

for jim, ben and lou

Three pieces for harp, guitar and percussion

- I. Preamble
- II. רועפלאץ (Rue Plats) (Resting Place)
- III. The World's Longest Melody (Trio)
"The Ever-Widening Halfstep"

for John Schneider and Just Strings

Larry Polansky
June – July, 1995

for jim, ben and lou
Three pieces for harp, guitar and percussion

I. Preamble

I. Preamble
for Jim Tenney

For guitar, diatonic harp, "tuner/2nd harp" (three performers), with optional three bass notes on second (concert) harp (played by tuner)

Tempo is relatively fast for the eighth note, (about 360). Except where indicated, the general dynamic level is mezzo forte, or a little louder depending on performance circumstances.

Any harp and any guitar might be used. The harp is diatonic, but a concert harp could be used without pedals. The guitar may be amplified, acoustic, or amplified acoustic, steel or nylon strings. What is important is a general matching of dynamics and timbre between the harp and guitar, though they do not need to be indistinguishable (just compatible).

The third performer's (tuner/2nd harp) main responsibility is to retune the guitar throughout the piece. This performer also plays harp, but only three low notes (C, E, and G) tuned to 1:1, 5:4, and 3:2. These are as low as possible: if a folk harp is used for the main harp part, the tuner might use the lowest notes on a concert harp for these three notes. These notes are always optional where written, and occur at the beginnings of measures as a kind of pedal/accents. If the performer is too busy retuning the guitar at any time, these notes can be omitted.

Harp Tuning

The (diatonic) harp is tuned differently in each of its four and a half octaves. The tuning is specified as harmonics of a given harmonic series, and the three series are related as 1:5:3 (a just major triad).

For example, C₃ is the 3rd harmonic of C, a G-natural 2¢ sharp of equal-tempered G. E₁₁ is the 11th harmonic on E, which is 11/8 x 5/4 = 55/32, notated as a B_b 62¢ flat of its tempered namesake (and actually, closer to an "A").

All pitches are referred to by their *octave reduced ratios*. The three harmonic series, their "note names" (used here) and their cents deviations from 12-ET are given below (only odd harmonics are given):

C (1/1)								
1	3	5	7	9	11	13	15	17
C	G	E	B _b	D	F _#	A _b	B	C _# /D _b
0	+2	-14	-31	+4	-49	+41	-12	+5

E (5/4 to C)								
1	3	5	7	9	11	13	15	17
E	B	G _#	D	F _#	B _b	C	D _#	F
-14	-12	-28	-45	-10	-63	+27	-26	-9

G (3/2 to C)

1	3	5	7	9	11	13	15	17
G	D	B	F	A	C#	Eb	F#	Ab/G#
+2	+4	-12	-29	+6	-47	+43	-10	+7

Guitar Tuning and General Tuning Notes

The guitar is tuned (and retuned four times throughout the piece) to these pitches as well. The guitar (and harp) tunings are shown below.

The piece is a continual modulation through the three harmonic series, achieved by “replacing” notes from one series with those of the other. The order of the three series is: C-E-G-C. The “replacement pattern” proceeds from the highest odd harmonic of the new series (17) down to the lowest, and is specifically described below. In most cases, one pitch replaces another within a semitone of itself. Where the replaced notes have the same “name,” I have also given the cents difference between them.

C->E

C:	13	17	1	7	11	9	3	15	5	(old)
E:	17	15	13	11	9	7	5	3	1	(new)
			(-27)	(-32)	(+39)	(-49)		(=)	(=)	

E->G

E:	5	9	15	13*	11**	17	3	7	1	(old)
G:	17	15	13	11*	9**	7	5	3	1	(new)
	(+35)	(=)	(+69)	(+26)	(-57)	(-20)	(=)	(+59)		

* E₁₃ is notated as a C-natural (+27), G₁₁ as a C# (-47). The G₁₁ is 26¢ higher than the E₁₃.

** E₁₁ is notated as a Bb (-63), G₉ as an A-natural (+6). The G₉ is 57¢ lower than the E₁₁.

G>C

G:	11	5	17	15	3	9***	13****	1	7	(old)
C:	17	15	13	11	9	7***	5****	3	1	(new)
	(+52)	(=)	(+34)	(-39)	(=)	(+63)	(+43)	(=)		

*** G₉ is notated as an A (+6), C₇ as a Bb (-31). The C₇ is 63¢ higher than the G₉.

**** G₁₃ is notated as an Eb (+43), C₅ as an E (-14). The C₅ is 43¢ higher than the G₁₃.

Most measures in the score are marked by the specific replacement occurring. For example, (G₁₇, E₅) indicates that the 17th harmonic of G (Ab) replaces the 5th of E (G#), a tuning difference of 35¢ (G₁₇ higher than E₅).

The retuning of the guitar by the third performer is gradual and continual, starting in Section II and even continuing into Section V (to gradually get the guitar completely in tune). The tuning instructions in each measure indicate where the retuning of a specific string should *start*, but it will certainly take several measures to completely retune the string,

and the tuner will be tuning (slightly) several strings at once. It may not really be possible to completely tune the guitar until the complete harmonic series has been achieved. The several measure passages before sections III and V may be repeated until the guitar is tuned to the new harmonic series.

It is important that this performer know by *ear* the four different tunings of the guitar used, and the differences between them (of which the above is a theoretical, not a sonic, explanation). The *current* tuning is notated frequently throughout the piece, with numbers referring to the harmonic number of the *new* or entering series. No tuning is done in Section I.

I Preamble

Tuning

Harp

C₁ C₉ C₅ C₁₁ C₃ C₁₃ C₇ C C₉ C₅ E₉ E₅ C₁₃ E₁₁ E₁₃ E₇ C₅ C₁₁ C₃ G₉ E₃ C₁₅ C₉ C₃ C₁₅ C₅ C₃
 G₃ E₁ G₁ G₃ E₁ E₁ G₁ G₅ G₁₁ G₃ G₁₃ G₇ G₁ G₁₇ E₃ G₅ C₁ C₁₇ E₁ E₁₇ G₁

Guitar

Section I Section II Section III Section IV
 C E G C
 5 7 17 3 1 5 1 11 7 5 13 17 13 17 3 1 5 7 5 13 17 3 7 1

I Preamble

I

12th fret harmonics

Guitar

ff
mf III VI
VI
(The C harmonic series tuning stays until II)

Tuner/
2nd Harp

ff mf mf
1 7 17 3 1 5

Harp

ff mf mf

Guit.

II VI II I III (C7)
VI II I III

Tuner

Harp

3

Guit.

(C9)
III II V III I II V III VI

Tuner

Harp

(V) (V) (V)

Guit. *bring out* (C₁₁) (C₁₃) III V III V I I

Tuner 1st X only

Harp (2nd X) (1st X)

Guit. (C₁₅) *freely* 8:5

Tuner

Harp *freely* 9 (J)

Guit. 12th fret (C₁₇) 12th fret harmonics

Tuner

Harp

*G♯ 1st X only,
then tune to G♯

II*

Guit. *(mf)* (E₁₇, C₁₃) (E₁₅, C₁₇) III

(tune I (E) → F (E₁₇)) (tune III (G) → G♯ (E₅))

Tuner 1st X only *(mf)* E₁₇ E₅ E₁₇

Harp *(mf)*

Guit. (E₁₃, C₁) (E₁₁, C₇) IV V I II I II III V

(tune II → C♯ (E₁₃)) (tune V → B♭ (E₁₁))

Tuner 5 13 17 E₁₁ 5 13 17

Harp (E₁₃) (E₁₁) (E₁₁)

Guit. (E₉, C₁₁) V IV II

Tuner 11 5 13 17

Harp (E₉) (C₁₁) (E₉) (C₁₁)

*(In section II-IV, low notes on 2nd harp are optional; tuning is more important.)

Guit. 3X

(E₇, C₉) (E₅, C₃)

IV 3 IV V VI IV (V) V IV III

(tune IV → D (E₇))

Tuner

11 E₇ 5 13 17

Harp

3X 2nd, 3rd X

Guit. (E₃, C₁₅) (E₁, C₅)

II IV III IV (tune VI (C) → E₁)

Tuner

(1st X only)

Harp

Note: these four measures, until III, may be repeated several times to fully tune.

Guit.

Tuner

Harp

Guit. **III**
 (tune V → Ab (G₁₇))
 (G₁₅, E₉)
 (tune II → B (G₅))

Tuner
 G₁₇ 17 G₅

Harp
 (G₁₇, E₅)

Guit.
 (tune VI → Eb (G₁₃))
 (G₁₃, E₁₅)

Tuner
 17 5

Harp
 (G₁₅, E₉)
 (G₁₃, E₁₅)
 softly

Guit.
 (G₁₁, E₁₃)
 (G₉, E₁₁)
 (tune VI → D (G₃))

Tuner
 13 17 G₃ 5

Harp
 (G₁₁, E₁₃)
 softly

Guit. (G₇, E₁₇)
 (tune I → F (G₅))

Tuner G₇

Harp (G₉, E₁₁) (G₇, E₁₇) (G₅, E₃)

Guit. (G₅, E₃) (G₃, E₇)
 (keep adjusting IV, I) (keep adjusting IV)

Tuner

Harp (G₃, E₇)

Guit. (G₁, E₁)
 (tune III → G (G₁))

Tuner G₁

Harp (G₁, E₁)

Guit. *pp pp pp (pp) mf*
 IV (5th fret) ^{8va}
 (C₁₇, G₁₁)
 III IV
 (tune IV → C₁₇)

Tuner C₁₇
 ♭ = ♭ = #

Harp *p mf*

Guit. *(C₁₅, G₅) (C₁₃, G₁₇) (C₁₁, G₁₅)*
 (all harmonics) ^{8va}
 (5th fret) (5th fret) II III I IV VI
 (tune V → A^b (C₁₃))
 C₁₃ 17

Tuner ♭ = ♭ = #

Harp

Guit. *(pp)*
 I IV VI I IV VI
 III (5th fret) III
 (strummed) (C₉, G₃) (C₇, G₉)
 (tune II → B^b (C₇))

Tuner 13 17 C₇
 ♭ = ♭ = #

Harp

This note can be slurred, not re-struck, by just touching the harmonic.

Guit. *(C₅, G₁₃)*

(tune VI → E (C₅))

Tuner C₅ 13 17 7

Harp

Guit. *(C₃, G₁) (strum)*

(continue adjusting) (tune I → C (C₁))

Tuner 5 13 17 3 7

Harp

Guit. *(simile)*

Tuner 5 13 17 3 7 1

Harp

Note: These three measures, until V, may be repeated to tune.

Guit. Tuner Harp

The first system of music is divided into three parts: Guitar, Tuner, and Harp. The Guitar part is in 5/8 time and features a sequence of triplets (marked '3') and a quintuplet (marked '5'). The Tuner part is in 5/8 time and provides a steady accompaniment. The Harp part is in 5/8 time and features a sequence of chords and single notes.

Guit. Tuner Harp

(continue to adjust)

V (C₁₇) (C₁₅) III VI II III V III I (C₁₃) (continue tuning)

The second system of music is divided into three parts: Guitar, Tuner, and Harp. The Guitar part is in 10/8 time and features a sequence of chords and notes, with a 'continue tuning' instruction. The Tuner part is in 10/8 time and provides a steady accompaniment. The Harp part is in 10/8 time and features a sequence of chords and single notes.

Guit. Tuner Harp

(C₁₁) VI II (C₉) III (C₇) 3X 3X (continue tuning) 3X 3X

The third system of music is divided into three parts: Guitar, Tuner, and Harp. The Guitar part is in 7/8 time and features a sequence of chords and notes, with '3X' markings indicating repeated sections. The Tuner part is in 7/8 time and provides a steady accompaniment. The Harp part is in 7/8 time and features a sequence of chords and single notes.

*In Section V, "leaving" pitches are accented slightly.

for jim, ben and lou
Three pieces for harp, guitar and percussion

II. רועפלאץ (Rue Plats) (Resting Place)

12

II. רועפלאץ (*Rue Plats*) (*Resting Place*) for Ben Johnston

רועפלאץ is scored for:

Guitarist: guitar, slide guitar, sandpaper blocks, voice, percussive pitched inhales, foot stomp, two-handed "slide-clapping."

Percussionist: Small bass drum (foot operated or struck), one suspended cymbal (like a small ride cymbal), three pitched metal milk cans, percussive pitched inhales, and hand claps.

Harpist: Diatonic harp, percussive inhales

The piece is played continuously in a moderate waltz tempo, not too slowly. All dynamics are matched to the voice: the piece should be treated as an ensemble arrangement of a song, consisting of sung and instrumental verses.

The percussive pitched inhales are breathy, pitched vocal sounds, either sung by closing the mouth and inhaling through the nose, or with open mouth and slightly rasping the throat. They are not to be too loud, but confident. Their exact tuning is not important.

In the final verse, the guitarist claps the eighth notes in the manner of Central Javanese "solo imbal" clapping, by sliding slightly through the claps, each hand moving slightly out and up, then down and in. It should, in fact, be a kind of slightly more articulated sound than the sandpaper blocks.

The tuning of the voice is left to the singer, but respects the harp tuning more or less. A great deal of liberty is encouraged in the song.

Harp Tuning

\ from D below the bass clef staff

0:	7/4	969	--	D
1:	1/1	0	231	E
2:	8/7	232	232	F#
3:	6/5	316	84	G
4:	4/3	499	183	A
5:	3/2	702	203	B
6:	8/5	814	112	C
7:	7/4	969	1	D

\ E below middle C

8:	1/1	0	231	E
9:	9/8	204	204	F#
10:	7/6	267	63	G
11:	21/16	471	204	A
12:	3/2	702	231	B
13:	49/32	738	36	C

14: 7/4/	969	231	D
\ E above middle C			
15: 1/1	0	231	E
16: 35/32	156	156	F#
17: 6/5	316	160	G
18: 4/3	499	183	A
19: 32/21	730	231	B
20: 8/5	814	84	C
21: 15/8	1089	275	D#
\ E on top of treble staff			
22: 1/1	0	111	E
23: 9/8	204	204	F#
24: 7/6	267	63	G
25: 21/16	471	204	A
26: 3/2	702	231	B
27: 49/32	738	36	C
28: 7/4	969	231	D
\ E three ledger lines above staff			
29: 1/1	0	231	E
30: 8/7	232	232	F#
31: 6/5	316	84	G

for jim, ben and lou

Yiddish

Nit zukh mikh dort vu
mirtn grinen,
Gefinst mikh dortn nit,
mayn shats!
Vu lebns velkn bay
mashinen,
Dortn iz mayn rueplats..

Nit zukh mikh dort vu
feygl zingen,
Gefinst mikh dortn nit,
mayn shats!
A shklaf bin ikh – vu
keytn klingen,
Dortn iz mayn rueplats..

Nit zukh mikh vu vu
fontanen shpritsn,
Gefinst mikh dortn nit,
mayn shats!
Vu trenn rinen, tseyner
kritsn,
Dortn iz mayn rueplats..

Un libstu mikh mit varer
libe —
To kum mit mir, mayn
guter shats,
Un hayter oyf mayn
harts, mayn tribn,
Un makh mir zis mayn
rueplats!

Transliterated Yiddish

— נײַט זוך מײך דאָרט, וווּ מײַרטן גרײַנען
געפֿינסט מײך דאָרטן נײַט, מײַן שאַץ!
ווּ לעבנס וועלן בײַ מאַשינען,
דאָרטן איז מײַן רועפּלאַץ...

— נײַט זוך מײך דאָרט, וווּ פֿײַגל זײַגען
געפֿינסט מײך דאָרטן נײַט, מײַן שאַץ!
אַ שקלאַף בײַן אײך — וווּ קײַטן קלײַגען,
דאָרטן איז מײַן רועפּלאַץ...

— נײַט זוך מײך, וווּ פֿאָנטאַנען שפּרײַצן
געפֿינסט מײך דאָרטן נײַט, מײַן שאַץ!
ווּ טרען רײַנען, צײַנער קרײַצן,
דאָרטן איז מײַן רועפּלאַץ...

— און לײַבסטו מײך מײַט וואַרער! לײַבע —
טאָ קום מײַט מײַר, מײַן גוטער שאַץ,
און הײַטער אױף מײַן האַרץ מײַן טרײַבן,
און מאַך מײַר זײַס מײַן רועפּלאַץ!

English

Don't search for me where
myrtles grow,
There my love, I won't be
found.
Where lives are wasting at
machines,
There is my resting place.

Don't search for me where
birds sing,
There my love, I won't be
found.
For I'm a slave and where
chains sound,
There is my resting place.

Don't search for me where
fountains spray,
There my love, I won't be
found.
Where tears are shed and
teeth do gnash,
There is my resting place.

And if your love for me is
true,
Then come to me my
priceless one —
Bring cheer to sooth my
gloomy heart,
And solace to my resting
place

II

רועפלאץ

(Rue Platz) (Resting Place)

Harp tuning

The harp tuning is defined by the following ratios for the notes across six staves:

Staff	Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7
1 (Treble)	1/1	8/7	6/5				
2 (Treble)	1/1	9/8	7/6	21/16	3/2	49/32	7/4
3 (Treble)	1/1	35/32	6/5	4/3	32/21	8/5	15/8
4 (Bass)	1/1	9/8	7/6	21/16	3/2	49/32	7/4
5 (Bass)	7/4	1/1	8/7	6/5	4/3	3/2	8/5
6 (Bass)							7/4

II רועפלאץ

(Rue Platz) (Resting Place)

(♩ 180) (♩. 60) or faster

SANDPAPER BLOCKS (>) (>) (>) (>)

Guit. Sand-Block *pp*

Perc. Cymb. BD

SMALL *pp* BASS DRUM

Harp



Guit. Sand-Block *p*

Perc. Cymb. BD *p*

Harp



I. Verse

somewhat freely

Voice *somewhat freely*

Nit zukh mikh dort vu mir - tn gri - nen ge - finst mikh dor - tn nit mayn

Guit. Sand-Block **SANDPAPER** (>)

quiet but strong and rhythmically precise

Perc. Cymb. BD *quiet but strong and rhythmically precise*

Harp

Voice
shats. Vu le - bns vel - kn bay ma - shi - nen dor - tn iz

Guit.

Sand-Block

Perc. Cymb. BD

Harp

Voice
mayn ru - e plats. Dor-tn iz mayn ru - -

Guit.

Sand-Block

Perc. Cymb. BD

Harp

Voice
- e plats

Guit.

Sand-Block
(TO GUITAR)

Perc. Cymb. MC BD
MILK CANS M.C. 5:4

Harp

(no crescendo)

B.D. *pp* 5 B.D.

I. Instrumental

GUITAR

mf

MILK CANS

BASS DRUM *mf*
(2nd & 3rd X only)

Harp

mf

bring out harp melody

pp

Guit.

(Bend F# up) 7/6

VI

Perc. MC
BD

Harp

Guit.

(Finger F#) 35/32

Perc. MC
BD

Harp

2:3

Guit.

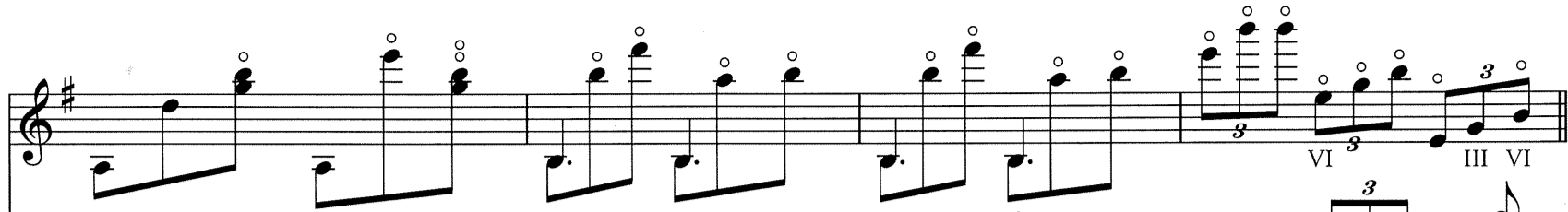
Perc. MC
BD


7:6

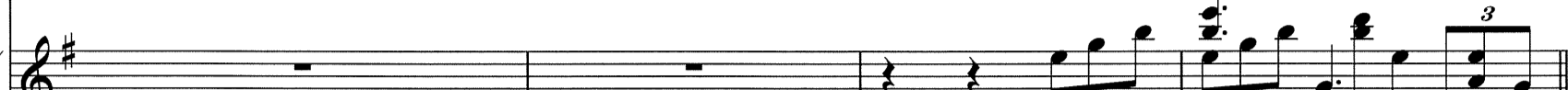
p


p

These low B's are fingered, bend to tune (slightly).

Guit. 

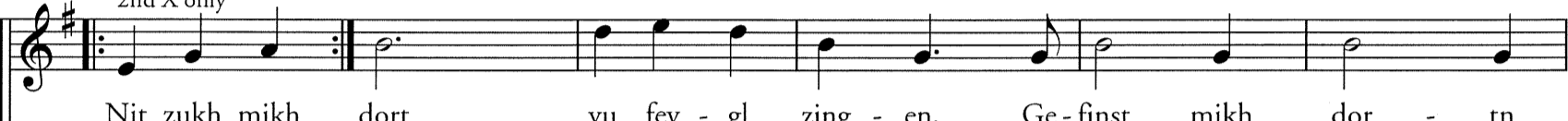
Perc. MC 

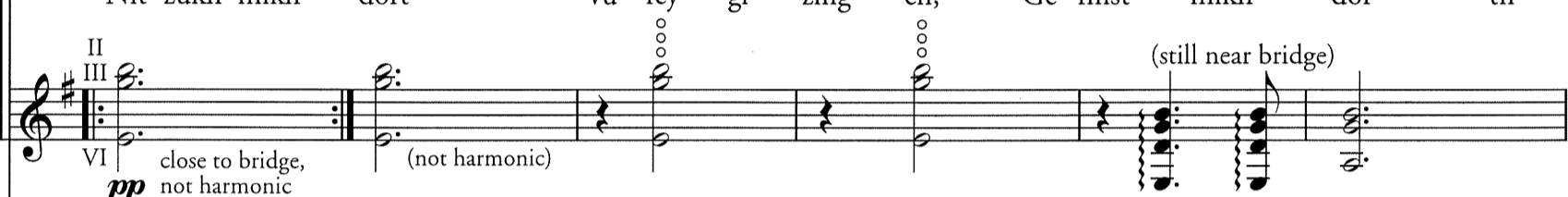
BD 


Harp 

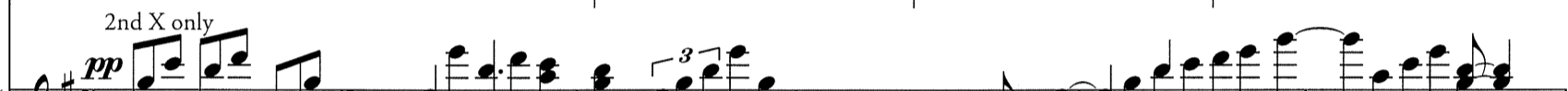
II. Verse


2nd X only

Voice 


Guit. 


Perc. MC 


BD 


Harp 


pp

Voice 

Guit. 

Perc. MC 

BD 

Harp 

Voice: dor - tn iz mayn ru - e plats. Dor - tn iz
 Guit.: (same) (hammer) (all open except E)
 Perc. MC BD
 Harp

Voice: mayn ru - e plats
 Guit.: (same)
 Perc. MC BD
 Harp

sub. pp *pp* INHALE *decresc. percussion only*

II. Instrumental Guitar: Don't strike each note. Play with thumb. Bend (vertical) and vibrato with liberty. Slide between notes to taste.

Guit.: VI always 6/5 4/3 (VI) 7/4 (VI) 7/6 (don't strike) 7/6
 Cymb. BD
 Perc. BASS DRUM Inhale
 Harp

strong mf-f *quiet* *mp* *Bring out melody*

Guit. $\frac{7}{16}$ $\frac{21}{16}$ $\frac{7}{16}$ $\frac{9}{8}$ (still VI) $\frac{6}{5}$

Cymb. BD

Perc. Inhale

Harp $\frac{6}{2}$ $\frac{11}{6}$ $\frac{10}{6}$ $\frac{3}{3}$ $\frac{5}{5}$

Guit. $\frac{7}{16}$ $\frac{9}{8}$ $\frac{7}{16}$ $\frac{7}{14}$ $\frac{8}{7}$

Cymb. BD

Perc. Inhale

Harp $\frac{5}{3}$ $\frac{3}{3}$ $\frac{3}{3}$ $\frac{3}{3}$ $\frac{3}{3}$

Guit. $\frac{21}{16}$ $\frac{49}{32}$ $\frac{3}{2}$ $\frac{32}{21}$ $\frac{4}{3}$ $\frac{32}{21}$ $\frac{8}{5}$ $\frac{4}{3}$

Cymb. BD

Perc. Inhale

Harp $\frac{3}{3}$ $\frac{3}{3}$ $\frac{3}{3}$ $\frac{3}{3}$ $\frac{3}{3}$

Guit. 7/6 21/16 9/8 21/16 9/8

Cymb. TO MILK CANS MILK CANS (>)

Perc. BD 3 3 (Harp) 2nd X only 1st X only

Inhale Harpist double inhales (Perc.)

Harp 3 p Inhale 2

7:6

III. Verse

Voice Nit zukh mikh vu fon - ta - nen shprit - sn ge-finst mikh dor - tn

Guit. SANDBLOCKS (>)

Sandblocks Footstamps

Perc. MC FOOTSTAMPS (>)

BD BASS DRUM(quiet)

Harp Inhale

Inhale

Voice nit mayn_ shats. Vu trer - n ri - nen tsey - ner krit - sn Dor - tn

Guit. (>)

Sandblocks Footstamps (>)

Perc. MC (>)

BD

Harp

Inhale

Voice
 iz mayn ru - e plats _____ Dort - tn iz _____ mayn

Guit.
 Sandblocks
 Footstamps

Perc.
 Cymb.
 MC
 BD

Harp
 Harp
 Inhale
 (INHALE)

quieter

Voice
 ru - - - e plats _____

Guit.
 Sandblocks
 Footstamps

Perc.
 MC
 BD

Harp
 Harp
 Inhale

TO SLIDE

HARP

III. Instrumental

Guit.
 SLIDE 6/5 32/21 4/3 32/21 32/21 7/6 3/2 3/2 7/6

Perc.
 MC
 BD
 BASS DRUM quietly

Harp
 Harp
 Inhale
 mf

Tune to harp

MILK CANS

3

Guit. Perc. MC BD Harp

21/16 9/8 7/6 3/2 (no V) 32/21 7/6 9/8 7/4 8/7

3 3 3

(no V)

Guit. Perc. MC BD Harp

7/4 21/10 3/2 49/32 49/32 3/2 32/21 3/2 32/21 3/2 21/16 3/2

pull offs 3 3

p.

Guit. Perc. MC BD Harp

49/32 21/16 7/6 21/16 7/6 9/8 21/16

2 3 3 3

2

IV. Verse

Voice: Un lib-stu mikh mit va - rer lib - - e to kum mit mir mayn
 Guit.: *mp*
 Clap: TWO HANDED, "SLIDE" CLAPPING
 Perc. Clap: HAND CLAPS *4:3*
 Harp:

Guit. Voice: *(continue hand clapping)*
 gu - ter shats. Un hay - ter oyf mayn harts, mayn tri - bn un
 Perc. Clap: *3 3 3*
 Harp:

Guit. Voice: *(continue hand clapping)*
 makh mir zis mayn ru - e plats un makh mir
 Perc. Clap: *3*
 Harp:

Guit. Voice Sandblocks

zis _____ mayn ru - - e plats.”

Perc. Clap Cymbals

Harp Bass drum

(let ring)

IV. Instrumental (Tag) accel. till end

Guit. Sand-Block

Inhale

Perc. Cymb. BD

Inhale

Harp

p cresc. poco a poco till end

accel. - - - - Strong till end - - - -

Guit. Sand-Block

Inhale

Perc. Cymb. BD

Inhale

Harp

(cresc.) (harp louder than other instruments)

ff

57

for jim, ben and lou
Three pieces for harp, guitar and percussion

III. The World's Longest Melody (trio version)
"The Ever-Widening Halfstep"

III. *The World's Longest Melody (trio version)*
"The Ever-Widening Halfstep"
 for Lou Harrison

The first note of each beamed phrase is accented. There are five sections, each with a pause (whose length is determined by the ensemble, but not more than a second or two) between them. The piece starts loud, gets very loud towards the middle, and then returns to loud by the end.

The tempo is as fast as possible. At quarter-note = 220 (eighth = 440), the piece lasts around three minutes.

The percussionist plays tuned handdrum(s). The part is improvisational, except that the metric patterns correspond closely to the melodic groupings. For each grouping, both a number and a rhythmic duration are given to guide the percussionist. The percussionist should creatively use different subdivisions of the grouping along with different "melodic" drumming patterns. For example, a grouping of 10 might be divided by low-drum (3), middle-drum (4), high-drum (4). The drum part's "complexity" follows the dynamic curve of the piece, starting simple, becoming more complex to the middle, and becoming simpler towards the end. The percussionist should be much quieter than the melody.

The harp tuning is the same as in Movement II, except that now the 7/6 G is treated (compositionally) as 1/1. All F's in the score are F#'s (for the harp).

Harp Tuning

\ from D below the bass clef staff

0: 7/4	969	--	D
1: 1/1	0	231	E
2: 8/7	232	232	F#
3: 6/5	316	84	G
4: 4/3	499	183	A
5: 3/2	702	203	B
6: 8/5	814	112	C
7: 7/4	969	1	D

\ E below middle C

8: 1/1	0	231	E
9: 9/8	204	204	F#
10: 7/6	267	63	G
11: 21/16	471	204	A
12: 3/2	702	231	B
13: 49/32	738	36	C
14: 7/4/	969	231	D

\ E above middle C

15: 1/1	0	231	E
16: 35/32	156	156	F#

17: 6/5	316	160	G
18: 4/3	499	183	A
19: 32/21	730	231	B
20: 8/5	814	84	C
21: 15/8	1089	275	D#

\ E on top of treble staff

22: 1/1	0	111	E
23: 9/8	204	204	F#
24: 7/6	267	63	G
25: 21/16	471	204	A
26: 3/2	702	231	B
27: 49/32	738	36	C
28: 7/4	969	231	D

\ E three ledger lines above staff

29: 1/1	0	231	E
30: 8/7	232	232	F#
31: 6/5	316	84	G

GUITAR TUNING

The guitar is tuned around the $G = 7/6$, which is the fundamental (1/1) of the piece. The open strings are tuned to it as a $7/6$ minor third (II), a $7/4$ minor seventh (I), an $11/8$ tritone (IV), a $17/8$ minor second (V), and a $13/8$ sixth (VI). All of these intervals are placed in their appropriate octaves.

Only eight different fingerings are used for the guitar part. Stopped octaves, fourths and fifths are used for pitches which are approximations of $4/3$'s and $3/2$'s (within two cents) above the open tuning. Octaves are played as harmonics or stopped pitches. Double octaves and "double" fifths are played as harmonics. "Double fourths" (a fourth plus an octave) are played on the 17th fret.

The notation for the fingerings is as follows, with the example of all of the notes possible on the 3 (circled in the score) string:

III ₀	open string ($G = 7/6$)
III ₁₂ or III ₁₂ ^o	stopped or harmonic at 12th fret ($G = 7/6$)
III ₅ ^o	double octave harmonic ($G = 7/6$), 5th fret
III ₅	perfect 4th, stopped at 5th fret ($C = 14/9$)
III ₁₇	perfect 4th plus an octave, stopped at 17 fret ($C = 14/9$)
III ₇	perfect 5th, stopped at 7th fret ($D = 7/4$)
III ₇ ^o	perfect 5th plus an octave, as harmonic, 7th fret ($D = 7/4$)

In other words, the "tablature" below each actual pitch gives string numbers in Roman numerals with fret numbers subscripted in smaller Arabic numerals. In the score, harmonics are indicated above the note itself, not with Arabic numerals. The guitar is written in the

score in its usual notation, sounding an octave below where written. In certain rare cases, when preceded by a 17th fret fingering, the guitarist may actually find it easier to play the double octave harmonic high on the neck (over the sound hole) than on the 5th fret.

The smaller staff, the "resultant," shows the combined harp/guitar melody. Only the diatonic note names and accidentals are shown on this staff (and not the specific tuning for each pitch).

The complete guitar tuning, with all possible pitches (in only one of their octaves), is as follows:

open strings

(also possible as octave and double octaves)

<i>String</i>	<i>Ratio</i>	<i>Cents (to E 1/1)</i>	<i>Name</i>
VI:	91/48	1108	Eb (13/8 * 7/6)
V:	119/96	372	Ab (17/8 * 7/6)
IV:	77/48	819	C# (11/8 * 7/6)
III:	7/6	267	G ("1/1")
II:	49/36	534	Bb (7/6 * 7/6)
I:	49/48	36	F (7/4 * 7/6)

fourths

("4/3" to open strings: fifth fret and 17th fret)

<i>String</i>	<i>Ratio</i>	<i>Cents (to E 1/1)</i>	<i>Name</i>
VI:	91/72	406	Ab (4/3 * 13/8 * 7/6)
V:	119/72	870	Db etc.
IV:	77/72	117	F#
III:	14/9	765	C
II:	49/27	1032	Eb
I:	49/36	534	Bb

fifths

("3/2" s to open strings: seventh fret and harmonics)

<i>String</i>	<i>Ratio</i>	<i>Cents (to E 1/1)</i>	<i>Name</i>
VI:	273/192	610	Bb (3/2 * 13/8 * 7/6)
V:	119/64	1074	Eb etc.
IV:	77/64	321	G#
III:	7/4	969	D
II:	49/48	36	F
I:	49/32	738	C

Complete Tuning

The following is the complete, "interlaced" tuning for the piece. The tuning is given in the following order:

ratio note name	absolute cents octave	adjacent cents fingering (if guitar)	instrument
--------------------	--------------------------	---	------------

Note: Octave 0 starts on the E below the bass clef, octave 1 on the E above that, and so on.

1/1	0	0	<i>guitar</i>	0 (phantom, not actually occurring)	
7/4	969	970	<i>harp</i>	D	-1
91/48	1108	139	<i>guitar</i>	Eb	-1 (VI open)

Starting on E below bass clef

1/1	0	92	<i>harp</i>	E	0	
8/7	232	232	<i>harp</i>	F#	0	
6/5	316	84	<i>harp</i>	G	0	
119/96	372	56	<i>guitar</i>	Ab	0	(V open)
91/72	406	34	<i>guitar</i>	Ab	0	(VI 4th)
4/3	499	93	<i>harp</i>	A	0	
273/192	610	111	<i>guitar</i>	Bb	0	(VI 5th)
3/2	702	92	<i>harp</i>	B	0	
8/5	814	112	<i>harp</i>	C	0	
77/48	819	5	<i>guitar</i>	C#	0	(IV open)
119/72	870	51	<i>guitar</i>	Db	0	(V 4th)
7/4	969	99	<i>harp</i>	D	0	
119/64	1074	105	<i>guitar</i>	Eb	0	(V 5th)
91/48	1108	34	<i>guitar</i>	Eb	0	(VI 12th)

Starting on E in middle of bass clef

1/1	0	92	<i>harp</i>	E	1	
77/72	117	117	<i>guitar</i>	F#	1	(IV 4th)
9/8	204	87	<i>harp</i>	F#	1	
7/6	267	63	<i>harp</i>	G	1	
7/6	267	0	<i>guitar</i>	G	1	(III open)
77/64	321	54	<i>guitar</i>	G#	1	(IV 5th)
119/96	372	51	<i>guitar</i>	Ab	1	(V 12th)
91/72	406	34	<i>guitar</i>	Ab	1	(VI 4th + oct)
21/16	471	65	<i>harp</i>	A	1	
49/36	534	63	<i>guitar</i>	Bb	1	(II open)
273/192	610	76	<i>guitar</i>	Bb	1	(VI 5th + oct)
3/2	702	92	<i>harp</i>	B	1	
49/32	738	36	<i>harp</i>	C	1	
14/9	765	27	<i>guitar</i>	C	1	(III 4th)
77/48	819	54	<i>guitar</i>	C#	1	(IV 12th)
119/72	870	51	<i>guitar</i>	Db	1	(V 4th + oct)
7/4	969	99	<i>harp</i>	D	1	
7/4	969	0	<i>guitar</i>	D	1	(II 5th)
49/27	1032	63	<i>guitar</i>	Eb	1	(II 4th)

or jim, ben and lou

119/64	1074	42	<i>guitar</i>	Eb	1	(V 5th + oct)
91/48	1108	34	<i>guitar</i>	Eb	1	(VI 24th)

Starting on E above middle C

1/1	0	92	<i>harp</i>	E	2	
49/48	36	36	<i>guitar</i>	F	2	(I open)
49/48	36	0	<i>guitar</i>	F	2	(II 5th)
77/72	117	81	<i>guitar</i>	F#	2	(IV 4th + oct)
35/32	156	39	<i>harp</i>	F#	2	
7/6	267	111	<i>guitar</i>	G	2	(III 12th)
6/5	316	49	<i>harp</i>	G	2	
77/64	321	5	<i>guitar</i>	Ab	2	(IV 5th + oct)
119/96	372	51	<i>guitar</i>	Ab	2	(V 24th)
4/3	499	127	<i>harp</i>	A	2	
49/36	534	35	<i>guitar</i>	Bb	2	(I 4th)
49/36	534	0	<i>guitar</i>	Bb	2	(II 12th)
32/21	730	196	<i>harp</i>	B	2	
14/9	765	27	<i>guitar</i>	C	2	(III 4th + oct)
8/5	814	49	<i>harp</i>	C	2	
77/48	819	5	<i>guitar</i>	C#	2	(IV 24th)
7/4	969	150	<i>guitar</i>	D	2	(III 5th + oct)
49/27	1032	63	<i>guitar</i>	Eb	2	(II 4th + oct)
15/8	1089	57	<i>harp</i>	D#	2	

Starting on E on top space of treble clef

1/1	0	111	<i>harp</i>	E	3	
49/48	36	36	<i>guitar</i>	F	3	(I 12th)
49/48	36	0	<i>guitar</i>	F	3	(II 5th + oct)
9/8	204	168	<i>harp</i>	F#	3	
7/6	267	63	<i>harp</i>	G	3	
7/6	267	0	<i>guitar</i>	G	3	(III 24th)
21/16	471	204	<i>harp</i>	A	3	
49/36	534	63	<i>guitar</i>	Bb	3	(II 24th)
49/36	534	63	<i>guitar</i>	Bb	3	(I 4th + oct)
3/2	702	168	<i>harp</i>	B	3	
49/32	738	36	<i>harp</i>	C	3	
49/32	738	0	<i>guitar</i>	C	3	(I 5th + oct)
7/4	969	231	<i>harp</i>	D	3	

Starting on E above treble clef

1/1	0	231	<i>harp</i>	E	4	
49/48	36	36	<i>guitar</i>	F	4	(I 24th)
8/7	232	196	<i>harp</i>	F#	4	
6/5	316	84	<i>harp</i>	G	4	

III The World's Longest Melody (trio version) "The Ever-Widening Halfstep"

Section 1

Harp

Guitar

Percussion

Resultant

Harp

Guit.

Perc.

Resultant

Harp

Guit.

Perc.

Resultant

Harp

Guit.

Perc.

Resultant

Harp

Guit. VI₀ V₀ V₀ VI₇ VI₅ VI₇ VI₅ VI₇

Perc. 4 4 2 2 4 4 4 3

Resultant

Section 2

Harp

Guit. III₇ III₇ IV₅ III₇ I₇ IV₅ III₇ III₅ V₁₇ II₅ V₇ I₇ II₀ II₀

Perc. 6 5 5 5 7 5

Resultant

Harp

Guit. II₅ III₅ I₁₂ VI₇ VI₅ VI₇ V₇ VI₁₂ III₅ IV₇ VI₅ II₅ II₁₂ III₇ I₇ II₁₂ IV₅

Perc. 5 7 5 6 5

Resultant

Harp

Guit. I₇ II₁₂ IV₇ IV₁₇ V₀ VI₇ VI₅ III₁₇ III₇

Perc. 5 9 9 7 9

Resultant

Harp

Guit.
 8
 VI₇ V₀ VI₇ VI₅ VI₇ V₅ V₇ III₅ II₁₂ II₁₂ III₁₇ I₇ III₇ IV₀ VI₇ V₅ IV₀

Perc.
 5 7 6 8 6

Resultant

Harp

Guit.
 8
 VI₅ VI₇ III₅ V₁₂ II₅ V₇ V₁₇ II₅ IV₁₇ V₅ I₇ III₅ VI₇ IV₀ VI₁₂ VI₁₇ VI₇

Perc.
 7 8 8 7

Resultant

Harp

Guit.
 8
 VI₁₇ VI₁₂ IV₀ VI₅ VI₇ VI₁₂ II₅ II₇ VI₅ V₀ VI₇ V₅ VI₁₂ V₇ III₅ V₅

Perc.
 6 8 7 8 7

Resultant

Section 3

Harp

Guit.
 8
 VI_{0b} V₇ III₅ VI₇ VI₁₂ VI₇ III₅ III₅ IV₁₂ VI₁₂ V₀ VI₅

Perc.
 9 9 10 10

Resultant

Harp

Guit. $\frac{8}{8}$ VI₇ VI₅ V₀ V₀ II₅ II₇ III₅ II₇ II₅ II₅ IV₁₂

Perc. 14 13 7

Resultant

Harp

Guit. $\frac{8}{8}$ III₅ II₀ V₁₇ III₇ VI₁₇ IV₇ VI₁₂ VI₁₇ IV₁₂ VI₀ IV₀ V₀ VI₀

Perc. 14 14

Resultant

Harp

Guit. $\frac{8}{8}$ II₀ III₅ V₇ V₅ VI₅ VI₇ V₇ VI₁₂ III₀ III₀ IV₇ II₀ III₇ II₅ II₇ IV₅

Perc. 7 10 14

Resultant

Harp

Guit. $\frac{8}{8}$ II₁₇ II₇ II₅ III₅ VI₁₇ IV₁₂ III₀ IV₇ VI₅ VI₇ III₀ VI₁₇ V₁₇ IV₁₇ V₅ IV₁₇ V₁₇

Perc. 10 8 14

Resultant

Harp

Guit.

Perc.

Resultant

8 V_0 IV_0 V_7 V_{12} II_0 III_0 VI_{12} V_0 III_7 III_5 II_5 II_5

Harp

Guit.

Perc.

Resultant

8 II_5 II_5 IV_7 II_5 II_5 V_{12} II_0 IV_5 IV_7 III_7 II_7 III_5 II_7 IV_5 IV_7 V_{17} II_5 VI_{17} III_5 V_{17} VI_{17}

Harp

Guit.

Perc.

Resultant

8 II_{17} II_{12} III_{12} V_7 IV_{12} III_0 VI_{12} II_5 IV_{12} VI_{17} VI_{12} IV_0 V_7 V_{12} V_{12} III_7 IV_5 II_7 IV_5 II_{17} V_5 I_5 III_{17}

Section 4

Harp

Guit.

Perc.

Resultant

8 IV_7 V_{17} VI_5 V_7 III_{12} III_7 II_0 III_7 IV_7 I_7 II_7 III_5 V_5 VI_5 VI_7 VI_{12} VI_{17} III_5

Harp

Guit. IV_7 V_5 IV_0 V_7 IV_0 V_5 IV_7 II_5 III_{12} I_{17} I_5 III_7 III_{17} IV_7 I_5

Perc. 15 11

Resultant

Harp

Guit. IV_7 VI_{12} V_5 VI_7 III_5 V_5 IV_7 II_5 II_7 II_{12} VI_5 III_7 IV_7 VI_7 II_5 III_5 II_0

Perc. 16 16

Resultant

Harp

Guit. V_7 V_{12} IV_{17} I_7 III_7 II_7 IV_0 III_5 VI_7 IV_{17} IV_{17} VI_{17} III_5 VI_7 VI_0

Perc. 13 15

Resultant

Harp

Guit. V_7 VI_5 V_0 V_5 III_0 IV_0 V_5 III_5 IV_7 IV_5 II_0 V_7 III_{17} IV_5 II_0 V_7 III_{17}

Perc. 13 13 10

Resultant

Harp

Guit. $IV_7 III_7 II_0 IV_{17} b^{\circ}$ $IV_7 V_{17} VI_5 b^{\circ} II_{12} II_5 IV_7 V_7 IV_7$

Perc. 15 13

Resultant

Harp

Guit. $III_5 VI_5 b^{\circ} I_5 I_7 V_5 II_5 V_7 b^{\circ} I_5 VI_5 VI_{12} V_0$ $II_7 III_5 II_7$

Perc. 16 9

Resultant

Harp

Guit. $III_0 V_7 V_7 VI_5 III_5 V_{17} III_5 I_5 III_5 V_{12} V_5 II_0 VI_{12} V_0 VI_7$

Perc. 14 12

Resultant

Harp

Guit. $II_5 b^{\circ} III_7 II_0 III_5 IV_0 VI_{17} VI_{17} V_7$ $II_5 I_5 IV_5 I_7$

Perc. 15 11

Resultant

Harp

Guit.
 8 IV₇ II₁₇ III₅ II₇ II₇ III₅ II₁₇ V₅ IV₇ V₁₇ VI₅ II₀ V₇ VI₇

Perc.
 14 9

Resultant

Harp

Guit.
 8 VI₁₂ IV₁₂ VI₁₇ V₇ V₀ III₁₇ VI₅ V₇ VI₇ V₇ VI₅ VI₇ IV₇ I₅ IV₅ IV₁₇ V₇ VI₁₇

Perc.
 12 15

Resultant

Harp

Guit.
 8 IV₇ V₁₂ II₀ VI₁₇ V₅ III₁₂ IV₁₇ II₀ VI₇ III₅ III₀ VI₁₂ IV₀ VI₅ V₇

Perc.
 9 9 6

Resultant

Section 5

Harp

Guit.
 8 II₅ IV₅ II₅ VI₅ VI₇ III₁₂ I₅ V₅ VI₇ III₅ V₅ II₀ III₁₂ VI₅ IV₁₂ IV₇

Perc.
 8 11 16

Resultant

Harp

Guit. 8 IV_{12} V_{12} IV_{12} II_5 IV_7 VI_7 IV_7 VI_{12} VI_7 III_0 VI_{12} III_5 V_7

Perc. 8 13

Resultant

Harp

Guit. 8 III_{12} III_5 I_5 IV_{12} VI_{17} IV_{17} IV_5 I_5 II_{17} VI_7 V_{12} IV_7 I_7 V_7 III_5 V_7 VI_{17}

Perc. 11 9 13

Resultant

Harp

Guit. 8 II_5 III_{17} V_5 IV_7 II_0 V_5 III_0 VI_5 III_{12} VI_7 V_5 II_0 II_5 II_{17} III_5 IV_7 II_{17} VI_{17} III_{12} VI_7 IV_7

Perc. 14 13 10

Resultant

Harp

Guit. 8 III_5 I_7 II_5 II_5 III_7 II_0 II_{17} I_5 II_7 V_5 I_5 III_5 II_7 III_7 II_0 II_7 III_5

Perc. 13 10 10

Resultant

Harp

Guit. $\text{IV}_7 \text{IV}_{12} \text{II}_5 \text{III}_{17} \text{II}_{17} \text{II}_{12} \text{VI}_{17} \text{VI}_{12} \text{III}_5 \text{V}_7 \text{V}_0 \text{VI}_7 \text{IV}_7 \text{II}_7 \text{III}_{17} \text{IV}_7 \text{VI}_5 \text{III}_7 \text{I}_7 \text{I}_5$

Perc. 13 8 11

Resultant

Harp

Guit. $\text{II}_{17} \text{II}_0 \text{III}_{12} \text{IV}_{17} \text{IV}_7 \text{I}_7 \text{III}_{17} \text{IV}_7 \text{III}_5 \text{IV}_7 \text{VI}_5 \text{V}_7 \text{VI}_7 \text{IV}_5 \text{II}_{12} \text{II}_{17}$

Perc. 15 12

Resultant

Harp

Guit. $\text{VI}_{17} \text{IV}_0 \text{VI}_7 \text{VI}_{12} \text{VI}_{17} \text{III}_0 \text{V}_5 \text{VI}_{12} \text{VI}_{17} \text{III}_5 \text{IV}_5 \text{II}_{12} \text{II}_0 \text{IV}_7 \text{I}_5 \text{IV}_5 \text{III}_5 \text{IV}_5 \text{V}_7$

Perc. 8 12 15

Resultant

Harp

Guit. $\text{III}_5 \text{IV}_7 \text{V}_5 \text{III}_5 \text{I}_7 \text{III}_5 \text{II}_{17} \text{IV}_{12} \text{V}_{12} \text{IV}_{12} \text{III}_0$

Perc. 11 15

Resultant

Harp

Guit.
 8 III₁₂ IV₇ V₇ V₁₂ V₀ III₅ V₅ V₁₂ IV₇ III₅ III₇ II₀ III₇ II₀ III₅ VI₁₂ V₇

Perc.
 16 9 8

Resultant

Harp

Guit.
 8 V₇ II₁₇ III₇ IV₅ II₁₇ II₅ II₇ II₇ III₁₂ V₁₂ IV₁₇ VI₅ III₀ VI₇

Perc.
 16 8

Resultant

Harp

Guit.
 8 IV₇ V₇ VI₁₇ V₅ V₁₂ IV₁₂ V₅ V₅ IV₁₂ III₁₇ II₀ VI₇ III₇ I₅ II₀ II₀

Perc.
 11 16

Resultant

Harp

Guit.
 8 III₀ VI₁₂ VI₁₇ VI₇ II₀ VI₇ III₅ II₀ III₇ V₇ VI₇ II₀ III₇ I₅ V₅ II₀ V₅ VI₁₇

Perc.
 16 13

Resultant