

Notes on Wingie2 Alternate Tunings

Just Intonation

The first six scales are in various forms of just intonation, meaning that every pitch can be described as a rational number (i.e., a ratio between two whole numbers).

Centaur

Centaur was developed by composer and theorist Kraig Grady. It is a 5-limit just intonation scale with 7-limit accidentals, and is a great starting point if you are interested in just intonation.

Scale: $1/1$, $21/20$, $9/8$, $7/6$, $5/4$, $4/3$, $7/5$, $3/2$, $14/9$, $5/3$, $7/4$, $15/8$

More information:

- <https://www.anaphoria.com/centaur.html>
- <https://en.xen.wiki/w/Centaur>

Harp of New Albion

This is the tuning developed by Terry Riley for his piano piece of the same name. This is also a good basic just intonation tuning.

Scale: $1/1$, $16/15$, $9/8$, $6/5$, $5/4$, $4/3$, $64/45$, $3/2$, $8/5$, $5/3$, $16/9$, $15/8$

More information:

- <https://www.sonoloco.com/rev/composers/riley/albion/albion3.html>
- <https://archive.bridgesmathart.org/1999/bridges1999-101.pdf>

Carlos Harmonic

This scale was devised by Wendy Carlos, who is a pioneer in both electronic music and alternative tuning systems. It has also been used by the great microtonal composer Ben Johnston and others. It is based on a subset of the harmonics between 16 and 32 (inclusive).

Scale: $1/1$, $17/16$, $9/8$, $19/16$, $5/4$, $21/16$, $11/8$, $3/2$, $13/8$, $27/16$, $7/4$, $15/8$

More information:

- https://en.wikipedia.org/wiki/Harmonic_scale
- https://en.xen.wiki/w/Carlos_harm
- https://www.wendycarlos.com/other/PDF-Files/Kbd86Tunings*.pdf
- https://resenv.media.mit.edu/classarchive/MAS960/NewReadings/carlos_tuning.pdf

Well Tuned Piano

This is from La Monte Young's epic piece of the same name, a unique and fascinating just intonation scale that includes some very high-numbered harmonics.

Scale: $1/1$, $567/512$, $9/8$, $147/128$, $21/16$, $1323/1024$, $189/128$, $3/2$, $49/32$, $7/4$, $441/256$, $63/32$

More information:

- <https://www.kylegann.com/wtp.html>
- <https://www.jstor.org/stable/833045>

Meta Slendro

This scale derives from the work of the great tuning theorist Erv Wilson, as documented and extended by Kraig Grady. This is the meta slendro variant known as "Meru C".

Hint — one way to use this scale is to break it into these two complementary modes:

- 5 notes: C#, E, G, A, B
- 7 notes: C, D, E-, F, F#, G#, B-

Scale: $1/1$, $65/64$, $9/8$, $37/32$, $151/128$, $5/4$, $21/16$, $43/32$, $3/2$, $49/32$, $7/4$, $57/32$

More information:

- <https://www.anaphoria.com/wilsonintroMERU.html>

Bihexany

Created by the late Gene Ward Smith. A "normal" hexany scale has only six pitches; this extends the scale to twelve pitches by combining two separate hexanies. Specifically, without getting into a lengthy explanation, this scale combines two 3-5-7-11 hexanies, 3:1 apart.

Scale: $1/1$, $35/33$, $7/6$, $5/4$, $14/11$, $15/11$, $3/2$, $35/22$, $5/3$, $7/4$, $20/11$, $21/11$

More information:

- <https://en.wikipedia.org/wiki/Hexany>
- <https://en.xen.wiki/w/Hexany>
- <https://laughingsquid.com/hexany-geometric-music-theory/>

EDO Tunings

The last two tunings are derived from schemes that divide the octave into equal parts. For reference, standard tuning is in 12EDO (EDO means "Equal Divisions of the Octave"). These pitches in these tunings are given in cents (here are 1200 center/octave).

Hexachordal Dodecaphonic

From theorist and composer Paul Erlich, this is a 12-note subset of a 22EDO scale.

Scale: 1, 109.0909, 218.1818, 327.2727, 436.363, 491.9192, 600, 709.0909, 818.1818, 927.2727, 1036.3636, 1145.4545

More information:

- <https://sethares.engr.wisc.edu/paperspdf/Erlich-22.pdf>

Augmented[12]

This is a subset of a 15EDO scale, suggested by Paul Erlich and Mike Smith.

Scale: 1, 160, 240, 320, 400, 560, 640, 720, 800, 960, 1040, 1120

Dave Seidel, Summer 2023

<http://mysterybear.net>