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The Arrow of Time

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THE ARROW OF TIME

for Flute and ensemble

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The Arrow of Time

(A Seta do Tempo)

I. Time

II. Space

III. Entropy

Flute

(Concert, Piccolo, Bass)

Percussion

(Glockenspiel, Crotales, Temple Blocks, 2 Cow Bells, Triangle)

Violin 1

Oboe

Piccolo Trumpet

Violin2

Duration: 19'00"



Program Notes

This is a piece in three movements for Piccolo and ensembles of varied sizes. All three movements can be performed as independent solo pieces. If using the ensembles, all three movements should be included in performance. It can be played with the flute and only the first ensemble (plus two instruments), two ensembles (plus 5 instruments), three (plus 10 instruments), four (plus 18 instruments), or five ensembles (plus 31 instruments).

The arrow of time is a concept that describes time's directionality: its asymmetry. While most physical laws are not time-sensitive — they remain true if time is reversed — the second law of thermodynamics states that entropy always increases over time. Entropy, the tendency to disorder within a system, describes how particles tend to move through space and through time until they reach the maximum state of disorganization, or uniformity. In other words, it takes an input of energy to keep a system in an organized state. If there's no source of energy, the system always moves toward disorder as it loses energy. In that sense, entropy becomes an evidence that time passes. Robert Smithson gives the perfect example in *The Monuments of the Passaic, New Jersey*:

I should now like to prove the irreversibility of eternity by using a jejune experiment for proving entropy. Picture in your mind's eye the sand box divided in half with black sand on one side and white sand on the other. We take a child and have him run hundreds of times clockwise in the box until the sand gets mixed and begins to turn grey; after that we have him run anti-clockwise, but the result will not be a restoration of the original division but a greater degree of greyness and an increase of entropy.

The main idea of *The Arrow of Time* is that the ensembles are expanding the flute part in different ways in the different movements: Time, Space, and Entropy. In the first movement, *Time*, the gestures performed by the flute are expanded to the other instruments over time, in an imitative manner. In the second movement, *Space*, the gestures performed by the piccolo are expanded in space; an analogy to the spectral expansion of the sound. The third movement, entropy, acts like a conclusion combining both dimensions. The music goes from highly organized—i.e., dependable of the flute part—to complete chaos and independency.

Instrumentation


There are several ways of presenting this piece. The flute part is mandatory. Any of the three movements can be performed as a solo piece. The ensembles can be added to the performance in order, from 1 to 5. No ensemble can be skipped: Ensemble 3 can only be used along with Ensembles 1 and 2. If any ensemble is used in the performance, all three movements should be presented. **This is the score for Flute + Ensemble 1 + Ensemble 2.**

- Flute (Piccolo, Concert, Bass)
- Ensemble 1: Violin, Percussion (Glockenspiel, Crotales, Temple Blocks, 2 Cow Bells, Triangle).
- Ensemble 2: Oboe, Piccolo Trumpet, Violin

Stage Set-up

It is important that each ensemble is placed together in the stage. The instruments that are part of an ensemble have a common role in the music, so it's important that the unity of the ensemble is noticeable visually and spatially.

Performance Notes



Winds: Flutter-Tongue
Others: Tremolo

any multiphonic
Any multiphonic involving the indicated pitch

Fl. *Bisbigliando*

Harmonics. Fundamentals indicated with diamond note-head

Flute *pizzicati*: accent-shaped note-head

Triple-Tongue

Double-Tongue

Airy Sound

Any extremely high note

Play indicated notes as fast as possible in the relative metric position

Accelerando. Duration indicated in parentheses

Very wide *vibrato*

Whistle tone

Jet Whistle

Tongue-Ram

Harmonic Glissando

Let the bow bounce (measured)

Trill to harmonic

Flautando (flute-like tone on by playing nearer the fingerboard)

Artificial Harmonics

Natural Harmonics (notes indicate fingering)

Let the bow bounce (unmeasured)

Sustain note and open close mute as indicated

Regular-sized notes are played in time, as grace notes are played freely like in proportional notation

6 (2)

Fl. *pp* *mfz* *mfz* *mfz* *mfz* *mfz* *mfz* *mfz* *p* bisb. (.)

Tr. Triangle *pp* Glockenspiel

Vln *pp* sul pont. *pp* *p* *gliss.* *gliss.* *ord.* *pp*

Ob. *tr* *p* *ppp* *pp*

Picc. Tpt *5-4* *pp*

Vln *pp* *IV* *pp*

10 (3)

Fl. *f* *p* *mf* *p* *mf* *pp* *mfz*

Gl. *f* *p* *mp* *pp*

Vln *pizz.* *f* *arco* *pp* *mp* *p* *jeté* *mp* *p*

Ob. *f* *p* *mp* *p*

Picc. Tpt *mute off* *f* *mf* *p*

Vln *f* *mp* *arco* *tr* *mp* *mf* *p*

14

Fl. *p* < *mf* > *p* < *mfz* > *f* *pp* < *mfz* >

Tr. Triangle *p* Cowbell *mp* *mf* *f*

Vln. *mp* *p* *f* *pp* arco

Ob. *p* *mf* *p*

Picc. Tpt. *p* *mp* *f*

Vln. *p* *f* *mf* *p* pizz.

16

Fl. *mfz* > *p* < *mf* > *p* *mp* cre - - - - - scen - - - - - do - - - - - *ff*

Tr. Triangle *pp* Cowbell *p* Triangle *p* Temple Blocks *p*

Vln. *p* *pp* *f* *f* *mf* *gliss.*

Ob. *mp* bisb.

Picc. Tpt. *p* *mf* *p* mute

Vln. *pp* *mf* *f* arco *jeté*

19 (5)

Fl. *p* < *mfz* > *p* < *mp* > *p* < *mfz* > *p* < *mf* > *p* *sfz* *mf* *f*

Glockenspiel

Tb. *ff* *p* *mp*

Vln. *gliss.* *ff* *mp* *p* < *mf* > *p* *mf* *pizz.*

Ob. *f* *mf* *mp*

Picc. Tpt. *mf* *mp*

Vln. *f* *mf* *p* < *mf*

22 (6)

Fl. *mp* *mf* *f* *ff* *p* < *mf* > *p* < *f* > *mp* *mf*

Tr. Triangle *mf* Cowbell *mf* *f* *mp*

Vln. *f* *mp* < *f* *ff* *p* < *mf* > *mp* *mf* *pizz.* *jeté arco*

Ob. *f* *mp* *ff* *mf*

Picc. Tpt. *f* *p* *f* *mp* < *mf*

Vln. *f* *mp* *pizz.* *arco* *ff* *mp* *pizz.* *arco*

This musical score is for the piece "Time" and is divided into two systems, starting at measures 29 and 31. The score includes parts for Flute (Fl.), Glockenspiel (Gl.), Violin (Vln.), Oboe (Ob.), Piccolo Trumpet (Picc. Tpt.), and Violin (Vln.).

System 1 (Measures 29-30):

- Flute (Fl.):** Features complex rhythmic patterns with slurs and accents. Dynamics range from *ff* to *p*. Includes markings for *bisb.* and *(♩)*. Rhythmic groupings are indicated as 6:4, 5:4, 3:2, and 5:4.
- Glockenspiel (Gl.):** Plays a melodic line with dynamics *mf*, *pp*, *mp*, and *mf*. Includes a *3:2* rhythmic marking.
- Violin (Vln.):** Starts with *ff* and *arco* markings. Dynamics include *mf*, *p*, *sfz*, and *mf*. Includes a *3:2* rhythmic marking.
- Oboe (Ob.):** Features a melodic line with dynamics *mf*, *pp*, and *pp*. Includes a *bisb.* and *(♩)* marking.
- Picc. Tpt:** Plays a rhythmic accompaniment with dynamics *mf* and *p*. Includes a *3:2* rhythmic marking and a *mute* instruction.
- Violin (Vln.):** Provides harmonic support with dynamics *mf*, *mf*, *p*, and *pizz.*

System 2 (Measures 31-34):

- Flute (Fl.):** Continues with complex rhythms. Dynamics range from *mp* to *pp*. Includes markings for *bisb.* and *(♩)*. Rhythmic groupings are indicated as 5:4, 3:2, 5:4, and 3:2.
- Glockenspiel (Gl.):** Features a melodic line with dynamics *p* and *mp*. Includes a *Cowbell* instruction.
- Violin (Vln.):** Includes *sfz*, *p*, *sfz*, *mp*, *f*, *pp*, *p*, *pp*, and *ppp* dynamics. Includes *arco* and *pizz.* markings.
- Oboe (Ob.):** Features a melodic line with dynamics *p*, *mp*, *p*, and *pp*. Includes a *bisb.* and *(♩)* marking.
- Picc. Tpt:** Plays a rhythmic accompaniment with dynamics *p* and *mf*.
- Violin (Vln.):** Provides harmonic support with dynamics *mp*, *sfz*, *sfz*, and *mp*. Includes *arco* and *pizz.* markings.

35 bisb. (♩) bisb. (♩) aeolian 5-4, 3-2, 1

Fl. *ppp* *p* *p* *mf* *p* *pp* *mp* *p* *mf*

Cowbell *pp* *pp* 3-2, 1

Vln *pp* 3-2, 1 *pp* 3-2, 1 *pp* flautando

Ob. *pp*

Picc. Tpt *pp*

Vln *pp* arco jeté 3-2, 1 *pp* flautando

38 as fast as possible 6-4, 3-2, 1 bisb. (♩) tr 3-2, 1 7-4, 3-2, 1

Fl. *mf* *f* *ff* *ppp* *p* *ppp* *p* *mfz* *p* *mp* *pp*

Gl. Glockenspiel *mp* Cowbell Triangle *pp*

Vln *pp* *mp* *pp* *f* *pp* 3-2, 1 *pp* 3-2, 1 *pp* *mp*

Ob. *mp* *mp*

Picc. Tpt mute off *mf* 3-2, 1 *mp*

Vln *mp*

41

Fl. *ppp* *mp* *p* *mf* *mfz* *pp* *mp* *p* *pp* *mf* *mp* *mf*

Glockenspiel *ppp* *p* *pp*

Vln *ppp* *p* *ppp* *pp*

Ob.

Picc. Tpt

Vln

44

Fl. *ppp* *pp* *mp* *p* *pp* *mp* *mf* *p* *mfz* *mp* *pp* *p*

Glockenspiel *ppp* *pp* Cowbell Triangle *pp* *mp* Glockenspiel *pp*

Vln *ppp* *pp* *mp* *pp* *pp* *pp* *mp* *mp* *5:4*

Ob. *pp* *mf* *p*

Picc. Tpt *pp* *p*

Vln *pp* *mp* *pp*

47

Fl. *mp mp mf sfz pp <mfz> mf pp mfz <mfz> p*

Gl. Triangle *pp p mf*

Vln arco *pp mf p mf* gliss. 3:2

Ob. *p mp*

Picc. Tpt *mp p*

Vln pizz. *mf*

49

Fl. *mf f mp mf f mp pp <mp> pp mp mf p <mf> p*

Tb. Temple Blocks Glockenspiel *pp mp mp*

Vln pizz. arco *pp mf mp p pp mp mf*

Ob. *mf pp p mf*

Picc. Tpt *mf p* mute off

Vln *mf pp mp*

51

Fl. *sfz* *ppp* *p* *ppp* *mf* *f* *mp* *pp* *mf* *pp*

Gl. Triangle Cowbell Triangle *p* *mp* *pp*

Vln. pizz. *p* *mf* *f* *mf* *p*

Ob. *mp* *pp*

Picc. Tpt. *mp*

Vln. arco *p* *pp* *mp*

54

Fl. *ppp* *p* *ppp* *f* *fff* *pp* *mp* *p*

Gl. Glockenspiel Temple Blocks Triangle *pp* *ppp* *pp* *mf* *pp*

Vln. *p* *ppp* *mf* *f* *p* *mf*

Ob. *mp*

Picc. Tpt. mute *mp*

Vln. *mp*

58

Fl. *mf* *mp* *f* *mp* *f* (d)

Glockenspiel *mf* *p* *pp*

Vln. *mf* *f* *pp* *mp* arco

Ob. *pp*

Picc. Tpt. *pp*

Vln. *pp* pizz. *3-2*

60

Fl. *p* *mf* *ff* *pp* *mfz* *ppp* *p* *pp* *mp* bisb. (d) molto vib.

Gl. Temple Blocks Triangle Crotales Triangle Temple Blocks

Vln. *pp* *mp* *f* *f* *ppp* *mp* *ppp* sul pont.

Ob. *p* *mf*

Picc. Tpt. *mp* mute off

Vln. *mp* pizz. *3-2* *3-2*

8

64

Fl. *sfz* *mf* *p* *f* *pp* *mf* *p* *f*

Tb. Triangle Cowbell Temple Blocks Triangle Crotales

Vln *pizz.* *tr* *mf* *mp > p* *mf* *pp* *mp* *p*

Ob. *mp*

Picc. Tpt *pp* *mp*

Vln *arco* *tr* *pp* *mp* *mf*

69

Fl. *mf* *mp* *f* *mf* *f* *p* *mfz* *mf* *mp*

Crot. Triangle Crotales

Vln *pizz.* *arco* *pizz.* *arco* *mf* *f* *mp* *mp* *mf* *p* *pp*

Ob. *mp* *mp* *p* *pp*

Picc. Tpt *mf* *p* *pp*

Vln *mf* *p* *mp* *pp* *mp* *p*

9

10

72

Fl. *mfz* *ff* *mf* *f* *mp* *mp* *mfz* *mp* *f* *mf*

Tr. Triangle Cowbell Triangle Temple Blocks *pp* *mp*

Vln *f* *mp* *mf* *p* *mf* *p*

Ob. *p* *pp* *mp*

Picc. Tpt *mp* *pp* *mp*

Vln *mp* *pp* *pp* *mfz* *pp*

75

Fl. *mf* *fff* *mf* *p* *mf* *f*

Cb. Cowbell Triangle Temple Blocks *p* *mp*

Vln *mf* *mp* *p* *p* *mf* *f*

Ob. *mp* *mf* *f* *pp* *mf*

Picc. Tpt *mp* *mf* *f* *p* *mp*

Vln *mf* *pp* *pizz.* *arco* *mf* *p* *pizz.* *p*

11

Musical score for measures 78 and 79, featuring Flute (Fl.), Glockenspiel (Gl.), Violin (Vln.), Oboe (Ob.), Piccolo Trumpet (Picc. Tpt.), and Violoncello (Vln.).

Measure 78:

- Flute (Fl.):** *mf* to *f*, *cresc. poco a poco*. Rhythmic patterns include 6:4, 5:4, and 3:2.
- Glockenspiel (Gl.):** *p*. Rhythmic patterns include 3:2.
- Violin (Vln.):** *mp* to *f*. Rhythmic patterns include 5:4, 6:4, and 3:2.
- Oboe (Ob.):** *mp* to *p*.
- Picc. Tpt:** *mp*.
- Violoncello (Vln.):** *mp* to *mf*, *arco*.

Measure 79:

- Flute (Fl.):** *ff* to *fff*. Rhythmic patterns include 5:4, 3:2, and 7:4.
- Glockenspiel (Gl.):** *f*. Rhythmic pattern includes 5:4.
- Violin (Vln.):** *mf* to *f*. Rhythmic patterns include 5:4.
- Oboe (Ob.):** *mf* to *f*.
- Picc. Tpt:** *mf* to *f*. Rhythmic pattern includes 3:2.
- Violoncello (Vln.):** *mf* to *f*, *pizz.* to *arco*.

as fast as possible

Musical score for measures 80-81. The score includes parts for Flute (Fl.), Clarinet (Cl.), Violin (Vln.), Oboe (Ob.), Piccolo Trumpet (Picc. Tpt.), and Violin (Vln.).

- Fl.:** Starts with a *fff* dynamic, marked with a 5:4 ratio. Ends with a *fff* dynamic.
- Cl.:** Starts with a *fff* dynamic, marked with a 5:4 ratio. Ends with a *fff* dynamic.
- Vln. (top):** Starts with a *ff* dynamic, marked with a 3:2 ratio. Continues with *sfz sempre* and *fff* dynamics, marked with 3:2 ratios.
- Ob.:** Starts with a *ff* dynamic.
- Picc. Tpt.:** Starts with a *ff* dynamic, marked with a 3:2 ratio. Continues with *mf* and *ff* dynamics.
- Vln. (bottom):** Starts with a *ff* dynamic, marked with a 3:2 ratio. Continues with *ff* dynamics, marked with a 3:2 ratio.

Musical score for measures 82-83. The score includes parts for Flute (Fl.), Trombone (Tb.), Violin (Vln.), Oboe (Ob.), Piccolo Trumpet (Picc. Tpt.), and Violin (Vln.).

- Fl.:** Starts with a *pp* dynamic, marked with a 6:4 ratio. Continues with *mf* and *p* dynamics. Ends with a *pp* dynamic, marked with a 6:4 ratio. Continues with *mf* dynamics.
- Tb.:** Starts with a *mp* dynamic. Continues with *mp* and *pp* dynamics. Ends with *p* and *ppp* dynamics.
- Vln. (top):** Starts with a *mp* dynamic, marked with a 6:4 ratio. Continues with *mf* and *p* dynamics. Ends with *mp* and *pp* dynamics.
- Ob.:** Starts with a *mp* dynamic. Continues with *mp* and *pp* dynamics. Ends with *p* dynamics.
- Picc. Tpt.:** Starts with a *mp* dynamic. Continues with *mp* and *p* dynamics.
- Vln. (bottom):** Starts with a *mp* dynamic. Continues with *mp* dynamics. Ends with *mp* dynamics.

84

Fl. *mp* *pp* *mf* *p* *f* *mf* *p* *pp*

Gl. *p* *ppp* *mp* *pp* *mp* *p* Temple Blocks Triangle *pp* *ppp*

Vln. *pizz.* *arco* *p* *ppp* *mp* *pp* *mf* *pp* *ppp* *pp* *ppp*

Ob. *pp*

Picc. Tpt *pp*

Vln. *pizz.* *arco* *pp* *mp* *ppp*

87

Fl. *ppp* *pp* *mp* *p* *ppp* *mp* *pp*

Tr. Cowbell Triangle Crotales *pp* *pp* *pp*

Vln. *sul pont.* *ppp* *pizz.* *pp* *pp*

Ob.

Picc. Tpt

Vln.

13

90

Fl. *p* *mf* *mp* *p* *pp* *ppp*

Crot. Temple Blocks *p* Triangle *ppp*

Vln *p* *mp* *p* *ppp*

Ob. *pp* *ppp*

Picc. Tpt. mute *pp* *ppp*

Vln *p* *mp* *p* *ppp*

92

Fl. *pp* *mp* *pp* *pp* *mfz* *p* *p* *pp*

Gl. Glockenspiel *p* *pp* Triangle

Vln *p* *ppp* *pizz.* *arco* *tr* *ppp*

Ob. *ppp*

Picc. Tpt. *pp* *ppp*

Vln *pizz.* *p* *ppp*

14

95

Fl. *pp* *mf* *mp* *mf* *mp* *f* *ff* *as fast as possible* (15)

Tr. Glockenspiel *ppp* *mp* Temple Blocks *p* *mp* Glockenspiel *mf* *p*

Vln. *mp* *p* *mp* *mf* *f* *f* *mf*

Ob. *mf* *mp* *mf*

Picc. Tpt. *mp* *mf* *mf*

Vln. *mp* *mf* *f*

98

Fl. *mf* *f* *mp* *p* *f* *mf* *sfz* *mf* *bisb.* (♩)

Gl. *f* *mf* *mp* *pp* Triangle *p*

Vln. *f* *f* *mf* *p* *pp* *mp* *mf*

Ob. *p* *p*

Picc. Tpt. *mp* *mf*

Vln. *mp* *mf* *p* *pp* *pp* *pp* *pp* *arco* (♩)

100

Fl. *f* *mf* *mf* *f* *ff* *f* *mf*

Glockenspiel *pp* Temple Blocks *mp* Crotales *mf*

Vln *pp* *mf* *p* *mp* *mf* *f* *mf*

Ob. *mf* *p* *mp* *mf* *p*

Picc. Tpt *mp* *p* *pp* *mf*

Vln *mp* *pp* *mf* *p* *mp* *mf* *f*

102

16

Fl. *mp* *mp* *mfz* *mf* *f* *mf* *p* *mf*

Cowbell *pp* Crotales *p* Triangle *p* Glockenspiel *mf* *p* *mf*

Vln *mp* *mp* *mf* *mp* *mf*

Ob. *mp* *pp* *p*

Picc. Tpt *mp* *fp sub.* *mf*

Vln *mf* *mp* *p* *ppp* *mf*

105

Fl. *p* *pp* *mp* *p* *pp* *mp* *p*

Gl. *p* *pp* *mp* *p* *pp*

Vln *pizz.* *arco* *pp* *mp* *p* *pp* *pizz.* *arco* *mp* III-----

Ob. *mf* *pp*

Picc. Tpt *pp*

Vln *arco* *pizz.* *arco* *pp*

Detailed description: This block contains the musical score for measures 105 to 107. It features six staves: Flute (Fl.), Clarinet (Gl.), Violin (Vln), Oboe (Ob.), Piccolo Trumpet (Picc. Tpt), and Violin (Vln). The music is in 3/8 time and includes various dynamics such as *p*, *pp*, *mp*, and *mf*. There are also performance markings like *pizz.* (pizzicato) and *arco* (arco). Measure 105 starts with a *p* dynamic. Measure 106 has a *pp* dynamic. Measure 107 has a *mp* dynamic. The score includes triplets and trills.

108

Fl. *ppp* *mp* *p* *pp* *bisb.* *molto vib.*

Tr. Triangle Cowbell Triangle Cowbell Triangle

Vln *p* *ppp* *pizz.*

Ob.

Picc. Tpt *tr*

Vln *pizz.*

Detailed description: This block contains the musical score for measures 108 to 110. It features five staves: Flute (Fl.), Triangle (Tr.), Violin (Vln), Oboe (Ob.), and Piccolo Trumpet (Picc. Tpt). The music is in 4/4 time. Measure 108 starts with a *ppp* dynamic. Measure 109 has a *mp* dynamic. Measure 110 has a *p* dynamic. The score includes performance markings like *bisb.* (bisbigliando) and *molto vib.* (molto vibrato). There are also performance markings for Triangle and Cowbell. The score includes triplets and trills.

2. Space

$\text{♩} = 60$

whistle tone

molto vib.

any multiphonic

Piccolo

Crotales

Violin

Oboe

Picc. Trumpet

Violin

Picc.

Glockenspiel

Vln

Ob.

Picc. Tpt

Vln

ppp *pp* *p* *pp* *mp* *p*

ppp *pp* *p* *pp* *ppp*

sul pont. III *ppp* *pp* *ppp* ord. *ppp*

straight mute *ppp* *pp* *ppp* *pp* *mp* *pp*

III *ppp* *pp* *ppp* *pp* *mp* *pp*

① *pp cresc.* *ppp cresc.* *mf*

ppp *p* *pp* *mp* *p*

ppp *p* *pp* *mp*

sul pont. III *ppp* *p* *mp* *pp* *mf* ord.

11 Picc. *fff* *pppp* *ppp* whistle tone

Gl. *mf* *p* Crotales *ppp* Crotales

Vln *ff* *ppp* sul pont. III *p*

Ob. *mf* *mp* *pp* *tr*

Picc. Tpt *mp* *mf* *mp* *p* *mp* *p* harmon mute

Vln *sfz* *mp* *p* *pp*

16 Picc. *pp* *p* *pp* *ppp* *mp* *p* molto vib. any multiphonic

Crot. *mp* *p* *pp* *ppp* Glockenspiel

Vln *ppp* *p* *ppp* *pp* *mp* *pp*

Ob. *pp* *mp* *pp*

Picc. Tpt *ppp* *p* *ppp* *pp* *mp* *pp* straight mute

Vln *ppp* *p* *pp* *mp* *pp* ord. III

3

22

Picc. *pp cresc. poco a poco* *5:4*

Gl. *pp*

Vln *ord.* *III* *ppp*

Ob. *pp* *tr* *mf* *pp*

Picc. Tpt *pp* *3:2* *(d)*

Vln *sul pont.* *pp* *3:2* *ord.* *pp* *mf* *arco* *pp*

25

Picc. *5:4* *6:4* *5:4* *3:2* *5:4* *3:2*

Gl. *mf* *p*

Vln *mf* *pizz.* *p*

Ob. *mf* *p* *p*

Picc. Tpt *pp* *tr* *mf* *p* *3:2*

Vln *sul pont.* *pp* *3:2* *mf* *pp* *ord.* *mf*

28

Picc. *fff* *mf* *f sfz* *mf* *f* *mp* aeolian Jet Whistle aeolian

Gl. *mf* Triangle *p* *mf* Crotales *p*

Vln. *mf* *mp* II *mp*

Ob. *mf* *p* *pp*

Picc. Tpt. harmon mute *mp* *mf* *mp* *p* *mp* *p*

Vln. *mp* *p* *mf*

32

Picc. *pp* *mf* *p* *mfz* *mf* *p* *pp* *pp* *mf* *f* *mp* *p* ord. aeolian ord.

Crot. Glockenspiel *pp* *mp* *p*

Vln. sul pont. *p* *mp* *p* ord. pizz. *pp* *mp*

Ob.

Picc. Tpt.

Vln.

4

5

36

Picc. *mfz* *mf* *mp* *p* *mp* *mf* *p* *mf* *f* *mf* *mp* *5-4*

Gl. *mp* *p* *mp* *mf* *mp* *p* *flautando molto sul tasto* *tr* *pizz.* *3-2*

Vln. *arco* *pizz.* *arco* *pizz.* *mf* *pp* *mp* *p* *mf* *p* *mp* *mf*

Ob. *p* *mp* *f*

Picc. Tpt. *straight mute* *p* *mfz* *mf* *3-2*

Vln. *pizz.* *p* *mp* *mf* *3-2*

39

Picc. *f* *sfz* *f* *mp* *mfz* *sfz* *mf* *mp* *p* *mp* *pp* *p*

Gl. *p* *mf* *p* *mp* *p* *p*

Vln. *arco* *pizz.* *arco* *pizz.* *arco* *pizz.* *arco* *pizz.* *mf* *f* *mp* *p* *mf* *mp* *f* *mp* *p*

Ob. *mp* *mf* *f* *mf* *3-2* *mp* *p* *pp*

Picc. Tpt. *mp* *mf* *f* *mf* *mp* *p* *3-2* *pp* *mute off*

Vln. *pizz.* *arco* *pizz.* *arco* *pizz.* *pizz.* *arco* *pizz.* *mp* *mf* *f* *mp* *mf* *mp* *p* *mf* *pp*

42 **6**

Picc. *mf* *p* *mf* *mp*

Gl. *p* *mf* *p*

Vln *arco p* *pizz. mf* *arco p* *pizz. mf*

Ob.

Picc. Tpt.

Vln

43

Picc. *mf* *mf*

Gl. *mf* *p* *mp*

Vln *arco mp* *pizz. mf* *arco mf* *6:4*

Ob. *p* *6:4*

Picc. Tpt. *p*

Vln *p* *6:4*

44

Picc. *ff sempre*

Cl. *mf* *f*

Vln. *f sempre*

Ob. *mf* *f*

Picc. Tpt. *mf*

Vln. *mf* *f*

45

Picc. *f* *ff*

Cl. *mf* *f*

Vln. *ff*

Ob. *ff*

Picc. Tpt. *f* *ff*

Vln. *ff*

Detailed description: This page of a musical score, titled 'Space', contains measures 44 and 45. The score is arranged in a system with seven staves. The instruments are Piccolo (Picc.), Clarinet (Cl.), Violin (Vln.), Oboe (Ob.), Piccolo Trumpet (Picc. Tpt.), and Violin (Vln.). Measure 44 features a Piccolo part with a *ff sempre* dynamic, a Clarinet part with *mf* and *f* dynamics, a Violin part with *f sempre*, an Oboe part with *mf* and *f*, a Piccolo Trumpet part with *mf*, and a Violin part with *mf* and *f*. Measure 45 continues with the Piccolo part having *f* and *ff* dynamics, the Clarinet part with *mf* and *f*, the Violin part with *ff*, the Oboe part with *ff*, the Piccolo Trumpet part with *f* and *ff*, and the Violin part with *ff*. The score includes various musical notations such as slurs, accents, and dynamic markings.

6:41

46

Picc.

Gl.

Vln

Ob.

Picc. Tpt

Vln

47

Picc.

Gl.

Vln

Ob.

Picc. Tpt

Vln

f dim. poco a poco *mf dim. poco a poco*

mf dim. poco a poco *mp dim. poco a poco*

f dim. poco a poco *mf dim. poco a poco*

f sempre

f sempre

f sempre

7

50

Picc. *mp dim.* *p*

Gl. *p dim.* *pp sempre*

Vln. *pizz.* *arco* *pizz.* *arco* *pizz.* *p sempre*

Ob. *mf*

Picc. Tpt. *mf*

Vln. *mf* *mp*

53

Picc. *p* *f* *tr* *mp* *mf* *p* *f* *mp*

Gl. *p* *f* *mp*

Vln. *arco* *pizz.* *arco* *pizz.*

Ob. *mp* *p*

Picc. Tpt. *mp* *p*

Vln. *p*

8

56 Picc. *pp* *mf* *f* *p* *mf* *p* *mp* *f* *mp* *p* *mf* *p*

Glc. Crotales *pp*

Vln arco pizz. arco pizz. arco pizz. arco *pp*

Ob.

Picc. Tpt. straight mute *pp*

Vln pizz. arco *pp*

60 Picc. *mf* *p* *mf* *f* *mp* *mf* *mp* *mfz* *p* *mfz*

Crot. Glockenspiel *ppp*

Vln pizz. arco *ppp*

Ob. *ppp*

Picc. Tpt. *ppp*

Vln *ppp*

64

Picc. *mp*

mf mp sfz mf mp f f ff

Gl. Triangle *pp* Crotales

Vln

Ob.

Picc. Tpt

Vln

10

67 whistle tone

Picc. *ppp* *pp* *p* *pp* *mp* *p*

molto vib.

any multiphonic

Crot. *ppp* *mp* *p* *pp* *ppp*

Vln sul pont. *ppp* *pp*

Ob. *pp* *mp* *pp*

Picc. Tpt *ppp* *p* *ppp* *pp* *mp* *pp*

Vln *ppp* *p* *ppp* *pp* *mp* *pp*

74 **11**

Picc. *ppp mp*

Crot.

Vln *ppp* *pp*

Ob. *ppp* *mf* *mp*

Picc. Tpt *ppp* *pp mp pp*

Vln *ppp* *pp* *gliss.*

78 **12**

Picc. *pppp* *ppp* *whistle tone* *molto vib.*

Crot.

Vln *ppp* *p* *ppp* *sul pont.*

Ob. *pp*

Picc. Tpt *pp mp pp* *(harmon mute)*

Vln *gliss.*

3. Entropy

♩ = 60
T.R.

Bass Flute
mf, fp, mp, mf, mp

Temple Blocks
pp, mp > p, p, mp > p, mp, p

Violin (1)
pizz. pp, mp > p, arco pp, p, mp > p, arco mp, pp, pizz. p

Oboe
pp, mp > p, pp, p, mp > p, mp, pp, p

Picc. Trumpet
mute, pp, mp > p, pp, p, mp > p, mp, pp, p

Violin (2)
pizz. pp, mp > p, arco pp, p, mp > p, arco mp, pp, pizz. p

B. Fl.
fp, mf, mf, p, f, mf, f, mf

Tbn.
mf, mp, p, pp, pp, pp, mp, mp > p, mf

Vln. (1)
mf, mp, p > pp, pp, pp < mp, mp > p, mf

Oboe
mf, mp, p > pp, pp, pp < mp, mp > p, mf

Picc. Tpt
mf, mp, p > pp, pp, pp < mp, mp > p, mf

Vln. (2)
mf, mp, p > pp, pp, pp < mp, mp > p, mf

11

B. Fl. *f* *mf* *fp sub.* *mf* *f* *mf* *mp* *mf* *mf* ①

Glockenspiel *mp* *pp* *mf* *mp* *p* *pp* *p* *mp* *mf*

Temple Blocks

Glockenspiel

Vln. *mp* *pp* *mf* *mp* *p* *pp* *ppp* *p* *mp* *mf*

arco *ppp* *pizz.*

Ob. *mp* *pp* *mf* *mp* *p* *pp* *ppp* *p* *mp* *mf*

Picc. Tpt. *mp* *pp* *mf* *mp* *p* *pp* *ppp* *p* *mp* *mf*

Vln. *mp* *pp* *mf* *mp* *p* *pp* *ppp* *p* *mp* *mf*

arco *ppp* *pizz.*

16

B. Fl. *p* *mf > mp* *mf* *mf > p* *f* *f > mf* *mp* *mf*

Glockenspiel *p* *mf* *mp* *pp* *mf* *pp* *mf* *p* *mf* *p*

Triangle

Glockenspiel

Cowbell

Vln. *p* *mf > mp* *mp* *mf* *p* *mp > pp* *mf* *mf* *p*

arco *pp* *pizz.* *arco* *pizz.* *arco* *pizz.*

Ob. *p* *mf* *mp* *pp* *mf* *p* *mp* *p* *mf* *p*

Picc. Tpt. *p* *mf > mp* *mp* *mf* *p* *mp > pp* *mf* *mf* *p*

Vln. *p* *mf* *mp* *pp* *mf* *p* *mp* *p* *mf* *p*

arco *pp* *pizz.* *arco* *pizz.*

20

B. Fl.

Glockenspiel Temple Blocks Glockenspiel Triangle Cowbell Temple Blocks

Vln arco pizz. arco pizz.

Ob.

Picc. Tpt

Vln arco pizz. arco pizz.

24

B. Fl.

Tb. Glockenspiel

Vln arco pizz. arco pizz.

Ob.

Picc. Tpt

Vln arco pizz. arco pizz.

27

B. Fl. *f* > *mf* *f* *mf* < *f* *f* > *mf* *f* *f*

Cb. Cowbell *mf* > *p* *p* Glockenspiel *f* > *mf* *p*

Vln. *mf* > *p* *mp* arco *mf* *mp* < *f* > *mf* *mp* pizz. *pp*

Ob. *mf* > *p* *mp* *mf* *mp* < *f* > *mf* *pp*

Picc. Tpt. *mf* > *p* *mp* *mf* *mp* < *f* > *mf* *mf*

Vln. *mf* > *p* *mp* arco *mf* *mp* < *f* > *mf* pizz. *p*

32

B. Fl. > *mp* *f* *p* < *mf* > *mf* < *p*

Gl. Temple Blocks *p* *pp* *mp* *pp* *mf* *p* Triangle *pp* *mp* Glockenspiel *pp*

Vln. *p* *mp* arco *mf* *pp* pizz. *mf* *p* arco *pp* < *mp* *p* arco *mp* > *pp*

Ob. *p* *mp* *mf* *mf* < *mf* *p* *pp* < *mp* *pp*

Picc. Tpt. *p* *mf* *pp* < *mf* *p* *pp* < *mp* *p*

Vln. *p* *pp* arco *mf* *pp* < *mf* *p* arco *pp* < *mp* pizz. *mp* arco *mp*

49

B. Fl. *mp* *p* *mp* *f* *mp* *f* *p* *mf* *p* *f* *f*

Gl. Temple Blocks Glockenspiel *mp* *p* *pp* *p* *pp* *mp* *p* *f*

Vln. *pizz.* *arco* *pp* *f* *p* *pp* *p* *mf* *p* *f*

Ob. *mp* *p* *p* *pp* *mp* *p* *f* *p*

Picc. Tpt. *mp* *pp* *mf* *p* *pp* *mp* *p* *f*

Vln. *mp* *pizz.* *p* *pp* *p* *pp* *mp* *pizz.* *arco* *p* *f*

52

B. Fl. *p* *f* *mp* *mf* *f* *mf* *mp* *f* *mp*

Gl. Cowbell Crotales *pp* *mf* *mp* *mp* *mf* *p* *p*

Vln. *pp* *mf* *mp* *mf* *mp* *mf* *p* *sfz* *pp* *mf* *pp* *mf* *pp* *mf*

Ob. *pp* *mf* *mp* *pp* *f* *mf* *p* *sfz* *pp* *mf* *pp* *mf* *pp* *mf*

Picc. Tpt. *pp* *mf* *mp* *mp* *mf* *p* *pp* *mf* *pp* *mf* *pp* *mf*

Vln. *p* *mf* *mp* *sfz* *p* *mf* *p* *pizz.* *arco* *p* *pp* *mf* *pp* *mf* *pp* *mf*

④

This musical score is for the piece "Entropy" and covers measures 55 to 60. It is written for a symphony orchestra with the following instruments and parts:

- B. Fl. (Bass Flute):** Measures 55-60. Dynamics range from *f* to *ff*. Includes accents and a *f sempre* marking at measure 60.
- Crot. (Crotonal/Glockenspiel):** Measures 55-60. Dynamics range from *p* to *f*. Includes a *Glockenspiel* marking.
- Vln. (Violins):** Two staves. Measures 55-60. Dynamics range from *pp* to *ff*. Includes markings for *8va* (octave up), *pizz.* (pizzicato), and *arco* (arco).
- Ob. (Oboe):** Measures 55-60. Dynamics range from *pp* to *ff*. Includes *tr* (trills) markings.
- Picc. Tpt. (Piccolo Trumpet):** Measures 55-60. Dynamics range from *pp* to *ff*.
- Gl. (Gluck Horn):** Measures 55-60. Dynamics range from *mp* to *p*. Includes a *3:2* (triplets) marking.

The score is in 3/4 time and features a variety of dynamic markings and articulations throughout.

Musical score for measures 62-64. The score includes parts for B. Fl., Gl., Vln (top), Ob., Picc. Tpt, and Vln (bottom). The music is in 4/4 time and features complex rhythmic patterns and dynamic markings. The dynamic range spans from *pp* to *ff*. Performance instructions include *arco*, *pizz.*, and *gliss.*. A *mf* dynamic is marked at the beginning of measure 63, and a *mp* dynamic is marked at the beginning of measure 64. A *ff* dynamic is marked at the end of measure 64. A *gliss.* instruction is present in the top Vln part in measure 64. A *pizz.* instruction is present in the bottom Vln part in measure 64. A *mf* dynamic is marked at the end of measure 64.

Musical score for measures 65-67. The score includes parts for B. Fl., Gl., Vln (top), Ob., Picc. Tpt, and Vln (bottom). The music is in 4/4 time and features complex rhythmic patterns and dynamic markings. The dynamic range spans from *pp* to *ff*. Performance instructions include *arco*, *pizz.*, and *sfz*. A *f* dynamic is marked at the beginning of measure 65, and a *mf* dynamic is marked at the beginning of measure 66. A *ff* dynamic is marked at the end of measure 66. A *mf* dynamic is marked at the beginning of measure 67. A *pizz.* instruction is present in the top Vln part in measure 65. A *mf* dynamic is marked at the end of measure 67. A *pp* dynamic is marked at the end of measure 67.

68

B. Fl. *f* *mf* *ff* *f* *pp* *f* *ff* (5)

Gl. *pp* *pp* *f*

Vln. *pizz.* *arco* *mf* *mp* *pp* *f* *pp* *f* *pizz.* *f*

Ob. *mf* *pp* *f* *f*

Picc. Tpt. *mf* *p* *pp* *f* *pp* *f* *f*

Vln. *pizz.* *arco* *mf* *mp* *pp* *pp* *f* *f* *pizz.* *f*

73

B. Fl. *f* *sempre* *f* *mf*

Gl. *arco* *ppp cresc. poco a poco*

Vln. *arco* *ppp cresc. poco a poco*

Ob. *ppp cresc. poco a poco*

Picc. Tpt. *mute off* *ppp cresc. poco a poco*

Vln. *arco* *ppp cresc. poco a poco*

78

B. Fl. *ord.*
pp cresc. poco a poco *p* *mp* *8va* *mf*

Cl. *p* *mp* *mf*

Vln. *p* *mp* *mf*

Ob. *p* *mp* *mf*

Picc. Tpt. *p* *mp* *mf*

Vln. *p* *mp* *mf*

82

B. Fl. *f* *ff* *sffz* *sffz*

Cl. *f* *ff* *sffz* *sffz*

Vln. *f* *ff* *sffz* *sffz*

Ob. *f* *ff* *sffz* *sffz*

Picc. Tpt. *f* *ff* *sffz* *sffz*

Vln. *f* *ff* *8va* *sffz* *sffz*

87

B. Fl. *sffz* *f* *mf* *f* *mp* *p* *mf*

Gl. Temple Blocks Glockenspiel *sffz* *f* *mp* *p* *mp* *arco* *mf* *pizz.* *mf* *arco* *p*

Vln. *sffz* *mf* *p* *f* *p* *mf*

Ob. *sffz* *mf* *mp* *p* *mp* *mf*

Picc. Tpt. *sffz* *mf* *mp* *p* *pp* *f*

Vln. *sffz* *mf* *mp* *p* *mf* *p* *gliss.*

90

B. Fl. *p* *mf* *mp* *f* *mp* *p* *mf* *p*

Gl. *pp* *mf* *mp* *arco* *f* *pizz.* *p*

Vln. *f* *p* *mf* *pp* *f* *mf* *p*

Ob. *pp* *f* *mp* *f* *p*

Picc. Tpt. *mp* *pp* *f* *mp* *mf* *pp* *f* *p* *pizz.*

Vln. *pizz.* *mp* *f* *mf* *p* *gliss.* *f* *mp* *p*

92

B. Fl. *p* *mf* *mp* *f* *mf* *p* *mf*

Gl. *p* *mf* *f* *p* *f* *mp* *p*

Vln. *pp* *f* *mp* *f* *p* *f*

Ob. *mf* *mp* *mf* *f* *mf* *mp*

Picc. Tpt. *mf* *mp* *f* *mp* *p* *fp*

Vln. *mf* *f* *mp* *p* *mf*

94

B. Fl. *f* *mp* *mf* *p* *p* *mf* *mp* *f*

Gl. *mf* *pp* *mp* *p* *mp*

Vln. *f* *mp* *pp* *mf* *mp* *pp* *pizz.* *mp*

Ob. *f* *mf* *p* *pp* *p* *mp*

Picc. Tpt. *f* *p* *mf* *mp* *pp* *mf*

Vln. *f* *pizz.* *mp* *mf* *pp* *mp*

96

B. Fl. *mf* *p* *p* *mp*

Gl. *p* *mf* *p* *pp*

Vln. *arco* *mp* *p* *pizz.* *pp*

Ob. *p* *mf* *mp* *p* *pp* *mf*

Picc. Tpt. *mp* *mute* *p* *mf* *p* *pp*

Vln. *p* *mf* *mp* *pizz.* *mp* *pp* *arco*

98

B. Fl. *p* *pp*

Gl. *pp* *ppp* *pp*

Vln. *arco* *pp* *pp*

Ob. *pp*

Picc. Tpt. *pp*

Vln.