All the Pretty Colours of the Rainbow

for Microtonal Piano

by

Brian K. Shepard

ASCAP

Performance Time: approx. 8:00

Program Note

I have long been fascinated by the differences in the way humans perceive light frequencies and sound frequencies. While we are capable of hearing more than nine octaves of sound frequencies, we are only capable of seeing the equivalent of about one octave of light frequencies. Yet, even though that one octave of visible light has only six steps in it (red, orange, yellow, green, blue, violet*), we see and recognize thousands of different hues within each of those steps. Think for a just a moment about how many different reds there are in the world. Now imagine that world with only one red, one yellow, one green, etc., and you get a sense of how we tend to understand sound frequencies. Although we can hear so many more octaves of sound, we like those octaves to be neatly divided into a distinct set of seven (or dare I say it, twelve) equally-spaced steps, and have little tolerance for different "hues" of those steps.

In writing *All the Pretty Colours of the Rainbow*, I wanted to give the listener a sense of the different "hues" that might be associated with steps in a musical scale. At its root, the pitch material is based on the five notes of a common pentatonic scale (D, E, G, A, B). However, the interval between each note is slightly wider than what we commonly hear in traditional tunings. In addition, there are four different versions of every note in the scale, each a tiny bit higher in frequency than the previous (think D, D^{+}, D^{++}, D^{+++}, E, E^{+}, etc.). The entire scale, then, requires twenty keys, or a perfect twelfth (octave + perfect fifth) on the piano keyboard to complete. And, since each repetition of the scale is slightly higher in frequency than a pure octave, an upward spiral of pitches is created to the top of the keyboard.

I also wanted to write a piece that uses a sound generally considered impossible on the piano. Because of the way the mechanism in the acoustic piano works, the keys take a bit of time to return to the up position after being pressed. This mechanical latency prevents extremely rapid repetitions on the same key. However, this tuning system puts four very-closely-tuned versions of each note next to each other, making it quite possible to produce fast repetitions and drumming patterns.

*Modern color scientists no longer consider indigo a separate color. Thus, our famous mnemonic for remembering the colors of visible light, "Roy G. Biv," has been shortened to "Roy G. Bv."

Note to Performer

Acoustic pianos do not respond well to such a drastic retuning as required in *All the Pretty Colours of the Rainbow*. Therefore, this composition should be performed on a digital piano instrument that supports custom tunings via Scala files, and uses "physical modeling" to produce its piano sound. Instruments that use samples to create their sound will suffer from a number of undesirable and unnatural artifacts in the piano sound as a result of retuning the samples. The only "real" way to produce the appropriate sound for each note is with an instrument such as the ***Pianoteq*** (www.pianoteq.com) virtual instrument that mathematically models and creates all the physical and acoustic aspects of each element in the piano sound.

The notation in *All the Pretty Colours of the Rainbow* is scordatura. The notes on the staff indicate which of the 88 piano keys are played. The actual tuning is only produced after loading the Scala file: *Rainbow.scl*, (available from the composer's website: www.briankshepard.com/musician-composer.html) into your virtual piano instrument. For best results, select a piano sound with a "solo concert grand" quality to it.

All the Pretty Colours of the Rainbow

for Aron Kallay

Brian K. Shepard
ASCAP

Microtonal Piano*

***The notation is scordatura. See the "Note to Performer" for information on the tuning system used for this composition.**

Quiet and Mysterious, ♩ = 62

pp

8va

Ped. *(held down through m. 34)*

(8va)

11

(8va)

15ma

19

(15ma)

27

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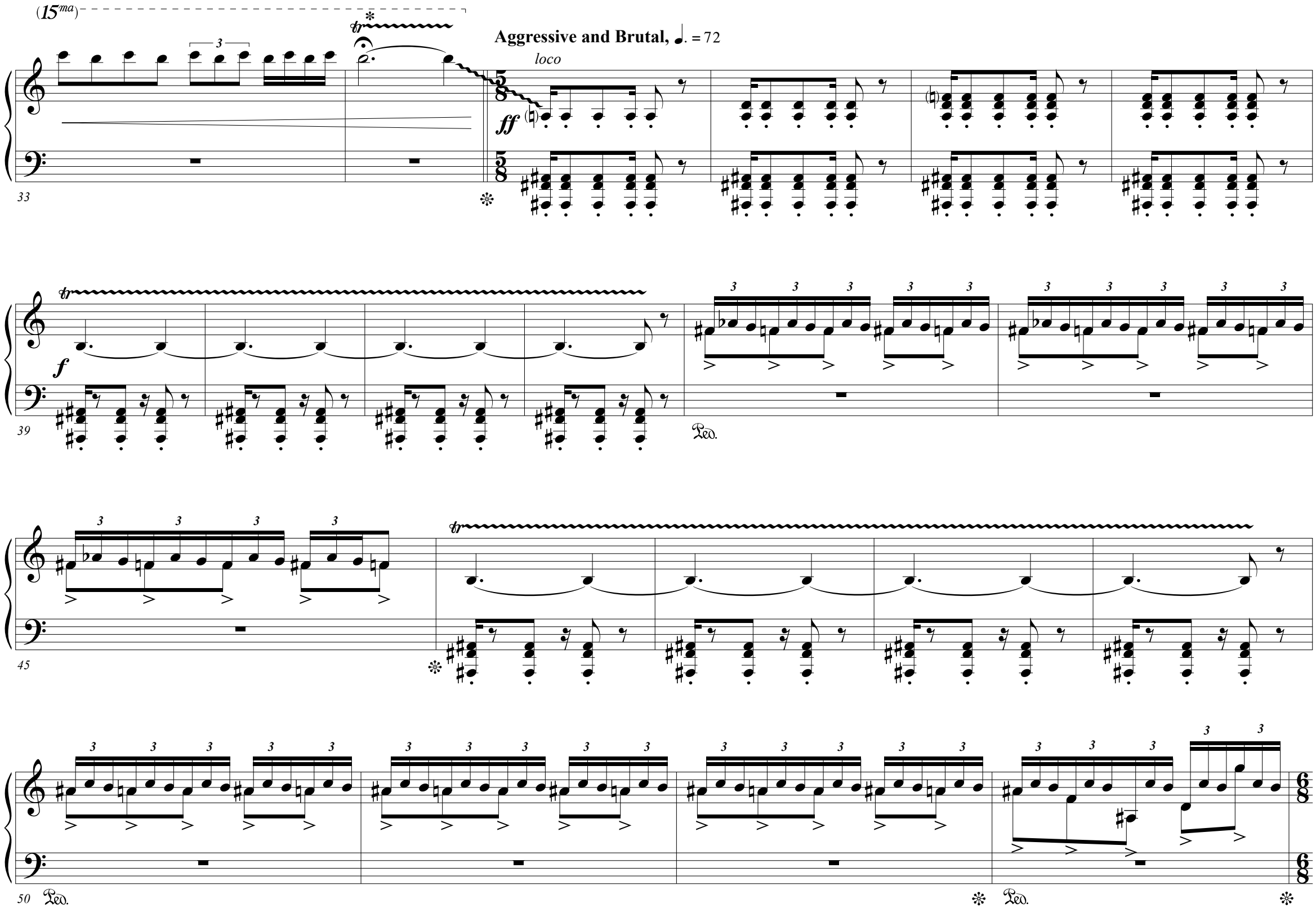


*All trills are to the note a half-step higher.

54

Ped. ✻ Ped. ✻ Ped. ✻ Ped. ✻

58

Ped. ✻ Ped. ✻ Ped. ✻

61

subito ***p***

molto rit.

Colourful and Worldly, ♩. = 52

65

ff ***mp***

Ped. ✻ Ped. ✻

74

mf

Ped. ✻ Ped. ✻ Ped. *(continue simile)*

82

90

98

104

Ped. ✻ Ped. ✻ Ped. ✻ Ped. ✻ Ped. ✻ Ped. ✻ Ped. ✻

8va – – loco

mf

112

Ped. *(as before)*

120

8va – – loco 8va – – loco 8va – – – – – loco

126

poco accel.

(turn page)

f

Tempo II, ♩. = 72

130

f

138 Ped.

144 Ped. ✻ Ped. ✻

149 Ped. ✻ Ped. ✻ Ped. ✻ Ped. ✻

153

Ped. * Ped. * Ped. * Ped. *

157

Ped. * Ped. * Ped. * Ped. *

161

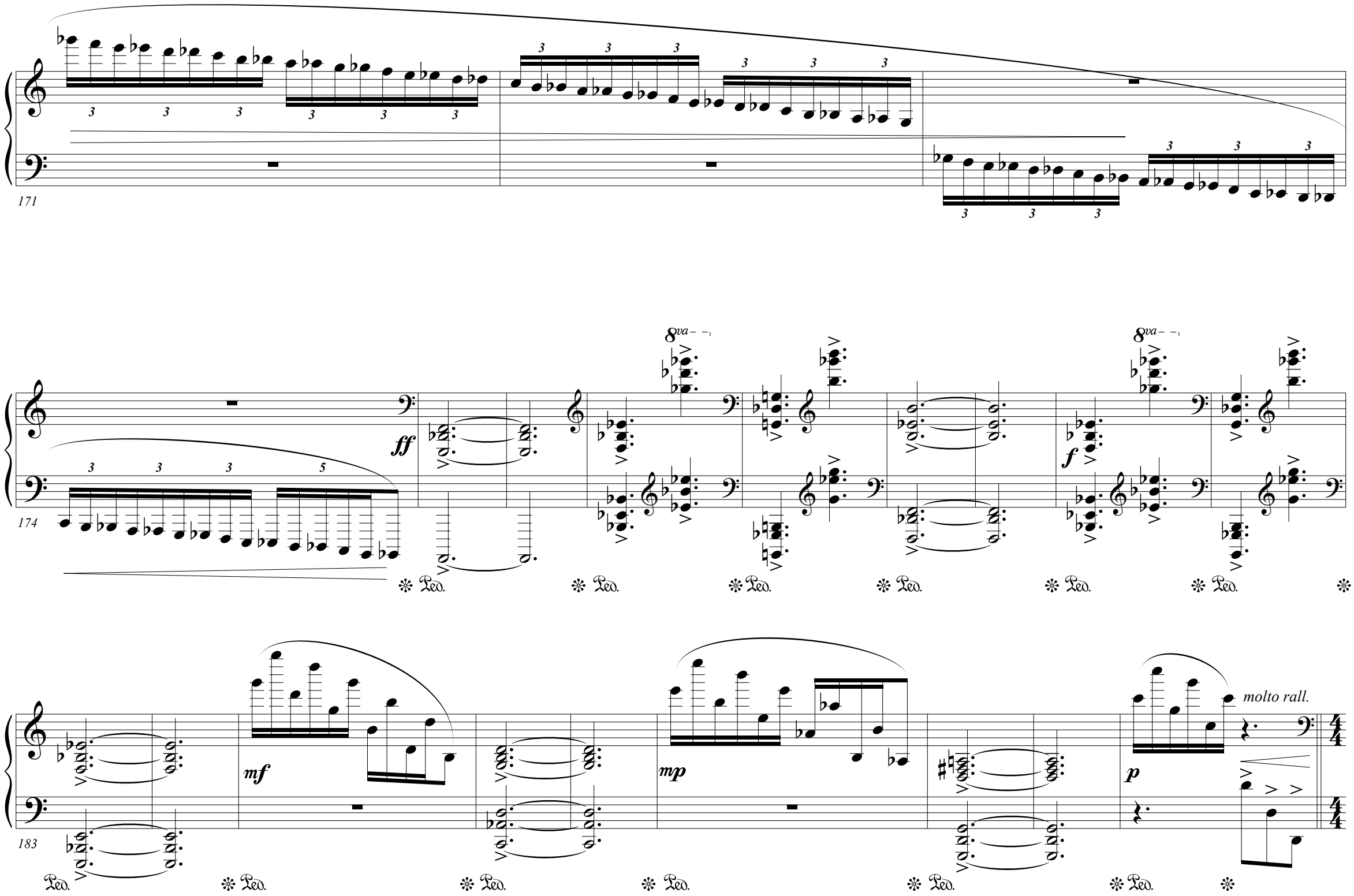
Ped. * Ped. * Ped. * subito *p*

166

8va

f

Ped.


171
174
183
ff
f
mf
mp
p
molto rall.
8va
Ped.

Tempo I, ♩ = 62

ff

pp

3

192

Ped. *(held down to end)*

8va

niente

200