

“JAUCHZET!”

A Topo of Enharmonic Joys

for viola, cello, double-bass, and tape – with optional scenography

Dedicated to the Catinblack Ensemble:

Sofia, Ema and Javad

Sara Cubarsi (2025)

Performance note:

This piece is a study in ecstatic harmonies and their continuous destabilization. It creates a space where justly tuned harmonies can vividly resonate and radiate, creating an experience that is fundamentally joyous and lively, while quick enharmonic transformations create changes in intensity and color. One harmonic region bends, swings, or morphs into another, never resolving and weaving a complex network of rationally related sounds, flowing, relentless.

Although its title and the lyrics of the pre-recorded voice draw inspiration from Bach's exclamatory "*Jauchzet!*" at the opening of his *Christmas Oratorio*—a cry of rejoicing at the arrival of Christ—this trio reimagines and subverts that exclamation. Here, joy is verbalized through the symbolic event of Sophia's descent: Wisdom, the creative power that, overgrown with an excess of light and uncontainable love, came out without consent, out of her "placenta" of light with overflowing creative enthusiasm. In her arrival, she created the imperfect physical world, which however imperfect, would gain consciousness to bring Wisdom back to her original place, the divine realm.

Optional Scenography:

A white dress hangs high from the ceiling, from a transparent fishing line. This fishing line could be held on the music stand of the cellist. The trio plays in a semi-circle close below the dress. At the end of the score, where indicated, the cellist cuts the fishing line, and the dress abruptly falls down. Optionally, one can place a small bag of theatrical dust inside the dress or attached to it, so that when it hits the ground, a simulation of smoke comes out of the (minor) impact.

Microtonal notation:

The piece uses strictly the HEJI notation, which allows the precise and scientific notation of the tuning, so that the harmonies can be understood and made to resonate at their maximum. The PDF with information about this is [here](#). The composer can provide single pitch samples, short progressions, or chords in audio format if requested.

Additionally, the fingerings with a "-" indicate that the finger stays on the string. The cents with a "+" or "-" indicate the relative amount of change in tuning from the previous note (!). The cent deviations with a note name and then a "+/-" (like "D +21") indicate the tuning deviation of that note from Pythagorean tuning (not from Equal Temperament).

Tape Next

(Narrator voice with singing in italics / text from Bach BWV248 between quotation marks)

„Jauchzet, frohlocket! Auf, preiset die Tage,
rühmet, was heute der Höchste getan.“
geboren wird jene,
die ewig im Licht getragen ist,
so voller Licht, dass sie es heute nicht mehr halten kann.

Alles was still war, wird sich bewegen.

„Jauchzet, frohlocket! Auf, preiset die Tage,
rühmet, was der Höchste getan!“ Ich werde...

Und mit ihr, aus dem Mund des Lichts hervortretende,
wird die Erkenntnis zu uns ankommen, und wir werden sein.

„Jauchzet, frohlocket!“

Hinter sich das geöffnete All lassend, singend,
entströmt sie allein, überenthusiastisch,
jodelnd.

*IAΩΩΩ IAEEEE IQ AIII, A DΩ NAI IA
IE LΩ AIM Ω IAEEEE IAΩΩΩ EQ III
JAUUUCHZET JAUUUCHZET JAUUUCHZET
IQIΩI IE AI Ω ÜÜÜÜÜÜÜ*

Sie entstand aus einem Übermaß an Liebe, Licht, Gottes Hauch.

*Bin so froh! Überliebe!
Ich kam aus dem Mund des Allerhöchsten.
Wie ein Hauch habe ich die Erde umhüllt -Hauch!*

*IΩ HAUU HAUUCH
JAUUUCH ZET
ΩI IΩ HAUUCH
Wie ein Hauchhhh...*

Und so löste Sie den Faden des Licht – und ward Gedanke.

Bin ich ich Ω MA Ω MA wie bin ich...

Aus der Öffnung rinnt der Bach der Freude,
ah, Bach!, die atmende Quelle allen Seins,
der im Anfang Gott, den Himmel und nun die Erde erschuf,
überströmend von Glück, Überglück, eine Flut...
Der Ü-ber-fluss! — Sophia ist...

*...mein Name
ist...*

*SOPHIA!
ΩIA; ES MA HA ΩIΩ ES Ω ES PE HQ I
IE AI ΩÜÜÜÜÜÜÜ IA VEEE*

*Ich bin das Wort, ich bin das Wort,
Gott ist, Wort ist, ich bin, IAΩ Ω EIA EIA Ω EL IA EL IA Ω HA*

*Auf, preiset die Tage, rühmet, was der Höchste getan hat! Jauchzet! Begehre
mich! Auf, preiset die Tage, rühmet, was der Höchste getan hat! Jauchzet!
Begehre MI LΩ E I Ω EA LΩ IM Ω EA LΩA IA Ω EA LΩA IA Ω EA LΩA IA Ω
EA LΩA IA Ω IA Ω – Ich komme an!*

"JAUCHZET!"

A topo of enharmonic joys

for low string-trio and tape, with optional scenic preparation

Sara Cubarsi, 2025
to the Catinblack Ensemble

Sonoro, in $\downarrow = \text{ca. } 76$

ad libitum / unsynchronized voice
mf

Tape
Jauchzet, frohlocket!
Auf, preiset die Tage,
rühmet, was der Höchste getan:
geboren wird jene,
die ewig im Licht getragen ist,
so voller Licht, dass sie es heute
nicht mehr halten kann.
Alles was still war, wird sich bewegen.

Ja - uch - zet, - froh - lo - cket! - Auf, prei - set die Ta -

2°II
4°III
4
don't force harmonics,
play as if using a baroque bow

1 4°III
3°IV
3°IV
2°III 5°III
5°IV
1- 3
4 +53,3 c.
-1
2°I 4°I
II
5°II

sempre non vibrato
mf
(b. 53-61: viola con sord.)
p *f* *mf*

3°II
4
don't force harmonics,
play as if using a baroque bow

5°III
2°III
11°IV
III
D-38,9 c.
2°II 2°II
4°III
3
0

sempre non vibrato
mf
mp *mf* *mf*

accents with bow speed, not aggressive
play as if using a baroque bow

4°II
4°III
3°III
3°IV
11°IV
4°III
4°IV
2°III
2°IV
7°III
2°I
2°II
11°III

sempre non vibrato
mf
mf continue dynamic hairpins similarly

5 *mp* **ritardando**

ge, rüh - met, was der Höch - ste ge - tan,
2 0 III
3°IV +53,3 c.
7°IV
2°IV
5°IV 3°III
5°IV
4°IV 3- +53,3 c.
III
meno *f* *mf* *f* *mf* *p* *mf*

3 1 2°IV
11°IV
V
11°IV
V
11°IV
2°II 2°III
II
2°III
3°IV 5°IV
3°III
3°IV
2°III
2°IV
7°III
IV
A-38,9 c.
f *mp* *f* *mp* *p* *mf*

Slower $\text{♩} = \text{ca. } 68$

8 *p* Und mit Ihr, aus dem Mund des Lichts hervortretende,

poco sul tasto +17,4 c. *pp* Ich wer - - de *ord.* 4^{IV} *mp* *poco pont.* 2^{IV} 4 0 *mf*

poco sul tasto 1- (keep 1 on string) 4^{IV} 5^{IV} 2 4^{IV} 125:128 +41.1 c. -1- *mf*

poco sul tasto 5^{IV} 2^{III} 4^{IV} 4^{III} 4^{IV} *ord.* 5^{IV} *poco pont.* 4^{III} 4^{IV} *ord.* *pp* let ring *mf*

accelerando

A tempo, $\text{♩} = \text{ca. } 76$

11 wird die Erkenntnis zu uns ankommen, und wir werden sein. *mf* Ja - - uch - - zet, froh - - lo - -

ord. 4 1 4^{IV} 4^{II} 4^{III} 5^{II} 6^{III} 3^{III} 4^{III} 5^{III} 3^{IV} 2 4 3^{IV} *mf* *f* *mf*

4^{IV} 4^{II} 4^{III} 2^{III} 2^{II} 11^{IV} *f* *mf*

4^{IV} 8^{IV} 3^{III} 3^{IV} 4^{II} 4^{III} 6^{II} 6^{III} 2^{II} 2^{III} 11^{IV} *f* *mf*

ritardando ----- Slower $\text{♩} = \text{ca. } 68$

14

Hinter sich, das geöffnete All lassend, singend, entströmt Sie allein, überenthusiastisch, jodelnd.

- cket!

5°IV

5°IV

5°IV

5°III

III 4

IV-

p

poco sul tasto

calmando

ord.

5°III

5°IV

10°IV

4°IV

p

pp

pp

mp

pp

mf

mf

mp

A tempo, $\text{♩} = \text{ca. } 76$

17

IA Ω IA E LO AI A - DO - - - NAI I

-III-

III 4

III 4

4°IV

3°IV

+119,4 c.

10°IV

pont.

7°IV

4°IV

2°IV

5°IV

2°IV

poco pont.

mf

mp

f

f

f

f

f

20

A IE LO AIM Ω IA E IA O EO

cresc.

+7,7 c. -4- (36/23) +19.1 c. -4- +43.8 c. -4- 1 0

10°IV *pont.* ord. 3°IV (7/4) ord. sul pont. ord. 1

mp *mf* *f*

A+45.8c.

4 0
0 0
sul pont.

ord. *mp* *p < ff* *mf* *mp*

ord. +7,7 c. ord. 2°III 4°III III III

mp *diminuendo* *mp*

23

I Ja uch - - - zet! Ja uch - - - zet!

4°IV 2°IV 3- 1 3- 0 4°IV 3- 1

mp *f* *ff* *ff* *ff*

III 3°IV *f* *ff* *ff* *ff*

transition to slow cantabile "tremolo" (accelerando) faster beautiful "tremolo"

< f *ff* *ff* *ff*

26

Ja — uch — — — — — zet!

I O I O I — — — — — IE

transition to cantabile "tremolo" (accelerando)

transition to cantabile "tremolo" (accelerando)

+53,3 c.

AI 4°II 5°IV ord.

poco pont. → molto pont.

-14,4 c.

ff p sffz f

poco pont. → molto pont.

ord.

p sffz f

poco pont. → molto pont.

D-38,9 c.

p sffz

29

O ü

Sie entstand aus einem Übermass an Liebe, Licht, Gottes Hauch.

Bin

2°II 4°II 5°II 5°III III 4°I I II

IV

3°III

mf

0 1 2°III 0 4

4°II 6°II 6°III

4°II 4°III

ord.

f mf

32

so frohl Ü - - - ber - - - lie - - - bel Ich

cresc. *ff* *mf*

4°II 3°II 2°II 4°II 4°IV 2°IV 4°IV

mp *mf* *f*

2 4 4°II 4°II A-53,3 c. -66,2 c.

mp *mf* *f*

4°II 5°II I 4°II 4°II 2°II 4°IV 4°III 4°IV 2°III 2°IV

mf *mp* *f*

35

kamm aus dem Mund's All - er - höch - - - sten. Wie ein Ha - - -

mp *poco a poco cresc.*

2°II 4°II 3°II 3°II 4°II 3°III 3

f *mf* *mp* *p* *mf*

2°II I 4 0 4°II

f *mf* *mp* *p* *mf*

2°III 3°II

mf *mp*

38 *poco a poco cresc.*

- a - - uch Ha - - be ich die Er - - de um hüllt

4^oIII 5^oIV +86,8 c.

ff *accelerando "trem"* *f* *ff* *mp*

(ord.)

2^oII (7/4) (ord.) 4 (7/4)

f *ff* *f* *ff* *mp* *mf* *cresc.*

4^oIV 2^oIV

p *mf* *p* *f* *mf* *p* *mf*

41 *ff*

Hauch! I O HA U HA UCH Ja uch zet! O I I O

mp *gliss.* *cresc.* *gliss.* *f* *ff*

+119,4 c.
4
0

cresc. *f* *ff* *f*

44

HA UCH wie ein Ha u ch...

ff *mf* *mf* *f* *mf*

(-48,8 c.) 2 -53,3 c.

rubato/time *p* *cresc poco a poco*

47

Und so löste Sie den Faden des Lichts - und ward Gedanke.

Bin ich ich

mp *p* *p* *f* *mp*

sospirando

mf *cresc poco a poco* *f* *mp*

50 *diminuendo* **ritardando** -----

O Ma O Ma wie bin ich 3

poco pont.

3°II 4°I IV 4°I III 4°I I II 4 3°II 3°II 4

2°II -53,3 c. mp p 3°II p pp

53 **Very calm** $\text{♩} = \text{ca. } 58$

Aus der Öffnung rinnt der Bach der Freude,

ord. -4 con sord. I 3- -3 I V

pp p pp pp mp

4°III 4°II 2°II 4°II

55

ah, Bach!, die atmende Quelle allen Seins, der im Anfang Gott, den Himmel und nun die erde erschuf, überströmend von Glück, Übergluck, eine Flut.. Der

poco alla punta

-48,7 c. -43,8 c. -31,2 c. II -138,6 c. -88,4 c. -66,1 c.

p *pp* *p*

-53,3 c. -53,3 c. -26,8 c. 2°III 2°IV

3°II 4°III IV 4°III

p *mp* *p* *mp*

mp

let ring

59

molto ritardando ----- **poco a poco accelerando**

Ü - ber - fluss... Sophia ist mein na me ist

III 2°IV 4°II 3°III

mp *mf* *mp* *mf* *mp* *p*

mf *f* *mp*

6°III

mf *mf* *p*

senza sord.

(poco a poco accelerando)

A tempo, ♩ = ca. 76

62

f SO PHI *ff* A! *f* O I A

mp *mf* *f* *f*

2°I 2°II 2°II 2°III 5°III

V +35,7 c. *mf* poco a poco cresc. *f*

(6°III) poco a poco cresc. *mf* *f* (as poss, don't force sound)

7°III 4°III 11°IV 4°III

65

ES MA HA O I O ES O ES PE HO I I E A I O U

p *f* *mf* *mf* *meno* *f* *mf*

5°IV 2°II III (+53,3 c.) 4°II 4°III 2°I 4°I II 5°II 2 0 III 3°IV (+53,3 c.) 7°IV 2°IV

11°IV III *p* *f* *mf* *meno* *f* *mf*

D -38,9 c. *mf* *mf* *meno* *f* *mf*

4°III 4°IV 2°III 2°IV 7°III 2°I 2°II 11°III 2°II 2°III 11°IV III 2°IV II 2°III

mf simile

poco rall.

A tempo, ♩ = ca. 76

68 *quasi parlando*
(poco gliss)

IA VE

mf
Ich bin das

+48,8 c.

f *mp* *f* *ff* *ff*

3 1 2^{IV} 11^{IV}

3^{III} 3^{IV} 3^{III} II 4^{III}

71 *sempre cresc.*

Wort. Ich bin das Wort. Gott ist Wort ist

sf *sf* *f* *cresc.* *mf*

ord. *ord.* *ord.* *ord.* *ord.*

bow vib. *bow vib.* *bow vib.* *bow vib.* *bow vib.*

II 4^{III} II 4^{III} I II

74 *sempre cresc.*

ich bin IA O O E I A E I A O EL I A EL I A O

ff

4^oIII
3^oIV

f

2^oII

2^oIII

2^oIII

f (meno)

77

HA Auf, pres - et die Ta - ge,

ff

1

III
IV

ord.

4^oIII
5^oIV

ff

2

3

bow vib.

+27,3 c.

ff warm

rubato

4^oIII
IV

2^oIV

bow vib.

f

start pulsating in quarters a bit

poco a poco cresc.

pochissimo accelerando

80

rüh met, was der Höch - ste ge tan hat! Jauch - zet! Be - geh - re mich

simile

4 2- → bow vib. ord. 3 4 -2- → bow vib. ord. 4 (-2-) → bow vib. (-2-) ord. bow vib. **fff**

→ bow vib. ord. *rubato* bow vib. *rubato* ord. → bow vib. ord. bow vib. **fff**

clear quarter-note legato pulsation accel. to bow vibrato ord. bow vib. **fff**

A tempo, ♩ = ca. 82

83

Auf, pres - et die Ta - ge, was der Höch - Be - ste ge tan Be - geh - re MI

ord. → pont. ord. bow vib. ord. → pont. ord. bow vib. ord. → pont. ord. bow vib. **ff** **sf** **< fff**

ord. → pont. ord. bow vib. ord. → pont. ord. bow vib. ord. → pont. ord. bow vib. **ff** **sf** **sf**

ord. → pont. ord. bow vib. ord. → pont. ord. bow vib. ord. → pont. ord. bow vib. **ff** **sf** **sf**

86 *meno, crescendo al fine*

LO E I O EA LO IM O EA LOA IA O EA LOA IA O

ord. *f* *cresc.* *ff* *fff* *2°II* *ff* *ff* *(meno)*

2 1 4 1 III

63:64 +27,3 c.

89 *fff* *ad lib.*

EA LOA IA O EA LOA IA O IA O Ich kom - me an!

III *2°IV* *III* *V* *4°II* *1* *2* *1* *4-* *1* *+31,2 c* *-4* *dress falls, dust effect*

III *V* *1* *4-* *1* *abrupt end / noisy when dress hits floor*

3°IV *4* *2* *-14,4 c.* *prepare to cut fishing line at the end of "-me"* *fff* *fff*

The Extended Helmholtz-Ellis JI Pitch Notation

microtonal accidentals designed by Marc Sabat and Wolfgang von Schweinitz, 2004 (rev. 2018)

3-LIMIT (PYTHAGOREAN) INTERVALS

$\flat\flat$ \flat \natural \sharp \times

FUNCTION OF THE ACCIDENTALS

notate 35 pitches from the series of untempered perfect fifths
(3/2) $\approx \pm 702.0$ cents;
perfect fifth (3/2); *perfect fourth* (4/3); *major wholetone* (9/8)

5-LIMIT (PTOLEMAIC) INTERVALS

$\flat\flat$ \flat \natural \sharp \times $\flat\flat$ \flat \natural \sharp \times

notate an alteration by one syntonic comma (81/80) $\approx \pm 21.5$ cents;
major third (5/4); *minor third* (6/5); *major sixth* (5/3); *minor sixth* (8/5);
minor wholetone (10/9)

$\flat\flat$ \flat \natural \sharp \times $\flat\flat$ \flat \natural \sharp \times

notate an alteration by two syntonic commas
(81/80) \cdot (81/80) $\approx \pm 43.0$ cents;
augmented fifth (25/16); *diminished fourth* (32/25)

$\flat\flat$ \flat \natural \sharp \times $\flat\flat$ \flat \natural \sharp \times

notate an alteration by three syntonic commas
(81/80) \cdot (81/80) \cdot (81/80) $\approx \pm 64.5$ cents;
minor diesis (128/125)

7-LIMIT (SEPTIMAL) INTERVALS

\flat \natural \sharp \flat or $\flat\flat$ \flat or $\flat\flat$

notate an alteration by one septimal comma (64/63) $\approx \pm 27.3$ cents;
natural seventh (7/4); *septimal wholetone* (8/7);
septimal diminished fifth (7/5); *septimal tritone* (10/7);
septimal minor third (7/6); *septimal quartetone* (36/35)

notate an alteration by two septimal commas
(64/63) \cdot (64/63) $\approx \pm 54.5$ cents;
septimal sixtrone (49/48)

11-LIMIT (UNDECIMAL) INTERVALS

\flat \natural

notate an alteration by one undecimal quartertone
(33/32) $\approx \pm 53.3$ cents;
undecimal augmented fourth (11/8); *undecimal diminished fifth*
(16/11)

13-LIMIT (TRIDECIMAL) INTERVALS

\flat \sharp

notate an alteration by one tridecimal thirteenth (27/26) $\approx \pm 65.3$ cents;
tridecimal neutral sixth (13/8); *tridecimal neutral third* (16/13)

PRIMES IN THE HARMONIC SERIES OCTAVE 16 - 32 (5-limit signs are given here relative to "A")

$\Rightarrow\flat$ $\Rightarrow\sharp$ $-\flat$ $-\sharp$

notate an alteration of the 5-limit accidental by one 17-limit schisma
(16/17) \cdot (16/15) = (256/255) $\approx \pm 6.8$ cents;
Galileo's "equal-tempered" semitone (18/17);
17-limit diminished seventh chord 10:12:14:17

notate an alteration by one 19-limit schisma
(19/16) \cdot (27/32) = (513/512) $\approx \pm 3.4$ cents;
19-limit minor third (19/16); 19-limit minor triad 16:19:24

$\sharp\#$ $\updownarrow\flat$
 notate an alteration by one 23-limit comma
 $(23/16) \cdot (8/9) \cdot (8/9) \cdot (8/9) \approx \pm 16.5$ cents;
raised leading tone (23/12)

$\cong\sharp$ or $\updownarrow\sharp$ $\cong\flat$ or $\updownarrow\flat$
 notate an alteration of the 5-limit accidental by one 29-limit comma
 $(29/16) \cdot (5/9) = (145/144) \approx \pm 12.0$ cents

$\flat\flat$ $\sharp\sharp$
 notate an alteration of the 11-limit accidental by one 31-limit schisma
 $(32/31) \cdot (32/33) = (1024/1023) \approx \pm 1.7$ cents

PRIMES IN THE HARMONIC SERIES OCTAVE 32 - 64 (5-limit signs are given here relative to "A")

$\{\approx\}\sharp$ $\{\approx\}\flat$
 notate an alteration of the 11-limit accidental by one 37-limit schisma
 $(36/37) \cdot (33/32) = (297/296) \approx \pm 5.8$ cents

$\{\sharp\}$ $\{\flat\}$
 notate an alteration of the 5-limit accidental by one 41-limit schisma
 $(32/41) \cdot (81/64) \cdot (81/80) = (6561/6560) \approx \pm 0.3$ cents

$\{\updownarrow\}$ $\{\updownarrow\}$
 notate an alteration by one 43-limit comma
 $(43/32) \cdot (3/4) = (129/128) \approx \pm 13.5$ cents

$\{\sharp\}\#$ or $\{\updownarrow\}\#$ $\{\sharp\}\flat$ or $\{\updownarrow\}\flat$
 notate an alteration of the 7-limit accidental by one 47-limit schisma
 $(32/47) \cdot (48/49) \cdot (3/2) = (2304/2303) \approx \pm 0.8$ cents

$\{\cong\}\#$ $\{\cong\}\flat$
 notate an alteration of the 5-limit accidental by one 53-limit comma
 $(32/53) \cdot (5/3) = (160/159) \approx \pm 10.9$ cents

$\{\sharp\}$ $\{\flat\}$
 notate an alteration of the 13-limit accidental by one 59-limit schisma
 $(32/59) \cdot (24/13) = (768/767) \approx \pm 2.3$ cents

$\{\updownarrow\}\#$ $\{\updownarrow\}\flat$
 notate an alteration of the 7-limit accidental by one 61-limit schisma
 $(61/32) \cdot (21/40) = (1281/1280) \approx \pm 1.4$ cents

IRRATIONAL AND TEMPERED INTERVALS

$\flat\flat$ \flat \sharp $\sharp\sharp$
 notate the respective Equal Tempered Semitone;
 may be combined with a cents indication to notate any pitch

NOTE ABOUT CENTS INDICATIONS

optional cents indications may be placed above or below the respective accidentals and are always understood in reference to Equal Tempered semitones, as implied by the Pythagorean accidentals if the cents exceed ± 50 the closest pitch as indicated on a tuner may be written as text, e.g. F#-35

TEXT NOTATION

in addition to the accidentals, a useful text shorthand for musicians combines the prime constituents of a ratio with the symbols \flat and \circ to indicate harmonic space coordinates: for example 7° or $\flat 11$

FONT

The HEJISMuFL font used here (2018) is freely available for download from www.plainsound.org
 * special thanks to Juhani Nuorvala for suggesting use of a distinct alternate symbol for 29°

THE HARMONIC SERIES 1 - 64 above "A0" (overtone row)

notated using the Extended Helmholtz-Ellis II Pitch Notation
microtonal accidentals designed by Marc Sabat and Wolfgang von Schweinitz, 2004 rev. 2018

The image displays a musical staff with 64 measures, each containing a note with a microtonal accidental and a pitch bend value. The notes are as follows:

Measure	Note	Pitch Bend
1	A0	0
2	B0	+2
3	C1	-14
4	D1	+2
5	E1	-14
6	F1	+2
7	G1	-31
8	A1	+2
9	B1	+4
10	C2	-14
11	D2	D# -49
12	E2	+2
13	F2	F +41
14	G2	-31
15	A2	-12
16	B2	+2
17	C3	+5
18	D3	+4
19	E3	-2
20	F3	-14
21	G3	-29
22	A3	D# -49
23	B3	+28
24	C4	+2
25	D4	-27
26	E4	F +41
27	F4	+6
28	G4	-31
29	A4	+30
30	B4	-12
31	C5	Ab +45
32	D5	+2
33	E5	A# -47
34	F5	+5
35	G5	-45
36	A5	+4
37	B5	B# -49
38	C6	-2
39	D6	C +42
40	E6	-14
41	F6	+29
42	G6	-29
43	A6	+12
44	B6	D# -49
45	C7	-10
46	D7	+28
47	E7	E -34
48	F7	+2
49	G7	E +38
50	A7	-27
51	B7	+7
52	C8	F +41
53	D8	-26
54	E8	+6
55	F8	+38
56	G8	-31
57	A8	-1
58	B8	+30
59	C9	G# -41
60	D9	-12
61	E9	+17
62	F9	Ab +45
63	G9	-27
64	A9	+2