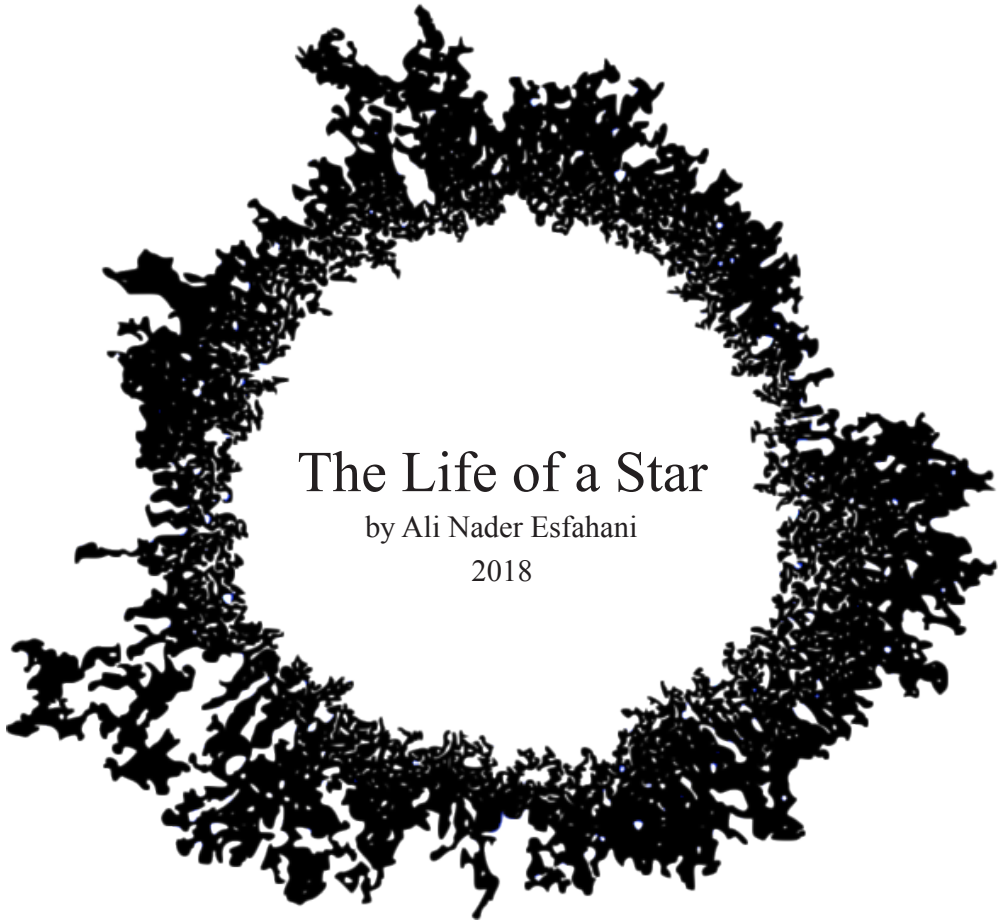


The Life of a Star

by Ali Nader Esfahani

2018

‘The Life of a Star’ is a five-movement chamber composition inspired by the life cycle of a sun-like star from birth to death.
Each movement of this piece represents one of the stages of this cycle:
the interstellar cloud, the sun, the red giant, the planetary nebula, and the white dwarf.

The internal interactions and imbalances of different natural forces inside a star,
as well as its external shapes, shades, colour threads, textures, sizes, and spatial transformations
inform the musical material and its evolution throughout this piece.

‘The Life of a star’ is a 10-minute musical manifestation of a 10-billion year lifetime of a hot body of glowing gas.

Timing & Coordination

About notation of time: This piece is mostly unmeasured, except for the last movement. In the notation of the unmeasured parts, space equals time. In other words, the space in front of each note is more or less proportional to the time duration of that note. This is while, conventional time duration symbols are also used to suggest approximate duration ratios of the notes. Performers should use both the spacial notation and the conventional duration symbols to shape rhythmic lines and navigate through time, in a flexible but coherent manner. To help with following time in the unmeasured systems, short vertical dashed lines are placed above the systems every 5 seconds. The last movement, 'the white dwarf', is measured but not in the conventional sense: dashed barlines are just a means of coordination and do not imply a sense of up and down beats.

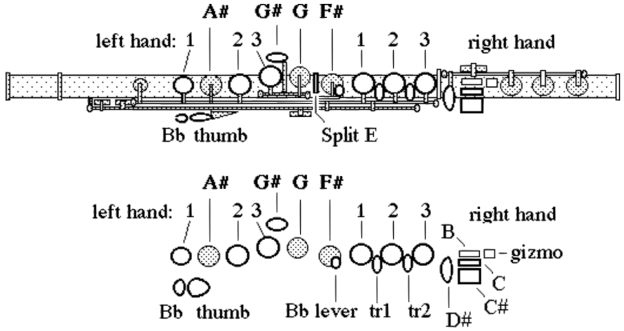
About coordination: To coordinate with other instruments, performers play from the score.
In the first and fourth movements, 'the interstellar cloud' and 'the planetary nebula', the horizontal position and length of the shapes of the interstellar clouds and the boxes around the shapes of the planetary nebulae correspond to their timing and duration. When shapes in different layers overlap, duration of overlap is indicated by the spacial overlap of the shapes or the boxes around them. In the first movement, shapes of interstellar clouds in flute and horn are parts of a larger combination shape. Each fragment of the combination shape belongs to one instrument. To know which fragments belong to flute and which ones belong to horn, the general rule is that if a fragment intersects with a staff it belongs to that instrument. For further clarification, arrows are used to show when a sound is passed from one instrument to another. The end of the last movement, 'the white dwarf' follows the same rule.
At the beginning of the second movement, 'the sun', systems 10 to 13, performers should use the solid lines that connect the pitches of the overall melody for coordination, namely the order of the pitches and the overall rhythm. Note that at the end of this passage in system 13 the melodic line splits into two branches, one ascending and the other descending.
In the third movement, 'the red giant', the harmonically expanding passage spanning from system 22 to 26 is coordinated by piano cues, indicating the beginning and middle of each system (approximately every 7 seconds). In this passage, when the piano gives a cue, if flute is more than a second behind or ahead of piano, it should go to the cue point by leaping ahead in time or repeating from the cue point. Other instruments also adjust their timing according to the piano cues.
In the measured part of the last movement, instruments follow the beats precisely.
Throughout the piece, vertical dashed lines are used to indicate simultaneous notes that have to be played together.

Flute

Interpreting shapes of interstellar clouds: Interpret shapes through improvising stage whisper of fricative consonants such as 's', 'f', 'sh', 'v', and 'z' through the instrument, with mouthpiece covered, while depicting them freely on an imaginary canvas with the end of the footjoint. Change consonants at a relatively slow but irregular pace, creating a variety of expressive sounds, while engaging upper body. In the first movement, 'the interstellar cloud', as the changes in the cloud shapes suggest, transformations of the sonic and theatrical gestures gradually get faster and more pronounced throughout the movement, reaching a climax at the very end. At the end of the last movement, these sounds and gestures return more or less to the mood and pace of the beginning of the first movement. Height and thickness of the clouds indicate the overall frequency spectrum and volume of the sounds.

Interpreting shapes of planetary nebulae: Interpret shapes through improvising whistle tones on the low B, while depicting them freely on an imaginary canvas with the end of the footjoint. Whistle tones should change at a rapid rate, and sound random with unpredictable changes. Engage upper body for the drawing motions. Continue for the duration of the box, fading in from an airy sound at the beginning and fading out to an airy sound at the end. This technique is used in the fourth movement, 'a planetary nebula'.

Fingering chart for multiphonics:
from 'the virtual flute' website: http://flute.fingerings.info/



Horn

Interpreting shapes of interstellar clouds: Interpret shapes through improvising stage whisper of fricative consonants such as 's', 'f', 'sh', 'v', and 'z' through the instrument, while depicting them freely on an imaginary canvas with the bell. Change consonants at a relatively slow but irregular pace, creating a variety of expressive sounds, while engaging upper body. In the first movement, 'the interstellar cloud', as the changes in the cloud shapes suggest, transformations of the sonic and theatrical gestures gradually get faster and more pronounced throughout the movement, reaching a climax at the very end. At the end of the last movement, these sounds and gestures return more or less to the mood and pace of the beginning of the first movement. Height and thickness of the clouds indicate the overall frequency spectrum and volume of the sounds.

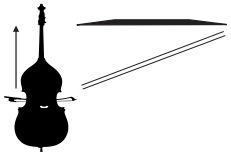
Playing and shaking the instrument with tension: Play and shake the body of instrument with tension. Graphics depict rate and intensity of shaking. This technique should result in an unstable volume, adding an unsettling quality to the sound.

Very low notes: The very low notes at the beginning of the third movement, 'the red giant', systems 21 and 22, and the end of the last movement, 'the white dwarf'', systems 43 to 45, are meant to sound buzzy and drone-like. In these sections, stability and clarity of these tones are musically subordinate to their rough but rich texture and quality.

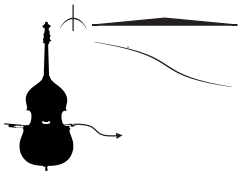
Hand glissandi or pitch-bend: This effect, which is used in systems 23 to 26 of the third movement, 'the red giant', is achieved through gradually changing hand position in the bell of the instrument from open to closed or vise versa.

Interpreting shapes of planetary nebulae: Interpret shapes through exhaling through the instrument with the mouthpiece placed backwards on the leadpipe for the first shape and in normal position for the second shape, while depicting them freely on an imaginary canvas with the bell. Engage upper body for the drawing motions. Continue for the duration of the box, fading in at the beginning and fading out at the end.

Double Bass



Scraping muted strings: Scrape indicated muted strings along their length with the bow, from the bridge towards the nut or vise versa. Apply controlled pressure to create a soft but deep roar. The arrow in the instrument diagram on the left shows the direction of bow motion.



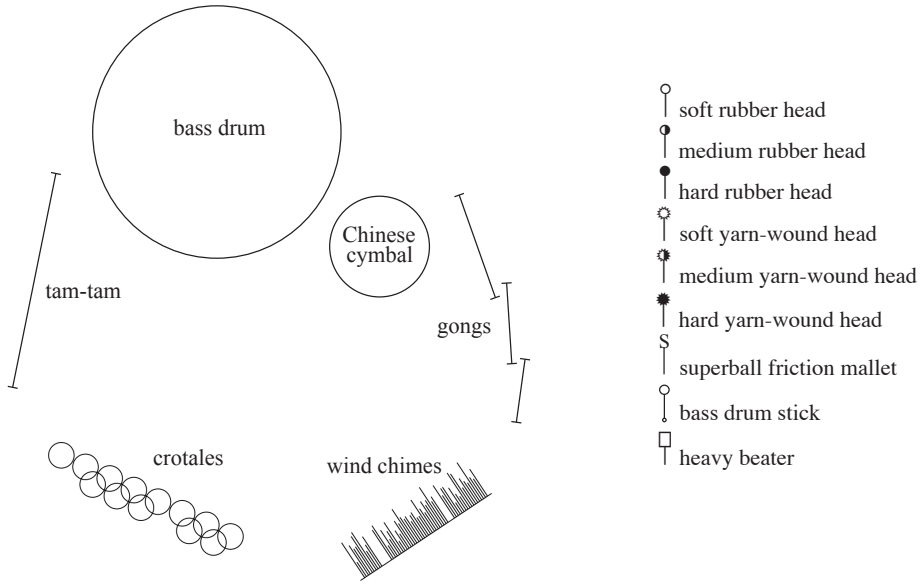
Grinding and sliding behind the bridge: Bow and grind indicated string behind the bridge with controlled pressure, while sliding towards the tailpiece, creating a deep grinding squeak. The arrow in the instrument diagram on the left shows the direction of bow motion.

Interpreting shapes of planetary nebulae: Interpret shapes through improvising very high natural harmonics near the bridge gliding up and down on the G string, while depicting them freely through moving the instrument around, on its endpin. Harmonics should change at a rapid rate, and sound random with unpredictable changes. Engage upper body for the drawing motions. Continue for the duration of the box, fading in at the beginning and fading out at the end. This technique is used in the fourth movement, 'a planetary nebula'.

Interpreting shapes of central stars: Interpret shapes creating deep squeaks and roars using one of the techniques below for each shape:
1) Bowing indicated string with excessive bow pressure near the bridge, creating a deep scratchy/squeaky sound.
2) 'Scraping muted strings' (explained above).
3) 'Grinding and sliding behind the bridge' (explained above).

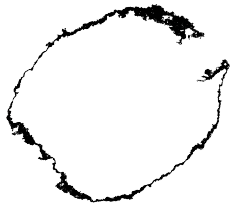
Percussion

Layout:



Interpreting outlines of interstellar clouds: Depending on score instructions, interpret shapes through rubbing a superball friction mallet on the head or shell of bass drum, or on the surface of tam-tam, creating deep and profound cries, groans, and roars. Look for sounds of different timbres and textures through changing pressure, speed, and position of mallet on the instrument. At the end of the first movement, 'the interstellar cloud', systems 7 and 8, as the changes in the cloud shapes suggest, transformations of the sonic and drawing gestures gradually get faster, reaching a climax at the end of system 8. At the end of the last movement, theses sounds and gestures return more or less to the mood and pace of the beginning of the first movement.

Interpreting shapes of central stars: Apply similar techniques as the ones described in 'Interpreting outlines of interstellar clouds'. This time use shapes of central stars as source of inspiration.

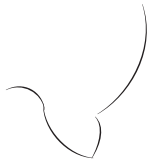


Interpreting shape of planetary nebulae: Interpret shape through improvising delicate sounds on wind chimes. Play gently with both hands, using different regions of the instrument and a variety of speeds, directions, and rhythms of motion, creating sounds of diverse qualities. Avoid long continuous motions. Continue for the duration of the box, fading in at the beginning and fading out at the end.

Interacting with bass drum through a cymbal: Hold Chinese cymbal with left hand and gently place its edge on the head of the bass drum at an approximately 30 degrees angle. Beat on the cymbal with right hand fist while gliding its edge around on the surface of the drum in an improvised manner.

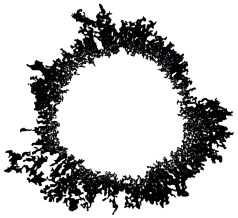
While ringing, hold cymbal parrallel to the surface of the drum and move it up and down vertically in an oscillatory motion, creating a panting effect.

Piano



Interpreting outlines of interstellar clouds: Interpret shapes through drawing them on strings inside piano with the fleshy part of fingertips. Keep sustaining pedal down, creating a variety of glissandi effects. Height of shapes correspond to their overall register. In systems 7 to 9, as the changes in the cloud shapes suggest, transformations of the sonic and drawing gestures gradually get faster, ascending in register and reaching a climax at the end of the first movement.

Irregular tremolo: Repeat note at a fast rate with an unpredictable rhythm of 16th, dotted 16th, and 32nd notes, creating tension.



Interpreting shape of planetary nebulae: Interpret shape through scraping the strings between the bridge and the hitch pins with the back of your fingernails. Play with both hands and use a variety of speeds, directions, and rhythms of motion, creating sounds of different characters. Avoid long continuous motions. Continue for the duration of the box, fading in at the beginning and fading out at the end.

Interpreting shapes of central stars: Interpret shapes through scraping the lowest strings along their length with fingernail at a slow pace. Improvise on the five lowest strings using different speeds, directions, and rhythms of motion. Use both hands and keep sustaining pedal down. Continue for the duration of the box, fading in at the beginning and fading out at the end.

Interpreting shape of 'Pillars of Creation': Interpret shape through scraping the strings inside the piano in the bass register with the fleshy part of fingertips. Keep sustaining pedal down, creating rich low glissandi effects. Continue for the duration of the box, fading in at the beginning and fading out at the end.

The Life of a Star

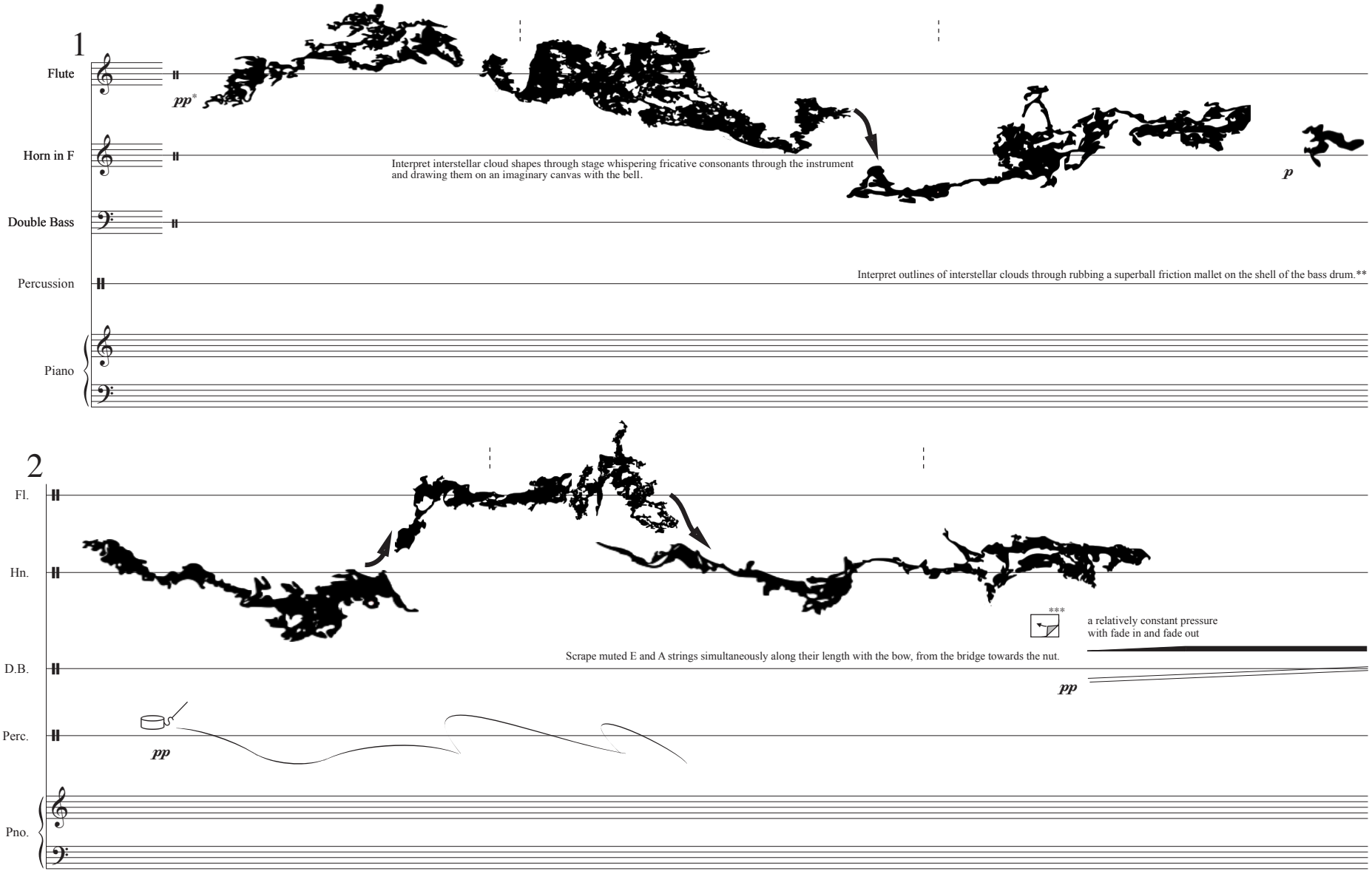
the interstellar cloud

[vast]

Each system is approximately 15 seconds.

Ali Nader Esfahani

Interpret interstellar cloud shapes through stage whispering fricative consonants through the instrument and drawing them on an imaginary canvas with the footjoint. Cover the mouthpiece.



*Except for its last two systems, dynamics of this movement range from *pianissimo* to *mezzo piano*.
Details of unmarked dynamics of the flexible extended techniques is left to circumstances of each performance and the interpretation of the performers.

**Shapes highlight portions of the outline of actual interstellar cloud images, in particular the "Pillars of Creation" from the Eagle Nebula.

***Sometimes a few of the instruments should play from memory and turn their pages a few seconds earlier or a few seconds later than the end of the page. In these cases, instruments have a 'turn page' sign at the suggested time for truning the page.
When an instrument has to turn page a few seconds after the end of the page, they will have a 'do not turn page' sign. They will have to play from memory or wait until a certain cue, then turn the page. On the next page, they will also have a 'turn page' sign at the suggested time, for clarification.
These early and late page turns fulfill two purposes, 1) to allow continuity of sound and music over page turn, 2) to avoid all instruments turning page at the same time.

3

Fl.

Hn.

mp

D.B.

p

Perc.

p

Bow edge of the tam tam applying controlled pressure, creating a soft, but deep and rich cry.

l. v.

pp

Pno.

4

Fl.

Hn.

D.B.

mp

Bow and grind the A string behind the bridge with pressure, while sliding towards the tailpiece.

mp

Perc.

Interpret shapes using a superball friction mallet on the surface of the tam tam.

p

mp

l. v.

Pno.

[enigmatic]

5

Fl.

Hn.

D.B.

p

Perc.

Pno.

p

pp

(Keep sustaining pedal down till the end of this movement.)

6

Fl.

Hn.

D.B.

Perc.

mp

pp

Pno.

mp

pp

[compressing]

7

Fl.

Interpret shapes through stage whispering fricative consonants through the instrument and drawing them with the footjoint. Cover the mouthpiece.

p

Hn.

Interpret shapes through stage whispering fricative consonants through the instrument and drawing them with the bell.

p

D.B.

Scrape muted A string along its length with the bow going back and forth between the bridge and the nut.

mp

Perc.

Draw and interpret shapes on the shell of the bass drum with a superball friction mallet, creating deep cries.

pp

p

Pno.

mp

pp

8

Fl.

Hn.

D.B.

Perc.

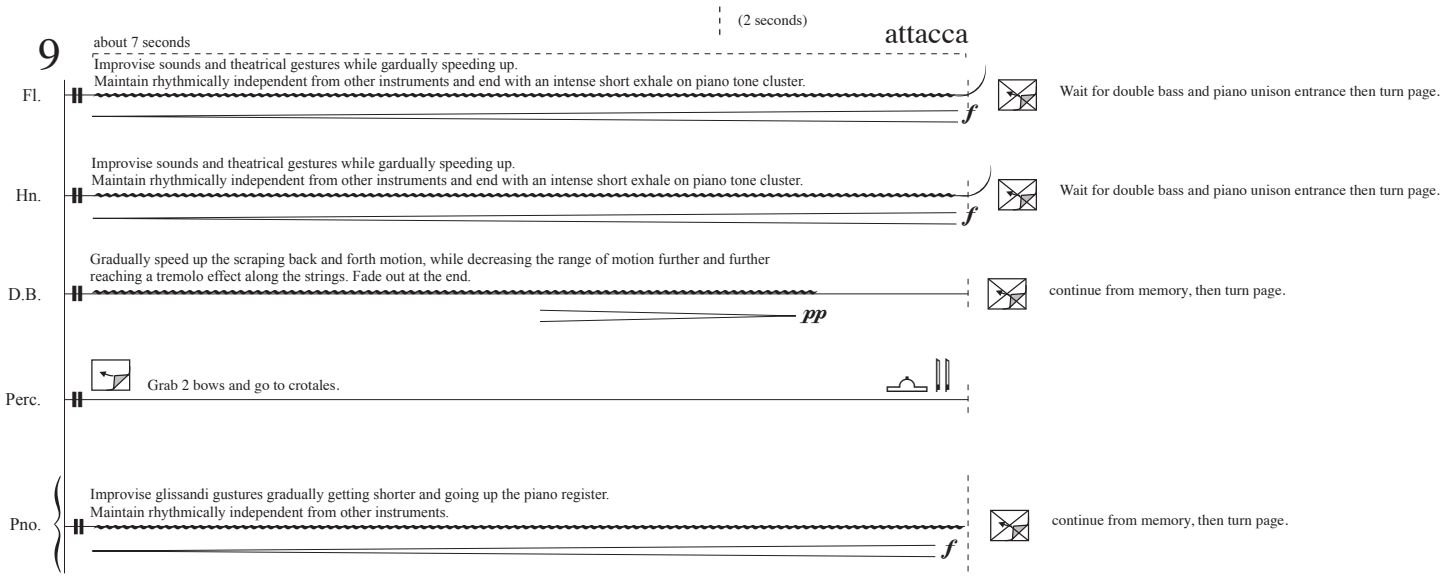
Improvise rubbing strokes gradually getting shorter, ending with a loud final stroke. Let vib.

f

Pno.

Interpret outlines of interstellar clouds through drawing them on strings inside piano with the fleshy part of fingertips.
Keep sustaining pedal down.

pp


9
about 7 seconds
(2 seconds)
attacca
Fl.
Improvise sounds and theatrical gestures while gardually speeding up.
Maintain rhythmically independent from other instruments and end with an intense short exhale on piano tone cluster.
f
Wait for double bass and piano unison entrance then turn page.
Hn.
Improvise sounds and theatrical gestures while gardually speeding up.
Maintain rhythmically independent from other instruments and end with an intense short exhale on piano tone cluster.
f
Wait for double bass and piano unison entrance then turn page.
D.B.
Gradually speed up the scraping back and forth motion, while decreasing the range of motion further and further
reaching a tremolo effect along the strings. Fade out at the end.
pp
continue from memory, then turn page.
Perc.
Grab 2 bows and go to crotales.
Pno.
Improvise glissandi gustures gradually getting shorter and going up the piano register.
Maintain rhythmically independent from other instruments.
f
continue from memory, then turn page.

the sun

[agitated]

10

Each system is approximately 15 seconds.

In this passage, spanning from system 10 to 13, dynamics are approximations.
Each instance of the same dynamic should slightly vary each time.

Fl.

Hn.

D.B.

Perc.

Pno.

ff

dal niente *mf* *pp*

p *mp* *p* *mp* *p* *mp* *p* *mp*

Looking for diverse sounds, strike gongs and tam-tam in different places, from middle to the edge.
Balance your dynamics with the rest of the ensemble
and do not allow your sound to drown the sound of rest of the ensemble.

Slam the strings with the palm of your hand, creating a huge explosive sound.

Repeat each note with an unpredictable rhythm of 16th, dotted 16th, and 32nd notes.
Play with both hands alternating.

ff 8va

Ped.

11

Fl.

Hn.

D.B.

Perc.

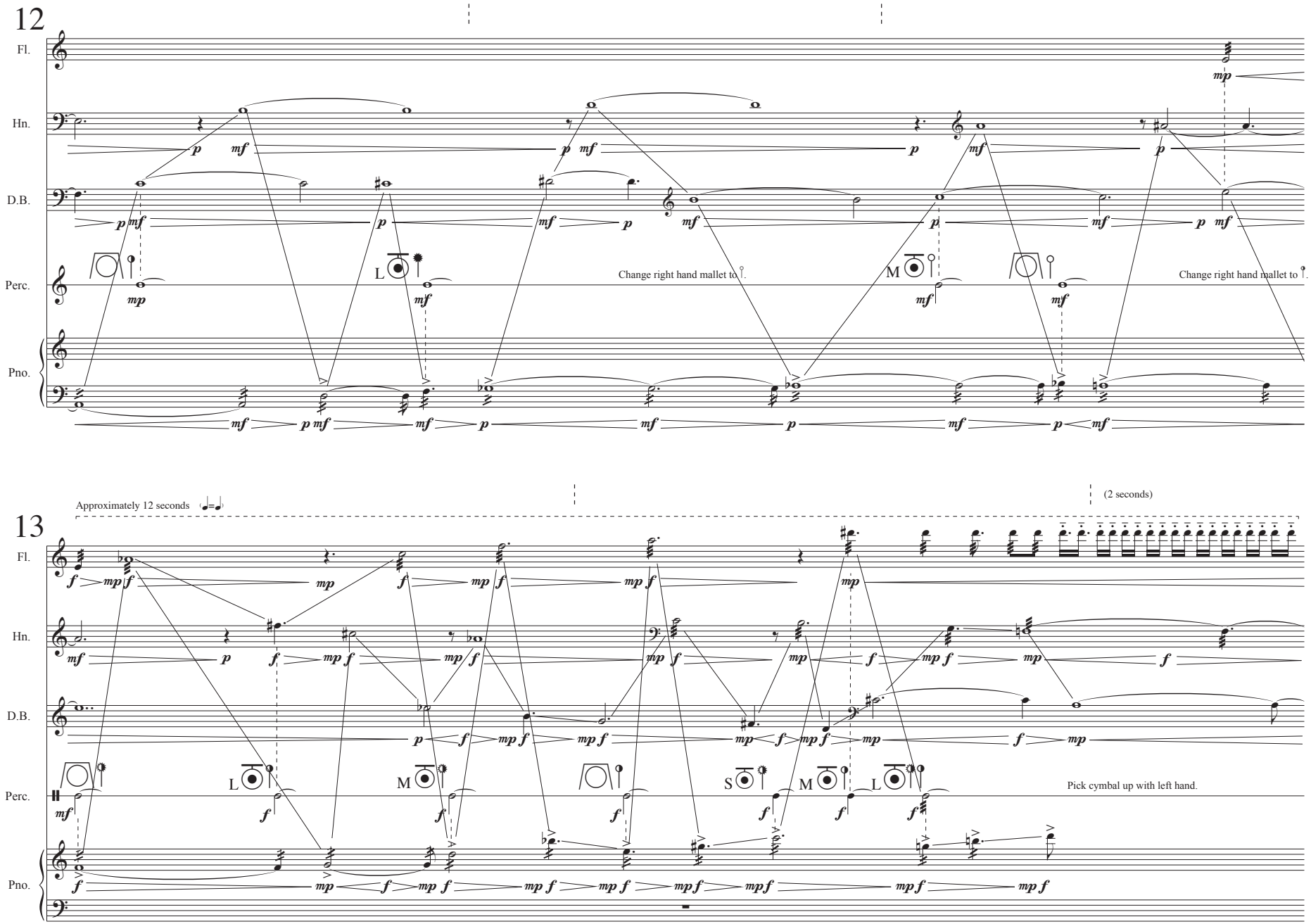
Pno.

M

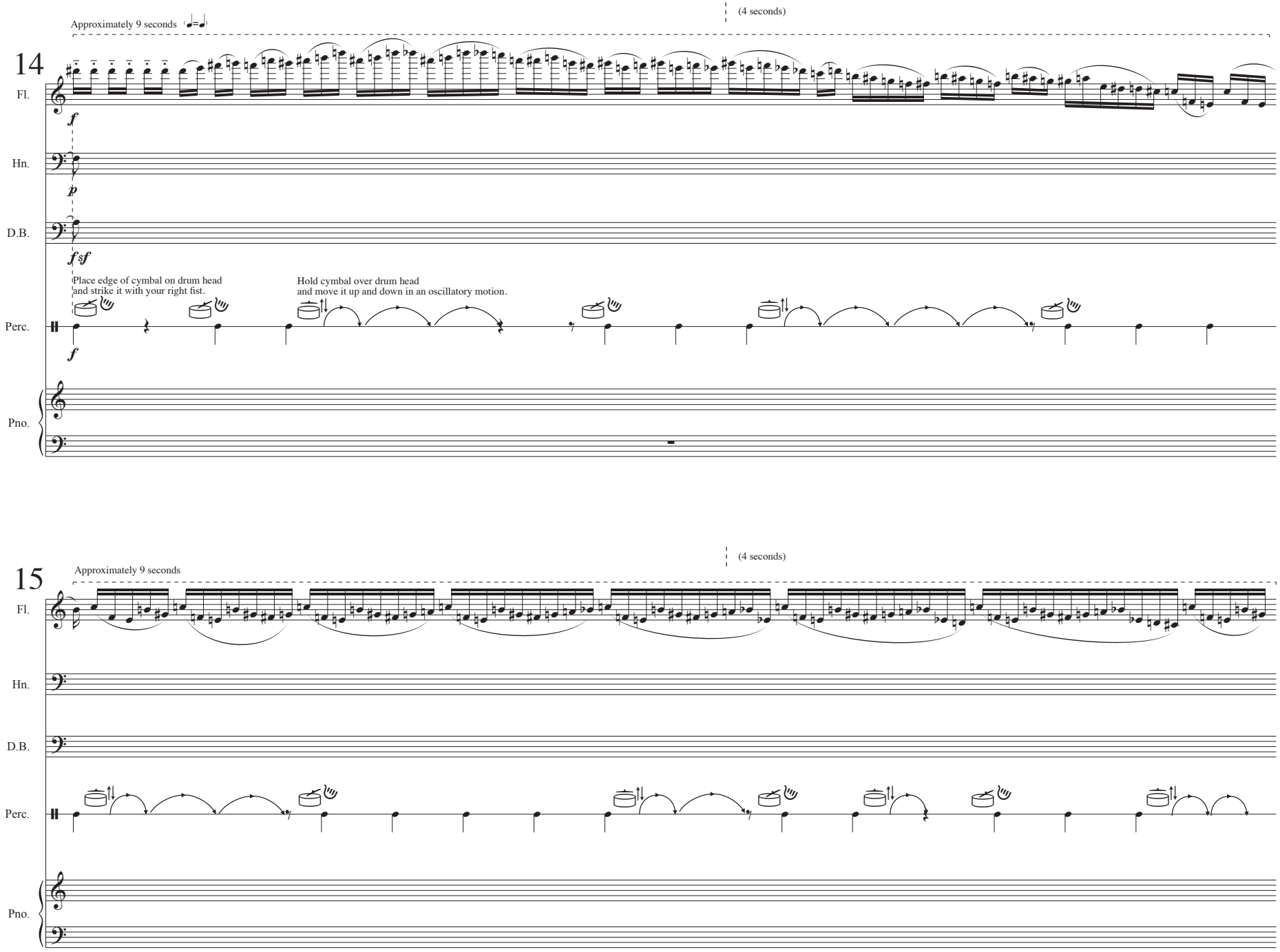
L

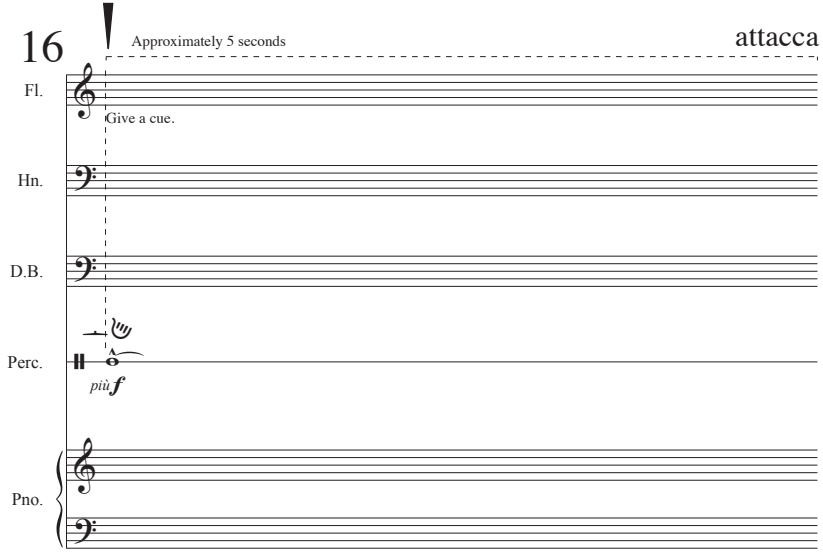
Change mallets to ' in left hand and ' in right hand.

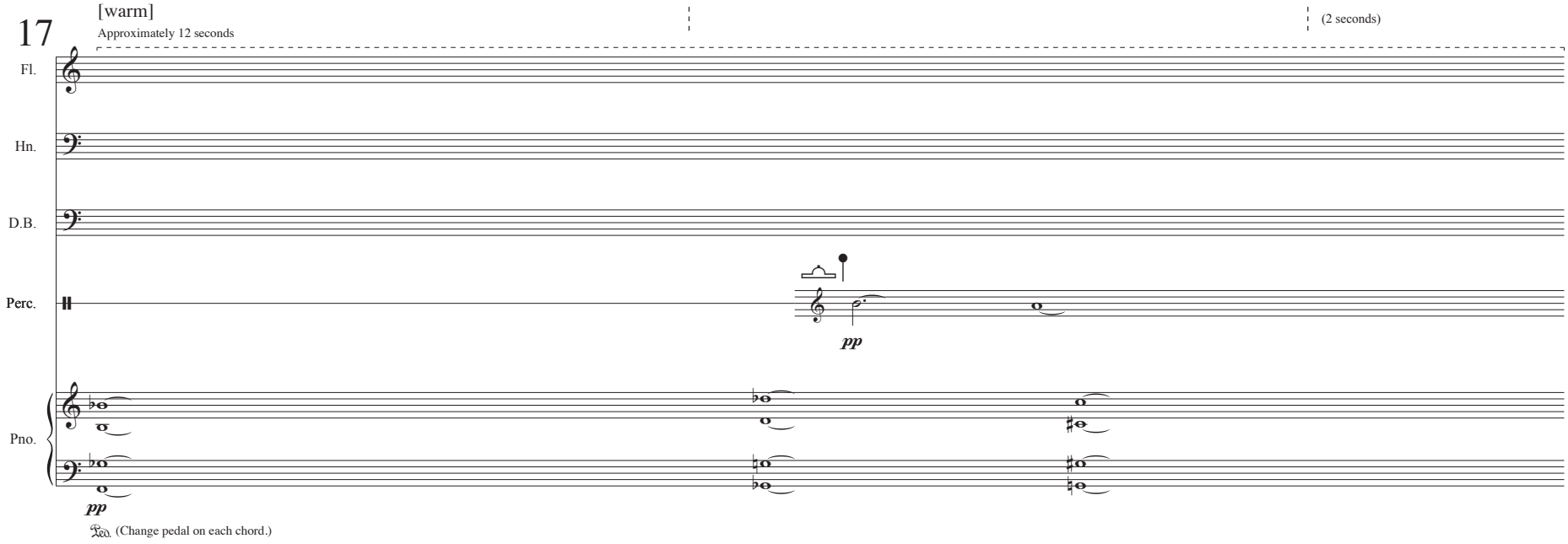
pp *mp* *p* *mf*

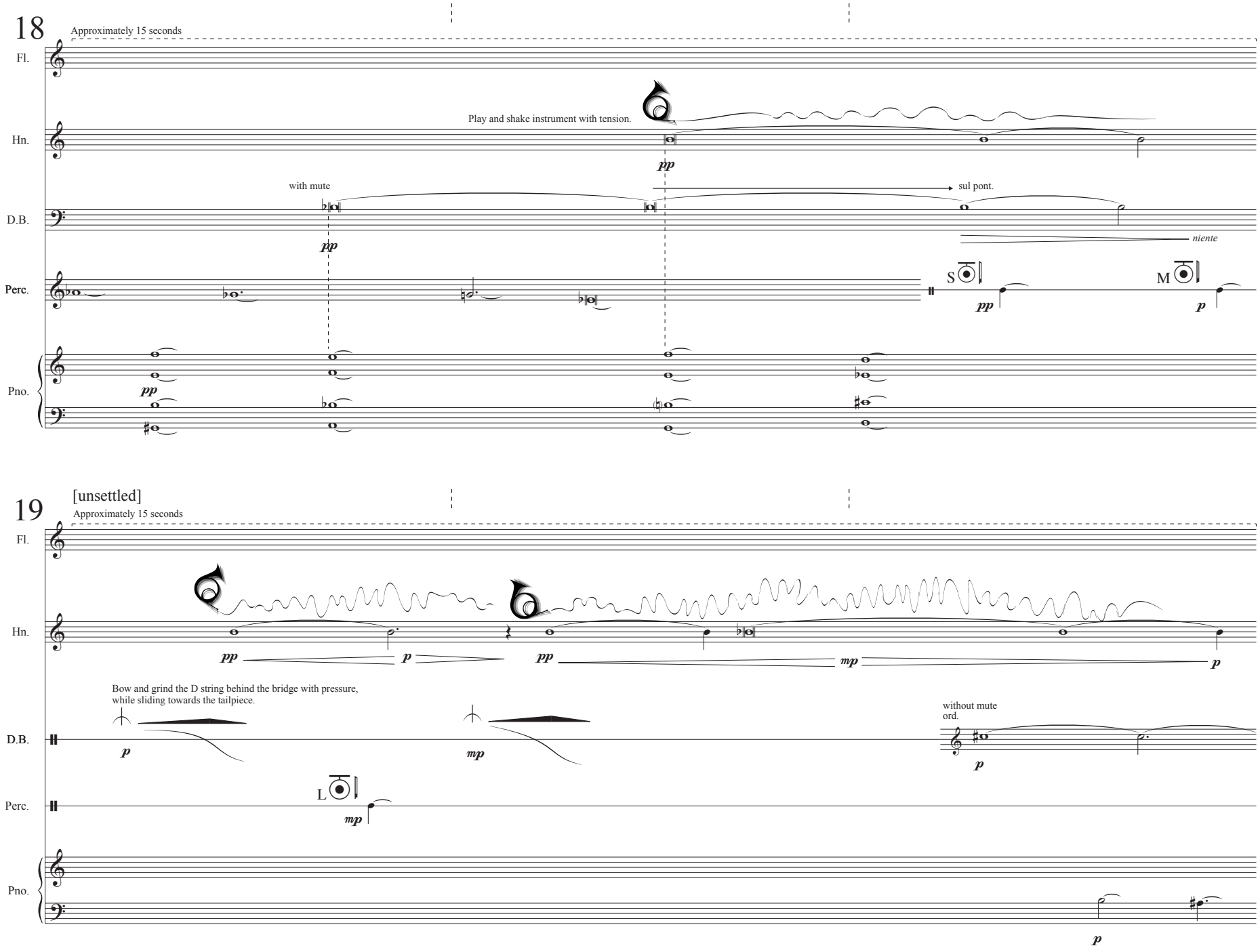


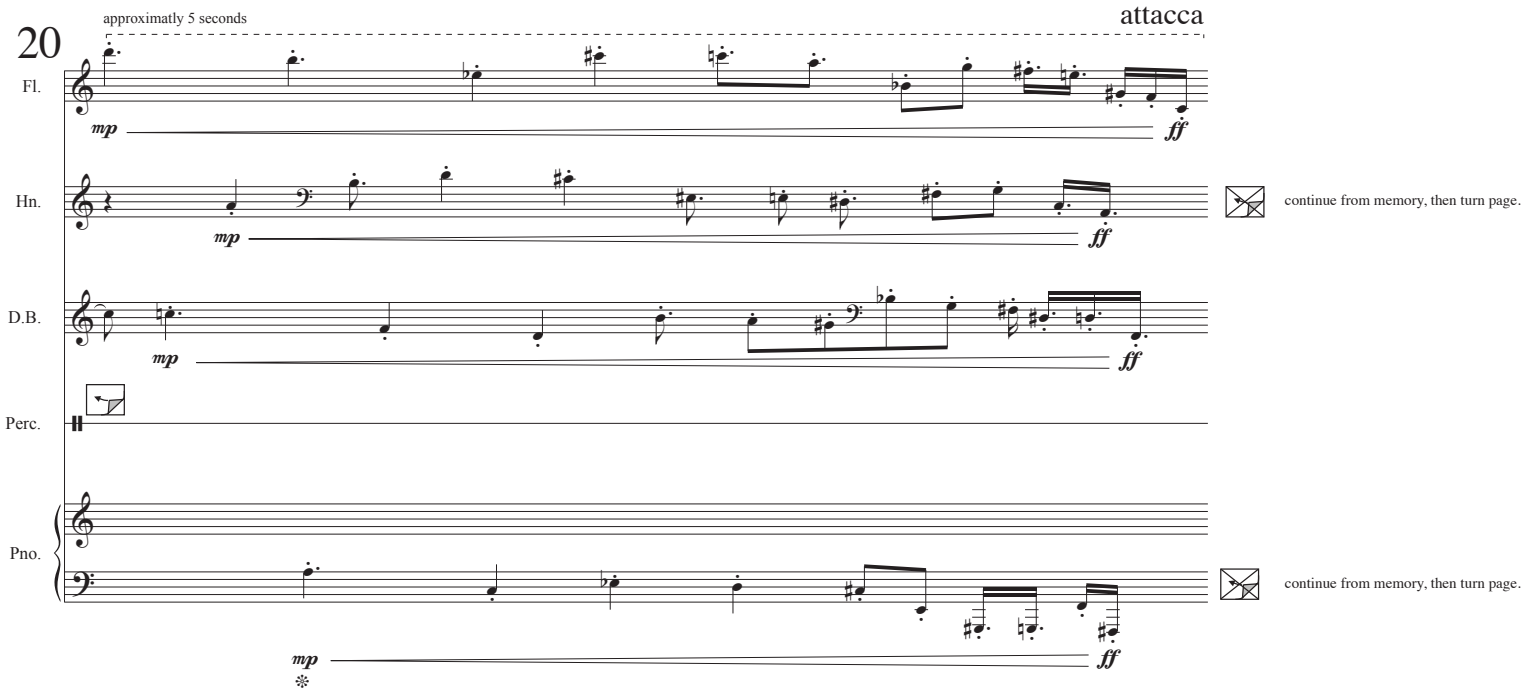
only horn, double bass, and piano


14
Approximately 9 seconds
(4 seconds)
Fl.
Hn.
D.B.
Perc.
Pno.
Place edge of cymbal on drum head
and strike it with your right fist.
Hold cymbal over drum head
and move it up and down in an oscillatory motion.
15
Approximately 9 seconds
(4 seconds)
Fl.
Hn.
D.B.
Perc.
Pno.

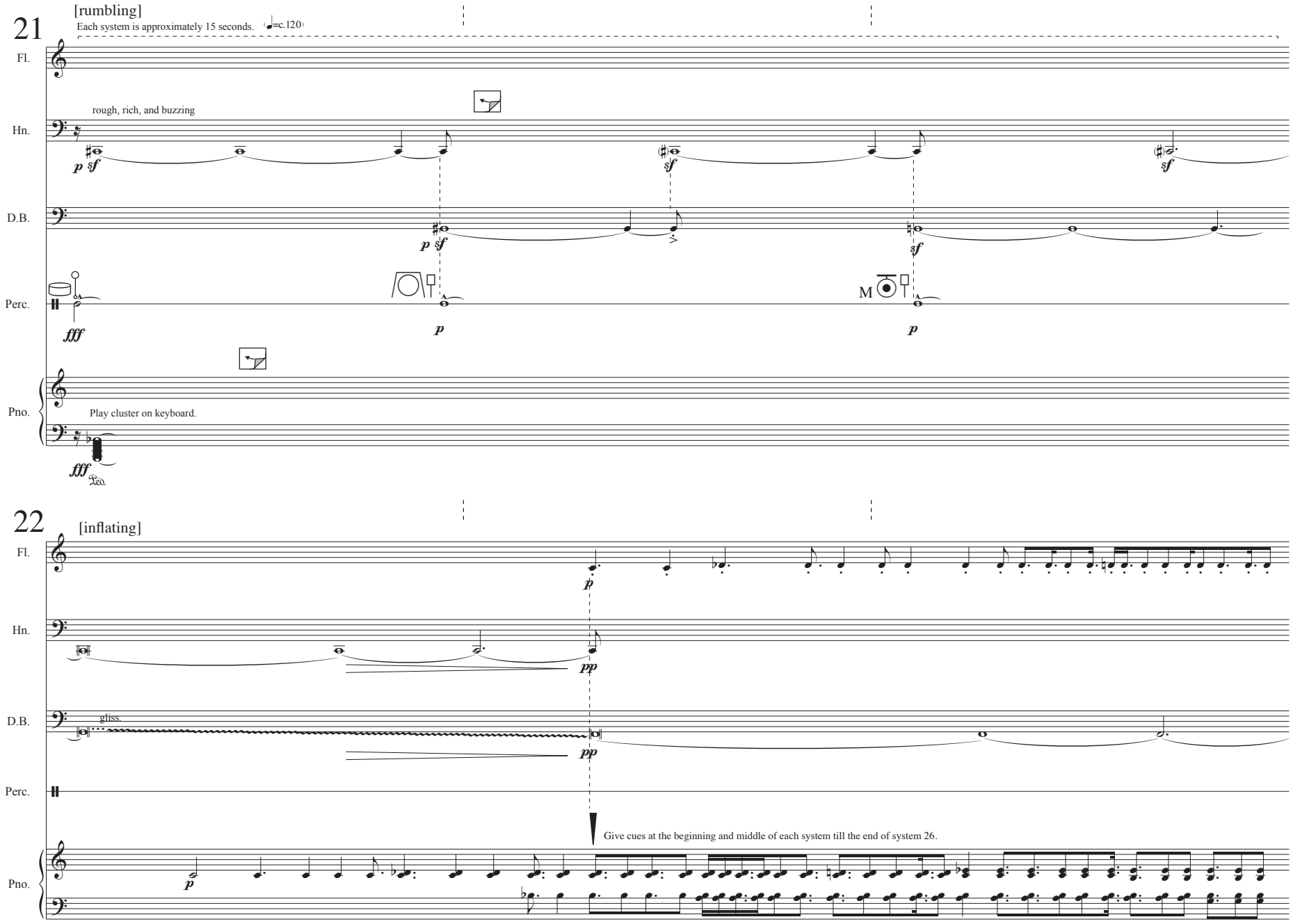

16
Approximately 5 seconds
attacca
Fl.
Give a cue.
Hn.
D.B.
Perc.
più f
Pno.

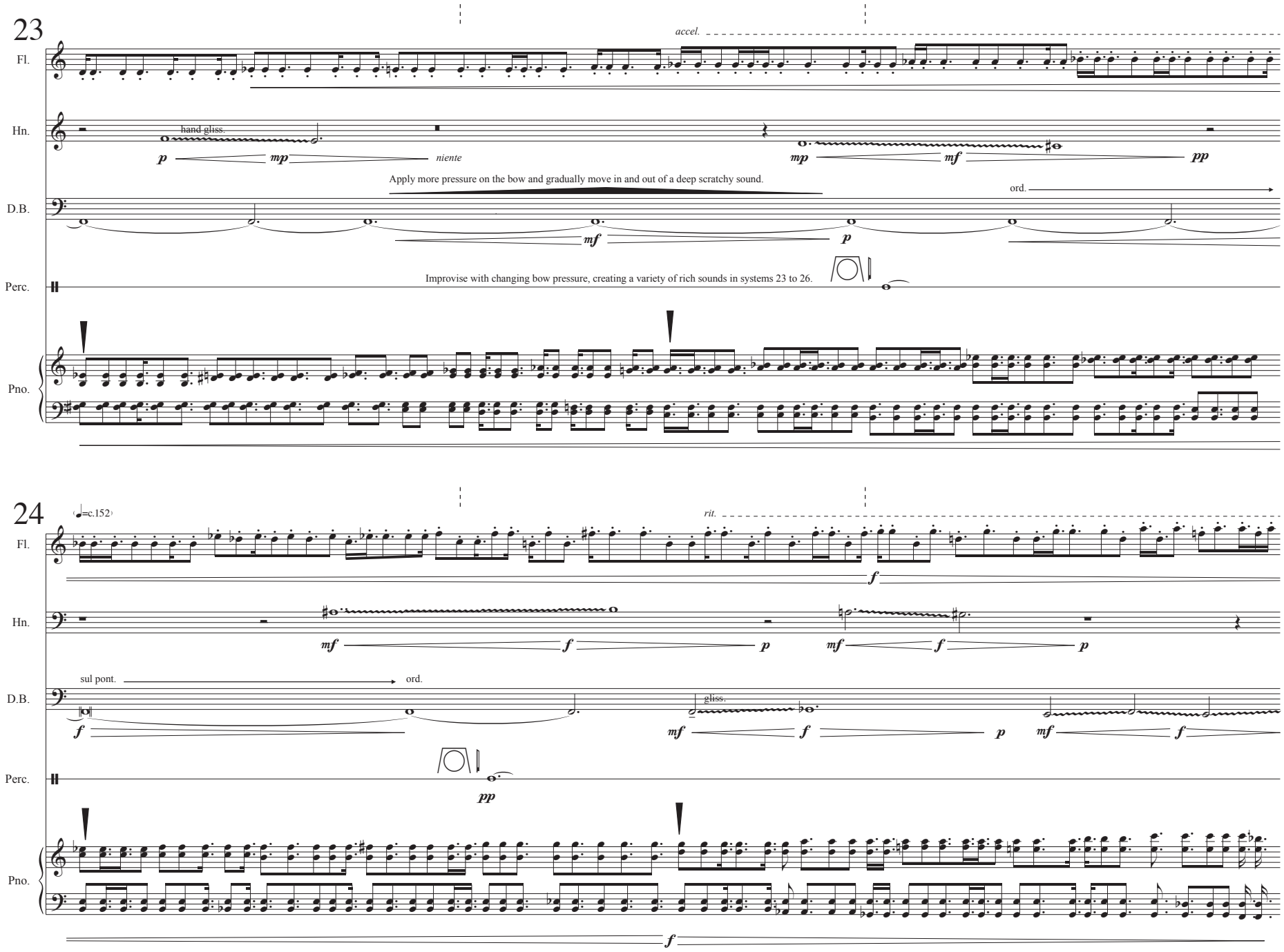

17
[warm]
Approximately 12 seconds
(2 seconds)
Fl.
Hn.
D.B.
Perc.
pp
Pno.
pp
(Change pedal on each chord.)

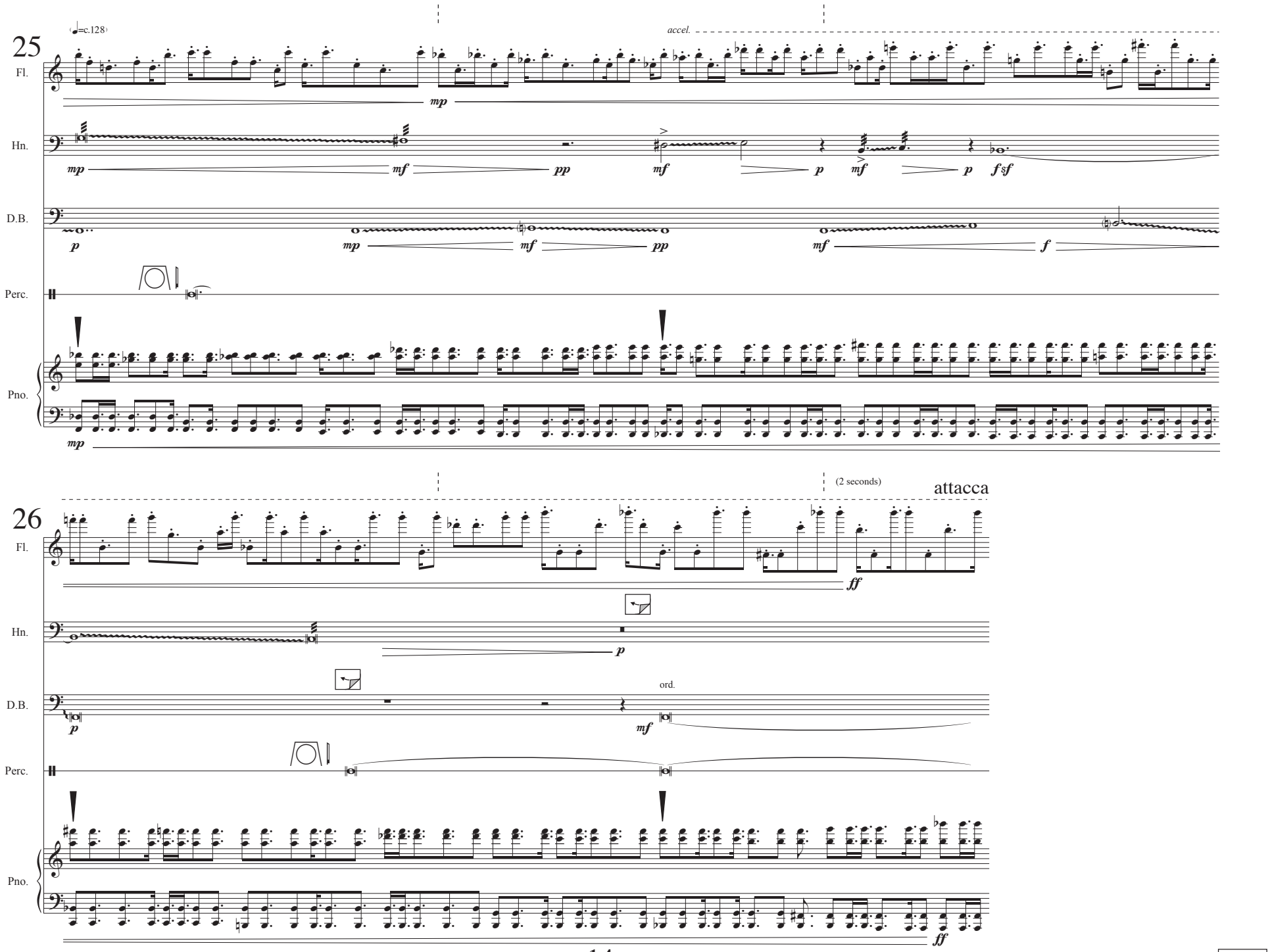

18
Approximately 15 seconds
Fl.
Hn.
Play and shake instrument with tension.
pp
with mute
sul pont.
D.B.
pp
niente
Perc.
S
M
pp
p
Pno.
pp
19
[unsettled]
Approximately 15 seconds
Fl.
Hn.
pp
p
pp
mp
p
Bow and grind the D string behind the bridge with pressure,
while sliding towards the tailpiece.
without mute
ord.
D.B.
p
mp
p
Perc.
L
mp
Pno.
p
Ped.

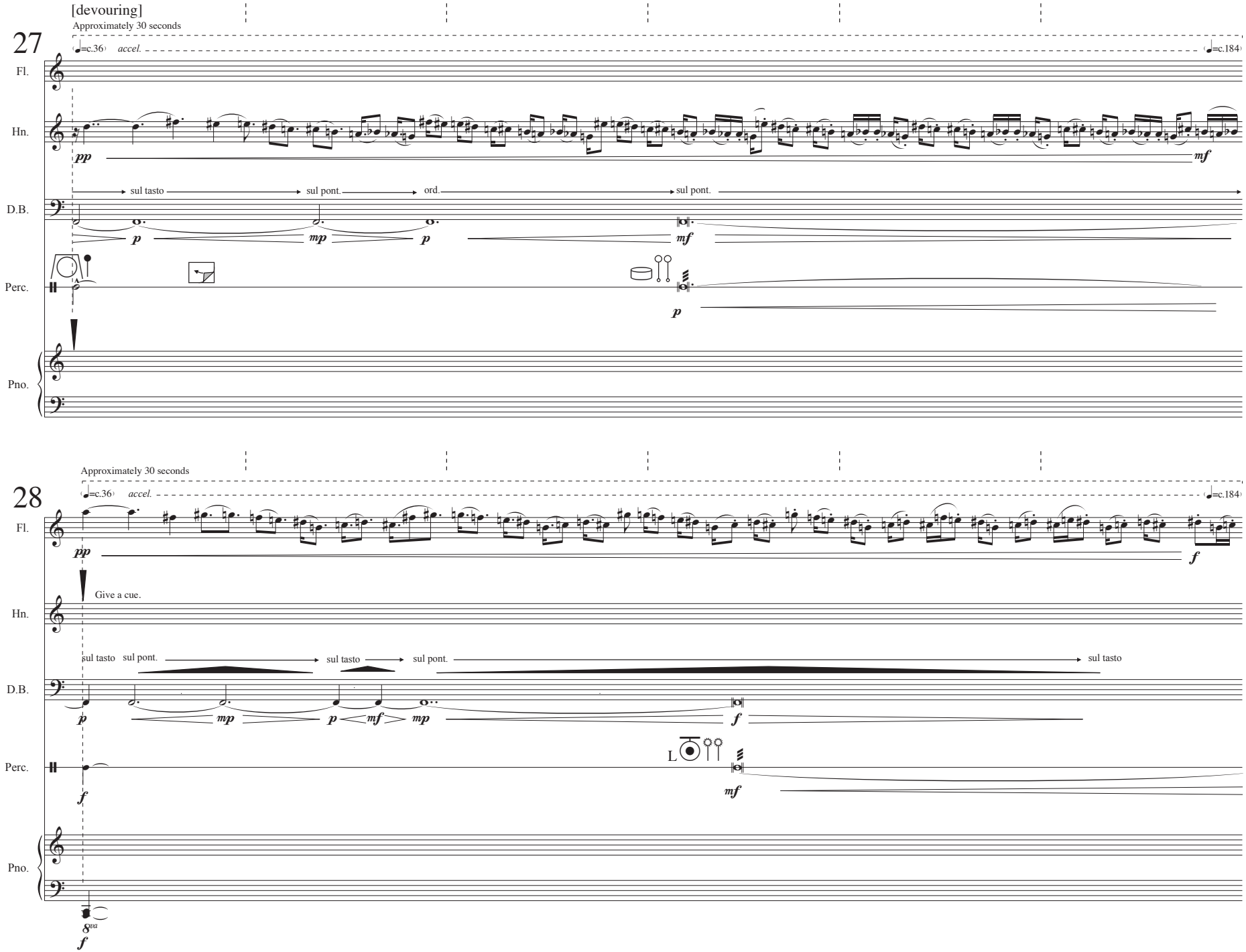

20
approximatly 5 seconds
attacca
Fl.
mp
ff
Hn.
mp
ff
continue from memory, then turn page.
D.B.
mp
ff
Perc.
Pno.
mp
ff
continue from memory, then turn page.

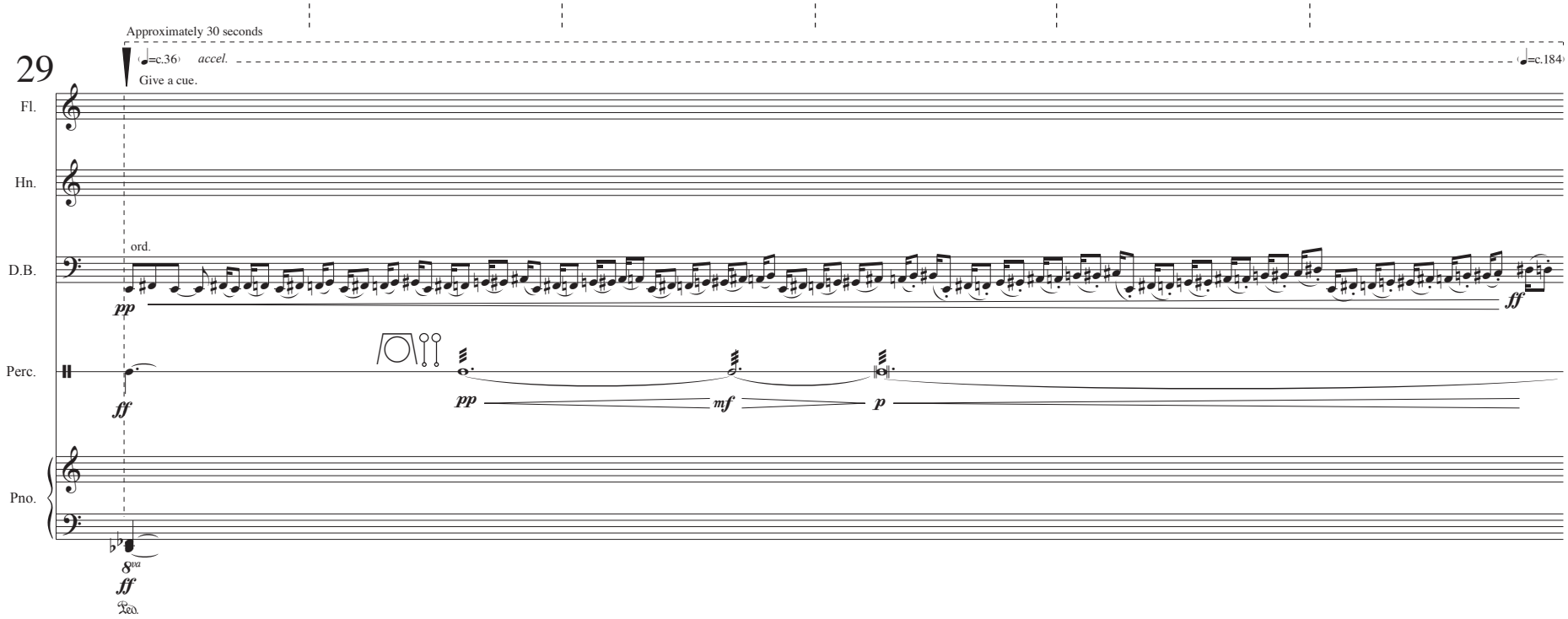
the red giant

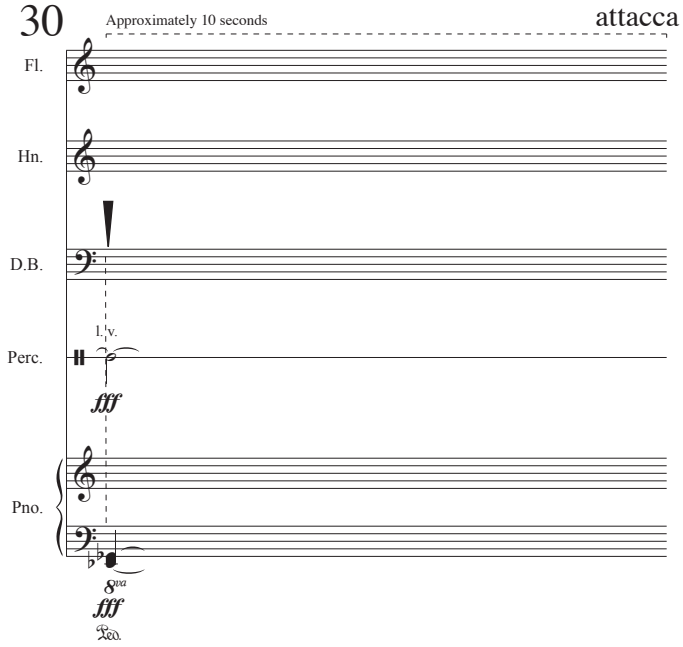



23
accel.
Fl.
Hn.
hand gliss.
p
mp
niente
mp
mf
pp
Apply more pressure on the bow and gradually move in and out of a deep scratchy sound.
D.B.
ord.
mf
p
Perc.
Improvise with changing bow pressure, creating a variety of rich sounds in systems 23 to 26.
Pno.
24
(♩=c.152)
rit.
Fl.
f
Hn.
mf
f
p
mf
f
p
sul pont.
ord.
D.B.
gliss.
f
mf
f
p
mf
f
Perc.
pp
Pno.
f


25
♩=c.128
accel.
Fl.
Hn.
D.B.
Perc.
Pno.
mp
mf
pp
p
f
sf
26
(2 seconds)
attacca
ff
ord.


[devouring]
Approximately 30 seconds
27
accel.
Fl.
Hn.
D.B.
sul tasto
sul pont.
ord.
sul pont.
Perc.
Pno.
Approximately 30 seconds
28
accel.
Give a cue.
sul tasto
sul pont.
sul tasto
sul pont.
sul tasto


29
Approximately 30 seconds
(♩=c.36) accel. (♩=c.184)
Give a cue.
Fl.
Hn.
D.B.
ord.
pp
ff
Perc.
ff
pp
mf
p
Pno.
8va
ff
Ped.


30
Approximately 10 seconds
attacca
Fl.
Hn.
D.B.
l.v.
Perc.
fff
Pno.
8va
fff
Ped.

the planetary nebula

[contemplating]*

31

Each system is approximately 18 seconds.

(3 seconds)

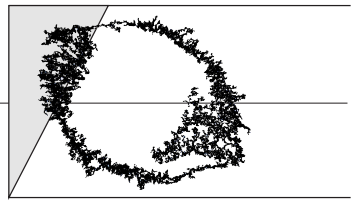
Fl.

Interpret shape through improvising whistle tones on the low B, while depicting it freely on an imaginary canvas with the end of the footjoint.

Hn.

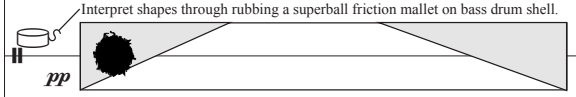
D.B.

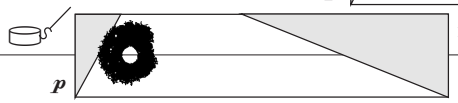
Interpret shape through improvising very high natural harmonics near the bridge gliding up and down on the G string, while depicting it freely through moving the instrument around, on its endpin.



Perc.

Interpret shapes through rubbing a superball friction mallet on bass drum shell.





Pno.

Depress sustaining pedal and keep it down for the whole movement.

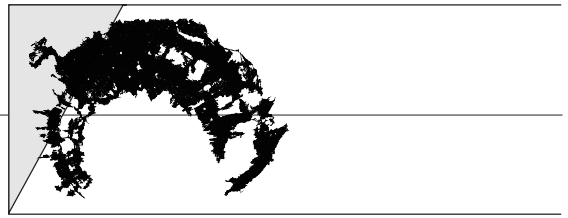
32

(3 seconds)

Fl.

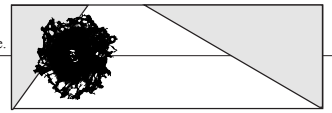
Hn.

Interpret shapes through exhaling through the instrument with the mouthpiece placed backwards on the leadpipe, while depicting it freely on an imaginary canvas with the bell.

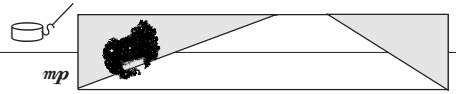


D.B.

Interpret shape through bowing the E string near the bridge applying excessive bow pressure.

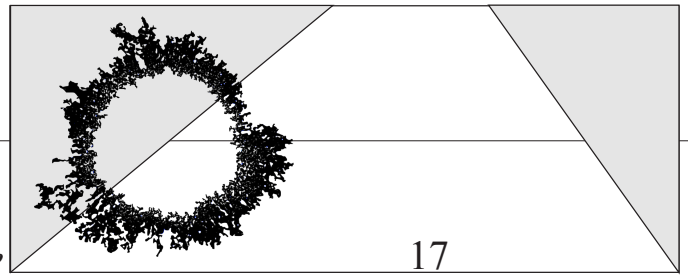


Perc.



Pno.

Interpret shape through scraping the strings between the bridge and the hitch pins with the back of your fingernails.



Interpret shapes through scraping the lowest strings along their length with fingernail at a slow pace.

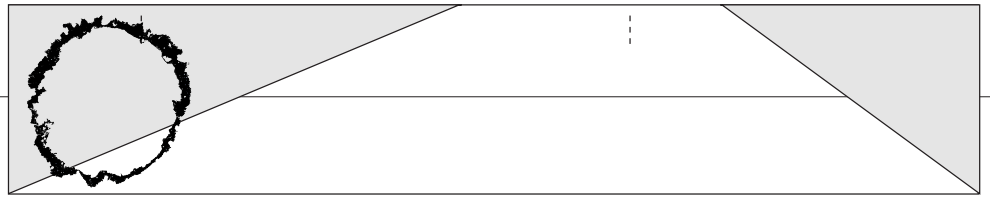
*The overall atmosphere of this movement is quiet but colorful. Rumbles of the bass 'hot core' are reflected in the 'outer ring' of various higher pitched sounds.

**Details of the dynamics of these flexible extended techniques are left to the imagination of performers. Timing of fade ins and fade outs are indicated by the rising and falling slopes at the beginning and end of the boxes. Suggested dynamics are reached after the rising slopes.

33

Fl.

Improvise whistle tones on low B.



(3 seconds)

Interpret shape starting with an airy sound and gradually transforming it into a normal A5.

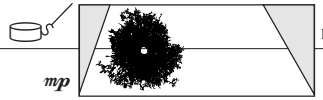
Hn.

Put the mouthpiece back in its normal position and interpret shape through exhaling through the instrument, ending it with a delicate pitched pop on D5.

D.B.

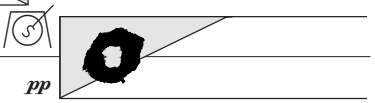
Improvise high natural harmonics on the G string near the bridge.

Perc.



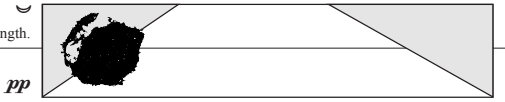
l. v.

Interpret shape through rubbing a superball friction mallet on the surface of the tam tam.



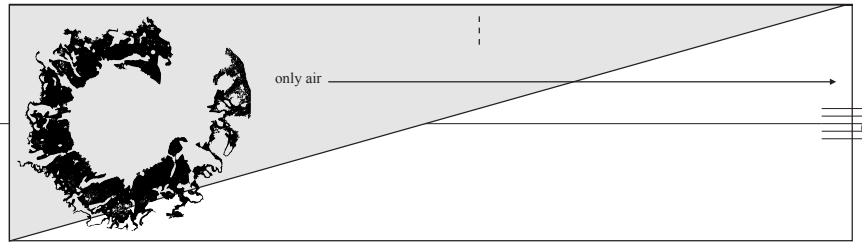
Pno.

Improvise through scraping the lowest strings along their length.



34

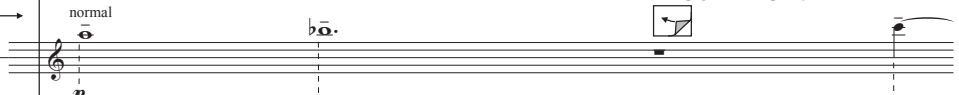
Fl.



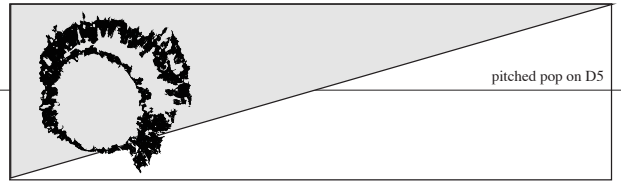
(3 seconds)

Turn page fast but quietly.

normal



Hn.

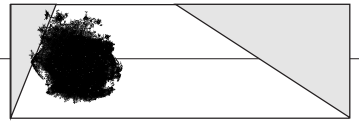


Turn page fast but quietly.

with mute

D.B.

Interpret shape through scraping strings along their length with the bow, from the bridge towards the nut.

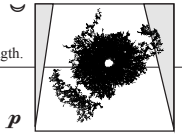


Perc.

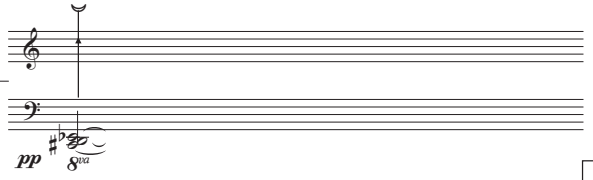
l. v.

Pno.

Improvise through scraping the lowest strings along their length.



Very fast fingernail scrapes



35

(3 seconds)

Fl.

Hn.

D.B.

Perc.

Pno.

mp

p

mp 8va

p 8va

36

(3 seconds)

Fl.

Hn.

sf (gentle)

sf (gentle)

Improvise through bowing
and grinding strings behind the bridge,
while sliding towards the tailpiece.

D.B.

mf

Interpret shape through improvising delicate sounds on wind chimes.

Perc.

mp

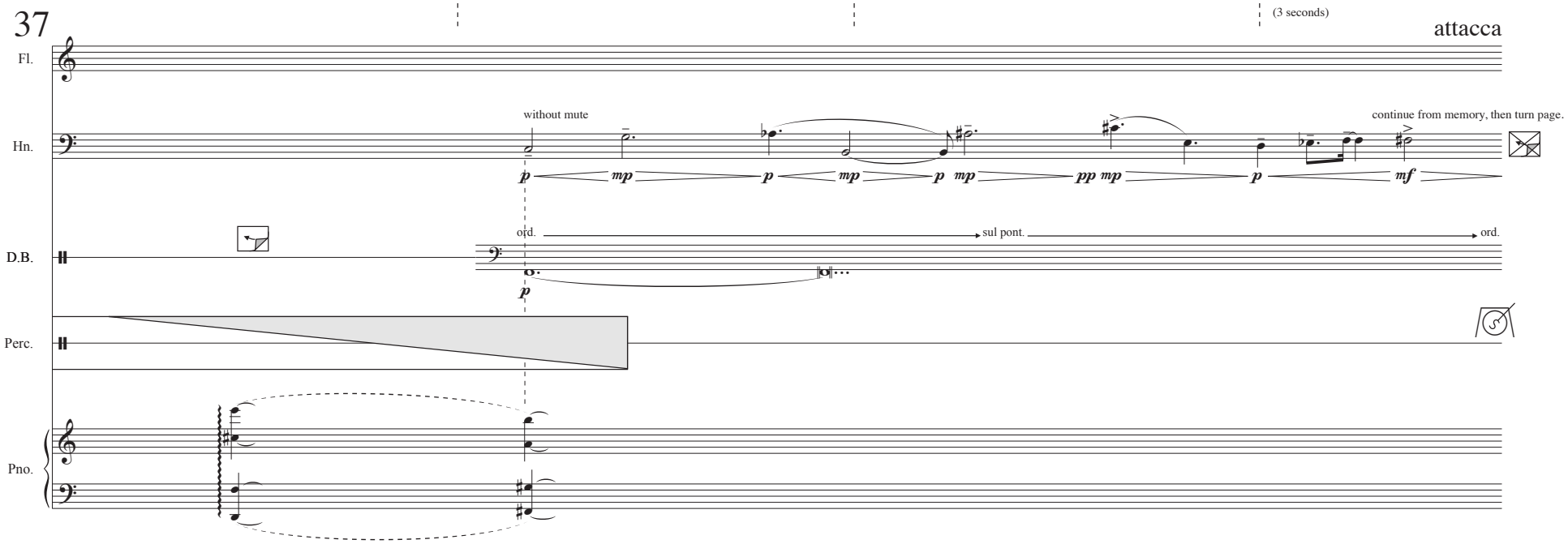
Pno.

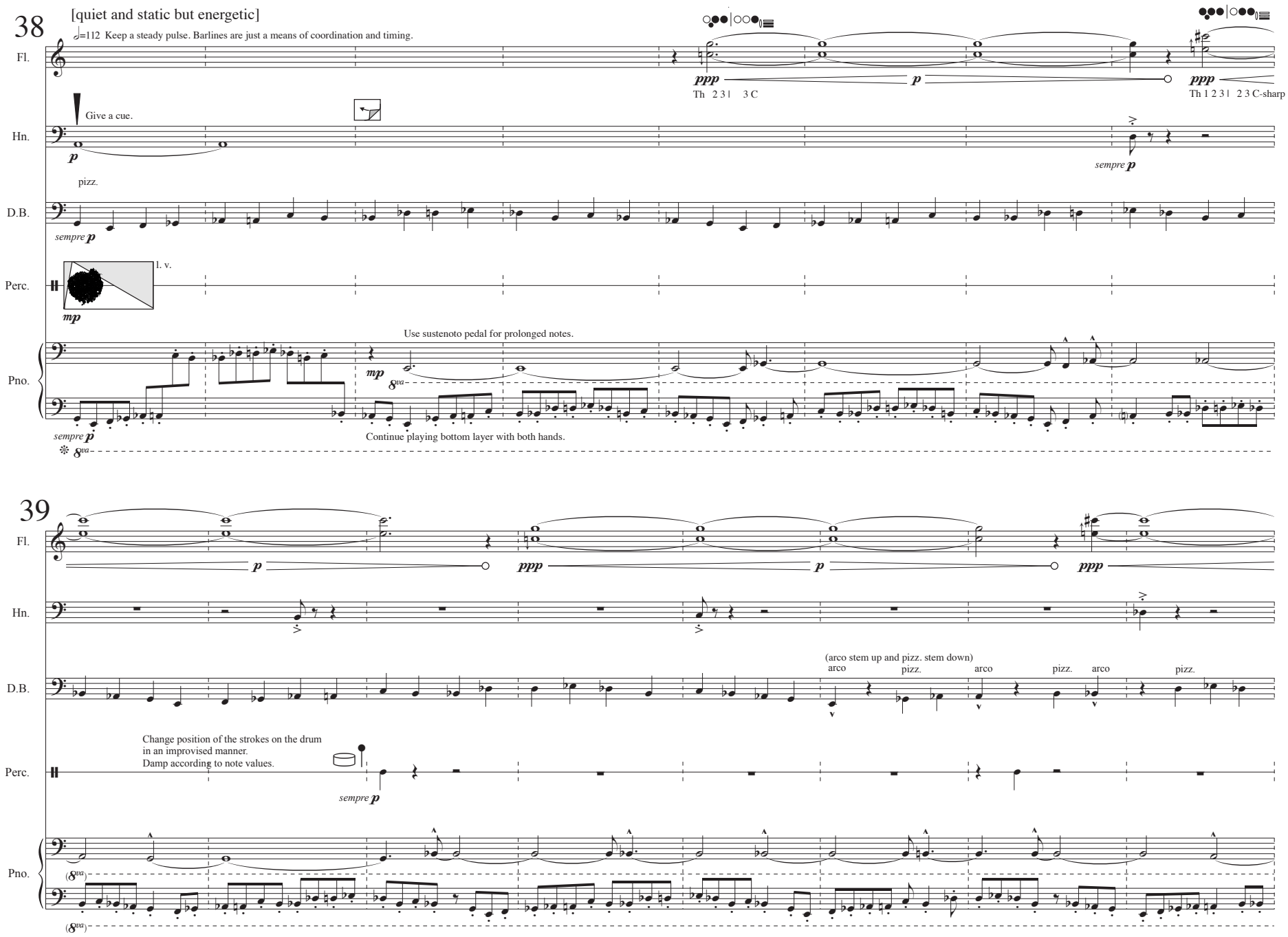
mf 8va

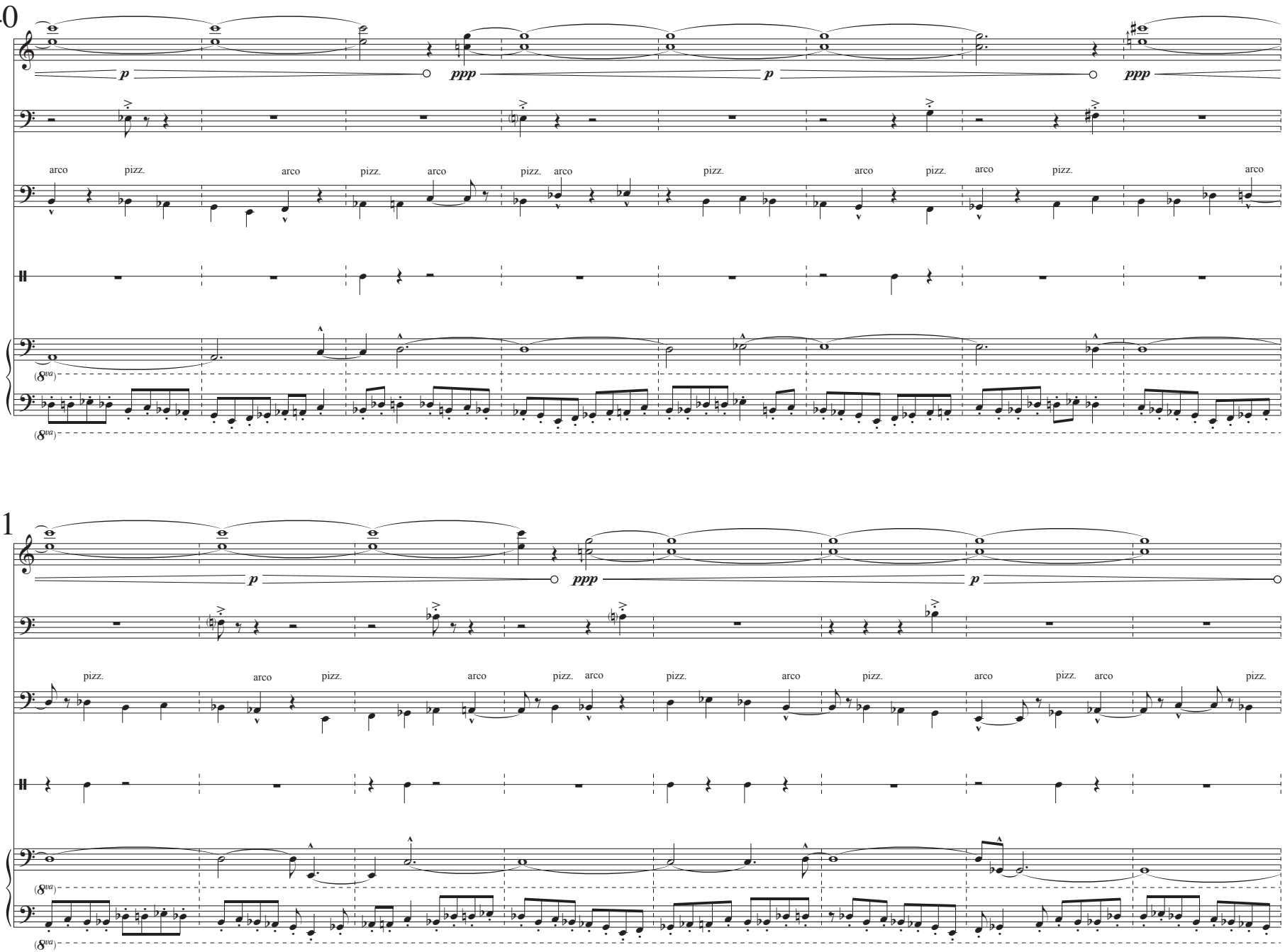
mp

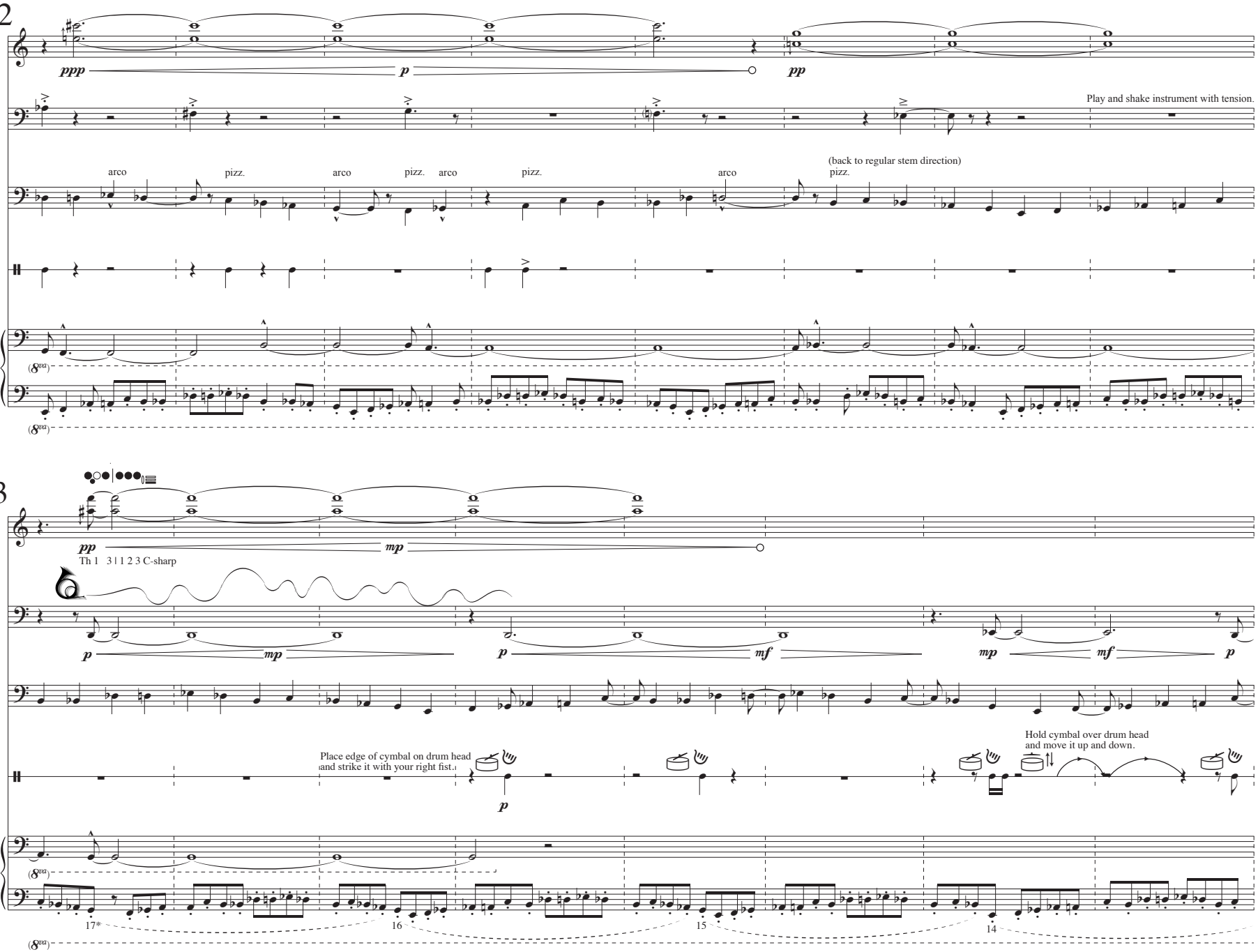
p

Ped.

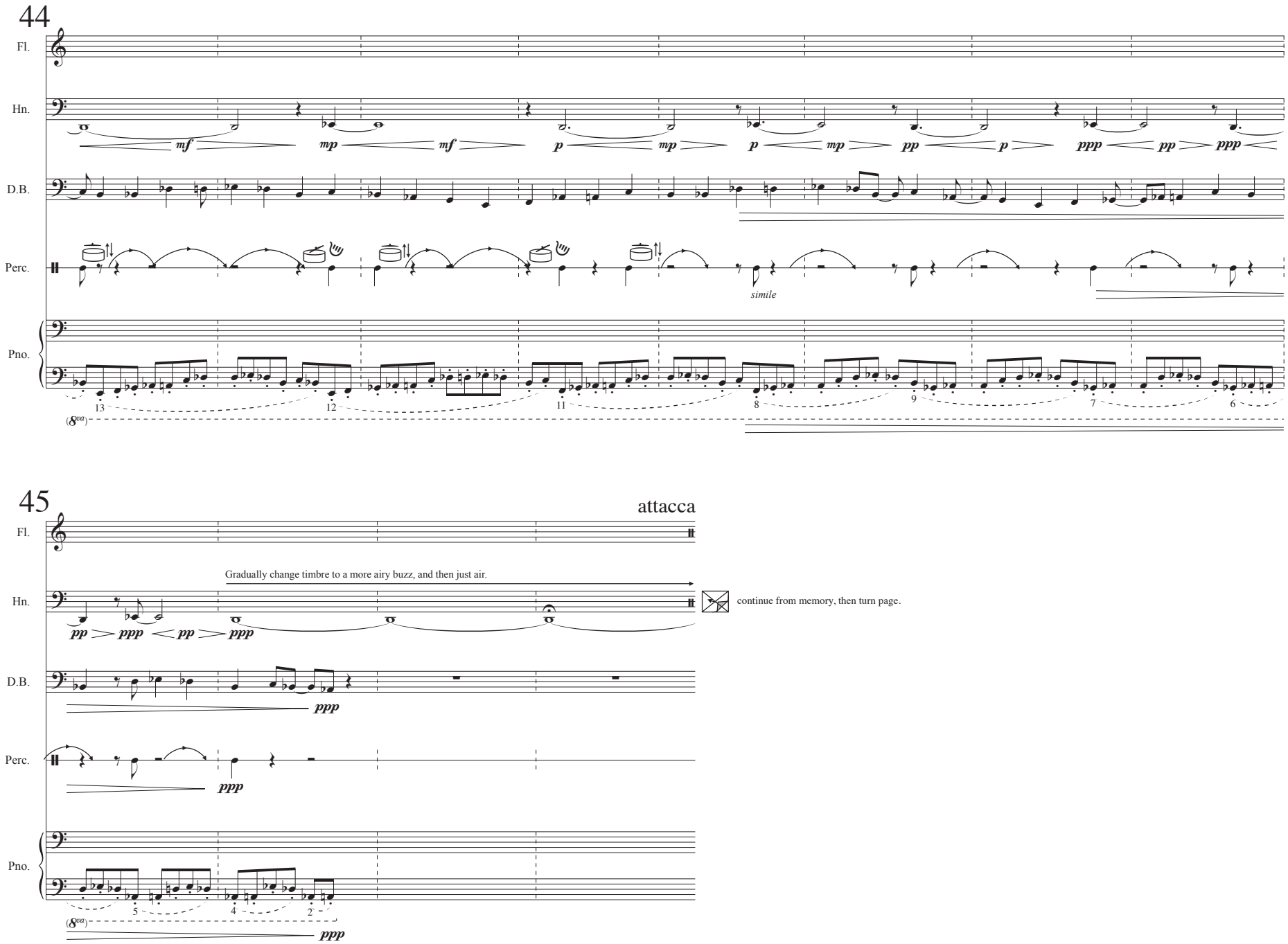

37
(3 seconds)
attacca
Fl.
Hn.
without mute
continue from memory, then turn page.
D.B.
ord.
sul pont.
ord.
Perc.
Pno.


38
[quiet and static but energetic]
♩=112 Keep a steady pulse. Barlines are just a means of coordination and timing.
Fl.
ppp
p
Th 2 3 1 3 C
ppp
Th 1 2 3 1 2 3 C-sharp
Give a cue.
Hn.
p
sempre p
pizz.
D.B.
sempre p
l. v.
Perc.
mp
Use sustenoto pedal for prolonged notes.
Pno.
mp
8va
sempre p
8va
Continue playing bottom layer with both hands.
39
Fl.
p
ppp
p
ppp
Hn.
D.B.
(arco stem up and pizz. stem down)
arco
pizz.
arco
pizz.
arco
pizz.
Change position of the strokes on the drum
in an improvised manner.
Damp according to note values.
Perc.
sempre p
Pno.
(8va)
(8va)


40
Fl.
Hn.
D.B.
Perc.
Pno.
p
ppp
p
ppp
arco
pizz.
41
Fl.
Hn.
D.B.
Perc.
Pno.
p
ppp
p
pizz.
arco



* Length of repeated pattern in 8th notes, getting shorter and shorter.


44
Fl.
Hn.
D.B.
Perc.
Pno.
mf
mp
mf
p
mp
p
mp
pp
p
ppp
pp
ppp
simile
13
12
11
8
9
7
6
(8va)
45
attacca
Gradually change timbre to a more airy buzz, and then just air.
pp
ppp
pp
ppp
ppp
ppp
5
4
2
(8va)
ppp
continue from memory, then turn page.

[timeless]
slower
about 30 seconds

46

Fl.

Interpret shapes through stage whispering fricative consonants through the instrument, while depicting them with the footjoint on an imaginary canvas. Cover the mouthpiece.

Hn.

pp

Interpret shapes through stage whispering fricative consonants through the instrument, while depicting them with the bell on an imaginary canvas.

D.B.

Bow and grind the A string behind the bridge while sliding towards the tailpiece.

pp *p*

Perc.

Interpret shapes on the surface of the tam tam rubbing a superball friction mallet.

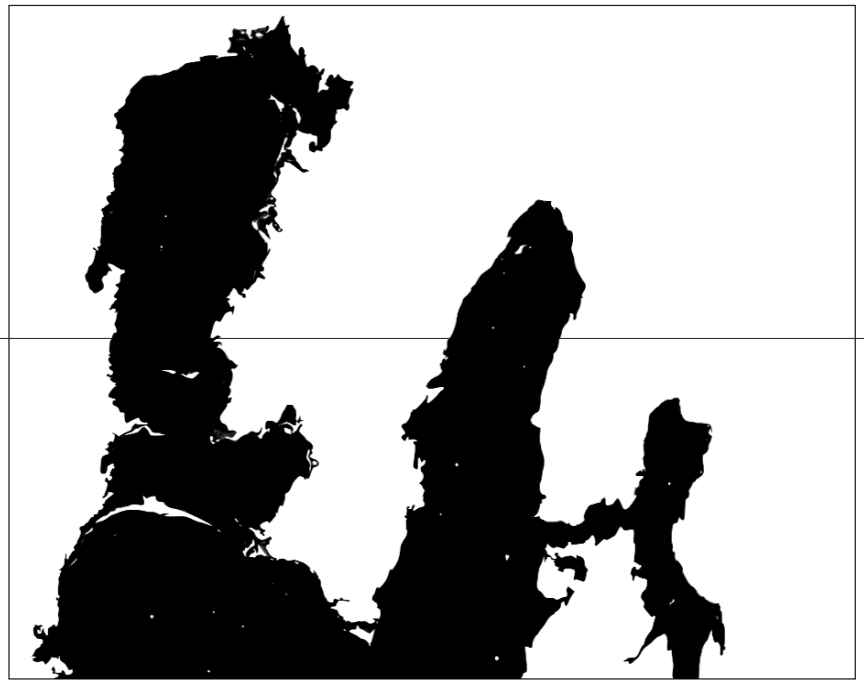
pp *p*

let vibe.

pp

Pno.

Interpret shapes scraping the strings inside the piano in the bass register with the fleshy part of fingertips. Use sustaining pedal.



p

keep pedal down
till the sound fades away.