

# 23-LIMIT TUNEABLE INTERVALS below "A4"

tested and notated in three gradations of difficulty (large open notehead = easiest; small black notehead = most difficult)

by Marc Sabat (violin/viola) with assistance from Wolfgang von Schweinitz (cello), Beltane Ruiz (bass), Anaïs Chen (violin)—Berlin, 2005

The score consists of 10 staves of music, each containing several intervals. Each interval is represented by a box with a fraction (e.g., 1/8, 3/23) and a corresponding note on a bass clef staff. The intervals are: 1/8, 3/23, 2/15, 3/22, 1/7, 4/27, 3/20, 2/13, 3/19, 4/25, 1/6, 4/23, 3/17, 5/28, 2/11, 3/16, 4/21, 5/26, 1/5, 5/24, 4/19, 3/14, 5/23, 2/9, 5/22, 3/13, 4/17, 5/21, 6/25, 1/4, 7/27, 6/23, 5/19, 4/15, 3/11, 5/18, 2/7, 7/24, 5/17, 8/27, 3/10, 4/13, 5/16, 6/19, 7/22, 8/25, 9/28, 1/3, 8/23, 7/20, 6/17, 5/14, 4/11, 3/8, 5/13, 7/18, 2/5, 7/17, 5/12, 8/19, 3/7, 4/9, 5/11, 6/13, 1/2, 12/23, 8/15, 7/13, 6/11, 5/9, 4/7, 7/12, 3/5, 8/13, 5/8, 7/11, 9/14, 2/3, 11/16, 9/13, 7/10, 5/7, 8/11, 3/4, 10/13, 7/9, 4/5, 9/11, 5/6, 6/7, 7/8, 1/1. Fret numbers are indicated below the notes, such as 0, +12, +31, +16, C# -41, +4, +27, -26, -49, -6, +2, +29, +46, +14, -2, -28, -3, Eb +49, -16, +2, +33, G# -39, +16, +29, -42, -4, G +35, -5, +12, +31, -37, -26, -11, -49, -18, -33, +16, C# -41, +4, +27, +35, -19, -6, -14, -82, +17, +2, +46, -2, -28, -17, -3, -51, -35, +14, +2, +33, G# -39, -36, -16, -4, G +35, +12, +28, +31, +16, C# -41, -26, -49, -18, -33, +35, D# -49, D# -37, +17, -14, Db +18, -2, -17, -51, +2, +46, +14, +33, -35, -47, -16, -31.

# 23-LIMIT TUNEABLE INTERVALS above "A3"

notated using the Extended Helmholtz-Ellis JI Pitch Notation with cents deviations from 12-tone equal temperament based on  $A = 0$  cents  
 microtonal accidentals designed by Marc Sabat and Wolfgang von Schweinitz, 2004

The following table lists the intervals and their corresponding cents deviations from 12-tone equal temperament as shown in the score:

Interval	Cents Deviation
1/1	0
8/7	+31
7/6	-33
6/5	+16
11/9	+47
5/4	-14
9/7	+35
13/10	-46
4/3	-2
11/8	D# -49
7/5	-17
10/7	+17
13/9	Eb +37
16/11	Eb +49
3/2	+2
14/9	-35
11/7	F -18
8/5	+14
13/8	F +41
5/3	-16
12/7	+33
7/4	-31
9/5	+18
11/6	+49
13/7	-28
15/8	-12
23/12	+26
2/1	0
13/6	B -35
11/5	+4
9/4	-33
7/3	-2
19/8	+16
12/5	+36
17/7	-14
5/2	-14
18/7	+35
13/5	-46
8/3	-2
11/4	D# -49
14/5	+3
17/6	+17
20/7	+28
23/8	+2
3/1	0
28/9	-35
25/8	-27
22/7	-2
19/6	-4
16/5	+14
13/4	F +41
10/3	-16
27/8	+6
17/5	+19
24/7	+33
7/2	-31
18/5	+18
11/3	+49
15/4	+11
19/5	+26
23/6	+37
27/7	-12
4/1	0
25/6	+5
21/5	B -35
17/4	+4
13/3	+42
22/5	-29
9/2	-16
23/5	Bb +39
14/3	-33
19/4	-2
24/5	+16
5/1	0
26/5	D# -49
21/4	-14
16/3	-46
11/2	-29
28/5	-2
17/3	-17
23/4	+3
6/1	+28
23/4	+2
25/4	+6
19/3	+49
13/2	-31
20/3	-12
27/4	+26
7/1	0
22/3	-27
15/2	-4
23/3	F +41
8/1	-16