

# **Coincidental Canon**

Michael Winter

# Coincidental Canon

Michael Winter (2003)

## Notes:

\*A single Cello performs a linear pitch glissando. When the spectrum of the Cello coincides with any of the first 16 harmonics of the Contrabasses, other members of the ensemble articulate the coincidental harmonic(s). These coincidences have been quantized to the nearest sixteenth note.

\*The instruments listed in the score represent the preferred instrumentation for orchestra. An ensemble may choose to use more or less than the suggested instruments per staff. Except for the Flute, the Piano, and the Cello (performing a glissando), an instrument that produces sound in a similar manner may replace any unavailable instruments. A double reed may replace a double reed. A single reed may replace a single reed. A brass instrument may replace a brass instrument, and a string instrument may replace a string instrument. The piece may also be performed with just Piano, Cello, and Contrabass.

\*The ensemble may choose to perform the work at any tempo or play the entire 76 measures several times with a faster tempo at each repeat. If repeated, the final repeat should be performed as fast as possible. The ensemble should not deviate from the chosen tempo throughout a playing of the entire 76 measures.

\*A master dynamic is located at the bottom of the orchestra score and included in all the parts. No voice should sound louder than the others except for the piano, cello, and contrabasses, which should be heard clearly throughout the piece without being too obtrusive. The piece consists of several swells that peak at the points when all voices resolve downwards at the same time. No intermediate dynamic markings are given throughout each crescendo. Right before the peak of each swell, there should be a very brief pause, like a breath, before the voices resolve downwards. This is not notated due to the variable length of the piece. Once a peak is reached, the dynamic of the ensemble should recede to *pianissimo* in a similar manner to a cymbal being allowed to ring freely after a roll. The extra *fortissimo* markings (7 by the last swell) are used to illustrate that each swell should be louder than the one before it. The peak of the final swell should be as loud as possible with no voice louder than the rest.

## Notes for the Pianists:

\*The two pianists can play one piano. The piece is based on the first sixteen harmonics of C2. All C's are the same as the equitempered C and require no alternate tuning. The other notes played on the piano should be tuned as follows (the numbers given are the harmonic number referenced from C2 followed by a cent deviation in hundredths of a semitone, from the tempered pitch):

G3 = 3, +2 cents  
E4 = 5, -14 cents  
G4 = 6, +2 cents  
A#4 = 7, -31 cents  
D5 = 9, +4 cents  
E5 = 10, -14 cents  
F#5 = 11, -49 cents  
G5 = 12, +2 cents  
A5 = 13, -59 cents  
A#5 = 14, -31 cents  
B5 = 15, -12 cents

\*In the piano parts, all notes connected by one stem can be played by one hand. When a new note is articulated, the represented harmonic number is written above. The pianist may be sustaining several notes even when one note is moving downwards. The players must make sure the movement is correct and pay close attention to which notes are actually tied over. A key is always released once the next lower harmonic is sounded. For example, the player depresses C6 when a 16 is written and holds the pitch until a 15 is written, at which point he or she will play B5.

\*The players should never depress the damper pedal and should always keep a key depressed as long as notated so that the string may sympathetically resonate with the orchestra.

## Notes for the Cellist performing a glissando:

\*Since the Cello performs a linear pitch glissando, the movement down the neck will become increasingly slower. The notes in parentheses with an arrow extended to the piano parts mark the points of spectral coincidence. The written note represents the tempered pitch closest to the desired pitch and is accompanied by a frequency ratio from the Contrabasses and a cent deviation from the tempered pitch.

\*The harmonics that should coincide at these points can be determined from the ratio. The denominator is the harmonic number of the Cello that coincides with the harmonic number of the Contrabasses represented by the numerator. The Cello should attempt to hear the coincidences, especially for the ratios with lower numbers, so that the other players are actually articulating the harmonics together with the coincidences.

\*String changes should not be on a coincidence and should be as seamless as possible.

**Notes for all instrumentalists except for the Pianists, the Cellist (performing a glissando), and the Contrabasses:**

\*Each player plays only one pitch throughout the entire piece. The first note written for each player is accompanied by the harmonic number referenced from C2 with a cent deviation from the tempered pitch. The same deviation should be assumed throughout the piece. Players can reference their pitch from the piano.

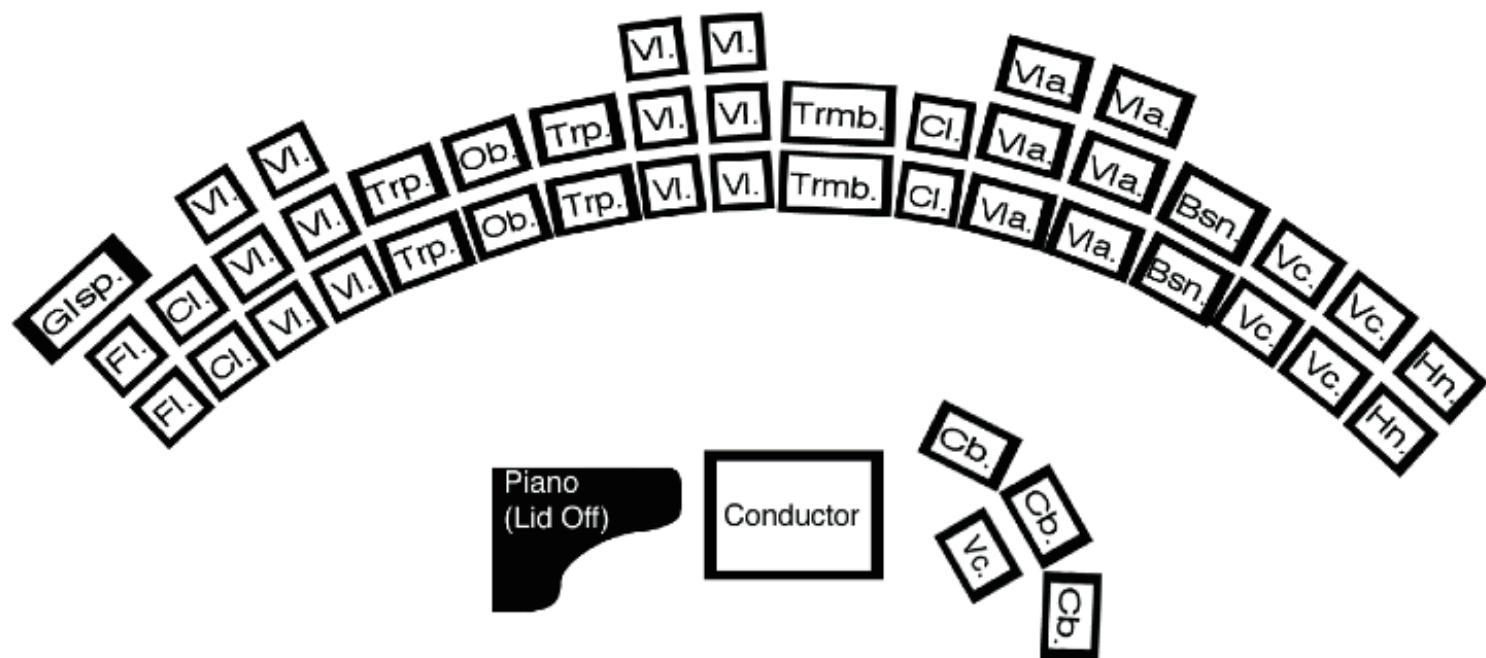
\*Except at the peaks of the crescendos, which are notated with accents, the players are to enter as imperceptibly as possible, secure their pitch, and then quickly and smoothly reach the dynamic of the rest of the ensemble. They must maintain a strong tone till the end of the written duration. At the peaks of the swells, those playing must enter strongly at the very beginning of the written pitch.

**Note for the Wind instruments:**

\*Some of the note durations are very long. The part doublings are more necessary for the groups who play lower and longer tones, which are located towards the bottom of the orchestra score. Breathing should be staggered. Players should decrescendo, breathe, and then reenter as imperceptibly as possible.

**Stage Placement:**

\*So the voices in canon may be better articulated, the instruments are not seated in choirs. The score order represents how the players should be seated from the far left, starting with Glockenspiel and Flute, to the far right when facing the stage. The Piano, the Cello (performing a glissando), and the Contrabasses should play positioned in front of the rest of the ensemble as close to the center of the stage as possible. The instruments that play C2 (not included in the seating chart below) in the final measure should be placed around the periphery of the ensemble. An instrument can be added or taken away from the back rows. Below is a seating chart for the preferred ensemble.



# Coincidental Canon

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16  
+0

Glockenspiel

2 Flutes

\*2 Clarinets

6 Violins

\*2 Trumpets

2 Oboes

\*2 Trumpets

6 Violins

\*2 Horns

6 Violins

2 Trombones

\*2 Clarinets

6 Violas

2 Bassoons

4 Cellos

\*2 Horns

Any Number  
Of Instruments  
That Can Play  
C2

Piano 1

Piano 2

1 Cello

3 Contrabasses

16  
+0

15  
-12

14  
-31

16/1  
+0

15/1  
-12

14/1  
-31

1/1

*p poco a poco cresc.*

\* Score "in C"

This page of a musical score contains 20 staves for orchestral instruments and 5 staves for chamber instruments. The orchestral section includes:

- Gls. (Glockenspiel)
- 2 Fl. (Flutes)
- 2 Cl. (Clarinets)
- 6 VI. (Violins)
- 2 Trpt. (Trumpets)
- 2 Ob. (Oboes)
- 2 Trpt. (Trumpets)
- 6 VI. (Violins)
- 2 Hn. (Horns)
- 6 VI. (Violins)
- 2 Trbn. (Trumpets)
- 2 Cl. (Clarinets)
- 6 Vla. (Violas)
- 2 Bsn. (Bassoons)
- 4 Vc. (Violoncellos)
- 2 Hn. (Horns)

The chamber section includes:

- Pno. 1 (Piano 1)
- Pno. 2 (Piano 2)
- Vc. (Violoncello)
- 3 Cb. (Contrabasses)

Key musical features include:

- Measures 12 and 13 with performance markings: 12 +2, 13 +41, 13/1 +41 (#), 12/1 +2, and 12.
- Long melodic lines in the 6 VI. and 2 Trpt. staves.
- Accented notes in the Vc. staff at measures 13 and 12.
- Measures 12 and 13 are marked with diamond symbols at the beginning of the staff.

This page of a musical score contains 20 staves for various instruments. The instruments listed on the left are: Glsp., 2 Fl., 2 Cl., 6 VI., 2 Trpt., 2 Ob., 2 Trpt., 6 VI., 2 Hn., 6 VI., 2 Trbn., 2 Cl., 6 Vla., 2 Bsn., 4 Vc., 2 Hn., Pno. 1, Pno. 2, Vc., and 3 Cb. The score is divided into four measures. The 2nd Ob. staff has a melodic line with a slur and a fermata. The 2nd Trpt. staff has a melodic line with a slur and a fermata, with a fingering '11' and a performance instruction '-49' above it. The 2nd Trpt. staff has a melodic line with a slur and a fermata, with a fingering '11' and a performance instruction '-49' above it. The 2nd Hn. staff has a melodic line with a slur and a fermata, with a fingering '11/1' and a performance instruction '-49' above it. The 3 Cb. staff has a melodic line with a slur and a fermata. The Pno. 1 and Pno. 2 staves are mostly empty, with some notes in the second measure. The Vc. staff has a melodic line with a slur and a fermata, with a fingering '11/1' and a performance instruction '-49' above it. The 3 Cb. staff has a melodic line with a slur and a fermata. The 4 Vc. staff has a melodic line with a slur and a fermata. The 2 Bsn. staff has a melodic line with a slur and a fermata. The 6 Vla. staff has a melodic line with a slur and a fermata. The 2 Cl. staff has a melodic line with a slur and a fermata. The 2 Trbn. staff has a melodic line with a slur and a fermata. The 6 VI. staff has a melodic line with a slur and a fermata. The 2 Hn. staff has a melodic line with a slur and a fermata. The 2 Trpt. staff has a melodic line with a slur and a fermata. The 6 VI. staff has a melodic line with a slur and a fermata. The 2 Cl. staff has a melodic line with a slur and a fermata. The 2 Fl. staff has a melodic line with a slur and a fermata. The Glsp. staff has a melodic line with a slur and a fermata.

13

Glsps.

2 Fl.

2 Cl.

6 VI.

2 Trpt.

2 Ob.

2 Trpt.

6 VI.

2 Hn.

6 VI.

2 Trbn.

2 Cl.

6 Vla.

2 Bsn.

4 Vc.

2 Hn.

Pno. 1

Pno. 2

Vc.

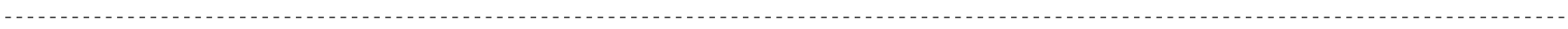
3 Cb.

10  
-14

9  
+4

10  
-14

9  
+4



17

Glsp.

2 Fl.

2 Cl.

6 Vl.

2 Trpt.

2 Ob.

2 Trpt.

6 Vl.

2 Hn.

6 Vl.

2 Trbn.

2 Cl.

6 Vla.

2 Bsn.

4 Vc.

2 Hn.

17

Pno. 1

Pno. 2

Vc.

3 Cb.

----- *mf* ----- *decresc.* -----



The musical score for page 6 consists of two systems of staves. The first system includes:

- Gls. (Glockenspiel)
- 2 Fl. (Flutes)
- 2 Cl. (Clarinets)
- 6 VI. (Violins)
- 2 Trpt. (Trumpets)
- 2 Ob. (Oboes)
- 2 Trpt. (Trumpets)
- 6 VI. (Violins)
- 2 Hn. (Horns)
- 6 VI. (Violins)
- 2 Trbn. (Trumpets)
- 2 Cl. (Clarinets)
- 6 Vla. (Violas)
- 2 Bsn. (Bassoons)
- 4 Vc. (Violas)
- 2 Hn. (Horns)
- 2 Hn. (Horns)

The second system includes:

- Pno. 1 (Piano 1)
- Pno. 2 (Piano 2)
- Vc. (Violin)
- 3 Cb. (Cellos)

Key musical features include:

- Rehearsal mark 21 at the beginning of the first system.
- Rehearsal mark 15 in the Piano 2 part, with a dynamic marking  $p$ .
- Rehearsal mark 14 in the Piano 2 part, with a dynamic marking  $f$ .
- Rehearsal mark 7 in the 2 Trbn. part, with a dynamic marking  $f$ .
- Rehearsal mark 31 in the 2 Trbn. part, with a dynamic marking  $f$ .
- Rehearsal mark 7 in the Vc. part, with a dynamic marking  $f$ .
- Rehearsal mark 31 in the Vc. part, with a dynamic marking  $f$ .
- Rehearsal mark 15/2 -12 in the Vc. part, with a dynamic marking  $p$ .
- Rehearsal mark 7/1 -31 in the Vc. part, with a dynamic marking  $f$ .
- Dynamic markings:  $p$  (piano),  $f$  (forte), and *poco a poco cresc.* (poco a poco crescendo).
- Dynamic markings: *decresc.* (decrescendo).

25

Glsp.

2 Fl.

2 Cl.

6 VI.

2 Trpt.

2 Ob.

2 Trpt.

6 VI.

2 Hn.

6 VI.

2 Trbn.

2 Cl.

6 Vla.

2 Bsn.

4 Vc.

2 Hn.

Pno. 1

Pno. 2

Vc.

3 Cb.

13

12

6

13/2 +41

6/1 +2

----- *p* poco a poco cresc. ----- *ff* ----- *decresc.* -----

29

Glsp.

2 Fl.

2 Cl.

6 VI.

2 Trpt.

2 Ob.

2 Trpt.

6 VI.

2 Hn.

6 VI.

2 Trbn.

2 Cl.

6 Vla.

2 Bsn.

4 Vc.

2 Hn.

Pno. 1

Pno. 2

Vc.

3 Cb.

11

16

11/2 -49

16/3 -2

5

-14

15

10

5

2

5/1 -14

----- *p* poco a poco cresc. ----- *fff*

Musical score for orchestra and piano, measures 33-36. The score includes staves for Glsp., 2 Fl., 2 Cl., 6 VI., 2 Trpt., 2 Ob., 2 Trpt., 6 VI., 2 Hn., 6 VI., 2 Trbn., 2 Cl., 6 Vla., 2 Bsn., 4 Vc., 2 Hn., Pno. 1, Pno. 2, Vc., and 3 Cb. The piano part features complex chords with figured bass notation: 14/3 -33, 9/2 +4, and 13/3 +39. The Vc. part has fingering markings (#) and (•).

decresc.----- *p* poco a poco cresc.-----

37

Gls.

2 Fl.

2 Cl.

6 Vl.

2 Trpt.

2 Ob.

2 Trpt.

6 Vl.

2 Hn.

6 Vl.

2 Trbn.

2 Cl.

6 Vla.

2 Bsn.

4 Vc.

2 Hn.

37

Pno. 1

Pno. 2

Vc.

3 Cb.

----- *fff* ----- *decresc.* ----- *p* *poco a poco cresc.* -----

This page of a musical score contains 24 staves. The top 20 staves are for an orchestra, and the bottom 4 are for piano and double bass. The orchestral parts include:

- Glsp. (Glockenspiel)
- 2 Fl. (Flutes)
- 2 Cl. (Clarinets)
- 6 VI. (Violins)
- 2 Trpt. (Trumpets)
- 2 Ob. (Oboes)
- 2 Trpt. (Trumpets)
- 6 VI. (Violins)
- 2 Hn. (Horns)
- 6 VI. (Violins)
- 2 Trbn. (Trumpets)
- 2 Cl. (Clarinets)
- 6 Vla. (Violas)
- 2 Bsn. (Bassoons)
- 4 Vc. (Violoncellos)
- 2 Hn. (Horns)
- 3 Cb. (Contrabasses)

The piano part (Pno. 1 and Pno. 2) and the double bass part (Vc.) feature complex rhythmic patterns and accidentals. The Vc. part includes specific markings:  $7/2$  -31 (#),  $10/3$  -16 (•),  $13/4$  +41 (#), and  $16/5$  +14 (•). The 3 Cb. part has a long, low note across the entire page. A diamond-shaped rehearsal mark containing the number 41 is located at the beginning of the first staff.

45

Glsp.

2 Fl.

2 Cl.

6 VI.

2 Trpt.

2 Ob.

2 Trpt.

6 VI.

2 Hn.

6 VI.

2 Trbn.

2 Cl.

6 Vla.

2 Bsn.

4 Vc.

2 Hn.

45

Pno. 1

Pno. 2

Vc.

3 Cb.

15  
12  
9  
6  
3

3/1  
+2  
(•)

14  
11

14/5  
-17  
(#•)

11/4  
-49  
(•)

----- *ffff* ----- *decresc.* ----- *p poco a poco cresc.* -----

49

Glsp.

2 Fl.

2 Cl.

6 VI.

2 Trpt.

2 Ob.

2 Trpt.

6 VI.

2 Hn.

6 VI.

2 Trbn.

2 Cl.

6 Vla.

2 Bsn.

4 Vc.

2 Hn.

Pno. 1

Pno. 2

Vc.

3 Cb.

16  
8

13

15  
10  
5

12

$\frac{8}{3}$   
-2

$\frac{13}{5}$   
-46

$\frac{5}{2}$   
-14

$\frac{12}{5}$   
+16



This page of a musical score, numbered 14, contains two systems of staves. The first system includes parts for Glsp., 2 Fl., 2 Cl., 6 VI., 2 Trpt., 2 Ob., 2 Trpt., 6 VI., 2 Hn., 6 VI., 2 Trbn., 2 Cl., 6 Vla., 2 Bsn., 4 Vc., and 2 Hn. The second system includes Pno. 1, Pno. 2, Vc., and 3 Cb. The score features various musical notations such as notes, rests, and slurs. A diamond-shaped marker with the number 33 is present at the beginning of the first system. The piano part (Pno. 2) includes specific fingering numbers: 7, 14, 11, and 13. The double bass part (Vc.) includes figured bass notation: 7/3 -33, 16/7 +31, 9/4 +4, 11/5 -35, 13/6 +39, and 15/7 +19. A dashed line is located at the bottom of the page.

57

Gls. 2 Fl. 2 Cl. 6 VI. 2 Trpt. 2 Ob. 2 Trpt. 6 VI. 2 Hn. 6 VI. 2 Trbn. 2 Cl. 6 Vla. 2 Bsn. 4 Vc. 2 Hn. Pno. 1 Pno. 2 Vc. 3 Cb.

2  
+0

16  
14

15

16 14

13

12  
10  
8  
6  
4  
2

11 9 7

2/1 +0

15/8 -12 13/7 -28 11/6 +49 9/5 +18 16/9 -4 7/4 -31

----- *ffff* *decresc.* ----- *p* *poco a poco cresc.* -----

This page of a musical score, numbered 16, contains the following parts and measures:

- Orchestral Instruments (Measures 1-4):**
  - Gls.:** Glimmering strings, starting with a diamond-shaped *gl* marking.
  - 2 Fl.:** Two flutes.
  - 2 Cl.:** Two clarinets.
  - 6 VI.:** Six violins.
  - 2 Trpt.:** Two trumpets.
  - 2 Ob.:** Two oboes.
  - 2 Trpt.:** Two trumpets (repeated).
  - 6 VI.:** Six violins (repeated).
  - 2 Hn.:** Two horns.
  - 6 VI.:** Six violins (repeated).
  - 2 Trbn.:** Two trombones.
  - 2 Cl.:** Two clarinets.
  - 6 Vla.:** Six violas.
  - 2 Bsn.:** Two bassoons.
  - 4 Vc.:** Four violas.
  - 2 Hn.:** Two horns.
- Piano Accompaniment (Measures 5-14):**
  - Pno. 1:** Right hand with notes numbered 12, 15, 16, 11, 14. Left hand with notes numbered 13.
  - Pno. 2:** Left hand with notes numbered 10, 5, 8.
  - Vc.:** Viola part with notes numbered 12/7 +33, 5/3 -16, 13/8 +41, 8/5 +14, 11/7 -18, 14/9 -35.
  - 3 Cb.:** Three cellos.

65

Glsp.

2 Fl.

2 Cl.

6 VI.

2 Trpt.

2 Ob.

2 Trpt.

6 VI.

2 Hn.

6 VI.

2 Trbn.

2 Cl.

6 Vla.

2 Bsn.

4 Vc.

2 Hn.

Pno. 1

Pno. 2

Vc.

3 Cb.

15 12 16 14 11 15 16 12

9 6 13 10 8 11 15 8 13

3 7 8 4

3/2 +2 16/11 +49 13/9 +37 10/7 +17 7/5 -17 11/8 -49 15/11 +37 4/3 -2 13/10 -46

(#) (#) (#) (#) (#) (#) (b) (.)

Detailed description: This page of a musical score, numbered 17, contains 17 staves. The top 16 staves are for various orchestral instruments: Glsp., 2 Fl., 2 Cl., 6 VI., 2 Trpt., 2 Ob., 2 Trpt., 6 VI., 2 Hn., 6 VI., 2 Trbn., 2 Cl., 6 Vla., 2 Bsn., 4 Vc., and 2 Hn. The bottom two staves are for piano accompaniment, labeled Pno. 1 and Pno. 2. Below the piano staves is a figured bass line for the basso continuo, with figures such as 3/2 +2, 16/11 +49, 13/9 +37, 10/7 +17, 7/5 -17, 11/8 -49, 15/11 +37, 4/3 -2, and 13/10 -46. The figured bass line includes accidentals: (#) for sharps, (b) for flats, and (.) for naturals. The piano part includes fingerings (e.g., 15, 12, 16, 14, 11, 15, 16, 12) and articulation marks. A diamond-shaped rehearsal mark containing the number 65 is located at the beginning of the first staff.

69

Glsp.

2 Fl.

2 Cl.

6 VI.

2 Trpt.

2 Ob.

2 Trpt.

6 VI.

2 Hn.

6 VI.

2 Trbn.

2 Cl.

6 Vla.

2 Bsn.

4 Vc.

2 Hn.

69

Pno. 1

Pno. 2

Vc.

3 Cb.

14 15 16 11 12 14 15 16

9 10 5 6 7 8 9

9/7 +35 14/11 +18 5/4 -14 16/13 -41 11/9 +47 6/5 +16 13/11 -11 7/6 -33 15/13 +48 8/7 +31 9/8 +4

73

Gls. 2 Fl. 2 Cl. 6 VI. 2 Trpt. 2 Ob. 2 Trpt. 6 VI. 2 Hn. 6 VI. 2 Trbn. 2 Cl. 6 Vla. 2 Bsn. 4 Vc. 2 Hn.

Pno. 1

Pno. 2

Vc.

3 Cb.

10/9 -18 11/10 -35 12/11 -49 13/12 +39 14/13 +28 15/14 +19 16/15 +12

11 12 14 15 16

10 13

decresc. pppp

