

Fredrik Rasten

Murmurations

XVI - XX (2021)

Thoughts on instrumentation:

All the *Murmurations* hitherto are composed as solo performer pieces for a special adapted fretless guitar with movable bridges, played with three e-bows on one guitar. Different setups (one guitar, two guitars, acoustics, electrics, added voice etc.) are collected in different groups within the series of pieces.

However, these pieces can be realized by any instrumentation capable of producing the specified amount of sounding pitches and their respective registers (see 'pitch ranges' below).

A timbral similarity between the instruments (or voices) is favoured, but not a requirement.

For instance, a sextet of strings would work well (with the order of voices as in score):

- 1 - violin / viola
- 2 - violin / viola
- 3 - cello
- 4 - violin / viola
- 5 - violin / viola
- 6 - cello

Notes / Instructions:

For the succession of the pieces, each instrument's note starts off where it ended, so there is a harmonic continuity between the pieces. If more than one part is played, the order should generally be obtained.

However, one can also feel free to combine the parts as wanted.

There are no note values in the score, but for any of the voices, a note or pause lasts until it is succeeded by a new note or pause in the given voice.

Note durations are free / flexible, and the graphic spacing between notes is generally not a guide to the pace of the music, but merely showing the succession of the note or pause entries.

The music should unfold with a focus on stability of tuning, combined with a sense of melodic movement.

Each sonority should last long enough to be tuned and then perceived for a while in their "tuned state", but without the music ending up being too static - it should have a sense of forward movement. When a sonority is difficult to tune, take your time to adjust. The searching and fine tuning is an intrinsic musical and human part of this music.

As a general rule - more time should be spent *in* the intended, tuned sonority than in the searching / tuning process.

When a chain of change occurs within one part, the movement *can generally* be a little bit faster, like a melodic phrase.

The end of a note should primarily be followed by a little pause (a few seconds long) before starting the new note. However, glissandi between the notes, with or without a little pause between them, is a viable variation.

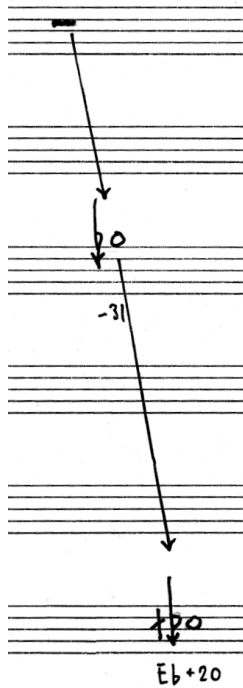
Cent deviations from 12-tone equal temperament are written under each note.

The accidentals belong to the Extended Helmholtz-Ellis JI pitch notation by Marc Sabat and Wolfgang von Schweinitz.

More information about the accidentals: <http://www.marcsabat.com/pdfs/notation.pdf>

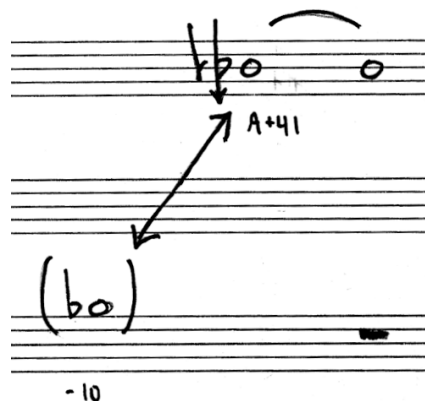
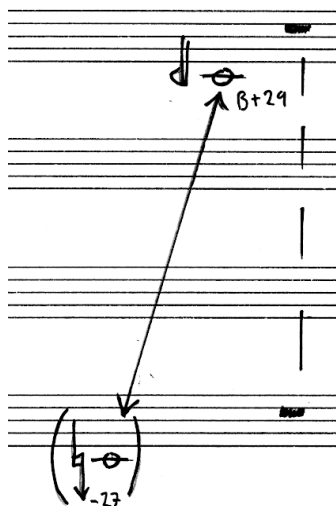
Symbols and signs:

1 - One-directional arrows show the succession of events where the narrowness of the graphical spacing makes it potentially hard to read (note that the graphical narrowness is accidental / random, and hence not a guide to the musical pace, which is free):



2 - Bidirectional arrows between notes signify a *crossfade* between the two notes in question, meaning that *note 1* enters by a fade-in while *note 2* is already sounding - then they sound for a while together before *note 2* fades out as *note 1* keeps sounding. This process is repeated a few (between 3 to 6) times *ad lib*.

Legato bows and / or pauses show how the music proceeds after this process, either with one note sounding, with both notes sounding, or with both notes paused. The parentheses between a note mean that this note already is sounding from before.



3 - Some places the 'crossfade' described above occurs not between *two notes*, but between *two groups of multiple notes*, (sometimes also including temporal change *within* a group - note sounding before eventually paused etc.):

The image shows two musical score examples illustrating crossfades between groups of notes. The left example features three systems of staves. The top system has a note with a downward arrow and the label 'A+41'. The middle system has a group of notes with a downward arrow and the label '-39'. The bottom system has a group of notes with a downward arrow and the label '-24'. A vertical line with a double-headed arrow connects the middle and bottom systems. The right example features three systems of staves. The top system has a note with a downward arrow and the label '-10'. The middle system has a group of notes with a downward arrow and the label '-39'. The bottom system has a group of notes with a downward arrow and the label '-27'. A vertical line with a double-headed arrow connects the middle and bottom systems. Arrows also point from the top system to the middle system in both examples.

4 - Dotted, vertical lines show that two events should happen at the same time (more or less)

The image shows a musical score example with four systems of staves. The top system has a note with a downward arrow and the label 'B-26'. The second, third, and fourth systems each have a vertical line indicating a simultaneous event. The vertical lines are dotted, suggesting a range of timing.

5 - bidirectional arrows between a note and a pause in the same system shows a movement back and forth between the pitch fading in and fading out again into silence, repeated ad lib.

The image shows a musical score example with one system of staves. A note is followed by a pause, and a bidirectional arrow is drawn between them, indicating a movement back and forth between the pitch fading in and fading out again into silence, repeated ad lib.

Pitch ranges

lowest to highest note in each voice (shown by excerpts from the score)

1st voice from top:

Two musical staves in treble clef. The first staff shows a whole note on the second line (D4) with a handwritten label $D\flat + 33$ below it. The second staff shows a whole note on the first space (G3) with a handwritten label -27 below it, and a downward-pointing arrow indicating the pitch range.

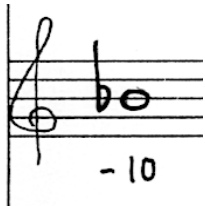
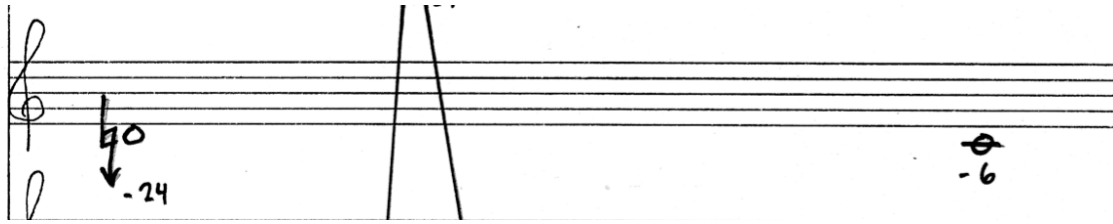
2nd voice from top:

Two musical staves in treble clef. The top staff shows a whole note on the first space (G3) with a handwritten label -27 below it, and a downward-pointing arrow. The bottom staff shows a whole note on the second line (D4) with a handwritten label $A\flat + 13$ below it, and an upward-pointing arrow. To the right, another whole note on the first space (G3) is shown with a handwritten label -10 below it.

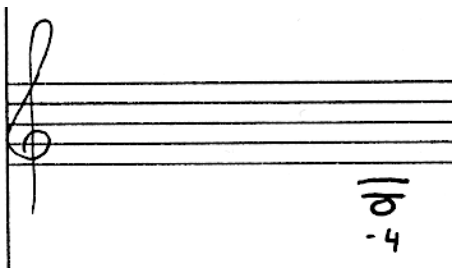
3rd voice from top:

Two musical staves in bass clef. The first staff shows a whole note on the second line (D3) with a handwritten label -10 below it. The second staff shows a whole note on the first space (G2) with a handwritten label -39 below it, and a downward-pointing arrow.

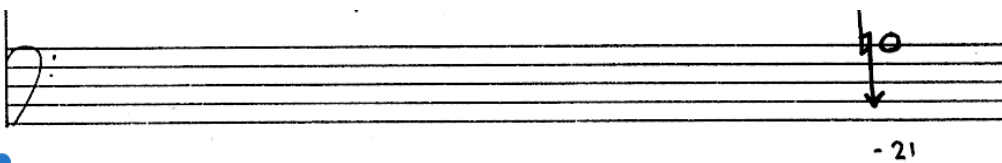
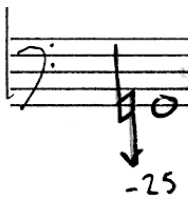
4th voice from top:



5th voice from top:



6th voice from top:



MURMURATIONS XVI

FREDRIK RASTEN
MAY 28 2021

Handwritten musical notation for the first system, consisting of six staves. The notation includes notes with fret numbers and some accidentals. A vertical dashed line is present in the middle of the system.

- Staff 1: Treble clef, note with fret number -20.
- Staff 2: Treble clef, note with fret number -6.
- Staff 3: Bass clef, note with fret number -8.
- Staff 4: Treble clef, notes with fret numbers -8 and -4.
- Staff 5: Treble clef, note with fret number -4.
- Staff 6: Bass clef, note with fret number -21.

Handwritten musical notation for the second system, consisting of six staves. The notation includes notes with fret numbers and some accidentals. A circled '1' is at the bottom.

- Staff 1: Treble clef, notes with fret numbers -2 and Db+33.
- Staff 2: Treble clef, note with fret number -8.
- Staff 3: Bass clef, note with fret number -8.
- Staff 4: Treble clef, note with fret number -4.
- Staff 5: Treble clef, note with fret number -20.
- Staff 6: Bass clef, notes with fret numbers -21, Ab+35, -4, -20, and -39.

A circled '1' is located at the bottom center of the page.

Handwritten musical notation on a five-staff system. The top staff has a treble clef and contains two notes: a whole note with a flat sign and the number "33" below it, and a half note with a flat sign and the number "24" below it. The second staff is empty. The third staff has a bass clef and contains a whole note with a flat sign and the number "21" below it. The fourth staff has a treble clef and contains a whole note with a flat sign and the number "21" below it. The fifth staff has a bass clef and contains a whole note with a flat sign and the number "39" below it.

Handwritten musical notation on a five-staff system. The top two staves are empty. The third staff has a treble clef and contains a whole note with a flat sign and the number "21" below it. The fourth staff has a treble clef and contains a whole note with a flat sign and the number "10" below it. The fifth staff has a bass clef and contains three notes: a whole note with a flat sign and the number "24" below it, a whole note with the number "6" below it, and a whole note with a flat sign and the number "10" below it. A circled number "2" is written below the second note.

MURMURATIONS XVII

FREDRIK RASTEN
MAY 29-30 2021

Handwritten musical notation for the first system, consisting of six staves. The notation includes various notes, accidentals, and numerical values:

- Staff 1: Treble clef, whole rest, then a note with a downward arrow and "-24".
- Staff 2: Treble clef, whole rest, then a note with a downward arrow and "-6", followed by a double bar line and a note with a downward arrow and "B+29".
- Staff 3: Bass clef, whole rest, then a note with "-8".
- Staff 4: Treble clef, note with a downward arrow and "-21", then a note with "Ab+40".
- Staff 5: Treble clef, note with a downward arrow and "-10".
- Staff 6: Bass clef, note with "-10", then a note with "-12".

Handwritten musical notation for the second system, consisting of six staves. The notation includes various notes, accidentals, and numerical values:

- Staff 1: Treble clef, whole rest, then a note with a downward arrow and "-24".
- Staff 2: Treble clef, whole rest, then a note with a downward arrow and "B+29", then a note with a downward arrow and "Db-43", then a note with a downward arrow and "-24".
- Staff 3: Bass clef, whole rest, then a note with a downward arrow and "-24".
- Staff 4: Treble clef, whole rest, then a note with "Ab+40", then a note with "Ab+40".
- Staff 5: Treble clef, whole rest.
- Staff 6: Bass clef, whole rest.

Handwritten musical notation on a grand staff. The notation includes notes with accidentals and numerical values:

- Top staff: \flat note with -12 below it; \flat note with -25 below it and an arrow pointing down.
- Middle staff: \flat note with -12 below it.
- Third staff: \flat note with -8 below it.
- Bottom staff: \flat note with -12 below it; \flat note with \flat above it and $\text{Db}-43$ below it; \flat note with -10 below it; \flat note with -25 below it and an arrow pointing down.

Handwritten musical notation on a grand staff. The notation includes notes with accidentals and numerical values:

- Top staff: \flat note with -10 below it; \flat note with -8 below it; \flat note with -24 below it and an arrow pointing down.
- Middle staff: \flat note with $\text{Db}-43$ below it; \flat note with -10 below it.
- Bottom staff: \flat note with -12 below it; \flat note with -25 below it and an arrow pointing down; \flat note with -12 below it; \flat note with -25 below it and an arrow pointing down.

A circled number **4** is written at the bottom center of the page.

Handwritten musical notation on a five-staff system. The top two staves are mostly empty. The third staff contains a double bar line. The fourth staff has three notes: a flat note with '-12', a double flat note with 'Db-43', and a flat note with '-24'. The fifth staff has a flat note with '-27' and a downward arrow. The bottom staff has a double bar line.

Handwritten musical notation on a five-staff system. The top staff has a flat note with '-10'. The second staff has a double bar line. The third staff has a double flat note with 'Bb+29' and a downward arrow. The fourth staff has five notes: a flat note with '-10', a double flat note with '-12', a double flat note with 'A+41', a flat note with '-10', and a flat note with '-39'. The fifth staff has a circled flat note with '-27' and a downward arrow. The bottom staff has a flat note with '-25' and a downward arrow. A circled number '5' is at the bottom center.

Handwritten musical score with annotations. The score consists of five staves. The first staff has a circled note with "-10" below it. The second staff has a circled note with "B+24" below it. The third staff has a circled note with "-39" below it. The fourth staff has a circled note with "-27" below it. The fifth staff has a circled note with "-10" and "A+41" below it. Arrows and brackets connect these notes across staves.

Handwritten musical score with annotations. The score consists of five staves. The first staff has a circled note with "A+41" below it. The second staff has a circled note with "-39" below it. The third staff has a circled note with "-24" below it. The fourth staff has a circled note with "-27" below it. The fifth staff has a circled note with "-10" below it. Arrows and brackets connect these notes across staves.

(6)

MURMURATIONS XVIII

FREDRIK RASTEN
JUNE 15 2021

The musical score consists of ten staves, organized into five systems of two staves each. The notation includes notes, rests, and dynamic markings. Handwritten annotations include frequency shifts and other numerical values:

- Staff 1: Rest.
- Staff 2: Notes with frequency shifts: $B+29$, -24 , -12 , -8 , -25 , $A\flat+40$, $A\flat+13$.
- Staff 3: Rest, then b_0 .
- Staff 4: Rest, then -10 .
- Staff 5: Note with -24 .
- Staff 6: Rest.
- Staff 7: Note with -25 .
- Staff 8: Note with $A+41$.
- Staff 9: Notes with frequency shifts: $A\flat+13$, -25 , $F+24$, $F+6$, -29 , $E+43$, b_0 .
- Staff 10: Rest, then -10 .
- Staff 11: Note with -27 .
- Staff 12: Rest.

⑦

* $G\flat$ OPTIONAL. 7/9 WITH $B\flat$
49/36 WITH $C\flat$

Handwritten musical notation on a grand staff. The top staff has a treble clef with a half note on G4, a slur over it, and a downward arrow labeled $A+41$. The second staff has a treble clef with a downward arrow labeled $(b0)$. The third staff has a bass clef with a downward arrow labeled -10 . The fourth staff has a treble clef with a half note on G4 and a downward arrow labeled -27 . The fifth staff has a bass clef with two half notes on G4 and F4, with downward arrows labeled -25 and -27 respectively.

Handwritten musical notation on a grand staff. The top staff has a treble clef with a half note on G4, a downward arrow labeled $A+41$, and a slur over it. The second staff has a treble clef with two half notes on G4 and F4, with downward arrows labeled $A+41$ and $Bb+22$. The third staff has a bass clef with a half note on G4 and a downward arrow labeled -24 . The fourth staff has a treble clef with a downward arrow labeled -29 . The fifth staff has a bass clef with four half notes on G4, F4, G4, and F4, with downward arrows labeled -24 , -25 , $6+37$, -25 , and $A-43$. A circled number 8 is written below the fifth staff.

MURMURATIONS XIX

FREDRIK
RASTEN
JUNE 15
2021

Handwritten musical notation for the first system. It consists of five staves. The top two staves are in treble clef, and the bottom three are in bass clef. The notation includes notes with stems and flags, some with accidentals. Fret numbers are indicated by arrows pointing to notes: B*22 (top staff), B-26 (top staff), (b0) (middle staff), -10 and -31 (middle staff), -24 (second staff), -27 (third staff), and A-43 (bottom staff). A slur is present over the first two notes of the top staff.

Handwritten musical notation for the second system. It consists of five staves. The top two staves are in treble clef, and the bottom three are in bass clef. The notation includes notes with stems and flags, some with accidentals. Fret numbers are indicated by arrows pointing to notes: -27 (top staff), B-26 (top staff), -31 (top staff), A-43 (top staff), B-26 (second staff), A-43 (bottom staff), A-43 (bottom staff), and -29 (bottom staff). A slur is present over the first two notes of the top staff. A long arrow connects the A-43 note in the top staff to the A-43 note in the bottom staff.

Handwritten musical notation on a grand staff with six staves. The notation includes various symbols (xpo, po, ho) with arrows pointing to specific notes, and numerical labels (Eb+20, D+34, D-45, B-26, Bb+22, -31, A-43) below the notes.

Handwritten musical notation on a grand staff with six staves. The notation includes various symbols (ho, po, xpo) with arrows pointing to specific notes, and numerical labels (-25, A-43, -31, Eb+20, E-41, Eb+20, D-45) below the notes.

MURMURATIONS XX

FREDRIK RISTEN

JUNE 18-21
2001

The musical score is written on 11 staves. The first three staves are grouped together, and the remaining eight staves are grouped together. The notation includes various notes, rests, and arrows pointing to specific notes with numerical values. The values are: -45, -31, A+20, A-43, E+43, Eb-6, -29, -47, Db+11, -45, -31, Eb+20, -27, -29, Eb+20, and -45. A circled double bar line is at the bottom center.

A handwritten musical score consisting of ten staves. The notation includes notes, rests, and various annotations. The first two staves are mostly empty. The third staff has two notes with downward arrows and labels -43 . The fourth staff has three notes with downward arrows and labels -45 , -27 , and -45 . The fifth staff has two notes with downward arrows and labels -45 and -43 . The sixth staff has a double bar line, a note with a downward arrow and label E_b-6 , a circled note with a downward arrow, and a slur over a note. The seventh staff has a note with a downward arrow and label E_b+20 . The eighth staff has a note with a downward arrow and label -47 . The ninth and tenth staves are mostly empty.

Handwritten musical notation on a grand staff (treble and bass clefs). Annotations include:

- Top staff: A double bar line with a downward arrow pointing to a note, labeled $E_b - 6$.
- Second staff: A downward arrow pointing to a note, labeled -31 .
- Third staff: A downward arrow pointing to a note, labeled $E_b + 20$.
- Fourth staff: A circled downward arrow pointing to a note, with a curved line underneath it.

Handwritten musical notation on a grand staff (treble and bass clefs). Annotations include:

- Top staff: A downward arrow pointing to a note, labeled -31 .
- Second staff: A circled downward arrow pointing to a note, labeled $E_b - 6$.
- Second staff: A downward arrow pointing to a note, labeled -27 .
- Third staff: A downward arrow pointing to a note, labeled -31 .
- Fourth staff: A downward arrow pointing to a note, labeled -29 .
- Fifth staff: A circled downward arrow pointing to a note, labeled -47 .
- Fifth staff: A note to the right of the circled arrow, labeled -13 .
- Sixth staff: A downward arrow pointing to a note, labeled -16 .

Handwritten musical notation on a grand staff. The notation includes notes with flat symbols and associated fret numbers:

- Staff 1 (Treble clef): Empty.
- Staff 2 (Treble clef): Empty.
- Staff 3 (Bass clef): Note with flat symbol, fret number -14.
- Staff 4 (Treble clef): Note with flat symbol, fret number -18; Note with flat symbol and downward arrow, fret number -29.
- Staff 5 (Treble clef): Note with flat symbol and downward arrow, fret number G+37; Note with flat symbol, fret number -14.
- Staff 6 (Bass clef): Note with flat symbol, fret number -16; Note with flat symbol, fret number -18.

Handwritten musical notation on a grand staff. The notation includes notes with flat symbols, fret numbers, and arrows indicating relationships:

- Staff 1 (Treble clef): Note with flat symbol, fret number -18; Note with flat symbol, fret number -14; Note with flat symbol and downward arrow, fret number -25.
- Staff 2 (Treble clef): Note with flat symbol and downward arrow, fret number -27.
- Staff 3 (Bass clef): Note with flat symbol, fret number -8.
- Staff 4 (Treble clef): Note with flat symbol, fret number -12.
- Staff 5 (Treble clef): Note with flat symbol, fret number -10.
- Staff 6 (Bass clef): Note with flat symbol, fret number -10; A sequence of notes with flat symbols: (b0) b0 b0 b0 b0.

Arrows indicate relationships between notes in different staves:

- An arrow points from the note with fret number -14 in Staff 1 down to the first note in the sequence in Staff 6.
- An arrow points from the note with fret number -27 in Staff 2 up to the note with fret number -14 in Staff 1.
- An arrow points from the note with fret number -12 in Staff 4 down to the first note in the sequence in Staff 6.

(14) -45 -14
-16 -12

Handwritten musical notation on a grand staff. The notation includes notes on both treble and bass clefs with various numerical annotations and arrows indicating intervals or relationships.

- Top staff (Treble clef): A note with a downward arrow and the number -21 .
- Second staff (Treble clef): A note with a downward arrow and the number -24 .
- Third staff (Bass clef): A note with a downward arrow and the number -24 . A note further right has a downward arrow and the number -6 .
- Fourth staff (Treble clef): A note with a downward arrow and the number -24 . A note further right has a downward arrow and the number -6 .
- Fifth staff (Bass clef): A note with a downward arrow and the number -8 . A note with a downward arrow and the number -25 . A note with a downward arrow and the number $A\flat+40$. A note with a downward arrow and the number -21 . A note with a downward arrow and the number -8 .

-8 -25 $A\flat+40$ -21 -8
 $A\flat+40$

Handwritten musical notation on a grand staff. The notation includes notes on both treble and bass clefs with various numerical annotations and arrows indicating intervals or relationships.

- Top staff (Treble clef): A note with a downward arrow and the number -8 . A note further right has a downward arrow and the number -20 .
- Second staff (Treble clef): A note with a downward arrow and the number -6 .
- Third staff (Bass clef): A note with a downward arrow and the number $E\flat+41$. A note with a downward arrow and the number -6 . A note with a downward arrow and the number -8 .
- Fourth staff (Treble clef): A note with a downward arrow and the number -8 .
- Fifth staff (Bass clef): A note with a downward arrow and the number -4 . A note with a downward arrow and the number -6 . A note with a downward arrow and the number -39 . A note with a downward arrow and the number -41 . A note with a downward arrow and the number -21 .

-6 -39 -41 -21

(15)