

Piano Trio

by Mary Simoni

2009

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Program Notes:

The Piano Trio is a single-movement work in five parts, metaphorically related to the fingers of the human hand. The technological premise of the piece correlates each of the five sections of the composition with a device known as the Hot Hand™ . This device contains technology that senses human motion and transmits the data wirelessly to a receiver connected to a computer. The computer analyzes the data from the Hot Hand and responds by creating a sonic signature that corresponds to the speed and trajectory of the human hand. The composer modified the Hot Hand™ from its original form as a ring to a bracelet that is attached to the bow arm of the violinist and cellist.

Instrumentation:

Piano with Microphone – the piano microphone is used to mix the amplified sound with the amplified and processed sound of the violin and cello.

Violin with HotHands™ Bracelet, MIDI & Microphone – the accelerometer of the HotHands™ has been integrated into a bracelet. The HotHands symbol should face the fingers of the performer. The violin microphone should be unidirectional so that the violin sound may be processed independent of the piano or cello. The unprocessed and processed violin sounds are mixed together equally.

Cello with HotHands™ Bracelet, MIDI & Microphone - the accelerometer of the HotHands™ has been integrated into a bracelet. The HotHands symbol should face the fingers of the performer. The cello microphone should be unidirectional so that the cello sound may be processed independent of the piano or violin. The unprocessed and processed cello sounds are mixed together equally.

Stereo Audio Playback – There are 24 stereo samples that are played back on cue in the score. The cue is a number 1-24 enclosed in a triangle. For example, the third cue is denoted as:



Computer running Max/MSP™ - There should be at least one but preferably two computers running Max/MSP. One computer running master_violin.maxpat should receive wireless MIDI input from the violinist's HotHands™ Bracelet, process the violin sound based on the MIDI data, and output the processed violin signal. The other computer running master_cello.maxpat should receive wireless input from the cellist's HotHands™ Bracelet, process the cello sound based on the MIDI data, and output the processed cello signal. The Max/MSP signal processing algorithms are in 5 sections that are cued in the score. The cue is a number 1-5 enclosed in a hexagon. For example, the second cue is denoted as:



Mixer – a mixer with at least 5 inputs with stereo output: 2 inputs for the violin (processed & unprocessed), 2 inputs for the cello (processed & unprocessed), and 1 stereo input for sample playback.

Please address any questions regarding performance instructions to:

Mary Simoni
msimoni@umich.edu

Calibrating the HotHands™ for the Violin (MIDI Channel 1):

Place the fully-charged HotHands™ Bracelet on the violinist with the H on the accelerometer facing toward the fingers. Turn the bracelet on by depressing the black button on the right side of the accelerometer. The status LED should be blue.

To calibrate the X axis:

1. Place the middle of the bow on the middle two strings of the instrument.
2. Hold down the activate button on the MIDI-EXP Controller for 2 seconds
3. Select X axis and assign to NOTE CONTROL 1 MESSAGE
4. Use maximum DEPTH and SMOOTHING
5. When properly calibrated, the tip of the bow on a middle string will have a MIDI note number of ~0 whereas the frog of the bow on a middle string will have a MIDI note number of ~127

To calibrate the Y axis:

1. Place the middle of the bow on the middle two strings of the instrument.
2. Hold down the activate button on the MIDI-EXP Controller for 2 seconds
3. Select Y axis and assign to CONTINUOUS CONTROLLER MESSAGE
4. Use maximum DEPTH and SMOOTHING
5. When properly calibrated, the middle of the bow on the G string should have a MIDI value of ~127, the D string should be ~86, the A string should be ~43, and the E string should be 0.

Calibrating the HotHands™ for the Cello (MIDI Channel 2):

Place the fully-charged HotHands™ Bracelet on the cellist with the H on the accelerometer facing toward the fingers. Turn the bracelet on by depressing the black button on the right side of the accelerometer. The status LED should be blue.

To calibrate the X axis:

1. Place the middle of the bow on the middle two strings of the instrument.
2. Hold down the activate button on the MIDI-EXP Controller for 2 seconds
3. Select X axis and assign to CONTINUOUS CONTROLLER MESSAGE
4. Use maximum DEPTH and SMOOTHING
5. When properly calibrated, *sul ponticello* should have a MIDI value of ~0 and *sul tasto* should have a MIDI value of ~127.

To calibrate the Y axis:

6. Place the middle of the bow on the middle two strings of the instrument.
7. Hold down the activate button on the MIDI-EXP Controller for 2 seconds
8. Select Y axis and assign to NOTE CONTROL 1 MESSAGE
9. Use maximum DEPTH and SMOOTHING
10. When properly calibrated, the tip of the bow on a middle string will have a MIDI note number of ~0 whereas the frog of the bow on a middle string will have a MIDI note number of ~127

Piano Trio

Adagio $\text{♩}=60$

Mary Simoni



Violin

Cello

Piano

Vln

Cel

Pno.

1

2

3

4

Musical score for strings and piano, measures 7-10.

Measure 7: Violin (Vln) plays eighth-note pairs with grace notes. Cello (Cel) plays eighth-note pairs. Piano (Pno) plays eighth-note pairs with dynamic *p*. Measure 7 ends with a fermata over the piano part.

Measure 8: Violin (Vln) continues eighth-note pairs. Cello (Cel) continues eighth-note pairs. Piano (Pno) continues eighth-note pairs with dynamic *pp*. Measure 8 ends with a fermata over the piano part.

Measure 9: Violin (Vln) begins a sustained note with a circle-dot above it. Cello (Cel) begins a sustained note with a circle-dot above it. Piano (Pno) begins a sustained note with a circle-dot above it. Measures 9-10 are labeled "pedal simile".

Measure 10: Violin (Vln) continues sustained notes. Cello (Cel) continues sustained notes. Piano (Pno) continues sustained notes. Measures 9-10 are labeled "pedal simile".

Measure 11: Violin (Vln) begins eighth-note pairs with grace notes. Cello (Cel) begins eighth-note pairs. Piano (Pno) begins eighth-note pairs with dynamic *mp*.

Measure 12: Violin (Vln) continues eighth-note pairs. Cello (Cel) continues eighth-note pairs. Piano (Pno) continues eighth-note pairs with dynamic *mf*.

Measure 13: Violin (Vln) continues eighth-note pairs. Cello (Cel) continues eighth-note pairs. Piano (Pno) continues eighth-note pairs with dynamic *mp*.

13 Vln 8 Cel 4 Pno. 4

13 Cel 8 Pno. 4

13 Pno. 8 Pno. 4

16 Vln pizz. 8 Pno. 4

16 Cel pizz. 8 Pno. 4

16 Cel pizz. 8 Pno. 4

16 Pno. 8 Pno. 4

Musical score for strings and piano, measures 19-22.

Measure 19: Violin (Vln) plays eighth-note chords in common time. Cello (Cel) plays sustained notes. Piano (Pno) has a bass line with eighth-note chords and a treble line with eighth-note chords. Dynamics: *mf*, *p*.

Measure 20: Violin (Vln) and Cello (Cel) play sustained notes. Piano (Pno) continues its eighth-note chords. Dynamics: *mf*, *p*.

Measure 21: Violin (Vln) and Cello (Cel) play eighth-note chords. Piano (Pno) continues its eighth-note chords. Dynamics: *mf*.

Measure 22: Violin (Vln) and Cello (Cel) play eighth-note chords. Piano (Pno) continues its eighth-note chords. Dynamics: *mp*. The piano part includes a dynamic *mp* and a tempo marking *3*.

25 Vln 13

Cel 25 pizz.

Pno. { 25 pizz. f

Vln Allegro e loco $\text{♩} = 192$

Cel Allegro e loco $\text{♩} = 192$

Pno. { 28 3 Allegro e loco $\text{♩} = 192$

8^{vb} sforzando

31

Vln *a risoluto* sul ponticello* ord. sul ponticello

Cel *a risoluto*

Pno.

34

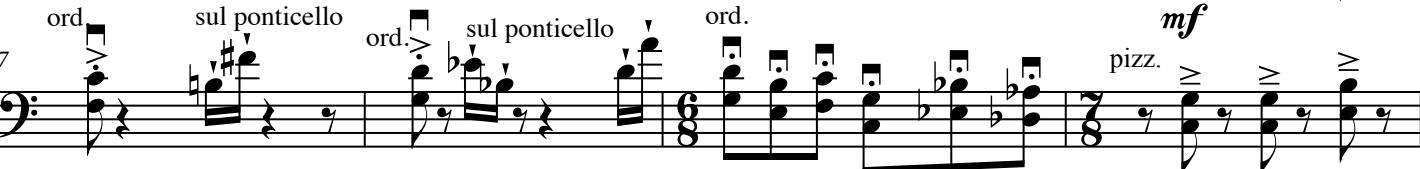
Vln ord. sul ponticello ord. sul ponticello

Cel *a risoluto* *a risoluto* *sforzato* sul ponticello *f*

Pno.

* a quasi-pitched percussive timbre

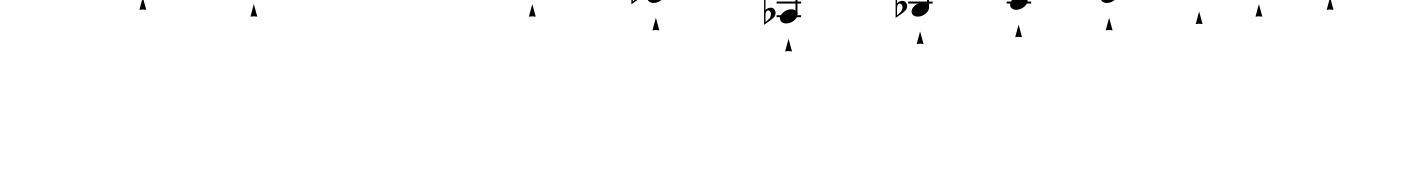
ord. sul ponticello ord. ord. sul ponticello ord. ord.

Vln 37 
Cel 37 
Pno. 37 

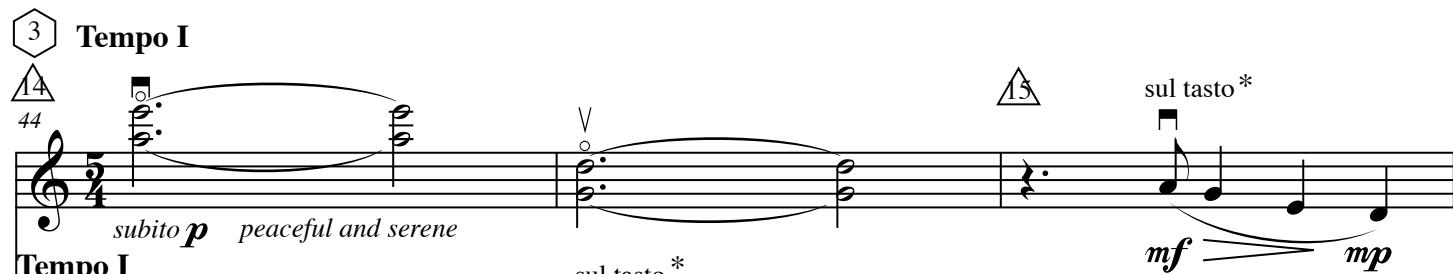
41 arco //

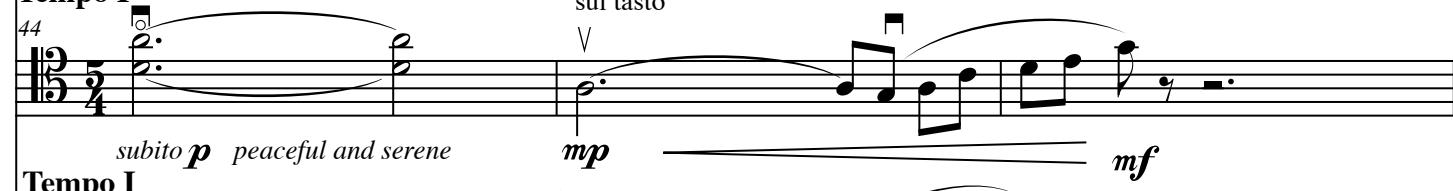
Vln 41 
Cel 41 
Pno. 41 

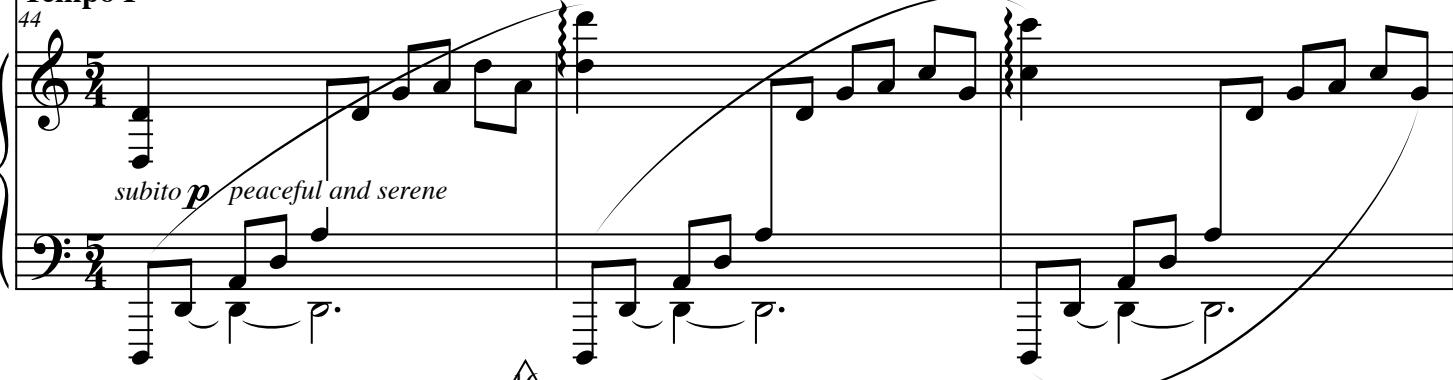
41 ritard ff //

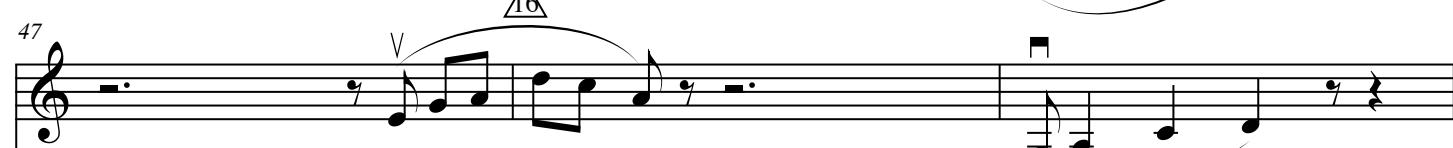
Vln 41 
Cel 41 
Pno. 41 

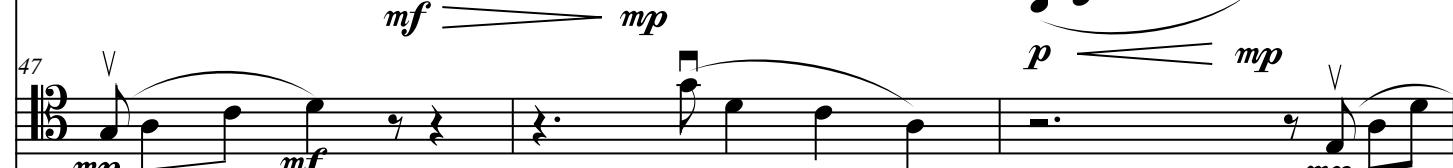
3 **Tempo I**

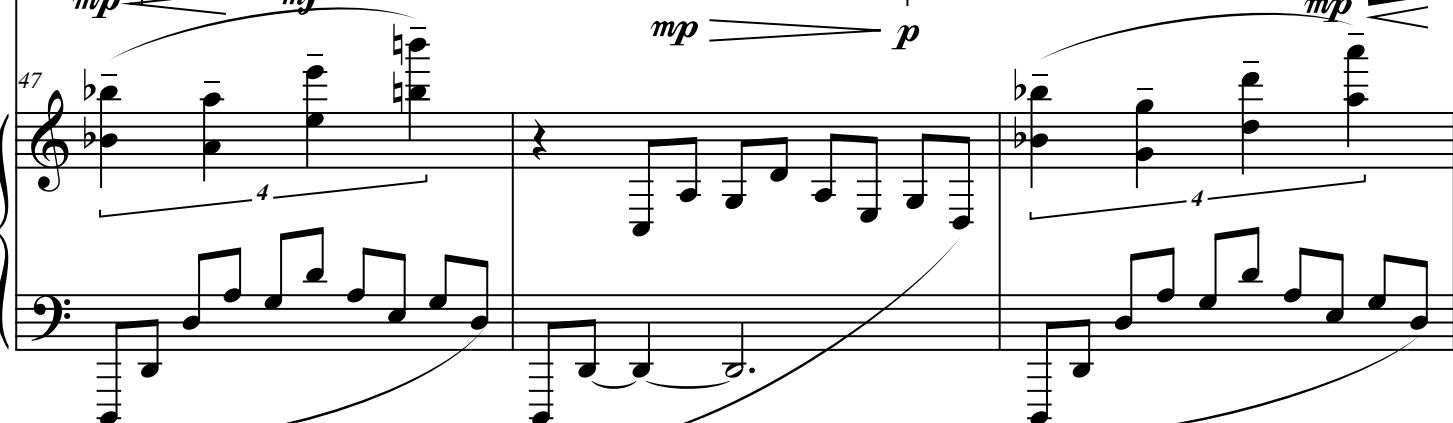
Vln 

Cel 

Pno. 

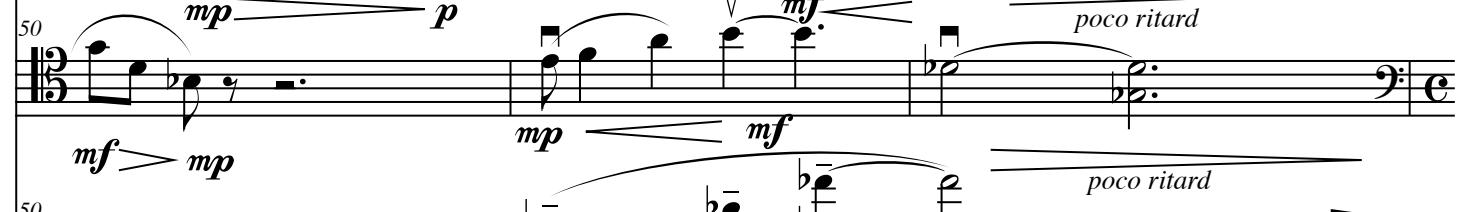
Vln 

Cel 

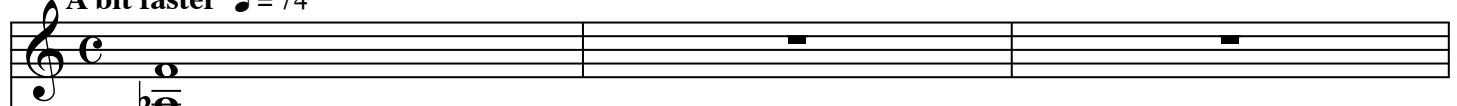
Pno. 

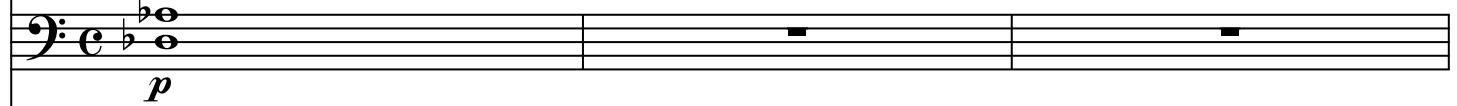
* a hollow whispering timbre

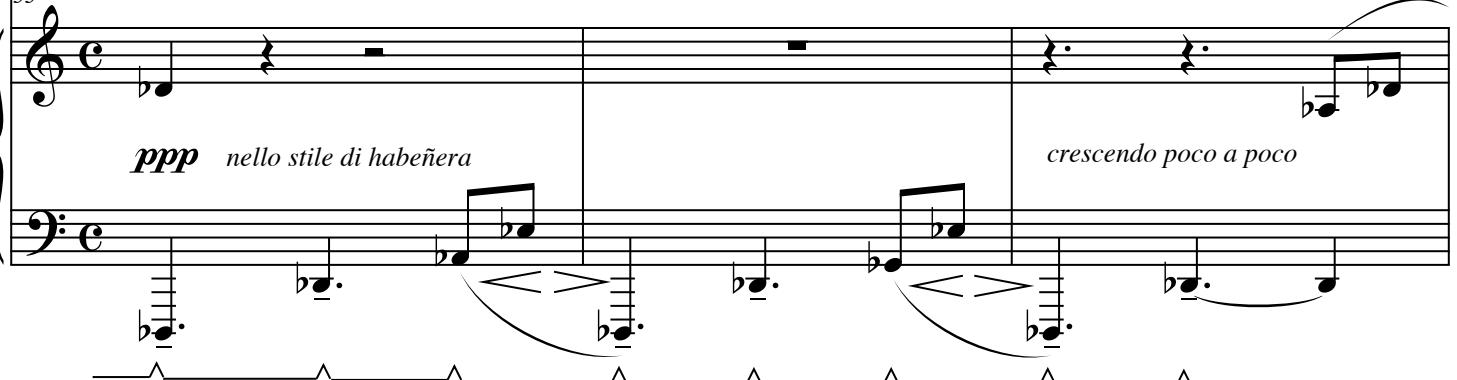
50 Vln 

50 Cel 

Pno. { 

53 A bit faster $\text{♩} = 74$ Vln 

53 A bit faster $\text{♩} = 74$ Cel 

Pno. { 

56 Vln
Cel
Pno.

56 Vln
Cel
Pno.

56 Vln
Cel
Pno.

59 Vln
Cel
Pno.

59 Vln
Cel
Pno.

62

Vln ff V

Cel V

Pno. ff sff

65 ritard ffffff ritard ff f mp sfz L.H.pizz.

Vln L.H.pizz. 4, sfz

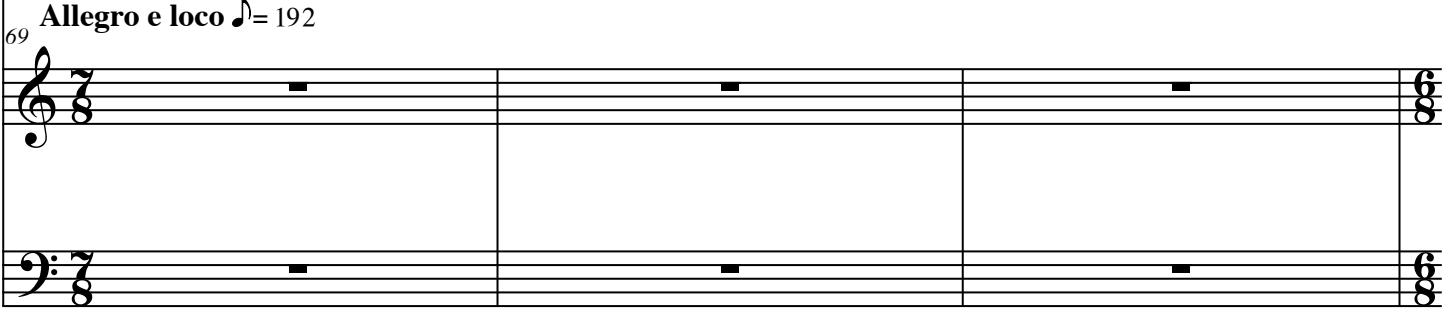
Cel ritard ff f mp sfz

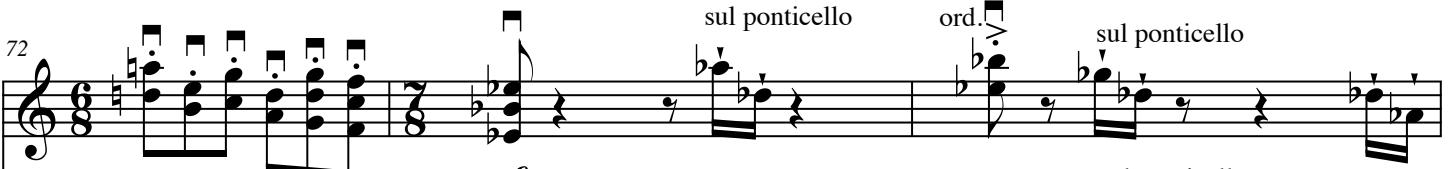
Pno. ff ritard ffffff sfz

Allegro e loco $\text{♪}=192$

Vln 69 

Cel 69 

Pno. { 69 

Vln 72 

Cel 72 

Pno. { 72 

81 Vln arco *p* *peaceful and serene*

81 Cel arco *mp*

81 Pno. *mp*

84 Vln *ritard poco a poco* *pp* *ppp*

84 Cel *pp* *ritard poco a poco* *ppp*

84 Pno. *p* *ritard poco a poco* *pp* *p* *ppp* *8vb*

81 Vln arco *p* *peaceful and serene*

81 Cel arco *mp*

81 Pno. *mp*

84 Vln *ritard poco a poco* *pp* *ppp*

84 Cel *pp* *ritard poco a poco* *ppp*

84 Pno. *p* *ritard poco a poco* *pp* *p* *ppp* *8vb*