

*seeds and ledgers 1–3*  
for string quartet

dedicated to lucie, cat, and ira, respectively

michael winter  
(berlin and cdmx; 2023–2024)

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**Description (which can optionally be used as a program note)**

**Tuning**

These pieces explore an extended just-intonation with no fixed fundamental. Within a part, from note-to-note, the melodic movement may be very complex. However, each note is always a relatively simple interval from a note that has recently terminated or is currently sounding in one of the other parts.

Each written note indicates the closest pitch in twelve-tone equal temperament with a cent-deviation (100th of a tempered semitone) provided above.

A Roman numeral with an Arabic superscript followed by an up or down arrow is most often provided below each note. The Roman numeral indicates the reference part against which the current note (which will be called the *referencing note* from here on) can be tuned by a relatively simple interval from a recently or currently sounding pitch in the reference part (which will be called the *reference pitch* from here on). The Arabic superscript and the corresponding arrow indicate the exact interval, up or down, of the referencing note from the reference pitch. Generally, the reference pitch is initiated prior and continues to sound when it is referenced. Occasionally, the reference pitch terminates in the beat prior to the initiation of the referencing note. As a courtesy, this is indicated by a ‘<’ preceding the Roman Numeral below the referencing note.

No indication below a note means that it is the same pitch as the prior note within the respective part.

A Roman numeral with superscript of 1 below a referencing note means that it is an octave equivalent of the reference pitch.

A Roman Numeral with a superscript of 3, 5, 7, 11, or 13 followed by an up arrow indicates that the pitch of the referencing note is a frequency ratio of a 3/2, 5/4, 7/4, 11/8 or 13/8, respectively, from the reference pitch if the reference pitch were transposed to the nearest octave *below* the pitch of the referencing note.

A Roman Numeral with a superscript of 3, 5, 7, 11, or 13 followed by a down arrow indicates that the pitch of the referencing note is a frequency ratio of a 2/3, 4/5, 4/7, 8/11 or 8/13, respectively, from the reference pitch if the reference pitch were transposed to the nearest octave *above* the pitch of the referencing note. That is, the down arrow is the inversion of an up arrow and it could alternatively be understood that the referencing note is a frequency ratio of 4/3, 8/5, 8/7, 16/11, or 16/13, respectively, from the reference pitch if the reference pitch were transposed to the nearest octave *below* the pitch of the referencing note.

**Tempo and Duration**

Pieces 1 and 2 are written with a 2/2 time signature and should be played at a tempo such that a half note is approximately 60 beats per minute (2 seconds per measure).

A fermata with a number directly below is a suggestion for the number of seconds the notes in that measure can be held. It is actually the exact number of seconds that the computer program that generated the piece assigned to the measure, but maybe interpreted more freely by the ensemble.

Piece 3 is much more open. Note durations are not provided until measure 105. Durations between the initiation of one note to the next among the parts should generally be 1 to 2 seconds. However, that is more of a lower limit. The

performer initiating the next note has discretion to maintain the current chord for (potentially much) longer such that the more consonant the chord subjectively, the longer it sounds. Within a part, each tone should generally be held until the next tone, but the given performer can also fade out and rest a moment before initiating the next tone.

A time signatures and note durations are only provided for the end of piece 3 (measures 105 to 114) and an optional coda (starting at measure 115). Like pieces 1 and 2, the ending and the coda of piece 3 should be interpreted with a tempo such that a half note is approximately 60 beats per minute.

### **Optional Coda of Piece 3**

Given that the coda of piece 3 starting at measure 115 is exceedingly difficult, it is optional. Good luck to any group that attempts it and congratulations in advance to any group who successfully executes it!

### **Generating programs**

These pieces were generated using custom software written in SuperCollider with a front-end user interface written in Javascript called Open Stage Control. These programs can also be used to audition the piece and each part. The most recent version of the code along with any utilities that are developed are downloadable from a git repository at: [https://unboundedpress.org/code/mwinter/seeds\\_and\\_ledgers](https://unboundedpress.org/code/mwinter/seeds_and_ledgers)

The generation of this document (using LaTeX) contains a version date at the bottom of this page in order to help track changes and the git repository will also detail commit changes. The piece was last generated using SuperCollider version 3.13 and Lilypond version 2.24.1.

# seeds and ledgers 1

for lucie nezri

michael winter  
(berlin; 2023-24)

First system of musical notation (measures 1-6). The system consists of four staves (I, II, III, IV) in 2/2 time. Staff I contains a melodic line with various intervals and ledger lines, with fingerings indicated by numbers above the notes. Staff II contains a sustained note with a +0 interval. Staff III is empty. Staff IV contains a sustained note with a +0 interval.

Second system of musical notation (measures 7-12). The system consists of four staves (I, II, III, IV) in 2/2 time. Staff I contains a melodic line with various intervals and ledger lines, with fingerings indicated by numbers above the notes. Staff II contains a melodic line with various intervals and ledger lines, with fingerings indicated by numbers above the notes. Staff III contains a melodic line with various intervals and ledger lines, with fingerings indicated by numbers above the notes. Staff IV contains a sustained note with a +47 interval.

Third system of musical notation (measures 13-18). The system consists of four staves (I, II, III, IV) in 2/2 time. Staff I contains a melodic line with various intervals and ledger lines, with fingerings indicated by numbers above the notes. Staff II contains a melodic line with various intervals and ledger lines, with fingerings indicated by numbers above the notes. Staff III contains a melodic line with various intervals and ledger lines, with fingerings indicated by numbers above the notes. Staff IV contains a melodic line with various intervals and ledger lines, with fingerings indicated by numbers above the notes.

20

Staff I: Treble clef, whole notes, ledger lines above. Fingerings: 6, 6.

Staff II: Treble clef, eighth notes, ledger lines above. Fingerings: I 7<sup>↑</sup>, I 3<sup>↑</sup>, I 11<sup>↑</sup>, I 3<sup>↓</sup>. Accidentals: +16, +49, -2, +45.

Staff III: Bass clef, whole notes, ledger lines below. No notes.

Staff IV: Bass clef, eighth notes, ledger lines below. Fingerings: II 13<sup>↑</sup>, I 5<sup>↓</sup>, II 1<sup>↑</sup>, I 11<sup>↓</sup>, I 13<sup>↑</sup>. Accidentals: -13, -40, -2, -5, -13.

27

Staff I: Treble clef, whole notes, ledger lines above. Fingerings: IV 1<sup>↑</sup>. Accidental: -22.

Staff II: Treble clef, eighth notes, ledger lines above. Fingering: III 1<sup>↑</sup>. Accidental: +47.

Staff III: Bass clef, eighth notes, ledger lines below. Fingerings: I 1<sup>↑</sup>, II 7<sup>↑</sup>. Accidentals: +47, +16.

Staff IV: Bass clef, eighth notes, ledger lines below. Fingerings: III 13<sup>↑</sup>, III 3<sup>↑</sup>, III 3<sup>↓</sup>, III 5<sup>↑</sup>, III 7<sup>↓</sup>, II 1<sup>↑</sup>, II 13<sup>↓</sup>. Accidentals: -13, +49, +45, +33, -22, +47, +6.

34

Staff I: Treble clef, whole notes, ledger lines above. Fingerings: IV 1<sup>↑</sup>, II 11<sup>↑</sup>, II 5<sup>↓</sup>. Accidentals: +6, -2, 2, -40.

Staff II: Treble clef, whole notes, ledger lines above. No notes.

Staff III: Bass clef, eighth notes, ledger lines below. Fingerings: II 5<sup>↓</sup>, II 13<sup>↑</sup>, II 3<sup>↑</sup>. Accidentals: -40, -13, +49.

Staff IV: Bass clef, eighth notes, ledger lines below. Fingerings: II 5<sup>↑</sup>, I 5<sup>↓</sup>, III 5<sup>↓</sup>, II 7<sup>↓</sup>, I 13<sup>↑</sup>, II 1<sup>↑</sup>, III 11<sup>↑</sup>. Accidentals: +33, +12, -38, -22, +39, +47, +0.

43

-20 +14 +49 -49 6 4

III 7↓ IV 5↓ III 1 IV 11↑

-2 -40 -5 +45 -41

IV 3↓ II 5↓ II 11↓ II 3↓ IV 13↓

52

2

-8 -47 -35 +20 +20

I 13↑ I 3↑ I 5↓ I 7↑

III 13↑ III 3↑ III 11↑ III 11↓

60

-49

IV 1

+49

IV 3↓

+36 +47 -47 -35 +9 -19 +36

II 5↑ II 3↓ IV 3↑ IV 5↓ II 13↓ II 7↓ II 5↑

+18 +6 -49

III 3↓ III 5↑ III 7↓

68

Measure 68: I (II 5<sup>↑</sup>), II (+49), III (+47, II 3<sup>↓</sup>), IV (+18, II 7<sup>↑</sup>).  
 Measure 69: I (+36, II 5<sup>↑</sup>), II (+49), III (-10, II 13<sup>↑</sup>), IV (+18, II 5<sup>↓</sup>).  
 Measure 70: I (+47, II 3<sup>↓</sup>), II (+49), III (+18, II 7<sup>↑</sup>), IV (-37, II 5<sup>↓</sup>).  
 Measure 71: I (+9, II 13<sup>↓</sup>), II (+49), III (-19, II 7<sup>↓</sup>), IV (-49, II 3<sup>↑</sup>).  
 Measure 72: I (-19, II 7<sup>↓</sup>), II (+38, IV 5<sup>↑</sup>), III (+47, II 3<sup>↓</sup>), IV (-49, IV 1<sup>↑</sup>).  
 Measure 73: I (-19, II 7<sup>↓</sup>), II (+11, IV 13<sup>↓</sup>), III (-49, IV 1<sup>↑</sup>), IV (-49, IV 1<sup>↑</sup>).  
 Measure 74: I (-19, II 7<sup>↓</sup>), II (+38, IV 5<sup>↑</sup>), III (+47, II 3<sup>↓</sup>), IV (-49, IV 1<sup>↑</sup>).  
 Measure 75: I (-19, II 7<sup>↓</sup>), II (+11, IV 13<sup>↓</sup>), III (-49, IV 1<sup>↑</sup>), IV (-49, IV 1<sup>↑</sup>).

76

Measure 76: I (-19, II 7<sup>↓</sup>), II (+3, IV 11<sup>↑</sup>), III (-19, II 7<sup>↓</sup>), IV (-21, I 3<sup>↓</sup>).  
 Measure 77: I (-19, II 7<sup>↓</sup>), II (-6, I 5<sup>↓</sup>), III (-19, II 7<sup>↓</sup>), IV (-18, III 7<sup>↓</sup>).  
 Measure 78: I (-19, II 7<sup>↓</sup>), II (+21, I 13<sup>↑</sup>), III (-19, II 7<sup>↓</sup>), IV (-18, III 7<sup>↓</sup>).  
 Measure 79: I (-19, II 7<sup>↓</sup>), II (+49, IV 3<sup>↓</sup>), III (-19, II 7<sup>↓</sup>), IV (-20, II 7<sup>↑</sup>).  
 Measure 80: I (-19, II 7<sup>↓</sup>), II (+11, IV 13<sup>↓</sup>), III (-19, II 7<sup>↓</sup>), IV (+29, I 11<sup>↓</sup>).  
 Measure 81: I (-19, II 7<sup>↓</sup>), II (+49, III 3<sup>↓</sup>), III (-19, II 7<sup>↓</sup>), IV (+29, I 11<sup>↓</sup>).  
 Measure 82: I (-19, II 7<sup>↓</sup>), II (+49, III 3<sup>↓</sup>), III (-19, II 7<sup>↓</sup>), IV (+29, I 11<sup>↓</sup>).

83

Measure 83: I (2), II (2), III (2), IV (+32, I 11<sup>↑</sup>).  
 Measure 84: I (2), II (2), III (2), IV (-10, II 13<sup>↑</sup>).  
 Measure 85: I (2), II (2), III (2), IV (-37, II 5<sup>↓</sup>).  
 Measure 86: I (2), II (2), III (2), IV (-49, III 1<sup>↑</sup>).  
 Measure 87: I (2), II (2), III (2), IV (-21, I 3<sup>↓</sup>).  
 Measure 88: I (2), II (2), III (2), IV (+29, I 11<sup>↓</sup>).  
 Measure 89: I (2), II (2), III (2), IV (+29, I 11<sup>↓</sup>).  
 Measure 90: I (-19, II 7<sup>↓</sup>), II (-33, I 5<sup>↑</sup>), III (+49, I 7<sup>↑</sup>), IV (-33, I 5<sup>↑</sup>).

93

Measure 93: I  $+12$   $IV 7 \downarrow$

Measure 94: II  $+32$   $-18$   $-6$   $+32$   $+29$   $+21$   $-6$

Measure 95: III  $-18$   $+21$   $-6$   $+49$   $+21$   $-6$   $-18$

Measure 96: IV  $-19$   $I 1$

Measure 97: I  $I 11 \uparrow$   $I 3 \uparrow$   $I 5 \downarrow$   $IV 11 \uparrow$   $IV 11 \downarrow$   $IV 13 \uparrow$   $III 1$

Measure 98: II  $I 3 \uparrow$   $I 13 \uparrow$   $I 5 \downarrow$   $IV 7 \uparrow$   $IV 13 \uparrow$   $IV 5 \downarrow$   $IV 3 \uparrow$

Measure 99: I  $I 1$

Measure 100: I  $I 1$

101

Measure 101: I  $+12$   $IV 7 \downarrow$   $2$   $-18$   $IV 3 \uparrow$

Measure 102: II  $+49$   $-19$   $+19$   $+12$   $+40$   $IV 13 \downarrow$

Measure 103: III  $+25$   $+46$   $-8$   $-33$   $-21$

Measure 104: IV  $-19$

Measure 105: I  $IV 7 \uparrow$   $IV 1$   $III 13 \uparrow$   $I 1$

Measure 106: II  $II 7 \downarrow$   $II 11 \uparrow$   $II 3 \downarrow$   $IV 5 \uparrow$   $IV 3 \downarrow$

Measure 107: I  $IV 7 \uparrow$   $IV 3 \uparrow$

Measure 108: I  $IV 13 \downarrow$

109

Measure 109: I  $+29$   $+32$   $-33$   $+12$   $+49$   $-18$

Measure 110: II  $+32$   $-4$   $+31$   $+19$

Measure 111: III  $-21$   $IV 3 \downarrow$

Measure 112: IV  $IV 11 \downarrow$   $IV 11 \uparrow$   $IV 5 \uparrow$   $IV 7 \downarrow$   $IV 7 \uparrow$   $IV 3 \uparrow$

Measure 113: I  $IV 11 \uparrow$   $I 5 \downarrow$   $I 11 \downarrow$   $III 13 \uparrow$

Measure 114: II  $IV 11 \uparrow$   $I 5 \downarrow$   $I 11 \downarrow$   $III 13 \uparrow$

Measure 115: III  $IV 3 \downarrow$

Measure 116: IV  $IV 3 \downarrow$

116

IV 5↓ III 13↓

+42 1 13↓ -18 IV 3↑

-21

-19

126

III 3↓ III 11↑

+10 III 7↓

-21

-19

137

III 11↓ IV 1

+38 III 13↓

-21

-19



148

III 5↓ IV 7↓

IV 5↓

III 5↓

III 13↑ III 3↑

III 7↓ III 5↑

II 3↓

158

III 13↑ III 3↑

III 7↓ III 5↑

II 3↓

167

IV 1 IV 7↑

IV 5↓

II 13↑ II 3↑ IV 13↓

II 5↑ II 7↓

179

IV 3↑

IV 5↑ IV 3↓

IV 11↓ IV 5↓

-4

184

I 13↑ II 7↑ IV 13↓ II 3↑ I 11↑

194

IV 7↑ IV 13↑

IV 11↑ III 7↓

I 11↑ II 5↓

II 3↑

203

II +42  
I 3↑

III +49  
II 3↑

IV +39 I 3↓ +42 II 1 -8 I 11↑ -19 III 7↓

211

I +41

II -46 I 5↓ -49 III 3↑ +1 IV 11↑

III +49

IV +49 III 1

219

I +41 +41

II -11 I 11↓ +36 III 5↑ +47 IV 3↓ +39 I 3↓

III +49

IV +49 III 1 +18 III 7↑

228

III 13 $\downarrow$  IV 3 $\uparrow$  I 13 $\downarrow$  III 5 $\uparrow$  IV 3 $\downarrow$  III 1 III 13 $\uparrow$  III 1 III 7 $\uparrow$  III 5 $\downarrow$

236

I 7 $\uparrow$  III 11 $\downarrow$  IV 3 $\downarrow$  III 13 $\downarrow$  III 1 III 7 $\uparrow$  III 5 $\downarrow$

245

I 5 $\downarrow$  III 11 $\uparrow$  I 5 $\downarrow$  III 3 $\downarrow$  III 3 $\uparrow$  III 13 $\uparrow$  III 7 $\uparrow$  III 1 III 7 $\uparrow$  III 13 $\uparrow$  III 11 $\downarrow$

(254)

Staff I:  $\text{III } 1$ ,  $\text{IV } 1$ ,  $\text{III } 1$

Staff II:  $\text{IV } 3 \downarrow$ ,  $\text{IV } 7 \uparrow$ ,  $\text{IV } 11 \uparrow$ ,  $\text{IV } 13 \uparrow$

Staff III:  $\text{IV } 7 \downarrow$ ,  $\text{IV } 1$ ,  $\text{IV } 5 \uparrow$ ,  $\text{IV } 1$

Staff IV:  $-2$ ,  $+39$ ,  $+0$ ,  $+39$ ,  $-33$

Staff IV fingerings:  $\text{III } 13 \uparrow$ ,  $\text{III } 3 \uparrow$ ,  $\text{III } 13 \uparrow$ ,  $\text{III } 7 \uparrow$

(261)

Staff I:  $\text{IV } 3 \uparrow$ ,  $\text{IV } 13 \downarrow$ ,  $\text{II } 7 \uparrow$ ,  $\text{II } 11 \uparrow$ ,  $\text{II } 1$

Staff II:  $\text{IV } 7 \uparrow$

Staff III:  $\text{IV } 5 \uparrow$ ,  $\text{IV } 13 \downarrow$ ,  $\text{II } 1$ ,  $\text{IV } 11 \uparrow$ ,  $\text{IV } 3 \downarrow$ ,  $\text{II } 13 \uparrow$ ,  $\text{II } 7 \uparrow$ ,  $\text{II } 5 \uparrow$

Staff IV:  $+38$ ,  $+36$

Staff IV fingerings:  $\text{II } 3 \uparrow$ ,  $\text{II } 1$

# seeds and ledgers 2

for cat lamb

michael winter  
(berlin; 2023)

First system of the musical score, measures 1-6. The score is for four staves (I, II, III, IV) in 2/2 time. Staff I (treble clef) has notes with intervals +0, -14, -41, and +6. Staff II (treble clef) has notes with intervals -14, -41, and -2. Staff III (bass clef) has notes with intervals +49, +2, and +14. Staff IV (bass clef) has a whole note with interval +0. Roman numerals IV 1, IV 5↑, IV 13↓, IV 1, IV 5↑, IV 13↓ are present.

Second system of the musical score, measures 7-12. Measure 7 is marked with a circled 12. Staff I has notes with intervals +0, -14, -41, and +16. Staff II has notes with intervals -14, -41, and -2. Staff III has notes with intervals +46, +29, +49, +2, and +14. Staff IV has notes with intervals -27, +47, and +0. Roman numerals IV 1, IV 5↑, IV 13↓, III 3↑, IV 5↑, IV 13↓, IV 3↓, I 5↑, II 7↓, IV 11↓, IV 3↑, IV 5↓, I 5↓, II 11↓, and < II 3↑ are present.

Third system of the musical score, measures 13-18. Measure 13 is marked with a circled 23. Staff I has notes with intervals +16 and +2. Staff II has notes with intervals +47, -25, +14, +2, +16, and -16. Staff III has notes with intervals -16, -36, and +18. Staff IV has a whole note with interval -44. Roman numerals I 7↓, I 13↓, I 3↓, I 5↑, I 1, I 7↑, II 5↑, I 11↓, I 3↑, and I 13↑ are present.

35

+44 2 -29 2 -17 +36 2 +33 -14 -2 2

II 13↓ II 5↑ II 3↓ II 11↑ II 11↓ II 3↑ II 5↓

45

+25 -47 2 +44 2 -17 4 +20 2 +31

II 13↑ II 7↑ II 13↓ II 3↓ III 3↑ IV 5↓

IV 13↓

7 +18 II 1

-47 +18 II 7↑ III 1

55

-42 -14 2 2 4 2

IV 13↑ IV 7↑

+16 IV 3↓

+46 -27 -16 +38

I 13↓ I 5↑ I 3↓ I 11↑

66

IV 5<sup>↑</sup>

IV 1

IV 11<sup>↓</sup>

I 11<sup>↓</sup> I 3<sup>↑</sup> I 13<sup>↑</sup> I 5<sup>↓</sup> I 3<sup>↑</sup>

77

IV 13<sup>↓</sup> IV 7<sup>↑</sup> IV 7<sup>↑</sup> IV 13<sup>↑</sup> IV 3<sup>↑</sup> IV 5<sup>↓</sup> IV 1

IV 3<sup>↓</sup> IV 3<sup>↓</sup>

IV 3<sup>↑</sup>

87

II 5<sup>↓</sup> III 1 III 13<sup>↑</sup>

III 1

II 7<sup>↓</sup> IV 1 II 11<sup>↑</sup>

II 5<sup>↓</sup> II 13<sup>↑</sup> III 3<sup>↑</sup> III 11<sup>↓</sup>



(96)

III 13↓ III 7↓ III 5↑

III 13↑

II 3↓ I 13↑ I 5↓ IV 1

II 11↑ III 1 II 5↑ III 7↑ I 13↑ I 3↑ I 11↓ I 11↑ III 7↑

(102)

IV 1 III 13↑ II 1 IV 1 IV 1 II 11↑

III 5↓ III 3↑

II 5↑ II 13↓ II 5↑

III 11↓ II 3↑ II 11↓ I 1 II 3↓ III 1

(108)

III 13↓ III 5↑ III 3↓ III 11↑ IV 11↓

III 3↑ III 5↓ III 13↑ III 7↑ III 3↑ III 5↓

II 3↓ I 1 IV 1

II 7↓ < II 1

119

Interval numbers and directions for system 119:

- Staff I: +18 (IV 3<sup>↑</sup>), +29 (IV 5<sup>↓</sup>), +16 (IV 1), -44 (IV 13<sup>↑</sup>), -15 (IV 7<sup>↑</sup>), +16 (IV 1)
- Staff II: -25 (IV 13<sup>↓</sup>), +14 (IV 3<sup>↓</sup>), +2 (IV 5<sup>↑</sup>), +14 (IV 3<sup>↓</sup>), -33 (IV 11<sup>↑</sup>), -36 (IV 11<sup>↓</sup>)
- Staff III: +2 (IV 5<sup>↑</sup>), -25 (IV 13<sup>↓</sup>), +18 (IV 3<sup>↑</sup>), +29 (IV 5<sup>↓</sup>), -25 (IV 13<sup>↓</sup>), +2 (IV 5<sup>↑</sup>)
- Staff IV: +16

127

Interval numbers and directions for system 127:

- Staff I: +16 (IV 1), -44 (IV 13<sup>↑</sup>), -15 (IV 7<sup>↑</sup>), +16 (IV 1), +2 (IV 5<sup>↑</sup>)
- Staff II: +2 (IV 5<sup>↑</sup>), +14 (IV 3<sup>↓</sup>), -33 (IV 11<sup>↑</sup>), -36 (IV 11<sup>↓</sup>), +18 (IV 3<sup>↑</sup>)
- Staff III: +18 (IV 3<sup>↑</sup>), +29 (IV 5<sup>↓</sup>), -25 (IV 13<sup>↓</sup>), +2 (IV 5<sup>↑</sup>), +14 (IV 3<sup>↓</sup>)
- Staff IV: +16

140

Interval numbers and directions for system 140:

- Staff I: +14 (IV 3<sup>↓</sup>), -33 (IV 11<sup>↑</sup>), -36 (IV 11<sup>↓</sup>)
- Staff II: -44 (IV 13<sup>↑</sup>), +14 (IV 3<sup>↓</sup>), -33 (I 1)
- Staff III: +29 (IV 5<sup>↓</sup>), -15 (IV 7<sup>↑</sup>), +2 (IV 5<sup>↑</sup>)
- Staff IV: +16

151

Interval markings for measures 151-158:

- Staff I: +18, -44, -15
- Staff II: -36, +47, -25
- Staff III: -25, +14, -33
- Staff IV: (no markings)

159

Interval markings for measures 159-166:

- Staff I: +16, +18, -36, +14
- Staff II: +14, -33, +2, +14
- Staff III: -36, +2, -25, +29
- Staff IV: +16

172

Interval markings for measures 172-179:

- Staff I: +18, -36, +14, +2, -25
- Staff II: -33, +2, +14, +47, +16
- Staff III: +2, -25, +29, -44, -15
- Staff IV: +16

# seeds and ledgers 3

for irasema fernandez

michael winter  
(berlin; 2023-24)

The musical score is written for five voices (I, II, III, IV, and V) across three systems. Each voice part is represented by a staff with a specific clef and key signature. The notation includes pitch bends (indicated by numbers above or below the notes) and fingerings (indicated by numbers 1-5 above or below the notes). The score is divided into three systems, with the fifth voice (V) starting at measure 15.

**System 1 (Measures 1-8):**

- Voice I:** Treble clef, key of D major. Notes: D4 (+0), E4 (+2), F#4 (+6), G#4 (-31), A4 (+0), B4 (-2), C5 (+2), D5 (-31). Fingerings: II 1, IV 3↑, III 7↑, II 1, IV 3↓, IV 1, IV 7↑.
- Voice II:** Treble clef, key of D major. Notes: E4 (+2), F#4 (+6), G#4 (+0), A4 (+2), B4 (+0), C5 (-2), D5 (+0), E5 (+2). Fingerings: IV 3↑, I 1, III 1, III 1, IV 3↑, IV 1, III 1, IV 3↑.
- Voice III:** Bass clef, key of D major. Notes: D4 (+0), E4 (+2), F#4 (+14), G#4 (+0), A4 (+0). Fingerings: IV 3↓, IV 5↓, II 1, IV 3↑.
- Voice IV:** Bass clef, key of D major. Notes: D4 (+0), E4 (+4), F#4 (+0), G#4 (-2), A4 (+2), B4 (-2), C5 (+0). Fingerings: II 3↑, II 1, I 1, III 3↑, III 3↓, III 1.

**System 2 (Measures 9-14):**

- Voice I:** Treble clef, key of D major. Notes: D4 (+0), E4 (-12), F#4 (-10), G#4 (+17), A4 (-27), B4 (-12), C5 (-10), D5 (-23). Fingerings: IV 1, IV 5↑, IV 1, III 7↓, III 5↑, II 1, III 1, III 5↑.
- Voice II:** Treble clef, key of D major. Notes: E4 (-12), F#4 (-12), G#4 (-8), A4 (+4). Fingerings: I 1, IV 3↓, III 3↑, IV 1.
- Voice III:** Bass clef, key of D major. Notes: D4 (+2), E4 (+4), F#4 (-10), G#4 (+2), A4 (-14), B4 (-10). Fingerings: II 1, II 3↑, I 3↑, II 1, IV 3↓, IV 3↑.
- Voice IV:** Bass clef, key of D major. Notes: D4 (+0), E4 (-2), F#4 (+2), G#4 (-10), A4 (-45), B4 (-12), C5 (-14), D5 (-10), E5 (-12), F#5 (+4). Fingerings: III 1, I 3↓, II 1, III 5↑, III 11↑, I 1, III 1, II 3↑, II 1, III 5↓.

**System 3 (Measures 15-21):**

- Voice I:** Treble clef, key of D major. Notes: D4 (-8), E4 (-20), F#4 (-10), G#4 (-8), A4 (+42), B4 (+10), C5 (-36), D5 (-21). Fingerings: IV 3↑, IV 5↑, III 1, III 11↓, III 3↓, III 1, II 5↑, II 1.
- Voice II:** Treble clef, key of D major. Notes: E4 (-22), F#4 (+42), G#4 (-10), A4 (-45), B4 (+10), C5 (-23), D5 (-34). Fingerings: I 5↑, III 11↑, I 1, IV 5↓, I 1, IV 7↑, III 5↑.
- Voice III:** Bass clef, key of D major. Notes: D4 (+43), E4 (+10), F#4 (+42), G#4 (-21). Fingerings: IV 11↑, IV 7↑, IV 1, II 3↑.
- Voice IV:** Bass clef, key of D major. Notes: D4 (-10), E4 (-6), F#4 (-23), G#4 (-8), A4 (+30), B4 (+42), C5 (+8), D5 (-38), E5 (-36). Fingerings: III 1, I 3↑, III 5↑, III 3↑, III 5↑, I 1, II 3↓, I 3↓, I 1.

(22)

System 1 (Measures 22-28):

- Staff I:** -38 (III<sup>1</sup>), -36 (III<sup>3↑</sup>), +50 (IV<sup>5↑</sup>), -38 (IV<sup>3↓</sup>), -36 (IV<sup>3↓</sup>), -21 (III<sup>1</sup>), +26 (IV<sup>11↓</sup>), -23 (II<sup>1</sup>).
- Staff II:** -23 (IV<sup>5↓</sup>), -38 (IV<sup>1</sup>), -34 (III<sup>1</sup>), -36 (IV<sup>1</sup>), -34 (IV<sup>3↑</sup>), -23 (III<sup>5↓</sup>).
- Staff III:** -38 (IV<sup>3↓</sup>), -34 (IV<sup>3↑</sup>), +32 (IV<sup>7↑</sup>), -36 (IV<sup>1</sup>), -36 (IV<sup>3↓</sup>), -21 (II<sup>3↑</sup>), -36 (IV<sup>3↓</sup>), +46 (II<sup>7↑</sup>), -34 (IV<sup>5↑</sup>).
- Staff IV:** -38 (III<sup>1</sup>), -36 (I<sup>1</sup>), -34 (II<sup>1</sup>), -23 (II<sup>1</sup>), -21 (II<sup>3↑</sup>).

(29)

System 2 (Measures 29-35):

- Staff I:** -36 (III<sup>3↓</sup>), -33 (IV<sup>3↑</sup>), -21 (IV<sup>5↓</sup>), -34 (II<sup>1</sup>), -21 (IV<sup>3↑</sup>), -19 (IV<sup>3↑</sup>), -36 (II<sup>3↓</sup>), -33 (III<sup>7↓</sup>), +10 (IV<sup>5↑</sup>), -23 (III<sup>3↓</sup>).
- Staff II:** -34 (I<sup>3↑</sup>), -33 (IV<sup>5↑</sup>), -9 (I<sup>5↓</sup>).
- Staff III:** +50 (I<sup>5↑</sup>), -19 (I<sup>5↓</sup>), -33 (I<sup>1</sup>), -23 (I<sup>3↓</sup>), -21 (IV<sup>1</sup>), +46 (I<sup>7↑</sup>).
- Staff IV:** -38 (I<sup>3↓</sup>), -34 (II<sup>1</sup>), -21 (I<sup>1</sup>), -19 (III<sup>5↓</sup>), +34 (II<sup>7↑</sup>), -23 (III<sup>1</sup>), -21 (I<sup>1</sup>), -19 (I<sup>1</sup>), -25 (I<sup>3↓</sup>).

(36)

System 3 (Measures 36-42):

- Staff I:** -25 (IV<sup>1</sup>), -50 (II<sup>13↓</sup>), -21 (IV<sup>1</sup>), -34 (IV<sup>1</sup>), -46 (III<sup>3↑</sup>), -11 (IV<sup>7↑</sup>), -11 (III<sup>3↓</sup>), -31 (IV<sup>11↓</sup>), +3 (III<sup>7↓</sup>).
- Staff II:** -34 (IV<sup>5↑</sup>), -8 (III<sup>13↑</sup>), -15 (I<sup>7↓</sup>), -20 (IV<sup>13↓</sup>), -9 (I<sup>3↑</sup>), +19 (IV<sup>3↓</sup>), -28 (III<sup>1</sup>).
- Staff III:** -23 (IV<sup>3↑</sup>), -23 (IV<sup>3↓</sup>), -48 (II<sup>5↑</sup>), +34 (IV<sup>5↓</sup>), +7 (IV<sup>5↑</sup>), -28 (IV<sup>11↑</sup>).
- Staff IV:** -23 (III<sup>1</sup>), -21 (III<sup>3↑</sup>), -34 (II<sup>1</sup>), -33 (II<sup>3↑</sup>), +21 (III<sup>7↑</sup>), +41 (III<sup>7↑</sup>).

(43)

Measure 43: I (IV 5<sup>↑</sup>), II (+1, I 3<sup>↓</sup>), III (+3, I 1), IV (+17, I 5<sup>↓</sup>).  
 Measure 44: I (-31), II (+34, III 7<sup>↓</sup>), III (+0, I 7<sup>↓</sup>), IV (+44, III 13<sup>↑</sup>).  
 Measure 45: I (-37, III 11<sup>↑</sup>), II (-37, III 13<sup>↓</sup>), III (+11, II 13<sup>↓</sup>), IV (-17, II 11<sup>↓</sup>).  
 Measure 46: I (-23, III 1), II (+38, I 7<sup>↑</sup>), III (-23, II 3<sup>↓</sup>), IV (+38, II 1).  
 Measure 47: I (+5, II 7<sup>↑</sup>), II (-48, IV 5<sup>↓</sup>), III (+5, II 13<sup>↓</sup>), IV (-35, II 5<sup>↑</sup>).  
 Measure 48: I (+36, III 13<sup>↓</sup>), II (-21, IV 13<sup>↑</sup>), III (-23, II 3<sup>↓</sup>), IV (-26, I 7<sup>↑</sup>).  
 Measure 49: I (+36, III 13<sup>↓</sup>), II (-37, IV 3<sup>↓</sup>), III (+5, II 13<sup>↓</sup>), IV (-21, III 3<sup>↑</sup>).

(50)

Measure 50: I (+12, III 11<sup>↓</sup>), II (-23, I 13<sup>↑</sup>), III (-6, II 11<sup>↓</sup>), IV (+44, II 3<sup>↓</sup>).  
 Measure 51: I (+1, II 11<sup>↓</sup>), II (-48, I 13<sup>↑</sup>), III (-33, I 7<sup>↓</sup>), IV (+36, I 1).  
 Measure 52: I (-46, III 3<sup>↑</sup>), II (-19, IV 3<sup>↓</sup>), III (-37, II 5<sup>↑</sup>), IV (+17, II 13<sup>↑</sup>).  
 Measure 53: I (-7, II 13<sup>↑</sup>), II (-48, I 13<sup>↓</sup>), III (+25, II 11<sup>↓</sup>), IV (-34, II 5<sup>↓</sup>).  
 Measure 54: I (-15, IV 1), II (-19, IV 3<sup>↓</sup>), III (+1, II 11<sup>↓</sup>), IV (+10, I 3<sup>↓</sup>).  
 Measure 55: I (-17, IV 3<sup>↑</sup>), II (-48, II 1), III (-29, I 13<sup>↓</sup>), IV (+14, I 3<sup>↑</sup>).  
 Measure 56: I (-46, I 1), II (-34, II 5<sup>↓</sup>), III (-7, II 13<sup>↑</sup>), IV (-17, II 7<sup>↓</sup>).

(57)

Measure 57: I (-15, IV 3<sup>↑</sup>), II (-15, IV 3<sup>↑</sup>), III (-15, II 1), IV (+37, II 11<sup>↑</sup>).  
 Measure 58: I (+35, IV 3<sup>↓</sup>), II (-30, IV 5<sup>↑</sup>), III (-3, IV 5<sup>↓</sup>), IV (-15, III 5<sup>↑</sup>).  
 Measure 59: I (+28, II 7<sup>↓</sup>), II (-15, I 1), III (-1, II 5<sup>↓</sup>), IV (-50, III 11<sup>↑</sup>).  
 Measure 60: I (+30, III 7<sup>↓</sup>), II (-3, III 3<sup>↓</sup>), III (-48, IV 3<sup>↑</sup>), IV (-15, III 5<sup>↑</sup>).  
 Measure 61: I (+19, IV 7<sup>↑</sup>), II (+1, III 3<sup>↑</sup>), III (-9, IV 13<sup>↑</sup>), IV (-50, III 3<sup>↑</sup>).  
 Measure 62: I (+19, IV 7<sup>↑</sup>), II (-9, III 1), III (+19, I 1), IV (-46, III 7<sup>↓</sup>).  
 Measure 63: I (+21, III 7<sup>↑</sup>), II (-48, III 1), III (-50, III 3<sup>↓</sup>), IV (-17, III 7<sup>↓</sup>).

64

System 1 (Measures 64-69):

- Staff I:** Notes at measures 64, 65, 66, 67, 68, 69. Fingerings: IV 3<sup>↑</sup>, III 3<sup>↑</sup>, IV 5<sup>↑</sup>, III 5<sup>↑</sup>, III 1.
- Staff II:** Notes at measures 64, 65, 66, 67, 68, 69. Fingerings: III 3<sup>↓</sup>, I 3<sup>↑</sup>, III 3<sup>↓</sup>, III 5<sup>↓</sup>, I 1, I 1, IV 3<sup>↓</sup>, III 3<sup>↑</sup>.
- Staff III:** Notes at measures 64, 65, 66, 67, 68, 69. Fingerings: I 3<sup>↑</sup>, I 1, IV 3<sup>↓</sup>, IV 7<sup>↓</sup>, II 5<sup>↓</sup>, II 3<sup>↑</sup>, I 13<sup>↑</sup>, II 3<sup>↑</sup>.
- Staff IV:** Notes at measures 64, 65, 66, 67, 68, 69. Fingerings: III 1, II 1, I 3<sup>↑</sup>, II 1, III 5<sup>↑</sup>, III 7<sup>↓</sup>, II 1.

71

System 2 (Measures 70-75):

- Staff I:** Notes at measures 70, 71, 72, 73, 74, 75. Fingerings: IV 7<sup>↓</sup>, IV 7<sup>↑</sup>, II 5<sup>↑</sup>, II 7<sup>↑</sup>, IV 3<sup>↑</sup>, IV 11<sup>↓</sup>, III 3<sup>↓</sup>.
- Staff II:** Notes at measures 70, 71, 72, 73, 74, 75. Fingerings: III 7<sup>↑</sup>, III 7<sup>↓</sup>, III 7<sup>↑</sup>, IV 5<sup>↓</sup>, IV 3<sup>↑</sup>, I 13<sup>↓</sup>, III 11<sup>↓</sup>, I 7<sup>↑</sup>.
- Staff III:** Notes at measures 70, 71, 72, 73, 74, 75. Fingerings: II 1, IV 11<sup>↓</sup>, I 5<sup>↑</sup>, II 3<sup>↓</sup>, II 5<sup>↓</sup>, II 7<sup>↓</sup>, IV 7<sup>↑</sup>.
- Staff IV:** Notes at measures 70, 71, 72, 73, 74, 75. Fingerings: III 3<sup>↑</sup>, I 1, III 1, II 7<sup>↓</sup>, III 1, II 7<sup>↑</sup>.

78

System 3 (Measures 76-81):

- Staff I:** Notes at measures 76, 77, 78, 79, 80, 81. Fingerings: IV 3<sup>↓</sup>, IV 1, IV 3<sup>↑</sup>, III 1, III 3<sup>↑</sup>, III 1.
- Staff II:** Notes at measures 76, 77, 78, 79, 80, 81. Fingerings: IV 5<sup>↓</sup>, IV 5<sup>↓</sup>, I 5<sup>↑</sup>, IV 1, IV 7<sup>↓</sup>, I 3<sup>↑</sup>.
- Staff III:** Notes at measures 76, 77, 78, 79, 80, 81. Fingerings: I 11<sup>↓</sup>, IV 11<sup>↓</sup>, II 3<sup>↓</sup>, IV 7<sup>↑</sup>, I 7<sup>↑</sup>.
- Staff IV:** Notes at measures 76, 77, 78, 79, 80, 81. Fingerings: III 1, III 3<sup>↑</sup>, III 11<sup>↑</sup>, III 7<sup>↑</sup>, III 11<sup>↓</sup>, I 1, III 7<sup>↓</sup>, III 5<sup>↓</sup>, II 11<sup>↓</sup>, III 3<sup>↓</sup>, III 7<sup>↑</sup>.

85

+50 +1 +3 +36 -15

IV<sup>11</sup>↓ IV<sup>1</sup> IV<sup>1</sup> III<sup>1</sup> IV<sup>11</sup>↓

-48 +3 +5 -48 +5 +34

IV<sup>11</sup>↑ IV<sup>1</sup> IV<sup>3</sup>↑ III<sup>11</sup>↑ IV<sup>3</sup>↑ I<sup>7</sup>↓

+50 +1 -28 +5 +1 +36 +34 -17

I<sup>1</sup> IV<sup>1</sup> IV<sup>7</sup>↑ II<sup>1</sup> IV<sup>1</sup> IV<sup>3</sup>↑ II<sup>1</sup> II<sup>11</sup>↓

+3 +1 +17 +34 +32 +36 -35 +36 -15

III<sup>3</sup>↑ I<sup>3</sup>↓ I<sup>5</sup>↓ II<sup>1</sup> II<sup>3</sup>↓ III<sup>1</sup> III<sup>7</sup>↓ I<sup>1</sup> I<sup>1</sup>

92

-27 +2 -29 +4

III<sup>3</sup>↑ III<sup>7</sup>↓ IV<sup>5</sup>↑ IV<sup>3</sup>↑

-17 -31 -29 -29 -31 +16 -42 -29

IV<sup>3</sup>↓ IV<sup>5</sup>↑ III<sup>1</sup> IV<sup>5</sup>↑ III<sup>7</sup>↑ IV<sup>7</sup>↓ I<sup>5</sup>↑ I<sup>1</sup>

-13 -29 -29 +0 -15 +2

IV<sup>3</sup>↑ IV<sup>5</sup>↑ IV<sup>5</sup>↑ I<sup>3</sup>↓ IV<sup>1</sup> II<sup>5</sup>↑

-17 -15 -15 -15 +2 +0

II<sup>1</sup> III<sup>5</sup>↓ III<sup>5</sup>↓ III<sup>1</sup> III<sup>1</sup> III<sup>3</sup>↓

98

+0 -13 +28 -5 +24 +28

IV<sup>1</sup> IV<sup>5</sup>↑ II<sup>5</sup>↓ II<sup>7</sup>↑ II<sup>3</sup>↓ IV<sup>1</sup>

+2 -49 +14 +41 +30 +14 +26

III<sup>1</sup> III<sup>11</sup>↓ IV<sup>5</sup>↓ IV<sup>13</sup>↑ IV<sup>3</sup>↑ I<sup>5</sup>↑ IV<sup>5</sup>↓

+0 -41 -13 +12 +14 -23 -43

IV<sup>1</sup> IV<sup>7</sup>↓ I<sup>13</sup>↓ IV<sup>1</sup> IV<sup>3</sup>↑ II<sup>11</sup>↑ II<sup>7</sup>↓

+4 +0 +0 +28 -41 +12 +28

III<sup>3</sup>↑ I<sup>1</sup> III<sup>1</sup> I<sup>1</sup> III<sup>1</sup> II<sup>3</sup>↓ II<sup>3</sup>↑



105

-45 +40 -16 -27

II 7↑ IV 1 II 3↑

+26 -29

III 5↓

-43 -31 -27

II 3↓ II 3↑

+28 -45 -41 -2 -29 +6 +15 +24 -16 -27

I 1 III 3↑ III 13↑ III 5↓ III 11↓ I 13↓ I 7↑ II 5↓ II 3↑

115

-27 -27 -27 -16 -27 -16 +19

III 1 III 1 IV 5↓ IV 3↑ IV 5↓ IV 11↓

-29 -27 +4 -41 -29 -25 -14 -25 -41 -29 -25 -27 -41 -29 -43 -31 -14

III 1 III 5↑ III 3↑ I 3↑ IV 1 I 3↓ I 1 I 5↑ IV 1 IV 5↑ I 5↓ IV 3↓

III 7↓ III 5↑ I 5↓ IV 1 I 3↑ I 3↑ I 5↑ IV 1 IV 5↑ I 5↓ IV 3↓

-16 -27 +11 -27 -29 +21 -25 +24 -41 -29 -25 -43 +41 -39 -27 -16 +40 -29 -45 -29

IV 3↓ II 13↑ IV 1 I 3↓ I 3↑ I 5↑ I 3↑ I 3↑ IV 3↓ II 3↑ IV 5↓ IV 7↑ IV 1 II 7↑ IV 1

-27 -29 -27 +4 -41 +24 -25 -29

III 3↓ I 1 I 7↓ III 1 I 11↑ I 3↓ I 3↑

119

-16 -27 -29 -25 -14 +41 -25 +13 -25 +6 -39 -23 +15 -23 -12 -29

III 5↓ III 3↑ < III 1 II 3↑ IV 7↑ IV 13↑ III 7↓ IV 1 IV 1 III 5↓ IV 3↓

IV 5↓ IV 3↑ III 1 IV 5↓ IV 3↑ III 1

+2 -43 -31 -43 -25 -14 +41 -27 -23 -12 +43 +15 -27 -39 +17 -21 +34 +26 -23 +32

III 7↓ III 3↓ IV 5↑ < I 3↑ IV 7↑ III 3↑ III 7↑ III 3↓ III 5↑ IV 13↑ III 13↓ III 3↑

III 5↑ III 3↑ III 5↓ III 13↑ IV 3↑ III 11↑ IV 13↓

-27 -25 +13

< I 1 II 1 I 1 IV 13↑

-16 -27 +19 -31 -29 -41 -29 +21 -27 -27 -23 -12 -23 -12 +26 -27

III 5↓ III 11↓ III 1 I 5↑ III 1 I 11↓ < I 1 II 1 III 3↑ III 5↓ III 3↑ III 5↓ III 11↑

123

Measure numbers: -25 -14 +21, +19 -31 -27 -16, -29 -18 +38, -29 -41 -25 -29, -16 -33 -29 -18 +38 -31 +40, +38 -31, -41 +35 +23 -27 -29, -18 +38 -14 -31, +24 +36 +40 +36 +40, +19 -31 -29 +2 -43 -27 -16 +40, -31 +24 +38 +40.

Fingering/Articulation: IV 3<sup>↑</sup> IV 5<sup>↓</sup> IV 11<sup>↓</sup>, II 11<sup>↓</sup> II 3<sup>↑</sup> IV 1, < II 1 III 5<sup>↓</sup> IV 7<sup>↑</sup>, IV 3<sup>↓</sup> IV 5<sup>↑</sup> IV 3<sup>↑</sup> IV 3<sup>↓</sup>, < I 1 III 3<sup>↓</sup> I 1 IV 7<sup>↑</sup> IV 1 I 3<sup>↑</sup> I 1 I 7<sup>↓</sup>, IV 5<sup>↑</sup> I 5<sup>↓</sup> I 3<sup>↑</sup> II 3<sup>↑</sup> II 1, < I 3<sup>↓</sup> II 3<sup>↑</sup> IV 3<sup>↓</sup> I 3<sup>↓</sup> I 5<sup>↑</sup> II 1 IV 3<sup>↓</sup> I 3<sup>↓</sup> II 1, II 11<sup>↓</sup> III 1 III 5<sup>↑</sup> III 5<sup>↓</sup> III 7<sup>↑</sup>, II 3<sup>↓</sup> III 7<sup>↓</sup> I 1, III 1 I 5<sup>↑</sup> I 1 III 1.

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Measure numbers: +38 +6 -38, +38 +36 +24 +40, +40 -25 -11 +24 -23 -45 -37, -25 +30 -40 -37 -25 +30, +36 +24 +38 +26 +6, -22 +40 -49 -25, -37 +2 -37 -40 +48, -40 -37 -25 +30 +2 -37, +36 +24 -11, -11 +24 +48 -38 -40, +10 +30 -25.

Fingering/Articulation: III 7<sup>↓</sup> III 5<sup>↑</sup>, I 1 III 1 I 5<sup>↑</sup> I 3<sup>↑</sup>, I 5<sup>↑</sup> I 3<sup>↑</sup> III 1 IV 1 III 3<sup>↑</sup> I 3<sup>↑</sup> I 5<sup>↓</sup> IV 1 I 5<sup>↓</sup> I 7<sup>↑</sup>, I 7<sup>↑</sup> IV 1 I 3<sup>↑</sup>, I 3<sup>↓</sup> I 5<sup>↑</sup> II 5<sup>↑</sup> I 7<sup>↑</sup>, I 13<sup>↑</sup> I 5<sup>↓</sup> II 1 IV 5<sup>↑</sup>, I 13<sup>↑</sup> II 1 IV 3<sup>↓</sup> I 5<sup>↑</sup> IV 1 I 3<sup>↑</sup> I 7<sup>↑</sup> I 13<sup>↑</sup> I 3<sup>↑</sup>, III 3<sup>↓</sup> I 11<sup>↑</sup> I 5<sup>↑</sup>, III 11<sup>↓</sup> I 5<sup>↑</sup> I 1 I 3<sup>↓</sup> I 11<sup>↓</sup> I 5<sup>↓</sup>, III 1 I 5<sup>↓</sup>.

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Measure numbers: -25 -37 +13 -37 +2 +30, -38, -25 +10 +13 -37 +13 -37, -38, -25 +10 -40 +48 -40 -37, -40 +48 +13 -37 -25 -37 -38, -25 -37 +2 +30 -38 -10 +28, +30 -38 +8 -42 -38 -35 +21, -38, -25 -37 -25 +30 +44, -40 -37 -25 -5, +13 -37 -40 -38.

Fingering/Articulation: IV 1 II 3<sup>↑</sup> IV 1 II 13<sup>↑</sup> II 7<sup>↑</sup> II 11<sup>↑</sup>, < II 1, < I 5<sup>↓</sup> IV 1 III 3<sup>↑</sup> III 3<sup>↑</sup> III 11<sup>↓</sup> IV 1, < I 1, < II 5<sup>↓</sup> IV 1 III 5<sup>↑</sup> I 3<sup>↑</sup> I 11<sup>↓</sup> IV 1 III 5<sup>↑</sup> I 3<sup>↑</sup> IV 1, < I 3<sup>↓</sup> III 5<sup>↑</sup> IV 1 III 3<sup>↑</sup> III 5<sup>↓</sup> III 1, IV 1 IV 1 II 13<sup>↑</sup> II 1 I 13<sup>↓</sup> I 3<sup>↓</sup>, < I 1 I 1 IV 11<sup>↓</sup> I 1 II 3<sup>↑</sup> I 13<sup>↓</sup>, < I 1, II 3<sup>↑</sup> II 5<sup>↓</sup> I 5<sup>↓</sup>, < II 3<sup>↓</sup> I 3<sup>↑</sup> III 5<sup>↓</sup> II 7<sup>↓</sup>, < I 11<sup>↑</sup> I 1 III 3<sup>↓</sup> III 1.

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Staff I: -38, -40, +48, +13, -37. Intervals:  $< \text{III}^1$ ,  $< \text{I}^{3\downarrow}$ ,  $\text{IV}^5\uparrow$ ,  $\text{IV}^{11\uparrow}$ ,  $\text{IV}^3\uparrow$ .

Staff II: -37, +13, -7, +48, -40, -37, -25, +30, -38, -7, -40, +48, -38. Intervals:  $< \text{I}^1$ ,  $\text{IV}^{11\uparrow}$ ,  $\text{III}^1$ ,  $\text{I}^5\uparrow$ ,  $\text{I}^{3\downarrow}$ ,  $\text{I}^3\uparrow$ ,  $\text{I}^{5\downarrow}$ ,  $< \text{I}^{7\uparrow}$ ,  $\text{IV}^1$ ,  $\text{IV}^{7\downarrow}$ ,  $\text{I}^1$ ,  $\text{IV}^5\uparrow$ ,  $\text{IV}^1$ .

Staff III: -7, +48, -40, -21, -25, -40, -37, -25, +30, +46, -40, +48, +13, -37. Intervals:  $\text{IV}^{7\downarrow}$ ,  $\text{I}^5\uparrow$ ,  $\text{II}^1$ ,  $\text{IV}^5\uparrow$ ,  $\text{I}^{5\downarrow}$ ,  $\text{I}^{3\downarrow}$ ,  $\text{I}^3\uparrow$ ,  $< \text{II}^1$ ,  $\text{IV}^{7\uparrow}$ ,  $\text{I}^5\uparrow$ ,  $\text{I}^1$ ,  $\text{IV}^5\uparrow$ ,  $\text{IV}^{11\uparrow}$ ,  $\text{IV}^3\uparrow$ .

Staff IV: -38, -7, -38, -27, -38, -38. Intervals:  $\text{III}^1$ ,  $\text{I}^1$ ,  $\text{II}^{3\downarrow}$ ,  $\text{I}^1$ ,  $< \text{I}^1$ .

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Staff I: -38, -38. Intervals:  $< \text{IV}^1$ .

Staff II: -38, -37, -25, -40, -37, -38, -25, -40, +48, +13, -37, -25, +30. Intervals:  $< \text{II}^1$ ,  $\text{IV}^1$ ,  $\text{I}^{5\downarrow}$ ,  $\text{III}^1$ ,  $\text{III}^1$ ,  $\text{I}^1$ ,  $\text{IV}^1$ ,  $\text{I}^{3\downarrow}$ ,  $\text{I}^5\uparrow$ ,  $\text{I}^{11\uparrow}$ ,  $\text{IV}^1$ ,  $\text{I}^{5\downarrow}$ ,  $\text{I}^{7\uparrow}$ .

Staff III: -40, -37, -25, -38, -7, -11, -40, -37, -25, -38, -35, +48, -40, +21. Intervals:  $< \text{IV}^{3\downarrow}$ ,  $\text{IV}^1$ ,  $\text{IV}^1$ ,  $\text{II}^1$ ,  $\text{I}^{7\downarrow}$ ,  $\text{II}^{5\downarrow}$ ,  $\text{I}^{3\downarrow}$ ,  $\text{I}^3\uparrow$ ,  $\text{I}^{5\downarrow}$ ,  $\text{I}^1$ ,  $\text{IV}^3\uparrow$ ,  $\text{I}^5\uparrow$ ,  $\text{I}^{3\downarrow}$ ,  $\text{I}^{13\downarrow}$ .

Staff IV: -37, -25, -37, +2, -40, -37, -25, -1, -38. Intervals:  $< \text{III}^1$ ,  $\text{I}^{5\downarrow}$ ,  $\text{I}^3\uparrow$ ,  $\text{I}^{13\uparrow}$ ,  $\text{I}^3\uparrow$ ,  $\text{I}^3\uparrow$ ,  $\text{I}^{5\downarrow}$ ,  $\text{II}^{7\uparrow}$ ,  $\text{I}^1$ .

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Staff I: -38, +28, -40, +46, +11, -38, +0, +28, -40. Intervals:  $\text{III}^{7\uparrow}$ ,  $\text{IV}^1$ ,  $5\uparrow$ ,  $11\uparrow$ ,  $1$ ,  $13\uparrow$ ,  $7\uparrow$ ,  $1$ .

Staff II: +30, -38, +11, -42, +46, -9, -27, -38, -42, +46, +11, -38, +28, +0, -38, +11, +46, -37, -40. Intervals:  $\text{III}^3\uparrow$ ,  $\text{IV}^3\downarrow$ ,  $\text{IV}^5\uparrow$ ,  $\text{IV}^{7\downarrow}$ ,  $\text{I}^{5\downarrow}$ ,  $\text{IV}^3\uparrow$ ,  $\text{I}^{5\uparrow}$ ,  $\text{I}^{11\uparrow}$ ,  $\text{I}^{3\downarrow}$ ,  $\text{I}^3\uparrow$ ,  $7\uparrow$ ,  $13\uparrow$ ,  $3\uparrow$ ,  $11\uparrow$ ,  $5\uparrow$ ,  $3\uparrow$ ,  $\text{IV}^1$ .

Staff III: +13, -37, +10, -40, -9, +46, -42, +19, -40, -9, +46, -42, +46, -38. Intervals:  $\text{I}^{11\uparrow}$ ,  $\text{IV}^{11\downarrow}$ ,  $\text{IV}^3\uparrow$ ,  $\text{IV}^3\downarrow$ ,  $\text{I}^{7\downarrow}$ ,  $\text{I}^{5\uparrow}$ ,  $\text{I}^{3\downarrow}$ ,  $\text{I}^{13\downarrow}$ ,  $\text{III}^1$ ,  $\text{I}^{7\downarrow}$ ,  $\text{I}^{5\uparrow}$ ,  $\text{IV}^1$ ,  $\text{I}^{5\uparrow}$ .

Staff IV: -38, -40, +28, -40, -42, -38, -42, -38, -38, -40. Intervals:  $\text{III}^1$ ,  $\text{I}^{7\uparrow}$ ,  $\text{III}^1$ ,  $\text{I}^{3\downarrow}$ ,  $3\uparrow$ ,  $3\downarrow$ ,  $3\uparrow$ ,  $3\uparrow$ ,  $1$ .