Wolfgang von Schweinitz

Plainsound Fanfare “Notre Dame”

Concertino in 19-limit Just Intonation

for flute, 2 trumpets (in E-flat and B-flat), alto trombone (with trill valve),
4 timpani, small tomtom, and double bass (with quarter-tone scordatura)

op. 65

2019

for Michael Matsuno, Matt Kline
and their friends at UCSD

- SCORE -

PLAINSOUND MUSIC EDITION

PROGRAM NOTE

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The Plainsound Fanfare “Notre Dame” was composed during the summer weeks of 2019 for flutist Michael Matsuno, bassist Matt Kline and their friends at the University of California in San Diego. On April 15 of that year, the roof of the cathedral Notre-Dame de Paris had caught fire and burned down, and the cathedral, which has been one of the cradles of polyphony in European music, was severely damaged as a result of this incident. So the medieval composers Léonin and Pérotin who filled that grand acoustic space with their Gothic Organum music came to my mind while I was working on the parts for the trumpets and the alto trombone, which are alluding to this oldest form of polyphony with their many parallel fourths and fifths.

Here are some technical remarks with regard to the harmonic language of the piece, which is derived from and based on the harmonically related pitches that can be played on the trumpets without the need to alter the intonation of any note by lipping it up or down:

The alto trombone must be equipped with a trill valve, the slide of which is tuned as a non-tempered diatonic semitone (with a frequency ratio 16/15, or 112 cents) in the first position. The semitone trills generated with the trill valve are gradually getting a bit smaller as the trombone slide is extended step by step, until they reach the size of an 11-limit semitone 22/21 or 81 cents. This phenomenon provides the conceptual basis for the pitch repertoire or tone system of the entire microtonal composition. The three valve slides of the trumpets are tuned to precisely match this u-tonal harmonic series of chromatic pitches (with wave length ratios 15:16:17:18:19:20:21:22), and the notes of the timpani part are also tuned to this microtonal chromatic scale of pitches, all of which serve as temporary tonic notes or tonal centers throughout the piece. On the double bass, these pitches can all be tuned by ear below some natural harmonic played on the G string or D string. The A string and the E string are lowered by an 11-limit quartertone (33/32 or 53 cents) to support or harmonize the pitches played on the trombone with its longest possible tube length (which yields a series of harmonics based on A-quarter-flat).

The flutist joins in by performing a continuous melodic sequence of more or less challenging tuning tasks, and many pitches of the flute part must be produced with special microtonal fingerings in order to be in tune with the harmonies played by the brass and the bass. This ensemble intonation study is also a concerto for the flute. (WvS)

BIO

Wolfgang von Schweinitz was born in Hamburg, Germany in 1953. He studied in 1968-76 with Esther Ballou, Ernst Gernot Klussmann, György Ligeti, and John Chowning and is currently living in Southern California, thirty miles north of CalArts (California Institute of the Arts), where he was invited to assume the succession of James Tenney in 2007. Since 1997 his compositions are concerned with developing new microtonal tuning and ensemble playing techniques based on non-tempered just intonation.

Website: www.plainsound.org

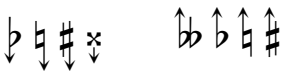
ACCIDENTALS

for microtonal just intonation

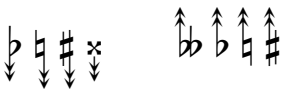
EXTENDED HELMHOLTZ-ELLIS JI PITCH NOTATION

The exact intonation of each pitch is written out by means of the following harmonically defined accidentals:

Pythagorean series of perfect fifths, based on the open strings
(… c g d a e …)



lowers / raises the pitch by a syntonic comma:
81 : 80 = circa 21.5 cents



lowers / raises the pitch by two syntonic commas:
circa 43 cents

lowers / raises the pitch by a septimal or 7-limit comma:
64 : 63 = circa 27.3 cents

lowers / raises the pitch by two septimal commas:
circa 54.5 cents (not used in this piece)

raises / lowers the pitch by an 11-limit quarter-tone:
33 : 32 = circa 53.3 cents

lowers / raises the pitch to diminish the Pythagorean major sixth 27:16 by a 13-limit third-tone to represent the 13:8 median sixth:
27 : 26 = circa 65.3 cents (not used in this piece)

lowers / raises the pitch to diminish the 16:15 diatonic semitone by a 17-limit schisma to represent the 17:16 semitone:
256 : 255 = circa 6.8 cents

raises / lowers the pitch to augment the 32:27 Pythagorean minor third by a 19-limit schisma to represent the 19:16 small minor third:
513 : 512 = circa 3.4 cents

raises / lowers the pitch to augment the Pythagorean tritone 729:512 by the 23-limit comma to represent the 23:16 augmented tritone:
736 : 729 = circa 16.5 cents (not used in this piece)

These 'Helmholtz-Ellis' accidentals for just intonation were designed in collaboration with Marc Sabat.

The attached arrows for pitch alterations by a syntonic comma are transcriptions of the notation used by Hermann von Helmholtz in his book "Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musik" (1863). – The annotated English translation "On the Sensations of Tone as a Physiological Basis for the Theory of Music" (published 1875/1885) was made by Alexander J. Ellis, who refined the definition of pitch within the 12-tone system of Equal Temperament by introducing a division of the octave into 1200 cents. – The accidental sign denoting an alteration by a septimal comma was devised by Guiseppe Tartini (1692-1770), the composer, violinist and researcher who investigated the difference tones created by double-stops.

Pitch-bend information:

In addition to the harmonic definition of a pitch by means of its accidentals, it is also possible to specify its absolute pitch-height as a cents-deviation from the respectively indicated chromatic pitch in the standard 12-tone System of Equal Temperament. – Such additional pitch-bend numbers are only included in the parts for the flute and timpani to facilitate solo rehearsals with the aid of a tuning device. In the ensemble rehearsals, every pitch may be tuned by ear.

Tuning Instructions and Pitch Repertoire

TRUMPETS and ALTO TROMBONE

Trumpet in E-flat

The open horn is tuned with harmonic 5 to harmonic 4 of the double bass G string.
The 2nd valve slide is tuned with harmonic 4 to harmonic 4 of the double bass D string.
The 3rd valve slide is tuned with harmonic 3 to harmonic 4 of the double bass G string.
The 1st valve slide is tuned in combination with valve 2 to harmonic 4 of the G string.

Trumpet in B-flat

The open horn is tuned with harmonic 5 to harmonic 4 of the double bass D string.
The 2nd valve slide is tuned with harmonic 4 to harmonic 3 of the double bass D string.
The 3rd valve slide is tuned with harmonic 4 to harmonic 4 of the double bass G string.
The 1st valve slide is tuned in combination with valve 2 to harmonic 4 of the G string

Alto Trombone with trill valve

Position I of the open horn ("O") is tuned with harmonic 5 to harmonic 4 of the double bass G string.
The trill valve slide ("T") is tuned in Position I with harmonic 4 to harmonic 4 of the double bass D string.

Table notated at sounding pitch

Trumpet in Eb
Trumpet in Bb
Alto Trombone

Position I

Position I with Trill valve = Position II

Position II with Trill valve = Position III

or

Position III with Trill valve = Position IV

Position IV with Trill valve = Position V

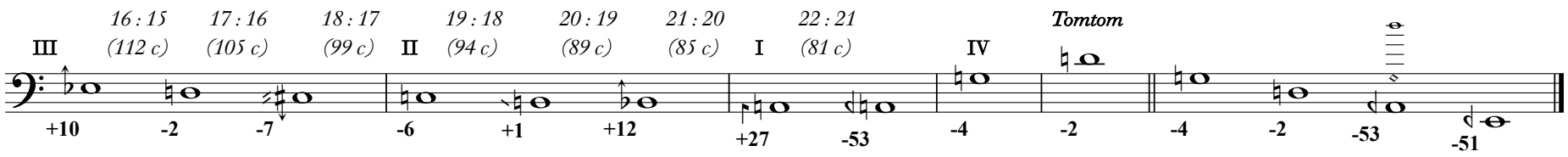
Position V with Trill valve = Position VI

Position VI with Trill valve = Position VII

Position VII with Trill valve

4 TIMPANI and small TOMTOM

DOUBLE BASS Scordatura



The pedal positions for these pitches should be marked on timpani I, II, and III.

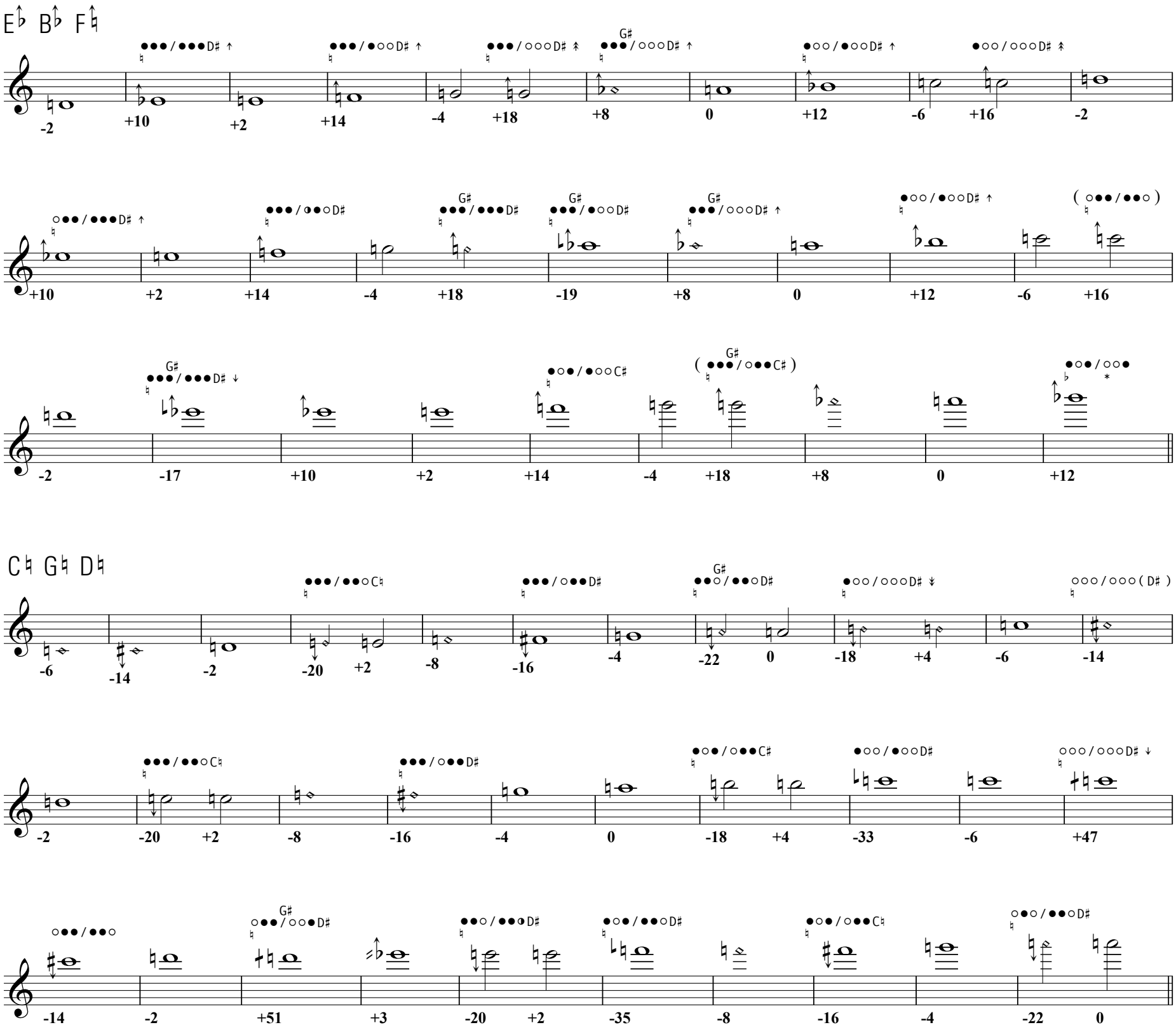
Double Bass Scordatura

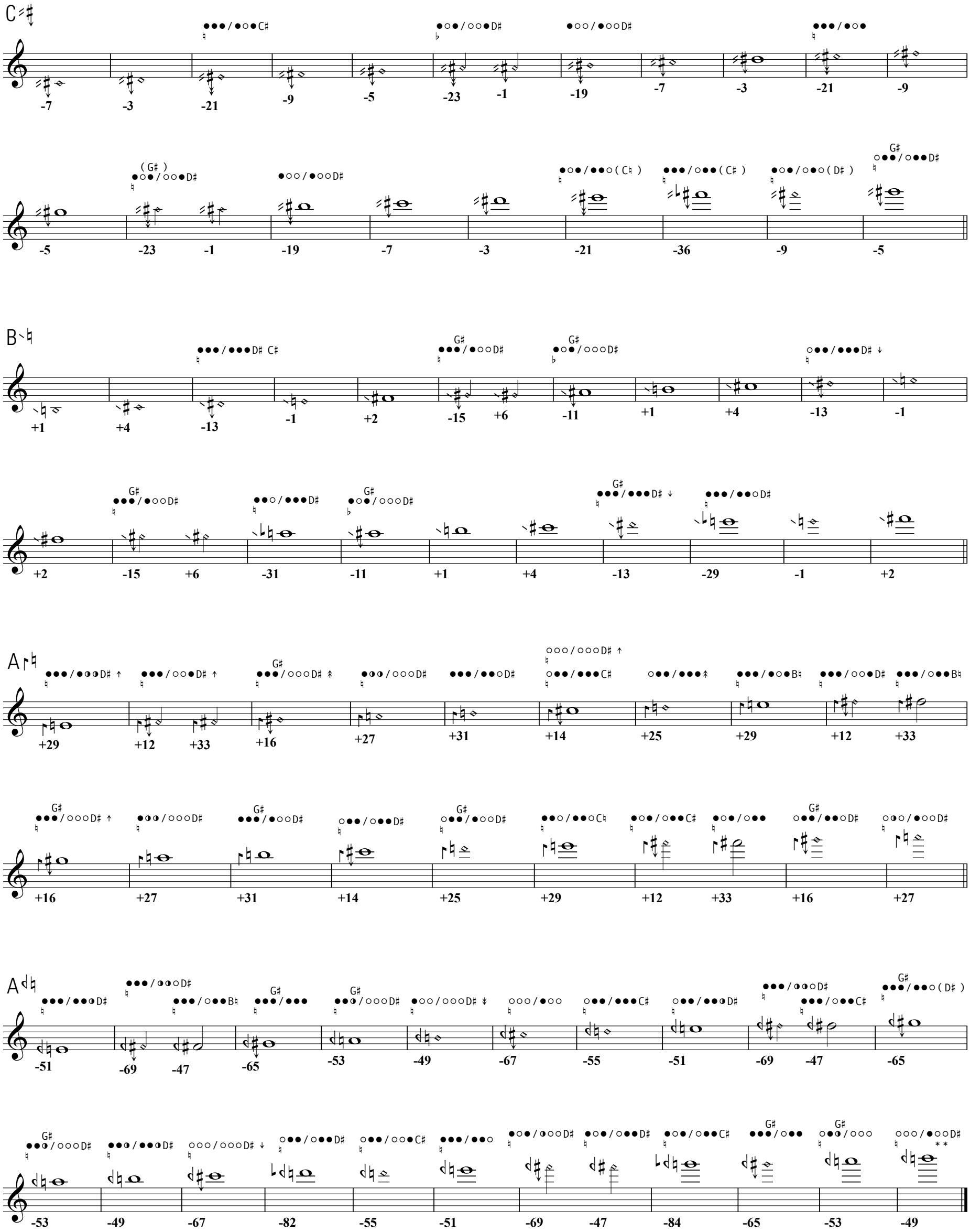
The A string and the E string are lowered by an 11-limit quarter-tone (frequency ratio 33/32 or 53 cents). The 3rd string may be tuned by ear as a consonant 11/2 below the double-octave harmonic of the D string by listening to and eliminating the beatings at D-5, and the 4th string may also be tuned by ear as an 11/1 consonance below the tuning reference pitch A = 440 Hz.

FLUTE

Fingering Suggestions

Pitches that are not used in the flute part are notated with a small diamond note head.




C
●●●/●○●C♯
-7 -3 -21 -9 -5
●○●/○○●D♯
-23 -1
●○○/●○○D♯
-19 -7 -3
●●●/●○●
-21 -9
-5
(G♯)
●○●/○○●D♯
-23 -1
●○○/●○○D♯
-19 -7 -3
●○●/●●○(C♮)
-21
●●●/○●●(C♯)
-36
●○●/○●○(D♯)
-9
G♯
○●●/○●●D♯
-5
B♭
●●●/●●●D♯ C♯
+1 +4 -13 -1 +2
G♯
●●●/●○○D♯
-15 +6
●○●/○○○D♯
-11 +1 +4
●●○/●●●D♯
-31
●●●/●●○D♯
-13 -29 -1 +2
A♮
●●●/●●●D♯
+29
●●●/○○●D♯
+12 +33
G♯
●●●/○○○D♯
+16
●●●/○○○D♯
+27 +31
○○○/○○○D♯
+14
○●●/●●●C♯
+25
○●●/●●●
●●●/●○○B♮
+29
●●●/○○●D♯
+12
●●●/○●●B♮
+33
A♭
●●●/●●●D♯
-51
●●●/○○○D♯
-69 -47
●●●/○●●B♮
G♯
●●●/●●●
-65
G♯
●●●/○○○D♯
-53 -49
●○○/○○○D♯
-67
○○○/●○○
○○●/●○○C♯
-55
○●●/●●●C♯
-51
○●●/●●●D♯
-69
●●●/◑◑○D♯
-47
●●●/○●●C♯
G♯
●●●/●●○(D♯)
-65
G♯
●●●/○○○D♯
-53
●●◑/●●●D♯
-49
○○○/○○○D♯
-67
○●●/○●●D♯
-82
○●●/○○●C♯
-55
●●●/●●○
-51
●○●/◑○○D♯
-69
●○●/○●●D♯
-47
●○●/○●●C♯
-84
G♯
●●●/○●●
-65
G♯
○●◑/○○○
-53
○○○/●○○D♯
**
-49

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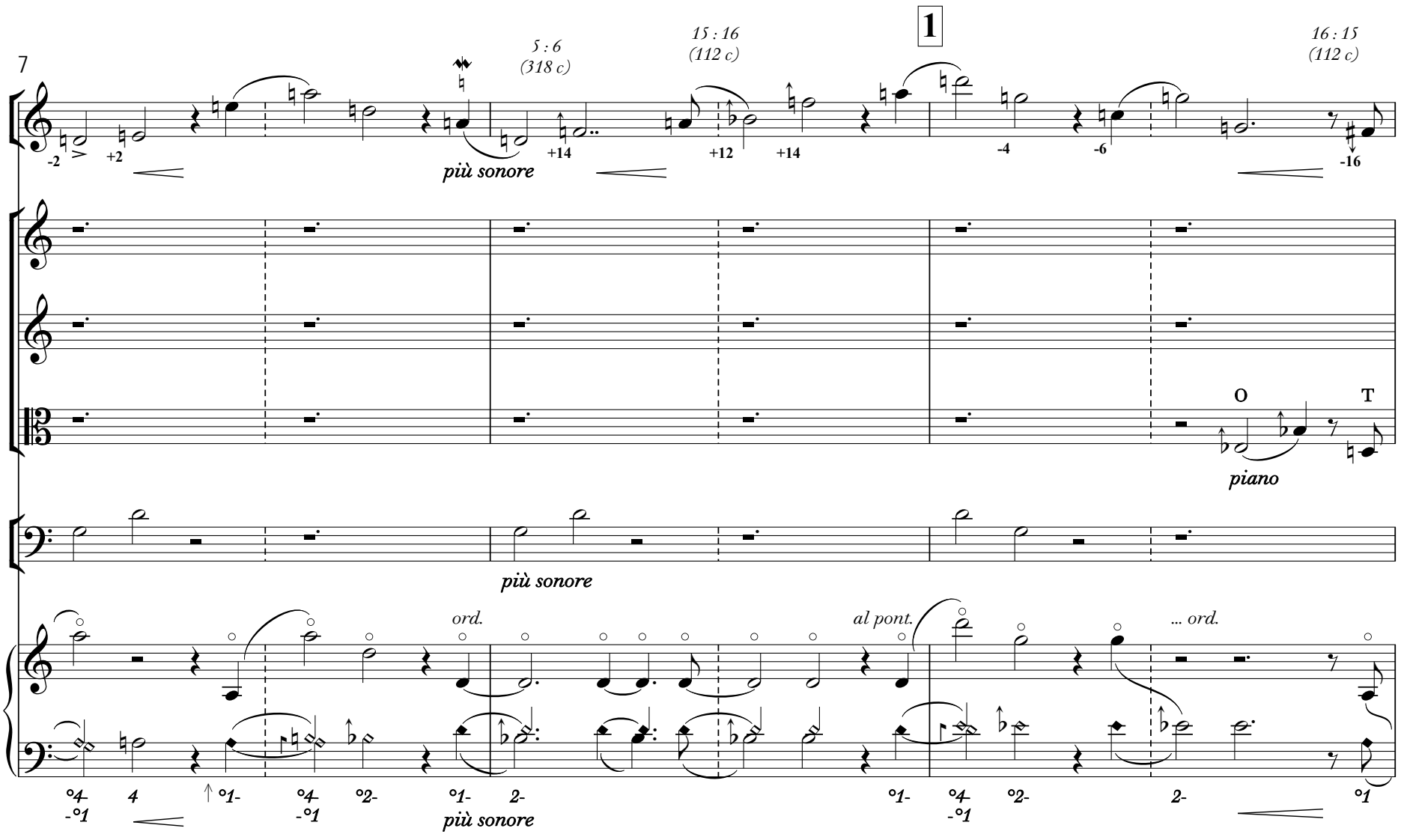
Microtonal fingering suggestions for all the notes in the flute part are listed in the preface. All notes in the trumpet parts may be played by simply trying to center the pitch, never lipping any note up or down. All the equidistant trombone slide positions may be found with the help of the trill valve slide, which is precisely tuned as a diatonic semitone (16 : 15 or 112 cents) in the 1st position. The entire trombone part may be played with perfect intonation even in solo rehearsals. The kettledrums should always be struck at the sweet spot, producing a harmonious, classical sound; and the pitch positions should be marked on the pedals of timpani I, II, and III. The double bass part may be played a little bit closer to the bridge than 'ordinario', to get a bright and nasal sound; the contact position of the bow is always defined by the various natural harmonics. Whenever one of the high harmonics is asking for some extra time to speak, the bass player may slow down the tempo as needed, conducting the ensemble. The distance between the 1st and the 4th finger is equal to 1/12 of the overall string length and precisely the same in every position, while the 2nd finger is always placed exactly in the middle between the 1st and the 4th finger. Performance duration : circa 13 minutes



13

-4 +12 -6 +10 -4 -2 +14 +12 +14 +2

O T O O O T O T O

più sonore

III *The eight recurring pedal positions should be marked on Timpani I, II, & III*

II II *182 c down* *(più piano)**

Notes with accents are just a little bit louder than the others.

+10 (-6) +12

*) *The first stroke on a retuned drum is always on a soft beat, to check the tuning.*

-2 1 ↓°4 °1 1 ↓°4 °1- 4 °4 1- °4

19

10 : 9
(182 c)

21 : 20
(85 c)

-2 -4 +14 +2 -2 +16 +12 +12 +14 +29 +14 -2 -4

T O T O O t O T O

II I

(+12) +27

al pont. *... ord.*

°1- 4 4 °4 1 °1 ↓°4 °1 -°4 °4 °2 2 °2 2 °4 2 °2

25

7 : 6
(267 c)

poco ritenuto

-2 -4 +29

flutter tongue

sfz e molto sonore *marcato*

T O T

I *81 c down*

-53

marcato

al pont. *... ord.*

2 °4- °4 °1- °2- 1- 0 1- °4 °1 1- °2- ↑°4 °1

marcato

2 ca. 54 ***a tempo***

31

-51 -4 +10

piano *più sonore*

○○○ + ○●○ ○○○ + ○●○

pianissimo *pianissimo*

T O O T O T O T O O T O

piano *più sonore* *pianissimo*

piano *più sonore* *pianissimo*

arco *al pont.* *... ord.*

pizz. *(l.v.)*

piano *più sonore* *pianissimo*

33 : 32
(53 c)

32 : 25
(427 c)

37

+2 +2 -51 -47 -65 -51 -53 +2 -4 +10 -18

più sonore *forte* *piano*

●●○ + ○●○ ○○● + ○○○

più sonore *piano*

più sonore *piano*

più sonore *piano*

II *182 c up*

-6

più sonore *più sonore* *piano*

43

6 : 7
(267 c)

7 : 8
(231 c)

-6 -18 -2 +14 +16 -17 -4 +14 +31 +16

T O T O T O T

II II *182 c down* I *81 c up* I

(-6) +12 +27

4 °4 °1 °4 1 °4 °2 2 °4 2 °2 2 °2 °4

più sonore

poco ritenuto

49

20 : 21
(85 c)

+33 +31 +16 +14 +10 +12 +2 -14 +4

più sonore *molto sonore*

O T O T O T

III *112 c down*

-2

al pont. *... ord.* *al pont.* *ord.*

2 °1 °2 2 °1- 2 °4 -°1- °1 1 °1 1 °1 °1 1 °1

molto sonore

3 ♩ ca. 54 ***a tempo***

55

piano

piano

piano

III *112 c up*

piano

III *112 c down*

arco *al pont.* *... ord.* *al pont.* *ord.* 17/8

pizz. *(l.v.)*

piano

60

19 : 16
(298 c)

più sonore

più sonore

più sonore

più sonore

III *105 c down*

II *182 c up*

II *94 c down*

17/6 19/8 19/3

65

+4 +16 +14 +12 -4 -17 -2 +29 +14 +16 +14

(178 c)

II 89 c down

+12 (+27)

I

al pont. ... ord. al pont.

poco ritenuto

70

-2 -53 -4 -16 -33 +2 +47

espr. più sonore marc.

or

più sonore marc.

I 81 c down

-53

più sonore marc.

4 ca. 54 ***a tempo***

22 : 21
(81 c)

75

piano più sonore piano

(T) O T O T O T O O t O T O T O

I *81 c up*

piano più sonore

arco *al pont.* *... ord.* *al pont.* *... ord.* *al pont.*

pizz. *(l.v.)*

piano più sonore

81

ca. 60 ***poco più mosso***

piano più sonore piano *espr.*

T O T O T O O

I *81 c down*

piano

piano più sonore

87

più sonore *espr.*

marc.

al pont.

più sonore

piano

sonjore *marc.*

93

flutter tongue

-53 -51 -51 -2 -51 -2 -47 -65 -53 -51 -2 -51 -67 -47 -2

forte *piano* *espr.*

T O T T o T T O

piano *espr.*

piano

1 0 1 °4 °4 °1 °1 °4 °1 °4 °4 °1 °4 °1 1 -

piano

98

5

○○● + ●○●

piano *più sonore* *piano*

○○● + ●○● ○○○ ●●● ○●○ + ○○○

piano *più sonore* *piano*

T T O T O T O T T O T O

piano *più sonore* *piano*

più sonore

al pont.

1 °4 4 °4 °2 2 °4 °4 °1 °1 1 °4 °2- 1-

più sonore

poco accelerando

103

-1 °4 °4 °2- °2- 4

6 ♩ ca. 66 ***ancora poco più mosso***

109

piano poco più sonore poco più sonore

piano poco più sonore poco più sonore

piano poco più sonore poco più sonore

I *81 c up* II *182 c up* III *217 c up*

piano poco più sonore poco più sonore

arco al pont. ord. al pont.

pizz. (l.v.)

piano poco più sonore poco più sonore

115

più sonore piano espr. marcato espr.

piano marcato

più sonore piano marcato espr. marcato

più sonore piano più sonore III *112 c down* marcato

ord.

marcato

121

17 : 20 (281 c) 10 : 9 (182 c) 9 : 10 (182 c) 19 : 15 (409 c)

-7 -5 -2 -21 -3 -2 -4 -6 -4 -20 +1 +2 +4 -11

poco più sonore

T O T O T

III 105 c down II 94 c down

17/8 17/6

poco ritenuto

127

+1 +4 -2 +2 +2 +12 +14 +16 +12 -4 +27 +29

crescendo

al pont. ord.

7 ca. 66 ***a tempo***

133

49 : 48 (36 c) *21 : 20 (85 c)* *28 : 27 (63 c)*

+29 -4 +14 -35 +29 -35 -20 -2 -6 -82 +14 +29 -4 +33 +2

piano *sonore*

(T) O T O T O T

I *81 c down*

al pont. *ord.* *al pont.*

-2 °2- -°2 2 °4 -°4 °1

piano *sonore*

poco ritenuto

139

-16 -2 -35 +2 -51 -84 -49 -53

crescendo *flutter tongue* *mettere sordino*

-53

crescendo

°2- 1- °2- -1- °4 °2- 4 °2- 1-

crescendo

8 ♩ ca. 72 ***andante - avanti***

145

piano espr.

pianissimo piano

arco al pont. ord. al pont.

pizz. (l.v.)

piano pianissimo piano espr.

151

sonore

con sordino (metal)

pianissimo piano

con sordino (metal)

pianissimo piano

ord. al pont. ord.

157

poco ritenuto

piano sonore

sonore

sonore

(T) con sordino (metal)

piano espr. sonore

sonore

al pont. ord.

sonore

9 ♩ ca. 72 ***a tempo - avanti***

163

147 : 132
(186 c)

flutter tongue

-2 +12 3 +10 -18 -82 -4 -53 -49 -84 +29

piano *crescendo*

sempre con sord.

○●○ + ○○○ + ●○● + ○○●

piano *crescendo* *flutter tongue* *sfz*

sempre con sord.

●●○ + ○●○ + ○○○

piano *crescendo* *flutter tongue* *sfz*

sempre con sord.

T O T O T O T O O T O *flutter tongue*

piano *crescendo* *Split tone, with harmonics 3+4*

III *105 c up*

-2

piano *crescendo*

arco

pizz. *(l.v.)*

0 0 ↑4 1 4 1 1 1 4 1- 4 1-

piano *crescendo*

168

-51 -53 -4 -2 -7 3 -2 -19 -3 -5 3 -82

sf *più piano* *crescendo*

●○○ + ○●○

sf *più piano* *crescendo*

●○○ + ●●○

sf *più piano* *crescendo*

T O T O T O T O T O

III *105 c down*

-7

marcato *più piano* *crescendo*

-4 -1- 4 -1- 2- -1 -2 4 2- 1- 2- -1- -2 -1- -1

più piano *crescendo*

173

flutter tongue

-2 -51 -4 -18 -35 -20

sf *più piano* *crescendo*

flutter tongue

sfz

sf *più piano* *crescendo*

flutter tongue

sfz

sf *più piano* *crescendo*

flutter tongue

T O T O O T

sf *più piano* *crescendo*

II *182 c up*

-6

marcato *più piano* *crescendo*

17/4
below trb.

°4 2- °1- -2 °1- 2 °1 1 °1 1 °1 °4 1 °1

molto sonore *più piano* *crescendo*

poco ritenuto

178

-6 -20 -4 -2 -82 -51 -84 +29 -51 -53 -4 -35

forte *piano*

flutter tongue

sfz

forte *piano*

flutter tongue

sfz

flutter tongue

O O T O T O T O O T

forte *piano*

II *94 c down*

+1

marcato *piano*

9/2
below trb.

1 °4 °1 °1 1- °1 -1 °1 °4 4 °4 2

molto sonore *forte* *piano*

10 ca. 72 ***a tempo - avanti***

183

flutter tongue

sf *piano* *crescendo*

sfz

19/4 below trb.

molto sonore

188

più piano *crescendo*

II *89 c down*

marcato *piano* *crescendo*

193

flutter tongue

-2 -51 -84 +14 +27 -4 +31 +16 +14 +29

sf più piano crescendo

sfz sf più piano crescendo

sfz più piano crescendo

T T O

sf più piano crescendo

I 81 c up

marcato +27 piano crescendo

al pont. ord. al pont. ord. al pont.

molto sonore più piano crescendo

poco ritenuto

198

-4 +10 +14 +31 -2 -6 +31 -51 -84 -49 +16 +31

forte

sfz forte

sfz forte

T O T O T O T

forte

I 81 c down

+27

forte

al pont. ord. al pont. 7/1 below trb. ord. 11/2 below trb. al pont. ord.

molto sonore forte

11

203

♩ ca. 72 ***a tempo ...*** ***... e poco a poco ritardando ... fino al tempo*** ♩ ca. 63

19 : 24
(404 c)

+31 -2 -4 +14 +12 -6 -18 -20 +2 +4 +2 +1

meno forte *e poco a poco diminuendo* *sf* *sf*

O T O T O T O T O T O

T o T o T

II *182 c up* II *94 c down*

(+12) -6 +1

arco

pizz. *(l.v.)*

209

-2 -4 +4 -29 -5 -7 +10 +12 +16

espr.

II *89 c down*

(-7) +12

215

-2 +18 +14 +12 +16 -4 -16 -14 +2 +51 +14 +16 +31

sf sf sf

T O T O T O T T O O O

O t O

III *217 c up* +10

III *112 c down* -2

I *81 c up* +27

al pont. *ord.*

2- °1- 2- -°1- -2 -°1 -2 1 2 °1- 2 ↓°4 °1 ↓°4 °1 ↓°4 °2 2 °4

... ♩ ca. 63 ... ***e poco ritenuto***

19 : 21
(173 c)

221

-2 +33 -4 +4 -29 -4 -20 -18 -6 +3

espr. *piano*

espr. *sf* *piano* *sf*

sf *espr.* *piano*

O T T O O T O T

piano

II *89 c up* +1

II *94 c up* -6

piano

al pont. *ord.*

2 ↑°1 °4 2 °4 2 ↑°1 1 °1- °4 ---°1 °1- 4

piano

12

227

𝅗𝅥 ca. ***63 ... e poco a poco ritardando ... fino al tempo*** 𝅗𝅥 ca. 54

quasi forte *e poco a poco diminuendo*

III *105 c down* II *182 c down* II *182 c up*

233

sf

II *182 c down* II *89 c up*

al pont. *ord.*

239

+4 -4 +14 +10 +12 -2 -3 -29 -7 -5 +2 -29 +4

sf sf sf

O O T O T O T O T O O t O O T

II *89 c down* +12 (-7) II *89 c up* +1

-2 °1- 2- 0 °4 1- -°4 -1 0 ↑°4 2- °1- 2- -°1 2 °4 2 ↓°4 2- -°4

... 𝅗𝅥 ca. 54 ***tempo primo, e molto ritenuto***

245

-2 +12 +16 -17 -51 -4 -16

molto piano *pianissimo*

sf *molto piano* *pianissimo*

sf *molto piano* *pianissimo*

O T O T O T T O T O

II *89 c down* +12 I *81 c down* -53

molto piano *pianissimo*

al pont. *ord.*

-2 °1- 2 0 ↓°4 °2- 4 -°2- 1 ↑°1- 0 °4 °1 °1- 0

molto piano

June 22 - August 15, 2019