

13 Years to Comet 67P

for chamber ensemble

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This composition follows the journey of the spaceprobe Rosetta to Comet 67P/Churyumov-Gerasimenko over the course of 13 years.

00:04 Scrubbed Launch
01:20 Successful Launch
02:20 Earth Gravity Assist
04:20 Mars Gravity Assist
05:00 Earth Gravity Assist
05:52 Asteroid Steins Flyby
07:00 Earth Gravity Assist
07:40 Asteroid Lutetia Flyby
08:36 Enter Deep Space Hibernation
11:12 Exit Deep Space Hibernation
11:44 Rosetta Arrives at Comet
12:00 Philae Lands
13:00 Nominal End of Mission

Flute

Clarinet in Bb

Viola

Cello

Piano

Percussion: vibraphone and suspended cymbal, with medium yarn mallets and bass or cello bow

Each performer needs a stopwatch, or if a large one is available, it can be shared by the group.

Watches are started on the 5th quarter note beat of the piano, and every other performer's first note begins on the 9th quarter note.

Notes within brackets should be completed in the accompanying timeframe. If you arrive at the end of a bracketed item before the marked time, hold the last bracketed note. Parenthetical units inside the brackets are either played in the given order or in an order of the player's choosing, depending on accompanying instructions.

Noteheads with no stems indicate approximate/improvised rhythm with specific pitches. Stems with no noteheads indicate random improvised pitches and improvised rhythm.

With timeframes such as (00:04 - 00:06), the gesture should begin at 4 seconds and go up to 6 seconds, not up through 6 seconds.

Bar rests represent an indeterminate amount of time between loose sections

Sections without barlines are loosely notated, relying on timecodes.

00:00 to 04:20 - loose
04:20 to 05:36 - strict
05:36 to 06:40 - loose
06:40 to 09:16 - strict
09:16 to 10:20 - loose
10:20 to 12:16 - strict
12:16 to 13:00 - loose

ca. 13'

13 Years to Comet 67P

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The score is for a contemporary chamber ensemble. It features seven parts: Flute, Clarinet in Bb, Bar. Sax, Percussion, Piano, Viola, and Violoncello. The tempo is marked as quarter note = 60. The score includes various performance instructions such as 'start stopwatch', 'whirlwind upwards, any rhythm and pitches', and dynamic markings like *pp*, *ff*, *p*, *f*, *n*, and *mf*. Time signatures and specific time intervals are provided for several sections, such as (00:04 - 00:06) and (ca. 00:20 - ca. 00:50). The Violoncello part includes a detailed dynamic curve at the bottom, showing a range from *pp* to *mf* over a 28-second period.

Fl. ¹⁰ (blow air through inst.) (key clicks) (quiet shifting harmonics) (00:56) slowly increase trill speed

Cl. (blow air through inst.) (key clicks) (quiet shifting harmonics) (00:58) slowly increase trill speed

Bari. Sax. (#e) (blow air through inst.) (key clicks) (quiet shifting harmonics) (ca. 01:00) - (01:16) slowly increase trill speed

Vib. ca. (00:34) vibraphone, motor on (in this system, black notes are played by the cello, open notes are vibraphone, line it up as written) sus. cymbal (01:04)

Pno. (ca. 00:56 - 01:20) legato mp mf

Vla. (01:00 - 01:16) ease into tremolo p

Vc. (ca. 00:56 - ca. 01:16) p

(01:16 - 01:20)
whirlwind upwards,
any rhythm and pitches

A

Fl. *pp* *ff* fl. 01:20 (01:20)

Cl. *pp* *ff*

Bari. Sax. *pp* *ff* *p* low multiphonic smooth out to F#

Vib. *mp* (01:20)

Pno. *f* *ff* (01:20 - ca. 01:36)
play erratic clusters, white keys only, slowing down forearms, then hands with spread fingers, then hands with closed fingers

Vla. (01:16) give it some crunch! *f* *fff* change bow freely to maintain max intensity

Vc. give it some crunch! (01:20 - ca. 02:00)

1'08" 1'12" 1'16" 1'20" 1'24"

(ca. 01:44 - 02:20)

slowly, approx. quarter notes, out of sync
transition into approx. 1/8 notes approaching 2'20"
play groups in this order, play each group at least once, repeating groups ad lib.

Fl. ²⁴ *p* *p*

(ca. 01:50 - 02:20)

slowly, approx. quarter notes, out of sync
transition into approx. 1/8 notes approaching 2'20"
play groups in this order, play each group at least once, repeating groups ad lib.

Cl. *p*

(ca. 01:52)

out of sync with other instruments

Bari. Sax.

(01:30)

vibraphone, bowed

(mallet)

Vib. *mp*

set sostenuto pedal

(ca. 01:56 - 02:20)

create rumbling sounds by rubbing, drumming, scratching, or strumming strings with all finger tips

Pno. *ppp*

(01:36 - 02:00)

p

Vla. *p*

(ca. 02:00 - 02:20)

fast, random pizz across entire range
use all fingers of r.h. to pluck

Vc. *pppp* *cresc.*

1'28" 1'32" 1'36" 1'40" 1'44" 1'48" 1'52" 1'56" 2'00"

B

(02:20 - 02:37)
approx. 1/8 notes, out of sync
repeat 3 note figure in parentheses
occasionally add from the sub-bracketed notes

Fl. ³³

(02:20 - 02:37)
approx. 1/8 notes, out of sync
repeat 3 note figure in parentheses
occasionally add from the sub-bracketed notes

Cl.

(02:20)
hold each note for one full breath

Bari. Sax.

(02:16) sus. cymbal
p *mf*
(02:26) vibraphone
mf

Vib.

(02:20 - 02:44)
continue rumbling sounds,
but release damper pedal
while holding down sostenuto pedal

Pno.

fast, random pizz across entire range
use all fingers of r.h. to pluck
(02:04 - 02:36) *pppp* *cresc.*
crescendo to 02:20, decrescendo to 2:36

Vla.

(02:24)
arco

Vc.

8

41 (02:37 - 02:49) (02:49 - 03:00) (03:00 - 03:09)

Fl. *mp* *p*

Cl. *mp* *p*

Bari. Sax.

Vib. (02:38) (02:52) *p*

Pno.

Vla.

Vc. (ca. 02:52 - ca. 03:04) (ca. 03:04 - 4:20)

stay in rhythmic coordination with Vla. improvise on DGAC in 1/8 notes, adding 1/16 notes later primarily rising figures play through viola cue

2'36" 2'40" 2'44" 2'48" 2'52" 2'56" 3'00" 3'04"

49

Fl. (ca. 03:12 - 04:22) hold each note for one breath play through viola cue ca. 4:20

Cl. (ca. 03:12 - 04:22) hold each note for one breath play just through viola cue ca. 4:20

Bari. Sax. (ca. 03:32 - 04:22) hold each note for one breath play through viola cue ca. 4:20

Vib. four mallets (03:12 - 04:12) *mp*

Pno. hold down damper release sostenuto (03:12 - 04:20) *pp* *mp* *p* *mp* *mf* *mp* *mf*

Vla. (ca. 03:08 - 04:20) stay in rhythmic coordination with Vc. improvise on DAGC in 1/8 notes, adding 1/16 notes as you go on primarily rising figures arco *mp*

Vc. *pppp* *mf* *ppp* rumble around on lowest keys

3'08" 3'12" 3'16" 3'20" 3'24" 3'28" 3'32" 3'36" 3'40" 3'44" 3'48" 3'52" 3'56"

62 **D** 04:20 9

Fl. *mf*

Cl. *mf*

Bari. Sax. *mf*

Vib. (04:16) sus. cymbal *p* *mf* vibraphone *mp*

Pno. *mf* *pp* *f* *p* *mp* *mf*

Vla. (4:20) *f* *p*

Vc. *ppp*

4'00" 4'04" 4'08" 4'12" 4'16" 4'20" 4'24" 4'28"

70

Fl. *mp* *f* *mp*

Cl. *mp* *f* *mp* *f*

Bari. Sax. *mp* *f* *mp*

Vib. *mf*

Pno. *pppp*

Vla. *ppp*

Vc. *ppp* *mf*

4'32" 4'36" 4'40" 4'44" 4'48"

10

75

Fl. *f* *mp* *f* *mf*

Cl. *mp* *mf* *p* *mf* *mp*

Bari. Sax. *mf* *mf* *mf* *mp* *p*

Vib. sus. cymbal *p* *mf* vibraphone *p* *pp* .l.v..

Pno. *mf* *mp* *n*

Vla. *f* *mf*

Vc. tremolo *p* ord. *f*

4'52" 4'56" 5'00" 5'04" 5'08" 5'12" 5'16"

82

Fl. *mp* *p*

Cl. *mp* *p*

Bari. Sax.

Vib. *p* *mp*

Pno.

Vla.

Vc.

5'20" 5'24" 5'28" 5'32" 5'36"

87

(05:44) a swell of harmonics passing by, focusing on G

Fl. *ppp* *mp*

(05:44) a swell of harmonics passing by, focusing on A

Cl. *ppp* *mp*

(05:44) a swell of harmonics passing by, focusing on E

Bari. Sax. *ppp* *mp*

Vib. *mf*

Pno.

(05:44) a swell of harmonics passing by, sliding finger lightly sul G

Vla. *ppp* *mp*

(05:44)

Vc. *pp* *mp*

5'40" 5'44" 5'48" 5'52"

91

(ca. 06:04 - 06:18) improvise medium slow in D mixolydian, avoid F# after 06:14 (example, optional to play)

Fl. *ppp* *mf*

(ca. 06:04 - ca. 06:16) intermittently hold A

Cl. *ppp* *p*

(ca. 06:04 - 06:40) intermittently hold E

Bari. Sax. *ppp* *p*

Vib. *mf*

Pno. *mf*

(06:02 - 06:20) improvise medium slow in D mixolydian, avoid F# after 06:14 (example, optional to play)

Vla. *ppp*

Vc.

5'56" 6'00" 6'04" 6'08" 6'12"

(ca. 06:28 - 06:40)
improvise medium slow in D natural minor
(example, optional to play)

96

Fl. *(ca. 06:16 - 6:40)*
improvise medium slow in E dorian, avoid C# after 6:24
(example, optional to play)

Cl. *mp*

Bari. Sax.

Vib. repeat through piano cue

Pno. repeat until 06:40 *mp*

Vla. hold G through piano cue

Vc. *mf*

6'16" 6'20" 6'24" 6'28" 6'32" 6'36"

102 (ca. 6:40)

Fl. *tr*

Cl. *(ca. 06:40)* *p*

Bari. Sax. *(ca. 6:40)* *mf*

Vib. *(ca. 6:40)*

Pno. *(6:40)* *mf*

Vla. *(ca. 06:40)* *p*

Vc. *(ca. 6:40)*

6'40" 6'44" 6'48" 6'52"

106 (tr)

Fl. *mf* *mp*

Cl. *mf* *mp*

Bari. Sax. *f*

Vib. *mf* *mp* ord.

Pno. *f* *pp* *p* *mp*

Vla. *mf* *f*

Vc. *f*

656" 700" 704" 708" 712"

111

Fl. *mf*

Cl. *mf*

Bari. Sax.

Vib.

Pno. *mf*

Vla.

Vc. *p*

716" 720" 724" 728"

115 (07:32)
a swell of harmonics passing by, focusing on C

Fl. *ppp* *mp* *ppp*

Cl. (07:32)
a swell of harmonics passing by, focusing on D
ppp *mp* *ppp*

Bari. Sax. (07:32)
a swell of harmonics passing by, focusing on A
ppp *mp* *ppp*

Vib. *p*

Pno. *6*

Vla. *p*

Vc.

732" 736" 740" 744"



119

Fl. *p*

Cl.

Bari. Sax.

Vib.

Pno. *6*

Vla.

Vc.

748" 752" 756" 8'00"

123

Fl. *pp*

Cl. *pp*

Bari. Sax. *fp* *mf*

Vib.

Pno. *6*

Vla.

Vc. *fp* *mp*

8'04" 8'08" 8'12" 8'16"

127

Fl.

Cl.

Bari. Sax. *p*

Vib. *p* *mf*

Pno. *6*

Vla. *mp* *f*

Vc. *mf*

8'20" 8'24" 8'28" 8'32"

16 131 **G** 08:36

Fl. *sub. p*

Cl. *sub. p*

Bari. Sax. *sub. p*

Vib. *sub. p*

Pno. *sub. p*

Vla. *sub. p* *pp*

Vc. *sub. p*

8'36" 8'40" 8'44" 8'48"

135 **H** 09:16

Fl.

Cl.

Bari. Sax.

Vib. *pp*

Pno.

Vla. put on mute

Vc.

8'52" 8'56" 9'00" 9'04" 9'08" 9'12" 9'16"

(ca. 9:24 - ca. 10:10)
play in any order, for any length of time
slowly
p

(ca. 9:28 - ca. 10:16)
play in any order, for any length of time
slowly
p

(ca. 9:32 - ca. 10:20)
play in any order, for any length of time
slowly
p

bowed
played slowly in any order, for any length of time
(ca. 9:30 - 10:12)
p

(ca. 9:20 - ca. 10:16)
play in any order, for any length of time
slowly
p

(slide finger up and down C string for harmonics)

(blow air through inst.)
(key clicks)
(quiet shifting harmonics)

(blow air through inst.)
(key clicks)
(quiet shifting harmonics)

(blow air through inst.)
(key clicks)
(quiet shifting harmonics)

9'20" 9'24" 9'28" 9'32" 9'36" 9'40" 9'44" 9'48" 9'52" 9'56" 10'00" 10'04" 10'08" 10'12" 10'16"

I 10:20

137

mp

mp

mf

p

(10:20)
mallets
mp

continually roll upwards, hands out of sync
ppp

pp

take off mute
p

10'20" 10'24" 10'28" 10'32" 10'36" 10'40" 10'44" 10'48" 10'52"

18

166

Fl. *mf*

Cl.

Bari. Sax. *mf*

Vib. *mf* *p*

Pno. *p* *mp*

Vla. *mp* *mf*

Vc. *mp*

10'56" 11'00" 11'04" 11'08"

==

170 **J** ca. 11:12

Fl.

Cl.

Bari. Sax. *mp*

Vib. *mf*

Pno.

Vla.

Vc. *mf*

11'12" 11'16" 11'20"

173

Fl.

Cl.

Bari. Sax.

Vib.

Pno.

Vla.

Vc.

mf

mp

mp

mf

f

mp

11'24"

11'28"

11'32"

176

Fl.

Cl.

Bari. Sax.

Vib.

Pno.

Vla.

Vc.

f

ff

f

mp

mf

f

ff

f

K

11'36"

11'40"

11'44"

179 *div*

Fl.

Cl.

Bari. Sax.

Vib.

Pno.

Vla.

Vc.

p

mf

p

leave damper pedal down to end of piece

11'48" 11'52" 11'56" 12'00" 12'04" 12'08" 12'12"

186 *L*

(ca. 12:14 - ca. 13:00)

Fl.

Cl.

Bari. Sax.

Vib.

Pno.

Vla.

Vc.

p

(ca. 12:28 - ca. 13:00)

p

(ca. 12:36 - ca. 13:00)

p

repeat through ca. 13'
con rubato
(ca. 12:16 - ca. 13:00)

(ca. 12:34 - ca. 12:56)

p

(ca. 12:34 - ca. 12:56)

p

12'16" 12'20" 12'24" 12'28" 12'32" 12'36" 12'40" 12'44" 12'48" 12'52" 12'56"