# Intonational Strategies
# In
# Ensemble Singing

## — Appendices —

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# APPENDIX 1

# PERFORMANCE RULES

Excerpts from Sundberg, Johan, *The Science of Musical Sounds,* pp. 221-226. All Italics are from the researcher.

> "We just mentioned that a verbatim realization of the music score, faithful down to the last millisecond, does not result in a musically acceptable performance. Rather, the performance sounds machine-like (which it, of course, is!). *This shows that musicians perform music such that, for example, the durations of the tones deviate from their nominal values in the score. These deviations are often called expressive.* They are sometimes minute, sometimes great, but it seems that an attentive listener always can hear them in some sense. But first of all they are meaningful. For this reason we will call them *meaningful deviations.*
>
> Thus, these *meaningful deviations cannot be replaced by random variations*: This is not very astonishing as it really means nothing more than that musicians cannot be replaced by random functions. These meaningful deviations from the nominal description given by the score represent an important and interesting part of the science of musical sounds. And, of course, *they are far more interesting than the meaningless deviations, which occur by accident, when the musician fails to execute his or her intentions when playing.*
>
> …
>
> It seems clear that the meaningful deviations are made according to certain principles, and at present it is difficult to see how general these principles are. However, it is obvious that a musician is by no means free to invent any principles he or she would like, because listeners would be unable to interpret new and freely invented deviations and would hence find them meaningless, i.e., a sign of poor playing technique. …
>
> …
>
> *The rules appear to serve two main musical purposes: differentiation of pitch and duration categories, and grouping of tones that musically belong together.*
>
> The differentiation is facilitated by enhancing the differences between categories. *For example, high notes are played somewhat sharp and low notes are played somewhat flat, thus increasing the differences between the pitch categories. At the same time, the octaves are a little stretched. Further, short notes are played a little shorter than normal and long notes a bit longer.* Another example is that the difference between dotted quarter note plus eighth note in two-fourth time, and quarter note plus eighth note in three-eighth time, is increased by taking some duration from the long note and adding it to the following shorter in three-fourths (or halves) time. Thus, in this particular durational context, the short notes are lengthened.
>
> …
>
> *When listening to computers playing music; one almost tends to be offended by its total lack of musical understanding, and part of what is felt to be missing is the phrasing. When music is performed without consideration of the phrase structure, the result sounds overly stupid and insensitive. This suggests that we are used to hearing phrase marking in performance, apparently because musicians always insert them in their performances.* This marking of structure occurs at different structural levels.
>
> …

… In a similar way, Clynes advocated the assumption that *different composers must be played with composer-specific durational bar patterns*. This is probably true although not for all music. For example, many composers, particularly during the Baroque and Classic eras, often play little musical games by moving the perceived bar lines around so that they do not always match those given in the notation. Also, grouping occurs not only within but also across bars. Some rules move tones belonging together closer in time and vice versa, and this would apparently violate a rigid durational bar pattern.

…

It is also interesting to see in what way and when emphasis and its opposite deemphasis are used in music. What is it that needs emphasis? To predict this with respect to pitch classes, the old classical circle of fifths turns out to be a key. The farther away from the root of the chord a tone is located on the circle of fifths, the more emphasis it appears to need in the performance.…

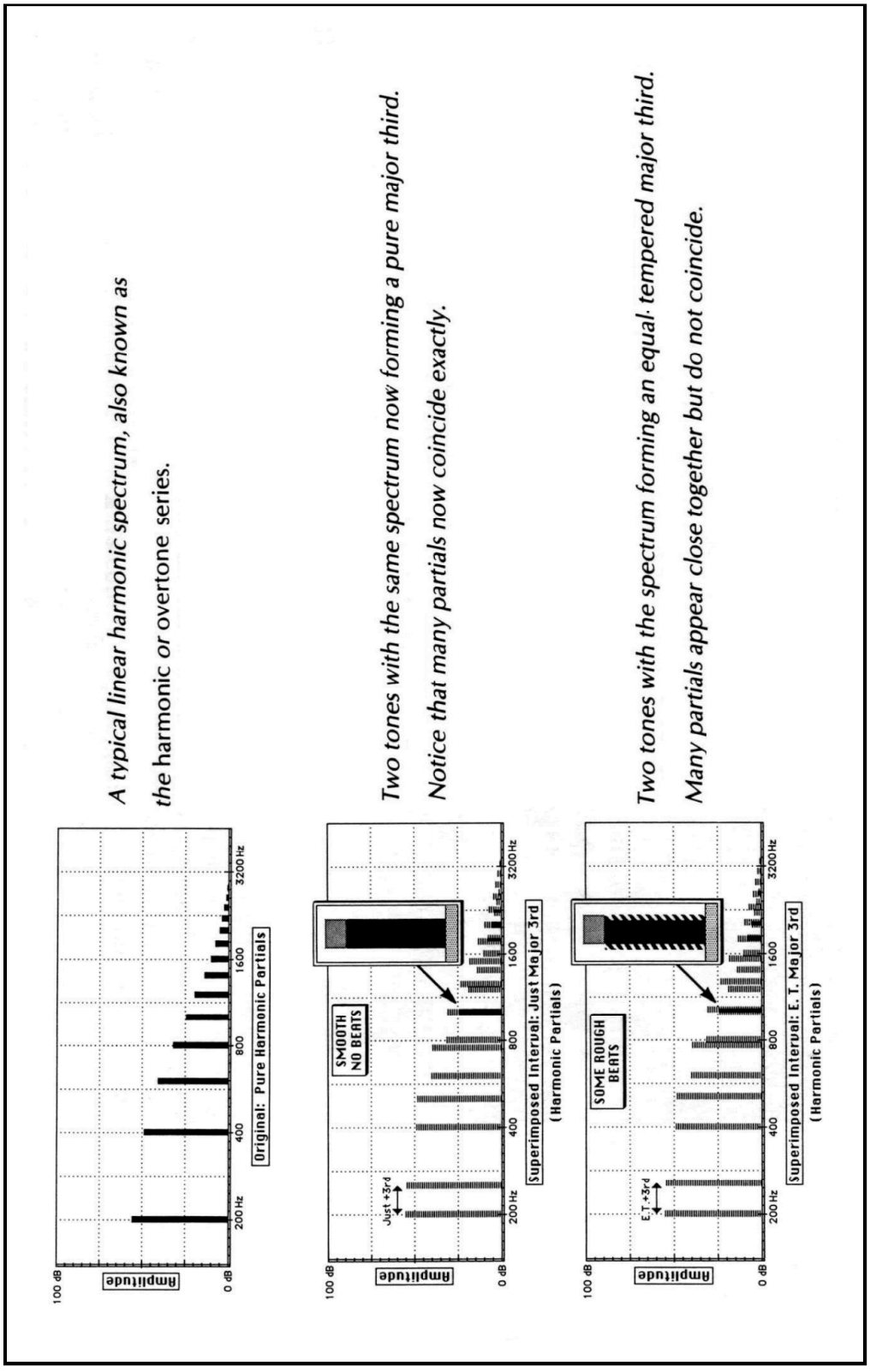
*A melodically charged note is lengthened and is played louder and, if possible, with more vibrato.*

…

…

Phrase endings are marked by a lengthening of the final tone or tones, and subphrase endings are marked by micropauses. This is, in fact, exactly the same code as is used in speech! In sentences the last syllables are lengthened, and small pauses are inserted after smaller groups of words. Also with respect to emphasis marking, there are strong parallels with speech. Important events are lengthened in both cases. *In music not much can be done with pitch, but the depth of the vibrato modulation can be increased, provided the instrument allows it.*

# APPENDIX 2
## HARMONIC SPECTRA



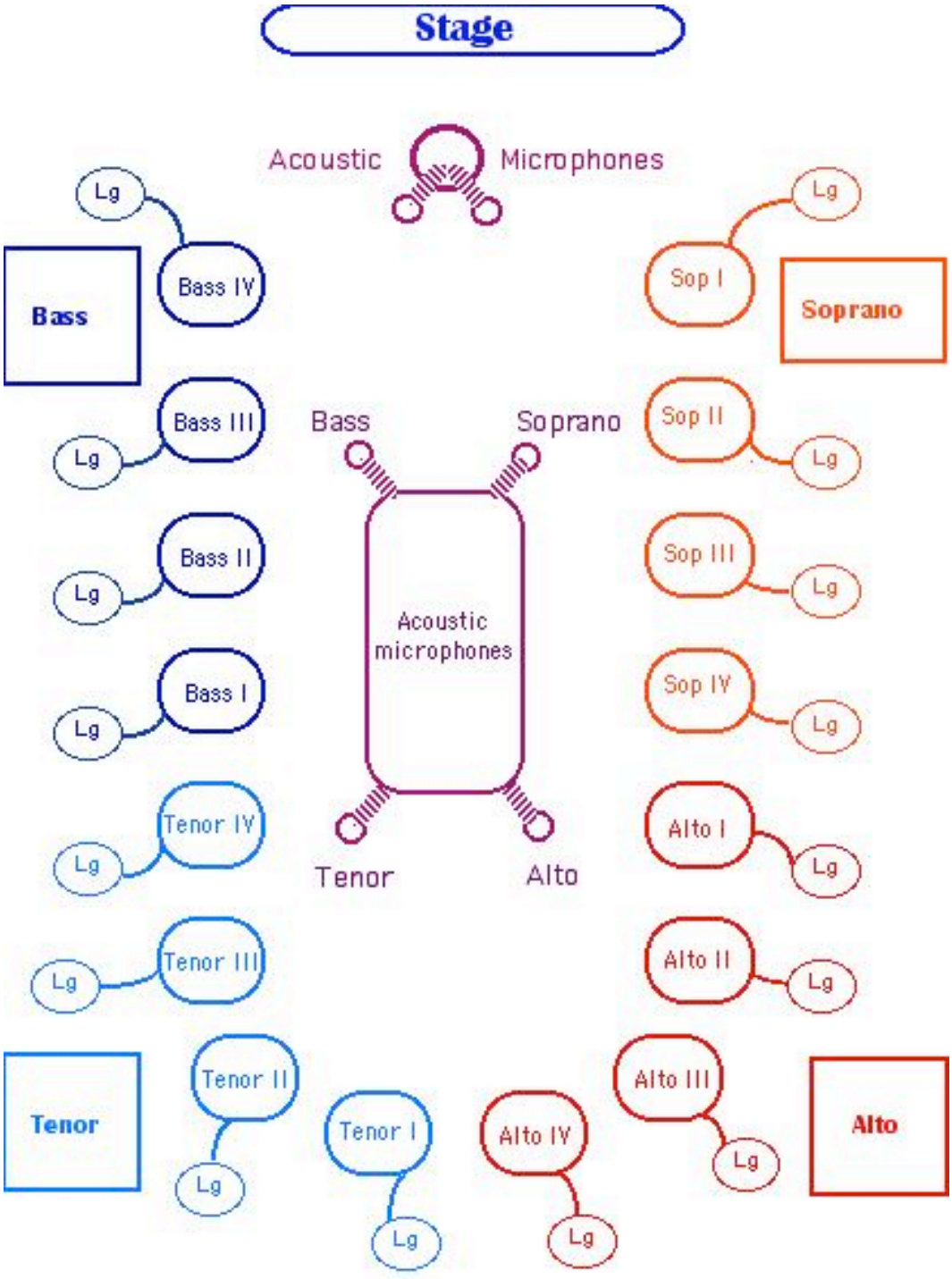
# APPENDIX 3

# IMAGES OF THE EXPERIMENTAL WORK

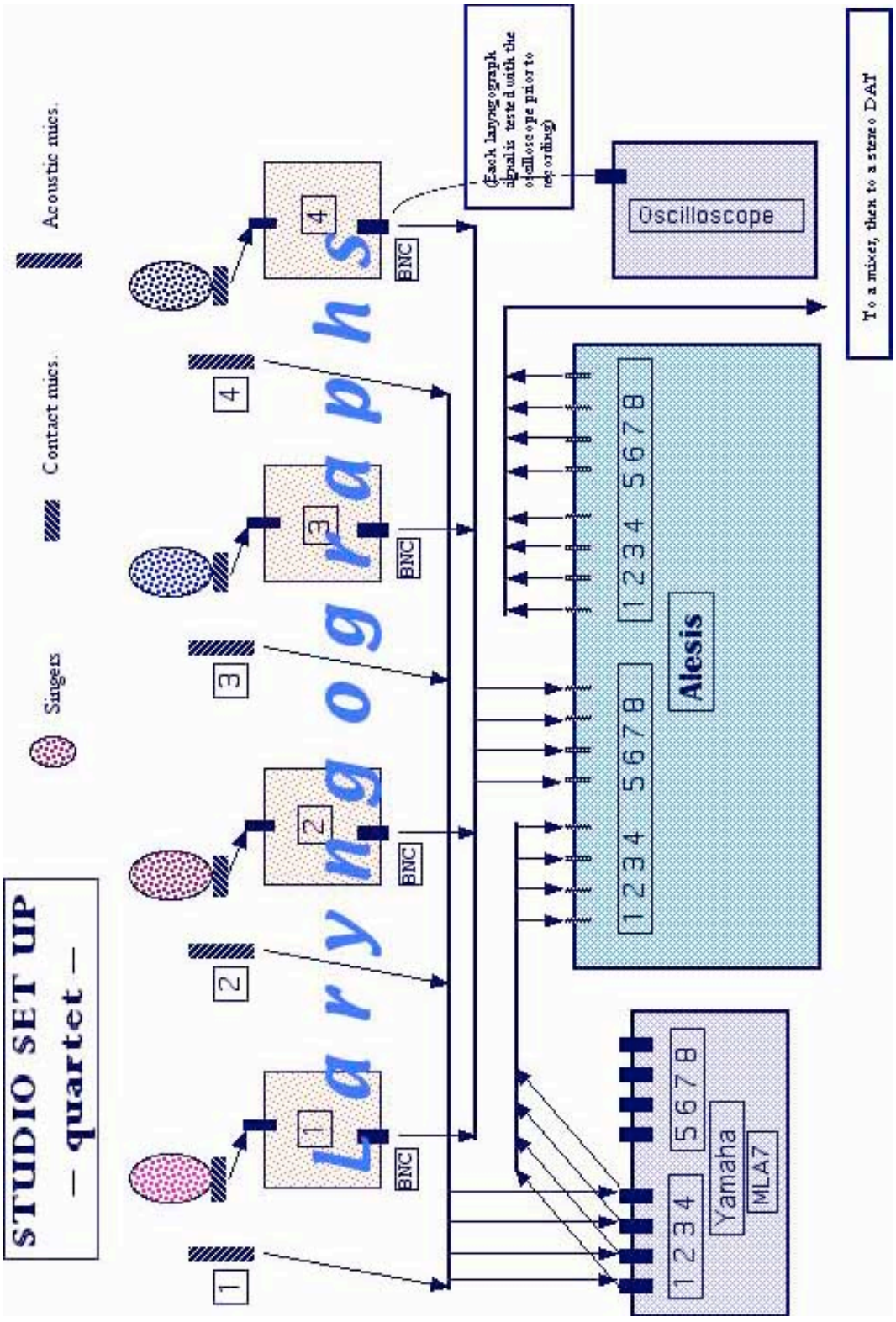

24 4'97

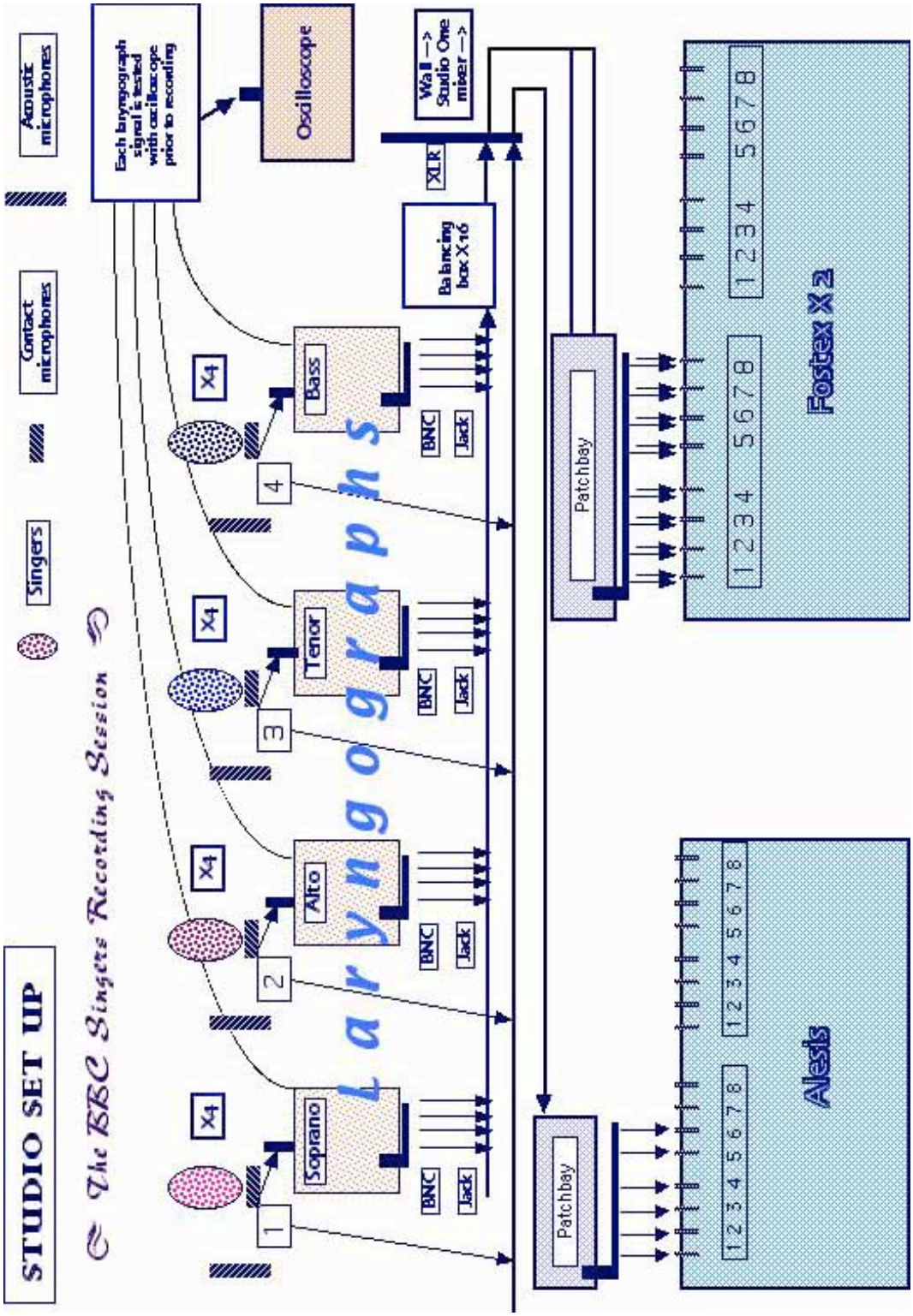
# APPENDIX 4

# RECORDING SESSIONS DIAGRAMS




The BBC Singers's disposition Diagram


STUDIO SET UP
– quartet –
Singers
Acoustic mics.
Contact mics.
Laryngographs
BNC
(Each laryngograph signal is tested with the oscilloscope prior to recording)
Oscilloscope
To a mixer, then to a stereo DAT
Alesis
1 2 3 4 5 6 7 8
Yamaha
MLA7


STUDIO SET UP
The BBC Singers Recording Session
Acoustic microphones
Contact microphones
Singers
Each laryngograph signal is tested with oscilloscope prior to recording
Oscilloscope
Wall —> Studio One mixer —>
XLR
Balancing box X16
Laryngographs
Soprano
Alto
Tenor
Bass
X4
BNC
Jack
1
2
3
4
Patchbay
Fostex X2
Alesis
1 2 3 4 5 6 7 8

# APPENDIX 5

# 5 - LARYNGOGRAPH AND ELECTRODES

Extracts from Laryngograph Limited information leaflets about the Laryngograph:

"The laryngograph is a practical instrument which has been designed to allow vocal fold closure to be monitored, most notably giving a basis for the measurement of aspects of vocal fold vibration which occur during voiced sounds. The device operates by sending the electrical conductance between two electrodes which are placed superficially one on either side of the neck of the speaker at the level of the larynx. Each gold-plated electrode consists of an inner disk surrounded by an outer guard-ring and these are held in position by means of an elastic neckband. The laryngograph monitors the varying electrical conductance between the electrodes in terms of the current flowing between them on application of a constant voltage. Its output waveform (Lx = Larynx excitation) gives this current flow as a function of time. Current flow will be at a maximum when the vocal folds are in contact, and at a minimum when they are apart – this point is basic to a proper understanding of device operation and subsequent Lx waveform interpretation. Acoustically, the closure of the vocal folds produces the main pulse of excitation in each larynx cycle." – *Laryngographic assessment of normal voice: a tutorial*, by Evelyn R. M. Abberton, David M. Howard and Adrian J. Fourcin, in *Clinical Linguistics & Phonetics*, 1989, vol. 3, 281-296.

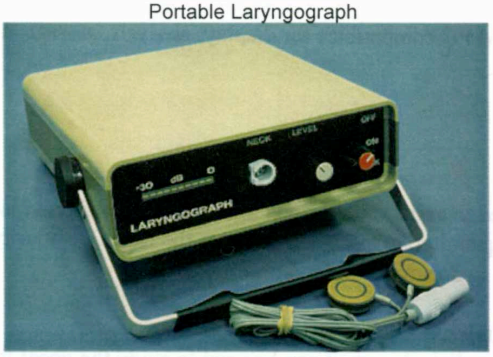
"The Laryngograph is an electro-glottograph that makes possible the examination of vocal-fold contact, rate of vibration and regularity during voice production, and without interfering with the processes of speaking or singing. Two gold plated electrodes are lightly placed on the speaker's neck at the level of the thyroid cartilage.

Pitch extraction from the Laryngograph waveform is particularly reliable, as the waveform is unaffected by vocal tract resonances and environmental noise. This makes possible precise synchronisation of a stroboscopic light source on a period by period basis, without the need for averaging the fundamental frequency over a number of periods.

The Laryngograph has been supplied to speech scientists, speech therapists, hearing clinics, ENT departments, phoneticians, foreign language teachers and singing teacher throughout the world since l974."

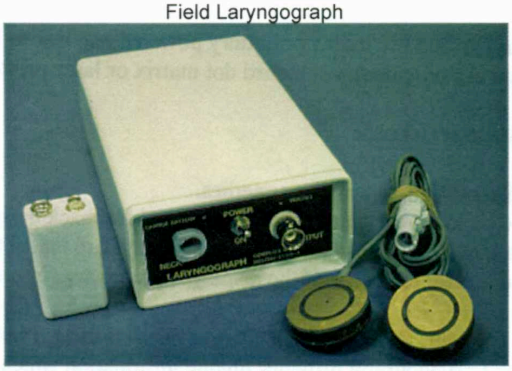
## Laryngographs

Portable Laryngograph




22x23x7cm. 1.4Kg. Battery/mains operation

Field Laryngograph

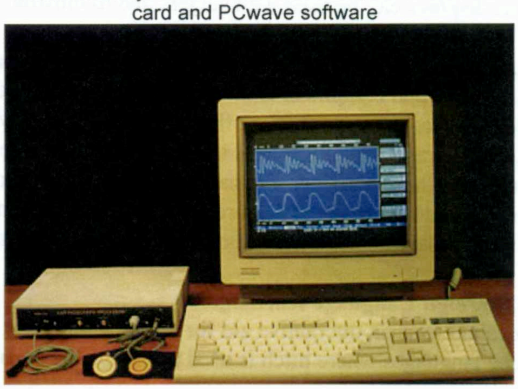



9.5x16x4.5cm. 500gm. Battery only operation.

## Speech and Laryngograph systems

Laryngograph Processor (PCLX) with PCLX DSP card, microphone and assorted electrodes


Basic PCLX system with Lx Processor, PC with PCLX card and PCwave software



**Laryngograph Ltd**
1 Foundry Mews, London NW1 2PE, U.K.
Tel: +44.(0)171.387 7793
Fax: +44.(0)171.383.2039

# APPENDIX 6

## 6.1 - SOUNDSCOPE INSTRUMENTS

Some extracts from the SoundScope User's manual are presented to describe the basic functions and building blocks of the software.

> "SoundScope was created to help you record, analyze, manipulate, and play speech and other sounds. Both recorded sounds and the sound calculations are stored in the computer as **waves**. Specific time values in a wave may be indicated by **markers** that can be moved with the mouse. The waves and markers are shown on the screen in rectangular areas called **displays**. The number, size, type and layout of displays is completely controlled by the user. There are four types of displays, listed below.
>
> **Wave Plot** shows the timewave (voltage as a function of time).
>
> **Analysis** shows a Spectrogram, LPC History, Horizontal Spectral Slice, Long-term Average Spectrum, To (fundamental frequency), Jitter, Shimmer, HNR (Harmonic-to-noise ratio), Envelope, Energy, Zero Crossing rate, Spline, or LPC Residual.
>
> **Snapshots** shows a close-up of the timewave at a specific point in time, showing either a 10, 20, 50 or 100 msec window, or an "instantaneous" FFT (Fast Fourier Transform), LPC (Linear Predictive Coding) or Cepstrum.
>
> **XY Plot** shows a wave plotted against another wave (e.g. F1 vs. F2), rather than as a function of time
>
> SoundScope also features integrated text editors called **journals**…
>
> Waves, markers, displays, and journals can be combined like building blocks to create software **instruments.** A few pre-defined instruments have been included with SoundScope. You can use these as is, customize them to suit your specific needs, or build new instrument from scratch." (Pages 2-1 to 2-2)

## 6.2 - SOUNDSCOPE OBJECTS

The SoundScope objects are:

- Waves – they are used to represent real world continuous data as a list of values, which when plotted, produce a waveform. Their values (voltage as a function of time) can be accessed and edited in a spreadsheet-like environment. Waves can also be manipulated in many ways.
- Displays – used to view waveforms and perform calculations. Each display con contain up to 8 waves. There are four display types: Wave plot, XY plot, Analysis and Snapshot.
- Markers – are used to mark a time in a wave or display. A pair of markers may define a segment of a wave. A wave may contain as many markers as necessary.
- Journals – are text regions that are used to enter, view and edit text in a similar way it is done in a word processor. It can operate in one of two modes: word processor or spreadsheet.
- Menubars – they can be redefined at will.
- Instructions – are the building blocks used to create tasks. There are over twenty kinds of instructions, each of which is used to perform a specific function.
- Tasks – Little program sequences that perform a series of operations when run, like it happens with macros in other programs. The tasks are built with *instructions*.
- Strings – they hold a series of characters of any length
- Variables – are used to hold one 32-bit floating-point value.

# 6.3 - FUNDAMENTAL FREQUENCY ($F_0$)

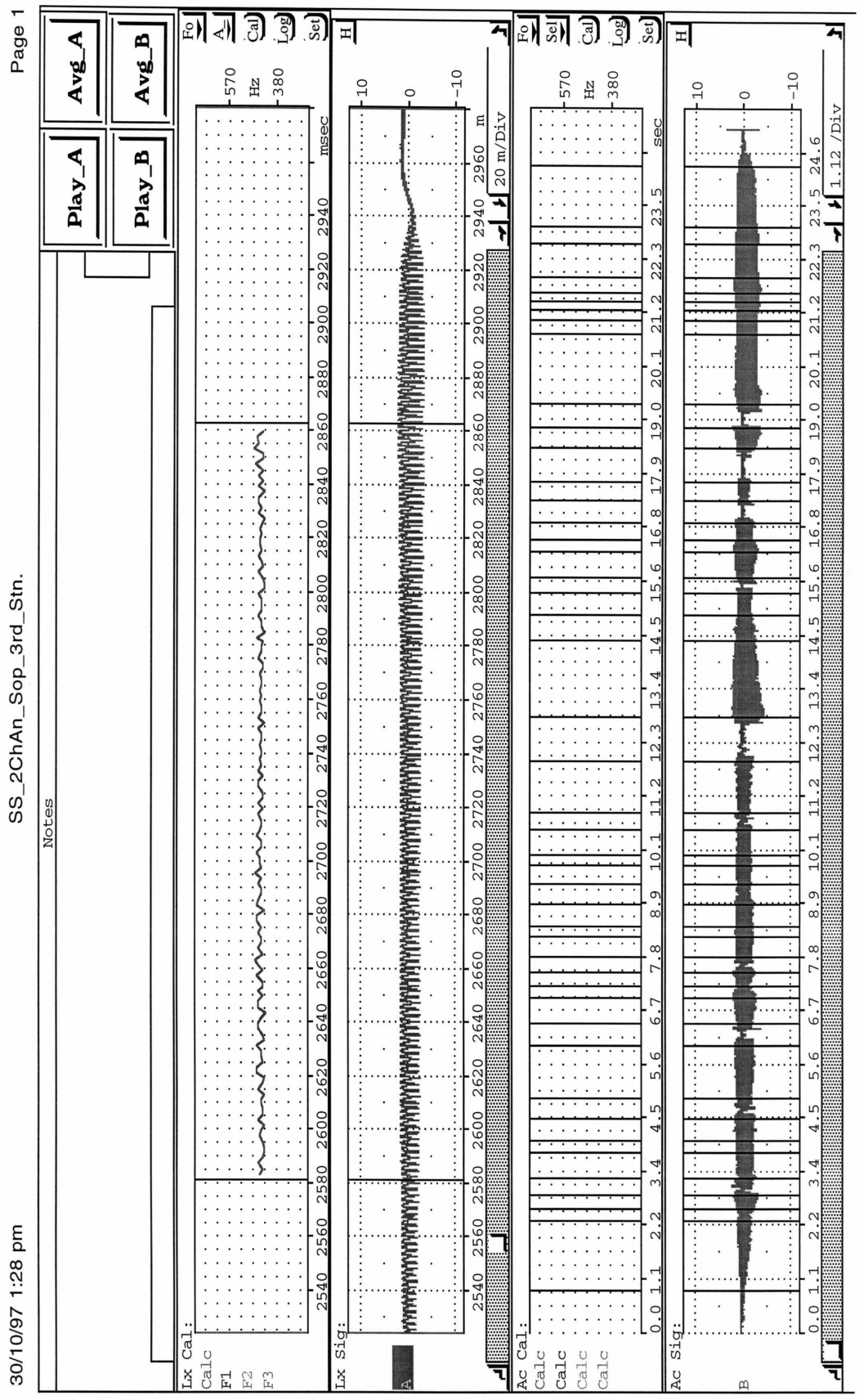
"Fundamental frequency (Fo) corresponds to the rate of the speaker's vocal cord vibration. This vibration appears as a periodic component in a speech waveform whose frequency varies over time. Naturally, the fundamental frequency can only be evaluated during voiced intervals. Fundamental frequency is determined using either an auto-correlation technique or a peak-picking algorithm, as specified in the Fo Setup dialog box.

…The peak-picking algorithm identifies the individual cycles in the source wave in order to calculate the fundamental frequency. The technique used is described in Gold, "Computer Program for Pitch Extraction." JASA, 34(7)[1]. The peak-picking algorithm produces a sequence of pitch values, one value for each pitch period. Variations in pitch cause this sequence of numbers to be spaced somewhat irregularly in time.

Both pitch-tracking techniques limit their search for pitch values to the pitch range specified in the Fo Options dialog. Gaps appear in the Fo plot in those regions in the source wave where no pitch has been detected in the pitch range." (Pages A-8 to A-9)

[1] The correct reference is:
GOLD, B. (1962). Computer program for pitch extraction. *Journal of the Acoustical Society of America* 34: 916-921.

# 6.4 - SOUNDSCOPE SAMPLE



# APPENDIX 7

# 7 - SCORES


Ave Verum Corpus
W. A. Mozart
Soprano
Alto
Tenor
Bass
A - ve, a - ve ve - rum cor - pus na - tum de Ma-ri - a Vir - gi - ne
A - ve, a - ve ve - rum cor - pus na - tum de Ma-ri - a Vir - gi - ne
Ve - re pas - sum, im - mo - la - tum in cru - ce pro ho - mi - ne
in cru - ce
Ve - re pas - sum, im - mo - la - tum in cru - ce pro ho - mi - ne
im - mo - la - tum
Cu - jus la - tus per - fo - ra - tum un - da flu - xit et san - gui-ne
Cu - jus la - tus per - fo - ra - tum un - da flu - xit et san - gui-ne
Es - to no - bis prae - gus - ta - tum in mor tis ex - a - mi-ne in
Es - to no - bis prae - gus - ta - tum in mor - tis ex - a - mi - ne
mor tis ex - a - mi-ne.
in mor tis ex - a - mi-ne
General Score
Jocelei Bohrer


Ave Verum Corpus
W. A. Mozart
Soprano
Alto
Tenor
Bass
A- ve, a - ve ve - rum cor - pus na - tum de Ma - ri - a Vir - gi - ne
A- ve, a - ve ve - rum cor - pus na - tum de Ma - ri - a Vir - gi - ne
Ve - re pas - sum, im - mo - la - tum in cru - ce pro ho - mi - ne
Ve - re pas - sum, im - mo - la - tum in cru - ce pro ho - mi - ne
im- mo- la- tum
Cu - jus la - tus per - fo - ra - tum un - da flu - xit et san - gui - ne
Cu - jus la - tus per - fo - ra - tum un - da flu - xit et san - gui - ne
Es - to no - bis prae - gus - ta - tum in mor - tis ex - a - mi - ne in
Es - to no - bis prae - gus - ta - tum in mor - tis ex - a - mi - ne
mor - tis ex - a - mi - ne.
in mor - tis ex - a - mi - ne
General Score with notes number
Jocelei Bohrer


Ave Verum Corpus
W. A. Mozart
Soprano
Alto
Tenor
Bass
A - ve, a - ve ve - rum cor - pus na - tum de Ma-ri - a Vir - gi - ne
Ve - re pas - sum, im - mo - la - tum in cru - ce pro ho - mi - ne
im - mo - la tum
in cru - ce
Cu - jus la - tus per - fo - ra - tum un - da flu - xit et san - gui-ne
Es - to no - bis prae - gus - ta - tum in mor - tis ex - a - mi-ne in
mor - tis ex - a - mi - ne
mor - tis ex - a - mi - ne.
in mor - tis ex - a - mi - ne
Intonational Analysis I
Jocelei Bohrer


Ave Verum Corpus
W. A. Mozart
Soprano
Alto
Tenor
Bass
A- ve, a- ve ve- rum cor- pus na- tum de Ma-ri- a Vir- gi- ne
A - ve, a - ve ve - rum cor - pus na - tum de Ma-ri - a Vir - gi - ne
Ve - re pas - sum, im - mo - la - tum in cru - ce pro ho - mi - ne
im- mo- la- tum
in cru - ce
Ve - re pas - sum, im - mo - la - tum in cru - ce pro ho - mi - ne
Cu- jus la - tus per - fo - ra - tum un - da flu - xit et san - gui - ne
Cu - jus la - tus per - fo - ra - tum un - da flu - xit et san - gui - ne
Es - to no - bis prae - gus - ta - tum in mor tis ex - a - mi - ne in
Es - to no - bis prae - gus - ta - tum in mor - tis ex - a - mi - ne
mor tis ex - a - mi - ne.
in mor tis ex - a - mi - ne
Intonational Analysis II
Jocelei Bohrer


"Ave Verum Corpus"
W. A. Mozart
Soprano
Alto
Tenor
Bass
D3
A2
Ave, ave verum Corpus natum de Maria Virgine
Vere passum, immolatum in cruce pro homine
immolatum
Cujus latus perfora tum unda fluxit et sanguine
perfora tum
Esto nobis prægustatum in mortis exa mine
exa mi ne
mortis exa mine.
Jocelei Bohrer - Reference Frequencies


Ave Verum Corpus
W. A. Mozart
Soprano
Alto
Tenor
Bass
A - ve, a - ve ve - rum cor - pus na - tum de Ma-ri-a Vir - gi - ne
Ve - re pas - sum, im - mo - la - tum in cru - ce pro ho - mi - ne
Cu - jus la - tus per - fo - ra - tum un - da flu - xit et san - gui - ne
Es - to no - bis prae - gus - ta - tum in mor - tis ex - a - mi - ne
mor - tis ex - a - mi - ne.
AVC
Target Notes
Jocelei Bohrer

# APPENDIX 8
# 8 - TUNING TABLES – ANALYSES

**Cents Table for Extended Pythagorean and Just Intonations, plus Extended Meantone Temperament**

| Degree | Ext Pyth Intonation | Extended JI +1 sc | Ext Just Intonation | Extended JI -1 sc | Extended JI -2 sc | Extended JI -3 sc | Extended JI -z | Extended JI -(k+z) | Extended JI - y | Extended JI +(k-y) | Extended MT Temp | Degree |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | **261,626** | 21,506 | **264,000** | -21,506 | -43,013 | -64,519 | -27,264 | -48,771 | -6,775 | 14,731 | **264,000** | I |
| I # | 113,685 | 135,191 | 113,685 | 92,180 | 70,673 | 49,167 | 86,422 | 64,915 | 106,910 | 128,415 | 76,049 | I # |
| I x | 227,371 | 248,876 | 227,371 | 205,863 | 184,358 | 162,851 | 200,106 | 178,599 | 220,594 | 242,105 | 152,098 | I x |
| II bb | -23,460 | -1,954 | -23,460 | -44,966 | -66,473 | -87,979 | -50,724 | -72,230 | -30,236 | -8,729 | 41,059 | II bb |
| II b | 90,225 | 111,732 | 90,225 | 68,719 | 47,212 | 25,706 | 62,961 | 41,454 | 83,450 | 104,955 | 117,107 | II b |
| II | 203,910 | 225,417 | 203,910 | 182,404 | 160,898 | 139,392 | 176,646 | 155,140 | 197,133 | 218,640 | 193,157 | II |
| II # | 317,595 | 339,101 | 317,595 | 296,088 | 274,582 | 253,076 | 290,331 | 268,825 | 310,819 | 332,325 | 269,206 | II # |
| II x | 431,280 | 452,786 | 431,280 | 409,774 | 388,267 | 366,761 | 404,016 | 382,509 | 424,504 | 446,010 | 345,255 | II x |
| III bb | 180,450 | 201,956 | 180,450 | 158,944 | 137,437 | 115,930 | 153,185 | 131,680 | 173,675 | 195,181 | 234,216 | III bb |
| III b | 294,135 | 315,641 | 294,135 | 249,909 | 251,122 | 229,616 | 266,871 | 245,364 | 287,360 | 308,866 | 310,265 | III b |
| III | 407,820 | 429,326 | 407,820 | 386,314 | 364,808 | 343,301 | 380,556 | 359,050 | 401,044 | 422,551 | 386,314 | III |
| III # | 521,505 | 543,011 | 521,505 | 499,999 | 478,492 | 456,986 | 494,241 | 472,735 | 514,729 | 536,235 | 462,362 | III # |
| IV b | 384,360 | 405,867 | 384,360 | 362,853 | 341,347 | 319,842 | 357,096 | 335,589 | 377,584 | 399,090 | 427,373 | IV b |
| IV | 498,045 | 519,551 | 498,045 | 476,538 | 455,033 | 433,526 | 470,781 | 449,274 | 491,269 | 512,776 | 503,422 | IV |
| IV # | 611,730 | 633,236 | 611,730 | 590,224 | 568,718 | 547,211 | 584,466 | 562,959 | 604,954 | 626,461 | 579,470 | IV # |
| IV x | 725,415 | 746,922 | 725,415 | 703,909 | 682,402 | 660,896 | 698,151 | 676,645 | 718,640 | 740,145 | 655,520 | IV x |
| V bb | 474,585 | 496,091 | 474,585 | 453,079 | 431,572 | 410,066 | 447,321 | 425,815 | 467,809 | 489,315 | 544,480 | V bb |
| V b | 588,270 | 609,776 | 588,270 | 566,763 | 545,257 | 523,751 | 561,006 | 539,499 | 581,494 | 603,001 | 620,530 | V b |
| V | 701,955 | 723,461 | 701,955 | 680,448 | 658,943 | 637,436 | 674,691 | 653,184 | 695,180 | 716,685 | 696,579 | V |
| V # | 815,640 | 837,146 | 815,640 | 794,133 | 772,627 | 751,121 | 788,375 | 766,870 | 808,865 | 830,370 | 772,627 | V # |
| V x | 929,325 | 950,832 | 929,325 | 907,818 | 886,313 | 864,806 | 902,061 | 880,554 | 922,549 | 944,055 | 848,677 | V x |
| VI bb | 678,496 | 700,001 | 678,496 | 656,988 | 635,483 | 613,977 | 651,231 | 629,725 | 671,719 | 693,225 | 737,637 | VI bb |
| VI b | 792,180 | 813,686 | 792,180 | 770,674 | 749,167 | 727,661 | 764,916 | 743,409 | 785,404 | 806,910 | 813,686 | VI b |
| VI | 905,865 | 927,372 | 905,865 | 884,359 | 862,853 | 841,346 | 878,601 | 857,095 | 899,089 | 920,596 | 889,736 | VI |
| VI # | 1019,550 | 1041,056 | 1019,550 | 998,044 | 976,538 | 955,031 | 992,286 | 970,780 | 1012,774 | 1034,281 | 965,784 | VI # |
| VI x | 1133,235 | 1154,742 | 1133,235 | 1111,729 | 1090,222 | 1068,716 | 1105,971 | 1084,465 | 1126,459 | 1147,966 | 1041,833 | VI x |
| VII bb | 882,405 | 903,912 | 882,405 | 860,899 | 839,393 | 817,886 | 855,141 | 833,635 | 875,629 | 897,135 | 930,794 | VII bb |
| VII b | 996,090 | 1017,596 | 996,090 | 974,584 | 953,077 | 931,571 | 968,826 | 947,320 | 989,314 | 1010,821 | 1006,843 | VII b |
| VII | 1109,775 | 1131,281 | 1109,775 | 1088,269 | 1066,763 | 1045,256 | 1082,511 | 1061,005 | 1102,999 | 1124,506 | 1082,892 | VII |
| VII # | 1223,460 | 1244,967 | 1223,460 | 1201,953 | 1180,447 | 1158,941 | 1196,196 | 1174,690 | 1216,685 | 1238,191 | 1158,941 | VII # |
| VIII b | 1086,315 | 1107,821 | 1086,315 | 1064,809 | 1043,303 | 1021,796 | 1059,051 | 1037,545 | 1079,539 | 1101,046 | 1123,951 | VIII b |

Note:The first degree frequency values (in bold characters) are given as examples only, since in this table they will provide always the same results in cents.

## Ave Verum Corpus_Tuning Table — Extended Just Intonation Analysis I

### Difference in Cents from Equal Temperament

**Phrases**

| First Phrase | | | | | | | | Second Phrase | | | | | | | | Third Phrase | | | | | | | | Fourth Phrase | | | | | | | | Fifth Phrase | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | |
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| A4 | 1,955 | F#4 | -13,686 | A3 | 1,955 | D3 | 0,000 | E4 | 3,911 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 | A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 | F#4 | -35,192 | D4 | -21,506 | | | | | G4 | -23,461 | | | | | | |
| D5 | 0,000 | F#4 | -13,686 | A3 | 1,955 | D3 | 0,000 | A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 | A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 | F#4 | -35,192 | D4 | -21,506 | | | | | D5 | -21,506 | | | | | | |
| F#4 | -13,686 | | | | | | | A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 | A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 | F#4 | -35,192 | D4 | -21,506 | B3 | -37,147 | G3 | -23,461 | | | F#4 | -35,192 | C4 | -52,680 | A3 | -19,551 |
| A4 | 1,955 | E4 | -17,596 | B3 | -15,641 | D3 | 0,000 | G#4 | -9,776 | | | D4 | -27,264 | B3 | 5,865 | Bb4 | 6,911 | | | | | G3 | -11,623 | E4 | -17,596 | C#4 | -33,237 | | | | | | | G4 | -23,461 | D4 | -21,506 | Bb3 | -7,820 |
| G#4 | -31,282 | | | | | | | G#4 | -9,776 | E4 | 3,911 | D4 | -27,264 | B3 | 5,865 | Bb4 | 6,911 | E4 | 3,911 | C#4 | -11,731 | G3 | -11,623 | D4 | -21,506 | B3 | -37,147 | | | | | D#5 | -29,326 | F#4 | -13,686 | C4 | -10,685 | A3 | -46,814 |
| G4 | -1,955 | E4 | -17,596 | B3 | -15,641 | D3 | 0,000 | E4 | 3,911 | E4 | 3,911 | B3 | 5,865 | | | | | | | C4 | -3,910 | | | G4 | -23,461 | E4 | -39,102 | B3 | -37,147 | G3 | -23,461 | E5 | -17,596 | E4 | -17,596 | B3 | -15,641 | G#3 | -31,282 |
| G4 | -29,219 | E4 | 3,910 | A3 | 1,955 | C#3 | -11,731 | G#4 | -9,776 | | | | | E3 | 3,911 | Bb4 | -35,084 | E4 | -17,596 | C4 | -3,910 | C3 | -3,910 | G4 | -23,461 | E4 | -39,102 | B3 | -37,147 | G3 | -23,461 | B4 | -15,641 | | | D4 | -48,770 | | |
| B4 | 5,865 | G4 | -29,219 | | | | | | | | | | | | | D5 | 0,000 | | | Bb3 | -35,084 | | | | | | | A3 | -19,551 | F#3 | -35,192 | C#5 | -33,237 | | | C#4 | -33,237 | | |
| A4 | 1,955 | F#4 | -13,686 | A3 | 1,955 | C#3 | -11,731 | B4 | 5,865 | G#4 | -9,776 | D4 | -27,264 | E3 | 3,911 | C5 | -3,910 | | | A3 | -19,551 | | | | | | | G3 | -23,461 | E3 | -39,102 | D5 | -48,770 | | | B3 | -15,641 | | |
| G4 | -29,219 | E4 | 3,910 | | | | | B4 | -42,905 | G#4 | -9,776 | D4 | -6,775 | E#3 | -25,417 | Bb4 | -35,084 | E4 | -17,596 | G3 | -1,954 | C3 | -3,910 | G4 | -50,725 | E4 | -17,596 | C#4 | -33,237 | A3 | -19,551 | C#5 | -33,237 | | | A3 | -19,551 | G3 | -50,725 |
| G4 | -1,955 | E4 | 3,910 | A3 | 1,955 | D3 | 0,000 | A4 | 1,955 | A4 | 1,955 | C#4 | -11,731 | F#3 | -13,686 | Bb4 | -35,084 | E4 | -17,596 | G3 | -1,954 | C3 | -3,910 | G4 | -50,725 | E4 | -17,596 | C#4 | -33,237 | A3 | -19,551 | B4 | -37,147 | D4 | -21,506 | | | |
| F#4 | -13,686 | D4 | 0,000 | | | | | A4 | 1,955 | A4 | 1,955 | C#4 | -11,731 | F#3 | -13,686 | A4 | -19,551 | F4 | -5,864 | A3 | -19,551 | F3 | -5,864 | F#4 | -35,192 | D4 | -21,506 | | | | | A4 | -19,551 | C#4 | -33,237 | | | | |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 | A4 | 1,955 | | | | | | | A4 | -19,551 | F4 | -5,864 | A3 | -19,551 | F3 | -5,864 | E4 | -17,596 | C#4 | -33,237 | | | | | D5 | -21,506 | D4 | -21,506 | A3 | -19,551 | F#3 | -35,192 |
| E4 | 3,910 | C#4 | -11,731 | A3 | 1,955 | A2 | 1,955 | D5 | -27,264 | | | | | | | G4 | -23,460 | D4 | -21,506 | B3 | -37,147 | F3 | -54,634 | A4 | -19,551 | F#4 | -35,192 | C#4 | -33,237 | A3 | -19,551 | G4 | -23,461 | D4 | -21,506 | G3 | -23,461 | B2 | -37,147 |
| E4 | 3,910 | C#4 | -11,731 | A3 | 1,955 | A2 | 1,955 | | | G#4 | -9,776 | D4 | -27,264 | B2 | 5,865 | G4 | -23,460 | D4 | -21,506 | B3 | -37,147 | F3 | -54,634 | A4 | -19,551 | F#4 | -35,192 | C#4 | -33,237 | A3 | -19,551 | F#4 | -35,192 | D4 | -21,506 | A3 | -19,551 | A2 | -19,551 |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 | | | A4 | 1,955 | E4 | 3,911 | C#3 | -11,731 | G4 | -50,725 | E4 | -17,595 | C#4 | -33,237 | E3 | -17,595 | | | | | B3 | -37,147 | G3 | -23,461 | E4 | -17,596 | C#4 | -33,237 | G3 | -50,725 | | |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 | C#4 | -11,731 | | | | | | | Bb4 | -7,819 | F4 | -5,864 | D4 | -21,506 | D3 | -21,506 | | | | | A3 | -19,551 | F#3 | -35,192 | | | | | A2 | -19,551 |
| G4 | -29,219 | E4 | 3,910 | A3 | 1,955 | C#3 | -11,731 | B4 | -15,641 | F#4 | -13,686 | D4 | 0,000 | D3 | 0,000 | A4 | -19,551 | E4 | -17,595 | E4 | -17,595 | C#3 | -33,237 | | | | | D4 | -21,506 | B3 | -37,147 | E4 | -17,596 | C#4 | -33,237 | G3 | -50,725 | | |
| G4 | -29,219 | E4 | 3,910 | A3 | 1,955 | C#3 | -11,731 | A4 | 1,955 | F#4 | -13,686 | C#4 | -11,731 | D3 | 0,000 | G4 | -50,725 | E4 | -17,595 | C#4 | -33,237 | A2 | -19,551 | | | | | D4 | -21,506 | B3 | -37,147 | D4 | -21,506 | D4 | -21,506 | F#3 | -35,192 | D3 | -21,506 |
| G4 | -1,955 | E4 | 3,910 | A3 | 1,955 | D3 | 0,000 | A4 | 1,955 | E4 | 3,911 | B3 | 5,865 | E3 | 3,911 | G4 | -50,725 | E4 | -17,595 | C#4 | -33,237 | Bb2 | -14,595 | G4 | -23,461 | G4 | -23,461 | | | | | | | | | | |
| F#4 | -13,686 | D4 | 0,000 | | | | | G#4 | -9,776 | | | | | | | F4 | -5,864 | D4 | -21,506 | D4 | -21,506 | A2 | -19,551 | A4 | -19,551 | F#4 | -35,192 | D4 | -21,506 | A3 | -19,551 | | | | | | | |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 | G#4 | -9,776 | E4 | 3,911 | B3 | 5,865 | E3 | 3,911 | E4 | -17,595 | C#4 | -33,237 | | | | | B4 | -15,641 | E4 | -17,596 | D4 | -48,770 | G#3 | -31,282 | | | | | | | | |
| E4 | 3,910 | C#4 | -11,731 | A3 | 1,955 | A2 | 1,955 | A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A2 | 1,955 | F4 | -12,640 | D4 | -48,770 | B3 | -15,641 | G#2 | -31,282 | F#4 | -35,192 | D4 | -21,506 | A3 | -19,551 | A3 | -19,551 | | | | | | | |
| | | | | | | | | | | | | | | | | E4 | -17,595 | C#4 | -33,237 | E3 | -17,595 | A2 | -19,551 | E4 | -17,596 | C#4 | -33,237 | | | A2 | -19,551 | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | A3 | -19,551 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | F#4 | -35,192 | C#4 | -33,237 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | G4 | -23,461 | D4 | -21,506 | G3 | -23,461 | B2 | -37,147 | | | | | | | | |

Change of Pitch for the same degree (as in enharmonic procedure)

Non-harmonic notes (appogiatura, passage note, anticipation)

Variation in Pitch for the differing analysis

Temperament (value does not agree with the harmonic series principle)

Probable use of a modified reference frequency (-k), in which case all of the values would be lowered by a syntonic comma

## Ave Verum Corpus_Tuning Table — Extended Just Intonation Analysis II

### Difference in Cents from Equal Temperament

**Phrases**

**First Phrase**

| Sop | | Alto | | Tenor | | Bass | |
|---|---|---|---|---|---|---|---|
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| A4 | 1,955 | F#4 | -13,686 | A3 | 1,955 | D3 | 0,000 |
| D5 | 0,000 | F#4 | -13,686 | A3 | 1,955 | D3 | 0,000 |
| F#4 | -13,686 | | | | | | |
| **A4** | 1,955 | E4 | -17,596 | B3 | -15,641 | D3 | 0,000 |
| **G#4** | -31,282 | | | | | | |
| **G4** | -1,955 | **E4** | -17,596 | B3 | -15,641 | D3 | 0,000 |
| **G4** | -29,219 | **E4** | 3,910 | A3 | 1,955 | C#3 | -11,731 |
| B4 | 5,865 | G4 | -29,219 | | | | |
| A4 | 1,955 | F#4 | -13,686 | A3 | 1,955 | C#3 | -11,731 |
| **G4** | -29,219 | **E4** | 3,910 | | | | |
| **G4** | -1,955 | **E4** | 3,910 | A3 | 1,955 | D3 | 0,000 |
| F#4 | -13,686 | D4 | 0,000 | | | | |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 |
| E4 | 3,910 | C#4 | -11,731 | A3 | 1,955 | A2 | 1,955 |
| E4 | 3,910 | C#4 | -11,731 | A3 | 1,955 | A2 | 1,955 |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 |
| G4 | -29,219 | E4 | 3,910 | A3 | 1,955 | C#3 | -11,731 |
| **G4** | -29,219 | **E4** | 3,910 | A3 | 1,955 | C#3 | -11,731 |
| **G4** | -1,955 | **E4** | 3,910 | A3 | 1,955 | D3 | 0,000 |
| F#4 | -13,686 | D4 | 0,000 | | | | |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 |
| E4 | 3,910 | C#4 | -11,731 | A3 | 1,955 | A2 | 1,955 |

**Second Phrase**

| Sop | | Alto | | Tenor | | Bass | |
|---|---|---|---|---|---|---|---|
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| E4 | 3,911 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 |
| A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 |
| A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 |
| G#4 | -9,776 | | | D4 | -27,264 | B3 | 5,865 |
| G#4 | -9,776 | E4 | 3,911 | D4 | -27,264 | B3 | 5,865 |
| E4 | 3,911 | E4 | 3,911 | B3 | 5,865 | | |
| G#4 | -9,776 | | | | | | |
| | | | | | | E3 | 3,911 |
| **B4** | 5,865 | G#4 | -9,776 | **D4** | -27,264 | E3 | 3,911 |
| **B4** | 5,865 | G#4 | -9,776 | **D4** | -6,775 | E#3 | -25,417 |
| A4 | 1,955 | A4 | 1,955 | C#4 | -11,731 | F#3 | -13,686 |
| A4 | 1,955 | A4 | 1,955 | C#4 | -11,731 | F#3 | -13,686 |
| A4 | 1,955 | | | | | | |
| D5 | -27,264 | | | | | | |
| | | G#4 | -9,776 | D4 | -27,264 | B2 | 5,865 |
| | | A4 | 1,955 | E4 | 3,911 | C#3 | -11,731 |
| C#4 | -11,731 | | | | | | |
| B4 | -15,641 | F#4 | -13,686 | D4 | 0,000 | D3 | 0,000 |
| A4 | 1,955 | F#4 | -13,686 | C#4 | -11,731 | D3 | 0,000 |
| A4 | 1,955 | E4 | 3,911 | B3 | 5,865 | E3 | 3,911 |
| G#4 | -9,776 | | | | | | |
| G#4 | -9,776 | E4 | 3,911 | B3 | 5,865 | E3 | 3,911 |
| A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A2 | 1,955 |

**Third Phrase**

| Sop | | Alto | | Tenor | | Bass | |
|---|---|---|---|---|---|---|---|
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 |
| A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 |
| A4 | 1,955 | E4 | 3,911 | C#4 | -11,731 | A3 | 1,955 |
| Bb4 | 6,911 | | | | | G3 | -11,623 |
| **Bb4** | 6,911 | **E4** | 3,911 | C#4 | -11,731 | G3 | -11,623 |
| | | | | **C4** | 17,596 | | |
| **Bb4** | -13,577 | **E4** | 3,910 | **C4** | 17,596 | **C3** | 17,596 |
| **D5** | 21,506 | | | **Bb3** | -13,577 | | |
| **C5** | 17,596 | | | **A3** | 1,955 | | |
| **Bb4** | -13,577 | **E4** | 3,910 | **G3** | 19,552 | **C3** | 17,596 |
| **Bb4** | -13,577 | **E4** | 3,910 | **G3** | 19,552 | **C3** | 17,596 |
| **A4** | 1,955 | **F4** | 15,642 | **A3** | 1,955 | **F3** | 15,642 |
| **A4** | 1,955 | **F4** | 15,642 | **A3** | 1,955 | **F3** | 15,642 |
| G4 | -1,954 | D4 | 0,000 | B3 | -15,641 | **F3** | -33,128 |
| **G4** | -1,954 | D4 | 0,000 | B3 | -15,641 | F3 | -33,128 |
| **G4** | -29,219 | E4 | 3,911 | C#4 | -11,731 | E3 | 3,911 |
| Bb4 | 13,687 | F4 | 15,642 | D4 | 0,000 | D3 | 0,000 |
| A4 | 1,955 | E4 | 3,911 | E4 | 3,911 | C#3 | -11,731 |
| G4 | -29,219 | E4 | 3,911 | C#4 | -11,731 | A2 | 1,955 |
| G4 | -29,219 | E4 | 3,911 | C#4 | -11,731 | Bb2 | 6,911 |
| F4 | 15,642 | D4 | 0,000 | D4 | 0,000 | A2 | 1,955 |
| E4 | 3,911 | C#4 | -11,731 | | | | |
| F4 | 8,866 | D4 | -27,264 | B3 | 5,865 | G#2 | -9,776 |
| E4 | 3,911 | C#4 | -11,731 | E3 | 3,911 | A2 | 1,955 |

**Fourth Phrase**

| Sop | | Alto | | Tenor | | Bass | |
|---|---|---|---|---|---|---|---|
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| F#4 | -13,686 | D4 | 0,000 | | | | |
| F#4 | -13,686 | D4 | 0,000 | | | | |
| F#4 | -13,686 | D4 | 0,000 | B3 | -15,641 | G3 | -1,955 |
| E4 | 3,910 | C#4 | -11,731 | | | | |
| D4 | 0,000 | B3 | -15,641 | | | | |
| G4 | -1,955 | E4 | -17,596 | B3 | -15,641 | G3 | -1,955 |
| **G4** | -1,955 | **E4** | -17,596 | B3 | -15,641 | G3 | -1,955 |
| | | | | A3 | 1,955 | F#3 | -13,686 |
| | | | | G3 | -1,955 | E3 | -17,596 |
| **G4** | -29,219 | **E4** | 3,910 | C#4 | -11,731 | A3 | 1,955 |
| G4 | -29,219 | E4 | 3,910 | C#4 | -11,731 | A3 | 1,955 |
| F#4 | -13,686 | D4 | 0,000 | | | | |
| E4 | 3,910 | C#4 | -11,731 | | | | |
| A4 | 1,955 | F#4 | -13,686 | C#4 | -11,731 | A3 | 1,955 |
| A4 | 1,955 | F#4 | -13,686 | C#4 | -11,731 | A3 | 1,955 |
| | | | | B3 | -15,641 | G3 | -1,955 |
| | | | | A3 | 1,955 | F#3 | -13,686 |
| | | | | D4 | 0,000 | B3 | -15,641 |
| | | | | D4 | 0,000 | B3 | -15,641 |
| G4 | -1,955 | G4 | -1,955 | | | | |
| A4 | 1,955 | F#4 | -13,686 | **D4** | 0,000 | A3 | 1,955 |
| B4 | 5,865 | E4 | 3,910 | **D4** | -27,264 | G#3 | -9,776 |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | A3 | 1,955 |
| E4 | 3,910 | C#4 | -11,731 | | | A2 | 1,955 |
| | | | | A3 | 1,955 | | |
| F#4 | -13,686 | C#4 | -11,731 | | | | |
| G4 | -1,955 | D4 | 0,000 | G3 | -1,955 | B2 | -15,641 |

**Fifth Phrase**

| Sop | | Alto | | Tenor | | Bass | |
|---|---|---|---|---|---|---|---|
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| G4 | -1,955 | | | | | | |
| D5 | 0,000 | | | | | | |
| | | F#4 | -13,686 | C4 | -31,174 | A3 | 1,955 |
| | | G4 | -1,955 | D4 | 0,000 | Bb3 | 13,686 |
| D#5 | -7,821 | F#4 | 7,820 | C4 | 10,821 | A3 | -25,309 |
| E5 | 3,910 | E4 | 3,910 | B3 | 5,865 | G#3 | -9,776 |
| B4 | 5,865 | | | D4 | -27,264 | | |
| C#5 | -11,731 | | | C#4 | -11,731 | | |
| D5 | -27,264 | | | B3 | 5,865 | | |
| C#5 | -11,731 | | | A3 | 1,955 | G3 | -29,219 |
| B4 | -15,641 | D4 | 0,000 | | | | |
| A4 | 1,955 | C#4 | -11,731 | | | | |
| D5 | 0,000 | D4 | 0,000 | A3 | 1,955 | F#3 | -13,686 |
| G4 | -1,955 | D4 | 0,000 | G3 | -1,955 | B2 | -15,641 |
| F#4 | -13,686 | D4 | 0,000 | A3 | 1,955 | A2 | 1,955 |
| E4 | 3,910 | C#4 | -11,731 | G3 | -29,219 | | |
| | | | | A3 | 1,955 | A2 | 1,955 |
| E4 | 3,910 | C#4 | -11,731 | G3 | -29,219 | | |
| D4 | 0,000 | D4 | 0,000 | F#3 | -13,686 | D3 | 0,000 |

Change of Pitch for the same degree (as in enharmonic procedure)

Variation in Pitch for the differing analysis

Temperament (value does not agree with the harmonic series principle)

Non-harmonic notes (appogiatura, passage note, anticipation)

Probable use of a modified reference frequency (-k), in which case all of the values would be lowered by a syntonic comma

**Ave Verum Corpus_Tuning Table — Pythagorean Intonation**

**Difference in Cents from Equal Temperament**

| Phrases | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First Phrase | | | | | | | | Second Phrase | | | | | | | | Third Phrase | | | | | | | | Fourth Phrase | | | | | | | | Fifth Phrase | | | | | | | |
| Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | |
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| A4 | 1,955 | F#4 | 7,820 | A3 | 1,955 | D3 | 0,000 | E4 | 3,910 | E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | A4 | 1,955 | E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | F#4 | 7,820 | D4 | 0,000 | | | | | G4 | -1,955 | | | | | | |
| D5 | 0,000 | F#4 | 7,820 | A3 | 1,955 | D3 | 0,000 | A4 | 1,955 | E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | A4 | 1,955 | E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | F#4 | 7,820 | D4 | 0,000 | | | | | D5 | 0,000 | | | | | | |
| F#4 | 7,820 | | | | | | | A4 | 1,955 | E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | A4 | 1,955 | E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | F#4 | 7,820 | D4 | 0,000 | B3 | 5,865 | G3 | -1,955 | | | F#4 | 7,820 | C4 | -3,910 | A3 | 1,955 |
| A4 | 1,955 | E4 | 3,910 | B3 | 5,865 | D3 | 0,000 | G#4 | 11,730 | | | D4 | 0,000 | B3 | 5,865 | Bb4 | -7,820 | | | | | G3 | -1,955 | E4 | 3,910 | C#4 | 9,775 | | | | | | | G4 | -1,955 | D4 | 0,000 | Bb3 | -7,820 |
| G#4 | 11,730 | | | | | | | G#4 | 11,730 | E4 | 3,910 | D4 | 0,000 | B3 | 5,865 | Bb4 | -7,820 | E4 | 3,910 | C#4 | 9,775 | G3 | -1,955 | D4 | 0,000 | B3 | 5,865 | | | | | D#5 | 13,685 | F#4 | 7,820 | C4 | -3,910 | A3 | 1,955 |
| G4 | -1,955 | E4 | 3,910 | B3 | 5,865 | D3 | 0,000 | E4 | 3,910 | E4 | 3,910 | B3 | 5,865 | | | | | | | C4 | -3,910 | | | G4 | -1,955 | E4 | 3,910 | B3 | 5,865 | G3 | -1,955 | E5 | 3,910 | E4 | 3,910 | B3 | 5,865 | G#3 | 11,730 |
| G4 | -1,955 | E4 | 3,910 | A3 | 1,955 | C#3 | 9,775 | G#4 | 11,730 | | | | | | | Bb4 | -7,820 | E4 | 3,910 | C4 | -3,910 | C3 | -3,910 | G4 | -1,955 | E4 | 3,910 | B3 | 5,865 | G3 | -1,955 | B4 | 5,865 | | | D4 | 0,000 | | |
| B4 | 5,865 | G4 | -1,955 | | | | | | | | | | | E3 | 3,910 | D5 | 0,000 | | | Bb3 | -7,820 | | | | | | | A3 | 1,955 | F#3 | 7,820 | C#5 | 9,775 | | | C#4 | 9,775 | | |
| A4 | 1,955 | F#4 | 7,820 | A3 | 1,955 | C#3 | 9,775 | B4 | 5,865 | G#4 | 11,730 | D4 | 0,000 | E3 | 3,910 | C5 | -3,910 | | | A3 | 1,955 | | | | | | | G3 | -1,955 | E3 | 3,910 | D5 | 0,000 | | | B3 | 5,865 | | |
| G4 | -1,955 | E4 | 3,910 | | | | | B4 | 5,865 | G#4 | 11,730 | D4 | 0,000 | E#3 | 17,595 | Bb4 | -7,820 | E4 | 3,910 | G3 | -1,955 | C3 | -3,910 | G4 | -1,955 | E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | C#5 | 9,775 | | | A3 | 1,955 | G3 | -1,955 |
| G4 | -1,955 | E4 | 3,910 | A3 | 1,955 | D3 | 0,000 | A4 | 1,955 | A4 | 1,955 | C#4 | 9,775 | F#3 | 7,820 | Bb4 | -7,820 | E4 | 3,910 | G3 | -1,955 | C3 | -3,910 | G4 | -1,955 | E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | B4 | 5,865 | D4 | 0,000 | | | | |
| F#4 | 7,820 | D4 | 0,000 | | | | | A4 | 1,955 | A4 | 1,955 | C#4 | 9,775 | F#3 | 7,820 | A4 | 1,955 | F4 | -5,865 | A3 | 1,955 | F3 | -5,865 | F#4 | 7,820 | D4 | 0,000 | | | | | A4 | 1,955 | C#4 | 9,775 | | | | |
| F#4 | 7,820 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 | A4 | 1,955 | | | | | | | A4 | 1,955 | F4 | -5,865 | A3 | 1,955 | F3 | -5,865 | E4 | 3,910 | C#4 | 9,775 | | | | | D5 | 0,000 | D4 | 0,000 | A3 | 1,955 | F#3 | 7,820 |
| E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | A2 | 1,955 | D5 | 0,000 | | | | | | | G4 | -1,955 | D4 | 0,000 | B3 | 5,865 | F3 | -5,865 | A4 | 1,955 | F#4 | 7,820 | C#4 | 9,775 | A3 | 1,955 | G4 | -1,955 | D4 | 0,000 | G3 | -1,955 | B2 | 5,865 |
| E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | A2 | 1,955 | | | G#4 | 11,730 | D4 | 0,000 | B2 | 5,865 | G4 | -1,955 | D4 | 0,000 | B3 | 5,865 | F3 | -5,865 | A4 | 1,955 | F#4 | 7,820 | C#4 | 9,775 | A3 | 1,955 | F#4 | 7,820 | D4 | 0,000 | A3 | 1,955 | A2 | 1,955 |
| F#4 | 7,820 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 | | | A4 | 1,955 | E4 | 3,910 | C#3 | 9,775 | G4 | -1,955 | E4 | 3,910 | C#4 | 9,775 | E3 | 3,910 | | | | | B3 | 5,865 | G3 | -1,955 | E4 | 3,910 | C#4 | 9,775 | G3 | -1,955 | | |
| F#4 | 7,820 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 | C#4 | 9,775 | | | | | | | Bb4 | -7,820 | F4 | -5,865 | D4 | 0,000 | D3 | 0,000 | | | | | A3 | 1,955 | F#3 | 7,820 | | | | | | | A2 | 1,955 |
| G4 | -1,955 | E4 | 3,910 | A3 | 1,955 | C#3 | 9,775 | B4 | 5,865 | F#4 | 7,820 | D4 | 0,000 | D3 | 0,000 | A4 | 1,955 | E4 | 3,910 | E4 | 3,910 | C#3 | 9,775 | | | | | D4 | 0,000 | B3 | 5,865 | E4 | 3,910 | C#4 | 9,775 | G3 | -1,955 | | |
| G4 | -1,955 | E4 | 3,910 | A3 | 1,955 | C#3 | 9,775 | A4 | 1,955 | F#4 | 7,820 | C#4 | 9,775 | D3 | 0,000 | G4 | -1,955 | E4 | 3,910 | C#4 | 9,775 | A2 | 1,955 | | | | | D4 | 0,000 | B3 | 5,865 | D4 | 0,000 | D4 | 0,000 | F#3 | 7,820 | D3 | 0,000 |
| G4 | -1,955 | E4 | 3,910 | A3 | 1,955 | D3 | 0,000 | A4 | 1,955 | E4 | 3,910 | B3 | 5,865 | E3 | 3,910 | G4 | -1,955 | E4 | 3,910 | C#4 | 9,775 | Bb2 | -7,820 | G4 | -1,955 | G4 | -1,955 | | | | | | | | | | |
| F#4 | 7,820 | D4 | 0,000 | | | | | G#4 | 11,730 | | | | | | | F4 | -5,865 | D4 | 0,000 | D4 | 0,000 | A2 | 1,955 | A4 | 1,955 | F#4 | 7,820 | D4 | 0,000 | A3 | 1,955 | | | | | | | | |
| F#4 | 7,820 | D4 | 0,000 | A3 | 1,955 | D3 | 0,000 | G#4 | 11,730 | E4 | 3,910 | B3 | 5,865 | E3 | 3,910 | E4 | 3,910 | C#4 | 9,775 | | | | | B4 | 5,865 | E4 | 3,910 | D4 | 0,000 | G#3 | 11,730 | | | | | | | | |
| E4 | 3,910 | C#4 | 9,775 | A3 | 1,955 | A2 | 1,955 | A4 | 1,955 | E4 | 3,910 | C#4 | 9,775 | A2 | 1,955 | F4 | -5,865 | D4 | 0,000 | B3 | 5,865 | G#2 | 11,730 | F#4 | 7,820 | D4 | 0,000 | A3 | 1,955 | A3 | 1,955 | | | | | | | | |
| | | | | | | | | | | | | | | | | E4 | 3,910 | C#4 | 9,775 | E3 | 3,910 | A2 | 1,955 | E4 | 3,910 | C#4 | 9,775 | | | A2 | 1,955 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | A3 | 1,955 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | F#4 | 7,820 | C#4 | 9,775 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | G4 | -1,955 | D4 | 0,000 | G3 | -1,955 | B2 | 5,865 | | | | | | | | |

## Ave Verum Corpus_Tuning Table — Meantone Temperament

### Difference in Cents from Equal Temperament

**Phrases**

| First Phrase | | | | | | | | Second Phrase | | | | | | | | Third Phrase | | | | | | | | Fourth Phrase | | | | | | | | Fifth Phrase | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | |
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| A4 | -3,421 | F#4 | -13,686 | A3 | -3,421 | D3 | 0,000 | E4 | -6,843 | E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | A4 | -3,421 | E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | F#4 | -13,686 | D4 | 0,000 | | | | | G4 | 3,422 | | | | | | |
| D5 | 0,000 | F#4 | -13,686 | A3 | -3,421 | D3 | 0,000 | A4 | -3,421 | E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | A4 | -3,421 | E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | F#4 | -13,686 | D4 | 0,000 | | | | | D5 | 0,000 | | | | | | |
| F#4 | -13,686 | | | | | | | A4 | -3,421 | E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | A4 | -3,421 | E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | F#4 | -13,686 | D4 | 0,000 | B3 | -10,264 | G3 | 3,422 | | | F#4 | -13,686 | C4 | 6,843 | A3 | -3,421 |
| A4 | -3,421 | E4 | -6,843 | B3 | -10,264 | D3 | 0,000 | G#4 | -20,530 | | | D4 | 0,000 | B3 | -10,264 | Bb4 | 13,686 | | | | | G3 | 3,422 | E4 | -6,843 | C#4 | -17,108 | | | | | | | G4 | 3,422 | D4 | 0,000 | Bb3 | 13,686 |
| G#4 | -20,530 | | | | | | | G#4 | -20,530 | E4 | -6,843 | D4 | 0,000 | B3 | -10,264 | Bb4 | 13,686 | E4 | -6,843 | C#4 | -17,108 | G3 | 3,422 | D4 | 0,000 | B3 | -10,264 | | | | | D#5 | -23,951 | F#4 | -13,686 | C4 | 6,843 | A3 | -3,421 |
| G4 | 3,422 | E4 | -6,843 | B3 | -10,264 | D3 | 0,000 | E4 | -6,843 | E4 | -6,843 | B3 | -10,264 | | | | | | | C4 | 6,843 | | | G4 | 3,422 | E4 | -6,843 | B3 | -10,264 | G3 | 3,422 | E5 | -6,843 | E4 | -6,843 | B3 | -10,264 | G#3 | -20,530 |
| G4 | 3,422 | E4 | -6,843 | A3 | -3,421 | C#3 | -17,108 | G#4 | -20,530 | | | | | | | Bb4 | 13,686 | E4 | -6,843 | C4 | 6,843 | C3 | 6,843 | G4 | 3,422 | E4 | -6,843 | B3 | -10,264 | G3 | 3,422 | B4 | -10,264 | | | D4 | 0,000 | | |
| B4 | -10,264 | G4 | 3,422 | | | | | | | | | | | E3 | -6,843 | D5 | 0,000 | | | Bb3 | 13,686 | | | | | | | A3 | -3,421 | F#3 | -13,686 | C#5 | -17,108 | | | C#4 | -17,108 | | |
| A4 | -3,421 | F#4 | -13,686 | A3 | -3,421 | C#3 | -17,108 | B4 | -10,264 | G#4 | -20,530 | D4 | 0,000 | E3 | -6,843 | C5 | 6,843 | | | A3 | -3,421 | | | | | | | G3 | 3,422 | E3 | -6,843 | D5 | 0,000 | | | B3 | -10,264 | | |
| G4 | 3,422 | E4 | -6,843 | | | | | B4 | -10,264 | G#4 | -20,530 | D4 | 0,000 | E#3 | -30,794 | Bb4 | 13,686 | E4 | -6,843 | G3 | 3,422 | C3 | 6,843 | G4 | 3,422 | E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | C#5 | -17,108 | | | A3 | -3,421 | G3 | 3,422 |
| G4 | 3,422 | E4 | -6,843 | A3 | -3,421 | D3 | 0,000 | A4 | -3,421 | A4 | -3,421 | C#4 | -17,108 | F#3 | -13,686 | Bb4 | 13,686 | E4 | -6,843 | G3 | 3,422 | C3 | 6,843 | G4 | 3,422 | E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | B4 | -10,264 | D4 | 0,000 | | | | |
| F#4 | -13,686 | D4 | 0,000 | | | | | A4 | -3,421 | A4 | -3,421 | C#4 | -17,108 | F#3 | -13,686 | A4 | -3,421 | F4 | 10,265 | A3 | -3,421 | F3 | 10,265 | F#4 | -13,686 | D4 | 0,000 | | | | | A4 | -3,421 | C#4 | -17,108 | | | | |
| F#4 | -13,686 | D4 | 0,000 | A3 | -3,421 | D3 | 0,000 | A4 | -3,421 | | | | | | | A4 | -3,421 | F4 | 10,265 | A3 | -3,421 | F3 | 10,265 | E4 | -6,843 | C#4 | -17,108 | | | | | D5 | 0,000 | D4 | 0,000 | A3 | -3,421 | F#3 | -13,686 |
| E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | A2 | -3,421 | D5 | 0,000 | | | | | | | G4 | 3,422 | D4 | 0,000 | B3 | -10,264 | F3 | 10,265 | A4 | -3,421 | F#4 | -13,686 | C#4 | -17,108 | A3 | -3,421 | G4 | 3,422 | D4 | 0,000 | G3 | 3,422 | B2 | -10,264 |
| E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | A2 | -3,421 | | | G#4 | -20,530 | D4 | 0,000 | B2 | -10,264 | G4 | 3,422 | D4 | 0,000 | B3 | -10,264 | F3 | 10,265 | A4 | -3,421 | F#4 | -13,686 | C#4 | -17,108 | A3 | -3,421 | F#4 | -13,686 | D4 | 0,000 | A3 | -3,421 | A2 | -3,421 |
| F#4 | -13,686 | D4 | 0,000 | A3 | -3,421 | D3 | 0,000 | | | A4 | -3,421 | E4 | -6,843 | C#3 | -17,108 | G4 | 3,422 | E4 | -6,843 | C#4 | -17,108 | E3 | -6,843 | | | | | B3 | -10,264 | G3 | 3,422 | E4 | -6,843 | C#4 | -17,108 | G3 | 3,422 | | |
| F#4 | -13,686 | D4 | 0,000 | A3 | -3,421 | D3 | 0,000 | C#4 | -17,108 | | | | | | | Bb4 | 13,686 | F4 | 10,265 | D4 | 0,000 | D3 | 0,000 | | | | | A3 | -3,421 | F#3 | -13,686 | | | | | | | A2 | -3,421 |
| G4 | 3,422 | E4 | -6,843 | A3 | -3,421 | C#3 | -17,108 | B4 | -10,264 | F#4 | -13,686 | D4 | 0,000 | D3 | 0,000 | A4 | -3,421 | E4 | -6,843 | E4 | -6,843 | C#3 | -17,108 | | | | | D4 | 0,000 | B3 | -10,264 | E4 | -6,843 | C#4 | -17,108 | G3 | 3,422 | | |
| G4 | 3,422 | E4 | -6,843 | A3 | -3,421 | C#3 | -17,108 | A4 | -3,421 | F#4 | -13,686 | C#4 | -17,108 | D3 | 0,000 | G4 | 3,422 | E4 | -6,843 | C#4 | -17,108 | A2 | -3,421 | | | | | D4 | 0,000 | B3 | -10,264 | D4 | 0,000 | D4 | 0,000 | F#3 | -13,686 | D3 | 0,000 |
| G4 | 3,422 | E4 | -6,843 | A3 | -3,421 | D3 | 0,000 | A4 | -3,421 | E4 | -6,843 | B3 | -10,264 | E3 | -6,843 | G4 | 3,422 | E4 | -6,843 | C#4 | -17,108 | Bb2 | 13,686 | G4 | 3,422 | G4 | 3,422 | | | | | | | | | | |
| F#4 | -13,686 | D4 | 0,000 | | | | | G#4 | -20,530 | | | | | | | F4 | 10,265 | D4 | 0,000 | D4 | 0,000 | A2 | -3,421 | A4 | -3,421 | F#4 | -13,686 | D4 | 0,000 | A3 | -3,421 | | | | | | | | |
| F#4 | -13,686 | D4 | 0,000 | A3 | -3,421 | D3 | 0,000 | G#4 | -20,530 | E4 | -6,843 | B3 | -10,264 | E3 | -6,843 | E4 | -6,843 | C#4 | -17,108 | | | | | B4 | -10,264 | E4 | -6,843 | D4 | 0,000 | G#3 | -20,530 | | | | | | | | |
| E4 | -6,843 | C#4 | -17,108 | A3 | -3,421 | A2 | -3,421 | A4 | -3,421 | E4 | -6,843 | C#4 | -17,108 | A2 | -3,421 | F4 | 10,265 | D4 | 0,000 | B3 | -10,264 | G#2 | -20,530 | F#4 | -13,686 | D4 | 0,000 | A3 | -3,421 | A3 | -3,421 | | | | | | | | |
| | | | | | | | | | | | | | | | | E4 | -6,843 | C#4 | -17,108 | E3 | -6,843 | A2 | -3,421 | E4 | -6,843 | C#4 | -17,108 | | | A2 | -3,421 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | A3 | -3,421 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | F#4 | -13,686 | C#4 | -17,108 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | G4 | 3,422 | D4 | 0,000 | G3 | 3,422 | B2 | -10,264 | | | | | | | | |

| Ave Verum Corpus_Keyboard Layout for Yamaha SY 99 (Middle C: C3) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Notes | Sub-Indexes | Reference Frequency | Cents -> ET | Steps -> SY | Keyboard Key | Notes | Sub-Indexes | Reference Frequency | Cents -> ET | Steps -> SY | Keyboard Key |
| E4 | 0 | D2 | 3,910 | 3,3 | C#7 | C#3 | -1 | D2 | -11,731 | -10,0 | F3 |
| D#4 | -1 | D2 | -7,821 | -6,7 | C7 | | -1 | A1 | -13,686 | -11,7 | E3 |
| D4 | +1 | A1 | +19.551 | 16683,5 | B6 | C3 | +1 | A1 | +29.326 | 25024,9 | D#3 |
| | 0 | D2 | 0,000 | 0,0 | Bb6 | | +(k-y) | D2 | +10.821 | 9233,9 | D3 |
| | 0 | A1 | -1,955 | -1,7 | A6 | | 0 | A1 | +7.820 | 6673,1 | C#3 |
| | -z | D2 | -27,264 | -23,3 | G#6 | | -z | D2 | -31,174 | -26,6 | C3 |
| | -z | A1 | -29,219 | -24,9 | G6 | B2 | 0 | D2 | +5.865 | 5004,8 | B2 |
| C#4 | -1 | D2 | -11,731 | -10,0 | F#6 | | 0 | A1 | +3.910 | 3336,5 | Bb2 |
| | -1 | A1 | -13,686 | -11,7 | F6 | | -1 | D2 | -15,641 | -13,3 | A2 |
| C4 | +1 | A1 | +29.326 | 25024,9 | E6 | | -1 | A1 | -17,596 | -15,0 | G#2 |
| | 0 | A1 | +7.820 | 6673,1 | D#6 | Bb2 | +1 | D2 | +13.686 | 11678,7 | G2 |
| B3 | 0 | D2 | +5.865 | 5004,8 | D6 | | +(k-z) | A1 | -15,532 | -13,3 | F#2 |
| | 0 | A1 | +3.910 | 3336,5 | C#6 | | -z | A1 | -37,039 | -31,6 | F2 |
| | -1 | D2 | -15,641 | -13,3 | C6 | A2 | 0 | D2 | +1.995 | 1702,4 | E2 |
| | -1 | A1 | -17,596 | -15,0 | B5 | | 0 | A1 | 0,000 | 0,0 | D#2 |
| | -(k+z) | A1 | -44,860 | -38,3 | Bb5 | | -1 | A1 | -21,506 | -18,4 | D2 |
| Bb3 | +1 | A1 | +11.732 | 10011,3 | A5 | | -z | D2 | -25,309 | -21,6 | C#2 |
| | +(k-y) | A1 | +4.955 | 4228,3 | G#5 | G#2 | -1 | D2 | -9,776 | -8,3 | C2 |
| | +(k-z) | A1 | -15,532 | -13,3 | G5 | G2 | +1 | A1 | +17.596 | 15015,3 | B1 |
| | -z | A1 | -37,039 | -31,6 | F#5 | | 0 | D2 | -1,955 | -1,7 | Bb1 |
| A3 | 0 | D2 | +1.955 | 1668,3 | F5 | | 0 | A1 | -3,910 | -3,3 | A1 |
| | 0 | A1 | 0,000 | 0,0 | E5 | | -z | D2 | -29,219 | -24,9 | G#1 |
| | -1 | A1 | -21,506 | -18,4 | D#5 | | -z | A1 | -31,174 | -26,6 | G1 |
| G#3 | -2 | D2 | -31,282 | -26,7 | D5 | F#2 | -1 | D2 | -13,686 | -11,7 | F#1 |
| | -1 | A1 | -11,731 | -10,0 | C#5 | | -1 | A1 | -15,641 | -13,3 | F1 |
| G3 | 0 | D2 | -1,955 | -1,7 | C5 | F2 | +1 | A1 | +13.687 | 11679,6 | E1 |
| | 0 | A1 | -3,910 | -3,3 | B4 | | 0 | A1 | -7,819 | -6,7 | D#1 |
| | -z | D2 | -29,219 | -24,9 | Bb4 | | -z | A1 | -35,084 | -29,9 | D1 |
| | -z | A1 | -31,174 | -26,6 | A4 | E#2 | -2 | A1 | -27,373 | -23,4 | C#1 |
| F#3 | 0 | D2 | 7,820 | 6,7 | G#4 | E2 | 0 | A1 | +1.995 | 1702,4 | C1 |
| | -1 | D2 | -13.686 | -11678,7 | G4 | | -1 | D2 | -17,596 | -15,0 | B0 |
| | -1 | A1 | -15,641 | -13,3 | F#4 | D2 | 0 | D2 | 0,000 | 0,0 | Bb0 |
| F3 | +1 | A1 | +13.687 | 11679,6 | F4 | | 0 | A1 | -1,955 | -1,7 | A0 |
| | +(k-y) | A1 | +6.910 | 5896,5 | E4 | C#2 | -1 | D2 | -11,731 | -10,0 | G#0 |
| | 0 | A1 | -7,819 | -6,7 | D#4 | | -1 | A1 | -13,686 | -11,7 | G0 |
| E3 | 0 | D2 | +3.910 | 3336,5 | D4 | C2 | +1 | A1 | +29.326 | 25024,9 | F#0 |
| | 0 | A1 | +1.955 | 1668,3 | C#4 | | 0 | A1 | +7.820 | 6673,1 | F0 |
| | -1 | D2 | -17,596 | -15,0 | C4 | B1 | -1 | D2 | -15,641 | -13,3 | E0 |
| | -1 | A1 | -19,552 | -16,7 | B3 | | 0 | A1 | 3,910 | 3,3 | D#0 |
| D3 | 0 | D2 | 0,000 | 0,0 | Bb3 | Bb1 | +(k-y) | A1 | +4.955 | 4,2 | D0 |
| | 0 | A1 | -1,955 | -1,7 | A3 | A1 | 0 | D2 | +1.995 | 1,7 | C#0 |
| | -y | A1 | -8,731 | -7,5 | G#3 | | 0 | A1 | 0,000 | 0,0 | C0 |
| | -z | D2 | -27,264 | -23,3 | G3 | G#1 | -1 | A1 | -11.731 | -10,0 | B -1 |
| | -z | A1 | -29,219 | -24,9 | F#3 | | | | | | |

# APPENDIX 9

# 9 - TUNING TABLES – REPLICATIONS

**Ave Verum Corpus_Tuning Table — RAM Quartet Average Deviations**

**Difference in Cents from Equal Temperament**

| Phrases | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First Phrase | | | | | | | | Second Phrase | | | | | | | | Third Phrase | | | | | | | | Fourth Phrase | | | | | | | | Fifth Phrase | | | | | | | |
| Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | |
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| A4 | 8,333 | F#4 | 0,367 | A3 | 8,965 | D3 | 4,162 | E4 | -14,340 | E4 | 1,893 | C#4 | -14,034 | A3 | -4,110 | A4 | 6,966 | E4 | 10,903 | C#4 | -12,153 | A3 | 0,902 | F#4 | -9,295 | D4 | 2,164 | | | | | G4 | -17,203 | | | | | | |
| D5 | 9,065 | F#4 | 2,059 | A3 | 2,217 | D3 | 4,282 | A4 | 3,645 | E4 | -5,903 | C#4 | -13,823 | A3 | -2,799 | A4 | 0,836 | E4 | 10,248 | C#4 | -16,557 | A3 | 8,891 | F#4 | -3,690 | D4 | 0,360 | | | | | D5 | -12,009 | | | | | | |
| F#4 | 1,938 | | | | | | | A4 | 6,703 | E4 | -8,750 | C#4 | -9,629 | A3 | -2,654 | A4 | 8,318 | E4 | 1,503 | C#4 | -29,798 | A3 | -10,559 | F#4 | -4,691 | D4 | -0,831 | B3 | -26,979 | G3 | -23,960 | | | F#4 | -19,538 | C4 | -20,630 | A3 | -27,434 |
| A4 | 14,966 | E4 | 3,893 | B3 | -13,005 | D3 | -5,548 | G#4 | 7,591 | | | D4 | -12,423 | B3 | -25,738 | Bb4 | -22,879 | | | | | G3 | -4,590 | E4 | -1,913 | C#4 | 3,595 | | | | | | | G4 | -33,034 | D4 | -37,636 | Bb3 | -30,930 |
| G#4 | 11,317 | | | | | | | G#4 | 14,453 | E4 | 8,691 | D4 | -9,051 | B3 | -6,185 | Bb4 | -14,498 | E4 | 3,011 | C#4 | -27,783 | G3 | 5,426 | D4 | 3,303 | B3 | -0,253 | | | | | D#5 | -36,906 | F#4 | -9,483 | C4 | -36,914 | A3 | -21,101 |
| G4 | -1,691 | E4 | 0,731 | B3 | -23,575 | D3 | -0,276 | E4 | 4,428 | E4 | 13,656 | B3 | -5,351 | | | | | | | C4 | -8,317 | | | G4 | -16,756 | E4 | 4,035 | B3 | -32,359 | G3 | -24,850 | E5 | -2,243 | E4 | -16,665 | B3 | -18,615 | G#3 | -18,135 |
| G4 | -7,380 | E4 | 3,842 | A3 | -4,130 | C#3 | -6,035 | G#4 | 0,153 | | | | | | | Bb4 | -9,630 | E4 | -12,322 | C4 | -24,651 | C3 | -12,099 | G4 | -20,500 | E4 | -4,193 | B3 | -28,616 | G3 | -25,997 | B4 | -37,589 | | | D4 | -34,941 | | |
| B4 | 1,853 | G4 | -2,436 | | | | | | | | | | | E3 | -9,924 | D5 | -23,698 | | | Bb3 | -40,331 | | | | | | | A3 | -23,457 | F#3 | -12,833 | C#5 | -14,492 | | | C#4 | -42,582 | | |
| A4 | 2,649 | F#4 | 11,408 | A3 | -3,691 | C#3 | 1,795 | B4 | 5,745 | G#4 | -8,746 | D4 | -16,569 | E3 | 0,423 | C5 | -14,256 | | | A3 | -26,765 | | | | | | | G3 | 0,760 | E3 | 6,102 | D5 | -17,904 | | | B3 | -44,887 | | |
| G4 | -2,957 | E4 | 8,591 | | | | | B4 | -0,902 | G#4 | -14,566 | D4 | -25,298 | E#3 | -14,498 | Bb4 | -17,009 | E4 | -12,418 | G3 | -22,207 | C3 | -26,379 | G4 | -13,705 | E4 | -4,859 | C#4 | -21,149 | A3 | -21,806 | C#5 | -1,213 | | | A3 | -29,565 | G3 | -22,023 |
| G4 | 14,047 | E4 | 14,680 | A3 | -4,336 | D3 | -11,508 | A4 | -2,957 | A4 | -9,022 | C#4 | -17,660 | F#3 | -14,304 | Bb4 | -11,961 | E4 | -11,944 | G3 | -27,860 | C3 | -19,048 | G4 | -24,220 | E4 | -12,672 | C#4 | -33,044 | A3 | -26,948 | B4 | -8,977 | D4 | -11,565 | | | | |
| F#4 | 3,950 | D4 | 3,448 | | | | | A4 | -10,656 | A4 | -0,308 | C#4 | -17,206 | F#3 | -9,754 | A4 | -19,024 | F4 | -25,732 | A3 | -29,188 | F3 | -24,796 | F#4 | -24,679 | D4 | -1,239 | | | | | A4 | -27,563 | C#4 | -13,151 | | | | |
| F#4 | 30,638 | D4 | 13,394 | A3 | 3,346 | D3 | -7,396 | A4 | 4,343 | | | | | | | A4 | -8,362 | F4 | -14,274 | A3 | -20,085 | F3 | -5,387 | E4 | -5,832 | C#4 | -1,593 | | | | | D5 | 8,428 | D4 | -3,034 | A3 | -13,739 | F#3 | -3,117 |
| E4 | -0,374 | C#4 | -3,761 | A3 | -3,654 | A2 | -2,132 | D5 | 7,533 | | | | | | | G4 | -16,652 | D4 | -11,368 | B3 | -9,552 | F3 | -11,689 | A4 | -5,397 | F#4 | -11,534 | C#4 | -25,033 | A3 | -18,392 | G4 | -23,680 | D4 | -7,341 | G3 | -33,447 | B2 | -31,731 |
| E4 | 14,697 | C#4 | 4,270 | A3 | 6,772 | A2 | 5,233 | | | G#4 | 0,294 | D4 | -12,569 | B2 | -35,772 | G4 | -22,349 | D4 | -6,326 | B3 | -20,093 | F3 | -21,982 | A4 | -23,096 | F#4 | -7,837 | C#4 | -44,793 | A3 | -34,249 | F#4 | -27,906 | D4 | -11,715 | A3 | -34,121 | A2 | -21,961 |
| F#4 | 18,069 | D4 | 9,326 | A3 | 7,468 | D3 | -6,942 | | | A4 | 0,336 | E4 | -6,299 | C#3 | -4,193 | G4 | -16,391 | E4 | -11,004 | C#4 | -20,400 | E3 | -13,226 | | | | | B3 | -33,481 | G3 | -27,545 | E4 | -34,508 | C#4 | -9,231 | G3 | -41,491 | | |
| F#4 | 11,546 | D4 | 4,383 | A3 | -0,151 | D3 | -8,411 | C#4 | 3,109 | | | | | | | Bb4 | -31,144 | F4 | -17,735 | D4 | -15,403 | D3 | -20,233 | | | | | A3 | -2,328 | F#3 | -15,837 | | | | | | | A2 | -28,881 |
| G4 | -1,764 | E4 | 16,386 | A3 | -0,054 | C#3 | -2,250 | B4 | -0,757 | F#4 | -2,173 | D4 | -13,338 | D3 | -15,766 | A4 | -17,453 | E4 | 6,945 | E4 | -19,330 | C#3 | -15,533 | | | | | D4 | -21,519 | B3 | -27,511 | E4 | -14,617 | C#4 | -4,399 | G3 | -29,795 | | |
| G4 | -11,276 | E4 | 1,955 | A3 | -5,469 | C#3 | -8,210 | A4 | -6,796 | F#4 | -7,891 | C#4 | -22,926 | D3 | -19,425 | G4 | -26,050 | E4 | -14,112 | C#4 | -20,002 | A2 | -18,657 | | | | | D4 | -30,000 | B3 | -15,697 | D4 | -11,548 | D4 | -6,094 | F#3 | -21,676 | D3 | -15,011 |
| G4 | -0,521 | E4 | 13,314 | A3 | -4,121 | D3 | 0,911 | A4 | 1,972 | E4 | -8,922 | B3 | -15,355 | E3 | -7,857 | G4 | -21,800 | E4 | -19,231 | C#4 | -30,764 | Bb2 | -27,166 | G4 | -26,079 | G4 | -26,693 | | | | | | | | | | |
| F#4 | 2,029 | D4 | 10,324 | | | | | G#4 | 11,155 | | | | | | | F4 | -16,617 | D4 | -10,268 | D4 | -24,180 | A2 | -7,761 | A4 | -14,436 | F#4 | -8,629 | D4 | -13,034 | A3 | -12,007 | | | | | | | | |
| F#4 | -5,448 | D4 | 6,454 | A3 | 1,932 | D3 | -0,917 | G#4 | 13,215 | E4 | 4,454 | B3 | -10,469 | E3 | 2,762 | E4 | -12,668 | C#4 | -7,790 | | | | | B4 | -10,873 | E4 | -14,704 | D4 | -28,923 | G#3 | -26,845 | | | | | | | | |
| E4 | -0,184 | C#4 | -0,358 | A3 | -3,185 | A2 | 0,097 | A4 | 6,217 | E4 | 7,003 | C#4 | -15,818 | A2 | -2,894 | F4 | -2,940 | D4 | -10,359 | B3 | -21,747 | G#2 | -17,724 | F#4 | -28,614 | D4 | -14,624 | A3 | -26,247 | A3 | -23,135 | | | | | | | | |
| | | | | | | | | | | | | | | | | E4 | -8,663 | C#4 | -4,911 | E3 | -19,580 | A2 | -8,861 | E4 | -21,382 | C#4 | -15,023 | | | A2 | -27,651 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | A3 | -34,764 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | F#4 | 5,301 | C#4 | -9,251 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | G4 | -20,191 | D4 | -19,776 | G3 | -28,376 | B2 | -17,937 | | | | | | | | |

**Ave Verum Corpus_Tuning Table — The BBC Singers Average Deviations**

**Difference in Cents from Equal Temperament**

Phrases

| First Phrase | | | | | | | | Second Phrase | | | | | | | | Third Phrase | | | | | | | | Fourth Phrase | | | | | | | | Fifth Phrase | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | | Sop | | Alto | | Tenor | | Bass | |
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| A4 | 6,632 | F#4 | 2,715 | A3 | -1,606 | D3 | -5,915 | E4 | 1,521 | E4 | -1,809 | C#4 | -11,623 | A3 | -0,381 | A4 | 12,048 | E4 | 14,588 | C#4 | 10,188 | A3 | 14,131 | F#4 | -5,902 | D4 | 4,833 | | | | | G4 | 18,342 | | | | | | |
| D5 | 10,474 | F#4 | 0,234 | A3 | -1,321 | D3 | -1,641 | A4 | -0,303 | E4 | -5,640 | C#4 | -8,755 | A3 | -0,803 | A4 | 11,942 | E4 | 9,331 | C#4 | -0,411 | A3 | 11,004 | F#4 | 2,067 | D4 | 8,044 | | | | | D5 | 14,250 | | | | | | |
| F#4 | 3,755 | | | | | | | A4 | -1,010 | E4 | -1,285 | C#4 | -6,527 | A3 | 1,938 | A4 | 7,269 | E4 | 3,029 | C#4 | -8,714 | A3 | -1,603 | F#4 | -3,216 | D4 | 6,998 | B3 | -4,339 | G3 | -12,053 | | | F#4 | 14,294 | C4 | 10,666 | A3 | 5,650 |
| A4 | 5,742 | E4 | 1,643 | B3 | -6,574 | D3 | -7,817 | G#4 | 3,598 | | | D4 | -11,097 | B3 | 0,860 | Bb4 | -9,733 | | | | | G3 | -8,173 | E4 | 4,069 | C#4 | 10,987 | | | | | | | G4 | 0,123 | D4 | 4,448 | Bb3 | -2,537 |
| G#4 | 15,319 | | | | | | | G#4 | 1,397 | E4 | 6,930 | D4 | -1,974 | B3 | 16,253 | Bb4 | -2,568 | E4 | 9,233 | C#4 | 1,361 | G3 | 2,460 | D4 | 22,172 | B3 | 11,011 | | | | | D#5 | 2,849 | F#4 | 4,682 | C4 | 4,217 | A3 | -2,023 |
| G4 | 5,048 | E4 | -1,056 | B3 | -8,212 | D3 | -7,129 | E4 | 10,353 | E4 | 15,230 | B3 | 1,345 | | | | | | | C4 | 3,628 | | | G4 | 8,522 | E4 | 10,881 | B3 | -4,581 | G3 | 2,833 | E5 | 2,034 | E4 | 6,500 | B3 | 7,177 | G#3 | -2,796 |
| G4 | 9,880 | E4 | -0,764 | A3 | -1,752 | C#3 | 1,822 | G#4 | 8,143 | | | | | | | Bb4 | -1,126 | E4 | -2,345 | C4 | -11,088 | C3 | -18,892 | G4 | 3,488 | E4 | 1,808 | B3 | -3,127 | G3 | -2,132 | B4 | 8,574 | | | D4 | -10,141 | | |
| B4 | 3,678 | G4 | 1,279 | | | | | | | | | | | E3 | -1,835 | D5 | -2,240 | | | Bb3 | -19,472 | | | | | | | A3 | -7,966 | F#3 | -3,548 | C#5 | 16,353 | | | C#4 | -5,726 | | |
| A4 | 9,008 | F#4 | 8,124 | A3 | 2,280 | C#3 | 11,096 | B4 | 3,378 | G#4 | 7,465 | D4 | -16,292 | E3 | -6,134 | C5 | -6,228 | | | A3 | -16,393 | | | | | | | G3 | 5,173 | E3 | 7,427 | D5 | 7,588 | | | B3 | -4,917 | | |
| G4 | 12,761 | E4 | 3,822 | | | | | B4 | -2,212 | G#4 | 7,872 | D4 | -11,964 | E#3 | -12,979 | Bb4 | 1,440 | E4 | -5,186 | G3 | -17,377 | C3 | -14,317 | G4 | 11,882 | E4 | 3,228 | C#4 | 4,794 | A3 | 9,650 | C#5 | 16,829 | | | A3 | -4,360 | G3 | -3,597 |
| G4 | 8,632 | E4 | 0,392 | A3 | 1,226 | D3 | -5,689 | A4 | -0,320 | A4 | -1,875 | C#4 | -12,691 | F#3 | -15,540 | Bb4 | -7,498 | E4 | -1,985 | G3 | -16,237 | C3 | -10,956 | G4 | 4,668 | E4 | -3,386 | C#4 | -10,105 | A3 | -4,483 | B4 | 7,909 | D4 | 2,057 | | | | |
| F#4 | 7,320 | D4 | 1,964 | | | | | A4 | 1,638 | A4 | 1,176 | C#4 | -4,531 | F#3 | 1,077 | A4 | -1,013 | F4 | -15,373 | A3 | -15,722 | F3 | -10,564 | F#4 | 12,635 | D4 | 1,246 | | | | | A4 | 8,312 | C#4 | 9,004 | | | | |
| F#4 | 14,433 | D4 | 3,403 | A3 | 9,751 | D3 | 6,132 | A4 | 4,736 | | | | | | | A4 | 7,100 | F4 | -2,620 | A3 | -1,985 | F3 | 20,153 | E4 | 15,774 | C#4 | 16,243 | | | | | D5 | 14,884 | D4 | 13,409 | A3 | 6,907 | F#3 | 19,182 |
| E4 | 6,190 | C#4 | 0,314 | A3 | 2,203 | A2 | -6,213 | D5 | 13,806 | | | | | | | G4 | 9,479 | D4 | 3,829 | B3 | 7,295 | F3 | 4,947 | A4 | 10,623 | F#4 | 8,344 | C#4 | 1,533 | A3 | -0,041 | G4 | 5,392 | D4 | 11,538 | G3 | 1,365 | B2 | -1,894 |
| E4 | 15,668 | C#4 | 5,015 | A3 | 3,639 | A2 | 5,544 | | | G#4 | 9,047 | D4 | -6,644 | B2 | -7,889 | G4 | 7,119 | D4 | 7,001 | B3 | -3,694 | F3 | -10,876 | A4 | 8,902 | F#4 | 2,354 | C#4 | -9,219 | A3 | -10,750 | F#4 | 3,629 | D4 | 7,642 | A3 | 1,470 | A2 | -6,392 |
| F#4 | 2,639 | D4 | -2,384 | A3 | 2,989 | D3 | -0,251 | | | A4 | 10,025 | E4 | 1,137 | C#3 | 6,247 | G4 | 14,804 | E4 | 5,586 | C#4 | 2,186 | E3 | 1,856 | | | | | B3 | -6,896 | G3 | -12,904 | E4 | 1,845 | C#4 | 5,211 | G3 | -4,681 | | |
| F#4 | 2,000 | D4 | 2,503 | A3 | 3,509 | D3 | -8,476 | C#4 | 14,004 | | | | | | | Bb4 | -2,406 | F4 | 4,866 | D4 | -6,030 | D3 | -6,542 | | | | | A3 | 8,220 | F#3 | 7,154 | | | | | A2 | -4,042 |
| G4 | 1,992 | E4 | 2,471 | A3 | 9,947 | C#3 | 18,917 | B4 | 1,531 | F#4 | -0,406 | D4 | -6,316 | D3 | -1,485 | A4 | 2,877 | E4 | 7,460 | E4 | -2,347 | C#3 | 3,179 | | | | | D4 | 4,246 | B3 | 1,241 | E4 | 5,685 | C#4 | 11,896 | G3 | 5,883 | | |
| G4 | -0,224 | E4 | -4,476 | A3 | -2,333 | C#3 | 5,722 | A4 | 2,391 | F#4 | 3,517 | C#4 | -5,747 | D3 | -0,520 | G4 | -7,715 | E4 | -2,883 | C#4 | -2,996 | A2 | -15,652 | | | | | D4 | -6,685 | B3 | -3,773 | D4 | 5,679 | D4 | 3,036 | F#3 | 7,506 | D3 | 1,238 |
| G4 | 5,258 | E4 | 3,557 | A3 | 9,623 | D3 | 12,969 | A4 | 3,809 | E4 | 2,332 | B3 | -3,588 | E3 | -1,424 | G4 | -5,524 | E4 | -3,775 | C#4 | -8,708 | Bb2 | -8,061 | G4 | 8,528 | G4 | -1,859 | | | | | | | | | | | |
| F#4 | 11,595 | D4 | 5,391 | | | | | G#4 | 12,234 | | | | | | | F4 | -3,253 | D4 | -1,463 | D4 | -16,270 | A2 | -12,749 | A4 | 11,620 | F#4 | 4,934 | D4 | 17,192 | A3 | 15,492 | | | | | | | | |
| F#4 | 4,880 | D4 | 10,319 | A3 | 8,534 | D3 | 9,465 | G#4 | 14,163 | E4 | 5,063 | B3 | 7,669 | E3 | 6,284 | E4 | 1,787 | C#4 | 16,311 | | | | | B4 | 12,680 | E4 | -7,988 | D4 | 4,205 | G#3 | 3,254 | | | | | | | | |
| E4 | 4,649 | C#4 | 1,720 | A3 | 1,633 | A2 | -5,444 | A4 | 4,512 | E4 | 0,212 | C#4 | -4,557 | A2 | -4,203 | F4 | 5,952 | D4 | 6,074 | B3 | -2,773 | G#2 | 6,548 | F#4 | 1,855 | D4 | 1,999 | A3 | -0,292 | A3 | 0,985 | | | | | | | | |
| | | | | | | | | | | | | | | | | E4 | -0,824 | C#4 | 0,409 | E3 | -11,641 | A2 | -10,665 | E4 | 9,733 | C#4 | 3,187 | | | A2 | -12,348 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | A3 | 1,019 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | F#4 | 12,444 | C#4 | 11,206 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | G4 | 2,523 | D4 | -2,744 | G3 | -5,256 | B2 | -7,529 | | | | | | | | |

**Ave Verum Corpus_Tuning Table — The BBC Singers_Soprano Section Average Deviations**

**Difference in Cents from Equal Temperament**

| Phrases | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First Phrase | | | | | | | | Second Phrase | | | | | | | | Third Phrase | | | | | | | | Fourth Phrase | | | | | | | | Fifth Phrase | | | | | |
| Sop I | | Sop II | | Sop III | | Sop IV | | Sop I | | Sop II | | Sop III | | Sop IV | | Sop I | | Sop II | | Sop III | | Sop IV | | Sop I | | Sop II | | Sop III | | Sop IV | | Sop I | | Sop II | | Sop III | | Sop IV | |
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| A4 | 23,457 | A4 | 11,957 | A4 | -7,134 | A4 | -1,995 | E4 | 10,089 | E4 | -0,160 | E4 | -4,911 | E4 | 1,815 | A4 | 23,181 | A4 | 20,312 | A4 | 0,877 | A4 | 3,705 | F#4 | 3,095 | F#4 | -2,272 | F#4 | -13,66 | F#4 | -10,89 | G4 | 26,867 | G4 | 15,37 | G4 | 17,99 | G4 | 13,11 |
| D5 | 20,535 | D5 | 26,837 | D5 | -0,708 | D5 | -5,059 | A4 | 12,641 | A4 | 1,653 | A4 | -7,936 | A4 | -6,867 | A4 | 24,716 | A4 | 13,582 | A4 | 6,465 | A4 | 2,919 | F#4 | 6,524 | F#4 | -4,692 | F#4 | 06,59 | F#4 | -00,25 | D5 | 26,422 | D5 | 11,76 | D5 | 10,76 | D5 | 08,00 |
| F#4 | 18,721 | F#4 | -02,44 | F#4 | -04,80 | F#4 | 03,36 | A4 | -1,738 | A4 | -3,423 | A4 | 1,294 | A4 | 0,607 | A4 | 10,855 | A4 | 9,979 | A4 | 6,851 | A4 | 1,371 | F#4 | 1,936 | F#4 | 3,449 | F#4 | -4,615 | F#4 | -13,759 | | | | | | | | |
| A4 | 6,721 | A4 | 4,544 | A4 | 3,585 | A4 | 8,037 | G#4 | 12,171 | G#4 | -07,59 | G#4 | -2,963 | G#4 | 13,461 | Bb4 | 6,809 | Bb4 | -09,81 | Bb4 | -22,41 | Bb4 | -13,659 | E4 | 9,061 | E4 | 3,471 | E4 | -02,25 | E4 | 05,90 | | | | | | | | |
| G#4 | 24,112 | G#4 | 04,52 | G#4 | 13,38 | G#4 | 19,13 | G#4 | 15,296 | G#4 | -7,885 | G#4 | -3,786 | G#4 | 2,653 | Bb4 | 11,566 | Bb4 | 3,748 | Bb4 | -7,357 | Bb4 | -18,380 | D4 | 31,050 | D4 | 10,736 | D4 | 18,54 | D4 | 28,21 | D#5 | 21,073 | D#5 | 3,674 | D#5 | -0,102 | D#5 | -13,422 |
| G4 | 14,549 | G4 | 7,231 | G4 | -12,874 | G4 | 11,077 | E4 | 21,396 | E4 | 8,992 | E4 | 7,813 | E4 | 03,94 | | | | | | | | | G4 | 28,617 | G4 | 3,992 | G4 | 9,601 | G4 | -8,397 | E5 | 15,477 | E5 | 8,961 | E5 | -7,398 | E5 | -9,031 |
| G4 | 13,293 | G4 | 11,140 | G4 | 2,033 | G4 | 12,953 | G#4 | 14,178 | G#4 | 06,29 | G#4 | 07,75 | G#4 | 05,13 | Bb4 | 16,913 | Bb4 | 3,044 | Bb4 | -6,000 | Bb4 | -18,662 | G4 | 12,876 | G4 | 4,270 | G4 | -8,170 | G4 | 4,840 | B4 | 18,192 | B4 | 00,47 | B4 | 18,353 | B4 | -02,83 |
| B4 | 16,046 | B4 | 3,727 | B4 | 01,12 | B4 | -06,34 | | | | | | | | | D5 | 17,019 | D5 | 06,40 | D5 | -12,617 | D5 | -20,02 | | | | | | | | | C#5 | 21,621 | C#5 | 18,44 | C#5 | 10,828 | C#5 | 14,50 |
| A4 | 15,956 | A4 | 17,796 | A4 | -4,027 | A4 | 6,144 | B4 | 18,050 | B4 | 2,881 | B4 | -0,625 | B4 | -6,104 | C5 | 3,698 | C5 | -01,68 | C5 | -15,022 | C5 | -11,98 | | | | | | | | | D5 | 21,035 | D5 | 15,43 | D5 | -2,592 | D5 | -03,66 |
| G4 | 19,069 | G4 | 17,979 | G4 | 10,54 | G4 | 03,33 | B4 | 15,765 | B4 | -5,259 | B4 | -7,664 | B4 | -11,037 | Bb4 | 12,258 | Bb4 | 4,243 | Bb4 | 3,844 | Bb4 | -14,702 | G4 | 30,659 | G4 | 8,155 | G4 | 0,695 | G4 | 7,800 | C#5 | 28,950 | C#5 | 23,98 | C#5 | 6,245 | C#5 | 8,031 |
| G4 | 14,269 | G4 | 18,218 | G4 | 1,769 | G4 | 0,124 | A4 | 13,219 | A4 | -1,359 | A4 | -10,023 | A4 | -2,417 | Bb4 | 2,519 | Bb4 | 0,566 | Bb4 | -13,814 | Bb4 | -19,366 | G4 | 5,766 | G4 | 5,606 | G4 | 9,047 | G4 | -1,835 | B4 | 17,685 | B4 | 8,706 | B4 | 07,61 | B4 | -02,42 |
| F#4 | 9,313 | F#4 | 8,499 | F#4 | 00,63 | F#4 | 10,75 | A4 | 9,612 | A4 | 5,898 | A4 | -4,100 | A4 | -4,121 | A4 | -0,647 | A4 | 14,956 | A4 | -12,045 | A4 | -6,439 | F#4 | 21,912 | F#4 | 5,911 | F#4 | 08,60 | F#4 | 14,01 | A4 | 32,260 | A4 | 3,820 | A4 | 04,80 | A4 | -07,88 |
| F#4 | 30,249 | F#4 | 18,920 | F#4 | 0,856 | F#4 | 7,487 | A4 | 13,322 | A4 | 04,25 | A4 | 00,59 | A4 | 01,53 | A4 | 18,627 | A4 | 14,629 | A4 | -8,143 | A4 | 3,155 | E4 | 29,508 | E4 | 4,962 | E4 | -03,43 | E4 | 31,72 | D5 | 28,985 | D5 | 28,519 | D5 | 4,950 | D5 | -3,150 |
| E4 | 10,122 | E4 | 4,702 | E4 | 5,323 | E4 | 4,530 | D5 | 19,229 | D5 | 16,83 | D5 | 11,74 | D5 | 08,18 | G4 | 21,612 | G4 | 6,116 | G4 | 7,648 | G4 | 2,472 | A4 | 13,913 | A4 | 22,733 | A4 | 12,107 | A4 | -6,462 | G4 | 18,904 | G4 | 9,071 | G4 | -3,861 | G4 | -2,647 |
| E4 | 13,471 | E4 | 21,981 | E4 | 13,091 | E4 | 14,036 | | | | | | | | | G4 | 16,555 | G4 | -1,131 | G4 | -0,666 | G4 | 13,639 | A4 | 18,936 | A4 | 10,347 | A4 | 4,581 | A4 | 1,623 | F#4 | 13,376 | F#4 | 3,834 | F#4 | -3,507 | F#4 | 0,770 |
| F#4 | 9,304 | F#4 | 0,431 | F#4 | 1,159 | F#4 | -0,433 | | | | | | | | | G4 | 28,091 | G4 | 12,282 | G4 | 14,036 | G4 | 4,720 | | | | | | | | | E4 | 9,416 | E4 | 2,940 | E4 | -8,113 | E4 | 03,09 |
| F#4 | 11,407 | F#4 | -6,928 | F#4 | 4,348 | F#4 | -0,956 | C#4 | 14,330 | C#4 | 25,26 | C#4 | 07,81 | C#4 | 09,34 | Bb4 | 18,997 | Bb4 | 0,687 | Bb4 | -14,400 | Bb4 | -15,137 | | | | | | | | | | | | | | | | |
| G4 | 12,407 | G4 | -0,239 | G4 | -0,200 | G4 | -4,121 | B4 | 15,508 | B4 | 8,672 | B4 | -7,097 | B4 | -10,310 | A4 | 17,502 | A4 | 9,452 | A4 | -11,364 | A4 | -4,235 | | | | | | | | | E4 | 17,535 | E4 | 14,901 | E4 | -2,997 | E4 | -06,83 |
| G4 | 7,731 | G4 | -3,393 | G4 | -1,994 | G4 | -3,342 | A4 | 10,998 | A4 | 2,532 | A4 | -3,803 | A4 | 0,587 | G4 | 12,289 | G4 | -5,370 | G4 | -21,792 | G4 | -16,188 | | | | | | | | | D4 | -0,435 | D4 | 1,936 | D4 | 7,080 | D4 | 14,100 |
| G4 | 17,799 | G4 | 5,300 | G4 | 1,748 | G4 | -3,968 | A4 | 19,040 | A4 | -1,547 | A4 | -2,696 | A4 | 1,129 | G4 | 7,340 | G4 | -6,549 | G4 | -14,259 | G4 | -8,705 | G4 | 12,304 | G4 | 5,459 | G4 | -01,41 | G4 | 17,63 | | | | | | | | |
| F#4 | 13,031 | F#4 | 18,613 | F#4 | 06,71 | F#4 | 07,92 | G#4 | 19,555 | G#4 | 07,83 | G#4 | 05,45 | G#4 | 16,85 | F4 | 6,072 | F4 | -0,011 | F4 | -17,170 | F4 | -1,991 | A4 | 20,019 | A4 | 16,692 | A4 | 3,858 | A4 | 5,786 | | | | | | | | |
| F#4 | 13,482 | F#4 | 7,861 | F#4 | 1,256 | F#4 | -3,202 | G#4 | 26,467 | G#4 | 12,729 | G#4 | 7,092 | G#4 | 11,083 | E4 | 15,132 | E4 | 6,462 | E4 | -12,11 | E4 | -02,46 | B4 | 33,819 | B4 | 8,236 | B4 | -0,168 | B4 | 8,576 | | | | | | | | |
| E4 | 10,248 | E4 | 9,682 | E4 | -4,070 | E4 | 2,620 | A4 | 12,684 | A4 | 13,041 | A4 | -7,898 | A4 | 0,913 | F4 | 26,170 | F4 | 9,813 | F4 | -10,997 | F4 | -1,403 | F#4 | 8,115 | F#4 | -4,190 | F#4 | 2,105 | F#4 | 1,298 | | | | | | | | |
| | | | | | | | | | | | | | | | | E4 | 3,294 | E4 | 5,767 | E4 | -8,318 | E4 | -4,077 | E4 | 9,182 | E4 | 3,531 | E4 | 10,35 | E4 | 15,776 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | F#4 | 20,865 | F#4 | 11,059 | F#4 | 09,16 | F#4 | 08,59 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | G4 | 15,259 | G4 | 9,577 | G4 | -12,859 | G4 | -2,091 | | | | | | | | |

## Ave Verum Corpus_Tuning Table — The BBC Singers_Alto Section Average Deviations

### Difference in Cents from Equal Temperament

**Phrases**

| First Phrase | | | | | | | | Second Phrase | | | | | | | | Third Phrase | | | | | | | | Fourth Phrase | | | | | | | | Fifth Phrase | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alto I | | Alto II | | Alto III | | Alto IV | | Alto I | | Alto II | | Alto III | | Alto IV | | Alto I | | Alto II | | Alto III | | Alto IV | | Alto I | | Alto II | | Alto III | | Alto IV | | Alto I | | Alto II | | Alto III | | Alto IV | |
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| F#4 | 1,088 | F#4 | -1,022 | F#4 | 13,469 | F#4 | -2,799 | E4 | 6,609 | E4 | -9,988 | E4 | 4,159 | E4 | -7,293 | E4 | 16,630 | E4 | 6,098 | E4 | 20,051 | E4 | 15,537 | D4 | 9,824 | D4 | 1,152 | D4 | 10,30 | D4 | -02,05 | | | | | | | | | |
| F#4 | 1,352 | F#4 | -7,403 | F#4 | 7,239 | F#4 | -0,362 | E4 | -12,544 | E4 | -0,504 | E4 | 5,031 | E4 | -13,832 | E4 | 14,518 | E4 | 6,640 | E4 | 15,106 | E4 | 1,015 | D4 | 9,985 | D4 | 16,219 | D4 | 06,73 | D4 | -00,87 | | | | | | | | | |
| | | | | | | | | E4 | 3,406 | E4 | -4,862 | E4 | 5,055 | E4 | -7,991 | E4 | 12,121 | E4 | -0,587 | E4 | 4,398 | E4 | -3,865 | D4 | 11,439 | D4 | 11,135 | D4 | 11,678 | D4 | -6,399 | F#4 | 06,21 | F#4 | 7,201 | F#4 | 27,869 | F#4 | 15,803 |
| E4 | 8,610 | E4 | -6,472 | E4 | 10,338 | E4 | -6,053 | | | | | | | | | | | | | | | | | C#4 | 24,789 | C#4 | 4,605 | C#4 | 18,26 | C#4 | -03,93 | G4 | -09,11 | G4 | -1,037 | G4 | 9,024 | G4 | 1,563 |
| | | | | | | | | E4 | 12,385 | E4 | -2,910 | E4 | 15,893 | E4 | 3,072 | E4 | 14,301 | E4 | 6,112 | E4 | 8,600 | E4 | 7,901 | B3 | 31,289 | B3 | 3,589 | B3 | 11,47 | B3 | -02,56 | F#4 | 1,431 | F#4 | -4,249 | F#4 | 12,060 | F#4 | 9,438 |
| E4 | 0,698 | E4 | -4,535 | E4 | 5,074 | E4 | -5,558 | E4 | 21,714 | E4 | 9,328 | E4 | 18,231 | E4 | 12,40 | | | | | | | | | E4 | 10,267 | E4 | 11,415 | E4 | 14,570 | E4 | 7,195 | E4 | 6,072 | E4 | 3,151 | E4 | 16,240 | E4 | 0,494 |
| E4 | -1,068 | E4 | 1,515 | E4 | 7,929 | E4 | -11,565 | | | | | | | | | E4 | -7,478 | E4 | -4,074 | E4 | 0,693 | E4 | 1,459 | E4 | 3,514 | E4 | -0,772 | E4 | 8,391 | E4 | -3,994 | | | | | | | | | |
| G4 | -5,634 | G4 | -8,260 | G4 | 20,36 | G4 | -01,58 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F#4 | 5,827 | F#4 | 0,669 | F#4 | 22,470 | F#4 | 3,369 | G#4 | -0,984 | G#4 | 3,570 | G#4 | 23,922 | G#4 | 4,025 | | | | | | | | | | | | | | | | | | | | | | | | |
| E4 | -1,513 | E4 | -0,115 | E4 | 21,62 | E4 | -04,91 | G#4 | 8,348 | G#4 | 5,630 | G#4 | 16,757 | G#4 | 1,498 | E4 | -6,924 | E4 | -7,894 | E4 | 1,588 | E4 | -7,537 | E4 | 3,340 | E4 | 2,081 | E4 | 13,166 | E4 | -5,798 | | | | | | | | | |
| E4 | -5,245 | E4 | 1,086 | E4 | 13,530 | E4 | -7,961 | A4 | -2,486 | A4 | -16,458 | A4 | 10,645 | A4 | 1,472 | E4 | 2,456 | E4 | -10,351 | E4 | 3,819 | E4 | -3,904 | E4 | -2,096 | E4 | -6,890 | E4 | 5,088 | E4 | -9,752 | D4 | 5,579 | D4 | -11,301 | D4 | 18,43 | D4 | -04,62 |
| D4 | 2,264 | D4 | 2,202 | D4 | 11,97 | D4 | -08,72 | A4 | 3,241 | A4 | -11,386 | A4 | 3,302 | A4 | 10,256 | F4 | -13,535 | F4 | -33,424 | F4 | -4,642 | F4 | -10,029 | D4 | 10,635 | D4 | -9,885 | D4 | 16,52 | D4 | -12,54 | C#4 | 1,230 | C#4 | 6,816 | C#4 | 26,27 | C#4 | 01,57 |
| D4 | 17,241 | D4 | -11,042 | D4 | 10,860 | D4 | -3,669 | | | | | | | | | F4 | 5,077 | F4 | -16,288 | F4 | 0,274 | F4 | 0,377 | C#4 | 28,935 | C#4 | 9,754 | C#4 | 26,79 | C#4 | -00,75 | D4 | 25,821 | D4 | 11,585 | D4 | 14,202 | D4 | 1,946 |
| C#4 | 15,078 | C#4 | -15,992 | C#4 | 10,884 | C#4 | -8,989 | | | | | | | | | D4 | 10,613 | D4 | -1,190 | D4 | 13,362 | D4 | -7,557 | F#4 | 10,549 | F#4 | 6,225 | F#4 | 19,916 | F#4 | -3,468 | D4 | 20,096 | D4 | 8,316 | D4 | 16,955 | D4 | 0,717 |
| C#4 | 14,642 | C#4 | -0,624 | C#4 | 13,335 | C#4 | -7,470 | G#4 | -02,72 | G#4 | -3,627 | G#4 | 30,341 | G#4 | 12,752 | D4 | 13,364 | D4 | 12,984 | D4 | 9,583 | D4 | -8,019 | F#4 | -2,042 | F#4 | -5,005 | F#4 | 13,503 | F#4 | 2,833 | D4 | 12,185 | D4 | 6,069 | D4 | 13,503 | D4 | -1,226 |
| D4 | 3,867 | D4 | -4,708 | D4 | 3,722 | D4 | -12,549 | A4 | 06,32 | A4 | -2,469 | A4 | 20,248 | A4 | 16,685 | E4 | 14,519 | E4 | -1,025 | E4 | 10,969 | E4 | -2,187 | | | | | | | | | C#4 | 12,714 | C#4 | -9,637 | C#4 | 22,179 | C#4 | -04,60 |
| D4 | 14,607 | D4 | 0,505 | D4 | 6,844 | D4 | -12,130 | | | | | | | | | F4 | 12,237 | F4 | -4,240 | F4 | 14,826 | F4 | -3,452 | | | | | | | | | | | | | | | | |
| E4 | -4,232 | E4 | 3,575 | E4 | 9,046 | E4 | 1,393 | F#4 | 4,881 | F#4 | -5,555 | F#4 | 4,210 | F#4 | -4,404 | E4 | 5,609 | E4 | 13,351 | E4 | 12,092 | E4 | -1,256 | | | | | | | | | C#4 | 12,153 | C#4 | 8,015 | C#4 | 28,933 | C#4 | -01,66 |
| E4 | -15,196 | E4 | -4,971 | E4 | 11,068 | E4 | -8,990 | F#4 | 12,219 | F#4 | -2,215 | F#4 | 8,146 | F#4 | -3,352 | E4 | -5,672 | E4 | 6,256 | E4 | 2,334 | E4 | -14,530 | | | | | | | | | D4 | 4,820 | D4 | -0,766 | D4 | 15,182 | D4 | -7,167 |
| E4 | 1,208 | E4 | 2,645 | E4 | 14,094 | E4 | -3,845 | E4 | 3,128 | E4 | -0,058 | E4 | 8,075 | E4 | -1,049 | E4 | -4,655 | E4 | -0,184 | E4 | -0,694 | E4 | -9,590 | G4 | -0,358 | G4 | -14,453 | G4 | 10,66 | G4 | -03,45 | | | | | | | | |
| D4 | 5,185 | D4 | 14,092 | D4 | 15,75 | D4 | -13,70 | | | | | | | | | D4 | -2,198 | D4 | 2,570 | D4 | 7,800 | D4 | -14,104 | F#4 | -1,145 | F#4 | -7,066 | F#4 | 26,011 | F#4 | 1,683 | | | | | | | | |
| D4 | 17,490 | D4 | 13,938 | D4 | 15,740 | D4 | -6,075 | E4 | 5,467 | E4 | 1,151 | E4 | 13,018 | E4 | 1,371 | C#4 | 16,762 | C#4 | 20,473 | C#4 | 23,11 | C#4 | 02,82 | E4 | -21,343 | E4 | -1,352 | E4 | 7,226 | E4 | -16,705 | | | | | | | | |
| C#4 | 11,915 | C#4 | -10,382 | C#4 | 11,715 | C#4 | -6,565 | E4 | 2,975 | E4 | 2,522 | E4 | 3,840 | E4 | -7,735 | D4 | 7,267 | D4 | 9,180 | D4 | 11,684 | D4 | -5,902 | D4 | 6,566 | D4 | 3,243 | D4 | 11,611 | D4 | -13,597 | | | | | | | | |
| | | | | | | | | | | | | | | | | C#4 | 6,648 | C#4 | -3,635 | C#4 | 11,979 | C#4 | -13,472 | C#4 | 7,983 | C#4 | -2,946 | C#4 | 15,40 | C#4 | -7,860 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | C#4 | 17,344 | C#4 | 7,523 | C#4 | 23,55 | C#4 | -03,79 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | D4 | 3,394 | D4 | -14,810 | D4 | 11,971 | D4 | -11,739 | | | | | | | | |

**Ave Verum Corpus_Tuning Table — The BBC Singers_Tenor Section Average Deviations**

**Difference in Cents from Equal Temperament**

| Phrases | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First Phrase | | | | | | | | Second Phrase | | | | | | | | Third Phrase | | | | | | | | Fourth Phrase | | | | | | | | Fifth Phrase | | | | | | | |
| Tenor I | | Tenor II | | Tenor III | | Tenor IV | | Tenor I | | Tenor II | | Tenor III | | Tenor IV | | Tenor I | | Tenor II | | Tenor III | | Tenor IV | | Tenor I | | Tenor II | | Tenor III | | Tenor IV | | Tenor I | | Tenor II | | Tenor III | | Tenor IV | |
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| A3 | 12,599 | A3 | -0,992 | A3 | -25,495 | A3 | 7,144 | C#4 | -9,028 | C#4 | -11,322 | C#4 | -20,067 | C#4 | -5,326 | C#4 | 14,597 | C#4 | 8,863 | C#4 | 1,682 | C#4 | 15,569 | | | | | | | | | | | | | | | | |
| A3 | 10,870 | A3 | 6,449 | A3 | -29,407 | A3 | 6,421 | C#4 | -5,019 | C#4 | -6,476 | C#4 | -18,369 | C#4 | -4,412 | C#4 | 1,815 | C#4 | 7,675 | C#4 | -11,799 | C#4 | 0,602 | | | | | | | | | | | | | | | | |
| | | | | | | | | C#4 | -6,006 | C#4 | -2,336 | C#4 | -17,114 | C#4 | 0,081 | C#4 | 1,784 | C#4 | -6,706 | C#4 | -21,104 | C#4 | -8,912 | B3 | 7,504 | B3 | -0,873 | B3 | -16,679 | B3 | -7,471 | C4 | 02,17 | C4 | 11,032 | C4 | 12,925 | C4 | 16,504 |
| B3 | -2,935 | B3 | -2,568 | B3 | -14,550 | B3 | -6,349 | D4 | -5,407 | D4 | -05,72 | D4 | -29,049 | D4 | -3,558 | | | | | | | | | | | | | | | | | | | | | D4 | 02,76 | D4 | 9,013 | D4 | -3,322 | D4 | 9,315 |
| | | | | | | | | D4 | 0,394 | D4 | 1,045 | D4 | -10,618 | D4 | 2,032 | C#4 | 2,744 | C#4 | 2,599 | C#4 | -7,232 | C#4 | 7,293 | | | | | | | | | | | | | | | C4 | 3,035 | C4 | 0,848 | C4 | -0,677 | C4 | 13,627 |
| B3 | -7,345 | B3 | -3,019 | B3 | -20,183 | B3 | -2,436 | B3 | -4,296 | B3 | 6,719 | B3 | -6,080 | B3 | 09,76 | C4 | 09,61 | C4 | 03,35 | C4 | -8,022 | C4 | 09,50 | B3 | 4,726 | B3 | -2,842 | B3 | -15,855 | B3 | -4,485 | B3 | 10,967 | B3 | 9,947 | B3 | 0,138 | B3 | 7,634 |
| A3 | 14,573 | A3 | 3,130 | A3 | -22,870 | A3 | -2,132 | | | | | | | | | C4 | -5,582 | C4 | -11,275 | C4 | -25,203 | C4 | -2,385 | B3 | 9,647 | B3 | -3,002 | B3 | -16,157 | B3 | -3,163 | D4 | -7,946 | D4 | -09,90 | D4 | -20,022 | D4 | -02,74 |
| | | | | | | | | | | | | | | | | Bb3 | -4,778 | Bb3 | -24,03 | Bb3 | -29,738 | Bb3 | -19,45 | A3 | 06,34 | A3 | -06,58 | A3 | -27,756 | A3 | -4,117 | C#4 | -11,043 | C#4 | 02,31 | C#4 | -12,964 | C#4 | -01,26 |
| A3 | 13,781 | A3 | 6,489 | A3 | -15,043 | A3 | 3,685 | D4 | -16,049 | D4 | -9,788 | D4 | -27,630 | D4 | -10,975 | A3 | -3,284 | A3 | -09,30 | A3 | -31,637 | A3 | -21,49 | G3 | 17,13 | G3 | 02,75 | G3 | -10,536 | G3 | 11,154 | B3 | -3,124 | B3 | 01,96 | B3 | -11,242 | B3 | -07,29 |
| | | | | | | | | D4 | -15,049 | D4 | -8,601 | D4 | -20,422 | D4 | -3,052 | G3 | -0,649 | G3 | -12,437 | G3 | -31,207 | G3 | -25,382 | C#4 | 9,702 | C#4 | 4,921 | C#4 | -15,276 | C#4 | 19,571 | A3 | 7,844 | A3 | 02,22 | A3 | -23,032 | A3 | -4,624 |
| A3 | 9,697 | A3 | 0,793 | A3 | -12,381 | A3 | 6,634 | C#4 | -10,759 | C#4 | -7,084 | C#4 | -23,632 | C#4 | -8,557 | G3 | -4,275 | G3 | -7,672 | G3 | -25,654 | G3 | -27,478 | C#4 | -5,124 | C#4 | -8,216 | C#4 | -22,664 | C#4 | -4,548 | | | | | | | | |
| | | | | | | | | C#4 | -11,202 | C#4 | -1,602 | C#4 | -14,572 | C#4 | 9,930 | A3 | -0,011 | A3 | -16,065 | A3 | -26,239 | A3 | -20,690 | | | | | | | | | | | | | | | | |
| A3 | 8,088 | A3 | 7,156 | A3 | 5,113 | A3 | 18,537 | | | | | | | | | A3 | 4,036 | A3 | 0,381 | A3 | -10,168 | A3 | -2,225 | | | | | | | | | A3 | 0,639 | A3 | 6,398 | A3 | -5,318 | A3 | 25,750 |
| A3 | 14,389 | A3 | 0,990 | A3 | -9,895 | A3 | 3,163 | | | | | | | | | B3 | 6,810 | B3 | 5,835 | B3 | 6,249 | B3 | 10,278 | C#4 | 6,055 | C#4 | 3,382 | C#4 | -13,473 | C#4 | 10,004 | G3 | 17,857 | G3 | -5,110 | G3 | -1,384 | G3 | -6,013 |
| A3 | 11,638 | A3 | 8,888 | A3 | -6,731 | A3 | 0,625 | D4 | -02,20 | D4 | -5,635 | D4 | -9,657 | D4 | -8,313 | B3 | 3,551 | B3 | -5,549 | B3 | -13,271 | B3 | 0,442 | C#4 | -0,829 | C#4 | -9,491 | C#4 | -18,668 | C#4 | -8,006 | A3 | 7,004 | A3 | 4,536 | A3 | -8,656 | A3 | 2,951 |
| A3 | 19,224 | A3 | 4,900 | A3 | -9,753 | A3 | -2,626 | E4 | -03,03 | E4 | 7,976 | E4 | -15,883 | E4 | 16,098 | C#4 | 3,497 | C#4 | 3,692 | C#4 | 4,056 | C#4 | -2,514 | B3 | -03,08 | B3 | -05,78 | B3 | -16,782 | B3 | -2,052 | G3 | -2,375 | G3 | 1,317 | G3 | -19,425 | G3 | 01,67 |
| A3 | 13,924 | A3 | 5,519 | A3 | -6,506 | A3 | 0,961 | | | | | | | | | D4 | -1,890 | D4 | -0,529 | D4 | -11,815 | D4 | -9,921 | A3 | 19,84 | A3 | 09,51 | A3 | -12,598 | A3 | 15,881 | | | | | | | | |
| A3 | 11,159 | A3 | 9,295 | A3 | 2,603 | A3 | 16,626 | D4 | -3,327 | D4 | -0,387 | D4 | -17,632 | D4 | -3,188 | E4 | 5,189 | E4 | -6,998 | E4 | -3,395 | E4 | -4,213 | D4 | 09,45 | D4 | 06,11 | D4 | -9,668 | D4 | 10,936 | G3 | -4,707 | G3 | 8,344 | G3 | 1,091 | G3 | 18,72 |
| A3 | 3,904 | A3 | -1,893 | A3 | -11,303 | A3 | -0,151 | C#4 | -1,143 | C#4 | -2,495 | C#4 | -14,101 | C#4 | -4,497 | C#4 | -4,210 | C#4 | -10,940 | C#4 | 1,020 | C#4 | 2,109 | D4 | -04,40 | D4 | -03,46 | D4 | -12,380 | D4 | -6,586 | F#3 | 13,420 | F#3 | 4,552 | F#3 | -2,846 | F#3 | 14,839 |
| A3 | 8,218 | A3 | 12,316 | A3 | 2,487 | A3 | 15,368 | B3 | -1,584 | B3 | 1,073 | B3 | -11,818 | B3 | -1,272 | C#4 | -4,753 | C#4 | -4,653 | C#4 | -13,057 | C#4 | -12,391 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | D4 | -10,054 | D4 | -6,460 | D4 | -26,764 | D4 | -21,887 | D4 | 13,736 | D4 | 26,387 | D4 | 10,049 | D4 | 18,484 | | | | | | | | |
| A3 | 8,734 | A3 | 15,199 | A3 | -2,223 | A3 | 12,300 | B3 | 7,974 | B3 | 7,386 | B3 | -0,869 | B3 | 16,921 | | | | | | | | | D4 | 8,321 | D4 | 16,212 | D4 | -5,400 | D4 | -2,472 | | | | | | | | |
| A3 | 8,239 | A3 | 2,202 | A3 | -10,049 | A3 | 6,007 | C#4 | -6,254 | C#4 | -5,580 | C#4 | -11,045 | C#4 | 5,390 | B3 | -9,320 | B3 | 6,361 | B3 | -5,597 | B3 | -2,581 | A3 | 6,680 | A3 | 0,465 | A3 | -11,837 | A3 | 3,397 | | | | | | | | |
| | | | | | | | | | | | | | | | | E3 | -8,655 | E3 | -8,901 | E3 | -21,815 | E3 | -7,238 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | A3 | 00,49 | A3 | 01,90 | A3 | -9,980 | A3 | 11,53 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | G3 | 7,378 | G3 | -0,875 | G3 | -25,816 | G3 | -1,960 | | | | | | | | |

## 9.5 – THE BBC SINGERS TENOR SECTION'S AVERAGE DEVIATIONS

**Ave Verum Corpus_Tuning Table — The BBC Singers_Bass Section Average Deviations**

**Difference in Cents from Equal Temperament**

| Phrases | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First Phrase | | | | | | | | Second Phrase | | | | | | | | Third Phrase | | | | | | | | Fourth Phrase | | | | | | | | Fifth Phrase | | | | | | | |
| Bass I | | Bass II | | Bass III | | Bass IV | | Bass I | | Bass II | | Bass III | | Bass IV | | Bass I | | Bass II | | Bass III | | Bass IV | | Bass I | | Bass II | | Bass III | | Bass IV | | Bass I | | Bass II | | Bass III | | Bass IV | |
| Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents | Notes | Cents |
| D3 | -12,136 | D3 | -7,759 | D3 | -4,483 | D3 | 0,617 | A3 | 6,279 | A3 | -11,469 | A3 | -0,733 | A3 | 5,122 | A3 | 10,407 | A3 | 6,544 | A3 | 13,123 | A3 | 26,380 | | | | | | | | | | | | | | | | |
| D3 | -19,464 | D3 | -6,365 | D3 | 9,816 | D3 | 9,202 | A3 | 5,903 | A3 | -8,679 | A3 | -3,158 | A3 | 3,467 | A3 | 17,857 | A3 | 0,917 | A3 | 8,850 | A3 | 16,336 | | | | | | | | | | | | | | | | |
| | | | | | | | | A3 | -1,897 | A3 | -0,455 | A3 | -1,397 | A3 | 12,245 | A3 | 0,247 | A3 | -1,535 | A3 | -10,671 | A3 | 5,503 | G3 | -2,639 | G3 | -15,001 | G3 | -21,857 | G3 | -8,842 | A3 | 04,54 | A3 | 4,050 | A3 | -1,970 | A3 | 15,929 |
| D3 | -18,988 | D3 | -12,055 | D3 | -1,575 | D3 | 1,195 | B3 | 4,980 | B3 | -10,71 | B3 | -21,192 | B3 | 30,705 | G3 | -3,672 | G3 | -16,68 | G3 | -11,17 | G3 | -1,221 | | | | | | | | | | | | | | | Bb3 | -02,00 | Bb3 | 2,560 | Bb3 | -18,053 | Bb3 | 7,241 |
| | | | | | | | | B3 | 21,089 | B3 | -2,594 | B3 | 5,277 | B3 | 41,691 | G3 | 14,924 | G3 | -6,938 | G3 | -4,893 | G3 | 6,650 | | | | | | | | | | | | | | | A3 | 2,373 | A3 | -2,207 | A3 | -14,974 | A3 | 6,638 |
| D3 | -9,642 | D3 | -13,699 | D3 | -2,726 | D3 | -2,550 | | | | | | | | | | | | | | | | | G3 | 11,033 | G3 | 6,520 | G3 | -5,087 | G3 | -1,251 | G#3 | -1,509 | G#3 | -9,134 | G#3 | -18,478 | G#3 | 17,734 |
| C#3 | -17,754 | C#3 | -2,236 | C#3 | 7,641 | C#3 | 19,346 | | | | | | | | | C3 | -31,390 | C3 | -14,009 | C3 | -14,765 | C3 | -15,470 | G3 | 8,313 | G3 | -2,362 | G3 | -11,312 | G3 | -3,293 | | | | | | | | |
| | | | | | | | | E3 | 01,70 | E3 | -07,53 | E3 | -13,72 | E3 | 12,875 | | | | | | | | | F#3 | -02,48 | F#3 | -06,10 | F#3 | -1,759 | F#3 | -3,930 | | | | | | | | |
| C#3 | -1,821 | C#3 | -1,778 | C#3 | 20,514 | C#3 | 27,193 | E3 | -16,629 | E3 | -2,750 | E3 | 7,342 | E3 | -11,816 | | | | | | | | | E3 | 02,81 | E3 | 07,69 | E3 | 10,173 | E3 | 8,953 | | | | | | | | |
| | | | | | | | | E#3 | -25,605 | E#3 | -18,055 | E#3 | -13,136 | E#3 | 5,511 | C3 | -25,688 | C3 | -16,965 | C3 | -15,644 | C3 | 0,919 | A3 | 15,754 | A3 | 5,088 | A3 | 3,140 | A3 | 14,511 | G3 | 5,136 | G3 | -11,49 | G3 | -13,952 | G3 | 5,821 |
| D3 | -20,241 | D3 | -15,902 | D3 | -0,624 | D3 | 13,726 | F#3 | -15,607 | F#3 | -26,199 | F#3 | -18,332 | F#3 | -1,334 | C3 | -16,236 | C3 | -7,641 | C3 | -11,110 | C3 | -8,854 | A3 | 7,202 | A3 | -15,039 | A3 | -9,868 | A3 | -0,383 | | | | | | | | |
| | | | | | | | | F#3 | 11,243 | F#3 | -13,433 | F#3 | -3,253 | F#3 | 10,409 | F3 | -15,589 | F3 | -14,634 | F3 | -12,851 | F3 | 0,762 | | | | | | | | | | | | | | | | |
| D3 | -4,193 | D3 | -4,131 | D3 | 6,222 | D3 | 26,374 | | | | | | | | | F3 | 21,042 | F3 | -0,024 | F3 | 15,847 | F3 | 43,463 | | | | | | | | | F#3 | 23,868 | F#3 | 16,402 | F#3 | 16,189 | F#3 | 20,259 |
| A2 | -9,917 | A2 | -10,518 | A2 | -3,711 | A2 | -0,800 | | | | | | | | | F3 | 3,643 | F3 | -8,369 | F3 | 10,207 | F3 | 14,218 | A3 | 8,547 | A3 | -6,719 | A3 | -10,272 | A3 | 8,125 | B2 | 7,775 | B2 | -6,153 | B2 | -12,937 | B2 | 3,663 |
| A2 | 6,977 | A2 | 9,415 | A2 | 12,593 | A2 | -6,951 | B2 | -00,84 | B2 | -16,538 | B2 | -8,143 | B2 | -5,287 | F3 | -10,850 | F3 | -22,324 | F3 | -7,859 | F3 | -2,535 | A3 | 1,602 | A3 | -14,983 | A3 | -24,652 | A3 | -5,153 | A2 | -5,782 | A2 | -4,841 | A2 | -12,442 | A2 | -2,517 |
| D3 | -14,928 | D3 | -6,045 | D3 | -2,707 | D3 | 22,377 | C#3 | -11,09 | C#3 | -0,726 | C#3 | 12,408 | C#3 | 24,964 | E3 | -5,517 | E3 | -1,298 | E3 | 10,977 | E3 | 3,215 | G3 | 03,82 | G3 | -15,08 | G3 | -23,342 | G3 | -17,195 | | | | | | | | |
| D3 | -18,746 | D3 | -8,293 | D3 | -8,818 | D3 | 1,816 | | | | | | | | | D3 | -26,416 | D3 | 2,365 | D3 | -2,936 | D3 | 0,657 | F#3 | -00,64 | F#3 | 04,58 | F#3 | 3,819 | F#3 | 20,715 | A2 | 02,38 | A2 | -01,24 | A2 | -16,18 | A2 | -1,182 |
| C#3 | 4,650 | C#3 | 13,314 | C#3 | 26,782 | C#3 | 30,719 | D3 | -9,945 | D3 | -6,029 | D3 | 2,029 | D3 | 8,726 | C#3 | -6,108 | C#3 | 2,644 | C#3 | 7,432 | C#3 | 8,704 | B3 | 08,92 | B3 | -05,41 | B3 | -11,064 | B3 | 12,342 | | | | | | | | |
| C#3 | -4,520 | C#3 | -0,514 | C#3 | 10,565 | C#3 | 17,195 | D3 | -3,394 | D3 | -0,299 | D3 | 3,882 | D3 | -1,494 | A2 | 6,508 | A2 | -19,080 | A2 | -14,246 | A2 | -36,061 | B3 | 07,56 | B3 | -10,87 | B3 | -19,259 | B3 | 7,246 | D3 | 1,834 | D3 | -1,169 | D3 | -0,433 | D3 | 4,715 |
| D3 | 6,052 | D3 | 4,990 | D3 | 15,168 | D3 | 25,510 | E3 | -8,155 | E3 | -7,649 | E3 | 2,690 | E3 | 8,144 | Bb2 | 4,543 | Bb2 | -12,445 | Bb2 | -18,418 | Bb2 | -6,012 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | A2 | -17,396 | A2 | -5,676 | A2 | -12,692 | A2 | -15,257 | A3 | 24,118 | A3 | 11,090 | A3 | 6,855 | A3 | 19,779 | | | | | | | | |
| D3 | 1,872 | D3 | 7,969 | D3 | 4,584 | D3 | 23,279 | E3 | 6,109 | E3 | 2,144 | E3 | 8,110 | E3 | 9,545 | | | | | | | | | G#3 | 4,906 | G#3 | 0,284 | G#3 | -2,201 | G#3 | 9,932 | | | | | | | | |
| A2 | -5,655 | A2 | -6,655 | A2 | -5,500 | A2 | -4,042 | A2 | -0,156 | A2 | -5,913 | A2 | -3,462 | A2 | -6,508 | G#2 | 7,487 | G#2 | 9,475 | G#2 | 6,516 | G#2 | 2,704 | A3 | 4,279 | A3 | -8,775 | A3 | -6,031 | A3 | 14,302 | | | | | | | | |
| | | | | | | | | | | | | | | | | A2 | -19,452 | A2 | -13,934 | A2 | -10,980 | A2 | 1,634 | A2 | -9,578 | A2 | -9,241 | A2 | -21,07 | A2 | -9,601 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | B2 | -5,318 | B2 | -14,157 | B2 | -13,337 | B2 | 2,572 | | | | | | | | |

# APPENDIX 10

# 10 - MEASUREMENTS RESULTS
# – ROYAL ACADEMY OF MUSIC SINGING QUARTET –

## AVC _ Worksheet _ RAM Quartet Recording Session _ Overview

| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
|---|---|---|---|---|---|---|---|---|---|
| 146,740 | D | 109,624 | A | 109,628 | A | 145,099 | D | 144,617 | D |

Reference Frequencies with Thirds

| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
|---|---|---|---|---|---|---|---|---|---|
| 146,326 | D | 109,612 | A | 109,482 | A | 144,736 | D | 144,660 | D |

Reference Frequencies without Thirds

Frequency Measurements

**First Phrase**

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOPRANO tk 01 | 442,070 | 596,287 | 369,606 | 438,526 | 414,789 | 387,731 | 389,487 | 498,228 | 440,956 | 389,891 | 401,003 | 372,818 | 383,301 | 326,720 | 336,239 | 374,706 | 370,372 | 389,703 | 387,747 | 390,876 | 372,130 | 369,178 | 330,010 |
| SOPRANO tk 02 | 438,799 | 587,356 | 370,255 | 447,161 | 416,917 | 388,814 | 389,333 | 490,246 | 436,858 | 391,164 | 397,057 | 368,669 | 377,571 | 329,694 | 327,664 | 368,040 | 368,698 | 387,467 | 389,639 | 390,984 | 371,083 | 368,491 | 329,419 |
| SOPRANO tk 03 | 437,713 | 599,516 | 370,179 | 440,022 | 417,330 | 389,833 | 388,533 | 490,570 | 438,099 | 385,480 | 388,909 | 367,565 | 376,346 | 328,447 | 333,466 | 371,930 | 369,408 | 393,539 | 389,137 | 391,234 | 372,287 | 367,459 | 328,500 |
| SOPRANO tk 04 | 442,250 | 589,277 | 370,459 | 439,604 | 419,338 | 392,012 | 388,411 | 490,091 | 438,258 | 387,454 | 393,939 | 369,357 | 372,773 | 324,524 | 328,369 | 370,176 | 368,857 | 390,728 | 386,988 | 388,489 | 366,163 | 362,657 | 327,242 |
| SOPRANO tk 05 | 436,781 | 586,154 | 370,070 | 441,103 | 416,771 | 395,122 | 389,409 | 491,263 | 440,642 | 392,451 | 395,701 | 370,942 | 376,609 | 330,434 | 336,391 | 373,076 | 372,726 | 393,542 | 390,301 | 391,697 | 365,521 | 370,330 | 328,066 |
| SOPRANO tk 06 | 442,963 | 587,611 | 365,556 | 437,066 | 417,698 | 394,127 | 397,700 | 499,826 | 446,500 | 392,945 | 397,876 | 374,197 | 378,210 | 323,341 | 336,049 | 375,456 | 375,555 | 390,871 | 389,928 | 393,695 | 376,592 | 372,809 | 334,296 |
| SOPRANO tk 07 | 438,190 | 587,038 | 371,775 | 446,905 | 416,705 | 388,492 | 386,415 | 492,034 | 435,970 | 388,066 | 390,216 | 366,226 | 372,271 | 333,298 | 325,929 | 375,348 | 376,181 | 387,193 | 390,515 | 390,980 | 363,089 | 366,046 | 326,829 |
| SOPRANO tk 08 | 439,165 | 584,536 | 371,145 | 449,402 | 415,234 | 390,207 | 391,919 | 495,805 | 438,553 | 391,471 | 393,151 | 367,899 | 373,159 | 331,737 | 326,988 | 373,392 | 370,990 | 386,584 | 384,032 | 386,696 | 368,401 | 364,891 | 330,210 |
| SOPRANO tk 09 | 438,628 | 581,645 | 368,713 | 435,793 | 410,960 | 390,030 | 385,948 | 492,970 | 439,876 | 391,571 | 395,516 | 368,488 | 377,766 | 327,785 | 333,577 | 377,262 | 372,745 | 390,922 | 388,135 | 392,212 | 371,173 | 370,186 | 323,515 |
| SOPRANO tk 10 | 448,181 | 589,281 | 366,189 | 441,159 | 418,440 | 383,688 | 383,162 | 486,461 | 431,696 | 381,959 | 380,298 | 361,778 | 367,065 | 327,776 | 321,898 | 366,912 | 366,912 | 382,538 | 381,452 | 382,582 | 363,919 | 360,138 | 322,626 |
| SOPRANO tk 11 | 440,578 | 587,839 | 364,463 | 446,630 | 417,799 | 391,102 | 387,428 | 491,537 | 440,767 | 396,575 | 397,877 | 374,410 | 372,726 | 329,119 | 331,966 | 372,218 | 370,493 | 392,962 | 387,001 | 392,085 | 366,397 | 367,931 | 332,156 |
| SOPRANO tk 12 | 441,864 | 583,988 | 371,173 | 444,109 | 417,066 | 391,991 | 390,041 | 493,459 | 441,678 | 390,701 | 394,375 | 372,383 | 375,829 | 328,166 | 336,963 | 372,528 | 371,297 | 396,904 | 392,422 | 394,786 | 373,057 | 370,609 | 328,604 |
| SOPRANO Average | **440,599** | **588,377** | **369,132** | **442,290** | **416,587** | **390,263** | **388,982** | **492,707** | **439,154** | **389,977** | **393,826** | **369,561** | **375,302** | **328,420** | **331,292** | **372,587** | **371,186** | **390,246** | **388,108** | **390,526** | **369,151** | **367,560** | **328,456** |
| Cents RF+3rds | 3,440 | 4,172 | -2,955 | 10,073 | 6,424 | -6,585 | -12,273 | -3,041 | -2,244 | -7,850 | 9,153 | -0,943 | 25,745 | -5,267 | 9,804 | 13,175 | 6,653 | -6,658 | -16,169 | -5,415 | -2,865 | -10,341 | -5,077 |
| Cents RF-3rds | 8,333 | 9,065 | 1,938 | 14,966 | 11,317 | -1,691 | -7,380 | 1,853 | 2,649 | -2,957 | 14,047 | 3,950 | 30,638 | -0,374 | 14,697 | 18,069 | 11,546 | -1,764 | -11,276 | -0,521 | 2,029 | -5,448 | -0,184 |
| Just Int I | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Just Int II | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Pythagorean | 1,955 | 0,000 | 7,820 | 1,955 | 11,730 | -1,955 | -1,955 | 5,865 | 1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 | 3,910 | 7,820 | 7,820 | -1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 |
| Meantone | -3,421 | 0,000 | -13,686 | -3,421 | -20,530 | 3,422 | 3,422 | -10,264 | -3,421 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 | -6,843 | -13,686 | -13,686 | 3,422 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 |
| ALTO tk 01 | 366,282 | 368,724 | 326,040 | 327,888 | 327,790 | 392,000 | 370,922 | 328,125 | 329,931 | 293,903 | 294,559 | 277,293 | 276,056 | 291,074 | 291,829 | 330,662 | 332,152 | 333,509 | 294,880 | 295,064 | 278,047 | | |
| ALTO tk 02 | 369,736 | 369,680 | 327,190 | 328,512 | 329,573 | 392,473 | 372,545 | 332,574 | 331,991 | 292,704 | 294,616 | 275,621 | 277,630 | 296,123 | 295,246 | 330,624 | 329,394 | 330,320 | 295,210 | 294,999 | 278,423 | | |
| ALTO tk 03 | 369,063 | 368,708 | 331,728 | 329,360 | 333,732 | 391,528 | 372,053 | 330,527 | 327,898 | 293,556 | 295,612 | 275,392 | 278,593 | 294,277 | 295,718 | 330,012 | 331,216 | 330,575 | 295,687 | 297,004 | 277,782 | | |
| ALTO tk 04 | 368,765 | 369,200 | 329,059 | 329,314 | 329,043 | 387,853 | 368,361 | 330,412 | 331,750 | 293,419 | 295,922 | 275,401 | 277,525 | 295,156 | 291,489 | 331,137 | 327,942 | 331,080 | 295,063 | 291,906 | 275,335 | | |
| ALTO tk 05 | 366,908 | 369,987 | 331,735 | 330,745 | 330,191 | 390,520 | 371,494 | 335,813 | 332,263 | 292,164 | 293,490 | 275,684 | 278,768 | 296,070 | 287,724 | 331,215 | 329,246 | 329,990 | 296,494 | 294,955 | 275,921 | | |
| ALTO tk 06 | 370,022 | 370,626 | 330,251 | 328,734 | 330,394 | 392,461 | 373,019 | 326,667 | 332,838 | 293,732 | 295,385 | 274,490 | 277,248 | 293,339 | 292,485 | 334,397 | 326,141 | 332,816 | 294,374 | 295,293 | 277,077 | | |
| ALTO tk 07 | 372,505 | 372,816 | 329,221 | 329,069 | 327,811 | 392,283 | 373,209 | 330,177 | 331,161 | 294,789 | 295,480 | 275,341 | 276,966 | 292,856 | 293,665 | 331,001 | 329,238 | 331,176 | 295,102 | 292,600 | 276,687 | | |
| ALTO tk 08 | 368,784 | 368,651 | 329,159 | 328,001 | 328,539 | 389,446 | 370,111 | 331,153 | 335,817 | 295,085 | 295,799 | 276,987 | 275,320 | 293,609 | 294,705 | 332,565 | 328,975 | 331,031 | 294,674 | 292,451 | 277,311 | | |
| ALTO tk 09 | 370,650 | 369,266 | 330,054 | 328,936 | 329,666 | 387,909 | 373,178 | 332,584 | 331,248 | 292,693 | 295,262 | 275,771 | 277,982 | 296,716 | 294,295 | 332,752 | 326,335 | 330,621 | 292,518 | 292,619 | 274,581 | | |
| ALTO tk 10 | 368,431 | 366,744 | 330,305 | 327,025 | 328,773 | 386,568 | 367,443 | 326,555 | 328,530 | 291,070 | 292,370 | 272,501 | 272,674 | 291,975 | 294,105 | 328,420 | 328,352 | 328,012 | 291,294 | 289,030 | 271,241 | | |
| ALTO tk 11 | 367,500 | 368,638 | 327,331 | 327,162 | 326,946 | 388,878 | 369,092 | 324,873 | 328,836 | 292,053 | 294,559 | 275,185 | 275,887 | 293,931 | 293,270 | 330,885 | 326,089 | 330,415 | 292,505 | 293,012 | 275,652 | | |
| ALTO tk 12 | 366,916 | 366,851 | 328,692 | 328,812 | 328,195 | 389,216 | 372,450 | 332,042 | 333,198 | 293,660 | 296,049 | 277,866 | 278,259 | 295,671 | 296,199 | 335,707 | 331,269 | 332,779 | 295,030 | 296,010 | 275,981 | | |
| ALTO Average | **368,797** | **369,158** | **329,230** | **328,630** | **329,221** | **390,095** | **371,156** | **330,125** | **331,288** | **293,236** | **294,925** | **275,628** | **276,909** | **294,233** | **293,394** | **331,615** | **328,862** | **331,027** | **294,403** | **293,745** | **276,170** | | |
| Cents RF+3rds | -4,527 | -2,835 | -1,001 | -4,162 | -1,051 | -7,330 | 6,514 | 3,697 | 9,787 | -1,445 | 8,501 | -8,654 | -0,624 | 4,432 | -0,511 | 11,492 | -2,938 | 8,421 | 5,430 | 1,560 | -5,252 | | |
| Cents RF-3rds | 0,367 | 2,059 | 3,893 | 0,731 | 3,842 | -2,436 | 11,408 | 8,591 | 14,680 | 3,448 | 13,394 | -3,761 | 4,270 | 9,326 | 4,383 | 16,386 | 1,955 | 13,314 | 10,324 | 6,454 | -0,358 | | |
| Just Int I | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 | | |
| Just Int II | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 | | |
| Pythagorean | 7,820 | 7,820 | 3,910 | 3,910 | 3,910 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 3,910 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 | | |
| Meantone | -13,686 | -13,686 | -6,843 | -6,843 | -6,843 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -6,843 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 | | |
| TENOR tk 01 | 221,327 | 219,985 | 244,950 | 242,765 | 217,751 | 218,761 | 219,455 | 218,875 | 219,315 | 220,843 | 220,951 | 220,544 | 219,717 | 219,419 | 218,639 | 220,307 | 219,716 | | | | | | |
| TENOR tk 02 | 220,214 | 219,282 | 245,479 | 244,618 | 219,313 | 220,131 | 220,432 | 219,455 | 219,388 | 220,500 | 219,896 | 219,035 | 219,573 | 218,667 | 219,027 | 220,157 | 219,918 | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TENOR tk 03 | 223,273 | 220,931 | 245,645 | 242,717 | 219,504 | 219,159 | 218,480 | 220,583 | 219,642 | 221,425 | 220,877 | 218,946 | 219,127 | 218,948 | 219,076 | 219,667 | 219,612 | | | |
| TENOR tk 04 | 219,576 | 219,339 | 243,640 | 243,180 | 219,856 | 219,418 | 218,233 | 219,900 | 217,872 | 219,894 | 218,853 | 218,278 | 218,761 | 216,620 | 218,139 | 219,550 | 217,995 | | | |
| TENOR tk 05 | 220,288 | 219,460 | 245,006 | 242,945 | 219,279 | 218,639 | 218,800 | 219,665 | 218,884 | 220,005 | 218,584 | 218,159 | 219,007 | 218,540 | 218,915 | 220,253 | 218,712 | | | |
| TENOR tk 06 | 221,491 | 220,451 | 245,360 | 243,329 | 220,254 | 220,171 | 220,165 | 220,583 | 219,707 | 220,500 | 221,742 | 220,140 | 221,234 | 219,561 | 219,690 | 221,430 | 219,571 | | | |
| TENOR tk 07 | 221,449 | 219,978 | 245,116 | 244,010 | 219,521 | 220,440 | 218,876 | 219,603 | 218,829 | 221,238 | 222,440 | 220,423 | 220,921 | 219,366 | 219,301 | 218,901 | 220,190 | | | |
| TENOR tk 08 | 220,590 | 219,766 | 243,453 | 243,060 | 217,051 | 217,107 | 218,246 | 220,368 | 218,688 | 220,143 | 218,736 | 218,919 | 217,087 | 218,977 | 217,828 | 219,098 | 218,439 | | | |
| TENOR tk 09 | 219,165 | 217,850 | 243,107 | 241,265 | 217,438 | 218,845 | 217,805 | 220,057 | 218,681 | 220,765 | 221,414 | 218,746 | 218,746 | 218,683 | 219,470 | 218,951 | 217,912 | | | |
| TENOR tk 10 | 216,340 | 217,908 | 240,769 | 241,074 | 216,852 | 216,268 | 215,400 | 217,914 | 214,619 | 215,508 | 217,816 | 215,368 | 216,214 | 214,494 | 215,776 | 216,665 | 214,941 | | | |
| TENOR tk 11 | 220,825 | 219,147 | 245,071 | 242,029 | 218,525 | 218,176 | 218,534 | 219,990 | 218,913 | 219,672 | 219,369 | 219,664 | 220,158 | 218,768 | 218,578 | 218,189 | 218,562 | | | |
| TENOR tk 12 | 220,020 | 220,174 | 243,386 | 242,150 | 219,286 | 218,180 | 219,890 | 218,996 | 220,812 | 220,716 | 221,596 | 222,446 | 220,269 | 220,557 | 220,201 | 220,668 | 220,493 | | | |
| **TENOR Average** | **220,380** | **219,522** | **244,248** | **242,762** | **218,719** | **218,775** | **218,693** | **219,666** | **218,779** | **220,101** | **220,189** | **219,222** | **219,235** | **218,550** | **218,720** | **219,486** | **218,838** | | | |
| Cents RF+3rds | 4,071 | -2,676 | -17,899 | -28,468 | -9,023 | -8,585 | -9,229 | -1,547 | -8,548 | 1,879 | 2,575 | -5,044 | -4,948 | -10,362 | -9,015 | -2,961 | -8,079 | | | |
| Cents RF-3rds | 8,965 | 2,217 | -13,005 | -23,575 | -4,130 | -3,691 | -4,336 | 3,346 | -3,654 | 6,772 | 7,468 | -0,151 | -0,054 | -5,469 | -4,121 | 1,932 | -3,185 | | | |
| Just Int I | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | | | |
| Just Int II | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | | | |
| Pythagorean | 1,955 | 1,955 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | | | |
| Meantone | -3,421 | -3,421 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | | | |
| BASS tk 01 | 146,841 | 146,066 | 145,462 | 146,605 | 136,565 | 137,486 | 145,580 | 146,569 | 110,403 | 109,490 | 144,436 | 145,425 | 138,807 | 135,495 | 146,431 | 147,384 | 109,487 | | | |
| BASS tk 02 | 146,853 | 147,288 | 145,023 | 146,500 | 137,521 | 138,114 | 145,760 | 145,728 | 109,794 | 110,230 | 145,395 | 144,764 | 138,619 | 136,380 | 146,427 | 146,009 | 110,331 | | | |
| BASS tk 03 | 148,070 | 147,700 | 146,379 | 147,024 | 137,693 | 137,416 | 145,831 | 145,792 | 110,073 | 108,595 | 146,177 | 147,000 | 138,086 | 139,238 | 147,106 | 147,851 | 110,053 | | | |
| BASS tk 04 | 146,977 | 146,400 | 145,680 | 147,257 | 139,610 | 138,273 | 144,842 | 144,564 | 109,357 | 109,124 | 145,885 | 144,330 | 136,972 | 137,408 | 146,311 | 146,624 | 109,648 | | | |
| BASS tk 05 | 146,599 | 147,594 | 145,174 | 145,664 | 138,609 | 138,200 | 145,646 | 145,627 | 109,182 | 111,773 | 145,870 | 145,213 | 136,682 | 138,506 | 146,915 | 145,987 | 109,558 | | | |
| BASS tk 06 | 147,333 | 147,374 | 146,708 | 147,106 | 137,928 | 138,022 | 146,812 | 147,475 | 109,433 | 109,929 | 144,926 | 145,436 | 139,005 | 138,420 | 147,130 | 146,730 | 110,004 | | | |
| BASS tk 07 | 147,965 | 146,269 | 146,930 | 148,213 | 137,154 | 139,514 | 145,680 | 146,859 | 109,509 | 109,793 | 146,398 | 146,801 | 138,306 | 138,171 | 146,702 | 146,661 | 109,574 | | | |
| BASS tk 08 | 145,317 | 145,467 | 145,925 | 145,731 | 136,624 | 137,477 | 144,306 | 145,827 | 109,075 | 109,962 | 144,780 | 145,208 | 136,198 | 137,442 | 145,817 | 145,907 | 109,142 | | | |
| BASS tk 09 | 145,566 | 147,055 | 145,739 | 145,467 | 137,963 | 138,939 | 144,412 | 145,560 | 109,474 | 110,518 | 147,214 | 146,265 | 137,718 | 136,406 | 146,501 | 146,729 | 109,402 | | | |
| BASS tk 10 | 146,346 | 147,041 | 145,647 | 144,917 | 135,629 | 136,639 | 144,721 | 143,821 | 107,254 | 108,194 | 144,140 | 144,703 | 135,566 | 135,748 | 144,704 | 142,349 | 108,384 | | | |
| BASS tk 11 | 146,785 | 147,773 | 146,593 | 146,741 | 139,251 | 140,105 | 145,295 | 145,670 | 109,724 | 109,895 | 146,677 | 144,998 | 139,157 | 138,028 | 146,355 | 145,703 | 109,814 | | | |
| BASS tk 12 | 145,487 | 144,235 | 145,035 | 144,408 | 137,048 | 138,896 | 145,394 | 144,936 | 110,552 | 111,929 | 146,990 | 147,260 | 140,092 | 138,279 | 146,438 | 147,048 | 110,126 | | | |
| **BASS Average** | **146,678** | **146,689** | **145,858** | **146,303** | **137,633** | **138,257** | **145,357** | **145,702** | **109,486** | **109,953** | **145,741** | **145,617** | **137,934** | **137,460** | **146,403** | **146,249** | **109,627** | | | |
| Cents RF+3rds | -0,731 | -0,611 | -10,442 | -5,170 | -10,928 | -3,098 | -16,402 | -12,289 | -7,025 | 0,340 | -11,836 | -13,304 | -7,144 | -13,104 | -3,983 | -5,810 | -4,796 | | | |
| Cents RF-3rds | 4,162 | 4,282 | -5,548 | -0,276 | -6,035 | 1,795 | -11,508 | -7,396 | -2,132 | 5,233 | -6,942 | -8,411 | -2,250 | -8,210 | 0,911 | -0,917 | 0,097 | | | |
| Just Int I | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | | | |
| Just Int II | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | | | |
| Meantone | 0,000 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | | | |

**Second Phrase**

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOPRANO tk 01 | 325,312 | 438,606 | 448,292 | 416,422 | 421,285 | 322,070 | 415,015 | 495,194 | 496,822 | 442,112 | 436,978 | 444,173 | 592,892 | 555,034 | 488,805 | 436,239 | 443,672 | 416,678 | 418,748 | 439,405 |
| SOPRANO tk 02 | 323,624 | 438,495 | 446,451 | 419,725 | 417,529 | 331,540 | 414,917 | 496,073 | 494,195 | 440,686 | 435,049 | 436,106 | 589,993 | 554,162 | 494,752 | 438,159 | 444,619 | 418,845 | 419,625 | 440,488 |
| SOPRANO tk 03 | 325,568 | 442,150 | 445,976 | 418,324 | 417,669 | 332,496 | 414,859 | 497,762 | 495,523 | 439,655 | 441,436 | 443,216 | 587,146 | 554,729 | 492,249 | 440,708 | 439,970 | 420,345 | 417,870 | 442,677 |
| SOPRANO tk 04 | 329,142 | 438,487 | 435,972 | 413,864 | 418,059 | 330,893 | 414,457 | 493,217 | 489,578 | 436,976 | 436,654 | 436,332 | 586,780 | 556,320 | 490,929 | 440,749 | 439,596 | 415,943 | 413,942 | 438,213 |
| SOPRANO tk 05 | 327,298 | 434,574 | 436,670 | 415,990 | 414,647 | 333,298 | 414,164 | 490,376 | 490,200 | 435,630 | 437,622 | 437,346 | 587,793 | 559,412 | 492,399 | 434,565 | 436,945 | 416,020 | 414,615 | 440,097 |
| SOPRANO tk 06 | 329,576 | 446,172 | 440,945 | 421,379 | 420,979 | 332,706 | 415,633 | 496,737 | 492,883 | 439,845 | 436,080 | 443,026 | 594,859 | 557,012 | 502,522 | 442,343 | 443,303 | 415,011 | 417,805 | 444,338 |
| SOPRANO tk 07 | 323,665 | 440,530 | 440,562 | 415,349 | 415,192 | 323,961 | 411,553 | 492,094 | 491,806 | 439,901 | 434,993 | 442,660 | 586,029 | 547,472 | 489,031 | 432,024 | 436,986 | 417,537 | 418,506 | 439,852 |
| SOPRANO tk 08 | 323,134 | 438,230 | 438,668 | 414,944 | 414,382 | 329,843 | 412,757 | 491,639 | 489,808 | 438,873 | 429,992 | 436,295 | 592,724 | 553,587 | 491,540 | 440,208 | 439,667 | 422,064 | 416,324 | 442,162 |
| SOPRANO tk 09 | 330,730 | 439,063 | 435,081 | 411,875 | 414,464 | 336,618 | 417,092 | 493,475 | 490,147 | 435,411 | 436,634 | 439,153 | 585,407 | 553,766 | 486,127 | 432,878 | 433,103 | 413,473 | 417,005 | 438,374 |
| SOPRANO tk 10 | 314,072 | 436,219 | 436,818 | 409,779 | 417,949 | 325,243 | 408,119 | 489,751 | 491,272 | 431,003 | 431,722 | 435,675 | 582,330 | 540,802 | 488,071 | 434,367 | 434,935 | 411,875 | 413,503 | 435,888 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SOPRANO tk 11** | 329,213 | 442,186 | 439,066 | 414,152 | 417,264 | 327,340 | 418,584 | 493,985 | 489,286 | 436,427 | 436,427 | 445,157 | 586,045 | 560,232 | 497,446 | 440,142 | 441,009 | 417,575 | 417,918 | 443,451 |
| **SOPRANO tk 12** | 332,259 | 443,863 | 443,406 | 421,875 | 424,094 | 330,246 | 415,122 | 501,888 | 497,939 | 441,967 | 441,566 | 441,566 | 589,900 | 556,000 | 496,082 | 434,454 | 439,669 | 418,605 | 424,068 | 441,479 |
| **SOPRANO Average** | **326,133** | **439,881** | **440,659** | **416,140** | **417,793** | **329,688** | **414,356** | **494,349** | **492,455** | **438,207** | **436,263** | **440,059** | **588,491** | **554,044** | **492,496** | **437,236** | **439,456** | **416,998** | **417,494** | **440,535** |
| **Cents RF+3rds** | -12,530 | 5,454 | 8,512 | 9,400 | 16,263 | 6,238 | 1,963 | 7,554 | 0,908 | -1,147 | -8,846 | 6,153 | 9,343 | 4,919 | 1,053 | -4,987 | 3,782 | 12,964 | 15,025 | 8,027 |
| **Cents RF-3rds** | -12,340 | 5,645 | 8,703 | 9,591 | 16,453 | 6,428 | 2,153 | 7,745 | 1,098 | -0,957 | -8,656 | 6,343 | 9,533 | 5,109 | 1,243 | -4,796 | 3,972 | 13,155 | 15,215 | 8,217 |
| **Just Int I** | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | -44,860 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| **Just Int II** | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| **Pythagorean** | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 1,955 | 9,775 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -1,955 | 7,820 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 |
| **Meantone** | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | -3,421 | -17,108 | -6,843 | -6,843 | 0,000 | 0,000 | 0,000 | 3,422 | -13,686 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 |
| **ALTO tk 01** | 328,902 | 327,230 | 327,147 | 331,188 | 332,162 | 414,515 | 412,484 | 437,507 | 434,822 | 416,679 | 442,697 | 369,384 | 368,830 | 329,959 | 330,985 | 330,847 | | | | |
| **ALTO tk 02** | 327,342 | 327,979 | 326,117 | 330,368 | 330,830 | 410,946 | 412,364 | 438,561 | 444,768 | 415,283 | 437,008 | 368,591 | 365,771 | 326,098 | 327,852 | 330,691 | | | | |
| **ALTO tk 03** | 330,030 | 328,596 | 328,600 | 330,282 | 332,869 | 411,056 | 410,213 | 437,700 | 439,082 | 412,240 | 436,758 | 369,960 | 368,000 | 327,674 | 330,473 | 331,655 | | | | |
| **ALTO tk 04** | 329,968 | 330,280 | 327,770 | 328,185 | 330,612 | 407,703 | 406,579 | 434,980 | 440,567 | 415,661 | 439,303 | 368,773 | 369,324 | 328,135 | 329,789 | 330,413 | | | | |
| **ALTO tk 05** | 329,844 | 325,684 | 324,997 | 329,369 | 331,573 | 408,022 | 406,862 | 436,471 | 439,261 | 414,956 | 439,011 | 369,497 | 368,448 | 328,150 | 329,972 | 331,535 | | | | |
| **ALTO tk 06** | 332,171 | 329,373 | 330,071 | 333,811 | 334,672 | 418,792 | 416,378 | 434,900 | 436,734 | 415,639 | 443,192 | 373,546 | 371,878 | 328,346 | 333,085 | 331,850 | | | | |
| **ALTO tk 07** | 328,335 | 325,777 | 327,684 | 329,710 | 329,421 | 414,479 | 415,039 | 435,947 | 438,408 | 411,436 | 434,767 | 364,932 | 364,294 | 325,677 | 328,089 | 329,803 | | | | |
| **ALTO tk 08** | 330,227 | 326,743 | 327,314 | 329,360 | 332,537 | 413,939 | 411,777 | 437,287 | 437,546 | 414,346 | 440,796 | 366,749 | 367,686 | 328,140 | 330,350 | 332,202 | | | | |
| **ALTO tk 09** | 328,867 | 327,796 | 326,433 | 330,961 | 331,507 | 407,956 | 409,403 | 435,639 | 438,203 | 412,521 | 436,599 | 365,028 | 366,200 | 326,227 | 327,210 | 327,912 | | | | |
| **ALTO tk 10** | 325,299 | 324,438 | 325,056 | 328,079 | 327,341 | 411,800 | 410,932 | 431,807 | 436,082 | 410,263 | 435,167 | 367,220 | 363,017 | 324,216 | 329,343 | 327,000 | | | | |
| **ALTO tk 11** | 327,075 | 327,866 | 324,674 | 329,052 | 329,165 | 410,508 | 407,875 | 438,404 | 439,950 | 415,061 | 440,230 | 368,990 | 366,505 | 325,231 | 327,656 | 327,827 | | | | |
| **ALTO tk 12** | 332,403 | 330,952 | 330,390 | 335,642 | 334,706 | 417,064 | 410,270 | 440,892 | 441,112 | 418,592 | 442,967 | 371,174 | 369,302 | 328,008 | 331,509 | 330,406 | | | | |
| **ALTO Average** | **329,205** | **327,726** | **327,188** | **330,501** | **331,450** | **412,232** | **410,848** | **436,675** | **438,878** | **414,390** | **439,041** | **368,654** | **367,438** | **327,155** | **329,693** | **330,178** | | | | |
| **Cents RF+3rds** | 3,703 | -4,093 | -6,940 | 10,501 | 15,466 | -6,936 | -12,756 | -7,212 | 1,502 | 2,104 | 2,145 | -0,363 | -6,082 | -7,112 | 6,264 | 8,812 | | | | |
| **Cents RF-3rds** | 3,893 | -3,903 | -6,750 | 10,691 | 15,656 | -6,746 | -12,566 | -7,022 | 1,692 | 2,294 | 2,336 | -0,173 | -5,891 | -6,922 | 6,454 | 9,003 | | | | |
| **Just Int I** | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | | | | |
| **Just Int II** | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | | | | |
| **Pythagorean** | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 9,775 | 9,775 | 0,000 | 0,000 | 9,775 | 0,000 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | | | | |
| **Meantone** | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -17,108 | -17,108 | 0,000 | 0,000 | -17,108 | 0,000 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 | | | | |
| **TENOR tk 01** | 273,836 | 275,243 | 275,037 | 291,014 | 292,756 | 245,008 | 291,801 | 290,340 | 274,025 | 276,936 | 292,978 | 329,410 | 293,546 | 273,656 | 243,910 | 245,730 | 274,097 | | | |
| **TENOR tk 02** | 273,961 | 276,047 | 275,143 | 292,396 | 293,431 | 246,009 | 292,390 | 290,676 | 276,009 | 275,716 | 292,674 | 328,528 | 292,481 | 272,125 | 245,213 | 245,015 | 274,828 | | | |
| **TENOR tk 03** | 275,337 | 276,316 | 276,270 | 293,713 | 292,027 | 245,548 | 290,392 | 289,070 | 275,649 | 274,526 | 291,261 | 327,943 | 291,207 | 272,902 | 244,677 | 245,605 | 274,975 | | | |
| **TENOR tk 04** | 273,611 | 273,488 | 273,710 | 290,685 | 290,754 | 245,387 | 289,775 | 288,066 | 272,723 | 274,479 | 289,542 | 327,730 | 290,318 | 272,643 | 243,128 | 243,823 | 274,050 | | | |
| **TENOR tk 05** | 275,361 | 272,976 | 274,502 | 291,067 | 291,891 | 246,040 | 289,806 | 288,236 | 273,273 | 273,295 | 289,896 | 328,825 | 290,660 | 272,491 | 245,033 | 245,121 | 274,093 | | | |
| **TENOR tk 06** | 277,257 | 276,588 | 277,474 | 290,922 | 292,599 | 247,771 | 290,714 | 290,378 | 273,868 | 274,441 | 291,454 | 326,857 | 289,240 | 275,625 | 245,677 | 246,960 | 275,179 | | | |
| **TENOR tk 07** | 274,922 | 273,957 | 275,646 | 292,674 | 292,728 | 244,467 | 290,821 | 289,275 | 274,482 | 273,139 | 289,574 | 326,534 | 290,726 | 271,586 | 243,531 | 242,941 | 273,539 | | | |
| **TENOR tk 08** | 273,748 | 273,743 | 275,215 | 288,653 | 290,152 | 244,782 | 289,297 | 287,989 | 272,988 | 271,216 | 290,738 | 327,114 | 291,077 | 273,836 | 244,553 | 245,177 | 274,427 | | | |
| **TENOR tk 09** | 272,977 | 272,975 | 273,536 | 290,933 | 291,433 | 245,241 | 288,994 | 287,694 | 272,748 | 272,050 | 290,528 | 327,945 | 288,896 | 271,268 | 243,002 | 243,789 | 272,313 | | | |
| **TENOR tk 10** | 271,210 | 270,598 | 273,392 | 286,627 | 286,459 | 243,683 | 286,621 | 285,167 | 269,685 | 269,984 | 288,061 | 326,335 | 287,339 | 271,526 | 242,251 | 243,118 | 271,104 | | | |
| **TENOR tk 11** | 274,081 | 273,000 | 273,537 | 290,614 | 290,172 | 245,021 | 289,113 | 286,556 | 274,042 | 273,906 | 289,841 | 327,691 | 289,696 | 271,364 | 243,805 | 244,356 | 274,188 | | | |
| **TENOR tk 12** | 275,211 | 276,980 | 276,435 | 291,181 | 292,882 | 248,190 | 292,405 | 291,173 | 275,130 | 275,796 | 293,639 | 326,903 | 293,447 | 275,625 | 245,387 | 246,810 | 275,325 | | | |
| **TENOR Average** | **274,292** | **274,326** | **274,991** | **290,873** | **291,440** | **245,596** | **290,177** | **288,718** | **273,719** | **273,790** | **290,849** | **327,651** | **290,720** | **272,887** | **244,180** | **244,871** | **274,010** | | | |
| **Cents RF+3rds** | -12,224 | -12,013 | -7,819 | -10,614 | -7,242 | -3,541 | -14,760 | -23,488 | -15,850 | -15,396 | -10,759 | -4,489 | -11,528 | -21,116 | -13,545 | -8,659 | -14,008 | | | |
| **Cents RF-3rds** | -12,034 | -11,823 | -7,629 | -10,423 | -7,051 | -3,351 | -14,569 | -23,298 | -15,660 | -15,206 | -10,569 | -4,299 | -11,338 | -20,926 | -13,355 | -8,469 | -13,818 | | | |
| **Just Int I** | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 | | | |
| **Just Int II** | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 | | | |
| **Pythagorean** | 7,820 | 7,820 | 7,820 | -1,955 | -1,955 | 3,910 | -1,955 | -1,955 | 7,820 | 7,820 | -1,955 | 1,955 | -1,955 | 7,820 | 3,910 | 3,910 | 7,820 | | | |
| **Meantone** | -13,686 | -13,686 | -13,686 | 3,422 | 3,422 | -6,843 | 3,422 | 3,422 | -13,686 | -13,686 | 3,422 | -3,421 | 3,422 | -13,686 | -6,843 | -6,843 | -13,686 | | | |
| **BASS tk 01** | 219,063 | 220,115 | 219,245 | 243,606 | 247,005 | 161,941 | 164,696 | 172,997 | 185,674 | 184,851 | 122,740 | 136,199 | 144,858 | 145,102 | 163,737 | 164,620 | 110,492 | | | |
| **BASS tk 02** | 219,943 | 220,732 | 220,651 | 244,609 | 245,527 | 165,406 | 166,598 | 174,748 | 183,768 | 185,922 | 120,705 | 137,809 | 145,763 | 145,104 | 164,383 | 164,890 | 109,961 | | | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BASS tk 03 | 220,535 | 220,133 | 219,450 | 242,858 | 246,819 | 164,123 | 164,829 | 173,205 | 184,288 | 184,328 | 121,057 | 137,253 | 145,726 | 144,024 | 163,733 | 164,697 | 108,953 | |
| BASS tk 04 | 217,960 | 218,825 | 218,393 | 243,100 | 245,911 | 164,680 | 164,679 | 173,258 | 182,539 | 182,763 | 119,823 | 135,671 | 144,701 | 144,551 | 163,357 | 164,589 | 109,609 | |
| BASS tk 05 | 218,994 | 218,943 | 218,317 | 240,861 | 244,839 | 162,003 | 163,600 | 173,416 | 181,777 | 183,192 | 121,218 | 137,579 | 145,653 | 145,764 | 163,851 | 165,257 | 109,882 | |
| BASS tk 06 | 220,711 | 220,511 | 221,037 | 243,779 | 247,877 | 164,314 | 165,221 | 173,669 | 184,530 | 184,699 | 121,115 | 138,287 | 145,733 | 145,652 | 164,887 | 165,789 | 110,302 | |
| BASS tk 07 | 219,230 | 218,958 | 218,748 | 243,424 | 244,375 | 162,326 | 163,538 | 170,798 | 182,755 | 183,459 | 119,756 | 138,588 | 146,057 | 146,122 | 163,243 | 164,330 | 109,332 | |
| BASS tk 08 | 219,230 | 219,033 | 219,244 | 242,101 | 245,006 | 163,090 | 164,612 | 170,288 | 184,058 | 182,442 | 119,764 | 138,016 | 145,785 | 144,557 | 164,027 | 164,863 | 109,509 | |
| BASS tk 09 | 218,336 | 218,373 | 218,766 | 242,122 | 243,572 | 164,580 | 165,160 | 172,934 | 181,983 | 181,434 | 119,469 | 138,076 | 144,772 | 143,908 | 162,786 | 163,714 | 109,322 | |
| BASS tk 10 | 215,482 | 215,938 | 216,563 | 239,095 | 243,449 | 159,152 | 159,937 | 169,126 | 179,393 | 181,282 | 119,043 | 138,258 | 143,912 | 143,393 | 161,920 | 163,167 | 107,393 | |
| BASS tk 11 | 218,040 | 216,671 | 218,142 | 241,304 | 242,299 | 163,441 | 163,481 | 172,332 | 180,901 | 182,189 | 121,436 | 139,678 | 145,031 | 143,608 | 163,440 | 164,587 | 109,534 | |
| BASS tk 12 | 219,970 | 221,250 | 221,146 | 245,786 | 249,048 | 166,738 | 167,206 | 176,194 | 184,810 | 185,697 | 121,780 | 139,722 | 143,883 | 146,410 | 164,775 | 165,722 | 110,381 | |
| **BASS Average** | **218,958** | **219,124** | **219,142** | **242,720** | **245,477** | **163,483** | **164,463** | **172,747** | **183,040** | **183,521** | **120,659** | **137,928** | **145,156** | **144,850** | **163,678** | **164,685** | **109,556** | |
| Cents RF+3rds | -2,300 | -0,989 | -0,844 | -23,928 | -4,375 | -8,114 | 2,233 | -12,688 | -12,495 | -7,945 | -33,963 | -2,383 | -13,956 | -17,616 | -6,047 | 4,572 | -1,084 | |
| Cents RF-3rds | -2,110 | -0,799 | -0,654 | -23,738 | -4,185 | -7,924 | 2,423 | -12,498 | -12,304 | -7,754 | -33,772 | -2,193 | -13,766 | -17,425 | -5,857 | 4,762 | -0,894 | |
| Just Int I | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | |
| Just Int II | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,955 | 1,955 | 15,640 | 5,865 | 5,865 | 3,910 | 7,820 | -1,955 | -1,955 | 1,955 | 1,955 | 0,000 | |
| Meantone | 0,000 | 0,000 | 0,000 | -6,843 | -6,843 | -3,421 | -3,421 | -27,373 | -10,264 | -10,264 | -6,843 | -13,686 | 3,422 | 3,422 | -3,421 | -3,421 | 0,000 | |

**Third Phrase**

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOPRANO tk 01 | 438,996 | 436,133 | 437,665 | 461,098 | 464,941 | 461,349 | 584,596 | 514,931 | 462,774 | 463,265 | 430,297 | 432,846 | 386,933 | 384,370 | 386,254 | 457,571 | 438,297 | 381,668 | 388,748 | 348,287 | 326,278 | 351,129 | 329,402 |
| SOPRANO tk 02 | 441,897 | 441,839 | 444,953 | 461,618 | 460,766 | 461,912 | 580,540 | 518,845 | 458,698 | 469,648 | 431,583 | 439,218 | 386,477 | 382,044 | 386,625 | 458,560 | 431,495 | 385,391 | 384,250 | 343,293 | 322,390 | 348,091 | 326,810 |
| SOPRANO tk 03 | 439,995 | 440,100 | 442,134 | 456,385 | 461,384 | 460,443 | 579,040 | 519,042 | 461,384 | 465,640 | 433,868 | 436,634 | 389,025 | 385,186 | 386,940 | 453,037 | 430,575 | 376,344 | 384,149 | 345,431 | 322,655 | 349,352 | 330,877 |
| SOPRANO tk 04 | 441,489 | 440,281 | 438,591 | 457,153 | 459,406 | 459,107 | 575,137 | 520,767 | 455,600 | 456,332 | 428,632 | 433,309 | 386,876 | 385,838 | 388,048 | 453,903 | 434,738 | 386,316 | 388,705 | 345,493 | 325,977 | 350,269 | 326,661 |
| SOPRANO tk 05 | 444,125 | 440,428 | 442,357 | 457,152 | 461,167 | 464,150 | 574,661 | 519,336 | 462,702 | 461,935 | 434,934 | 434,714 | 387,422 | 385,542 | 388,492 | 457,080 | 432,694 | 387,698 | 388,621 | 349,812 | 322,112 | 348,922 | 324,297 |
| SOPRANO tk 06 | 444,322 | 444,030 | 447,608 | 463,614 | 466,418 | 467,237 | 582,811 | 518,052 | 465,732 | 468,846 | 438,482 | 439,540 | 384,573 | 394,010 | 385,300 | 460,053 | 436,229 | 392,023 | 390,073 | 351,415 | 334,743 | 354,283 | 332,640 |
| SOPRANO tk 07 | 439,684 | 435,665 | 440,574 | 455,893 | 458,049 | 461,364 | 581,569 | 513,837 | 455,849 | 457,928 | 429,059 | 432,442 | 384,861 | 384,010 | 387,421 | 450,094 | 424,506 | 389,882 | 383,784 | 341,377 | 326,264 | 342,019 | 325,577 |
| SOPRANO tk 08 | 442,483 | 441,756 | 441,623 | 462,025 | 461,317 | 463,779 | 581,624 | 521,209 | 465,353 | 464,432 | 442,711 | 439,348 | 388,149 | 384,727 | 389,432 | 456,052 | 433,474 | 382,801 | 384,835 | 343,719 | 326,879 | 348,158 | 328,248 |
| SOPRANO tk 09 | 437,546 | 434,729 | 437,841 | 457,628 | 460,287 | 463,153 | 576,063 | 514,408 | 458,692 | 455,223 | 432,423 | 433,905 | 388,697 | 387,025 | 387,623 | 459,856 | 438,686 | 386,625 | 385,749 | 345,206 | 329,596 | 347,929 | 326,596 |
| SOPRANO tk 10 | 434,567 | 430,900 | 435,819 | 452,226 | 451,122 | 454,639 | 575,435 | 514,991 | 456,242 | 459,996 | 431,898 | 436,078 | 382,490 | 381,954 | 383,029 | 454,987 | 434,227 | 386,534 | 384,065 | 342,719 | 328,260 | 340,219 | 322,494 |
| SOPRANO tk 11 | 441,740 | 441,511 | 441,000 | 457,715 | 462,730 | 466,515 | 562,007 | 516,287 | 455,789 | 453,255 | 432,587 | 436,569 | 391,390 | 386,218 | 388,132 | 457,048 | 440,217 | 382,291 | 384,352 | 339,448 | 325,578 | 345,616 | 326,740 |
| SOPRANO tk 12 | 441,707 | 442,485 | 442,513 | 464,750 | 466,399 | 465,919 | 581,946 | 520,852 | 467,148 | 465,602 | 443,272 | 447,330 | 390,830 | 391,528 | 391,126 | 462,789 | 439,340 | 384,986 | 386,588 | 344,531 | 326,524 | 347,588 | 325,988 |
| **SOPRANO Average** | **440,712** | **439,155** | **441,057** | **458,938** | **461,165** | **462,464** | **577,952** | **517,713** | **460,497** | **461,842** | **434,146** | **436,828** | **387,310** | **386,038** | **387,368** | **456,752** | **434,540** | **385,213** | **386,160** | **345,061** | **326,438** | **347,798** | **327,194** |
| Cents RF+3rds | 8,672 | 2,542 | 10,024 | -21,173 | -12,792 | -7,924 | -21,992 | -12,550 | -15,303 | -10,255 | -17,318 | -6,656 | -14,946 | -20,643 | -14,685 | -29,438 | -15,747 | -24,344 | -20,094 | -14,911 | -10,962 | -1,234 | -6,957 |
| Cents RF-3rds | 10,966 | 4,836 | 12,318 | -18,879 | -10,498 | -5,630 | -19,698 | -10,256 | -13,009 | -7,961 | -15,024 | -4,362 | -12,652 | -18,349 | -12,391 | -27,144 | -13,453 | -22,050 | -17,800 | -12,617 | -8,668 | 1,060 | -4,663 |
| Just Int I | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -37,039 | -1,955 | 7,820 | -37,039 | -37,039 | -21,506 | -21,506 | -25,416 | -25,416 | -52,680 | -9,774 | -21,506 | -52,680 | -52,680 | -7,820 | -19,551 | -14,596 | -19,551 |
| Just Int II | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -15,532 | 19,551 | 29,326 | -15,532 | -15,532 | 0,000 | 0,000 | -3,910 | -3,910 | -31,174 | 11,732 | 0,000 | -31,174 | -31,174 | 13,686 | 1,955 | 6,910 | 1,955 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -9,775 | -9,775 | -9,775 | -1,955 | -5,865 | -9,775 | -9,775 | 0,000 | 0,000 | -3,910 | -3,910 | -3,910 | -9,775 | 0,000 | -3,910 | -3,910 | -7,820 | 1,955 | -7,820 | 1,955 |
| Meantone | 0,000 | 0,000 | 0,000 | 17,107 | 17,107 | 17,107 | 3,422 | 10,265 | 17,107 | 17,107 | 0,000 | 0,000 | 6,843 | 6,843 | 6,843 | 17,107 | 0,000 | 6,843 | 6,843 | 13,686 | 1,955 | 13,686 | 1,955 |
| ALTO tk 01 | 331,760 | 332,128 | 330,410 | 330,306 | 328,138 | 327,895 | 330,579 | 346,399 | 347,111 | 292,132 | 291,403 | 325,447 | 339,989 | 329,221 | 324,512 | 320,286 | 293,615 | 273,933 | 290,903 | 276,202 | | | |
| ALTO tk 02 | 332,449 | 331,191 | 331,274 | 331,129 | 328,160 | 328,828 | 328,481 | 345,622 | 347,998 | 293,654 | 293,561 | 329,308 | 342,878 | 332,219 | 325,721 | 328,845 | 296,253 | 278,862 | 292,939 | 278,038 | | | |
| ALTO tk 03 | 331,631 | 330,124 | 327,432 | 329,699 | 328,499 | 327,303 | 326,371 | 345,932 | 347,078 | 293,025 | 294,687 | 327,156 | 346,221 | 334,421 | 329,789 | 326,150 | 292,247 | 277,497 | 292,233 | 277,551 | | | |
| ALTO tk 04 | 331,452 | 329,237 | 328,323 | 328,900 | 327,108 | 326,302 | 326,954 | 342,627 | 345,239 | 292,176 | 292,248 | 324,545 | 346,989 | 334,091 | 328,198 | 325,859 | 293,326 | 282,005 | 292,393 | 275,006 | | | |
| ALTO tk 05 | 332,336 | 329,707 | 330,511 | 331,367 | 326,471 | 326,186 | 326,596 | 342,388 | 345,454 | 289,524 | 292,720 | 329,364 | 346,698 | 327,039 | 329,132 | 327,993 | 290,441 | 273,850 | 291,221 | 275,285 | | | |
| ALTO tk 06 | 333,790 | 334,878 | 331,629 | 332,127 | 329,188 | 330,194 | 326,799 | 343,820 | 346,159 | 296,657 | 294,922 | 327,912 | 346,392 | 329,624 | 329,596 | 327,027 | 290,378 | 274,027 | 291,632 | 276,527 | | | |
| ALTO tk 07 | 329,832 | 329,259 | 324,837 | 325,629 | 324,380 | 326,131 | 325,304 | 343,070 | 344,113 | 288,462 | 293,515 | 330,463 | 348,250 | 327,256 | 322,574 | 324,204 | 287,137 | 273,973 | 289,741 | 274,803 | | | |
| ALTO tk 08 | 333,362 | 332,711 | 330,344 | 331,333 | 326,546 | 325,263 | 325,838 | 344,755 | 348,175 | 288,755 | 292,813 | 329,104 | 346,718 | 326,385 | 324,283 | 326,020 | 293,561 | 277,144 | 291,198 | 276,014 | | | |
| ALTO tk 09 | 330,081 | 330,415 | 329,563 | 327,934 | 326,102 | 326,957 | 324,802 | 339,504 | 343,336 | 289,775 | 290,769 | 323,366 | 342,157 | 332,460 | 326,314 | 325,766 | 290,648 | 275,100 | 290,314 | 274,612 | | | |
| ALTO tk 10 | 326,024 | 327,357 | 330,060 | 326,229 | 323,475 | 322,532 | 323,637 | 339,855 | 341,028 | 283,184 | 284,382 | 317,070 | 339,934 | 323,986 | 318,247 | 319,329 | 288,103 | 269,692 | 287,696 | 272,570 | | | |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALTO tk 11 | 324,846 | 329,370 | 324,095 | 325,588 | 323,396 | 324,734 | 323,676 | 340,162 | 342,863 | 290,358 | 290,469 | 326,311 | 343,390 | 330,419 | 328,348 | 323,984 | 287,461 | 272,673 | 291,757 | 274,663 | | |
| ALTO tk 12 | 333,392 | 333,077 | 330,975 | 332,654 | 326,578 | 325,494 | 329,858 | 344,854 | 347,788 | 294,798 | 291,198 | 330,976 | 348,444 | 334,762 | 327,277 | 326,973 | 291,552 | 274,545 | 292,511 | 277,527 | | |
| **ALTO Average** | **330,913** | **330,788** | **329,121** | **329,408** | **326,503** | **326,485** | **326,575** | **343,249** | **345,528** | **291,042** | **291,891** | **326,752** | **344,838** | **330,157** | **326,166** | **325,203** | **291,227** | **275,275** | **291,211** | **275,733** | | |
| Cents RF+3rds | 12,609 | 11,954 | 3,209 | 4,717 | -10,616 | -10,712 | -10,238 | -24,027 | -12,568 | -9,662 | -4,620 | -9,298 | -16,029 | 8,651 | -12,406 | -17,525 | -8,562 | -6,084 | -8,653 | -3,205 | | |
| Cents RF-3rds | 14,903 | 14,248 | 5,503 | 7,011 | -8,322 | -8,418 | -7,944 | -21,732 | -10,274 | -7,368 | -2,326 | -7,004 | -13,735 | 10,945 | -10,112 | -15,231 | -6,268 | -3,790 | -6,359 | -0,911 | | |
| Just Int I | 1,955 | 1,955 | 1,955 | 1,955 | -19,552 | -19,552 | -19,552 | -7,819 | -7,819 | -23,461 | -23,461 | -19,551 | -7,820 | -19,551 | -19,551 | -19,551 | -23,461 | -35,192 | -50,725 | -35,192 | | |
| Just Int II | 1,955 | 1,955 | 1,955 | 1,955 | 1,954 | 1,954 | 1,954 | 13,687 | 13,687 | -1,955 | -1,955 | 1,955 | 13,686 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -29,219 | -13,686 | | |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | -7,820 | -7,820 | -1,955 | -1,955 | 1,955 | -7,820 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | -1,955 | 7,820 | | |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | 13,686 | 13,686 | 3,422 | 3,422 | -3,421 | 13,686 | -3,421 | -3,421 | -3,421 | 3,422 | -13,686 | 3,422 | -13,686 | | |
| TENOR tk 01 | 275,911 | 275,949 | 272,040 | 272,070 | 260,724 | 257,833 | 227,175 | 215,706 | 195,036 | 192,967 | 217,213 | 217,761 | 245,566 | 244,100 | 270,740 | 293,474 | 325,132 | 273,513 | 269,936 | 289,798 | 243,173 | 163,401 |
| TENOR tk 02 | 275,696 | 276,231 | 273,331 | 274,679 | 262,304 | 258,064 | 227,399 | 219,122 | 194,758 | 192,963 | 217,565 | 218,666 | 246,529 | 244,576 | 275,396 | 289,157 | 324,219 | 273,530 | 273,143 | 288,997 | 242,749 | 161,848 |
| TENOR tk 03 | 275,847 | 275,550 | 272,729 | 273,851 | 260,360 | 258,735 | 227,387 | 217,761 | 193,436 | 192,382 | 216,590 | 218,085 | 244,057 | 244,873 | 274,648 | 291,394 | 327,894 | 273,524 | 273,027 | 289,611 | 244,440 | 163,445 |
| TENOR tk 04 | 273,648 | 273,972 | 271,250 | 272,303 | 258,831 | 257,487 | 227,545 | 215,225 | 192,450 | 191,838 | 215,299 | 215,352 | 246,506 | 243,563 | 273,462 | 291,444 | 326,194 | 272,630 | 272,712 | 290,313 | 244,139 | 162,574 |
| TENOR tk 05 | 273,624 | 271,962 | 272,358 | 272,556 | 259,179 | 257,871 | 227,583 | 215,702 | 193,812 | 192,173 | 215,166 | 216,256 | 245,432 | 242,321 | 273,697 | 289,360 | 324,882 | 272,684 | 271,979 | 288,537 | 243,220 | 161,937 |
| TENOR tk 06 | 276,503 | 275,303 | 273,758 | 273,339 | 261,507 | 259,024 | 226,334 | 217,241 | 194,941 | 191,925 | 217,694 | 217,305 | 245,010 | 244,859 | 272,616 | 290,697 | 325,598 | 273,393 | 271,790 | 288,971 | 242,611 | 162,871 |
| TENOR tk 07 | 273,750 | 273,651 | 270,914 | 272,759 | 259,360 | 256,106 | 225,892 | 216,244 | 192,523 | 190,405 | 214,643 | 217,204 | 245,113 | 241,833 | 272,412 | 289,638 | 325,340 | 272,389 | 270,913 | 288,796 | 242,451 | 162,017 |
| TENOR tk 08 | 274,054 | 274,287 | 271,977 | 271,663 | 260,289 | 258,148 | 228,134 | 215,787 | 192,710 | 193,463 | 215,615 | 219,147 | 246,664 | 245,213 | 272,758 | 288,017 | 327,678 | 273,444 | 271,029 | 287,956 | 243,052 | 162,417 |
| TENOR tk 09 | 272,599 | 273,537 | 269,832 | 269,894 | 257,754 | 253,910 | 226,430 | 215,364 | 191,073 | 191,966 | 215,139 | 215,442 | 243,014 | 241,313 | 272,327 | 289,415 | 323,490 | 274,485 | 272,232 | 288,760 | 243,518 | 162,106 |
| TENOR tk 10 | 273,674 | 270,116 | 270,336 | 270,601 | 259,371 | 255,037 | 225,922 | 213,259 | 190,767 | 191,130 | 212,535 | 214,611 | 241,253 | 240,701 | 270,982 | 288,155 | 321,158 | 269,920 | 266,986 | 284,237 | 241,066 | 160,387 |
| TENOR tk 11 | 274,078 | 272,060 | 270,832 | 269,292 | 257,388 | 254,872 | 225,859 | 214,598 | 191,638 | 192,080 | 215,149 | 215,439 | 244,843 | 242,828 | 275,367 | 291,478 | 324,898 | 276,868 | 273,827 | 289,212 | 245,341 | 163,374 |
| TENOR tk 12 | 275,603 | 273,997 | 272,218 | 272,365 | 259,886 | 260,595 | 230,351 | 217,241 | 193,272 | 195,574 | 217,018 | 218,010 | 245,925 | 245,886 | 274,924 | 292,142 | 325,728 | 273,704 | 272,178 | 291,559 | 243,516 | 164,446 |
| **TENOR Average** | **274,582** | **273,885** | **271,798** | **272,114** | **259,746** | **257,307** | **227,168** | **216,104** | **193,035** | **192,405** | **215,802** | **216,940** | **244,993** | **243,506** | **273,277** | **290,364** | **325,184** | **273,340** | **271,646** | **288,896** | **243,273** | **162,569** |
| Cents RF+3rds | -10,447 | -14,851 | -28,092 | -26,077 | -6,611 | -22,945 | -38,625 | -25,059 | -20,501 | -26,154 | -27,482 | -18,379 | -7,846 | -18,387 | -18,694 | -13,697 | -17,624 | -18,296 | -29,058 | -22,474 | -20,041 | -17,874 |
| Cents RF-3rds | -8,153 | -12,557 | -25,798 | -23,783 | -4,317 | -20,651 | -36,331 | -22,765 | -18,207 | -23,860 | -25,188 | -16,085 | -5,552 | -16,093 | -16,400 | -11,403 | -15,330 | -16,002 | -26,764 | -20,180 | -17,747 | -15,580 |
| Just Int I | -13,686 | -13,686 | -13,686 | -13,686 | 7,820 | 7,820 | -37,039 | -21,506 | -3,910 | -3,910 | -21,506 | -21,506 | -39,102 | -39,102 | -35,192 | -19,551 | -19,551 | -35,192 | -35,192 | -23,461 | -17,596 | -19,551 |
| Just Int II | -13,686 | -13,686 | -13,686 | -13,686 | 29,326 | 29,326 | -15,532 | 0,000 | 17,596 | 17,596 | 0,000 | 0,000 | -17,596 | -17,596 | -13,686 | -1,955 | 1,955 | -13,686 | -13,686 | -1,955 | 3,910 | 1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 7,820 | -5,865 | -5,865 | 4,955 | 0,000 | -3,910 | -3,910 | 0,000 | 0,000 | 3,910 | 3,910 | 7,820 | -1,955 | 1,955 | 7,820 | 7,820 | -1,955 | 3,910 | 1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -13,686 | 10,265 | 10,265 | 17,107 | 0,000 | 6,843 | 6,843 | 0,000 | 0,000 | -6,843 | -6,843 | -13,686 | 3,422 | -3,421 | -13,686 | -13,686 | 3,422 | -6,843 | -3,421 |
| BASS tk 01 | 220,667 | 222,104 | 218,029 | 195,796 | 196,370 | 129,415 | 129,083 | 130,479 | 171,112 | 174,023 | 173,762 | 171,271 | 163,284 | 143,410 | 137,420 | 108,125 | 115,239 | 108,677 | 103,265 | 108,869 | | |
| BASS tk 02 | 221,425 | 222,791 | 220,020 | 197,190 | 196,819 | 130,373 | 129,576 | 130,310 | 173,241 | 174,495 | 173,849 | 172,893 | 163,180 | 145,915 | 137,075 | 110,026 | 114,394 | 110,291 | 103,053 | 109,143 | | |
| BASS tk 03 | 220,420 | 221,499 | 218,954 | 196,055 | 196,886 | 130,580 | 128,875 | 128,859 | 173,444 | 175,121 | 174,891 | 172,868 | 164,520 | 145,781 | 137,019 | 109,497 | 115,440 | 109,960 | 103,401 | 110,526 | | |
| BASS tk 04 | 219,285 | 217,043 | 218,116 | 195,424 | 196,172 | 129,483 | 129,426 | 129,048 | 172,191 | 172,383 | 173,148 | 172,862 | 162,327 | 145,217 | 137,177 | 110,158 | 114,259 | 109,497 | 104,078 | 109,930 | | |
| BASS tk 05 | 220,089 | 221,360 | 218,539 | 196,307 | 197,411 | 129,299 | 129,216 | 129,434 | 171,992 | 172,800 | 171,696 | 171,708 | 164,249 | 144,264 | 137,124 | 108,697 | 113,897 | 109,388 | 102,287 | 109,365 | | |
| BASS tk 06 | 220,265 | 221,813 | 219,824 | 195,182 | 198,343 | 130,133 | 128,571 | 127,988 | 172,115 | 174,657 | 173,386 | 172,861 | 163,777 | 144,850 | 136,709 | 107,978 | 114,981 | 109,199 | 102,038 | 109,079 | | |
| BASS tk 07 | 217,515 | 218,317 | 216,783 | 192,187 | 193,534 | 128,853 | 127,726 | 128,375 | 169,396 | 172,606 | 171,213 | 169,589 | 162,093 | 146,467 | 137,797 | 110,755 | 114,789 | 108,185 | 101,471 | 108,568 | | |
| BASS tk 08 | 220,286 | 221,824 | 217,442 | 194,118 | 196,071 | 129,697 | 127,359 | 129,036 | 171,416 | 174,217 | 173,897 | 171,918 | 162,426 | 143,259 | 135,923 | 107,141 | 114,169 | 108,835 | 101,361 | 109,104 | | |
| BASS tk 09 | 218,752 | 221,644 | 217,427 | 194,180 | 196,018 | 129,480 | 127,598 | 129,177 | 171,455 | 174,207 | 174,046 | 171,913 | 162,512 | 143,492 | 135,493 | 107,073 | 114,106 | 108,722 | 101,443 | 109,104 | | |
| BASS tk 10 | 216,922 | 217,851 | 216,056 | 192,878 | 193,071 | 127,676 | 127,440 | 127,890 | 170,306 | 172,827 | 172,079 | 170,699 | 161,091 | 141,681 | 135,836 | 105,556 | 112,532 | 108,206 | 101,857 | 107,637 | | |
| BASS tk 11 | 218,618 | 218,810 | 215,983 | 193,321 | 194,690 | 129,034 | 127,781 | 127,850 | 170,721 | 171,777 | 170,054 | 171,322 | 162,232 | 146,911 | 137,803 | 109,086 | 114,188 | 108,894 | 103,090 | 109,521 | | |
| BASS tk 12 | 220,784 | 222,160 | 220,470 | 197,471 | 198,301 | 131,053 | 129,650 | 130,400 | 173,218 | 174,727 | 174,246 | 174,057 | 166,305 | 146,083 | 138,905 | 108,621 | 115,415 | 111,083 | 102,915 | 109,258 | | |
| **BASS Average** | **219,586** | **220,601** | **218,137** | **195,009** | **196,140** | **129,590** | **128,525** | **129,070** | **171,717** | **173,653** | **173,022** | **171,997** | **163,166** | **144,778** | **137,023** | **108,559** | **114,451** | **109,245** | **102,522** | **109,175** | | |
| Cents RF+3rds | 2,608 | 10,597 | -8,853 | -2,884 | 7,132 | -10,393 | -24,673 | -17,342 | -23,090 | -3,681 | -9,983 | -20,276 | -11,520 | -18,527 | -13,827 | -16,951 | -25,460 | -6,055 | -16,018 | -7,155 | | |
| Cents RF-3rds | 4,902 | 12,891 | -6,559 | -0,590 | 9,426 | -8,099 | -22,379 | -15,048 | -20,796 | -1,387 | -7,689 | -17,982 | -9,226 | -16,233 | -11,533 | -14,657 | -23,166 | -3,761 | -13,724 | -4,861 | | |
| Just Int I | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 7,820 | 7,820 | 7,820 | -7,819 | -7,819 | -56,590 | -56,590 | -19,551 | -19,551 | -35,192 | -21,506 | -16,551 | -21,506 | -33,237 | -21,506 | | |
| Just Int II | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 29,326 | 29,326 | 29,326 | 13,687 | 13,687 | -35,084 | -35,084 | 1,955 | -1,955 | -13,686 | 0,000 | 4,955 | 0,000 | -11,731 | 0,000 | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | -3,910 | -3,910 | -5,865 | -5,865 | -5,865 | -7,820 | -7,820 | -7,820 | -7,820 | 1,955 | -1,955 | 7,820 | 0,000 | -9,775 | 0,000 | 9,775 | 0,000 | | |
| Meantone | 0,000 | 0,000 | 0,000 | 6,843 | 6,843 | 10,265 | 10,265 | 10,265 | 13,686 | 13,686 | 13,686 | 13,686 | -3,421 | 3,422 | -13,686 | 0,000 | 17,107 | 0,000 | -17,108 | 0,000 | | |
| **Fourth Phrase** | | | | | | | | | | | | | | | | | | | | | | |

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOPRANO tk 01 | 367,159 | 367,642 | 367,082 | 328,723 | 290,459 | 383,865 | 383,771 | 391,834 | 385,923 | 363,281 | 326,300 | 430,158 | 433,251 | 382,055 | 434,376 | 485,539 | 361,936 | 327,445 | 371,546 | 388,949 |
| SOPRANO tk 02 | 365,116 | 368,977 | 367,649 | 328,129 | 294,894 | 386,080 | 386,643 | 391,336 | 387,508 | 362,821 | 328,084 | 434,483 | 431,808 | 381,561 | 431,617 | 493,496 | 365,642 | 326,227 | 378,583 | 390,357 |
| SOPRANO tk 03 | 365,950 | 369,178 | 368,888 | 331,974 | 296,134 | 390,605 | 388,481 | 386,594 | 382,302 | 364,446 | 328,416 | 444,102 | 435,279 | 394,066 | 439,752 | 487,957 | 365,524 | 324,765 | 366,207 | 381,379 |
| SOPRANO tk 04 | 368,236 | 368,959 | 366,740 | 329,365 | 295,245 | 389,270 | 386,683 | 386,719 | 381,719 | 358,038 | 326,151 | 439,703 | 432,022 | 383,548 | 431,374 | 485,993 | 364,259 | 325,859 | 370,316 | 387,346 |
| SOPRANO tk 05 | 365,246 | 361,549 | 367,102 | 327,094 | 293,588 | 383,726 | 385,281 | 385,211 | 383,823 | 363,811 | 328,555 | 431,427 | 429,970 | 380,787 | 432,934 | 488,338 | 358,521 | 316,179 | 366,192 | 378,197 |
| SOPRANO tk 06 | 371,724 | 370,457 | 367,935 | 329,569 | 296,688 | 386,603 | 383,039 | 384,985 | 390,032 | 367,574 | 334,520 | 435,373 | 436,203 | 384,118 | 432,900 | 489,411 | 362,973 | 328,488 | 375,515 | 390,035 |
| SOPRANO tk 07 | 366,692 | 372,494 | 366,850 | 329,439 | 292,947 | 390,773 | 387,058 | 393,308 | 386,725 | 365,851 | 331,438 | 434,016 | 434,278 | 384,262 | 429,615 | 489,621 | 357,683 | 326,486 | 369,986 | 387,142 |
| SOPRANO tk 08 | 364,991 | 367,598 | 371,250 | 328,699 | 290,769 | 379,986 | 382,355 | 385,170 | 385,478 | 362,583 | 324,007 | 433,318 | 433,841 | 386,137 | 438,989 | 493,339 | 360,430 | 326,511 | 367,775 | 389,375 |
| SOPRANO tk 09 | 365,762 | 364,164 | 367,131 | 328,094 | 287,529 | 388,352 | 384,684 | 383,743 | 382,329 | 361,425 | 325,365 | 438,149 | 431,092 | 383,362 | 435,536 | 487,896 | 363,179 | 323,536 | 370,166 | 385,945 |
| SOPRANO tk 10 | 366,143 | 366,494 | 366,930 | 325,406 | 297,804 | 384,242 | 383,834 | 382,475 | 380,035 | 363,143 | 323,510 | 436,280 | 430,622 | 384,513 | 429,702 | 484,687 | 362,404 | 320,538 | 365,497 | 381,070 |
| SOPRANO tk 11 | 367,254 | 368,052 | 366,323 | 323,115 | 293,107 | 386,378 | 388,962 | 387,087 | 386,380 | 360,457 | 321,429 | 448,751 | 429,513 | 386,337 | 448,751 | 491,920 | 366,213 | 324,190 | 370,544 | 388,973 |
| SOPRANO tk 12 | 366,877 | 369,858 | 368,988 | 328,125 | 289,543 | 392,923 | 391,984 | 392,529 | 390,575 | 368,782 | 331,051 | 439,915 | 434,442 | 387,121 | 432,813 | 491,281 | 363,545 | 323,474 | 366,084 | 384,833 |
| SOPRANO Average | **366,762** | **367,952** | **367,739** | **328,144** | **293,226** | **386,900** | **386,064** | **387,583** | **385,236** | **363,518** | **327,402** | **437,140** | **432,693** | **384,822** | **434,863** | **489,123** | **362,692** | **324,475** | **369,868** | **386,133** |
| Cents RF+3rds | 5,370 | 10,974 | 9,973 | 12,751 | 17,968 | -2,091 | -5,835 | 0,959 | -9,555 | -10,015 | 8,832 | 9,268 | -8,432 | -11,415 | 0,229 | 3,791 | -13,949 | -6,718 | 19,965 | -5,526 |
| Cents RF-3rds | 9,705 | 15,310 | 14,309 | 17,087 | 22,303 | 2,244 | -1,500 | 5,295 | -5,220 | -5,679 | 13,168 | 13,603 | -4,096 | -7,079 | 4,564 | 8,127 | -9,614 | -2,382 | 24,301 | -1,191 |
| Just Int I | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Just Int II | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 3,910 | 0,000 | -1,955 | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | 7,820 | 3,910 | 7,820 | -1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -6,843 | 0,000 | 3,422 | 3,422 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | 3,422 | -3,421 | -10,264 | -13,686 | -6,843 | -13,686 | 3,422 |
| ALTO tk 01 | 292,633 | 290,198 | 289,536 | 274,051 | 246,953 | 329,947 | 327,716 | 327,436 | 327,315 | 295,773 | 276,709 | 367,414 | 368,720 | 386,863 | 369,329 | 328,311 | 292,653 | 275,302 | 276,159 | 289,778 |
| ALTO tk 02 | 295,109 | 295,278 | 294,485 | 277,302 | 250,662 | 330,838 | 329,892 | 329,531 | 329,017 | 295,871 | 281,308 | 366,977 | 369,620 | 388,061 | 368,470 | 326,933 | 290,924 | 275,673 | 275,734 | 291,923 |
| ALTO tk 03 | 295,397 | 294,999 | 293,698 | 279,088 | 245,753 | 333,254 | 328,413 | 327,414 | 325,796 | 293,480 | 277,162 | 367,210 | 368,019 | 386,092 | 371,368 | 326,388 | 293,470 | 272,556 | 274,728 | 291,714 |
| ALTO tk 04 | 294,939 | 294,561 | 294,126 | 278,295 | 249,186 | 329,491 | 329,172 | 326,881 | 325,659 | 291,548 | 277,979 | 367,920 | 366,628 | 385,394 | 368,735 | 326,074 | 290,939 | 274,317 | 278,186 | 289,942 |
| ALTO tk 05 | 292,716 | 292,919 | 294,900 | 277,581 | 244,979 | 327,814 | 328,369 | 328,410 | 324,460 | 288,586 | 270,760 | 362,434 | 363,441 | 382,976 | 363,292 | 326,374 | 288,617 | 271,505 | 271,870 | 287,759 |
| ALTO tk 06 | 293,400 | 291,923 | 294,672 | 278,509 | 246,748 | 328,761 | 330,555 | 329,471 | 326,014 | 292,231 | 276,669 | 364,403 | 367,926 | 385,198 | 364,520 | 324,450 | 291,450 | 275,290 | 274,749 | 289,582 |
| ALTO tk 07 | 293,488 | 295,698 | 294,114 | 277,358 | 246,949 | 330,042 | 328,167 | 329,382 | 330,173 | 294,314 | 272,966 | 367,044 | 369,515 | 383,842 | 366,156 | 322,054 | 288,163 | 273,358 | 275,120 | 287,639 |
| ALTO tk 08 | 293,201 | 290,348 | 293,045 | 276,356 | 245,040 | 330,899 | 329,642 | 329,171 | 327,774 | 290,897 | 276,193 | 366,596 | 368,566 | 385,613 | 368,625 | 327,340 | 288,951 | 275,175 | 276,649 | 290,411 |
| ALTO tk 09 | 291,801 | 292,190 | 290,889 | 278,281 | 244,946 | 328,839 | 325,884 | 324,498 | 323,230 | 288,892 | 277,700 | 364,481 | 364,076 | 379,396 | 364,529 | 323,704 | 287,569 | 272,492 | 274,529 | 287,487 |
| ALTO tk 10 | 288,956 | 288,617 | 288,731 | 269,651 | 242,198 | 325,183 | 323,891 | 326,169 | 323,387 | 289,553 | 270,552 | 363,677 | 365,006 | 382,630 | 363,778 | 321,598 | 287,396 | 273,100 | 272,110 | 286,914 |
| ALTO tk 11 | 292,620 | 292,733 | 289,668 | 277,623 | 244,801 | 326,517 | 324,855 | 323,808 | 323,807 | 290,352 | 275,548 | 366,352 | 364,218 | 382,176 | 364,096 | 327,507 | 289,973 | 272,160 | 274,007 | 289,031 |
| ALTO tk 12 | 292,131 | 293,269 | 292,448 | 277,680 | 244,583 | 329,700 | 325,993 | 328,868 | 326,706 | 297,987 | 278,290 | 370,953 | 369,119 | 387,988 | 369,943 | 328,012 | 292,353 | 275,317 | 273,379 | 289,931 |
| ALTO Average | **293,033** | **292,728** | **292,526** | **276,815** | **246,066** | **329,274** | **327,712** | **327,586** | **326,111** | **292,457** | **275,986** | **366,288** | **367,071** | **384,686** | **366,903** | **325,729** | **290,205** | **273,854** | **274,768** | **289,342** |
| Cents RF+3rds | 16,828 | 15,025 | 13,833 | 18,260 | 14,411 | 18,700 | 10,471 | 9,806 | 1,992 | 13,425 | 13,071 | 3,130 | 6,827 | -12,028 | 6,035 | -0,039 | 0,040 | -0,358 | 5,414 | -5,112 |
| Cents RF-3rds | 21,164 | 19,360 | 18,169 | 22,595 | 18,747 | 23,035 | 14,807 | 14,141 | 6,328 | 17,761 | 17,407 | 7,466 | 11,163 | -7,693 | 10,371 | 4,296 | 4,376 | 3,977 | 9,749 | -0,776 |
| Just Int I | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Just Int II | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Pythagorean | 0,000 | 0,000 | 0,000 | 9,775 | 5,865 | 3,910 | 3,910 | 3,910 | 3,910 | 0,000 | 9,775 | 7,820 | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 9,775 | 0,000 |
| Meantone | 0,000 | 0,000 | 0,000 | -17,108 | -10,264 | -6,843 | -6,843 | -6,843 | -6,843 | 0,000 | -17,108 | -13,686 | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | -17,108 | 0,000 |
| TENOR tk 01 | 241,753 | 241,680 | 242,456 | 217,640 | 197,130 | 274,021 | 272,158 | 275,436 | 268,940 | 241,222 | 218,774 | 290,258 | 287,744 | 290,405 | 287,754 | 216,072 | 215,276 | 193,888 | | |
| TENOR tk 02 | 241,708 | 242,017 | 242,842 | 217,404 | 198,539 | 275,061 | 272,422 | 272,836 | 269,719 | 241,611 | 222,098 | 290,085 | 290,613 | 292,676 | 290,299 | 217,010 | 215,617 | 194,085 | | |
| TENOR tk 03 | 243,633 | 242,975 | 244,051 | 218,292 | 195,235 | 273,752 | 271,850 | 272,082 | 271,926 | 241,808 | 221,266 | 291,688 | 287,876 | 291,740 | 290,018 | 216,389 | 216,121 | 193,421 | | |
| TENOR tk 04 | 242,467 | 241,988 | 241,890 | 215,972 | 194,005 | 272,292 | 269,927 | 271,027 | 269,370 | 241,694 | 219,082 | 289,458 | 287,719 | 290,839 | 289,191 | 215,952 | 214,384 | 192,378 | | |
| TENOR tk 05 | 244,251 | 242,129 | 242,891 | 217,155 | 195,175 | 271,570 | 270,164 | 270,321 | 266,465 | 240,484 | 218,175 | 287,186 | 287,456 | 289,536 | 286,398 | 213,836 | 212,953 | 189,460 | | |
| TENOR tk 06 | 242,912 | 242,852 | 241,405 | 218,481 | 196,672 | 271,991 | 271,926 | 275,310 | 269,244 | 243,301 | 220,759 | 290,348 | 290,007 | 294,894 | 289,219 | 218,382 | 216,399 | 193,506 | | |
| TENOR tk 07 | 243,710 | 241,364 | 243,688 | 214,020 | 195,457 | 273,503 | 271,896 | 271,380 | 269,867 | 242,101 | 219,825 | 289,235 | 287,552 | 289,608 | 288,384 | 216,712 | 214,950 | 192,001 | | |
| TENOR tk 08 | 241,863 | 241,043 | 242,477 | 215,969 | 195,216 | 272,544 | 270,369 | 272,706 | 269,639 | 240,928 | 221,136 | 287,522 | 286,101 | 289,117 | 288,860 | 216,529 | 216,294 | 192,051 | | |
| TENOR tk 09 | 240,860 | 239,101 | 241,189 | 213,767 | 193,780 | 270,141 | 269,483 | 271,120 | 268,253 | 239,481 | 210,429 | 286,002 | 285,021 | 290,523 | 284,846 | 214,013 | 213,338 | 189,798 | | |
| TENOR tk 10 | 238,879 | 238,566 | 238,890 | 213,710 | 192,131 | 271,939 | 268,481 | 270,668 | 267,672 | 239,032 | 218,238 | 290,323 | 285,446 | 286,943 | 284,287 | 213,892 | 214,940 | 189,645 | | |

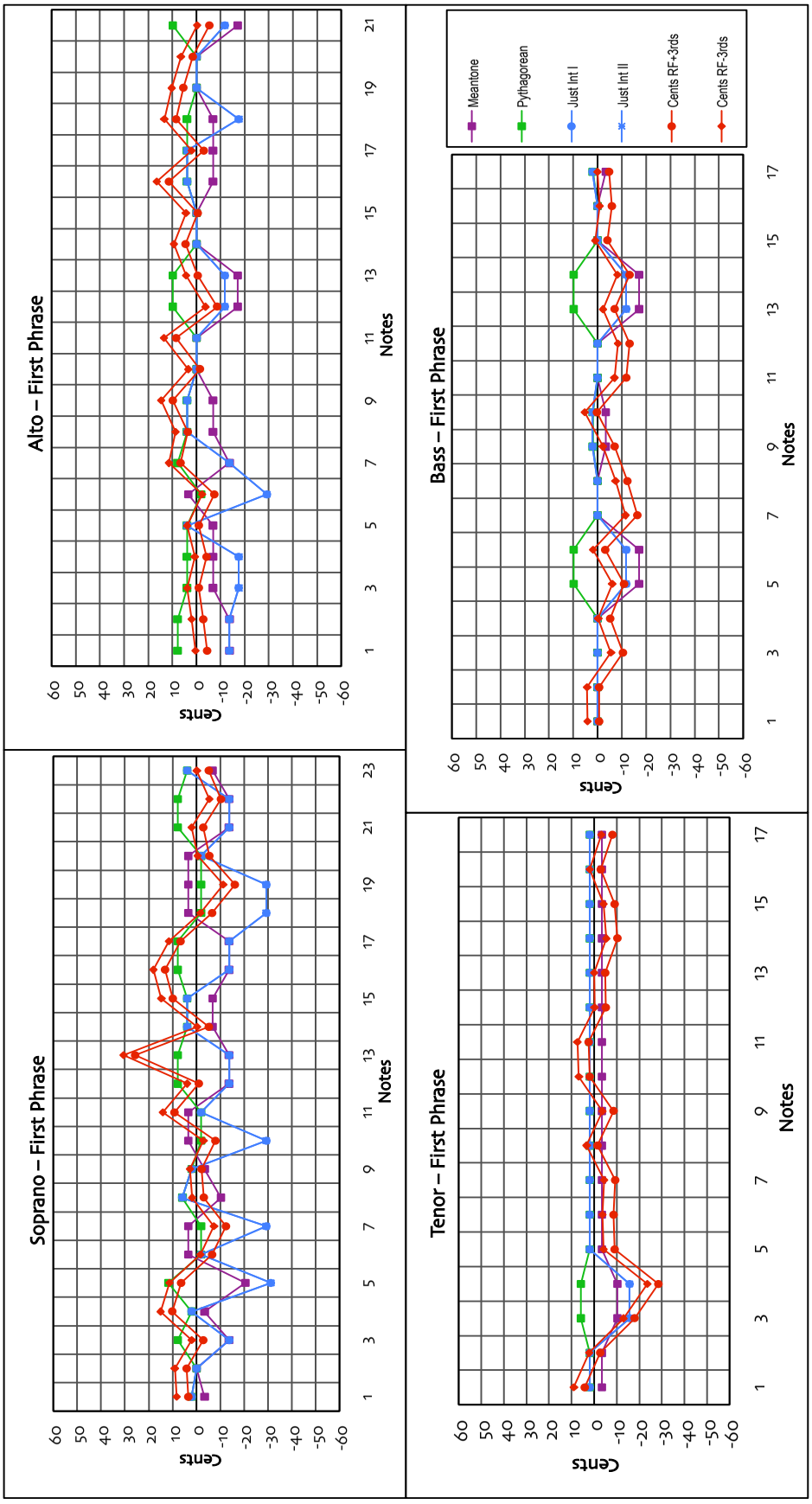
| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TENOR tk 11 | 242,147 | 241,291 | 240,601 | 215,295 | 195,193 | 274,841 | 272,456 | 272,647 | 269,498 | 242,627 | 218,011 | 289,996 | 287,635 | 290,218 | 286,706 | 216,407 | 213,551 | 192,309 |
| TENOR tk 12 | 243,378 | 243,535 | 242,435 | 217,911 | 196,473 | 272,983 | 271,082 | 271,765 | 269,626 | 242,373 | 219,696 | 286,517 | 288,495 | 289,160 | 287,850 | 216,247 | 214,898 | 193,332 |
| **TENOR Average** | **242,297** | **241,545** | **242,068** | **216,302** | **195,417** | **272,886** | **271,018** | **272,275** | **269,185** | **241,389** | **218,958** | **289,051** | **287,639** | **290,472** | **287,818** | **215,953** | **214,893** | **192,156** |
| Cents RF+3rds | -12,315 | -17,695 | -13,951 | -8,793 | 15,424 | -6,484 | -18,380 | -10,369 | -30,129 | -18,817 | 12,336 | -6,854 | -15,336 | 1,631 | -14,259 | -11,582 | -20,100 | -13,711 |
| Cents RF-3rds | -7,979 | -13,359 | -9,616 | -4,457 | 19,760 | -2,149 | -14,044 | -6,033 | -25,793 | -14,481 | 16,672 | -2,519 | -11,000 | 5,966 | -9,923 | -7,247 | -15,764 | -9,376 |
| Just Int I | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Just Int II | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Pythagorean | 5,865 | 5,865 | 5,865 | 1,955 | -1,955 | 9,775 | 9,775 | 9,775 | 9,775 | 5,865 | 1,955 | 0,000 | 0,000 | 0,000 | 0,000 | 1,955 | 1,955 | -1,955 |
| Meantone | -10,264 | -10,264 | -10,264 | -3,421 | -29,219 | -17,108 | -17,108 | -17,108 | -17,108 | -10,264 | -3,421 | 0,000 | 0,000 | 0,000 | 0,000 | -3,421 | -3,421 | 3,422 |
| BASS tk 01 | 190,795 | 192,465 | 191,688 | 182,169 | 163,552 | 214,983 | 215,033 | 216,590 | 214,162 | 190,683 | 182,120 | 240,450 | 243,022 | 216,287 | 204,213 | 216,844 | 109,598 | 122,924 |
| BASS tk 02 | 192,182 | 192,066 | 193,666 | 183,770 | 164,263 | 216,277 | 216,648 | 216,638 | 214,748 | 191,323 | 184,388 | 242,694 | 244,513 | 216,280 | 205,271 | 217,463 | 108,619 | 123,159 |
| BASS tk 03 | 193,320 | 192,993 | 194,227 | 184,483 | 167,207 | 219,764 | 216,792 | 218,489 | 215,885 | 193,506 | 185,118 | 242,919 | 244,360 | 219,908 | 205,164 | 217,858 | 107,891 | 123,125 |
| BASS tk 04 | 194,012 | 193,494 | 192,469 | 183,582 | 163,318 | 217,381 | 215,949 | 217,470 | 215,359 | 193,111 | 182,702 | 240,427 | 243,945 | 217,943 | 202,342 | 217,149 | 109,921 | 122,716 |
| BASS tk 05 | 192,483 | 192,363 | 193,009 | 181,265 | 161,849 | 214,411 | 215,052 | 217,816 | 214,450 | 191,564 | 182,117 | 241,879 | 244,424 | 215,358 | 201,405 | 213,520 | 104,963 | 120,260 |
| BASS tk 06 | 194,440 | 193,648 | 193,589 | 184,367 | 166,206 | 219,923 | 218,639 | 219,611 | 215,869 | 192,277 | 181,692 | 243,971 | 244,178 | 218,084 | 206,167 | 217,552 | 108,913 | 122,937 |
| BASS tk 07 | 193,654 | 193,839 | 192,364 | 181,481 | 166,181 | 219,723 | 217,154 | 218,880 | 215,681 | 194,592 | 184,376 | 242,553 | 247,071 | 219,767 | 202,875 | 215,145 | 107,326 | 121,978 |
| BASS tk 08 | 192,917 | 192,535 | 190,469 | 183,995 | 168,381 | 215,820 | 215,501 | 218,368 | 215,088 | 192,668 | 183,292 | 241,383 | 246,752 | 218,125 | 201,730 | 216,296 | 108,876 | 121,878 |
| BASS tk 09 | 192,215 | 191,176 | 191,284 | 183,681 | 165,409 | 214,157 | 214,729 | 216,323 | 212,422 | 189,725 | 179,329 | 240,461 | 241,482 | 218,295 | 204,662 | 215,451 | 106,622 | 119,789 |
| BASS tk 10 | 189,657 | 190,339 | 190,131 | 180,292 | 161,961 | 214,703 | 212,873 | 213,743 | 212,964 | 191,780 | 179,394 | 241,505 | 242,018 | 214,137 | 201,901 | 214,921 | 106,134 | 118,919 |
| BASS tk 11 | 192,449 | 191,396 | 191,250 | 182,670 | 164,014 | 212,356 | 214,325 | 211,739 | 216,055 | 192,161 | 183,975 | 241,393 | 242,468 | 221,379 | 203,757 | 216,926 | 106,709 | 120,540 |
| BASS tk 12 | 193,638 | 194,260 | 194,895 | 184,326 | 165,662 | 218,598 | 217,695 | 217,557 | 216,806 | 193,587 | 183,772 | 247,035 | 242,337 | 217,282 | 205,661 | 216,976 | 109,098 | 123,170 |
| **BASS Average** | **192,647** | **192,548** | **192,420** | **183,007** | **164,834** | **216,508** | **215,866** | **216,935** | **214,957** | **192,248** | **182,690** | **242,222** | **243,881** | **217,737** | **203,762** | **216,342** | **107,889** | **121,783** |
| Cents RF+3rds | -9,295 | -10,186 | -11,333 | 1,831 | 20,767 | -7,142 | -12,284 | -3,727 | -19,585 | -12,881 | -1,173 | -12,847 | -1,033 | 2,658 | -12,181 | -8,471 | -12,987 | -3,273 |
| Cents RF-3rds | -4,960 | -5,850 | -6,997 | 6,167 | 25,102 | -2,806 | -7,948 | 0,608 | -15,249 | -8,545 | 3,163 | -8,511 | 3,303 | 6,993 | -7,845 | -4,135 | -8,651 | 1,063 |
| Just Int I | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Just Int II | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Pythagorean | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | 5,865 | 5,865 | 1,955 | 11,730 | 1,955 | 1,955 | 5,865 |
| Meantone | -29,219 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | -3,421 | -3,421 | -29,219 | -13,686 | -10,264 | -10,264 | -3,421 | -20,530 | -3,421 | 3,421 | -15,641 |

**Fifth Phrase**

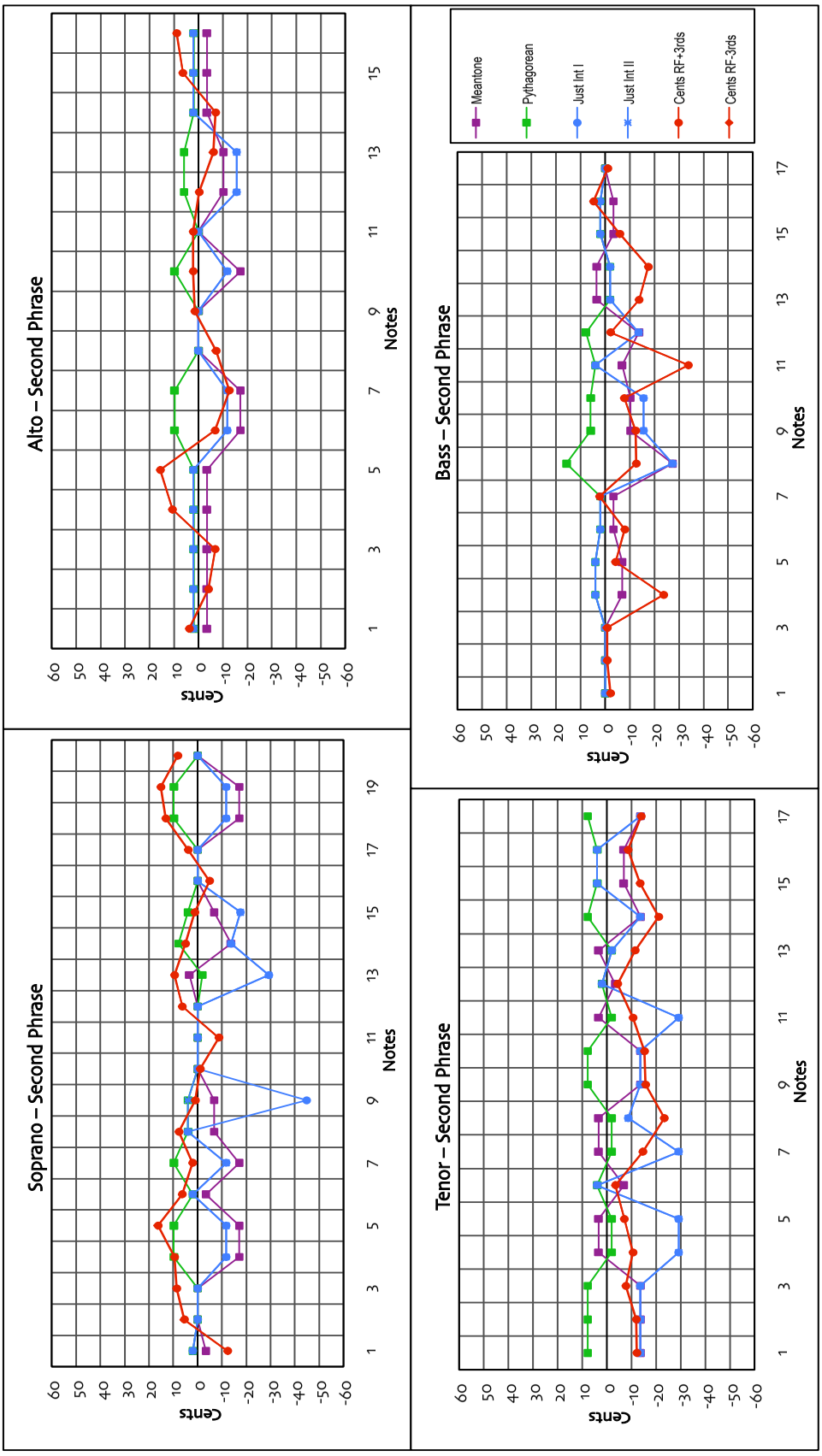
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SOPRANO tk 01 | 388,574 | 584,277 | 606,284 | 659,224 | 488,799 | 550,021 | 585,938 | 556,510 | 489,480 | 438,683 | 595,120 | 383,870 | 363,047 | 325,622 | 326,135 | 294,896 |
| SOPRANO tk 02 | 387,814 | 583,292 | 606,313 | 656,550 | 489,658 | 554,795 | 586,278 | 561,065 | 490,763 | 439,137 | 595,685 | 385,237 | 364,689 | 326,439 | 331,546 | 295,320 |
| SOPRANO tk 03 | 387,012 | 583,205 | 610,686 | 659,448 | 482,070 | 550,569 | 584,001 | 558,160 | 493,979 | 436,301 | 599,359 | 395,331 | 368,470 | 327,325 | 327,083 | 290,282 |
| SOPRANO tk 04 | 388,056 | 580,075 | 603,584 | 655,040 | 481,752 | 546,671 | 577,746 | 552,793 | 492,042 | 429,052 | 587,380 | 384,735 | 360,753 | 323,830 | 325,565 | 289,016 |
| SOPRANO tk 05 | 385,033 | 576,973 | 603,672 | 651,531 | 473,833 | 544,663 | 572,728 | 548,377 | 489,698 | 428,121 | 586,515 | 384,423 | 359,366 | 322,517 | 325,917 | 289,712 |
| SOPRANO tk 06 | 389,014 | 584,607 | 618,738 | 658,435 | 480,045 | 547,869 | 577,177 | 551,683 | 486,560 | 434,307 | 584,875 | 387,863 | 363,354 | 323,922 | 327,231 | 290,522 |
| SOPRANO tk 07 | 382,382 | 579,745 | 606,840 | 661,273 | 479,517 | 547,856 | 581,522 | 553,056 | 492,351 | 439,717 | 592,797 | 385,941 | 363,587 | 319,495 | 326,129 | 292,263 |
| SOPRANO tk 08 | 387,788 | 579,080 | 608,535 | 657,893 | 475,348 | 541,067 | 572,881 | 542,167 | 480,327 | 422,539 | 589,278 | 379,781 | 360,037 | 315,192 | 323,814 | 287,966 |
| SOPRANO tk 09 | 385,158 | 579,438 | 603,854 | 648,226 | 479,032 | 546,530 | 574,703 | 547,630 | 486,154 | 422,090 | 584,567 | 385,179 | 360,432 | 316,552 | 323,491 | 287,665 |
| SOPRANO tk 10 | 382,270 | 581,332 | 604,955 | 660,121 | 479,109 | 544,337 | 575,844 | 548,689 | 490,481 | 429,381 | 582,500 | 377,659 | 360,513 | 320,303 | 322,650 | 289,250 |
| SOPRANO tk 11 | 390,028 | 581,496 | 599,923 | 646,934 | 478,719 | 545,965 | 576,702 | 541,827 | 485,460 | 429,710 | 574,833 | 386,654 | 364,404 | 319,983 | 324,116 | 291,237 |
| SOPRANO tk 12 | 388,706 | 582,272 | 611,684 | 659,684 | 492,002 | 554,491 | 586,558 | 563,501 | 498,907 | 430,158 | 585,719 | 387,829 | 365,654 | 323,301 | 325,461 | 290,694 |
| **SOPRANO Average** | **386,820** | **581,316** | **607,089** | **656,197** | **481,657** | **547,903** | **579,340** | **552,121** | **489,683** | **431,600** | **588,219** | **385,375** | **362,859** | **322,040** | **325,761** | **290,735** |
| Cents RF+3rds | 3,305 | 8,499 | -16,398 | 18,265 | -17,081 | 6,016 | 2,604 | 19,295 | 11,531 | -7,056 | 28,936 | -3,173 | -7,399 | -14,000 | 5,891 | 8,959 |
| Cents RF-3rds | 2,797 | 7,991 | -16,906 | 17,757 | -17,589 | 5,508 | 2,096 | 18,787 | 11,023 | -7,563 | 28,428 | -3,680 | -7,906 | -14,508 | 5,383 | 8,452 |
| Just Int I | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 |
| Just Int II | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 |
| Pythagorean | -1,955 | 0,000 | 13,685 | 3,910 | 5,865 | 9,775 | 0,000 | 9,775 | 5,865 | 1,955 | 0,000 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Meantone | 3,422 | 0,000 | -23,951 | -6,843 | -10,264 | -17,108 | 0,000 | -17,108 | -10,264 | -3,421 | 0,000 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 |
| ALTO tk 01 | 365,567 | 385,617 | 369,134 | 326,369 | 292,313 | 272,054 | 289,800 | 291,099 | 290,775 | 276,868 | 276,300 | 293,750 | | | | |
| ALTO tk 02 | 364,039 | 385,908 | 368,718 | 328,850 | 295,295 | 276,267 | 297,674 | 294,947 | 293,522 | 278,221 | 279,451 | 294,831 | | | | |
| ALTO tk 03 | 368,607 | 387,127 | 369,844 | 326,785 | 291,719 | 274,422 | 293,609 | 293,248 | 293,226 | 276,784 | 278,883 | 294,548 | | | | |
| ALTO tk 04 | 365,415 | 383,075 | 366,577 | 327,047 | 294,283 | 274,015 | 291,582 | 291,187 | 290,103 | 274,449 | 275,359 | 291,671 | | | | |
| ALTO tk 05 | 361,750 | 378,993 | 364,603 | 324,047 | 289,725 | 276,966 | 292,127 | 291,656 | 290,346 | 273,490 | 274,897 | 289,286 | | | | |
| ALTO tk 06 | 365,494 | 387,458 | 368,380 | 326,064 | 289,334 | 274,262 | 290,900 | 288,950 | 291,903 | 275,513 | 275,258 | 293,020 | | | | |
| ALTO tk 07 | 363,604 | 378,055 | 367,941 | 324,391 | 289,620 | 275,570 | 292,737 | 291,331 | 290,824 | 273,929 | 276,200 | 293,255 | | | | |
| ALTO tk 08 | 366,937 | 383,112 | 367,175 | 325,844 | 288,934 | 273,557 | 291,920 | 289,206 | 290,414 | 273,770 | 272,887 | 290,185 | | | | |
| ALTO tk 09 | 361,712 | 379,866 | 363,727 | 324,507 | 291,025 | 273,008 | 288,851 | 290,168 | 287,809 | 271,902 | 272,204 | 288,478 | | | | |
| ALTO tk 10 | 361,889 | 382,109 | 362,327 | 321,551 | 287,170 | 272,276 | 289,937 | 290,242 | 287,668 | 272,226 | 273,142 | 289,106 | | | | |
| ALTO tk 11 | 364,643 | 383,783 | 363,851 | 323,716 | 288,250 | 274,918 | 291,315 | 292,406 | 289,658 | 272,911 | 275,011 | 289,352 | | | | |
| ALTO tk 12 | 365,747 | 384,482 | 368,615 | 325,347 | 291,121 | 272,649 | 295,574 | 292,870 | 292,241 | 277,359 | 277,046 | 292,351 | | | | |
| ALTO Average | **364,617** | **383,298** | **366,741** | **325,376** | **290,733** | **274,164** | **292,169** | **291,443** | **290,707** | **274,785** | **275,553** | **291,653** | | | | |
| Cents RF+3rds | 0,970 | -12,526 | 11,025 | 3,843 | 8,943 | 7,357 | 17,474 | 13,166 | 8,793 | 11,277 | 16,109 | 14,413 | | | | |
| Cents RF-3rds | 0,462 | -13,034 | 10,517 | 3,335 | 8,435 | 6,849 | 16,966 | 12,659 | 8,285 | 10,769 | 15,601 | 13,906 | | | | |
| Just Int I | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | | | |
| Just Int II | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | | | |
| Pythagorean | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | | | | |
| Meantone | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | | | | |
| TENOR tk 01 | 258,478 | 286,897 | 255,865 | 244,733 | 286,618 | 270,518 | 238,755 | 215,845 | 218,058 | 193,480 | 215,638 | 192,180 | 192,882 | 182,816 | | |
| TENOR tk 02 | 258,360 | 286,921 | 257,355 | 246,733 | 288,303 | 269,924 | 244,425 | 217,363 | 218,725 | 193,256 | 216,196 | 192,674 | 193,862 | 183,878 | | |
| TENOR tk 03 | 258,839 | 288,573 | 257,634 | 245,871 | 289,142 | 271,945 | 241,205 | 216,706 | 218,939 | 193,944 | 217,454 | 192,354 | 193,369 | 183,711 | | |
| TENOR tk 04 | 261,056 | 285,397 | 256,861 | 245,031 | 289,353 | 269,651 | 239,335 | 215,704 | 219,185 | 190,222 | 215,994 | 190,190 | 191,405 | 181,758 | | |
| TENOR tk 05 | 252,452 | 284,844 | 252,175 | 241,304 | 285,100 | 268,692 | 237,504 | 215,324 | 216,082 | 190,002 | 213,111 | 189,109 | 191,164 | 180,597 | | |
| TENOR tk 06 | 260,875 | 288,517 | 257,695 | 245,635 | 288,357 | 269,017 | 239,114 | 216,990 | 217,368 | 192,629 | 215,866 | 190,596 | 192,466 | 183,359 | | |
| TENOR tk 07 | 257,242 | 284,413 | 253,497 | 242,587 | 285,129 | 268,889 | 240,691 | 215,585 | 216,722 | 192,057 | 215,270 | 190,514 | 192,166 | 181,985 | | |
| TENOR tk 08 | 255,810 | 286,575 | 254,263 | 242,775 | 285,032 | 269,481 | 238,345 | 214,385 | 216,539 | 190,059 | 214,039 | 190,393 | 190,382 | 181,387 | | |
| TENOR tk 09 | 256,488 | 284,632 | 253,779 | 241,597 | 284,494 | 268,915 | 239,741 | 214,039 | 218,215 | 189,703 | 213,483 | 187,839 | 190,542 | 180,578 | | |
| TENOR tk 10 | 254,827 | 284,344 | 252,328 | 240,347 | 286,203 | 268,726 | 238,131 | 213,764 | 214,721 | 190,909 | 212,009 | 189,753 | 190,884 | 180,339 | | |
| TENOR tk 11 | 258,395 | 288,166 | 255,157 | 240,327 | 285,412 | 268,927 | 239,305 | 213,741 | 215,840 | 189,412 | 215,423 | 190,450 | 191,440 | 181,721 | | |
| TENOR tk 12 | 259,107 | 287,368 | 256,370 | 244,848 | 288,857 | 269,825 | 241,232 | 217,161 | 219,965 | 193,570 | 215,324 | 192,533 | 193,534 | 182,872 | | |
| TENOR Average | **257,661** | **286,387** | **255,248** | **243,482** | **286,833** | **269,542** | **239,815** | **215,551** | **217,530** | **191,604** | **214,984** | **190,715** | **192,008** | **182,084** | | |
| Cents RF+3rds | -0,122 | -17,128 | -16,406 | 1,893 | -14,433 | -22,074 | -24,379 | -9,057 | 6,769 | -12,939 | -13,613 | -20,983 | -9,287 | -1,168 | | |
| Cents RF-3rds | -0,630 | -17,636 | -16,914 | 1,385 | -14,941 | -22,582 | -24,887 | -9,565 | 6,261 | -13,447 | -14,121 | -21,491 | -9,795 | -1,676 | | |
| Just Int I | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 | | |
| Just Int II | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 | | |
| Pythagorean | -3,910 | 0,000 | -3,910 | 5,865 | 0,000 | 9,775 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -1,955 | -1,955 | 7,820 | | |
| Meantone | 6,843 | 0,000 | 6,843 | -10,264 | 0,000 | -17,108 | -10,264 | -3,421 | -3,421 | 3,422 | -3,421 | 3,422 | 3,422 | -13,686 | | |
| BASS tk 01 | 217,352 | 228,493 | 218,727 | 206,461 | 193,237 | 184,632 | 121,488 | 109,333 | 108,992 | 145,853 | | | | | | |
| BASS tk 02 | 218,180 | 230,602 | 219,368 | 206,058 | 194,151 | 187,621 | 122,554 | 108,874 | 108,274 | 146,395 | | | | | | |
| BASS tk 03 | 214,725 | 228,396 | 215,245 | 205,936 | 193,499 | 187,129 | 121,893 | 109,134 | 108,666 | 146,500 | | | | | | |
| BASS tk 04 | 214,692 | 227,246 | 216,872 | 206,102 | 195,035 | 186,129 | 121,877 | 108,491 | 108,163 | 144,746 | | | | | | |
| BASS tk 05 | 213,801 | 225,144 | 214,316 | 203,896 | 190,978 | 183,124 | 120,368 | 107,763 | 107,933 | 144,034 | | | | | | |
| BASS tk 06 | 217,646 | 231,465 | 217,356 | 205,132 | 193,104 | 185,240 | 120,972 | 108,429 | 108,207 | 145,535 | | | | | | |
| BASS tk 07 | 213,898 | 225,611 | 214,918 | 203,136 | 190,501 | 182,506 | 120,463 | 107,953 | 107,372 | 145,334 | | | | | | |
| BASS tk 08 | 215,370 | 227,861 | 215,905 | 203,941 | 192,111 | 181,019 | 119,601 | 107,962 | 106,894 | 144,381 | | | | | | |
| BASS tk 09 | 214,252 | 228,019 | 217,061 | 204,382 | 191,848 | 183,485 | 119,946 | 107,031 | 107,559 | 144,310 | | | | | | |
| BASS tk 10 | 214,756 | 228,723 | 215,900 | 204,522 | 193,739 | 181,463 | 118,781 | 106,617 | 104,896 | 143,254 | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| BASS tk 11 | 215,646 | 227,041 | 215,514 | 203,644 | 193,244 | 182,398 | 120,805 | 108,621 | 107,873 | 144,589 |
| BASS tk 12 | 219,473 | 229,652 | 218,100 | 204,391 | 193,018 | 183,805 | 121,122 | 108,789 | 108,986 | 145,995 |
| BASS Average | **215,816** | **228,188** | **216,607** | **204,800** | **192,872** | **184,046** | **120,822** | **108,250** | **107,818** | **145,077** |
| Cents RF+3rds | -6,927 | -10,423 | -0,594 | 2,373 | -1,515 | 17,391 | -11,224 | -1,453 | -8,374 | 5,497 |
| Cents RF-3rds | -7,434 | -10,930 | -1,101 | 1,865 | -2,023 | 16,883 | -11,731 | -1,961 | -8,881 | 4,989 |
| Just Int I | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Just Int II | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Pythagorean | 1,955 | -7,820 | 1,955 | 11,730 | -1,955 | 7,820 | 5,865 | 1,955 | 1,955 | 0,000 |
| Meantone | -3,421 | 13,686 | -3,421 | -20,530 | 3,422 | -13,686 | -10,264 | -3,421 | -3,421 | 0,000 |

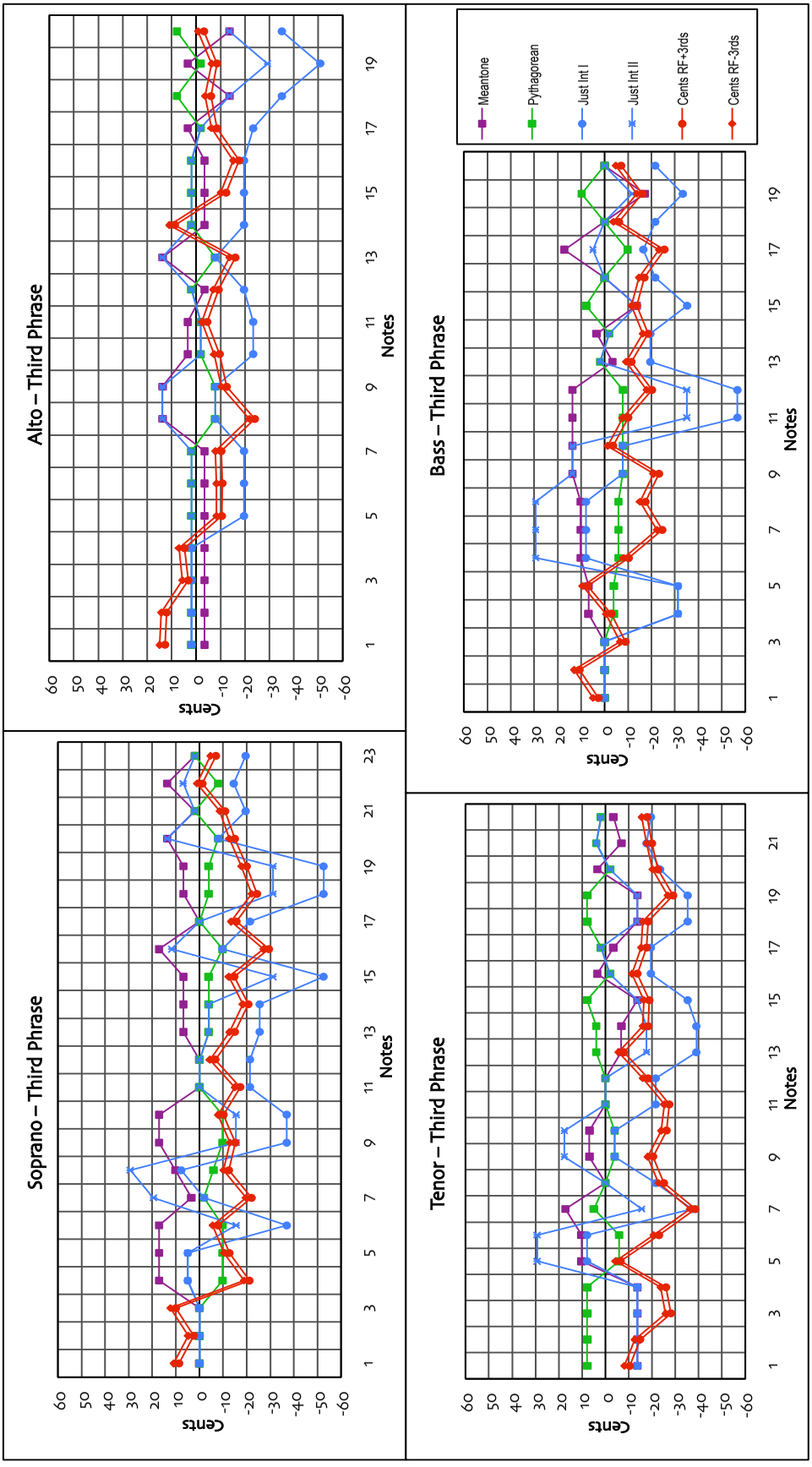



**10.1A - RAM VOICE'S CHARTS – PHRASE 1**

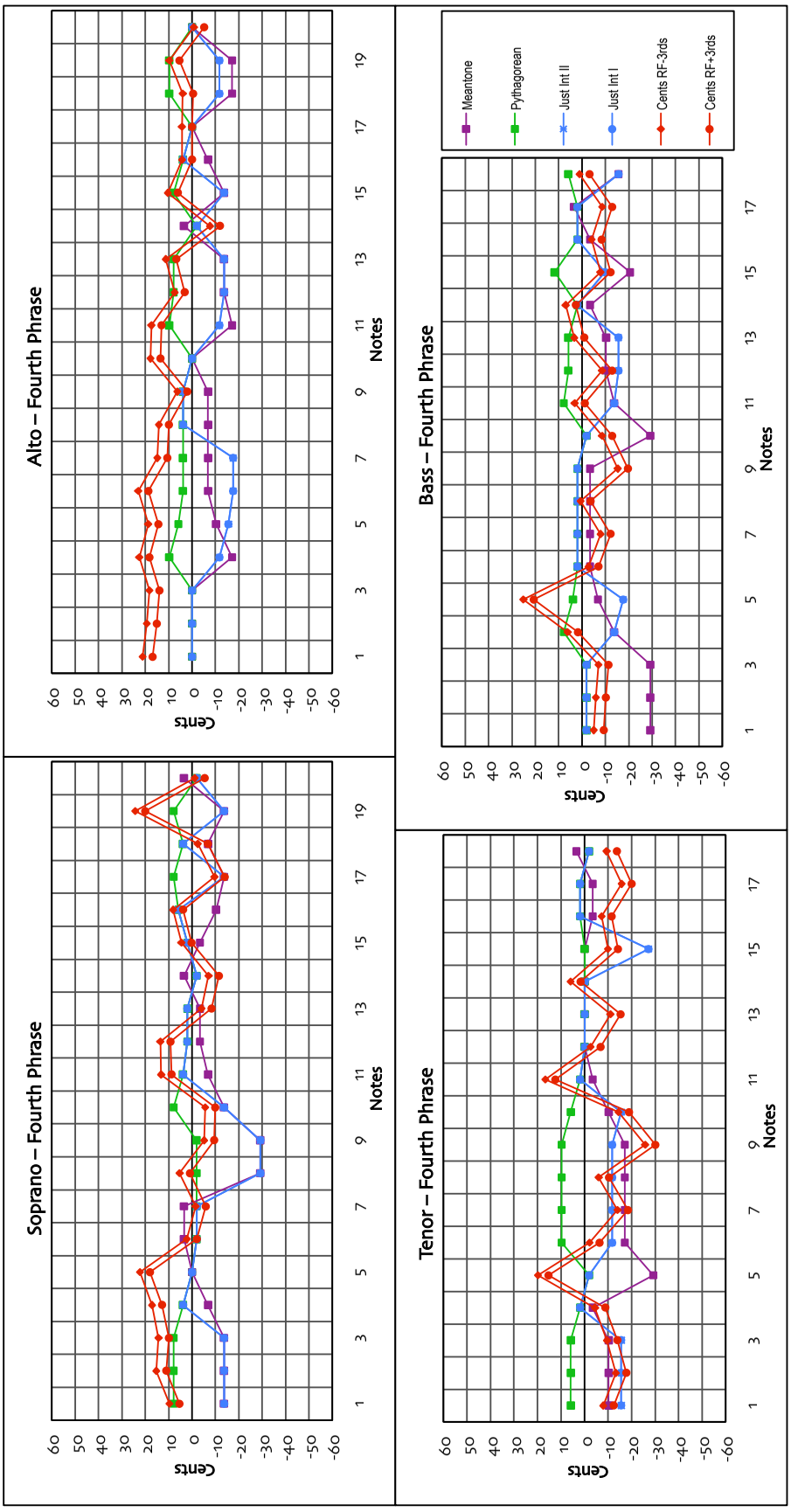



**10.1B - R RAM VOICE'S CHARTS – PHRASE 2**

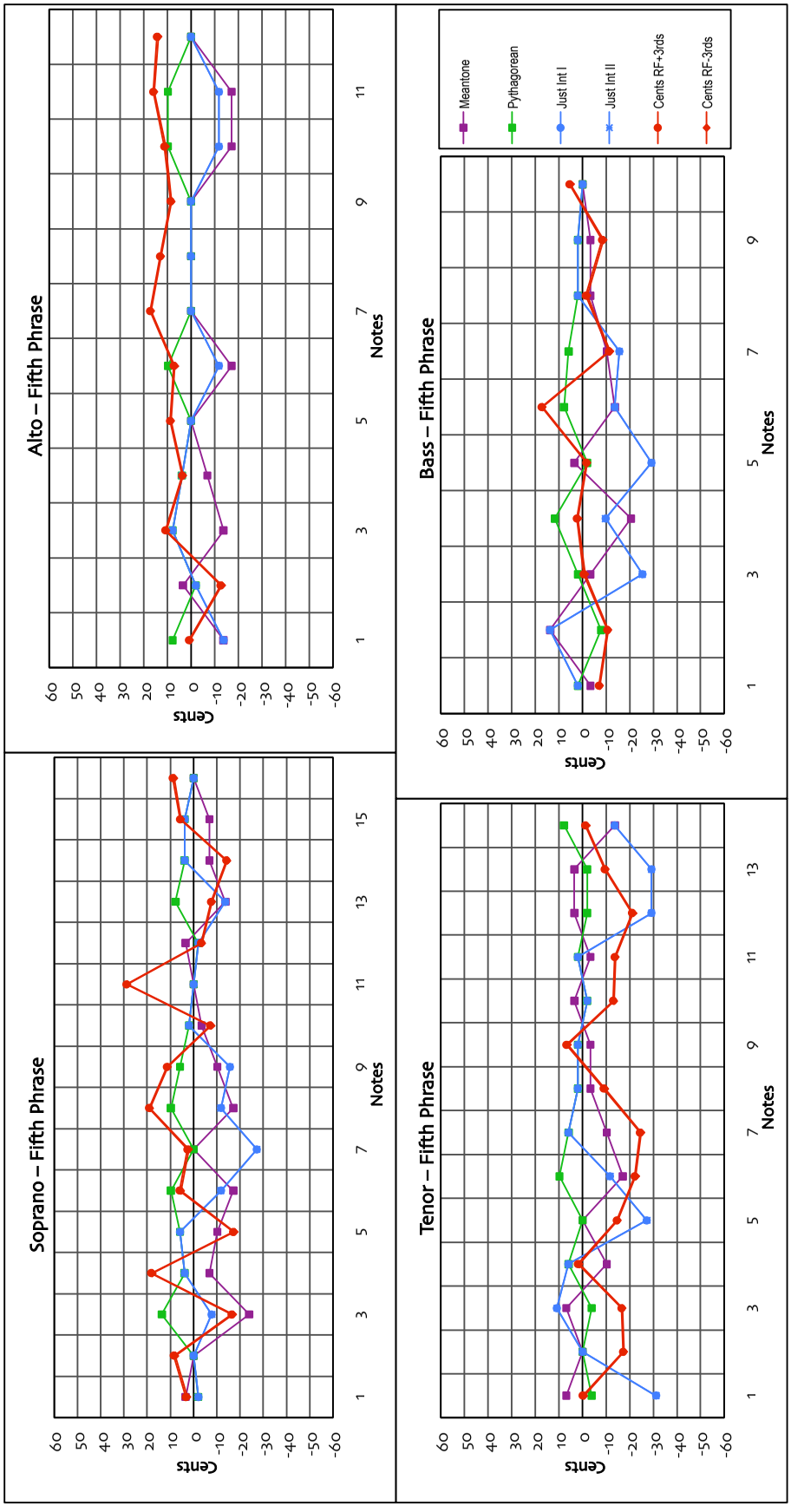
**10.1B - R RAM VOICE'S CHARTS – PHRASE 2**




**10.1C - RAM VOICE'S CHARTS – PHRASE 3**




**10.1D - RAM VOICE'S CHARTS – PHRASE 4**




**10.1E - RAM VOICE'S CHARTS – PHRASE 5**

## 10.2 - RAM voices' table
## (equalised reference frequencies)

**AVC_Worksheet_RAM Quartet Recording Session_Overview**

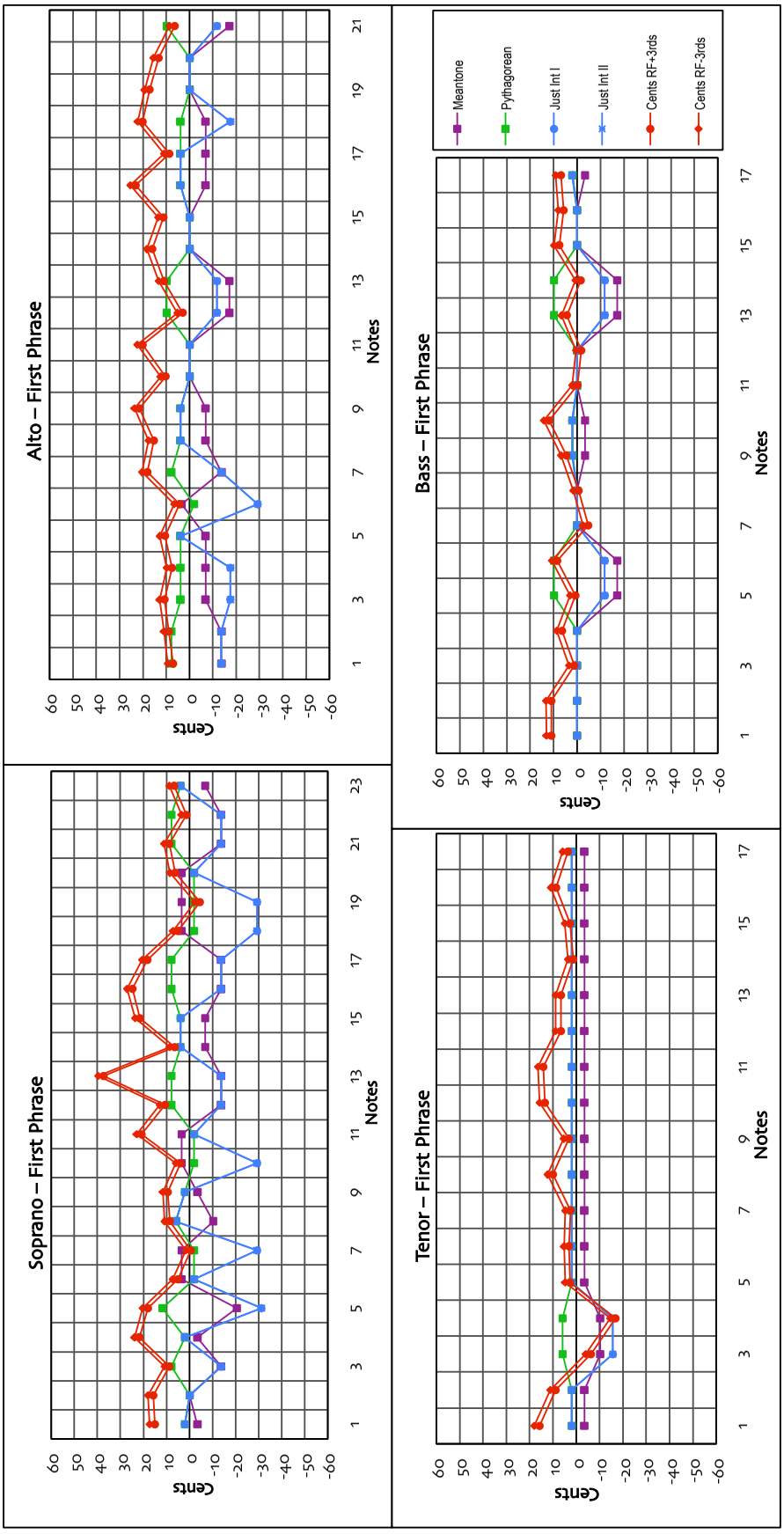
| | | Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 145,758 | Gen RF+ | 145,758 | D | 109,319 | A | 109,319 | A | 145,758 | D | 145,758 | D |
| 145,570 | Gen RF- | | | | | | | | | | |

Reference Frequencies with Thirds

Frequency Measurements

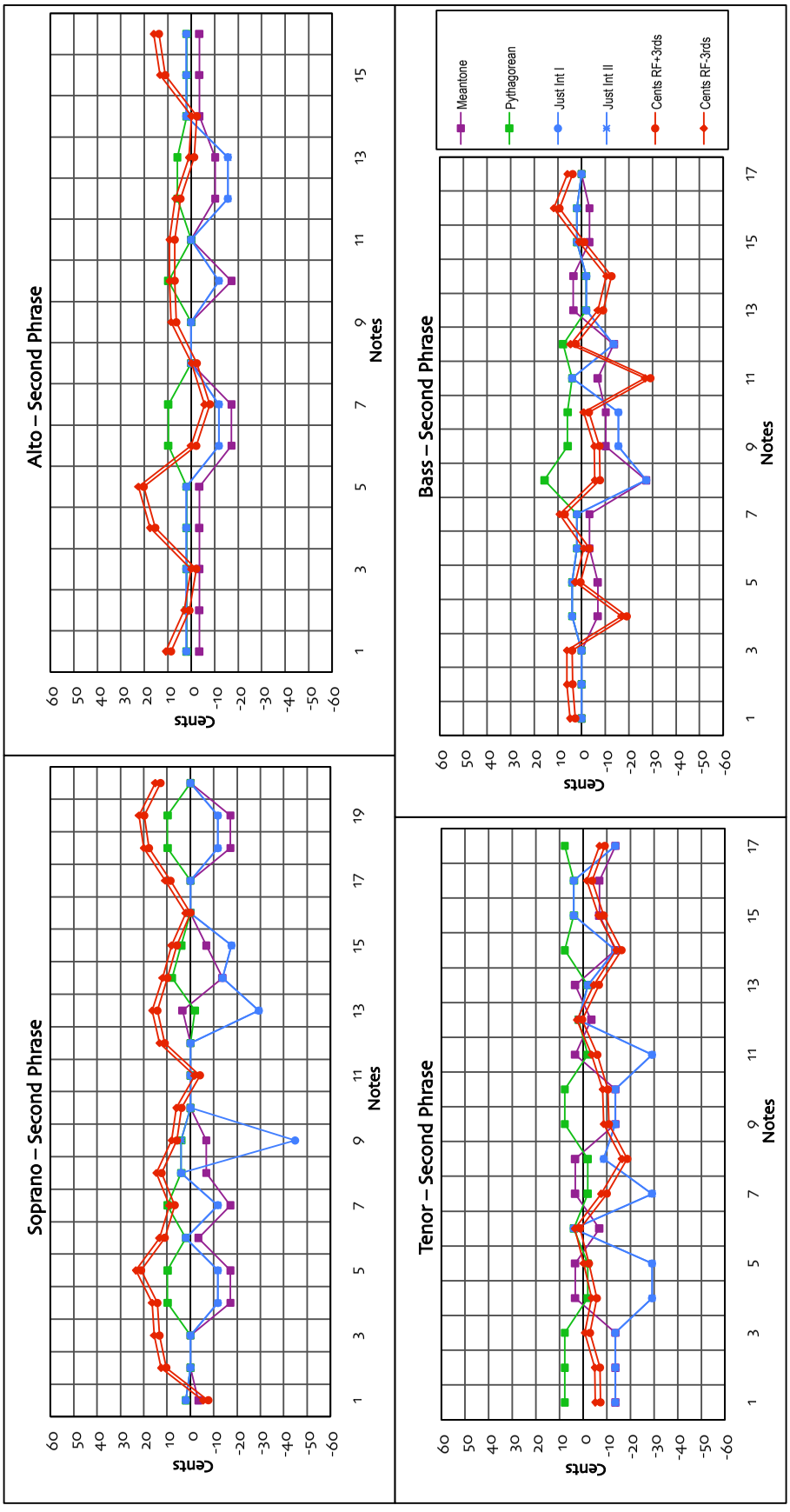
| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
|---|---|---|---|---|---|---|---|---|---|
| 145,570 | D | 109,177 | A | 109,177 | A | 145,570 | D | 145,570 | D |

Reference Frequencies without Thirds



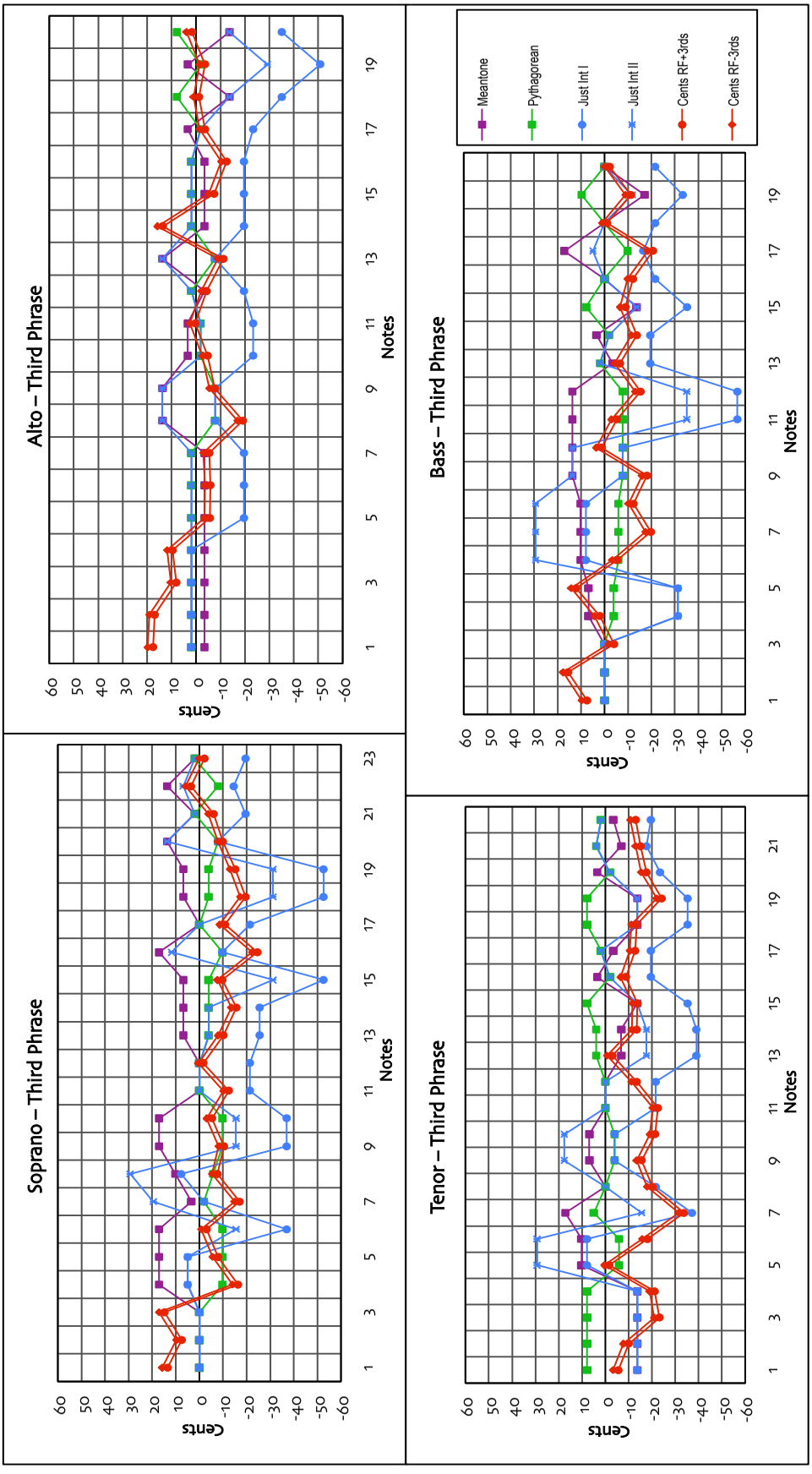

**10.2A - RAM VOICES' CHARTS (EQUALISED) – PHRASE 1**

**10.2A - RAM VOICES' CHARTS (EQUALISED) – PHRASE 1**



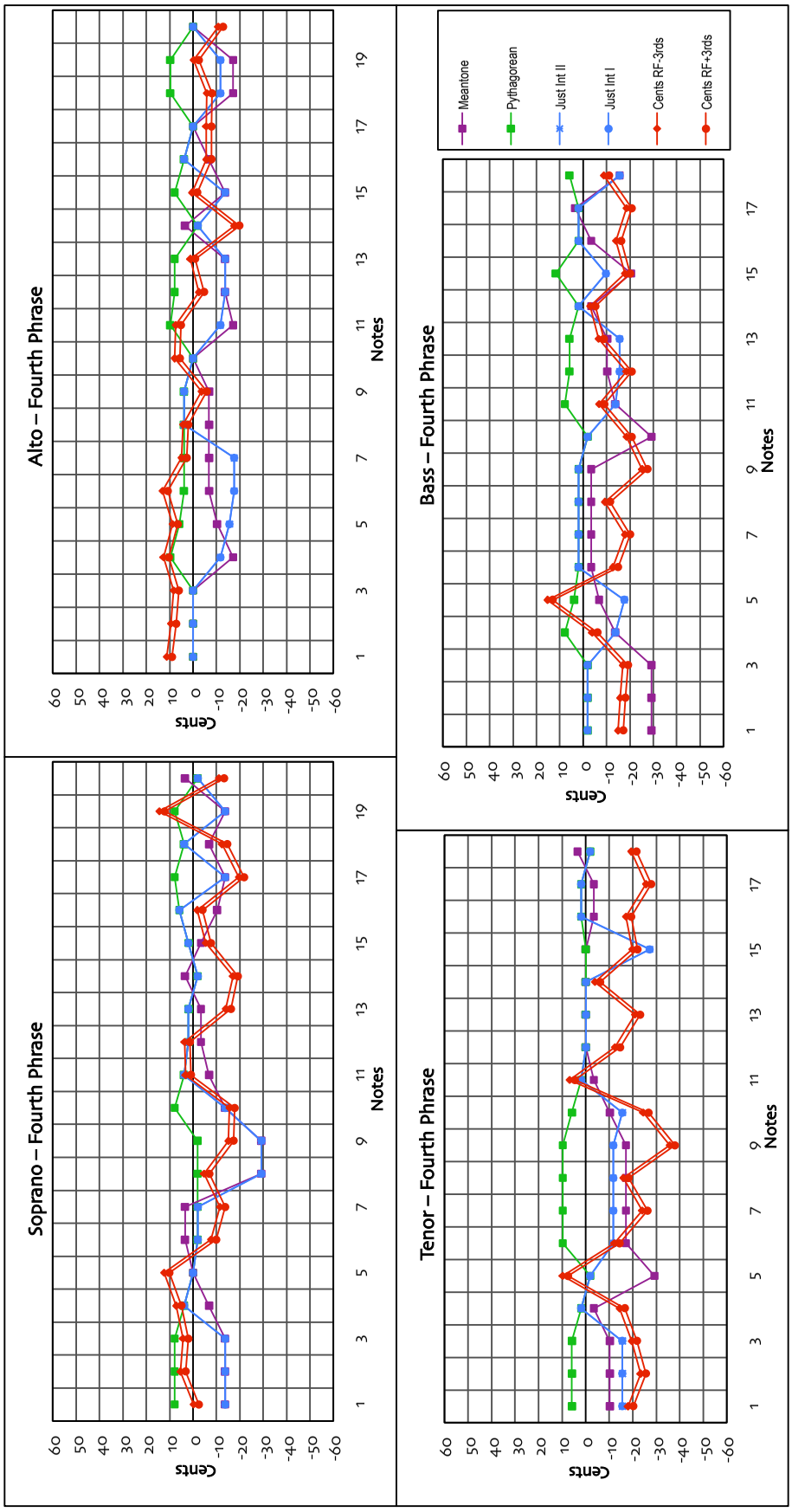

**10.2B - RAM VOICES' CHARTS (EQUALISED) – PHRASE 2**

**10.2B - RAM VOICES' CHARTS (EQUALISED) – PHRASE 2**



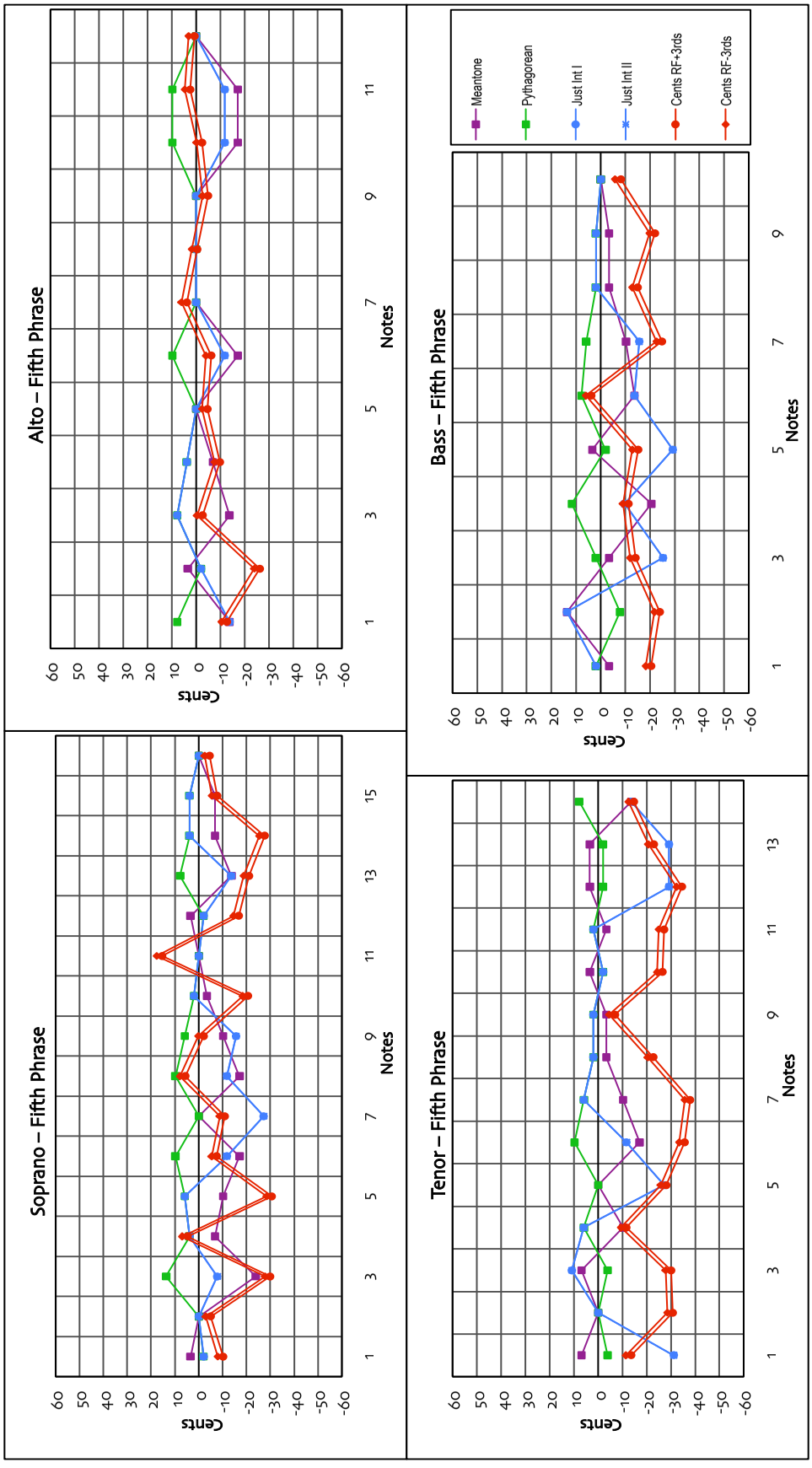

**10.2C - RAM VOICES' CHARTS (EQUALISED) – PHRASE 3**

**10.2C - RAM VOICES' CHARTS (EQUALISED) – PHRASE 3**




**10.2D - RAM VOICES' CHARTS (EQUALISED) – PHRASE 4**

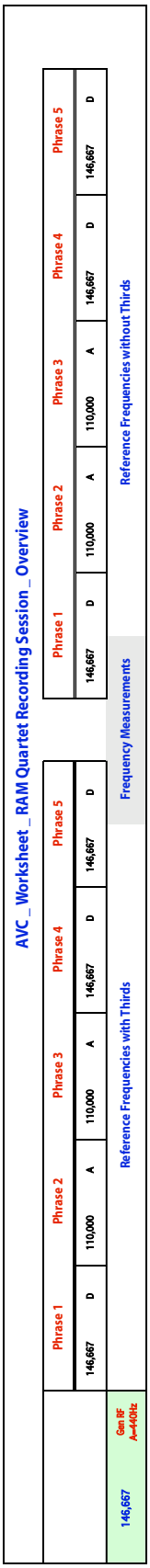
**10.2D - RAM VOICES' CHARTS (EQUALISED) – PHRASE 4**




**10.2E - RAM VOICES' CHARTS (EQUALISED) – PHRASE 5**

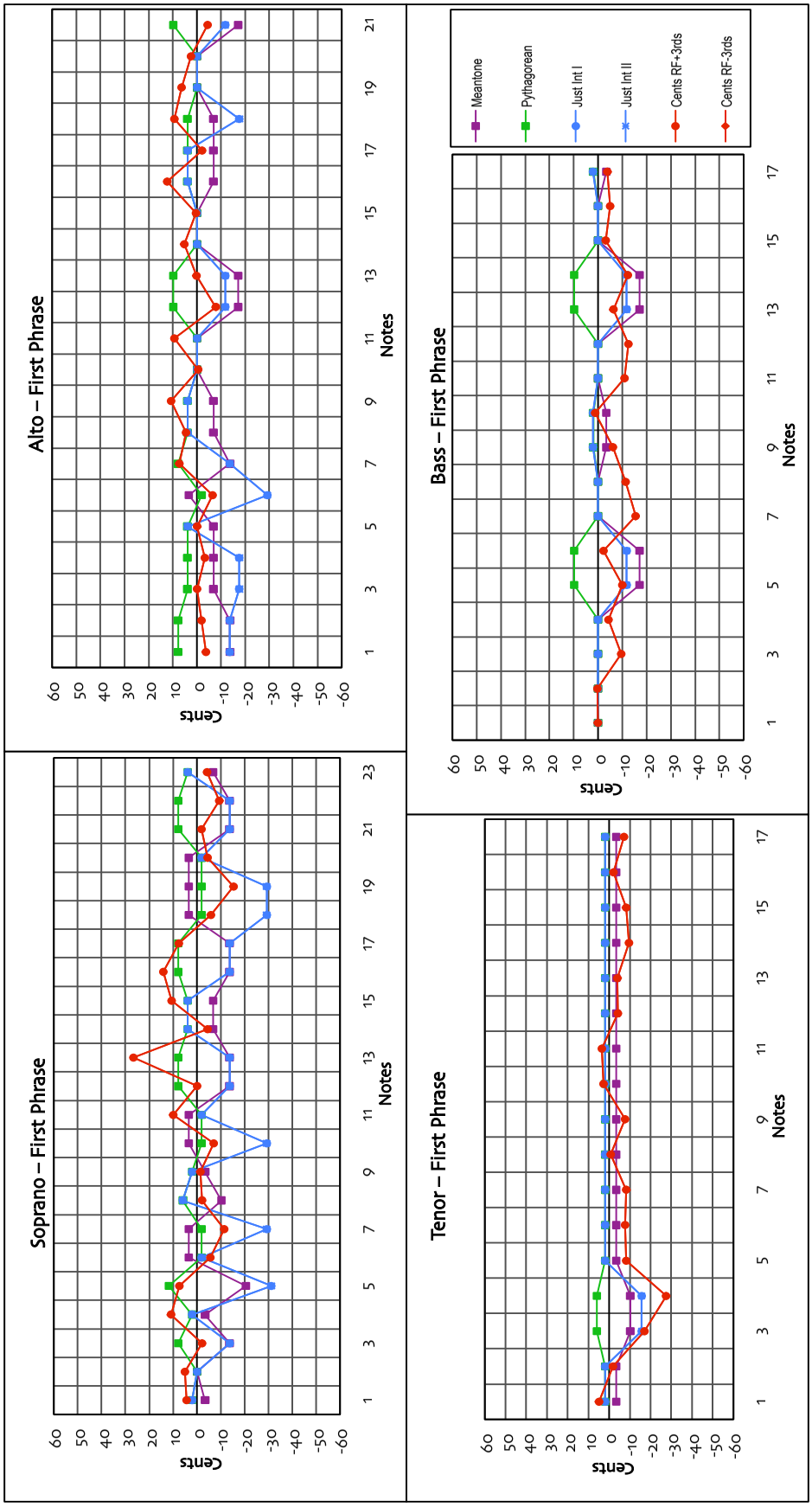
**10.2E - RAM VOICES' CHARTS (EQUALISED) – PHRASE 5**

## 10.3 - RAM voices' results
## (reference frequency = 440 Hz)



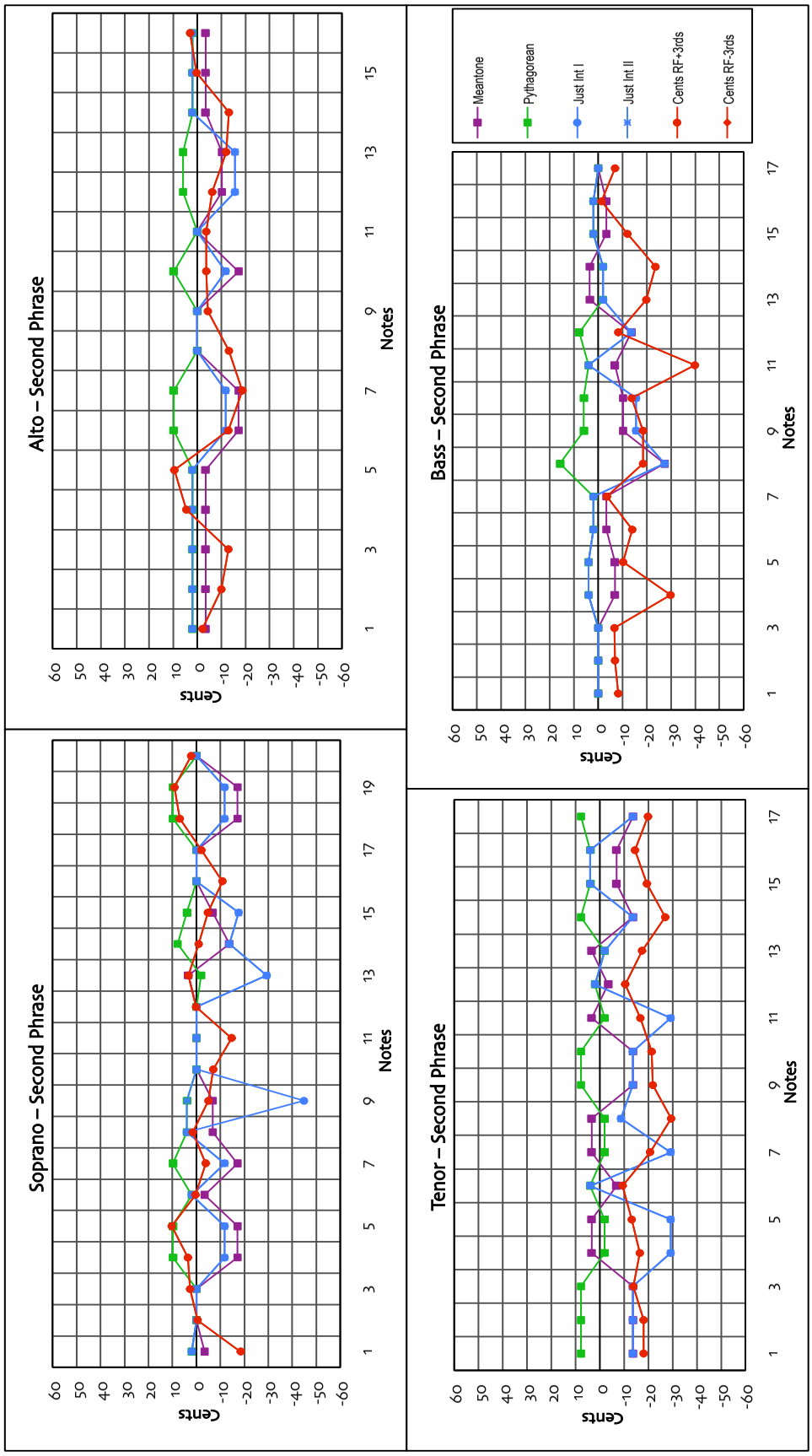

RAM Voices_Reference frequency=440 Hz

## 10.3 - RAM VOICE'S RESULTS (REFERENCE FREQUENCY = 440 HZ)

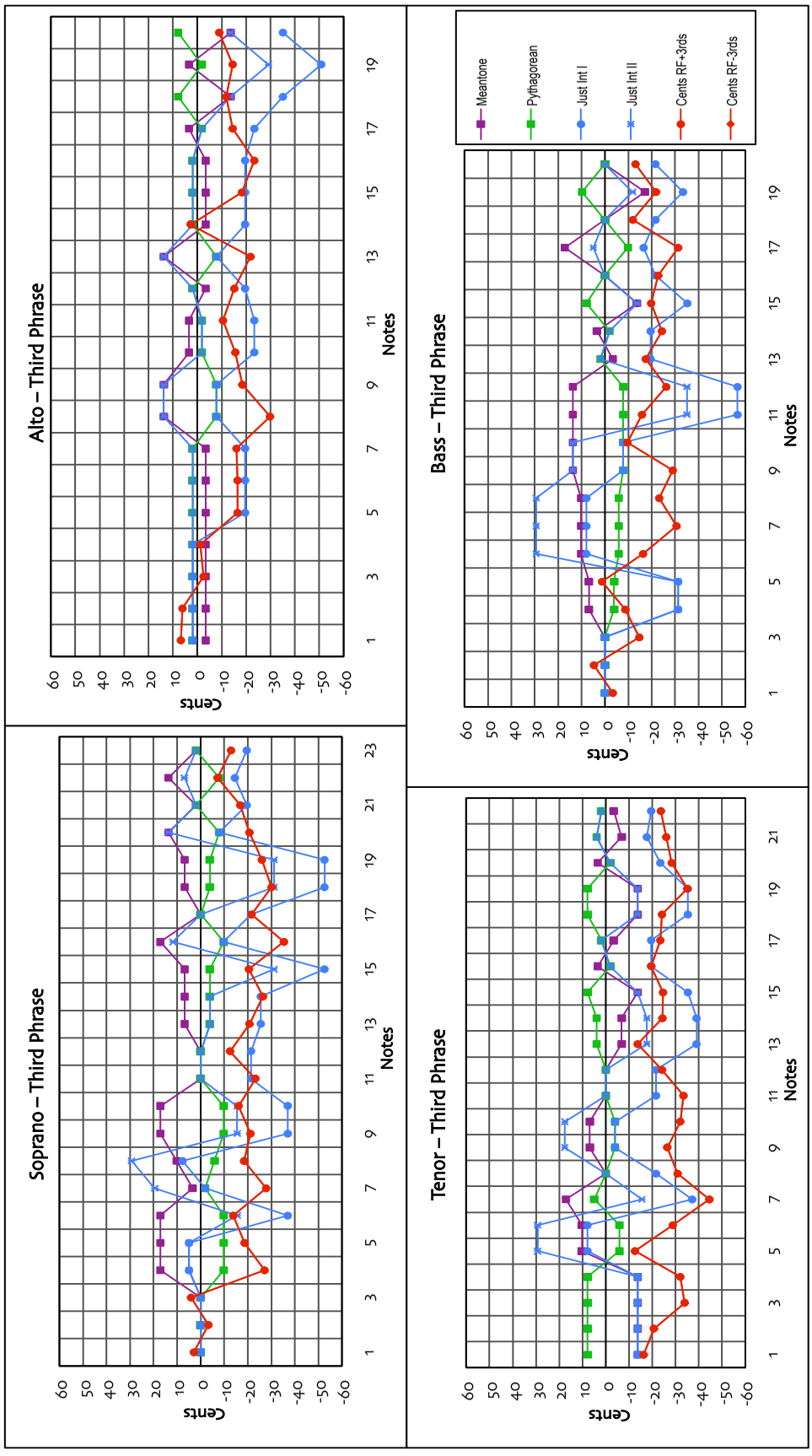



**10.3A - RAM VOICES' CHARTS (440 HZ) – PHRASE 1**

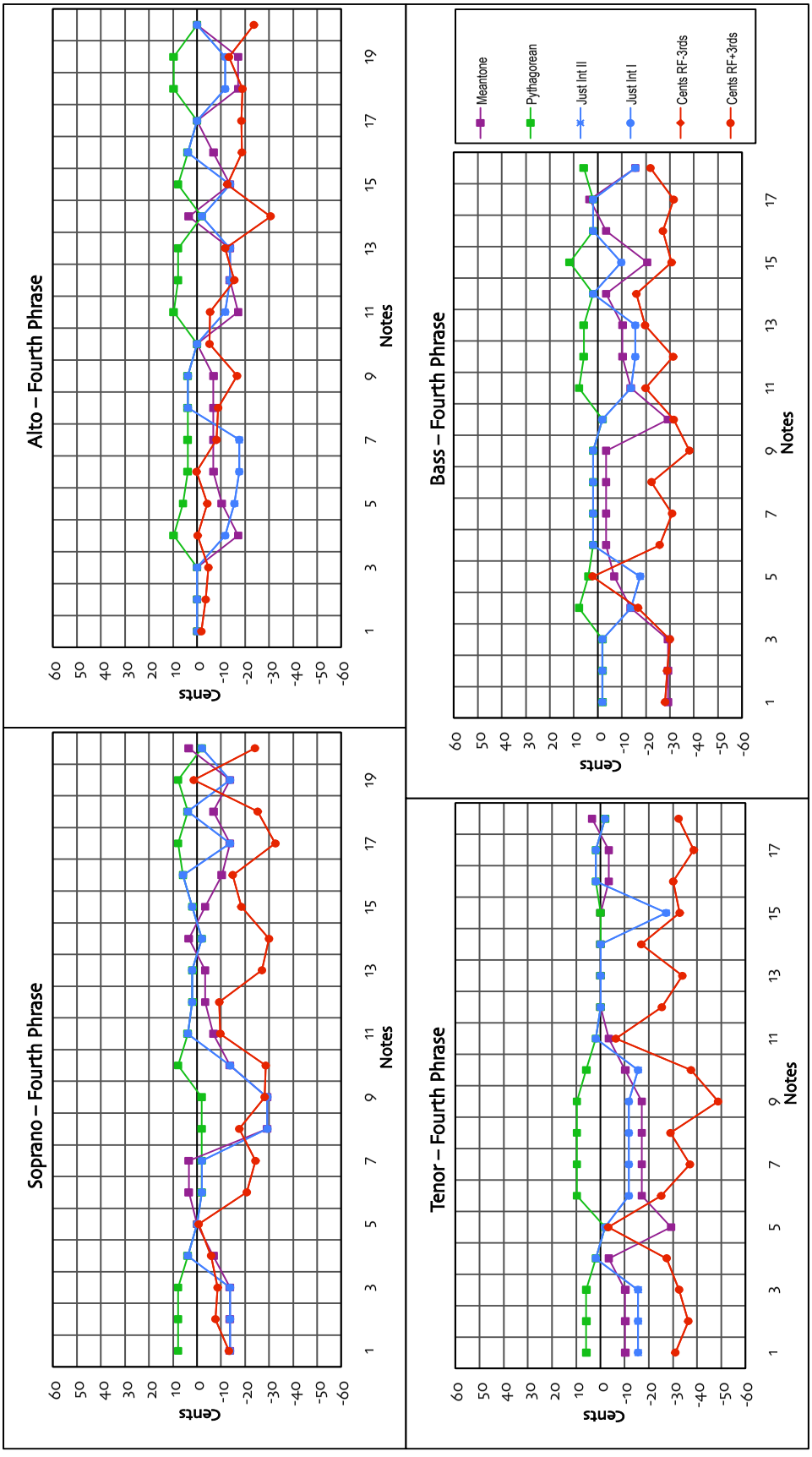
**10.3A - RAM VOICES' CHARTS (440 HZ) – PHRASE 1**



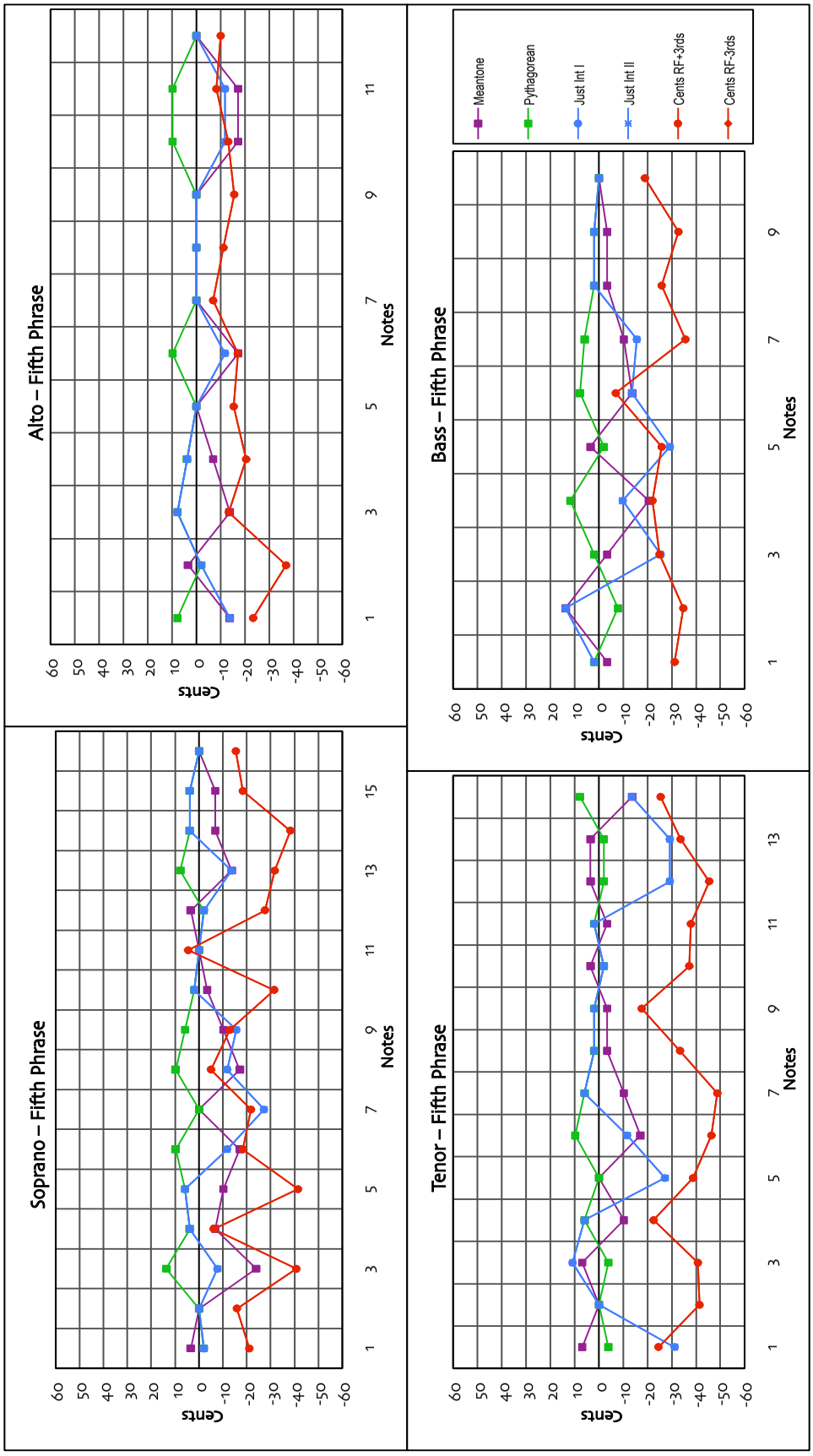

**10.3B - RAM VOICES' CHARTS (440 HZ) – PHRASE 2**




**10.3C - RAM VOICES' CHARTS (440 HZ) – PHRASE 3**



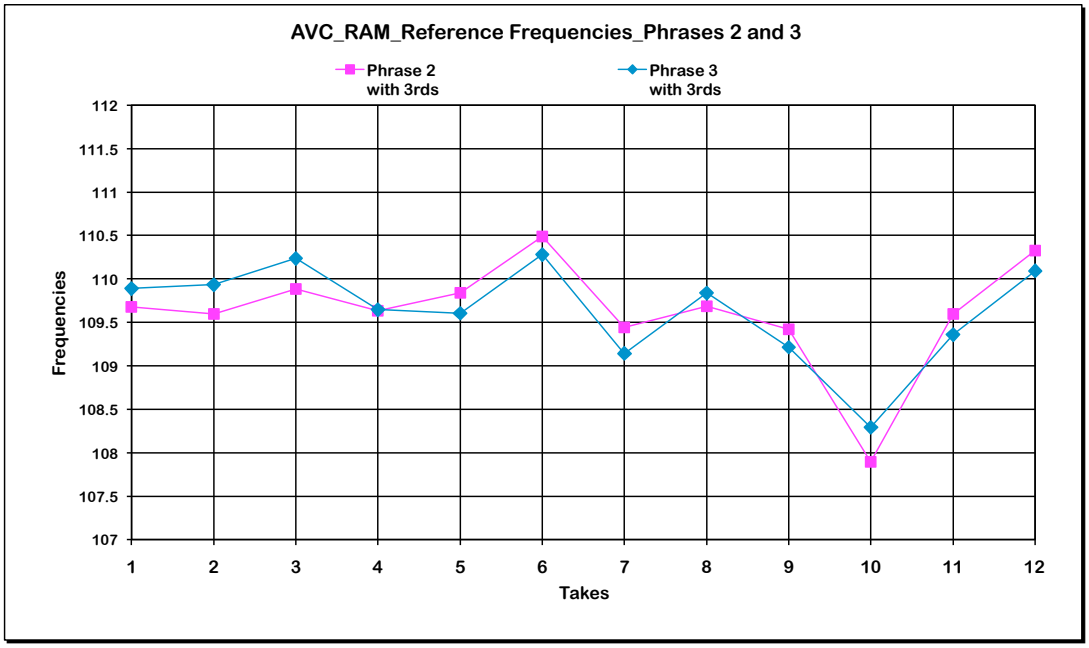

**10.3D - RAM VOICES' CHARTS (440 HZ) – PHRASE 4**

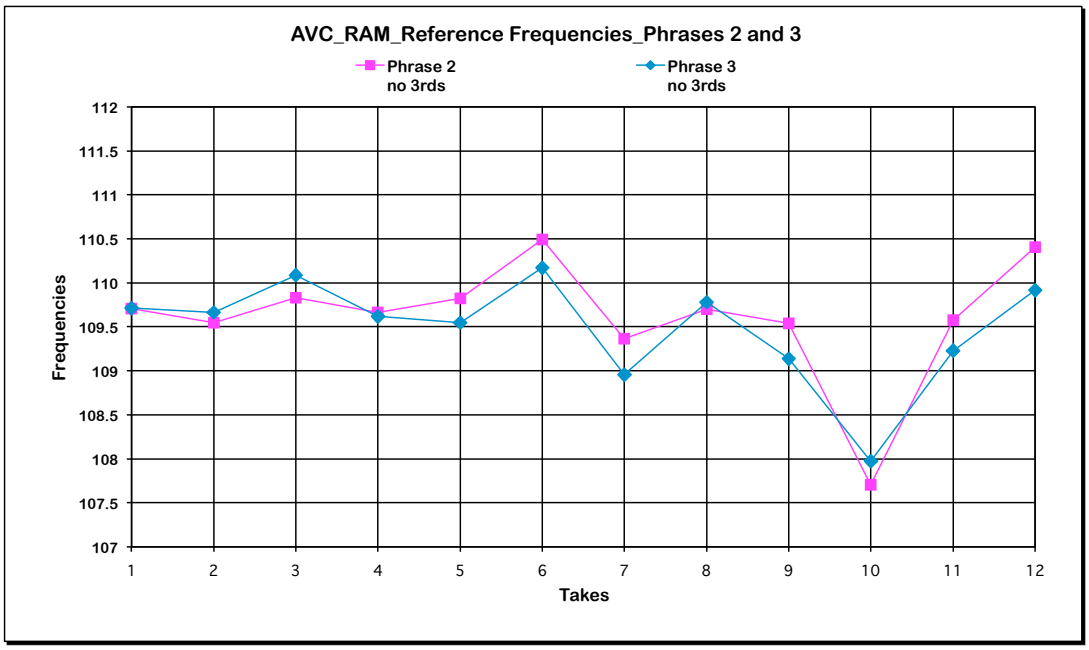


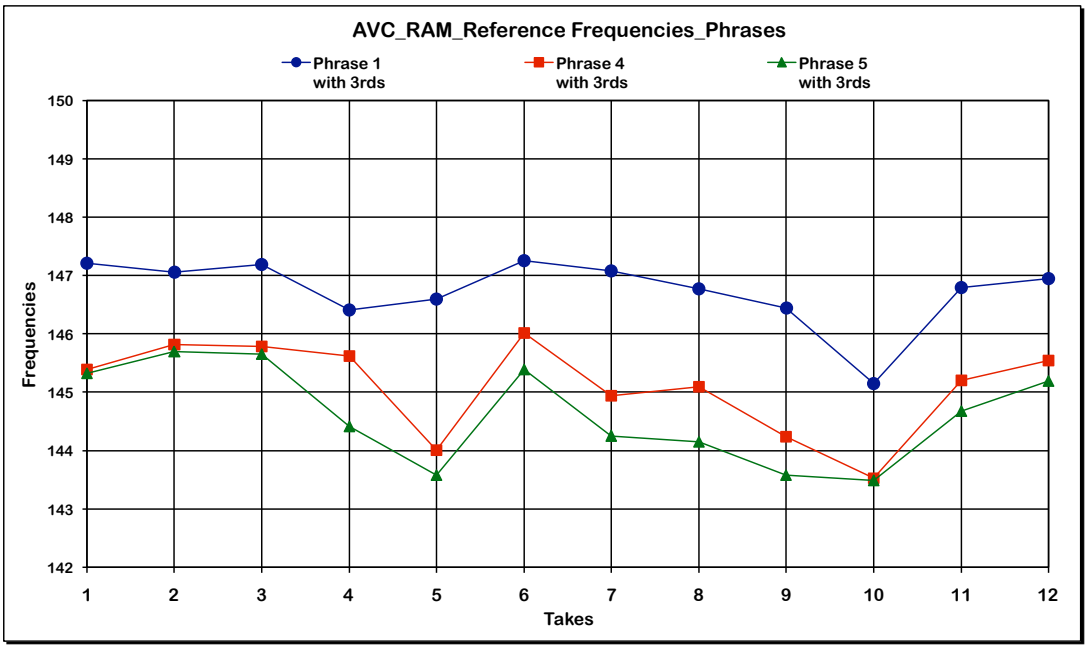

**10.3E - RAM VOICES' CHARTS (440 HZ) – PHRASE 5**

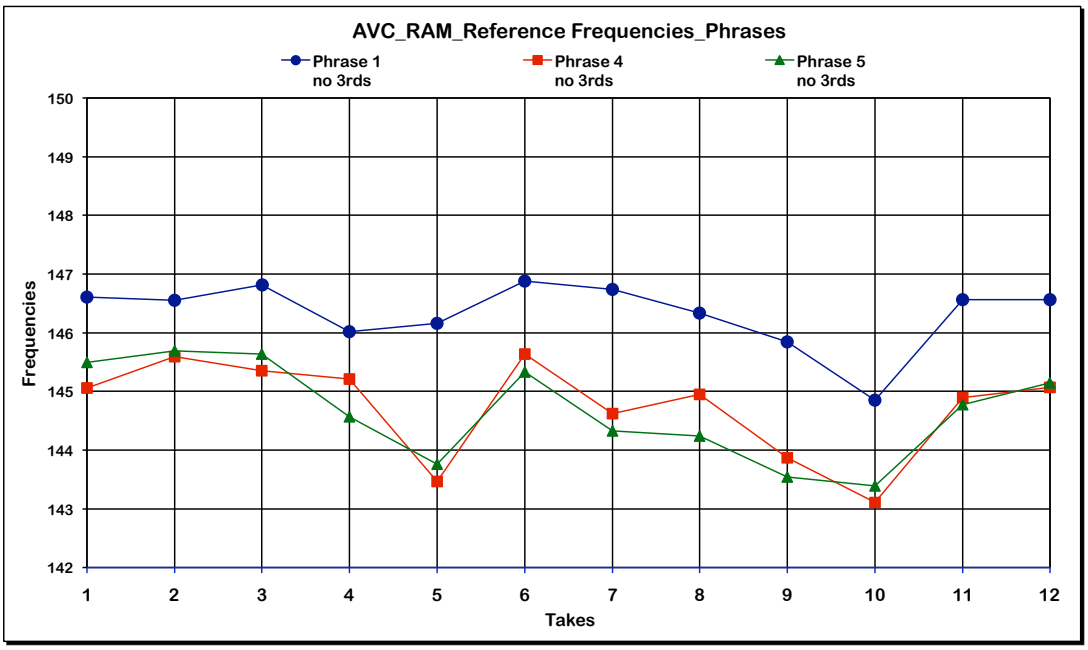
**AVC_RAM Recording Session_Reference Frequencies**

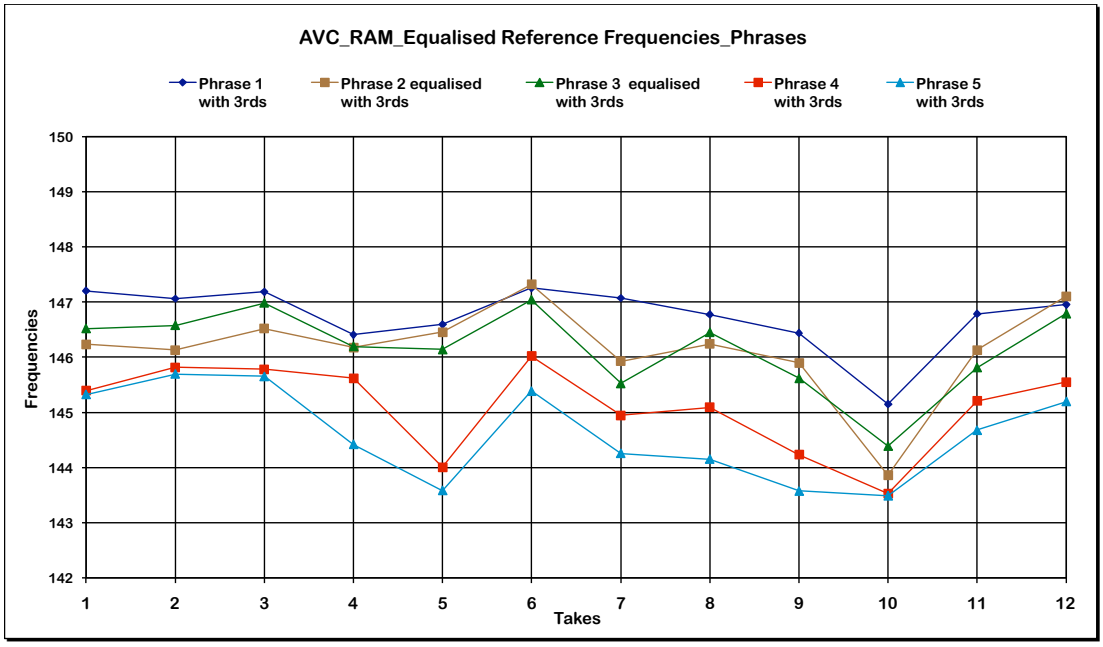
| | Phrase 1 with 3rds | Phrase 2 with 3rds | Phrase 3 with 3rds | Phrase 2 equalised with 3rds | Phrase 3 equalised with 3rds | Phrase 4 with 3rds | Phrase 5 with 3rds | Phrase 1 no 3rds | Phrase 2 no 3rds | Phrase 3 no 3rds | Phrase 2 equalised no 3rds | Phrase 3 equalised no 3rds | Phrase 4 no 3rds | Phrase 5 no 3rds | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 1 | 147,205 | 109,675 | 109,890 | 146,234 | 146,520 | 145,392 | 145,324 | 146,606 | 109,705 | 109,712 | 146,273 | 146,283 | 145,064 | 145,494 | Take 1 |
| Take 2 | 147,062 | 109,599 | 109,934 | 146,131 | 146,579 | 145,819 | 145,697 | 146,548 | 109,546 | 109,664 | 146,061 | 146,218 | 145,589 | 145,696 | Take 2 |
| Take 3 | 147,186 | 109,887 | 110,237 | 146,516 | 146,982 | 145,782 | 145,654 | 146,816 | 109,829 | 110,089 | 146,439 | 146,785 | 145,358 | 145,640 | Take 3 |
| Take 4 | 146,406 | 109,631 | 109,645 | 146,175 | 146,193 | 145,619 | 144,417 | 146,013 | 109,664 | 109,616 | 146,219 | 146,155 | 145,211 | 144,568 | Take 4 |
| Take 5 | 146,595 | 109,843 | 109,605 | 146,457 | 146,140 | 144,008 | 143,583 | 146,160 | 109,827 | 109,546 | 146,436 | 146,062 | 143,466 | 143,764 | Take 5 |
| Take 6 | 147,253 | 110,489 | 110,279 | 147,319 | 147,038 | 146,018 | 145,386 | 146,882 | 110,490 | 110,169 | 147,320 | 146,893 | 145,633 | 145,333 | Take 6 |
| Take 7 | 147,073 | 109,445 | 109,144 | 145,927 | 145,525 | 144,943 | 144,253 | 146,737 | 109,363 | 108,955 | 145,817 | 145,273 | 144,621 | 144,326 | Take 7 |
| Take 8 | 146,774 | 109,682 | 109,839 | 146,243 | 146,452 | 145,093 | 144,153 | 146,331 | 109,698 | 109,780 | 146,263 | 146,374 | 144,947 | 144,245 | Take 8 |
| Take 9 | 146,440 | 109,421 | 109,214 | 145,895 | 145,619 | 144,235 | 143,579 | 145,845 | 109,542 | 109,138 | 146,056 | 145,518 | 143,872 | 143,538 | Take 9 |
| Take 10 | 145,150 | 107,894 | 108,292 | 143,859 | 144,389 | 143,528 | 143,487 | 144,851 | 107,705 | 107,973 | 143,606 | 143,964 | 143,111 | 143,391 | Take 10 |
| Take 11 | 146,788 | 109,595 | 109,359 | 146,127 | 145,812 | 145,205 | 144,679 | 146,561 | 109,576 | 109,229 | 146,101 | 145,639 | 144,892 | 144,779 | Take 11 |
| Take 12 | 146,952 | 110,330 | 110,094 | 147,107 | 146,792 | 145,547 | 145,194 | 146,563 | 110,404 | 109,917 | 147,206 | 146,556 | 145,070 | 145,144 | Take 12 |
| Averages | 146,740 | 109,624 | 109,628 | 146,166 | 146,170 | 145,099 | 144,617 | 146,326 | 109,612 | 109,482 | 146,150 | 145,977 | 144,736 | 144,660 | Averages |

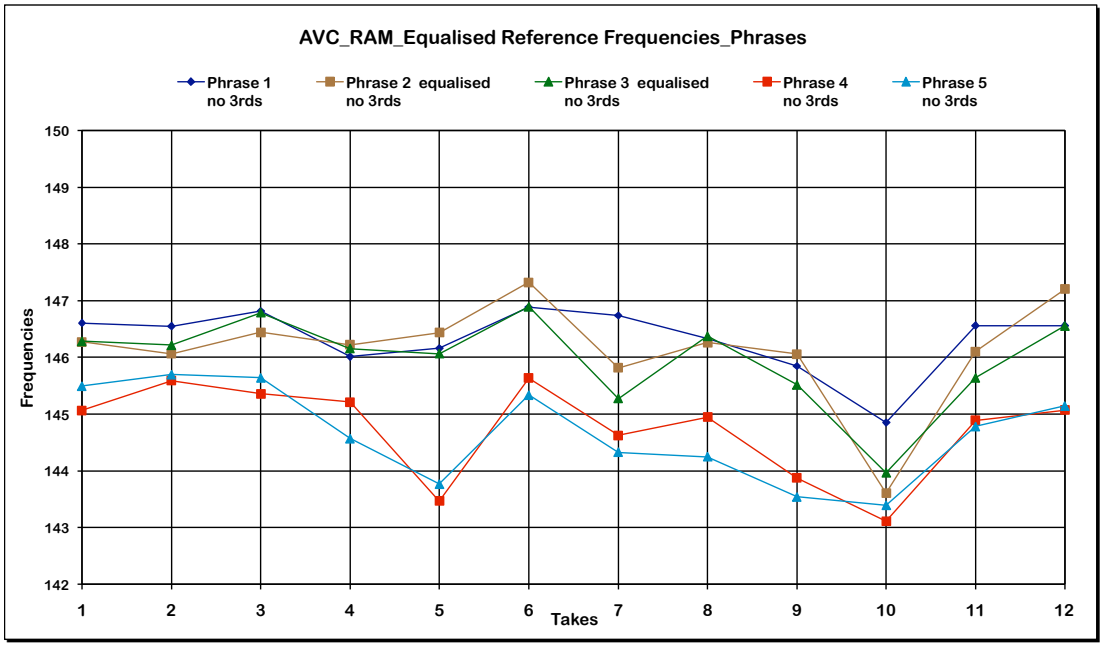

AVC_RAM_Reference Frequencies_Phrases 2 and 3
Phrase 2 with 3rds
Phrase 3 with 3rds
Frequencies
112
111.5
111
110.5
110
109.5
109
108.5
108
107.5
107
1
2
3
4
5
6
7
8
9
10
11
12
Takes


AVC_RAM_Reference Frequencies_Phrases 2 and 3
Phrase 2 no 3rds
Phrase 3 no 3rds
Frequencies
112
111.5
111
110.5
110
109.5
109
108.5
108
107.5
107
1
2
3
4
5
6
7
8
9
10
11
12
Takes


AVC_RAM_Reference Frequencies_Phrases
Phrase 1 with 3rds
Phrase 4 with 3rds
Phrase 5 with 3rds
Frequencies
150
149
148
147
146
145
144
143
142
1
2
3
4
5
6
7
8
9
10
11
12
Takes


AVC_RAM_Reference Frequencies_Phrases
Phrase 1 no 3rds
Phrase 4 no 3rds
Phrase 5 no 3rds
Frequencies
150
149
148
147
146
145
144
143
142
1
2
3
4
5
6
7
8
9
10
11
12
Takes


AVC_RAM_Equalised Reference Frequencies_Phrases
Phrase 1 with 3rds
Phrase 2 equalised with 3rds
Phrase 3 equalised with 3rds
Phrase 4 with 3rds
Phrase 5 with 3rds
Frequencies
150
149
148
147
146
145
144
143
142
1
2
3
4
5
6
7
8
9
10
11
12
Takes


AVC_RAM_Equalised Reference Frequencies_Phrases
Phrase 1 no 3rds
Phrase 2 equalised no 3rds
Phrase 3 equalised no 3rds
Phrase 4 no 3rds
Phrase 5 no 3rds
Frequencies
150
149
148
147
146
145
144
143
142
1
2
3
4
5
6
7
8
9
10
11
12
Takes

# APPENDIX 11
# 11 - MEASUREMENTS RESULTS – THE BBC SINGERS –

## AVC_BBC Singers Recording Session_Overview_All

| Reference Frequencies with Thirds | | | | | | | | | | Frequency Measurements | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | | Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
| 147,030 | D | 110,067 | A | 110,428 | A | 146,873 | D | 147,153 | D | 146,657 | D | 109,962 | A | 110,156 | A | 146,542 | D | 147,103 | D |

Reference Frequencies without Thirds

### First Phrase

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soprano 1 Avg | 445,474 | 593,633 | 373,574 | 441,188 | 420,630 | 394,835 | 394,549 | 497,891 | 443,548 | 395,867 | 394,771 | 371,549 | 376,070 | 331,167 | 331,809 | 371,547 | 371,999 | 394,347 | 393,283 | 395,577 | 372,348 | 372,445 | 331,191 |
| Soprano 2 Avg | 442,524 | 595,798 | 369,036 | 440,633 | 415,897 | 393,170 | 394,058 | 494,361 | 444,019 | 395,618 | 395,673 | 371,375 | 373,617 | 330,132 | 333,444 | 369,648 | 368,080 | 391,477 | 390,764 | 392,731 | 373,551 | 371,238 | 331,083 |
| Soprano 3 Avg | 437,671 | 586,394 | 368,532 | 440,390 | 418,030 | 388,630 | 391,991 | 493,618 | 438,457 | 393,922 | 391,931 | 369,690 | 369,739 | 330,251 | 331,736 | 369,803 | 370,485 | 391,486 | 391,080 | 391,926 | 370,992 | 369,824 | 328,464 |
| Soprano 4 Avg | 438,972 | 584,922 | 370,274 | 441,523 | 419,422 | 394,044 | 394,471 | 491,496 | 441,041 | 392,285 | 391,559 | 371,857 | 371,158 | 330,099 | 331,917 | 369,463 | 369,352 | 390,600 | 390,776 | 390,635 | 371,250 | 368,873 | 329,736 |
| AVERAGE All | **441,160** | **590,187** | **370,354** | **440,934** | **418,495** | **392,670** | **393,767** | **494,342** | **441,766** | **394,423** | **393,483** | **371,118** | **372,646** | **330,412** | **332,226** | **370,116** | **369,979** | **391,977** | **391,476** | **392,717** | **372,035** | **370,595** | **330,118** |
| Cents RF+3rds | 2,236 | 6,078 | -0,641 | 1,346 | 10,924 | 0,652 | 5,485 | -0,718 | 4,613 | 8,366 | 4,236 | 2,924 | 10,038 | 1,794 | 11,272 | -1,757 | -2,395 | -2,403 | -4,620 | 0,862 | 7,199 | 0,484 | 0,253 |
| Cents RF-3rds | 6,632 | 10,474 | 3,755 | 5,742 | 15,319 | 5,048 | 9,880 | 3,678 | 9,008 | 12,761 | 8,632 | 7,320 | 14,433 | 6,190 | 15,668 | 2,639 | 2,000 | 1,992 | -0,224 | 5,258 | 11,595 | 4,880 | 4,649 |
| Just Int I | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Just Int II | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Pythagorean | 1,955 | 0,000 | 7,820 | 1,955 | 11,730 | -1,955 | -1,955 | 5,865 | 1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 | 3,910 | 7,820 | 7,820 | -1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 |
| Meantone | -3,421 | 0,000 | -13,686 | -3,421 | -20,530 | 3,422 | 3,422 | -10,264 | -3,421 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 | -6,843 | -13,686 | -13,686 | 3,422 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 |
| Alto 1 Avg | 369,788 | 369,845 | 330,878 | 329,370 | 329,034 | 390,259 | 370,802 | 328,949 | 328,241 | 293,701 | 296,252 | 279,276 | 279,206 | 293,973 | 295,802 | 328,433 | 326,360 | 329,467 | 294,197 | 296,295 | 278,766 | | |
| Alto 2 Avg | 369,338 | 367,979 | 328,008 | 328,376 | 329,525 | 389,667 | 369,699 | 329,215 | 329,443 | 293,690 | 291,452 | 274,309 | 276,754 | 292,520 | 293,402 | 329,918 | 328,293 | 329,740 | 295,714 | 295,688 | 275,199 | | |
| Alto 3 Avg | 372,442 | 371,104 | 331,209 | 330,203 | 330,748 | 396,164 | 374,384 | 333,374 | 331,820 | 295,351 | 295,162 | 278,600 | 278,995 | 293,948 | 294,479 | 330,962 | 331,348 | 331,928 | 295,998 | 295,996 | 278,734 | | |
| Alto 4 Avg | 368,959 | 369,479 | 328,088 | 328,181 | 327,045 | 391,174 | 370,276 | 328,304 | 327,726 | 291,843 | 292,696 | 275,420 | 275,662 | 291,198 | 291,269 | 329,502 | 327,532 | 328,506 | 291,004 | 292,289 | 275,806 | | |
| AVERAGE All | **370,132** | **369,602** | **329,546** | **329,032** | **329,088** | **391,816** | **371,290** | **329,961** | **329,308** | **293,646** | **293,891** | **276,901** | **277,654** | **292,910** | **293,738** | **329,704** | **328,383** | **329,910** | **294,228** | **295,067** | **277,126** | | |
| Cents RF+3rds | -1,681 | -4,162 | -2,753 | -5,452 | -5,159 | -3,116 | 3,728 | -0,574 | -4,004 | -2,432 | -0,992 | -4,082 | 0,620 | -6,780 | -1,892 | -1,924 | -8,871 | -0,838 | 0,995 | 5,923 | -2,675 | | |
| Cents RF-3rds | 2,715 | 0,234 | 1,643 | -1,056 | -0,764 | 1,279 | 8,124 | 3,822 | 0,392 | 1,964 | 3,403 | 0,314 | 5,015 | -2,384 | 2,503 | 2,471 | -4,476 | 3,557 | 5,391 | 10,319 | 1,720 | | |
| Just Int I | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 | | |
| Just Int II | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 | | |
| Pythagorean | 7,820 | 7,820 | 3,910 | 3,910 | 3,910 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 3,910 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 | | |
| Meantone | -13,686 | -13,686 | -6,843 | -6,843 | -6,843 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -6,843 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 | | |
| Tenor 1 Avg | 221,344 | 221,123 | 246,231 | 245,605 | 221,597 | 221,495 | 220,973 | 220,768 | 221,573 | 221,221 | 222,193 | 221,514 | 221,160 | 220,235 | 220,785 | 220,851 | 220,787 | | | | | | |
| Tenor 2 Avg | 219,613 | 220,559 | 246,283 | 246,219 | 220,137 | 220,564 | 219,840 | 220,649 | 219,865 | 220,870 | 220,362 | 220,441 | 220,922 | 219,499 | 221,308 | 221,677 | 220,019 | | | | | | |
| Tenor 3 Avg | 216,527 | 216,038 | 244,585 | 243,790 | 216,856 | 217,838 | 218,173 | 220,389 | 218,487 | 218,887 | 218,505 | 218,915 | 220,070 | 218,309 | 220,055 | 219,457 | 218,467 | | | | | | |
| Tenor 4 Avg | 220,648 | 220,556 | 245,746 | 246,302 | 219,469 | 220,208 | 220,583 | 222,105 | 220,141 | 219,819 | 219,406 | 219,861 | 221,860 | 219,720 | 221,699 | 221,306 | 220,503 | | | | | | |
| AVERAGE All | **219,533** | **219,569** | **245,711** | **245,479** | **219,515** | **220,026** | **219,892** | **220,978** | **220,017** | **220,199** | **220,117** | **220,183** | **221,003** | **219,441** | **220,962** | **220,823** | **219,944** | | | | | | |
| Cents RF+3rds | -6,001 | -5,717 | -10,970 | -12,607 | -6,148 | -2,116 | -3,170 | 5,355 | -2,193 | -0,756 | -1,407 | -0,886 | 5,552 | -6,728 | 5,228 | 4,139 | -2,762 | | | | | | |
| Cents RF-3rds | -1,606 | -1,321 | -6,574 | -8,212 | -1,752 | 2,280 | 1,226 | 9,751 | 2,203 | 3,639 | 2,989 | 3,509 | 9,947 | -2,333 | 9,623 | 8,534 | 1,633 | | | | | | |
| Just Int I | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | | | | | | |
| Just Int II | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | | | | | | |
| Pythagorean | 1,955 | 1,955 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | | | | | | |
| Meantone | -3,421 | -3,421 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | | | | | | |
| Bass 1 Avg | 145,634 | 145,019 | 145,059 | 145,844 | 137,015 | 138,282 | 144,954 | 146,304 | 109,242 | 110,313 | 145,399 | 145,079 | 138,799 | 138,066 | 147,172 | 146,817 | 109,511 | | | | | | |
| Bass 2 Avg | 146,003 | 146,120 | 145,641 | 145,502 | 138,248 | 138,285 | 145,317 | 146,309 | 109,204 | 110,469 | 146,147 | 145,957 | 139,496 | 138,386 | 147,082 | 147,335 | 109,448 | | | | | | |
| Bass 3 Avg | 146,279 | 147,492 | 146,525 | 146,428 | 139,039 | 140,077 | 146,605 | 147,186 | 109,634 | 110,672 | 146,429 | 145,913 | 140,585 | 139,274 | 147,949 | 147,047 | 109,521 | | | | | | |
| Bass 4 Avg | 146,711 | 147,440 | 146,760 | 146,442 | 139,983 | 140,619 | 147,826 | 148,910 | 109,819 | 109,429 | 148,566 | 146,812 | 140,905 | 139,809 | 148,835 | 148,644 | 109,613 | | | | | | |
| AVERAGE All | **146,157** | **146,518** | **145,996** | **146,054** | **138,571** | **139,316** | **146,176** | **147,177** | **109,475** | **110,221** | **146,635** | **145,940** | **139,946** | **138,884** | **147,759** | **147,461** | **109,523** | | | | | | |
| Cents RF+3rds | -10,310 | -6,037 | -12,213 | -11,524 | -2,574 | 6,700 | -10,085 | 1,737 | -10,608 | 1,148 | -4,647 | -12,871 | 14,521 | 1,327 | 8,573 | 5,069 | -9,839 | | | | | | |
| Cents RF-3rds | -5,915 | -1,641 | -7,817 | -7,129 | 1,822 | 11,096 | -5,689 | 6,132 | -6,213 | 5,544 | -0,251 | -8,476 | 18,917 | 5,722 | 12,969 | 9,465 | -5,444 | | | | | | |
| Just Int I | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | | | | | | |
| Just Int II | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | | | | | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | | | | | | |
| Meantone | 0,000 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | | | | | | |

### Second Phrase

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soprano 1 Avg | 331,593 | 443,276 | 439,610 | 418,284 | 419,040 | 333,766 | 418,769 | 499,118 | 498,460 | 443,424 | 442,502 | 443,451 | 593,959 | 559,039 | 498,386 | 442,856 | 444,918 | 420,072 | 421,752 | 443,288 |





11.1 - The BBC Singers sections' results

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soprano 2 Avg | 329,636 | 440,472 | 439,182 | 413,536 | 413,466 | 331,383 | 416,864 | 494,764 | 492,443 | 439,706 | 441,553 | **441,134** | 593,137 | 562,580 | 496,422 | 440,696 | 439,659 | 417,236 | 418,418 | 443,379 | | |
| Soprano 3 Avg | 328,732 | 438,039 | 440,381 | 414,643 | 414,446 | 331,157 | 417,216 | 493,763 | 491,760 | 437,511 | 439,011 | 440,202 | 591,395 | 556,937 | 491,921 | 439,086 | 439,367 | 416,662 | 417,058 | 438,049 | | |
| Soprano 4 Avg | 330,012 | 438,310 | 440,206 | 418,595 | 415,990 | 330,418 | 416,586 | 492,203 | 490,802 | 439,438 | 439,005 | 440,441 | 590,182 | **557,430** | 491,009 | 440,201 | 440,339 | 419,415 | 418,021 | 440,284 | | |
| AVERAGE All | **329,993** | **440,024** | **439,845** | **416,265** | **415,736** | **331,681** | **417,359** | **494,962** | **493,366** | **440,020** | **440,518** | **441,307** | **592,168** | **558,996** | **494,434** | **440,710** | **441,071** | **418,346** | **418,812** | **441,250** | | |
| Cents RF+3rds | 0,869 | -0,955 | -1,662 | 2,946 | 0,744 | 9,701 | 7,490 | 2,726 | -2,865 | -0,973 | 0,985 | 4,084 | 13,154 | 13,351 | 0,879 | 1,739 | 3,156 | 11,581 | 13,510 | 3,859 | | |
| Cents RF-3rds | 2,521 | 0,697 | -0,010 | 4,598 | 2,397 | 11,353 | 9,143 | 4,378 | -1,212 | 0,680 | 2,638 | 5,736 | 14,806 | 15,004 | 2,531 | 3,391 | 4,809 | 13,234 | 15,163 | 5,512 | | |
| Just Int I | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | -44,860 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | |
| Just Int II | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | |
| Pythagorean | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 1,955 | 9,775 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -1,955 | 7,820 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | | |
| Meantone | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | -3,421 | -17,108 | -6,843 | -6,843 | 0,000 | 0,000 | 0,000 | 3,422 | -13,686 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | | |
| Alto 1 Avg | 330,927 | 327,286 | 330,315 | 332,033 | 333,827 | 415,117 | 417,361 | 439,420 | 440,876 | 414,701 | 441,662 | 371,083 | 372,659 | 330,262 | 330,709 | 330,233 | | | | | | |
| Alto 2 Avg | 327,770 | 329,570 | 328,742 | 329,112 | 331,447 | 416,211 | 416,706 | 435,888 | 437,167 | 414,484 | 439,424 | 368,852 | 369,565 | 329,655 | 329,885 | 330,147 | | | | | | |
| Alto 3 Avg | 330,459 | 330,626 | 330,630 | 332,707 | 333,156 | 421,133 | 419,393 | 442,766 | 440,892 | 422,697 | 445,229 | 370,939 | 371,783 | 331,207 | 332,154 | 330,398 | | | | | | |
| Alto 4 Avg | 328,280 | 327,043 | 328,148 | 330,252 | 332,037 | 416,320 | 415,713 | 440,426 | 442,666 | 418,424 | 444,313 | 369,098 | 369,322 | 329,467 | 329,927 | 328,197 | | | | | | |
| AVERAGE All | **329,359** | **328,631** | **329,459** | **331,026** | **332,617** | **417,195** | **417,293** | **439,625** | **440,400** | **417,577** | **442,657** | **369,993** | **370,832** | **330,148** | **330,669** | **329,744** | | | | | | |
| Cents RF+3rds | -2,462 | -6,292 | -1,937 | 6,278 | 14,578 | 6,812 | 7,219 | -2,527 | 0,524 | 8,394 | 9,372 | -1,058 | 2,865 | 1,680 | 4,410 | -0,441 | | | | | | |
| Cents RF-3rds | -0,809 | -4,640 | -0,285 | 7,930 | 16,230 | 8,465 | 8,872 | -0,875 | 2,176 | 10,047 | 11,025 | 0,594 | 4,517 | 3,332 | 6,063 | 1,212 | | | | | | |
| Just Int I | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | | | | | | |
| Just Int II | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | | | | | | |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 9,775 | 9,775 | 0,000 | 0,000 | 9,775 | 0,000 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | | | | | | |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -17,108 | -17,108 | 0,000 | 0,000 | -17,108 | 0,000 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 | | | | | | |
| Tenor 1 Avg | 275,773 | 276,413 | 276,255 | 292,783 | 293,766 | 246,359 | 290,989 | 291,157 | 275,498 | 275,427 | 293,326 | 329,090 | 293,135 | 277,032 | 246,745 | 248,111 | 276,215 | | | | | |
| Tenor 2 Avg | 275,408 | 276,180 | 276,841 | 292,731 | 293,877 | 247,931 | 292,043 | 292,244 | 276,083 | 276,959 | 292,745 | 331,189 | 293,634 | 276,816 | 247,124 | 248,027 | 276,323 | | | | | |
| Tenor 3 Avg | 274,020 | 274,289 | 274,488 | 288,812 | 291,903 | 246,105 | 289,049 | 290,255 | 273,457 | 274,892 | 292,066 | 326,656 | 290,723 | 274,966 | 245,291 | 246,847 | 275,452 | | | | | |
| Tenor 4 Avg | 276,364 | 276,510 | 277,228 | 293,096 | 294,044 | 248,367 | 291,843 | 293,182 | 275,848 | 278,810 | 292,292 | 332,746 | 293,159 | 276,496 | 246,789 | 249,396 | 278,080 | | | | | |
| AVERAGE All | **275,391** | **275,848** | **276,203** | **291,856** | **293,398** | **247,190** | **290,981** | **291,709** | **275,221** | **276,522** | **292,607** | **329,920** | **292,663** | **276,328** | **246,487** | **248,095** | **276,518** | | | | | |
| Cents RF+3rds | -12,275 | -9,407 | -7,179 | -11,749 | -2,627 | 0,692 | -16,944 | -12,617 | -13,344 | -5,183 | -7,296 | 0,484 | -6,968 | -6,399 | -4,241 | 7,017 | -5,210 | | | | | |
| Cents RF-3rds | -10,623 | -7,755 | -5,527 | -10,097 | -0,974 | 2,345 | -15,292 | -10,964 | -11,691 | -3,531 | -5,644 | 2,137 | -5,316 | -4,747 | -2,588 | 8,669 | -3,557 | | | | | |
| Just Int I | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 | | | | | |
| Just Int II | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 | | | | | |
| Pythagorean | 7,820 | 7,820 | 7,820 | -1,955 | -1,955 | 3,910 | -1,955 | -1,955 | 7,820 | 7,820 | -1,955 | 1,955 | -1,955 | 7,820 | 3,910 | 3,910 | 7,820 | | | | | |
| Meantone | -13,686 | -13,686 | -13,686 | 3,422 | 3,422 | -6,843 | 3,422 | 3,422 | -13,686 | -13,686 | 3,422 | -3,421 | 3,422 | -13,686 | -6,843 | -6,843 | -13,686 | | | | | |
| Bass 1 Avg | 220,825 | 220,777 | 219,785 | 247,682 | 249,997 | 164,995 | 163,257 | 172,071 | 183,358 | 186,224 | 123,425 | 137,723 | 146,008 | 146,562 | 164,059 | 165,416 | 110,003 | | | | | |
| Bass 2 Avg | 218,573 | 218,926 | 219,968 | 245,447 | 246,601 | 164,118 | 164,572 | 172,823 | 182,240 | 183,589 | 122,311 | 138,549 | 146,339 | 146,824 | 164,106 | 165,037 | 109,638 | | | | | |
| Bass 3 Avg | 219,933 | 219,625 | 219,848 | 243,966 | 247,725 | 163,532 | 165,534 | 173,315 | 183,070 | 184,672 | 122,906 | 139,605 | 147,022 | 147,179 | 165,089 | 165,607 | 109,793 | | | | | |
| Bass 4 Avg | 220,678 | 220,467 | 221,588 | 251,390 | 252,990 | 166,064 | 163,712 | 175,191 | 184,876 | 186,135 | 123,109 | 140,621 | 147,592 | 146,723 | 165,610 | 165,744 | 109,600 | | | | | |
| AVERAGE All | **220,002** | **219,949** | **220,297** | **247,121** | **249,328** | **164,677** | **164,269** | **173,350** | **183,386** | **185,155** | **122,938** | **139,124** | **146,740** | **146,822** | **164,716** | **165,451** | **109,759** | | | | | |
| Cents RF+3rds | -1,034 | -1,455 | 1,286 | 0,208 | 15,601 | -2,487 | -6,787 | -13,631 | -16,192 | 0,424 | -8,541 | 5,595 | -2,138 | -1,172 | -2,076 | 5,632 | -4,855 | | | | | |
| Cents RF-3rds | 0,619 | 0,197 | 2,938 | 1,860 | 17,253 | -0,835 | -5,134 | -11,979 | -14,540 | 2,077 | -6,889 | 7,247 | -0,485 | 0,480 | -0,424 | 7,284 | -3,203 | | | | | |
| Just Int I | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | | | |
| Just Int II | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,955 | 1,955 | 15,640 | 5,865 | 5,865 | 3,910 | 7,820 | -1,955 | -1,955 | 1,955 | 1,955 | 0,000 | | | | | |
| Meantone | 0,000 | 0,000 | 0,000 | -6,843 | -6,843 | -3,421 | -3,421 | -27,373 | -10,264 | -10,264 | -6,843 | -13,686 | 3,422 | 3,422 | -3,421 | -3,421 | 0,000 | | | | | |

**Third Phrase**

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soprano 1 Avg | 446,049 | 446,445 | 442,885 | 468,125 | 469,413 | 470,865 | 593,289 | 524,509 | 469,601 | 466,966 | 439,952 | 444,877 | 397,025 | 395,867 | 398,513 | 471,432 | 444,589 | 394,893 | 393,765 | 350,548 | 332,609 | 354,641 | 330,343 |
| Soprano 2 Avg | 445,311 | 443,583 | 442,661 | 463,653 | 467,298 | 467,108 | 589,662 | 522,881 | 467,432 | 466,440 | 443,935 | 443,851 | 393,487 | 391,843 | 394,891 | 466,472 | 442,526 | 390,885 | 390,619 | 349,318 | 330,948 | 351,306 | 330,815 |
| Soprano 3 Avg | 440,340 | 441,763 | 441,862 | 460,290 | 464,310 | 464,674 | 583,219 | 518,868 | 467,324 | 462,581 | 437,065 | 438,051 | 393,835 | 391,948 | 395,291 | 462,425 | 437,237 | 387,195 | 388,883 | 345,873 | 327,416 | 347,109 | 328,134 |
| Soprano 4 Avg | 441,059 | 440,859 | 440,465 | 462,623 | 461,363 | 461,288 | 580,730 | 519,782 | 462,344 | 461,100 | 438,483 | 440,919 | 392,659 | 395,201 | 393,170 | 462,228 | 439,041 | 388,450 | 390,133 | 348,919 | 329,247 | 349,038 | 328,939 |
| AVERAGE All | **443,190** | **443,163** | **441,968** | **463,673** | **465,596** | **465,984** | **586,725** | **521,510** | **466,675** | **464,272** | **439,859** | **441,925** | **394,252** | **393,715** | **395,466** | **465,639** | **440,848** | **390,356** | **390,850** | **348,665** | **330,055** | **350,524** | **329,558** |
| Cents RF+3rds | 5,784 | 5,678 | 1,006 | -15,997 | -8,831 | -7,390 | -8,504 | -12,492 | -4,823 | -13,761 | -7,277 | 0,836 | 3,215 | 0,856 | 8,541 | -8,670 | -3,387 | -13,979 | -11,787 | -9,516 | -4,477 | -0,311 | -7,087 |
| Cents RF-3rds | 10,048 | 9,942 | 5,269 | -11,733 | -4,568 | -3,126 | -4,240 | -8,228 | -0,560 | -9,498 | -3,013 | 5,100 | 7,479 | 5,119 | 12,804 | -4,406 | 0,877 | -9,715 | -7,524 | -5,253 | -0,213 | 3,952 | -2,824 |
| Just Int I | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -37,039 | -1,955 | 7,820 | -37,039 | -37,039 | -21,506 | -21,506 | -25,416 | -25,416 | -52,680 | -9,774 | -21,506 | -52,680 | -52,680 | -7,820 | -19,551 | -14,596 | -19,551 |
| Just Int II | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -15,532 | 19,551 | 29,326 | -15,532 | -15,532 | 0,000 | 0,000 | -3,910 | -3,910 | -31,174 | 11,732 | 0,000 | -31,174 | -31,174 | 13,686 | 1,955 | 6,910 | 1,955 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -9,775 | -9,775 | -9,775 | -1,955 | -5,865 | -9,775 | -9,775 | 0,000 | 0,000 | -3,910 | -3,910 | -3,910 | -9,775 | 0,000 | -3,910 | -3,910 | -7,820 | 1,955 | -7,820 | 1,955 |
| Meantone | 0,000 | 0,000 | 0,000 | 17,107 | 17,107 | 17,107 | 3,422 | 10,265 | 17,107 | 17,107 | 0,000 | 0,000 | 6,843 | 6,843 | 6,843 | 17,107 | 0,000 | 6,843 | 6,843 | 13,686 | 1,955 | 13,686 | 1,955 |
| Alto 1 Avg | 332,897 | 332,491 | 332,032 | 332,450 | 328,294 | 328,399 | 330,183 | 346,600 | 350,347 | 295,549 | 296,019 | 332,492 | 351,799 | 330,785 | 328,637 | 328,829 | 293,370 | 279,953 | 294,978 | 278,323 | | | |
| Alto 2 Avg | 330,878 | 330,982 | 329,603 | 330,881 | 328,940 | 328,215 | 327,749 | 342,641 | 346,050 | 293,541 | 295,954 | 329,520 | 348,466 | 332,267 | 330,909 | 329,680 | 294,179 | 280,554 | 295,304 | 276,674 | | | |
| Alto 3 Avg | 333,556 | 332,605 | 330,554 | 331,357 | 329,847 | 330,017 | 330,443 | 348,385 | 349,376 | 296,018 | 295,373 | 331,811 | 352,325 | 332,026 | 330,160 | 329,583 | 295,069 | 281,306 | 296,074 | 279,181 | | | |
| Alto 4 Avg | 332,687 | 329,908 | 328,980 | 331,223 | 329,993 | 328,283 | 328,972 | 347,303 | 349,397 | 292,463 | 292,385 | 329,299 | 348,625 | 329,476 | 326,959 | 327,894 | 291,359 | 277,708 | 292,743 | 275,107 | | | |
| AVERAGE All | **332,505** | **331,497** | **330,292** | **331,478** | **329,268** | **328,728** | **329,337** | **346,232** | **348,792** | **294,393** | **294,933** | **330,780** | **350,304** | **331,138** | **329,166** | **328,996** | **293,494** | **279,880** | **294,775** | **277,321** | | | |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cents RF+3rds | 8,324 | 3,067 | -3,235 | 2,969 | -8,609 | -11,450 | -8,248 | -21,636 | -8,883 | -2,434 | 0,738 | -0,678 | -1,398 | 1,196 | -9,147 | -10,039 | -7,727 | 10,047 | -0,190 | -5,855 | | |
| Cents RF-3rds | 12,588 | 7,331 | 1,029 | 7,233 | -4,345 | -7,186 | -3,985 | -17,373 | -4,620 | 1,829 | 5,001 | 3,586 | 2,866 | 5,460 | -4,883 | -5,775 | -3,463 | 14,311 | 4,074 | -1,591 | | |
| Just Int I | 1,955 | 1,955 | 1,955 | 1,955 | -19,552 | -19,552 | -19,552 | -7,819 | -7,819 | -23,461 | -23,461 | -19,551 | -7,820 | -19,551 | -19,551 | -19,551 | -23,461 | -35,192 | -50,725 | -35,192 | | |
| Just Int II | 1,955 | 1,955 | 1,955 | 1,955 | 1,954 | 1,954 | 1,954 | 13,687 | 13,687 | -1,955 | -1,955 | 1,955 | 13,686 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -29,219 | -13,686 | | |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | -7,820 | -7,820 | -1,955 | -1,955 | 1,955 | -7,820 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | -1,955 | 7,820 | | |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | 13,686 | 13,686 | 3,422 | 3,422 | -3,421 | 13,686 | -3,421 | -3,421 | -3,421 | 3,422 | -13,686 | 3,422 | -13,686 | | |
| Tenor 1 Avg | 279,604 | 277,547 | 277,542 | 277,696 | 263,152 | 260,853 | 232,501 | 219,641 | 195,976 | 195,566 | 220,057 | 220,572 | 247,981 | 247,514 | 277,817 | 293,422 | 330,705 | 276,583 | 276,496 | 292,042 | 245,681 | 164,035 |
| Tenor 2 Avg | 278,679 | 278,488 | 276,184 | 277,673 | 262,202 | 259,996 | 229,930 | 218,879 | 194,646 | 195,183 | 218,026 | 220,107 | 247,841 | 246,217 | 277,848 | 293,653 | 328,385 | 275,510 | 276,512 | 292,648 | 247,916 | 164,012 |
| Tenor 3 Avg | 277,526 | 275,373 | 273,897 | 276,100 | 260,485 | 257,913 | 229,173 | 216,073 | 192,547 | 193,166 | 216,748 | 218,770 | 247,900 | 245,121 | 277,906 | 291,745 | 329,069 | 277,420 | 275,173 | 289,236 | 246,210 | 162,793 |
| Tenor 4 Avg | 279,761 | 277,352 | 275,832 | 278,427 | 263,135 | 261,335 | 230,540 | 217,343 | 193,196 | 192,963 | 217,444 | 219,776 | 248,478 | 247,070 | 276,854 | 292,064 | **328,914** | 277,594 | 275,279 | 290,052 | 246,639 | 164,170 |
| **AVERAGE All** | **278,892** | **277,190** | **275,864** | **277,474** | **262,244** | **260,024** | **230,536** | **217,984** | **194,092** | **194,219** | **218,069** | **219,806** | **248,050** | **246,480** | **277,606** | **292,721** | **329,268** | **276,776** | **275,865** | **290,995** | **246,612** | **163,753** |
| Cents RF+3rds | 3,924 | -6,675 | -14,978 | -4,903 | -2,636 | -17,352 | -25,736 | -22,657 | -23,641 | -22,501 | -21,986 | -8,249 | 1,032 | -9,957 | -4,077 | -12,294 | -8,610 | -9,260 | -14,971 | -22,534 | -9,037 | -17,904 |
| Cents RF-3rds | 8,188 | -2,411 | -10,714 | -0,639 | 1,628 | -13,088 | -21,472 | -18,393 | -19,377 | -18,237 | -17,722 | -3,985 | 5,295 | -5,694 | 0,186 | -8,030 | -4,347 | -4,996 | -10,708 | -18,270 | -4,773 | -13,641 |
| Just Int I | -13,686 | -13,686 | -13,686 | -13,686 | 7,820 | 7,820 | -37,039 | -21,506 | -3,910 | -3,910 | -21,506 | -21,506 | -39,102 | -39,102 | -35,192 | -19,551 | -19,551 | -35,192 | -35,192 | -23,461 | -17,596 | -19,551 |
| Just Int II | -13,686 | -13,686 | -13,686 | -13,686 | 29,326 | 29,326 | -15,532 | 0,000 | 17,596 | 17,596 | 0,000 | 0,000 | -17,596 | -17,596 | -13,686 | -1,955 | 1,955 | -13,686 | -13,686 | -1,955 | 3,910 | 1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 7,820 | -5,865 | -5,865 | 4,955 | 0,000 | -3,910 | -3,910 | 0,000 | 0,000 | 3,910 | 3,910 | 7,820 | -1,955 | 1,955 | 7,820 | 7,820 | -1,955 | 3,910 | 1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -13,686 | 10,265 | 10,265 | 17,107 | 0,000 | 6,843 | 6,843 | 0,000 | 0,000 | -6,843 | -6,843 | -13,686 | 3,422 | -3,421 | -13,686 | -13,686 | 3,422 | -6,843 | -3,421 |
| Bass 1 Avg | 221,385 | 222,340 | 220,090 | 195,634 | 197,747 | 128,496 | 128,920 | 129,626 | 173,095 | 176,796 | 175,028 | 173,569 | 164,333 | 144,647 | 138,140 | 110,444 | 116,878 | 108,929 | 104,304 | 108,800 | | |
| Bass 2 Avg | 220,892 | 220,175 | 219,863 | 194,170 | 195,266 | 129,793 | 129,571 | 130,271 | 173,190 | 174,658 | 173,818 | 172,423 | 164,734 | 147,072 | 138,840 | 108,823 | 115,737 | 109,669 | 104,424 | 109,147 | | |
| Bass 3 Avg | 221,733 | 221,186 | 218,706 | 194,789 | 195,496 | 129,736 | 129,670 | 130,010 | 173,369 | 176,267 | 175,693 | 173,869 | 165,906 | 146,622 | 139,224 | 109,127 | 115,338 | 109,225 | 104,245 | 109,334 | | |
| Bass 4 Avg | 223,437 | 222,145 | 220,759 | 195,911 | 196,804 | 129,683 | 130,917 | 130,180 | 174,737 | 179,101 | 176,101 | 174,405 | 165,164 | 146,927 | 139,327 | 107,761 | 116,168 | 109,064 | 104,016 | 110,133 | | |
| **AVERAGE All** | **221,862** | **221,461** | **219,854** | **195,126** | **196,328** | **129,427** | **129,770** | **130,022** | **173,598** | **176,705** | **175,160** | **173,566** | **165,034** | **146,317** | **138,883** | **109,039** | **116,030** | **109,222** | **104,247** | **109,353** | | |
| Cents RF+3rds | 7,867 | 4,741 | -7,866 | -14,436 | -3,804 | -25,156 | -20,580 | -17,219 | -16,828 | 13,890 | -1,317 | -17,139 | -4,407 | -12,806 | -3,085 | -21,916 | -14,324 | -19,012 | 0,285 | -16,928 | | |
| Cents RF-3rds | 12,131 | 9,004 | -3,603 | -10,173 | 0,460 | -20,892 | -16,317 | -12,956 | -12,564 | 18,153 | 2,947 | -12,876 | -0,144 | -8,542 | 1,179 | -17,652 | -10,061 | -14,749 | 4,548 | -12,665 | | |
| Just Int I | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 7,820 | 7,820 | 7,820 | -7,819 | -7,819 | -56,590 | -56,590 | -19,551 | -19,551 | -35,192 | -21,506 | -16,551 | -21,506 | -33,237 | -21,506 | | |
| Just Int II | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 29,326 | 29,326 | 29,326 | 13,687 | 13,687 | -35,084 | -35,084 | 1,955 | -1,955 | -13,686 | 0,000 | 4,955 | 0,000 | -11,731 | 0,000 | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | -3,910 | -3,910 | -5,865 | -5,865 | -5,865 | -7,820 | -7,820 | -7,820 | -7,820 | 1,955 | -1,955 | 7,820 | 0,000 | -9,775 | 0,000 | 9,775 | 0,000 | | |
| Meantone | 0,000 | 0,000 | 0,000 | 6,843 | 6,843 | 10,265 | 10,265 | 10,265 | 13,686 | 13,686 | 13,686 | 13,686 | -3,421 | 3,422 | -13,686 | 0,000 | 17,107 | 0,000 | -17,108 | 0,000 | | |

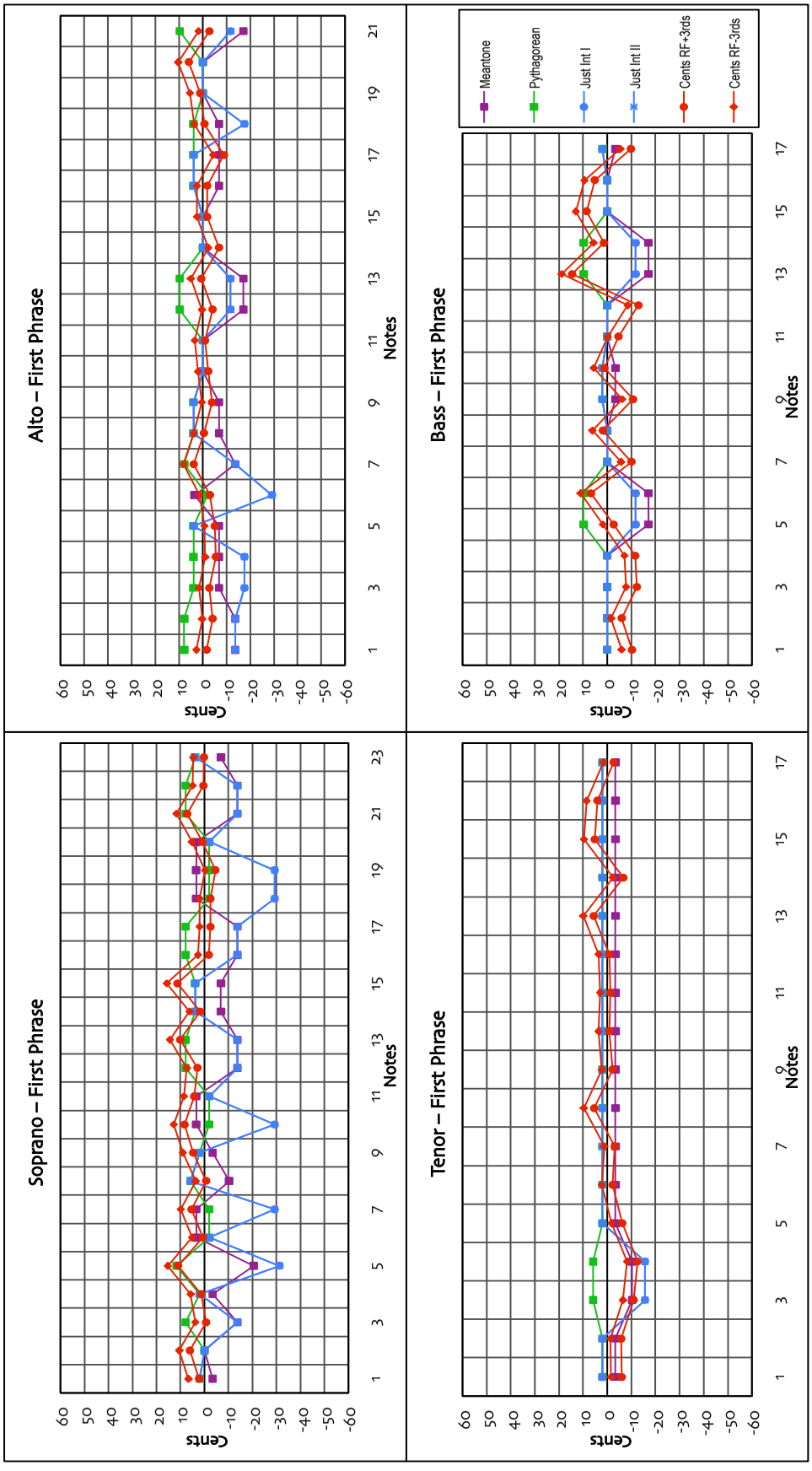
**Fourth Phrase**

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soprano 1 Avg | 370,140 | 370,874 | 369,893 | 330,896 | 298,563 | 397,974 | 394,372 | 398,444 | 392,756 | 374,185 | 334,827 | 442,933 | 444,220 | 394,242 | 444,498 | **502,925** | 371,215 | 330,919 | 373,959 | 394,915 | | |
| Soprano 2 Avg | 368,995 | 368,479 | 370,216 | 329,829 | 295,080 | 392,353 | 392,416 | 393,298 | 392,719 | 370,743 | 330,113 | 445,195 | 442,021 | 392,686 | 443,644 | 495,548 | 368,586 | 329,841 | 371,847 | 393,621 | | |
| Soprano 3 Avg | 366,576 | 370,889 | 368,496 | 328,742 | 296,414 | 393,627 | 389,607 | 391,607 | 393,501 | 371,319 | 328,518 | 442,471 | 440,552 | 391,130 | 440,368 | 493,148 | 369,929 | 331,143 | 371,440 | 388,553 | | |
| Soprano 4 Avg | 367,162 | 369,425 | 366,555 | 330,292 | 298,074 | 389,556 | 392,546 | 393,217 | 391,035 | 372,481 | 335,254 | 437,750 | 439,800 | 395,457 | 440,858 | 495,645 | 369,757 | 332,182 | 371,317 | 390,977 | | |
| **AVERAGE All** | **368,218** | **369,917** | **368,790** | **329,940** | **297,033** | **393,377** | **392,235** | **394,142** | **392,503** | **372,182** | **332,178** | **442,087** | **441,648** | **393,379** | **442,342** | **496,816** | **369,872** | **331,021** | **372,141** | **392,017** | | |
| Cents RF+3rds | -8,806 | -0,837 | -6,121 | 1,164 | 19,267 | 5,618 | 0,583 | 8,977 | 1,763 | 9,730 | 12,869 | 7,718 | 5,997 | 5,623 | 8,715 | 9,776 | -1,050 | 6,828 | 9,539 | -0,382 | | |
| Cents RF-3rds | -4,902 | 3,067 | -2,216 | 5,069 | 23,172 | 9,522 | 4,488 | 12,882 | 5,668 | 13,635 | 16,774 | 11,623 | 9,902 | 9,528 | 12,620 | 13,680 | 2,855 | 10,733 | 13,444 | 3,523 | | |
| Just Int I | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 | | |
| Just Int II | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 | | |
| Pythagorean | 7,820 | 7,820 | 7,820 | 3,910 | 0,000 | -1,955 | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | 7,820 | 3,910 | 7,820 | -1,955 | | |
| Meantone | -13,686 | -13,686 | -13,686 | -6,843 | 0,000 | 3,422 | 3,422 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | 3,422 | -3,421 | -10,264 | -13,686 | -6,843 | -13,686 | 3,422 | | |
| Alto 1 Avg | 294,925 | 294,952 | 295,200 | 280,789 | 251,095 | 331,127 | 329,837 | 329,804 | 328,770 | 295,063 | 281,462 | 371,738 | 369,044 | 391,369 | 369,235 | **325,135** | 294,370 | 278,076 | 279,584 | 293,831 | | |
| Alto 2 Avg | 293,451 | 296,016 | 295,148 | 277,534 | 247,110 | 331,346 | 329,022 | 329,565 | 327,861 | 291,586 | 278,361 | 370,810 | 368,413 | 388,195 | 367,974 | 328,912 | 293,806 | 276,326 | 278,002 | 290,758 | | |
| Alto 3 Avg | 295,006 | 294,398 | 295,241 | 279,732 | 248,237 | 331,951 | 330,768 | 331,682 | 330,138 | 296,068 | 281,113 | 373,754 | 372,372 | 393,868 | 375,072 | 330,545 | 295,229 | 279,270 | 280,588 | 295,291 | | |
| Alto 4 Avg | 292,909 | 293,108 | 292,174 | 276,170 | 246,233 | 330,540 | 328,410 | 328,068 | 327,320 | 291,139 | 276,677 | 368,740 | 370,084 | 390,671 | 369,839 | **326,008** | **290,962** | 275,543 | 276,191 | 291,274 | | |
| **AVERAGE All** | **294,073** | **294,619** | **294,441** | **278,556** | **248,169** | **331,241** | **329,509** | **329,780** | **328,522** | **293,464** | **279,403** | **371,261** | **369,978** | **391,026** | **370,530** | **327,650** | **293,592** | **277,304** | **278,591** | **292,789** | | |
| Cents RF+3rds | 1,929 | 5,140 | 4,093 | 8,082 | 8,106 | 7,977 | -1,096 | 0,324 | -6,290 | -1,659 | 13,338 | 5,439 | -0,551 | -4,764 | 2,030 | -10,893 | -0,905 | 0,282 | 8,301 | -5,648 | | |
| Cents RF-3rds | 5,833 | 9,044 | 7,998 | 11,987 | 12,011 | 11,881 | 2,808 | 4,228 | -2,386 | 2,246 | 17,243 | 9,344 | 3,354 | -0,859 | 5,934 | -6,988 | 2,999 | 4,187 | 12,206 | -1,744 | | |
| Just Int I | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 | | |
| Just Int II | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 9,775 | 5,865 | 3,910 | 3,910 | 3,910 | 3,910 | 0,000 | 9,775 | 7,820 | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 9,775 | 0,000 | | |
| Meantone | 0,000 | 0,000 | 0,000 | -17,108 | -10,264 | -6,843 | -6,843 | -6,843 | -6,843 | 0,000 | -17,108 | -13,686 | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | -17,108 | 0,000 | | |
| Tenor 1 Avg | 247,669 | 247,272 | 247,976 | 220,500 | 197,671 | 278,352 | 275,979 | 277,767 | 276,664 | 246,159 | 222,225 | 294,862 | 292,511 | 295,592 | 294,669 | 220,543 | 219,756 | 196,561 | | | | |
| Tenor 2 Avg | 246,474 | 246,193 | 246,171 | 218,861 | 196,036 | 277,585 | 275,486 | 277,338 | 275,283 | 245,776 | 220,904 | 294,294 | 292,671 | 297,760 | 296,015 | 219,753 | 219,935 | 195,626 | | | | |
| Tenor 3 Avg | 244,234 | 244,350 | 244,307 | 216,200 | 194,537 | 274,365 | 273,197 | 274,651 | 273,828 | 244,219 | 218,101 | 291,623 | 291,166 | 294,963 | 292,343 | 218,197 | 218,431 | 192,828 | | | | |
| Tenor 4 Avg | 245,536 | 245,960 | 246,148 | 219,172 | 196,990 | 279,944 | 276,071 | 278,401 | 275,520 | 246,306 | 221,718 | 295,114 | 292,142 | 296,404 | 292,838 | 220,125 | **221,162** | **195,503** | | | | |
| **AVERAGE All** | **245,978** | **245,944** | **246,150** | **218,683** | **196,309** | **277,561** | **275,183** | **277,039** | **275,324** | **245,615** | **220,737** | **293,973** | **292,123** | **296,180** | **293,966** | **219,654** | **219,821** | **195,130** | | | | |
| Cents RF+3rds | -7,244 | -7,485 | -6,031 | -10,871 | 2,269 | 1,889 | -13,009 | -1,372 | -12,124 | -9,801 | 5,315 | 1,341 | -9,590 | 14,288 | 1,300 | -3,196 | -1,886 | -8,161 | | | | |
| Cents RF-3rds | -3,339 | -3,581 | -2,127 | -6,966 | 6,173 | 5,794 | -9,105 | 2,533 | -8,219 | -5,896 | 9,220 | 5,246 | -5,685 | 18,192 | 5,205 | 0,708 | 2,019 | -4,256 | | | | |
| Just Int I | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 | | | | |
| Just Int II | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 | | | | |

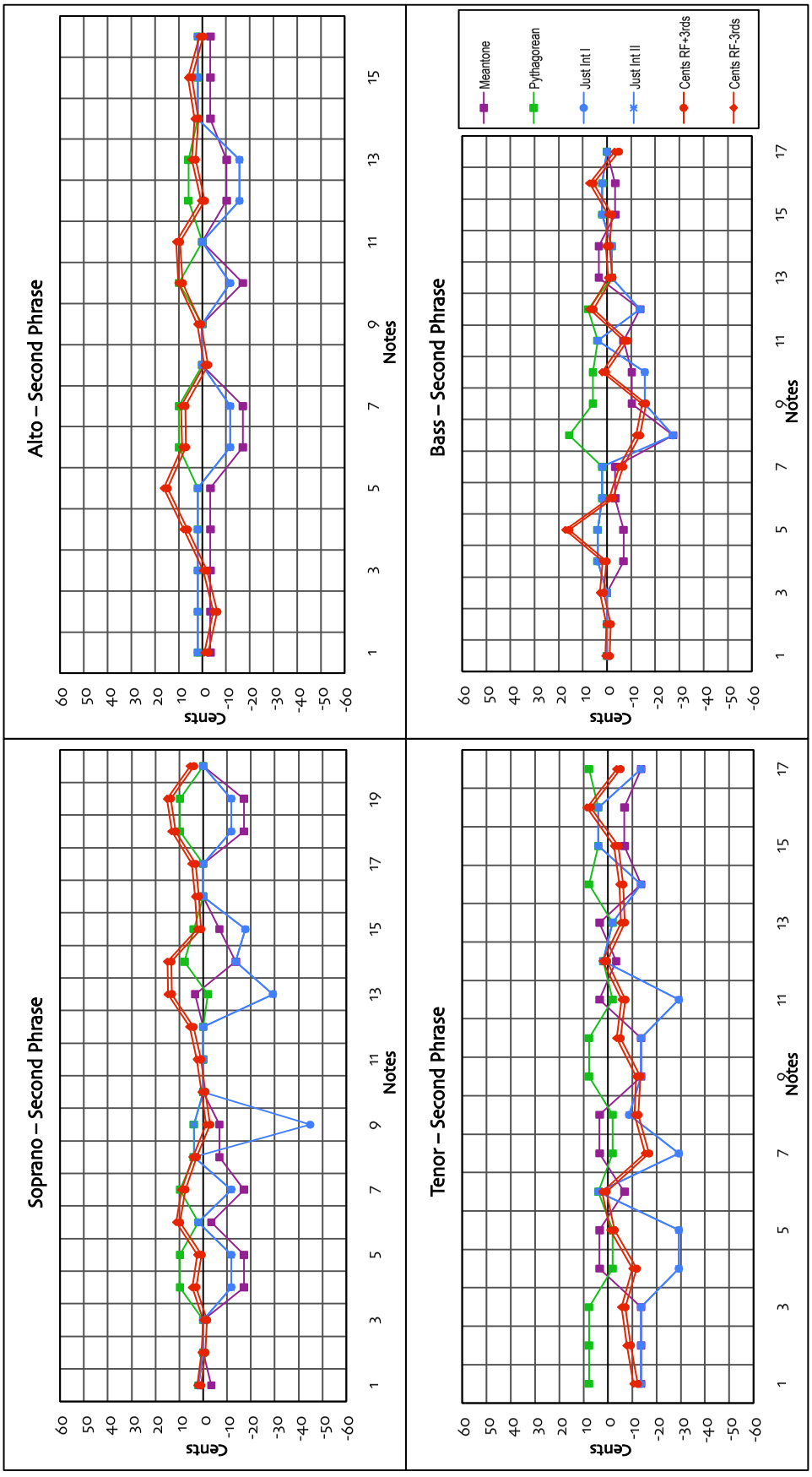
| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pythagorean | 5,865 | 5,865 | 5,865 | 1,955 | -1,955 | 9,775 | 9,775 | 9,775 | 9,775 | 5,865 | 1,955 | 0,000 | 0,000 | 0,000 | 0,000 | 1,955 | 1,955 | -1,955 |
| Meantone | -10,264 | -10,264 | -10,264 | -3,421 | -29,219 | -17,108 | -17,108 | -17,108 | -17,108 | -10,264 | -3,421 | 0,000 | 0,000 | 0,000 | 0,000 | -3,421 | -3,421 | 3,422 |
| Bass 1 Avg | 195,427 | 196,976 | 196,667 | 184,475 | 164,852 | 221,702 | 220,610 | **220,781** | 219,897 | 196,157 | 184,671 | 247,872 | 247,677 | 222,776 | 207,952 | 220,237 | 109,241 | 122,921 |
| Bass 2 Avg | 194,036 | 196,463 | 195,458 | 184,090 | 165,317 | 220,340 | 217,794 | 218,843 | 217,801 | 194,027 | 185,229 | 245,828 | 245,055 | 221,106 | 207,397 | 218,583 | 109,262 | 122,295 |
| Bass 3 Avg | 193,269 | 195,151 | 194,450 | 184,552 | 165,554 | 220,093 | 218,445 | 218,394 | 216,588 | 193,104 | 185,148 | 245,027 | 243,870 | 220,565 | 207,100 | 218,930 | 108,518 | 122,353 |
| Bass 4 Avg | 194,728 | 195,583 | 195,353 | 184,321 | 165,438 | 221,543 | 219,645 | 220,727 | 219,041 | 193,790 | **186,963** | 248,362 | 247,632 | 222,218 | 208,556 | 221,516 | 109,239 | 123,482 |
| AVERAGE All | **194,365** | **196,043** | **195,482** | **184,360** | **165,290** | **220,919** | **219,123** | **219,686** | **218,332** | **194,269** | **185,503** | **246,772** | **246,059** | **221,666** | **207,751** | **219,817** | **109,065** | **122,763** |
| Cents RF+3rds | -14,957 | -0,072 | -5,037 | -6,453 | 4,523 | 6,745 | -7,388 | -2,946 | -13,655 | -15,808 | 4,250 | -1,663 | -6,678 | 12,587 | 0,350 | -1,919 | -15,253 | -10,434 |
| Cents RF-3rds | -11,053 | 3,833 | -1,132 | -2,548 | 8,427 | 10,650 | -3,483 | 0,959 | -9,750 | -11,904 | 8,154 | 2,241 | -2,773 | 16,492 | 4,254 | 1,985 | -11,348 | -6,529 |
| Just Int I | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Just Int II | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Pythagorean | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | 5,865 | 5,865 | 1,955 | 11,730 | 1,955 | 1,955 | 5,865 |
| Meantone | -29,219 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | -3,421 | -3,421 | -29,219 | -13,686 | -10,264 | -10,264 | -3,421 | -20,530 | -3,421 | 3,421 | -15,641 |

**Fifth Phrase**

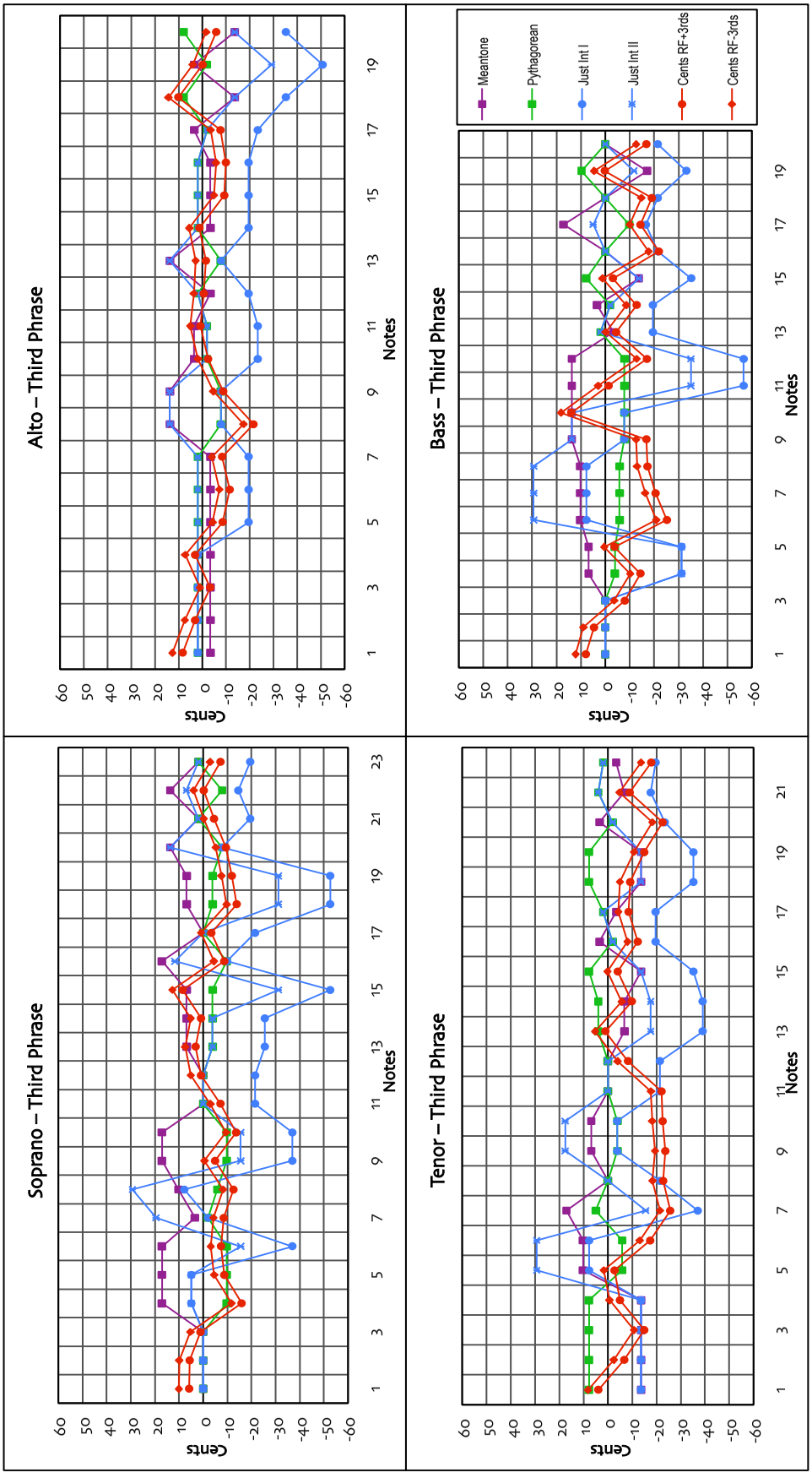
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Soprano 1 Avg | 397,711 | 595,740 | 629,217 | 664,481 | 498,580 | 560,746 | 593,889 | 563,125 | 498,434 | 447,808 | 596,622 | 395,886 | 372,475 | 331,079 | 332,636 | 293,285 |
| Soprano 2 Avg | 395,077 | 590,715 | 622,925 | 661,985 | 493,501 | 559,718 | 591,969 | 561,510 | 495,855 | 440,512 | 596,462 | 393,644 | 370,428 | 329,843 | 332,130 | 293,686 |
| Soprano 3 Avg | 395,678 | 590,376 | 621,568 | 655,759 | 498,626 | 557,261 | 585,839 | 555,788 | 495,542 | 440,761 | 588,397 | 390,714 | 368,860 | 327,744 | 328,714 | 294,560 |
| Soprano 4 Avg | 394,563 | 589,433 | 616,804 | 655,141 | 492,563 | 558,444 | 585,478 | 556,362 | 492,678 | 437,545 | 585,650 | 390,988 | 369,773 | 329,872 | 327,987 | 295,757 |
| AVERAGE All | **395,757** | **591,566** | **622,629** | **659,341** | **495,818** | **559,042** | **589,294** | **559,196** | **495,627** | **441,656** | **591,783** | **392,808** | **370,384** | **329,635** | **330,367** | **294,322** |
| Cents RF+3rds | 12,763 | 8,671 | -2,730 | -3,545 | 2,995 | 10,773 | 2,008 | 11,250 | 2,330 | 2,733 | 9,305 | -0,188 | -1,950 | -3,734 | 0,106 | 0,099 |
| Cents RF-3rds | 13,342 | 9,250 | -2,151 | -2,966 | 3,574 | 11,353 | 2,588 | 11,829 | 2,909 | 3,312 | 9,884 | 0,392 | -1,371 | -3,155 | 0,685 | 0,679 |
| Just Int I | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 |
| Just Int II | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 |
| Pythagorean | -1,955 | 0,000 | 13,685 | 3,910 | 5,865 | 9,775 | 0,000 | 9,775 | 5,865 | 1,955 | 0,000 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 |
| Meantone | 3,422 | 0,000 | -23,951 | -6,843 | -10,264 | -17,108 | 0,000 | -17,108 | -10,264 | -3,421 | 0,000 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 |
| Alto 1 Avg | 370,937 | 389,532 | 369,914 | 330,440 | 294,305 | 277,090 | 297,766 | 296,783 | 295,430 | 278,934 | 278,844 | 294,176 | | | | |
| Alto 2 Avg | 371,149 | 391,352 | 368,702 | 329,884 | 291,450 | 277,986 | 295,328 | 294,771 | 294,389 | 275,356 | 278,178 | 293,229 | | | | |
| Alto 3 Avg | 375,606 | 393,633 | 372,192 | 332,387 | 296,497 | 281,128 | 295,775 | 296,246 | 295,655 | 280,464 | 281,560 | 295,942 | | | | |
| Alto 4 Avg | 372,998 | 391,940 | 371,629 | 329,378 | 292,577 | 277,145 | 293,688 | 293,480 | 293,151 | 276,158 | 276,628 | 292,146 | | | | |
| AVERAGE All | **372,673** | **391,614** | **370,609** | **330,522** | **293,707** | **278,337** | **295,639** | **295,320** | **294,656** | **277,728** | **278,803** | **293,873** | | | | |
| Cents RF+3rds | 8,714 | -5,457 | -0,898 | 0,920 | -3,522 | 3,424 | 7,830 | 5,958 | 2,063 | -0,368 | 6,317 | -2,543 | | | | |
| Cents RF-3rds | 9,294 | -4,877 | -0,318 | 1,500 | -2,943 | 4,004 | 8,409 | 6,538 | 2,642 | 0,211 | 6,896 | -1,964 | | | | |
| Just Int I | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | | | |
| Just Int II | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | | | |
| Pythagorean | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | | | | |
| Meantone | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | | | | |
| Tenor 1 Avg | 261,681 | 293,826 | 261,811 | 248,252 | 292,015 | 275,133 | 246,239 | 220,768 | 219,852 | 197,823 | 220,661 | 195,525 | 195,262 | 186,242 | | |
| Tenor 2 Avg | 263,023 | 294,890 | 261,481 | 248,105 | 291,685 | 277,264 | 246,963 | 220,052 | 220,584 | 195,216 | 220,347 | 195,942 | 196,739 | 185,291 | | |
| Tenor 3 Avg | 263,311 | 292,796 | 261,250 | 246,704 | 289,985 | 274,828 | 245,087 | 216,866 | 219,096 | 195,637 | 218,674 | 193,609 | 195,917 | 184,501 | | |
| Tenor 4 Avg | 263,856 | 294,941 | 263,418 | 247,774 | 292,894 | 276,692 | 245,647 | 219,184 | 223,064 | 195,114 | 220,145 | 195,982 | 197,921 | 186,395 | | |
| AVERAGE All | **262,968** | **294,113** | **261,990** | **247,709** | **291,645** | **275,979** | **245,984** | **219,218** | **220,649** | **195,948** | **219,957** | **195,264** | **196,460** | **185,607** | | |
| Cents RF+3rds | 5,087 | -1,131 | -1,362 | 1,597 | -15,721 | -11,305 | -10,497 | -9,940 | 1,327 | -4,215 | -4,110 | -10,261 | 0,304 | 1,927 | | |
| Cents RF-3rds | 5,666 | -0,552 | -0,783 | 2,177 | -15,141 | -10,726 | -9,917 | -9,360 | 1,907 | -3,635 | -3,530 | -9,681 | 0,883 | 2,506 | | |
| Just Int I | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 | | |
| Just Int II | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 | | |
| Pythagorean | -3,910 | 0,000 | -3,910 | 5,865 | 0,000 | 9,775 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -1,955 | -1,955 | 7,820 | | |
| Meantone | 6,843 | 0,000 | 6,843 | -10,264 | 0,000 | -17,108 | -10,264 | -3,421 | -3,421 | 3,422 | -3,421 | 3,422 | 3,422 | -13,686 | | |
| Bass 1 Avg | 220,348 | 232,570 | 220,072 | 207,255 | 196,375 | 187,370 | 123,897 | 109,519 | 110,036 | 146,835 | | | | | | |
| Bass 2 Avg | 220,285 | 233,183 | 219,490 | 206,344 | 194,498 | 186,563 | 122,904 | 109,578 | 109,806 | 146,580 | | | | | | |
| Bass 3 Avg | 219,521 | 230,423 | 217,878 | 205,233 | 194,222 | 186,540 | 122,424 | 109,098 | 108,863 | 146,642 | | | | | | |
| Bass 4 Avg | 221,802 | 233,815 | 220,615 | 209,571 | 196,453 | 186,979 | 123,603 | 109,726 | 109,810 | 147,079 | | | | | | |
| AVERAGE All | **220,489** | **232,498** | **219,514** | **207,101** | **195,387** | **186,863** | **123,207** | **109,480** | **109,629** | **146,784** | | | | | | |
| Cents RF+3rds | 0,070 | -8,116 | -7,603 | -8,375 | -9,177 | 13,603 | -7,474 | -11,971 | -9,622 | -4,341 | | | | | | |
| Cents RF-3rds | 0,650 | -7,537 | -7,023 | -7,796 | -8,597 | 14,182 | -6,894 | -11,392 | -9,042 | -3,762 | | | | | | |
| Just Int I | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 | | | | | | |
| Just Int II | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 | | | | | | |
| Pythagorean | 1,955 | -7,820 | 1,955 | 11,730 | -1,955 | 7,820 | 5,865 | 1,955 | 1,955 | 0,000 | | | | | | |
| Meantone | -3,421 | 13,686 | -3,421 | -20,530 | 3,422 | -13,686 | -10,264 | -3,421 | -3,421 | 0,000 | | | | | | |



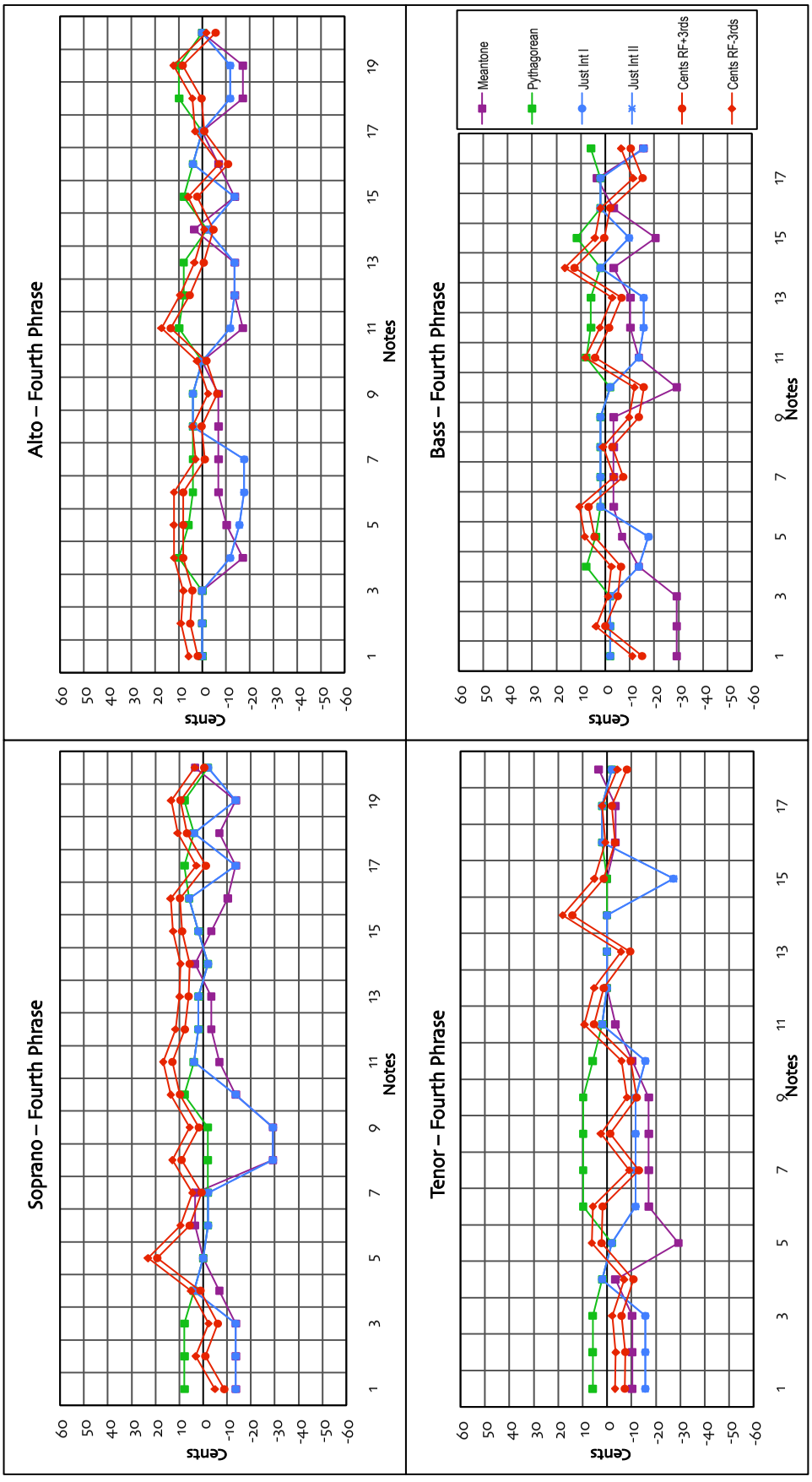

**11.1A – BBC SECTIONS' CHARTS – PHRASE 1**



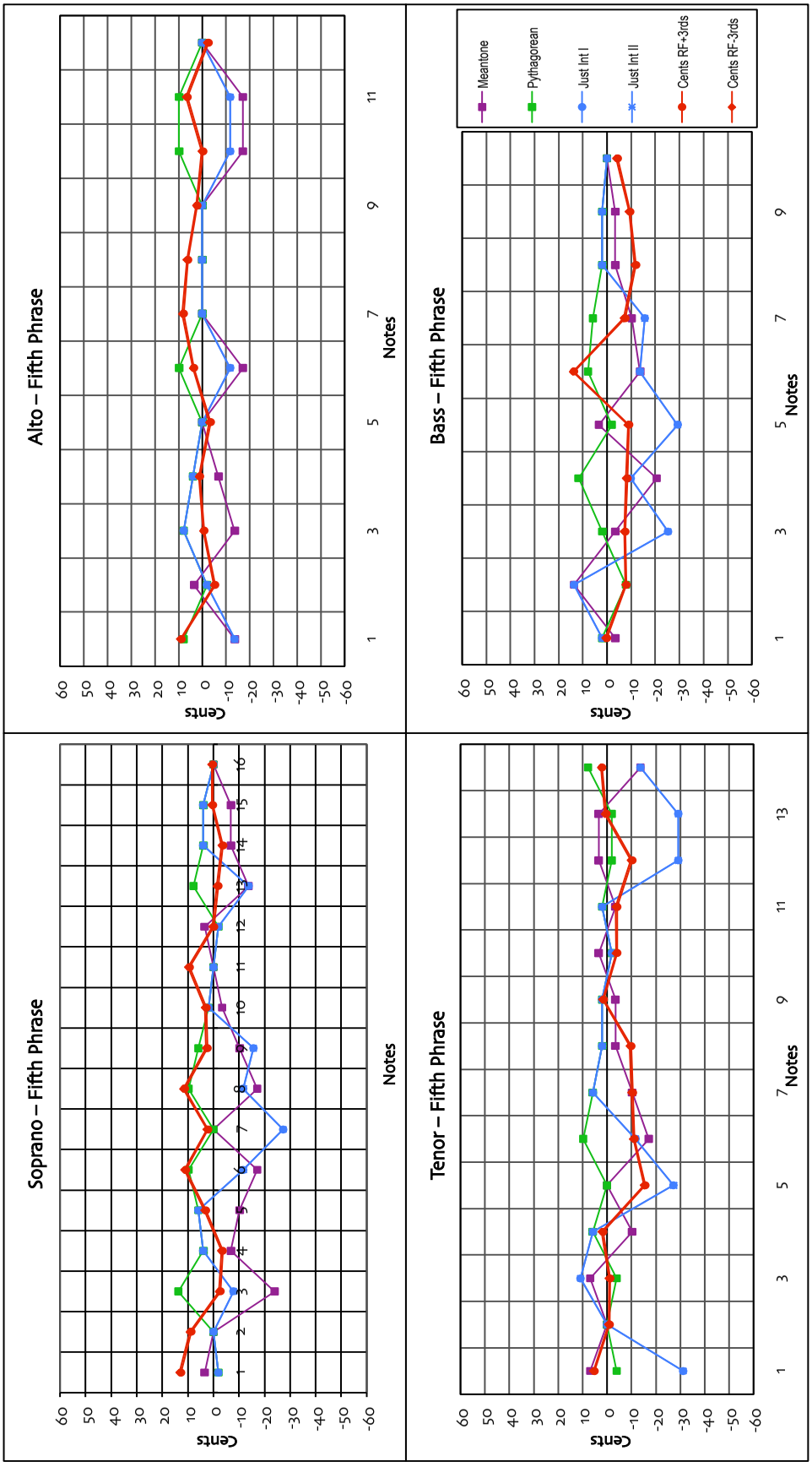

**11.1B – BBC SECTIONS' CHARTS – PHRASE 2**



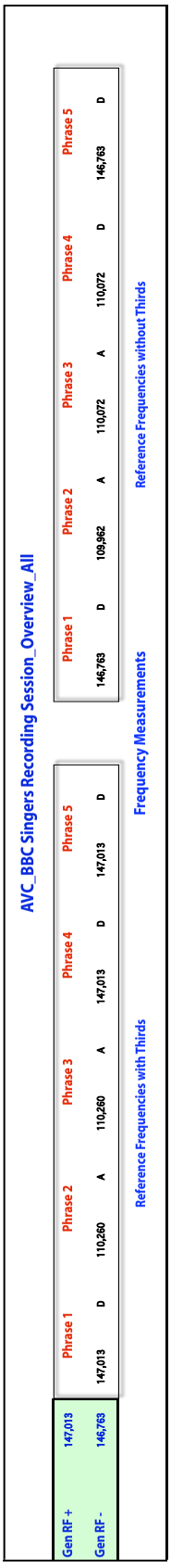

**11.1C – BBC SECTIONS' CHARTS – PHRASE 3**



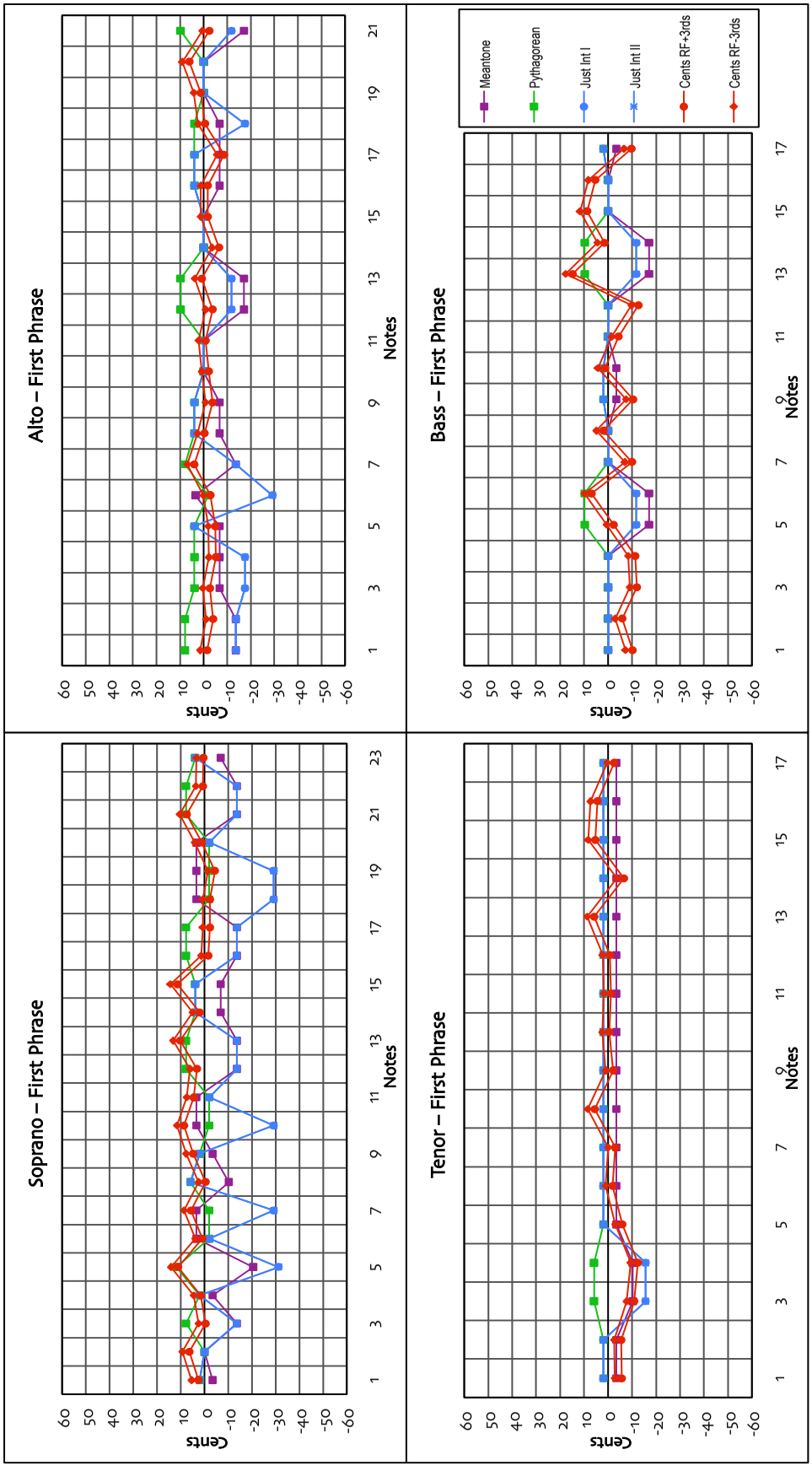

**11.1D – BBC SECTIONS' CHARTS – PHRASE 4**



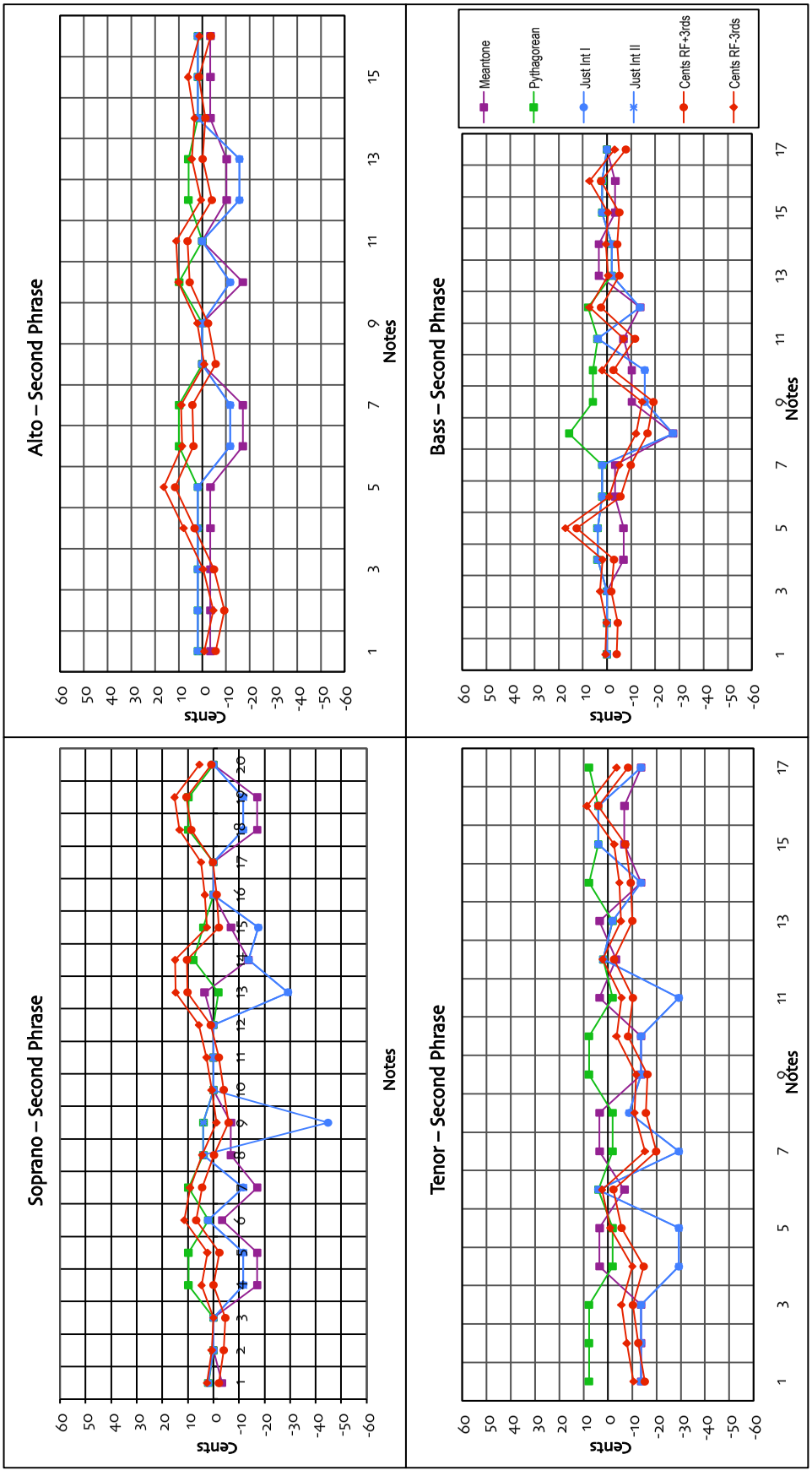

**11.1E – BBC SECTIONS' CHARTS – PHRASE 5**



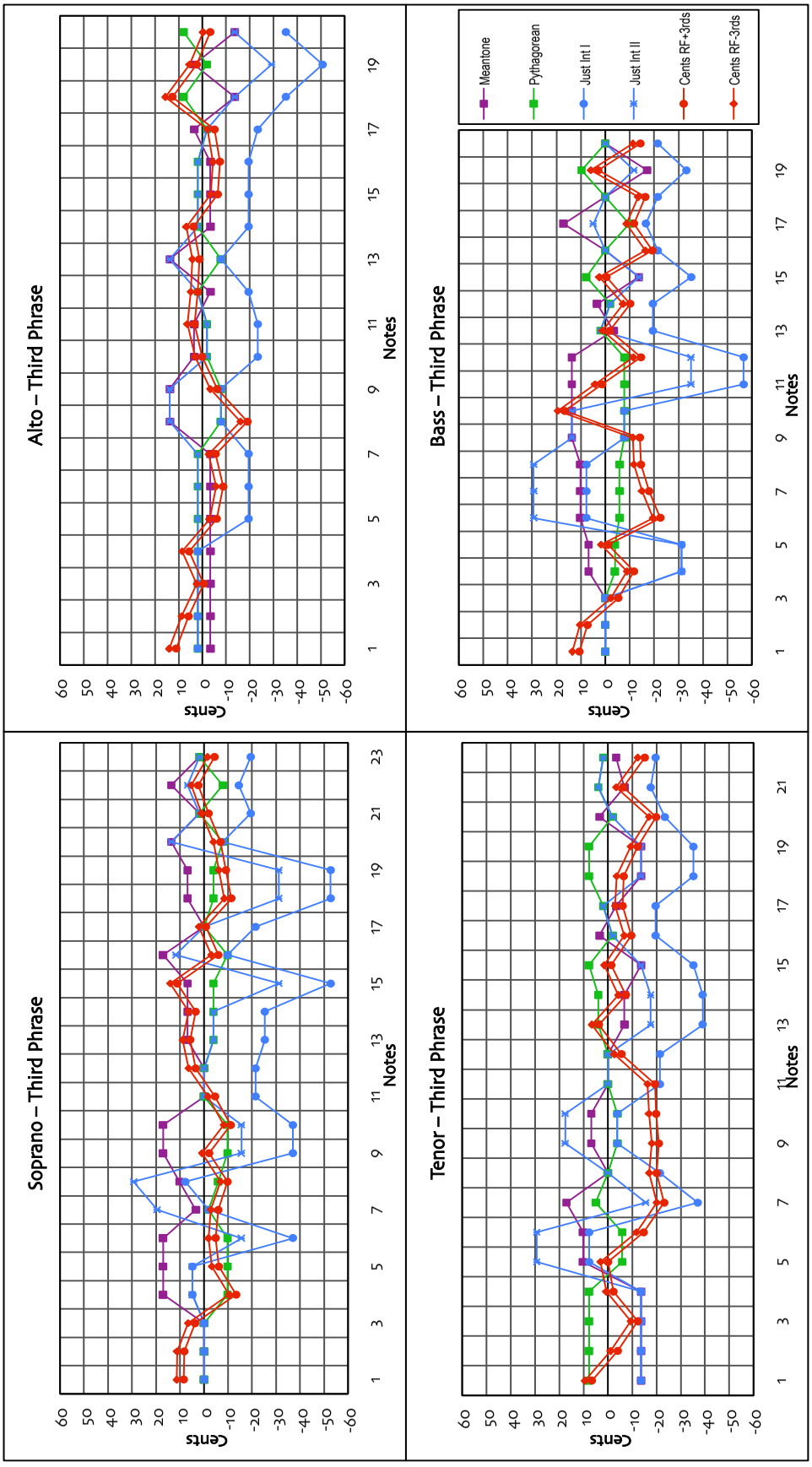

AVC_BBC Sections_Equalised reference frequencies



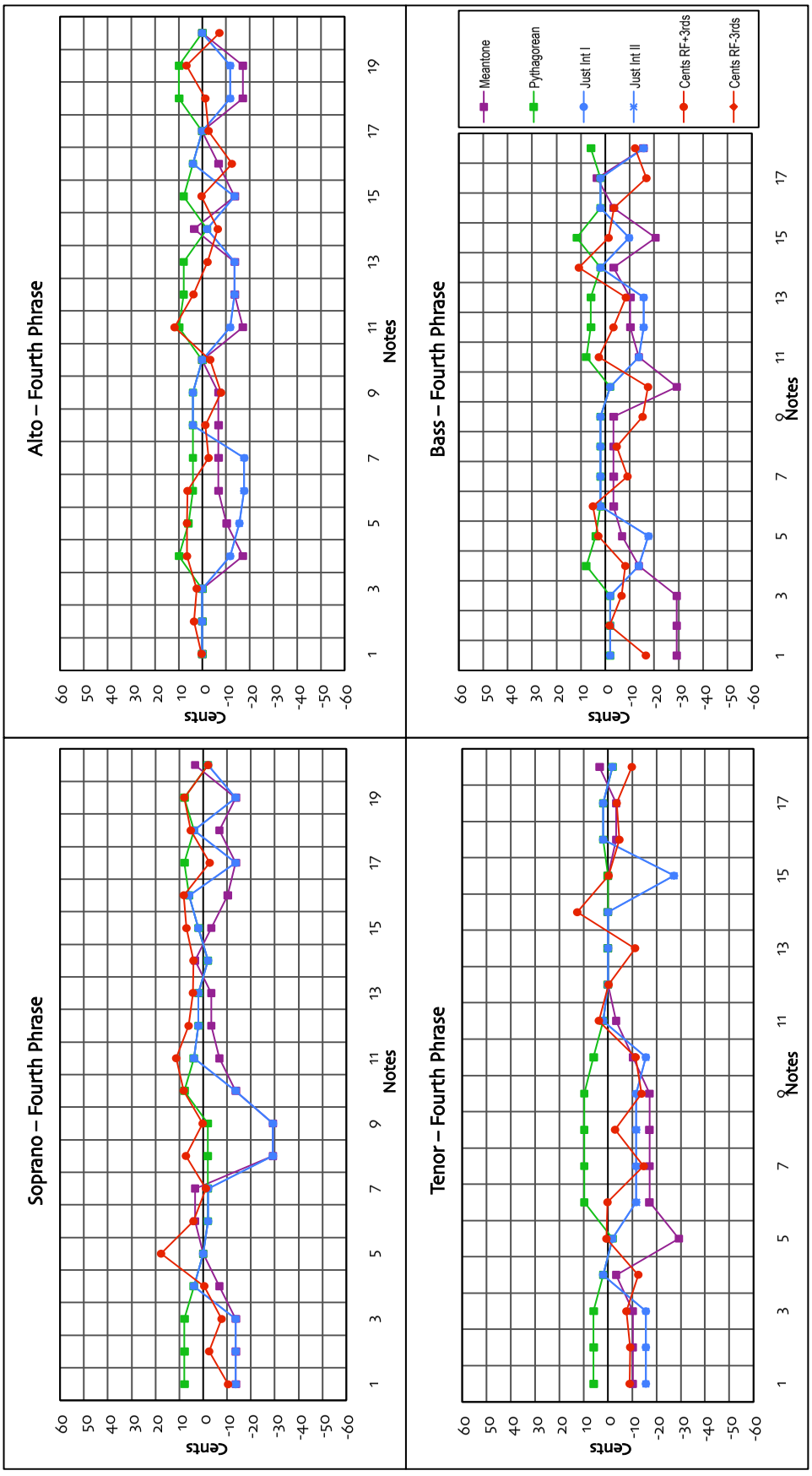

**11.2A – BBC SECTIONS' CHARTS (EQUALISED) – PHRASE 1**



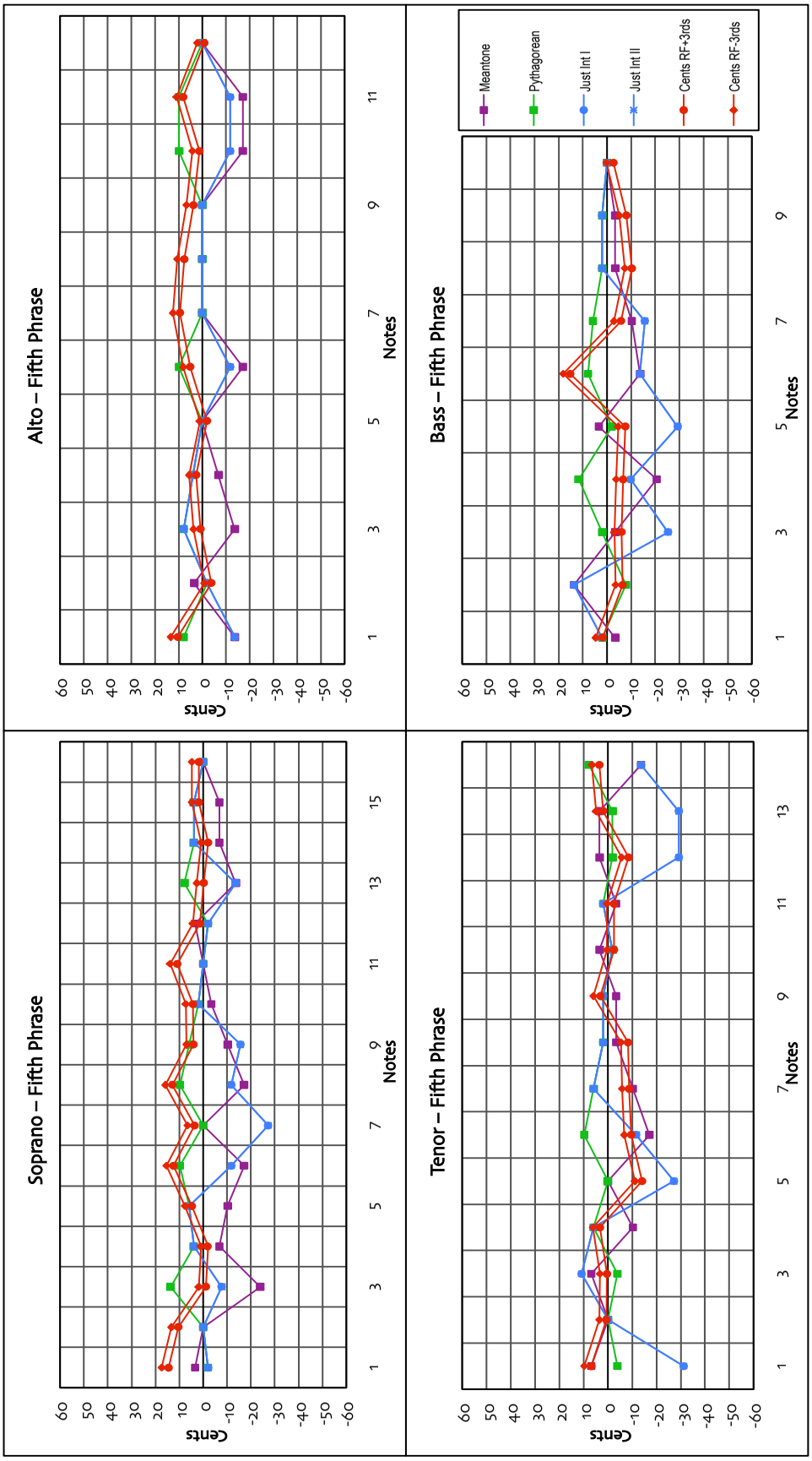

**11.2B – BBC SECTIONS' CHARTS (EQUALISED) – PHRASE 2**




**11.2c – BBC SECTIONS' CHARTS (EQUALISED) – PHRASE 3**

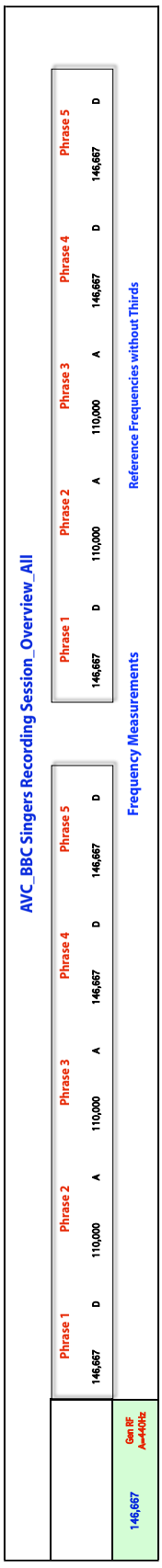



**11.2D – BBC SECTIONS' CHARTS (EQUALISED) – PHRASE 4**



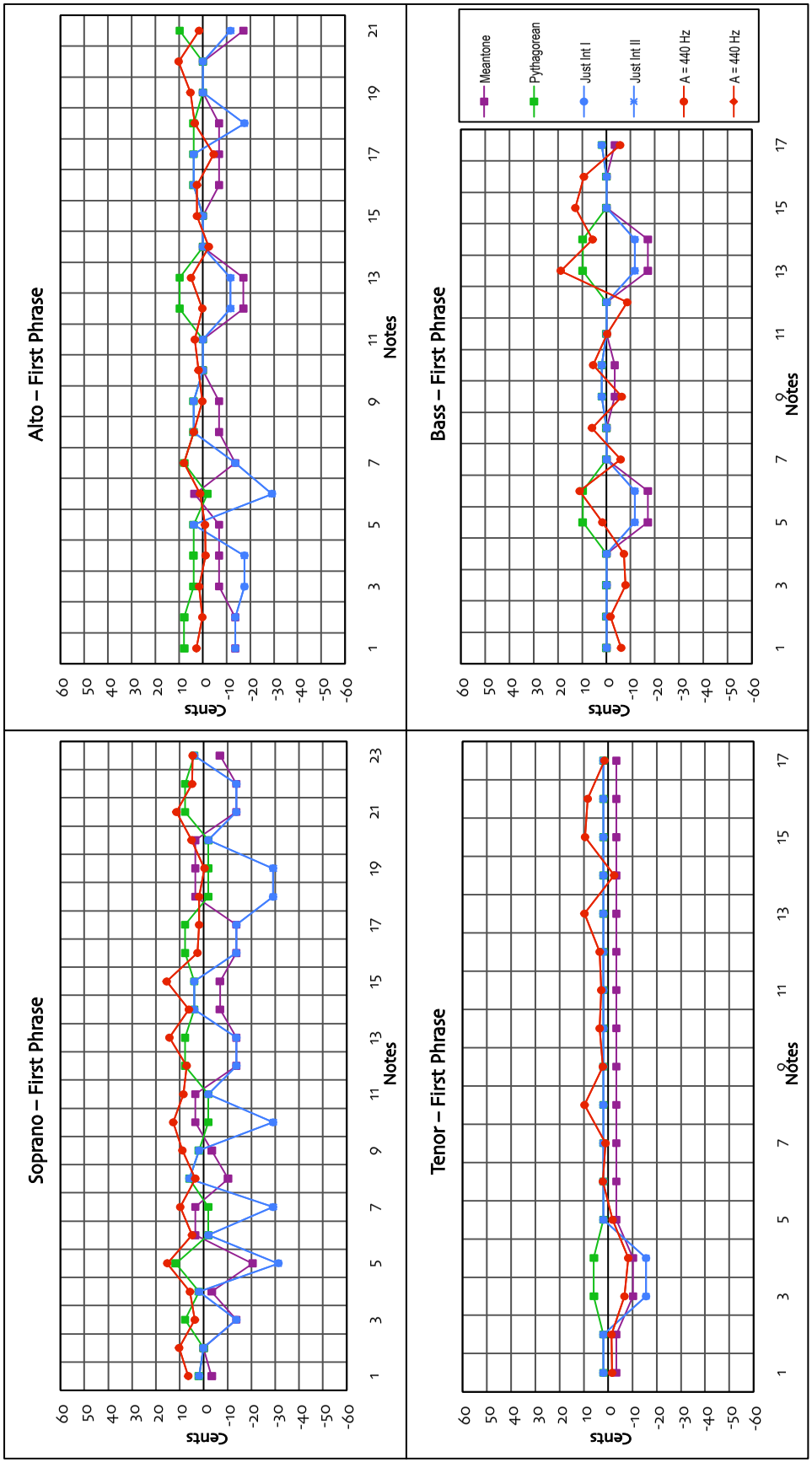

**11.2E – BBC SECTIONS' CHARTS (EQUALISED) – PHRASE 5**

## 11.3 - The BBC Singers sections' results
## (reference frequency = 440Hz)

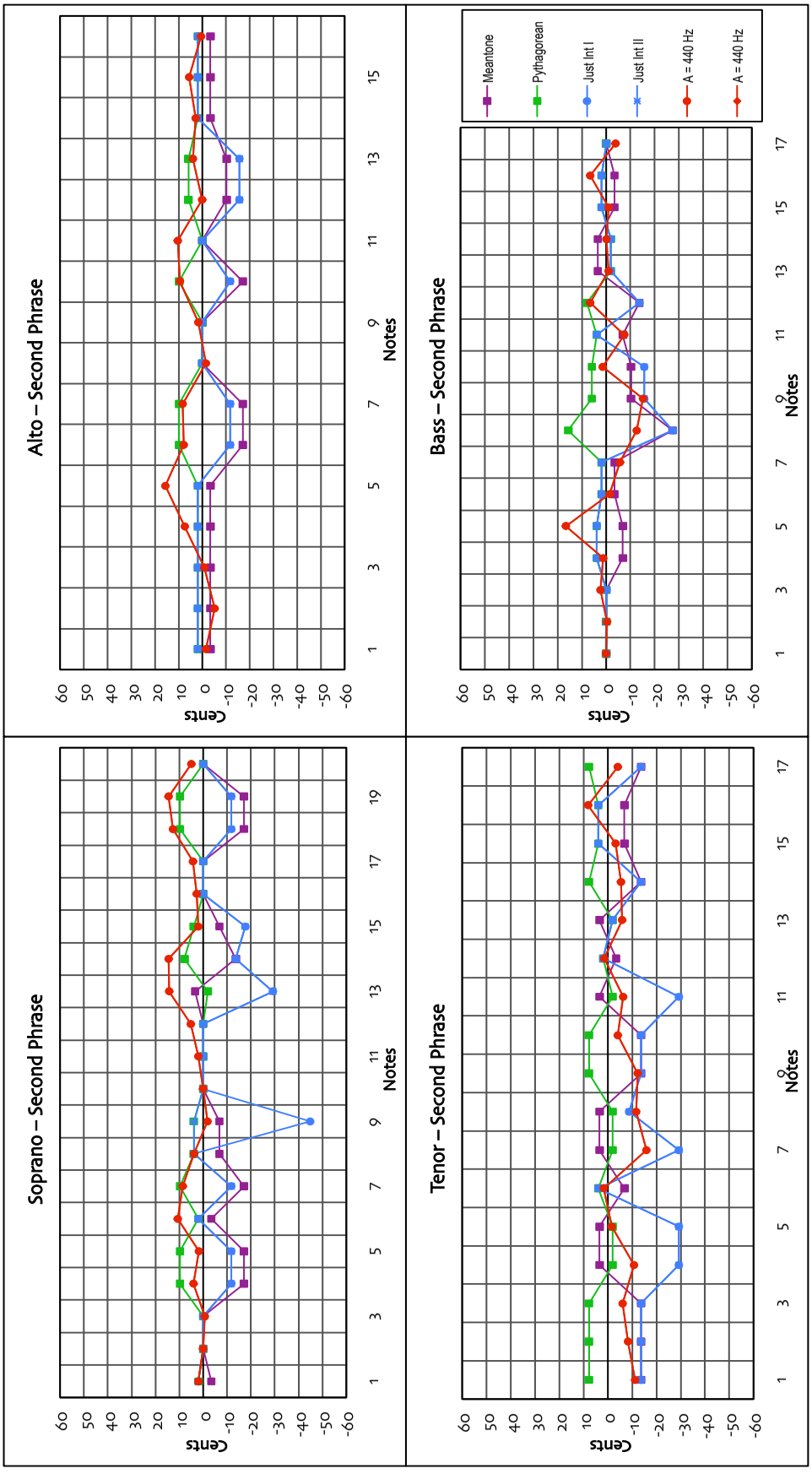



AVC_BBC Sections_Reference frequency=440 Hz

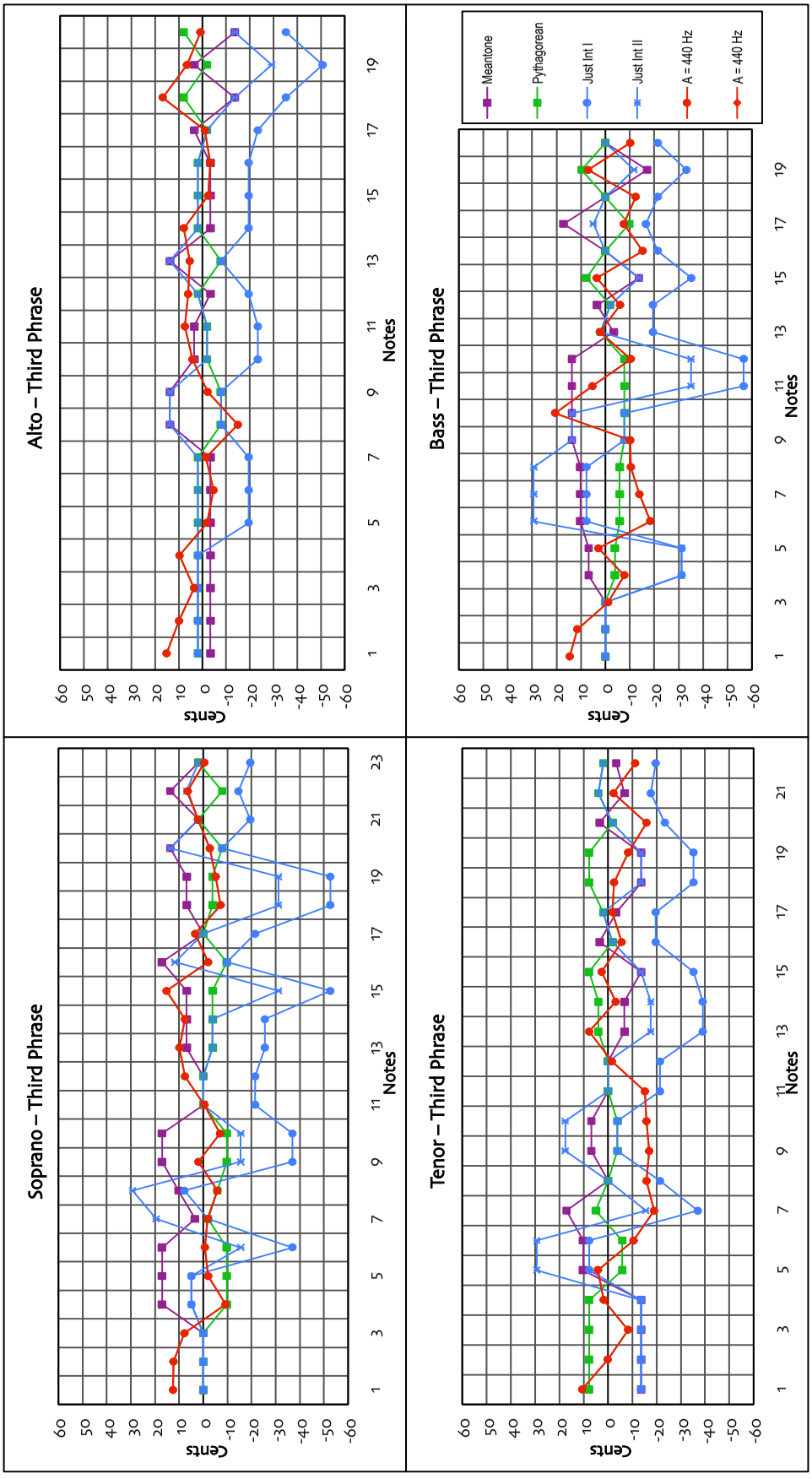
## 11.3 - THE BBC SINGERS SECTIONS' RESULTS (REFERENCE FREQUENCY = 440HZ)



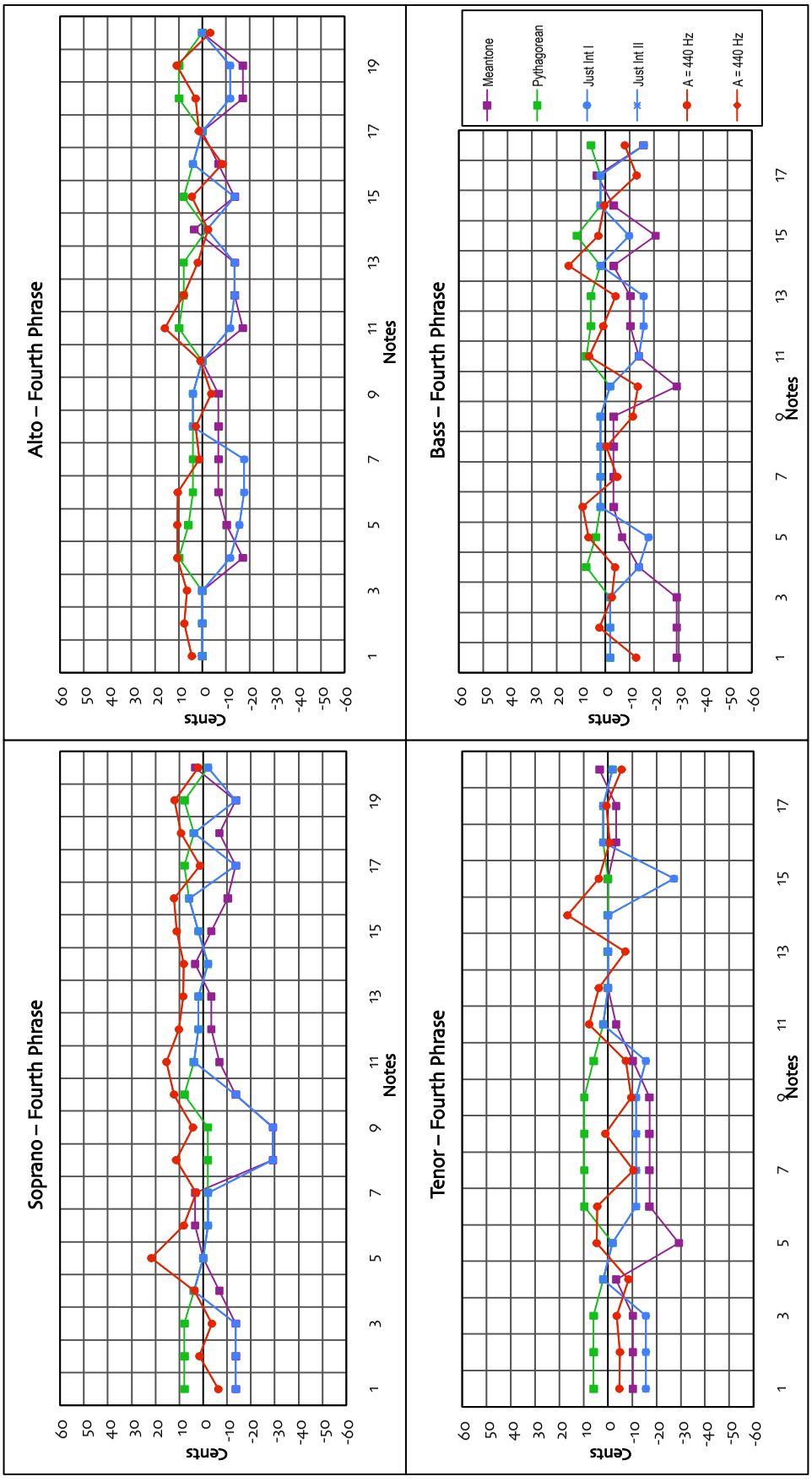

**11.3A – THE BBC SINGERS SECTIONS' CHARTS (440HZ) – PHRASE 1**



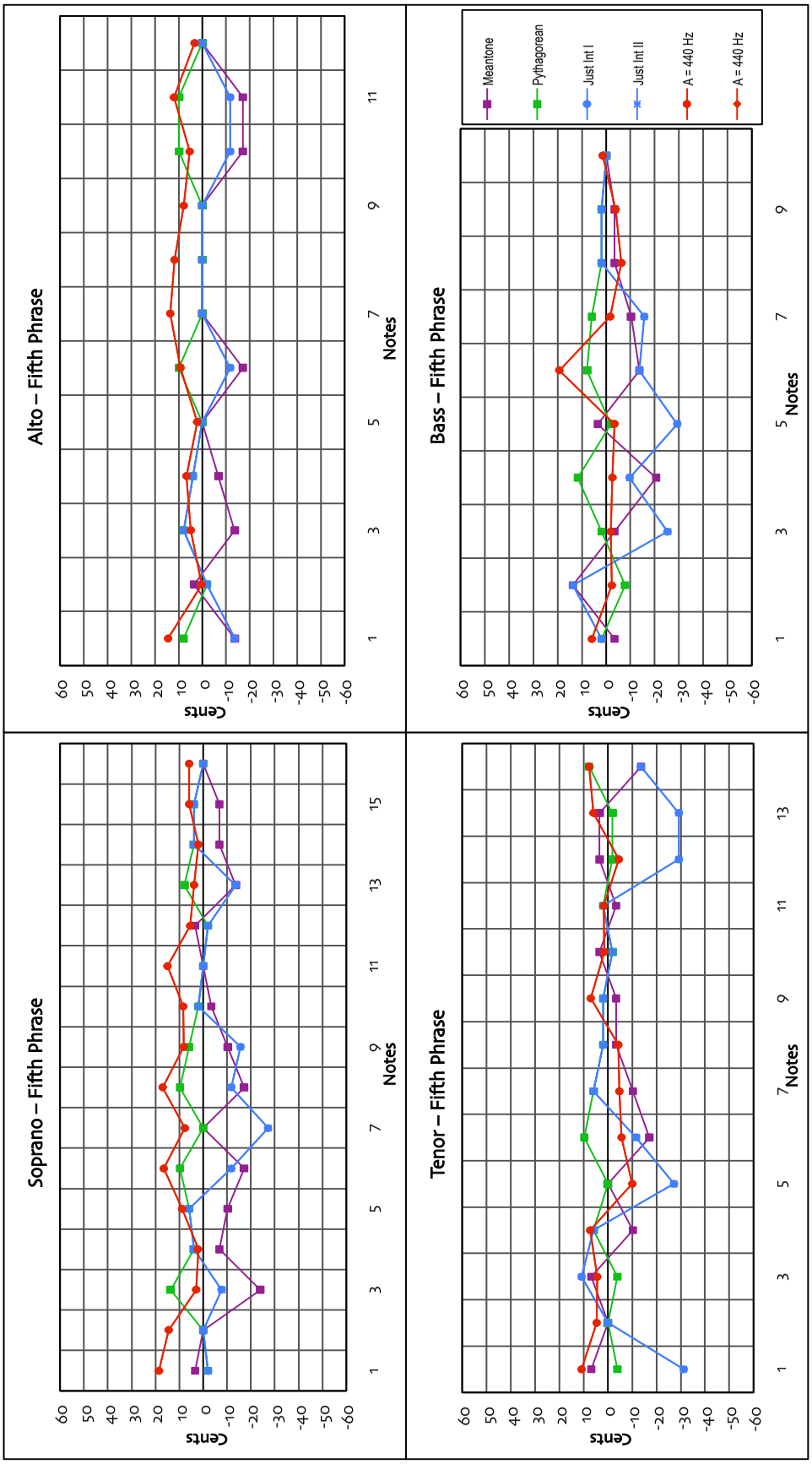

**11.3B – THE BBC SINGERS SECTIONS' CHARTS (440HZ) – PHRASE 2**




**11.3C – THE BBC SINGERS SECTIONS' CHARTS (440HZ) – PHRASE 3**




**11.3D – THE BBC SINGERS SECTIONS' CHARTS (440HZ) – PHRASE 4**




**11.3E – THE BBC SINGERS SECTIONS' CHARTS (440HZ) – PHRASE 5**

## AVC _ BBC Singers Sections _ Soprano

| Reference Frequencies with Thirds | | | | | | | | | | Frequency Measurements | | | | | | | | | | Reference Frequencies without Thirds | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | | | | | | | | | | | | Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
| 147,030 | D | 110,057 | A | 110,428 | A | 146,875 | D | 147,179 | D | | | | | | | | | | | 146,658 | D | 109,949 | A | 110,156 | A | 146,543 | D | 147,138 | D |

First Phrase

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 449,368 | 588,558 | 378,037 | 441,495 | 420,997 | 397,280 | 399,533 | 490,706 | 443,013 | 396,256 | 393,423 | 373,781 | 376,323 | 333,272 | 326,997 | 372,943 | 373,592 | 395,730 | 396,201 | 397,848 | 377,952 | 372,119 | 331,380 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 444,073 | 591,468 | 372,317 | 440,796 | 420,462 | 398,235 | 392,590 | 494,348 | 434,583 | 398,741 | 392,873 | 370,872 | 377,004 | 329,387 | 329,697 | 375,415 | 375,585 | 393,424 | 398,530 | 393,603 | 372,581 | 370,537 | 334,856 |
| Take 04 | 446,324 | 591,921 | 381,268 | 445,564 | 422,364 | 395,362 | 391,947 | 490,519 | 438,681 | 398,774 | 395,018 | 375,753 | 379,793 | 334,408 | 323,472 | 373,973 | 374,767 | 395,858 | 396,315 | 398,584 | 372,166 | 371,676 | 331,585 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 444,365 | 585,942 | 368,608 | 437,636 | 417,085 | 395,374 | 396,221 | 496,664 | 439,095 | 393,200 | 393,792 | 367,331 | 371,825 | 330,466 | 335,106 | 372,414 | 374,412 | 399,249 | 398,287 | 397,139 | 372,578 | 371,487 | 332,369 |
| Take 07 | 442,757 | 601,738 | 374,681 | 443,237 | 418,608 | 397,194 | 397,087 | 503,334 | 443,638 | 397,330 | 392,729 | 372,429 | 375,226 | 332,552 | 333,861 | 372,995 | 367,448 | 393,734 | 389,780 | 393,539 | 369,157 | 375,964 | 334,301 |
| Take 08 | 446,212 | 592,580 | 379,879 | 442,881 | 421,375 | 393,856 | 393,992 | 496,867 | 445,031 | 390,369 | 399,617 | 372,971 | 377,411 | 331,900 | 331,042 | 372,882 | 371,849 | 393,105 | 396,071 | 396,505 | 370,407 | 374,761 | 332,960 |
| Take 09 | 456,955 | 599,430 | 375,521 | 447,602 | 428,271 | 399,055 | 395,816 | 503,953 | 445,966 | 397,114 | 397,535 | 374,327 | 377,285 | 330,410 | 335,142 | 375,923 | 372,507 | 397,043 | 394,873 | 397,395 | 372,099 | 372,419 | 330,797 |
| Take 10 | 443,032 | 591,918 | 363,687 | 436,235 | 416,279 | 391,506 | 392,246 | 487,199 | 444,829 | 397,246 | 388,537 | 368,997 | 376,689 | 327,630 | 329,022 | 373,840 | 372,370 | 396,243 | 388,104 | 394,557 | 371,180 | 371,849 | 330,233 |
| Take 11 | 446,926 | 600,169 | 369,861 | 440,935 | 419,223 | 395,695 | 399,857 | 506,803 | 442,787 | 399,727 | 396,197 | 370,563 | 374,177 | 333,156 | 332,449 | 372,152 | 371,614 | 396,065 | 398,043 | 399,913 | 376,328 | 375,633 | 334,621 |
| Take 12 | 445,622 | 594,844 | 368,931 | 442,857 | 422,228 | 394,018 | 396,234 | 497,285 | 446,852 | 394,495 | 398,530 | 372,287 | 374,293 | 330,576 | 335,333 | 372,603 | 374,192 | 394,483 | 399,968 | 394,928 | 373,273 | 374,774 | 330,625 |
| Take 13 | 448,808 | 595,946 | 381,876 | 444,225 | 423,782 | 397,208 | 391,543 | 499,861 | 442,413 | 400,422 | 398,664 | 372,737 | 381,948 | 333,567 | 332,137 | 370,981 | 371,094 | 396,617 | 390,897 | 394,835 | 373,197 | 372,084 | 330,849 |
| Take 14 | 443,449 | 587,675 | 375,464 | 441,227 | 421,482 | 397,068 | 396,305 | 499,480 | 447,727 | 400,809 | 397,006 | 372,044 | 375,457 | 331,700 | 334,091 | 370,963 | 373,274 | 394,178 | 395,474 | 395,177 | 375,774 | 376,114 | 331,826 |
| Take 15 | 447,057 | 591,454 | 368,430 | 440,956 | 421,517 | 395,733 | 397,020 | 502,071 | 446,627 | 394,905 | 398,175 | 369,811 | 374,080 | 330,816 | 332,857 | 368,120 | 373,648 | 392,061 | 391,104 | 393,545 | 372,439 | 370,385 | 332,733 |
| Take 16 | 441,591 | 598,173 | 373,063 | 443,360 | 417,286 | 391,296 | 390,646 | 492,656 | 448,145 | 393,445 | 392,792 | 369,848 | 372,963 | 329,762 | 336,390 | 364,265 | 371,537 | 394,078 | 389,598 | 395,940 | 371,868 | 371,480 | 328,592 |
| Take 17 | 444,093 | 573,432 | 375,007 | 439,178 | 418,840 | 391,543 | 390,950 | 498,357 | 443,853 | 393,306 | 392,923 | 370,277 | 374,536 | 329,888 | 330,323 | 368,689 | 367,407 | 392,259 | 390,250 | 394,011 | 373,614 | 371,654 | 328,867 |
| Take 18 | 443,058 | 592,679 | 376,269 | 444,921 | 432,845 | 396,904 | 395,729 | 493,418 | 442,322 | 397,547 | 389,502 | 371,737 | 377,814 | 330,074 | 331,183 | 369,902 | 374,395 | 391,642 | 395,166 | 393,247 | 369,785 | 374,969 | 326,546 |
| Take 19 | 440,597 | 551,319 | 373,668 | 432,993 | 412,149 | 394,141 | 391,913 | 507,307 | 448,692 | 392,552 | 393,949 | 371,664 | 377,307 | 332,756 | 326,614 | 371,390 | 366,770 | 391,779 | 388,641 | 395,855 | 371,559 | 369,515 | 331,096 |
| Take 20 | 446,190 | 593,631 | 370,794 | 434,686 | 418,456 | 388,907 | 397,567 | 501,697 | 440,081 | 390,370 | 391,703 | 369,675 | 374,140 | 329,646 | 336,671 | 368,441 | 368,344 | 389,201 | 387,291 | 397,466 | 368,537 | 369,314 | 328,522 |
| Take 21 | 443,524 | 595,652 | 370,539 | 441,788 | 418,724 | 391,493 | 389,229 | 497,412 | 443,068 | 394,868 | 397,687 | 372,331 | 377,051 | 330,215 | 331,979 | 371,509 | 373,174 | 395,844 | 387,786 | 391,875 | 370,118 | 369,723 | 329,881 |
| Sop 1 AVERAGE | 445,474 | 593,633 | 373,574 | 441,188 | 420,630 | 394,835 | 394,549 | 497,891 | 443,548 | 395,867 | 394,771 | 371,549 | 376,070 | 331,167 | 331,809 | 371,547 | 371,999 | 394,347 | 393,283 | 395,577 | 372,348 | 372,445 | 331,191 |
| Cents RF+3rds | 19,081 | 16,158 | 14,345 | 2,345 | 19,735 | 10,173 | 8,917 | 11,670 | 11,579 | 14,693 | 9,893 | 4,937 | 25,872 | 5,746 | 9,095 | 4,928 | 7,031 | 8,031 | 3,355 | 13,423 | 8,654 | 9,106 | 5,871 |
| Cents RF-3rds | 23,457 | 20,535 | 18,721 | 6,721 | 24,112 | 14,549 | 13,293 | 16,046 | 15,956 | 19,069 | 14,269 | 9,313 | 30,249 | 10,122 | 13,471 | 9,304 | 11,407 | 12,407 | 7,731 | 17,799 | 13,031 | 13,482 | 10,248 |
| Just Int I | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Just Int II | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Pythagorean | 1,955 | 0,000 | 7,820 | 1,955 | 11,730 | -1,955 | -1,955 | 5,865 | 1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 | 3,910 | 7,820 | 7,820 | -1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 |
| Meantone | -3,421 | 0,000 | -13,686 | -3,421 | -20,530 | 3,422 | 3,422 | -10,264 | -3,421 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 | -6,843 | -13,686 | -13,686 | 3,422 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 |
| Take 01 | 446,801 | 604,674 | 361,290 | 441,845 | 418,485 | 394,055 | 395,278 | 496,505 | 445,616 | 398,565 | 397,519 | 369,012 | 370,467 | 331,489 | 337,968 | 370,791 | 370,915 | 387,480 | 391,647 | 393,929 | 375,122 | 373,709 | 332,458 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 438,535 | 595,570 | 366,754 | 440,834 | 415,983 | 391,283 | 388,496 | 492,675 | 440,382 | 392,238 | 392,887 | 371,208 | 373,983 | 329,517 | 333,586 | 367,637 | 368,436 | 388,260 | 385,804 | 390,100 | 375,154 | 371,495 | 331,523 |
| Take 04 | 439,211 | 562,160 | 369,018 | 444,934 | 418,406 | 393,811 | 392,708 | 495,797 | 444,157 | 393,370 | 395,389 | 371,512 | 376,207 | 338,778 | 332,974 | 373,981 | 371,537 | 392,706 | 392,896 | 395,347 | 370,719 | 374,156 | 331,375 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 443,187 | 589,881 | 368,011 | 442,361 | 420,000 | 394,975 | 395,551 | 497,997 | 444,801 | 396,480 | 396,239 | 373,794 | 377,856 | 331,141 | 331,367 | 370,270 | 370,357 | 396,799 | 392,581 | 394,552 | 374,374 | 373,604 | 331,781 |
| Take 07 | 447,419 | 593,069 | 377,070 | 440,854 | 413,800 | 392,970 | 395,269 | 495,204 | 444,977 | 397,262 | 394,524 | 372,373 | 376,608 | 329,069 | 334,487 | 369,206 | 365,596 | 393,958 | 392,898 | 393,807 | 372,910 | 369,910 | 332,186 |
| Take 08 | 445,617 | 594,647 | 370,447 | 437,558 | 417,241 | 393,850 | 392,666 | 492,890 | 442,760 | 393,812 | 395,507 | 372,760 | 371,371 | 329,763 | 342,703 | 373,562 | 368,485 | 392,346 | 393,311 | 393,218 | 374,336 | 372,386 | 332,360 |
| Take 09 | 451,332 | 586,882 | 362,963 | 442,679 | 421,888 | 397,446 | 395,882 | 480,982 | 448,336 | 399,698 | 392,797 | 371,664 | 376,457 | 333,636 | 335,106 | 374,205 | 371,419 | 396,423 | 393,268 | 395,346 | 377,211 | 375,239 | 330,701 |
| Take 10 | 440,844 | 578,060 | 363,262 | 444,267 | 415,065 | 392,481 | 391,066 | 488,162 | 439,015 | 393,410 | 393,653 | 372,980 | 369,427 | 330,625 | 333,397 | 368,764 | 369,215 | 388,925 | 388,016 | 390,625 | 369,788 | 366,567 | 332,906 |
| Take 11 | 443,975 | 596,445 | 376,476 | 442,281 | 415,985 | 392,873 | 397,390 | 497,859 | 447,514 | 399,803 | 398,341 | 374,341 | 383,970 | 330,461 | 334,461 | 372,781 | 365,894 | 391,951 | 393,186 | 395,729 | 378,256 | 378,212 | 334,388 |
| Take 12 | 443,760 | 600,481 | 363,570 | 445,723 | 419,576 | 395,689 | 400,164 | 492,914 | 447,830 | 394,956 | 403,609 | 369,769 | 372,608 | 329,682 | 333,535 | 372,034 | 367,644 | 394,648 | 390,246 | 392,553 | 375,793 | 370,485 | 332,419 |
| Take 13 | 440,725 | 602,093 | 369,978 | 443,369 | 416,526 | 393,779 | 394,514 | 505,250 | 447,916 | 397,194 | 398,203 | 372,152 | 374,036 | 331,580 | 334,859 | 371,925 | 369,560 | 389,304 | 390,834 | 395,107 | 377,215 | 369,047 | 329,472 |
| Take 14 | 447,924 | 599,810 | 372,059 | 442,009 | 419,929 | 398,071 | 401,179 | 494,240 | 447,670 | 403,090 | 402,816 | 376,497 | 374,169 | 332,405 | 332,126 | 370,073 | 369,360 | 393,710 | 391,235 | 393,628 | 371,206 | 369,248 | 335,023 |
| Take 15 | 440,424 | 597,116 | 370,900 | 439,665 | 415,202 | 392,514 | 394,522 | 499,671 | 441,794 | 394,028 | 391,799 | 370,509 | 373,790 | 330,067 | 331,418 | 365,078 | 364,532 | 389,425 | 394,328 | 393,159 | 374,277 | 366,736 | 329,477 |
| Take 16 | 439,515 | 591,652 | 369,019 | 433,655 | 408,579 | 387,867 | 389,861 | 485,980 | 439,580 | 394,857 | 394,209 | 368,985 | 367,053 | 326,619 | 327,776 | 365,107 | 365,528 | 388,647 | 382,320 | 388,897 | 371,117 | 366,195 | 329,997 |
| Take 17 | 439,717 | 518,882 | 370,811 | 437,866 | 412,214 | 393,025 | 394,424 | 488,803 | 441,937 | 389,564 | 391,695 | 368,517 | 369,520 | 329,306 | 334,299 | 367,938 | 364,671 | 389,925 | 388,220 | 392,039 | 372,228 | 368,069 | 328,972 |
| Take 18 | 439,923 | 590,449 | 373,643 | 436,731 | 415,851 | 396,781 | 396,135 | 504,833 | 446,036 | 400,283 | 396,763 | 372,683 | 375,747 | 329,540 | 327,348 | 365,953 | 366,854 | 393,318 | 393,421 | 391,355 | 372,009 | 372,861 | 330,437 |
| Take 19 | 438,422 | 597,270 | 368,105 | 437,209 | 410,527 | 387,455 | 390,666 | 490,437 | 440,841 | 389,969 | 392,411 | 369,818 | 373,445 | 326,090 | 333,828 | 365,395 | 368,708 | 389,812 | 390,879 | 389,777 | 371,947 | 370,111 | 327,074 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 20 | 438,609 | 591,426 | 370,460 | 437,155 | 410,233 | 388,245 | 389,374 | 497,401 | 440,951 | 393,215 | 393,364 | 365,499 | 371,072 | 325,530 | 330,675 | 366,526 | 366,052 | 389,604 | 389,182 | 392,229 | 371,065 | 373,554 | 327,058 |
| Take 21 | 442,023 | 601,306 | **367,855** | **441,042** | 416,550 | 393,052 | 391,966 | **495,259** | **444,258** | 394,948 | **396,055** | **372,045** | **370,932** | 327,216 | 333,520 | **372,086** | **368,755** | 390,820 | 390,250 | 390,498 | 372,731 | 371,933 | 330,976 |
| **Sop 2 AVERAGE** | **442,524** | **595,798** | **369,036** | **440,633** | **415,897** | **393,170** | **394,058** | **494,361** | **444,019** | **395,618** | **395,673** | **371,375** | **373,617** | **330,132** | **333,444** | **369,648** | **368,080** | **391,477** | **390,764** | **392,731** | **373,551** | **371,238** | **331,083** |
| Cents RF+3rds | 7,581 | 22,461 | -6,811 | 0,168 | 0,143 | 2,855 | 6,764 | -0,649 | 13,420 | 13,603 | 13,842 | 4,123 | 14,544 | 0,325 | 17,605 | -3,945 | -11,304 | -4,615 | -7,769 | 0,924 | 14,237 | 3,485 | 5,306 |
| Cents RF-3rds | 11,957 | 26,837 | -2,435 | 4,544 | 4,519 | 7,231 | 11,140 | 3,727 | 17,796 | 17,979 | 18,218 | 8,499 | 18,920 | 4,702 | 21,981 | 0,431 | -6,928 | -0,239 | -3,393 | 5,300 | 18,613 | 7,861 | 9,682 |
| Just Int I | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Just Int II | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Pythagorean | 1,955 | 0,000 | 7,820 | 1,955 | 11,730 | -1,955 | -1,955 | 5,865 | 1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 | 3,910 | 7,820 | 7,820 | -1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 |
| Meantone | -3,421 | 0,000 | -13,686 | -3,421 | -20,530 | 3,422 | 3,422 | -10,264 | -3,421 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 | -6,843 | -13,686 | -13,686 | 3,422 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 |
| Take 01 | 437,628 | 584,249 | 362,869 | 439,917 | 423,169 | 388,787 | 392,224 | 488,529 | 442,038 | 393,926 | 387,926 | 373,150 | 366,936 | 328,494 | 331,311 | 367,433 | 372,814 | 392,643 | 390,958 | 392,188 | 375,083 | 375,187 | 327,678 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 433,770 | 592,957 | 367,769 | 445,912 | 425,637 | 389,649 | 388,534 | 493,148 | 433,544 | 390,920 | 388,818 | 370,042 | 370,955 | 329,467 | 326,821 | 366,120 | 367,573 | 391,451 | 396,551 | 392,478 | 377,011 | 368,897 | 329,142 |
| Take 04 | 441,381 | 591,752 | 368,861 | 452,536 | 419,714 | 383,571 | 395,001 | 503,479 | 442,367 | 398,623 | 391,470 | 366,286 | 375,038 | 333,157 | 331,452 | 371,554 | 369,263 | 391,879 | 395,417 | 395,051 | 373,261 | 368,323 | 329,531 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 433,916 | 587,356 | 371,121 | 447,775 | 419,958 | 390,652 | 386,341 | 503,467 | 446,438 | 388,427 | 393,321 | 367,292 | 373,797 | 334,342 | 328,881 | 370,491 | 370,326 | 392,029 | 392,159 | 392,700 | 372,446 | 369,529 | 328,564 |
| Take 07 | 439,712 | 589,702 | 374,013 | 441,850 | 418,955 | 387,563 | 397,244 | 497,042 | 441,282 | 396,522 | 395,988 | 373,196 | 369,025 | 331,646 | 332,909 | 366,438 | 367,500 | 389,705 | 392,762 | 392,361 | 371,155 | 370,750 | 329,909 |
| Take 08 | **431,296** | 588,539 | **350,253** | 444,202 | 412,911 | 388,806 | 397,609 | 489,314 | **433,316** | 396,409 | 391,925 | 371,733 | 370,052 | 329,225 | 337,116 | 367,831 | 376,737 | 393,499 | 390,785 | 392,901 | 372,458 | 369,646 | 330,166 |
| Take 09 | 444,259 | 595,589 | 360,836 | 433,070 | 422,675 | 392,330 | 394,348 | 490,342 | 437,644 | 398,312 | 392,392 | 374,064 | 370,447 | 329,412 | 337,307 | 375,783 | 374,629 | 392,352 | 391,481 | 393,770 | 369,113 | 375,475 | 329,295 |
| Take 10 | 444,517 | 575,614 | 367,834 | 435,659 | 412,809 | 389,318 | 383,782 | 482,360 | 434,870 | 393,112 | 391,603 | 370,944 | 370,641 | 330,834 | 329,319 | 370,921 | 372,220 | 391,183 | 392,633 | 390,871 | 367,412 | 371,577 | 327,825 |
| Take 11 | 437,287 | 586,499 | 369,340 | 441,447 | 418,226 | 387,333 | 392,222 | 493,795 | 439,293 | 392,679 | 391,748 | 367,584 | 368,299 | 331,639 | 331,652 | 365,006 | 372,854 | 391,053 | 394,108 | 394,656 | 369,259 | 371,905 | 328,866 |
| Take 12 | 442,452 | 583,404 | 369,838 | 437,989 | 421,788 | 390,898 | 395,205 | 498,334 | 438,877 | 392,279 | 394,566 | 366,556 | 370,299 | 329,583 | 332,468 | 370,381 | 371,677 | 392,306 | 390,793 | 391,875 | 370,002 | 373,552 | 332,062 |
| Take 13 | 431,027 | 587,586 | 372,540 | 436,282 | 416,038 | 389,555 | 392,905 | 488,183 | 434,144 | 392,923 | 392,868 | 372,129 | 370,007 | 332,466 | 327,342 | 372,315 | 371,136 | 394,185 | 390,511 | 393,396 | 369,319 | 369,117 | 329,266 |
| Take 14 | 441,845 | **399,457** | **359,646** | 437,365 | 416,937 | 389,842 | 395,927 | 490,542 | 439,632 | 393,959 | 390,132 | 370,565 | 369,598 | 330,505 | 336,852 | **370,746** | **369,410** | 392,694 | 391,152 | 388,116 | 366,711 | 363,133 | 328,602 |
| Take 15 | 434,630 | 585,011 | 366,634 | 437,907 | 416,683 | 383,917 | 388,662 | 493,582 | 436,343 | 395,393 | 393,395 | 361,342 | 370,388 | 330,497 | 333,322 | 369,953 | 371,354 | 394,591 | 390,377 | 392,166 | 374,087 | 373,123 | 328,713 |
| Take 16 | 436,654 | 591,082 | 373,281 | 451,277 | 418,483 | 388,127 | 387,367 | 491,822 | 441,653 | 391,156 | 392,260 | 369,908 | 372,469 | 328,978 | 333,545 | 370,492 | 369,438 | 394,118 | 387,100 | 392,380 | 367,297 | 367,246 | 326,217 |
| Take 17 | 429,223 | 583,849 | 366,379 | 432,122 | 411,509 | 387,538 | 392,165 | 488,749 | 434,067 | 389,893 | 390,663 | 365,147 | 368,170 | 327,052 | 331,371 | 370,783 | 368,963 | 390,568 | 388,818 | 391,961 | 369,195 | 365,030 | 325,357 |
| Take 18 | 438,822 | 585,785 | 370,930 | 442,663 | 417,474 | 386,933 | 388,012 | 495,689 | 435,132 | 394,951 | 389,991 | 367,609 | 361,676 | 328,037 | 328,046 | 371,825 | 366,893 | 386,373 | 391,047 | 387,632 | 366,981 | 371,020 | 328,655 |
| Take 19 | 438,632 | 570,882 | 369,258 | 438,089 | 415,049 | 389,423 | 396,716 | 501,327 | 440,430 | 394,217 | 391,376 | 375,519 | 367,234 | 331,962 | 331,272 | 371,802 | 371,677 | 390,756 | 388,587 | 391,339 | 369,051 | 365,683 | 325,815 |
| Take 20 | 437,265 | **569,102** | 373,661 | 434,468 | 413,080 | 388,817 | 390,265 | 495,899 | 439,500 | 393,959 | 393,254 | 367,307 | 369,234 | 328,174 | 330,618 | 371,587 | 368,093 | 389,738 | 389,654 | 390,868 | 378,916 | 370,570 | 327,555 |
| Take 21 | 435,063 | 588,833 | 368,772 | **436,870** | **421,477** | **390,913** | 393,299 | 493,135 | 440,120 | 396,865 | **392,995** | **373,729** | 370,771 | **329,294** | **331,377** | 364,804 | 366,664 | 387,102 | 385,629 | **389,892** | 370,091 | 366,893 | 327,591 |
| **Sop 3 AVERAGE** | **437,671** | **586,394** | **368,532** | **440,390** | **418,030** | **388,630** | **391,991** | **493,618** | **438,457** | **393,922** | **391,931** | **369,690** | **369,739** | **330,251** | **331,736** | **369,803** | **370,485** | **391,486** | **391,080** | **391,926** | **370,992** | **369,824** | **328,464** |
| Cents RF+3rds | -11,510 | -5,084 | -9,178 | -0,791 | 9,001 | -17,250 | -2,343 | -3,254 | -8,403 | 6,166 | -2,607 | -3,750 | -3,520 | 0,947 | 8,715 | -3,217 | -0,028 | -4,576 | -6,370 | -2,628 | 2,339 | -3,120 | -8,446 |
| Cents RF-3rds | -7,134 | -0,708 | -4,802 | 3,585 | 13,377 | -12,874 | 2,033 | 1,123 | -4,027 | 10,542 | 1,769 | 0,626 | 0,856 | 5,323 | 13,091 | 1,159 | 4,348 | -0,200 | -1,994 | 1,748 | 6,715 | 1,256 | -4,070 |
| Just Int I | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Just Int II | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Pythagorean | 1,955 | 0,000 | 7,820 | 1,955 | 11,730 | -1,955 | -1,955 | 5,865 | 1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 | 3,910 | 7,820 | 7,820 | -1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 |
| Meantone | -3,421 | 0,000 | -13,686 | -3,421 | -20,530 | 3,422 | 3,422 | -10,264 | -3,421 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 | -6,843 | -13,686 | -13,686 | 3,422 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 |
| Take 01 | 445,234 | 580,093 | 371,152 | 432,218 | 423,066 | 399,117 | 397,651 | 483,647 | 442,627 | 395,465 | 395,000 | 373,249 | 372,946 | 332,707 | 334,902 | 373,569 | 374,755 | 400,640 | 392,857 | 393,773 | 375,273 | 373,262 | 332,510 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 432,153 | 585,926 | 372,574 | 436,379 | 416,421 | 395,592 | 394,999 | 488,545 | 435,925 | 391,588 | 391,844 | 374,297 | 370,096 | 329,005 | 332,790 | 369,185 | 370,660 | 390,203 | 395,452 | 392,616 | 373,381 | 369,150 | 333,081 |
| Take 04 | 440,810 | 584,407 | 374,248 | 444,850 | 421,208 | 395,877 | 402,177 | 494,245 | 447,455 | 395,647 | 394,002 | 374,145 | 372,689 | 334,352 | 336,361 | 372,333 | 370,005 | 391,628 | 392,410 | 390,951 | 376,770 | 370,139 | 329,958 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 432,434 | 577,245 | 368,597 | 463,722 | 420,989 | 397,203 | 403,747 | 489,499 | 438,622 | 391,035 | 391,401 | 374,876 | 369,751 | 329,980 | 330,948 | 367,291 | 373,405 | 391,911 | 390,381 | 393,379 | 372,485 | 369,275 | 328,715 |
| Take 07 | 442,929 | 589,475 | 371,439 | 441,037 | 418,518 | 393,391 | 389,641 | 494,775 | 442,960 | 392,065 | 392,201 | 374,144 | 373,983 | 332,490 | 333,829 | 372,009 | 367,890 | 393,092 | 392,534 | 390,330 | 372,209 | 371,569 | 330,074 |
| Take 08 | 439,338 | 584,128 | 369,701 | 441,352 | 422,598 | 392,042 | 396,613 | 493,458 | 442,998 | 392,394 | 392,967 | 375,875 | 373,042 | 326,892 | 331,522 | 368,836 | 369,919 | 394,046 | 392,729 | 391,543 | 373,836 | 371,780 | 330,801 |
| Take 09 | 445,052 | 595,596 | 378,216 | 442,220 | 425,888 | 403,255 | 394,669 | **521,613** | 450,000 | **425,676** | **405,024** | **368,222** | 374,841 | 331,177 | 328,659 | 366,279 | 369,231 | 391,224 | 391,662 | 390,651 | 368,363 | 366,192 | 335,648 |
| Take 10 | 436,299 | **561,193** | 366,197 | 440,062 | 413,634 | 391,523 | 393,983 | 488,063 | 436,960 | 387,174 | 385,736 | 368,348 | 370,796 | 328,117 | 330,424 | 367,943 | 369,268 | 385,276 | 388,929 | 388,261 | 371,855 | 365,217 | 329,702 |
| Take 11 | 437,942 | 590,248 | 370,544 | 441,578 | 422,053 | 393,690 | 391,973 | 500,476 | 443,972 | 395,279 | 387,538 | 379,436 | 372,005 | 329,470 | 331,538 | 369,636 | 370,875 | 389,441 | 394,829 | 394,825 | 372,804 | 369,967 | 331,717 |
| Take 12 | 435,861 | 588,188 | 373,202 | 441,286 | 419,613 | 393,159 | 396,725 | 493,495 | 443,972 | 395,107 | 393,497 | 373,689 | 370,017 | 331,302 | 334,811 | 372,781 | 370,793 | 392,249 | 393,330 | 391,259 | 372,098 | 370,565 | 330,301 |
| Take 13 | 439,218 | 592,222 | 367,658 | 440,069 | 421,544 | 393,926 | 399,510 | 495,769 | 439,956 | 393,079 | 391,540 | 371,034 | 372,250 | 332,429 | 332,857 | 369,357 | 371,121 | 390,656 | 392,271 | 392,412 | 373,107 | 371,022 | 330,025 |
| Take 14 | 455,673 | 574,000 | 373,808 | 445,080 | 421,721 | 391,676 | 396,132 | 504,412 | 445,638 | 397,080 | 392,940 | 372,676 | 373,910 | 330,223 | 334,886 | 367,238 | 367,257 | 386,143 | 389,286 | 390,322 | 367,459 | 367,127 | 328,239 |
| Take 15 | 438,965 | 574,636 | 360,736 | 443,216 | 420,555 | 392,778 | 390,658 | 493,454 | 439,069 | 389,704 | 394,681 | 372,277 | 366,215 | 329,408 | 331,981 | 369,090 | 364,899 | 390,928 | 388,370 | 389,244 | 369,110 | 367,926 | 327,510 |
| Take 16 | 437,586 | 587,573 | 368,551 | 436,770 | 418,166 | 393,896 | 390,990 | 486,603 | 436,661 | 389,341 | 389,441 | 368,196 | 368,620 | 327,723 | 326,819 | 364,847 | 371,380 | 388,292 | 385,752 | 387,942 | 369,969 | 368,082 | 327,406 |
| Take 17 | 435,329 | 582,196 | 367,598 | 442,007 | 418,664 | 391,713 | 390,046 | 493,585 | 438,344 | 389,704 | 388,690 | 371,453 | 367,687 | 326,064 | 327,489 | 369,263 | 366,315 | 388,141 | 386,531 | 387,649 | 370,179 | 367,295 | 329,045 |
| Take 18 | 436,347 | **560,822** | 366,092 | 441,000 | 417,873 | 390,874 | 390,061 | 495,353 | 442,822 | 388,453 | 389,200 | 368,114 | 372,509 | 327,205 | 328,507 | 365,035 | 364,956 | 388,333 | 384,043 | 389,039 | 366,899 | 369,990 | 327,069 |
| Take 19 | 436,555 | 582,995 | 367,589 | 445,396 | 414,119 | 390,658 | 395,787 | 490,038 | 437,381 | 388,531 | 389,638 | 368,060 | 369,484 | 332,924 | 330,358 | 367,347 | 363,717 | 389,258 | 389,557 | 387,691 | 367,738 | 364,781 | 325,730 |
| Take 20 | 433,888 | **451,676** | **345,689** | 435,206 | 412,782 | 394,078 | 391,060 | 476,668 | 434,278 | 393,970 | 391,848 | 368,468 | 368,235 | 330,322 | 328,810 | 370,978 | 370,405 | 390,174 | 394,253 | 388,057 | 372,497 | 365,658 | 328,153 |
| Take 21 | 438,863 | 589,818 | **377,029** | **435,496** | **419,600** | 392,386 | 388,530 | **484,844** | **440,135** | **395,516** | **395,894** | 368,722 | 372,918 | 362,466 | **338,935** | **376,787** | **370,834** | 389,764 | 389,565 | **392,113** | 367,719 | 369,586 | **329,291** |
| **Sop 4 AVERAGE** | **438,972** | **584,922** | **370,274** | **441,523** | **419,422** | **394,044** | **394,471** | **491,496** | **441,041** | **392,285** | **391,559** | **371,857** | **371,158** | **330,099** | **331,917** | **369,463** | **369,352** | **390,600** | **390,776** | **390,635** | **371,250** | **368,873** | **329,736** |
| Cents RF+3rds | -6,371 | -9,435 | -1,016 | 3,661 | 14,755 | 6,700 | 8,577 | -10,712 | 1,768 | -1,044 | -4,252 | 6,369 | 3,111 | 0,154 | 9,660 | -4,809 | -5,332 | -8,497 | -7,718 | -8,344 | 3,542 | -7,578 | -1,756 |
| Cents RF-3rds | -1,995 | -5,059 | 3,361 | 8,037 | 19,132 | 11,077 | 12,953 | -6,335 | 6,144 | 3,332 | 0,124 | 10,745 | 7,487 | 4,530 | 14,036 | -0,433 | -0,956 | -4,121 | -3,342 | -3,968 | 7,918 | -3,202 | 2,620 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Just Int I | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Just Int II | 1,955 | 0,000 | -13,686 | 1,995 | -31,282 | -1,955 | -29,219 | 5,865 | 1,995 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 | 3,910 | -13,686 | -13,686 | -29,219 | -29,219 | -1,955 | -13,686 | -13,686 | 3,910 |
| Pythagorean | 1,955 | 0,000 | 7,820 | 1,955 | 11,730 | -1,955 | -1,955 | 5,865 | 1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 | 3,910 | 7,820 | 7,820 | -1,955 | -1,955 | -1,955 | 7,820 | 7,820 | 3,910 |
| Meantone | -3,421 | 0,000 | -13,686 | -3,421 | -20,530 | 3,422 | 3,422 | -10,264 | -3,421 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 | -6,843 | -13,686 | -13,686 | 3,422 | 3,422 | 3,422 | -13,686 | -13,686 | -6,843 |
| | Second Phrase | | | | | | | | | | | | | | | | | | | | | | |
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | | | |
| Take 01 | 334,243 | 448,196 | 440,722 | 420,769 | 421,793 | 335,116 | 421,633 | 496,872 | 499,276 | 446,181 | 442,877 | 446,092 | 596,313 | 562,664 | 498,198 | 446,619 | 449,938 | 424,822 | 426,520 | 444,560 | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 332,008 | 449,538 | 439,908 | 418,326 | 414,698 | 334,176 | 419,907 | 494,333 | 497,046 | 442,709 | 439,535 | 442,020 | 589,988 | 554,093 | 493,565 | 440,812 | 444,849 | 419,427 | 420,828 | 445,413 | | | |
| Take 04 | 334,113 | 447,545 | 441,020 | 419,463 | 422,731 | 334,236 | 421,626 | 500,467 | 498,152 | 444,889 | 442,532 | 448,616 | 596,564 | 558,198 | 499,279 | 443,319 | 447,390 | 426,682 | 423,134 | 446,832 | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 331,864 | 435,484 | 442,469 | 418,279 | 422,326 | 334,890 | 416,649 | 498,021 | 495,007 | 438,698 | 441,963 | 435,555 | 594,461 | 559,603 | 501,516 | 440,647 | 440,945 | 416,072 | 414,582 | 442,914 | | | |
| Take 07 | 331,223 | 437,542 | 444,567 | 419,661 | 420,172 | 336,060 | 418,685 | 499,088 | 496,912 | 446,796 | 444,066 | 440,328 | 595,277 | 558,479 | 501,469 | 439,971 | 446,981 | 417,859 | 423,264 | 438,949 | | | |
| Take 08 | 332,069 | 445,092 | 438,866 | 421,267 | 420,972 | 335,846 | 419,414 | 499,185 | 502,220 | 446,942 | 442,853 | 440,096 | 595,717 | 560,493 | 494,367 | 437,069 | 446,057 | 423,697 | 429,442 | 504,962 | | | |
| Take 09 | 331,487 | 444,338 | 443,983 | 422,854 | 419,764 | 330,698 | 420,116 | 502,284 | 499,425 | 444,566 | 448,939 | 439,011 | 593,691 | 564,613 | 501,886 | 441,949 | 444,895 | 421,009 | 423,506 | 442,434 | | | |
| Take 10 | 334,878 | 443,373 | 443,933 | 415,871 | 416,694 | 335,250 | 420,295 | 501,897 | 502,366 | 444,140 | 439,933 | 445,970 | 595,186 | 564,434 | 500,648 | 441,185 | 447,932 | 422,826 | 422,901 | 447,681 | | | |
| Take 11 | 334,121 | 445,528 | 444,753 | 420,259 | 420,117 | 333,040 | 424,038 | 499,197 | 501,634 | 449,870 | 445,042 | 452,340 | 602,536 | 556,177 | 501,390 | 445,489 | 447,124 | 423,629 | 423,357 | 445,941 | | | |
| Take 12 | 332,607 | 444,525 | 437,165 | 420,323 | 419,846 | 334,162 | 418,283 | 496,550 | 496,423 | 448,153 | 443,508 | 447,509 | 599,724 | 560,509 | 496,476 | 441,835 | 445,737 | 420,923 | 422,494 | 446,464 | | | |
| Take 13 | 331,201 | 440,150 | 442,647 | 420,413 | 421,666 | 335,399 | 425,156 | 501,991 | 501,617 | 445,797 | 444,888 | 442,457 | 597,827 | 562,612 | 504,583 | 443,369 | 444,466 | 420,182 | 427,195 | 446,081 | | | |
| Take 14 | 330,860 | 442,576 | 440,708 | 419,714 | 420,476 | 333,712 | 417,612 | 498,951 | 495,139 | 442,826 | 439,630 | 438,806 | 584,668 | 559,385 | 500,213 | 441,130 | 442,225 | 419,386 | 422,611 | 444,762 | | | |
| Take 15 | 330,053 | 441,156 | 436,030 | 418,304 | 420,469 | 332,015 | 418,557 | 499,223 | 497,415 | 438,513 | 446,789 | 434,943 | 591,318 | 559,337 | 490,297 | 437,264 | 440,923 | 415,118 | 421,468 | 438,726 | | | |
| Take 16 | 328,397 | 438,195 | 432,817 | 415,290 | 415,309 | 335,640 | 419,336 | 499,563 | 495,767 | 435,184 | 444,270 | 445,176 | 588,947 | 504,602 | 503,441 | 444,576 | 443,298 | 419,133 | 425,495 | 441,654 | | | |
| Take 17 | 329,045 | 440,244 | 438,701 | 416,008 | 416,540 | 331,039 | 410,419 | 499,568 | 498,731 | 440,722 | 441,242 | 443,839 | 584,206 | 503,983 | 499,871 | 443,561 | 441,398 | 414,571 | 417,748 | 439,900 | | | |
| Take 18 | 328,878 | 443,440 | 436,859 | 419,367 | 419,779 | 331,885 | 423,325 | 495,819 | 496,640 | 441,181 | 436,805 | 453,804 | 593,784 | 558,037 | 492,627 | 438,982 | 442,334 | 416,728 | 419,165 | 439,538 | | | |
| Take 19 | 329,271 | 443,232 | 436,837 | 410,458 | 417,654 | 326,141 | 413,456 | 499,946 | 495,899 | 443,227 | 440,688 | 440,170 | 596,466 | 561,166 | 499,760 | 446,234 | 448,849 | 420,936 | 419,266 | 444,535 | | | |
| Take 20 | 332,104 | 447,729 | 435,632 | 417,154 | 413,923 | 338,956 | 412,973 | 496,355 | 498,598 | 446,032 | 438,868 | 445,805 | 597,176 | 557,027 | 488,824 | 453,212 | 442,734 | 418,335 | 411,098 | 444,946 | | | |
| Take 21 | 331,847 | 444,368 | 434,977 | 413,612 | 416,820 | 333,289 | 415,128 | 503,933 | 502,468 | 438,636 | 443,102 | 443,030 | 591,375 | 546,830 | 500,919 | 447,042 | 445,366 | 420,024 | 419,213 | 437,846 | | | |
| Sop 1 AVERAGE | 331,593 | 443,276 | 439,610 | 418,284 | 419,040 | 333,766 | 418,769 | 499,118 | 498,460 | 443,424 | 442,502 | 443,451 | 593,959 | 559,039 | 498,386 | 442,856 | 444,918 | 420,072 | 421,752 | 443,288 | | | |
| Cents RF+3rds | 9,388 | 11,939 | -2,439 | 11,470 | 14,595 | 20,695 | 13,477 | 17,348 | 15,064 | 12,517 | 8,911 | 12,621 | 18,528 | 13,629 | 14,807 | 10,297 | 18,339 | 18,853 | 25,766 | 11,983 | | | |
| Cents RF-3rds | 11,089 | 13,641 | -0,738 | 13,171 | 16,296 | 22,396 | 15,178 | 19,050 | 16,765 | 14,219 | 10,612 | 14,322 | 20,229 | 15,330 | 16,508 | 11,998 | 20,040 | 20,555 | 27,467 | 13,684 | | | |
| Just Int I | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | -44,860 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | | |
| Just Int II | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | | |
| Pythagorean | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 1,955 | 9,775 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -1,955 | 7,820 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | | | |
| Meantone | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | -3,421 | -17,108 | -6,843 | -6,843 | 0,000 | 0,000 | 0,000 | 3,422 | -13,686 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | | | |
| Take 01 | 332,981 | 442,366 | 445,211 | 418,102 | 419,302 | 336,848 | 420,201 | 500,194 | 496,122 | 433,951 | 437,693 | 452,199 | 595,956 | 568,807 | 504,459 | 441,854 | 441,934 | 422,615 | 424,862 | 444,660 | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 331,391 | 439,699 | 440,276 | 407,870 | 413,534 | 329,072 | 415,944 | 494,379 | 491,577 | 438,413 | 435,495 | 442,342 | 594,617 | 559,001 | 494,436 | 439,677 | 438,723 | 416,159 | 413,961 | 442,364 | | | |
| Take 04 | 331,819 | 444,958 | 442,410 | 415,793 | 416,249 | 329,043 | 417,034 | 495,082 | 496,157 | 445,010 | 453,986 | 439,406 | 591,347 | 562,938 | 495,155 | 439,471 | 443,048 | 415,164 | 416,434 | 443,648 | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 330,198 | 440,818 | 437,309 | 415,021 | 414,217 | 328,270 | 418,810 | 497,960 | 489,726 | 438,152 | 438,806 | 443,603 | 591,591 | 557,835 | 497,753 | 433,720 | 436,362 | 413,902 | 414,784 | 442,232 | | | |
| Take 07 | 336,087 | 443,327 | 440,871 | 414,084 | 412,821 | 335,589 | 415,538 | 489,432 | 488,828 | 438,524 | 440,954 | 445,508 | 593,141 | 566,824 | 497,204 | 439,740 | 437,626 | 414,456 | 416,571 | 440,875 | | | |
| Take 08 | 332,092 | 447,174 | 440,595 | 413,430 | 413,985 | 332,036 | 417,996 | 498,494 | 492,448 | 437,656 | 442,358 | 445,911 | 592,929 | 567,147 | 499,115 | 441,879 | 437,691 | 416,671 | 421,103 | 447,753 | | | |
| Take 09 | 329,169 | 437,978 | 439,270 | 412,237 | 414,281 | 332,899 | 417,204 | 496,590 | 495,467 | 442,574 | 437,717 | 440,685 | 597,875 | 563,051 | 493,733 | 440,881 | 442,097 | 419,721 | 420,818 | 451,405 | | | |
| Take 10 | 330,289 | 443,524 | 435,732 | 413,901 | 414,747 | 331,348 | 419,018 | 496,330 | 492,515 | 442,312 | 457,439 | 449,840 | 590,069 | 565,385 | 499,235 | 445,807 | 443,347 | 419,519 | 417,938 | 444,526 | | | |
| Take 11 | 330,917 | 447,052 | 444,342 | 415,346 | 414,817 | 334,373 | 419,339 | 496,082 | 495,793 | 441,865 | 436,121 | 442,323 | 597,479 | 561,600 | 500,565 | 444,031 | 438,856 | 421,186 | 419,295 | 451,589 | | | |
| Take 12 | 330,280 | 438,954 | 441,061 | 418,140 | 417,436 | 336,490 | 418,577 | 492,382 | 494,996 | 444,920 | 438,514 | 440,816 | 597,003 | 564,592 | 493,087 | 437,349 | 440,163 | 420,351 | 419,422 | 445,626 | | | |
| Take 13 | 330,073 | 439,624 | 437,146 | 414,557 | 415,382 | 329,104 | 415,875 | 493,687 | 491,954 | 444,480 | 465,435 | 439,485 | 590,734 | 564,565 | 496,318 | 449,672 | 441,585 | 420,942 | 420,897 | 444,952 | | | |
| Take 14 | 328,388 | 441,256 | 436,113 | 413,065 | 411,186 | 331,171 | 414,645 | 492,159 | 487,325 | 438,681 | 444,063 | 433,537 | 578,714 | 564,040 | 493,455 | 445,587 | 446,102 | 414,650 | 418,449 | 441,024 | | | |
| Take 15 | 327,634 | 435,139 | 435,622 | 412,022 | 408,737 | 329,197 | 415,233 | 491,848 | 486,600 | 436,850 | 439,068 | 440,966 | 585,392 | 560,974 | 490,528 | 438,570 | 434,445 | 412,944 | 415,165 | 441,081 | | | |
| Take 16 | 327,040 | 444,221 | 435,139 | 409,486 | 410,145 | 331,204 | 414,236 | 488,179 | 494,314 | 435,479 | 439,252 | 439,599 | 590,786 | 559,304 | 491,796 | 438,153 | 437,861 | 410,590 | 418,168 | 437,989 | | | |
| Take 17 | 326,356 | 436,789 | 434,850 | 413,258 | 413,050 | 328,539 | 413,660 | 490,176 | 491,052 | 433,690 | 433,560 | 436,135 | 592,323 | 558,197 | 495,592 | 438,163 | 437,454 | 411,339 | 418,801 | 437,752 | | | |
| Take 18 | 326,011 | 433,343 | 438,327 | 411,779 | 408,833 | 326,203 | 416,678 | 494,092 | 492,562 | 440,664 | 452,914 | 442,238 | 591,919 | 557,450 | 492,795 | 439,604 | 438,815 | 419,309 | 418,118 | 441,730 | | | |
| Take 19 | 325,203 | 435,853 | 437,445 | 413,561 | 412,474 | 332,867 | 416,818 | 500,276 | 494,027 | 440,880 | 442,830 | 435,147 | 593,633 | 559,581 | 495,987 | 437,553 | 437,957 | 419,874 | 416,957 | 439,786 | | | |
| Take 20 | 325,442 | 436,709 | 441,246 | 411,205 | 412,485 | 332,257 | 417,354 | 497,715 | 492,583 | 442,902 | 439,911 | 439,251 | 596,542 | 566,401 | 501,735 | 436,920 | 439,034 | 418,827 | 415,317 | 440,231 | | | |
| Take 21 | 331,710 | 440,185 | 441,503 | 414,320 | 412,172 | 329,770 | 416,260 | 495,458 | 492,368 | 437,416 | 441,716 | 443,617 | 540,982 | 561,324 | 499,065 | 444,584 | 440,415 | 419,258 | 422,889 | 444,978 | | | |
| Sop 2 AVERAGE | 329,636 | 440,472 | 439,182 | 413,536 | 413,466 | 331,383 | 416,864 | 494,764 | 492,443 | 439,706 | 441,553 | 441,134 | 593,137 | 562,580 | 496,422 | 440,696 | 439,659 | 417,236 | 418,418 | 443,379 | | | |
| Cents RF+3rds | -0,861 | 0,952 | -4,124 | -8,294 | -8,586 | 8,291 | 5,585 | 2,180 | -5,961 | -2,061 | 5,197 | 3,552 | 16,131 | 24,560 | 7,971 | 1,830 | -2,248 | 7,126 | 12,027 | 12,340 | | | |
| Cents RF-3rds | 0,840 | 2,653 | -2,423 | -6,593 | -6,885 | 9,992 | 7,286 | 3,881 | -4,259 | -0,359 | 6,898 | 5,253 | 17,832 | 26,262 | 9,672 | 3,532 | -0,547 | 8,828 | 13,729 | 14,041 | | | |
| Just Int I | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | -44,860 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | | |
| Just Int II | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | | |
| Pythagorean | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 1,955 | 9,775 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -1,955 | 7,820 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | | | |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Meantone | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | -3,421 | -17,108 | -6,843 | -6,843 | 0,000 | 0,000 | 0,000 | 3,422 | -13,686 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | | |
| Take 01 | 329,623 | 431,269 | 438,988 | 415,094 | 417,838 | 328,256 | 417,009 | 493,206 | 495,640 | 438,831 | 437,244 | 432,786 | 594,845 | 558,576 | 490,866 | 438,726 | 439,672 | 420,427 | 425,055 | 437,717 | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 325,544 | 434,680 | 441,228 | 412,760 | 412,913 | 329,682 | 416,234 | 491,766 | 491,174 | 436,007 | 442,463 | 443,109 | 595,622 | 554,717 | 492,409 | 437,784 | 440,203 | 419,650 | 414,591 | 440,022 | | |
| Take 04 | 331,801 | 440,549 | 444,907 | 418,221 | 413,231 | 331,406 | 415,963 | 495,505 | 491,805 | 439,993 | 438,324 | 441,961 | 594,584 | 555,034 | 491,302 | 439,574 | 440,269 | 422,208 | 413,324 | 441,466 | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 328,394 | 444,339 | 436,941 | 415,147 | 414,233 | 332,271 | 419,529 | 493,040 | 492,546 | 443,593 | 442,020 | 445,049 | 587,899 | 557,047 | 492,847 | 438,348 | 441,516 | 417,715 | 414,231 | 436,031 | | |
| Take 07 | 329,189 | 436,343 | 434,733 | 413,683 | 416,928 | 330,623 | 417,226 | 487,043 | 488,007 | 438,494 | 441,234 | 433,788 | 588,695 | 553,568 | 494,851 | 440,411 | 438,597 | 412,426 | 416,677 | 436,653 | | |
| Take 08 | 331,379 | 446,133 | 444,163 | 413,745 | 415,979 | 332,158 | 417,171 | 493,850 | 492,324 | 444,627 | 437,580 | 439,212 | 591,276 | 556,633 | 496,573 | 440,041 | 440,072 | 416,379 | 418,855 | 439,163 | | |
| Take 09 | 327,677 | 435,858 | 444,885 | 421,091 | 415,010 | 330,756 | 416,714 | 496,746 | 494,113 | 435,995 | 446,922 | 443,459 | 593,821 | 562,014 | 496,496 | 444,455 | 442,925 | 418,431 | 418,697 | 442,244 | | |
| Take 10 | 326,631 | 445,620 | 443,189 | 414,440 | 409,254 | 331,267 | 415,043 | 498,464 | 494,678 | 435,047 | 434,896 | 442,686 | 587,927 | 556,272 | 488,923 | 440,805 | 437,278 | 411,278 | 415,385 | 438,929 | | |
| Take 11 | 328,454 | 437,467 | 442,830 | 414,668 | 419,783 | 335,617 | 420,207 | 499,269 | 494,734 | 437,373 | 438,888 | 440,583 | 594,008 | 557,074 | 485,977 | 439,220 | 441,016 | 416,365 | 419,218 | 437,799 | | |
| Take 12 | 330,424 | 438,000 | 443,346 | 419,412 | 419,655 | 331,070 | 421,300 | 493,904 | 496,425 | 433,557 | 439,900 | 442,577 | 595,871 | 558,350 | 490,779 | 440,453 | 440,877 | 417,733 | 416,996 | 437,983 | | |
| Take 13 | 329,653 | 440,190 | 438,949 | 411,899 | 415,379 | 329,142 | 423,024 | 499,987 | 493,871 | 433,341 | 438,070 | 443,669 | 592,573 | 560,194 | 484,849 | 439,648 | 437,458 | 418,998 | 417,274 | 441,162 | | |
| Take 14 | 330,964 | 433,943 | 437,490 | 410,772 | 409,900 | 332,369 | 417,779 | 485,378 | 485,959 | 426,685 | 448,077 | 438,533 | 589,097 | 555,713 | 494,527 | 439,896 | 437,496 | 415,003 | 416,306 | 440,282 | | |
| Take 15 | 328,162 | 438,079 | 437,896 | 416,361 | 414,341 | 334,091 | 415,603 | 496,770 | 490,930 | 444,127 | 440,134 | 445,141 | 588,401 | 554,400 | 488,149 | 438,112 | 438,716 | 418,609 | 412,621 | 438,075 | | |
| Take 16 | 328,476 | 439,508 | 437,860 | 411,230 | 415,638 | 325,815 | 415,163 | 487,209 | 486,004 | 438,289 | 436,954 | 437,725 | 589,242 | 561,939 | 494,899 | 439,939 | 439,351 | 414,061 | 415,732 | 437,595 | | |
| Take 17 | 325,827 | 440,120 | 440,371 | 417,214 | 415,327 | 330,158 | 415,595 | 490,389 | 489,039 | 437,630 | 438,624 | 435,836 | 589,721 | 555,297 | 492,758 | 437,504 | 437,640 | 416,650 | 414,284 | 431,027 | | |
| Take 18 | 328,302 | 429,926 | 436,565 | 411,251 | 408,813 | 332,104 | 414,683 | 490,628 | 489,634 | 434,190 | 436,001 | 441,306 | 590,422 | 555,246 | 495,963 | 436,778 | 438,287 | 415,941 | 415,138 | 436,674 | | |
| Take 19 | 328,527 | 438,574 | 441,783 | 418,269 | 413,782 | 332,610 | 414,176 | 492,294 | 487,603 | 436,785 | 438,079 | 434,354 | 590,680 | 556,829 | 492,259 | 436,979 | 437,566 | 414,656 | 419,388 | 433,659 | | |
| Take 20 | 342,870 | 435,804 | 439,683 | 411,895 | 421,576 | 347,569 | 420,398 | 500,635 | 495,490 | 440,397 | 433,165 | 442,392 | 590,792 | 556,103 | 489,651 | 438,435 | 439,239 | 415,030 | 421,055 | 439,435 | | |
| Take 21 | 328,153 | 436,340 | 441,424 | 411,068 | 412,026 | 331,438 | 414,283 | 495,412 | 493,459 | 437,752 | 432,629 | 439,664 | 591,025 | 556,794 | 492,412 | 435,527 | 439,793 | 415,024 | 419,283 | 437,009 | | |
| Sop 3 AVERAGE | **328,732** | **438,039** | **440,381** | **414,643** | **414,446** | **331,157** | **417,216** | **493,763** | **491,760** | **437,511** | **439,011** | **440,202** | **591,395** | **556,937** | **491,921** | **439,086** | **439,367** | **416,662** | **417,058** | **438,049** | | |
| Cents RF+3rds | -5,613 | -8,637 | 0,592 | -3,664 | -4,487 | 7,112 | 7,044 | -1,326 | -8,365 | -10,724 | -4,801 | -0,111 | 11,037 | 7,108 | -7,798 | -4,505 | -3,397 | 4,745 | 6,390 | -8,599 | | |
| Cents RF-3rds | -3,911 | -6,936 | 2,294 | -1,963 | -2,786 | 8,813 | 8,746 | 0,375 | -6,664 | -9,023 | -3,100 | 1,590 | 12,738 | 8,809 | -6,097 | -2,803 | -1,696 | 6,447 | 8,092 | -6,898 | | |
| Just Int I | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | -44,860 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | |
| Just Int II | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | |
| Pythagorean | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 1,955 | 9,775 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -1,955 | 7,820 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | | |
| Meantone | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | -3,421 | -17,108 | -6,843 | -6,843 | 0,000 | 0,000 | 0,000 | 3,422 | -13,686 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | | |
| Take 01 | 332,222 | 443,139 | 446,744 | 422,396 | 419,396 | 335,281 | 418,862 | 495,809 | 496,137 | 441,224 | 440,681 | 442,570 | 597,847 | 528,533 | 494,369 | 442,932 | 444,407 | 424,809 | 422,396 | 444,683 | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 331,519 | 439,408 | 442,934 | 421,945 | 415,022 | 331,013 | 415,642 | 495,159 | 490,661 | 443,324 | 443,216 | 442,368 | 591,306 | 547,561 | 493,091 | 441,088 | 438,619 | 418,969 | 418,107 | 441,168 | | |
| Take 04 | 329,780 | 437,973 | 446,038 | 417,322 | 420,419 | 330,084 | 418,323 | 493,221 | 497,222 | 443,142 | 443,216 | 441,376 | 591,763 | 555,523 | 490,927 | 442,089 | 439,685 | 419,621 | 420,078 | 442,319 | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 327,151 | 437,555 | 435,276 | 417,602 | 419,265 | 326,350 | 419,330 | 497,053 | 494,378 | 440,142 | 440,034 | 448,773 | 586,533 | 553,577 | 493,257 | 442,306 | 440,345 | 421,271 | 419,413 | 441,703 | | |
| Take 07 | 326,552 | 439,330 | 438,555 | 413,913 | 418,088 | 334,091 | 419,353 | 494,046 | 491,909 | 437,027 | 438,854 | 440,335 | 589,773 | 555,282 | 488,619 | 436,382 | 443,898 | 420,027 | 416,281 | 441,172 | | |
| Take 08 | 328,246 | 437,245 | 444,577 | 422,472 | 417,514 | 331,602 | 418,320 | 492,421 | 495,506 | 439,289 | 438,470 | 441,115 | 594,164 | 552,109 | 494,711 | 445,413 | 445,014 | 422,218 | 419,047 | 440,550 | | |
| Take 09 | 341,676 | 440,120 | 439,535 | 415,116 | 417,897 | 334,654 | 420,843 | 499,439 | 495,530 | 443,014 | 442,845 | 446,107 | 590,978 | 564,032 | 491,932 | 443,203 | 440,021 | 418,753 | 415,247 | 442,100 | | |
| Take 10 | 330,438 | 442,645 | 443,639 | 421,424 | 413,549 | 328,372 | 416,307 | 489,963 | 493,348 | 443,307 | 439,816 | 443,545 | 590,177 | 562,404 | 492,934 | 446,627 | 444,365 | 419,776 | 417,069 | 440,952 | | |
| Take 11 | 332,357 | 440,514 | 440,348 | 423,786 | 420,012 | 335,151 | 420,895 | 498,770 | 495,904 | 447,243 | 447,303 | 443,365 | 599,008 | 569,008 | 505,671 | 443,949 | 446,007 | 419,600 | 423,267 | 442,118 | | |
| Take 12 | 329,723 | 441,833 | 440,137 | 422,358 | 418,731 | 332,009 | 418,292 | 496,639 | 490,859 | 443,804 | 439,005 | 437,500 | 591,872 | 559,726 | 489,272 | 441,615 | 438,522 | 423,368 | 418,426 | 441,703 | | |
| Take 13 | 327,561 | 438,270 | 441,320 | 422,090 | 414,351 | 331,639 | 415,261 | 487,477 | 486,537 | 440,344 | 439,489 | 438,316 | 589,105 | 557,137 | 489,897 | 439,570 | 440,350 | 422,449 | 419,420 | 440,563 | | |
| Take 14 | 331,055 | 441,671 | 433,188 | 414,287 | 416,481 | 330,284 | 416,188 | 490,326 | 486,450 | 437,275 | 436,364 | 436,935 | 584,032 | 559,286 | 490,821 | 441,637 | 442,758 | 414,411 | 411,077 | 439,855 | | |
| Take 15 | 329,789 | 434,113 | 435,778 | 413,926 | 414,129 | 330,309 | 414,396 | 489,828 | 486,069 | 437,421 | 439,647 | 435,277 | 586,843 | 558,688 | 486,052 | 434,892 | 439,476 | 418,249 | 415,658 | 437,923 | | |
| Take 16 | 328,785 | 433,176 | 437,985 | 418,535 | 413,743 | 328,601 | 413,793 | 490,694 | 486,185 | 435,474 | 436,179 | 437,555 | 591,814 | 557,591 | 491,615 | 436,752 | 438,755 | 417,529 | 419,550 | 440,243 | | |
| Take 17 | 325,960 | 434,687 | 435,867 | 415,889 | 413,673 | 328,283 | 412,237 | 490,260 | 488,087 | 436,026 | 433,677 | 435,051 | 588,646 | 555,495 | 489,869 | 438,405 | 437,709 | 417,830 | 417,154 | 436,298 | | |
| Take 18 | 329,263 | 433,891 | 446,074 | 412,315 | 410,199 | 324,005 | 408,906 | 485,657 | 486,419 | 431,173 | 436,252 | 438,221 | 587,259 | 557,409 | 491,169 | 435,605 | 436,773 | 416,061 | 418,652 | 437,059 | | |
| Take 19 | 326,781 | 436,810 | 437,291 | 420,678 | 412,884 | 327,755 | 413,041 | 486,322 | 484,201 | 436,779 | 437,109 | 437,389 | 587,741 | 557,859 | 491,392 | 436,561 | 437,652 | 415,955 | 415,894 | 438,482 | | |
| Take 20 | 335,377 | 436,732 | 439,208 | 418,162 | 415,112 | 445,815 | 422,824 | 491,991 | 489,039 | 431,200 | 434,576 | 441,062 | 575,377 | 552,895 | 485,569 | 438,232 | 438,080 | 417,920 | 416,701 | 437,599 | | |
| Take 21 | 331,358 | 438,771 | 439,420 | 419,098 | 413,353 | 328,046 | 412,317 | 486,777 | 455,982 | 442,105 | 434,370 | 441,516 | 584,411 | 558,154 | 492,656 | 436,559 | 434,000 | 420,068 | 418,962 | 438,903 | | |
| Sop 4 AVERAGE | **330,012** | **438,310** | **440,206** | **418,595** | **415,990** | **330,418** | **416,586** | **492,203** | **490,802** | **439,438** | **439,005** | **440,441** | **590,182** | **557,430** | **491,009** | **440,201** | **440,339** | **419,415** | **418,021** | **440,284** | | |
| Cents RF+3rds | 1,114 | -7,568 | -0,095 | 12,759 | 1,952 | 3,243 | 4,428 | -6,805 | -11,739 | -3,119 | -4,822 | 0,829 | 7,483 | 8,640 | -11,011 | -0,114 | 0,428 | 16,146 | 10,382 | 0,212 | | |
| Cents RF-3rds | 2,815 | -5,867 | 1,607 | 14,461 | 3,653 | 4,945 | 6,129 | -5,104 | -10,037 | -1,417 | -3,121 | 2,531 | 9,184 | 10,341 | -9,310 | 1,587 | 2,129 | 17,847 | 12,083 | 1,913 | | |
| Just Int I | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | -44,860 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | |
| Just Int II | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 1,995 | -11,731 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -29,219 | -13,686 | -17,596 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | | |
| Pythagorean | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 1,955 | 9,775 | 3,910 | 3,910 | 0,000 | 0,000 | 0,000 | -1,955 | 7,820 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | | |
| Meantone | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | -3,421 | -17,108 | -6,843 | -6,843 | 0,000 | 0,000 | 0,000 | 3,422 | -13,686 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | | |
| | Third Phrase | | | | | | | | | | | | | | | | | | | | | |
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
| Take 01 | 449,297 | 449,691 | 449,841 | 468,756 | 477,059 | 480,133 | 598,027 | 525,266 | 476,176 | 471,924 | 444,173 | 449,305 | 401,850 | 405,186 | 405,927 | 473,657 | 447,024 | 398,194 | 398,462 | 353,858 | 334,023 | 356,951 | 333,524 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 03 | 445,677 | 448,909 | 442,573 | 468,605 | 470,585 | 474,104 | 601,175 | 526,211 | 472,014 | 466,667 | 437,644 | 446,014 | 400,232 | 395,299 | 403,349 | 469,045 | 449,563 | 394,218 | 394,875 | 351,247 | 335,443 | 359,005 | 332,726 |
| Take 04 | 447,433 | 451,432 | 444,356 | 469,149 | 468,120 | 469,651 | 603,527 | 527,235 | 469,035 | 470,189 | 438,538 | 447,498 | 398,234 | 396,590 | 401,285 | 475,352 | 446,633 | 395,286 | 397,728 | 348,544 | 323,195 | 358,443 | 331,084 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 444,999 | 442,738 | 441,586 | 469,459 | 468,115 | 463,898 | 590,666 | 521,661 | 467,884 | 463,247 | 440,258 | 442,786 | 395,165 | 398,516 | 395,932 | 472,402 | 444,913 | 391,035 | 393,036 | 350,549 | 332,756 | 354,634 | 332,210 |
| Take 07 | 445,623 | 448,399 | 444,933 | 466,182 | 467,212 | 470,173 | 596,795 | 522,708 | 470,828 | 466,166 | 439,674 | 443,845 | 398,006 | 394,631 | 395,663 | 468,163 | 443,527 | 394,176 | 394,828 | 347,080 | 333,391 | 355,879 | 330,301 |
| Take 08 | 443,354 | 451,203 | 440,175 | 466,356 | 468,235 | 470,555 | 593,287 | 525,000 | 465,157 | 464,796 | 441,618 | 443,432 | 396,781 | 393,750 | 396,278 | 466,292 | 441,104 | 392,895 | 395,911 | 345,921 | 330,618 | 355,530 | 329,010 |
| Take 09 | 446,295 | 446,009 | 441,742 | 464,937 | 467,491 | 470,783 | 596,695 | 525,124 | 470,579 | 470,849 | 439,314 | 445,335 | 396,175 | 396,207 | 401,111 | 470,111 | 447,629 | 389,819 | 394,196 | 351,411 | 330,791 | 352,862 | 333,447 |
| Take 10 | 447,610 | 448,951 | 449,291 | 473,933 | 474,052 | 475,359 | 596,041 | 524,674 | 472,772 | 472,584 | 442,943 | 444,470 | 400,797 | 401,144 | 400,023 | 478,961 | 448,004 | 395,761 | 395,098 | 355,236 | 334,044 | 353,498 | 331,014 |
| Take 11 | 451,016 | 449,340 | 443,519 | 474,648 | 473,829 | 480,179 | 596,985 | 525,294 | 471,837 | 470,535 | 442,029 | 442,634 | 400,718 | 398,744 | 405,581 | 478,093 | 447,094 | 398,003 | 397,036 | 358,495 | 333,511 | 358,735 | 332,905 |
| Take 12 | 449,253 | 448,655 | 438,278 | 466,642 | 471,129 | 480,860 | 591,865 | 529,220 | 469,953 | 469,171 | 442,125 | 447,747 | 392,232 | 394,231 | 401,116 | 471,273 | 442,833 | 394,852 | 395,406 | 357,337 | 334,389 | 354,497 | 331,313 |
| Take 13 | 447,429 | 449,619 | 441,618 | 472,935 | 472,813 | 472,626 | 596,512 | 524,876 | 471,087 | 465,984 | 445,642 | 445,571 | 397,404 | 391,751 | 400,356 | 475,549 | 446,264 | 398,816 | 394,694 | 351,008 | 323,391 | 355,600 | 331,038 |
| Take 14 | 442,442 | 441,613 | 445,454 | 461,672 | 465,136 | 464,905 | 576,713 | 514,786 | 460,032 | 462,818 | 436,505 | 444,654 | 393,578 | 392,656 | 393,385 | 467,627 | 446,723 | 389,971 | 388,775 | 349,840 | 330,647 | 351,022 | 329,387 |
| Take 15 | 442,415 | 439,900 | 439,272 | 464,526 | 465,358 | 466,894 | 589,845 | 523,615 | 464,304 | 462,334 | 437,424 | 438,857 | 394,928 | 389,843 | 392,666 | 466,031 | 439,913 | 392,688 | 389,876 | 348,228 | 329,628 | 351,293 | 333,304 |
| Take 16 | 443,141 | 446,566 | 443,155 | 467,956 | 467,146 | 469,961 | 574,987 | 523,839 | 470,424 | 466,524 | 440,477 | 442,649 | 395,257 | 391,379 | 394,451 | 465,921 | 440,663 | **395,464** | 391,259 | 347,590 | **333,670** | 351,379 | 327,717 |
| Take 17 | 445,606 | 443,549 | 441,986 | 463,808 | 466,671 | 460,822 | 583,120 | 524,218 | 470,377 | 460,432 | 443,391 | 447,423 | 395,618 | 389,955 | 396,987 | 471,172 | 444,989 | 390,396 | 389,079 | 353,062 | 336,581 | 351,402 | 328,328 |
| Take 18 | 443,782 | 442,681 | 441,419 | 461,498 | 467,050 | 467,870 | 596,053 | 524,379 | 470,595 | 462,460 | 432,000 | 443,635 | 395,308 | 400,006 | 393,895 | 469,992 | 444,721 | 398,077 | 393,700 | 351,376 | 330,458 | 350,645 | 328,349 |
| Take 19 | 445,129 | 444,844 | 441,198 | 465,530 | 468,613 | 463,498 | 591,242 | 524,896 | 469,327 | 466,271 | 432,513 | 444,026 | 395,632 | 397,544 | 399,583 | 472,957 | 439,810 | 393,454 | 393,109 | 346,398 | 333,434 | 353,247 | 327,715 |
| Take 20 | 449,398 | 442,731 | 434,899 | 477,065 | 471,852 | 471,028 | 598,721 | 526,068 | 467,614 | 470,374 | 440,140 | 443,288 | 396,323 | 398,771 | 395,192 | 471,760 | 443,281 | 397,728 | 391,260 | **343,312** | 340,820 | 355,145 | **327,777** |
| Take 21 | 445,037 | 445,620 | 449,517 | **470,715** | **468,377** | 473,136 | 600,235 | 526,598 | 472,417 | 469,033 | 442,684 | 449,504 | 399,232 | 395,263 | 398,976 | 472,850 | 442,493 | 402,128 | 393,210 | 349,922 | 338,787 | 358,416 | 325,365 |
| Sop 1 AVERAGE | **446,049** | **446,445** | **442,885** | **468,125** | **469,413** | **470,865** | **593,289** | **524,509** | **469,601** | **466,966** | **439,952** | **444,877** | **397,025** | **395,867** | **398,513** | **471,432** | **444,589** | **394,893** | **393,765** | **350,548** | **332,609** | **354,641** | **330,343** |
| Cents RF+3rds | 16,914 | 18,448 | 4,587 | 0,542 | 5,298 | 10,646 | 10,752 | -2,569 | 5,991 | -3,748 | -6,914 | 12,359 | 15,345 | 10,287 | 21,824 | 12,730 | 11,235 | 6,022 | 1,072 | -0,196 | 8,865 | 19,903 | -2,974 |
| Cents RF-3rds | 21,181 | 22,716 | 8,855 | 4,809 | 9,566 | 14,913 | 15,019 | 1,698 | 10,258 | 0,519 | -2,647 | 16,627 | 19,612 | 14,555 | 26,091 | 16,997 | 15,502 | 10,289 | 5,340 | 4,072 | 13,132 | 24,170 | 1,294 |
| Just Int I | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -37,039 | -1,955 | 7,820 | -37,039 | -37,039 | -21,506 | -21,506 | -25,416 | -25,416 | -52,680 | -9,774 | -21,506 | -52,680 | -52,680 | -7,820 | -19,551 | -14,596 | -19,551 |
| Just Int II | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -15,532 | 19,551 | 29,326 | -15,532 | -15,532 | 0,000 | 0,000 | -3,910 | -3,910 | -31,174 | 11,732 | 0,000 | -31,174 | -31,174 | 13,686 | 1,955 | 6,910 | 1,955 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -9,775 | -9,775 | -9,775 | -1,955 | -5,865 | -9,775 | -9,775 | 0,000 | 0,000 | -3,910 | -3,910 | -3,910 | -9,775 | 0,000 | -3,910 | -3,910 | -7,820 | 1,955 | -7,820 | 1,955 |
| Meantone | 0,000 | 0,000 | 0,000 | 17,107 | 17,107 | 17,107 | 3,422 | 10,265 | 17,107 | 17,107 | 0,000 | 0,000 | 6,843 | 6,843 | 6,843 | 17,107 | 0,000 | 6,843 | 6,843 | 13,686 | 1,955 | 13,686 | 1,955 |
| Take 01 | 449,685 | 447,642 | 445,953 | 464,322 | 474,651 | 473,990 | 593,617 | 530,016 | 471,085 | 470,704 | 444,843 | 456,708 | 396,919 | 395,063 | 398,719 | 472,591 | 447,538 | 392,188 | 391,246 | 358,981 | 333,922 | 355,148 | 334,392 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 444,780 | 443,870 | 440,915 | 469,211 | 469,671 | 469,454 | **570,072** | 527,730 | 467,524 | 465,280 | 441,669 | 444,603 | 396,828 | 393,499 | 397,817 | 465,478 | 444,055 | 390,479 | 391,183 | 348,971 | 328,696 | 350,945 | 331,306 |
| Take 04 | 446,975 | 444,079 | 448,280 | 463,077 | 470,083 | 468,765 | **531,930** | 524,220 | 472,613 | 471,266 | 447,642 | 444,208 | 395,311 | 394,981 | 396,034 | 466,854 | 438,305 | 393,887 | 390,019 | 347,556 | 331,579 | 351,632 | 333,075 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 445,056 | 443,423 | 444,267 | 461,465 | 466,364 | 464,934 | 591,858 | 521,837 | 459,797 | 467,097 | 445,637 | 442,504 | 394,482 | 390,514 | 396,596 | 461,145 | 437,446 | 391,491 | 394,024 | 348,818 | 331,735 | 351,748 | 331,938 |
| Take 07 | 446,485 | 445,795 | 441,702 | 461,305 | 464,738 | 466,932 | 594,451 | 519,188 | 469,222 | 460,236 | 446,082 | 442,495 | 394,889 | 389,634 | 398,494 | 467,913 | 446,181 | 394,090 | 392,262 | 348,015 | 328,327 | 351,253 | 330,813 |
| Take 08 | 445,219 | 441,269 | 442,356 | 460,290 | 463,921 | 466,076 | 597,966 | 523,385 | 469,829 | 463,230 | 445,669 | 449,583 | 395,446 | 393,792 | 393,640 | 467,736 | 438,391 | 393,879 | 391,019 | 348,275 | 331,170 | 352,974 | 331,741 |
| Take 09 | 446,943 | 441,724 | 440,835 | 461,474 | 465,480 | 466,667 | 592,443 | 525,000 | 468,728 | 464,476 | 445,334 | 442,358 | 392,405 | 390,371 | 396,136 | 472,223 | 445,806 | 391,220 | 392,683 | 351,826 | 331,501 | 350,419 | 331,003 |
| Take 10 | 448,229 | 448,809 | 447,797 | 467,473 | 468,511 | 471,225 | 589,815 | 527,033 | 470,177 | 470,799 | 448,762 | 448,541 | 397,571 | 394,581 | 400,282 | 468,726 | 446,782 | 393,296 | 391,213 | 356,055 | 334,042 | 352,624 | 331,477 |
| Take 11 | 451,396 | 447,039 | 444,586 | 464,855 | 471,894 | 469,351 | **611,933** | 525,759 | 471,913 | 470,717 | 456,995 | 447,773 | 396,814 | 397,991 | 399,477 | 471,720 | 447,626 | 395,083 | 395,089 | 352,304 | 333,290 | 351,545 | 333,550 |
| Take 12 | 449,199 | 445,087 | 442,960 | 465,002 | 467,511 | 466,082 | 583,333 | 517,513 | 467,413 | 466,394 | 442,732 | 449,490 | 391,552 | 395,867 | 395,470 | 465,845 | 442,706 | 392,572 | 388,611 | 345,840 | 330,023 | 350,440 | 329,671 |
| Take 13 | 445,836 | 446,251 | 442,733 | 465,295 | 467,244 | 466,208 | 595,359 | 524,447 | 465,745 | 466,485 | 442,732 | **446,959** | 391,603 | 397,518 | 392,953 | 469,863 | 439,257 | 388,723 | 391,152 | 346,190 | 332,273 | 354,106 | 330,396 |
| Take 14 | 445,033 | 440,127 | 438,193 | 466,403 | 465,071 | 463,593 | 574,162 | 521,718 | 465,690 | 462,119 | 442,383 | 437,602 | 392,004 | 385,389 | 392,739 | 459,635 | 445,367 | 388,755 | 391,788 | 345,015 | 329,277 | 351,166 | 331,513 |
| Take 15 | 448,832 | 441,283 | 440,292 | 464,549 | 465,703 | 462,393 | 581,904 | 520,529 | 462,992 | 467,656 | 434,374 | 441,842 | 389,753 | 394,753 | 392,690 | 461,897 | 445,143 | 388,314 | 389,526 | 350,468 | 331,375 | 348,722 | 330,296 |
| Take 16 | 439,504 | 441,395 | 443,140 | 461,703 | 462,643 | 463,871 | 584,922 | 518,604 | 463,601 | 465,007 | 439,853 | 436,595 | 391,152 | 394,190 | 391,974 | 464,117 | 438,358 | **391,456** | 390,679 | 344,065 | 330,209 | 348,936 | 328,713 |
| Take 17 | 439,892 | 438,370 | 438,625 | 457,997 | 466,026 | 466,324 | 588,633 | 517,612 | 463,974 | 463,822 | 437,536 | 441,668 | 392,453 | 390,891 | 391,396 | 467,172 | 441,976 | 390,727 | 388,268 | 345,039 | 330,119 | 348,953 | 328,254 |
| Take 18 | 442,139 | 445,396 | 440,194 | 462,046 | 468,219 | 464,002 | **488,793** | 521,104 | 465,615 | 466,945 | 443,008 | 431,707 | 391,103 | 383,270 | 391,345 | 463,393 | 442,948 | 383,095 | 387,215 | 347,792 | 326,158 | 347,641 | 328,402 |
| Take 19 | 438,488 | 442,193 | 443,662 | 463,640 | 463,873 | 466,304 | 599,444 | 520,586 | 466,108 | 463,242 | 442,048 | 441,401 | 391,366 | 388,534 | 390,469 | 462,121 | 439,181 | 394,696 | 389,423 | 349,486 | 331,950 | 350,200 | 329,250 |
| Take 20 | 441,941 | 442,119 | 443,082 | 464,427 | 468,460 | 473,887 | 587,355 | 524,649 | 469,036 | 468,814 | 442,655 | 445,689 | 389,484 | 385,253 | 392,445 | 465,713 | 438,015 | 385,464 | 385,644 | 349,199 | 332,981 | 351,280 | 329,563 |
| Take 21 | 445,273 | 442,204 | 440,982 | 464,875 | 468,600 | 464,992 | **545,621** | 523,805 | 470,138 | 468,067 | 444,813 | **441,453** | 395,118 | 388,935 | 394,253 | 468,833 | 442,918 | 387,399 | 390,717 | 353,157 | 329,384 | 355,091 | 330,131 |
| Sop 2 AVERAGE | **445,311** | **443,583** | **442,661** | **463,653** | **467,298** | **467,108** | **589,662** | **522,881** | **467,432** | **466,440** | **443,935** | **443,851** | **393,487** | **391,843** | **394,891** | **466,472** | **442,526** | **390,885** | **390,619** | **349,318** | **330,948** | **351,306** | **330,815** |
| Cents RF+3rds | 14,045 | 7,315 | 3,712 | -16,075 | -2,519 | -3,223 | 0,135 | -7,952 | -2,024 | -5,701 | 8,689 | 8,362 | -0,151 | -7,398 | 6,015 | -5,580 | 3,185 | -11,637 | -12,816 | -6,279 | 0,195 | 3,546 | -0,500 |
| Cents RF-3rds | 18,312 | 11,582 | 7,979 | -11,808 | 1,748 | 1,044 | 4,402 | -3,685 | 2,243 | -1,434 | 12,956 | 12,629 | 4,116 | -3,131 | 10,282 | -1,313 | 7,452 | -7,370 | -8,549 | -2,011 | 4,462 | 7,813 | 3,767 |
| Just Int I | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -37,039 | -1,955 | 7,820 | -37,039 | -37,039 | -21,506 | -21,506 | -25,416 | -25,416 | -52,680 | -9,774 | -21,506 | -52,680 | -52,680 | -7,820 | -19,551 | -14,596 | -19,551 |
| Just Int II | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -15,532 | 19,551 | 29,326 | -15,532 | -15,532 | 0,000 | 0,000 | -3,910 | -3,910 | -31,174 | 11,732 | 0,000 | -31,174 | -31,174 | 13,686 | 1,955 | 6,910 | 1,955 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -9,775 | -9,775 | -9,775 | -1,955 | -5,865 | -9,775 | -9,775 | 0,000 | 0,000 | -3,910 | -3,910 | -3,910 | -9,775 | 0,000 | -3,910 | -3,910 | -7,820 | 1,955 | -7,820 | 1,955 |
| Meantone | 0,000 | 0,000 | 0,000 | 17,107 | 17,107 | 17,107 | 3,422 | 10,265 | 17,107 | 17,107 | 0,000 | 0,000 | 6,843 | 6,843 | 6,843 | 17,107 | 0,000 | 6,843 | 6,843 | 13,686 | 1,955 | 13,686 | 1,955 |
| Take 01 | 436,966 | 436,960 | 441,795 | 463,841 | 466,312 | 466,201 | 583,307 | 518,223 | 464,425 | 464,373 | 441,092 | 438,622 | 389,777 | 390,958 | 394,164 | 464,596 | 439,475 | 382,530 | 389,500 | 356,124 | 329,213 | 345,937 | 329,169 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 439,504 | 438,689 | 439,820 | 453,048 | 459,607 | 462,486 | 583,348 | 521,464 | 468,335 | 461,793 | 439,599 | 440,271 | 387,552 | 387,579 | 394,723 | 459,959 | 439,709 | 382,291 | 387,875 | 346,148 | 332,265 | 347,616 | 329,547 |
| Take 04 | 441,373 | 438,821 | 441,219 | 461,227 | 461,214 | 464,955 | 592,357 | 522,077 | 468,261 | 461,906 | 435,060 | 436,913 | 392,327 | 396,262 | 388,135 | 456,711 | 436,757 | 383,072 | 389,546 | 354,420 | 331,159 | 345,601 | 327,895 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 439,026 | 444,748 | 443,139 | 460,569 | 461,225 | 464,097 | 580,124 | 517,662 | 466,510 | 461,323 | 436,788 | 434,794 | 392,751 | 391,467 | 396,610 | 458,532 | 431,813 | 387,845 | 385,903 | 339,116 | 327,536 | 346,125 | 328,438 |
| Take 07 | **437,961** | 445,483 | **438,590** | 461,623 | 466,389 | 459,649 | 586,778 | 521,919 | 471,018 | 467,205 | 435,804 | 438,256 | 394,009 | 386,367 | **392,577** | 466,614 | 438,309 | 395,321 | 387,781 | 345,555 | 324,507 | 347,024 | 329,318 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 08 | 440,429 | 440,053 | 445,621 | 454,518 | 465,493 | 464,785 | 585,877 | 523,065 | 470,294 | 465,273 | 440,096 | 439,747 | 395,356 | 393,982 | 397,086 | 458,811 | 433,752 | 390,895 | 390,134 | 339,875 | 320,805 | 349,945 | 331,223 |
| Take 09 | 441,351 | 446,412 | 448,226 | 455,698 | 465,821 | 465,107 | 582,834 | 518,181 | 475,032 | 465,822 | 437,895 | 437,404 | 396,262 | 392,923 | 395,782 | 467,292 | 440,219 | 393,617 | 392,341 | 343,846 | 323,861 | 348,026 | 330,553 |
| Take 10 | 440,355 | 446,374 | 445,924 | 468,110 | 467,337 | 468,875 | 591,093 | 518,701 | 468,640 | 464,081 | 436,229 | 438,691 | 395,885 | 395,615 | 398,893 | 457,674 | 443,036 | 387,220 | 387,993 | 348,564 | 329,397 | 347,591 | 326,145 |
| Take 11 | 441,684 | 444,056 | 440,536 | 467,451 | 465,156 | 469,819 | 585,023 | 522,603 | 473,625 | 465,460 | 440,930 | 437,245 | 395,020 | 391,923 | 399,691 | 465,125 | 437,400 | 386,381 | 385,469 | 339,978 | 335,929 | 346,222 | 327,682 |
| Take 12 | 440,135 | 442,587 | 443,173 | 463,109 | 466,083 | 464,924 | 582,280 | 518,794 | 465,335 | 461,819 | 435,118 | 437,487 | 391,030 | 393,686 | 395,287 | 458,151 | 442,137 | 386,172 | 390,156 | 347,422 | 329,587 | 348,924 | 325,762 |
| Take 13 | 440,773 | 441,532 | 441,934 | 463,701 | 467,467 | 463,544 | 579,508 | 517,309 | 461,694 | 459,702 | 435,058 | 438,367 | 393,235 | 390,587 | 393,056 | 462,942 | 437,375 | 388,637 | 389,143 | 341,290 | 329,756 | 348,226 | 328,111 |
| Take 14 | 440,714 | 441,100 | 437,222 | 459,961 | 460,863 | 462,071 | 579,952 | 519,212 | 467,261 | 461,229 | 435,187 | 435,893 | 391,156 | 392,000 | 394,162 | 468,265 | 437,643 | 385,839 | 388,797 | 343,435 | 334,483 | 348,712 | 327,288 |
| Take 15 | 434,558 | 436,332 | 438,052 | 455,306 | 460,853 | 461,500 | 586,848 | 518,394 | 464,583 | 456,810 | 436,951 | 439,449 | 397,359 | 394,442 | 397,588 | 465,468 | 440,132 | 389,735 | 389,008 | 349,058 | 330,944 | 348,664 | 328,118 |
| Take 16 | 439,348 | 445,952 | 439,670 | 461,541 | 463,830 | 461,665 | 580,927 | 513,359 | 461,195 | 462,406 | 436,738 | 433,682 | 398,071 | 394,208 | 395,396 | 460,588 | 434,418 | 389,773 | 392,964 | 346,143 | 330,134 | 346,831 | 328,378 |
| Take 17 | 441,407 | 439,079 | 438,765 | 457,091 | 462,835 | 461,188 | 577,264 | 517,741 | 467,352 | 457,642 | 443,896 | 437,739 | 393,684 | 392,448 | 395,345 | 461,982 | 437,538 | 390,059 | 389,261 | 347,365 | 322,656 | 346,532 | 331,522 |
| Take 18 | 444,107 | 443,065 | 443,351 | 463,235 | 465,538 | 471,052 | 586,107 | 520,466 | 468,916 | 463,400 | 428,829 | 438,302 | 393,131 | 390,409 | 397,115 | 459,200 | 428,583 | 382,839 | 388,406 | 343,481 | 318,717 | 345,953 | 327,420 |
| Take 19 | 444,864 | 440,732 | 440,396 | 455,854 | 461,785 | 459,322 | 584,081 | 513,089 | 466,008 | 463,457 | 430,220 | 439,015 | 397,574 | 390,657 | 398,619 | 463,593 | 432,595 | 386,955 | 394,072 | 344,244 | 326,103 | 346,159 | 326,738 |
| Take 20 | 438,987 | 438,806 | 444,153 | 454,856 | 465,578 | 469,409 | 583,536 | 519,977 | 467,904 | 460,456 | 442,116 | 440,589 | 394,794 | 391,741 | 389,865 | 463,460 | 440,319 | 377,730 | 385,220 | 349,818 | 325,266 | 342,808 | 328,185 |
| Take 21 | 442,914 | 442,722 | 443,788 | 464,780 | 468,503 | 468,159 | 569,924 | 516,257 | 462,763 | 464,888 | 436,634 | 440,506 | 393,899 | 389,766 | 396,440 | 467,111 | 436,297 | 380,323 | 385,210 | 345,713 | 318,593 | 348,173 | 323,063 |
| Sop 3 AVERAGE | 440,340 | 441,763 | 441,862 | 460,290 | 464,310 | 464,674 | 583,219 | 518,868 | 467,324 | 462,581 | 437,065 | 438,051 | 393,835 | 391,948 | 395,291 | 462,425 | 437,237 | 387,195 | 388,883 | 345,873 | 327,416 | 347,109 | 328,134 |
| Cents RF+3rds | -5,390 | 0,198 | 0,584 | -28,677 | -13,625 | -12,267 | -18,884 | -21,289 | -2,423 | -20,081 | -18,312 | -14,411 | 1,381 | -6,933 | 7,769 | -20,667 | -17,631 | -28,059 | -20,526 | -23,437 | -18,379 | -17,264 | -14,586 |
| Cents RF-3rds | -1,123 | 4,465 | 4,851 | -24,410 | -9,357 | -8,000 | -14,617 | -17,022 | 1,844 | -15,814 | -14,045 | -10,143 | 5,648 | -2,666 | 12,036 | -16,400 | -13,364 | -23,792 | -16,259 | -19,170 | -14,111 | -12,997 | -10,318 |
| Just Int I | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -37,039 | -1,955 | 7,820 | -37,039 | -37,039 | -21,506 | -21,506 | -25,416 | -25,416 | -52,680 | -9,774 | -21,506 | -52,680 | -52,680 | -7,820 | -19,551 | -14,596 | -19,551 |
| Just Int II | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -15,532 | 19,551 | 29,326 | -15,532 | -15,532 | 0,000 | 0,000 | -3,910 | -3,910 | -31,174 | 11,732 | 0,000 | -31,174 | -31,174 | 13,686 | 1,955 | 6,910 | 1,955 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -9,775 | -9,775 | -9,775 | -1,955 | -5,865 | -9,775 | -9,775 | 0,000 | 0,000 | -3,910 | -3,910 | -3,910 | -9,775 | 0,000 | -3,910 | -3,910 | -7,820 | 1,955 | -7,820 | 1,955 |
| Meantone | 0,000 | 0,000 | 0,000 | 17,107 | 17,107 | 17,107 | 3,422 | 10,265 | 17,107 | 17,107 | 0,000 | 0,000 | 6,843 | 6,843 | 6,843 | 17,107 | 0,000 | 6,843 | 6,843 | 13,686 | 1,955 | 13,686 | 1,955 |
| Take 01 | 443,095 | 443,928 | 444,805 | 467,288 | 468,293 | 466,434 | 585,374 | 530,023 | 460,659 | 464,051 | 445,067 | 444,112 | 400,356 | 398,098 | 401,340 | 472,859 | 444,579 | 395,274 | 398,597 | 355,841 | 333,068 | 355,223 | 332,721 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 440,119 | 439,313 | 440,345 | 460,490 | 462,110 | 460,007 | 579,012 | 519,424 | 458,363 | 461,506 | 439,960 | 443,003 | 394,680 | 399,063 | 393,842 | 461,310 | 437,437 | 385,268 | 392,689 | 350,902 | 331,846 | 349,054 | 330,337 |
| Take 04 | 443,083 | 440,801 | 442,206 | 463,299 | 459,914 | 459,892 | 581,302 | 520,360 | 464,628 | 463,352 | 443,322 | 440,596 | 394,434 | 397,563 | 396,108 | 463,757 | 444,057 | 390,653 | 392,886 | 350,168 | 332,144 | 353,325 | 330,137 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 442,899 | 438,745 | 441,421 | 461,641 | 459,993 | 461,853 | 573,919 | 519,295 | 462,952 | 461,803 | 437,920 | 436,497 | 392,329 | 397,840 | 396,990 | 459,398 | 436,922 | 393,040 | 394,322 | 350,576 | 328,790 | 349,000 | 327,857 |
| Take 07 | 443,764 | 438,806 | 442,492 | 463,619 | 462,839 | 462,931 | 580,874 | 517,666 | 468,091 | 462,822 | 442,858 | 445,175 | 394,890 | 399,594 | 392,619 | 465,065 | 440,060 | 387,365 | 390,978 | 349,208 | 329,304 | 351,363 | 330,166 |
| Take 08 | 444,195 | 442,261 | 440,112 | 461,421 | 461,642 | 461,465 | 583,733 | 520,461 | 462,117 | 460,612 | 438,272 | 441,792 | 392,541 | 395,194 | 396,763 | 463,553 | 441,124 | 388,731 | 394,029 | 346,451 | 328,798 | 349,215 | 327,724 |
| Take 09 | 444,648 | 441,359 | 444,056 | 468,951 | 461,554 | 461,849 | 584,268 | 523,309 | 464,914 | 460,907 | 435,425 | 441,660 | 394,983 | 393,863 | 396,101 | 465,875 | 438,448 | 392,640 | 390,984 | 346,625 | 328,186 | 346,722 | 327,988 |
| Take 10 | 439,916 | 441,591 | 439,773 | 462,501 | 462,466 | 466,542 | 589,123 | 519,457 | 468,145 | 461,594 | 439,415 | 438,758 | 391,553 | 396,495 | 394,121 | 468,240 | 439,091 | 390,520 | 392,086 | 355,839 | 335,651 | 350,038 | 329,004 |
| Take 11 | 444,598 | 446,707 | 447,076 | 469,842 | 467,043 | 467,098 | 583,889 | 528,483 | 468,538 | 465,351 | 443,982 | 442,554 | 395,243 | 397,908 | 393,987 | 468,193 | 442,513 | 391,980 | 393,948 | 350,574 | 328,055 | 352,466 | 328,560 |
| Take 12 | 442,729 | 443,332 | 444,242 | 464,070 | 464,251 | 464,839 | 584,078 | 519,791 | 462,271 | 464,019 | 440,965 | 439,929 | 392,446 | 398,014 | 397,453 | 463,227 | 440,828 | 387,522 | 389,296 | 349,258 | 347,505 | 350,862 | 331,233 |
| Take 13 | 441,329 | 440,710 | 437,209 | 459,420 | 462,196 | 467,546 | 583,447 | 521,210 | 461,313 | 464,102 | 435,796 | 440,417 | 392,661 | 394,542 | 399,185 | 457,110 | 434,727 | 386,950 | 389,398 | 349,722 | 328,985 | 349,945 | 328,617 |
| Take 14 | 443,552 | 441,999 | 438,795 | 462,508 | 459,100 | 458,879 | 576,028 | 517,654 | 463,600 | 456,338 | 432,252 | 440,674 | 390,151 | 390,793 | 389,337 | 461,101 | 438,874 | 388,826 | 386,183 | 346,574 | 325,810 | 346,165 | 328,102 |
| Take 15 | 438,348 | 437,042 | 441,268 | 459,694 | 457,809 | 458,254 | 577,839 | 516,669 | 460,602 | 457,301 | 434,113 | 436,087 | 388,597 | 392,508 | 389,547 | 461,636 | 436,820 | 384,951 | 385,719 | 341,913 | 321,533 | 342,600 | 326,741 |
| Take 16 | 437,868 | 441,178 | 438,327 | 461,315 | 463,003 | 456,501 | 577,696 | 516,525 | 461,322 | 459,261 | 435,452 | 439,113 | 391,387 | 389,245 | 394,888 | 461,809 | 437,832 | 388,583 | 388,468 | 355,080 | 325,671 | 347,877 | 328,841 |
| Take 17 | 438,354 | 439,038 | 436,949 | 459,979 | 459,553 | 451,902 | 572,688 | 513,700 | 459,956 | 458,087 | 436,471 | 442,372 | 388,820 | 392,482 | 389,014 | 461,801 | 439,384 | 387,065 | 386,835 | 347,604 | 323,456 | 347,316 | 327,809 |
| Take 18 | 440,049 | 439,714 | 439,319 | 457,913 | 460,841 | 462,152 | 579,836 | 515,287 | 459,066 | 459,072 | 436,779 | 443,486 | 390,450 | 390,392 | 383,128 | 454,485 | 435,031 | 382,332 | 385,110 | 344,401 | 323,878 | 345,402 | 328,534 |
| Take 19 | 439,578 | 438,375 | 439,182 | 465,442 | 461,847 | 457,587 | 580,365 | 516,972 | 461,323 | 458,807 | 433,951 | 441,871 | 390,941 | 392,979 | 389,632 | 459,984 | 430,405 | 387,236 | 386,343 | 345,861 | 327,570 | 345,753 | 326,106 |
| Take 20 | 435,069 | 442,209 | 436,616 | 455,513 | 453,539 | 457,450 | 579,674 | 504,842 | 453,237 | 459,398 | 442,722 | 438,279 | 390,500 | 395,293 | 384,890 | 455,679 | 437,717 | 383,852 | 386,148 | 346,101 | 333,542 | 348,353 | 328,895 |
| Take 21 | 436,937 | 439,219 | 434,647 | 464,927 | 457,902 | 446,959 | 422,090 | 486,342 | 463,444 | 462,526 | 436,448 | 441,096 | 393,568 | 396,944 | 391,284 | 457,249 | 445,937 | 387,763 | 388,502 | 346,766 | 321,898 | 351,039 | 330,475 |
| Sop 4 AVERAGE | 441,059 | 440,859 | 440,465 | 462,623 | 461,363 | 461,288 | 580,730 | 519,782 | 462,344 | 461,100 | 438,483 | 440,919 | 392,659 | 395,201 | 393,170 | 462,228 | 439,041 | 388,450 | 390,133 | 348,919 | 329,247 | 349,038 | 328,939 |
| Cents RF+3rds | -2,562 | -3,348 | -4,896 | -19,927 | -24,648 | -24,929 | -26,288 | -18,243 | -20,969 | -25,633 | -12,706 | -3,112 | -3,796 | 7,372 | -1,547 | -21,405 | -10,502 | -22,455 | -14,972 | -8,258 | -8,727 | -7,670 | -10,344 |
| Cents RF-3rds | 1,705 | 0,919 | -0,629 | -15,659 | -20,380 | -20,662 | -22,021 | -13,976 | -16,702 | -21,366 | -8,439 | 1,155 | 0,472 | 11,639 | 2,720 | -17,137 | -6,235 | -18,188 | -10,705 | -3,991 | -4,460 | -3,403 | -6,077 |
| Just Int I | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -37,039 | -1,955 | 7,820 | -37,039 | -37,039 | -21,506 | -21,506 | -25,416 | -25,416 | -52,680 | -9,774 | -21,506 | -52,680 | -52,680 | -7,820 | -19,551 | -14,596 | -19,551 |
| Just Int II | 0,000 | 0,000 | 0,000 | 4,955 | 4,955 | -15,532 | 19,551 | 29,326 | -15,532 | -15,532 | 0,000 | 0,000 | -3,910 | -3,910 | -31,174 | 11,732 | 0,000 | -31,174 | -31,174 | 13,686 | 1,955 | 6,910 | 1,955 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -9,775 | -9,775 | -9,775 | -1,955 | -5,865 | -9,775 | -9,775 | 0,000 | 0,000 | -3,910 | -3,910 | -3,910 | -9,775 | 0,000 | -3,910 | -3,910 | -7,820 | 1,955 | -7,820 | 1,955 |
| Meantone | 0,000 | 0,000 | 0,000 | 17,107 | 17,107 | 17,107 | 3,422 | 10,265 | 17,107 | 17,107 | 0,000 | 0,000 | 6,843 | 6,843 | 6,843 | 17,107 | 0,000 | 6,843 | 6,843 | 13,686 | 1,955 | 13,686 | 1,955 |
| | Fourth Phrase | | | | | | | | | | | | | | | | | | | | | | |
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | | | |
| Take 01 | 372,456 | 372,665 | 374,467 | 331,786 | 301,163 | 399,065 | 397,807 | 404,716 | 395,516 | 377,701 | 336,600 | 450,852 | 449,022 | 396,271 | 448,906 | 513,062 | 371,040 | 333,476 | 374,788 | 396,704 | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 373,233 | 373,787 | 374,079 | 336,891 | 307,000 | 401,948 | 397,288 | 402,034 | 391,315 | 381,613 | 337,177 | 438,972 | 443,463 | 394,274 | 443,290 | 501,137 | 370,155 | 333,754 | 375,467 | 392,622 | | | |
| Take 04 | 371,701 | 371,705 | 376,414 | 332,003 | 297,915 | 400,700 | 397,189 | 399,155 | 394,727 | 369,778 | 334,695 | 442,709 | 443,227 | 398,328 | 445,372 | 505,216 | 369,754 | 330,849 | 390,927 | 397,333 | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 370,122 | 372,038 | 371,483 | 328,303 | 294,226 | 400,744 | 390,454 | 399,142 | 397,485 | 375,569 | 337,285 | 441,971 | 443,666 | 390,078 | 443,119 | 501,589 | 369,696 | 332,915 | 378,956 | 397,316 | | | |
| Take 07 | 369,725 | 369,471 | 368,851 | 328,666 | 294,278 | 393,212 | 392,780 | 399,344 | 395,094 | 372,685 | 331,081 | 441,871 | 443,931 | 387,923 | 442,564 | 503,796 | 369,471 | 331,893 | 377,491 | 394,355 | | | |
| Take 08 | 369,986 | 370,569 | 368,317 | 330,374 | 297,736 | 400,663 | 393,056 | 399,220 | 394,700 | 371,542 | 337,055 | 447,306 | 444,332 | 395,080 | 445,538 | 503,558 | 370,064 | 330,622 | 369,038 | 394,389 | | | |
| Take 09 | 369,842 | 370,821 | 372,970 | 330,988 | 297,595 | 400,285 | 394,058 | 403,709 | 393,541 | 374,815 | 332,062 | 441,000 | 444,157 | 393,923 | 447,901 | 504,976 | 367,956 | 331,890 | 371,829 | 398,767 | | | |
| Take 10 | 371,680 | 372,828 | 370,506 | 334,624 | 296,126 | 397,568 | 398,431 | 398,057 | 394,141 | 380,473 | 332,386 | 444,382 | 446,052 | 397,263 | 445,373 | 504,610 | 372,695 | 330,105 | 377,321 | 396,292 | | | |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 11 | 371,022 | 372,000 | 371,165 | 330,936 | 303,308 | 402,330 | 398,835 | 398,591 | 392,362 | 376,952 | 337,135 | 451,478 | 446,435 | 401,478 | 444,512 | 509,748 | 372,498 | 332,709 | 378,634 | 400,706 |
| Take 12 | 369,663 | 369,725 | 368,232 | 329,985 | 301,924 | 397,939 | 395,530 | 397,164 | 392,461 | 371,432 | 332,970 | 444,727 | 443,544 | 395,173 | 449,356 | 500,695 | 373,541 | 329,638 | 373,583 | 399,286 |
| Take 13 | 371,997 | 374,117 | 367,086 | 334,518 | 303,248 | 399,776 | 396,804 | 404,439 | 397,412 | 380,284 | 337,387 | 445,905 | 444,274 | 394,307 | 444,351 | 491,014 | 376,396 | 330,130 | 375,415 | 396,987 |
| Take 14 | 367,190 | 368,771 | 370,302 | 330,546 | 297,031 | 399,505 | 394,215 | 395,535 | 390,499 | 368,762 | 333,029 | 441,427 | 442,635 | 395,681 | 442,483 | 505,007 | 369,715 | 331,011 | 367,708 | 391,985 |
| Take 15 | 367,868 | 369,649 | 368,023 | 329,546 | 298,414 | 397,751 | 390,423 | 392,741 | 389,088 | 366,696 | 327,389 | 438,603 | 439,999 | 390,819 | 444,556 | 505,175 | 369,580 | 329,610 | 369,682 | 394,587 |
| Take 16 | 369,966 | 372,931 | 370,436 | 328,752 | 293,580 | 396,726 | 391,353 | 396,365 | 388,083 | 370,997 | 337,142 | 440,955 | 441,139 | 390,197 | 440,583 | 502,028 | 370,251 | 328,242 | 369,817 | 390,726 |
| Take 17 | 368,380 | 372,112 | 368,014 | 329,991 | 297,718 | 396,802 | 392,138 | 397,068 | 390,266 | 370,782 | 336,325 | 440,225 | 444,073 | 393,231 | 441,871 | 506,962 | 369,499 | 329,955 | 378,000 | 393,352 |
| Take 18 | 369,416 | 370,728 | 370,147 | 327,696 | 295,187 | 396,367 | 392,992 | 398,780 | 388,725 | 371,238 | 331,406 | 436,707 | 442,564 | 392,776 | 439,339 | 501,197 | 373,170 | 328,052 | 368,007 | 392,552 |
| Take 19 | 368,273 | 366,371 | 366,415 | 327,536 | 297,135 | 391,926 | 390,821 | 394,692 | 394,450 | 368,390 | 335,106 | 441,364 | 442,171 | 397,030 | 439,314 | 499,245 | 370,962 | 331,170 | 370,557 | 391,563 |
| Take 20 | 369,472 | 367,395 | 362,941 | 329,994 | 300,562 | 396,754 | 391,590 | 395,685 | 390,535 | 378,866 | 332,155 | 445,531 | 444,570 | 394,236 | 447,716 | 503,770 | 369,818 | 330,524 | 374,577 | 392,857 |
| Take 21 | 370,676 | 368,928 | 368,114 | 333,887 | 298,553 | 391,447 | 397,303 | 393,995 | 391,956 | 380,950 | 343,335 | 439,737 | 450,921 | 392,523 | 449,312 | 516,563 | 376,830 | 345,689 | 380,396 | 391,013 |
| Sop 1 AVERAGE | 370,140 | 370,874 | 369,893 | 330,896 | 298,563 | 397,974 | 394,372 | 398,444 | 392,756 | 374,185 | 334,827 | 442,933 | 444,220 | 394,242 | 444,498 | 502,925 | 371,215 | 330,919 | 373,959 | 394,915 |
| Cents RF+3rds | 0,186 | 3,615 | -0,973 | 6,152 | 28,141 | 25,708 | 9,967 | 27,750 | 2,857 | 19,003 | 26,599 | 11,004 | 16,027 | 9,395 | 17,110 | 30,910 | 5,206 | 6,274 | 17,956 | 12,351 |
| Cents RF-3rds | 4,095 | 7,524 | 2,936 | 10,061 | 32,050 | 29,617 | 13,876 | 31,659 | 6,766 | 22,912 | 30,508 | 14,913 | 19,936 | 13,304 | 21,019 | 34,819 | 9,115 | 10,182 | 21,865 | 16,259 |
| Just Int I | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Just Int II | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 3,910 | 0,000 | -1,955 | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | 7,820 | 3,910 | 7,820 | -1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -6,843 | 0,000 | 3,422 | 3,422 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | 3,422 | -3,421 | -10,264 | -13,686 | -6,843 | -13,686 | 3,422 |
| Take 01 | 371,519 | 362,733 | 373,242 | 331,439 | 297,844 | 396,578 | 394,276 | 397,040 | 393,011 | 371,592 | 334,318 | 444,569 | 445,344 | 396,454 | 448,754 | 502,043 | 371,474 | 329,633 | 371,947 | 394,821 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 369,523 | 370,436 | 371,391 | 332,445 | 296,433 | 390,411 | 393,314 | 395,018 | 393,734 | 371,002 | 327,464 | 446,693 | 444,955 | 394,698 | 442,173 | 499,954 | 369,821 | 331,691 | 370,048 | 393,618 |
| Take 04 | 369,810 | 369,409 | 372,599 | 333,427 | 295,872 | 392,332 | 393,803 | 396,370 | 395,039 | 375,083 | 335,084 | 454,321 | 443,282 | 395,798 | 446,667 | 497,993 | 372,909 | 330,147 | 376,198 | 395,769 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 370,935 | 370,368 | 372,169 | 329,779 | 297,494 | 389,641 | 392,713 | 393,103 | 392,702 | 370,506 | 333,156 | 443,905 | 440,500 | 396,593 | 443,691 | 496,647 | 367,078 | 328,736 | 372,710 | 394,662 |
| Take 07 | 369,159 | 368,750 | 367,943 | 327,502 | 296,527 | 392,765 | 391,144 | 397,576 | 393,905 | 368,421 | 324,862 | 447,468 | 440,389 | 387,701 | 445,102 | 492,349 | 369,440 | 328,907 | 371,514 | 392,313 |
| Take 08 | 369,125 | 370,464 | 371,700 | 331,261 | 295,428 | 390,858 | 393,959 | 396,558 | 393,112 | 371,266 | 327,111 | 448,107 | 442,573 | 394,116 | 448,094 | 498,991 | 368,530 | 330,223 | 369,836 | 398,941 |
| Take 09 | 371,641 | 377,232 | 370,674 | 326,097 | 295,668 | 390,632 | 393,123 | 394,910 | 393,750 | 371,581 | 331,241 | 444,609 | 442,025 | 388,992 | 443,281 | 494,909 | 367,590 | 330,409 | 371,415 | 393,648 |
| Take 10 | 370,638 | 371,474 | 370,807 | 331,941 | 293,375 | 392,413 | 395,419 | 393,570 | 394,392 | 374,158 | 333,045 | 449,809 | 444,288 | 396,119 | 443,555 | 493,860 | 370,628 | 329,396 | 371,377 | 393,345 |
| Take 11 | 370,856 | 365,945 | 372,152 | 331,989 | 296,584 | 399,082 | 395,682 | 393,270 | 395,490 | 371,078 | 332,386 | 449,638 | 445,015 | 393,402 | 445,426 | 498,802 | 369,609 | 335,196 | 379,923 | 398,958 |
| Take 12 | 367,348 | 368,488 | 367,637 | 334,415 | 293,291 | 395,161 | 391,357 | 388,143 | 395,637 | 371,513 | 329,055 | 445,386 | 442,818 | 396,728 | 445,454 | 492,803 | 367,120 | 331,236 | 371,078 | 396,737 |
| Take 13 | 370,100 | 367,617 | 370,270 | 331,040 | 294,273 | 395,107 | 393,047 | 395,916 | 388,546 | 372,518 | 330,625 | 449,289 | 443,521 | 395,460 | 447,971 | 494,368 | 368,443 | 329,577 | 371,389 | 393,723 |
| Take 14 | 367,844 | 368,949 | 370,763 | 327,328 | 296,816 | 396,568 | 392,076 | 391,312 | 392,828 | 369,232 | 327,759 | 443,179 | 440,115 | 393,227 | 442,042 | 488,106 | 368,631 | 326,316 | 367,602 | 391,207 |
| Take 15 | 366,007 | 367,599 | 370,503 | 327,761 | 291,738 | 387,794 | 393,470 | 390,184 | 388,462 | 367,574 | 326,143 | 441,705 | 438,424 | 386,814 | 437,030 | 490,431 | 366,441 | 327,637 | 367,781 | 392,472 |
| Take 16 | 368,390 | 364,616 | 366,619 | 326,067 | 295,303 | 389,474 | 389,384 | 392,174 | 390,794 | 371,585 | 334,476 | 437,868 | 436,641 | 386,874 | 441,000 | 494,398 | 366,766 | 328,802 | 370,744 | 388,399 |
| Take 17 | 368,158 | 367,358 | 366,021 | 327,226 | 295,074 | 389,858 | 388,899 | 392,281 | 390,063 | 371,185 | 331,321 | 438,120 | 440,580 | 386,727 | 440,728 | 489,449 | 365,378 | 327,335 | 372,444 | 389,259 |
| Take 18 | 366,992 | 368,316 | 367,983 | 325,012 | 291,922 | 388,082 | 390,508 | 394,297 | 391,711 | 367,057 | 326,964 | 442,159 | 440,948 | 393,604 | 442,261 | 494,757 | 368,624 | 328,997 | 368,682 | 389,500 |
| Take 19 | 366,490 | 367,424 | 369,467 | 329,031 | 292,440 | 392,249 | 391,187 | 391,473 | 392,264 | 368,960 | 327,826 | 447,116 | 442,414 | 389,854 | 442,111 | 496,219 | 366,884 | 328,674 | 371,120 | 394,909 |
| Take 20 | 367,365 | 366,934 | 370,075 | 331,660 | 293,023 | 392,897 | 390,958 | 389,398 | 389,834 | 368,739 | 328,686 | 440,881 | 441,204 | 395,400 | 441,251 | 497,665 | 371,674 | 331,253 | 374,314 | 392,901 |
| Take 21 | 368,999 | 366,994 | 372,091 | 331,335 | 297,418 | 392,813 | 391,591 | 390,070 | 396,393 | 371,066 | 330,634 | 443,887 | 443,373 | 392,473 | 442,652 | 501,662 | 366,097 | 332,812 | 374,972 | 406,622 |
| Sop 2 AVERAGE | 368,995 | 368,479 | 370,216 | 329,829 | 295,080 | 392,353 | 392,416 | 393,298 | 392,719 | 370,743 | 330,113 | 445,195 | 442,021 | 392,686 | 443,644 | 495,548 | 368,586 | 329,841 | 371,847 | 393,621 |
| Cents RF+3rds | -5,181 | -7,601 | 0,540 | 0,562 | 7,827 | 1,083 | 1,361 | 5,247 | 2,697 | 3,002 | 2,053 | 19,824 | 7,439 | 2,551 | 13,783 | 5,328 | -7,099 | 0,622 | 8,150 | 6,668 |
| Cents RF-3rds | -1,272 | -3,692 | 4,449 | 4,471 | 11,736 | 4,992 | 5,270 | 9,155 | 6,606 | 6,911 | 5,962 | 23,733 | 11,347 | 6,459 | 17,692 | 9,236 | -3,190 | 4,531 | 12,059 | 10,577 |
| Just Int I | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Just Int II | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 3,910 | 0,000 | -1,955 | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | 7,820 | 3,910 | 7,820 | -1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -6,843 | 0,000 | 3,422 | 3,422 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | 3,422 | -3,421 | -10,264 | -13,686 | -6,843 | -13,686 | 3,422 |
| Take 01 | 369,917 | 366,752 | 368,726 | 329,638 | 295,374 | 385,549 | 390,619 | 395,009 | 394,627 | 370,483 | 334,286 | 441,101 | 440,647 | 388,086 | 437,948 | 493,046 | 373,293 | 332,437 | 371,958 | 389,255 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 369,902 | 368,477 | 373,047 | 333,933 | 298,720 | 391,771 | 387,356 | 391,295 | 395,544 | 364,184 | 328,614 | 440,172 | 437,867 | 392,626 | 440,795 | 489,041 | 373,082 | 329,172 | 369,221 | 391,756 |
| Take 04 | 367,733 | 375,129 | 371,269 | 330,864 | 299,700 | 392,257 | 389,524 | 391,189 | 394,268 | 372,927 | 332,516 | 451,151 | 442,716 | 393,940 | 445,085 | 505,563 | 369,466 | 329,887 | 378,487 | 391,109 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 360,596 | 378,793 | 366,352 | 328,500 | 295,940 | 385,172 | 387,743 | 392,512 | 392,309 | 371,010 | 328,735 | 441,412 | 440,735 | 389,189 | 438,816 | 491,811 | 370,319 | 330,683 | 374,536 | 387,595 |
| Take 07 | 369,854 | 369,012 | 368,135 | 331,147 | 295,605 | 394,332 | 389,992 | 388,889 | 395,780 | 375,733 | 326,667 | 446,348 | 442,479 | 394,639 | 434,396 | 489,563 | 367,050 | 328,284 | 372,764 | 393,692 |
| Take 08 | 370,050 | 370,690 | 371,352 | 331,769 | 295,352 | 398,954 | 391,874 | 389,632 | 394,498 | 374,608 | 325,942 | 445,842 | 438,498 | 388,714 | 440,685 | 490,501 | 370,736 | 332,595 | 374,557 | 390,219 |
| Take 09 | 373,469 | 371,178 | 368,411 | 328,816 | 292,688 | 391,695 | 388,462 | 390,918 | 395,049 | 374,403 | 331,223 | 443,308 | 442,740 | 397,045 | 442,077 | 492,875 | 370,969 | 336,497 | 370,224 | 389,690 |
| Take 10 | 364,368 | 371,393 | 367,899 | 329,027 | 301,211 | 392,037 | 390,824 | 391,688 | 399,051 | 368,478 | 326,736 | 443,421 | 441,128 | 388,815 | 442,914 | 497,922 | 369,011 | 328,950 | 371,444 | 386,006 |
| Take 11 | 363,903 | 371,438 | 370,986 | 327,015 | 302,588 | 392,212 | 390,020 | 389,635 | 393,363 | 370,702 | 329,149 | 435,387 | 444,009 | 389,206 | 443,540 | 495,794 | 373,941 | 330,996 | 375,937 | 389,381 |
| Take 12 | 367,109 | 372,759 | 369,012 | 328,807 | 301,146 | 399,220 | 389,749 | 391,737 | 399,000 | 372,261 | 328,543 | 444,097 | 444,622 | 391,161 | 441,667 | 496,005 | 366,507 | 334,023 | 369,215 | 385,788 |
| Take 13 | 364,477 | 366,860 | 366,861 | 331,062 | 291,687 | 395,472 | 388,350 | 393,465 | 394,000 | 370,358 | 332,927 | 449,898 | 439,718 | 394,624 | 442,952 | 493,456 | 361,991 | 333,338 | 372,152 | 385,511 |
| Take 14 | 363,190 | 366,179 | 366,336 | 326,398 | 295,710 | 391,739 | 389,923 | 389,858 | 389,858 | 366,166 | 331,442 | 437,311 | 439,059 | 388,763 | 435,475 | 485,058 | 369,199 | 327,624 | 369,930 | 390,033 |
| Take 15 | 367,656 | 371,026 | 365,512 | 329,861 | 292,354 | 401,610 | 389,383 | 392,478 | 393,500 | 373,605 | 322,899 | 443,959 | 441,182 | 395,161 | 440,766 | 493,490 | 367,589 | 333,611 | 372,280 | 385,554 |

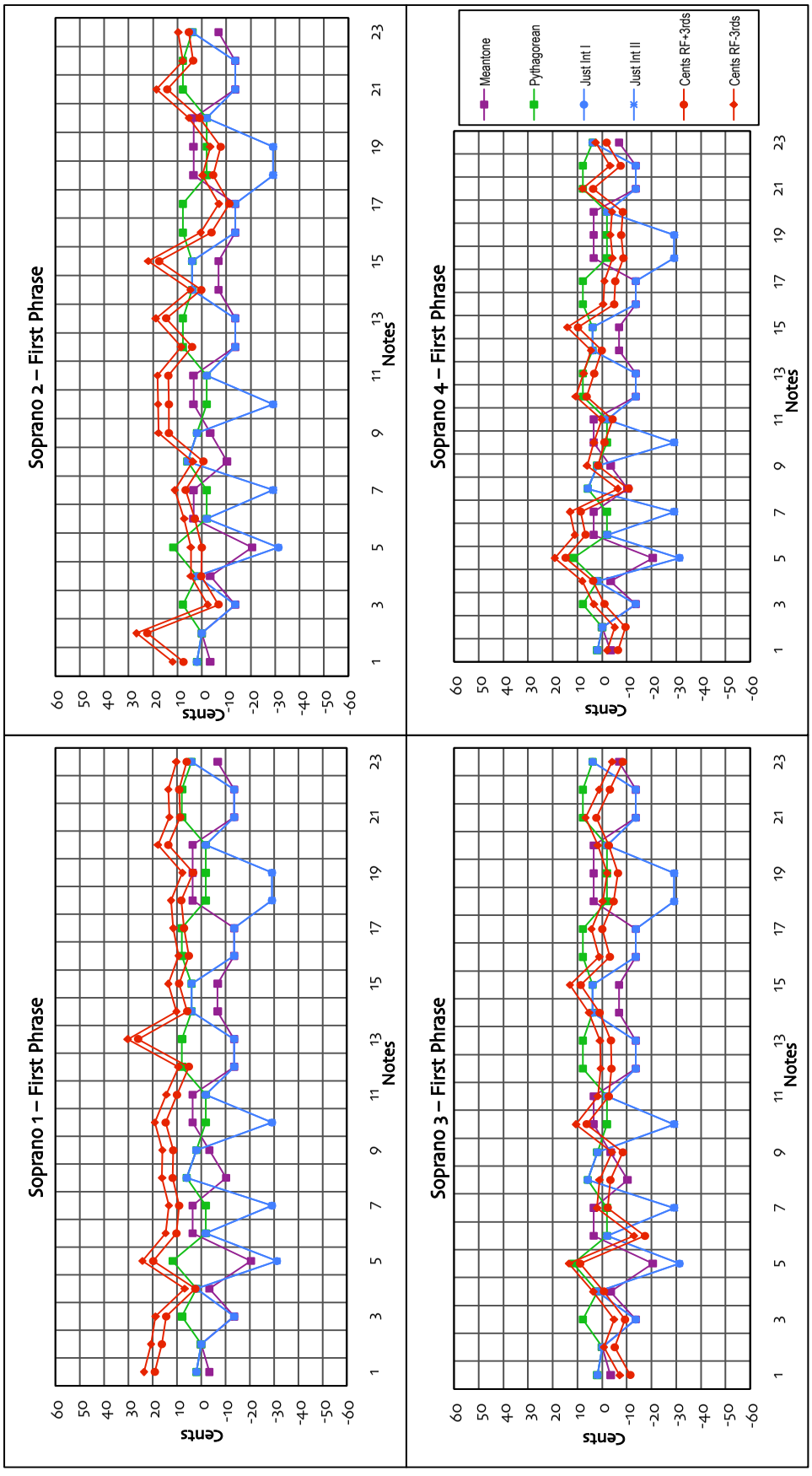
| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 16 | 366,052 | 370,275 | 364,200 | 327,615 | 290,747 | 389,247 | 389,241 | 394,455 | 389,003 | 367,725 | 325,243 | 438,148 | 438,535 | 390,025 | 436,701 | 487,336 | 368,124 | 327,594 | 367,294 | 384,420 |
| Take 17 | 368,285 | 369,390 | 368,305 | 326,290 | 296,863 | 400,781 | 389,907 | 388,836 | 387,197 | 370,060 | 331,849 | 445,046 | 438,335 | 393,519 | 440,213 | 493,459 | 368,245 | 331,848 | 368,282 | 387,102 |
| Take 18 | 368,042 | 369,546 | 371,587 | 326,682 | 294,110 | 394,332 | 392,223 | 391,420 | 388,245 | 371,996 | 327,219 | 438,114 | 439,404 | 395,546 | 438,588 | 490,262 | 369,352 | 332,289 | 376,847 | 389,071 |
| Take 19 | 365,511 | 367,363 | 368,035 | 326,841 | 296,520 | 395,857 | 387,091 | 391,827 | 392,367 | 372,409 | 325,461 | 442,981 | 440,283 | 389,162 | 437,738 | 493,657 | 373,715 | 331,016 | 365,679 | 387,037 |
| Take 20 | 357,186 | 407,125 | 366,373 | 327,889 | 300,859 | 394,676 | 389,133 | 394,190 | 393,096 | 371,111 | 326,183 | 459,004 | 440,891 | 386,771 | 446,478 | 490,698 | 373,522 | 329,621 | 366,127 | 391,169 |
| Take 21 | 367,643 | 379,747 | 369,021 | 323,938 | 294,688 | 391,990 | 391,113 | 391,500 | 395,754 | 376,838 | 326,200 | 436,781 | 437,629 | 384,484 | 440,150 | 500,277 | 372,536 | 331,244 | 370,424 | 388,118 |
| Sop 3 AVERAGE | 366,576 | 370,889 | 368,496 | 328,742 | 296,414 | 393,627 | 389,607 | 391,607 | 393,501 | 371,319 | 328,518 | 442,471 | 440,552 | 391,130 | 440,368 | 493,148 | 369,929 | 331,143 | 371,440 | 388,553 |
| Cents RF+3rds | -16,566 | 3,685 | -7,524 | -5,156 | 15,634 | 6,692 | -11,079 | -2,213 | 6,138 | 5,689 | -6,337 | 9,198 | 1,672 | -4,322 | 0,949 | -3,076 | -0,804 | 7,442 | 6,253 | -15,768 |
| Cents RF-3rds | -12,657 | 7,594 | -3,615 | -1,247 | 19,543 | 10,601 | -7,170 | 1,695 | 10,047 | 9,597 | -2,428 | 13,107 | 5,581 | -0,413 | 4,858 | 0,832 | 3,105 | 11,351 | 10,162 | -11,859 |
| Just Int I | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Just Int II | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 3,910 | 0,000 | -1,955 | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | 7,820 | 3,910 | 7,820 | -1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -6,843 | 0,000 | 3,422 | 3,422 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | 3,422 | -3,421 | -10,264 | -13,686 | -6,843 | -13,686 | 3,422 |
| Take 01 | 373,763 | 375,354 | 371,757 | 336,811 | 303,291 | 395,861 | 399,596 | 397,102 | 397,258 | 379,207 | 345,470 | 444,410 | 442,828 | 393,447 | 440,228 | 496,279 | 374,774 | 334,933 | 379,409 | 394,973 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 366,003 | 370,430 | 368,860 | 330,813 | 298,110 | 392,756 | 395,114 | 395,935 | 398,734 | 374,488 | 339,019 | 440,595 | 442,064 | 397,214 | 438,320 | 498,289 | 371,984 | 332,513 | 370,118 | 392,352 |
| Take 04 | 367,663 | 373,049 | 365,455 | 335,778 | 296,666 | 388,115 | 392,367 | 395,001 | 394,708 | 378,955 | 336,214 | 446,831 | 443,982 | 399,192 | 445,576 | 498,671 | 374,940 | 332,599 | 376,144 | 392,829 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 365,220 | 369,301 | 370,848 | 321,649 | 297,183 | 390,577 | 390,393 | 392,513 | 391,435 | 373,026 | 333,314 | 435,183 | 439,454 | 394,442 | 438,057 | 497,917 | 369,459 | 331,414 | 372,754 | 390,853 |
| Take 07 | 367,828 | 367,406 | 364,573 | 332,865 | 297,584 | 389,944 | 395,729 | 396,737 | 397,357 | 373,599 | 335,821 | 434,289 | 441,633 | 390,387 | 440,760 | 496,653 | 369,689 | 331,303 | 369,196 | 392,273 |
| Take 08 | 366,897 | 366,813 | 367,134 | 328,119 | 298,250 | 388,959 | 395,920 | 393,468 | 388,101 | 372,202 | 333,000 | 437,517 | 440,502 | 394,413 | 440,814 | 496,713 | 370,577 | 333,617 | 373,020 | 392,562 |
| Take 09 | 368,601 | 371,297 | 364,220 | 328,617 | 296,071 | 389,074 | 394,249 | 393,871 | 389,839 | 373,020 | 326,768 | 441,303 | 442,377 | 388,456 | 439,407 | 497,626 | 369,932 | 331,003 | 368,758 | 392,558 |
| Take 10 | 365,667 | 371,741 | 370,183 | 333,980 | 302,257 | 388,087 | 393,323 | 394,619 | 395,812 | 376,055 | 338,174 | 441,135 | 443,064 | 390,829 | 442,444 | 496,347 | 371,194 | 334,106 | 370,417 | 392,079 |
| Take 11 | 368,753 | 370,542 | 371,056 | 330,678 | 302,222 | 391,660 | 393,688 | 396,501 | 393,932 | 375,737 | 333,637 | 442,891 | 443,848 | 397,655 | 445,859 | 498,631 | 368,190 | 332,837 | 370,629 | 393,855 |
| Take 12 | 366,639 | 369,734 | 365,736 | 329,482 | 299,346 | 391,835 | 393,847 | 393,866 | 388,526 | 373,785 | 339,767 | 436,430 | 439,072 | 397,881 | 440,685 | 495,898 | 369,359 | 331,868 | 371,853 | 391,480 |
| Take 13 | 367,381 | 368,801 | 367,799 | 336,373 | 299,457 | 390,650 | 392,084 | 395,560 | 389,791 | 373,632 | 340,068 | 439,163 | 438,328 | 401,633 | 442,475 | 492,097 | 371,739 | 334,074 | 370,854 | 393,481 |
| Take 14 | 365,002 | 363,635 | 364,695 | 327,303 | 296,905 | 386,037 | 390,187 | 388,918 | 386,688 | 370,211 | 332,160 | 432,809 | 439,735 | 394,900 | 437,872 | 489,691 | 366,482 | 327,446 | 368,006 | 389,443 |
| Take 15 | 364,288 | 364,957 | 363,023 | 325,195 | 291,590 | 386,794 | 388,190 | 389,278 | 385,932 | 366,892 | 332,180 | 435,220 | 437,986 | 394,653 | 441,917 | 492,066 | 366,826 | 329,137 | 368,678 | 387,886 |
| Take 16 | 367,801 | 368,864 | 363,987 | 330,095 | 297,775 | 388,012 | 386,819 | 389,460 | 387,385 | 365,794 | 331,317 | 434,001 | 438,211 | 393,530 | 440,106 | 494,389 | 367,105 | 331,017 | 367,467 | 388,039 |
| Take 17 | 367,196 | 367,539 | 365,533 | 327,328 | 296,546 | 389,262 | 390,501 | 389,746 | 389,807 | 368,137 | 328,265 | 433,998 | 437,870 | 397,753 | 439,832 | 495,410 | 367,155 | 328,787 | 366,532 | 387,724 |
| Take 18 | 366,960 | 372,833 | 366,108 | 329,912 | 296,073 | 388,832 | 390,218 | 392,998 | 388,232 | 371,229 | 336,724 | 432,730 | 436,822 | 395,489 | 436,082 | 494,522 | 367,266 | 336,478 | 371,413 | 385,777 |
| Take 19 | 364,128 | 368,135 | 361,149 | 325,739 | 295,791 | 385,455 | 388,054 | 390,336 | 388,737 | 370,136 | 334,741 | 437,051 | 436,460 | 390,143 | 436,915 | 491,209 | 367,904 | 334,543 | 374,003 | 390,636 |
| Take 20 | 368,547 | 399,746 | 367,222 | 336,281 | 297,585 | 391,204 | 391,200 | 391,249 | 385,646 | 371,078 | 334,762 | 463,885 | 436,663 | 401,145 | 445,428 | 484,172 | 396,951 | 331,302 | 371,881 | 389,225 |
| Take 21 | 367,736 | 369,224 | 365,199 | 328,537 | 300,708 | 388,444 | 396,886 | 393,970 | 391,745 | 369,949 | 338,435 | 433,953 | 435,293 | 400,518 | 443,534 | 499,202 | 371,042 | 332,479 | 373,896 | 390,542 |
| Sop 4 AVERAGE | 367,162 | 369,425 | 366,555 | 330,292 | 298,074 | 389,556 | 392,546 | 393,217 | 391,035 | 372,481 | 335,254 | 437,750 | 439,800 | 395,457 | 440,858 | 495,645 | 369,757 | 332,182 | 371,317 | 390,977 |
| Cents RF+3rds | -13,803 | -3,162 | -16,668 | 2,992 | 25,306 | -11,306 | 1,931 | 4,891 | -4,744 | 11,097 | 28,807 | -9,371 | -1,286 | 14,723 | 2,878 | 5,667 | -1,610 | 12,867 | 5,682 | -5,000 |
| Cents RF-3rds | -9,894 | 0,747 | -12,759 | 6,900 | 29,214 | -7,397 | 5,840 | 8,800 | -0,835 | 15,006 | 32,716 | -5,462 | 2,623 | 18,632 | 6,786 | 9,576 | 2,298 | 16,776 | 9,591 | -1,091 |
| Just Int I | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Just Int II | -13,686 | -13,686 | -13,686 | 3,910 | 0,000 | -1,955 | -1,955 | -29,219 | -29,219 | -13,686 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | -13,686 | 3,910 | -13,686 | -1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 3,910 | 0,000 | -1,955 | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | -1,955 | 1,955 | 5,865 | 7,820 | 3,910 | 7,820 | -1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -6,843 | 0,000 | 3,422 | 3,422 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | 3,422 | -3,421 | -10,264 | -13,686 | -6,843 | -13,686 | 3,422 |

Fifth Phrase

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 398,817 | 599,673 | 634,102 | 666,836 | 497,192 | 560,408 | 596,268 | 564,747 | 496,914 | 451,129 | 589,982 | 401,893 | 376,509 | 331,678 | 329,128 | 299,002 |
| Take 02 | | | | | | | | | | | | | | | | |
| Take 03 | 395,324 | 597,946 | 630,729 | 662,270 | 499,337 | 559,389 | 592,643 | 559,868 | 496,492 | 442,758 | 593,286 | 398,530 | 375,719 | 332,277 | 329,172 | 295,204 |
| Take 04 | 405,780 | 574,780 | 611,149 | 646,638 | 499,270 | 564,096 | 594,715 | 564,985 | 504,288 | 463,795 | 602,283 | 395,143 | 373,716 | 335,468 | 334,091 | 296,801 |
| Take 05 | | | | | | | | | | | | | | | | |
| Take 06 | 396,128 | 594,778 | 631,226 | 662,495 | 496,321 | 562,449 | 588,048 | 562,863 | 497,129 | 444,831 | 597,237 | 396,128 | 371,923 | 332,104 | 332,383 | 295,982 |
| Take 07 | 397,112 | 596,811 | 625,311 | 665,341 | 501,507 | 561,068 | 591,013 | 560,725 | 496,404 | 448,569 | 601,453 | 392,034 | 372,296 | 328,675 | 330,814 | 295,452 |
| Take 08 | 397,510 | 593,619 | 630,658 | 668,562 | 502,629 | 561,551 | 592,193 | 563,948 | 503,861 | 454,316 | 592,759 | 401,119 | 371,409 | 331,793 | 336,196 | 296,990 |
| Take 09 | 396,971 | 562,520 | 626,416 | 663,022 | 495,380 | 563,280 | 593,213 | 558,358 | 488,557 | 446,765 | 591,182 | 386,953 | 372,991 | 329,776 | 333,862 | 295,064 |
| Take 10 | 399,119 | 598,404 | 626,281 | 663,758 | 496,440 | 561,663 | 596,471 | 565,708 | 499,164 | 442,094 | 592,693 | 397,512 | 373,364 | 333,470 | 333,497 | 296,680 |
| Take 11 | 399,698 | 598,598 | 631,258 | 667,802 | 506,997 | 564,616 | 598,995 | 567,136 | 500,480 | 452,239 | 601,630 | 402,619 | 376,723 | 334,778 | 335,258 | 297,576 |
| Take 12 | 397,663 | 598,003 | 632,897 | 669,028 | 500,235 | 561,449 | 597,164 | 562,555 | 495,098 | 447,236 | 603,066 | 396,182 | 372,763 | 332,008 | 335,676 | 297,250 |
| Take 13 | 398,946 | 598,135 | 629,620 | 664,956 | 499,761 | 554,400 | 600,989 | 564,864 | 500,400 | 445,535 | 604,373 | 393,985 | 372,536 | 332,572 | 331,155 | 297,066 |
| Take 14 | 396,712 | 591,626 | 625,409 | 651,026 | 493,540 | 554,240 | 590,255 | 559,431 | 496,021 | 444,418 | 588,371 | 394,105 | 370,975 | 326,718 | 330,703 | 293,844 |
| Take 15 | 395,832 | 593,295 | 624,623 | 662,993 | 498,571 | 558,845 | 593,520 | 558,392 | 496,715 | 443,544 | 597,271 | 391,121 | 367,597 | 329,817 | 329,965 | 295,236 |
| Take 16 | 393,637 | 591,152 | 629,378 | 669,203 | 498,657 | 563,178 | 587,626 | 561,265 | 500,972 | 450,386 | 596,471 | 390,552 | 371,050 | 332,111 | 333,051 | 292,360 |
| Take 17 | 395,207 | 593,118 | 622,538 | 662,995 | 505,056 | 565,822 | 593,203 | 563,261 | 502,420 | 449,583 | 595,193 | 392,717 | 370,767 | 327,600 | 328,921 | 291,889 |
| Take 18 | 394,858 | 594,944 | 625,833 | 662,712 | 491,355 | 560,793 | 589,284 | 563,991 | 499,067 | 450,398 | 589,363 | 398,280 | 373,381 | 344,056 | 333,768 | 294,887 |

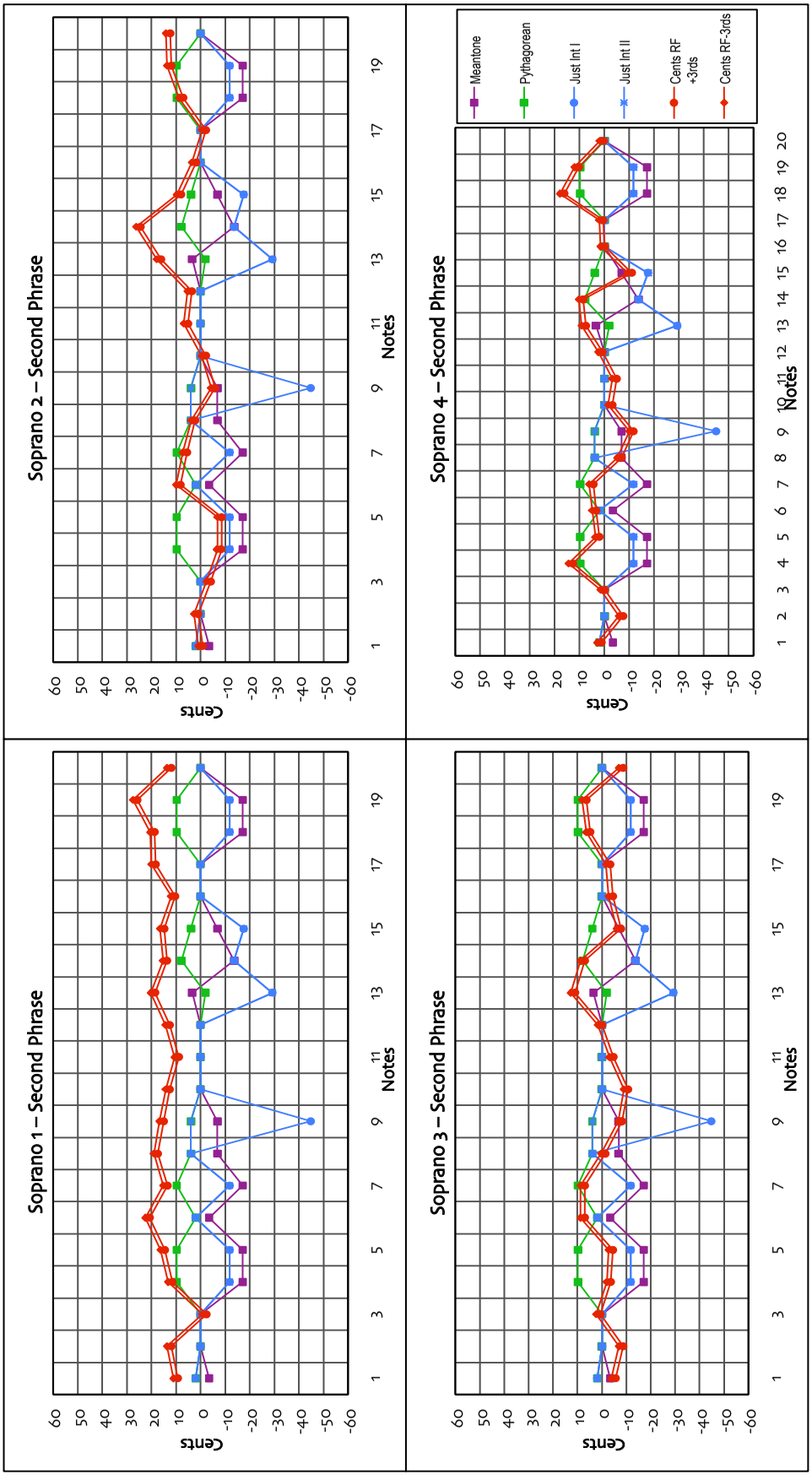
| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 19 | 397,896 | 593,199 | 631,962 | 668,589 | 504,042 | 557,656 | 598,942 | 566,502 | 497,850 | 444,172 | 594,978 | 394,484 | 371,102 | 330,783 | 330,834 | 292,114 | |
| Take 20 | 400,587 | 596,101 | 631,378 | 667,842 | 489,665 | 565,425 | 596,653 | 561,069 | 500,077 | 451,206 | 604,784 | 395,321 | 370,875 | 327,601 | 339,292 | 293,613 | |
| Take 21 | 398,706 | 598,172 | 636,292 | **661,230** | **497,054** | **553,851** | **592,697** | **569,709** | 498,330 | 451,367 | 599,448 | 403,149 | **371,328** | **330,201** | 332,313 | 292,524 | |
| Sop 1 AVERAGE | **397,711** | **595,740** | **629,217** | **664,481** | **498,580** | **560,746** | **593,889** | **563,125** | **498,434** | **447,808** | **596,622** | **395,886** | **372,475** | **331,079** | **332,636** | **293,285** | |
| Cents RF+3rds | 20,973 | 20,527 | 15,179 | 9,583 | 12,297 | 15,727 | 15,141 | 23,056 | 11,791 | 26,366 | 23,091 | 13,009 | 7,482 | 3,522 | 11,641 | -6,330 | |
| Cents RF-3rds | 21,458 | 21,012 | 15,664 | 10,068 | 12,782 | 16,212 | 15,626 | 23,540 | 12,276 | 26,851 | 23,575 | 13,494 | 7,966 | 4,007 | 12,126 | -5,845 | |
| Just Int I | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 | |
| Just Int II | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 | |
| Pythagorean | -1,955 | 0,000 | 13,685 | 3,910 | 5,865 | 9,775 | 0,000 | 9,775 | 5,865 | 1,955 | 0,000 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 | |
| Meantone | 3,422 | 0,000 | -23,951 | -6,843 | -10,264 | -17,108 | 0,000 | -17,108 | -10,264 | -3,421 | 0,000 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 | |
| Take 01 | 396,984 | 595,194 | 626,374 | 672,880 | 501,569 | 563,943 | 595,747 | 566,467 | 495,279 | 436,800 | 595,350 | 399,230 | 372,493 | 331,291 | 337,003 | 297,897 | |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 393,281 | 590,404 | 622,601 | 657,095 | 499,945 | 559,972 | 593,464 | 561,713 | 498,413 | 441,963 | 591,871 | 390,618 | 369,726 | 328,448 | 332,303 | 294,419 | |
| Take 04 | **393,671** | **478,769** | **565,787** | **641,831** | 501,303 | 559,501 | 599,232 | 562,686 | 499,097 | 441,077 | 602,792 | 392,955 | 371,750 | **330,012** | **332,788** | 297,341 | |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 401,541 | 586,696 | 612,285 | **632,582** | 492,021 | **524,769** | 584,481 | 559,755 | 496,598 | 439,812 | **568,365** | 395,451 | 370,918 | 330,129 | 330,420 | 295,416 | |
| Take 07 | 396,099 | 589,456 | 619,998 | **627,014** | 493,776 | 556,055 | 592,148 | 563,610 | 498,433 | 440,618 | 588,357 | 396,967 | 369,556 | 328,648 | 332,024 | 294,636 | |
| Take 08 | 394,056 | **575,770** | 627,722 | 660,566 | 498,368 | 557,848 | 591,145 | 558,319 | 497,350 | 439,262 | 597,012 | 392,940 | 369,896 | 331,123 | 333,986 | 296,768 | |
| Take 09 | 394,628 | **541,812** | 626,881 | 649,295 | 492,862 | 567,740 | 596,515 | 560,557 | 489,758 | 436,518 | 596,775 | 392,125 | 367,257 | 328,898 | 332,450 | 295,616 | |
| Take 10 | 395,886 | 593,467 | 626,788 | **540,121** | 494,866 | 559,873 | **369,966** | 567,568 | 498,162 | 443,447 | **567,346** | 395,086 | 374,357 | 330,962 | 336,014 | 295,334 | |
| Take 11 | 398,744 | 599,486 | 630,743 | **620,944** | 494,645 | 563,375 | 595,531 | **547,155** | 497,107 | 447,277 | 595,946 | 396,011 | 374,557 | 332,917 | 335,654 | 297,078 | |
| Take 12 | 394,398 | 594,307 | 627,427 | 663,180 | 493,208 | 559,239 | 593,819 | 570,225 | 488,709 | 442,094 | 604,450 | 389,494 | 371,251 | 330,335 | 334,366 | 296,284 | |
| Take 13 | 393,855 | 594,978 | 628,264 | 659,219 | 494,697 | 550,930 | **560,593** | 556,553 | 495,941 | 446,174 | 589,859 | 396,595 | 369,488 | 330,421 | 332,693 | 295,890 | |
| Take 14 | 393,941 | 588,136 | **474,522** | 658,053 | 484,835 | 573,970 | 585,398 | 560,475 | 496,472 | 442,040 | 592,604 | 388,391 | 371,063 | 328,852 | 328,341 | 298,904 | |
| Take 15 | 392,776 | 587,235 | 610,916 | **621,927** | 490,262 | 558,830 | 580,407 | 564,731 | 490,180 | 435,005 | **579,782** | 390,886 | 367,399 | 328,032 | 328,868 | 291,978 | |
| Take 16 | 393,316 | 588,944 | 615,463 | **569,612** | 492,935 | 554,434 | 589,989 | 559,377 | 498,256 | 439,869 | 594,440 | 391,599 | 369,465 | 328,602 | 330,320 | 292,924 | |
| Take 17 | 393,821 | 593,501 | 616,135 | **624,057** | 489,714 | **517,144** | 596,020 | **475,339** | 484,865 | 431,243 | 601,754 | 390,712 | 365,992 | 327,613 | 328,950 | 291,424 | |
| Take 18 | 393,768 | **564,582** | 624,375 | 665,184 | 490,254 | 554,871 | **554,482** | 558,311 | 500,688 | 443,566 | 602,707 | 391,156 | 368,803 | 330,705 | 331,672 | 292,694 | |
| Take 19 | 393,108 | **511,283** | 623,282 | 664,693 | 492,737 | 556,945 | **455,393** | 554,874 | 492,925 | 442,610 | 589,925 | 395,881 | 369,073 | 327,679 | 330,172 | 293,342 | |
| Take 20 | 395,685 | 592,442 | 623,981 | 663,428 | 486,430 | 555,540 | 593,669 | 561,186 | 502,791 | 440,969 | 603,084 | 396,165 | 371,896 | 331,650 | 331,253 | 293,853 | |
| Take 21 | 396,913 | **530,027** | 626,496 | **668,238** | 492,094 | 562,140 | **551,938** | 559,271 | 500,221 | 439,377 | **556,904** | 396,964 | **373,187** | **330,705** | 331,190 | 294,857 | |
| Sop 2 AVERAGE | **395,077** | **590,715** | **622,925** | **661,985** | **493,501** | **559,718** | **591,969** | **561,510** | **495,855** | **440,512** | **596,462** | **393,644** | **370,428** | **329,843** | **332,130** | **293,686** | |
| Cents RF+3rds | 9,472 | 5,865 | -2,220 | 3,066 | -5,427 | 12,549 | 9,535 | 18,084 | 2,812 | -2,074 | 22,625 | 3,177 | -2,061 | -2,954 | 9,006 | -3,959 | |
| Cents RF-3rds | 9,957 | 6,350 | -1,735 | 3,551 | -4,942 | 13,034 | 10,020 | 18,569 | 3,296 | -1,590 | 23,110 | 3,662 | -1,576 | -2,469 | 9,491 | -3,474 | |
| Just Int I | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 | |
| Just Int II | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 | |
| Pythagorean | -1,955 | 0,000 | 13,685 | 3,910 | 5,865 | 9,775 | 0,000 | 9,775 | 5,865 | 1,955 | 0,000 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 | |
| Meantone | 3,422 | 0,000 | -23,951 | -6,843 | -10,264 | -17,108 | 0,000 | -17,108 | -10,264 | -3,421 | 0,000 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 | |
| Take 01 | 397,567 | 591,598 | 623,612 | 666,282 | 504,388 | 560,008 | 589,413 | 559,337 | 499,311 | 434,445 | 590,171 | 390,418 | 369,004 | 326,323 | 328,830 | 297,182 | |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 393,306 | 594,222 | 622,563 | 659,936 | 488,260 | 566,752 | 588,899 | 556,092 | 492,870 | 433,227 | 587,554 | 391,602 | 367,606 | 328,870 | 328,927 | **0,000** | |
| Take 04 | 397,116 | 592,335 | 627,532 | 664,513 | 503,261 | 558,343 | 588,132 | 556,102 | 492,890 | 443,672 | 589,381 | 393,405 | 371,338 | 329,940 | 330,786 | 293,943 | |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 399,190 | 593,119 | 622,094 | 651,289 | 498,874 | 562,324 | 586,028 | 552,166 | 499,070 | 442,974 | 591,281 | 388,094 | 371,420 | 328,627 | 331,407 | 295,541 | |
| Take 07 | 396,191 | 592,574 | 622,385 | 656,256 | 502,118 | 562,046 | 587,373 | 556,923 | 494,677 | 436,241 | 591,518 | 397,132 | 369,512 | 329,304 | 331,393 | 296,007 | |
| Take 08 | 397,044 | 593,022 | 626,967 | 658,700 | 503,705 | 554,688 | 586,007 | 557,929 | 497,690 | 442,081 | 587,729 | 389,746 | 372,337 | 327,166 | 332,117 | 295,428 | |
| Take 09 | 399,433 | 593,209 | 630,083 | 648,228 | 493,920 | 555,131 | 584,556 | 559,950 | 496,177 | 441,000 | 591,790 | 391,275 | 367,261 | 326,989 | 331,183 | 295,049 | |
| Take 10 | 396,870 | 590,419 | 622,983 | 651,588 | 497,977 | 557,853 | 583,007 | 559,307 | 497,499 | 438,996 | 588,349 | 398,772 | 366,454 | 327,422 | 329,252 | 294,332 | |
| Take 11 | 399,379 | 592,143 | 627,819 | 659,505 | 500,016 | 555,913 | 586,437 | 553,564 | 494,346 | 438,079 | 590,406 | 390,984 | 368,847 | 332,088 | 331,518 | 295,577 | |
| Take 12 | 396,166 | 592,211 | 625,370 | 662,800 | 503,532 | 559,421 | 591,226 | 550,464 | 496,118 | 439,637 | 595,845 | 392,835 | 368,607 | 330,383 | 331,822 | 298,576 | |
| Take 13 | 400,187 | 592,442 | 624,223 | 664,754 | 497,881 | 553,443 | 582,713 | 551,453 | 496,600 | 448,887 | 585,614 | 389,766 | 369,477 | 328,457 | 325,942 | 295,058 | |
| Take 14 | 393,241 | 585,594 | 614,779 | 655,883 | 495,629 | 554,193 | 584,639 | 553,885 | 495,790 | 436,426 | 587,288 | 386,587 | 368,378 | 324,550 | 325,704 | 291,841 | |
| Take 15 | 392,256 | 588,929 | 620,651 | 655,277 | 498,290 | 556,348 | 589,828 | 560,295 | 495,607 | 442,091 | 595,030 | 387,706 | 367,067 | 326,930 | **328,715** | 292,635 | |
| Take 16 | 392,625 | 588,053 | 619,864 | 658,542 | 498,987 | 560,035 | 585,084 | 555,222 | 496,746 | 440,559 | 587,166 | 387,324 | 369,413 | 326,453 | 324,690 | 295,672 | |
| Take 17 | 393,341 | 588,181 | 615,927 | 650,719 | 497,679 | 545,310 | 588,033 | 552,993 | 490,687 | 437,974 | 587,065 | 388,512 | 367,250 | 326,820 | 322,853 | 292,470 | |
| Take 18 | 393,338 | 584,978 | 614,714 | 643,422 | 497,360 | 553,595 | 582,651 | 557,522 | 498,573 | 446,907 | 584,956 | 384,242 | 367,256 | 326,364 | 332,719 | 293,895 | |
| Take 19 | 393,823 | 587,930 | 618,235 | 651,703 | 496,400 | 557,042 | 582,907 | 554,533 | 492,526 | 440,894 | 585,845 | 389,740 | 368,014 | 326,227 | 323,648 | 293,940 | |
| Take 20 | 392,224 | 587,534 | 619,929 | 646,280 | 493,811 | 557,064 | 582,092 | 556,688 | 498,115 | 449,095 | 583,281 | 388,001 | 370,972 | 328,319 | 326,110 | 292,020 | |
| Take 21 | 394,582 | 588,646 | 610,059 | 653,744 | 501,806 | 558,453 | 581,912 | 555,546 | 490,000 | 441,266 | 579,264 | 397,425 | **368,135** | **325,906** | 327,951 | 292,922 | |
| Sop 3 AVERAGE | **395,678** | **590,376** | **621,568** | **655,759** | **498,626** | **557,261** | **585,839** | **555,788** | **495,542** | **440,761** | **588,397** | **390,714** | **368,860** | **327,744** | **328,714** | **294,560** | |
| Cents RF+3rds | 12,100 | 4,869 | -5,997 | -13,292 | 12,459 | 4,934 | -8,487 | 0,350 | 1,717 | -1,097 | -0,945 | -9,755 | -9,401 | -14,007 | -8,891 | 1,185 | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cents RF-3rds | 12,585 | 5,354 | -5,512 | -12,807 | 12,944 | 5,418 | -8,002 | 0,835 | 2,202 | -0,612 | -0,460 | -9,270 | -8,916 | -13,522 | -8,406 | 1,670 |
| Just Int I | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 |
| Just Int II | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 |
| Pythagorean | -1,955 | 0,000 | 13,685 | 3,910 | 5,865 | 9,775 | 0,000 | 9,775 | 5,865 | 1,955 | 0,000 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 |
| Meantone | 3,422 | 0,000 | -23,951 | -6,843 | -10,264 | -17,108 | 0,000 | -17,108 | -10,264 | -3,421 | 0,000 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 |
| Take 01 | 398,327 | 597,100 | 616,336 | 680,760 | 501,959 | 563,558 | 589,177 | 561,323 | 498,167 | 447,628 | 588,430 | 391,929 | 369,949 | 331,072 | 331,148 | 296,600 |
| Take 02 | | | | | | | | | | | | | | | | |
| Take 03 | 396,094 | 588,761 | 622,074 | 658,610 | 494,882 | 558,103 | 582,895 | 556,059 | 494,760 | 439,913 | 584,634 | 393,478 | 369,001 | 328,240 | 331,628 | 293,787 |
| Take 04 | 395,925 | 583,686 | 623,382 | 662,906 | 493,824 | 561,585 | 592,703 | 562,744 | 496,774 | 437,500 | 593,758 | 391,139 | 370,414 | 333,442 | 330,201 | 296,870 |
| Take 05 | | | | | | | | | | | | | | | | |
| Take 06 | 396,823 | 593,057 | 615,449 | 647,151 | 497,187 | 557,970 | 590,743 | 559,394 | 494,330 | 437,641 | 589,345 | 389,737 | 371,036 | 329,349 | 331,045 | 292,979 |
| Take 07 | 397,087 | 588,418 | 617,510 | 651,105 | 497,541 | 561,405 | 588,274 | 555,253 | 497,270 | 436,770 | 585,794 | 387,670 | 368,836 | 330,055 | 328,412 | 293,528 |
| Take 08 | 394,056 | 589,415 | 622,340 | 642,991 | 492,737 | 561,355 | 589,398 | 560,749 | 495,612 | 436,814 | 585,214 | 391,020 | 369,137 | 330,280 | 330,281 | 299,532 |
| Take 09 | 393,625 | 589,839 | 620,197 | 654,864 | 495,506 | 559,830 | 586,347 | 555,656 | 483,671 | 433,474 | 583,454 | 390,159 | 369,131 | 332,794 | 328,654 | 298,411 |
| Take 10 | 394,553 | 592,501 | 600,136 | 654,969 | 490,936 | 558,733 | 579,473 | 563,141 | 493,352 | 438,614 | 587,639 | 391,613 | 372,374 | 331,160 | 327,753 | 299,592 |
| Take 11 | 396,714 | 593,763 | 604,626 | 668,924 | 492,311 | 558,596 | 590,277 | 554,972 | 494,804 | 445,271 | 591,582 | 395,363 | 371,919 | 332,283 | 330,542 | 296,205 |
| Take 12 | 393,077 | 591,895 | 622,588 | 654,893 | 495,034 | 557,617 | 579,954 | 553,617 | 497,246 | 432,869 | 587,949 | 390,595 | 371,305 | 332,049 | 327,030 | 294,073 |
| Take 13 | 392,150 | 590,971 | 624,289 | 638,093 | 490,778 | 559,510 | 588,679 | 557,528 | 497,297 | 439,583 | 585,614 | 393,775 | 370,976 | 328,501 | 327,411 | 295,687 |
| Take 14 | 393,106 | 585,337 | 611,975 | 651,407 | 486,804 | 555,787 | 579,585 | 551,806 | 485,658 | 432,226 | 576,033 | 386,383 | 367,080 | 328,567 | 320,458 | 296,641 |
| Take 15 | 393,534 | 588,129 | 616,405 | 655,704 | 485,011 | 558,649 | 588,151 | 560,635 | 488,935 | 437,291 | 575,153 | 387,108 | 368,987 | 330,058 | 322,770 | 295,563 |
| Take 16 | 394,242 | 589,371 | 610,379 | 652,847 | 491,575 | 566,470 | 584,847 | 556,805 | 493,110 | 434,545 | 571,766 | 391,947 | 368,272 | 329,953 | 328,855 | 292,029 |
| Take 17 | 391,974 | 586,712 | 611,085 | 647,616 | 488,481 | 551,396 | 585,978 | 557,606 | 491,267 | 434,133 | 586,939 | 389,156 | 369,215 | 327,692 | 325,390 | 292,049 |
| Take 18 | 392,564 | 586,596 | 609,678 | 648,529 | 494,603 | 553,078 | 581,212 | 552,290 | 488,044 | 434,603 | 563,016 | 388,311 | 368,545 | 326,658 | 329,042 | 293,598 |
| Take 19 | 393,142 | 587,117 | 613,028 | 651,207 | 486,945 | 555,551 | 580,419 | 549,282 | 493,229 | 432,633 | 589,572 | 389,484 | 365,679 | 326,151 | 327,695 | 293,254 |
| Take 20 | 394,960 | 586,425 | 613,581 | 658,292 | 490,813 | 554,436 | 581,826 | 549,763 | 488,151 | 442,459 | 592,691 | 395,283 | 368,453 | 329,389 | 326,987 | 298,719 |
| Take 21 | 394,744 | 590,140 | 615,371 | 649,760 | 491,779 | 556,813 | 584,152 | 552,247 | 489,206 | 439,384 | 588,914 | 394,623 | 375,373 | 341,229 | 326,453 | 297,458 |
| Sop 4 AVERAGE | **394,563** | **589,433** | **616,804** | **655,141** | **492,563** | **558,444** | **585,478** | **556,362** | **492,678** | **437,545** | **585,650** | **390,988** | **369,773** | **329,872** | **327,987** | **295,757** |
| Cents RF+3rds | 7,216 | 2,103 | -19,317 | -14,925 | -8,719 | 8,605 | -9,552 | 2,137 | -8,317 | -13,774 | -9,044 | -8,541 | -5,124 | -2,804 | -12,724 | 8,205 |
| Cents RF-3rds | 7,701 | 2,588 | -18,832 | -14,440 | -8,234 | 9,090 | -9,067 | 2,621 | -7,832 | -13,289 | -8,559 | -8,057 | -4,639 | -2,319 | -12,239 | 8,690 |
| Just Int I | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 |
| Just Int II | -1,955 | 0,000 | -7,821 | 3,910 | 5,865 | -11,731 | -27,264 | -11,731 | -15,641 | 1,955 | 0,000 | -1,955 | -13,686 | 3,910 | 3,910 | 0,000 |
| Pythagorean | -1,955 | 0,000 | 13,685 | 3,910 | 5,865 | 9,775 | 0,000 | 9,775 | 5,865 | 1,955 | 0,000 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 |
| Meantone | 3,422 | 0,000 | -23,951 | -6,843 | -10,264 | -17,108 | 0,000 | -17,108 | -10,264 | -3,421 | 0,000 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 |

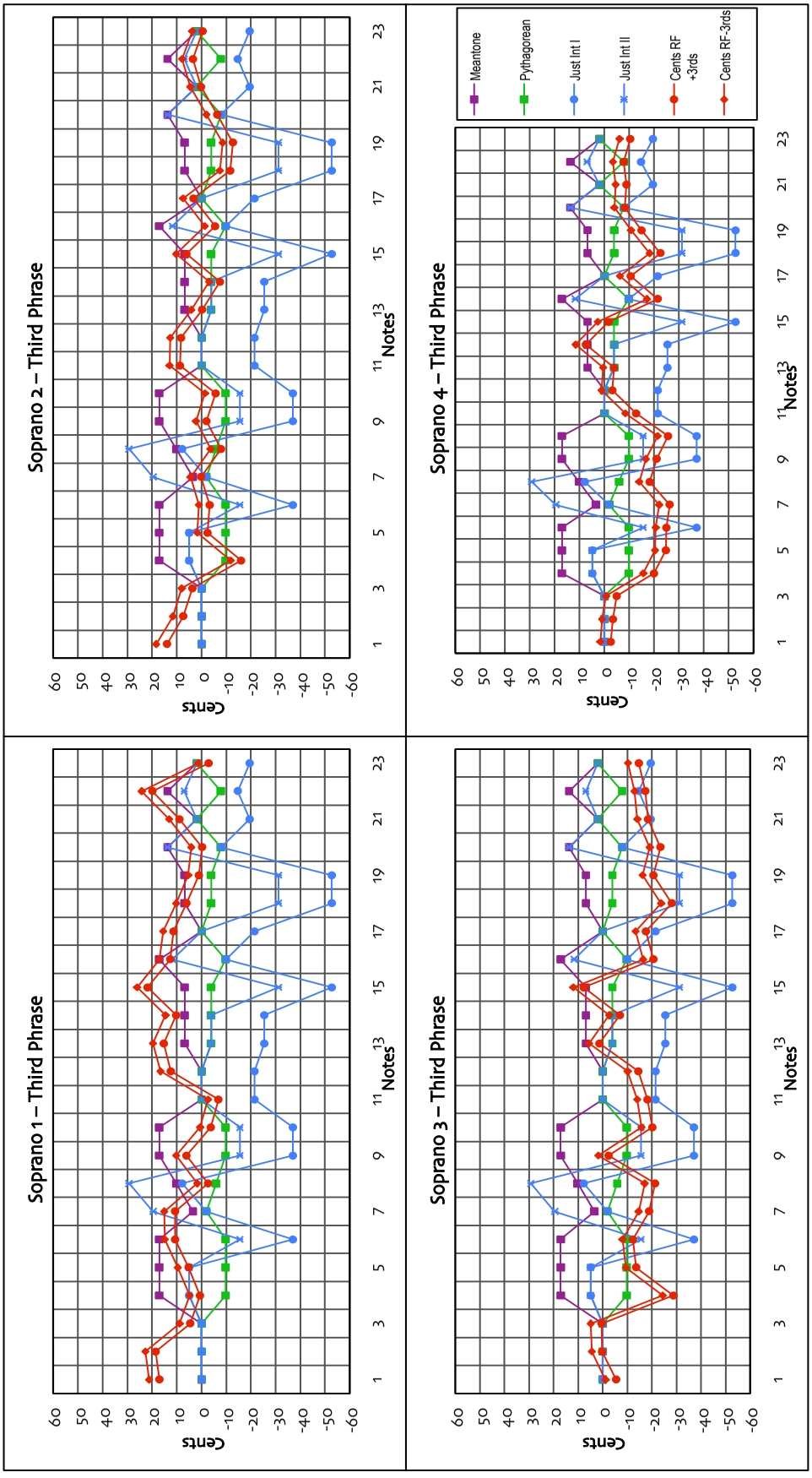



**11.4A - THE BBC SINGERS SOPRANOS' CHARTS – PHRASE 1**

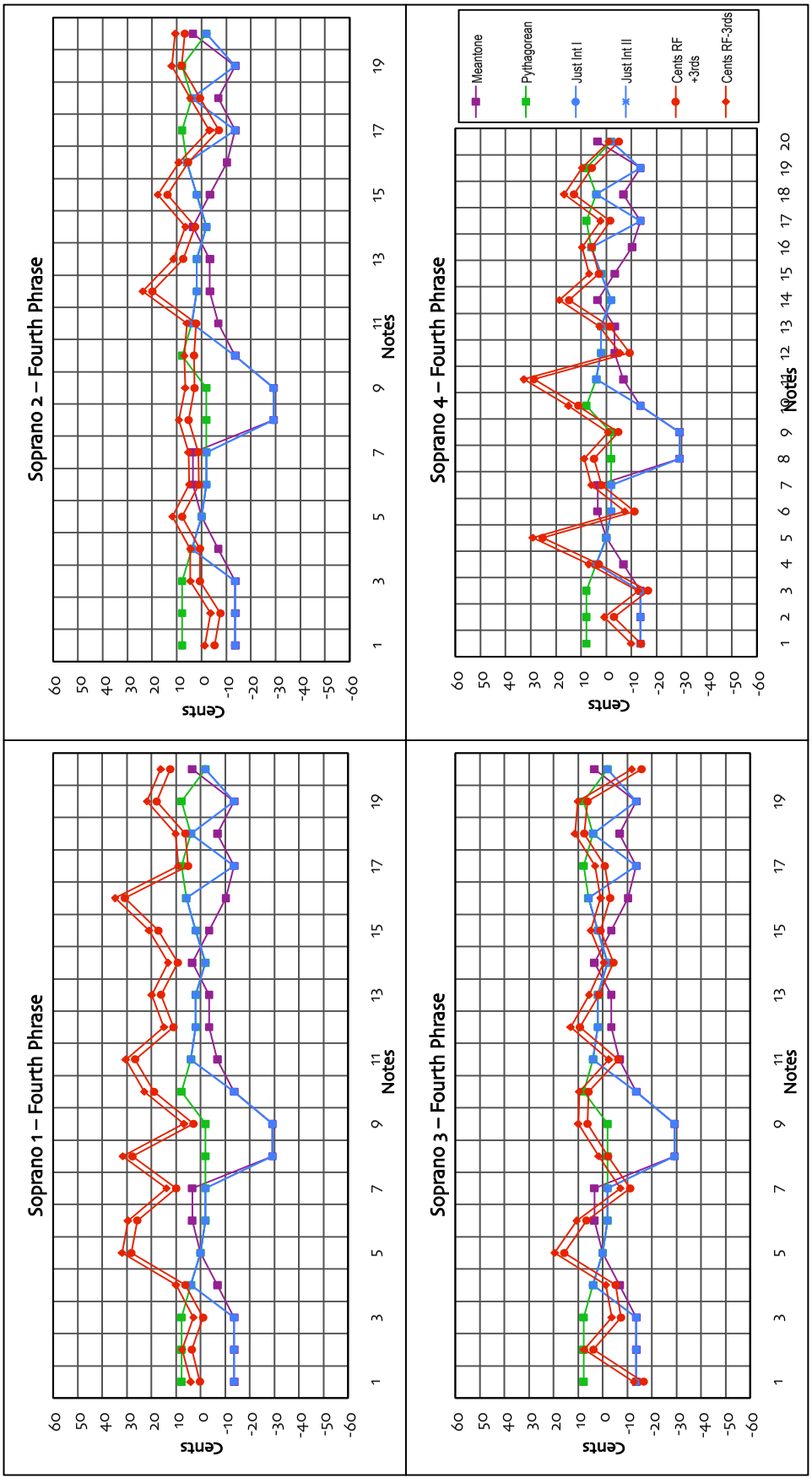
**11.4A - THE BBC SINGERS SOPRANOS' CHARTS – PHRASE 1**



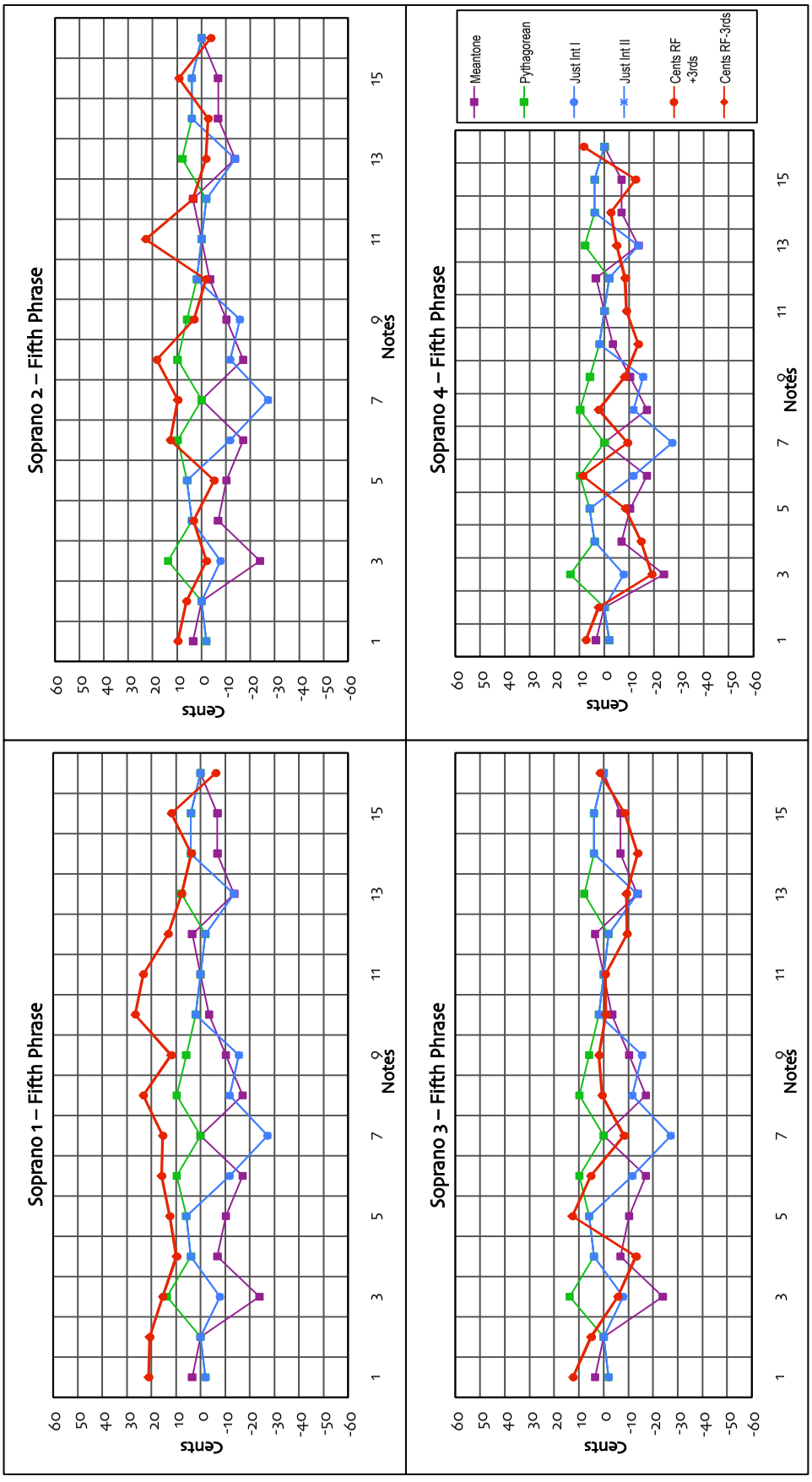

**11.4B - THE BBC SINGERS SOPRANOS' CHARTS – PHRASE 2**




**11.4C - THE BBC SINGERS SOPRANOS' CHARTS – PHRASE 3**




**11.4D - THE BBC SINGERS SOPRANOS' CHARTS – PHRASE 4**




**11.4E - THE BBC SINGERS SOPRANOS' CHARTS – PHRASE 5**

## AVC _ BBC Singers Sections _ Alto

| Reference Frequencies with Thirds | | | | | | | | | | Frequency Measurements | | | | | | | | | | Reference Frequencies without Thirds | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | | Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | | | | | | | | | | | |
| 147,030 | D | 110,057 | A | 110,428 | A | 146,875 | D | 147,179 | D | 146,658 | D | 109,949 | A | 110,156 | A | 146,543 | D | 147,138 | D | | | | | | | | | | |

First Phrase

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 368,499 | 367,648 | 325,870 | 326,475 | 329,060 | 394,468 | 368,194 | 329,210 | 328,339 | 290,191 | 295,963 | 278,314 | 279,143 | 291,198 | 297,145 | 326,727 | 325,674 | 327,325 | 291,399 | 295,542 | 277,584 | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 368,748 | 372,493 | 329,373 | 335,298 | 327,637 | 383,881 | 367,910 | 327,506 | 328,194 | 288,235 | 295,588 | 277,328 | 280,005 | 289,536 | 295,907 | 328,514 | 325,981 | 329,200 | 295,924 | 297,791 | 279,295 | | |
| Take 04 | 368,176 | 369,376 | 326,787 | 327,148 | 326,512 | 394,698 | 367,991 | 322,637 | 325,797 | 294,511 | 297,826 | 280,398 | 276,222 | 297,365 | 294,802 | 326,002 | 331,018 | 329,172 | 305,453 | 296,606 | 279,885 | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 367,150 | 369,237 | 330,420 | 331,261 | 333,553 | 388,205 | 366,880 | 329,283 | 330,720 | 303,537 | 297,114 | 278,237 | 275,843 | 291,635 | 299,459 | 327,171 | 327,055 | 327,468 | 289,160 | 293,603 | 281,463 | | |
| Take 07 | 369,090 | 369,980 | 332,622 | 329,227 | 327,201 | 385,996 | 373,353 | 330,908 | 323,128 | 290,711 | 297,697 | 277,440 | 276,535 | 290,684 | 295,018 | 334,937 | 331,278 | 333,336 | 290,920 | 298,924 | 279,740 | | |
| Take 08 | 371,195 | 369,347 | 334,232 | 333,476 | 330,544 | 388,444 | 374,996 | 333,912 | 331,065 | 293,205 | 296,544 | 281,017 | 279,100 | 294,196 | 295,434 | 333,529 | 328,352 | 332,224 | 297,649 | 297,116 | 279,406 | | |
| Take 09 | 372,421 | 367,689 | 334,183 | 330,123 | 329,118 | 392,017 | 375,605 | 331,053 | 327,007 | 291,119 | 298,586 | 281,024 | 280,747 | 296,089 | 295,393 | 326,251 | 331,592 | 330,996 | 295,474 | 294,309 | 278,737 | | |
| Take 10 | 367,264 | 368,163 | 331,327 | 335,861 | 332,128 | 388,614 | 369,722 | 328,072 | 324,733 | 295,312 | 296,529 | 280,099 | 279,708 | 296,115 | 293,868 | 325,242 | 323,908 | 329,596 | 294,209 | 297,614 | 280,665 | | |
| Take 11 | 375,993 | 373,423 | 336,413 | 333,166 | 329,653 | 390,303 | 375,043 | 331,679 | 331,332 | 293,179 | 292,799 | 281,450 | 287,497 | 297,065 | 300,459 | 333,131 | 334,676 | 333,317 | 294,102 | 296,684 | 280,947 | | |
| Take 12 | 363,843 | 369,570 | 327,494 | 325,326 | 327,685 | 394,051 | 375,352 | 324,376 | 325,237 | 293,166 | 295,630 | 278,904 | 279,238 | 294,945 | 299,226 | 329,856 | 331,974 | 328,809 | 298,636 | 297,129 | 280,035 | | |
| Take 13 | 370,017 | 367,040 | 332,164 | 328,183 | 330,593 | 391,822 | 369,791 | 330,666 | 331,674 | 295,789 | 299,962 | 279,337 | 277,021 | 292,950 | 295,299 | 328,068 | 326,892 | 331,953 | 296,631 | 297,441 | 279,081 | | |
| Take 14 | 366,679 | 368,111 | 334,803 | 332,824 | 331,245 | 385,386 | 368,625 | 333,073 | 327,484 | 294,936 | 291,759 | 278,124 | 279,205 | 291,311 | 295,205 | 333,081 | 323,502 | 330,037 | 297,374 | 298,440 | 276,659 | | |
| Take 15 | 370,250 | 368,626 | 327,677 | 327,940 | 322,012 | 390,635 | 370,035 | 324,427 | 326,175 | 294,127 | 293,193 | 280,467 | 275,881 | 293,860 | 298,155 | 327,666 | 323,640 | 329,099 | 293,062 | 294,610 | 277,580 | | |
| Take 16 | 371,327 | 371,780 | 331,784 | 326,605 | 326,589 | 389,038 | 370,908 | 327,232 | 330,448 | 294,644 | 298,829 | 280,962 | 280,824 | 297,051 | 296,890 | 328,809 | 320,352 | 329,524 | 297,730 | 299,070 | 277,244 | | |
| Take 17 | 374,060 | 372,716 | 333,499 | 327,443 | 333,239 | 396,068 | 366,011 | 328,570 | 328,660 | 289,061 | 293,154 | 275,681 | 276,843 | 295,228 | 292,819 | 329,368 | 329,280 | 330,146 | 288,637 | 293,547 | 276,152 | | |
| Take 18 | 367,385 | 370,567 | 328,754 | 323,838 | 325,426 | 395,834 | 371,997 | 330,009 | 330,053 | 297,840 | 295,495 | 278,641 | 275,736 | 295,506 | 290,565 | 327,061 | 317,555 | 326,223 | 290,886 | 293,990 | 276,695 | | |
| Take 19 | 370,294 | 367,338 | 331,408 | 325,971 | 330,436 | 388,385 | 372,329 | 330,649 | 329,237 | 296,008 | 296,675 | 281,331 | 279,959 | 298,292 | 294,818 | 320,479 | 320,596 | 324,890 | 293,023 | 294,506 | 278,328 | | |
| Take 20 | 371,183 | 371,595 | 327,946 | 326,254 | 329,939 | 384,668 | 367,859 | 327,505 | 323,279 | 291,372 | 296,885 | 278,829 | 284,549 | 290,613 | 291,523 | 327,082 | 324,159 | 328,361 | 297,267 | 295,434 | 280,341 | | |
| Take 21 | 372,402 | 372,350 | 329,933 | 331,602 | 329,074 | 392,401 | 372,634 | 329,269 | 334,016 | 293,367 | 298,566 | 278,659 | 280,849 | 291,840 | 298,251 | 327,254 | 323,349 | 328,190 | 293,455 | 297,251 | 276,720 | | |
| Alto 1 AVERAGE | 369,788 | 369,845 | 330,878 | 329,370 | 329,034 | 390,259 | 370,802 | 328,949 | 328,241 | 293,701 | 296,252 | 279,276 | 279,206 | 293,973 | 295,802 | 328,433 | 326,360 | 329,467 | 294,197 | 296,295 | 278,766 | | |
| Cents RF+3rds | -3,288 | -3,024 | 4,234 | -3,679 | -5,444 | -10,010 | 1,451 | -5,889 | -9,621 | -2,112 | 12,865 | 10,702 | 10,266 | -0,509 | 10,230 | -8,608 | -19,572 | -3,168 | 0,809 | 13,114 | 7,539 | | |
| Cents RF-3rds | 1,088 | 1,352 | 8,610 | 0,698 | -1,068 | -5,634 | 5,827 | -1,513 | -5,245 | 2,264 | 17,241 | 15,078 | 14,642 | 3,867 | 14,607 | -4,232 | -15,196 | 1,208 | 5,185 | 17,490 | 11,915 | | |
| Just Int I | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 | | |
| Just Int II | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 | | |
| Pythagorean | 7,820 | 7,820 | 3,910 | 3,910 | 3,910 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 3,910 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 | | |
| Meantone | -13,686 | -13,686 | -6,843 | -6,843 | -6,843 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -6,843 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 | | |
| Take 01 | 366,907 | 362,187 | 313,879 | 324,059 | 328,930 | 387,547 | 367,988 | 328,783 | 332,084 | 295,612 | 285,460 | 271,628 | 277,980 | 290,780 | 292,629 | 331,559 | 327,654 | 329,021 | 297,706 | 297,959 | 274,307 | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 370,627 | 370,054 | 327,173 | 327,922 | 325,790 | 384,277 | 367,789 | 327,041 | 328,695 | 295,885 | 293,711 | 272,560 | 275,482 | 291,800 | 291,842 | 331,072 | 324,819 | 330,570 | 297,677 | 296,307 | 272,345 | | |
| Take 04 | 370,665 | 372,283 | 329,001 | 330,131 | 331,607 | 399,046 | 372,626 | 334,898 | 332,651 | 297,735 | 289,033 | 278,420 | 278,645 | 294,000 | 292,196 | 329,348 | 328,691 | 331,317 | 298,296 | 293,338 | 274,468 | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 369,240 | 366,764 | 326,761 | 332,756 | 333,254 | 385,783 | 367,398 | 330,219 | 331,286 | 294,371 | 290,356 | 273,522 | 280,608 | 290,006 | 292,881 | 329,974 | 327,750 | 332,272 | 297,417 | 292,737 | 275,421 | | |
| Take 07 | 367,960 | 366,854 | 325,379 | 330,425 | 328,052 | 388,519 | 374,131 | 333,893 | 329,317 | 294,424 | 291,440 | 276,379 | 280,598 | 295,250 | 293,834 | 331,291 | 328,917 | 329,534 | 294,319 | 297,543 | 277,108 | | |
| Take 08 | 370,225 | 371,826 | 331,176 | 331,046 | 332,436 | 395,527 | 369,393 | 329,084 | 331,462 | 293,664 | 296,034 | 277,855 | 276,739 | 292,216 | 293,389 | 332,152 | 330,478 | 330,283 | 296,347 | 298,574 | 277,426 | | |
| Take 09 | 376,154 | 374,094 | 0,000 | 332,601 | 332,507 | 390,265 | 378,590 | 330,148 | 335,538 | 297,152 | 295,189 | 274,691 | 279,302 | 294,336 | 298,650 | 332,489 | 326,992 | 330,499 | 296,848 | 297,973 | 276,018 | | |
| Take 10 | 366,470 | 366,787 | 331,027 | 326,821 | 333,467 | 387,732 | 365,047 | 326,334 | 330,661 | 294,069 | 290,454 | 271,725 | 275,122 | 291,541 | 293,129 | 329,012 | 328,341 | 328,297 | 291,182 | 295,403 | 274,278 | | |
| Take 11 | 368,776 | 372,388 | 330,225 | 327,777 | 329,396 | 386,689 | 370,963 | 331,415 | 328,757 | 293,458 | 296,789 | 274,147 | 274,636 | 293,557 | 292,074 | 332,682 | 330,870 | 330,513 | 296,622 | 295,664 | 276,963 | | |
| Take 12 | 367,401 | 365,957 | 325,600 | 321,803 | 330,474 | 387,253 | 368,811 | 331,184 | 328,614 | 295,400 | 289,980 | 275,577 | 275,408 | 292,420 | 292,773 | 328,165 | 326,925 | 330,234 | 295,881 | 296,521 | 275,335 | | |
| Take 13 | 372,740 | 367,004 | 330,640 | 330,539 | 331,841 | 393,937 | 371,155 | 324,790 | 328,319 | 293,885 | 287,831 | 276,125 | 278,937 | 291,663 | 295,185 | 331,327 | 331,579 | 329,375 | 297,303 | 295,800 | 273,532 | | |
| Take 14 | 367,035 | 365,697 | 331,624 | 331,228 | 328,500 | 387,719 | 372,115 | 335,830 | 328,629 | 293,937 | 294,763 | 276,210 | 277,142 | 293,404 | 293,967 | 327,981 | 328,906 | 331,127 | 297,935 | 296,387 | 276,357 | | |
| Take 15 | 367,983 | 363,771 | 328,512 | 328,394 | 327,980 | 388,546 | 365,284 | 324,059 | 328,988 | 289,071 | 290,456 | 275,486 | 278,791 | 297,515 | 291,509 | 328,783 | 327,338 | 330,998 | 296,663 | 293,764 | 277,299 | | |
| Take 16 | 370,651 | 369,808 | 330,282 | 328,193 | 331,861 | 393,532 | 374,619 | 327,662 | 328,824 | 292,364 | 289,415 | 275,689 | 278,993 | 291,938 | 292,800 | 329,994 | 326,667 | 328,569 | 293,663 | 292,445 | 276,618 | | |
| Take 17 | 370,250 | 367,189 | 330,270 | 329,728 | 327,309 | 395,889 | 373,653 | 331,403 | 329,117 | 292,128 | 293,543 | 273,052 | 273,412 | 294,631 | 292,858 | 332,529 | 328,382 | 331,216 | 293,586 | 293,927 | 274,920 | | |
| Take 18 | 368,643 | 367,636 | 327,492 | 327,920 | 324,437 | 384,555 | 369,449 | 326,461 | 327,996 | 291,007 | 289,668 | 269,634 | 271,594 | 290,897 | 293,901 | 324,469 | 327,231 | 327,056 | 295,156 | 299,499 | 275,369 | | |
| Take 19 | 371,813 | 370,551 | 326,611 | 325,295 | 328,641 | 389,850 | 369,617 | 328,871 | 327,506 | 291,403 | 294,330 | 273,420 | 272,418 | 291,399 | 294,976 | 327,847 | 325,774 | 327,946 | 293,304 | 296,762 | 276,370 | | |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 20 | 367,065 | 365,553 | 329,659 | 326,221 | 328,934 | 387,313 | 366,027 | 325,284 | 321,839 | 291,589 | 289,022 | 272,543 | 278,419 | 286,937 | 292,738 | 330,181 | 331,225 | 329,726 | 294,659 | 292,804 | 273,189 |
| Take 21 | 366,813 | 365,198 | 328,839 | 326,279 | 325,559 | 389,696 | 368,512 | 327,727 | 329,144 | 292,957 | 290,112 | 273,200 | 274,106 | 293,591 | 293,311 | 327,578 | 329,025 | 326,512 | 294,000 | 294,659 | 271,456 |
| **Alto 2 AVERAGE** | **369,338** | **367,979** | **328,008** | **328,376** | **329,525** | **389,667** | **369,699** | **329,215** | **329,443** | **293,690** | **291,452** | **274,309** | **276,754** | **292,520** | **293,402** | **329,918** | **328,293** | **329,740** | **295,714** | **295,688** | **275,199** |
| Cents RF+3rds | -5,399 | -11,779 | -10,848 | -8,911 | -2,861 | -12,636 | -3,707 | -4,491 | -3,290 | -2,174 | -15,418 | -20,368 | -5,000 | -9,084 | -3,871 | -0,801 | -9,347 | -1,731 | 9,716 | 9,562 | -14,758 |
| Cents RF-3rds | -1,022 | -7,403 | -6,472 | -4,535 | 1,515 | -8,260 | 0,669 | -0,115 | 1,086 | 2,202 | -11,042 | -15,992 | -0,624 | -4,708 | 0,505 | 3,575 | -4,971 | 2,645 | 14,092 | 13,938 | -10,382 |
| Just Int I | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 |
| Just Int II | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 |
| Pythagorean | 7,820 | 7,820 | 3,910 | 3,910 | 3,910 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 3,910 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 |
| Meantone | -13,686 | -13,686 | -6,843 | -6,843 | -6,843 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -6,843 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 |
| Take 01 | 371,993 | 373,474 | 330,351 | 329,604 | 331,146 | 396,750 | 372,263 | 331,732 | 330,681 | 294,194 | 292,169 | 277,583 | 277,556 | 295,879 | 290,023 | 332,009 | 329,089 | 336,147 | 296,330 | 293,542 | 277,831 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 365,317 | 370,045 | 332,872 | 331,090 | 329,807 | 393,244 | 372,243 | 330,023 | 332,240 | 291,777 | 292,577 | 276,923 | 276,666 | 290,564 | 291,264 | 329,317 | 329,188 | 330,213 | 293,533 | 295,384 | 277,310 |
| Take 04 | 373,112 | 369,264 | 327,128 | 330,645 | 332,282 | 393,922 | 372,719 | 332,651 | 330,238 | 296,918 | 297,813 | 278,771 | 280,486 | 293,953 | 292,001 | 332,009 | 331,921 | 332,794 | 297,209 | 297,391 | 280,082 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 378,270 | 375,743 | 328,879 | 330,572 | 330,195 | 397,617 | 373,124 | 334,559 | 334,818 | 298,106 | 291,951 | 277,786 | 277,634 | 292,448 | 294,524 | 330,503 | 331,602 | 331,026 | 294,640 | 294,989 | 278,426 |
| Take 07 | 372,332 | 375,065 | 332,008 | 330,450 | 331,267 | 393,721 | 375,667 | 336,408 | 333,288 | 295,595 | 295,488 | 280,126 | 280,841 | 295,720 | 294,368 | 331,446 | 332,766 | 330,501 | 297,829 | 293,856 | 280,270 |
| Take 08 | 373,163 | 370,228 | 333,441 | 331,615 | 333,156 | 398,204 | 379,828 | 337,702 | 332,289 | 295,812 | 296,316 | 280,863 | 279,764 | 296,687 | 293,662 | 331,238 | 331,237 | 332,795 | 297,623 | 299,090 | 279,890 |
| Take 09 | 373,008 | 370,894 | 333,043 | 336,356 | 337,489 | 395,736 | 373,801 | 337,535 | 336,587 | 297,898 | 296,720 | 280,490 | 280,516 | 296,415 | 298,400 | 334,323 | 335,468 | 334,048 | 294,742 | 301,114 | 278,398 |
| Take 10 | 375,257 | 375,115 | 330,677 | 329,954 | 333,755 | 395,042 | 373,370 | 329,470 | 331,599 | 293,685 | 293,661 | 276,798 | 280,406 | 291,494 | 294,000 | 329,031 | 330,358 | 330,722 | 292,414 | 296,220 | 276,408 |
| Take 11 | 370,443 | 372,745 | 334,791 | 329,710 | 327,732 | 394,607 | 377,240 | 336,722 | 335,103 | 294,964 | 297,057 | 279,477 | 278,429 | 292,463 | 296,835 | 332,315 | 332,510 | 335,807 | 299,583 | 294,687 | 278,552 |
| Take 12 | 374,187 | 368,432 | 330,698 | 332,299 | 328,429 | 397,430 | 373,241 | 335,225 | 334,825 | 294,411 | 294,186 | 277,893 | 282,334 | 293,539 | 294,448 | 329,484 | 328,963 | 332,472 | 295,413 | 296,195 | 279,151 |
| Take 13 | 374,812 | 370,999 | 332,958 | 332,970 | 337,709 | 397,497 | 379,434 | 334,699 | 333,182 | 298,608 | 295,773 | 281,356 | 282,376 | 294,807 | 295,203 | 332,350 | 334,021 | 334,481 | 297,764 | 297,743 | 280,705 |
| Take 14 | 369,472 | 370,509 | 330,040 | 328,099 | 329,387 | 385,318 | 372,661 | 329,526 | 331,251 | 295,140 | 297,538 | 277,534 | 277,595 | 295,056 | 294,620 | 334,074 | 332,281 | 330,058 | 293,936 | 294,086 | 277,895 |
| Take 15 | 371,844 | 368,341 | 330,152 | 328,916 | 328,084 | 393,248 | 370,965 | 327,825 | 328,424 | 295,841 | 294,424 | 279,265 | 280,516 | 291,904 | 296,189 | 329,205 | 330,345 | 332,078 | 296,201 | 296,206 | 279,742 |
| Take 16 | 374,855 | 371,458 | 332,299 | 328,104 | 328,379 | 396,964 | 372,999 | 332,781 | 330,870 | 294,329 | 294,555 | 278,476 | 279,099 | 294,705 | 295,565 | 330,052 | 330,251 | 330,111 | 296,504 | 296,018 | 278,931 |
| Take 17 | 372,146 | 371,089 | 333,608 | 332,175 | 329,699 | 401,885 | 377,324 | 337,266 | 329,987 | 295,377 | 296,320 | 277,347 | 277,074 | 294,522 | 294,230 | 331,031 | 331,700 | 330,015 | 296,761 | 295,653 | 280,262 |
| Take 18 | 371,834 | 369,175 | 328,727 | 327,743 | 326,849 | 395,475 | 370,570 | 329,860 | 329,237 | 293,122 | 297,053 | 277,264 | 276,896 | 292,568 | 293,831 | 325,508 | 332,447 | 327,936 | 295,507 | 294,153 | 277,012 |
| Take 19 | 372,249 | 369,410 | 329,944 | 327,775 | 330,460 | 393,652 | 376,367 | 335,500 | 328,237 | 294,637 | 293,042 | 277,316 | 275,882 | 294,139 | 295,005 | 331,529 | 330,423 | 329,836 | 295,510 | 298,447 | 277,003 |
| Take 20 | 370,355 | 368,431 | 329,281 | 325,820 | 330,454 | 397,075 | 371,468 | 331,118 | 332,200 | 292,911 | 295,449 | 277,020 | 277,213 | 293,556 | 294,419 | 332,636 | 330,101 | 332,666 | 294,531 | 293,732 | 279,307 |
| Take 21 | 371,755 | 370,564 | 332,072 | 329,965 | 327,937 | 398,877 | 378,006 | 333,511 | 329,524 | 298,354 | 295,995 | 281,116 | 279,619 | 294,594 | 296,504 | 330,214 | 330,952 | 332,931 | 297,934 | 295,411 | 278,769 |
| **Alto 3 AVERAGE** | **372,442** | **371,104** | **331,209** | **330,203** | **330,748** | **396,164** | **374,384** | **333,374** | **331,820** | **295,351** | **295,162** | **278,600** | **278,995** | **293,948** | **294,479** | **330,962** | **331,348** | **331,928** | **295,998** | **295,996** | **278,734** |
| Cents RF+3rds | 9,093 | 2,863 | 5,962 | 0,698 | 3,553 | 15,989 | 18,094 | 17,245 | 9,154 | 7,592 | 6,484 | 6,508 | 8,959 | -0,654 | 2,468 | 4,670 | 6,692 | 9,718 | 11,378 | 11,364 | 7,339 |
| Cents RF-3rds | 13,469 | 7,239 | 10,338 | 5,074 | 7,929 | 20,365 | 22,470 | 21,621 | 13,530 | 11,968 | 10,860 | 10,884 | 13,335 | 3,722 | 6,844 | 9,046 | 11,068 | 14,094 | 15,754 | 15,740 | 11,715 |
| Just Int I | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 |
| Just Int II | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 |
| Pythagorean | 7,820 | 7,820 | 3,910 | 3,910 | 3,910 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 3,910 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 |
| Meantone | -13,686 | -13,686 | -6,843 | -6,843 | -6,843 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -6,843 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 |
| Take 01 | 369,418 | 370,211 | 328,278 | 330,598 | 327,230 | 388,708 | 372,264 | 327,964 | 330,131 | 291,230 | 291,167 | 276,002 | 275,920 | 292,233 | 292,316 | 329,720 | 328,978 | 330,271 | 290,849 | 287,700 | 276,020 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 370,249 | 373,892 | 329,984 | 328,362 | 325,236 | 391,019 | 373,033 | 330,090 | 328,575 | 293,243 | 291,828 | 275,514 | 275,204 | 291,600 | 291,186 | 329,626 | 330,781 | 326,915 | 289,444 | 291,089 | 273,796 |
| Take 04 | 369,688 | 373,256 | 328,996 | 329,075 | 327,210 | 389,324 | 368,887 | 332,093 | 327,335 | 290,553 | 293,759 | 276,501 | 278,010 | 294,421 | 288,925 | 329,874 | 329,814 | 330,309 | 290,681 | 293,885 | 276,355 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 367,092 | 374,195 | 329,700 | 328,598 | 327,597 | 392,424 | 367,209 | 329,104 | 327,205 | 294,305 | 294,279 | 275,776 | 275,959 | 292,882 | 293,274 | 331,274 | 325,185 | 327,922 | 292,670 | 294,462 | 274,549 |
| Take 07 | 370,373 | 370,147 | 329,059 | 330,978 | 328,103 | 389,760 | 370,404 | 327,533 | 327,394 | 293,000 | 292,912 | 276,201 | 276,212 | 290,472 | 291,691 | 329,269 | 326,604 | 328,182 | 291,965 | 292,186 | 275,487 |
| Take 08 | 368,491 | 369,542 | 329,133 | 330,276 | 330,514 | 392,156 | 371,720 | 327,768 | 328,859 | 292,537 | 293,854 | 275,964 | 276,522 | 292,793 | 292,432 | 330,322 | 327,664 | 329,641 | 292,966 | 292,774 | 276,181 |
| Take 09 | 371,647 | 371,037 | 330,591 | 329,876 | 329,044 | 392,249 | 371,493 | 331,830 | 328,934 | 293,441 | 294,400 | 275,636 | 278,079 | 290,746 | 291,967 | 328,901 | 329,839 | 330,269 | 292,186 | 292,790 | 275,687 |
| Take 10 | 370,084 | 369,387 | 327,665 | 328,138 | 328,418 | 388,402 | 368,445 | 324,507 | 325,389 | 291,944 | 290,162 | 274,316 | 274,458 | 292,359 | 292,705 | 328,736 | 327,475 | 326,613 | 290,455 | 291,148 | 274,916 |
| Take 11 | 368,820 | 367,349 | 327,213 | 329,420 | 328,930 | 389,914 | 369,694 | 330,514 | 327,513 | 292,187 | 293,392 | 276,957 | 273,766 | 292,132 | 293,213 | 332,237 | 332,363 | 330,421 | 292,443 | 293,497 | 277,382 |
| Take 12 | 368,129 | 370,934 | 325,932 | 327,386 | 327,546 | 392,804 | 373,069 | 329,006 | 329,747 | 293,165 | 292,820 | 274,862 | 276,826 | 290,407 | 292,248 | 330,469 | 327,759 | 327,387 | 293,605 | 292,388 | 277,412 |
| Take 13 | 367,820 | 368,937 | 329,593 | 325,738 | 325,601 | 393,505 | 370,480 | 326,201 | 329,039 | 289,024 | 293,128 | 275,267 | 273,392 | 291,207 | 291,436 | 328,351 | 326,604 | 328,362 | 289,480 | 291,521 | 276,378 |
| Take 14 | 371,928 | 365,217 | 329,269 | 328,310 | 328,159 | 392,457 | 369,910 | 329,628 | 328,990 | 295,399 | 292,041 | 276,064 | 275,844 | 289,934 | 289,723 | 329,560 | 326,225 | 329,111 | 290,830 | 291,014 | 275,394 |
| Take 15 | 368,287 | 370,285 | 324,924 | 323,277 | 323,916 | 390,097 | 368,970 | 329,579 | 327,715 | 291,727 | 291,866 | 276,106 | 276,757 | 288,235 | 290,063 | 329,715 | 327,060 | 328,692 | 289,877 | 295,348 | 276,642 |
| Take 16 | 367,841 | 368,382 | 327,753 | 328,698 | 326,804 | 393,246 | 368,547 | 329,719 | 327,919 | 291,185 | 291,206 | 274,976 | 275,759 | 290,988 | 292,797 | 330,162 | 327,205 | 327,381 | 290,327 | 291,720 | 276,997 |
| Take 17 | 370,223 | 370,433 | 328,885 | 328,581 | 327,172 | 390,286 | 369,907 | 325,164 | 327,977 | 291,441 | 294,043 | 274,973 | 272,790 | 292,236 | 291,136 | 328,709 | 324,920 | 327,377 | 289,453 | 292,053 | 274,872 |
| Take 18 | 369,519 | 370,588 | 326,607 | 327,467 | 325,832 | 392,597 | 371,381 | 327,772 | 325,677 | 291,522 | 292,448 | 273,992 | 275,757 | 289,418 | 289,590 | 328,793 | 329,067 | 329,305 | 290,941 | 293,776 | 276,379 |
| Take 19 | 367,519 | 366,759 | 326,979 | 324,567 | 326,088 | 391,482 | 367,976 | 326,473 | 326,453 | 288,124 | 292,458 | 274,705 | 274,043 | 289,251 | 289,993 | 324,200 | 325,140 | 327,201 | 290,166 | 292,694 | 276,049 |
| Take 20 | 364,827 | 368,890 | 326,643 | 327,334 | 326,059 | 390,170 | 371,052 | 327,178 | 325,447 | 289,190 | 291,575 | 274,803 | 276,854 | 290,596 | 290,925 | 330,376 | 326,051 | 330,337 | 292,730 | 294,583 | 274,461 |
| Take 21 | 368,264 | 360,652 | 326,462 | 328,770 | 324,395 | 391,705 | 370,800 | 325,658 | 326,504 | 291,802 | 293,881 | 274,368 | 275,430 | 290,860 | 288,486 | 330,242 | 324,367 | 325,925 | 288,009 | 288,869 | 275,358 |
| **Alto 4 AVERAGE** | **368,959** | **369,479** | **328,088** | **328,181** | **327,045** | **391,174** | **370,276** | **328,304** | **327,726** | **291,843** | **292,696** | **275,420** | **275,662** | **291,198** | **291,269** | **329,502** | **327,532** | **328,506** | **291,004** | **292,289** | **275,806** |
| Cents RF+3rds | -7,175 | -4,738 | -10,429 | -9,934 | -15,941 | -5,955 | -1,007 | -9,287 | -12,337 | -13,095 | -8,045 | -13,366 | -11,846 | -16,925 | -16,506 | -2,984 | -13,366 | -8,221 | -18,080 | -10,451 | -10,941 |
| Cents RF-3rds | -2,799 | -0,362 | -6,053 | -5,558 | -11,565 | -1,579 | 3,369 | -4,911 | -7,961 | -8,719 | -3,669 | -8,989 | -7,470 | -12,549 | -12,130 | 1,393 | -8,990 | -3,845 | -13,704 | -6,075 | -6,565 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Just Int I | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 |
| Just Int II | -13,686 | -13,686 | -17,596 | -17,596 | 3,910 | -29,219 | -13,686 | 3,910 | 3,910 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 3,910 | 3,910 | -17,596 | 0,000 | 0,000 | -11,731 |
| Pythagorean | 7,820 | 7,820 | 3,910 | 3,910 | 3,910 | -1,955 | 7,820 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 3,910 | 3,910 | 3,910 | 0,000 | 0,000 | 9,775 |
| Meantone | -13,686 | -13,686 | -6,843 | -6,843 | -6,843 | 3,422 | -13,686 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -6,843 | -6,843 | -6,843 | 0,000 | 0,000 | -17,108 |
| | Second Phrase | | | | | | | | | | | | | | | | | | | | |
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | |
| Take 01 | 330,040 | 325,296 | 328,285 | 332,763 | 331,990 | 411,740 | 421,775 | 451,239 | 439,951 | 419,540 | 446,267 | 372,396 | 378,274 | 332,103 | 331,598 | 329,763 | | | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 330,532 | 326,517 | 326,681 | 328,885 | 336,190 | 413,506 | 417,195 | 440,606 | 440,078 | 413,372 | 441,285 | 368,574 | 371,856 | 331,065 | 331,878 | 330,549 | | | | | |
| Take 04 | 327,630 | 326,423 | 328,754 | 332,210 | 332,264 | 408,901 | 415,462 | 435,270 | 437,867 | 415,023 | 442,593 | 371,882 | 371,727 | 330,381 | 332,435 | 328,671 | | | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 330,209 | 326,267 | 332,697 | 331,554 | 335,342 | 413,544 | 416,793 | 445,344 | 442,484 | 418,808 | 441,405 | 370,547 | 371,483 | 328,535 | 331,728 | 331,967 | | | | | |
| Take 07 | 279,537 | 287,310 | 281,603 | 292,611 | 297,662 | 414,709 | 418,649 | 434,305 | 434,753 | 413,358 | 441,219 | 370,075 | 372,632 | 329,586 | 329,350 | 331,057 | | | | | |
| Take 08 | 336,233 | 330,448 | 330,504 | 332,259 | 336,757 | 416,233 | 414,711 | 436,925 | 443,017 | 418,795 | 443,307 | 379,049 | 373,651 | 331,029 | 332,951 | 332,587 | | | | | |
| Take 09 | 330,466 | 331,381 | 331,579 | 336,687 | 337,751 | 421,566 | 418,204 | 441,730 | 439,280 | 419,748 | 443,840 | 368,926 | 373,529 | 331,020 | 335,081 | 332,183 | | | | | |
| Take 10 | 330,481 | 330,163 | 330,891 | 329,216 | 334,143 | 419,958 | 415,065 | 441,749 | 447,396 | 417,908 | 443,603 | 368,198 | 367,401 | 329,934 | 323,378 | 325,428 | | | | | |
| Take 11 | 328,446 | 326,882 | 328,384 | 325,745 | 334,844 | 414,002 | 415,453 | 438,806 | 446,255 | 415,181 | 442,569 | 369,658 | 375,713 | 334,041 | 331,150 | 331,606 | | | | | |
| Take 12 | 277,316 | 321,339 | 334,137 | 335,127 | 337,257 | 418,084 | 420,320 | 436,922 | 441,668 | 416,787 | 439,455 | 374,430 | 374,982 | 334,234 | 329,804 | 332,014 | | | | | |
| Take 13 | 330,497 | 329,569 | 327,269 | 330,275 | 334,365 | 410,603 | 418,557 | 436,932 | 438,077 | 413,525 | 443,216 | 370,340 | 372,933 | 334,249 | 333,571 | 332,313 | | | | | |
| Take 14 | 329,983 | 319,102 | 326,077 | 333,624 | 331,262 | 417,092 | 416,372 | 436,752 | 441,865 | 419,209 | 439,003 | 365,082 | 367,183 | 328,152 | 328,476 | 329,969 | | | | | |
| Take 15 | 277,943 | 283,353 | 329,482 | 330,749 | 334,627 | 418,279 | 415,632 | 441,678 | 440,539 | 412,412 | 440,546 | 370,344 | 372,178 | 328,484 | 329,410 | 328,812 | | | | | |
| Take 16 | 279,592 | 324,076 | 332,347 | 331,328 | 331,658 | 412,642 | 420,935 | 438,217 | 437,130 | 408,633 | 439,612 | 369,400 | 371,073 | 328,644 | 330,337 | 331,099 | | | | | |
| Take 17 | 273,753 | 328,880 | 334,315 | 334,113 | 330,776 | 418,585 | 417,118 | 435,270 | 441,110 | 409,795 | 440,201 | 368,083 | 375,057 | 327,081 | 331,619 | 328,513 | | | | | |
| Take 18 | 326,969 | 320,101 | 335,732 | 334,426 | 333,234 | 410,939 | 416,204 | 438,024 | 444,023 | 411,998 | 441,496 | 383,907 | 372,707 | 329,547 | 330,105 | 327,758 | | | | | |
| Take 19 | 335,947 | 335,665 | 334,823 | 333,011 | 331,069 | 416,521 | 417,636 | 438,624 | 440,956 | 411,883 | 439,635 | 369,525 | 372,430 | 331,293 | 330,947 | 328,743 | | | | | |
| Take 20 | 334,618 | 334,589 | 328,720 | 333,357 | 333,614 | 414,874 | 416,966 | 436,202 | 440,460 | 410,541 | 441,221 | 369,503 | 374,339 | 329,073 | 329,661 | 329,676 | | | | | |
| Take 21 | 278,929 | 327,168 | 325,003 | 331,264 | 331,745 | 415,450 | 416,812 | 444,390 | 439,738 | 412,810 | 441,110 | 370,651 | 371,368 | 326,535 | 329,991 | 331,725 | | | | | |
| Alto 1 AVERAGE | 330,927 | 327,286 | 330,315 | 332,033 | 333,827 | 415,117 | 417,361 | 439,420 | 440,876 | 414,701 | 441,662 | 371,083 | 372,659 | 330,262 | 330,709 | 330,233 | | | | | |
| Cents RF+3rds | 5,907 | -13,246 | 2,705 | 11,683 | 21,013 | -1,686 | 7,646 | -3,187 | 2,540 | -3,421 | 5,624 | 4,180 | 11,517 | 2,427 | 4,765 | 2,274 | | | | | |
| Cents RF-3rds | 7,609 | -11,544 | 4,406 | 13,385 | 22,714 | 0,016 | 9,348 | -1,486 | 4,241 | -1,720 | 7,325 | 5,881 | 13,219 | 4,128 | 6,467 | 3,975 | | | | | |
| Just Int I | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | | | | | |
| Just Int II | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | | | | | |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 9,775 | 9,775 | 0,000 | 0,000 | 9,775 | 0,000 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | | | | | |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -17,108 | -17,108 | 0,000 | 0,000 | -17,108 | 0,000 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 | | | | | |
| Take 01 | 328,298 | 334,061 | 331,654 | 334,091 | 331,295 | 421,091 | 420,197 | 431,027 | 436,315 | 415,075 | 441,260 | 367,716 | 369,376 | 329,805 | 331,926 | 331,246 | | | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 326,303 | 327,504 | 328,724 | 329,968 | 330,457 | 418,185 | 420,340 | 436,572 | 416,713 | 411,192 | 439,099 | 369,063 | 365,100 | 328,188 | 331,498 | 327,221 | | | | | |
| Take 04 | 329,313 | 328,299 | 329,253 | 326,768 | 330,395 | 413,122 | 417,938 | 435,269 | 437,746 | 415,569 | 443,039 | 373,398 | 370,499 | 329,925 | 332,368 | 331,821 | | | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 331,475 | 332,980 | 329,854 | 331,107 | 334,758 | 416,985 | 415,283 | 439,972 | 438,480 | 415,704 | 441,077 | 370,611 | 369,470 | 330,114 | 331,154 | 330,366 | | | | | |
| Take 07 | 330,860 | 328,680 | 326,534 | 326,226 | 330,591 | 420,148 | 412,637 | 434,335 | 437,378 | 412,150 | 439,182 | 371,565 | 368,928 | 331,474 | 333,220 | 328,517 | | | | | |
| Take 08 | 327,601 | 333,768 | 327,685 | 332,212 | 332,922 | 416,374 | 420,442 | 439,845 | 440,142 | 414,949 | 439,839 | 366,990 | 369,746 | 331,741 | 332,155 | 330,453 | | | | | |
| Take 09 | 329,782 | 328,577 | 330,413 | 330,828 | 332,691 | 413,923 | 418,182 | 438,016 | 440,046 | 416,959 | 436,766 | 369,776 | 369,419 | 330,619 | 331,698 | 331,662 | | | | | |
| Take 10 | 328,954 | 329,392 | 331,538 | 322,845 | 332,117 | 414,590 | 410,353 | 434,874 | 441,595 | 416,413 | 437,510 | 371,952 | 369,301 | 329,026 | 328,036 | 332,673 | | | | | |
| Take 11 | 327,755 | 331,772 | 330,515 | 332,627 | 333,345 | 418,102 | 419,285 | 440,313 | 434,211 | 415,489 | 442,002 | 371,338 | 370,305 | 330,675 | 328,069 | 331,975 | | | | | |
| Take 12 | 327,962 | 327,335 | 328,193 | 328,971 | 333,046 | 421,920 | 424,038 | 440,682 | 437,227 | 417,262 | 440,728 | 369,087 | 369,617 | 329,329 | 328,556 | 329,331 | | | | | |
| Take 13 | 328,765 | 330,474 | 329,185 | 330,724 | 332,400 | 418,386 | 416,986 | 434,294 | 439,883 | 414,797 | 440,702 | 369,980 | 371,108 | 329,030 | 325,140 | 333,615 | | | | | |
| Take 14 | 327,224 | 325,755 | 328,595 | 328,371 | 330,847 | 415,621 | 414,687 | 433,179 | 437,283 | 415,103 | 438,146 | 370,305 | 369,596 | 328,925 | 329,546 | 330,714 | | | | | |
| Take 15 | 325,290 | 327,533 | 328,443 | 329,080 | 331,238 | 416,978 | 417,740 | 437,779 | 439,182 | 415,119 | 439,294 | 365,588 | 368,419 | 329,750 | 327,825 | 331,455 | | | | | |
| Take 16 | 328,083 | 333,490 | 326,415 | 330,234 | 330,343 | 415,339 | 415,539 | 433,564 | 434,862 | 410,119 | 436,794 | 367,029 | 370,704 | 329,418 | 331,194 | 329,965 | | | | | |
| Take 17 | 316,653 | 326,085 | 327,184 | 327,187 | 329,529 | 413,767 | 415,556 | 431,875 | 439,802 | 415,871 | 440,823 | 365,567 | 370,225 | 328,645 | 332,823 | 330,394 | | | | | |
| Take 18 | 328,144 | 330,546 | 325,845 | 327,443 | 329,945 | 414,074 | 415,546 | 433,798 | 438,583 | 417,685 | 436,499 | 369,065 | 370,179 | 329,004 | 329,472 | 328,130 | | | | | |
| Take 19 | 327,775 | 326,058 | 328,365 | 327,224 | 328,550 | 413,669 | 415,273 | 435,489 | 438,232 | 414,780 | 440,433 | 365,561 | 368,587 | 329,190 | 328,081 | 327,713 | | | | | |
| Take 20 | 330,387 | 328,448 | 328,255 | 327,445 | 330,413 | 413,668 | 414,504 | 437,814 | 438,701 | 409,396 | 435,113 | 366,823 | 373,426 | 328,872 | 326,603 | 329,602 | | | | | |
| Take 21 | 327,003 | 331,073 | 329,443 | 329,788 | 332,616 | 412,066 | 412,895 | 433,180 | 439,793 | 411,565 | 440,760 | 366,782 | 367,725 | 329,717 | 328,457 | 325,941 | | | | | |
| Alto 2 AVERAGE | 327,770 | 329,570 | 328,742 | 329,112 | 331,447 | 416,211 | 416,706 | 435,888 | 437,167 | 414,484 | 439,424 | 368,852 | 369,565 | 329,655 | 329,885 | 330,147 | | | | | |
| Cents RF+3rds | -10,689 | -1,206 | -5,563 | -3,612 | 8,626 | 2,869 | 4,929 | -17,159 | -12,087 | -4,329 | -3,170 | -6,256 | -2,916 | -0,759 | 0,450 | 1,821 | | | | | |
| Cents RF-3rds | -8,988 | 0,496 | -3,862 | -1,910 | 10,328 | 4,570 | 6,630 | -15,458 | -10,386 | -2,627 | -1,469 | -4,555 | -1,215 | 0,942 | 2,151 | 3,522 | | | | | |
| Just Int I | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | | | | | |
| Just Int II | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | | | | | |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 9,775 | 9,775 | 0,000 | 0,000 | 9,775 | 0,000 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -17,108 | -17,108 | 0,000 | 0,000 | -17,108 | 0,000 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 |
| Take 01 | 330,990 | 328,570 | 331,005 | 334,640 | 333,218 | 422,654 | 422,837 | 442,105 | 445,243 | 420,974 | 447,284 | 372,172 | 372,987 | 332,361 | 335,004 | 332,518 |
| Take 02 | | | | | | | | | | | | | | | | |
| Take 03 | 330,768 | 330,714 | 330,808 | 332,552 | 333,756 | 417,997 | 419,666 | 442,404 | 446,081 | 425,387 | 449,047 | 374,465 | 373,953 | 332,631 | 333,085 | 330,647 |
| Take 04 | 330,696 | 329,879 | 331,557 | 336,179 | 332,621 | 425,316 | 425,578 | 450,466 | 441,341 | 424,855 | 446,214 | 368,560 | 372,048 | 331,168 | 333,931 | 330,598 |
| Take 05 | | | | | | | | | | | | | | | | |
| Take 06 | 328,014 | 330,535 | 330,381 | 331,901 | 332,123 | 419,863 | 417,279 | 444,847 | 439,922 | 423,606 | 443,273 | 369,596 | 370,976 | 330,894 | 331,423 | 329,873 |
| Take 07 | 330,069 | 329,637 | 328,782 | 333,698 | 333,477 | 422,998 | 417,081 | 442,882 | 436,351 | 422,903 | 445,124 | 370,222 | 373,990 | 332,501 | 333,177 | 329,960 |
| Take 08 | 331,350 | 330,614 | 331,107 | 333,572 | 334,844 | 420,585 | 417,038 | 444,885 | 446,004 | 424,877 | 445,851 | 369,571 | 371,849 | 332,481 | 332,927 | 333,550 |
| Take 09 | 332,206 | 334,159 | 333,147 | 333,157 | 332,943 | 431,594 | 416,642 | 437,981 | 433,674 | 423,407 | 443,314 | 371,332 | 374,729 | 333,255 | 335,046 | 333,617 |
| Take 10 | 330,859 | 328,052 | 331,782 | 333,269 | 333,545 | 419,862 | 422,348 | 443,017 | 434,822 | 423,484 | 440,757 | 372,875 | 372,250 | 330,901 | 329,733 | 330,612 |
| Take 11 | 332,439 | 332,651 | 333,303 | 336,089 | 336,255 | 423,697 | 419,117 | 445,102 | 444,158 | 417,957 | 449,916 | 371,655 | 374,604 | 331,675 | 334,835 | 331,336 |
| Take 12 | 331,502 | 332,486 | 331,210 | 334,775 | 333,133 | 420,511 | 422,423 | 447,849 | 444,017 | 424,688 | 446,198 | 369,321 | 371,864 | 332,136 | 332,277 | 329,878 |
| Take 13 | 333,590 | 334,995 | 330,667 | 333,591 | 335,480 | 416,503 | 417,953 | 447,419 | 436,309 | 425,260 | 448,027 | 371,364 | 368,599 | 332,165 | 332,339 | 330,783 |
| Take 14 | 328,816 | 328,993 | 327,567 | 330,805 | 333,081 | 415,172 | 420,904 | 437,596 | 438,304 | 425,451 | 440,755 | 368,796 | 370,565 | 328,766 | 327,083 | 329,274 |
| Take 15 | 329,021 | 331,694 | 332,984 | 334,184 | 333,497 | 420,879 | 420,187 | 438,681 | 441,577 | 418,042 | 441,275 | 370,228 | 369,871 | 329,902 | 330,891 | 328,888 |
| Take 16 | 331,384 | 333,600 | 330,710 | 331,966 | 330,561 | 422,829 | 415,485 | 439,933 | 439,634 | 423,555 | 444,775 | 370,380 | 370,749 | 331,229 | 331,162 | 329,780 |
| Take 17 | 329,470 | 329,507 | 328,039 | 331,762 | 330,925 | 420,239 | 419,162 | 445,516 | 440,043 | 420,391 | 446,916 | 367,622 | 370,062 | 330,193 | 332,458 | 329,070 |
| Take 18 | 328,190 | 329,022 | 329,418 | 329,079 | 331,628 | 416,184 | 417,661 | 441,832 | 442,769 | 420,813 | 446,891 | 374,469 | 369,504 | 330,186 | 331,305 | 328,937 |
| Take 19 | 328,665 | 328,859 | 329,486 | 329,151 | 331,711 | 422,182 | 418,413 | 441,584 | 441,950 | 418,562 | 445,651 | 364,735 | 368,755 | 330,114 | 330,028 | 329,618 |
| Take 20 | 330,241 | 329,194 | 331,070 | 331,793 | 335,396 | 421,302 | 417,675 | 434,512 | 443,449 | 420,672 | 441,132 | 374,546 | 375,250 | 329,980 | 332,937 | 329,873 |
| Take 21 | 330,449 | 328,727 | 328,953 | 329,261 | 331,772 | 421,156 | 421,022 | 443,939 | 441,296 | 426,359 | 446,942 | 375,927 | 371,276 | 330,403 | 331,296 | 328,756 |
| **Alto 3 AVERAGE** | **330,459** | **330,626** | **330,630** | **332,707** | **333,156** | **421,133** | **419,393** | **442,766** | **440,892** | **422,697** | **445,229** | **370,939** | **371,783** | **331,207** | **332,154** | **330,398** |
| Cents RF+3rds | 3,457 | 4,329 | 4,354 | 15,192 | 17,530 | 23,221 | 16,055 | 9,944 | 2,601 | 29,640 | 19,547 | 3,509 | 7,445 | 7,373 | 12,317 | 3,139 |
| Cents RF-3rds | 5,159 | 6,031 | 6,055 | 16,893 | 19,231 | 24,922 | 17,757 | 11,645 | 4,302 | 31,341 | 21,248 | 5,210 | 9,146 | 9,075 | 14,018 | 4,840 |
| Just Int I | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 |
| Just Int II | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 9,775 | 9,775 | 0,000 | 0,000 | 9,775 | 0,000 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -17,108 | -17,108 | 0,000 | 0,000 | -17,108 | 0,000 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 |
| Take 01 | 330,522 | 328,812 | 328,381 | 331,812 | 333,533 | 413,721 | 413,939 | 444,598 | 444,695 | 418,210 | 446,854 | 371,825 | 371,400 | 331,116 | 329,687 | 328,176 |
| Take 02 | | | | | | | | | | | | | | | | |
| Take 03 | 329,324 | 328,736 | 328,760 | 327,948 | 334,250 | 416,789 | 416,505 | 444,253 | 446,104 | 418,939 | 447,832 | 371,025 | 369,347 | 329,948 | 329,708 | 328,442 |
| Take 04 | 327,401 | 331,503 | 329,925 | 328,312 | 330,727 | 415,573 | 415,938 | 443,527 | 442,579 | 419,071 | 447,020 | 368,888 | 370,083 | 330,082 | 330,329 | 329,737 |
| Take 05 | | | | | | | | | | | | | | | | |
| Take 06 | 330,543 | 329,746 | 328,721 | 331,679 | 332,973 | 416,570 | 416,828 | 442,651 | 441,867 | 415,488 | 443,200 | 370,944 | 369,208 | 328,872 | 329,171 | 327,430 |
| Take 07 | 329,034 | 326,576 | 328,822 | 330,764 | 330,863 | 413,875 | 413,739 | 438,534 | 439,490 | 416,630 | 444,452 | 369,027 | 368,322 | 329,263 | 329,930 | 328,004 |
| Take 08 | 326,916 | 326,602 | 326,824 | 329,761 | 332,824 | 420,000 | 417,309 | 440,845 | 445,547 | 419,812 | 445,893 | 371,912 | 370,709 | 329,215 | 332,025 | 330,081 |
| Take 09 | 328,878 | 328,264 | 328,532 | 331,295 | 330,253 | 415,971 | 415,727 | 440,240 | 441,872 | 418,498 | 441,779 | 368,322 | 370,917 | 329,159 | 328,735 | 329,147 |
| Take 10 | 326,662 | 327,734 | 328,421 | 331,330 | 330,145 | 416,106 | 415,493 | 437,891 | 443,656 | 418,693 | 443,593 | 367,909 | 369,094 | 329,264 | 330,013 | 328,636 |
| Take 11 | 329,400 | 330,957 | 330,739 | 330,340 | 333,798 | 418,401 | 419,156 | 443,868 | 443,999 | 418,931 | 446,012 | 368,969 | 370,636 | 330,812 | 332,528 | 328,440 |
| Take 12 | 328,864 | 329,125 | 329,417 | 332,513 | 332,806 | 418,445 | 418,406 | 442,575 | 445,282 | 417,144 | 444,630 | 370,659 | 371,328 | 329,856 | 330,894 | 327,710 |
| Take 13 | 327,875 | 326,666 | 327,714 | 331,737 | 332,891 | 419,158 | 416,594 | 442,167 | 443,176 | 420,481 | 445,771 | 372,490 | 371,252 | 330,166 | 331,455 | 329,406 |
| Take 14 | 328,994 | 326,146 | 328,662 | 328,713 | 331,516 | 412,150 | 414,876 | 433,516 | 440,104 | 417,097 | 442,676 | 364,319 | 367,840 | 329,259 | 329,738 | 328,762 |
| Take 15 | 329,542 | 325,292 | 328,499 | 331,251 | 330,529 | 414,813 | 414,813 | 438,306 | 439,666 | 419,661 | 443,180 | 366,971 | 366,513 | 328,316 | 328,397 | 328,283 |
| Take 16 | 326,961 | 325,177 | 326,727 | 330,982 | 331,587 | 418,061 | 417,470 | 438,747 | 444,465 | 418,195 | 443,232 | 368,250 | 367,414 | 329,993 | 330,408 | 328,017 |
| Take 17 | 326,288 | 327,103 | 326,989 | 329,479 | 332,229 | 416,354 | 413,642 | 440,158 | 441,182 | 417,605 | 441,627 | 364,410 | 366,797 | 327,657 | 329,554 | 327,340 |
| Take 18 | 328,245 | 324,787 | 327,896 | 328,674 | 331,973 | 414,297 | 414,698 | 440,316 | 442,358 | 419,538 | 445,285 | 368,456 | 370,166 | 330,441 | 330,561 | 328,227 |
| Take 19 | 326,214 | 324,192 | 325,310 | 328,761 | 330,503 | 415,486 | 414,742 | 438,673 | 441,853 | 421,111 | 440,467 | 368,607 | 368,928 | 328,631 | 327,647 | 327,172 |
| Take 20 | 326,066 | 324,379 | 326,621 | 330,872 | 334,355 | 419,441 | 412,836 | 438,792 | 440,867 | 416,258 | 444,052 | 371,453 | 368,406 | 330,560 | 329,552 | 326,196 |
| Take 21 | 329,598 | 322,015 | 327,851 | 328,558 | 330,941 | 414,872 | 415,839 | 438,433 | 441,896 | 418,696 | 444,398 | 368,423 | 368,761 | 327,252 | 328,288 | 326,529 |
| **Alto 4 AVERAGE** | **328,280** | **327,043** | **328,148** | **330,252** | **332,037** | **416,320** | **415,713** | **440,426** | **442,666** | **418,424** | **444,313** | **369,098** | **369,322** | **329,467** | **329,927** | **328,197** |
| Cents RF+3rds | -7,995 | -14,533 | -8,692 | 2,371 | 11,703 | 3,324 | 0,797 | 0,770 | 9,555 | 12,051 | 15,984 | -5,105 | -4,053 | -1,750 | 0,669 | -8,436 |
| Cents RF-3rds | -6,293 | -12,832 | -6,991 | 4,072 | 13,404 | 5,025 | 2,498 | 2,472 | 11,256 | 13,752 | 17,685 | -3,404 | -2,352 | -0,049 | 2,371 | -6,735 |
| Just Int I | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 |
| Just Int II | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | -11,731 | -11,731 | 0,000 | 0,000 | -11,731 | 0,000 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 9,775 | 9,775 | 0,000 | 0,000 | 9,775 | 0,000 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -17,108 | -17,108 | 0,000 | 0,000 | -17,108 | 0,000 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 |

**Third Phrase**

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 333,584 | 335,035 | 335,828 | 336,085 | 331,745 | 333,249 | 335,371 | 351,981 | 354,836 | 301,463 | 296,941 | 335,602 | 352,851 | 335,259 | 330,417 | 326,479 | 294,198 | 281,173 | 295,140 | 280,314 | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 03 | 332,098 | 331,500 | 328,986 | 332,118 | 328,965 | 327,104 | 333,244 | 349,342 | 350,119 | 294,236 | 294,480 | 325,882 | 350,000 | 330,301 | 328,707 | 328,654 | 291,545 | 277,679 | 293,891 | 276,149 |
| Take 04 | 333,269 | 335,580 | 332,593 | 335,108 | 325,312 | 326,645 | 326,593 | 343,984 | 352,728 | 297,740 | 299,007 | 330,247 | 353,181 | 331,482 | 324,666 | 327,224 | 296,748 | 285,285 | 292,786 | 278,411 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 331,766 | 330,223 | 332,930 | 334,655 | 328,266 | 0,000 | 327,659 | 350,324 | 350,967 | 296,925 | 300,286 | 323,521 | 339,909 | 330,677 | 336,399 | 333,473 | 295,860 | 280,953 | 300,737 | 278,129 |
| Take 07 | 335,308 | 337,106 | 332,389 | 330,837 | 329,978 | 331,446 | 328,231 | 345,933 | 350,404 | 296,043 | 297,364 | 331,522 | 352,722 | 329,957 | 325,396 | 328,335 | 297,179 | 289,977 | 298,477 | 280,236 |
| Take 08 | 334,292 | 335,088 | 335,694 | 334,306 | 327,812 | 327,105 | 330,612 | 351,930 | 344,992 | 293,823 | 295,973 | 332,730 | 354,670 | 329,387 | 331,596 | 326,813 | 288,904 | 278,619 | 293,843 | 278,349 |
| Take 09 | 336,623 | 331,005 | 334,638 | 334,613 | 324,151 | 330,141 | 333,681 | 348,503 | 353,540 | 295,267 | 294,572 | 334,210 | 350,896 | 328,963 | 336,203 | 329,894 | 291,554 | 276,796 | 294,149 | 276,761 |
| Take 10 | 331,554 | 331,745 | 332,165 | 331,251 | 328,213 | 328,810 | 333,223 | 348,137 | 350,456 | 297,881 | 297,955 | 333,945 | 352,475 | 329,067 | 329,016 | 328,033 | 295,672 | 282,140 | 298,261 | 281,745 |
| Take 11 | 302,573 | 346,954 | 335,474 | 330,677 | 330,309 | 330,017 | 333,848 | 347,995 | 354,217 | 298,308 | 298,261 | 326,586 | 350,717 | 330,490 | 327,019 | 326,068 | 292,861 | 283,581 | 298,193 | 280,699 |
| Take 12 | 333,418 | 328,741 | 334,276 | 331,868 | 330,559 | 329,715 | 332,929 | 347,574 | 347,702 | 293,854 | 298,423 | 332,845 | 357,339 | 330,957 | 331,259 | 328,928 | 294,064 | 277,634 | 295,191 | 280,613 |
| Take 13 | 335,713 | 335,343 | 334,706 | 334,599 | 332,093 | 329,852 | 329,561 | 345,248 | 352,892 | 295,117 | 301,252 | 334,105 | 354,410 | 328,672 | 329,483 | 326,777 | 289,805 | 277,644 | 293,228 | 278,858 |
| Take 14 | 329,503 | 328,506 | 329,732 | 331,124 | 329,437 | 328,841 | 328,130 | 346,115 | 350,141 | 293,550 | 295,280 | 333,152 | 353,159 | 335,814 | 329,709 | 328,864 | 292,615 | 275,648 | 291,410 | 277,251 |
| Take 15 | 332,472 | 335,601 | 330,337 | 330,713 | 327,556 | 324,023 | 329,719 | 341,379 | 349,945 | 295,313 | 295,371 | 333,238 | 348,388 | 325,717 | 321,822 | 329,208 | 294,448 | 273,182 | 293,959 | 275,737 |
| Take 16 | 330,787 | 327,756 | 331,074 | 332,878 | 330,876 | 327,831 | 328,799 | 345,611 | 359,103 | 292,474 | 294,445 | 339,584 | 352,898 | 336,901 | 329,945 | 331,722 | 291,035 | 282,843 | 288,796 | 275,215 |
| Take 17 | 331,967 | 330,157 | 328,700 | 328,665 | 326,543 | 326,513 | 329,255 | 342,436 | 347,285 | 293,688 | 292,974 | 335,257 | 350,604 | 328,852 | 323,121 | 328,566 | 298,563 | 276,861 | 295,018 | 277,620 |
| Take 18 | 332,378 | 333,310 | 333,245 | 331,416 | 325,446 | 326,986 | 336,320 | 346,882 | 347,316 | 294,525 | 296,977 | 329,812 | 348,112 | 326,391 | 326,899 | 328,267 | 291,119 | 276,556 | 294,967 | 276,120 |
| Take 19 | 333,476 | 335,141 | 328,433 | 330,166 | 325,590 | 327,051 | 325,199 | 342,533 | 346,783 | 293,969 | 291,496 | 330,070 | 345,906 | 330,768 | 330,208 | 328,791 | 292,655 | 281,609 | 293,698 | 276,794 |
| Take 20 | 331,113 | 330,390 | 326,903 | 328,887 | 326,052 | 324,988 | 324,109 | 345,431 | 344,158 | 295,285 | 288,980 | 332,143 | 350,827 | 334,922 | 335,664 | 331,969 | 295,997 | 280,466 | 296,692 | 280,273 |
| Take 21 | 332,831 | 332,617 | 330,497 | 336,581 | 328,678 | 330,866 | 326,995 | 344,071 | 346,216 | 295,970 | 294,322 | 333,920 | 353,221 | 330,337 | 331,893 | 329,695 | 289,204 | 280,469 | 296,150 | 278,860 |
| **Alto 1 AVERAGE** | **332,897** | **332,491** | **332,032** | **332,450** | **328,294** | **328,399** | **330,183** | **346,600** | **350,347** | **295,549** | **296,019** | **332,492** | **351,799** | **330,785** | **328,637** | **328,829** | **293,370** | **279,953** | **294,978** | **278,323** |
| Cents RF+3rds | 10,363 | 8,250 | 5,854 | 8,034 | -13,746 | -13,191 | -3,811 | -19,802 | -1,190 | 4,346 | 7,097 | 8,252 | 5,969 | -0,658 | -11,939 | -10,923 | -8,466 | 10,494 | 1,000 | 0,381 |
| Cents RF-3rds | 14,630 | 12,518 | 10,121 | 12,301 | -9,478 | -8,924 | 0,456 | -15,535 | 3,077 | 8,613 | 11,364 | 12,519 | 10,237 | 3,609 | -7,672 | -6,655 | -4,198 | 14,762 | 5,267 | 4,648 |
| Just Int I | 1,955 | 1,955 | 1,955 | 1,955 | -19,552 | -19,552 | -19,552 | -7,819 | -7,819 | -23,461 | -23,461 | -19,551 | -7,820 | -19,551 | -19,551 | -19,551 | -23,461 | -35,192 | -50,725 | -35,192 |
| Just Int II | 1,955 | 1,955 | 1,955 | 1,955 | 1,954 | 1,954 | 1,954 | 13,687 | 13,687 | -1,955 | -1,955 | 1,955 | 13,686 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -29,219 | -13,686 |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | -7,820 | -7,820 | -1,955 | -1,955 | 1,955 | -7,820 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | -1,955 | 7,820 |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | 13,686 | 13,686 | 3,422 | 3,422 | -3,421 | 13,686 | -3,421 | -3,421 | -3,421 | 3,422 | -13,686 | 3,422 | -13,686 |
| Take 01 | 332,000 | 334,289 | 332,072 | 333,660 | 330,000 | 330,879 | 328,739 | 342,774 | 350,627 | 292,770 | 293,391 | 333,602 | 352,690 | 332,693 | 334,347 | 332,013 | 290,980 | 279,255 | 296,536 | 274,850 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 332,366 | 332,676 | 328,317 | 330,428 | 330,231 | 330,039 | 325,262 | 340,379 | 350,117 | 292,354 | 294,445 | 328,699 | 348,454 | 334,114 | 330,317 | 330,197 | 299,957 | 284,017 | 295,315 | 276,724 |
| Take 04 | 331,313 | 332,293 | 334,630 | 332,552 | 329,712 | 331,084 | 329,132 | 345,271 | 342,116 | 294,196 | 298,068 | 330,283 | 348,542 | 330,038 | 330,600 | 327,650 | 291,488 | 279,704 | 296,482 | 275,014 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 331,473 | 332,159 | 329,921 | 331,473 | 329,530 | 327,881 | 0,000 | 0,000 | 349,069 | 293,668 | 296,172 | 331,811 | 348,000 | 330,614 | 329,341 | 331,966 | 295,214 | 280,641 | 296,498 | 276,815 |
| Take 07 | 332,540 | 329,280 | 327,828 | 328,346 | 328,525 | 326,742 | 324,840 | 342,638 | 344,946 | 297,886 | 300,587 | 330,291 | 348,676 | 328,958 | 332,031 | 329,244 | 295,313 | 279,661 | 292,548 | 277,125 |
| Take 08 | 331,282 | 331,660 | 329,912 | 330,367 | 328,744 | 334,671 | 329,229 | 342,438 | 354,050 | 293,757 | 297,505 | 329,413 | 347,872 | 332,802 | 331,055 | 330,149 | 294,778 | 285,593 | 299,083 | 278,295 |
| Take 09 | 332,218 | 332,334 | 328,125 | 332,806 | 330,079 | 331,624 | 330,402 | 345,355 | 342,444 | 294,364 | 298,271 | 332,350 | 352,504 | 335,925 | 332,891 | 329,679 | 290,992 | 278,921 | 293,744 | 277,568 |
| Take 10 | 329,589 | 331,613 | 329,830 | 330,298 | 329,589 | 329,165 | 332,030 | 346,009 | 349,491 | 299,436 | 300,867 | 330,367 | 351,284 | 333,972 | 329,525 | 329,907 | 295,845 | 282,818 | 294,018 | 279,097 |
| Take 11 | 328,888 | 332,324 | 330,337 | 331,643 | 331,444 | 328,842 | 326,209 | 345,578 | 345,587 | 293,128 | 296,082 | 329,782 | 350,800 | 335,032 | 333,414 | 331,808 | 295,465 | 281,443 | 298,352 | 278,778 |
| Take 12 | 329,823 | 331,139 | 330,016 | 333,417 | 327,742 | 326,898 | 329,869 | 343,500 | 346,840 | 295,841 | 298,438 | 328,770 | 345,445 | 335,966 | 333,331 | 330,274 | 294,604 | 278,893 | 293,316 | 277,863 |
| Take 13 | 331,329 | 332,536 | 330,308 | 331,719 | 329,208 | 328,249 | 328,434 | 342,470 | 344,885 | 294,081 | 293,023 | 329,787 | 344,026 | 328,947 | 328,680 | 330,256 | 292,708 | 279,855 | 295,998 | 277,035 |
| Take 14 | 327,458 | 326,522 | 328,898 | 331,515 | 328,575 | 327,865 | 326,853 | 342,524 | 344,081 | 294,336 | 294,789 | 328,292 | 348,450 | 334,385 | 330,160 | 330,824 | 293,467 | 279,114 | 293,082 | 274,642 |
| Take 15 | 331,386 | 328,501 | 328,116 | 329,340 | 326,944 | 327,163 | 326,516 | 343,476 | 347,133 | 292,231 | 293,202 | 327,741 | 346,932 | 332,846 | 329,252 | 326,613 | 295,738 | 280,810 | 293,328 | 279,820 |
| Take 16 | 330,929 | 329,744 | 329,891 | 330,331 | 328,265 | 325,132 | 325,243 | 338,246 | 341,422 | 292,866 | 297,798 | 325,221 | 346,414 | 333,931 | 329,636 | 331,358 | 294,226 | 276,675 | 297,632 | 275,510 |
| Take 17 | 331,429 | 332,758 | 330,572 | 329,143 | 330,196 | 326,868 | 327,179 | 339,159 | 344,080 | 291,713 | 293,654 | 325,965 | 348,728 | 332,444 | 329,288 | 328,626 | 292,891 | 281,082 | 295,828 | 276,563 |
| Take 18 | 329,644 | 329,437 | 328,287 | 328,192 | 326,753 | 325,349 | 324,818 | 341,563 | 347,474 | 291,495 | 296,286 | 326,526 | 344,842 | 332,700 | 0,000 | 327,664 | 293,837 | 281,409 | 295,820 | 274,910 |
| Take 19 | 331,848 | 330,315 | 328,322 | 332,598 | 326,590 | 323,902 | 327,667 | 339,645 | 343,430 | 292,639 | 292,995 | 326,764 | 348,822 | 328,871 | 328,661 | 326,048 | 292,234 | 277,724 | 293,134 | 277,757 |
| Take 20 | 330,271 | 328,724 | 327,870 | 328,231 | 330,197 | 328,348 | 328,836 | 345,645 | 346,426 | 288,905 | 295,576 | 331,121 | 348,885 | 327,823 | 332,817 | 328,833 | 294,229 | 280,534 | 295,783 | 273,369 |
| Take 21 | 330,902 | 330,356 | 329,209 | 330,682 | 327,532 | 325,383 | 328,229 | 340,872 | 340,724 | 291,609 | 291,973 | 334,090 | 349,494 | 331,020 | 331,006 | 330,810 | 295,435 | 282,380 | 294,283 | 275,082 |
| **Alto 2 AVERAGE** | **330,878** | **330,982** | **329,603** | **330,881** | **328,940** | **328,215** | **327,749** | **342,641** | **346,050** | **293,541** | **295,954** | **329,520** | **348,466** | **332,267** | **330,909** | **329,680** | **294,179** | **280,554** | **295,304** | **276,674** |
| Cents RF+3rds | -0,169 | 0,373 | -6,854 | -0,155 | -10,342 | -14,161 | -16,619 | -39,692 | -22,556 | -7,458 | 6,717 | -7,292 | -10,507 | 7,084 | -0,011 | -6,451 | -3,697 | 14,206 | 2,913 | -9,903 |
| Cents RF-3rds | 4,098 | 4,640 | -2,587 | 4,112 | -6,074 | -9,894 | -12,351 | -35,424 | -18,288 | -3,190 | 10,984 | -3,025 | -6,240 | 11,351 | 4,256 | -2,184 | 0,570 | 18,473 | 7,180 | -5,635 |
| Just Int I | 1,955 | 1,955 | 1,955 | 1,955 | -19,552 | -19,552 | -19,552 | -7,819 | -7,819 | -23,461 | -23,461 | -19,551 | -7,820 | -19,551 | -19,551 | -19,551 | -23,461 | -35,192 | -50,725 | -35,192 |
| Just Int II | 1,955 | 1,955 | 1,955 | 1,955 | 1,954 | 1,954 | 1,954 | 13,687 | 13,687 | -1,955 | -1,955 | 1,955 | 13,686 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -29,219 | -13,686 |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | -7,820 | -7,820 | -1,955 | -1,955 | 1,955 | -7,820 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | -1,955 | 7,820 |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | 13,686 | 13,686 | 3,422 | 3,422 | -3,421 | 13,686 | -3,421 | -3,421 | -3,421 | 3,422 | -13,686 | 3,422 | -13,686 |
| Take 01 | 336,262 | 333,073 | 331,724 | 332,946 | 332,439 | 332,030 | 332,951 | 351,638 | 349,385 | 297,295 | 301,034 | 333,297 | 350,880 | 333,750 | 332,841 | 331,004 | 296,070 | 279,393 | 293,365 | 279,518 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 332,622 | 331,038 | 333,147 | 332,641 | 329,711 | 330,183 | 332,701 | 346,997 | 346,271 | 295,039 | 295,727 | 333,709 | 351,457 | 336,892 | 329,366 | 330,266 | 293,609 | 281,250 | 299,772 | 280,520 |
| Take 04 | 335,294 | 331,481 | 333,119 | 332,463 | 329,383 | 330,198 | 331,861 | 350,921 | 347,433 | 295,199 | 295,109 | 332,837 | 352,859 | 331,147 | 331,100 | 328,665 | 295,593 | 280,131 | 296,682 | 280,473 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 330,633 | 329,000 | 328,023 | 333,091 | 327,527 | 331,935 | 330,093 | 347,584 | 352,274 | 294,306 | 294,768 | 332,218 | 350,668 | 338,413 | 330,946 | 330,023 | 296,823 | 283,712 | 294,013 | 280,367 |
| Take 07 | 335,036 | 332,181 | 331,872 | 331,546 | 328,748 | 331,394 | 327,994 | 346,574 | 352,323 | 296,695 | 296,782 | 332,929 | 354,547 | 340,882 | 327,537 | 331,951 | 292,135 | 281,177 | 297,231 | 280,724 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 08 | 336,187 | 333,756 | 332,512 | 331,088 | 330,462 | 330,195 | 331,093 | 352,159 | 349,800 | 295,017 | 293,861 | 333,132 | 348,186 | 332,512 | 330,698 | 329,456 | 290,705 | 280,092 | 296,648 | 279,255 |
| Take 09 | 331,616 | 334,408 | 331,370 | 332,721 | 328,886 | 330,187 | 330,267 | 344,682 | 351,571 | 294,941 | 296,688 | 331,057 | 355,049 | 327,516 | 331,008 | 329,827 | 295,161 | 279,475 | 298,642 | 279,662 |
| Take 10 | 333,320 | 334,043 | 329,475 | 329,693 | 329,222 | 329,613 | 332,660 | 352,232 | 349,645 | 297,124 | 294,608 | 329,724 | 348,581 | 330,135 | 326,686 | 328,617 | 297,562 | 282,456 | 297,930 | 279,653 |
| Take 11 | 336,620 | 333,730 | 330,836 | 331,424 | 332,727 | 332,636 | 332,797 | 349,095 | 349,284 | 296,793 | 300,000 | 332,866 | 358,192 | 329,636 | 330,862 | 331,919 | 295,171 | 283,020 | 295,870 | 280,455 |
| Take 12 | 334,731 | 335,318 | 330,988 | 332,275 | 329,645 | 328,989 | 329,997 | 351,001 | 347,282 | 297,075 | 291,853 | 331,662 | 350,552 | 322,517 | 331,418 | 329,894 | 294,935 | 283,402 | 295,677 | 278,892 |
| Take 13 | 335,535 | 335,455 | 332,564 | 333,710 | 329,818 | 330,403 | 332,026 | 348,840 | 351,998 | 298,714 | 295,523 | 326,849 | 352,409 | 332,685 | 331,816 | 332,283 | 293,340 | 280,859 | 296,849 | 280,795 |
| Take 14 | 330,905 | 330,670 | 328,093 | 328,035 | 327,883 | 331,406 | 329,090 | 344,761 | 347,526 | 296,593 | 293,826 | 332,697 | 352,610 | 331,296 | 332,012 | 327,712 | 290,910 | 279,285 | 295,153 | 278,019 |
| Take 15 | 329,992 | 331,350 | 327,922 | 328,123 | 330,171 | 328,367 | 330,794 | 347,491 | 348,284 | 295,581 | 294,260 | 330,855 | 355,861 | 330,646 | 328,074 | 326,220 | 294,405 | 277,650 | 294,529 | 277,587 |
| Take 16 | 331,960 | 330,979 | 330,442 | 330,639 | 328,715 | 327,488 | 328,779 | 344,210 | 350,701 | 294,163 | 294,896 | 331,521 | 347,389 | 332,421 | 326,384 | 329,932 | 293,749 | 279,207 | 294,402 | 277,752 |
| Take 17 | 332,954 | 331,387 | 329,663 | 331,201 | 329,964 | 329,565 | 327,942 | 350,098 | 347,527 | 295,102 | 295,973 | 330,823 | 351,900 | 330,973 | 330,424 | 328,385 | 296,897 | 278,734 | 295,026 | 276,707 |
| Take 18 | 331,191 | 328,945 | 327,835 | 330,153 | 330,773 | 325,538 | 327,068 | 346,469 | 350,128 | 295,523 | 290,521 | 328,078 | 353,873 | 334,412 | 329,520 | 327,973 | 297,358 | 282,484 | 295,088 | 276,757 |
| Take 19 | 333,773 | 331,038 | 329,421 | 330,244 | 328,686 | 327,385 | 329,806 | 348,683 | 348,053 | 294,885 | 292,842 | 333,832 | 350,280 | 327,346 | 328,666 | 327,203 | 294,393 | 280,892 | 294,457 | 278,484 |
| Take 20 | 333,435 | 335,961 | 331,533 | 333,157 | 332,914 | 331,287 | 330,593 | 350,145 | 349,558 | 296,966 | 296,124 | 333,081 | 356,378 | 336,320 | 331,226 | 328,545 | 298,428 | 286,364 | 298,118 | 278,791 |
| Take 21 | 335,495 | 335,674 | 329,978 | 330,630 | 329,414 | 331,532 | 329,905 | 345,741 | 349,102 | 297,340 | 297,690 | 333,233 | 352,510 | 328,991 | 332,450 | 332,198 | 299,066 | 285,233 | 295,945 | 280,029 |
| **Alto 3 AVERAGE** | **333,556** | **332,605** | **330,554** | **331,357** | **329,847** | **330,017** | **330,443** | **348,385** | **349,376** | **296,018** | **295,373** | **331,811** | **352,325** | **332,026** | **330,160** | **329,583** | **295,069** | **281,306** | **296,074** | **279,181** |
| Cents RF+3rds | 13,783 | 8,839 | -1,869 | 2,333 | -5,574 | -4,679 | -2,448 | -10,909 | -5,994 | 7,095 | 3,316 | 4,702 | 8,559 | 5,824 | -3,933 | -6,961 | 1,533 | 18,839 | 7,416 | 5,711 |
| Cents RF-3rds | 18,051 | 13,106 | 2,398 | 6,600 | -1,307 | -0,412 | 1,819 | -6,642 | -1,726 | 11,362 | 7,583 | 8,969 | 12,826 | 10,092 | 0,334 | -2,694 | 5,800 | 23,106 | 11,684 | 9,979 |
| Just Int I | 1,955 | 1,955 | 1,955 | 1,955 | -19,552 | -19,552 | -19,552 | -7,819 | -7,819 | -23,461 | -23,461 | -19,551 | -7,820 | -19,551 | -19,551 | -19,551 | -23,461 | -35,192 | -50,725 | -35,192 |
| Just Int II | 1,955 | 1,955 | 1,955 | 1,955 | 1,954 | 1,954 | 1,954 | 13,687 | 13,687 | -1,955 | -1,955 | 1,955 | 13,686 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -29,219 | -13,686 |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | -7,820 | -7,820 | -1,955 | -1,955 | 1,955 | -7,820 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | -1,955 | 7,820 |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | 13,686 | 13,686 | 3,422 | 3,422 | -3,421 | 13,686 | -3,421 | -3,421 | -3,421 | 3,422 | -13,686 | 3,422 | -13,686 |
| Take 01 | 331,012 | 328,758 | 329,428 | 331,363 | 329,631 | 326,611 | 330,576 | 349,527 | 349,454 | 294,492 | 291,144 | 329,440 | 349,271 | 331,605 | 329,483 | 328,379 | 295,088 | 281,286 | 294,160 | 275,887 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 331,684 | 328,318 | 329,221 | 329,746 | 329,893 | 326,523 | 328,473 | 346,239 | 348,649 | 293,789 | 295,238 | 330,293 | 348,360 | 329,925 | 328,995 | 328,017 | 291,200 | 278,695 | 293,938 | 275,376 |
| Take 04 | 333,524 | 331,864 | 329,500 | 331,429 | 331,057 | 330,471 | 329,219 | 348,218 | 348,660 | 293,589 | 294,248 | 328,882 | 348,909 | 329,933 | 326,861 | 328,373 | 289,355 | 275,765 | 292,598 | 275,081 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 332,921 | 330,531 | 329,274 | 331,256 | 330,520 | 327,637 | 327,747 | 347,105 | 349,471 | 292,090 | 295,690 | 328,786 | 347,299 | 331,377 | 325,400 | 328,558 | 291,031 | 274,644 | 293,508 | 275,299 |
| Take 07 | 334,195 | 330,609 | 328,404 | 332,438 | 329,801 | 328,212 | 329,268 | 349,844 | 349,929 | 292,865 | 291,241 | 329,827 | 350,710 | 327,756 | 327,925 | 327,006 | 292,129 | 278,458 | 293,077 | 274,533 |
| Take 08 | 333,732 | 330,144 | 331,492 | 334,869 | 330,541 | 327,997 | 329,757 | 348,772 | 346,616 | 291,058 | 295,432 | 329,602 | 347,935 | 326,614 | 327,055 | 329,884 | 292,118 | 277,634 | 294,553 | 275,282 |
| Take 09 | 331,889 | 328,174 | 326,381 | 330,780 | 330,053 | 326,245 | 327,305 | 348,762 | 350,428 | 292,745 | 291,482 | 330,419 | 352,758 | 328,036 | 329,149 | 328,807 | 292,861 | 281,421 | 293,584 | 276,012 |
| Take 10 | 332,976 | 330,908 | 329,489 | 330,796 | 330,385 | 330,713 | 329,509 | 345,719 | 351,825 | 294,855 | 293,246 | 328,839 | 349,047 | 328,794 | 327,559 | 327,505 | 291,290 | 276,941 | 292,001 | 274,309 |
| Take 11 | 333,490 | 330,108 | 331,048 | 332,438 | 330,497 | 327,667 | 332,319 | 348,165 | 350,458 | 294,176 | 296,739 | 328,617 | 348,534 | 330,242 | 327,016 | 328,879 | 294,357 | 277,037 | 293,963 | 276,312 |
| Take 12 | 334,564 | 330,112 | 330,291 | 331,391 | 330,784 | 331,049 | 331,456 | 347,718 | 350,212 | 292,826 | 290,602 | 330,009 | 347,952 | 331,260 | 328,109 | 327,386 | 293,359 | 278,471 | 291,858 | 274,622 |
| Take 13 | 333,958 | 330,705 | 331,232 | 332,833 | 330,973 | 330,045 | 330,581 | 349,313 | 349,741 | 292,589 | 293,043 | 329,736 | 349,663 | 331,636 | 326,031 | 328,779 | 287,931 | 276,336 | 291,174 | 275,228 |
| Take 14 | 333,895 | 330,653 | 328,537 | 331,999 | 330,867 | 330,723 | 328,422 | 344,708 | 349,596 | 289,386 | 291,792 | 329,737 | 348,158 | 330,227 | 326,780 | 329,615 | 293,150 | 277,598 | 293,163 | 275,077 |
| Take 15 | 332,541 | 330,422 | 327,995 | 331,394 | 329,715 | 326,456 | 327,337 | 346,888 | 349,737 | 291,559 | 288,386 | 328,789 | 346,048 | 328,916 | 324,057 | 327,789 | 289,517 | 277,393 | 293,459 | 274,862 |
| Take 16 | 331,588 | 332,234 | 329,549 | 330,731 | 329,091 | 327,430 | 330,483 | 343,393 | 348,691 | 290,543 | 291,560 | 329,256 | 350,029 | 329,401 | 326,425 | 326,602 | 290,089 | 275,109 | 291,835 | 276,106 |
| Take 17 | 331,539 | 329,425 | 328,921 | 333,130 | 330,899 | 328,283 | 327,505 | 346,483 | 348,266 | 292,146 | 289,303 | 330,479 | 350,104 | 327,116 | 326,112 | 328,346 | 291,074 | 275,716 | 292,616 | 274,847 |
| Take 18 | 332,293 | 331,300 | 327,358 | 330,657 | 328,768 | 329,053 | 328,240 | 345,721 | 349,290 | 291,355 | 293,685 | 327,276 | 349,343 | 330,475 | 326,844 | 326,530 | 289,686 | 277,728 | 291,268 | 274,912 |
| Take 19 | 330,977 | 327,606 | 326,888 | 327,943 | 328,023 | 327,396 | 329,021 | 347,468 | 349,417 | 293,157 | 291,387 | 328,920 | 347,899 | 322,593 | 326,711 | 326,214 | 290,264 | 278,810 | 290,944 | 274,126 |
| Take 20 | 332,253 | 328,695 | 329,037 | 330,003 | 329,508 | 327,127 | 326,131 | 347,641 | 349,026 | 290,959 | 290,354 | 330,223 | 347,489 | 329,672 | 323,868 | 325,739 | 288,147 | 278,663 | 292,317 | 275,374 |
| Take 21 | 332,027 | 327,693 | 326,569 | 328,043 | 328,860 | 327,729 | 327,121 | 347,072 | 349,073 | 292,624 | 290,744 | 327,544 | 344,364 | 334,462 | 327,847 | 327,570 | 293,179 | 278,743 | 292,099 | 273,790 |
| **Alto 4 AVERAGE** | **332,687** | **329,908** | **328,980** | **331,223** | **329,993** | **328,283** | **328,972** | **347,303** | **349,397** | **292,463** | **292,385** | **329,299** | **348,625** | **329,476** | **326,959** | **327,894** | **291,359** | **277,708** | **292,743** | **275,107** |
| Cents RF+3rds | 9,270 | -5,252 | -10,132 | 1,634 | -4,808 | -13,805 | -10,171 | -16,296 | -5,890 | -13,824 | -14,286 | -8,454 | -9,720 | -7,523 | -20,797 | -15,857 | -20,371 | -3,450 | -12,170 | -19,739 |
| Cents RF-3rds | 13,537 | -0,985 | -5,865 | 5,901 | -0,541 | -9,537 | -5,904 | -12,029 | -1,623 | -9,557 | -10,019 | -4,187 | -5,452 | -3,256 | -16,530 | -11,590 | -16,104 | 0,818 | -7,902 | -15,472 |
| Just Int I | 1,955 | 1,955 | 1,955 | 1,955 | -19,552 | -19,552 | -19,552 | -7,819 | -7,819 | -23,461 | -23,461 | -19,551 | -7,820 | -19,551 | -19,551 | -19,551 | -23,461 | -35,192 | -50,725 | -35,192 |
| Just Int II | 1,955 | 1,955 | 1,955 | 1,955 | 1,954 | 1,954 | 1,954 | 13,687 | 13,687 | -1,955 | -1,955 | 1,955 | 13,686 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -29,219 | -13,686 |
| Pythagorean | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | -7,820 | -7,820 | -1,955 | -1,955 | 1,955 | -7,820 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | -1,955 | 7,820 |
| Meantone | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | 13,686 | 13,686 | 3,422 | 3,422 | -3,421 | 13,686 | -3,421 | -3,421 | -3,421 | 3,422 | -13,686 | 3,422 | -13,686 |
| | **Fourth Phrase** | | | | | | | | | | | | | | | | | | | |
| | **Note 01** | **Note 02** | **Note 03** | **Note 04** | **Note 05** | **Note 06** | **Note 07** | **Note 08** | **Note 09** | **Note 10** | **Note 11** | **Note 12** | **Note 13** | **Note 14** | **Note 15** | **Note 16** | **Note 17** | **Note 18** | **Note 19** | **Note 20** |
| Take 01 | 295,302 | 297,088 | 295,773 | 284,055 | 249,190 | 333,972 | 328,353 | 334,165 | 335,400 | 291,216 | 280,684 | 376,174 | 373,186 | 392,289 | 378,574 | 340,596 | 292,458 | 279,011 | 280,451 | 293,969 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 294,144 | 290,434 | 292,027 | 280,668 | 256,407 | 329,397 | 329,950 | 327,979 | 326,251 | 295,590 | 281,064 | 377,286 | 367,660 | 388,024 | 373,458 | 281,789 | 295,887 | 276,720 | 274,601 | 293,806 |
| Take 04 | 296,230 | 298,111 | 297,653 | 281,743 | 258,178 | 335,414 | 335,306 | 331,835 | 326,579 | 293,511 | 273,913 | 369,299 | 369,256 | 388,989 | 367,311 | 329,906 | 293,319 | 275,625 | 278,526 | 293,449 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 294,608 | 297,261 | 292,541 | 278,761 | 248,332 | 329,382 | 327,856 | 331,924 | 330,649 | 298,400 | 284,246 | 377,960 | 368,929 | 390,265 | 365,025 | 322,462 | 294,433 | 279,242 | 283,402 | 294,544 |
| Take 07 | 295,922 | 295,323 | 294,836 | 282,439 | 249,830 | 330,572 | 329,901 | 329,497 | 327,345 | 296,680 | 284,211 | 371,955 | 369,501 | 387,055 | 368,546 | 324,105 | 294,184 | 279,462 | 280,876 | 293,925 |
| Take 08 | 295,618 | 293,941 | 294,938 | 279,275 | 245,954 | 328,026 | 329,767 | 324,316 | 327,126 | 294,066 | 287,995 | 371,037 | 374,005 | 395,133 | 367,190 | 327,898 | 296,192 | 279,955 | 281,520 | 293,716 |
| Take 09 | 292,514 | 293,614 | 292,729 | 277,708 | 244,176 | 333,216 | 332,234 | 332,863 | 327,089 | 294,580 | 287,247 | 374,167 | 373,288 | 390,661 | 369,371 | 323,366 | 295,271 | 276,893 | 278,486 | 293,727 |
| Take 10 | 295,339 | 294,921 | 296,078 | 284,813 | 259,618 | 330,671 | 331,154 | 331,473 | 331,828 | 299,414 | 281,789 | 372,652 | 367,976 | 386,842 | 368,542 | 327,915 | 294,840 | 280,195 | 281,735 | 294,648 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 11 | 298,620 | 297,553 | 299,296 | 275,154 | 255,278 | 329,564 | 327,757 | 330,606 | 327,023 | 300,400 | 287,464 | 371,325 | 369,006 | 392,613 | 369,207 | 324,660 | 297,670 | 282,027 | 283,933 | 296,784 |
| Take 12 | 293,627 | 294,034 | 296,511 | 283,760 | 250,105 | 336,323 | 330,795 | 329,863 | 327,578 | 290,397 | 278,835 | 377,402 | 368,249 | 396,075 | 367,607 | 327,094 | 293,499 | 277,556 | 277,019 | 295,056 |
| Take 13 | 297,848 | 294,594 | 297,891 | 281,336 | 251,559 | 334,930 | 332,419 | 330,628 | 324,280 | 297,899 | 281,548 | 369,790 | 367,266 | 391,172 | 368,938 | 326,482 | 295,072 | 276,638 | 277,760 | 295,845 |
| Take 14 | 293,404 | 297,731 | 296,653 | 276,115 | 247,884 | 335,805 | 332,683 | 331,200 | 331,650 | 295,472 | 279,634 | 367,147 | 367,082 | 389,062 | 370,588 | 325,506 | 293,433 | 276,463 | 278,823 | 293,554 |
| Take 15 | 291,692 | 296,653 | 294,507 | 281,681 | 248,998 | 330,408 | 329,124 | 326,935 | 329,546 | 294,288 | 283,742 | 362,154 | 364,588 | 389,862 | 363,584 | 320,191 | 294,528 | 278,537 | 277,194 | 295,164 |
| Take 16 | 294,310 | 293,053 | 294,232 | 284,398 | 250,568 | 327,906 | 324,544 | 326,461 | 326,686 | 291,692 | 294,903 | 372,764 | 373,459 | 394,041 | 371,092 | 337,572 | 291,604 | 276,581 | 275,216 | 291,780 |
| Take 17 | 296,032 | 298,607 | 295,140 | 278,971 | 244,503 | 328,608 | 328,297 | 331,690 | 328,936 | 295,742 | 274,917 | 367,516 | 366,725 | 390,448 | 368,151 | 326,258 | 294,180 | 278,650 | 279,735 | 290,544 |
| Take 18 | 295,956 | 294,647 | 293,684 | 281,174 | 249,236 | 328,125 | 327,907 | 326,800 | 326,157 | 293,133 | 276,923 | 373,688 | 367,598 | 394,198 | 370,645 | 323,008 | 295,288 | 277,030 | 278,851 | 292,077 |
| Take 19 | 293,326 | 290,077 | 293,661 | 280,982 | 256,127 | 323,794 | 326,602 | 326,597 | 330,350 | 297,578 | 279,772 | 369,286 | 366,186 | 393,750 | 365,875 | 328,635 | 292,317 | 277,608 | 279,712 | 291,039 |
| Take 20 | 293,358 | 294,368 | 293,137 | 282,010 | 251,344 | 326,088 | 328,882 | 328,584 | 328,844 | 290,167 | 268,706 | 366,284 | 367,198 | 395,796 | 374,553 | 324,985 | 294,678 | 278,747 | 279,984 | 294,793 |
| Take 21 | 295,721 | 292,079 | 297,514 | 279,940 | 253,525 | 339,204 | 333,382 | 332,866 | 333,323 | 295,973 | 273,637 | 375,128 | 370,672 | 389,732 | 367,207 | 324,469 | 294,185 | 276,506 | 284,268 | 294,377 |
| **Alto 1 AVERAGE** | **294,925** | **294,952** | **295,200** | **280,789** | **251,095** | **331,127** | **329,837** | **329,804** | **328,770** | **295,063** | **281,462** | **371,738** | **369,044** | **391,369** | **369,235** | **325,135** | **294,370** | **278,076** | **279,584** | **293,831** |
| Cents RF+3rds | 6,915 | 7,076 | 8,530 | 21,880 | 28,381 | 7,358 | 0,605 | 0,432 | -5,004 | 7,727 | 26,026 | 7,641 | -4,951 | -3,266 | -4,054 | -24,252 | 3,658 | 5,074 | 14,436 | 0,485 |
| Cents RF-3rds | 10,824 | 10,985 | 12,439 | 25,789 | 32,289 | 11,267 | 4,514 | 4,340 | -1,096 | 11,635 | 29,935 | 11,549 | -1,042 | 0,642 | -0,145 | -20,343 | 7,566 | 8,983 | 18,344 | 4,394 |
| Just Int I | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Just Int II | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Pythagorean | 0,000 | 0,000 | 0,000 | 9,775 | 5,865 | 3,910 | 3,910 | 3,910 | 3,910 | 0,000 | 9,775 | 7,820 | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 9,775 | 0,000 |
| Meantone | 0,000 | 0,000 | 0,000 | -17,108 | -10,264 | -6,843 | -6,843 | -6,843 | -6,843 | 0,000 | -17,108 | -13,686 | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | -17,108 | 0,000 |
| Take 01 | 291,889 | 298,588 | 294,611 | 278,613 | 250,962 | 333,163 | 327,314 | 331,097 | 331,648 | 292,067 | 277,129 | 368,373 | 369,616 | 388,594 | 362,137 | 333,486 | 296,505 | 281,171 | 279,250 | 293,497 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 292,080 | 296,466 | 296,073 | 279,022 | 249,604 | 328,310 | 325,718 | 326,136 | 326,255 | 291,398 | 270,789 | 370,295 | 370,183 | 388,279 | 369,774 | 333,286 | 296,706 | 276,647 | 281,489 | 287,082 |
| Take 04 | 293,740 | 295,580 | 296,255 | 279,114 | 240,808 | 331,241 | 329,549 | 328,374 | 328,877 | 292,607 | 277,097 | 369,607 | 368,344 | 385,177 | 365,690 | 332,466 | 295,421 | 275,521 | 278,301 | 288,901 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 294,301 | 296,692 | 296,637 | 280,285 | 246,329 | 329,978 | 329,823 | 331,677 | 330,379 | 295,075 | 279,179 | 371,435 | 369,144 | 389,372 | 368,341 | 328,121 | 292,435 | 267,519 | 274,684 | 309,957 |
| Take 07 | 296,433 | 297,063 | 296,017 | 275,555 | 249,920 | 330,327 | 329,254 | 329,201 | 328,158 | 293,023 | 278,154 | 369,113 | 368,946 | 389,071 | 368,992 | 332,412 | 293,678 | 273,736 | 279,661 | 294,000 |
| Take 08 | 291,193 | 295,870 | 294,853 | 278,613 | 249,843 | 332,965 | 330,013 | 331,597 | 326,648 | 293,612 | 278,087 | 373,353 | 368,980 | 386,871 | 365,627 | 330,632 | 295,053 | 277,121 | 279,299 | 293,471 |
| Take 09 | 293,657 | 296,688 | 295,570 | 275,934 | 250,241 | 329,904 | 329,217 | 330,289 | 327,513 | 290,573 | 279,261 | 372,873 | 368,963 | 385,485 | 0,000 | 328,915 | 293,780 | 279,304 | 274,345 | 297,726 |
| Take 10 | 294,182 | 298,944 | 297,325 | 280,473 | 248,879 | 334,370 | 329,975 | 327,392 | 327,464 | 293,777 | 281,241 | 372,302 | 368,565 | 386,762 | 368,243 | 328,189 | 292,358 | 277,905 | 278,040 | 292,857 |
| Take 11 | 294,245 | 297,560 | 296,253 | 275,638 | 244,836 | 330,094 | 330,829 | 328,972 | 328,327 | 292,607 | 280,792 | 371,544 | 369,926 | 391,601 | 371,352 | 329,755 | 294,320 | 275,210 | 281,896 | 293,009 |
| Take 12 | 293,874 | 294,689 | 296,263 | 277,724 | 246,897 | 333,955 | 329,218 | 329,423 | 327,179 | 292,738 | 279,114 | 371,598 | 369,434 | 387,587 | 368,091 | 329,302 | 292,659 | 275,672 | 280,358 | 290,912 |
| Take 13 | 289,790 | 294,340 | 294,000 | 279,882 | 248,486 | 332,961 | 331,195 | 328,239 | 331,901 | 288,011 | 278,946 | 367,694 | 368,128 | 390,103 | 369,667 | 328,881 | 293,129 | 275,023 | 278,189 | 294,457 |
| Take 14 | 293,406 | 298,024 | 296,223 | 280,945 | 244,446 | 328,268 | 328,013 | 332,957 | 330,207 | 292,006 | 282,228 | 372,073 | 367,755 | 384,237 | 368,096 | 326,058 | 293,356 | 272,839 | 273,391 | 287,091 |
| Take 15 | 297,593 | 293,593 | 296,241 | 274,013 | 248,194 | 330,696 | 327,649 | 328,011 | 326,358 | 292,558 | 282,357 | 374,204 | 368,196 | 387,708 | 365,347 | 329,069 | 293,938 | 276,013 | 278,274 | 290,369 |
| Take 16 | 295,640 | 295,165 | 294,788 | 277,551 | 246,586 | 330,966 | 329,311 | 328,502 | 326,292 | 291,236 | 277,010 | 371,114 | 367,929 | 391,397 | 379,367 | 323,695 | 293,331 | 279,120 | 279,559 | 292,289 |
| Take 17 | 293,792 | 295,136 | 294,793 | 275,240 | 246,349 | 331,487 | 329,670 | 330,444 | 326,461 | 288,056 | 283,855 | 368,051 | 367,684 | 388,449 | 370,054 | 323,256 | 293,030 | 275,083 | 277,138 | 291,033 |
| Take 18 | 294,541 | 294,799 | 295,669 | 275,730 | 243,605 | 331,912 | 327,869 | 330,006 | 326,946 | 290,026 | 283,784 | 371,129 | 367,568 | 386,643 | 367,441 | 331,357 | 295,221 | 268,472 | 274,204 | 286,705 |
| Take 19 | 291,102 | 293,837 | 293,946 | 276,837 | 245,288 | 333,697 | 327,106 | 330,146 | 327,012 | 291,089 | 279,659 | 371,448 | 365,653 | 385,278 | 365,074 | 328,614 | 292,581 | 278,526 | 280,685 | 289,162 |
| Take 20 | 291,455 | 295,474 | 289,253 | 277,174 | 241,815 | 326,905 | 331,414 | 330,537 | 328,292 | 289,737 | 268,684 | 371,218 | 366,076 | 389,770 | 362,990 | 325,273 | 291,553 | 274,137 | 274,140 | 285,089 |
| Take 21 | 292,659 | 295,801 | 293,048 | 274,804 | 245,694 | 334,380 | 328,277 | 328,727 | 323,444 | 289,945 | 271,485 | 367,970 | 368,750 | 393,327 | 367,254 | 326,556 | 293,257 | 274,516 | 280,386 | 288,730 |
| **Alto 2 AVERAGE** | **293,451** | **296,016** | **295,148** | **277,534** | **247,110** | **331,346** | **329,022** | **329,565** | **327,861** | **291,586** | **278,361** | **370,810** | **368,413** | **388,195** | **367,974** | **328,912** | **293,806** | **276,326** | **278,002** | **290,758** |
| Cents RF+3rds | -1,757 | 13,310 | 8,226 | 1,697 | 0,680 | 8,506 | -3,681 | -0,828 | -9,799 | -12,794 | 6,845 | 3,316 | -7,914 | -17,361 | -9,975 | -4,261 | 0,334 | -5,854 | 4,614 | -17,719 |
| Cents RF-3rds | 2,152 | 17,219 | 12,135 | 5,605 | 4,589 | 12,415 | 0,228 | 3,081 | -5,890 | -8,885 | 10,754 | 7,225 | -4,005 | -13,453 | -6,066 | -0,352 | 4,243 | -1,946 | 8,523 | -13,810 |
| Just Int I | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Just Int II | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Pythagorean | 0,000 | 0,000 | 0,000 | 9,775 | 5,865 | 3,910 | 3,910 | 3,910 | 3,910 | 0,000 | 9,775 | 7,820 | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 9,775 | 0,000 |
| Meantone | 0,000 | 0,000 | 0,000 | -17,108 | -10,264 | -6,843 | -6,843 | -6,843 | -6,843 | 0,000 | -17,108 | -13,686 | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | -17,108 | 0,000 |
| Take 01 | 295,953 | 295,142 | 296,101 | 279,686 | 251,238 | 334,010 | 331,571 | 334,323 | 329,901 | 296,648 | 281,436 | 379,167 | 373,917 | 394,653 | 371,999 | 334,832 | 296,856 | 279,969 | 282,375 | 295,606 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 295,089 | 294,434 | 296,850 | 281,141 | 250,544 | 332,856 | 332,876 | 334,474 | 331,220 | 297,458 | 281,727 | 377,666 | 372,817 | 393,681 | 377,019 | 326,066 | 296,721 | 279,877 | 281,501 | 295,053 |
| Take 04 | 295,705 | 294,327 | 294,168 | 280,470 | 248,510 | 332,969 | 331,749 | 331,505 | 333,081 | 296,613 | 282,692 | 372,318 | 372,372 | 395,275 | 381,064 | 325,630 | 296,208 | 280,530 | 283,826 | 297,839 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 293,892 | 291,122 | 294,509 | 281,631 | 250,169 | 333,148 | 329,889 | 327,947 | 327,020 | 295,450 | 281,057 | 373,754 | 371,506 | 389,568 | 376,305 | 330,281 | 293,752 | 279,310 | 280,997 | 293,540 |
| Take 07 | 296,772 | 294,377 | 294,905 | 279,709 | 248,561 | 332,536 | 331,185 | 332,361 | 330,117 | 291,565 | 275,175 | 372,587 | 370,949 | 391,762 | 375,775 | 328,628 | 294,669 | 281,458 | 281,738 | 295,333 |
| Take 08 | 295,848 | 294,604 | 295,309 | 279,535 | 248,970 | 335,418 | 330,136 | 330,595 | 328,167 | 292,852 | 280,584 | 371,272 | 372,643 | 394,325 | 372,788 | 329,244 | 294,356 | 281,052 | 282,275 | 296,233 |
| Take 09 | 295,508 | 295,753 | 295,607 | 279,980 | 247,989 | 330,138 | 330,864 | 328,404 | 325,939 | 290,494 | 280,917 | 375,540 | 373,344 | 395,941 | 376,112 | 330,021 | 295,551 | 279,852 | 280,463 | 295,015 |
| Take 10 | 295,592 | 296,089 | 296,441 | 280,935 | 246,369 | 333,947 | 332,328 | 333,124 | 330,034 | 296,457 | 280,039 | 375,723 | 372,760 | 395,582 | 370,654 | 336,920 | 296,276 | 279,631 | 278,547 | 293,894 |
| Take 11 | 296,356 | 296,700 | 296,661 | 280,440 | 248,977 | 333,122 | 333,266 | 332,491 | 335,134 | 301,585 | 289,920 | 371,463 | 375,312 | 395,636 | 375,120 | 331,555 | 297,648 | 279,874 | 280,584 | 297,834 |
| Take 12 | 295,901 | 296,287 | 297,082 | 278,633 | 247,428 | 334,234 | 329,183 | 333,673 | 332,040 | 297,330 | 282,990 | 370,257 | 374,627 | 397,810 | 375,073 | 330,374 | 297,315 | 279,288 | 281,479 | 296,360 |
| Take 13 | 296,777 | 295,738 | 295,272 | 282,428 | 251,172 | 334,332 | 332,675 | 332,941 | 329,083 | 296,632 | 282,090 | 372,041 | 374,592 | 397,496 | 376,306 | 332,393 | 295,766 | 279,049 | 280,822 | 295,031 |
| Take 14 | 292,821 | 292,153 | 291,242 | 277,406 | 248,678 | 329,350 | 329,306 | 333,501 | 326,597 | 298,192 | 282,119 | 374,894 | 370,462 | 397,362 | 369,898 | 330,150 | 293,953 | 277,111 | 278,035 | 295,499 |
| Take 15 | 293,052 | 291,757 | 292,331 | 279,127 | 246,774 | 334,311 | 327,683 | 334,758 | 330,690 | 298,068 | 283,853 | 316,697 | 371,351 | 394,200 | 372,807 | 324,437 | 293,655 | 277,912 | 277,885 | 296,786 |

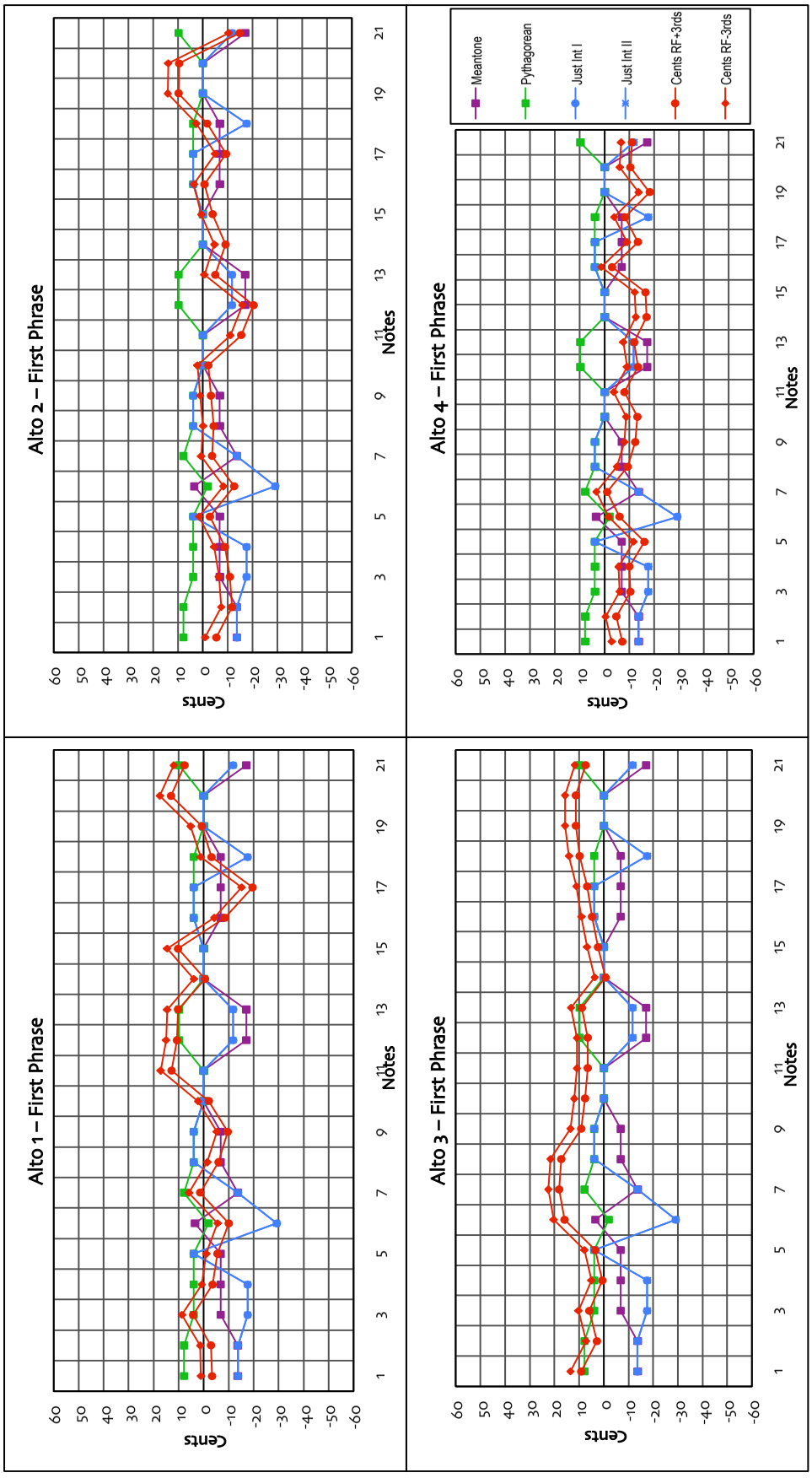
| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 16 | 295,227 | 293,433 | 294,419 | 277,847 | 246,885 | 332,595 | 329,913 | 330,705 | 329,818 | 295,365 | 278,557 | 377,361 | 372,348 | 393,791 | 378,631 | 333,793 | 293,148 | 278,381 | 279,528 | 294,822 |
| Take 17 | 292,555 | 295,228 | 294,961 | 278,947 | 248,392 | 331,958 | 330,963 | 328,332 | 327,672 | 294,062 | 278,592 | 371,747 | 371,614 | 389,415 | 375,891 | 325,076 | 293,758 | 277,428 | 281,959 | 294,616 |
| Take 18 | 293,710 | 293,635 | 296,048 | 278,244 | 246,022 | 332,052 | 329,054 | 328,764 | 328,553 | 294,389 | 281,620 | 0,000 | 369,022 | 388,438 | 374,579 | 332,936 | 294,764 | 279,934 | 275,700 | 292,871 |
| Take 19 | 293,311 | 293,857 | 294,249 | 279,065 | 243,291 | 327,978 | 329,386 | 331,599 | 331,375 | 294,860 | 276,045 | 369,887 | 370,612 | 390,565 | 373,443 | 332,396 | 294,005 | 277,824 | 278,058 | 293,642 |
| Take 20 | 295,999 | 296,443 | 296,015 | 279,327 | 250,227 | 331,268 | 330,829 | 330,789 | 334,047 | 298,567 | 281,353 | 372,798 | 373,422 | 390,315 | 375,508 | 329,614 | 295,514 | 279,429 | 283,304 | 295,866 |
| Take 21 | 295,052 | 292,488 | 297,404 | 280,355 | 246,309 | 330,839 | 331,737 | 331,666 | 332,126 | 298,700 | 280,381 | 375,350 | 371,407 | 397,672 | 377,405 | 336,015 | 295,443 | 278,226 | 282,105 | 294,682 |
| **Alto 3 AVERAGE** | **295,006** | **294,398** | **295,241** | **279,732** | **248,237** | **331,951** | **330,768** | **331,682** | **330,138** | **296,068** | **281,113** | **373,754** | **372,372** | **393,868** | **375,072** | **330,545** | **295,229** | **279,270** | **280,588** | **295,291** |
| Cents RF+3rds | 7,393 | 3,822 | 8,769 | 15,352 | 8,562 | 11,661 | 5,482 | 10,258 | 2,179 | 13,611 | 23,879 | 17,008 | 10,595 | 7,752 | 23,102 | 4,317 | 8,702 | 12,494 | 20,645 | 9,062 |
| Cents RF-3rds | 11,302 | 7,730 | 12,678 | 19,261 | 12,470 | 15,570 | 9,391 | 14,166 | 6,088 | 17,520 | 27,787 | 20,916 | 14,503 | 11,661 | 27,011 | 8,226 | 12,611 | 16,402 | 24,554 | 12,971 |
| Just Int I | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Just Int II | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Pythagorean | 0,000 | 0,000 | 0,000 | 9,775 | 5,865 | 3,910 | 3,910 | 3,910 | 3,910 | 0,000 | 9,775 | 7,820 | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 9,775 | 0,000 |
| Meantone | 0,000 | 0,000 | 0,000 | -17,108 | -10,264 | -6,843 | -6,843 | -6,843 | -6,843 | 0,000 | -17,108 | -13,686 | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | -17,108 | 0,000 |
| Take 01 | 292,704 | 292,175 | 290,295 | 277,290 | 246,984 | 332,987 | 327,447 | 327,704 | 329,012 | 292,338 | 276,621 | 367,883 | 369,834 | 390,773 | 370,449 | 327,792 | 290,426 | 279,487 | 274,924 | 290,915 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 293,699 | 292,053 | 292,127 | 274,453 | 245,229 | 330,755 | 328,712 | 327,988 | 328,574 | 288,881 | 273,834 | 367,625 | 371,035 | 391,464 | 368,052 | 327,800 | 291,514 | 276,485 | 275,695 | 289,763 |
| Take 04 | 293,938 | 293,283 | 292,907 | 273,833 | 246,809 | 330,521 | 329,539 | 327,491 | 326,540 | 291,281 | 274,089 | 367,899 | 371,994 | 393,469 | 370,922 | 325,527 | 291,434 | 275,904 | 277,485 | 291,664 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 292,008 | 293,392 | 291,122 | 277,083 | 246,600 | 330,208 | 327,886 | 325,950 | 325,886 | 290,545 | 278,754 | 366,998 | 368,952 | 387,077 | 368,399 | 324,024 | 290,026 | 275,583 | 273,995 | 288,048 |
| Take 07 | 292,892 | 292,221 | 291,580 | 276,798 | 245,217 | 329,530 | 328,888 | 329,672 | 326,651 | 292,501 | 276,778 | 366,679 | 371,262 | 390,783 | 369,849 | 327,829 | 291,289 | 275,294 | 277,408 | 292,985 |
| Take 08 | 294,623 | 293,932 | 293,681 | 277,444 | 246,979 | 332,583 | 328,891 | 329,942 | 325,443 | 292,812 | 282,491 | 369,290 | 371,664 | 392,261 | 368,785 | 325,688 | 291,441 | 275,158 | 277,851 | 291,826 |
| Take 09 | 293,023 | 294,523 | 293,447 | 276,765 | 247,561 | 331,732 | 329,227 | 328,614 | 327,090 | 291,458 | 274,181 | 369,468 | 371,901 | 390,784 | 368,707 | 326,024 | 290,712 | 274,987 | 276,091 | 292,219 |
| Take 10 | 292,371 | 292,834 | 291,932 | 278,526 | 253,119 | 329,569 | 326,979 | 328,894 | 333,184 | 294,121 | 277,358 | 366,664 | 369,702 | 389,134 | 370,614 | 325,511 | 290,792 | 276,589 | 278,147 | 292,774 |
| Take 11 | 294,520 | 293,441 | 294,152 | 274,262 | 249,209 | 330,820 | 328,873 | 328,072 | 328,797 | 290,799 | 276,438 | 370,915 | 371,015 | 389,281 | 374,820 | 329,007 | 291,663 | 275,581 | 276,108 | 293,207 |
| Take 12 | 293,127 | 295,590 | 293,764 | 274,822 | 245,059 | 329,554 | 328,875 | 327,574 | 327,359 | 290,346 | 277,359 | 363,614 | 371,381 | 391,441 | 368,515 | 324,072 | 290,510 | 276,971 | 281,232 | 291,171 |
| Take 13 | 291,633 | 292,216 | 292,381 | 277,174 | 245,960 | 328,230 | 328,891 | 332,339 | 330,367 | 290,776 | 280,664 | 368,213 | 370,656 | 395,256 | 373,231 | 327,651 | 291,736 | 275,996 | 275,857 | 292,489 |
| Take 14 | 292,722 | 293,614 | 290,507 | 277,019 | 244,604 | 329,398 | 328,809 | 326,875 | 326,575 | 291,910 | 273,027 | 366,654 | 369,281 | 390,328 | 369,559 | 323,912 | 290,872 | 274,800 | 274,960 | 290,751 |
| Take 15 | 292,984 | 293,261 | 291,473 | 276,806 | 247,667 | 328,532 | 326,790 | 327,935 | 325,089 | 289,120 | 277,450 | 368,996 | 368,826 | 392,623 | 367,957 | 322,863 | 290,169 | 274,543 | 275,681 | 290,110 |
| Take 16 | 292,224 | 292,332 | 291,457 | 276,405 | 244,790 | 332,897 | 328,372 | 330,281 | 327,567 | 292,929 | 276,140 | 371,414 | 368,238 | 389,773 | 367,782 | 324,925 | 291,458 | 274,461 | 275,843 | 292,302 |
| Take 17 | 292,868 | 293,374 | 291,979 | 274,993 | 245,038 | 330,485 | 327,234 | 327,983 | 325,647 | 290,510 | 276,716 | 368,252 | 369,114 | 388,648 | 370,512 | 328,254 | 290,684 | 273,863 | 274,692 | 292,098 |
| Take 18 | 293,034 | 291,357 | 289,881 | 276,025 | 243,267 | 330,356 | 327,804 | 323,832 | 326,896 | 292,445 | 270,392 | 367,123 | 368,755 | 388,851 | 372,657 | 323,868 | 291,035 | 274,980 | 275,669 | 289,267 |
| Take 19 | 292,002 | 292,986 | 293,549 | 275,494 | 242,654 | 330,111 | 326,768 | 327,600 | 325,965 | 288,677 | 278,065 | 373,569 | 369,471 | 389,204 | 369,440 | 325,906 | 290,482 | 274,222 | 275,685 | 290,994 |
| Take 20 | 290,973 | 290,884 | 290,538 | 275,672 | 246,245 | 329,525 | 328,522 | 326,938 | 324,407 | 291,612 | 281,603 | 374,119 | 368,501 | 390,005 | 368,359 | 325,940 | 291,126 | 276,029 | 276,417 | 291,185 |
| Take 21 | 293,927 | 295,592 | 294,534 | 276,359 | 245,435 | 332,460 | 331,283 | 327,611 | 328,026 | 288,578 | 274,902 | 370,682 | 370,022 | 391,588 | 368,324 | 327,555 | 290,904 | 274,382 | 273,891 | 290,439 |
| **Alto 4 AVERAGE** | **292,909** | **293,108** | **292,174** | **276,170** | **246,233** | **330,540** | **328,410** | **328,068** | **327,320** | **291,139** | **276,677** | **368,740** | **370,084** | **390,671** | **369,839** | **326,008** | **290,962** | **275,543** | **276,191** | **291,274** |
| Cents RF+3rds | -4,958 | -3,780 | -9,308 | -6,835 | -5,473 | 4,286 | -6,903 | -8,706 | -12,660 | -15,452 | -3,659 | -6,377 | -0,076 | -6,357 | -1,225 | -19,614 | -16,506 | -10,769 | -6,701 | -14,648 |
| Cents RF-3rds | -1,049 | 0,129 | -5,399 | -2,926 | -1,564 | 8,195 | -2,994 | -4,798 | -8,752 | -11,543 | 0,250 | -2,468 | 3,833 | -2,449 | 2,683 | -15,705 | -12,597 | -6,860 | -2,792 | -10,739 |
| Just Int I | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Just Int II | 0,000 | 0,000 | 0,000 | -11,731 | -15,641 | -17,596 | -17,596 | 3,910 | 3,910 | 0,000 | -11,731 | -13,686 | -13,686 | -1,955 | -13,686 | 3,910 | 0,000 | -11,731 | -11,731 | 0,000 |
| Pythagorean | 0,000 | 0,000 | 0,000 | 9,775 | 5,865 | 3,910 | 3,910 | 3,910 | 3,910 | 0,000 | 9,775 | 7,820 | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 9,775 | 0,000 |
| Meantone | 0,000 | 0,000 | 0,000 | -17,108 | -10,264 | -6,843 | -6,843 | -6,843 | -6,843 | 0,000 | -17,108 | -13,686 | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | -17,108 | 0,000 |

Fifth Phrase

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 369,938 | 389,420 | 369,509 | 329,878 | 297,038 | 279,012 | 296,449 | 294,620 | 297,396 | 282,946 | 283,442 | 295,303 | | | | |
| Take 02 | | | | | | | | | | | | | | | | |
| Take 03 | 368,157 | 384,057 | 366,046 | 328,412 | 295,441 | 279,087 | 295,500 | 298,566 | 293,679 | 276,853 | 279,626 | 294,484 | | | | |
| Take 04 | 369,981 | 387,770 | 365,814 | 330,442 | 295,766 | 280,459 | 304,972 | 299,521 | 295,215 | 279,988 | 280,259 | 295,676 | | | | |
| Take 05 | | | | | | | | | | | | | | | | |
| Take 06 | 368,517 | 391,357 | 372,867 | 334,407 | 303,049 | 280,054 | 299,267 | 296,821 | 297,630 | 280,767 | 280,620 | 294,123 | | | | |
| Take 07 | 371,325 | 387,282 | 368,767 | 330,636 | 296,395 | 278,079 | 297,496 | 299,699 | 297,527 | 279,082 | 277,141 | 294,445 | | | | |
| Take 08 | 375,597 | 388,461 | 370,308 | 331,361 | 294,096 | 276,654 | 299,296 | 300,244 | 293,273 | 279,768 | 280,875 | 294,034 | | | | |
| Take 09 | 371,846 | 392,274 | 370,744 | 333,329 | 293,780 | 271,214 | 295,804 | 298,440 | 295,724 | 278,555 | 278,236 | 293,549 | | | | |
| Take 10 | 373,729 | 389,401 | 372,821 | 329,675 | 302,320 | 276,047 | 297,929 | 296,257 | 295,735 | 280,503 | 280,045 | 295,848 | | | | |
| Take 11 | 372,339 | 389,335 | 371,103 | 332,291 | 296,939 | 282,218 | 300,049 | 296,092 | 297,133 | 283,235 | 281,803 | 296,141 | | | | |
| Take 12 | 372,087 | 392,048 | 368,806 | 331,150 | 291,057 | 282,186 | 300,000 | 299,188 | 296,555 | 279,420 | 278,156 | 295,513 | | | | |
| Take 13 | 373,355 | 392,652 | 374,139 | 333,531 | 295,597 | 272,033 | 294,849 | 301,082 | 297,798 | 275,844 | 276,190 | 294,983 | | | | |
| Take 14 | 366,564 | 385,314 | 362,364 | 328,518 | 290,450 | 277,121 | 297,133 | 295,503 | 294,461 | 276,426 | 276,915 | 293,128 | | | | |
| Take 15 | 370,164 | 391,033 | 370,969 | 331,116 | 292,894 | 278,063 | 295,576 | 299,962 | 295,825 | 277,404 | 278,894 | 294,365 | | | | |
| Take 16 | 368,137 | 391,588 | 371,618 | 328,971 | 290,203 | 275,328 | 295,240 | 293,381 | 295,288 | 279,488 | 276,362 | 291,217 | | | | |
| Take 17 | 370,643 | 391,139 | 373,165 | 330,215 | 289,822 | 278,233 | 297,391 | 295,860 | 293,875 | 277,007 | 275,094 | 293,682 | | | | |
| Take 18 | 371,699 | 391,083 | 372,518 | 330,159 | 292,621 | 275,851 | 296,030 | 289,920 | 293,706 | 276,859 | 277,208 | 291,435 | | | | |

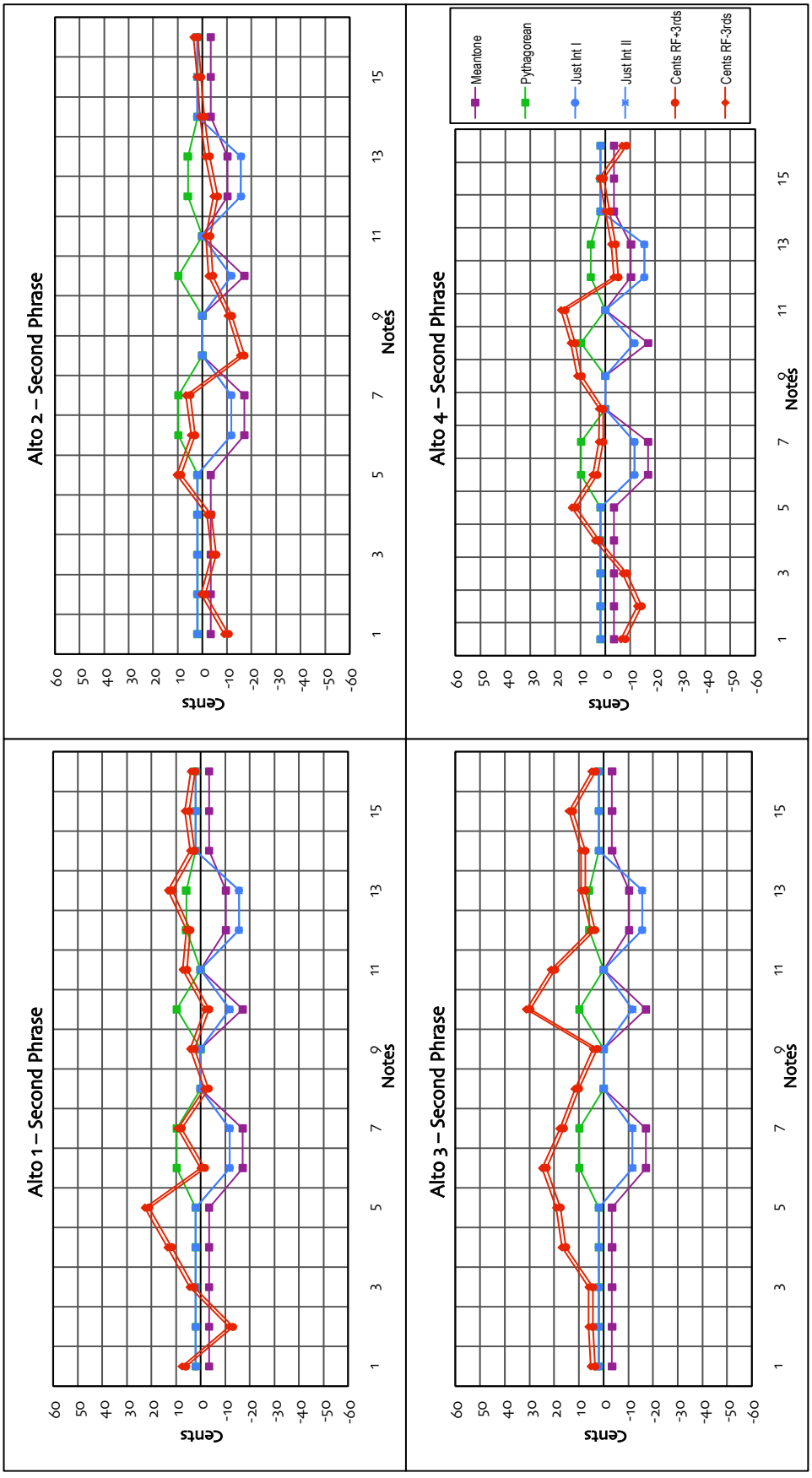
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 19 | 371,321 | 388,899 | 368,626 | 327,600 | 292,085 | 276,477 | 297,170 | 290,823 | 293,725 | 278,921 | 275,743 | 293,263 |
| Take 20 | 369,264 | 387,221 | 366,376 | 327,871 | 294,218 | 271,385 | 298,566 | 296,381 | 293,793 | 280,129 | 280,217 | 293,887 |
| Take 21 | 373,151 | 390,769 | 371,805 | 328,808 | 288,028 | 275,217 | 298,843 | 296,524 | 294,840 | 276,558 | 281,208 | 294,271 |
| **Alto 1 AVERAGE** | **370,937** | **389,532** | **369,914** | **330,440** | **294,305** | **277,090** | **297,766** | **296,783** | **295,430** | **278,934** | **278,844** | **294,176** |
| Cents RF+3rds | 0,320 | -15,002 | -4,464 | 0,177 | -0,315 | -4,664 | 19,926 | 14,201 | 6,291 | 6,820 | 6,258 | -1,075 |
| Cents RF-3rds | 0,805 | -14,517 | -3,979 | 0,662 | 0,169 | -4,179 | 20,411 | 14,686 | 6,776 | 7,305 | 6,743 | -0,590 |
| Just Int I | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| Just Int II | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| Pythagorean | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 |
| Meantone | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 |
| Take 01 | 372,658 | 395,927 | 371,309 | 331,827 | 288,643 | 269,500 | **304,293** | **304,197** | 296,107 | 278,927 | 280,967 | **295,068** |
| Take 02 | | | | | | | | | | | | |
| Take 03 | 369,038 | 389,527 | 368,739 | 331,319 | 294,262 | 275,342 | 296,053 | 296,588 | 294,866 | 276,413 | 278,832 | 295,172 |
| Take 04 | 367,782 | 391,476 | 370,568 | 331,086 | 293,822 | 278,599 | 300,155 | 294,058 | 294,813 | 278,190 | 282,505 | 293,386 |
| Take 05 | | | | | | | | | | | | |
| Take 06 | **370,973** | 388,903 | 369,869 | 329,414 | 293,292 | 274,766 | 296,482 | 297,710 | 293,553 | 275,923 | 280,181 | 293,084 |
| Take 07 | 370,781 | 390,373 | 368,723 | 329,843 | 294,000 | 279,958 | 297,125 | 295,307 | 295,041 | 276,253 | 278,332 | 292,264 |
| Take 08 | 371,762 | 393,085 | 371,431 | 331,759 | 290,777 | 279,176 | **298,591** | **295,681** | 295,837 | 275,136 | 279,287 | **293,099** |
| Take 09 | 375,094 | 393,493 | 369,980 | 328,829 | 291,316 | 278,768 | **290,301** | 294,795 | 292,304 | 274,630 | **276,014** | **293,290** |
| Take 10 | 372,511 | 393,191 | 369,207 | 331,642 | 293,534 | 281,867 | 295,620 | 296,888 | 294,705 | 276,129 | 278,456 | **295,324** |
| Take 11 | 375,329 | 396,861 | 370,616 | 331,070 | 295,290 | 284,705 | **294,604** | 297,357 | 297,111 | 275,097 | **278,533** | **297,225** |
| Take 12 | 367,966 | 385,872 | 364,277 | 328,209 | 287,884 | 276,815 | **291,089** | 294,429 | 297,154 | 275,503 | 280,667 | 293,295 |
| Take 13 | 372,660 | 393,709 | 368,626 | 329,615 | 294,258 | 278,475 | 294,087 | 296,401 | 295,923 | 272,853 | 276,598 | 293,265 |
| Take 14 | 370,328 | 389,510 | 369,486 | 327,797 | 288,619 | 273,481 | 290,886 | 293,637 | 293,277 | 272,702 | 276,900 | 291,189 |
| Take 15 | 369,859 | 390,566 | 369,576 | 329,569 | 285,920 | **278,423** | 294,491 | 290,991 | 293,200 | 275,028 | **277,032** | **292,152** |
| Take 16 | 369,361 | 389,954 | 365,614 | 330,283 | 293,055 | 275,296 | 298,983 | 293,920 | 293,182 | 272,669 | 277,207 | 291,209 |
| Take 17 | 373,281 | 393,694 | 366,717 | 330,256 | 289,529 | 278,975 | 289,558 | 295,857 | 295,406 | 273,349 | 277,358 | 295,344 |
| Take 18 | 367,196 | 390,194 | 365,980 | 329,210 | 291,459 | 281,323 | 295,157 | 292,029 | 293,640 | 275,356 | 275,052 | 292,373 |
| Take 19 | 370,589 | 389,671 | 367,527 | 329,004 | 291,347 | 276,984 | 298,526 | 293,410 | 292,363 | 275,410 | 274,292 | 291,970 |
| Take 20 | 374,642 | 390,375 | 369,085 | 327,628 | 287,775 | 280,162 | 295,973 | 292,164 | 293,051 | 276,237 | 278,161 | 290,903 |
| Take 21 | 370,020 | 389,307 | 368,011 | 329,427 | 292,762 | 279,114 | 298,223 | 294,651 | 291,849 | 275,964 | 279,014 | 291,734 |
| **Alto 2 AVERAGE** | **371,149** | **391,352** | **368,702** | **329,884** | **291,450** | **277,986** | **295,328** | **294,771** | **294,389** | **275,356** | **278,178** | **293,229** |
| Cents RF+3rds | 1,307 | -6,931 | -10,144 | -2,743 | -17,195 | 0,922 | 5,691 | 2,422 | 0,175 | -15,532 | 2,121 | -6,660 |
| Cents RF-3rds | 1,792 | -6,446 | -9,659 | -2,258 | -16,710 | 1,407 | 6,176 | 2,907 | 0,660 | -15,047 | 2,606 | -6,175 |
| Just Int I | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| Just Int II | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| Pythagorean | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 |
| Meantone | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 |
| Take 01 | 374,669 | 395,988 | 375,284 | 334,348 | 300,547 | 284,170 | 295,117 | 297,718 | 297,159 | 282,464 | 282,944 | **299,536** |
| Take 02 | | | | | | | | | | | | |
| Take 03 | 374,787 | 395,055 | 371,344 | 332,595 | 297,076 | 281,115 | 298,556 | 296,581 | 297,100 | 281,323 | 283,157 | 299,316 |
| Take 04 | 376,152 | 394,444 | 371,459 | 332,697 | 299,191 | 281,359 | 297,857 | 296,764 | 298,612 | 283,150 | 281,077 | **298,236** |
| Take 05 | | | | | | | | | | | | |
| Take 06 | **374,852** | 391,993 | 371,292 | 332,057 | 295,916 | 280,691 | **295,313** | 295,375 | 295,437 | 279,898 | 283,945 | 295,011 |
| Take 07 | 373,577 | 393,706 | 371,820 | 331,762 | 294,000 | 281,767 | 297,413 | 296,196 | 294,506 | 280,569 | 280,828 | 295,807 |
| Take 08 | 377,997 | 396,847 | 372,580 | 332,423 | 293,775 | 282,125 | 299,267 | 296,207 | 295,935 | 283,771 | 282,122 | 295,275 |
| Take 09 | 375,380 | 391,740 | 372,246 | 331,382 | 292,996 | 276,980 | 294,041 | 295,458 | 295,306 | 281,228 | 279,613 | 295,990 |
| Take 10 | 373,808 | 389,893 | 370,374 | 332,620 | 298,921 | 282,038 | 290,483 | 297,698 | 295,304 | 280,976 | **281,600** | **295,859** |
| Take 11 | 374,788 | 397,665 | 372,512 | 335,284 | 301,343 | 284,181 | 297,683 | 298,481 | 296,871 | 283,192 | 284,506 | 298,464 |
| Take 12 | 379,458 | 395,951 | 374,867 | 334,042 | 295,211 | 282,396 | 297,497 | 297,368 | 296,732 | 281,775 | 282,272 | 296,554 |
| Take 13 | 375,038 | 395,000 | 374,536 | 335,042 | 298,405 | 282,205 | 299,588 | 295,973 | 297,470 | 279,513 | 281,715 | 296,304 |
| Take 14 | 373,632 | 387,707 | 369,207 | 329,512 | 292,244 | 276,446 | 292,274 | 295,720 | 293,404 | 279,833 | 280,905 | 293,859 |
| Take 15 | 376,301 | 391,933 | 370,963 | 330,179 | 293,558 | 277,892 | 295,150 | 296,573 | 292,733 | 277,326 | 281,407 | 295,976 |
| Take 16 | 374,109 | 393,642 | 370,932 | 330,986 | 298,331 | 280,088 | 294,991 | 297,392 | 295,008 | 278,373 | 281,485 | 294,772 |
| Take 17 | 374,928 | 390,648 | 371,291 | 332,317 | 296,366 | 281,889 | 296,375 | 295,402 | 294,907 | 280,244 | 280,381 | 293,547 |
| Take 18 | 375,946 | 391,793 | 369,131 | 330,750 | 295,230 | 279,758 | 289,930 | 293,585 | 293,874 | 278,047 | 280,280 | 295,796 |
| Take 19 | 373,082 | 389,965 | 369,990 | 332,385 | 297,664 | 278,997 | 296,284 | 292,633 | 294,640 | 278,514 | 280,854 | 294,120 |
| Take 20 | 379,968 | 399,805 | 380,225 | 332,968 | 297,137 | 283,479 | 294,699 | 295,283 | 295,248 | 278,911 | 280,738 | 293,701 |
| Take 21 | 378,052 | 395,249 | 371,595 | 332,004 | 295,538 | 283,850 | 297,207 | 298,258 | 297,203 | 279,698 | 279,809 | 294,776 |
| **Alto 3 AVERAGE** | **375,606** | **393,633** | **372,192** | **332,387** | **296,497** | **281,128** | **295,775** | **296,246** | **295,655** | **280,464** | **281,560** | **295,942** |
| Cents RF+3rds | 21,975 | 3,130 | 6,166 | 10,346 | 12,532 | 20,380 | 8,308 | 11,061 | 7,608 | 16,285 | 23,039 | 9,287 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cents RF-3rds | 22,460 | 3,615 | 6,650 | 10,831 | 13,016 | 20,865 | 8,793 | 11,546 | 8,093 | 16,770 | 23,524 | 9,772 |
| Just Int I | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| Just Int II | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| Pythagorean | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 |
| Meantone | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 |
| Take 01 | 372,101 | 392,512 | 373,068 | 330,228 | 294,728 | 281,340 | 296,763 | 293,846 | 294,921 | **278,928** | 279,638 | 292,368 |
| Take 02 | | | | | | | | | | | | |
| Take 03 | 371,396 | 390,901 | 372,824 | 329,153 | 291,744 | 278,886 | 295,537 | 293,384 | 294,086 | 278,461 | 277,315 | 291,870 |
| Take 04 | 373,901 | 391,913 | 375,002 | 330,226 | 295,621 | 281,394 | 295,712 | 294,410 | 293,927 | 279,214 | 279,958 | 293,801 |
| Take 05 | | | | | | | | | | | | |
| Take 06 | 370,783 | 393,007 | 371,173 | 330,421 | 291,020 | 274,236 | 291,579 | 295,532 | 294,773 | 276,343 | 276,609 | 292,224 |
| Take 07 | 371,729 | 395,273 | 372,462 | 330,367 | 290,927 | 276,449 | 292,809 | 292,463 | 293,969 | 275,292 | 278,005 | 292,129 |
| Take 08 | 377,218 | 393,714 | 371,182 | 330,129 | 291,000 | 276,903 | 295,223 | 296,185 | 293,064 | 277,346 | 276,595 | 294,401 |
| Take 09 | 373,445 | 395,424 | 371,801 | 330,002 | 293,218 | 279,183 | 294,890 | 293,828 | 293,374 | 275,155 | 275,685 | 292,585 |
| Take 10 | 374,212 | 392,658 | 372,231 | 328,586 | 294,226 | 279,576 | 297,344 | 293,710 | 294,134 | 275,778 | 279,332 | **293,986** |
| Take 11 | 376,376 | 393,059 | 373,331 | 329,496 | 294,231 | 278,974 | 293,906 | 293,771 | 292,738 | 277,177 | 278,578 | 292,541 |
| Take 12 | 371,632 | 393,339 | 373,963 | 329,891 | 292,290 | 273,510 | 294,572 | 294,527 | 294,205 | 277,853 | 276,792 | 291,840 |
| Take 13 | 376,836 | 391,418 | 371,844 | 330,492 | 293,623 | 278,175 | 294,017 | 294,080 | 292,513 | 275,245 | 276,861 | 292,133 |
| Take 14 | 368,825 | 389,841 | 367,518 | 329,290 | 290,356 | 276,961 | 293,087 | 293,358 | 292,824 | 277,880 | 274,462 | 290,961 |
| Take 15 | 372,621 | 390,744 | 370,301 | 328,420 | 296,151 | 276,737 | 291,462 | 294,761 | 291,975 | 274,065 | 276,028 | 292,368 |
| Take 16 | 370,326 | 392,162 | 371,007 | 328,736 | 291,738 | 273,913 | 293,855 | 291,341 | 291,840 | 276,048 | 275,793 | 291,493 |
| Take 17 | 373,411 | 388,931 | 372,048 | 328,793 | 291,976 | 275,305 | 291,021 | 291,570 | 292,843 | 274,284 | 274,712 | 290,862 |
| Take 18 | 372,291 | 390,542 | 366,754 | 326,190 | 290,648 | 276,018 | 294,376 | 291,300 | 291,309 | 274,164 | 274,021 | 291,675 |
| Take 19 | 371,887 | 391,204 | 371,711 | 330,061 | 293,034 | 276,489 | 293,817 | 292,436 | 292,108 | 273,465 | 276,977 | 291,811 |
| Take 20 | 373,185 | 389,589 | 369,671 | 329,003 | 291,462 | 277,002 | 290,350 | 295,130 | 293,765 | 275,384 | 274,453 | 291,586 |
| Take 21 | 374,778 | 390,631 | 373,056 | 328,692 | 290,962 | 274,707 | 289,757 | 290,483 | 291,492 | 274,928 | 274,122 | 290,148 |
| Alto 4 AVERAGE | **372,998** | **391,940** | **371,629** | **329,378** | **292,577** | **277,145** | **293,688** | **293,480** | **293,151** | **276,158** | **276,628** | **292,146** |
| Cents RF+3rds | 9,908 | -4,331 | 3,544 | -5,400 | -10,514 | -4,321 | -3,948 | -5,178 | -7,120 | -10,495 | -7,553 | -13,062 |
| Cents RF-3rds | 10,393 | -3,846 | 4,028 | -4,915 | -10,029 | -3,836 | -3,464 | -4,693 | -6,635 | -10,011 | -7,068 | -12,577 |
| Just Int I | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| Just Int II | -13,686 | -1,955 | 7,820 | 3,910 | 0,000 | -11,731 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 |
| Pythagorean | 7,820 | -1,955 | 7,820 | 3,910 | 0,000 | 9,775 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 |
| Meantone | -13,686 | 3,422 | -13,686 | -6,843 | 0,000 | -17,108 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 |

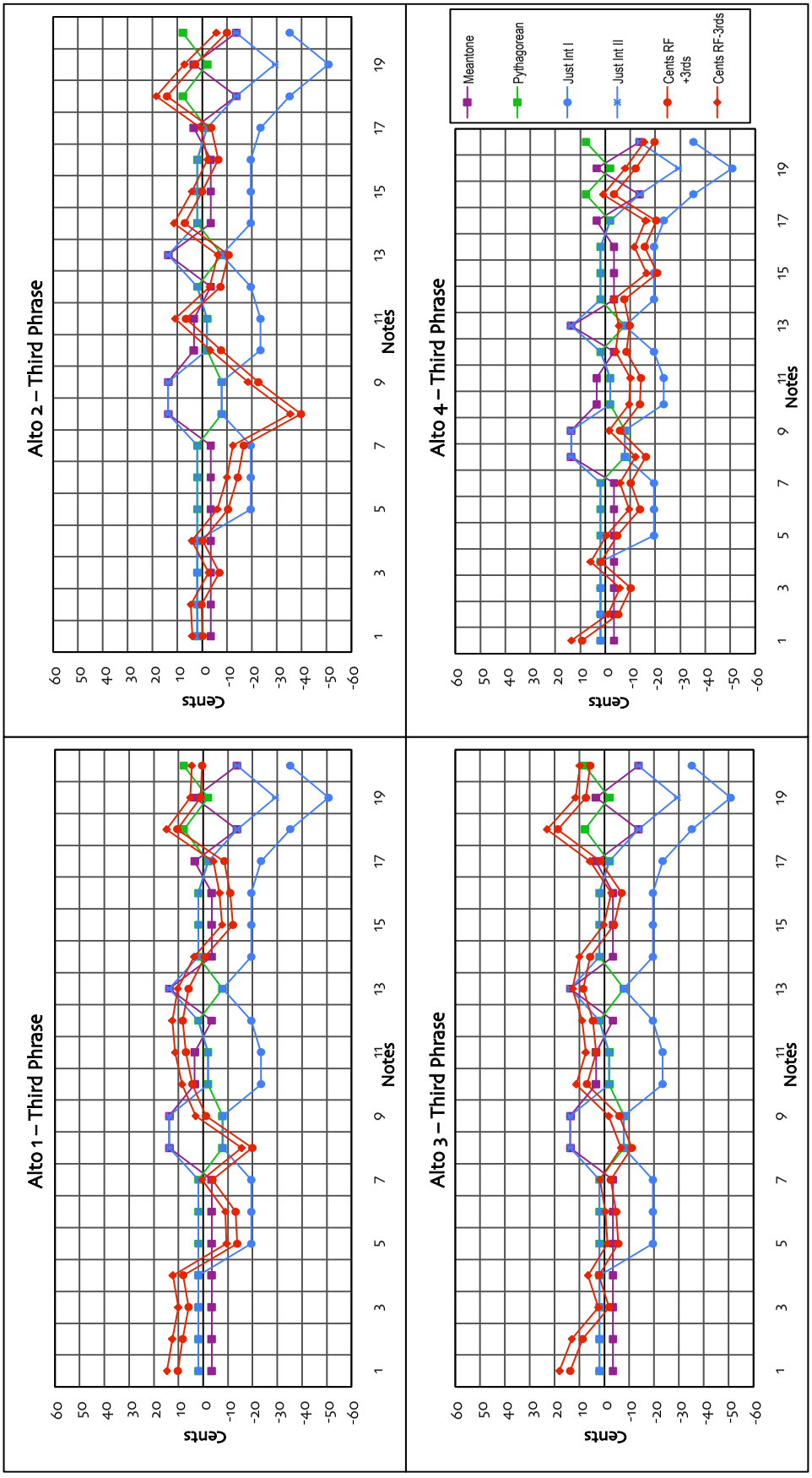



**11.5A - THE BBC SINGERS ALTOS' CHARTS – PHRASE 1**

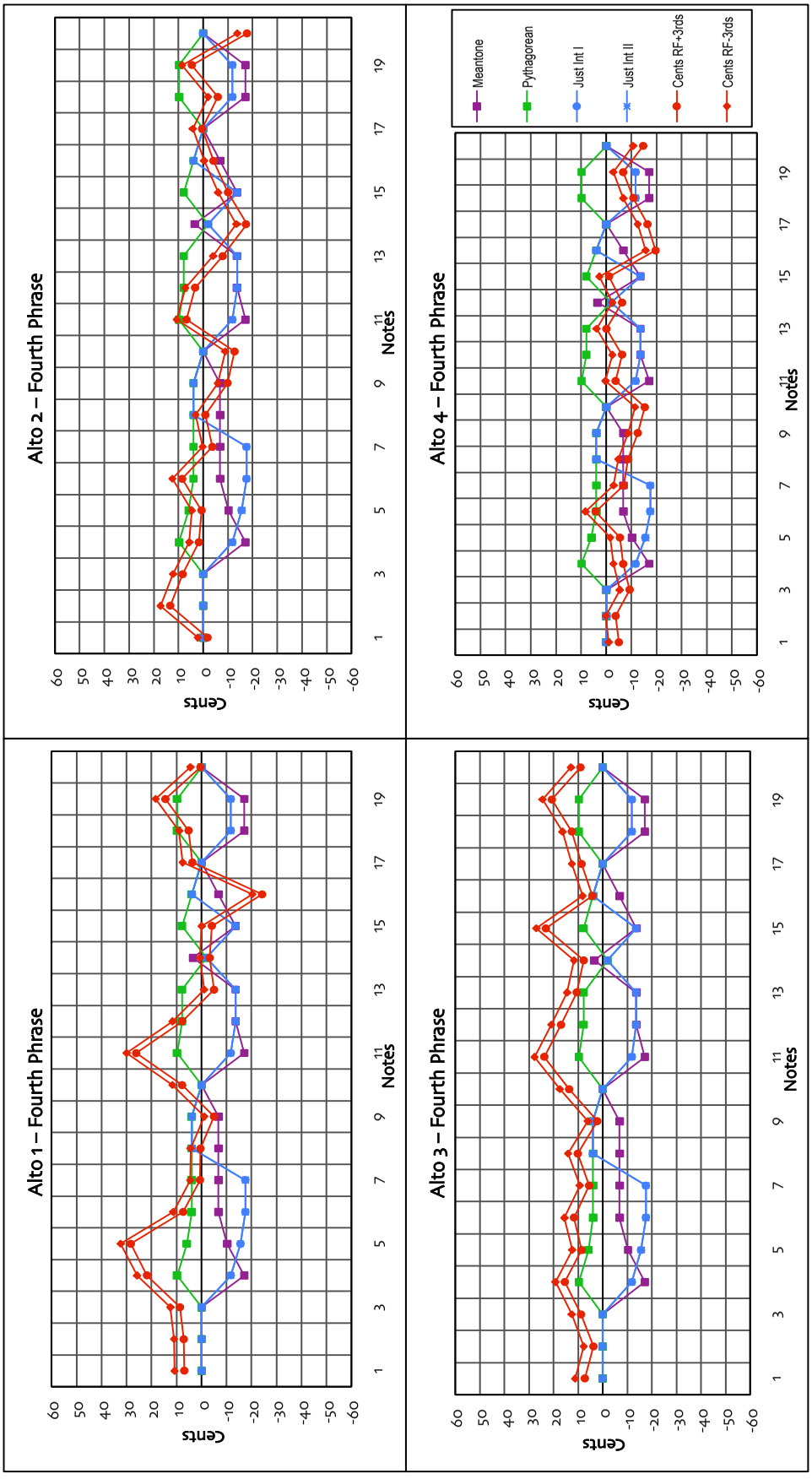
**11.5A - THE BBC SINGERS ALTOS' CHARTS – PHRASE 1**




**11.5B - THE BBC SINGERS ALTOS' CHARTS – PHRASE 2**

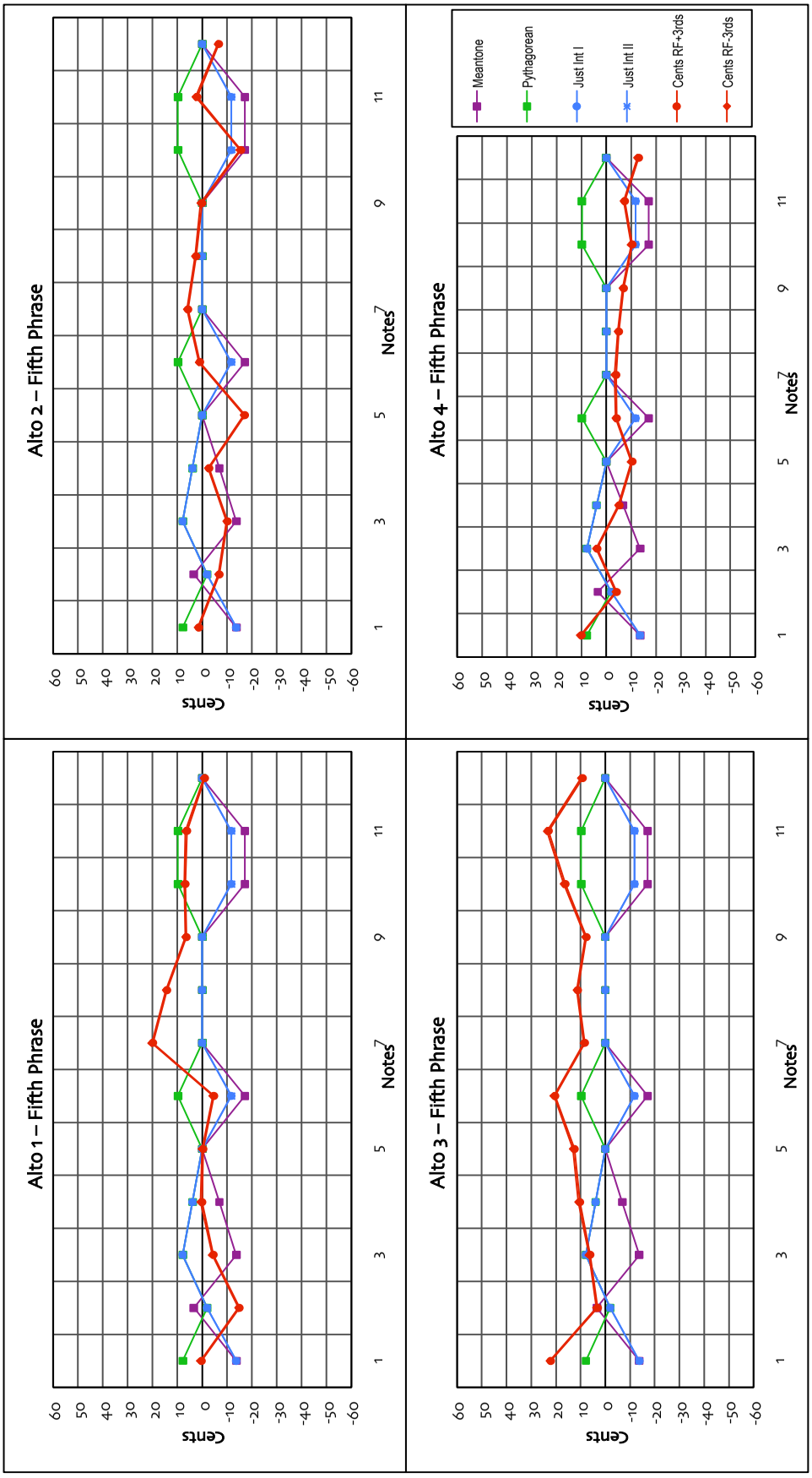



**11.5C - THE BBC SINGERS ALTOS' CHARTS – PHRASE 3**




**11.5D - THE BBC SINGERS ALTOS' CHARTS – PHRASE 4**

**11.5D - THE BBC SINGERS ALTOS' CHARTS – PHRASE 4**




**11.5E - THE BBC SINGERS ALTOS' CHARTS – PHRASE 5**

## AVC _ BBC Singers Sections _ Voice

| Reference Frequencies with Thirds | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
| 147,030 | D | 110,057 | A | 110,428 | A | 146,875 | D | 147,179 | D |

| Frequency Measurements | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
| 146,658 | D | 109,949 | A | 110,156 | A | 146,543 | D | 147,138 | D |

| Reference Frequencies without Thirds | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
| 146,658 | D | 109,949 | A | 110,156 | A | 146,543 | D | 147,138 | D |

First Phrase

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 220,903 | 221,400 | 247,049 | 246,542 | 222,189 | 222,004 | 221,921 | 220,073 | 223,111 | 223,875 | 222,431 | 222,777 | 222,607 | 221,634 | 221,383 | 220,903 | 221,704 |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 219,139 | 218,669 | 244,873 | 244,987 | 220,372 | 219,870 | 220,402 | 220,340 | 222,230 | 220,310 | 222,086 | 222,429 | 221,064 | 221,118 | 219,661 | 220,796 | 220,490 |
| Take 04 | 220,327 | 221,791 | **243,913** | 246,197 | 222,676 | 222,440 | 222,476 | 222,943 | 223,311 | 222,195 | 222,553 | 223,002 | 223,166 | 221,918 | 222,047 | 222,577 | 221,802 |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 222,920 | 219,566 | 245,167 | 245,489 | 221,268 | 221,584 | 221,140 | 219,540 | 220,690 | 220,862 | 221,989 | 222,166 | 221,796 | 220,582 | 220,642 | 219,929 | 220,325 |
| Take 07 | 222,007 | 224,967 | 246,362 | 245,530 | 221,310 | 220,964 | 220,819 | 220,118 | 221,527 | 221,028 | 222,823 | 221,964 | 222,619 | 220,649 | 220,786 | 222,236 | 219,806 |
| Take 08 | 223,237 | 225,131 | 248,276 | 246,348 | 223,543 | 223,060 | 222,248 | 221,267 | 222,123 | 223,358 | 221,820 | 222,101 | 223,547 | 220,063 | 222,635 | 222,592 | 220,613 |
| Take 09 | 221,274 | 218,817 | 245,076 | 244,329 | 221,745 | 222,016 | 219,897 | 222,271 | 221,611 | 222,303 | 222,877 | 222,250 | 222,280 | 220,510 | 220,920 | 219,243 | 221,470 |
| Take 10 | 220,227 | 219,806 | 247,223 | 244,096 | 220,516 | 221,309 | 220,810 | 220,621 | 221,431 | 218,891 | 221,998 | 220,747 | 219,127 | 220,679 | 220,190 | 220,769 | 221,193 |
| Take 11 | 225,756 | 222,826 | 248,833 | 248,424 | 224,352 | 225,422 | 222,031 | 222,232 | 224,258 | 223,412 | 224,186 | 223,153 | 221,670 | 220,916 | 222,971 | 223,351 | 222,352 |
| Take 12 | 220,382 | 221,327 | 245,986 | 246,504 | 221,937 | 219,684 | 219,846 | 220,701 | 221,962 | 222,347 | 221,539 | 220,616 | 221,102 | 220,821 | 221,793 | 221,257 | 221,341 |
| Take 13 | 223,985 | 226,406 | 249,404 | 246,125 | 223,254 | 222,743 | 221,887 | 221,526 | 222,741 | 222,765 | 222,737 | 222,999 | 222,828 | 221,867 | 221,197 | 221,142 | 221,316 |
| Take 14 | 220,225 | 218,532 | 245,108 | 244,126 | 218,267 | 221,812 | 220,788 | 220,541 | 220,602 | 219,739 | 220,138 | 218,985 | 220,467 | 219,567 | 218,395 | 220,286 | 220,623 |
| Take 15 | 221,900 | 220,536 | 247,728 | 246,928 | 222,260 | 220,914 | 219,735 | 219,661 | 220,407 | 218,317 | 222,800 | 222,066 | 222,507 | 218,419 | 219,271 | 219,379 | 221,381 |
| Take 16 | 220,561 | 220,120 | 245,805 | 245,956 | 222,290 | 221,027 | 221,489 | 219,670 | 221,387 | 219,487 | 222,161 | 219,937 | 220,548 | 218,027 | 220,172 | 220,695 | 220,100 |
| Take 17 | 221,091 | 220,862 | 245,724 | 245,633 | 220,141 | 219,438 | 220,459 | 220,010 | 220,219 | 219,377 | 220,566 | 218,854 | 218,803 | 220,419 | 220,214 | 219,968 | 219,001 |
| Take 18 | 220,426 | 220,080 | 242,206 | 243,119 | 219,551 | 222,092 | 219,197 | 219,166 | 218,003 | 218,664 | 219,455 | 218,624 | 219,444 | 218,001 | 218,578 | 218,446 | 220,708 |
| Take 19 | 219,398 | 220,393 | 247,713 | 247,453 | 221,803 | 220,259 | 220,178 | 220,925 | 221,273 | 221,042 | 223,514 | 221,294 | 219,179 | 219,598 | 220,334 | 218,930 | 219,628 |
| Take 20 | 223,125 | 220,784 | 246,175 | 244,559 | 221,340 | 220,247 | 221,966 | 221,723 | 222,080 | 224,451 | 223,180 | 223,230 | 220,086 | 221,166 | 222,605 | 222,037 | 221,627 |
| Take 21 | 218,656 | 219,329 | 245,771 | 244,145 | 221,525 | 221,530 | 221,209 | 221,271 | 220,924 | 220,784 | 222,809 | 221,566 | 219,202 | 218,517 | 221,119 | 221,627 | 219,480 |
| Ten 1 AVERAGE | **221,344** | **221,123** | **246,231** | **245,605** | **221,597** | **221,495** | **220,973** | **220,768** | **221,573** | **221,221** | **222,193** | **221,514** | **221,160** | **220,235** | **220,785** | **220,851** | **220,787** |
| Cents RF+3rds | 8,223 | 6,494 | -7,311 | -11,721 | 10,197 | 9,405 | 5,321 | 3,712 | 10,013 | 7,262 | 14,848 | 9,548 | 6,782 | -0,472 | 3,842 | 4,358 | 3,863 |
| Cents RF-3rds | 12,599 | 10,870 | -2,935 | -7,345 | 14,573 | 13,781 | 9,697 | 8,088 | 14,389 | 11,638 | 19,224 | 13,924 | 11,159 | 3,904 | 8,218 | 8,734 | 8,239 |
| Just Int I | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 |
| Just Int II | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 |
| Pythagorean | 1,955 | 1,955 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 |
| Meantone | -3,421 | -3,421 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 |
| Take 01 | 219,179 | 220,310 | 244,757 | 246,477 | 218,689 | 218,910 | 219,777 | 221,908 | 220,138 | 220,190 | 220,060 | 222,134 | 219,464 | 219,665 | 221,531 | 220,500 | 219,781 |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 216,779 | 221,022 | 246,312 | 245,611 | 219,884 | 220,380 | 219,515 | 220,184 | 219,932 | 222,996 | 218,027 | 218,979 | 222,104 | 218,820 | 221,342 | 222,809 | 219,884 |
| Take 04 | 219,007 | 220,633 | **246,937** | 246,794 | 220,715 | 223,581 | 220,201 | 222,997 | **220,354** | 221,665 | 220,486 | 219,441 | 221,784 | 216,738 | 222,995 | 224,073 | 220,848 |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 220,338 | 221,213 | 246,444 | 246,162 | 222,177 | 223,702 | 220,251 | 220,180 | 219,710 | 222,179 | 220,155 | 220,267 | 219,870 | 221,074 | 220,598 | 219,841 | 218,775 |
| Take 07 | 223,063 | 221,722 | 245,603 | 246,243 | 222,264 | 220,174 | 222,600 | 221,619 | 220,147 | 220,743 | 222,446 | 221,506 | 222,220 | 218,681 | 221,293 | 221,822 | 220,810 |
| Take 08 | 222,712 | 221,337 | 247,276 | 247,056 | 220,355 | 221,531 | 220,701 | 221,014 | 220,062 | 220,407 | 223,462 | 220,332 | 218,977 | 218,033 | 221,458 | 221,377 | 220,056 |
| Take 09 | 220,967 | 220,530 | 248,657 | 248,800 | 222,260 | 219,972 | 220,794 | 221,112 | 221,726 | 221,563 | 223,350 | 221,881 | 223,809 | 221,719 | 223,627 | 223,227 | 221,234 |
| Take 10 | 218,783 | 218,460 | 246,784 | 246,361 | 218,835 | 220,154 | 219,981 | 220,980 | 220,118 | 219,574 | 218,806 | 220,177 | 220,316 | 219,690 | 220,305 | 222,468 | 221,188 |
| Take 11 | 221,030 | 221,690 | 248,919 | 247,844 | 220,356 | 222,653 | 220,657 | 221,629 | 222,667 | 223,072 | 221,275 | 219,563 | 222,457 | 222,318 | 223,383 | 224,267 | 221,849 |
| Take 12 | 219,230 | 222,199 | 248,264 | 246,027 | 219,918 | 220,759 | 218,405 | 219,100 | 221,949 | 219,384 | 221,966 | 221,462 | 222,571 | 217,833 | 220,996 | 221,677 | 220,775 |
| Take 13 | 221,042 | 221,753 | 246,701 | 246,233 | 219,233 | 220,474 | 219,726 | 221,428 | 219,717 | 220,928 | 219,070 | 222,266 | 224,161 | 221,088 | 222,846 | 222,545 | 220,283 |
| Take 14 | 221,897 | 220,044 | 244,201 | 246,192 | 220,663 | 219,196 | 220,976 | 221,650 | 219,107 | 220,056 | 220,039 | 221,337 | 220,236 | 218,141 | 219,492 | 219,422 | 220,050 |
| Take 15 | 218,213 | 219,744 | 245,608 | 246,972 | 220,089 | 221,254 | 220,527 | 221,180 | 218,861 | 222,577 | 220,684 | 221,568 | 223,846 | 220,105 | 221,811 | 221,490 | 218,879 |
| Take 16 | 219,527 | 220,169 | 247,618 | 245,609 | 218,321 | 220,644 | 217,555 | 219,734 | 217,717 | 220,247 | 218,774 | 218,807 | 219,463 | 220,813 | 220,876 | 219,860 | 219,131 |
| Take 17 | 218,782 | 218,276 | 243,657 | 244,267 | 218,597 | 219,508 | 218,633 | 219,810 | 218,508 | 217,506 | 219,942 | 219,755 | 218,410 | 221,337 | 220,029 | 221,963 | 219,511 |
| Take 18 | 217,438 | 220,561 | 243,702 | 245,058 | 221,218 | 220,091 | 219,683 | 216,903 | 221,625 | 220,751 | 220,418 | 217,621 | 220,033 | 218,396 | 219,418 | 217,206 | 219,084 |
| Take 19 | 217,682 | 219,403 | 248,369 | 246,483 | 220,564 | 219,494 | 219,463 | 219,298 | 218,702 | 220,833 | 219,889 | 222,142 | 218,427 | 219,413 | 220,381 | 219,955 | 219,147 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 20 | 216,866 | 219,366 | 243,776 | 244,699 | 218,735 | 217,638 | 216,234 | 220,921 | 215,524 | 219,854 | 218,590 | 219,036 | 217,522 | 216,797 | 220,891 | 224,059 | 219,086 |
| Take 21 | 220,118 | 222,197 | 245,800 | 245,277 | 219,728 | 220,608 | 221,279 | 220,690 | 220,871 | 222,011 | 219,441 | 220,103 | 221,852 | 219,821 | 221,580 | 223,302 | 219,989 |
| **Ten 2 AVERAGE** | **219,613** | **220,559** | **246,283** | **246,219** | **220,137** | **220,564** | **219,840** | **220,649** | **219,865** | **220,870** | **220,362** | **220,441** | **220,922** | **219,499** | **221,308** | **221,677** | **220,019** |
| Cents RF+3rds | -5,368 | 2,073 | -6,944 | -7,395 | -1,246 | 2,113 | -3,583 | 2,780 | -3,386 | 4,512 | 0,524 | 1,142 | 4,919 | -6,269 | 7,940 | 10,823 | -2,174 |
| Cents RF-3rds | -0,992 | 6,449 | -2,568 | -3,019 | 3,130 | 6,489 | 0,793 | 7,156 | 0,990 | 8,888 | 4,900 | 5,519 | 9,295 | -1,893 | 12,316 | 15,199 | 2,202 |
| Just Int I | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 |
| Just Int II | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 |
| Pythagorean | 1,955 | 1,955 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 |
| Meantone | -3,421 | -3,421 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 |
| Take 01 | 216,264 | 215,797 | 242,558 | 242,094 | 217,342 | 216,634 | 218,026 | 217,868 | 216,904 | 217,760 | 217,659 | 220,486 | 219,177 | 219,826 | 220,853 | 218,686 | 217,391 |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 216,674 | 213,667 | 243,609 | 240,792 | 217,465 | 217,104 | 217,501 | 217,185 | 217,851 | 217,964 | 217,436 | 220,146 | 219,391 | 218,370 | 218,482 | 219,722 | 217,421 |
| Take 04 | 217,106 | 218,189 | 245,782 | 244,313 | 217,932 | 220,653 | 219,542 | 219,785 | 218,903 | 220,807 | 219,906 | 220,859 | 219,311 | 220,384 | 220,324 | 218,624 | 217,862 |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 216,076 | 214,956 | 243,451 | 243,736 | 217,205 | 219,136 | 217,658 | 220,133 | 218,256 | 219,328 | 218,524 | 219,125 | 220,178 | 216,224 | 220,691 | 219,906 | 219,264 |
| Take 07 | 222,394 | 220,670 | 247,299 | 244,410 | 217,625 | 220,072 | 221,851 | 225,138 | 220,154 | 219,426 | 220,247 | 220,005 | 220,182 | 220,071 | 220,182 | 219,183 | 220,633 |
| Take 08 | 216,281 | 215,092 | 244,733 | 246,038 | 216,699 | 215,356 | 217,082 | 221,850 | 218,821 | 220,855 | 219,219 | 217,743 | 221,573 | 217,870 | 221,056 | 222,039 | 219,601 |
| Take 09 | 217,972 | 219,760 | 246,801 | 247,970 | 219,964 | 219,867 | 219,989 | 225,095 | 220,739 | 223,383 | 223,364 | 222,349 | 225,122 | 220,157 | 220,482 | 218,298 | 219,813 |
| Take 10 | 212,590 | 215,874 | 245,084 | 244,870 | 217,195 | 217,426 | 217,812 | 221,814 | 216,471 | 216,536 | 216,796 | 217,060 | 220,266 | 217,934 | 219,721 | 220,292 | 217,396 |
| Take 11 | 219,106 | 216,255 | 247,105 | 245,402 | 217,636 | 219,307 | 219,548 | 221,755 | 220,029 | 217,655 | 218,924 | 222,233 | 218,985 | 220,769 | 221,913 | 221,047 | 220,929 |
| Take 12 | 217,498 | 214,640 | 244,973 | 244,455 | 213,984 | 217,177 | 219,003 | 217,646 | 218,126 | 219,224 | 218,947 | 219,231 | 219,064 | 220,045 | 221,339 | 221,371 | 218,923 |
| Take 13 | 218,296 | 218,099 | 245,728 | 245,225 | 216,937 | 219,379 | 218,449 | 222,277 | 220,115 | 223,004 | 219,219 | 217,567 | 221,201 | 218,642 | 220,121 | 222,108 | 220,373 |
| Take 14 | 216,553 | 223,534 | 242,279 | 241,725 | 218,693 | 219,049 | 217,545 | 219,657 | 218,810 | 217,407 | 219,164 | 220,156 | 219,526 | 218,013 | 219,872 | 219,195 | 218,703 |
| Take 15 | 217,473 | 214,526 | 243,555 | 241,885 | 217,198 | 218,490 | 218,048 | 218,594 | 219,182 | 219,585 | 217,080 | 219,455 | 220,016 | 219,574 | 218,871 | 217,444 | 216,468 |
| Take 16 | 215,100 | 214,802 | 243,692 | 244,119 | 216,799 | 217,440 | 216,923 | 221,192 | 218,363 | 217,380 | 219,311 | 217,881 | 220,524 | 218,546 | 219,682 | 219,848 | 219,069 |
| Take 17 | 212,322 | 212,665 | 244,981 | 243,307 | 216,131 | 218,218 | 217,033 | 220,813 | 217,296 | 217,241 | 218,872 | 218,465 | 222,123 | 214,796 | 219,898 | 218,806 | 217,926 |
| Take 18 | 216,311 | 213,603 | 244,116 | 242,756 | 215,387 | 215,890 | 217,832 | 221,399 | 218,326 | 218,648 | 217,623 | 218,776 | 216,204 | 218,353 | 218,993 | 218,960 | 218,298 |
| Take 19 | 218,414 | 214,817 | 244,836 | 243,393 | 215,925 | 216,247 | 217,280 | 217,178 | 217,773 | 217,025 | 216,536 | 216,265 | 218,013 | 216,714 | 219,523 | 218,194 | 216,177 |
| Take 20 | 209,654 | 212,891 | 240,635 | 241,884 | 213,779 | 213,354 | 216,807 | 219,300 | 217,224 | 216,671 | 215,906 | 213,798 | 220,038 | 215,448 | 220,167 | 217,621 | 216,769 |
| Take 21 | 217,932 | 214,888 | 245,891 | 243,638 | 216,362 | 218,124 | 217,363 | 218,714 | 217,910 | 218,946 | 216,855 | 217,783 | 220,437 | 216,140 | 218,879 | 218,343 | 217,866 |
| **Ten 3 AVERAGE** | **216,527** | **216,038** | **244,585** | **243,790** | **216,856** | **217,838** | **218,173** | **220,389** | **218,487** | **218,887** | **218,505** | **218,915** | **220,070** | **218,309** | **220,055** | **219,457** | **218,467** |
| Cents RF+3rds | -29,871 | -33,783 | -18,926 | -24,560 | -27,246 | -19,420 | -16,757 | 0,737 | -14,271 | -11,107 | -14,129 | -10,882 | -1,773 | -15,680 | -1,889 | -6,599 | -14,425 |
| Cents RF-3rds | -25,495 | -29,407 | -14,550 | -20,183 | -22,870 | -15,043 | -12,381 | 5,113 | -9,895 | -6,731 | -9,753 | -6,506 | 2,603 | -11,303 | 2,487 | -2,223 | -10,049 |
| Just Int I | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 |
| Just Int II | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 |
| Pythagorean | 1,955 | 1,955 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 |
| Meantone | -3,421 | -3,421 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 |
| Take 01 | 216,880 | 218,863 | 244,729 | 244,891 | 217,620 | 221,418 | 221,187 | 221,823 | 219,891 | 218,994 | 219,078 | 219,031 | 221,520 | 221,531 | 222,469 | 221,142 | 219,472 |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 221,417 | 219,033 | 245,167 | 245,988 | 219,749 | 218,920 | 220,296 | 220,046 | 220,438 | 218,975 | 219,026 | 220,708 | 220,376 | 220,037 | 221,932 | 222,311 | 220,204 |
| Take 04 | 219,239 | 221,429 | 248,965 | 249,315 | 220,111 | 220,477 | 221,822 | 222,887 | 220,489 | 219,377 | 221,212 | 222,822 | 223,426 | 220,864 | 222,451 | 218,656 | 220,469 |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 221,017 | 222,231 | 245,106 | 244,403 | 219,068 | 221,947 | 219,610 | 222,340 | 220,468 | 222,452 | 218,043 | 219,561 | 219,443 | 217,396 | 219,672 | 219,506 | 220,799 |
| Take 07 | 221,747 | 219,885 | 247,212 | 246,653 | 220,561 | 219,282 | 219,813 | 222,303 | 221,337 | 221,846 | 219,458 | 220,073 | 222,874 | 219,624 | 223,229 | 222,505 | 221,702 |
| Take 08 | 219,939 | 221,247 | 244,388 | 245,858 | 219,038 | 220,506 | 221,089 | 223,807 | 220,630 | 220,141 | 218,729 | 219,246 | 223,291 | 220,106 | 222,916 | 222,961 | 220,489 |
| Take 09 | 221,302 | 219,457 | 248,887 | 250,542 | 220,585 | 223,060 | 222,086 | 224,864 | 222,839 | 221,909 | 221,483 | 220,848 | 223,153 | 221,571 | 223,094 | 223,372 | 221,535 |
| Take 10 | 220,477 | 217,172 | 242,963 | 242,836 | 216,318 | 218,985 | 219,781 | 223,161 | 217,128 | 218,317 | 221,316 | 218,109 | 219,671 | 218,108 | 219,423 | 219,895 | 220,288 |
| Take 11 | 221,003 | 221,403 | 248,722 | 247,595 | 221,027 | 221,257 | 220,719 | 222,763 | 220,661 | 223,388 | 220,528 | 221,955 | 223,374 | 222,336 | 223,543 | 222,727 | 221,011 |
| Take 12 | 224,976 | 220,107 | 244,706 | 247,489 | 222,134 | 221,778 | 221,038 | 221,723 | 221,107 | 220,533 | 219,771 | 220,966 | 220,220 | 219,369 | 222,316 | 221,811 | 220,263 |
| Take 13 | 221,379 | 222,799 | 245,502 | 249,682 | 222,223 | 221,682 | 222,169 | 225,224 | 220,458 | 220,022 | 219,656 | 218,807 | 223,417 | 218,787 | 221,841 | 221,387 | 221,413 |
| Take 14 | 221,038 | 224,688 | 245,571 | 245,504 | 219,489 | 220,925 | 220,468 | 221,396 | 220,385 | 219,449 | 220,213 | 220,804 | 219,600 | 220,784 | 221,799 | 221,647 | 220,608 |
| Take 15 | 219,903 | 219,255 | 243,800 | 244,096 | 218,502 | 217,663 | 218,792 | 221,782 | 219,499 | 219,137 | 218,891 | 219,982 | 222,783 | 218,704 | 221,309 | 221,608 | 220,425 |
| Take 16 | 219,095 | 220,231 | 246,455 | 245,904 | 219,324 | 218,721 | 219,570 | 218,910 | 219,006 | 218,195 | 218,244 | 219,693 | 220,851 | 219,321 | 219,959 | 219,391 | 220,233 |
| Take 17 | 220,500 | 219,958 | 246,519 | 245,254 | 221,133 | 218,755 | 218,921 | 219,397 | 219,343 | 217,651 | 219,563 | 219,910 | 221,879 | 217,162 | 220,856 | 221,774 | 219,300 |
| Take 18 | 219,320 | 221,165 | 243,652 | 244,854 | 214,584 | 218,216 | 218,317 | 221,340 | 219,479 | 217,684 | 219,148 | 217,859 | 220,779 | 217,623 | 219,877 | 220,681 | 220,767 |
| Take 19 | 220,486 | 219,304 | 247,658 | 246,951 | 219,897 | 218,820 | 221,454 | 220,275 | 219,988 | 219,859 | 218,350 | 219,092 | 221,811 | 219,431 | 221,635 | 221,415 | 220,288 |
| Take 20 | 217,542 | 221,290 | 243,167 | 245,724 | 217,836 | 220,613 | 222,717 | 223,523 | 219,968 | 218,439 | 217,659 | 218,071 | 222,582 | 221,053 | 221,234 | 221,386 | 219,577 |
| Take 21 | 225,049 | 221,043 | 246,006 | 246,201 | 220,710 | 220,917 | 221,225 | 222,426 | 219,567 | 220,185 | 218,349 | 219,828 | 224,285 | 220,875 | 222,716 | 220,638 | 220,714 |
| **Ten 4 AVERAGE** | **220,648** | **220,556** | **245,746** | **246,302** | **219,469** | **220,208** | **220,583** | **222,105** | **220,141** | **219,819** | **219,406** | **219,861** | **221,860** | **219,720** | **221,699** | **221,306** | **220,503** |
| Cents RF+3rds | 2,768 | 2,045 | -10,725 | -6,812 | -6,508 | -0,691 | 2,258 | 14,161 | -1,213 | -3,751 | -7,002 | -3,415 | 12,250 | -4,527 | 10,992 | 7,924 | 1,631 |
| Cents RF-3rds | 7,144 | 6,421 | -6,349 | -2,436 | -2,132 | 3,685 | 6,634 | 18,537 | 3,163 | 0,625 | -2,626 | 0,961 | 16,626 | -0,151 | 15,368 | 12,300 | 6,007 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Just Int I | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 |
| Just Int II | 1,995 | 1,995 | -15,641 | -15,641 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 | 1,995 |
| Pythagorean | 1,955 | 1,955 | 5,865 | 5,865 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 | 1,955 |
| Meantone | -3,421 | -3,421 | -10,264 | -10,264 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 | -3,421 |
| | Second Phrase | | | | | | | | | | | | | | | | |
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 |
| Take 01 | 278,603 | 278,689 | 277,590 | 294,218 | 295,298 | 247,692 | 291,795 | 292,109 | 276,448 | 276,734 | 294,960 | 330,238 | 295,866 | 280,745 | 247,961 | 250,341 | 278,677 |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 276,476 | 276,397 | 276,428 | 294,390 | 295,258 | 247,797 | 291,815 | 292,009 | 276,644 | 276,670 | 294,328 | 332,004 | 296,533 | 277,807 | 247,534 | 249,837 | 278,018 |
| Take 04 | 279,267 | 278,939 | 277,184 | 293,118 | 291,334 | 246,562 | 292,774 | 292,780 | 276,870 | 271,783 | 294,940 | 330,750 | 294,952 | 278,545 | 248,849 | 248,537 | 277,167 |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 275,958 | 276,527 | 276,174 | 291,916 | 294,036 | 246,131 | 288,668 | 288,455 | 274,708 | 274,986 | 293,527 | 331,571 | 290,298 | 274,938 | 246,215 | 247,582 | 275,057 |
| Take 07 | 275,064 | 272,637 | 273,624 | 292,237 | 293,330 | 245,680 | 288,766 | 291,239 | 276,283 | 275,217 | 295,182 | 329,964 | 293,775 | 276,715 | 247,140 | 247,722 | 275,910 |
| Take 08 | 276,286 | 277,979 | 277,196 | 292,396 | 294,040 | 246,744 | 291,480 | 289,211 | 275,885 | 277,417 | 294,961 | 331,911 | 292,092 | 275,118 | 246,776 | 247,630 | 276,599 |
| Take 09 | 274,211 | 279,775 | 278,427 | 295,333 | 298,702 | 246,186 | 293,567 | 291,165 | 280,314 | 281,160 | 294,442 | 329,165 | 292,485 | 277,050 | 247,088 | 249,987 | 276,362 |
| Take 10 | 276,737 | 277,329 | 277,485 | 292,661 | 295,645 | 247,413 | 291,060 | 292,845 | 276,370 | 275,102 | 291,667 | 328,681 | 294,235 | 278,137 | 247,437 | 249,768 | 278,216 |
| Take 11 | 277,717 | 278,019 | 279,370 | 294,757 | 297,514 | 249,440 | 294,051 | 292,826 | 276,890 | 278,280 | 295,404 | 325,335 | 295,486 | 279,865 | 247,989 | 249,544 | 275,598 |
| Take 12 | 275,953 | 276,043 | 275,209 | 292,263 | 294,304 | 247,853 | 290,510 | 293,243 | 277,681 | 278,258 | 293,921 | 326,914 | 294,806 | 278,958 | 248,107 | 250,386 | 277,055 |
| Take 13 | 276,291 | 277,107 | 277,889 | 294,570 | 298,121 | 244,983 | 291,152 | 293,049 | 277,064 | 274,376 | 292,504 | 327,713 | 294,871 | 278,366 | 247,535 | 251,074 | 277,044 |
| Take 14 | 273,802 | 276,052 | 276,758 | 290,755 | 290,174 | 245,398 | 288,089 | 285,831 | 272,351 | 274,485 | 291,582 | 328,194 | 291,032 | 276,167 | 245,342 | 247,129 | 273,429 |
| Take 15 | 274,809 | 274,152 | 275,434 | 292,202 | 292,730 | 247,147 | 291,008 | 289,230 | 272,442 | 271,563 | 292,257 | 331,564 | 293,485 | 274,729 | 244,306 | 246,727 | 274,395 |
| Take 16 | 274,473 | 276,791 | 274,398 | 291,178 | 292,566 | 242,669 | 292,287 | 291,230 | 272,981 | 273,622 | 292,673 | 326,791 | 288,782 | 276,192 | 246,100 | 244,519 | 275,521 |
| Take 17 | 274,653 | 274,286 | 273,865 | 289,189 | 291,136 | 246,633 | 289,573 | 289,333 | 273,536 | 272,902 | 292,724 | 328,592 | 291,915 | 273,417 | 245,983 | 248,866 | 274,527 |
| Take 18 | 276,052 | 277,930 | 277,118 | 292,290 | 292,261 | 244,790 | 290,952 | 290,974 | 273,265 | 274,113 | 293,256 | 328,032 | 291,306 | 276,074 | 246,346 | 246,325 | 276,094 |
| Take 19 | 274,421 | 275,641 | 275,493 | 292,930 | 293,962 | 245,892 | 289,904 | 291,498 | 275,389 | 272,184 | 293,248 | 327,633 | 292,123 | 278,472 | 245,837 | 246,582 | 276,040 |
| Take 20 | 274,074 | 272,829 | 273,391 | 291,269 | 287,009 | 243,886 | 287,814 | 292,796 | 273,963 | 272,671 | 293,169 | 329,780 | 294,946 | 274,614 | 246,049 | 245,341 | 276,414 |
| Take 21 | 274,845 | 274,718 | 275,811 | 295,213 | 294,136 | 247,917 | 293,530 | 292,165 | 275,372 | 281,596 | 288,455 | 327,873 | 290,585 | 277,703 | 245,557 | 246,206 | 275,972 |
| **Ten 1 AVERAGE** | **275,773** | **276,413** | **276,255** | **292,783** | **293,766** | **246,359** | **290,989** | **291,157** | **275,498** | **275,427** | **293,326** | **329,090** | **293,135** | **277,032** | **246,745** | **248,111** | **276,215** |
| Cents RF+3rds | -9,729 | -5,720 | -6,708 | -6,109 | -0,307 | -4,997 | -16,750 | -15,750 | -11,461 | -11,903 | -2,900 | -3,732 | -4,028 | -1,844 | -2,285 | 7,272 | -6,956 |
| Cents RF-3rds | -8,028 | -4,019 | -5,006 | -4,407 | 1,394 | -3,296 | -15,049 | -14,049 | -9,759 | -10,202 | -1,199 | -2,030 | -2,327 | -0,143 | -0,584 | 8,974 | -5,254 |
| Just Int I | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 |
| Just Int II | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 |
| Pythagorean | 7,820 | 7,820 | 7,820 | -1,955 | -1,955 | 3,910 | -1,955 | -1,955 | 7,820 | 7,820 | -1,955 | 1,955 | -1,955 | 7,820 | 3,910 | 3,910 | 7,820 |
| Meantone | -13,686 | -13,686 | -13,686 | 3,422 | 3,422 | -6,843 | 3,422 | 3,422 | -13,686 | -13,686 | 3,422 | -3,421 | 3,422 | -13,686 | -6,843 | -6,843 | -13,686 |
| Take 01 | 275,561 | 274,998 | 277,998 | 291,328 | 292,309 | 246,399 | 294,033 | 295,807 | 274,459 | 275,750 | 293,797 | 333,369 | 293,076 | 278,689 | 248,622 | 249,230 | 279,438 |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 275,397 | 277,694 | 277,901 | 292,230 | 293,482 | 248,394 | 296,453 | 291,661 | 277,617 | 277,549 | 294,320 | 333,012 | 294,895 | 278,268 | 247,476 | 247,364 | 277,699 |
| Take 04 | 275,863 | 277,421 | 275,815 | 294,961 | 292,589 | 245,433 | 291,553 | 292,069 | 275,994 | 273,718 | 292,413 | 330,567 | 293,066 | 277,668 | 248,918 | 249,127 | 277,083 |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 275,472 | 275,259 | 275,610 | 294,260 | 288,743 | 247,530 | 291,266 | 291,075 | 276,613 | 274,351 | 291,954 | 330,624 | 292,404 | 276,139 | 246,607 | 246,623 | 276,247 |
| Take 07 | 275,935 | 277,517 | 273,684 | 290,797 | 292,859 | 248,319 | 290,632 | 292,053 | 276,391 | 277,518 | 290,698 | 332,169 | 293,071 | 276,435 | 247,873 | 247,454 | 275,585 |
| Take 08 | 275,741 | 276,850 | 277,684 | 292,680 | 295,432 | 246,505 | 289,734 | 294,604 | 277,592 | 278,439 | 290,776 | 330,061 | 292,181 | 278,640 | 247,060 | 246,691 | 276,303 |
| Take 09 | 275,916 | 276,008 | 275,027 | 295,822 | 297,950 | 249,467 | 292,787 | 293,753 | 276,594 | 278,089 | 292,416 | 330,890 | 295,073 | 273,898 | 246,881 | 248,875 | 278,267 |
| Take 10 | 277,153 | 277,725 | 278,633 | 295,197 | 294,566 | 248,827 | 294,774 | 293,807 | 275,916 | 278,150 | 292,966 | 332,192 | 293,457 | 279,433 | 247,322 | 248,446 | 276,849 |
| Take 11 | 275,655 | 278,396 | 279,007 | 295,326 | 293,925 | 250,455 | 292,780 | 294,955 | 275,812 | 279,304 | 297,833 | 335,385 | 292,618 | 278,309 | 247,676 | 248,644 | 278,953 |
| Take 12 | 276,152 | 276,742 | 279,216 | 294,280 | 295,271 | 249,571 | 295,515 | 295,189 | 279,919 | 278,055 | 291,231 | 333,198 | 297,170 | 278,490 | 247,955 | 247,896 | 276,982 |
| Take 13 | 274,690 | 276,239 | 279,817 | 291,610 | 295,297 | 246,262 | 294,558 | 294,211 | 277,476 | 275,901 | 294,045 | 329,952 | 292,131 | 276,587 | 247,961 | 249,118 | 275,528 |
| Take 14 | 274,598 | 275,460 | 278,373 | 291,342 | 292,408 | 247,297 | 287,834 | 290,070 | 274,788 | 275,799 | 293,397 | 329,128 | 292,592 | 272,899 | 245,526 | 249,096 | 275,646 |
| Take 15 | 275,830 | 277,237 | 275,882 | 290,691 | 291,304 | 248,435 | 293,984 | 291,542 | 273,848 | 275,340 | 291,599 | 331,254 | 291,931 | 275,347 | 246,115 | 246,521 | 275,777 |
| Take 16 | 275,011 | 273,259 | 273,937 | 291,632 | 292,936 | 247,038 | 289,778 | 289,207 | 276,452 | 278,516 | 290,767 | 329,630 | 294,117 | 277,682 | 246,856 | 247,912 | 274,231 |
| Take 17 | 274,737 | 276,774 | 278,613 | 289,782 | 295,313 | 248,296 | 292,395 | 292,509 | 275,603 | 277,231 | 292,535 | 328,844 | 289,402 | 278,426 | 246,858 | 247,908 | 275,021 |
| Take 18 | 274,774 | 274,496 | 274,453 | 293,190 | 292,917 | 246,925 | 289,068 | 287,592 | 274,633 | 278,024 | 296,371 | 328,290 | 288,220 | 277,780 | 244,715 | 246,644 | 274,381 |
| Take 19 | 274,262 | 274,395 | 272,870 | 289,737 | 295,197 | 248,223 | 291,364 | 292,897 | 274,349 | 275,250 | 292,608 | 330,460 | 295,092 | 277,374 | 247,190 | 247,034 | 276,519 |
| Take 20 | 276,096 | 275,026 | 275,873 | 293,725 | 296,618 | 249,731 | 291,028 | 290,143 | 275,458 | 276,179 | 289,583 | 332,344 | 304,738 | 277,824 | 246,347 | 249,804 | 273,904 |
| Take 21 | 273,913 | 275,925 | 279,590 | 293,294 | 294,541 | 247,581 | 289,291 | 289,485 | 276,065 | 279,051 | 292,842 | 331,213 | 293,804 | 269,614 | 247,393 | 248,116 | 275,724 |
| **Ten 2 AVERAGE** | **275,408** | **276,180** | **276,841** | **292,731** | **293,877** | **247,931** | **292,043** | **292,244** | **276,083** | **276,959** | **292,745** | **331,189** | **293,634** | **276,816** | **247,124** | **248,027** | **276,323** |
| Cents RF+3rds | -12,023 | -7,177 | -3,038 | -6,420 | 0,344 | 6,018 | -10,489 | -9,303 | -7,785 | -2,303 | -6,336 | 7,275 | -1,088 | -3,197 | 0,372 | 6,685 | -6,282 |
| Cents RF-3rds | -10,322 | -5,476 | -1,336 | -4,718 | 2,045 | 7,719 | -8,788 | -7,601 | -6,084 | -0,602 | -4,635 | 8,976 | 0,613 | -1,495 | 2,073 | 8,386 | -4,580 |
| Just Int I | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 |
| Just Int II | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 |
| Pythagorean | 7,820 | 7,820 | 7,820 | -1,955 | -1,955 | 3,910 | -1,955 | -1,955 | 7,820 | 7,820 | -1,955 | 1,955 | -1,955 | 7,820 | 3,910 | 3,910 | 7,820 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Meantone | -13,686 | -13,686 | -13,686 | 3,422 | 3,422 | -6,843 | 3,422 | 3,422 | -13,686 | -13,686 | 3,422 | -3,421 | 3,422 | -13,686 | -6,843 | -6,843 | -13,686 | | | | | |
| Take 01 | 275,549 | 276,778 | 277,068 | 286,973 | 291,121 | 245,354 | 293,389 | 293,154 | 276,588 | 275,513 | 291,839 | 326,291 | 290,966 | 275,294 | 247,683 | 247,470 | 277,911 | | | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 275,432 | 273,485 | 276,840 | **283,022** | 292,603 | 245,245 | 292,431 | 291,836 | 277,010 | 275,399 | 290,641 | 325,879 | 288,125 | 274,277 | 245,042 | 247,304 | 275,382 | | | | | |
| Take 04 | 273,991 | 271,414 | 272,939 | 287,561 | 293,659 | 243,562 | 287,850 | 291,903 | 270,439 | 271,508 | 291,620 | 324,265 | 289,346 | 275,139 | 245,969 | 245,713 | 276,463 | | | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 275,163 | 273,542 | 273,855 | 289,806 | 293,023 | 246,039 | 283,906 | 290,174 | 273,111 | 275,756 | 290,800 | 325,445 | 289,921 | 272,819 | 244,654 | 247,267 | 275,464 | | | | | |
| Take 07 | 274,863 | 276,205 | 274,436 | 294,061 | 294,612 | 246,810 | 290,031 | 291,676 | 274,145 | 272,412 | 290,015 | 328,305 | 290,609 | 272,707 | 245,179 | 247,470 | 274,974 | | | | | |
| Take 08 | 274,926 | 273,476 | 274,921 | 289,403 | 291,903 | 244,238 | 283,911 | 288,210 | 273,626 | 271,592 | 291,237 | 328,243 | 292,939 | 273,126 | 245,297 | **247,059** | 272,005 | | | | | |
| Take 09 | 273,780 | 274,203 | 272,848 | 289,290 | 295,806 | 246,922 | 289,131 | 290,007 | 273,313 | 276,229 | 291,800 | 330,759 | 287,898 | 274,245 | 244,841 | 245,397 | 275,945 | | | | | |
| Take 10 | 274,285 | 275,949 | 276,867 | 288,170 | 289,435 | **246,518** | 287,131 | 289,872 | 273,386 | 274,687 | 295,738 | 327,739 | 290,733 | 274,271 | 246,885 | 245,165 | 275,896 | | | | | |
| Take 11 | 275,434 | 277,449 | 278,560 | 292,973 | 296,387 | 250,103 | 294,791 | 295,274 | 275,908 | 276,522 | 293,638 | 326,121 | 290,929 | 279,715 | 248,050 | 249,572 | 278,504 | | | | | |
| Take 12 | 272,609 | 275,175 | 273,942 | 289,090 | 291,397 | 250,280 | 289,789 | 291,586 | 275,412 | 278,156 | 292,121 | 324,806 | 294,573 | 276,930 | 247,123 | 246,571 | 276,372 | | | | | |
| Take 13 | 275,846 | 277,755 | 275,068 | 290,292 | 291,721 | 243,110 | 289,989 | 290,098 | 274,650 | 274,997 | 293,358 | 328,148 | 295,973 | 274,918 | 244,973 | 248,050 | 275,740 | | | | | |
| Take 14 | 273,744 | 272,121 | 273,054 | 288,790 | 291,492 | 245,364 | 285,377 | 285,680 | 272,788 | 274,977 | 289,184 | 327,182 | 290,051 | 275,601 | 244,689 | 248,624 | 274,486 | | | | | |
| Take 15 | 273,848 | 274,315 | 275,117 | 287,551 | 290,833 | 246,713 | 289,124 | 289,835 | 269,944 | 274,967 | 290,081 | 326,051 | 287,633 | 275,186 | 244,270 | 246,488 | 275,376 | | | | | |
| Take 16 | 273,016 | 273,081 | 273,604 | 287,754 | 292,849 | 245,161 | 291,501 | 289,768 | 274,490 | 274,304 | 292,273 | 326,879 | 293,769 | 275,952 | 245,286 | 247,429 | 274,458 | | | | | |
| Take 17 | 270,606 | 273,154 | 274,031 | 291,490 | 292,480 | 244,524 | 287,547 | 290,067 | 271,882 | 274,090 | 289,261 | 324,271 | 291,460 | 274,088 | 242,787 | 246,541 | 275,155 | | | | | |
| Take 18 | 273,670 | 273,267 | 272,871 | 287,724 | 286,634 | 244,759 | 285,272 | 288,345 | 271,765 | 273,701 | 293,602 | 329,380 | 289,828 | 276,501 | 244,150 | 244,313 | 275,916 | | | | | |
| Take 19 | 273,815 | 274,339 | 272,511 | 288,462 | 291,646 | 246,209 | 289,742 | 291,039 | 273,883 | 273,740 | 294,265 | 328,177 | 290,002 | 273,110 | 244,210 | 247,337 | 274,827 | | | | | |
| Take 20 | 272,802 | 272,651 | 274,147 | 288,313 | 290,014 | 249,617 | 289,979 | 288,928 | 267,944 | 275,898 | 290,242 | 324,933 | 290,345 | 276,232 | 244,763 | 246,463 | 274,137 | | | | | |
| Take 21 | 273,008 | 273,138 | 272,598 | 286,706 | **288,550** | 245,461 | 291,041 | 287,393 | 275,395 | 278,490 | 297,530 | 323,583 | 288,638 | 274,249 | 244,670 | 245,856 | 274,578 | | | | | |
| Ten 3 AVERAGE | **274,020** | **274,289** | **274,488** | **288,812** | **291,903** | **246,105** | **289,049** | **290,255** | **273,457** | **274,892** | **292,066** | **326,656** | **290,723** | **274,966** | **245,291** | **246,847** | **275,452** | | | | | |
| Cents RF+3rds | -20,769 | -19,070 | -17,815 | -29,750 | -11,319 | -6,782 | -28,332 | -21,123 | -24,333 | -15,274 | -10,358 | -16,584 | -18,334 | -14,803 | -12,519 | -1,570 | -11,747 | | | | | |
| Cents RF-3rds | -19,067 | -17,369 | -16,114 | -28,049 | -9,618 | -5,080 | -26,630 | -19,422 | -22,632 | -13,572 | -8,657 | -14,883 | -16,632 | -13,101 | -10,818 | 0,131 | -10,045 | | | | | |
| Just Int I | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 | | | | | |
| Just Int II | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 | | | | | |
| Pythagorean | 7,820 | 7,820 | 7,820 | -1,955 | -1,955 | 3,910 | -1,955 | -1,955 | 7,820 | 7,820 | -1,955 | 1,955 | -1,955 | 7,820 | 3,910 | 3,910 | 7,820 | | | | | |
| Meantone | -13,686 | -13,686 | -13,686 | 3,422 | 3,422 | -6,843 | 3,422 | 3,422 | -13,686 | -13,686 | 3,422 | -3,421 | 3,422 | -13,686 | -6,843 | -6,843 | -13,686 | | | | | |
| Take 01 | 275,253 | 277,044 | 276,712 | 293,202 | 294,065 | 247,799 | 294,416 | 293,078 | 275,155 | 280,375 | 295,846 | 335,989 | 293,253 | 275,357 | 247,252 | 247,597 | 280,425 | | | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 280,356 | 275,918 | 274,382 | 291,242 | 294,175 | 248,836 | 295,448 | 295,273 | 277,396 | 279,132 | 294,363 | 335,280 | 290,709 | 277,155 | 247,410 | 249,584 | 279,217 | | | | | |
| Take 04 | 273,939 | 276,186 | 276,076 | 290,799 | 292,969 | 248,544 | 291,505 | 303,988 | 273,745 | 279,920 | 290,124 | **341,303** | 288,763 | 275,189 | 247,628 | 251,769 | 281,054 | | | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 274,617 | 274,624 | 275,898 | 292,618 | 292,236 | 246,712 | 290,270 | 291,216 | 273,194 | 280,040 | 292,594 | 334,091 | 290,414 | 275,112 | 247,158 | 247,959 | 278,598 | | | | | |
| Take 07 | 275,101 | 276,398 | 277,052 | 295,107 | 296,245 | 249,833 | 287,620 | 289,421 | 275,041 | 276,703 | 288,178 | **281,204** | 287,381 | 271,137 | 246,851 | 250,594 | 278,416 | | | | | |
| Take 08 | 278,309 | 274,233 | 276,555 | 297,491 | 293,699 | 249,751 | 287,996 | 295,654 | 274,666 | 278,649 | 289,683 | 335,442 | 286,462 | 271,727 | 246,672 | 249,952 | 275,703 | | | | | |
| Take 09 | 279,440 | 277,217 | 277,111 | 292,759 | 295,921 | 250,041 | 292,026 | 293,441 | 277,824 | 280,403 | 290,009 | 334,435 | 296,912 | 282,287 | 244,816 | 250,208 | 278,059 | | | | | |
| Take 10 | 278,207 | 279,948 | 279,718 | 294,950 | 293,884 | **247,876** | 294,751 | 293,112 | 275,311 | 279,077 | 298,046 | 329,959 | **298,477** | 277,157 | 247,018 | 249,269 | 279,101 | | | | | |
| Take 11 | 278,085 | **284,164** | 280,965 | 294,914 | 294,959 | 250,559 | 292,195 | 293,138 | 280,292 | 279,075 | 292,864 | 335,913 | 298,833 | 278,912 | 248,140 | 250,504 | 278,642 | | | | | |
| Take 12 | 278,605 | 278,845 | 275,695 | 293,016 | 296,021 | 249,268 | 293,717 | 296,494 | 276,796 | 278,981 | **289,032** | **310,374** | 293,358 | 279,128 | 247,096 | 248,538 | 278,409 | | | | | |
| Take 13 | 278,419 | 280,013 | 277,147 | 294,000 | 292,752 | 248,197 | 296,836 | 291,740 | 277,643 | 279,359 | 294,739 | **320,785** | 294,617 | 276,022 | 248,503 | 250,374 | 279,442 | | | | | |
| Take 14 | 276,658 | 277,699 | 275,950 | 290,779 | 292,414 | 246,503 | 287,575 | 289,442 | 272,880 | 275,517 | 288,996 | 327,497 | 292,416 | 276,507 | 245,405 | 249,513 | 276,417 | | | | | |
| Take 15 | 272,905 | 276,338 | 274,909 | 289,912 | 293,984 | 247,786 | 290,993 | 290,505 | 272,696 | 277,328 | 288,143 | 329,727 | 293,428 | 278,577 | 246,698 | 249,700 | 277,133 | | | | | |
| Take 16 | 274,508 | 275,490 | 279,716 | 289,502 | 291,612 | 248,070 | 289,744 | 291,024 | 275,424 | 278,557 | 292,224 | 320,602 | 294,689 | 275,967 | 246,321 | 249,996 | 276,357 | | | | | |
| Take 17 | 271,940 | 272,819 | 276,221 | 294,798 | 294,555 | 247,912 | 289,906 | 289,780 | 273,216 | 277,462 | 290,447 | 334,044 | 291,205 | 276,395 | 246,451 | 247,390 | 276,289 | | | | | |
| Take 18 | 278,694 | 276,703 | 276,621 | 293,817 | 295,612 | 245,490 | 289,769 | 293,014 | 277,957 | 278,398 | 295,435 | **169,391** | 295,832 | 278,409 | 246,678 | 248,250 | 278,250 | | | | | |
| Take 19 | 275,932 | 274,871 | 276,422 | 288,343 | 292,684 | 248,082 | 289,164 | 289,478 | 273,133 | 276,677 | 289,367 | **311,128** | 291,182 | 276,609 | 246,607 | 250,671 | 277,315 | | | | | |
| Take 20 | 274,937 | 275,289 | 280,696 | 295,039 | 292,250 | 248,290 | 292,812 | **301,065** | **297,973** | **286,876** | 297,378 | 334,041 | 295,353 | 274,070 | 246,085 | 248,335 | 276,389 | | | | | |
| Take 21 | 275,003 | 277,539 | 279,487 | 296,542 | 296,803 | 249,434 | 298,277 | 297,474 | 282,901 | 282,922 | 296,089 | 338,678 | 296,733 | 277,708 | 246,206 | 248,328 | 278,296 | | | | | |
| Ten 4 AVERAGE | **276,364** | **276,510** | **277,228** | **293,096** | **294,044** | **248,367** | **291,843** | **293,182** | **275,848** | **278,810** | **292,292** | **332,746** | **293,159** | **276,496** | **246,789** | **249,396** | **278,080** | | | | | |
| Cents RF+3rds | -6,027 | -5,113 | -0,621 | -4,259 | 1,331 | 9,062 | -11,676 | -3,754 | -9,258 | 9,229 | -9,015 | 15,397 | -3,890 | -5,198 | -1,973 | 16,220 | 4,689 | | | | | |
| Cents RF-3rds | -4,326 | -3,412 | 1,081 | -2,558 | 3,032 | 10,764 | -9,975 | -2,052 | -7,557 | 10,930 | -7,313 | 17,098 | -2,188 | -3,497 | -0,272 | 17,921 | 6,390 | | | | | |
| Just Int I | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 | | | | | |
| Just Int II | -13,686 | -13,686 | -13,686 | -29,219 | -29,219 | 3,910 | -29,219 | -8,731 | -13,686 | -13,686 | -29,219 | 1,995 | -1,955 | -13,686 | 3,910 | 3,910 | -13,686 | | | | | |
| Pythagorean | 7,820 | 7,820 | 7,820 | -1,955 | -1,955 | 3,910 | -1,955 | -1,955 | 7,820 | 7,820 | -1,955 | 1,955 | -1,955 | 7,820 | 3,910 | 3,910 | 7,820 | | | | | |
| Meantone | -13,686 | -13,686 | -13,686 | 3,422 | 3,422 | -6,843 | 3,422 | 3,422 | -13,686 | -13,686 | 3,422 | -3,421 | 3,422 | -13,686 | -6,843 | -6,843 | -13,686 | | | | | |
| | Third Phrase | | | | | | | | | | | | | | | | | | | | | |
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 |
| Take 01 | 282,309 | 279,935 | 278,372 | 279,014 | 266,861 | 263,480 | 235,137 | 221,711 | 199,354 | 197,984 | 221,261 | 223,509 | 249,146 | 247,368 | 279,813 | 295,761 | 328,013 | 277,108 | 277,768 | 290,114 | 243,126 | 165,949 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 03 | 281,369 | 279,426 | 278,530 | 277,797 | 264,369 | 261,598 | 232,895 | 220,090 | 195,159 | 195,652 | 220,580 | 220,777 | 250,294 | 250,580 | 278,110 | 294,383 | 335,584 | 280,431 | 279,153 | 296,552 | 247,703 | 164,594 |
| Take 04 | 282,878 | 280,460 | 281,675 | 278,837 | 264,648 | 263,967 | 233,221 | 221,296 | 197,159 | 194,898 | 220,064 | 221,355 | 249,806 | 251,415 | 282,889 | 298,901 | 333,918 | 279,499 | 279,571 | 292,995 | 246,262 | 165,008 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 277,783 | 266,183 | 277,853 | 276,775 | 263,608 | 262,330 | 232,923 | 220,258 | 196,875 | 194,028 | 219,914 | 220,036 | 248,908 | 248,645 | 278,453 | 298,085 | 334,325 | 276,267 | 276,944 | 290,490 | 246,926 | 164,892 |
| Take 07 | 278,214 | 276,958 | 276,559 | 276,527 | 262,129 | 262,765 | 233,699 | 221,988 | 197,967 | 196,685 | 220,857 | 219,647 | 248,215 | 249,083 | 276,474 | 295,048 | 326,591 | 275,940 | 275,359 | 289,393 | 243,837 | 163,468 |
| Take 08 | 279,525 | 277,307 | 277,678 | 274,030 | 260,568 | 258,091 | 229,625 | 217,267 | 194,062 | 194,019 | 218,393 | 217,241 | 246,610 | 247,920 | 278,331 | 295,009 | 333,693 | 276,458 | 275,415 | 291,807 | 247,315 | 163,170 |
| Take 09 | 280,911 | 279,079 | 278,303 | 277,610 | 260,997 | 261,281 | 231,294 | 217,749 | 194,838 | 197,656 | 218,969 | 219,904 | 248,149 | 247,322 | 276,656 | 289,829 | 325,520 | 271,917 | 275,480 | 298,391 | 245,994 | 164,136 |
| Take 10 | 280,689 | 279,061 | 279,303 | 278,557 | 264,305 | 261,815 | 234,313 | 221,273 | 196,841 | 197,891 | 220,925 | 223,171 | 249,734 | 247,585 | 281,566 | 293,981 | 333,036 | 280,583 | 279,568 | 294,069 | 247,336 | 165,814 |
| Take 11 | 0,000 | 0,000 | 214,599 | 281,421 | 265,221 | 258,656 | 234,456 | 221,425 | 197,235 | 197,958 | 221,037 | 223,243 | 249,544 | 247,918 | 277,941 | 295,595 | 330,475 | 276,799 | 277,982 | 294,983 | 247,299 | 165,666 |
| Take 12 | 281,089 | 278,665 | 276,307 | 277,658 | 263,425 | 259,212 | 232,749 | 218,404 | 195,432 | 195,934 | 219,996 | 220,942 | 247,653 | 245,947 | 278,124 | 297,161 | 329,814 | 276,844 | 274,598 | 291,221 | 247,345 | 164,741 |
| Take 13 | 280,197 | 280,396 | 277,976 | 279,306 | 265,304 | 260,296 | 232,209 | 221,857 | 197,586 | 196,639 | 220,219 | 221,437 | 248,961 | 251,152 | 278,699 | 294,685 | 332,314 | 279,688 | 279,936 | 295,958 | 248,579 | 164,212 |
| Take 14 | 277,567 | 273,558 | 273,559 | 276,221 | 261,627 | 259,004 | 232,184 | 217,526 | 195,278 | 194,957 | 218,175 | 218,227 | 244,942 | 245,093 | 277,324 | 291,737 | 328,514 | 272,260 | 273,452 | 292,309 | 244,478 | 163,741 |
| Take 15 | 276,862 | 276,052 | 276,399 | 277,526 | 262,555 | 259,819 | 231,423 | 218,747 | 195,042 | 195,408 | 219,794 | 219,770 | 246,420 | 246,951 | 277,734 | 293,107 | 330,257 | 276,017 | 276,392 | 290,145 | 242,601 | 162,946 |
| Take 16 | 277,394 | 276,432 | 275,689 | 274,047 | 257,345 | 259,247 | 230,050 | 219,587 | 196,086 | 194,065 | 219,207 | 220,269 | 247,947 | 248,349 | 276,437 | 287,409 | 331,032 | 277,862 | 274,855 | 287,066 | 244,201 | 161,759 |
| Take 17 | 277,825 | 275,020 | 276,914 | 277,359 | 261,985 | 258,379 | 229,443 | 216,473 | 192,919 | 193,464 | 219,622 | 220,002 | 247,097 | 245,164 | 273,310 | 292,739 | 330,460 | 276,569 | 276,752 | 291,430 | 248,269 | 163,494 |
| Take 18 | 279,486 | 280,052 | 275,666 | 277,751 | 262,173 | 259,669 | 234,207 | 219,562 | 194,011 | 191,979 | 219,145 | 220,792 | 247,430 | 245,394 | 278,969 | 287,537 | 331,207 | 275,228 | 274,175 | 289,431 | 241,811 | 162,952 |
| Take 19 | 279,703 | 280,196 | 276,868 | 278,937 | 262,561 | 261,536 | 231,871 | 219,183 | 195,744 | 195,485 | 219,028 | 218,077 | 244,744 | 243,906 | 276,471 | 293,260 | 330,474 | 273,828 | 276,228 | 290,132 | 244,803 | 162,816 |
| Take 20 | 278,356 | 279,140 | 278,832 | 278,763 | 265,235 | 261,382 | 232,218 | 218,432 | 195,937 | 196,167 | 223,049 | 220,304 | 248,570 | 245,544 | 276,684 | 292,708 | 327,924 | 276,078 | 275,304 | 292,238 | 246,153 | 162,889 |
| Take 21 | 280,710 | 277,924 | 279,270 | 278,086 | 264,972 | 263,670 | 233,603 | 220,357 | 196,019 | 194,889 | 220,846 | 222,162 | 247,459 | 247,434 | 274,531 | 288,083 | 330,238 | 275,694 | 274,492 | 290,067 | 243,900 | 164,425 |
| **Ten 1 AVERAGE** | **279,604** | **277,547** | **277,542** | **277,696** | **263,152** | **260,853** | **232,501** | **219,641** | **195,976** | **195,566** | **220,057** | **220,572** | **247,981** | **247,514** | **277,817** | **293,422** | **330,705** | **276,583** | **276,496** | **292,042** | **245,681** | **164,035** |
| Cents RF+3rds | 8,330 | -4,452 | -4,483 | -3,523 | 3,345 | -11,849 | -11,045 | -9,551 | -6,916 | -10,542 | -6,278 | -2,231 | 0,543 | -2,717 | -2,770 | -8,157 | -1,078 | -10,477 | -11,020 | -16,321 | -15,587 | -14,922 |
| Cents RF-3rds | 12,597 | -0,185 | -0,216 | 0,744 | 7,613 | -7,582 | -6,778 | -5,284 | -2,649 | -6,275 | -2,011 | 2,036 | 4,810 | 1,551 | 1,497 | -3,890 | 3,189 | -6,210 | -6,753 | -12,054 | -11,320 | -10,655 |
| Just Int I | -13,686 | -13,686 | -13,686 | -13,686 | 7,820 | 7,820 | -37,039 | -21,506 | -3,910 | -3,910 | -21,506 | -21,506 | -39,102 | -39,102 | -35,192 | -19,551 | -19,551 | -35,192 | -35,192 | -23,461 | -17,596 | -19,551 |
| Just Int II | -13,686 | -13,686 | -13,686 | -13,686 | 29,326 | 29,326 | -15,532 | 0,000 | 17,596 | 17,596 | 0,000 | 0,000 | -17,596 | -17,596 | -13,686 | -1,955 | 1,955 | -13,686 | -13,686 | -1,955 | 3,910 | 1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 7,820 | -5,865 | -5,865 | 4,955 | 0,000 | -3,910 | -3,910 | 0,000 | 0,000 | 3,910 | 3,910 | 7,820 | -1,955 | 1,955 | 7,820 | 7,820 | -1,955 | 3,910 | 1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -13,686 | 10,265 | 10,265 | 17,107 | 0,000 | 6,843 | 6,843 | 0,000 | 0,000 | -6,843 | -6,843 | -13,686 | 3,422 | -3,421 | -13,686 | -13,686 | 3,422 | -6,843 | -3,421 |
| Take 01 | 280,586 | 279,673 | 279,088 | 282,819 | 265,210 | 263,666 | 233,346 | 222,994 | 199,459 | 198,147 | 220,838 | 221,824 | 248,704 | 249,940 | 276,667 | 291,646 | 317,371 | 271,310 | 278,336 | 292,811 | 247,850 | 165,859 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 278,904 | 278,147 | 277,270 | 279,645 | 262,935 | 260,886 | 233,070 | 220,295 | 196,228 | 195,834 | 217,184 | 219,523 | 248,237 | 244,018 | 279,336 | 292,657 | 323,210 | 273,960 | 276,479 | 292,409 | 247,789 | 164,149 |
| Take 04 | 277,167 | 279,873 | 277,264 | 281,416 | 262,500 | 258,651 | 230,340 | 218,480 | 192,892 | 193,710 | 215,714 | 221,182 | 247,001 | 247,741 | 279,409 | 295,624 | 325,346 | 272,559 | 280,092 | 293,776 | 248,532 | 163,761 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 278,601 | 276,114 | 276,745 | 278,614 | 260,090 | 258,850 | 229,324 | 218,842 | 194,012 | 193,982 | 220,243 | 220,135 | 249,964 | 247,875 | 278,363 | 291,867 | 333,738 | 274,469 | 277,205 | 291,965 | 246,014 | 165,483 |
| Take 07 | 278,853 | 276,586 | 275,604 | 275,463 | 261,343 | 259,067 | 229,966 | 219,962 | 197,015 | 196,095 | 218,819 | 220,254 | 250,486 | 249,110 | 275,767 | 294,983 | 331,904 | 276,219 | 275,826 | 292,447 | 248,669 | 164,330 |
| Take 08 | 277,942 | 280,174 | 275,131 | 278,027 | 262,321 | 259,472 | 227,072 | 217,057 | 194,478 | 193,360 | 217,414 | 222,011 | 249,836 | 245,396 | 279,951 | 293,261 | 329,104 | 276,316 | 276,114 | 295,066 | 246,934 | 163,883 |
| Take 09 | 281,260 | 280,511 | 276,153 | 279,162 | 263,177 | 258,682 | 228,925 | 217,647 | 195,366 | 195,529 | 216,551 | 219,523 | 247,007 | 247,435 | 277,967 | 292,862 | 335,988 | 280,720 | 276,532 | 292,026 | 246,972 | 161,148 |
| Take 10 | 280,060 | 281,017 | 280,237 | 279,225 | 265,478 | 262,727 | 234,172 | 222,181 | 197,112 | 196,769 | 219,263 | 220,784 | 250,448 | 245,969 | 276,350 | 293,808 | 331,558 | 279,313 | 281,326 | 293,726 | 247,354 | 165,965 |
| Take 11 | 280,829 | 279,988 | 277,623 | 277,895 | 262,551 | 261,564 | 230,411 | 221,595 | 195,479 | 198,701 | 219,875 | 222,493 | 247,421 | 248,021 | 279,704 | 294,311 | 330,223 | 271,343 | 276,544 | 294,316 | 247,432 | 165,244 |
| Take 12 | 279,988 | 277,390 | 277,495 | 278,614 | 262,703 | 258,870 | 232,004 | 218,371 | 192,134 | 195,485 | 219,392 | 218,290 | 248,030 | 244,780 | 277,652 | 293,474 | 328,959 | 272,281 | 276,077 | 289,497 | 246,731 | 164,807 |
| Take 13 | 278,995 | 278,103 | 275,349 | 278,284 | 262,759 | 260,211 | 229,806 | 220,738 | 193,604 | 195,210 | 219,231 | 222,003 | 247,150 | 244,792 | 276,418 | 293,951 | 327,605 | 278,367 | 279,228 | 293,455 | 247,634 | 164,191 |
| Take 14 | 276,351 | 276,721 | 275,466 | 273,421 | 258,013 | 260,204 | 228,029 | 216,991 | 196,092 | 194,668 | 216,427 | 219,000 | 245,876 | 243,924 | 275,496 | 292,617 | 329,691 | 275,153 | 274,385 | 293,249 | 247,095 | 164,365 |
| Take 15 | 275,659 | 278,569 | 275,353 | 274,062 | 257,895 | 256,083 | 229,789 | 218,826 | 195,042 | 194,867 | 217,009 | 221,278 | 246,241 | 246,817 | 278,422 | 295,363 | 320,426 | 276,839 | 276,617 | 294,887 | 247,547 | 163,416 |
| Take 16 | 277,305 | 280,381 | 274,389 | 278,386 | 266,145 | 261,950 | 225,352 | 215,033 | 191,003 | 193,187 | 217,251 | 217,197 | 246,198 | 246,058 | 276,260 | 295,181 | 327,350 | 271,829 | 273,955 | 295,026 | 250,337 | 162,033 |
| Take 17 | 278,961 | 277,248 | 274,998 | 275,848 | 263,368 | 257,834 | 226,464 | 216,946 | 193,742 | 194,447 | 216,188 | 217,778 | 246,587 | 242,935 | 277,832 | 291,378 | 328,654 | 276,244 | 275,836 | 290,248 | 247,468 | 165,053 |
| Take 18 | 277,941 | 274,133 | 274,973 | 271,229 | 257,502 | 261,220 | 230,561 | 216,405 | 192,733 | 197,630 | 217,916 | 218,040 | 247,351 | 244,613 | 277,504 | 292,171 | 317,048 | 274,919 | 274,224 | 290,038 | 247,326 | 164,603 |
| Take 19 | 277,183 | 277,438 | 274,708 | 278,164 | 261,517 | 256,323 | 226,989 | 218,122 | 192,677 | 193,950 | 217,051 | 218,859 | 245,329 | 244,671 | 274,898 | 292,686 | 325,888 | 275,052 | 274,773 | 288,937 | 244,819 | 162,095 |
| Take 20 | 280,288 | 280,570 | 274,701 | 278,148 | 264,573 | 264,652 | 231,937 | 219,335 | 193,046 | 192,922 | 216,389 | 220,462 | 248,710 | 248,068 | 282,016 | 296,986 | 335,461 | 281,253 | 275,009 | 293,738 | 256,332 | 161,620 |
| Take 21 | 278,030 | 278,633 | 274,953 | 277,358 | 261,767 | 259,012 | 231,109 | 218,878 | 196,166 | 193,981 | 219,734 | 221,392 | 248,402 | 245,954 | 279,099 | 294,581 | 328,451 | 276,535 | 275,166 | 292,704 | 247,576 | 164,224 |
| **Ten 2 AVERAGE** | **278,679** | **278,488** | **276,184** | **277,673** | **262,202** | **259,996** | **229,930** | **218,879** | **194,646** | **195,183** | **218,026** | **220,107** | **247,841** | **246,217** | **277,848** | **293,653** | **328,385** | **275,510** | **276,512** | **292,648** | **247,916** | **164,012** |
| Cents RF+3rds | 2,596 | 1,407 | -12,973 | -3,668 | -2,913 | -17,543 | -30,299 | -15,570 | -18,704 | -13,939 | -22,332 | -5,887 | -0,432 | -11,816 | -2,575 | -6,796 | -13,265 | -17,207 | -10,920 | -12,728 | 0,094 | -15,168 |
| Cents RF-3rds | 6,863 | 5,675 | -8,706 | 0,599 | 1,354 | -13,275 | -26,031 | -11,303 | -14,437 | -9,672 | -18,065 | -1,619 | 3,835 | -7,549 | 1,692 | -2,529 | -8,998 | -12,940 | -6,653 | -8,460 | 4,361 | -10,901 |
| Just Int I | -13,686 | -13,686 | -13,686 | -13,686 | 7,820 | 7,820 | -37,039 | -21,506 | -3,910 | -3,910 | -21,506 | -21,506 | -39,102 | -39,102 | -35,192 | -19,551 | -19,551 | -35,192 | -35,192 | -23,461 | -17,596 | -19,551 |
| Just Int II | -13,686 | -13,686 | -13,686 | -13,686 | 29,326 | 29,326 | -15,532 | 0,000 | 17,596 | 17,596 | 0,000 | 0,000 | -17,596 | -17,596 | -13,686 | -1,955 | 1,955 | -13,686 | -13,686 | -1,955 | 3,910 | 1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 7,820 | -5,865 | -5,865 | 4,955 | 0,000 | -3,910 | -3,910 | 0,000 | 0,000 | 3,910 | 3,910 | 7,820 | -1,955 | 1,955 | 7,820 | 7,820 | -1,955 | 3,910 | 1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -13,686 | 10,265 | 10,265 | 17,107 | 0,000 | 6,843 | 6,843 | 0,000 | 0,000 | -6,843 | -6,843 | -13,686 | 3,422 | -3,421 | -13,686 | -13,686 | 3,422 | -6,843 | -3,421 |
| Take 01 | 279,511 | 277,000 | 276,639 | 277,783 | 261,910 | 259,606 | 228,951 | 214,018 | 193,421 | 195,367 | 218,717 | 220,154 | 248,514 | 246,311 | 279,090 | 294,184 | 332,283 | 280,027 | 278,307 | 291,582 | 249,046 | 164,521 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 277,379 | 274,809 | 275,140 | 273,019 | 259,620 | 257,819 | 226,893 | 217,251 | 189,997 | 194,976 | 218,329 | 219,594 | 248,981 | 249,325 | 279,732 | 293,298 | 328,985 | 275,504 | 275,947 | 292,025 | 245,676 | 163,698 |
| Take 04 | 277,103 | 278,724 | 273,903 | 277,258 | 260,907 | 259,021 | 229,127 | 217,173 | 191,289 | 192,506 | 216,196 | 219,186 | 247,710 | 246,052 | 279,010 | 290,327 | 330,661 | 274,266 | 276,491 | 289,327 | 246,726 | 161,403 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 278,187 | 276,466 | 275,797 | 274,551 | 263,681 | 260,270 | 231,782 | 219,827 | 194,418 | 194,788 | 217,125 | 220,423 | 248,197 | 246,277 | 281,937 | 292,399 | 335,169 | 276,930 | 272,782 | 287,981 | 245,751 | 163,159 |
| Take 07 | 276,614 | 275,818 | 273,216 | 276,577 | 262,206 | 259,249 | 230,807 | 216,068 | 192,817 | 194,292 | 218,177 | 221,317 | 248,174 | 246,690 | 276,254 | 289,413 | 320,930 | 273,301 | 273,874 | 288,512 | 246,032 | 162,206 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 08 | 275,606 | 273,048 | 271,531 | 273,773 | 260,869 | 256,955 | 227,958 | 218,387 | 0,000 | 191,323 | 215,826 | 214,229 | 247,427 | 247,108 | 277,862 | 291,071 | 335,893 | 270,083 | 274,536 | 286,516 | 243,494 | 160,666 |
| Take 09 | 279,483 | 275,732 | 275,595 | 274,889 | 258,047 | 259,698 | 228,859 | 214,930 | 193,467 | 192,498 | 215,251 | 218,229 | 248,148 | 240,681 | 275,871 | 295,218 | 328,325 | 315,481 | 272,887 | 290,747 | 245,012 | 164,590 |
| Take 10 | 278,588 | 276,418 | 275,974 | 278,724 | 263,033 | 258,460 | 230,929 | 217,408 | 192,243 | 192,682 | 218,435 | 218,673 | 248,097 | 244,422 | 281,549 | 293,062 | 327,210 | 278,571 | 279,061 | 290,279 | 247,242 | 165,566 |
| Take 11 | 278,917 | 276,460 | 275,925 | 281,102 | 262,549 | 259,441 | 229,041 | 219,023 | 192,477 | 193,264 | 220,190 | 221,717 | 248,671 | 242,815 | 277,760 | 292,819 | 325,764 | 277,742 | 274,926 | 289,478 | 246,702 | 165,434 |
| Take 12 | 281,089 | 278,113 | 276,307 | 277,658 | 263,425 | 259,212 | 232,749 | 218,404 | 195,432 | 195,934 | 219,996 | 220,942 | 247,653 | 245,947 | 278,124 | 297,161 | 328,506 | 276,844 | 274,598 | 291,221 | 247,345 | 164,741 |
| Take 13 | 276,345 | 271,786 | 273,573 | 274,114 | 259,427 | 257,534 | 230,087 | 213,638 | 191,129 | 192,350 | 217,999 | 219,514 | 250,630 | 244,354 | 278,053 | 290,991 | 329,879 | 276,623 | 277,374 | 288,759 | 247,682 | 160,951 |
| Take 14 | 275,764 | 273,491 | 273,402 | 276,155 | 261,555 | 256,098 | 228,861 | 216,403 | 192,618 | 193,923 | 217,856 | 215,934 | 247,591 | 244,856 | 277,079 | 290,666 | 329,328 | 277,240 | 276,020 | 285,859 | 244,162 | 163,044 |
| Take 15 | 275,604 | 272,170 | 272,960 | 274,539 | 261,369 | 254,321 | 229,885 | 216,898 | 192,531 | 193,328 | 217,550 | 218,542 | 245,850 | 245,413 | 277,524 | 290,481 | 329,589 | 273,010 | 276,728 | 287,574 | 243,848 | 163,302 |
| Take 16 | 277,250 | 275,390 | 274,202 | 275,866 | 258,227 | 255,718 | 229,163 | 214,618 | 192,687 | 193,358 | 214,984 | 217,651 | 245,821 | 242,494 | 276,355 | 288,145 | 328,601 | 272,207 | 273,339 | 288,312 | 246,269 | 161,451 |
| Take 17 | 278,152 | 276,628 | 273,834 | 277,724 | 258,533 | 255,231 | 225,528 | 212,594 | 191,829 | 190,723 | 212,216 | 216,524 | 249,335 | 244,657 | 277,332 | 287,680 | 329,916 | 275,836 | 272,353 | 289,789 | 246,628 | 162,812 |
| Take 18 | 277,470 | 275,723 | 273,235 | 275,764 | 257,923 | 259,177 | 228,889 | 213,299 | 191,776 | 191,645 | 215,586 | 217,902 | 245,853 | 244,673 | 277,774 | 288,164 | 328,248 | 271,234 | 273,401 | 287,098 | 247,593 | 162,457 |
| Take 19 | 278,060 | 275,514 | 273,531 | 274,468 | 261,941 | 259,191 | 227,542 | 214,840 | 191,389 | 190,749 | 214,489 | 217,220 | 248,485 | 241,206 | 275,276 | 292,387 | 330,897 | 278,314 | 275,332 | 289,718 | 245,289 | 162,432 |
| Take 20 | 274,839 | 276,088 | 268,695 | 277,426 | 258,953 | 257,959 | 228,084 | 214,619 | 193,865 | 193,109 | 214,995 | 220,423 | 247,753 | 249,508 | 279,676 | 292,863 | 325,836 | 273,310 | 276,509 | 291,160 | 246,767 | 162,130 |
| Take 21 | 277,027 | 272,707 | 270,580 | 274,518 | 255,042 | 255,382 | 229,152 | 215,998 | 192,467 | 193,340 | 214,299 | 218,448 | 247,216 | 244,509 | 273,963 | 292,822 | 326,293 | 274,446 | 273,821 | 289,554 | 246,722 | 158,507 |
| **Ten 3 AVERAGE** | **277,526** | **275,373** | **273,897** | **276,100** | **260,485** | **257,913** | **229,173** | **216,073** | **192,547** | **193,166** | **216,748** | **218,770** | **247,900** | **245,121** | **277,906** | **291,745** | **329,069** | **277,420** | **275,173** | **289,236** | **246,210** | **162,793** |
| Cents RF+3rds | -4,586 | -18,066 | -27,371 | -13,499 | -14,289 | -31,470 | -36,005 | -37,904 | -37,474 | -31,921 | -32,506 | -16,436 | -0,018 | -19,538 | -2,212 | -18,082 | -9,662 | -5,247 | -19,324 | -33,032 | -11,865 | -28,082 |
| Cents RF-3rds | -0,318 | -13,799 | -23,104 | -9,232 | -10,022 | -27,203 | -31,738 | -33,637 | -33,207 | -27,654 | -28,239 | -12,168 | 4,249 | -15,271 | 2,056 | -13,815 | -5,395 | -0,980 | -15,057 | -28,764 | -7,597 | -23,815 |
| Just Int I | -13,686 | -13,686 | -13,686 | -13,686 | 7,820 | 7,820 | -37,039 | -21,506 | -3,910 | -3,910 | -21,506 | -21,506 | -39,102 | -39,102 | -35,192 | -19,551 | -19,551 | -35,192 | -35,192 | -23,461 | -17,596 | -19,551 |
| Just Int II | -13,686 | -13,686 | -13,686 | -13,686 | 29,326 | 29,326 | -15,532 | 0,000 | 17,596 | 17,596 | 0,000 | 0,000 | -17,596 | -17,596 | -13,686 | -1,955 | 1,955 | -13,686 | -13,686 | -1,955 | 3,910 | 1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 7,820 | -5,865 | -5,865 | 4,955 | 0,000 | -3,910 | -3,910 | 0,000 | 0,000 | 3,910 | 3,910 | 7,820 | -1,955 | 1,955 | 7,820 | 7,820 | -1,955 | 3,910 | 1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -13,686 | 10,265 | 10,265 | 17,107 | 0,000 | 6,843 | 6,843 | 0,000 | 0,000 | -6,843 | -6,843 | -13,686 | 3,422 | -3,421 | -13,686 | -13,686 | 3,422 | -6,843 | -3,421 |
| Take 01 | 279,265 | 278,934 | 278,045 | 281,041 | 266,578 | 261,527 | 233,868 | 218,073 | 194,671 | 193,084 | 217,045 | 223,755 | 247,745 | 245,215 | 277,130 | 289,792 | 305,002 | 272,350 | 274,519 | 288,300 | 246,559 | 165,955 |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 279,687 | 278,544 | 275,878 | 280,821 | 265,089 | 262,841 | 231,732 | 218,556 | 195,443 | 194,997 | 218,724 | 218,219 | 249,190 | 249,022 | 277,288 | 289,821 | 325,161 | 272,877 | 274,075 | 286,551 | 246,173 | 165,321 |
| Take 04 | 282,028 | 279,383 | 277,541 | 280,408 | 262,176 | 260,247 | 231,651 | 217,836 | 194,265 | 191,813 | 217,756 | 219,879 | 249,123 | 250,429 | 277,271 | 292,745 | 296,750 | 275,935 | 276,559 | 293,609 | 251,453 | 165,309 |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 277,124 | 275,251 | 274,411 | 278,787 | 261,880 | 261,111 | 230,478 | 217,422 | 192,566 | 192,954 | 216,848 | 220,606 | 249,669 | 245,857 | 279,154 | 291,141 | 279,233 | 274,000 | 273,854 | 291,218 | 246,611 | 163,717 |
| Take 07 | 277,782 | 278,344 | 275,545 | 281,474 | 268,366 | 264,132 | 232,214 | 217,754 | 194,054 | 193,795 | 218,943 | 220,386 | 250,457 | 245,417 | 275,463 | 292,614 | 331,235 | 275,212 | 273,661 | 286,303 | 248,637 | 164,557 |
| Take 08 | 277,916 | 272,054 | 271,622 | 276,118 | 263,782 | 261,030 | 230,215 | 214,464 | 192,428 | 190,995 | 216,227 | 218,688 | 249,740 | 246,146 | 278,542 | 291,356 | 329,731 | 277,440 | 278,061 | 292,544 | 246,661 | 165,001 |
| Take 09 | 282,828 | 280,355 | 278,193 | 280,544 | 261,814 | 261,584 | 230,933 | 216,144 | 191,201 | 192,977 | 216,868 | 221,249 | 249,900 | 248,493 | 279,602 | 295,326 | 331,354 | 313,465 | 272,562 | 291,361 | 248,332 | 165,126 |
| Take 10 | 281,188 | 278,402 | 278,449 | 277,425 | 259,955 | 262,714 | 230,080 | 218,525 | 197,961 | 193,106 | 221,737 | 220,423 | 247,864 | 248,101 | 274,993 | 290,050 | 330,429 | 277,092 | 277,585 | 288,716 | 245,853 | 164,563 |
| Take 11 | 280,233 | 280,236 | 276,993 | 279,366 | 263,650 | 262,629 | 233,233 | 221,491 | 195,266 | 196,630 | 219,707 | 224,694 | 246,065 | 245,986 | 277,578 | 292,334 | 325,862 | 275,412 | 275,070 | 287,314 | 248,045 | 164,956 |
| Take 12 | 279,988 | 277,224 | 277,495 | 278,614 | 262,703 | 258,870 | 232,004 | 218,371 | 192,134 | 195,485 | 219,392 | 218,290 | 248,030 | 244,654 | 277,427 | 293,245 | 328,959 | 272,281 | 275,733 | 289,497 | 246,731 | 164,807 |
| Take 13 | 279,526 | 279,290 | 274,749 | 279,125 | 262,605 | 263,822 | 235,156 | 219,182 | 195,023 | 189,512 | 215,819 | 221,019 | 249,945 | 246,085 | 276,316 | 292,175 | 315,238 | 274,032 | 274,981 | 289,750 | 248,885 | 164,724 |
| Take 14 | 276,995 | 276,810 | 275,929 | 275,096 | 260,755 | 259,107 | 227,880 | 216,485 | 190,053 | 193,887 | 216,723 | 217,506 | 247,845 | 243,568 | 274,041 | 292,909 | 331,554 | 276,897 | 276,690 | 287,336 | 244,206 | 162,751 |
| Take 15 | 278,708 | 275,906 | 274,167 | 275,016 | 261,064 | 258,668 | 227,750 | 217,241 | 190,918 | 192,971 | 218,075 | 218,950 | 247,588 | 247,172 | 274,911 | 291,938 | 326,974 | 275,679 | 274,928 | 290,517 | 244,877 | 163,564 |
| Take 16 | 279,634 | 274,430 | 272,437 | 275,749 | 262,117 | 260,974 | 230,275 | 215,662 | 194,693 | 191,573 | 215,458 | 216,570 | 247,883 | 248,390 | 277,359 | 291,346 | 333,299 | 279,704 | 275,885 | 292,316 | 248,677 | 163,660 |
| Take 17 | 282,375 | 276,384 | 273,252 | 277,176 | 260,779 | 261,344 | 228,797 | 215,657 | 189,503 | 190,731 | 215,339 | 218,337 | 247,925 | 245,631 | 277,213 | 293,600 | 334,651 | 270,699 | 273,785 | 291,787 | 243,729 | 163,898 |
| Take 18 | 281,022 | 277,927 | 277,268 | 280,271 | 263,641 | 260,151 | 226,984 | 215,790 | 189,979 | 193,594 | 217,403 | 220,062 | 245,073 | 249,348 | 279,342 | 293,816 | 331,813 | 277,566 | 276,218 | 291,063 | 244,234 | 163,037 |
| Take 19 | 280,675 | 275,168 | 276,481 | 277,695 | 262,772 | 261,887 | 227,278 | 215,392 | 193,130 | 191,719 | 214,900 | 220,026 | 245,911 | 248,608 | 275,698 | 290,538 | 323,721 | 278,837 | 276,912 | 289,049 | 250,619 | 162,408 |
| Take 20 | 279,266 | 277,189 | 275,490 | 277,558 | 265,387 | 261,086 | 229,700 | 217,802 | 196,886 | 195,477 | 217,144 | 218,372 | 248,885 | 248,771 | 276,489 | 288,375 | 333,723 | 273,116 | 275,653 | 293,713 | 247,925 | 163,391 |
| Take 21 | 279,213 | 277,866 | 276,870 | 277,821 | 264,451 | 261,633 | 230,023 | 217,672 | 190,554 | 190,991 | 217,328 | 218,707 | 252,242 | 247,439 | 274,405 | 296,097 | 181,159 | 281,692 | 273,565 | 0,000 | 237,938 | 162,480 |
| **Ten 4 AVERAGE** | **279,761** | **277,352** | **275,832** | **278,427** | **263,135** | **261,335** | **230,540** | **217,343** | **193,196** | **192,963** | **217,444** | **219,776** | **248,478** | **247,070** | **276,854** | **292,064** | **328,914** | **277,594** | **275,279** | **290,052** | **246,639** | **164,170** |
| Cents RF+3rds | 9,302 | -5,666 | -15,179 | 1,026 | 3,234 | -8,652 | -25,713 | -27,760 | -31,650 | -33,745 | -26,957 | -8,492 | 4,011 | -5,825 | -8,781 | -16,188 | -10,480 | -4,158 | -18,658 | -28,154 | -8,848 | -13,505 |
| Cents RF-3rds | 13,569 | -1,398 | -10,912 | 5,293 | 7,501 | -4,385 | -21,446 | -23,493 | -27,382 | -29,478 | -22,690 | -4,225 | 8,278 | -1,558 | -4,514 | -11,921 | -6,213 | 0,109 | -14,391 | -23,887 | -4,581 | -9,238 |
| Just Int I | -13,686 | -13,686 | -13,686 | -13,686 | 7,820 | 7,820 | -37,039 | -21,506 | -3,910 | -3,910 | -21,506 | -21,506 | -39,102 | -39,102 | -35,192 | -19,551 | -19,551 | -35,192 | -35,192 | -23,461 | -17,596 | -19,551 |
| Just Int II | -13,686 | -13,686 | -13,686 | -13,686 | 29,326 | 29,326 | -15,532 | 0,000 | 17,596 | 17,596 | 0,000 | 0,000 | -17,596 | -17,596 | -13,686 | -1,955 | 1,955 | -13,686 | -13,686 | -1,955 | 3,910 | 1,955 |
| Pythagorean | 7,820 | 7,820 | 7,820 | 7,820 | -5,865 | -5,865 | 4,955 | 0,000 | -3,910 | -3,910 | 0,000 | 0,000 | 3,910 | 3,910 | 7,820 | -1,955 | 1,955 | 7,820 | 7,820 | -1,955 | 3,910 | 1,955 |
| Meantone | -13,686 | -13,686 | -13,686 | -13,686 | 10,265 | 10,265 | 17,107 | 0,000 | 6,843 | 6,843 | 0,000 | 0,000 | -6,843 | -6,843 | -13,686 | 3,422 | -3,421 | -13,686 | -13,686 | 3,422 | -6,843 | -3,421 |

**Fourth Phrase**

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 247,556 | 247,537 | 249,579 | 223,314 | 202,901 | 279,710 | 279,882 | 280,216 | 278,907 | 246,776 | 219,403 | 300,724 | 296,508 | 300,206 | 296,821 | 222,190 | 223,666 | 199,931 |
| Take 02 | | | | | | | | | | | | | | | | | | |
| Take 03 | 249,114 | 247,584 | 250,083 | 221,142 | 198,957 | 279,332 | 277,442 | 282,090 | 280,651 | 246,933 | 221,120 | 298,013 | 292,760 | 300,997 | 298,184 | 221,884 | 220,353 | 198,354 |
| Take 04 | 249,146 | 249,350 | 251,333 | 221,163 | 198,121 | 283,286 | 278,489 | 281,519 | 277,491 | 246,510 | 218,560 | 294,936 | 292,375 | 297,681 | 294,752 | 222,198 | 220,695 | 197,428 |
| Take 05 | | | | | | | | | | | | | | | | | | |
| Take 06 | 246,337 | 246,050 | 245,258 | 218,405 | 195,072 | 273,970 | 273,683 | 275,546 | 274,593 | 245,455 | 222,820 | 292,941 | 290,289 | 301,091 | 288,187 | 219,326 | 219,956 | 197,217 |
| Take 07 | 247,278 | 249,515 | 247,429 | 220,087 | 195,537 | 277,457 | 276,721 | 278,949 | 275,846 | 245,548 | 224,519 | 300,155 | 293,628 | 303,020 | 293,770 | 220,042 | 219,779 | 194,921 |
| Take 08 | 247,330 | 246,704 | 247,786 | 218,492 | 198,109 | 281,985 | 276,240 | 276,985 | 276,660 | 245,682 | 219,746 | 302,249 | 293,578 | 298,443 | 295,068 | 219,003 | 218,559 | 195,885 |
| Take 09 | 247,908 | 246,857 | 248,510 | 218,923 | 195,335 | 277,063 | 274,306 | 276,383 | 274,948 | 245,488 | 224,405 | 294,839 | 293,555 | 299,699 | 294,079 | 219,921 | 219,203 | 195,992 |
| Take 10 | 249,590 | 248,779 | 249,073 | 223,228 | 198,818 | 280,262 | 279,347 | 278,342 | 278,515 | 248,451 | 223,480 | 291,141 | 290,032 | 295,072 | 293,308 | 221,500 | 219,861 | 198,429 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 11 | 248,502 | 248,972 | 249,225 | 223,387 | 202,786 | 279,560 | 276,998 | 279,722 | 278,251 | 247,812 | 226,285 | 297,947 | 292,479 | 297,662 | 299,462 | 221,095 | 220,604 | 197,423 |
| Take 12 | 249,009 | 247,250 | 249,125 | 219,649 | 200,151 | 278,355 | 276,803 | 278,942 | 281,093 | 248,349 | 224,816 | 296,235 | 292,901 | 293,196 | 296,006 | 220,234 | 219,345 | 197,357 |
| Take 13 | 250,589 | 249,754 | 250,849 | 222,772 | 196,377 | 279,537 | 275,542 | 276,091 | 275,580 | 247,322 | 222,548 | 295,422 | 290,756 | 288,070 | 291,992 | 221,735 | 218,933 | 196,143 |
| Take 14 | 246,480 | 246,299 | 246,788 | 221,784 | 197,740 | 277,930 | 274,974 | 274,498 | 273,507 | 245,260 | 219,446 | 287,174 | 291,827 | 296,360 | 294,054 | 219,009 | 220,103 | 194,640 |
| Take 15 | 247,388 | 248,061 | 247,094 | 218,750 | 196,195 | 278,488 | 276,700 | 277,840 | 276,141 | 246,633 | 222,615 | 296,970 | 294,196 | 296,436 | 293,390 | 220,200 | 221,150 | 195,589 |
| Take 16 | 245,101 | 245,753 | 247,504 | 219,873 | 192,787 | 275,890 | 274,120 | 275,693 | 277,019 | 246,325 | 222,138 | 289,814 | 292,062 | 294,273 | 294,849 | 220,670 | 218,522 | 197,415 |
| Take 17 | 247,281 | 247,353 | 247,130 | 218,766 | 194,569 | 276,428 | 273,631 | 276,975 | 273,365 | 243,393 | 221,098 | 294,567 | 290,008 | 292,558 | 294,191 | 219,166 | 218,878 | 195,488 |
| Take 18 | 247,599 | 247,573 | 246,160 | 219,104 | 196,451 | 281,658 | 276,893 | 279,967 | 273,850 | 247,039 | 222,636 | 295,808 | 290,724 | 291,670 | 291,675 | 220,058 | 221,034 | 196,363 |
| Take 19 | 245,630 | 244,835 | 246,435 | 219,685 | 198,867 | 273,845 | 272,963 | 274,655 | 276,309 | 242,420 | 224,618 | 294,105 | 293,581 | 290,973 | 295,873 | 218,824 | 216,861 | 193,629 |
| Take 20 | 246,506 | 243,031 | 246,141 | 221,805 | 198,244 | 276,841 | 274,530 | 275,591 | 278,734 | 245,738 | 222,645 | 288,941 | 296,692 | 289,358 | 298,509 | 221,877 | 220,399 | 197,647 |
| Take 21 | 247,366 | 246,911 | 246,038 | 219,162 | 198,729 | 277,099 | 274,334 | 277,559 | 275,159 | 245,889 | 219,383 | 290,390 | 289,759 | 289,484 | 294,537 | 221,385 | 217,466 | 194,804 |
| Ten 1 AVERAGE | **247,669** | **247,272** | **247,976** | **220,500** | **197,671** | **278,352** | **275,979** | **277,767** | **276,664** | **246,159** | **222,225** | **294,862** | **292,511** | **295,592** | **294,669** | **220,543** | **219,756** | **196,561** |
| Cents RF+3rds | 4,595 | 1,817 | 6,739 | 3,430 | 14,219 | 6,793 | -8,033 | 3,146 | -3,737 | -5,991 | 16,926 | 6,545 | -7,312 | 10,827 | 5,413 | 3,771 | -2,417 | 4,469 |
| Cents RF-3rds | 8,504 | 5,726 | 10,647 | 7,339 | 18,128 | 10,702 | -4,124 | 7,055 | 0,171 | -2,083 | 20,835 | 10,453 | -3,403 | 14,736 | 9,321 | 7,680 | 1,492 | 8,378 |
| Just Int I | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Just Int II | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Pythagorean | 5,865 | 5,865 | 5,865 | 1,955 | -1,955 | 9,775 | 9,775 | 9,775 | 9,775 | 5,865 | 1,955 | 0,000 | 0,000 | 0,000 | 0,000 | 1,955 | 1,955 | -1,955 |
| Meantone | -10,264 | -10,264 | -10,264 | -3,421 | -29,219 | -17,108 | -17,108 | -17,108 | -17,108 | -10,264 | -3,421 | 0,000 | 0,000 | 0,000 | 0,000 | -3,421 | -3,421 | 3,422 |
| Take 01 | 246,552 | 248,481 | 246,923 | 220,230 | 197,993 | 277,217 | 276,916 | 278,617 | 274,339 | 249,712 | 224,820 | 293,831 | 296,035 | 299,289 | 298,578 | 220,941 | 220,500 | 196,571 |
| Take 02 | | | | | | | | | | | | | | | | | | |
| Take 03 | 249,030 | 248,571 | 246,678 | 218,809 | 193,670 | 279,866 | 274,821 | 276,997 | 274,921 | 246,845 | 225,400 | 294,535 | 293,301 | 297,399 | 294,741 | 219,434 | 220,087 | 196,495 |
| Take 04 | 245,624 | 250,462 | 248,969 | 218,568 | 195,549 | 279,013 | 276,452 | 278,328 | 278,947 | 247,278 | 221,798 | 295,527 | 294,256 | 298,052 | 296,317 | 219,891 | 218,359 | 197,507 |
| Take 05 | | | | | | | | | | | | | | | | | | |
| Take 06 | 244,664 | 244,846 | 246,172 | 218,663 | 194,578 | 278,649 | 274,245 | 278,298 | 276,152 | 243,461 | 217,599 | 292,089 | 293,927 | 293,781 | 293,617 | 219,325 | 220,561 | 193,963 |
| Take 07 | 246,718 | 244,556 | 247,048 | 220,046 | 196,715 | 275,048 | 275,770 | 278,705 | 274,284 | 243,841 | 223,178 | 295,096 | 295,186 | 296,417 | 294,429 | 219,567 | 218,535 | 195,853 |
| Take 08 | 245,633 | 247,203 | 247,099 | 218,029 | 196,760 | 279,528 | 276,010 | 276,566 | 276,442 | 245,245 | 218,339 | 296,251 | 292,473 | 295,706 | 298,740 | 219,569 | 218,909 | 195,098 |
| Take 09 | 245,154 | 247,667 | 246,988 | 219,036 | 196,854 | 276,768 | 276,054 | 279,474 | 276,857 | 242,666 | 219,786 | 294,000 | 293,396 | 295,285 | 296,718 | 219,786 | 220,108 | 194,640 |
| Take 10 | 248,047 | 248,353 | 247,705 | 221,551 | 195,971 | 275,908 | 276,973 | 276,224 | 275,983 | 247,603 | 225,500 | 291,641 | 292,221 | 295,248 | 296,217 | 221,150 | 221,586 | 198,310 |
| Take 11 | 247,897 | 245,800 | 244,736 | 217,520 | 200,160 | 280,198 | 277,735 | 277,840 | 275,896 | 247,788 | 219,896 | 297,022 | 293,080 | 296,411 | 299,509 | 220,986 | 219,396 | 197,869 |
| Take 12 | 246,999 | 248,851 | 245,830 | 219,846 | 196,084 | 279,406 | 276,341 | 280,630 | 275,297 | 248,429 | 217,168 | 296,989 | 292,735 | 297,590 | 292,699 | 220,500 | 220,068 | 195,096 |
| Take 13 | 247,136 | 247,479 | 245,600 | 219,036 | 195,897 | 277,860 | 277,071 | 277,546 | 275,143 | 245,249 | 225,350 | 297,840 | 292,780 | 296,978 | 294,918 | 220,545 | 221,486 | 193,748 |
| Take 14 | 245,821 | 244,986 | 244,012 | 219,162 | 198,000 | 274,398 | 275,514 | 277,677 | 275,543 | 242,274 | 214,829 | 293,720 | 292,240 | 295,781 | 293,359 | 219,485 | 220,045 | 196,000 |
| Take 15 | 247,558 | 244,667 | 244,966 | 218,456 | 196,995 | 278,471 | 276,465 | 276,301 | 276,511 | 245,462 | 219,670 | 295,973 | 293,730 | 296,000 | 295,892 | 218,840 | 220,239 | 195,195 |
| Take 16 | 245,380 | 242,826 | 248,072 | 218,012 | 192,693 | 280,873 | 272,950 | 279,239 | 275,291 | 245,032 | 215,617 | 293,419 | 291,531 | 298,639 | 296,763 | 218,998 | 219,217 | 195,850 |
| Take 17 | 247,397 | 245,246 | 245,595 | 219,919 | 195,597 | 273,521 | 272,859 | 274,169 | 272,742 | 246,561 | 220,957 | 288,880 | 290,937 | 298,221 | 297,103 | 218,961 | 218,336 | 194,090 |
| Take 18 | 245,030 | 244,478 | 245,689 | 218,039 | 194,328 | 278,258 | 274,971 | 274,799 | 273,288 | 242,865 | 219,428 | 284,493 | 291,727 | 296,604 | 296,312 | 218,062 | 220,776 | 195,710 |
| Take 19 | 243,482 | 243,242 | 245,282 | 213,874 | 194,551 | 277,415 | 273,090 | 274,710 | 273,269 | 246,194 | 219,445 | 294,950 | 290,413 | 296,666 | 295,265 | 219,690 | 219,065 | 194,061 |
| Take 20 | 248,218 | 241,810 | 244,218 | 224,524 | 197,012 | 274,682 | 275,260 | 277,614 | 277,391 | 248,240 | 229,305 | 293,147 | 290,076 | 314,069 | 297,953 | 219,707 | 221,891 | 193,889 |
| Take 21 | 246,660 | 248,151 | 245,658 | 215,029 | 195,282 | 277,028 | 274,742 | 275,686 | 272,090 | 245,000 | 219,084 | 302,172 | 290,709 | 299,303 | 295,157 | 219,866 | 219,593 | 196,948 |
| Ten 2 AVERAGE | **246,474** | **246,193** | **246,171** | **218,861** | **196,036** | **277,585** | **275,486** | **277,338** | **275,283** | **245,776** | **220,904** | **294,294** | **292,671** | **297,760** | **296,015** | **219,753** | **219,935** | **195,626** |
| Cents RF+3rds | -3,782 | -5,751 | -5,911 | -9,487 | -0,156 | 2,012 | -11,125 | 0,474 | -12,400 | -8,688 | 6,600 | 3,206 | -6,365 | 23,479 | 13,304 | -2,443 | -1,012 | -3,783 |
| Cents RF-3rds | 0,127 | -1,842 | -2,002 | -5,578 | 3,753 | 5,921 | -7,216 | 4,382 | -8,491 | -4,779 | 10,508 | 7,115 | -2,456 | 27,387 | 17,212 | 1,465 | 2,897 | 0,125 |
| Just Int I | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Just Int II | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Pythagorean | 5,865 | 5,865 | 5,865 | 1,955 | -1,955 | 9,775 | 9,775 | 9,775 | 9,775 | 5,865 | 1,955 | 0,000 | 0,000 | 0,000 | 0,000 | 1,955 | 1,955 | -1,955 |
| Meantone | -10,264 | -10,264 | -10,264 | -3,421 | -29,219 | -17,108 | -17,108 | -17,108 | -17,108 | -10,264 | -3,421 | 0,000 | 0,000 | 0,000 | 0,000 | -3,421 | -3,421 | 3,422 |
| Take 01 | 246,720 | 246,996 | 247,544 | 216,393 | 194,722 | 279,853 | 277,550 | 275,460 | 277,146 | 246,218 | 215,069 | 292,266 | 295,727 | 298,207 | 295,228 | 219,702 | 217,819 | 193,414 |
| Take 02 | | | | | | | | | | | | | | | | | | |
| Take 03 | 243,392 | 245,484 | 245,727 | 216,708 | 194,343 | 275,157 | 275,197 | 272,971 | 274,843 | 246,025 | 222,209 | 289,079 | 290,873 | 295,527 | 292,633 | 219,883 | 220,700 | 192,728 |
| Take 04 | 245,904 | 245,341 | 246,154 | 219,251 | 196,763 | 275,024 | 273,630 | 274,544 | 276,393 | 247,034 | 224,120 | 293,550 | 293,476 | 295,112 | 293,146 | 219,049 | 219,232 | 191,420 |
| Take 05 | | | | | | | | | | | | | | | | | | |
| Take 06 | 244,014 | 243,233 | 243,267 | 219,246 | 194,883 | 272,181 | 272,576 | 275,353 | 274,901 | 244,197 | 215,272 | 292,791 | 289,435 | 292,503 | 292,906 | 218,293 | 218,796 | 191,887 |
| Take 07 | 244,953 | 246,369 | 245,166 | 218,159 | 196,257 | 275,331 | 273,507 | 275,358 | 276,759 | 245,941 | 218,317 | 292,481 | 291,626 | 300,468 | 291,611 | 218,228 | 219,877 | 193,396 |
| Take 08 | 243,395 | 0,000 | 246,105 | 214,914 | 191,950 | 271,281 | 272,828 | 273,811 | 272,131 | 245,827 | 222,054 | 293,796 | 288,145 | 299,510 | 291,683 | 217,561 | 218,739 | 190,205 |
| Take 09 | 243,188 | 242,929 | 245,201 | 217,742 | 193,092 | 272,053 | 273,839 | 274,944 | 273,499 | 245,494 | 220,037 | 291,703 | 289,830 | 293,161 | 292,850 | 218,774 | 220,057 | 193,349 |
| Take 10 | 245,740 | 246,094 | 246,247 | 217,790 | 193,244 | 276,310 | 274,053 | 276,421 | 276,010 | 247,511 | 220,577 | 291,777 | 291,332 | 294,770 | 293,497 | 219,215 | 220,207 | 194,200 |
| Take 11 | 243,975 | 243,633 | 243,353 | 218,747 | 198,071 | 277,275 | 274,836 | 275,678 | 274,490 | 244,881 | 218,547 | 294,035 | 293,671 | 295,430 | 292,986 | 219,918 | 221,132 | 195,080 |
| Take 12 | 244,879 | 244,712 | 245,974 | 216,290 | 194,588 | 275,086 | 272,978 | 273,941 | 275,214 | 246,635 | 218,659 | 293,146 | 292,764 | 293,441 | 292,937 | 218,451 | 217,297 | 192,519 |
| Take 13 | 243,768 | 243,534 | 244,120 | 217,265 | 194,864 | 272,727 | 272,606 | 274,280 | 272,116 | 242,144 | 218,203 | 290,028 | 290,249 | 293,676 | 294,240 | 217,556 | 216,712 | 193,123 |
| Take 14 | 243,815 | 244,367 | 243,487 | 216,634 | 192,988 | 274,400 | 273,233 | 274,513 | 274,736 | 242,647 | 215,313 | 291,768 | 290,313 | 292,393 | 293,820 | 218,021 | 217,970 | 194,226 |
| Take 15 | 245,105 | 244,783 | 244,181 | 216,681 | 194,720 | 273,462 | 272,668 | 274,995 | 274,221 | 243,669 | 216,546 | 290,026 | 290,596 | 294,754 | 291,615 | 218,425 | 216,845 | 195,273 |

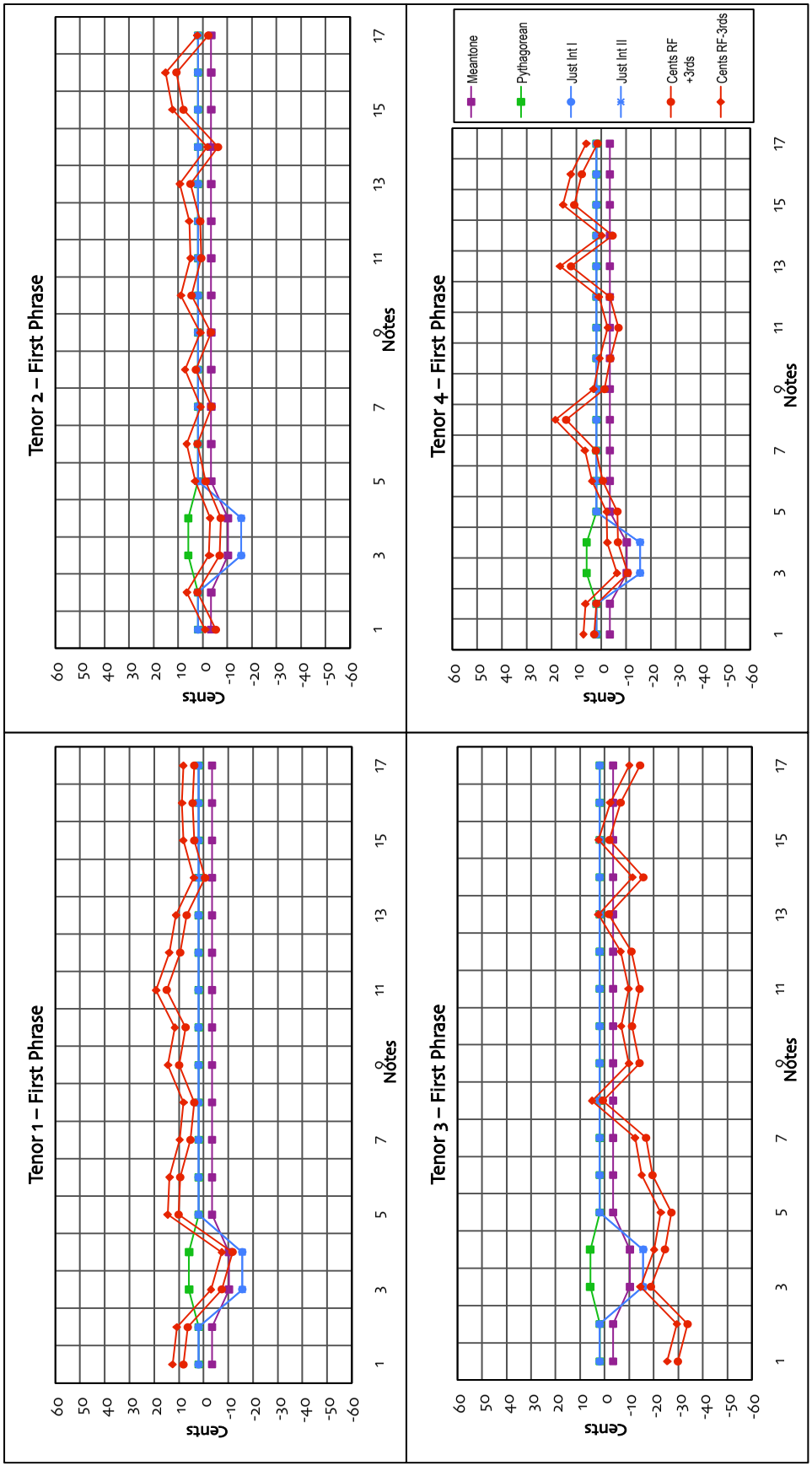
| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 16 | 242,198 | 243,207 | 242,798 | 214,235 | 194,027 | 274,333 | 274,334 | 273,840 | 269,215 | 244,768 | 217,375 | 290,348 | 290,837 | 296,405 | 289,437 | 217,699 | 216,677 | 192,068 |
| Take 17 | 244,101 | 243,954 | 243,316 | 213,033 | 195,876 | 279,362 | 272,131 | 274,867 | 271,085 | 245,615 | 221,114 | 290,447 | 289,583 | 295,360 | 290,063 | 217,662 | 218,926 | 192,053 |
| Take 18 | 243,695 | 244,811 | 241,190 | 212,639 | 193,280 | 275,129 | 272,084 | 273,609 | 271,318 | 240,867 | 212,107 | 282,864 | 290,911 | 289,642 | 291,836 | 215,851 | 216,168 | 193,066 |
| Take 19 | 243,912 | 243,491 | 244,723 | 213,583 | 193,496 | 271,599 | 270,956 | 273,621 | 270,965 | 241,661 | 218,571 | 291,028 | 288,591 | 294,659 | 290,558 | 217,080 | 217,419 | 191,392 |
| Take 20 | 244,168 | 242,018 | 239,762 | 213,911 | 194,894 | 270,801 | 269,308 | 274,855 | 275,614 | 240,285 | 218,630 | 300,143 | 295,201 | 296,522 | 293,168 | 217,376 | 218,225 | 192,492 |
| Take 21 | 243,515 | 243,340 | 243,521 | 214,570 | 194,151 | 271,570 | 272,423 | 275,310 | 272,077 | 238,741 | 211,196 | 289,558 | 289,002 | 292,759 | 290,294 | 216,994 | 217,389 | 191,837 |
| **Ten 3 AVERAGE** | **244,234** | **244,350** | **244,307** | **216,200** | **194,537** | **274,365** | **273,197** | **274,651** | **273,828** | **244,219** | **218,101** | **291,623** | **291,166** | **294,963** | **292,343** | **218,197** | **218,431** | **192,828** |
| Cents RF+3rds | -19,588 | -18,764 | -19,065 | -30,665 | -13,445 | -18,185 | -25,573 | -16,381 | -21,577 | -19,690 | -15,506 | -12,576 | -15,289 | 7,140 | -8,309 | -14,745 | -12,889 | -28,725 |
| Cents RF-3rds | -15,679 | -14,855 | -15,157 | -26,756 | -9,536 | -14,276 | -21,664 | -12,473 | -17,668 | -15,782 | -11,598 | -8,668 | -11,380 | 11,049 | -4,400 | -10,837 | -8,980 | -24,816 |
| Just Int I | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Just Int II | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Pythagorean | 5,865 | 5,865 | 5,865 | 1,955 | -1,955 | 9,775 | 9,775 | 9,775 | 9,775 | 5,865 | 1,955 | 0,000 | 0,000 | 0,000 | 0,000 | 1,955 | 1,955 | -1,955 |
| Meantone | -10,264 | -10,264 | -10,264 | -3,421 | -29,219 | -17,108 | -17,108 | -17,108 | -17,108 | -10,264 | -3,421 | 0,000 | 0,000 | 0,000 | 0,000 | -3,421 | -3,421 | 3,422 |
| Take 01 | 244,785 | 249,013 | 246,025 | 220,903 | 197,534 | 282,240 | 276,045 | 280,693 | 276,434 | 246,228 | 222,727 | 294,020 | 293,197 | 301,504 | 295,761 | 220,934 | **223,019** | **194,949** |
| Take 02 | | | | | | | | | | | | | | | | | | |
| Take 03 | 246,250 | 245,854 | 246,632 | 219,087 | 197,847 | 283,400 | 277,165 | 279,265 | 278,409 | 244,311 | 222,463 | 296,238 | 294,192 | 295,152 | 289,603 | 221,384 | 221,467 | 194,260 |
| Take 04 | 245,538 | 245,237 | 247,381 | 216,278 | 197,015 | 282,984 | 276,946 | 280,511 | 278,163 | 249,976 | 224,796 | 296,447 | 289,431 | 294,870 | 289,395 | 217,772 | 219,109 | 193,565 |
| Take 05 | | | | | | | | | | | | | | | | | | |
| Take 06 | 243,337 | 245,986 | 246,202 | 222,036 | 195,990 | 277,936 | 274,340 | 276,957 | 272,059 | 243,338 | 218,452 | 294,552 | 292,176 | 294,408 | 293,258 | 219,802 | 220,602 | 197,440 |
| Take 07 | 245,391 | 247,799 | 245,643 | 220,947 | 196,865 | 278,070 | 275,702 | 279,778 | 276,357 | 245,298 | 222,665 | 299,917 | 289,691 | 293,775 | 292,637 | 219,695 | 219,368 | 196,437 |
| Take 08 | 247,377 | 247,341 | 249,153 | 220,109 | 196,806 | 282,190 | 276,661 | 282,066 | 276,214 | 247,545 | 221,119 | 299,168 | 297,516 | 297,502 | 293,470 | 220,014 | 223,150 | 196,381 |
| Take 09 | 245,585 | 245,743 | 247,361 | 219,088 | 197,066 | 278,802 | 275,840 | 277,941 | 276,097 | 246,552 | 226,194 | 293,663 | 293,509 | 299,063 | 291,491 | 221,019 | 220,292 | 197,350 |
| Take 10 | 246,427 | 246,475 | 245,535 | 221,511 | 199,644 | 278,860 | 276,556 | 280,121 | 275,887 | 245,855 | 222,054 | 294,327 | 268,622 | 301,222 | 295,105 | 220,389 | 223,105 | 194,351 |
| Take 11 | 246,157 | 244,305 | 245,482 | 219,244 | 199,132 | 283,439 | 276,976 | 279,991 | 275,780 | 246,764 | 223,669 | 295,758 | 296,492 | 294,880 | 286,464 | 221,971 | 223,303 | 197,048 |
| Take 12 | 245,661 | 248,353 | 247,980 | 219,403 | 199,562 | 280,212 | 276,163 | 277,065 | 280,023 | 249,139 | 223,150 | 291,965 | 294,284 | 293,844 | 291,949 | 218,871 | 222,659 | 195,269 |
| Take 13 | 246,032 | 246,900 | 248,536 | 219,363 | 198,957 | 278,068 | 276,438 | 276,660 | 276,059 | 244,228 | 217,749 | 293,187 | 295,570 | 297,386 | 294,983 | 220,229 | 221,608 | 194,456 |
| Take 14 | 243,861 | 245,256 | 243,453 | 218,967 | 195,710 | 276,502 | 275,794 | 276,722 | 271,492 | 243,743 | 223,001 | 291,841 | 289,671 | 293,720 | 290,132 | 220,124 | 219,846 | 194,492 |
| Take 15 | 245,468 | 247,563 | 245,570 | 218,199 | 196,919 | 278,631 | 274,838 | 277,474 | 275,839 | 247,658 | 222,976 | 291,469 | 289,847 | 295,784 | 293,293 | 219,873 | 219,897 | 195,867 |
| Take 16 | 245,757 | 243,986 | 245,286 | 219,214 | 196,353 | 278,128 | 275,810 | 280,849 | 274,115 | 246,685 | 218,828 | 291,659 | 292,440 | 292,777 | 292,714 | 220,432 | 218,964 | 196,033 |
| Take 17 | 244,703 | 245,801 | 244,587 | 215,854 | 194,786 | 276,292 | 275,235 | 274,197 | 274,205 | 248,383 | 222,974 | 293,960 | 293,620 | 295,191 | 292,330 | 220,048 | 220,517 | 194,682 |
| Take 18 | 245,239 | 243,873 | 245,443 | 218,397 | 198,516 | 281,906 | 276,003 | 277,931 | 276,520 | 244,495 | 215,929 | 293,807 | 293,829 | 295,587 | 294,662 | 220,073 | 220,267 | 194,221 |
| Take 19 | 245,700 | 244,909 | 245,295 | 218,636 | 195,261 | 278,984 | 276,237 | 279,301 | 273,750 | 245,344 | 218,023 | 292,850 | 294,655 | 295,911 | 291,754 | 219,553 | 221,907 | 196,036 |
| Take 20 | 245,858 | 243,778 | 246,137 | 220,434 | 194,771 | 283,276 | 276,898 | 279,768 | 275,088 | 249,217 | 222,019 | 298,207 | 296,819 | 298,997 | 297,009 | 221,001 | 222,829 | 196,633 |
| Take 21 | 246,057 | 245,066 | 245,106 | 216,597 | 194,076 | 279,011 | 275,695 | 272,325 | 272,382 | 245,049 | **223,858** | **304,138** | **295,145** | 300,098 | 297,906 | 219,195 | 220,163 | 195,095 |
| **Ten 4 AVERAGE** | **245,536** | **245,960** | **246,148** | **219,172** | **196,990** | **279,944** | **276,071** | **278,401** | **275,520** | **246,306** | **221,718** | **295,114** | **292,142** | **296,404** | **292,838** | **220,125** | **221,162** | **195,503** |
| Cents RF+3rds | -10,380 | -7,393 | -6,072 | -7,025 | 8,245 | 16,663 | -7,457 | 7,095 | -10,915 | -4,961 | 12,972 | 8,027 | -9,495 | 15,575 | -5,380 | 0,488 | 8,622 | -4,869 |
| Cents RF-3rds | -6,471 | -3,485 | -2,163 | -3,117 | 12,154 | 20,571 | -3,548 | 11,004 | -7,006 | -1,052 | 16,881 | 11,936 | -5,586 | 19,484 | -1,472 | 4,397 | 12,530 | -0,960 |
| Just Int I | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Just Int II | -15,641 | -15,641 | -15,641 | 1,955 | -1,955 | -11,731 | -11,731 | -11,731 | -11,731 | -15,641 | 1,955 | 0,000 | 0,000 | 0,000 | -27,264 | 1,955 | 1,955 | -1,955 |
| Pythagorean | 5,865 | 5,865 | 5,865 | 1,955 | -1,955 | 9,775 | 9,775 | 9,775 | 9,775 | 5,865 | 1,955 | 0,000 | 0,000 | 0,000 | 0,000 | 1,955 | 1,955 | -1,955 |
| Meantone | -10,264 | -10,264 | -10,264 | -3,421 | -29,219 | -17,108 | -17,108 | -17,108 | -17,108 | -10,264 | -3,421 | 0,000 | 0,000 | 0,000 | 0,000 | -3,421 | -3,421 | 3,422 |

**Fifth Phrase**

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 264,575 | 299,051 | 265,606 | 250,937 | 297,997 | 280,618 | 250,606 | 222,197 | 219,562 | 199,497 | 222,628 | 198,112 | 197,446 | 187,334 |
| Take 02 | | | | | | | | | | | | | | |
| Take 03 | 261,208 | 296,670 | 261,287 | 247,902 | 294,110 | 277,658 | 248,057 | 222,459 | 221,373 | 198,761 | 221,625 | 196,006 | 196,508 | 187,060 |
| Take 04 | 261,164 | 294,139 | 263,001 | 249,061 | 293,930 | 277,525 | 247,676 | 222,706 | 222,345 | 199,777 | 221,129 | 195,525 | 195,950 | 187,445 |
| Take 05 | | | | | | | | | | | | | | |
| Take 06 | 259,195 | 291,097 | 261,897 | 248,593 | 293,240 | 274,605 | 243,902 | 220,689 | 220,879 | 196,816 | 220,271 | 194,999 | 196,471 | 187,389 |
| Take 07 | 263,738 | 293,532 | 264,691 | 250,138 | 293,068 | 275,602 | 245,132 | 220,211 | 219,142 | 195,985 | 219,550 | 194,697 | 195,423 | 185,232 |
| Take 08 | 257,137 | 293,068 | 260,864 | 248,019 | 291,177 | 273,925 | 246,508 | 220,382 | 220,156 | 197,092 | 219,140 | 194,538 | 195,379 | 186,354 |
| Take 09 | 263,249 | 294,763 | 262,698 | 248,326 | 292,447 | 274,986 | 245,321 | 220,874 | 219,191 | 196,839 | 219,674 | 196,285 | 195,858 | 185,862 |
| Take 10 | 264,814 | 294,695 | 262,484 | 250,789 | 292,229 | 278,937 | 246,936 | 220,768 | 221,644 | 200,342 | 222,105 | 198,942 | 196,430 | 186,832 |
| Take 11 | 265,063 | 293,728 | 262,767 | 251,460 | 291,374 | 271,440 | 246,628 | 222,170 | 218,199 | 198,187 | 222,679 | 197,006 | 195,523 | 188,718 |
| Take 12 | 263,212 | 294,648 | 262,930 | 250,179 | 294,954 | 278,789 | 251,494 | 223,742 | 220,744 | 201,334 | 221,836 | 196,242 | 195,601 | 186,057 |
| Take 13 | 262,223 | 293,163 | 260,154 | 249,060 | 292,028 | 274,226 | 247,524 | 223,591 | 221,897 | 198,993 | 220,970 | 195,028 | 195,306 | 187,021 |
| Take 14 | 258,800 | 291,775 | 259,885 | 247,174 | 292,118 | 273,968 | 244,989 | 218,821 | 218,137 | 193,564 | 218,736 | 195,425 | 194,702 | 184,137 |
| Take 15 | 261,191 | 292,333 | 262,922 | 250,608 | 290,071 | 274,828 | 246,670 | 221,301 | 220,406 | 197,088 | 218,718 | 194,978 | 194,092 | 185,327 |
| Take 16 | 260,690 | 292,124 | 259,735 | 245,420 | 286,919 | 271,847 | 245,880 | 219,357 | 220,126 | 197,665 | 220,095 | 195,266 | 194,529 | 185,000 |
| Take 17 | 260,786 | 292,126 | 260,196 | 246,122 | 290,683 | 276,688 | 244,082 | 218,788 | 221,156 | 196,946 | 220,336 | 193,819 | 194,695 | 185,148 |
| Take 18 | 260,018 | 293,213 | 263,307 | 247,185 | 289,116 | 270,565 | 244,358 | 218,322 | 219,057 | 199,439 | 219,658 | 194,002 | 193,632 | 185,038 |

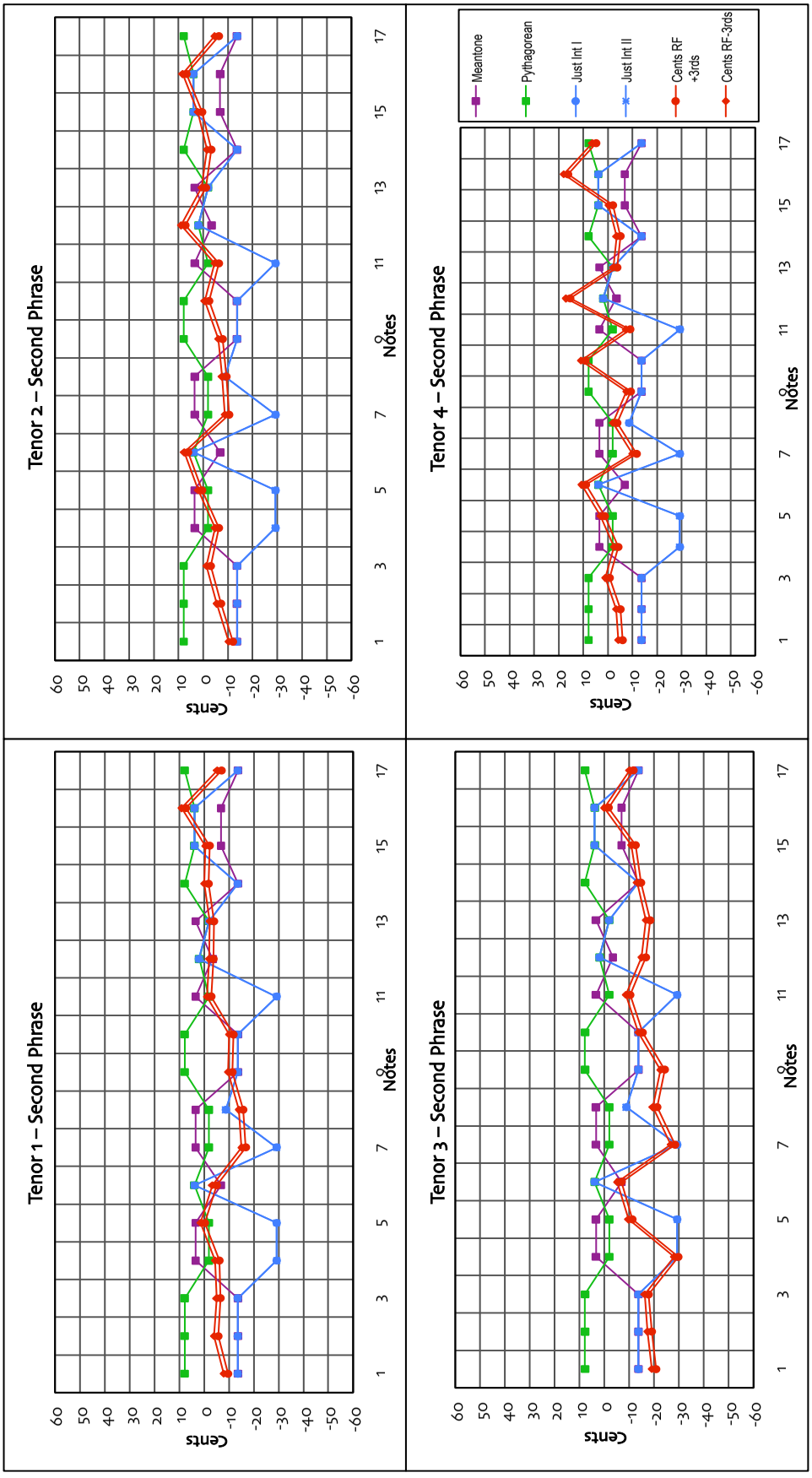
| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 19 | 261,360 | 293,075 | 259,400 | 245,070 | 291,369 | 272,643 | 242,292 | 218,650 | 220,345 | 197,340 | 219,904 | 195,228 | 196,270 | 185,290 |
| Take 20 | 261,560 | 294,291 | 259,529 | 245,243 | 291,753 | 276,450 | 245,765 | 218,121 | 213,432 | 193,744 | 222,470 | 195,512 | 192,494 | 187,117 |
| Take 21 | 261,951 | 295,198 | 261,059 | 245,495 | 289,703 | 272,222 | 244,726 | 221,450 | 219,391 | 199,232 | 221,043 | 193,359 | 193,662 | 186,245 |
| Ten 1 AVERAGE | **261,681** | **293,826** | **261,811** | **248,252** | **292,015** | **275,133** | **246,239** | **220,768** | **219,852** | **197,823** | **220,661** | **195,525** | **195,262** | **186,242** |
| Cents RF+3rds | -3,722 | -3,137 | -2,859 | 5,072 | -13,840 | -16,937 | -9,019 | 1,949 | -5,256 | 11,963 | 1,110 | -8,270 | -10,601 | 7,526 |
| Cents RF-3rds | -3,237 | -2,653 | -2,375 | 5,557 | -13,355 | -16,453 | -8,534 | 2,434 | -4,771 | 12,448 | 1,595 | -7,785 | -10,116 | 8,011 |
| Just Int I | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 |
| Just Int II | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 |
| Pythagorean | -3,910 | 0,000 | -3,910 | 5,865 | 0,000 | 9,775 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -1,955 | -1,955 | 7,820 |
| Meantone | 6,843 | 0,000 | 6,843 | -10,264 | 0,000 | -17,108 | -10,264 | -3,421 | -3,421 | 3,422 | -3,421 | 3,422 | 3,422 | -13,686 |
| Take 01 | 263,128 | 296,382 | 263,063 | 247,130 | 295,426 | 279,094 | 248,337 | 220,493 | 221,998 | 196,324 | 222,443 | 197,680 | 196,329 | 187,018 |
| Take 02 | | | | | | | | | | | | | | |
| Take 03 | 264,040 | 294,866 | 260,966 | 249,653 | 290,936 | 280,422 | 247,341 | 219,015 | 221,798 | 196,508 | 220,402 | 195,925 | 197,732 | 185,785 |
| Take 04 | 263,229 | 296,077 | 264,850 | 251,040 | 288,962 | 276,845 | 248,905 | 224,956 | 222,599 | 196,703 | 221,032 | 196,970 | 198,053 | 186,579 |
| Take 05 | | | | | | | | | | | | | | |
| Take 06 | 264,510 | 294,332 | 263,936 | 248,963 | 292,075 | 276,211 | 245,009 | 221,141 | 221,559 | 196,017 | 220,474 | 196,339 | 197,934 | 185,420 |
| Take 07 | 260,184 | 296,032 | 263,943 | 248,546 | 291,346 | 277,070 | 247,817 | 220,086 | 223,767 | 193,466 | 220,165 | 195,748 | 196,758 | 184,602 |
| Take 08 | 265,974 | 296,358 | 263,230 | 247,336 | 290,900 | 277,082 | 248,246 | 220,441 | 220,196 | 193,905 | 220,251 | 195,964 | 198,310 | 184,712 |
| Take 09 | 263,739 | 295,426 | 262,270 | 248,673 | 293,238 | 277,337 | 247,736 | 220,744 | 219,646 | 194,376 | 220,581 | 196,200 | 196,733 | 184,629 |
| Take 10 | 265,727 | 295,859 | 262,282 | 247,286 | 291,556 | 277,889 | 248,205 | 221,282 | 221,843 | 196,631 | 221,364 | 197,337 | 196,685 | 185,856 |
| Take 11 | 262,543 | 295,979 | 263,772 | 252,926 | 298,319 | 281,640 | 249,045 | 220,718 | 218,570 | 193,951 | 221,659 | 196,888 | 195,706 | 186,631 |
| Take 12 | 261,393 | 294,623 | 260,274 | 245,971 | 292,575 | 278,327 | 248,267 | 219,611 | 219,571 | 197,490 | 220,772 | 195,937 | 196,589 | 185,531 |
| Take 13 | 260,388 | 295,963 | 263,966 | 250,091 | 291,897 | 278,136 | 248,023 | 217,609 | 220,624 | 197,113 | 220,207 | 195,968 | 195,722 | 186,054 |
| Take 14 | 263,357 | 294,169 | 259,682 | 246,640 | 290,158 | 274,212 | 245,795 | 219,618 | 218,897 | 194,862 | 218,814 | 195,456 | 196,624 | 184,320 |
| Take 15 | 262,745 | 294,021 | 262,270 | 247,983 | 290,597 | 272,956 | 246,646 | 218,432 | 218,290 | 193,964 | 219,454 | 195,206 | 196,649 | 185,433 |
| Take 16 | 259,038 | 292,016 | 256,678 | 247,405 | 294,118 | 276,982 | 244,341 | 218,265 | 217,410 | 195,419 | 219,527 | 194,680 | 198,117 | 184,534 |
| Take 17 | 267,539 | 291,619 | 261,150 | 246,742 | 292,935 | 278,252 | 244,009 | 219,716 | 220,893 | 194,683 | 219,837 | 193,895 | 195,389 | 184,514 |
| Take 18 | 261,449 | 293,164 | 256,204 | 248,036 | 286,022 | 272,183 | 244,129 | 220,069 | 220,559 | 193,970 | 219,628 | 194,747 | 193,712 | 183,938 |
| Take 19 | 261,617 | 294,155 | 260,200 | 246,192 | 293,687 | 278,253 | 248,673 | 219,421 | 220,681 | 194,947 | 220,500 | 196,337 | 196,269 | 185,272 |
| Take 20 | 265,147 | 296,866 | 259,980 | 248,814 | 289,529 | 280,680 | 246,301 | 218,437 | 223,598 | 195,811 | 220,574 | 196,151 | 197,633 | 184,936 |
| Take 21 | 261,695 | 294,994 | 259,417 | 244,574 | 287,747 | 274,440 | 245,476 | 220,934 | 218,597 | 192,968 | 218,910 | 195,474 | 197,098 | 184,759 |
| Ten 2 AVERAGE | **263,023** | **294,890** | **261,481** | **248,105** | **291,685** | **277,264** | **246,963** | **220,052** | **220,584** | **195,216** | **220,347** | **195,942** | **196,739** | **185,291** |
| Cents RF+3rds | 5,138 | 3,119 | -5,046 | 4,053 | -15,795 | -3,580 | -3,935 | -3,678 | 0,503 | -11,004 | -1,358 | -4,577 | 2,450 | -1,343 |
| Cents RF-3rds | 5,622 | 3,604 | -4,561 | 4,538 | -15,310 | -3,095 | -3,450 | -3,193 | 0,988 | -10,519 | -0,873 | -4,092 | 2,935 | -0,858 |
| Just Int I | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 |
| Just Int II | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 |
| Pythagorean | -3,910 | 0,000 | -3,910 | 5,865 | 0,000 | 9,775 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -1,955 | -1,955 | 7,820 |
| Meantone | 6,843 | 0,000 | 6,843 | -10,264 | 0,000 | -17,108 | -10,264 | -3,421 | -3,421 | 3,422 | -3,421 | 3,422 | 3,422 | -13,686 |
| Take 01 | 260,647 | 292,933 | 262,862 | 249,829 | 290,146 | 275,503 | 246,682 | 221,514 | 220,999 | 197,145 | 218,698 | 194,709 | 195,113 | 185,256 |
| Take 02 | | | | | | | | | | | | | | |
| Take 03 | 259,110 | 290,367 | 258,186 | 247,839 | 293,316 | 277,181 | 248,266 | 216,021 | 218,023 | 194,493 | 218,425 | 194,499 | 195,509 | 184,879 |
| Take 04 | 261,692 | 293,197 | 262,819 | 248,393 | 292,461 | 274,996 | 246,532 | 217,792 | 223,103 | 198,385 | 218,843 | 194,549 | 197,790 | 184,973 |
| Take 05 | | | | | | | | | | | | | | |
| Take 06 | 263,858 | 295,198 | 261,425 | 245,616 | 290,435 | 271,832 | 245,089 | 217,123 | 222,680 | 199,071 | 219,856 | 194,650 | 198,155 | 185,373 |
| Take 07 | 261,716 | 289,609 | 260,332 | 248,032 | 290,121 | 275,800 | 247,059 | 217,905 | 218,378 | 195,666 | 219,178 | 193,670 | 195,891 | 184,444 |
| Take 08 | 258,793 | 291,411 | 260,239 | 248,311 | 289,951 | 272,698 | 246,541 | 217,231 | 219,668 | 197,175 | 219,590 | 193,510 | 195,298 | 184,113 |
| Take 09 | 263,458 | 294,860 | 262,340 | 246,731 | 290,055 | 274,772 | 247,085 | 218,095 | 218,327 | 195,386 | 220,046 | 192,428 | 194,498 | 184,637 |
| Take 10 | 264,342 | 294,474 | 263,917 | 245,523 | 290,678 | 278,023 | 246,867 | 218,325 | 220,500 | 195,902 | 220,241 | 194,848 | 196,098 | 184,792 |
| Take 11 | 264,936 | 292,268 | 261,803 | 246,442 | 293,664 | 277,751 | 244,715 | 216,780 | 222,540 | 196,600 | 220,111 | 196,687 | 194,685 | 185,456 |
| Take 12 | 264,600 | 295,798 | 261,783 | 247,481 | 294,874 | 278,686 | 245,098 | 217,055 | 217,197 | 194,702 | 218,827 | 193,613 | 197,138 | 184,683 |
| Take 13 | 264,598 | 295,359 | 262,846 | 246,287 | 293,084 | 277,704 | 244,277 | 216,427 | 217,231 | 195,349 | 219,125 | **193,660** | 197,946 | 185,850 |
| Take 14 | 261,314 | 291,287 | 259,050 | 242,058 | 287,221 | 270,426 | 243,948 | 214,702 | 216,572 | 193,482 | 216,748 | 192,820 | 195,637 | 182,929 |
| Take 15 | 264,212 | 292,944 | 261,234 | 246,604 | 291,719 | 274,997 | 245,115 | 216,608 | 218,356 | 195,309 | 218,659 | 192,887 | 195,376 | 184,822 |
| Take 16 | 264,277 | 290,679 | 259,314 | 245,524 | 287,273 | 275,941 | 246,058 | 218,556 | 221,213 | 192,539 | 217,473 | 191,945 | 195,348 | 183,546 |
| Take 17 | 268,549 | 290,361 | 260,621 | 242,234 | 287,490 | 272,345 | 243,552 | 213,511 | 217,345 | 195,061 | 217,245 | 191,079 | 195,479 | 184,040 |
| Take 18 | 263,229 | 293,481 | 259,034 | 245,319 | 286,949 | 275,509 | 242,357 | 216,421 | 217,926 | 192,484 | 217,415 | 193,059 | 196,135 | 183,494 |
| Take 19 | 264,727 | 290,880 | 260,125 | 244,764 | 285,014 | 274,352 | 243,230 | 214,425 | 218,807 | 195,933 | 218,829 | 194,022 | 195,857 | 184,095 |
| Take 20 | 264,262 | 292,630 | 261,435 | 250,046 | 289,277 | 272,002 | 240,689 | 215,739 | 218,144 | 196,113 | 217,245 | 193,811 | 194,842 | 183,481 |
| Take 21 | 264,589 | 295,387 | 264,391 | 250,337 | 285,987 | 271,208 | 243,499 | 216,225 | 215,824 | 196,304 | 218,260 | 192,118 | 195,621 | 184,647 |
| Ten 3 AVERAGE | **263,311** | **292,796** | **261,250** | **246,704** | **289,985** | **274,828** | **245,087** | **216,866** | **219,096** | **195,637** | **218,674** | **193,609** | **195,917** | **184,501** |
| Cents RF+3rds | 7,031 | -9,216 | -6,571 | -5,756 | -25,917 | -18,858 | -17,136 | -28,927 | -11,212 | -7,279 | -14,550 | -25,319 | -4,803 | -8,741 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cents RF-3rds | 7,515 | -8,732 | -6,086 | -5,271 | -25,432 | -18,373 | -16,651 | -28,442 | -10,727 | -6,794 | -14,065 | -24,834 | -4,318 | -8,256 |
| Just Int I | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 |
| Just Int II | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 |
| Pythagorean | -3,910 | 0,000 | -3,910 | 5,865 | 0,000 | 9,775 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -1,955 | -1,955 | 7,820 |
| Meantone | 6,843 | 0,000 | 6,843 | -10,264 | 0,000 | -17,108 | -10,264 | -3,421 | -3,421 | 3,422 | -3,421 | 3,422 | 3,422 | -13,686 |
| Take 01 | 263,059 | 294,410 | 262,353 | 247,143 | 290,727 | 272,887 | 246,646 | 218,762 | 218,317 | 193,985 | 219,431 | 195,232 | 196,624 | 185,405 |
| Take 02 | | | | | | | | | | | | | | |
| Take 03 | 262,511 | 294,958 | 264,059 | 245,650 | 295,668 | 272,527 | 243,554 | 219,032 | 222,356 | 191,873 | 219,161 | 196,540 | 197,337 | 186,268 |
| Take 04 | 263,400 | 295,888 | 266,286 | 248,730 | 291,430 | 278,218 | 248,937 | 221,398 | 224,633 | 195,502 | 221,145 | 197,455 | 199,846 | 186,932 |
| Take 05 | | | | | | | | | | | | | | |
| Take 06 | 260,157 | 295,624 | 262,534 | 248,852 | 292,548 | 275,787 | 248,127 | 219,236 | 225,121 | 192,849 | 220,045 | 195,966 | 199,884 | 187,227 |
| Take 07 | 261,285 | 295,900 | 264,756 | 247,010 | 293,669 | 274,540 | 246,868 | 218,790 | 221,985 | 193,823 | 220,264 | 196,153 | 197,563 | 186,948 |
| Take 08 | 260,695 | 294,871 | 262,481 | 247,167 | 296,016 | 280,226 | 246,754 | 216,682 | 225,207 | 194,454 | 220,693 | 196,715 | 198,849 | 187,487 |
| Take 09 | 266,826 | 295,526 | 264,127 | 246,797 | 291,780 | 276,413 | 245,814 | 220,571 | 225,348 | 196,601 | 219,890 | 196,213 | 198,985 | 187,404 |
| Take 10 | 264,303 | 293,420 | 262,758 | 248,430 | 293,162 | 278,222 | 247,226 | 220,974 | 225,315 | 198,623 | 220,083 | 197,152 | 198,455 | 186,939 |
| Take 11 | 263,786 | 296,223 | 265,684 | 249,013 | 295,016 | 276,137 | 245,671 | 220,605 | 224,747 | 197,166 | 222,979 | 197,957 | 199,874 | 186,924 |
| Take 12 | 269,462 | 293,135 | 264,761 | 249,745 | 293,359 | 278,395 | 246,946 | 219,633 | 223,462 | 193,081 | 220,222 | 195,106 | 198,247 | 186,610 |
| Take 13 | 265,738 | 297,133 | 266,221 | 252,505 | 299,608 | 282,467 | 248,156 | 220,542 | 222,857 | 197,278 | 220,346 | 198,276 | 199,082 | 186,836 |
| Take 14 | 260,871 | 291,476 | 259,979 | 244,478 | 286,830 | 273,760 | 243,691 | 216,959 | 221,030 | 195,094 | 218,569 | 194,089 | 195,459 | 184,784 |
| Take 15 | 264,422 | 293,196 | 261,370 | 248,379 | 292,754 | 275,087 | 243,646 | 218,674 | 224,509 | 196,000 | 221,074 | 195,582 | 196,910 | 185,729 |
| Take 16 | 262,061 | 293,560 | 262,705 | 245,044 | 291,286 | 276,748 | 243,832 | 218,737 | 221,948 | 194,246 | 218,912 | 194,951 | 196,956 | 185,926 |
| Take 17 | 264,184 | 295,061 | 260,082 | 245,879 | 291,459 | 276,021 | 245,281 | 218,509 | 220,690 | 196,304 | 219,516 | 193,922 | 196,709 | 186,053 |
| Take 18 | 260,742 | 294,317 | 262,108 | 245,070 | 290,410 | 275,108 | 244,221 | 218,229 | 220,842 | 193,635 | 220,168 | 194,649 | 195,318 | 186,270 |
| Take 19 | 261,708 | 295,518 | 260,390 | 245,455 | 289,963 | 277,134 | 243,387 | 219,144 | 222,117 | 192,890 | 220,026 | 194,892 | 196,398 | 185,695 |
| Take 20 | 267,922 | 296,468 | 267,374 | 251,124 | 294,310 | 277,148 | 243,194 | 220,007 | 221,961 | 196,830 | 220,800 | 195,679 | 198,328 | 185,926 |
| Take 21 | 270,128 | 297,191 | 264,911 | 251,238 | 294,996 | 280,327 | 245,347 | 218,013 | 225,763 | 196,937 | 219,438 | 197,134 | 199,680 | 186,142 |
| Ten 4 AVERAGE | **263,856** | **294,941** | **263,418** | **247,774** | **292,894** | **276,692** | **245,647** | **219,184** | **223,064** | **195,114** | **220,145** | **195,982** | **197,921** | **186,395** |
| Cents RF+3rds | 10,609 | 3,420 | 7,733 | 1,739 | -8,635 | -7,153 | -13,185 | -10,519 | 19,856 | -11,907 | -2,943 | -4,223 | 12,821 | 8,945 |
| Cents RF-3rds | 11,094 | 3,905 | 8,217 | 2,224 | -8,150 | -6,668 | -12,700 | -10,034 | 20,341 | -11,422 | -2,458 | -3,738 | 13,306 | 9,430 |
| Just Int I | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 |
| Just Int II | -31,174 | 0,000 | 10,821 | 5,865 | -27,264 | -11,731 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -29,219 | -29,219 | -13,686 |
| Pythagorean | -3,910 | 0,000 | -3,910 | 5,865 | 0,000 | 9,775 | 5,865 | 1,955 | 1,955 | -1,955 | 1,955 | -1,955 | -1,955 | 7,820 |
| Meantone | 6,843 | 0,000 | 6,843 | -10,264 | 0,000 | -17,108 | -10,264 | -3,421 | -3,421 | 3,422 | -3,421 | 3,422 | 3,422 | -13,686 |



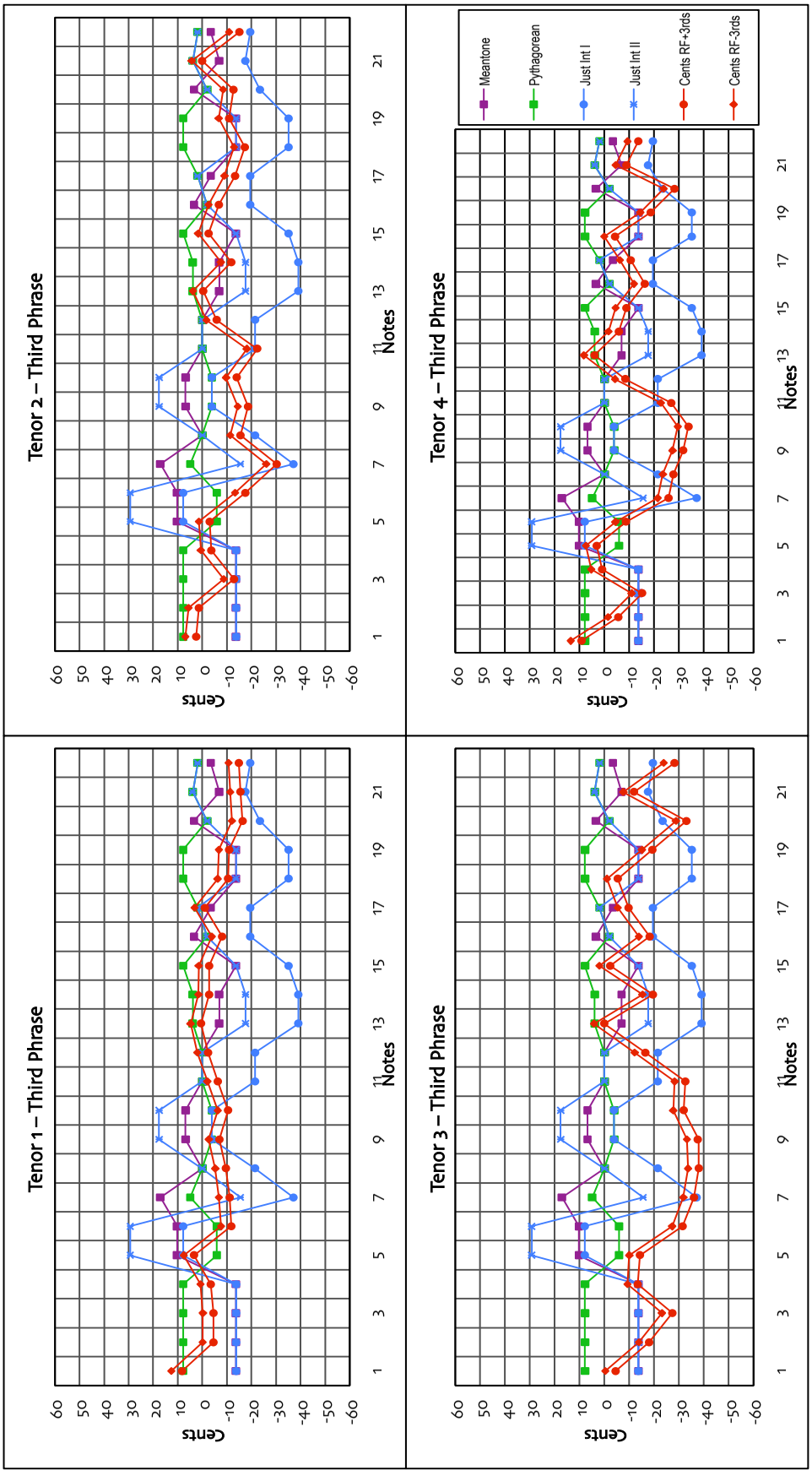

**11.6A - THE BBC SINGERS TENORS' CHARTS – PHRASE 1**

**11.6A - THE BBC SINGERS TENORS' CHARTS – PHRASE 1**

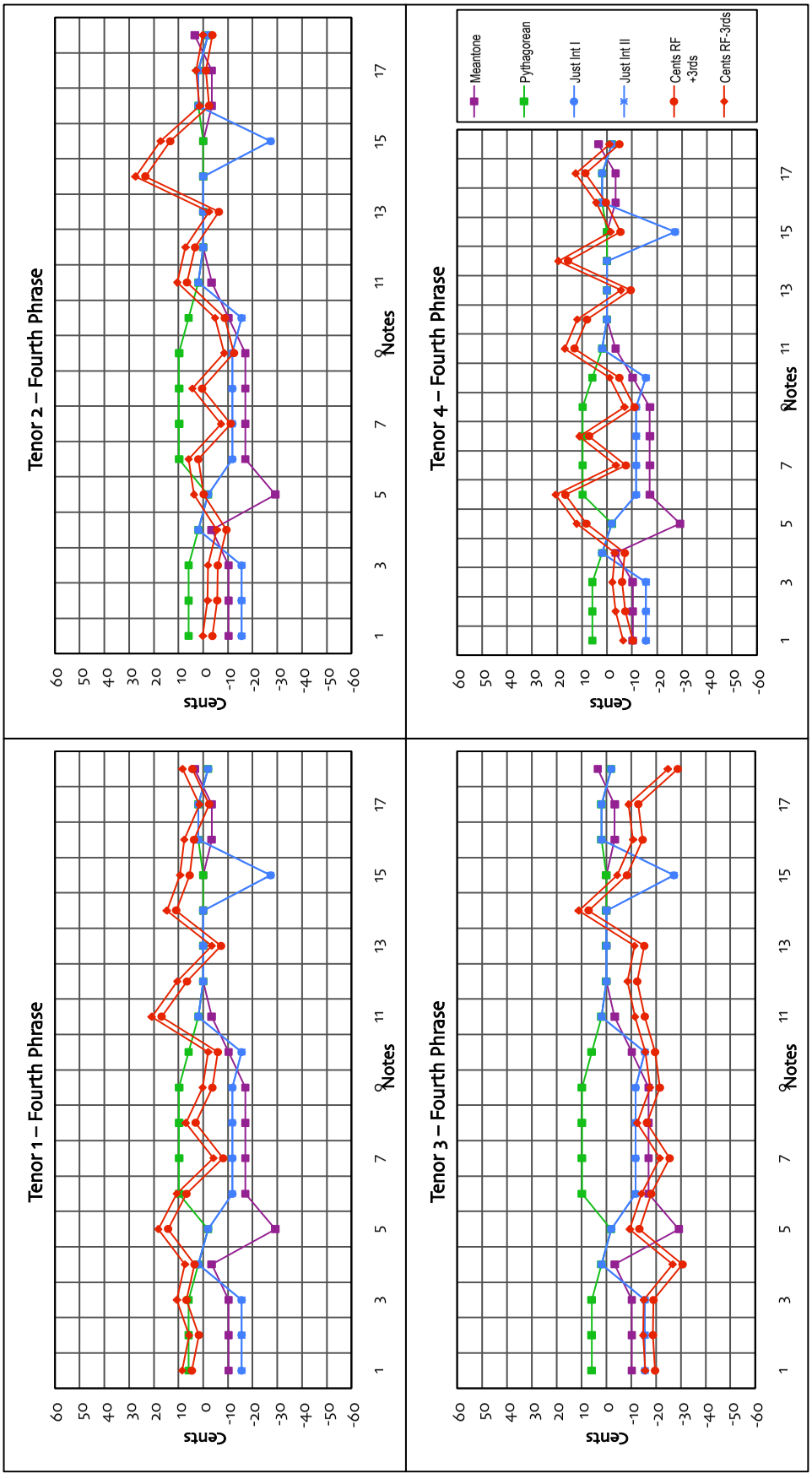



**11.6B - THE BBC SINGERS TENORS' CHARTS – PHRASE 2**

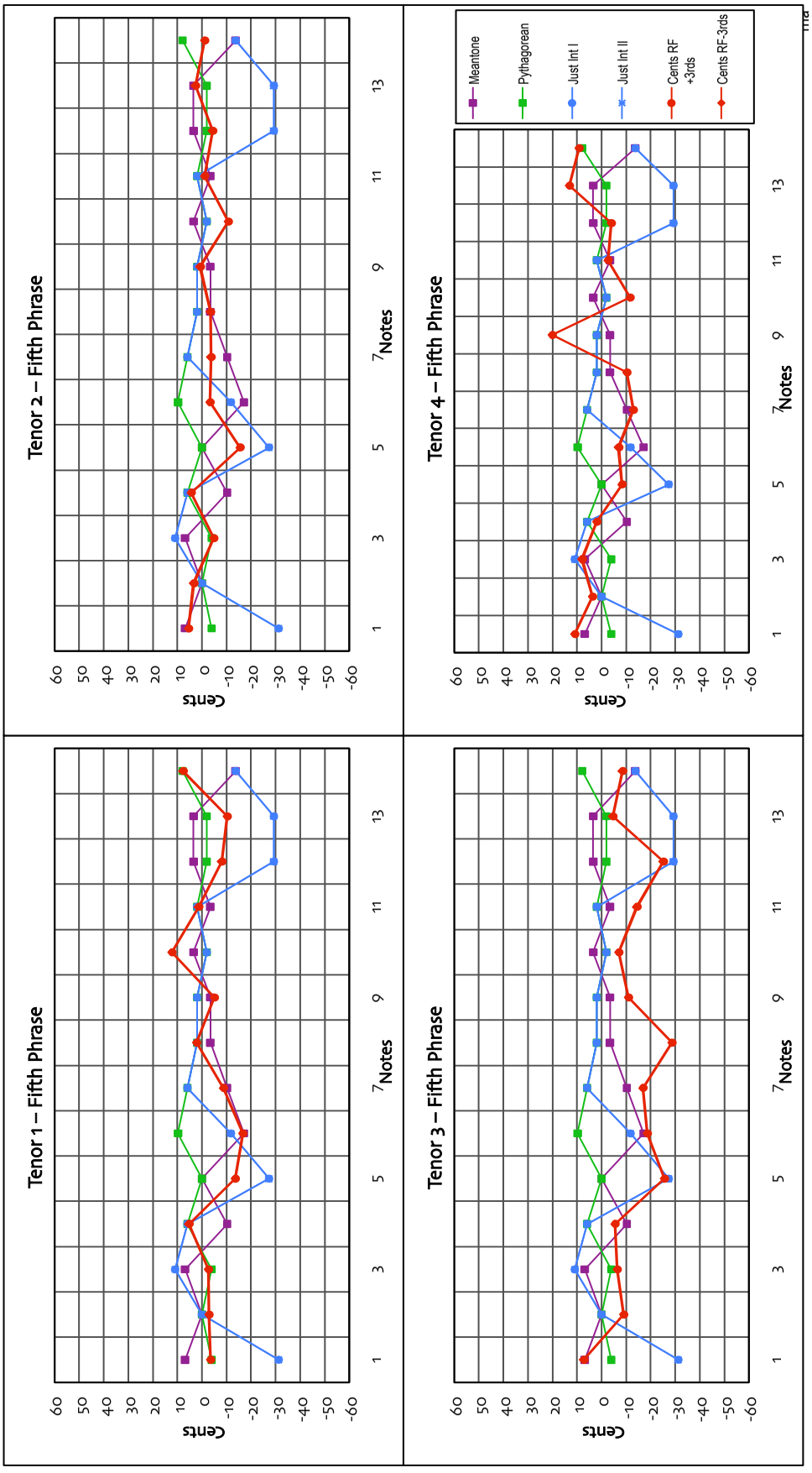
**11.6B - THE BBC SINGERS TENORS' CHARTS – PHRASE 2**




**11.6C - THE BBC SINGERS TENORS' CHARTS – PHRASE 3**




**11.6D - THE BBC SINGERS TENORS' CHARTS – PHRASE 4**




**11.6E - THE BBC SINGERS TENORS' CHARTS – PHRASE 5**

## AVC _ BBC Singers Sections _ Bass

| Reference Frequencies with Thirds | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
| 147,030 | D | 110,057 | A | 110,428 | A | 146,875 | D | 147,179 | D |

| Reference Frequencies without Thirds | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Phrase 1 | | Phrase 2 | | Phrase 3 | | Phrase 4 | | Phrase 5 | |
| 146,658 | D | 109,949 | A | 110,156 | A | 146,543 | D | 147,138 | D |

Frequency Measurements

First Phrase

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 143,299 | 144,561 | 144,569 | 144,862 | 135,568 | 136,631 | 144,487 | 146,370 | 108,864 | 109,403 | 141,374 | 144,200 | 136,943 | 137,420 | 146,988 | 147,145 | 111,159 | | | | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 146,249 | 143,725 | 145,128 | 146,463 | 136,748 | 137,329 | 145,954 | 147,182 | 109,462 | 113,517 | 147,492 | 144,278 | 137,756 | 137,091 | 144,522 | 146,020 | 108,858 | | | | | | |
| Take 04 | 146,567 | 144,511 | 144,477 | 144,647 | 136,677 | 137,307 | 146,356 | 149,253 | 108,298 | 106,635 | 145,778 | 148,511 | 137,530 | 138,150 | 146,549 | 148,526 | 110,097 | | | | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 146,927 | 145,492 | 145,060 | 145,358 | 137,306 | 138,558 | 144,245 | 146,962 | 109,015 | 109,075 | 147,763 | 145,136 | 139,145 | 138,507 | 148,082 | 146,948 | 108,390 | | | | | | |
| Take 07 | 148,039 | 146,876 | 145,575 | 146,938 | 136,971 | 137,284 | 144,979 | 146,896 | 109,889 | 110,392 | 144,460 | 143,346 | 138,547 | 140,387 | 146,123 | 145,836 | 108,965 | | | | | | |
| Take 08 | 143,448 | 144,330 | 145,012 | 144,993 | 136,568 | 139,005 | 146,079 | 145,129 | 109,930 | 109,019 | 145,720 | 146,210 | 139,333 | 137,987 | 146,912 | 144,545 | 109,397 | | | | | | |
| Take 09 | 146,564 | 147,377 | 146,662 | 150,374 | 137,132 | 138,338 | 143,690 | 147,370 | 108,059 | 110,776 | 146,303 | 144,072 | 140,487 | 136,525 | 146,184 | 147,303 | 109,998 | | | | | | |
| Take 10 | 143,509 | 146,724 | 145,989 | 144,381 | 136,079 | 138,212 | 143,383 | 147,208 | 108,997 | 107,157 | 144,767 | 143,422 | 138,888 | 139,076 | 149,217 | 145,191 | 108,095 | | | | | | |
| Take 11 | 147,854 | 145,313 | 145,001 | 143,680 | 137,163 | 138,694 | 145,710 | 144,768 | 108,722 | 112,371 | 146,358 | 145,900 | 140,439 | 139,152 | 148,039 | 147,707 | 111,218 | | | | | | |
| Take 12 | 142,473 | 145,858 | 146,005 | 146,915 | 136,387 | 138,922 | 146,978 | 147,042 | 111,852 | 110,897 | 148,279 | 145,419 | 141,195 | 139,255 | 147,716 | 145,614 | 110,059 | | | | | | |
| Take 13 | 146,624 | 146,309 | 144,495 | 144,237 | 138,049 | 140,374 | 145,273 | 146,927 | 110,286 | 109,949 | 141,849 | 147,525 | 139,630 | 137,946 | 147,938 | 148,229 | 111,231 | | | | | | |
| Take 14 | 145,920 | 142,801 | 146,142 | 145,473 | 138,412 | 139,895 | 142,680 | 145,580 | 110,248 | 109,146 | 146,347 | 144,463 | 137,757 | 139,679 | 146,952 | 147,700 | 110,459 | | | | | | |
| Take 15 | 145,481 | 144,254 | 145,545 | 146,309 | 136,265 | 139,036 | 144,815 | 145,705 | 110,737 | 110,434 | 148,721 | 145,996 | 143,071 | 138,859 | 148,539 | 148,935 | 109,405 | | | | | | |
| Take 16 | 147,831 | 143,259 | 145,204 | 145,794 | 137,154 | 137,911 | 145,375 | 146,603 | 109,414 | 114,367 | 144,901 | 143,480 | 137,731 | 137,588 | 146,774 | 146,222 | 109,865 | | | | | | |
| Take 17 | 147,437 | 145,565 | 145,506 | 146,366 | 137,026 | 138,756 | 145,965 | 143,740 | 109,443 | 115,397 | 145,022 | 144,484 | 136,290 | 137,091 | 146,678 | 148,510 | 108,592 | | | | | | |
| Take 18 | 146,323 | 147,560 | 144,404 | 145,103 | 136,577 | 136,786 | 144,476 | 145,518 | 107,324 | 107,386 | 144,544 | 144,626 | 138,956 | 138,049 | 147,924 | 147,908 | 109,251 | | | | | | |
| Take 19 | 147,057 | 145,167 | 143,883 | 146,257 | 137,761 | 136,305 | 145,056 | 145,927 | 108,131 | 107,731 | 143,474 | 146,152 | 138,196 | 136,604 | 148,089 | 146,935 | 109,549 | | | | | | |
| Take 20 | 144,705 | 145,072 | 145,933 | 145,720 | 136,855 | 139,172 | 143,929 | 145,220 | 108,799 | 112,016 | 145,014 | 146,709 | 139,375 | 137,975 | 146,259 | 145,124 | 109,289 | | | | | | |
| Take 21 | 140,735 | 140,602 | 141,524 | 147,164 | 138,581 | 138,834 | 144,690 | 146,369 | 108,129 | 110,283 | 144,419 | 142,570 | 135,919 | 135,917 | 146,780 | 145,123 | 106,841 | | | | | | |
| Bass 1 AVERAGE | **145,634** | **145,019** | **145,059** | **145,844** | **137,015** | **138,282** | **144,954** | **146,304** | **109,242** | **110,313** | **145,399** | **145,079** | **138,799** | **138,066** | **147,172** | **146,817** | **109,511** | | | | | | |
| Cents RF+3rds | -16,512 | -23,840 | -23,364 | -14,018 | -22,130 | -6,197 | -24,617 | -8,569 | -14,293 | 2,600 | -19,304 | -23,122 | 0,274 | -8,896 | 1,675 | -2,504 | -10,031 | | | | | | |
| Cents RF-3rds | -12,136 | -19,464 | -18,988 | -9,642 | -17,754 | -1,821 | -20,241 | -4,193 | -9,917 | 6,977 | -14,928 | -18,746 | 4,650 | -4,520 | 6,052 | 1,872 | -5,655 | | | | | | |
| Just Int I | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | | | | | | |
| Just Int II | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | | | | | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | | | | | | |
| Meantone | 0,000 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | | | | | | |
| Take 01 | 146,488 | 143,648 | 146,061 | 144,632 | 137,456 | 136,864 | 145,707 | 145,503 | 109,583 | 111,038 | 146,590 | 146,961 | 138,407 | 136,729 | 147,348 | 148,879 | 110,016 | | | | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 146,030 | 145,865 | 145,653 | 143,262 | 136,533 | 136,605 | 145,132 | 145,159 | 109,826 | 111,393 | 146,705 | 146,026 | 138,088 | 137,883 | 147,277 | 148,669 | 109,635 | | | | | | |
| Take 04 | 147,815 | 147,699 | 146,762 | 146,584 | 138,265 | 139,005 | 146,063 | 147,895 | 109,572 | 111,073 | 146,290 | 146,454 | 141,502 | 138,669 | 145,971 | 147,445 | 109,271 | | | | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 144,602 | 146,463 | 144,912 | 145,766 | 138,072 | 139,894 | 145,124 | 146,156 | 110,001 | 110,762 | 145,898 | 145,845 | 138,755 | 137,079 | 146,936 | 146,130 | 109,651 | | | | | | |
| Take 07 | 146,378 | 147,176 | 147,167 | 147,631 | 138,940 | 137,193 | 145,676 | 147,871 | 109,171 | 110,474 | 146,892 | 147,770 | 142,464 | 139,607 | 147,819 | 147,512 | 109,376 | | | | | | |
| Take 08 | 147,332 | 147,101 | 145,863 | 146,505 | 138,450 | 138,640 | 146,084 | 146,904 | 108,527 | 110,559 | 148,630 | 145,466 | 138,623 | 138,046 | 147,207 | 148,409 | 109,636 | | | | | | |
| Take 09 | 146,387 | 147,995 | 146,228 | 147,124 | 139,988 | 136,889 | 145,566 | 147,411 | 109,688 | 108,872 | 145,991 | 147,254 | 140,364 | 139,469 | 147,892 | 147,299 | 110,307 | | | | | | |
| Take 10 | 144,400 | 142,902 | 144,553 | 144,254 | 138,447 | 136,924 | 145,056 | 145,516 | 109,249 | 109,608 | 144,876 | 145,672 | 138,981 | 138,551 | 146,056 | 145,950 | 109,418 | | | | | | |
| Take 11 | 147,374 | 148,658 | 146,161 | 145,507 | 139,057 | 138,076 | 145,363 | 147,797 | 110,168 | 108,874 | 146,256 | 145,829 | 138,713 | 138,297 | 147,899 | 147,654 | 110,308 | | | | | | |
| Take 12 | 145,337 | 144,514 | 144,399 | 145,703 | 139,408 | 139,390 | 144,342 | 145,072 | 109,261 | 111,872 | 146,834 | 145,757 | 140,254 | 138,679 | 147,143 | 148,463 | 109,999 | | | | | | |
| Take 13 | 146,724 | 145,797 | 146,617 | 145,437 | 138,428 | 138,767 | 146,342 | 147,197 | 109,066 | 110,975 | 146,065 | 146,220 | 140,229 | 138,983 | 148,149 | 148,337 | 109,719 | | | | | | |
| Take 14 | 144,652 | 144,668 | 144,665 | 144,842 | 137,110 | 139,739 | 146,122 | 146,546 | 108,973 | 110,533 | 145,309 | 145,620 | 139,500 | 138,473 | 146,650 | 147,558 | 109,603 | | | | | | |
| Take 15 | 146,086 | 145,808 | 145,165 | 146,715 | 137,996 | 138,627 | 145,278 | 144,926 | 108,669 | 109,604 | 145,611 | 145,530 | 139,296 | 138,769 | 147,849 | 147,517 | 109,288 | | | | | | |
| Take 16 | 145,213 | 145,737 | 145,985 | 144,221 | 137,473 | 138,033 | 144,143 | 146,220 | 108,883 | 110,410 | 147,198 | 145,830 | 139,932 | 139,467 | 148,093 | 147,549 | 109,164 | | | | | | |
| Take 17 | 147,516 | 147,849 | 146,932 | 144,673 | 139,963 | 136,971 | 144,840 | 146,652 | 109,060 | 109,643 | 145,166 | 145,206 | 140,545 | 138,973 | 147,051 | 147,372 | 108,828 | | | | | | |
| Take 18 | 144,565 | 145,001 | 144,999 | 144,979 | 137,505 | 138,182 | 145,085 | 147,839 | 109,196 | 109,413 | 145,497 | 146,494 | 138,795 | 137,914 | 146,390 | 146,179 | 108,726 | | | | | | |
| Take 19 | 145,858 | 148,160 | 146,275 | 145,922 | 136,786 | 137,986 | 144,001 | 145,267 | 108,109 | 111,056 | 145,822 | 144,741 | 138,566 | 138,237 | 146,006 | 145,566 | 108,381 | | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 20 | 146,020 | 145,092 | 144,398 | 144,666 | 138,236 | 138,796 | 145,547 | 144,901 | 108,768 | 112,413 | 145,427 | 144,505 | 138,849 | 138,605 | 147,271 | 146,798 | 108,781 |
| Take 21 | 145,273 | 146,149 | 144,379 | 146,126 | 138,609 | 140,832 | 145,561 | 145,035 | 109,109 | 110,335 | 145,740 | 146,012 | 138,554 | 136,903 | 145,546 | 146,080 | 109,408 |
| **Bass 2 AVERAGE** | **146,003** | **146,120** | **145,641** | **145,502** | **138,248** | **138,285** | **145,317** | **146,309** | **109,204** | **110,469** | **146,147** | **145,957** | **139,496** | **138,386** | **147,082** | **147,335** | **109,448** |
| Cents RF+3rds | -12,135 | -10,741 | -16,431 | -18,075 | -6,612 | -6,154 | -20,278 | -8,507 | -14,894 | 5,038 | -10,422 | -12,669 | 8,938 | -4,890 | 0,614 | 3,593 | -11,031 |
| Cents RF-3rds | -7,759 | -6,365 | -12,055 | -13,699 | -2,236 | -1,778 | -15,902 | -4,131 | -10,518 | 9,415 | -6,045 | -8,293 | 13,314 | -0,514 | 4,990 | 7,969 | -6,655 |
| Just Int I | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 |
| Just Int II | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 |
| Pythagorean | 0,000 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 |
| Meantone | 0,000 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 |
| Take 01 | 145,648 | 148,184 | 148,241 | 147,072 | 139,954 | 140,854 | 147,767 | 148,135 | 110,645 | 110,392 | 146,613 | 146,774 | 141,696 | 140,618 | 150,492 | 148,036 | 109,881 |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 146,493 | 147,630 | 145,307 | 145,987 | 138,741 | 141,676 | 147,021 | 147,514 | 109,562 | 111,348 | 147,892 | 145,472 | 140,801 | 138,521 | 147,672 | 147,160 | 109,424 |
| Take 04 | 146,485 | 147,157 | 146,943 | 146,050 | 139,732 | 139,241 | 147,170 | 148,080 | 110,945 | 112,390 | 146,709 | 146,213 | 139,080 | 140,626 | 148,128 | 148,507 | 110,580 |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 145,810 | 145,723 | 145,276 | 143,709 | 136,230 | 135,502 | 145,140 | 146,372 | 109,203 | 110,174 | 145,985 | 144,031 | 141,977 | 0,000 | 147,960 | 147,220 | 109,188 |
| Take 07 | 147,278 | 147,170 | 146,534 | 147,303 | 138,073 | 140,411 | 147,068 | 147,378 | 109,309 | 111,364 | 145,923 | 146,374 | 141,673 | 141,069 | 147,407 | 146,242 | 110,412 |
| Take 08 | 146,732 | 148,665 | 146,437 | 147,905 | 140,322 | 141,726 | 148,491 | 147,037 | 109,775 | 110,820 | 145,099 | 146,628 | 142,710 | 140,305 | 148,475 | 148,239 | 109,431 |
| Take 09 | 147,964 | 148,959 | 148,031 | 147,878 | 140,322 | 140,508 | 147,664 | 147,697 | 110,198 | 111,876 | 149,010 | 147,571 | 141,816 | 138,963 | 148,468 | 148,759 | 109,557 |
| Take 10 | 147,137 | 147,352 | 145,959 | 146,238 | 139,170 | 140,225 | 146,723 | 147,502 | 110,017 | 110,718 | 146,153 | 146,191 | 139,045 | 138,508 | 147,925 | 147,354 | 110,185 |
| Take 11 | 147,492 | 147,921 | 146,703 | 146,650 | 138,158 | 138,553 | 147,209 | 148,489 | 110,259 | 111,280 | 147,667 | 146,567 | 140,664 | 139,244 | 147,628 | 148,890 | 110,448 |
| Take 12 | 143,906 | 147,451 | 145,965 | 145,895 | 139,680 | 141,391 | 146,103 | 147,133 | 109,859 | 109,887 | 145,957 | 146,304 | 140,677 | 139,846 | 149,191 | 148,064 | 109,868 |
| Take 13 | 145,184 | 148,075 | 146,956 | 147,755 | 138,984 | 142,348 | 146,857 | 147,957 | 109,859 | 109,899 | 144,639 | 145,896 | 139,423 | 139,337 | 147,599 | 147,929 | 109,681 |
| Take 14 | 145,764 | 146,743 | 145,456 | 144,319 | 136,770 | 137,581 | 145,708 | 147,356 | 109,061 | 109,660 | 145,351 | 145,473 | 139,000 | 136,730 | 147,654 | 144,824 | 109,675 |
| Take 15 | 145,146 | 146,512 | 145,698 | 146,988 | 137,310 | 138,110 | 145,888 | 146,760 | 108,787 | 109,282 | 147,073 | 144,914 | 138,990 | 139,330 | 146,750 | 146,320 | 109,311 |
| Take 16 | 146,291 | 147,641 | 146,325 | 146,199 | 140,388 | 142,544 | 147,350 | 147,503 | 109,891 | 112,232 | 145,694 | 145,473 | 139,971 | 138,075 | 147,768 | 146,076 | 109,035 |
| Take 17 | 146,792 | 146,862 | 147,044 | 146,362 | 140,240 | 140,507 | 146,726 | 145,864 | 108,673 | 110,765 | 147,108 | 146,567 | 140,263 | 138,827 | 147,670 | 146,207 | 108,959 |
| Take 18 | 145,841 | 147,139 | 145,600 | 145,783 | 138,172 | 137,746 | 146,174 | 145,795 | 109,664 | 110,149 | 145,655 | 145,850 | 141,048 | 136,869 | 147,909 | 146,768 | 109,073 |
| Take 19 | 146,105 | 146,471 | 145,740 | 146,401 | 138,945 | 140,242 | 145,234 | 146,801 | 109,067 | 110,429 | 146,273 | 146,329 | 139,486 | 139,269 | 146,675 | 146,260 | 108,593 |
| Take 20 | 146,131 | 148,056 | 148,408 | 146,083 | 140,271 | 141,475 | 146,855 | 146,711 | 108,765 | 110,213 | 146,965 | 144,681 | 141,975 | 140,829 | 147,669 | 146,185 | 108,888 |
| Take 21 | 147,102 | 148,644 | 147,354 | 147,547 | 140,287 | 140,824 | 144,356 | 146,456 | 109,514 | 109,884 | 146,390 | 145,044 | 140,823 | 139,973 | 147,988 | 144,859 | 108,713 |
| **Bass 3 AVERAGE** | **146,279** | **147,492** | **146,525** | **146,428** | **139,039** | **140,077** | **146,605** | **147,186** | **109,634** | **110,672** | **146,429** | **145,913** | **140,585** | **139,274** | **147,949** | **147,047** | **109,521** |
| Cents RF+3rds | -8,859 | 5,440 | -5,951 | -7,102 | 3,265 | 16,138 | -5,000 | 1,846 | -8,087 | 8,217 | -7,083 | -13,194 | 22,406 | 6,189 | 10,792 | 0,208 | -9,876 |
| Cents RF-3rds | -4,483 | 9,816 | -1,575 | -2,726 | 7,641 | 20,514 | -0,624 | 6,222 | -3,711 | 12,593 | -2,707 | -8,818 | 26,782 | 10,565 | 15,168 | 4,584 | -5,500 |
| Just Int I | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 |
| Just Int II | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 |
| Pythagorean | 0,000 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 |
| Meantone | 0,000 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 |
| Take 01 | 147,185 | 151,693 | 150,408 | 147,564 | 140,461 | 141,479 | 151,650 | 151,793 | 110,861 | 110,033 | 151,786 | 147,689 | 142,725 | 140,292 | 150,656 | 152,287 | 109,720 |
| Take 02 | | | | | | | | | | | | | | | | | |
| Take 03 | 145,258 | 145,856 | 146,151 | 145,265 | 138,401 | 139,460 | 147,007 | 147,378 | 109,193 | 108,287 | 149,896 | 147,080 | 140,983 | 139,564 | 149,354 | 147,706 | 108,867 |
| Take 04 | 145,361 | 147,481 | 146,664 | 147,018 | 140,118 | 140,093 | 149,015 | 149,454 | 110,346 | 108,200 | 147,327 | 147,987 | 139,491 | 138,679 | 149,077 | 147,390 | 110,194 |
| Take 05 | | | | | | | | | | | | | | | | | |
| Take 06 | 145,328 | 146,388 | 144,985 | 144,255 | 138,040 | 138,179 | 147,168 | 147,846 | 109,255 | 110,429 | 147,987 | 145,730 | 140,738 | 138,659 | 148,415 | 148,597 | 109,707 |
| Take 07 | 147,346 | 146,755 | 146,375 | 148,213 | 140,924 | 142,178 | 148,063 | 149,426 | 110,219 | 109,985 | 150,472 | 147,727 | 142,766 | 142,135 | 148,319 | 147,203 | 110,443 |
| Take 08 | 147,148 | 148,794 | 149,286 | 146,064 | 140,620 | 141,647 | 148,580 | 147,483 | 110,123 | 109,234 | 147,777 | 148,415 | 141,216 | 139,985 | 148,960 | 147,707 | 109,924 |
| Take 09 | 146,431 | 147,352 | 146,654 | 148,067 | 141,528 | 142,787 | 149,416 | 149,961 | 109,487 | 110,429 | 148,949 | 148,105 | 140,613 | 141,663 | 148,750 | 149,525 | 110,000 |
| Take 10 | 147,909 | 147,921 | 145,578 | 146,407 | 141,087 | 140,451 | 147,210 | 147,716 | 109,867 | 109,328 | 148,084 | 145,727 | 139,746 | 138,808 | 148,875 | 150,321 | 109,016 |
| Take 11 | 148,363 | 146,503 | 144,859 | 144,464 | 138,859 | 141,575 | 146,109 | 148,389 | 110,469 | 109,559 | 148,314 | 146,382 | 141,617 | 138,868 | 148,929 | 148,859 | 109,809 |
| Take 12 | 146,839 | 146,627 | 146,828 | 144,790 | 139,295 | 139,330 | 147,249 | 151,051 | 109,684 | 109,692 | 148,534 | 146,167 | 140,552 | 139,134 | 149,595 | 150,035 | 108,981 |
| Take 13 | 149,455 | 149,547 | 147,996 | 148,329 | 140,075 | 140,418 | 148,585 | 150,049 | 109,805 | 110,129 | 148,577 | 147,116 | 142,077 | 140,000 | 148,749 | 150,959 | 110,054 |
| Take 14 | 145,015 | 144,824 | 144,296 | 145,023 | 138,155 | 138,950 | 146,205 | 148,438 | 110,405 | 111,058 | 148,530 | 146,138 | 140,812 | 139,022 | 149,194 | 148,382 | 109,540 |
| Take 15 | 146,002 | 148,596 | 147,203 | 146,996 | 140,881 | 140,576 | 146,759 | 148,726 | 109,478 | 110,273 | 148,071 | 147,077 | 141,889 | 142,774 | 148,162 | 146,800 | 109,699 |
| Take 16 | 146,794 | 147,987 | 148,583 | 147,915 | 141,226 | 141,316 | 148,796 | 147,996 | 109,995 | 108,538 | 148,755 | 146,583 | 140,702 | 139,317 | 149,009 | 148,142 | 109,629 |
| Take 17 | 146,404 | 148,194 | 147,648 | 146,984 | 141,249 | 141,305 | 146,746 | 147,204 | 109,654 | 109,505 | 147,007 | 145,537 | 138,553 | 141,256 | 148,905 | 146,432 | 109,917 |
| Take 18 | 145,000 | 144,949 | 144,885 | 146,027 | 137,390 | 140,482 | 146,420 | 150,957 | 110,002 | 108,771 | 146,982 | 146,392 | 139,294 | 137,327 | 147,480 | 148,269 | 109,156 |
| Take 19 | 149,318 | 145,661 | 145,053 | 144,636 | 140,136 | 141,330 | 147,587 | 149,086 | 109,704 | 108,289 | 150,587 | 146,653 | 143,753 | 140,123 | 147,471 | 148,291 | 109,202 |
| Take 20 | 145,558 | 149,012 | 147,492 | 147,141 | 141,155 | 140,579 | 147,649 | 148,677 | 108,468 | 109,443 | 146,842 | 146,578 | 139,094 | 140,156 | 149,549 | 148,107 | 109,702 |
| Take 21 | 146,788 | 147,218 | 147,489 | 147,249 | 140,072 | 139,620 | 148,475 | 147,654 | 109,543 | 107,976 | 148,281 | 146,353 | 140,578 | 138,608 | 148,422 | 149,219 | 109,097 |
| **Bass 4 AVERAGE** | **146,711** | **147,440** | **146,760** | **146,442** | **139,983** | **140,619** | **147,826** | **148,910** | **109,819** | **109,429** | **148,566** | **146,812** | **140,905** | **139,809** | **148,835** | **148,644** | **109,613** |
| Cents RF+3rds | -3,759 | 4,826 | -3,181 | -6,926 | 14,970 | 22,817 | 9,350 | 21,998 | -5,176 | -11,327 | 18,001 | -2,560 | 26,343 | 12,819 | 21,134 | 18,903 | -8,418 |
| Cents RF-3rds | 0,617 | 9,202 | 1,195 | -2,550 | 19,346 | 27,193 | 13,726 | 26,374 | -0,800 | -6,951 | 22,377 | 1,816 | 30,719 | 17,195 | 25,510 | 23,279 | -4,042 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Just Int I | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | | | |
| Just Int II | 0,000 | 0,000 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | 1,995 | 0,000 | 0,000 | -11,731 | -11,731 | 0,000 | 0,000 | 1,995 | | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | 1,955 | 0,000 | 0,000 | 9,775 | 9,775 | 0,000 | 0,000 | 1,955 | | | |
| Meantone | 0,000 | 0,000 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | -3,421 | 0,000 | 0,000 | -17,108 | -17,108 | 0,000 | 0,000 | -3,421 | | | |
| | Second Phrase | | | | | | | | | | | | | | | | | | | |
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 |
| Take 01 | 222,397 | 222,682 | 220,829 | 250,063 | 251,748 | 165,055 | 161,539 | 171,337 | 182,893 | 187,713 | 123,648 | 135,888 | 146,209 | 147,327 | 165,137 | 166,912 | 110,211 | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 219,930 | 219,977 | 220,761 | 247,812 | 252,338 | 164,448 | 164,450 | 170,099 | 183,855 | 187,873 | 122,986 | 137,540 | 144,432 | 143,337 | 164,157 | 165,427 | 109,556 | | | |
| Take 04 | 221,933 | 220,487 | 216,320 | 245,869 | 249,680 | 165,799 | 164,137 | 170,618 | 182,591 | 189,412 | 123,607 | 138,146 | 147,463 | 146,042 | 164,632 | 164,743 | 110,940 | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 220,443 | 219,185 | 218,846 | 243,377 | 246,125 | 165,931 | 163,956 | 175,110 | 182,599 | 185,874 | 123,695 | 136,727 | 146,778 | 145,102 | 162,163 | 164,808 | 108,786 | | | |
| Take 07 | 221,468 | 220,916 | 220,006 | 248,409 | 248,998 | 166,069 | 163,031 | 172,708 | 183,463 | 185,550 | 122,452 | 136,876 | 144,806 | 145,283 | 165,138 | 166,074 | 110,345 | | | |
| Take 08 | 221,177 | 220,639 | 221,890 | 246,646 | 249,497 | 162,949 | 163,085 | 171,960 | 184,128 | 184,890 | 121,876 | 139,281 | 147,250 | 146,591 | 163,947 | 166,117 | 107,835 | | | |
| Take 09 | 222,775 | 221,311 | 216,611 | 249,018 | 251,684 | 168,786 | 164,632 | 173,746 | 181,426 | 187,048 | 124,921 | 140,250 | 144,221 | 146,411 | 164,845 | 166,958 | 111,145 | | | |
| Take 10 | 218,475 | 222,213 | 222,076 | 248,939 | 247,236 | 162,905 | 163,303 | 170,816 | 182,434 | 187,221 | 125,317 | 137,930 | 145,644 | 147,412 | 164,114 | 166,323 | 109,517 | | | |
| Take 11 | 221,933 | 221,573 | 221,697 | 248,926 | 249,137 | 166,617 | 162,617 | 174,319 | 184,432 | 187,216 | 122,841 | 138,736 | 146,663 | 146,664 | 163,886 | 166,203 | 111,569 | | | |
| Take 12 | 222,250 | 222,849 | 222,127 | 249,132 | 252,297 | 166,052 | 163,859 | 171,806 | 184,488 | 186,553 | 124,403 | 136,996 | 144,795 | 146,633 | 164,940 | 166,302 | 110,231 | | | |
| Take 13 | 221,074 | 221,593 | 221,053 | 248,471 | 252,692 | 167,037 | 161,775 | 172,735 | 183,360 | 187,386 | 123,227 | 139,983 | 148,346 | 147,277 | 164,601 | 165,309 | 111,384 | | | |
| Take 14 | 221,755 | 222,717 | 218,414 | 245,139 | 249,027 | 166,061 | 164,307 | 172,233 | 184,809 | 185,899 | 122,864 | 136,189 | 143,430 | 146,943 | 163,312 | 165,660 | 109,533 | | | |
| Take 15 | 219,585 | 221,669 | 219,139 | 249,377 | 247,158 | 166,966 | 162,982 | 170,793 | 184,167 | 184,776 | 124,917 | 137,269 | 146,618 | 146,959 | 163,584 | 165,467 | 111,426 | | | |
| Take 16 | 220,621 | 218,500 | 219,316 | 247,485 | 250,740 | 162,853 | 159,946 | 171,500 | 184,888 | 184,141 | 123,499 | 140,909 | 145,092 | 147,946 | 163,964 | 166,133 | 108,428 | | | |
| Take 17 | 221,101 | 217,941 | 221,146 | 245,789 | 248,129 | 162,142 | 163,523 | 171,327 | 184,292 | 185,485 | 121,265 | 136,707 | 144,883 | 145,833 | 163,725 | 165,080 | 111,104 | | | |
| Take 18 | 218,386 | 217,712 | 216,784 | 248,071 | 249,386 | 0,000 | 167,753 | 172,949 | 183,526 | 185,448 | 125,357 | 134,770 | 145,830 | 147,484 | 163,275 | 163,719 | 109,348 | | | |
| Take 19 | 218,945 | 219,810 | 217,028 | 246,488 | 249,520 | 163,087 | 161,794 | 171,833 | 182,447 | 186,906 | 120,672 | 138,124 | 147,225 | 145,411 | 163,547 | 163,702 | 110,757 | | | |
| Take 20 | 221,511 | 222,577 | 220,909 | 247,312 | 251,292 | 160,857 | 160,651 | 169,058 | 180,290 | 185,607 | 122,039 | 135,798 | 147,673 | 147,587 | 163,640 | 166,940 | 109,689 | | | |
| Take 21 | 219,918 | 220,419 | 220,961 | 249,636 | 253,268 | 166,301 | 164,552 | 174,396 | 183,723 | 183,265 | 125,493 | 138,614 | 146,800 | 148,435 | 164,504 | 161,023 | 108,252 | | | |
| Bass 1 AVERAGE | **220,825** | **220,777** | **219,785** | **247,682** | **249,997** | **164,995** | **163,257** | **172,071** | **183,358** | **186,224** | **123,425** | **137,723** | **146,008** | **146,562** | **164,059** | **165,416** | **110,003** | | | |
| Cents RF+3rds | 5,577 | 5,202 | -2,598 | 4,279 | 20,387 | 1,000 | -17,330 | -26,307 | -16,309 | 10,542 | -1,544 | -11,788 | -10,647 | -4,095 | -8,856 | 5,408 | -0,857 | | | |
| Cents RF-3rds | 7,279 | 6,903 | -0,897 | 5,980 | 22,089 | 2,702 | -15,629 | -24,605 | -14,607 | 12,243 | 0,157 | -10,087 | -8,945 | -2,394 | -7,155 | 7,109 | 0,844 | | | |
| Just Int I | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | |
| Just Int II | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,955 | 1,955 | 15,640 | 5,865 | 5,865 | 3,910 | 7,820 | -1,955 | -1,955 | 1,955 | 1,955 | 0,000 | | | |
| Meantone | 0,000 | 0,000 | 0,000 | -6,843 | -6,843 | -3,421 | -3,421 | -27,373 | -10,264 | -10,264 | -6,843 | -13,686 | 3,422 | 3,422 | -3,421 | -3,421 | 0,000 | | | |
| Take 01 | 218,300 | 217,733 | 222,216 | 245,232 | 246,147 | 163,869 | 165,869 | 175,209 | 185,321 | 183,429 | 123,278 | 139,029 | 146,162 | 146,565 | 165,756 | 166,129 | 110,519 | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 219,041 | 219,230 | 220,018 | 246,316 | 248,666 | 165,670 | 162,856 | 173,078 | 180,920 | 184,705 | 121,603 | 137,013 | 147,640 | 147,064 | 163,695 | 166,070 | 109,786 | | | |
| Take 04 | 218,740 | 220,932 | 221,289 | 244,357 | 245,944 | 162,457 | 164,198 | 173,163 | 181,799 | 182,801 | 120,934 | 138,756 | 146,371 | 147,638 | 164,259 | 164,409 | 109,173 | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 218,922 | 218,257 | 222,329 | 246,010 | 247,192 | 166,485 | 166,172 | 171,827 | 182,473 | 183,216 | 121,276 | 137,444 | 144,779 | 146,608 | 164,199 | 164,887 | 109,795 | | | |
| Take 07 | 219,064 | 220,383 | 220,982 | 246,550 | 246,173 | 161,953 | 163,753 | 174,201 | 182,208 | 183,675 | 124,350 | 139,598 | 147,673 | 145,899 | 163,916 | 165,351 | 109,788 | | | |
| Take 08 | 219,022 | 221,016 | 220,597 | 249,978 | 247,940 | 164,618 | 165,957 | 173,546 | 182,069 | 183,863 | 123,921 | 139,615 | 146,188 | 146,732 | 164,988 | 164,405 | 109,758 | | | |
| Take 09 | 220,893 | 219,584 | 219,568 | 242,377 | 246,378 | 160,601 | 164,057 | 172,027 | 181,571 | 184,709 | 122,244 | 137,910 | 146,962 | 147,814 | 165,277 | 165,476 | 109,630 | | | |
| Take 10 | 218,621 | 218,884 | 219,635 | 242,833 | 246,660 | 164,406 | 165,818 | 172,711 | 182,715 | 182,832 | 122,542 | 139,229 | 146,191 | 146,217 | 163,966 | 164,790 | 110,660 | | | |
| Take 11 | 221,356 | 221,464 | 221,898 | 245,033 | 245,577 | 165,714 | 166,440 | 175,192 | 183,954 | 183,893 | 121,281 | 140,333 | 147,210 | 147,936 | 164,965 | 166,223 | 110,195 | | | |
| Take 12 | 218,139 | 219,523 | 221,350 | 245,834 | 244,385 | 164,613 | 165,449 | 173,622 | 184,370 | 185,871 | 124,241 | 138,619 | 146,406 | 146,970 | 164,226 | 164,888 | 109,853 | | | |
| Take 13 | 219,581 | 219,884 | 220,111 | 246,369 | 247,375 | 164,898 | 165,066 | 172,497 | 181,684 | 184,242 | 121,256 | 138,117 | 146,005 | 147,153 | 164,288 | 167,017 | 108,791 | | | |
| Take 14 | 217,341 | 218,678 | 219,285 | 243,871 | 247,759 | 163,771 | 162,849 | 170,730 | 181,057 | 184,374 | 122,263 | 138,082 | 145,837 | 146,741 | 163,018 | 164,436 | 109,143 | | | |
| Take 15 | 217,789 | 218,764 | 219,086 | 244,951 | 247,076 | 165,133 | 165,059 | 171,411 | 181,244 | 185,258 | 121,058 | 138,515 | 145,800 | 146,488 | 163,804 | 163,594 | 109,424 | | | |
| Take 16 | 218,566 | 216,688 | 218,722 | 246,407 | 245,599 | 165,699 | 165,722 | 173,622 | 181,237 | 182,612 | 121,361 | 137,926 | 147,804 | 147,687 | 163,479 | 165,253 | 110,125 | | | |
| Take 17 | 217,426 | 218,131 | 217,466 | 246,133 | 247,472 | 166,716 | 164,892 | 173,500 | 181,437 | 182,261 | 122,098 | 137,152 | 145,841 | 145,985 | 163,062 | 164,640 | 109,717 | | | |
| Take 18 | 216,963 | 219,088 | 218,317 | 245,504 | 245,685 | 161,590 | 162,435 | 171,901 | 184,835 | 183,309 | 122,488 | 139,972 | 147,007 | 146,239 | 163,895 | 164,853 | 108,282 | | | |
| Take 19 | 216,348 | 218,382 | 219,796 | 243,019 | 246,265 | 164,552 | 164,801 | 170,877 | 180,933 | 181,261 | 123,360 | 137,741 | 145,553 | 146,438 | 162,756 | 164,785 | 109,100 | | | |
| Take 20 | 219,240 | 217,447 | 218,364 | 245,291 | 245,028 | 164,525 | 161,886 | 172,923 | 180,864 | 182,710 | 120,429 | 139,246 | 145,301 | 146,026 | 164,141 | 163,284 | 109,646 | | | |
| Take 21 | 217,535 | 215,516 | 218,364 | 247,432 | 248,095 | 160,968 | 163,579 | 171,595 | 181,872 | 183,168 | 123,932 | 138,144 | 145,712 | 147,459 | 164,333 | 165,222 | 109,735 | | | |
| Bass 2 AVERAGE | **218,573** | **218,926** | **219,968** | **245,447** | **246,601** | **164,118** | **164,572** | **172,823** | **182,240** | **183,589** | **122,311** | **138,549** | **146,339** | **146,824** | **164,106** | **165,037** | **109,638** | | | |
| Cents RF+3rds | -12,170 | -9,380 | -1,157 | -11,413 | -3,296 | -8,232 | -3,451 | -18,756 | -26,900 | -14,134 | -17,240 | -1,427 | -6,730 | -1,000 | -8,350 | 1,443 | -6,614 | | | |
| Cents RF-3rds | -10,469 | -7,679 | 0,545 | -9,712 | -1,594 | -6,531 | -1,750 | -17,055 | -25,199 | -12,433 | -15,538 | 0,274 | -5,029 | 0,701 | -6,649 | 3,144 | -4,913 | | | |
| Just Int I | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | |
| Just Int II | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,955 | 1,955 | 15,640 | 5,865 | 5,865 | 3,910 | 7,820 | -1,955 | -1,955 | 1,955 | 1,955 | 0,000 | | | |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Meantone | 0,000 | 0,000 | 0,000 | -6,843 | -6,843 | -3,421 | -3,421 | -27,373 | -10,264 | -10,264 | -6,843 | -13,686 | 3,422 | 3,422 | -3,421 | -3,421 | 0,000 | | | | | | |
| Take 01 | 221,997 | 220,411 | 222,022 | 246,630 | 251,755 | 163,325 | 167,063 | 172,534 | 184,232 | 185,262 | 122,637 | 141,705 | 149,031 | 148,704 | 166,338 | 166,913 | 110,455 | | | | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 219,895 | 220,515 | 219,268 | 243,152 | 248,699 | 162,866 | 165,823 | 172,777 | 183,790 | 183,810 | 123,520 | 138,058 | 146,482 | 147,552 | 165,812 | 165,345 | 109,243 | | | | | | |
| Take 04 | 220,929 | 217,680 | 223,265 | 173,291 | 246,904 | 162,514 | 166,214 | 173,673 | 182,483 | 185,535 | 123,127 | 138,733 | 147,821 | 146,905 | 165,053 | 165,536 | 109,733 | | | | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 219,832 | 221,477 | 217,482 | 246,310 | 247,839 | 164,137 | 164,320 | 172,197 | 183,659 | 184,031 | 121,547 | 137,919 | 143,915 | 145,433 | 164,315 | 164,730 | 110,215 | | | | | | |
| Take 07 | 221,466 | 220,715 | 219,697 | 245,787 | 246,139 | 164,055 | 165,943 | 173,111 | 185,318 | 184,314 | 122,995 | 141,138 | 148,679 | 147,520 | 164,095 | 164,205 | 110,071 | | | | | | |
| Take 08 | 219,495 | 219,954 | 220,964 | 245,050 | 249,237 | 156,383 | 164,806 | 172,133 | 184,023 | 184,708 | 123,145 | 139,546 | 148,152 | 146,854 | 164,888 | 166,054 | 109,956 | | | | | | |
| Take 09 | 221,394 | 222,406 | 221,432 | 242,886 | 246,161 | 165,967 | 165,466 | 172,609 | 184,117 | 185,694 | 122,290 | 139,632 | 145,781 | 145,634 | 165,188 | 166,524 | 109,548 | | | | | | |
| Take 10 | 219,274 | 221,247 | 219,599 | 246,041 | 249,389 | 163,803 | 164,939 | 172,919 | 181,233 | 184,677 | 121,290 | 139,297 | 148,169 | 146,478 | 164,111 | 165,442 | 109,713 | | | | | | |
| Take 11 | 221,861 | 220,985 | 221,420 | 246,114 | 249,496 | 168,207 | 168,434 | 176,384 | 184,379 | 186,369 | 123,237 | 142,346 | 148,635 | 148,187 | 166,046 | 166,475 | 110,410 | | | | | | |
| Take 12 | 204,640 | 219,489 | 218,028 | 242,325 | 247,185 | 167,941 | 167,819 | 176,400 | 184,398 | 185,321 | 122,041 | 139,906 | 145,339 | 147,078 | 166,063 | 166,415 | 109,420 | | | | | | |
| Take 13 | 221,603 | 221,166 | 218,494 | 246,699 | 247,231 | 163,410 | 164,263 | 171,167 | 181,773 | 185,607 | 123,231 | 139,382 | 149,646 | 149,807 | 165,779 | 165,128 | 110,728 | | | | | | |
| Take 14 | 218,413 | 217,790 | 218,711 | 243,405 | 247,259 | 164,049 | 164,453 | 173,120 | 183,867 | 184,465 | 122,317 | 138,165 | 145,143 | 146,053 | 163,911 | 165,714 | 109,068 | | | | | | |
| Take 15 | 219,492 | 219,076 | 220,336 | 241,933 | 249,060 | 162,843 | 165,831 | 171,699 | 181,771 | 184,917 | 122,881 | 137,856 | 146,170 | 146,020 | 164,030 | 164,019 | 109,319 | | | | | | |
| Take 16 | 219,458 | 219,909 | 221,928 | 238,708 | 246,907 | 163,909 | 164,022 | 173,444 | 181,861 | 183,793 | 122,551 | 139,048 | 146,103 | 147,396 | 164,657 | 164,792 | 110,122 | | | | | | |
| Take 17 | 218,825 | 217,036 | 217,939 | 241,824 | 245,664 | 160,417 | 164,500 | 173,486 | 183,286 | 184,215 | 119,067 | 139,705 | 145,241 | 146,208 | 164,419 | 166,321 | 110,025 | | | | | | |
| Take 18 | 218,048 | 218,334 | 218,160 | 241,295 | 244,942 | 165,524 | 164,619 | 172,872 | 180,449 | 183,432 | 124,800 | 139,521 | 147,219 | 148,051 | 164,852 | 164,995 | 109,559 | | | | | | |
| Take 19 | 217,724 | 216,360 | 217,401 | 245,476 | 249,508 | 166,265 | 163,941 | 171,741 | 179,593 | 183,168 | 121,829 | 137,732 | 145,655 | 144,687 | 164,915 | 165,100 | 109,794 | | | | | | |
| Take 20 | 220,518 | 218,490 | 222,328 | 244,436 | 243,842 | 163,344 | 166,716 | 175,059 | 184,819 | 184,480 | 128,427 | 141,959 | 148,668 | 150,443 | 166,697 | 167,362 | 109,460 | | | | | | |
| Take 21 | 218,566 | 219,828 | 218,645 | 243,316 | 249,550 | 158,147 | 165,968 | 175,652 | 183,283 | 184,964 | 124,279 | 140,837 | 147,564 | 147,396 | 165,531 | 165,466 | 109,231 | | | | | | |
| Bass 3 AVERAGE | **219,933** | **219,625** | **219,848** | **243,966** | **247,725** | **163,532** | **165,534** | **173,315** | **183,070** | **184,672** | **122,906** | **139,605** | **147,022** | **147,179** | **165,089** | **165,607** | **109,793** | | | | | | |
| Cents RF+3rds | -1,434 | -3,859 | -2,098 | -21,893 | 4,576 | -14,423 | 6,641 | -13,837 | -19,033 | -3,954 | -8,844 | 11,706 | 1,328 | 3,181 | 1,989 | 7,409 | -4,163 | | | | | | |
| Cents RF-3rds | 0,267 | -2,158 | -0,397 | -20,192 | 6,277 | -12,721 | 8,342 | -12,136 | -17,332 | -2,253 | -7,143 | 13,408 | 3,029 | 4,882 | 3,690 | 9,110 | -2,462 | | | | | | |
| Just Int I | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | | | | |
| Just Int II | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | | | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,955 | 1,955 | 15,640 | 5,865 | 5,865 | 3,910 | 7,820 | -1,955 | -1,955 | 1,955 | 1,955 | 0,000 | | | | | | |
| Meantone | 0,000 | 0,000 | 0,000 | -6,843 | -6,843 | -3,421 | -3,421 | -27,373 | -10,264 | -10,264 | -6,843 | -13,686 | 3,422 | 3,422 | -3,421 | -3,421 | 0,000 | | | | | | |
| Take 01 | 223,293 | 221,045 | 223,800 | 252,586 | 257,401 | 168,321 | 165,350 | 176,215 | 188,001 | 189,588 | 121,387 | 140,595 | 145,977 | 151,101 | 166,864 | 168,337 | 110,622 | | | | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 220,504 | 220,112 | 222,540 | 252,475 | 254,699 | 166,565 | 163,535 | 174,431 | 185,274 | 187,322 | 122,531 | 144,974 | 151,710 | 147,245 | 167,449 | 165,823 | 110,092 | | | | | | |
| Take 04 | 220,891 | 220,797 | 222,546 | 249,495 | 253,143 | 164,410 | 162,694 | 175,559 | 184,508 | 187,469 | 124,011 | 140,811 | 146,423 | 144,769 | 165,473 | 166,967 | 109,778 | | | | | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 220,455 | 218,268 | 218,993 | 254,381 | 254,860 | 170,270 | 165,725 | 179,020 | 186,018 | 185,133 | 122,547 | 137,924 | 145,291 | 146,072 | 164,559 | 165,443 | 109,567 | | | | | | |
| Take 07 | 222,149 | 220,089 | 220,864 | 249,677 | 252,484 | 167,553 | 164,783 | 176,014 | 182,964 | 184,715 | 124,918 | 141,801 | 148,448 | 146,642 | 164,269 | 165,334 | 109,376 | | | | | | |
| Take 08 | 221,359 | 219,938 | 222,650 | 252,292 | 253,827 | 167,065 | 164,609 | 177,140 | 185,251 | 185,273 | 122,525 | 142,168 | 150,388 | 147,186 | 164,874 | 165,775 | 110,062 | | | | | | |
| Take 09 | 210,138 | 222,176 | 221,072 | 249,002 | 253,730 | 167,671 | 160,784 | 174,292 | 186,510 | 189,604 | 121,897 | 141,862 | 146,173 | 145,475 | 165,714 | 164,574 | 109,060 | | | | | | |
| Take 10 | 223,019 | 225,282 | 222,851 | 251,824 | 252,538 | 167,029 | 164,202 | 173,243 | 185,090 | 186,281 | 123,885 | 139,541 | 148,007 | 146,640 | 165,291 | 165,267 | 109,183 | | | | | | |
| Take 11 | 221,885 | 223,072 | 224,331 | 251,267 | 256,591 | 168,451 | 166,863 | 176,725 | 184,718 | 186,975 | 125,578 | 142,342 | 149,938 | 146,973 | 167,152 | 168,423 | 109,992 | | | | | | |
| Take 12 | 221,476 | 218,926 | 224,003 | 252,787 | 256,134 | 167,801 | 162,964 | 176,912 | 185,690 | 185,746 | 122,401 | 139,899 | 145,831 | 147,241 | 166,365 | 166,367 | 109,575 | | | | | | |
| Take 13 | 221,988 | 219,341 | 220,107 | 249,760 | 252,419 | 165,704 | 162,470 | 175,655 | 186,434 | 187,124 | 123,264 | 140,905 | 146,981 | 147,429 | 166,417 | 165,301 | 109,466 | | | | | | |
| Take 14 | 220,724 | 219,074 | 221,399 | 254,582 | 250,776 | 166,110 | 163,522 | 171,350 | 183,722 | 184,661 | 121,629 | 142,338 | 147,516 | 146,323 | 164,050 | 166,764 | 109,607 | | | | | | |
| Take 15 | 220,579 | 220,806 | 222,798 | 251,920 | 253,380 | 165,356 | 166,102 | 175,083 | 185,761 | 185,451 | 123,001 | 143,207 | 148,726 | 147,218 | 165,348 | 165,154 | 109,926 | | | | | | |
| Take 16 | 220,892 | 220,220 | 221,699 | 250,845 | 251,588 | 165,009 | 162,828 | 174,690 | 183,848 | 184,638 | 122,034 | 138,120 | 147,133 | 146,547 | 164,876 | 164,378 | 109,893 | | | | | | |
| Take 17 | 219,708 | 220,386 | 220,733 | 250,973 | 250,648 | 166,097 | 163,668 | 177,011 | 186,864 | 186,085 | 124,569 | 138,470 | 146,303 | 145,006 | 164,344 | 164,381 | 108,999 | | | | | | |
| Take 18 | 220,149 | 218,515 | 219,490 | 251,322 | 249,941 | 163,911 | 162,519 | 172,724 | 181,727 | 184,026 | 122,327 | 136,422 | 145,877 | 145,616 | 165,945 | 164,721 | 109,232 | | | | | | |
| Take 19 | 220,546 | 219,003 | 220,492 | 250,384 | 250,718 | 161,623 | 161,583 | 173,395 | 183,053 | 185,567 | 124,177 | 143,221 | 146,481 | 146,174 | 165,119 | 164,994 | 109,614 | | | | | | |
| Take 20 | 221,414 | 222,532 | 220,916 | 250,882 | 249,614 | 165,286 | 162,820 | 174,633 | 183,249 | 184,276 | 125,587 | 140,644 | 147,927 | 146,887 | 166,934 | 165,774 | 109,553 | | | | | | |
| Take 21 | 221,706 | 219,287 | 218,878 | 249,954 | 252,323 | 165,181 | 163,506 | 174,546 | 183,969 | 186,628 | 120,798 | 140,905 | 149,112 | 147,190 | 165,552 | 165,367 | 108,805 | | | | | | |
| Bass 4 AVERAGE | **220,678** | **220,467** | **221,588** | **251,390** | **252,990** | **166,064** | **163,712** | **175,191** | **184,876** | **186,135** | **123,109** | **140,621** | **147,592** | **146,723** | **165,610** | **165,744** | **109,600** | | | | | | |
| Cents RF+3rds | 4,420 | 2,765 | 11,543 | 30,003 | 40,990 | 12,174 | -12,517 | 4,810 | -2,036 | 9,708 | -5,989 | 24,263 | 8,024 | -2,196 | 7,443 | 8,843 | -7,209 | | | | | | |
| Cents RF-3rds | 6,122 | 4,467 | 13,245 | 31,705 | 42,691 | 13,875 | -10,816 | 6,511 | -0,334 | 11,409 | -4,287 | 25,964 | 9,726 | -0,494 | 9,144 | 10,545 | -5,508 | | | | | | |
| Just Int I | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | | | | |
| Just Int II | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,995 | 1,995 | -27,373 | -15,641 | -15,641 | 3,910 | -13,686 | -1,955 | -1,955 | 1,995 | 1,995 | 0,000 | | | | | | |
| Pythagorean | 0,000 | 0,000 | 0,000 | 3,910 | 3,910 | 1,955 | 1,955 | 15,640 | 5,865 | 5,865 | 3,910 | 7,820 | -1,955 | -1,955 | 1,955 | 1,955 | 0,000 | | | | | | |
| Meantone | 0,000 | 0,000 | 0,000 | -6,843 | -6,843 | -3,421 | -3,421 | -27,373 | -10,264 | -10,264 | -6,843 | -13,686 | 3,422 | 3,422 | -3,421 | -3,421 | 0,000 | | | | | | |
| | Third Phrase | | | | | | | | | | | | | | | | | | | | | | |
| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 | Note 21 | Note 22 | Note 23 |
| Take 01 | 223,648 | 225,793 | 219,728 | 195,876 | 199,324 | 127,540 | 128,632 | 128,592 | 173,081 | 177,838 | 175,494 | 176,262 | 162,142 | 145,582 | 137,620 | 113,068 | 118,789 | 112,124 | 104,418 | 107,873 | | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 03 | 221,656 | 223,187 | 221,301 | 197,324 | 197,859 | 125,350 | 128,648 | 128,706 | 175,240 | 178,046 | 177,742 | 173,108 | 165,071 | 142,748 | 136,554 | 113,831 | 117,334 | 109,918 | 102,596 | 107,616 |
| Take 04 | 222,054 | 224,952 | 222,428 | 193,020 | 198,975 | 128,561 | 128,879 | 129,372 | 171,837 | 179,649 | 177,016 | 173,912 | 164,259 | 145,827 | 137,518 | 113,500 | 118,315 | 107,500 | 101,162 | 107,846 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 220,758 | 218,565 | 218,629 | 195,771 | 195,369 | 129,672 | 129,646 | 130,809 | 173,542 | 175,480 | 175,043 | 173,118 | 164,853 | 145,050 | 139,541 | 109,851 | 115,545 | 106,365 | 104,922 | 108,835 |
| Take 07 | 218,340 | 219,286 | 217,989 | 196,220 | 197,113 | 129,550 | 129,111 | 130,736 | 172,622 | 176,725 | 175,510 | 174,909 | 166,216 | 143,358 | 136,198 | 110,711 | 117,768 | 109,552 | 102,979 | 108,862 |
| Take 08 | 222,005 | 222,299 | 219,702 | 191,563 | 196,889 | 131,218 | 129,406 | 128,017 | 173,485 | 178,182 | 176,041 | 172,236 | 162,811 | 143,922 | 135,920 | 111,061 | 118,149 | 108,482 | 105,374 | 106,344 |
| Take 09 | 220,267 | 223,804 | 221,808 | 196,772 | 198,895 | 129,938 | 126,867 | 128,987 | 170,882 | 177,254 | 176,146 | 172,838 | 167,871 | 146,254 | 137,529 | 112,119 | 116,758 | 111,705 | 102,701 | 108,983 |
| Take 10 | 221,784 | 223,226 | 219,458 | 196,311 | 199,536 | 128,786 | 129,739 | 132,018 | 175,774 | 177,757 | 174,929 | 175,433 | 164,692 | 150,616 | 140,373 | 110,998 | 116,300 | 111,815 | 106,201 | 109,762 |
| Take 11 | 222,444 | 222,302 | 219,993 | 195,989 | 197,102 | 129,974 | 131,704 | 131,214 | 174,494 | 178,872 | 177,090 | 173,647 | 166,329 | 140,305 | 137,526 | 0,000 | 114,818 | 106,131 | 104,756 | 106,935 |
| Take 12 | 221,933 | 222,107 | 222,216 | 196,667 | 199,059 | 127,939 | 129,057 | 129,292 | 173,459 | 177,091 | 175,837 | 173,157 | 163,752 | 145,022 | 138,433 | 111,636 | 116,782 | 107,519 | 104,502 | 108,922 |
| Take 13 | 220,633 | 223,356 | 221,698 | 194,755 | 196,980 | 129,861 | 127,701 | 128,768 | 171,422 | 176,146 | 173,817 | 171,271 | 164,776 | 144,075 | 137,193 | 107,299 | 117,310 | 108,894 | 106,885 | 110,193 |
| Take 14 | 222,329 | 219,902 | 222,294 | 196,166 | 197,103 | 128,695 | 129,887 | 131,077 | 171,262 | 175,572 | 173,329 | 173,641 | 164,246 | 143,715 | 137,783 | 112,290 | 114,662 | 109,897 | 103,402 | 109,894 |
| Take 15 | 221,370 | 221,085 | 217,298 | 194,457 | 197,213 | 128,795 | 125,980 | 130,047 | 173,323 | 175,210 | 177,186 | 176,427 | 167,383 | 146,493 | 139,860 | 109,917 | 116,426 | 108,141 | 110,507 | 110,657 |
| Take 16 | 221,770 | 219,304 | 218,369 | 194,702 | 195,227 | 127,391 | 129,270 | 128,105 | 171,835 | 173,856 | 174,329 | 173,182 | 160,782 | 140,322 | 135,588 | 103,948 | 118,152 | 108,132 | 104,212 | 108,773 |
| Take 17 | 218,424 | 224,437 | 216,694 | 195,201 | 196,879 | 128,794 | 129,105 | 127,169 | 175,000 | 175,209 | 172,294 | 172,650 | 163,333 | 143,229 | 137,926 | 107,066 | 116,731 | 109,887 | 107,338 | 109,808 |
| Take 18 | 220,832 | 223,786 | 221,408 | 196,303 | 199,242 | 126,558 | 128,334 | 127,871 | 172,793 | 175,594 | 172,151 | 171,511 | 165,589 | 146,540 | 139,526 | 107,727 | 114,863 | 106,463 | 104,130 | 107,538 |
| Take 19 | 222,175 | 221,608 | 220,173 | 197,057 | 197,733 | 128,510 | 128,431 | 133,238 | 172,215 | 175,858 | 174,271 | 175,185 | 161,612 | 145,195 | 138,920 | 111,415 | 118,645 | 109,233 | 104,961 | 108,962 |
| Take 20 | 223,349 | 223,742 | 221,803 | 197,835 | 199,592 | 127,745 | 131,015 | 131,051 | 173,361 | 179,774 | 172,437 | 172,608 | 163,165 | 145,481 | 140,549 | 111,254 | 116,026 | 108,870 | 105,431 | 109,063 |
| Take 21 | 220,548 | 221,718 | 218,714 | 195,063 | 197,101 | 126,556 | 128,074 | 127,826 | 173,171 | 175,015 | 174,875 | 172,719 | 163,444 | 144,564 | 140,098 | 107,185 | 117,312 | 109,023 | 104,532 | 110,329 |
| **Bass 1 AVERAGE** | **221,385** | **222,340** | **220,090** | **195,634** | **197,747** | **128,496** | **128,920** | **129,626** | **173,095** | **176,796** | **175,028** | **173,569** | **164,333** | **144,647** | **138,140** | **110,444** | **116,878** | **108,929** | **104,304** | **108,800** |
| Cents RF+3rds | 4,140 | 11,589 | -6,020 | -9,939 | 8,657 | -37,657 | -31,955 | -22,503 | -21,856 | 14,775 | -2,624 | -17,117 | -11,784 | -32,683 | -12,375 | 0,241 | -1,724 | -23,663 | 1,220 | -25,719 |
| Cents RF-3rds | 8,407 | 15,857 | -1,753 | -5,672 | 12,924 | -33,390 | -27,688 | -18,236 | -17,589 | 19,042 | 1,643 | -12,850 | -7,517 | -28,416 | -8,108 | 4,508 | 2,543 | -19,396 | 5,487 | -21,452 |
| Just Int I | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 7,820 | 7,820 | 7,820 | -7,819 | -7,819 | -56,590 | -56,590 | -19,551 | -19,551 | -35,192 | -21,506 | -16,551 | -21,506 | -33,237 | -21,506 |
| Just Int II | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 29,326 | 29,326 | 29,326 | 13,687 | 13,687 | -35,084 | -35,084 | 1,955 | -1,955 | -13,686 | 0,000 | 4,955 | 0,000 | -11,731 | 0,000 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -3,910 | -3,910 | -5,865 | -5,865 | -5,865 | -7,820 | -7,820 | -7,820 | -7,820 | 1,955 | -1,955 | 7,820 | 0,000 | -9,775 | 0,000 | 9,775 | 0,000 |
| Meantone | 0,000 | 0,000 | 0,000 | 6,843 | 6,843 | 10,265 | 10,265 | 10,265 | 13,686 | 13,686 | 13,686 | 13,686 | -3,421 | 3,422 | -13,686 | 0,000 | 17,107 | 0,000 | -17,108 | 0,000 |
| Take 01 | 222,003 | 224,438 | 222,656 | 195,401 | 196,414 | 132,247 | 131,830 | 130,575 | 175,912 | 175,705 | 175,182 | 173,274 | 166,232 | 148,772 | 140,023 | 113,059 | 116,127 | 112,875 | 105,318 | 109,987 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 221,114 | 220,523 | 220,108 | 194,164 | 195,730 | 129,896 | 129,378 | 130,867 | 171,595 | 174,551 | 174,440 | 173,812 | 163,551 | 146,413 | 140,191 | 110,228 | 115,971 | 111,044 | 104,938 | 110,470 |
| Take 04 | 221,062 | 220,795 | 220,283 | 194,237 | 193,753 | 129,858 | 128,635 | 130,698 | 173,298 | 175,321 | 175,203 | 173,530 | 165,717 | 148,194 | 138,687 | 107,920 | 115,996 | 110,401 | 104,577 | 109,269 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 220,280 | 220,335 | 220,483 | 195,488 | 195,454 | 129,872 | 130,005 | 130,217 | 172,455 | 174,643 | 173,939 | 172,200 | 164,162 | 148,083 | 136,997 | 109,103 | 115,182 | 110,299 | 104,348 | 109,672 |
| Take 07 | 221,391 | 218,363 | 220,096 | 193,304 | 195,700 | 129,439 | 129,938 | 131,210 | 171,820 | 174,772 | 174,598 | 174,849 | 164,066 | 146,352 | 138,736 | 109,252 | 115,716 | 110,192 | 103,695 | 109,348 |
| Take 08 | 221,675 | 220,393 | 219,169 | 194,085 | 195,056 | 129,581 | 127,237 | 129,305 | 171,769 | 174,535 | 174,295 | 174,093 | 165,789 | 146,920 | 137,652 | 107,412 | 115,016 | 109,644 | 104,419 | 109,892 |
| Take 09 | 222,185 | 220,339 | 220,232 | 194,385 | 198,450 | 130,638 | 129,482 | 130,089 | 175,957 | 174,316 | 173,933 | 171,392 | 165,415 | 147,381 | 140,836 | 107,426 | 115,336 | 108,157 | 104,354 | 108,516 |
| Take 10 | 220,852 | 217,353 | 219,856 | 196,291 | 197,128 | 129,716 | 129,831 | 131,486 | 172,740 | 175,385 | 174,631 | 171,241 | 165,107 | 146,767 | 137,899 | 108,420 | 116,744 | 108,725 | 104,247 | 110,112 |
| Take 11 | 221,064 | 223,871 | 221,129 | 195,356 | 194,827 | 130,658 | 130,157 | 130,773 | 177,369 | 174,381 | 173,458 | 172,092 | 164,383 | 148,567 | 141,494 | 108,373 | 116,740 | 109,294 | 105,279 | 108,916 |
| Take 12 | 222,054 | 219,539 | 220,357 | 196,688 | 197,391 | 130,192 | 129,937 | 130,225 | 173,377 | 174,944 | 173,458 | 172,439 | 163,990 | 146,328 | 139,088 | 110,556 | 115,359 | 110,279 | 105,093 | 108,759 |
| Take 13 | 221,567 | 220,769 | 221,443 | 193,086 | 193,491 | 129,373 | 130,069 | 130,371 | 174,217 | 174,619 | 174,726 | 173,272 | 166,572 | 147,357 | 138,358 | 107,210 | 115,959 | 109,040 | 103,740 | 108,589 |
| Take 14 | 220,541 | 219,906 | 220,252 | 195,465 | 196,271 | 129,299 | 129,994 | 130,479 | 172,982 | 174,975 | 173,978 | 172,496 | 164,585 | 145,372 | 136,092 | 108,745 | 115,325 | 108,831 | 103,711 | 108,784 |
| Take 15 | 219,593 | 217,719 | 217,882 | 193,399 | 195,209 | 129,628 | 129,195 | 129,957 | 173,528 | 174,544 | 173,141 | 171,039 | 164,387 | 145,447 | 138,941 | 107,386 | 115,414 | 109,124 | 104,543 | 108,909 |
| Take 16 | 221,625 | 220,711 | 218,552 | 192,157 | 193,866 | 130,129 | 129,632 | 130,607 | 171,810 | 174,438 | 173,306 | 173,281 | 164,732 | 147,677 | 140,264 | 107,803 | 115,845 | 108,647 | 103,083 | 108,042 |
| Take 17 | 220,162 | 219,533 | 218,464 | 192,860 | 193,035 | 128,573 | 129,944 | 129,922 | 172,150 | 174,071 | 173,409 | 170,841 | 163,306 | 147,245 | 138,746 | 109,846 | 115,545 | 108,011 | 103,400 | 108,916 |
| Take 18 | 219,980 | 218,490 | 218,083 | 193,421 | 194,467 | 128,819 | 127,393 | 129,139 | 172,449 | 173,019 | 172,874 | 171,456 | 163,660 | 147,653 | 136,585 | 107,330 | 115,376 | 107,656 | 104,046 | 109,244 |
| Take 19 | 220,062 | 219,895 | 217,807 | 190,846 | 194,764 | 130,472 | 129,250 | 129,841 | 172,669 | 173,897 | 173,132 | 171,553 | 163,142 | 145,297 | 138,836 | 106,429 | 114,350 | 108,876 | 104,259 | 108,766 |
| Take 20 | 218,974 | 220,476 | 220,682 | 195,323 | 194,483 | 128,188 | 129,532 | 129,243 | 170,460 | 174,318 | 171,448 | 169,859 | 166,364 | 146,224 | 136,876 | 108,679 | 116,510 | 110,612 | 104,803 | 107,501 |
| Take 21 | 220,755 | 219,874 | 219,870 | 193,270 | 194,558 | 129,488 | 130,421 | 130,152 | 174,057 | 176,067 | 173,394 | 173,311 | 164,784 | 148,321 | 141,657 | 112,462 | 116,488 | 112,005 | 106,197 | 110,104 |
| **Bass 2 AVERAGE** | **220,892** | **220,175** | **219,863** | **194,170** | **195,266** | **129,793** | **129,571** | **130,271** | **173,190** | **174,658** | **173,818** | **172,423** | **164,734** | **147,072** | **138,840** | **108,823** | **115,737** | **109,669** | **104,424** | **109,147** |
| Cents RF+3rds | 0,276 | -5,350 | -7,802 | -22,948 | -13,205 | -20,276 | -23,233 | -13,908 | -20,901 | -6,292 | -14,637 | -28,592 | -7,566 | -3,902 | -3,623 | -25,347 | -18,713 | -11,943 | 3,208 | -20,201 |
| Cents RF-3rds | 4,544 | -1,083 | -3,535 | -18,681 | -8,938 | -16,009 | -18,965 | -9,641 | -16,634 | -2,024 | -10,369 | -24,324 | -3,298 | 0,365 | 0,644 | -21,080 | -14,445 | -7,676 | 7,475 | -15,934 |
| Just Int I | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 7,820 | 7,820 | 7,820 | -7,819 | -7,819 | -56,590 | -56,590 | -19,551 | -19,551 | -35,192 | -21,506 | -16,551 | -21,506 | -33,237 | -21,506 |
| Just Int II | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 29,326 | 29,326 | 29,326 | 13,687 | 13,687 | -35,084 | -35,084 | 1,955 | -1,955 | -13,686 | 0,000 | 4,955 | 0,000 | -11,731 | 0,000 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -3,910 | -3,910 | -5,865 | -5,865 | -5,865 | -7,820 | -7,820 | -7,820 | -7,820 | 1,955 | -1,955 | 7,820 | 0,000 | -9,775 | 0,000 | 9,775 | 0,000 |
| Meantone | 0,000 | 0,000 | 0,000 | 6,843 | 6,843 | 10,265 | 10,265 | 10,265 | 13,686 | 13,686 | 13,686 | 13,686 | -3,421 | 3,422 | -13,686 | 0,000 | 17,107 | 0,000 | -17,108 | 0,000 |
| Take 01 | 222,831 | 222,769 | 220,989 | 196,808 | 197,788 | 131,099 | 131,398 | 131,818 | 174,971 | 178,532 | 178,238 | 175,956 | 165,450 | 146,201 | 140,034 | 110,872 | 115,678 | 110,811 | 105,423 | 110,748 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 222,471 | 220,073 | 221,244 | 194,634 | 196,145 | 130,638 | 130,890 | 130,225 | 173,943 | 174,780 | 176,467 | 175,211 | 167,471 | 146,564 | 137,185 | 108,490 | 116,681 | 109,450 | 103,878 | 109,525 |
| Take 04 | 221,815 | 220,086 | 217,750 | 194,520 | 193,619 | 129,924 | 130,788 | 129,618 | 173,327 | 177,393 | 177,061 | 174,541 | 165,862 | 146,909 | 141,556 | 108,596 | 115,094 | 110,713 | 103,833 | 109,868 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 221,550 | 220,716 | 217,630 | 193,376 | 196,651 | 130,247 | 129,910 | 130,702 | 172,913 | 176,549 | 174,975 | 172,831 | 164,156 | 146,313 | 139,089 | 108,647 | 115,609 | 109,858 | 104,949 | 109,730 |
| Take 07 | 220,979 | 221,088 | 219,117 | 195,041 | 196,080 | 129,999 | 130,272 | 130,141 | 174,549 | 176,800 | 175,667 | 172,686 | 169,222 | 147,700 | 138,949 | 106,894 | 114,493 | 108,661 | 103,305 | 109,039 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 08 | 220,697 | 221,762 | 216,997 | 196,253 | 195,080 | 130,167 | 130,070 | 129,638 | 174,570 | 175,732 | 174,639 | 174,358 | 165,828 | 147,590 | 139,483 | 108,643 | 114,744 | 109,180 | 105,708 | 109,846 |
| Take 09 | 222,614 | 219,982 | 219,420 | 195,278 | 197,550 | 129,470 | 130,796 | 130,742 | 169,999 | 176,536 | 176,400 | 174,139 | 166,705 | 145,643 | 138,301 | 108,552 | 115,154 | 109,264 | 103,820 | 108,822 |
| Take 10 | 221,716 | 222,667 | 220,928 | 194,442 | 194,918 | 130,551 | 130,123 | 129,964 | 175,740 | 176,319 | 173,672 | 171,429 | 163,941 | 146,748 | 140,099 | 110,277 | 116,217 | 110,762 | 105,214 | 110,485 |
| Take 11 | 222,302 | 221,645 | 218,764 | 194,931 | 195,190 | 130,084 | 129,332 | 129,063 | 174,247 | 176,476 | 176,893 | 174,547 | 165,636 | 146,781 | 140,534 | 110,471 | 116,046 | 110,540 | 104,454 | 110,266 |
| Take 12 | 224,805 | 221,243 | 219,266 | 196,137 | 194,915 | 130,062 | 128,300 | 131,605 | 175,844 | 176,667 | 175,428 | 173,659 | 165,144 | 146,080 | 139,569 | 109,000 | 115,910 | 108,310 | 103,410 | 109,192 |
| Take 13 | 222,344 | 223,681 | 219,275 | 195,331 | 195,175 | 129,778 | 129,740 | 130,974 | 174,804 | 176,066 | 175,646 | 173,976 | 167,309 | 148,415 | 136,861 | 109,571 | 115,867 | 109,535 | 104,711 | 110,193 |
| Take 14 | 220,797 | 222,217 | 220,510 | 195,211 | 196,605 | **128,911** | 130,402 | 128,710 | 173,916 | 175,473 | 174,906 | 173,062 | 165,610 | 146,155 | 139,308 | 108,272 | 114,601 | 109,529 | 103,700 | 109,555 |
| Take 15 | 222,084 | 221,153 | 217,095 | 195,514 | 195,789 | 129,744 | 127,741 | 129,382 | 174,860 | 177,348 | 175,736 | 174,875 | 165,443 | 146,485 | 138,566 | 110,221 | 114,612 | 108,449 | 104,755 | 109,441 |
| Take 16 | 220,710 | 217,895 | 218,591 | 192,810 | 194,430 | 128,886 | 127,076 | 128,942 | 172,044 | 176,063 | 173,995 | 172,643 | 165,699 | 145,880 | 138,598 | 108,490 | 114,111 | 108,347 | 103,586 | 108,598 |
| Take 17 | 220,022 | 219,701 | 219,921 | 193,181 | 193,621 | 128,838 | 129,048 | 129,108 | 171,916 | 175,163 | 175,278 | 173,581 | 164,246 | 146,759 | 138,776 | 112,147 | 115,643 | 108,848 | 103,765 | 108,765 |
| Take 18 | 220,211 | 221,405 | 215,516 | 195,157 | 196,627 | 127,944 | 129,310 | 128,508 | 171,176 | 176,011 | 175,233 | 172,734 | 164,464 | 143,457 | 138,174 | 106,344 | 115,309 | 108,822 | 104,046 | 108,434 |
| Take 19 | 219,912 | 220,435 | 218,499 | 194,208 | 194,988 | 129,106 | 129,311 | 129,337 | 170,838 | 177,020 | 176,593 | 173,484 | 166,093 | 146,420 | 139,165 | 108,401 | 115,264 | 108,200 | 105,191 | 109,215 |
| Take 20 | 222,346 | 221,984 | 217,636 | 194,283 | 193,432 | 130,873 | 130,390 | 132,904 | 174,010 | 174,709 | 176,363 | 175,369 | 168,590 | 150,023 | 142,518 | 110,149 | 115,083 | 107,937 | 103,025 | 107,378 |
| Take 21 | 222,718 | 222,033 | 216,268 | 193,878 | 195,827 | 128,670 | 128,840 | 128,820 | 170,339 | 175,430 | 174,981 | 174,435 | 165,348 | 145,705 | 138,501 | 109,383 | 115,310 | 108,068 | 103,889 | 108,235 |
| **Bass 3 AVERAGE** | **221,733** | **221,186** | **218,706** | **194,789** | **195,496** | **129,736** | **129,670** | **130,010** | **173,369** | **176,267** | **175,693** | **173,869** | **165,906** | **146,622** | **139,224** | **109,127** | **115,338** | **109,225** | **104,245** | **109,334** |
| Cents RF+3rds | 6,856 | 2,582 | -16,938 | -17,434 | -11,160 | -21,032 | -21,912 | -17,377 | -19,118 | 9,580 | 3,940 | -14,127 | 4,710 | -9,203 | 1,165 | -20,514 | -24,685 | -18,959 | 0,248 | -17,247 |
| Cents RF-3rds | 11,123 | 6,850 | -12,671 | -13,167 | -6,893 | -16,765 | -17,644 | -13,110 | -14,851 | 13,847 | 8,207 | -9,859 | 8,977 | -4,936 | 5,432 | -16,246 | -20,418 | -14,692 | 4,516 | -12,980 |
| Just Int I | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 7,820 | 7,820 | 7,820 | -7,819 | -7,819 | -56,590 | -56,590 | -19,551 | -19,551 | -35,192 | -21,506 | -16,551 | -21,506 | -33,237 | -21,506 |
| Just Int II | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 29,326 | 29,326 | 29,326 | 13,687 | 13,687 | -35,084 | -35,084 | 1,955 | -1,955 | -13,686 | 0,000 | 4,955 | 0,000 | -11,731 | 0,000 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -3,910 | -3,910 | -5,865 | -5,865 | -5,865 | -7,820 | -7,820 | -7,820 | -7,820 | 1,955 | -1,955 | 7,820 | 0,000 | -9,775 | 0,000 | 9,775 | 0,000 |
| Meantone | 0,000 | 0,000 | 0,000 | 6,843 | 6,843 | 10,265 | 10,265 | 10,265 | 13,686 | 13,686 | 13,686 | 13,686 | -3,421 | 3,422 | -13,686 | 0,000 | 17,107 | 0,000 | -17,108 | 0,000 |
| Take 01 | 227,127 | 224,646 | 223,020 | 200,719 | 198,778 | 130,259 | 131,842 | 130,943 | 179,070 | 182,501 | 177,432 | 177,705 | 165,231 | 147,269 | 138,875 | 108,347 | 117,039 | 109,715 | 106,947 | 110,920 |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 223,157 | 225,847 | 222,631 | 195,746 | 195,932 | 129,162 | 132,077 | 129,965 | 177,094 | 179,488 | 176,187 | 175,286 | 164,559 | 147,009 | 138,929 | 107,195 | 116,340 | 109,528 | 104,270 | 110,808 |
| Take 04 | 224,275 | 222,002 | 220,685 | 195,068 | 194,407 | 129,285 | 130,465 | 130,371 | 175,945 | 179,245 | 174,962 | 175,050 | 164,412 | 147,296 | 138,310 | 105,896 | 114,866 | 109,365 | 104,068 | 110,750 |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 222,689 | 220,222 | 219,918 | 193,954 | 196,356 | 129,864 | 130,559 | 131,282 | 175,799 | 179,031 | 175,036 | 173,353 | 164,864 | 148,753 | 137,022 | 109,143 | 116,610 | 110,107 | 103,707 | 110,423 |
| Take 07 | 223,039 | 221,737 | 219,465 | 197,943 | 199,902 | 130,301 | 131,523 | 130,893 | 175,596 | 179,801 | 176,770 | 176,195 | 165,149 | 147,536 | 139,689 | 107,411 | 117,093 | 108,720 | 103,778 | 110,522 |
| Take 08 | 223,090 | 221,869 | 220,552 | 195,416 | 195,310 | 129,124 | 130,170 | 130,082 | 174,449 | 178,617 | 175,265 | 174,230 | 164,690 | 145,130 | 138,984 | 107,815 | 117,355 | 109,690 | 105,086 | 109,843 |
| Take 09 | 223,284 | 221,242 | 219,456 | 195,687 | 196,867 | 128,649 | 129,390 | 130,130 | 174,737 | 177,432 | 178,429 | 175,182 | 165,255 | 146,378 | 139,879 | 108,654 | 116,030 | 107,251 | 103,984 | 109,383 |
| Take 10 | 223,849 | 222,151 | 225,401 | 196,835 | 197,012 | 129,712 | 131,856 | 129,765 | 174,249 | 180,738 | 177,215 | 175,835 | 167,343 | 148,083 | 141,120 | 108,278 | 116,000 | 109,850 | 104,861 | 110,569 |
| Take 11 | 225,331 | 222,052 | 221,057 | 196,029 | 196,212 | 129,823 | 130,734 | 129,552 | 173,981 | 178,709 | 176,886 | 174,026 | 164,767 | 146,968 | 140,496 | 108,056 | 115,008 | 109,397 | 104,914 | 110,451 |
| Take 12 | 224,367 | 222,860 | 221,270 | 194,809 | 196,866 | 128,516 | 131,243 | 129,024 | 174,011 | 178,718 | 175,561 | 172,566 | 164,822 | 146,026 | 138,633 | 108,746 | 116,871 | 107,337 | 103,170 | 110,884 |
| Take 13 | 222,789 | 223,561 | 222,035 | 196,769 | 197,378 | 130,399 | 130,714 | 131,148 | 173,410 | 180,253 | 176,661 | 175,424 | 166,228 | 147,889 | 139,566 | 106,627 | 116,654 | 110,649 | 104,480 | 110,745 |
| Take 14 | 222,976 | 219,898 | 219,188 | 195,688 | 196,991 | 129,874 | 129,836 | 129,538 | 175,055 | 177,265 | 174,830 | 172,533 | 165,636 | 147,624 | 140,827 | 109,006 | 115,911 | 109,549 | 103,758 | 110,056 |
| Take 15 | 222,158 | 220,536 | 221,739 | 194,156 | 197,607 | 130,143 | 130,867 | 131,403 | 173,508 | 178,755 | 175,084 | 174,182 | 165,328 | 148,232 | 140,516 | 107,572 | 116,159 | 108,702 | 104,585 | 108,693 |
| Take 16 | 222,612 | 220,916 | 220,732 | 195,649 | 195,673 | 130,045 | 130,623 | 129,504 | 172,564 | 178,452 | 175,688 | 174,989 | 165,168 | 145,449 | 138,187 | 106,273 | 115,788 | 108,547 | 103,705 | 109,060 |
| Take 17 | 223,237 | 221,465 | 218,388 | 195,710 | 195,971 | 130,153 | 130,411 | 130,447 | 172,532 | 178,463 | 175,175 | 174,693 | 165,847 | 147,008 | 138,622 | 109,260 | 116,306 | 109,294 | 105,092 | 109,904 |
| Take 18 | 224,841 | 224,251 | 221,309 | 194,239 | 198,688 | 129,382 | 129,856 | 128,673 | 176,935 | 180,689 | 175,176 | 171,674 | 164,282 | 145,180 | 138,232 | 107,396 | 116,077 | 109,257 | 102,774 | 110,299 |
| Take 19 | 223,488 | 220,198 | 219,273 | 196,945 | 196,910 | 128,075 | 131,250 | 128,942 | 172,915 | 177,753 | 178,387 | 173,451 | 163,538 | 145,530 | 142,690 | 106,981 | 114,877 | 108,750 | 103,472 | 109,126 |
| Take 20 | 222,136 | 223,885 | 219,494 | 195,035 | 196,229 | 131,165 | 132,548 | 131,806 | 175,162 | 178,824 | 175,847 | 173,694 | 167,569 | 147,380 | 138,479 | 105,689 | 115,750 | 107,645 | 101,800 | 110,239 |
| Take 21 | 220,860 | 221,410 | 218,806 | 195,919 | 196,191 | 130,053 | 131,457 | 129,950 | 172,996 | 178,182 | 175,323 | 173,622 | 163,426 | 146,873 | 138,154 | 109,112 | 116,453 | 108,858 | 101,853 | 109,852 |
| **Bass 4 AVERAGE** | **223,437** | **222,145** | **220,759** | **195,911** | **196,804** | **129,683** | **130,917** | **130,180** | **174,737** | **179,101** | **176,101** | **174,405** | **165,164** | **146,927** | **139,327** | **107,761** | **116,168** | **109,064** | **104,016** | **110,133** |
| Cents RF+3rds | 20,113 | 10,069 | -0,764 | -7,488 | 0,383 | -21,738 | -5,348 | -15,122 | -5,505 | 37,196 | 7,951 | -8,802 | -3,053 | -5,610 | 2,437 | -42,328 | -12,279 | -21,525 | -3,563 | -4,633 |
| Cents RF-3rds | 24,380 | 14,336 | 3,503 | -3,221 | 4,650 | -17,470 | -1,081 | -10,854 | -1,238 | 41,463 | 12,218 | -4,535 | 1,215 | -1,343 | 6,704 | -38,061 | -8,012 | -17,257 | 0,704 | -0,366 |
| Just Int I | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 7,820 | 7,820 | 7,820 | -7,819 | -7,819 | -56,590 | -56,590 | -19,551 | -19,551 | -35,192 | -21,506 | -16,551 | -21,506 | -33,237 | -21,506 |
| Just Int II | 0,000 | 0,000 | 0,000 | -31,174 | -31,174 | 29,326 | 29,326 | 29,326 | 13,687 | 13,687 | -35,084 | -35,084 | 1,955 | -1,955 | -13,686 | 0,000 | 4,955 | 0,000 | -11,731 | 0,000 |
| Pythagorean | 0,000 | 0,000 | 0,000 | -3,910 | -3,910 | -5,865 | -5,865 | -5,865 | -7,820 | -7,820 | -7,820 | -7,820 | 1,955 | -1,955 | 7,820 | 0,000 | -9,775 | 0,000 | 9,775 | 0,000 |
| Meantone | 0,000 | 0,000 | 0,000 | 6,843 | 6,843 | 10,265 | 10,265 | 10,265 | 13,686 | 13,686 | 13,686 | 13,686 | -3,421 | 3,422 | -13,686 | 0,000 | 17,107 | 0,000 | -17,108 | 0,000 |

**Fourth Phrase**

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 | Note 17 | Note 18 | Note 19 | Note 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 195,561 | 198,322 | 198,012 | 185,294 | 165,179 | 220,396 | 224,039 | 211,005 | 222,715 | 200,744 | 180,167 | 250,154 | 249,928 | 220,079 | 211,232 | 221,201 | 110,475 | 123,947 | | |
| Take 02 | | | | | | | | | | | | | | | | | | | | |
| Take 03 | 199,609 | 198,521 | 195,282 | 183,714 | 162,914 | 219,736 | 222,050 | 219,772 | 220,027 | 194,240 | 185,256 | 247,742 | 248,351 | 223,498 | 209,539 | 220,211 | 107,017 | 121,553 | | |
| Take 04 | 197,313 | 197,153 | 196,211 | 184,843 | 166,248 | 222,479 | 220,809 | 221,755 | 220,373 | 194,963 | 185,658 | 247,411 | 248,379 | 222,481 | 206,105 | 220,519 | 109,547 | 123,236 | | |
| Take 05 | | | | | | | | | | | | | | | | | | | | |
| Take 06 | 194,560 | 196,496 | 195,218 | 181,967 | 164,515 | 221,053 | 219,413 | 222,401 | 218,209 | 197,563 | 184,222 | 246,336 | 245,801 | 219,508 | 207,011 | 218,424 | 110,509 | 122,937 | | |
| Take 07 | 195,236 | 197,788 | 198,319 | 183,182 | 167,005 | 222,741 | 219,958 | 222,237 | 218,053 | 197,251 | 183,613 | 247,781 | 248,862 | 224,528 | 208,364 | 219,731 | 108,855 | 122,009 | | |
| Take 08 | 195,540 | 197,095 | 197,734 | 185,102 | 165,109 | 223,260 | 221,454 | 220,476 | 221,350 | 196,792 | 184,763 | 245,504 | 245,996 | 221,376 | 209,115 | 221,529 | 109,604 | 123,301 | | |
| Take 09 | 195,716 | 196,755 | 195,333 | 185,113 | 165,345 | 221,785 | 219,298 | 223,072 | 218,926 | 194,654 | 185,937 | 249,048 | 246,739 | 222,345 | 209,831 | 219,522 | 108,229 | 123,470 | | |
| Take 10 | 195,267 | 195,571 | 199,743 | 183,000 | 167,446 | 221,564 | 221,843 | 222,022 | 221,207 | 196,198 | 184,078 | 248,968 | 248,365 | 224,871 | 209,982 | 220,411 | 111,823 | 123,615 | | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 11 | 198,649 | 202,322 | 190,360 | 186,957 | 165,100 | 221,153 | 220,966 | 220,197 | 219,094 | 195,387 | 186,100 | 248,168 | 245,530 | 222,923 | 209,619 | 221,286 | 111,165 | 122,579 |
| Take 12 | 196,075 | 199,995 | 198,539 | 183,694 | 162,755 | 222,098 | 220,537 | 220,402 | 218,536 | 196,437 | 186,338 | 246,870 | 248,778 | 221,922 | 207,317 | 221,429 | 107,488 | 123,004 |
| Take 13 | 195,046 | 196,893 | 198,974 | 185,503 | 166,634 | 223,015 | 221,735 | 0,000 | 221,377 | 196,696 | 187,114 | 252,169 | 247,432 | 221,946 | 206,647 | 220,387 | 111,174 | 123,082 |
| Take 14 | 195,151 | 197,930 | 196,557 | 187,888 | 164,762 | 220,562 | 218,304 | 222,353 | 219,491 | 196,633 | 187,175 | 248,661 | 246,787 | 220,645 | 204,356 | 218,553 | 110,691 | 122,545 |
| Take 15 | 197,835 | 196,184 | 194,912 | 183,245 | 164,864 | 220,714 | 218,658 | 219,834 | 218,328 | 194,979 | 183,438 | 250,957 | 249,360 | 222,022 | 206,813 | 219,306 | 109,089 | 123,861 |
| Take 16 | 194,772 | 196,424 | 197,185 | 184,262 | 163,821 | 220,140 | 219,828 | 219,618 | 218,490 | 197,395 | 184,700 | 248,192 | 246,297 | 221,664 | 205,705 | 220,326 | 107,167 | 122,598 |
| Take 17 | 194,847 | 193,633 | 196,195 | 185,857 | 164,994 | 220,868 | 218,207 | 218,124 | 219,806 | 195,791 | 184,438 | 244,906 | 246,272 | 223,438 | 208,262 | 219,716 | 107,186 | 122,430 |
| Take 18 | 193,383 | 197,824 | 193,846 | 183,632 | 163,203 | 220,692 | 220,816 | 219,758 | 221,999 | 195,750 | 183,618 | 243,897 | 249,619 | 223,884 | 207,129 | 220,111 | 108,849 | 123,947 |
| Take 19 | 193,781 | 195,010 | 195,458 | 185,072 | 164,743 | 223,628 | 220,353 | 219,723 | 221,505 | 192,988 | 181,866 | 245,772 | 245,444 | 223,488 | 208,658 | 220,365 | 109,148 | 122,702 |
| Take 20 | 193,696 | 199,615 | 197,539 | 182,160 | 162,824 | 222,514 | 222,490 | 218,391 | 219,820 | 196,645 | 186,216 | 246,673 | 249,997 | 227,458 | 208,425 | 221,703 | 112,882 | 122,763 |
| Take 21 | 194,293 | 194,362 | 194,948 | 184,543 | 164,730 | 223,942 | 220,826 | 223,142 | 218,739 | 195,878 | 184,054 | 250,354 | 247,932 | 224,664 | 206,972 | 219,784 | 108,317 | 121,916 |
| **Bass 1 AVERAGE** | **195,427** | **196,976** | **196,667** | **184,475** | **164,852** | **221,702** | **220,610** | **220,781** | **219,897** | **196,157** | **184,671** | **247,872** | **247,677** | **222,776** | **207,952** | **220,237** | **109,241** | **122,921** |
| Cents RF+3rds | -5,548 | 8,124 | 5,404 | -5,390 | -0,094 | 12,845 | 4,293 | 5,638 | -1,307 | 0,908 | -3,552 | 6,011 | 4,653 | 21,210 | 1,998 | 1,370 | -12,486 | -8,227 |
| Cents RF-3rds | -1,639 | 12,033 | 9,313 | -1,481 | 3,815 | 16,754 | 8,202 | 9,547 | 2,602 | 4,817 | 0,357 | 9,920 | 8,561 | 25,118 | 5,906 | 5,279 | -8,578 | -4,318 |
| Just Int I | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Just Int II | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Pythagorean | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | 5,865 | 5,865 | 1,955 | 11,730 | 1,955 | 1,955 | 5,865 |
| Meantone | -29,219 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | -3,421 | -3,421 | -29,219 | -13,686 | -10,264 | -10,264 | -3,421 | -20,530 | -3,421 | 3,421 | -15,641 |
| Take 01 | 195,072 | 197,592 | 197,177 | 184,845 | 165,941 | 219,750 | 219,257 | 219,777 | 219,274 | 194,559 | 186,508 | 247,088 | 246,352 | 222,491 | 209,286 | 219,370 | 109,049 | 123,285 |
| Take 02 | | | | | | | | | | | | | | | | | | |
| Take 03 | 193,421 | 197,463 | 196,332 | 184,006 | 167,412 | 220,661 | 218,799 | 217,891 | 217,961 | 195,941 | 184,105 | 242,168 | 245,498 | 220,533 | 207,854 | 219,179 | 108,645 | 122,224 |
| Take 04 | 194,675 | 199,219 | 198,013 | 185,043 | 167,194 | 221,503 | 219,183 | 218,730 | 216,713 | 194,454 | 185,104 | 245,503 | 244,046 | 221,555 | 206,910 | 218,800 | 109,005 | 122,381 |
| Take 05 | | | | | | | | | | | | | | | | | | |
| Take 06 | 194,200 | 196,825 | 195,385 | 183,483 | 165,298 | 218,212 | 217,700 | 218,991 | 217,666 | 195,080 | 184,787 | 247,488 | 244,210 | 221,004 | 207,541 | 217,768 | 109,213 | 121,109 |
| Take 07 | 193,372 | 195,664 | 194,294 | 185,634 | 165,158 | 221,429 | 218,511 | 218,426 | 219,282 | 193,711 | 185,214 | 247,707 | 244,567 | 222,663 | 206,751 | 219,133 | 107,635 | 122,265 |
| Take 08 | 196,201 | 198,678 | 196,690 | 185,467 | 165,612 | 221,146 | 219,095 | 220,805 | 220,265 | 197,031 | 188,404 | 244,849 | 246,793 | 221,935 | 206,243 | 218,181 | 109,429 | 122,735 |
| Take 09 | 194,544 | 198,263 | 195,221 | 182,548 | 165,259 | 216,814 | 216,511 | 214,375 | 214,603 | 193,977 | 188,958 | 249,121 | 244,907 | 221,653 | 207,211 | 216,816 | 108,930 | 122,938 |
| Take 10 | 194,016 | 197,491 | 197,650 | 183,162 | 165,116 | 220,445 | 218,093 | 219,761 | 217,629 | 194,702 | 183,825 | 245,482 | 244,280 | 221,632 | 208,815 | 216,997 | 109,908 | 122,517 |
| Take 11 | 195,938 | 196,733 | 193,113 | 183,803 | 165,557 | 222,700 | 218,666 | 218,317 | 217,837 | 196,759 | 184,354 | 247,202 | 247,313 | 220,875 | 210,146 | 220,559 | 109,000 | 123,052 |
| Take 12 | 193,992 | 196,000 | 195,690 | 183,190 | 165,358 | 221,471 | 219,192 | 219,387 | 220,789 | 193,566 | 185,104 | 244,291 | 245,641 | 220,289 | 207,442 | 219,407 | 110,019 | 122,212 |
| Take 13 | 195,107 | 198,320 | 196,009 | 183,930 | 166,169 | 221,805 | 218,982 | 219,345 | 220,478 | 193,920 | 184,914 | 246,997 | 246,562 | 219,945 | 205,703 | 217,482 | 109,313 | 122,745 |
| Take 14 | 191,918 | 194,373 | 192,987 | 181,977 | 164,389 | 219,912 | 216,732 | 221,895 | 218,263 | 194,898 | 184,450 | 247,511 | 243,996 | 221,527 | 206,960 | 220,266 | 110,021 | 121,700 |
| Take 15 | 193,024 | 194,578 | 196,163 | 187,380 | 166,098 | 220,603 | 216,492 | 221,906 | 216,143 | 191,458 | 184,476 | 243,048 | 244,065 | 219,910 | 206,673 | 217,506 | 108,927 | 121,575 |
| Take 16 | 193,780 | 194,511 | 196,134 | 182,905 | 165,270 | 221,573 | 216,673 | 217,294 | 216,198 | 195,782 | 184,143 | 245,134 | 243,893 | 221,909 | 206,584 | 217,881 | 110,349 | 121,953 |
| Take 17 | 193,171 | 196,191 | 193,724 | 185,274 | 163,980 | 221,955 | 216,945 | 220,021 | 217,260 | 194,284 | 185,092 | 246,649 | 245,092 | 220,814 | 205,774 | 218,292 | 109,763 | 123,662 |
| Take 18 | 194,315 | 194,315 | 194,938 | 183,186 | 163,857 | 217,961 | 215,877 | 219,094 | 217,420 | 192,134 | 184,609 | 242,215 | 244,135 | 221,019 | 207,979 | 219,205 | 108,856 | 121,996 |
| Take 19 | 194,322 | 195,839 | 195,143 | 183,477 | 165,029 | 217,087 | 215,866 | 218,733 | 217,385 | 190,522 | 184,373 | 246,861 | 243,762 | 219,918 | 206,770 | 218,715 | 109,083 | 120,733 |
| Take 20 | 192,632 | 195,077 | 194,725 | 185,726 | 164,147 | 220,159 | 218,820 | 216,563 | 217,454 | 191,282 | 186,259 | 245,319 | 246,678 | 222,178 | 209,647 | 218,507 | 108,972 | 122,154 |
| Take 21 | 192,988 | 195,673 | 194,314 | 182,679 | 164,177 | 221,279 | 216,684 | 216,701 | 215,593 | 192,454 | 184,673 | 246,100 | 244,252 | 219,155 | 206,259 | 219,014 | 109,862 | 122,366 |
| **Bass 2 AVERAGE** | **194,036** | **196,463** | **195,458** | **184,090** | **165,317** | **220,340** | **217,794** | **218,843** | **217,801** | **194,027** | **185,229** | **245,828** | **245,055** | **221,106** | **207,397** | **218,583** | **109,262** | **122,295** |
| Cents RF+3rds | -17,910 | 3,611 | -5,271 | -9,005 | 4,780 | 2,179 | -17,948 | -9,628 | -17,892 | -17,992 | 1,671 | -8,321 | -13,775 | 8,181 | -2,625 | -11,684 | -12,150 | -17,066 |
| Cents RF-3rds | -14,001 | 7,520 | -1,362 | -5,096 | 8,689 | 6,088 | -14,039 | -5,719 | -13,983 | -14,083 | 5,579 | -4,412 | -9,866 | 12,090 | 1,284 | -7,775 | -8,241 | -13,157 |
| Just Int I | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Just Int II | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Pythagorean | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | 5,865 | 5,865 | 1,955 | 11,730 | 1,955 | 1,955 | 5,865 |
| Meantone | -29,219 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | -3,421 | -3,421 | -29,219 | -13,686 | -10,264 | -10,264 | -3,421 | -20,530 | -3,421 | 3,421 | -15,641 |
| Take 01 | 193,244 | 196,420 | 196,231 | 186,597 | 166,705 | 221,877 | 220,833 | 220,166 | 218,854 | 194,439 | 186,842 | 247,538 | 244,563 | 222,199 | 208,744 | 221,152 | 110,112 | 125,316 |
| Take 02 | | | | | | | | | | | | | | | | | | |
| Take 03 | 194,752 | 197,615 | 194,824 | 184,293 | 165,000 | 220,084 | 218,314 | 217,407 | 217,613 | 193,817 | 186,376 | 239,743 | 244,650 | 220,298 | 206,984 | 221,451 | 108,488 | 121,869 |
| Take 04 | 193,708 | 198,947 | 197,758 | 185,174 | 165,122 | 224,499 | 219,072 | 219,807 | 220,724 | 192,857 | 187,477 | 246,354 | 240,855 | 222,222 | 208,683 | 219,154 | 108,429 | 121,329 |
| Take 05 | | | | | | | | | | | | | | | | | | |
| Take 06 | 192,501 | 195,020 | 194,968 | 184,050 | 164,235 | 220,770 | 217,917 | 217,404 | 214,677 | 191,855 | 186,714 | 244,346 | 243,619 | 218,163 | 206,696 | 217,308 | 108,491 | 122,001 |
| Take 07 | 192,492 | 194,142 | 195,279 | 182,988 | 166,273 | 219,133 | 217,949 | 217,973 | 216,022 | 192,506 | 185,344 | 244,351 | 243,869 | 216,877 | 208,101 | 218,115 | 107,736 | 123,548 |
| Take 08 | 193,073 | 195,786 | 192,739 | 185,698 | 164,021 | 217,022 | 218,502 | 218,245 | 216,008 | 190,579 | 185,481 | 244,674 | 243,617 | 222,251 | 205,215 | 218,993 | 108,884 | 122,774 |
| Take 09 | 193,007 | 195,725 | 195,609 | 185,121 | 164,854 | 221,290 | 218,619 | 220,320 | 215,189 | 194,149 | 184,068 | 247,049 | 243,047 | 223,216 | 208,785 | 220,445 | 107,364 | 123,905 |
| Take 10 | 195,368 | 194,870 | 197,139 | 185,936 | 165,707 | 218,440 | 218,861 | 217,178 | 216,168 | 194,146 | 184,789 | 248,895 | 243,623 | 220,730 | 206,237 | 219,182 | 108,969 | 123,501 |
| Take 11 | 194,426 | 198,955 | 192,998 | 182,547 | 167,752 | 220,370 | 219,810 | 221,864 | 217,861 | 193,086 | 183,540 | 244,909 | 244,703 | 223,601 | 207,507 | 219,440 | 109,931 | 123,138 |
| Take 12 | 195,164 | 196,569 | 195,944 | 186,885 | 165,330 | 220,396 | 220,085 | 218,018 | 214,593 | 192,258 | 182,777 | 245,293 | 245,266 | 221,846 | 208,384 | 219,990 | 108,449 | 122,227 |
| Take 13 | 193,218 | 194,252 | 194,611 | 185,693 | 167,925 | 222,528 | 220,276 | 220,414 | 217,754 | 194,596 | 188,277 | 240,984 | 244,464 | 220,475 | 207,399 | 218,305 | 108,496 | 123,057 |
| Take 14 | 191,225 | 194,280 | 193,655 | 184,551 | 165,365 | 216,931 | 217,106 | 217,839 | 217,289 | 193,168 | 186,007 | 248,096 | 244,111 | 220,500 | 206,553 | 217,654 | 108,032 | 120,716 |
| Take 15 | 192,891 | 196,395 | 194,728 | 185,342 | 164,538 | 219,742 | 217,888 | 217,292 | 217,016 | 192,515 | 183,356 | 246,751 | 242,648 | 220,687 | 208,337 | 217,462 | 108,072 | 121,536 |

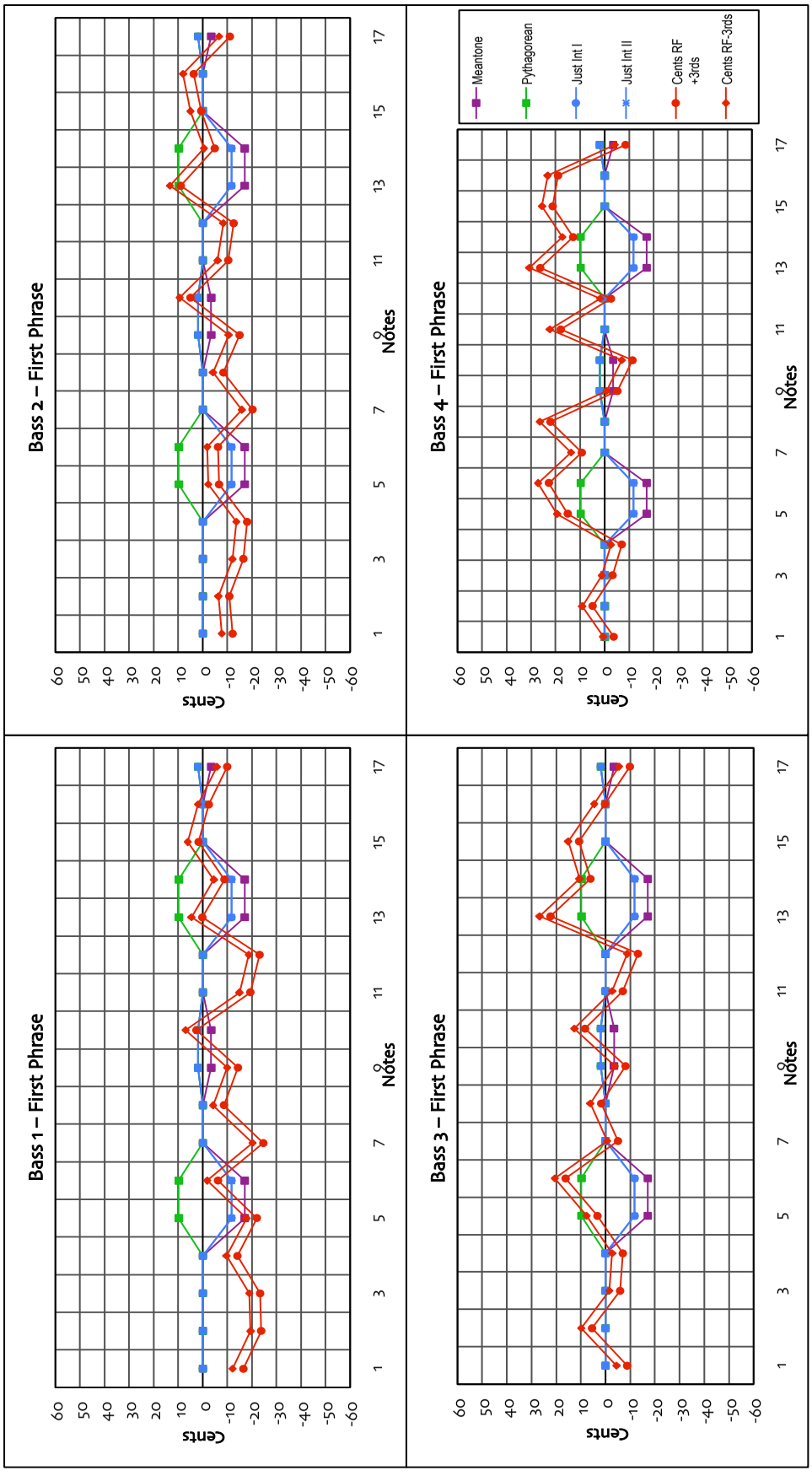
| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 16 | 191,965 | 194,422 | 194,104 | 185,326 | 164,600 | 223,357 | 218,435 | 217,385 | 217,440 | 193,940 | 185,649 | 246,909 | 245,791 | 220,542 | 207,649 | 218,435 | 107,088 | 122,337 |
| Take 17 | 193,070 | 193,487 | 193,781 | 183,274 | 166,075 | 217,027 | 217,890 | 218,386 | 217,143 | 192,546 | 185,660 | 235,976 | 241,996 | 220,926 | 206,845 | 219,202 | 109,830 | 121,765 |
| Take 18 | 193,848 | 190,233 | 191,703 | 183,903 | 164,850 | 218,711 | 217,353 | 217,241 | 216,274 | 193,622 | 182,447 | 243,084 | 244,251 | 221,100 | 203,721 | 217,131 | 107,380 | 121,801 |
| Take 19 | 193,210 | 192,508 | 192,180 | 183,074 | 167,053 | 216,504 | 216,386 | 217,517 | 215,405 | 192,077 | 183,218 | 245,479 | 241,852 | 217,992 | 206,344 | 218,723 | 107,765 | 120,883 |
| Take 20 | 192,110 | 193,036 | 193,375 | 181,326 | 163,932 | 221,249 | 217,381 | 218,099 | 214,919 | 194,052 | 183,613 | 247,328 | 246,277 | 219,738 | 207,798 | 218,215 | 109,299 | 121,063 |
| Take 21 | 192,847 | 195,195 | 192,928 | 184,712 | 166,195 | 221,827 | 217,779 | 216,932 | 214,215 | 192,760 | 186,172 | **247,753** | 244,324 | 217,379 | 204,916 | 219,310 | 109,025 | 121,934 |
| **Bass 3 AVERAGE** | **193,269** | **195,151** | **194,450** | **184,552** | **165,554** | **220,093** | **218,445** | **218,394** | **216,588** | **193,104** | **185,148** | **245,027** | **243,870** | **220,565** | **207,100** | **218,930** | **108,518** | **122,353** |
| Cents RF+3rds | -24,766 | -7,996 | -14,221 | -4,668 | 7,264 | 0,231 | -12,777 | -13,181 | -27,560 | -26,251 | 0,911 | -13,973 | -22,168 | 3,947 | -5,110 | -8,940 | -23,981 | -16,245 |
| Cents RF-3rds | -20,857 | -4,087 | -10,312 | -0,759 | 11,173 | 4,140 | -8,868 | -9,272 | -23,652 | -22,342 | 4,819 | -10,064 | -18,259 | 7,855 | -1,201 | -5,031 | -20,073 | -12,337 |
| Just Int I | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Just Int II | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Pythagorean | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | 5,865 | 5,865 | 1,955 | 11,730 | 1,955 | 1,955 | 5,865 |
| Meantone | -29,219 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | -3,421 | -3,421 | -29,219 | -13,686 | -10,264 | -10,264 | -3,421 | -20,530 | -3,421 | 3,421 | -15,641 |
| Take 01 | 195,417 | 194,669 | 194,390 | 183,667 | 165,460 | 225,197 | 221,110 | 223,607 | 218,193 | 196,875 | **186,649** | 249,963 | 250,278 | 224,623 | 210,343 | 223,361 | 110,006 | 124,137 |
| Take 02 | | | | | | | | | | | | | | | | | | |
| Take 03 | 196,504 | 195,763 | 196,662 | 184,970 | 168,092 | 221,842 | 219,438 | 222,153 | 220,306 | 194,220 | 185,621 | 253,021 | 247,001 | 220,741 | 209,141 | 223,014 | 109,094 | 122,866 |
| Take 04 | 197,401 | 197,018 | 198,461 | 185,248 | 166,976 | 223,055 | 220,965 | 222,486 | 220,160 | 195,560 | 184,086 | 251,167 | 249,279 | 222,895 | 209,494 | 221,995 | 109,197 | 123,555 |
| Take 05 | | | | | | | | | | | | | | | | | | |
| Take 06 | 193,371 | 195,367 | 194,478 | 186,151 | 164,873 | 222,517 | 219,693 | 220,621 | 219,011 | 193,570 | **191,361** | 244,786 | 244,414 | 219,014 | 207,311 | 221,550 | 108,656 | 122,776 |
| Take 07 | 194,222 | 194,917 | 194,473 | 183,070 | 165,129 | 221,738 | 219,431 | 223,059 | 219,791 | 192,810 | 183,897 | 247,995 | 247,600 | 220,612 | 209,491 | 221,644 | 107,422 | 123,665 |
| Take 08 | 194,733 | 196,567 | 194,485 | 182,960 | 165,066 | 221,747 | 219,831 | 222,212 | 218,905 | 189,963 | 189,439 | 245,241 | 247,307 | 222,713 | 207,771 | 220,710 | 107,605 | 122,830 |
| Take 09 | 197,717 | 197,679 | 197,195 | 185,458 | 162,842 | 218,741 | 219,839 | 219,710 | 217,804 | 195,440 | 191,126 | 250,699 | 246,255 | 216,934 | 208,237 | 220,393 | 109,292 | 122,603 |
| Take 10 | 195,135 | 195,836 | 196,110 | 185,878 | 167,268 | 221,351 | 219,881 | 220,995 | 221,836 | 195,332 | 186,920 | 250,126 | 248,037 | 224,213 | 210,571 | 222,620 | 111,095 | 123,965 |
| Take 11 | 197,109 | 193,954 | 194,849 | 183,158 | 165,855 | 218,583 | 220,356 | 219,086 | 219,597 | 194,719 | 188,327 | 247,556 | 249,157 | 223,750 | 210,887 | 223,207 | 111,521 | 124,806 |
| Take 12 | 194,981 | 194,741 | 196,559 | 185,798 | 167,064 | 221,398 | 219,683 | 220,261 | 219,275 | 193,529 | 185,569 | 248,947 | 248,674 | 224,856 | 210,587 | 221,643 | 110,460 | 123,999 |
| Take 13 | 194,412 | 196,697 | 196,850 | 184,730 | 165,761 | 223,349 | 220,807 | 221,307 | 220,282 | 195,318 | 188,187 | 249,588 | 249,609 | 223,784 | 208,179 | 221,579 | 109,624 | 123,096 |
| Take 14 | 192,520 | 194,221 | 194,410 | 184,615 | 165,008 | 219,724 | 220,204 | 219,795 | 219,085 | 194,137 | 186,893 | 247,511 | 246,615 | 222,627 | 210,933 | 220,857 | 108,998 | 123,241 |
| Take 15 | 193,561 | 195,979 | 193,991 | 182,550 | 163,383 | 220,743 | 219,101 | 218,910 | 219,204 | 192,317 | 186,841 | 248,315 | **246,018** | **224,705** | **204,146** | **221,791** | 108,468 | 123,236 |
| Take 16 | 193,552 | 196,122 | 192,982 | 184,895 | 165,519 | 221,862 | 218,335 | 219,381 | 218,630 | 192,333 | 186,434 | 251,779 | 248,136 | 222,295 | 206,568 | 220,244 | 109,281 | 123,643 |
| Take 17 | 193,261 | 195,692 | 193,595 | 183,779 | 165,273 | 222,324 | 219,700 | 219,485 | 218,993 | 192,954 | 188,129 | 247,059 | 245,030 | 221,323 | 205,710 | 221,283 | 109,395 | 122,859 |
| Take 18 | 195,441 | 194,478 | 197,331 | 184,288 | 166,616 | 221,464 | 218,956 | 220,960 | 217,428 | 193,166 | 187,534 | 244,900 | 248,167 | 221,593 | 207,871 | 219,608 | 108,751 | 122,948 |
| Take 19 | 192,814 | 195,777 | 193,662 | 183,892 | 163,426 | 220,627 | 218,100 | 221,334 | 216,712 | 194,137 | 184,279 | 247,150 | 247,131 | 221,790 | 208,321 | 220,140 | 109,647 | 123,200 |
| Take 20 | 194,451 | 195,554 | 195,935 | 183,268 | 164,571 | 223,033 | 218,962 | 219,133 | 216,940 | 193,039 | 189,240 | 246,208 | 248,613 | 220,998 | 209,787 | 221,075 | 109,409 | 124,393 |
| Take 21 | **193,225** | 195,054 | 195,290 | 183,718 | 165,137 | 220,020 | 218,864 | 219,321 | 219,623 | 192,601 | 186,172 | 246,869 | 247,691 | 222,677 | 207,222 | 222,094 | 107,627 | 124,344 |
| **Bass 4 AVERAGE** | **194,728** | **195,583** | **195,353** | **184,321** | **165,438** | **221,543** | **219,645** | **220,727** | **219,041** | **193,790** | **186,963** | **248,362** | **247,632** | **222,218** | **208,556** | **221,516** | **109,239** | **123,482** |
| Cents RF+3rds | -11,751 | -4,160 | -6,202 | -6,839 | 6,045 | 11,602 | -3,292 | 5,217 | -8,062 | -20,104 | 17,806 | 9,433 | 4,337 | 16,871 | 7,024 | 11,394 | -12,509 | -0,337 |
| Cents RF-3rds | -7,842 | -0,251 | -2,293 | -2,930 | 9,953 | 15,511 | 0,617 | 9,125 | -4,153 | -16,195 | 21,715 | 13,342 | 8,246 | 20,779 | 10,932 | 15,302 | -8,601 | 3,572 |
| Just Int I | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Just Int II | -1,955 | -1,955 | -1,955 | -13,686 | -17,596 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | -13,686 | -15,641 | -15,641 | 1,955 | -9,776 | 1,955 | 1,955 | -15,641 |
| Pythagorean | -1,955 | -1,955 | -1,955 | 7,820 | 3,910 | 1,955 | 1,955 | 1,955 | 1,955 | -1,955 | 7,820 | 5,865 | 5,865 | 1,955 | 11,730 | 1,955 | 1,955 | 5,865 |
| Meantone | -29,219 | -29,219 | -29,219 | -13,686 | -6,843 | -3,421 | -3,421 | -3,421 | -3,421 | -29,219 | -13,686 | -10,264 | -10,264 | -3,421 | -20,530 | -3,421 | 3,421 | -15,641 |

Fifth Phrase

| | Note 01 | Note 02 | Note 03 | Note 04 | Note 05 | Note 06 | Note 07 | Note 08 | Note 09 | Note 10 | Note 11 | Note 12 | Note 13 | Note 14 | Note 15 | Note 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take 01 | 223,449 | 234,589 | 222,303 | 207,515 | 196,450 | 187,354 | 124,257 | 111,234 | 109,525 | 148,177 | | | | | | |
| Take 02 | | | | | | | | | | | | | | | | |
| Take 03 | 219,118 | 232,514 | 220,052 | 205,986 | 194,896 | 189,290 | 123,876 | 108,982 | 108,370 | 146,614 | | | | | | |
| Take 04 | 222,057 | 232,652 | 220,884 | 208,999 | 198,586 | 186,435 | 124,315 | 111,046 | 108,935 | 146,827 | | | | | | |
| Take 05 | | | | | | | | | | | | | | | | |
| Take 06 | 218,216 | 233,757 | 218,819 | 207,344 | 196,146 | 189,586 | 123,313 | 112,075 | 109,108 | 147,308 | | | | | | |
| Take 07 | 220,404 | 231,811 | 221,161 | 207,881 | 197,111 | 186,005 | 121,918 | 108,161 | 113,188 | 146,946 | | | | | | |
| Take 08 | 221,343 | 228,801 | 219,704 | 206,924 | 197,879 | 183,790 | 125,186 | 109,300 | 109,326 | 146,209 | | | | | | |
| Take 09 | 220,380 | 234,183 | 221,772 | 207,511 | 197,077 | 189,560 | 121,958 | 109,153 | 109,774 | 146,997 | | | | | | |
| Take 10 | 220,102 | 230,468 | 220,701 | 207,423 | 195,602 | 188,528 | 126,598 | 109,131 | 110,624 | 147,285 | | | | | | |
| Take 11 | 221,836 | 233,120 | 220,743 | 206,562 | 194,184 | 187,290 | 125,193 | 108,286 | 110,083 | 148,161 | | | | | | |
| Take 12 | 223,313 | 234,149 | 222,286 | 207,745 | 198,029 | 188,193 | 125,889 | 108,768 | 108,735 | 146,818 | | | | | | |
| Take 13 | **222,637** | 233,231 | 222,065 | 209,479 | 197,331 | 185,713 | 122,580 | 109,865 | 110,942 | 146,580 | | | | | | |
| Take 14 | **226,154** | **232,792** | 219,827 | 206,704 | 195,332 | 186,571 | 122,190 | 109,208 | 111,567 | 146,665 | | | | | | |
| Take 15 | 220,041 | 231,029 | 218,797 | 207,647 | 195,032 | 188,143 | 121,495 | 110,056 | 109,706 | 146,922 | | | | | | |
| Take 16 | 218,817 | 230,633 | 219,378 | 206,550 | 195,115 | 187,050 | 123,191 | 108,428 | 109,406 | 146,843 | | | | | | |
| Take 17 | 222,331 | 233,090 | 218,621 | 206,889 | 197,012 | 187,049 | 126,000 | 110,311 | 109,229 | 146,599 | | | | | | |
| Take 18 | 219,357 | 232,372 | 218,529 | 206,576 | 195,996 | 185,482 | 124,630 | 108,465 | 109,691 | 146,893 | | | | | | |

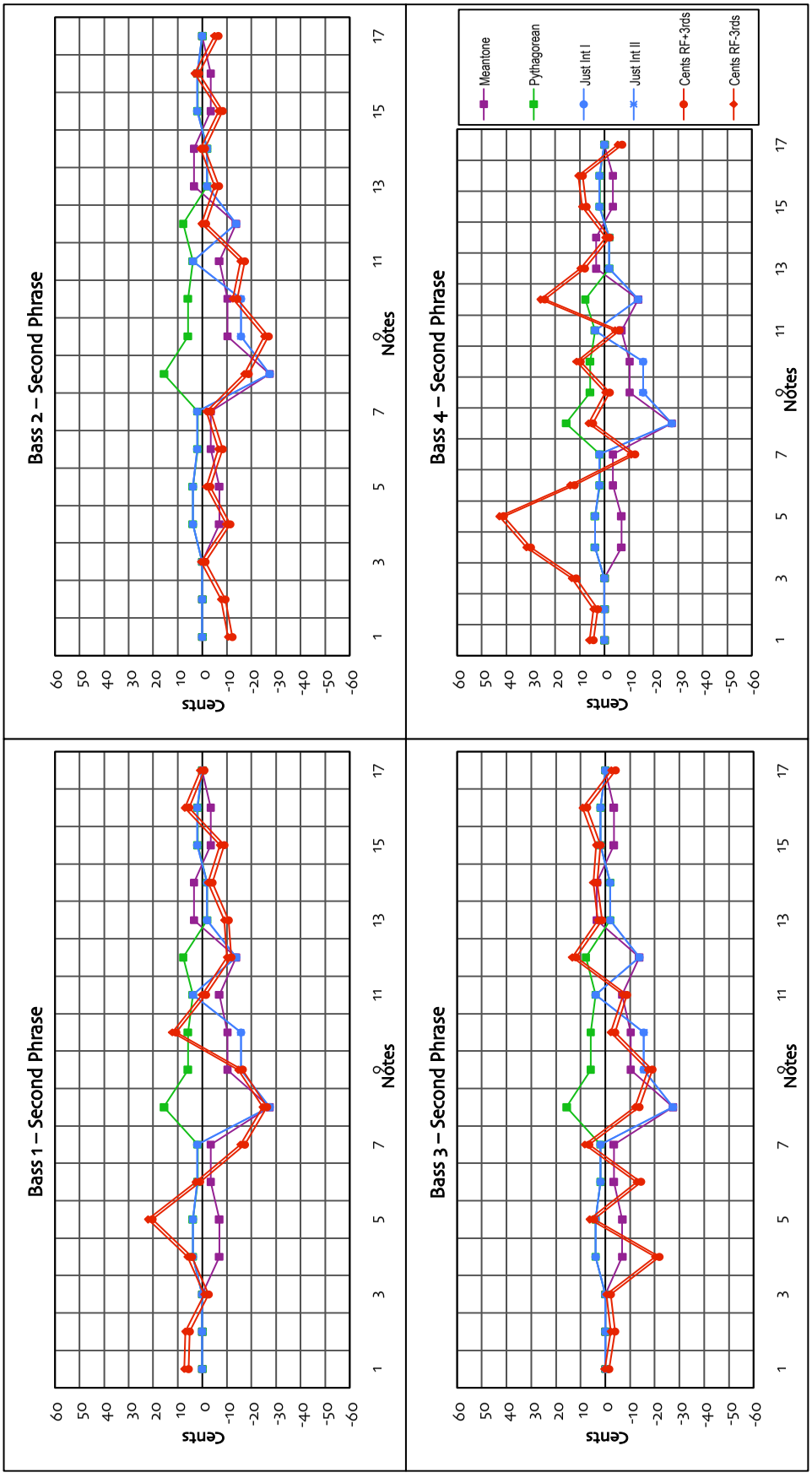
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Take 19 | 219,175 | 232,767 | 219,820 | 206,864 | 196,831 | 188,472 | 125,348 | 109,349 | 110,510 | 145,753 |
| Take 20 | 215,954 | 234,305 | 218,764 | 206,255 | **195,837** | 185,216 | 122,980 | 106,433 | 109,167 | 146,710 |
| Take 21 | 220,016 | 232,564 | 217,142 | 206,989 | 196,676 | 190,299 | 123,129 | **106,715** | 112,805 | 145,552 |
| **Bass 1 AVERAGE** | **220,348** | **232,570** | **220,072** | **207,255** | **196,375** | **187,370** | **123,897** | **109,519** | **110,036** | **146,835** |
| Cents RF+3rds | -1,353 | -7,893 | -3,521 | -7,403 | -0,759 | 17,974 | 1,880 | -11,677 | -3,514 | -4,061 |
| Cents RF-3rds | -0,868 | -7,409 | -3,036 | -6,918 | -0,274 | 18,459 | 2,365 | -11,192 | -3,029 | -3,576 |
| Just Int I | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Just Int II | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Pythagorean | 1,955 | -7,820 | 1,955 | 11,730 | -1,955 | 7,820 | 5,865 | 1,955 | 1,955 | 0,000 |
| Meantone | -3,421 | 13,686 | -3,421 | -20,530 | 3,422 | -13,686 | -10,264 | -3,421 | -3,421 | 0,000 |
| Take 01 | 221,242 | 234,293 | 219,531 | 206,579 | 196,612 | 188,453 | 122,821 | 110,772 | 110,387 | 147,430 |
| Take 02 | | | | | | | | | | |
| Take 03 | 221,216 | 232,726 | 218,961 | 206,292 | 194,017 | 186,188 | 123,352 | 109,763 | 110,018 | 146,950 |
| Take 04 | 218,972 | 233,958 | 220,759 | 206,084 | 195,300 | 187,638 | 122,285 | 109,524 | 109,757 | 147,137 |
| Take 05 | | | | | | | | | | |
| Take 06 | 218,837 | 232,647 | 220,172 | 206,890 | 193,575 | 187,923 | 122,615 | 108,999 | 109,512 | 146,813 |
| Take 07 | 222,312 | 233,684 | 218,958 | 205,782 | 194,325 | 187,719 | 122,903 | 109,570 | 110,201 | 146,463 |
| Take 08 | 218,949 | 232,449 | 218,163 | 206,401 | 194,656 | 184,536 | 124,246 | 109,608 | 109,772 | 146,838 |
| Take 09 | 218,602 | 233,625 | 219,470 | 206,875 | 195,154 | 189,464 | 124,126 | 109,642 | 109,891 | 147,185 |
| Take 10 | 219,826 | 233,596 | 220,232 | 206,431 | 194,459 | 186,514 | 122,792 | 110,261 | 110,624 | 146,696 |
| Take 11 | 221,882 | 234,722 | 221,486 | 206,723 | 194,251 | 186,316 | 126,231 | 110,133 | 111,035 | 147,449 |
| Take 12 | 220,705 | 232,576 | 220,217 | 207,187 | 193,022 | 187,660 | 124,287 | 110,339 | 109,983 | 146,806 |
| Take 13 | 220,546 | 234,179 | 220,279 | 206,052 | 195,177 | 185,627 | 121,763 | 109,907 | 110,073 | 146,872 |
| Take 14 | 220,520 | 233,365 | 218,865 | 206,744 | 195,116 | 185,551 | 122,132 | 108,596 | 108,839 | 146,433 |
| Take 15 | 219,296 | 231,398 | 219,467 | 205,837 | 195,373 | 185,810 | 122,413 | 108,914 | 109,384 | 146,765 |
| Take 16 | 220,951 | 233,673 | 217,454 | 208,172 | 195,144 | 184,910 | 122,318 | 109,201 | 109,425 | 146,004 |
| Take 17 | 220,426 | 233,309 | 218,304 | 205,658 | 193,794 | 186,757 | 123,013 | 109,433 | 109,396 | 145,841 |
| Take 18 | 219,666 | 232,240 | 218,719 | 205,080 | 192,947 | 183,521 | 122,688 | 109,727 | 110,040 | 145,793 |
| Take 19 | 221,474 | 231,685 | 219,714 | 205,107 | 194,896 | 189,042 | 121,961 | 109,205 | 109,786 | 146,579 |
| Take 20 | 220,569 | 233,736 | 221,157 | 206,199 | 193,373 | 186,147 | 121,149 | 108,896 | 108,739 | 145,477 |
| Take 21 | 219,427 | 232,617 | 218,410 | 206,444 | 194,268 | 184,925 | 122,089 | 109,503 | 109,460 | 145,491 |
| **Bass 2 AVERAGE** | **220,285** | **233,183** | **219,490** | **206,344** | **194,498** | **186,563** | **122,904** | **109,578** | **109,806** | **146,580** |
| Cents RF+3rds | -1,844 | -3,335 | -8,101 | -15,029 | -17,386 | 10,507 | -12,048 | -10,735 | -7,135 | -7,063 |
| Cents RF-3rds | -1,359 | -2,850 | -7,616 | -14,544 | -16,901 | 10,992 | -11,563 | -10,250 | -6,650 | -6,578 |
| Just Int I | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Just Int II | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Pythagorean | 1,955 | -7,820 | 1,955 | 11,730 | -1,955 | 7,820 | 5,865 | 1,955 | 1,955 | 0,000 |
| Meantone | -3,421 | 13,686 | -3,421 | -20,530 | 3,422 | -13,686 | -10,264 | -3,421 | -3,421 | 0,000 |
| Take 01 | 223,596 | 231,899 | 218,942 | 207,511 | 194,639 | 187,057 | 123,657 | 111,041 | 110,485 | 148,313 |
| Take 02 | | | | | | | | | | |
| Take 03 | 221,365 | 229,705 | 217,180 | 204,471 | 194,041 | 188,213 | 122,170 | 109,929 | 109,385 | 147,588 |
| Take 04 | 219,461 | 230,215 | 217,782 | 205,408 | 194,624 | 184,688 | 122,229 | 109,548 | 109,630 | 146,615 |
| Take 05 | | | | | | | | | | |
| Take 06 | 218,984 | 230,316 | 218,208 | 203,340 | 194,004 | 185,324 | 123,618 | 109,594 | 110,247 | 146,760 |
| Take 07 | 219,424 | 230,795 | 218,464 | 207,401 | 195,381 | 186,717 | 122,513 | 109,381 | 108,539 | 146,910 |
| Take 08 | 220,372 | 230,765 | 219,560 | 205,613 | 194,933 | 187,350 | 124,264 | 109,207 | 108,670 | 146,980 |
| Take 09 | 219,017 | 230,894 | 218,254 | 206,162 | 195,059 | 187,378 | 122,668 | 108,852 | 109,057 | 146,437 |
| Take 10 | 221,169 | 230,502 | 218,281 | 204,448 | 195,547 | 187,195 | 122,285 | 109,193 | 109,155 | 146,722 |
| Take 11 | 219,277 | 232,018 | 220,478 | 206,842 | 193,879 | 187,677 | 124,042 | 110,083 | 110,465 | 147,447 |
| Take 12 | 218,463 | 230,668 | 219,399 | 205,682 | 193,848 | 185,942 | 122,091 | 109,476 | 109,141 | 146,740 |
| Take 13 | 220,786 | 231,360 | 218,914 | 205,248 | 192,183 | 185,407 | 123,130 | 109,030 | 107,968 | 147,107 |
| Take 14 | 220,718 | 230,362 | 218,625 | 204,821 | 195,706 | 185,836 | 122,355 | 107,733 | 107,767 | 146,001 |
| Take 15 | 217,872 | 229,204 | 217,585 | 205,151 | 194,496 | 187,382 | 122,750 | 108,292 | 107,774 | 145,964 |
| Take 16 | 218,099 | 229,622 | 217,189 | 204,264 | 195,502 | 186,810 | 123,452 | 108,513 | 108,354 | 145,636 |
| Take 17 | 217,246 | 228,379 | 215,326 | 207,440 | 195,494 | 185,863 | 120,360 | 108,358 | 108,550 | 145,657 |
| Take 18 | 215,229 | 226,436 | 213,893 | 201,257 | 191,941 | 183,758 | 120,734 | 108,113 | 108,033 | 145,727 |
| Take 19 | 217,096 | 230,239 | 215,680 | 204,070 | 194,313 | 191,332 | 120,127 | 108,677 | 108,156 | 146,551 |
| Take 20 | 221,994 | 233,952 | 218,212 | 204,255 | 190,839 | 184,752 | 121,492 | 108,512 | 108,626 | 146,705 |
| Take 21 | 220,724 | 230,712 | 217,705 | 206,051 | 193,784 | 185,587 | 122,112 | **109,336** | **108,391** | 146,346 |
| **Bass 3 AVERAGE** | **219,521** | **230,423** | **217,878** | **205,233** | **194,222** | **186,540** | **122,424** | **109,098** | **108,863** | **146,642** |
| Cents RF+3rds | -7,864 | -23,947 | -20,869 | -24,372 | -19,846 | 10,294 | -18,831 | -18,336 | -22,079 | -6,328 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Cents RF-3rds | -7,379 | -23,463 | -20,384 | -23,887 | -19,361 | 10,779 | -18,346 | -17,851 | -21,594 | -5,843 |
| Just Int I | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Just Int II | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Pythagorean | 1,955 | -7,820 | 1,955 | 11,730 | -1,955 | 7,820 | 5,865 | 1,955 | 1,955 | 0,000 |
| Meantone | -3,421 | 13,686 | -3,421 | -20,530 | 3,422 | -13,686 | -10,264 | -3,421 | -3,421 | 0,000 |
| Take 01 | 222,116 | 234,095 | 222,622 | 211,127 | 196,571 | 188,060 | 124,954 | 111,943 | 110,215 | 148,392 |
| Take 02 | | | | | | | | | | |
| Take 03 | 220,179 | 232,140 | 219,593 | 210,257 | 196,960 | 187,072 | 122,415 | 110,018 | 110,921 | 147,145 |
| Take 04 | 220,529 | 233,325 | 220,136 | 209,341 | 199,451 | 188,315 | 122,494 | 109,980 | 109,292 | 146,891 |
| Take 05 | | | | | | | | | | |
| Take 06 | 220,292 | 232,816 | 220,704 | 208,839 | 195,049 | 184,114 | 124,036 | 109,580 | 110,346 | 147,505 |
| Take 07 | 221,539 | 233,950 | 220,086 | 208,197 | 197,448 | 188,337 | 124,862 | 108,826 | 109,484 | 147,466 |
| Take 08 | 223,122 | 234,223 | 221,747 | 209,179 | 194,471 | 188,276 | 125,531 | 109,871 | 109,732 | 147,310 |
| Take 09 | 221,128 | 232,209 | 222,493 | 208,221 | 195,484 | 186,512 | 123,555 | 108,942 | 110,331 | 147,473 |
| Take 10 | 222,543 | 233,197 | 219,771 | 210,252 | 197,796 | 185,999 | 125,313 | 109,568 | 110,090 | 147,719 |
| Take 11 | 221,629 | 233,936 | 222,240 | 210,055 | 195,926 | 186,170 | 123,930 | 110,040 | 109,709 | 147,775 |
| Take 12 | 225,370 | 235,459 | 221,864 | 211,748 | 197,098 | 186,299 | 123,284 | 110,077 | 110,329 | 147,252 |
| Take 13 | 222,212 | 236,597 | 222,154 | 211,234 | 196,957 | 188,507 | 123,993 | 109,941 | 109,724 | 147,192 |
| Take 14 | 222,467 | 232,709 | 221,428 | 209,050 | 195,547 | 184,573 | 123,718 | 109,642 | **111,071** | 146,667 |
| Take 15 | 221,438 | 232,148 | 219,943 | 208,873 | 196,878 | 187,228 | 122,033 | 109,196 | 109,956 | 146,473 |
| Take 16 | 220,235 | 233,992 | 218,507 | 207,809 | 195,615 | 187,248 | 124,138 | 108,808 | 107,631 | 146,059 |
| Take 17 | 220,271 | 233,853 | 218,695 | 208,086 | 195,707 | 188,633 | 121,363 | 109,512 | 109,673 | 146,543 |
| Take 18 | 223,605 | 232,579 | 218,838 | 208,649 | 195,429 | 184,619 | 121,839 | 108,702 | 108,419 | 146,482 |
| Take 19 | 219,646 | 234,172 | 220,244 | 208,694 | 196,784 | 187,382 | 122,550 | 109,559 | 109,371 | 147,043 |
| Take 20 | 222,573 | 236,824 | 220,244 | 211,498 | 197,001 | 188,506 | 124,996 | 110,309 | 109,595 | 146,462 |
| Take 21 | 223,341 | 234,250 | 220,373 | 210,749 | 196,426 | 186,760 | 123,457 | **110,271** | 110,504 | 146,654 |
| Bass 4 AVERAGE | **221,802** | **233,815** | **220,615** | **209,571** | **196,453** | **186,979** | **123,603** | **109,726** | **109,810** | **147,079** |
| Cents RF+3rds | 10,035 | 1,346 | 0,744 | 11,839 | -0,073 | 14,365 | -2,231 | -8,412 | -7,077 | -1,179 |
| Cents RF-3rds | 10,519 | 1,831 | 1,229 | 12,324 | 0,412 | 14,850 | -1,746 | -7,927 | -6,592 | -0,694 |
| Just Int I | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Just Int II | 1,955 | 13,686 | -25,309 | -9,776 | -29,219 | -13,686 | -15,641 | 1,955 | 1,955 | 0,000 |
| Pythagorean | 1,955 | -7,820 | 1,955 | 11,730 | -1,955 | 7,820 | 5,865 | 1,955 | 1,955 | 0,000 |
| Meantone | -3,421 | 13,686 | -3,421 | -20,530 | 3,422 | -13,686 | -10,264 | -3,421 | -3,421 | 0,000 |



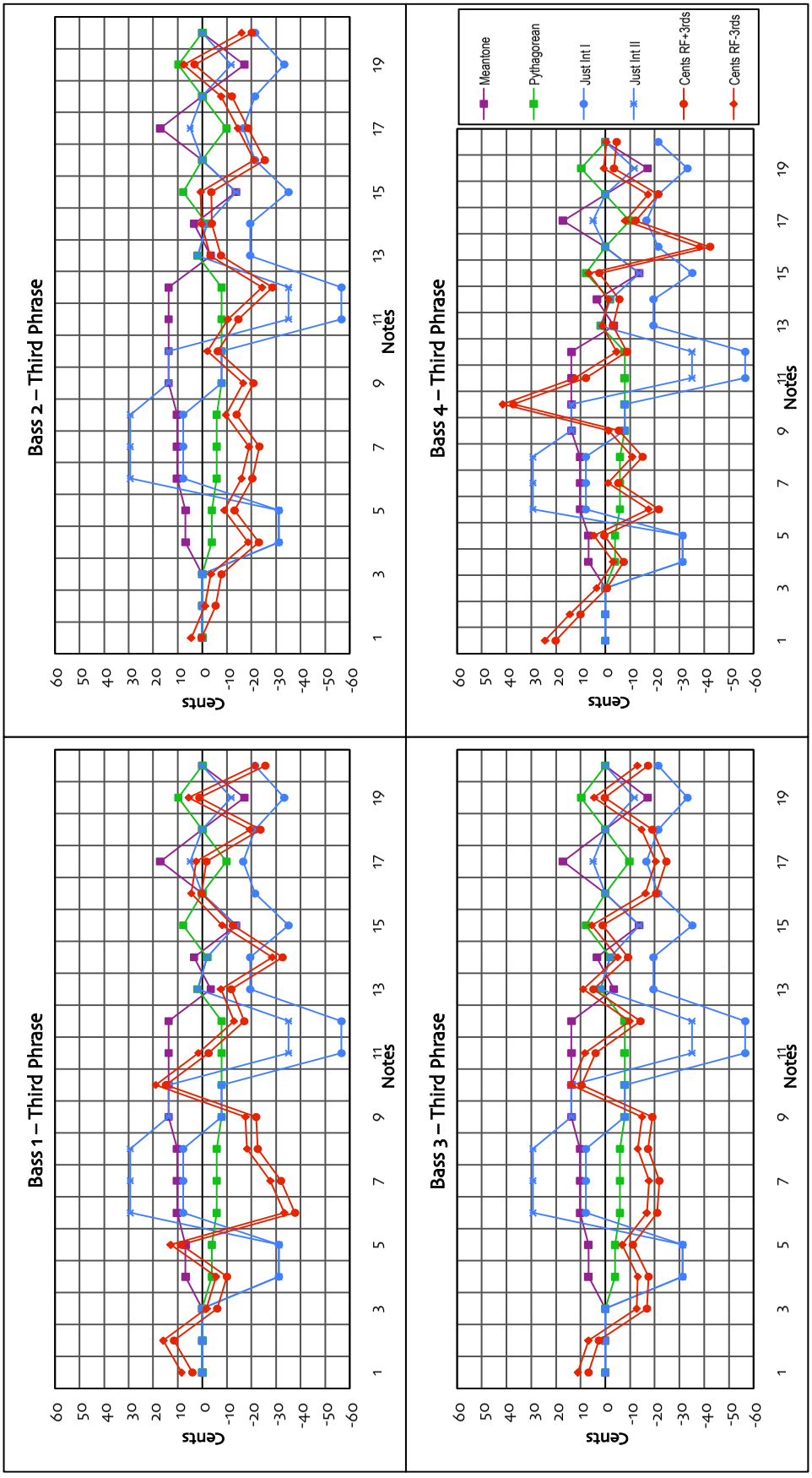

**11.7A - THE BBC SINGERS BASSES' CHARTS – PHRASE 1**

**11.7A - THE BBC SINGERS BASSES' CHARTS – PHRASE 1**



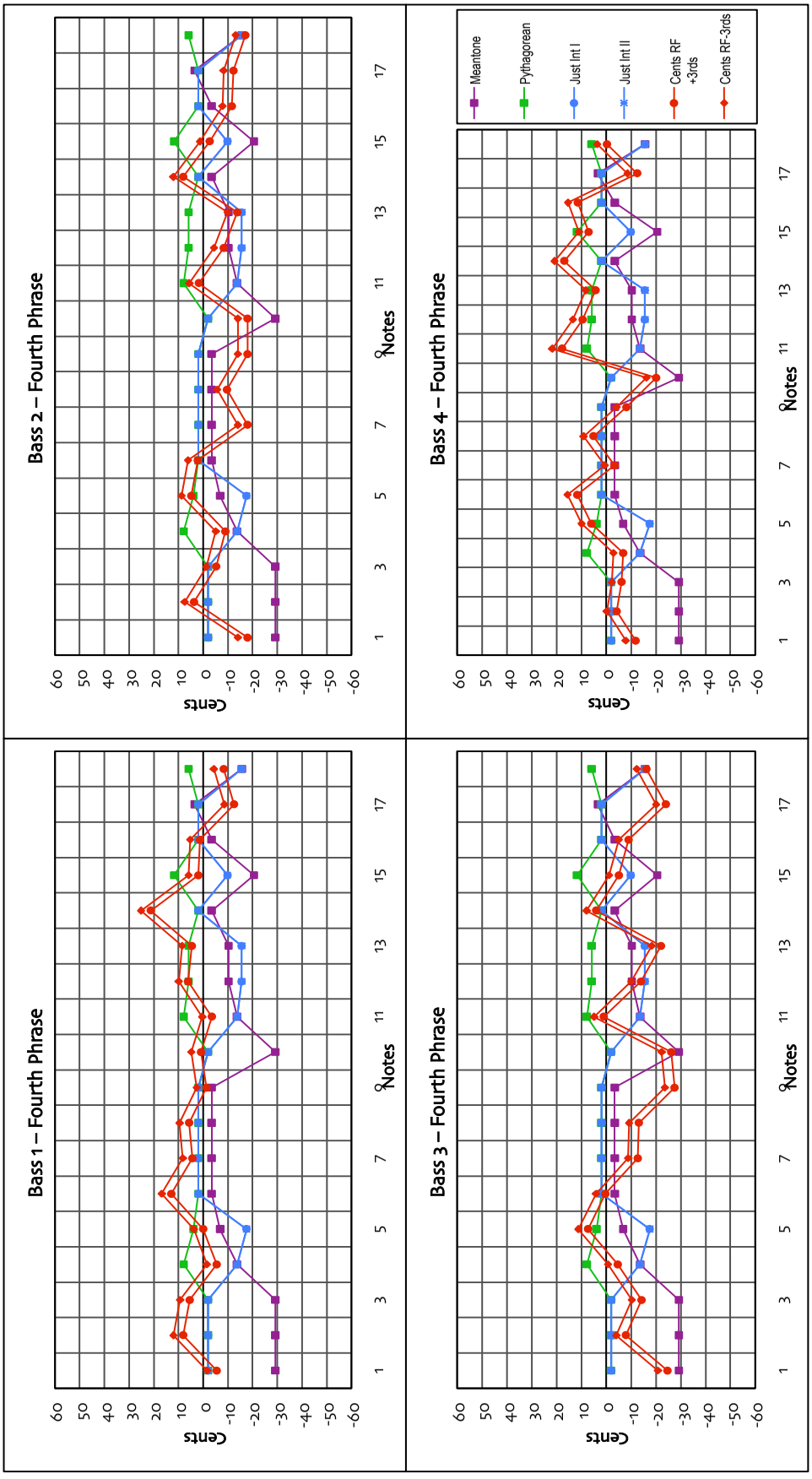

**11.7B - THE BBC SINGERS BASSES' CHARTS – PHRASE 2**

**11.7B - THE BBC SINGERS BASSES' CHARTS – PHRASE 2**



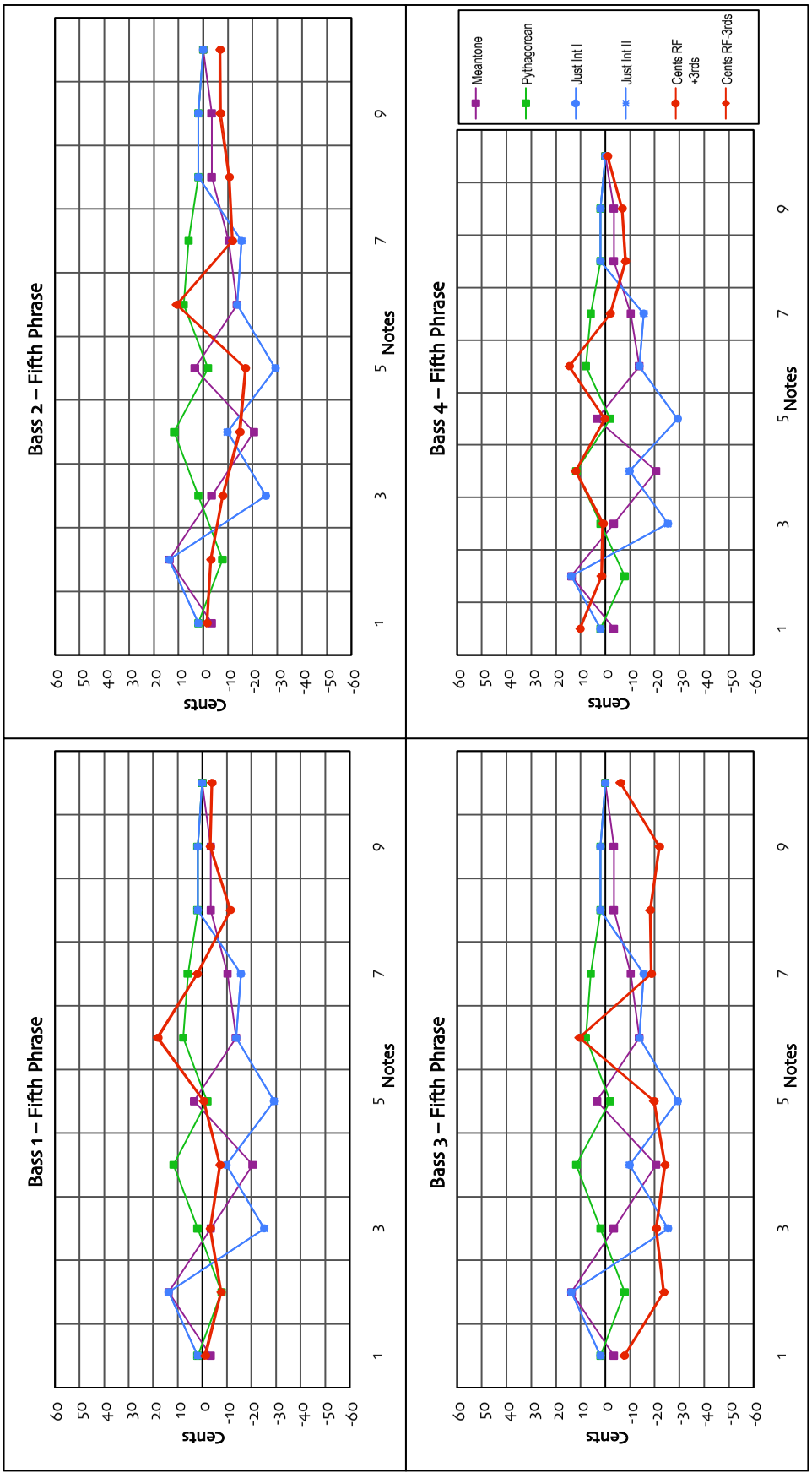

**11.7C - THE BBC SINGERS BASSES' CHARTS – PHRASE 3**

**11.7C - THE BBC SINGERS BASSES' CHARTS – PHRASE 3**




**11.7D - THE BBC SINGERS BASSES' CHARTS – PHRASE 4**

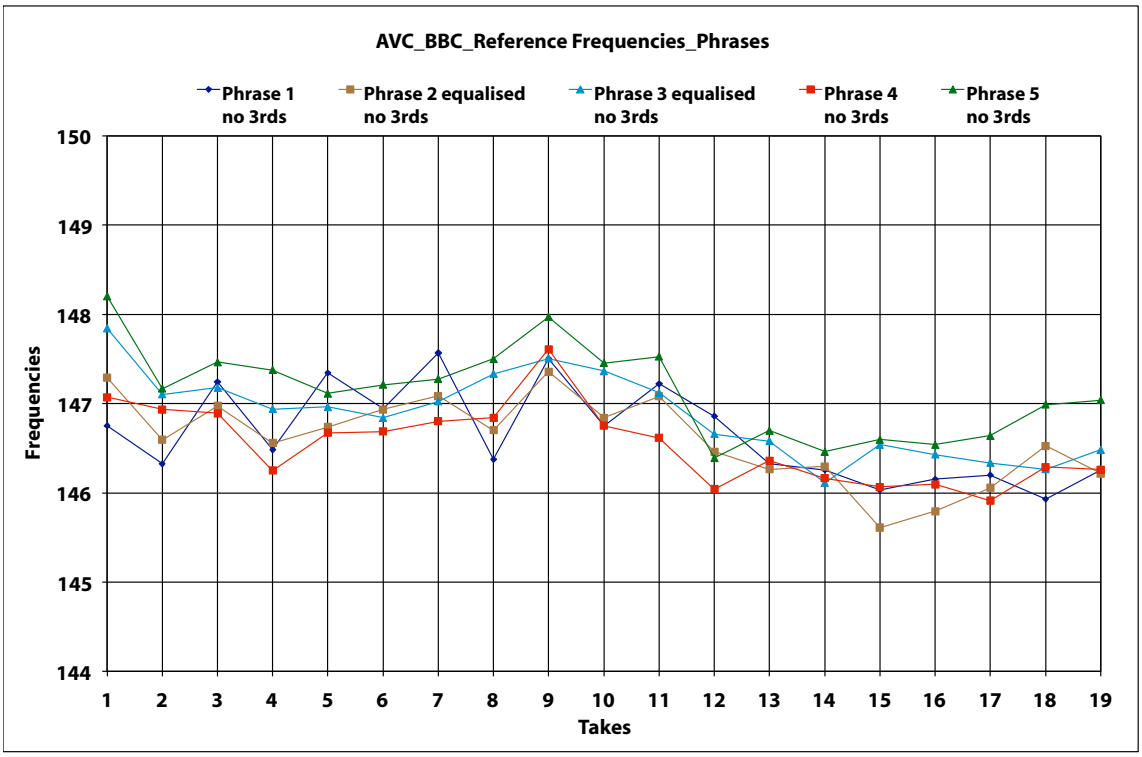
**11.7D - THE BBC SINGERS BASSES' CHARTS – PHRASE 4**

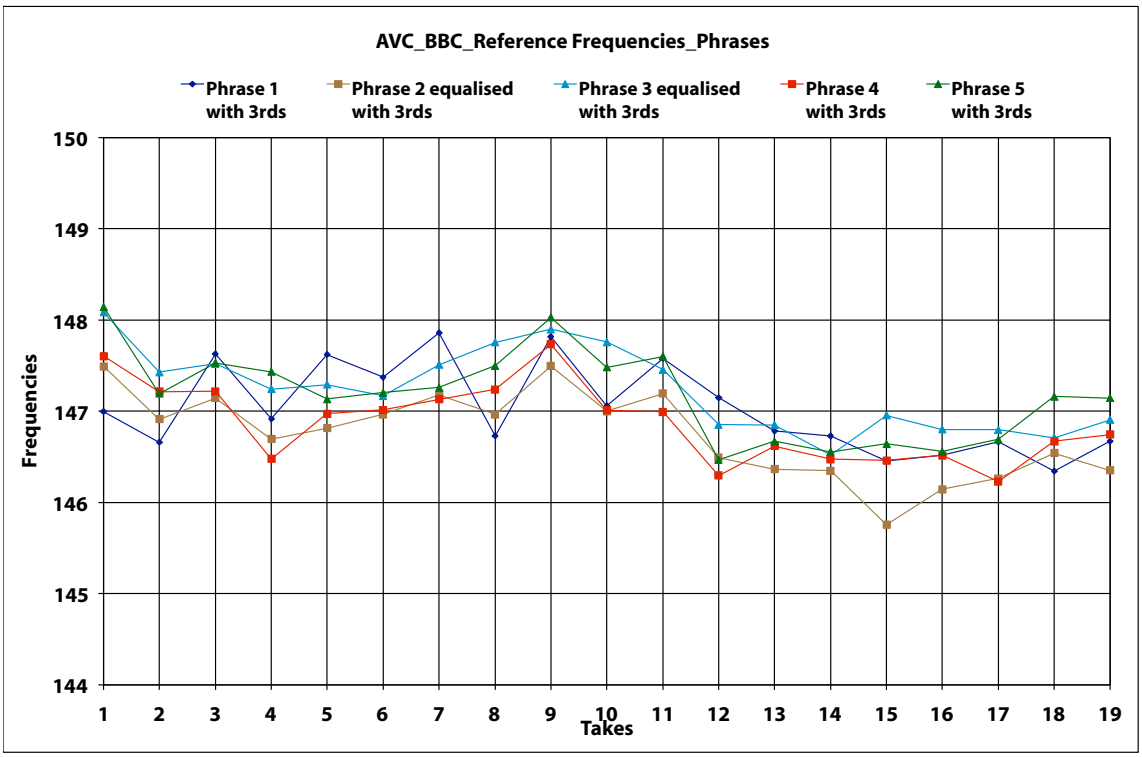


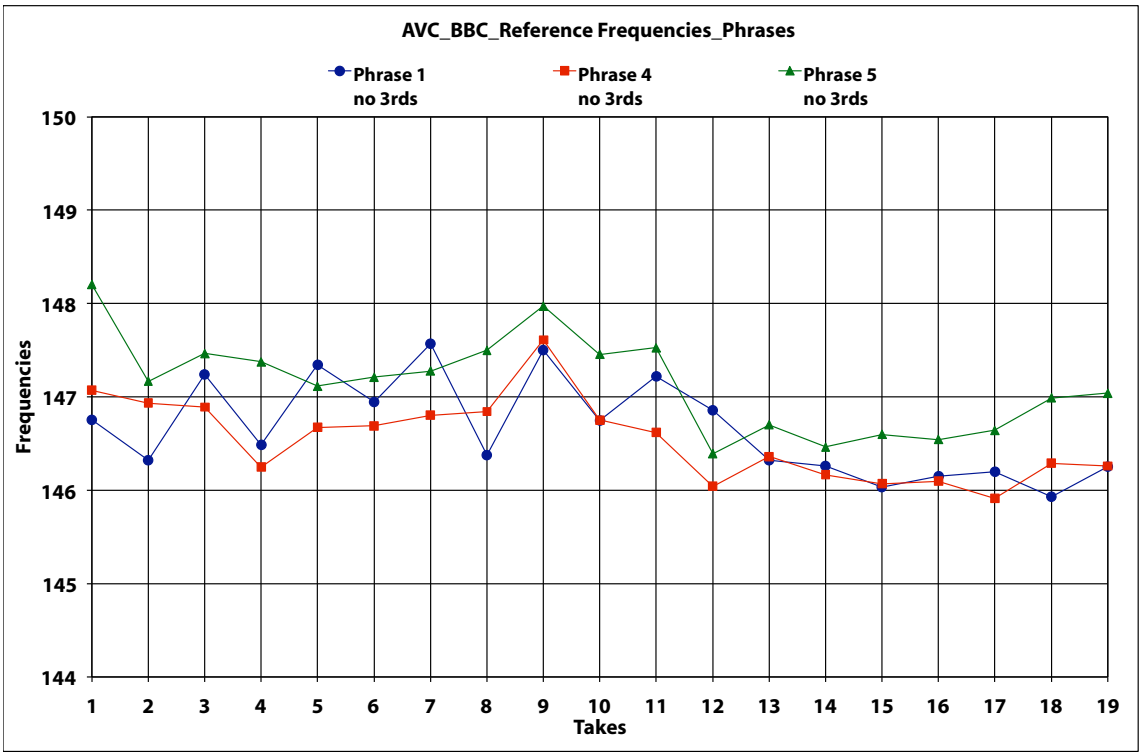

**11.7E - THE BBC SINGERS BASSES' CHARTS – PHRASE 5**

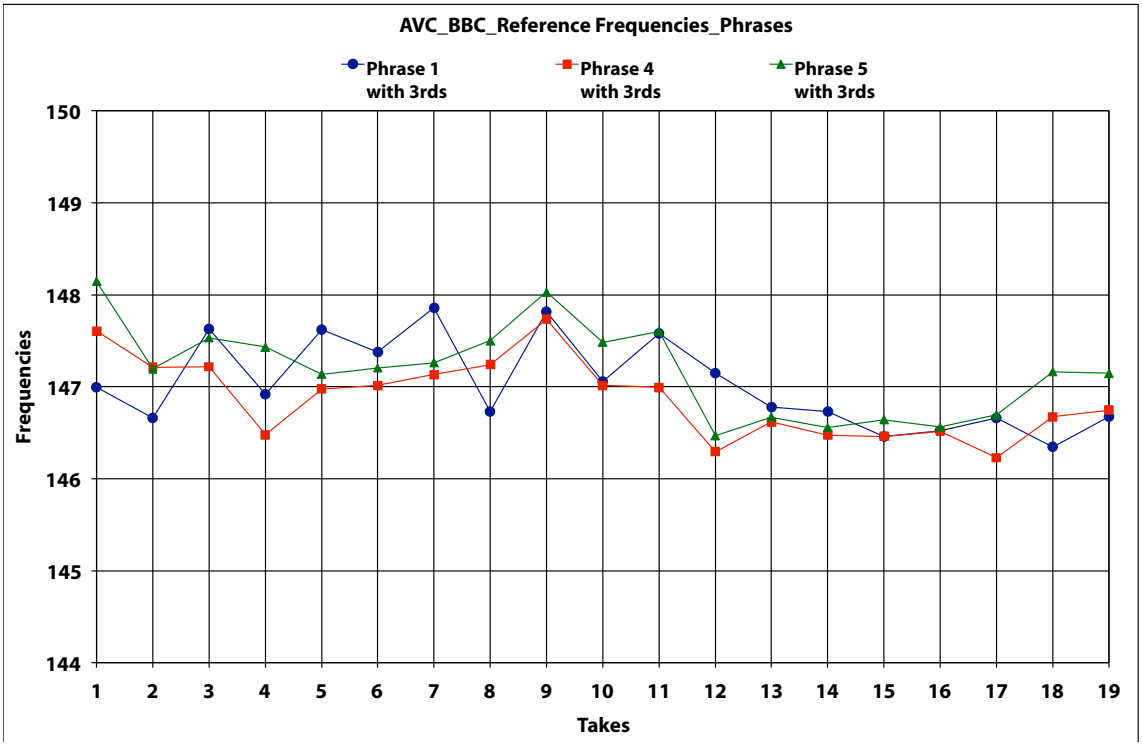
**11.7E - THE BBC SINGERS BASSES' CHARTS – PHRASE 5**

| AVC _ BBC Recording Session _ Reference Frequencies | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Phrase 1 with 3rds | Phrase 2 with 3rds | Phrase 3 with 3rds | Phrase 2 equalised with 3rds | Phrase 3 equalised with 3rds | Phrase 4 with 3rds | Phrase 5 with 3rds | Phrase 1 no 3rds | Phrase 2 no 3rds | Phrase 3 no 3rds | Phrase 2 equalised no 3rds | Phrase 3 equalised no 3rds | Phrase 4 no 3rds | Phrase 5 no 3rds | |
| Take 1 | 146,996 | 110,619 | 111,065 | 147,492 | 148,086 | 147,604 | 148,145 | 146,752 | 110,469 | 110,882 | 147,291 | 147,843 | 147,072 | 148,201 | Take 1 |
| Take 2 | | | | | | | | | | | | | | | Take 2 |
| Take 3 | 146,662 | 110,184 | 110,572 | 146,912 | 147,430 | 147,213 | 147,195 | 146,323 | 109,945 | 110,328 | 146,594 | 147,104 | 146,933 | 147,167 | Take 3 |
| Take 4 | 147,631 | 110,359 | 110,641 | 147,146 | 147,521 | 147,217 | 147,531 | 147,242 | 110,232 | 110,385 | 146,976 | 147,180 | 146,891 | 147,466 | Take 4 |
| Take 5 | | | | | | | | | | | | | | | Take 5 |
| Take 6 | 146,916 | 110,022 | 110,431 | 146,696 | 147,241 | 146,477 | 147,431 | 146,483 | 109,920 | 110,203 | 146,560 | 146,937 | 146,248 | 147,375 | Take 6 |
| Take 7 | 147,621 | 110,112 | 110,469 | 146,816 | 147,292 | 146,974 | 147,135 | 147,343 | 110,052 | 110,224 | 146,736 | 146,965 | 146,672 | 147,114 | Take 7 |
| Take 8 | 147,374 | 110,224 | 110,376 | 146,965 | 147,168 | 147,013 | 147,203 | 146,945 | 110,200 | 110,132 | 146,934 | 146,843 | 146,689 | 147,211 | Take 8 |
| Take 9 | 147,860 | 110,385 | 110,633 | 147,179 | 147,511 | 147,131 | 147,261 | 147,569 | 110,313 | 110,269 | 147,084 | 147,026 | 146,803 | 147,276 | Take 9 |
| Take 10 | 146,732 | 110,225 | 110,817 | 146,967 | 147,756 | 147,240 | 147,500 | 146,374 | 110,026 | 110,501 | 146,702 | 147,334 | 146,843 | 147,500 | Take 10 |
| Take 11 | 147,817 | 110,622 | 110,924 | 147,496 | 147,898 | 147,734 | 148,029 | 147,504 | 110,519 | 110,628 | 147,359 | 147,504 | 147,611 | 147,972 | Take 11 |
| Take 12 | 147,058 | 110,251 | 110,820 | 147,001 | 147,759 | 147,012 | 147,482 | 146,747 | 110,132 | 110,524 | 146,843 | 147,365 | 146,750 | 147,455 | Take 12 |
| Take 13 | 147,579 | 110,396 | 110,593 | 147,194 | 147,457 | 146,993 | 147,601 | 147,222 | 110,311 | 110,341 | 147,081 | 147,121 | 146,617 | 147,526 | Take 13 |
| Take 14 | 147,148 | 109,869 | 110,140 | 146,491 | 146,854 | 146,294 | 146,468 | 146,860 | 109,845 | 109,993 | 146,460 | 146,657 | 146,043 | 146,391 | Take 14 |
| Take 15 | 146,782 | 109,774 | 110,137 | 146,365 | 146,849 | 146,617 | 146,670 | 146,323 | 109,697 | 109,935 | 146,263 | 146,580 | 146,361 | 146,700 | Take 15 |
| Take 16 | 146,729 | 109,760 | 109,891 | 146,347 | 146,521 | 146,474 | 146,556 | 146,258 | 109,721 | 109,585 | 146,295 | 146,113 | 146,165 | 146,462 | Take 16 |
| Take 17 | 146,458 | 109,317 | 110,217 | 145,756 | 146,956 | 146,459 | 146,642 | 146,030 | 109,207 | 109,906 | 145,609 | 146,541 | 146,068 | 146,597 | Take 17 |
| Take 18 | 146,521 | 109,607 | 110,100 | 146,143 | 146,799 | 146,516 | 146,560 | 146,152 | 109,346 | 109,822 | 145,794 | 146,430 | 146,096 | 146,541 | Take 18 |
| Take 19 | 146,662 | 109,697 | 110,098 | 146,262 | 146,798 | 146,229 | 146,693 | 146,199 | 109,543 | 109,751 | 146,058 | 146,335 | 145,912 | 146,642 | Take 19 |
| Take 20 | 146,344 | 109,906 | 110,031 | 146,541 | 146,709 | 146,672 | 147,162 | 145,930 | 109,896 | 109,699 | 146,527 | 146,266 | 146,289 | 146,990 | Take 20 |
| Take 21 | 146,672 | 109,765 | 110,181 | 146,353 | 146,908 | 146,745 | 147,145 | 146,253 | 109,664 | 109,862 | 146,218 | 146,483 | 146,260 | 147,039 | Take 21 |
| Averages | 147,030 | 110,057 | 110,428 | 146,743 | 147,238 | 146,875 | 147,179 | 146,658 | 109,949 | 110,156 | 146,599 | 146,875 | 146,543 | 147,138 | Averages |


AVC_BBC_Reference Frequencies_Phrases
Phrase 1 no 3rds
Phrase 2 equalised no 3rds
Phrase 3 equalised no 3rds
Phrase 4 no 3rds
Phrase 5 no 3rds
Frequencies
150
149
148
147
146
145
144
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Takes


AVC_BBC_Reference Frequencies_Phrases
Phrase 1 with 3rds
Phrase 2 equalised with 3rds
Phrase 3 equalised with 3rds
Phrase 4 with 3rds
Phrase 5 with 3rds
Frequencies
150
149
148
147
146
145
144
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Takes


AVC_BBC_Reference Frequencies_Phrases
Phrase 1 no 3rds
Phrase 4 no 3rds
Phrase 5 no 3rds
Frequencies
150
149
148
147
146
145
144
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Takes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Phrase 1 with 3rds
Phrase 4 with 3rds
Phrase 5 with 3rds
Frequencies
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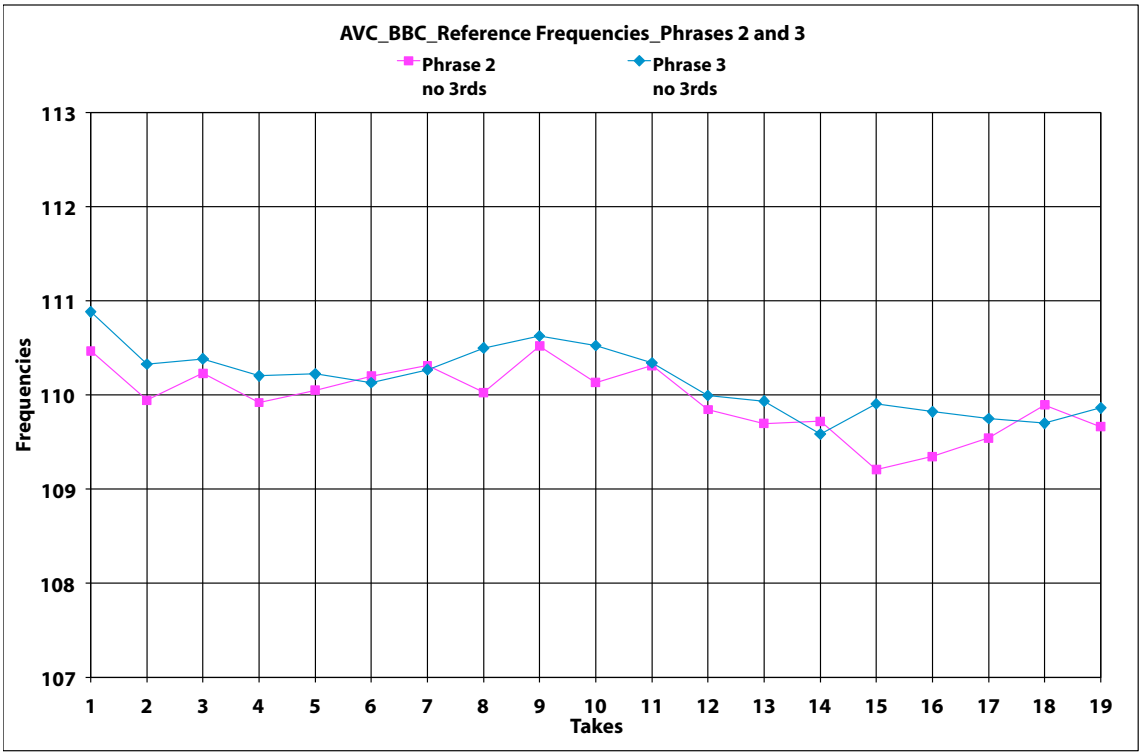
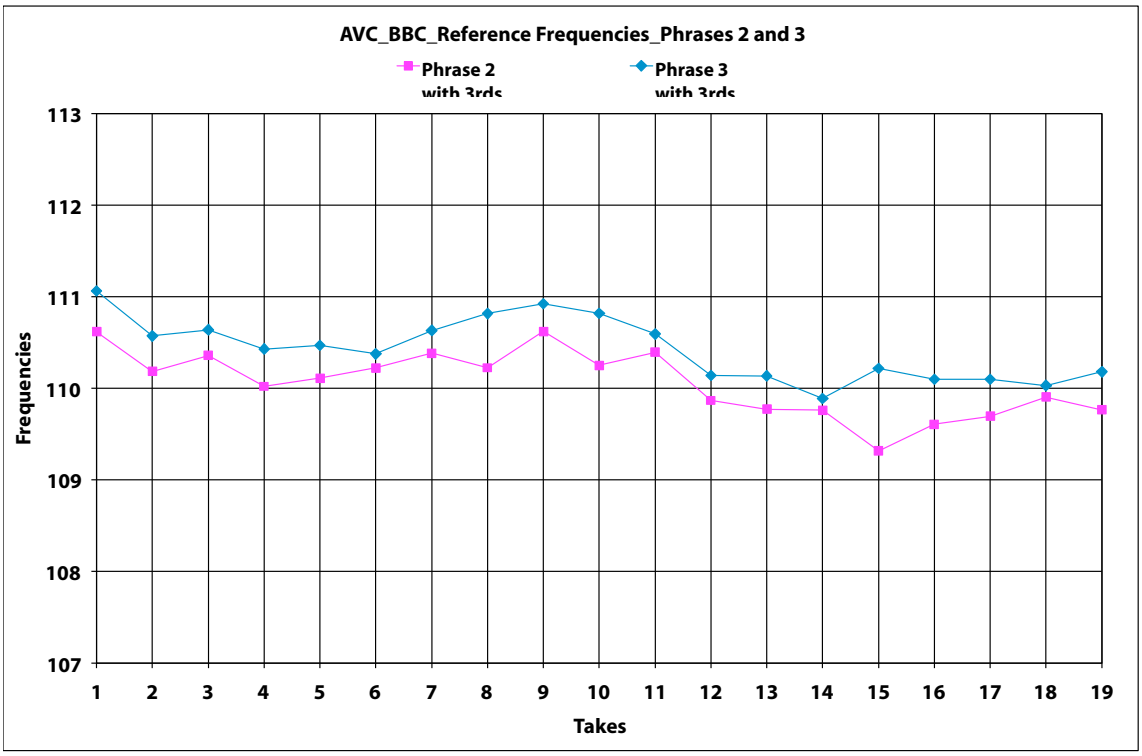
149
148
147
146
145
144
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Takes


AVC_BBC_Reference Frequencies_Phrases 2 and 3
Phrase 2
no 3rds
Phrase 3
no 3rds
113
112
111
110
109
108
107
Frequencies
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Takes

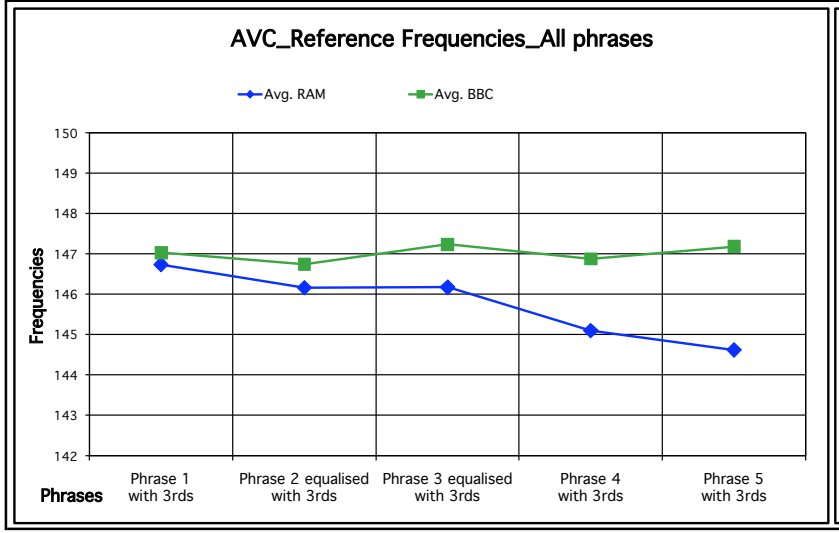

AVC_BBC_Reference Frequencies_Phrases 2 and 3
Phrase 2
with 3rds
Phrase 3
with 3rds
113
112
111
110
109
108
107
Frequencies
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Takes

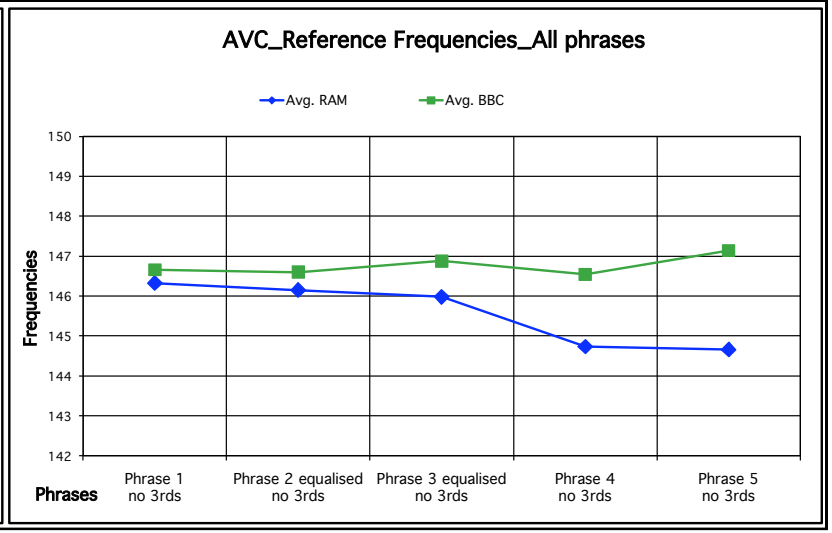
# APPENDIX 12

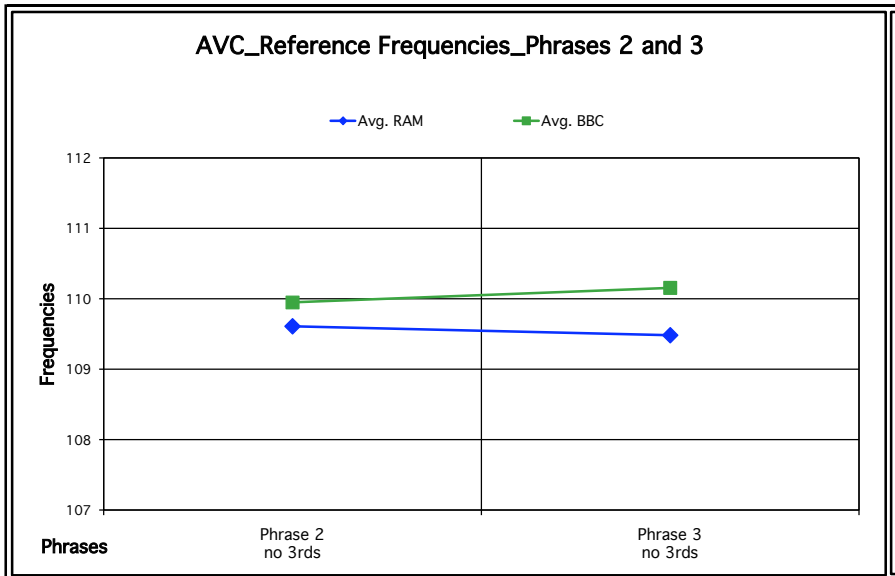
# 12 - MEASUREMENTS RESULTS
# – REFERENCE FREQUENCIES GENERAL AVERAGES –

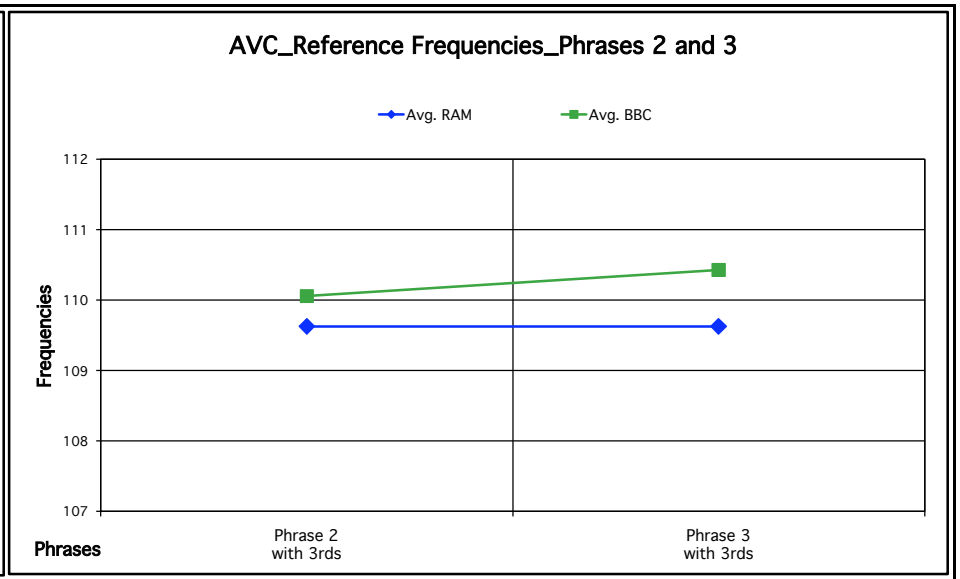
## AVC _ Reference Frequencies _ General Averages

| | Phrase 1 with 3rds | Phrase 2 with 3rds | Phrase 3 with 3rds | Phrase 2 equalised with 3rds | Phrase 3 equalised with 3rds | Phrase 4 with 3rds | Phrase 5 with 3rds | Phrase 1 no 3rds | Phrase 2 no 3rds | Phrase 3 no 3rds | Phrase 2 equalised no 3rds | Phrase 3 equalised no 3rds | Phrase 4 no 3rds | Phrase 5 no 3rds | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Avg. RAM** | 146,740 | 109,624 | 109,628 | 146,166 | 146,170 | 145,099 | 144,617 | 146,326 | 109,612 | 109,482 | 146,150 | 145,977 | 144,736 | 144,660 | **Avg. RAM** |
| **Avg. BBC** | 147,030 | 110,057 | 110,428 | 146,743 | 147,238 | 146,875 | 147,179 | 146,658 | 109,949 | 110,156 | 146,599 | 146,875 | 146,543 | 147,138 | **Avg. BBC** |
| **Differences** | RAM<br>Ph1-ph2: - 7 cents<br>Ph2-ph3: irrellevant<br>Ph1-ph4: - 20 cents<br>Ph1-ph5: - 25 cents<br>BBC<br>Ph1-ph2: - 3 cents<br>Ph2-ph3: + 6 cents<br>Ph1-ph4: - 2 cents<br>Ph1-ph5: + 1 cent | | | | | | | RAM<br>Ph1-ph2: -2 cents<br>Ph2-ph3: - 2 cents<br>Ph1-ph4: - 19 cents<br>Ph1-ph5: - 20 cents<br>BBC<br>Ph1-ph2: - 1 cent<br>Ph2-ph3: + 3 cents<br>Ph1-ph4: - 1 cent<br>Ph1-ph5: + 5 cents | | | | | | | **Differences** |
| **Averages** | 146,885 | 109,841 | 110,028 | 146,455 | 146,704 | 145,987 | 145,898 | 146,492 | 109,781 | 109,819 | 146,374 | 146,426 | 145,640 | 145,899 | **Averages** |




AVC_Reference Frequencies_Phrases 2 and 3
Avg. RAM
Avg. BBC
112
111
110
109
108
107
Frequencies
Phrases
Phrase 2
no 3rds
Phrase 3
no 3rds


AVC_Reference Frequencies_Phrases 2 and 3
Avg. RAM
Avg. BBC
112
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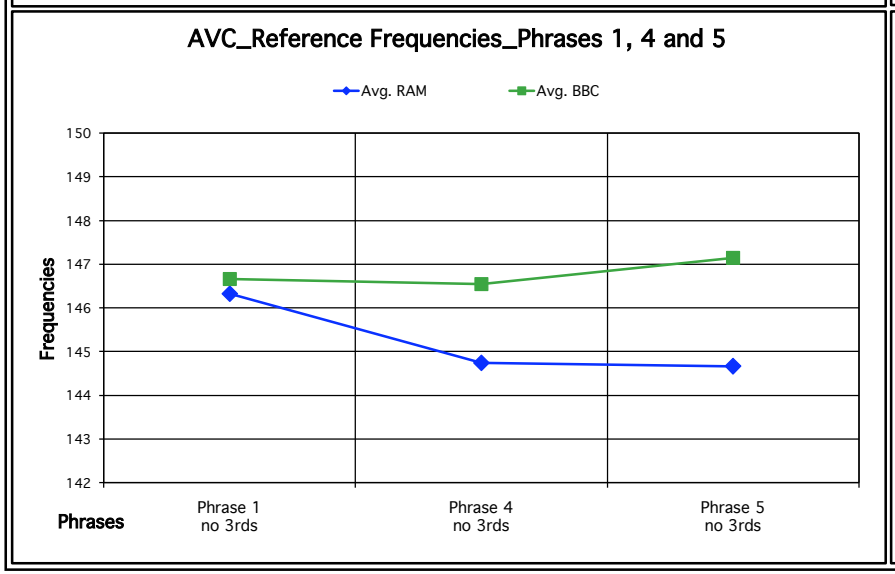
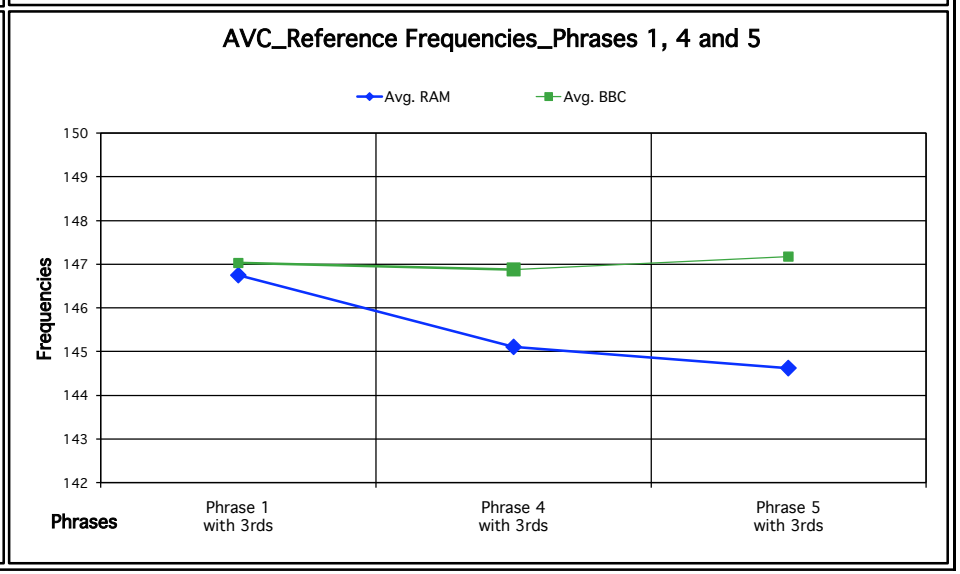
Frequencies
Phrases
Phrase 2
with 3rds
Phrase 3
with 3rds


AVC_Reference Frequencies_Phrases 1, 4 and 5
Avg. RAM
Avg. BBC
150
149
148
147
146
145
144
143
142
Frequencies
Phrases
Phrase 1
no 3rds
Phrase 4
no 3rds
Phrase 5
no 3rds


AVC_Reference Frequencies_Phrases 1, 4 and 5
Avg. RAM
Avg. BBC
150
149
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144
143
142
Frequencies
Phrases
Phrase 1
with 3rds
Phrase 4
with 3rds
Phrase 5
with 3rds

# APPENDIX 13
# 13 - CITY UNIVERSITY ANNUAL REPORT, 1994-5

# Setting the **TONE**

New **digital technology** has made it possible for the first time to analyse minute variations in **intonation of choral singers** in performance and could shed new light on **performance practice.**

There is already an established body of research on intonation or 'tuning' in singers' voices, but this has focused on individual singers and has taken place in a studio or laboratory situation. This necessarily focuses on melody, rather than harmony, and does not tell us anything about the intonational behaviour of choral singers in a performance situation. Research student Jocelei Bohrer became interested in this area when working as a conductor. Using conventional recording technology, however, it has not been possible to isolate and analyse the frequencies of an individual singer within a group as the microphone picks up frequencies from the other singers. Thus it has not been possible to analyse how groups of singers tune their voices to one anothers' when singing in harmony. Intonation has always been important in musical practice throughout Western musical history. The pitches of musical notes, like any sound, are measured in frequencies - the greater the frequency, the higher the note. When notes sound together, the vibrations produce complex, harmonic frequencies. The difference between the frequencies can

also cause a 'beat' which may sound dissonant. The melodic difference in frequency between notes in a scale - the interval - is determined by the tuning system. Around 200 years ago, an Equal Temperament tuning system was adopted in Western music. This prescribes uniform distances between each semi-tone of the scale and addresses many of the problems of 'beating' and limitations in adaptability to different keys which had been a feature of earlier tuning systems. While this system eliminates major problems, it still contains small errors in all its intervals, and all 'beat' to some extent when sounded together.
Mr Bohrer noticed that in a performance situation, when singing certain combinations of notes, the actual note sung by each voice might vary slightly from that of a fixed intonation instrument such as the piano, erring towards a

more 'natural' harmonic system to avoid the dissonance of 'beating'. Mr Bohrer is now working with Dr Simon Emmerson from the Music Department and Mr Allen Hirson in the Department of Clinical Communication Studies using a specialist piece of equipment called the laryngograph to study how this happens. The laryngograph is used by speech clinicians to measure the vibrations in the larynx. By attaching a pair of electrodes from the laryngograph to the throat of each member of a quartet of singers, it is possible to record very accurately the frequencies each singer is producing at a given time. This data is then analysed using SoundScope software and spectrography in the Department of Clinical Communications Studies to display the music graphically as well as to provide numerical analysis. Because the laryngograph technology is so accurate, variations in intonation of a 'cent' - a 100th of a semi-tone, can be identified.

Mozart's *Ave Verum Corpus* has been chosen as the music for the experiments because it is a good example of classical harmonic writing, comprising regular, sustained notes and phrases in all the voice parts. This will enable analysis of each individual note and chord, comparing them to the expected frequencies calculated for a range of historical tuning systems. It will also enable an assessment of phrases to see if there are intonational trends across a phrase.

The first in a series of experiments has involved a group of students from the Music Department. Further experiments will be conducted with other groups of singers to identify mistakes in intonation and to characterise intentional deviation from the equal temperament tuning system. Mr Bohrer hopes to be able to conduct the experiment with an established professional quartet to assess whether results are more consistent where a group is accustomed to singing together. Because the laryngograph is a specialist piece of equipment, it is not readily available in large numbers - Laryngograph Ltd., the London-based manufacturers kindly supported the experiment. This means that the same analysis of larger groups is not currently possible. It is hoped however, that this method of analysis will help pave the way for much larger experiments in the future.

# APPENDIX 14

## 14 - SOUND EXAMPLES—ACOUSTIC CD

1. Harmonics
2. *Ave Verum Corpus* – equal temperament
3. *Ave Verum Corpus* – Pythagorean intonation
4. *Ave Verum Corpus* – meantone temperament
5. *Ave Verum Corpus* – just intonation I
6. *Ave Verum Corpus* – just intonation II
7. *Ave Verum Corpus* – first phrase, Pythagorean intonation
8. *Ave Verum Corpus* – first phrase, meantone temperament
9. *Ave Verum Corpus* – first phrase, equal temperament
10. *Ave Verum Corpus* – first phrase, pure intonation
11. *Ave Verum Corpus* – second phrase, Pythagorean intonation
12. *Ave Verum Corpus* – second phrase, meantone temperament
13. *Ave Verum Corpus* – second phrase, equal temperament
14. *Ave Verum Corpus* – second phrase, pure intonation I
15. *Ave Verum Corpus* – second phrase, pure intonation II
16. *Ave Verum Corpus* – third phrase, Pythagorean intonation
17. *Ave Verum Corpus* – third phrase, meantone temperament
18. *Ave Verum Corpus* – third phrase, equal temperament
19. *Ave Verum Corpus* – third phrase, pure intonation I
20. *Ave Verum Corpus* – third phrase, pure intonation II
21. *Ave Verum Corpus* – fourth phrase, Pythagorean intonation
22. *Ave Verum Corpus* – fourth phrase, meantone temperament
23. *Ave Verum Corpus* – fourth phrase, equal temperament
24. *Ave Verum Corpus* – fourth phrase, pure intonation
25. *Ave Verum Corpus* – fifth phrase, Pythagorean intonation
26. *Ave Verum Corpus* – fifth phrase, meantone temperament
27. *Ave Verum Corpus* – fifth phrase, equal temperament
28. *Ave Verum Corpus* – fifth phrase, pure intonation
29. Royal Academy of Music singing quartet's acoustic signal
30. Royal Academy of Music singing quartet's larinx excitation signal
31. The BBC Singers' acoustic signal
32. The BBC Singers' larinx excitation signal
33. Royal Academy of Music singing quartet's replication – first phrase
34. Royal Academy of Music singing quartet's replication – second phrase
35. Royal Academy of Music singing quartet's replication – third phrase
36. Royal Academy of Music singing quartet's replication – fourth phrase
37. Royal Academy of Music singing quartet's replication – fifth phrase
38. The BBC Singers sections' replications – first phrase
39. The BBC Singers sections' replications – second phrase
40. The BBC Singers sections' replications – third phrase
41. The BBC Singers sections' replications – fourth phrase
42. The BBC Singers sections' replications – fifth phrase
43. The BBC Singers sopranos' replications – first phrase
44. The BBC Singers sopranos' replications – second phrase
45. The BBC Singers sopranos' replications – third phrase
46. The BBC Singers sopranos' replications – fourth phrase

47. The BBC Singers sopranos' replications – fifth phrase
48. The BBC Singers altos' replications – first phrase
49. The BBC Singers altos' replications – second phrase
50. The BBC Singers altos' replications – third phrase
51. The BBC Singers altos' replications – fourth phrase
52. The BBC Singers altos' replications – fifth phrase
53. The BBC Singers tenors' replications – first phrase
54. The BBC Singers tenors' replications – second phrase
55. The BBC Singers tenors' replications – third phrase
56. The BBC Singers tenors' replications – fourth phrase
57. The BBC Singers tenors' replications – fifth phrase
58. The BBC Singers basses' replications – first phrase
59. The BBC Singers basses' replications – second phrase
60. The BBC Singers basses' replications – third phrase
61. The BBC Singers basses' replications – fourth phrase
62. The BBC Singers basses' replications – fifth phrase
63. The BBC Singers' replications (all individual singers) – first phrase
64. The BBC Singers' replications (all individual singers) – second phrase
65. The BBC Singers' replications (all individual singers) – third phrase
66. The BBC Singers' replications (all individual singers) – fourth phrase
67. The BBC Singers' replications (all individual singers) – fifth phrase

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