Peter McKenzie Armstrong

Phigits

One–Part Takes on the Digits of Phi

for autopiano

2016

Edition Ottaviano Petrucci

NOTES

One number uniquely equals its inverse added to 1: the irrational 1.618..., embodied in Phidias's Parthenon statuary, Fibonacci's rabbit generations, and Luca Pacioli's "De divina proportione" – not to mention Le Corbusier.

Music embodying Phi (as it is now named) has tended understandably to focus on the value's application as a ratio. I focus here instead on application of its digits.

Wishing to map these as pitch values saturating 1 to 7 octaves, but with only 10 unique digits available in the usual representation, I opted to convert Phi (as much of it as needed per fill) to number bases matching those ranges: with 8vas inclusive, 13 25 37 49 61 73 85.

Each saturation series was ended when its last not–yet–occuring value appeared for the first time. At that point duration was assigned per pitch in inverse proportion to that pitch's frequency of occurrence within the series.

Depending on series range, there resulted 4 to 8 such occurrence–frequency levels. I decided to use the first four of these (always present) to determine combinatorially which pitches in a given series would be realized instead as rests – i.e., silenced!

There resulted 14 possible sound–vs–silence patterns per setting (omitting two that presented either all rests or no rests). I chose one for each setting – exclusively, so all–told presenting each pattern once. It is indicated in the score by "Tacet", with its selection of silent duration levels – from "1234", '1' being the longest – following.

The movements are arranged in two sets of seven. The first set presents octave ranges in ascending order, all member movements straddling the keyboard's center. The second set reverses this order, with members now ranging inwards from alternate keyboard extremes.

Tempo progression exercises Phi as a ratio. Each set's min–vs–max metronome settings relate as 1–vs–Phi.

Clearly this piece is, for rhythmic reasons, not humanly playable. The score, then, is for listeners. It is laid out space–proportionally, with notehead sizes and colors varying to highlight the duration levels. Rests differ in color accordingly but not in image or size. Accidentals apply only to the immediate notehead, so exactly once. The alto clef is used exclusively (and the ottava never) in order to make the most of spacial proportioning.

This score's accompanying audio file was generated in Pianoteq via its "D4 Hamburg Steinway" instrument.

– PMA

Duration: 7' 28"

to Michaela Hauser-Wagner

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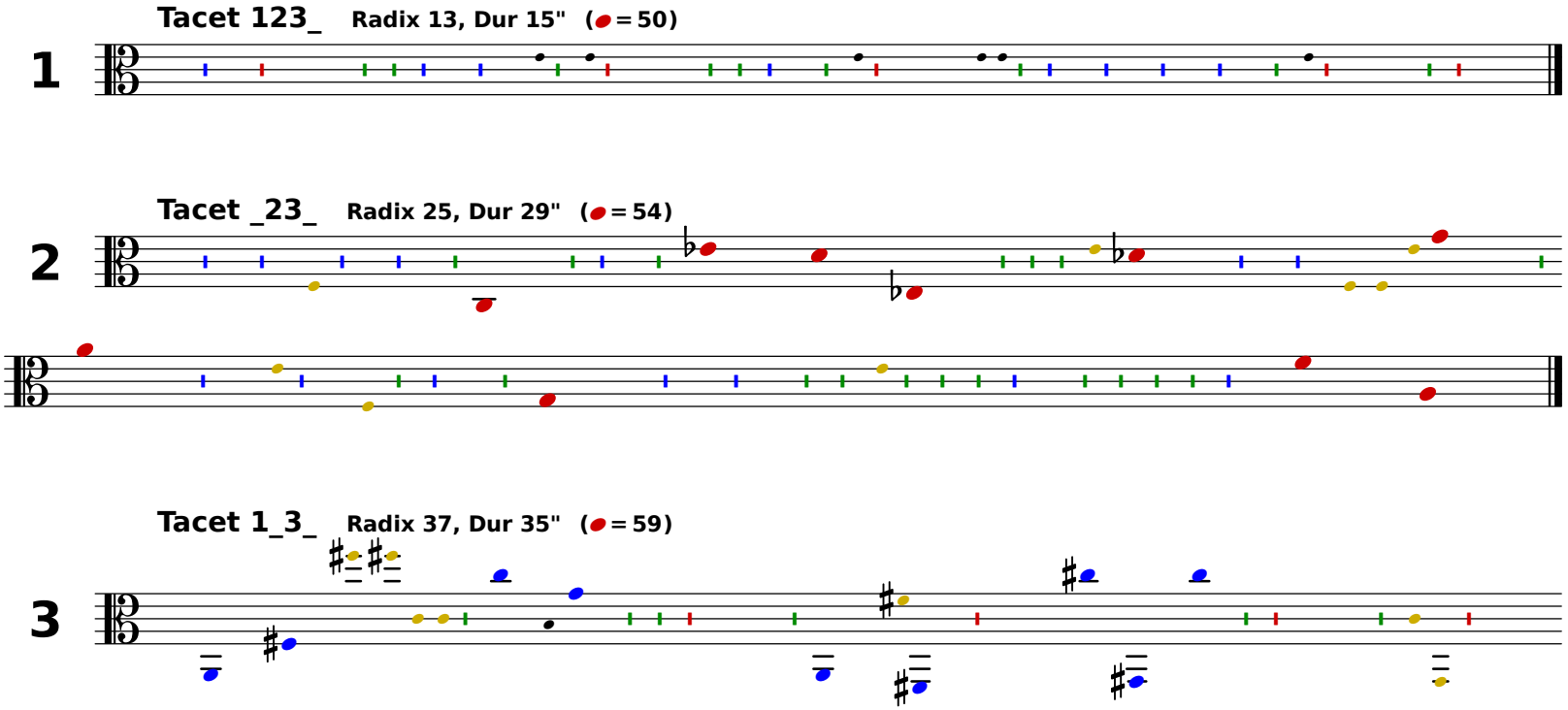

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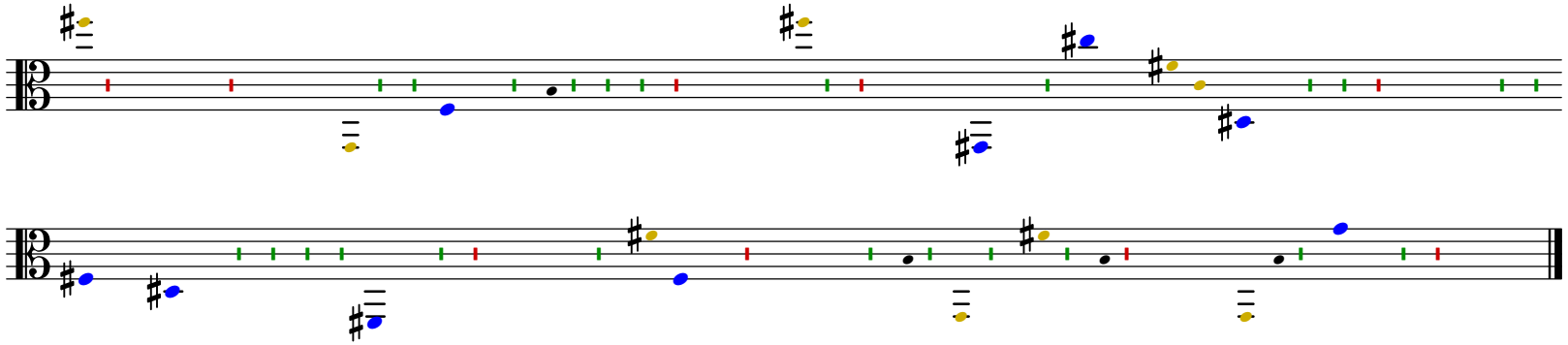
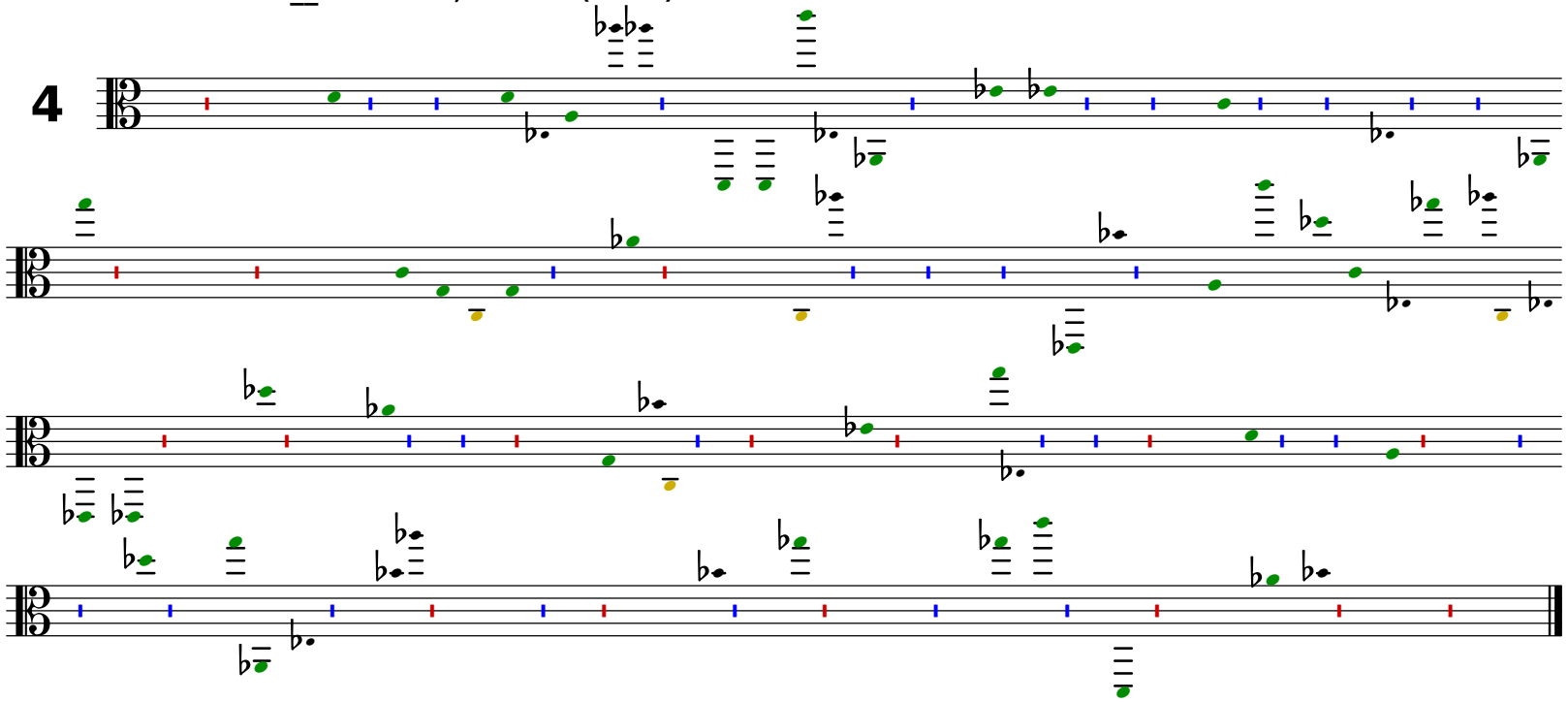
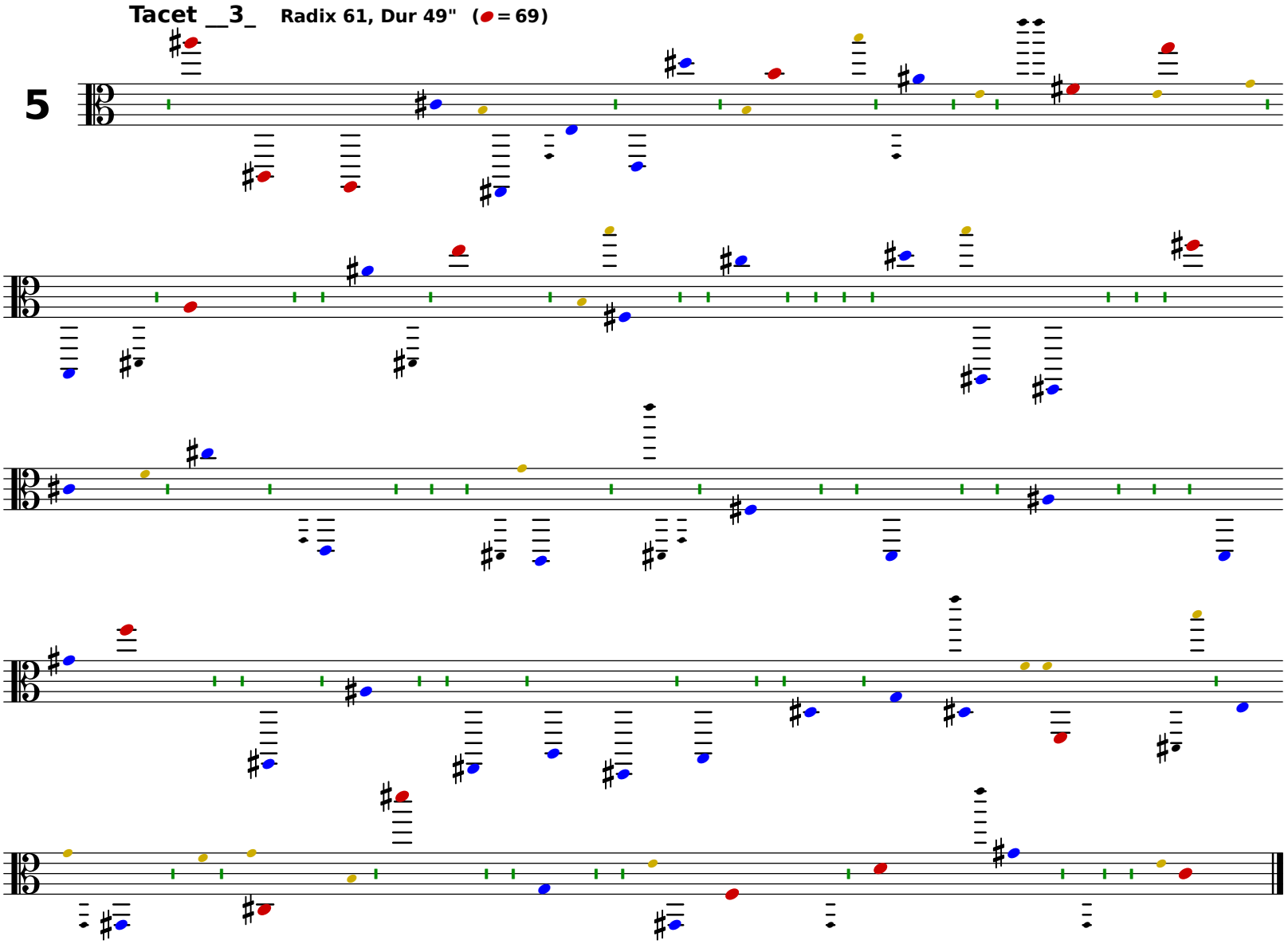
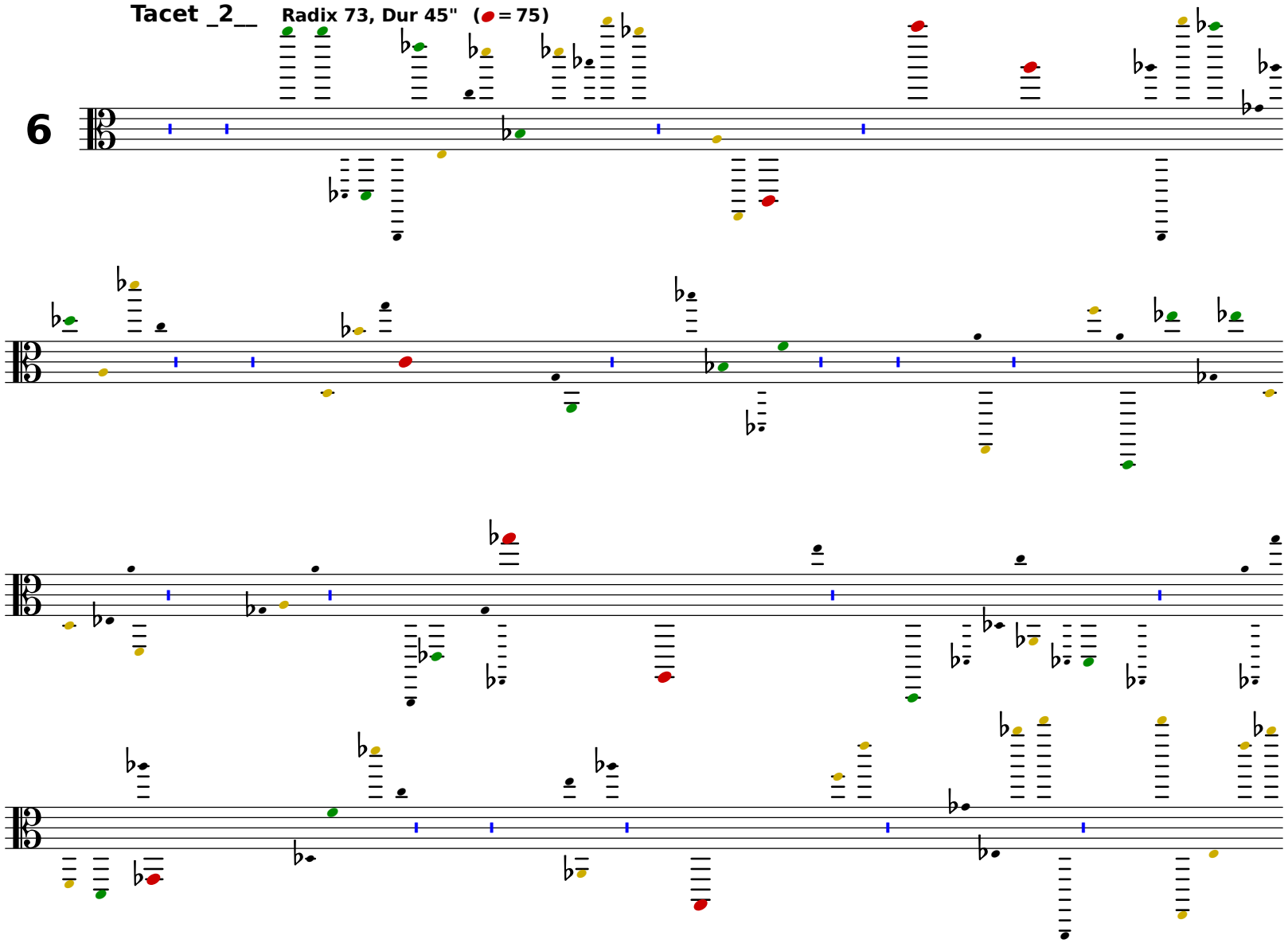
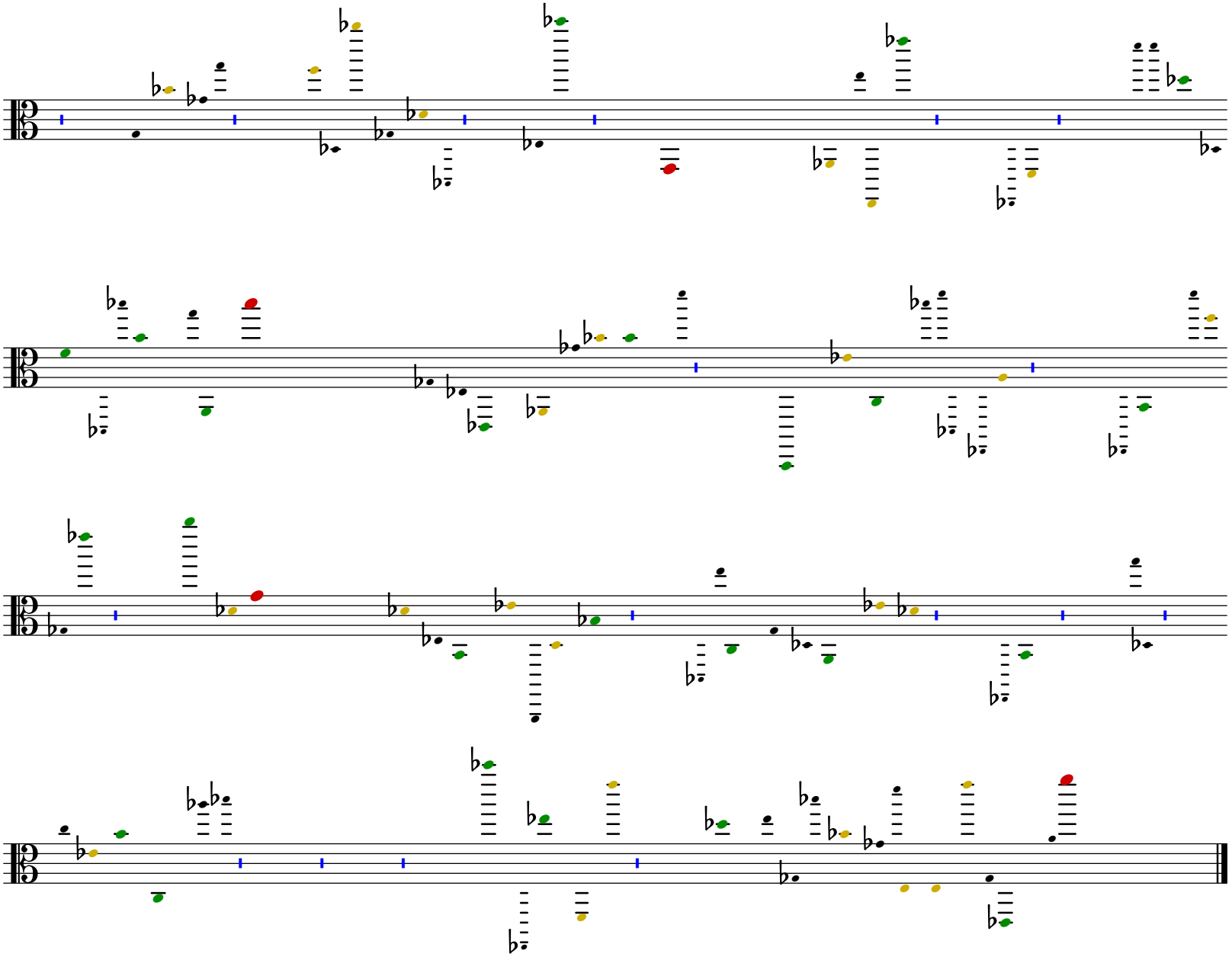


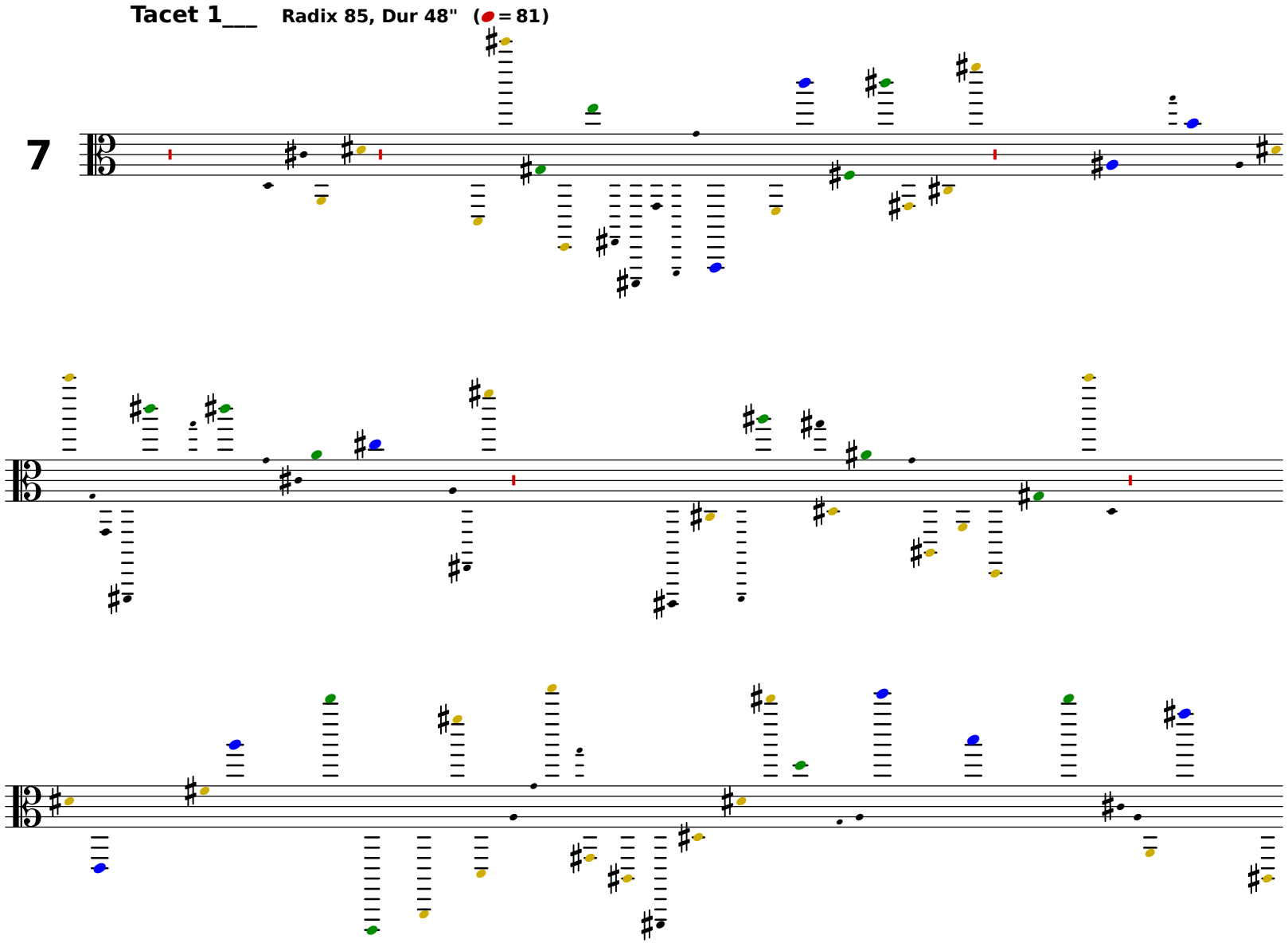
Tacet 12__ **Radix 49, Dur 43" (● = 64)**

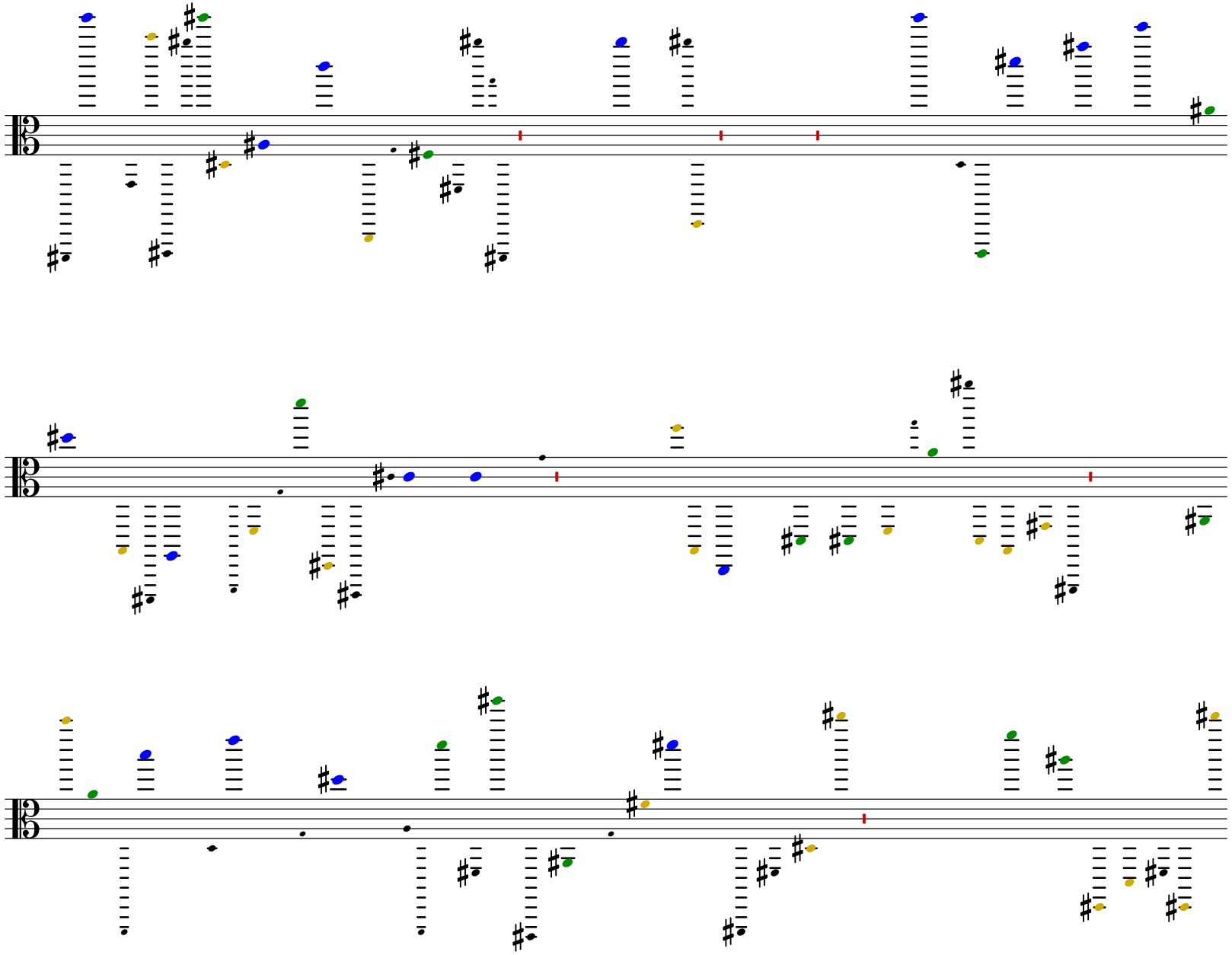


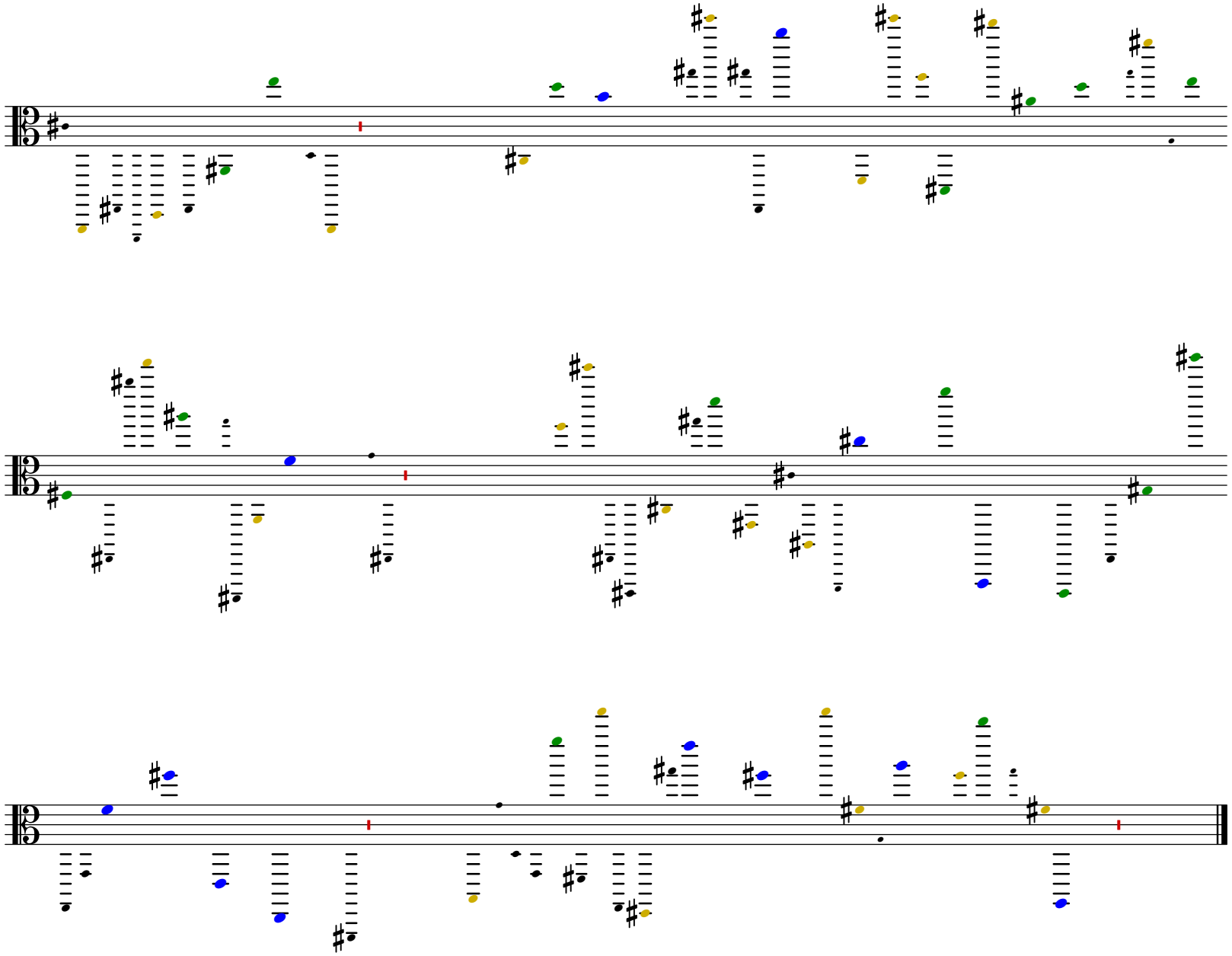

Tacet __3_ Radix 61, Dur 49" (= 69)
5

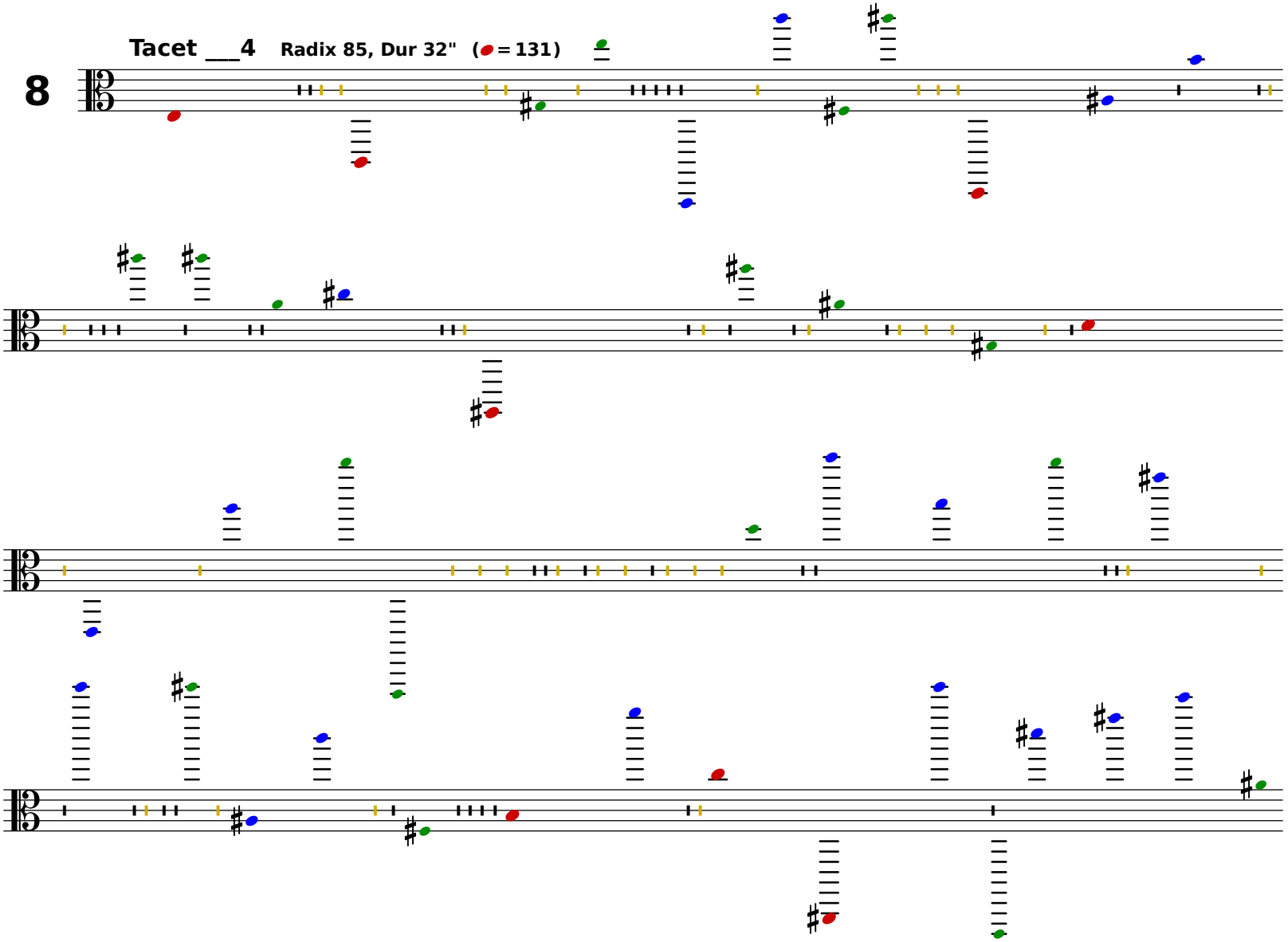

Tacet _2__
Radix 73, Dur 45"
(= 75)
6

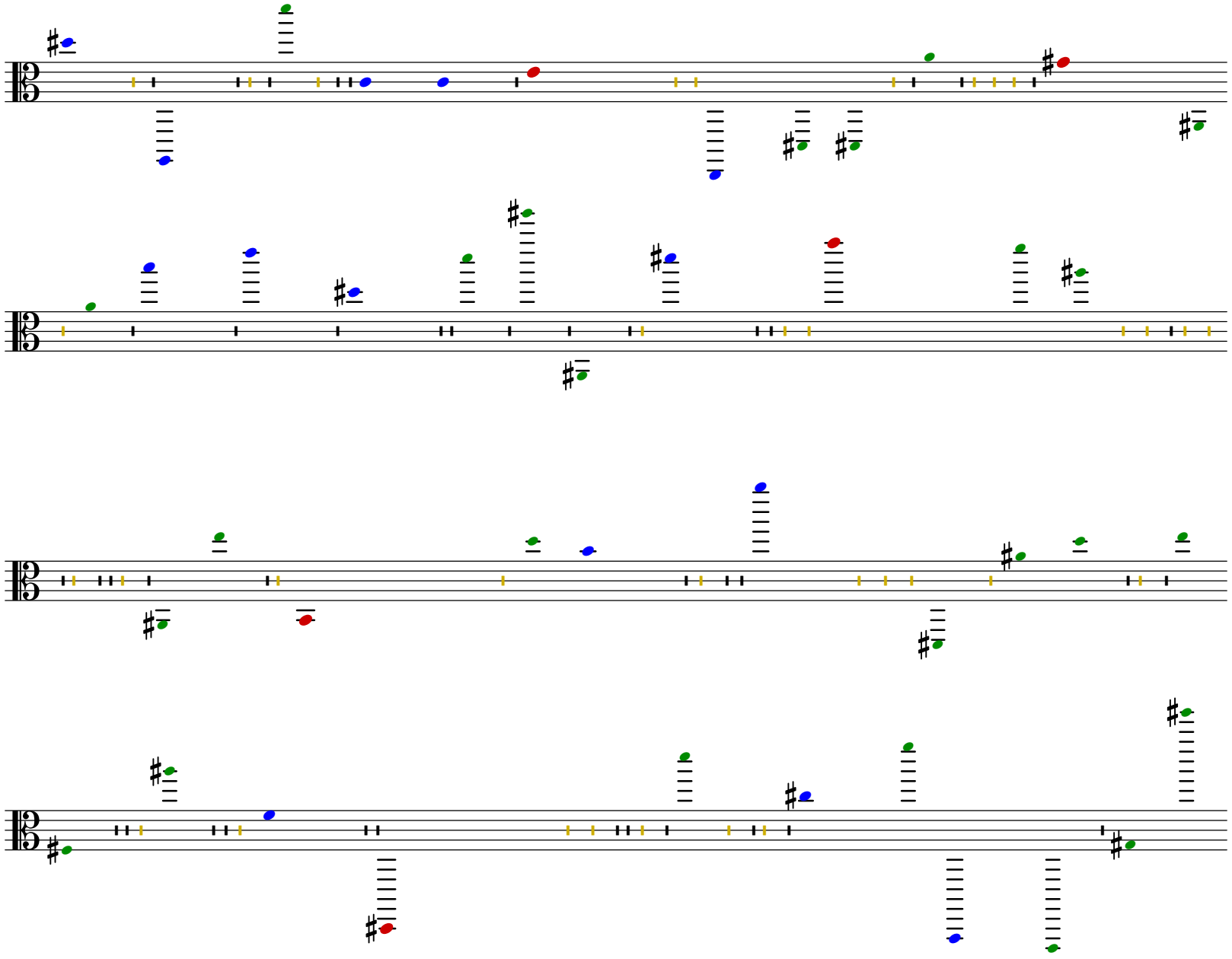


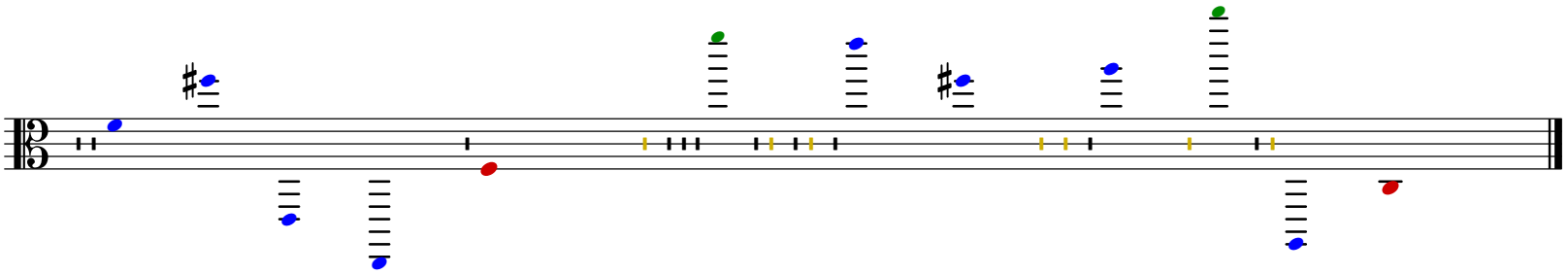

Tacet 1___ Radix 85, Dur 48" (= 81)
7



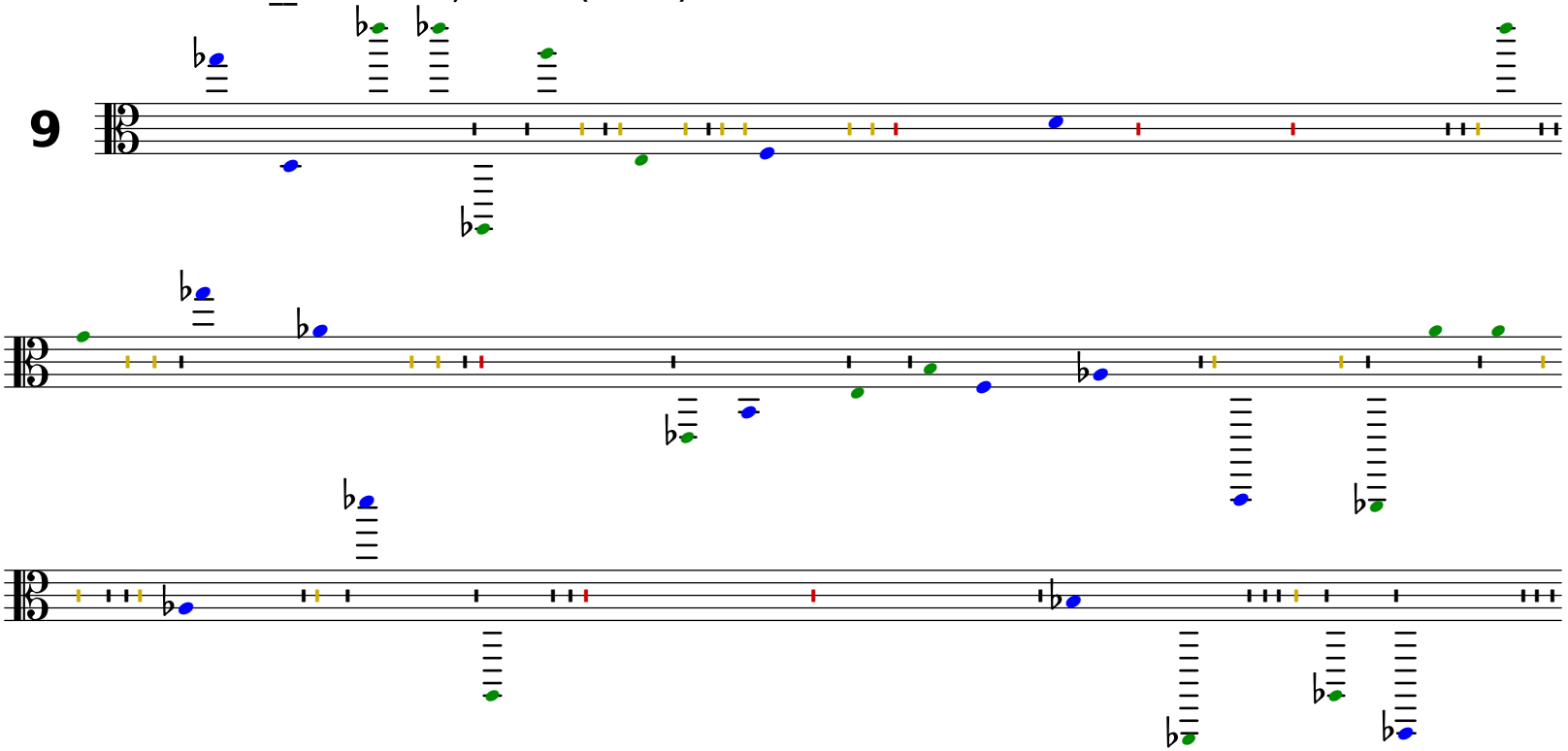


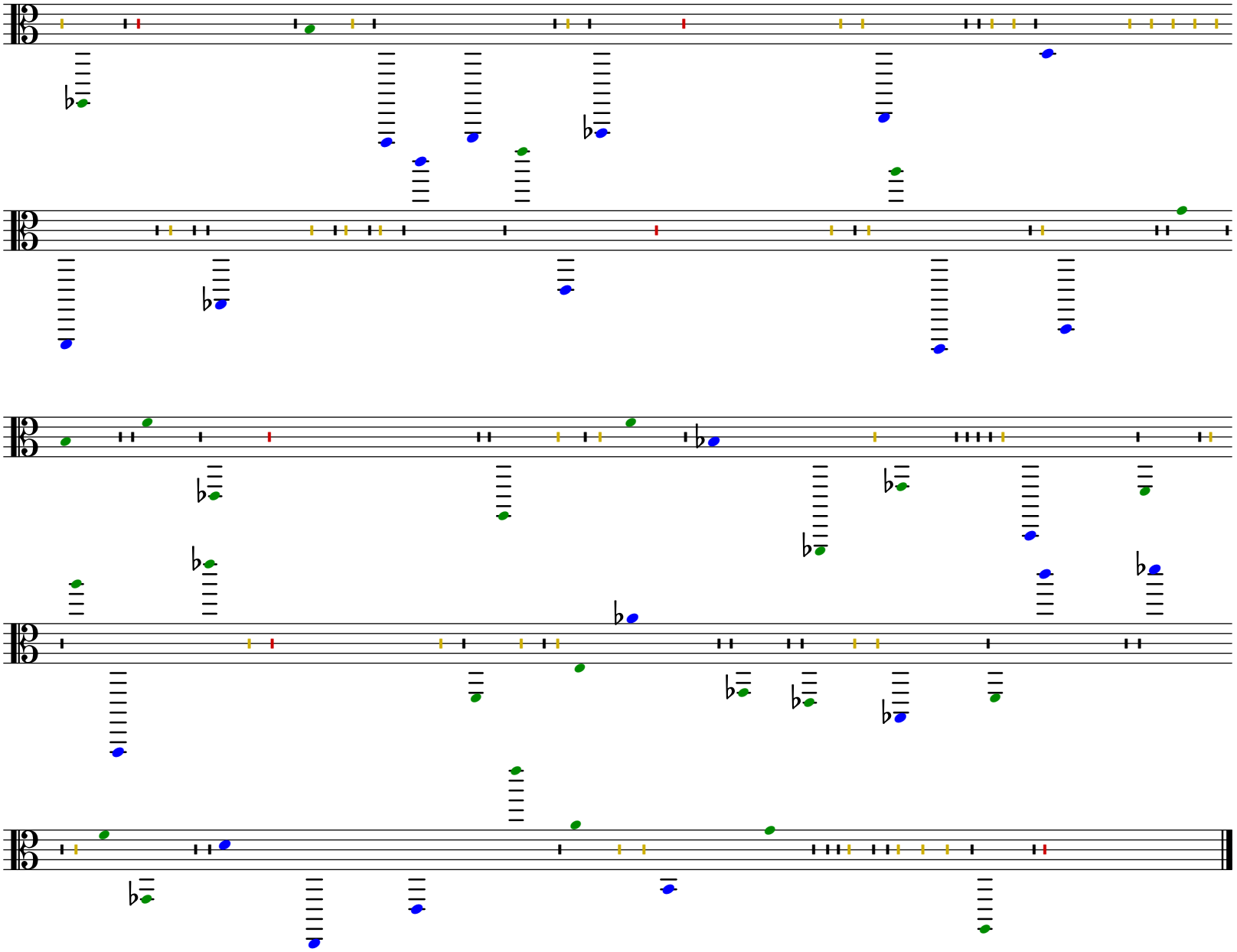

Tacet ___4
Radix 85, Dur 32"
(= 131)
8

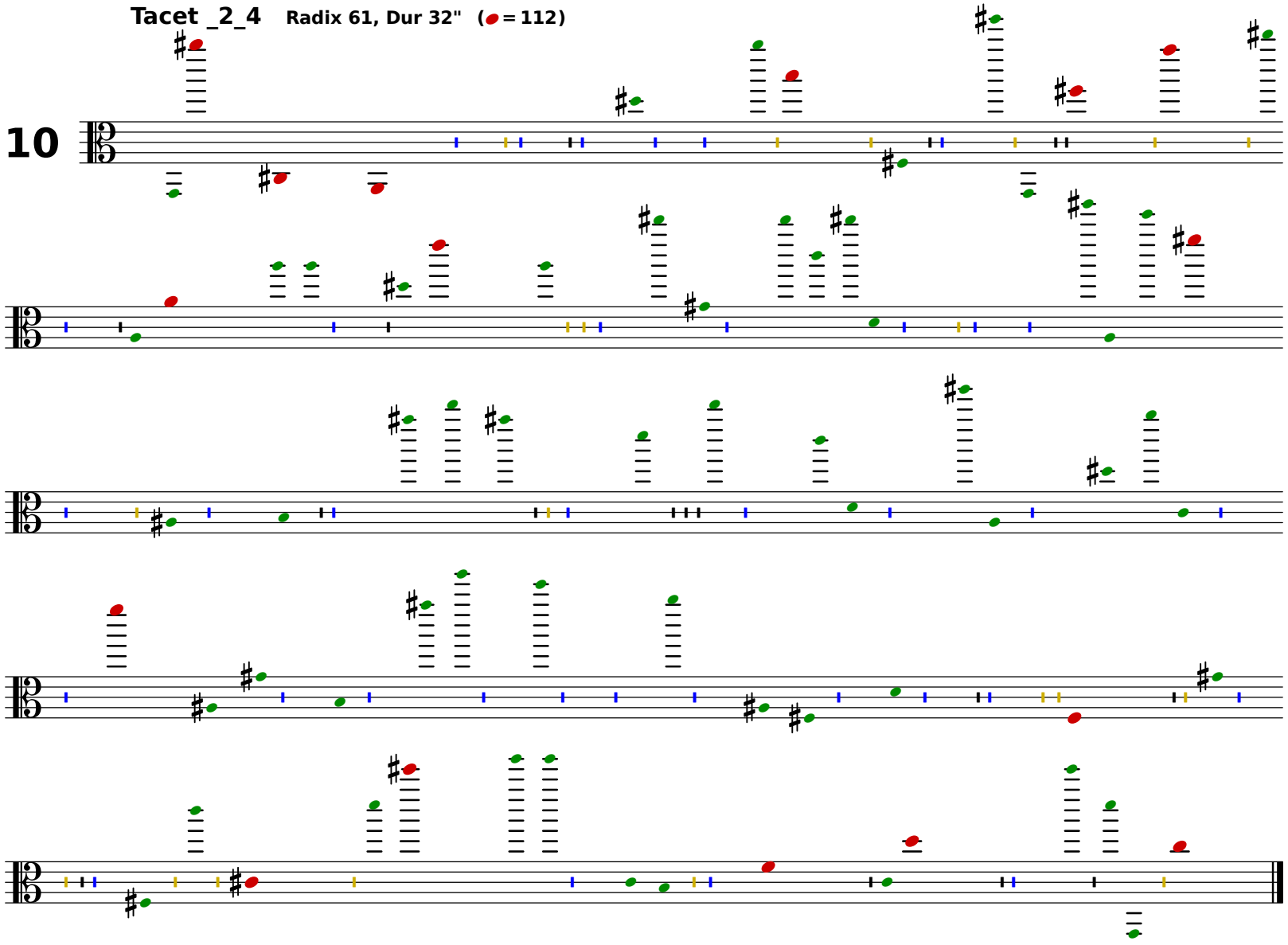


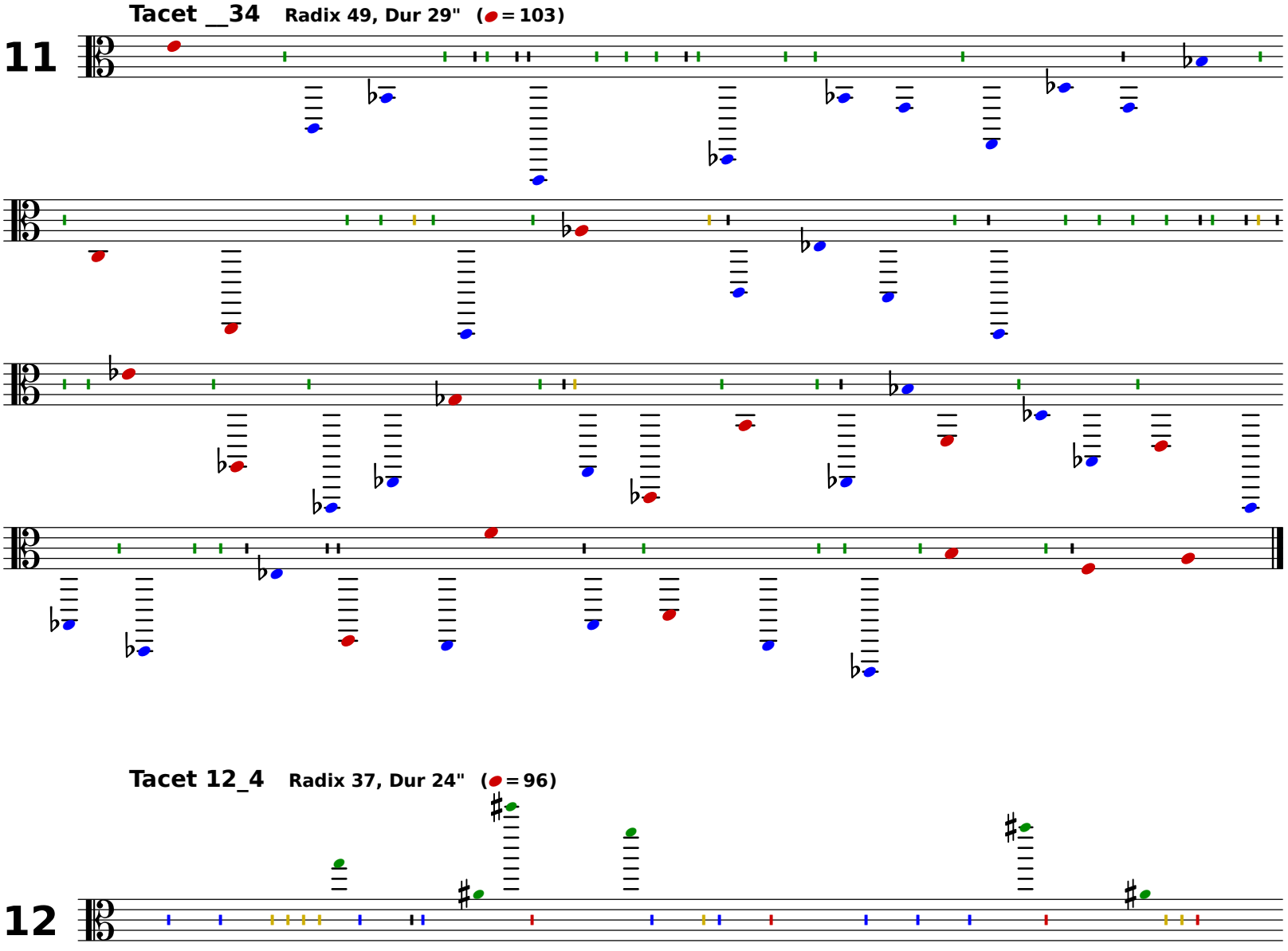


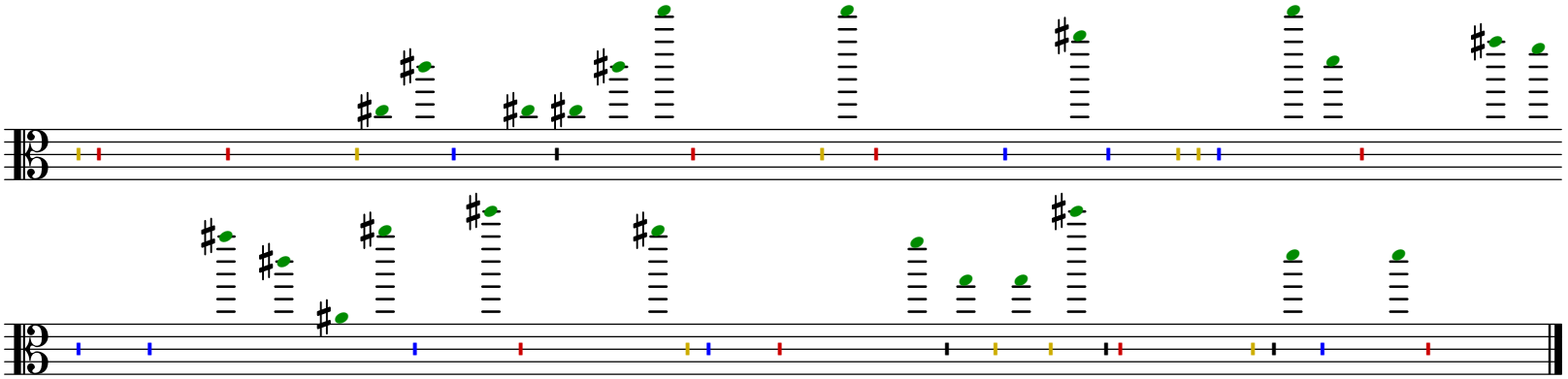
Tacet 1__4 Radix 73, Dur 30" (♩ = 122)





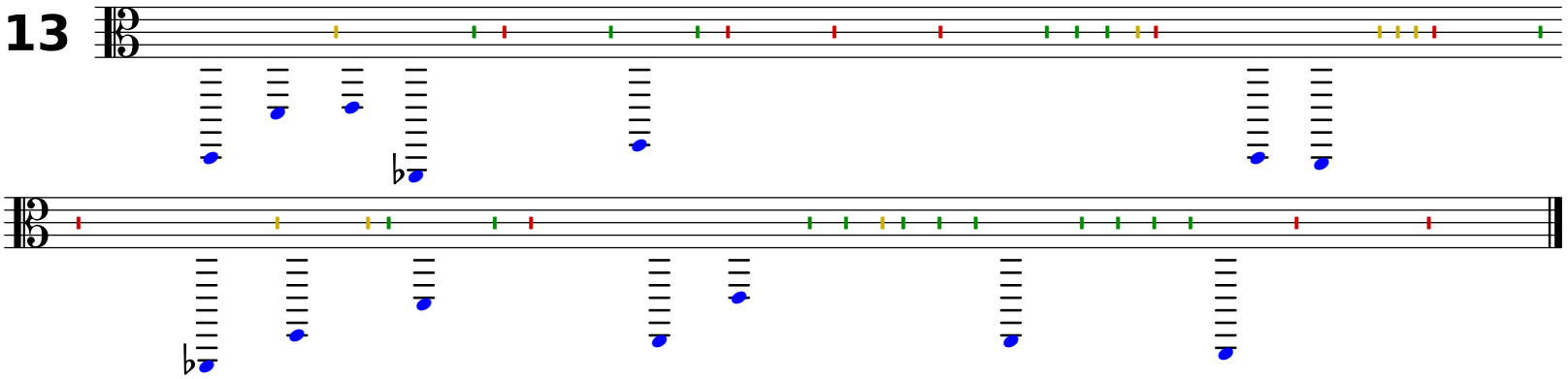

Tacet _2_4
Radix 61, Dur 32"
(= 112)
10

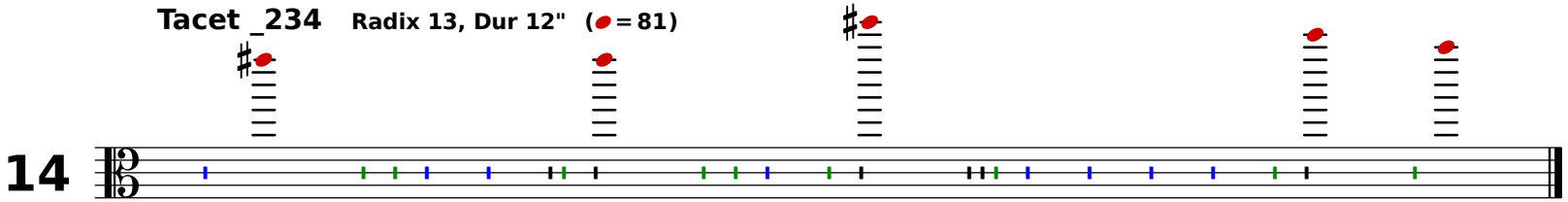

Tacet __34 Radix 49, Dur 29" (= 103)
11
Tacet 12_4 Radix 37, Dur 24" (= 96)
12



Tacet 1_34 Radix 25, Dur 17" (♩ = 88)

13



Tacet _234 Radix 13, Dur 12" (♩ = 81)

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