Kite Giedraitis

Evening Rondo

for 7-string Kite guitar
4' - 6'

Tucson, Arizona

Edition Zalzal

series editor — Robert Lopez-Hanshaw

2021 — Z0028

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Preface

Evening Rondo was written for 41-edo Kite guitar, but is essentially in 7-limit Just Intonation. It begins in septimal harmonic minor, which is 1/1 9/8 7/6 4/3 3/2 14/9 27/14 2/1. This scale contains three subminor 2nds of only 59¢ (if 2\41) or 63¢ (if 28/27). The Intro, Theme I, and Transition I make heavy use of these 2nds, creating rather angular melodies.

The septimal harmonic minor scale uses only primes 2, 3 and 7, for a bleak sound. Prime 5 is used very sparingly at first, but becomes more prominent starting with Theme II, making a warmer sound.

The piece starts off mostly diatonic and progressively becomes more microtonal. The major 7 (sus4) chord in Theme II is an innate-comma chord (225/224). Theme II and Verse III feature runs of subminor 2nds. Verse IV has a run of comma-sized steps. Transition II has a 1029/1024 comma pump. The score indicates this with the equation double-septimal-down F = septimal-up E.

The score is written with a key center of E, but the actual key center on a Kite guitar might be D𝄮 or F𝄯, depending on which open string is used for the root. Alternate versions of the score are at **https://tallkite.com/music/eveningrondo.html**. Some versions use ups and downs notation and include chord names. Some versions use KDF numbering in the tablature.

—*K. G.*

Biography

Kite Giedraitis invented the Kite Guitar in 2019. Unlike most professional musicians, he didn't play any instrument until his mid-twenties. He clearly recalls being an adult non-musician, to which he credits his unique perspective on music and music teaching. He started with the bowed psaltery and moved to African marimba, *mbira dzavadzimu*, and hand drums. He was first exposed to microtonal music while studying traditional African music, especially Hukwe Zawose. He fell in love with 7-limit just intonation instantly.

Kite is fascinated by microtonal notation, seeing it as the intersection of music, mathematics and language. He has devised several notations, including the Kite Guitar's ups and downs notation. He is a computer programmer and the creator of "alt-tuner," microtonal midi tuning software. He has also written an ear trainer for 41-edo. A lyricist/composer/arranger/vocalist, he plays African marimba and mbira in his band Fools In Paradise. He also teaches African marimba, and builds them as well.

The Kite Guitar

The Kite guitar, named for its inventor Kite Giedraitis (**https://tallkite.com**), is a new solution to a problem that musicians and instrument builders have grappled with for centuries: How do you balance accurate tuning, ergonomic playing, and the ability to modulate between keys?

If all harmonic intervals are tuned to pure Just Intonation, the instrument must favor a single key (or only a few), or else the number of pitches rapidly proliferates. If there is a large number of pitches, physical navigation of the instrument becomes more difficult. And if absolute freedom of modulation is desired, an equal division of the octave (edo) must be used—yet the most accurate edos are quite large, with many pitches, and the smaller and more ergonomic edos are much less accurate.

The Kite guitar solves this conundrum by using 41-edo, a large and accurate edo, combined with the idea of "skip-fretting" as developed by Matthew Autry. In this scheme, only every *other* fret is used, so adjacent frets are *two* steps of 41-edo apart. This makes the fretboard much more playable than a full 41-edo board, because the fret spacing is not as narrow. Only half of the intervals of 41-edo are available on a single string; however, the strings are tuned an odd number of edo-steps apart, and thus all pitches are available on each *pair* of strings. In addition, because the strings are all tuned the same interval apart, interval shapes and chord shapes are consistent everywhere on the fingerboard: the system is "isomorphic," unlike a standard guitar.

The following diagram graphically demonstrates the utility of the Kite system. In this diagram, the strings are tuned 13 steps of 41-edo (13\41) apart, representing a "downmajor" third in Kite parlance, very close to the Just Intonation ratio 5/4 (386c). This is the most common tuning for Kite guitar, though others are possible. With this tuning, 25 different intervals, all commonly of interest to microtonal musicians, are available across 4 strings and a compass of 8 frets, equivalent to roughly 4-5 frets on a standard guitar. Thus, they all lie easily under the hand without shifting position.

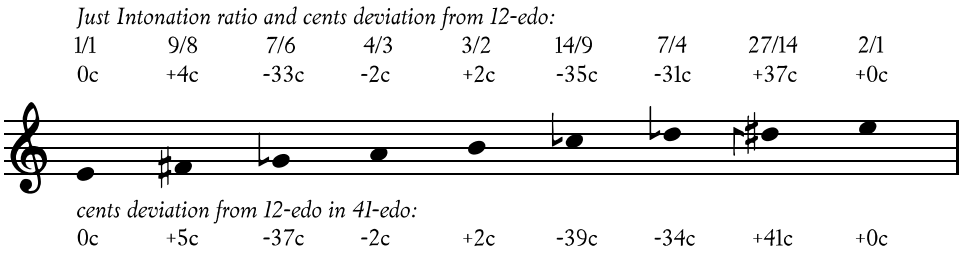
← towards the nut						towards the bridge →	
vm7 966¢ 7/4	^m7 1024¢ 9/5	vM7 1083¢ 15/8	^M7 1141¢ 27/14	**P8** **1200¢** **2/1**			
d5 585¢ 7/5	~5 644¢ 16/11	**P5** **702¢** **3/2**	vm6 761¢ 14/9	^m6 820¢ 8/5	vM6 878¢ 5/3	^M6 937¢ 12/7	m7 995¢ 16/9
M2 205¢ 9/8	vm3 263¢ 7/6	^m3 322¢ 6/5	vM3 380¢ 5/4	^M3 439¢ 9/7	**P4** **498¢** **4/3**	~4 556¢ 11/8	A4 615¢ 10/7
			P1 **0¢** **1/1**	vm2 59¢ 28/27	^m2 117¢ 16/15	vM2 176¢ 10/9	^M2 234¢ 8/7
-3	-2	-1	**0**	1	2	3	4

Further resources are available at **https://kiteguitar.com**.

—R. L. H.

Notation

Primary Scale:



Accidentals

Note that all pitch information necessary for performance is contained in the tablature—the staff notation is primarily for understanding what sounds to expect.

Although this piece was written to be played in 41-edo, the important intervals are "septimal," i.e. they use ratios that involve a factor of 7. 41-edo notation, as seen in other Kite guitar pieces in this series, does not uniquely distinguish septimal intervals. But they are clearly shown in Just Intonation. Thus, this score uses the Helmholtz-Ellis Just Intonation system of accidentals (HEJI). As can be seen above, 41-edo is a very accurate approximation of septimal intervals in Just Intonation, so the notational difference is purely one of symbolic convenience.

In HEJI, the standard sharp, flat and natural accidentals denote a series of true perfect 5ths. Because a perfect 5th is 702c, rather than 700c, this means that each step along the spiral of 5ths adds or subtracts another 2c compared to that pitch's 12-edo value. In this case, E is the fundamental, so B is +2c, F♯ is +4c, etc. In the opposite direction, A is -2c, D would be -4c, and so on. This tuning is called "Pythagorean."

The other symbols alter the Pythagorean pitch. A hook (𝄾) alters the pitch by 27c, and represents various septimal intervals. An arrow attached to an accidental alters that pitch by 22c. Accidentals which usually indicate quarter tones (e.g. 𝄲) alter the pitch by 53c. These correspond to ratios using different prime factors. A thorough explanation of this notation can be found at **https://marsbat.space**.

In this piece, the purpose of compound accidentals is to show precise harmonic relationships. For example, on the first two beats of measure 68, a dominant 7th chord can be discerned. All pitches are lowered by a septimal hook; the root, 5th, and 7th are all raised by an arrow (leaving a narrower major 3rd); and the 7th is further lowered by an additional hook. Thus, despite its complex appearance, the chord is a simple "barbershop" dominant chord, tuned with a low 3rd and an even lower 7th. The root only has so many alterations because it is a common tone of the F♯ half-diminished chord from measure 65.

—R. L. H.

Tablature

The tablature uses the fret numbers of the Kite system. For ease of reading the numbers, all rhythmic, articulation and expressive information is shown on the standard notation staff.

Key Signature

There is one key signature in the piece, a modified E minor showing three septimal subminor intervals. It is read like a standard key signature, and its accidentals can be cancelled according to standard practice.

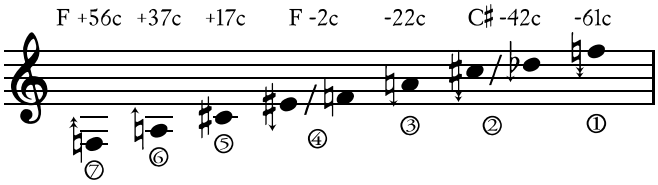
Performance Notes

–The overall tempo is fairly flexible. The piece can be anywhere from 4 to 6 minutes long.
–The first 4 measures can be played freely at a slower tempo.
–Measure 34: one might change tempo such that the pulse speeds up but the beat slows down.
–The last note in measure 42 and/or measure 46 could optionally be played a fifth higher, i.e. an F♯.
–Measures 53-54: the dynamic changes are optional.
–One could add a cadenza to measure 78, or to measure 98 if it's short.
–One could possibly return to 12:8 time for measures 79-99.

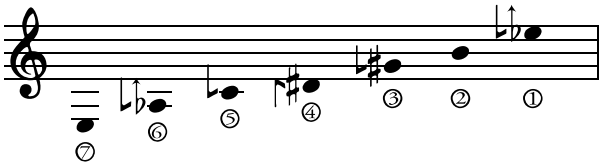
—K. G.

Fretboard and Tuning

Open Strings - sounding pitch



Open Strings - notated pitch



This piece uses the most common Kite guitar tuning, "downmajor" thirds. This is shown above at left in HEJI notation, with enharmonic substitutions to clarify the major 3rd relationships. Cent deviations from 12-edo are included for reference.

The composer chose to notate this piece as though the lowest string were tuned to E, for ease of demonstrating the harmonic relationships and to avoid too many compound accidentals. It is a transposing score. Above at right, the open string pitches are written as they appear on the staff in the piece. Amusingly, the major 3rd relationships of the open strings are totally obscured when their pitches are notated in reference to an E septimal subminor key.

No cent deviations are given above right, because E is not necessarily the sounding key. As mentioned in the Preface, the actual sounding key will depend on the lowest open string used as the root.

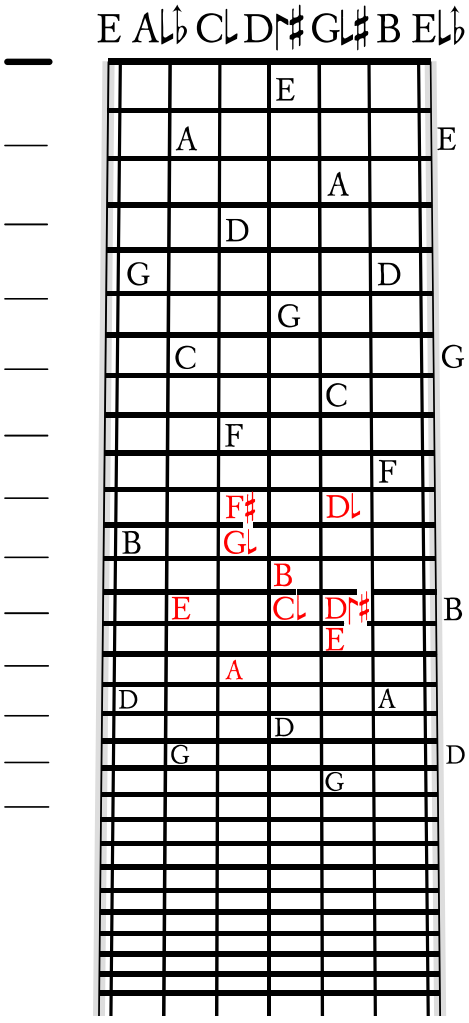
above: composer Kite Giedraitis with 6-string Kite guitar.

Fretboard

The fretboard according to the staff notation is shown at right. To the left of the fretboard, 12-edo is provided for visual reference. All of the "plain" diatonic notes are marked in black—note that each individual string contains only half of them in the first octave. Finally, one octave of a characteristic scale in this piece is shown in red (E septimal subminor, with a raised 7th). Comparing this with the interval diagram on page 4 is highly recommended.

The Kite guitar community is very welcoming and supportive, and their website **https://kiteguitar.com** gives several ways to make or acquire a Kite-fretted guitar. In addition, **https://untwelve.org/zalzal/microtonal_guitar** has more resources for microtonally altering guitars in general.

—R. L. H.

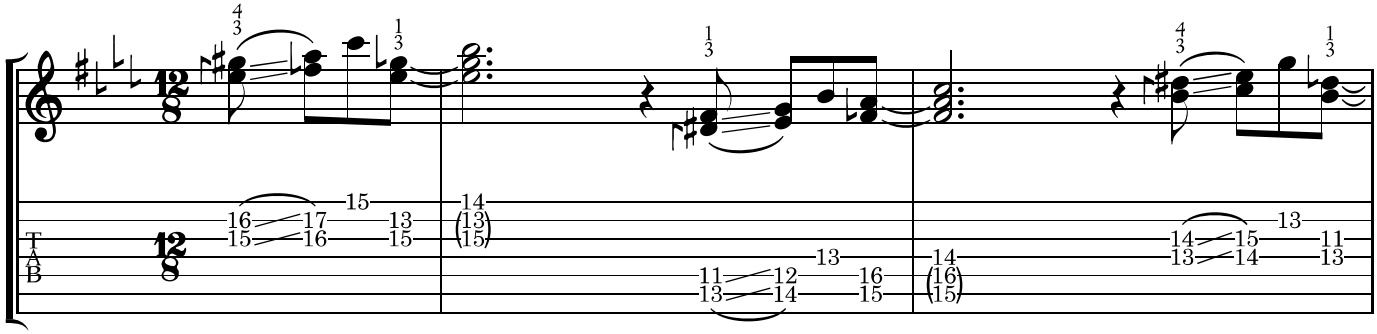


Evening Rondo

Kite Giedraitis

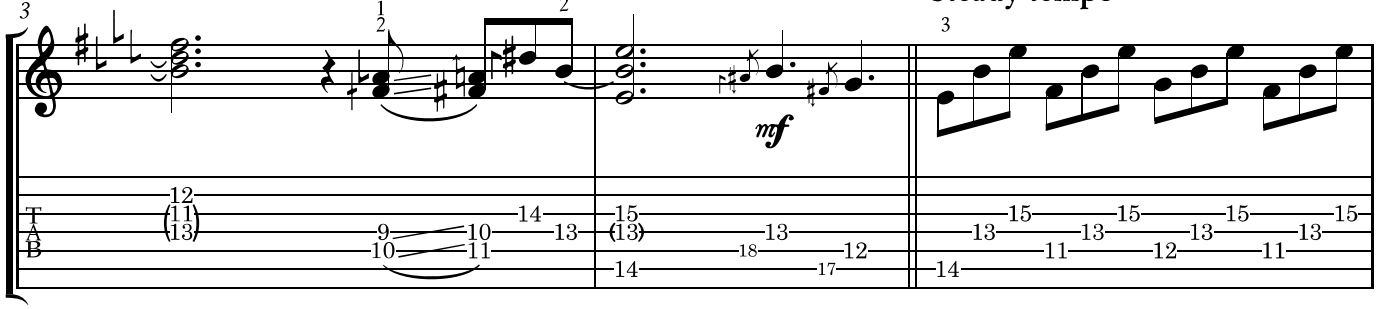
Introduction

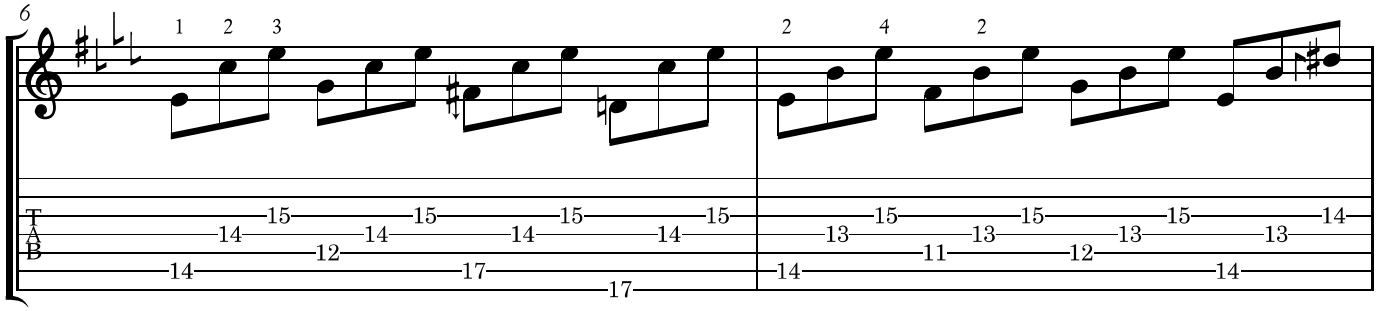
Play freely

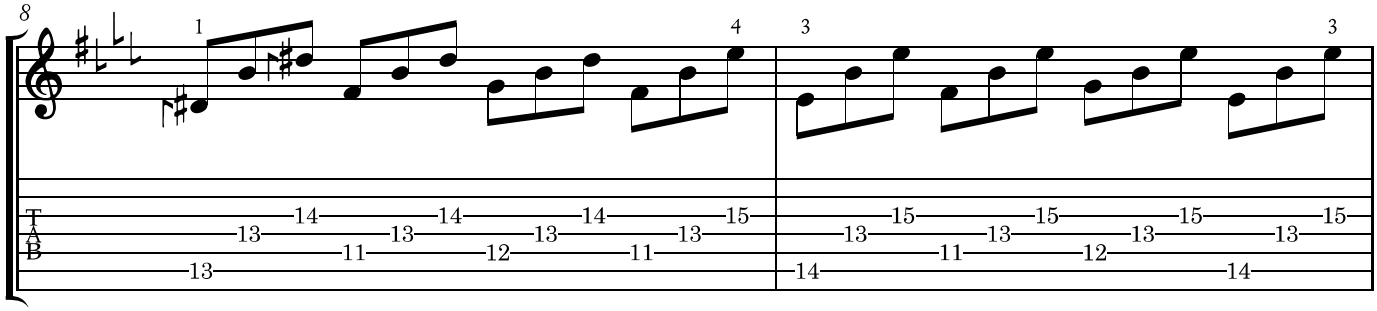


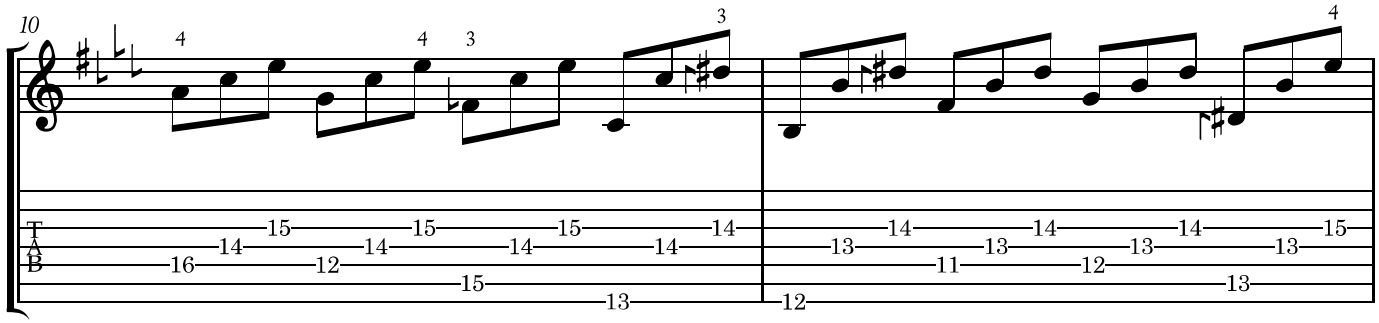
Theme I

Steady tempo





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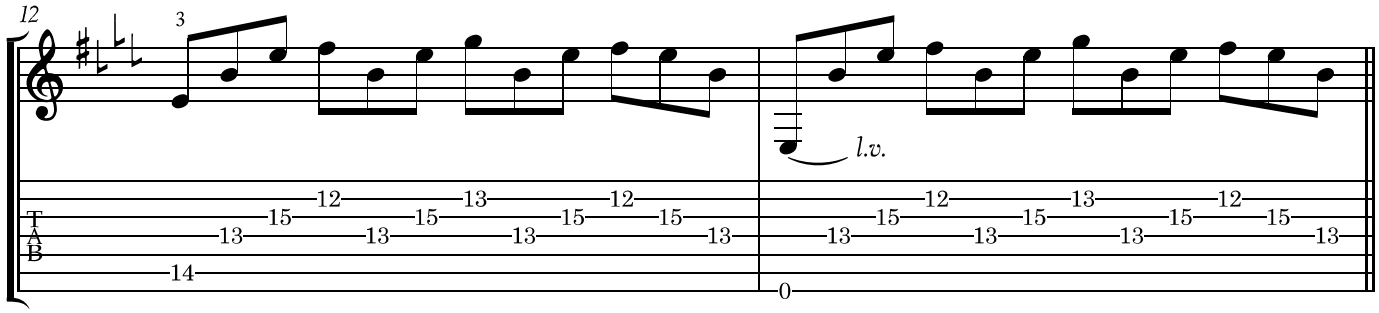
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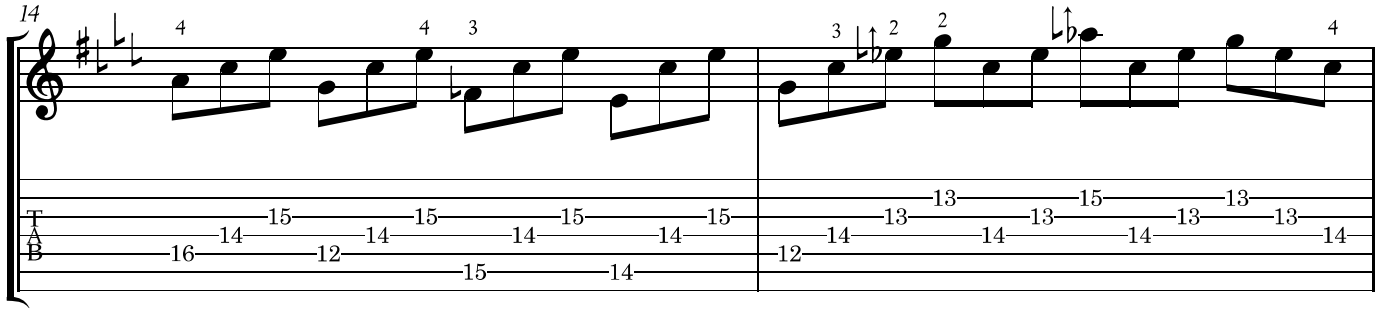
Variation I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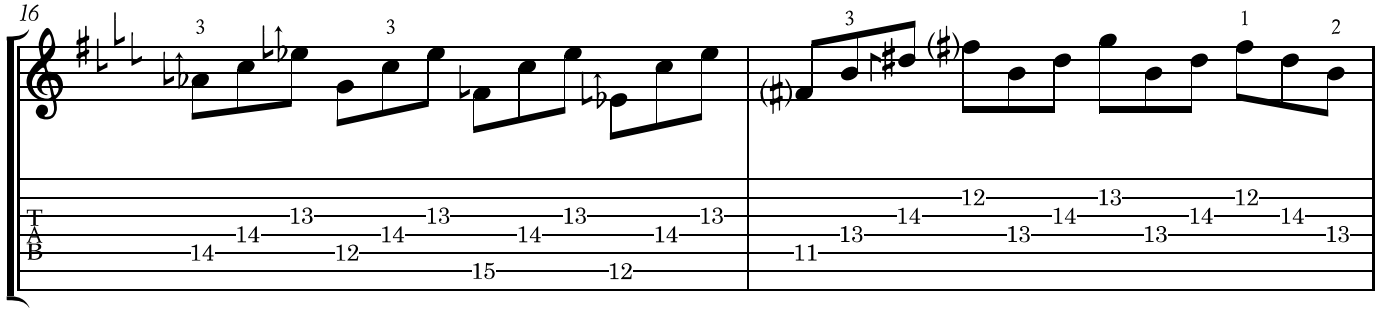
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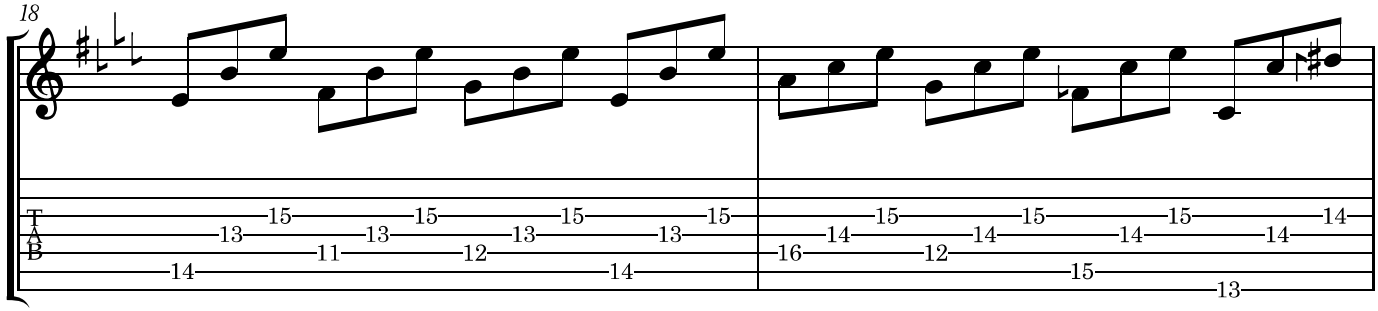
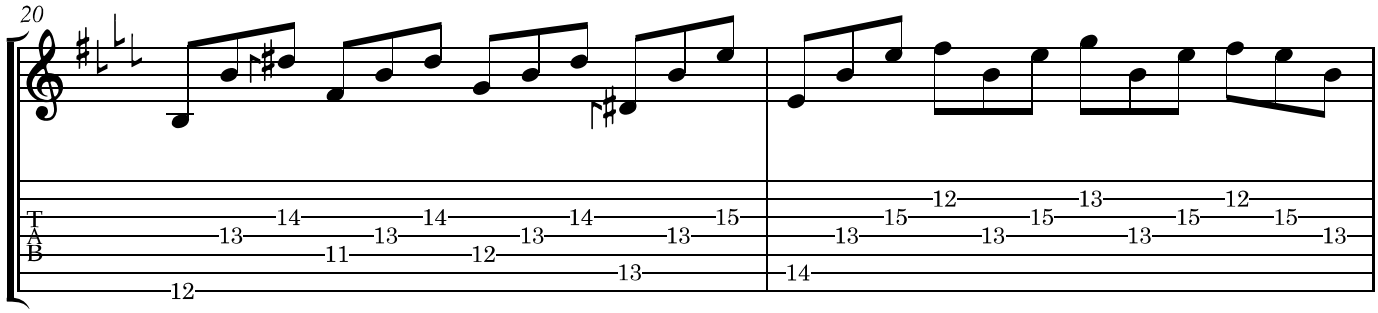
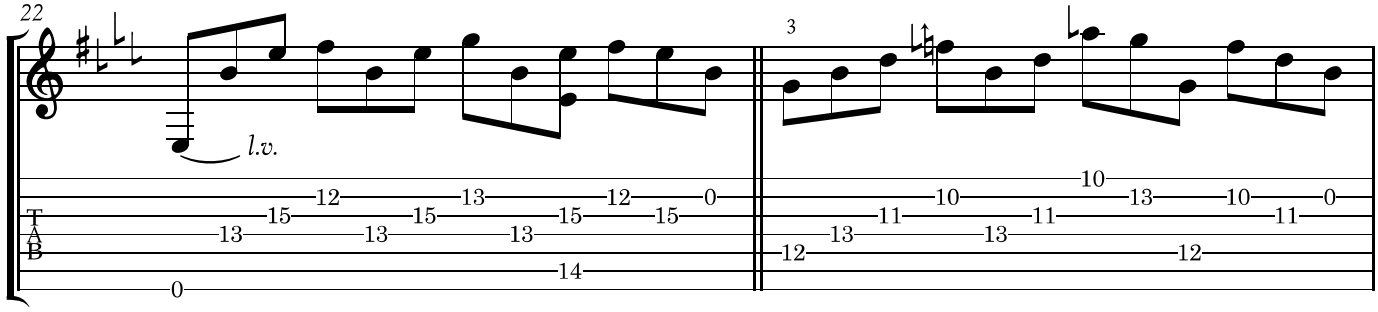
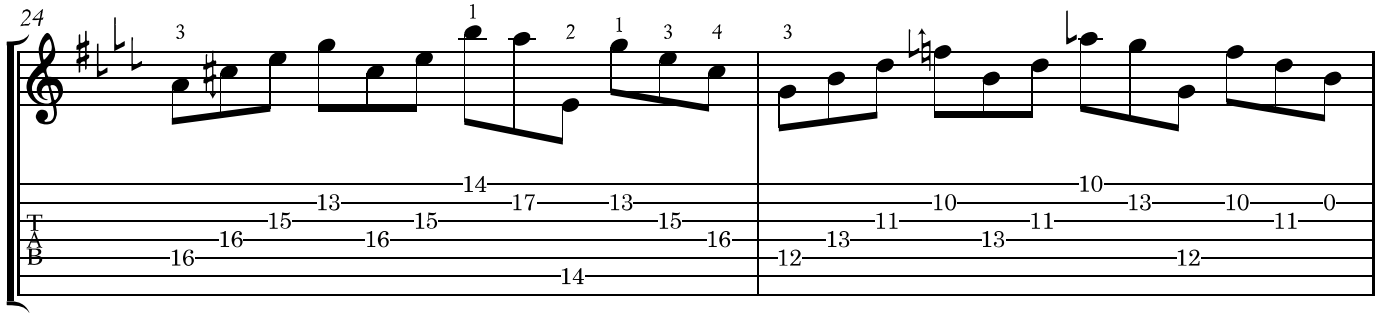
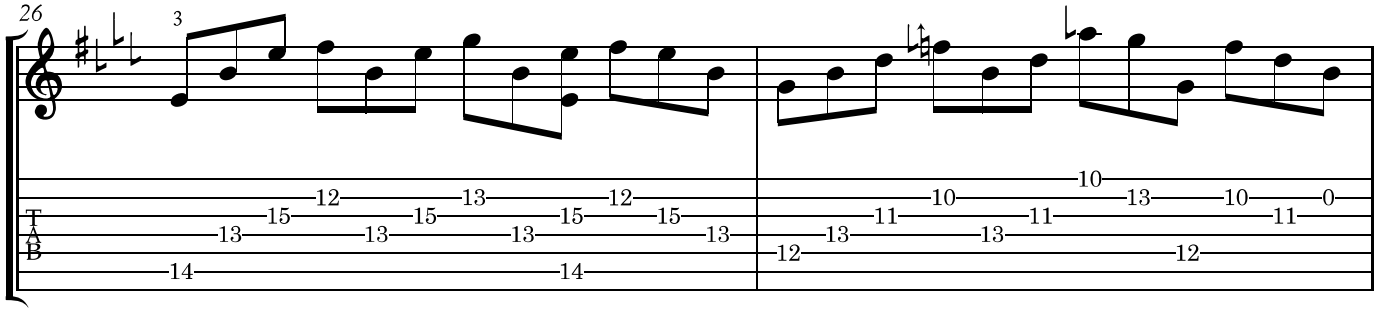


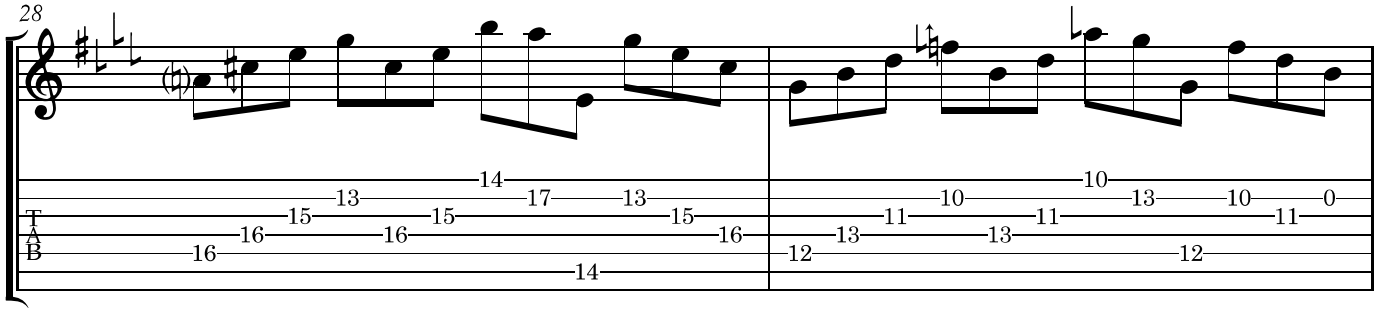


Verse I

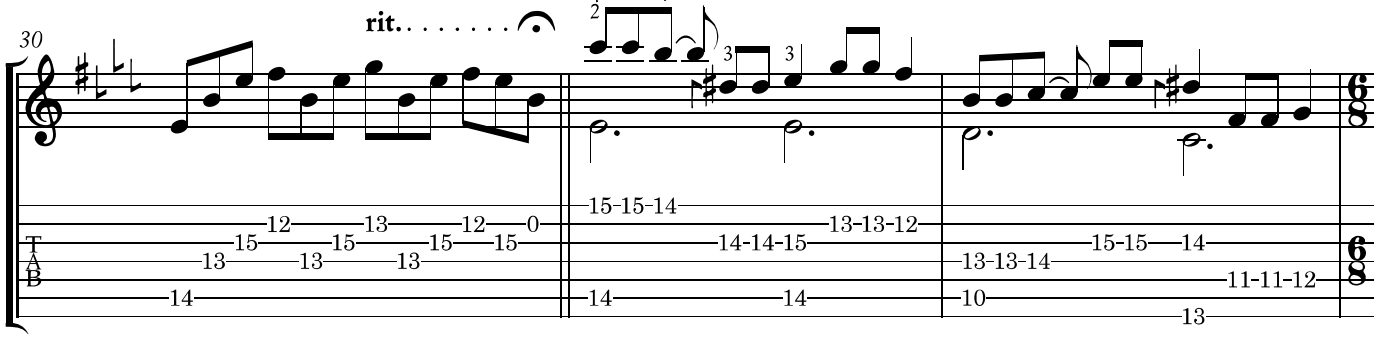




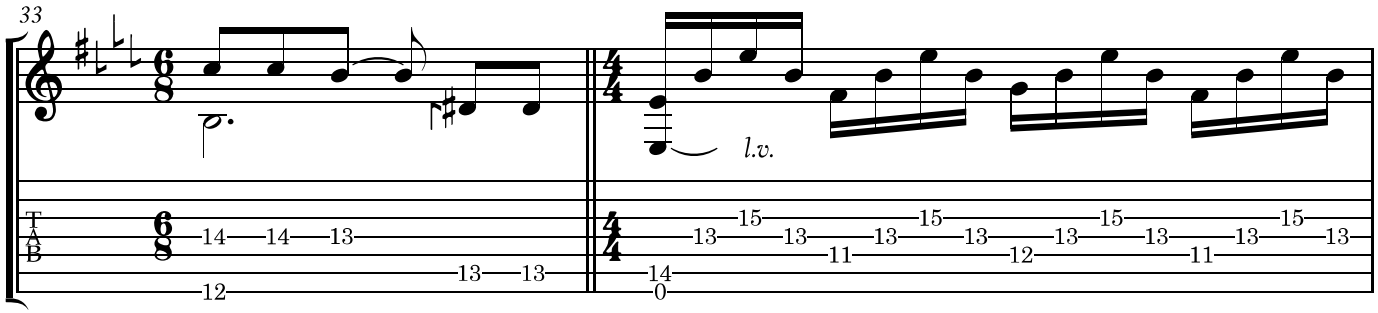


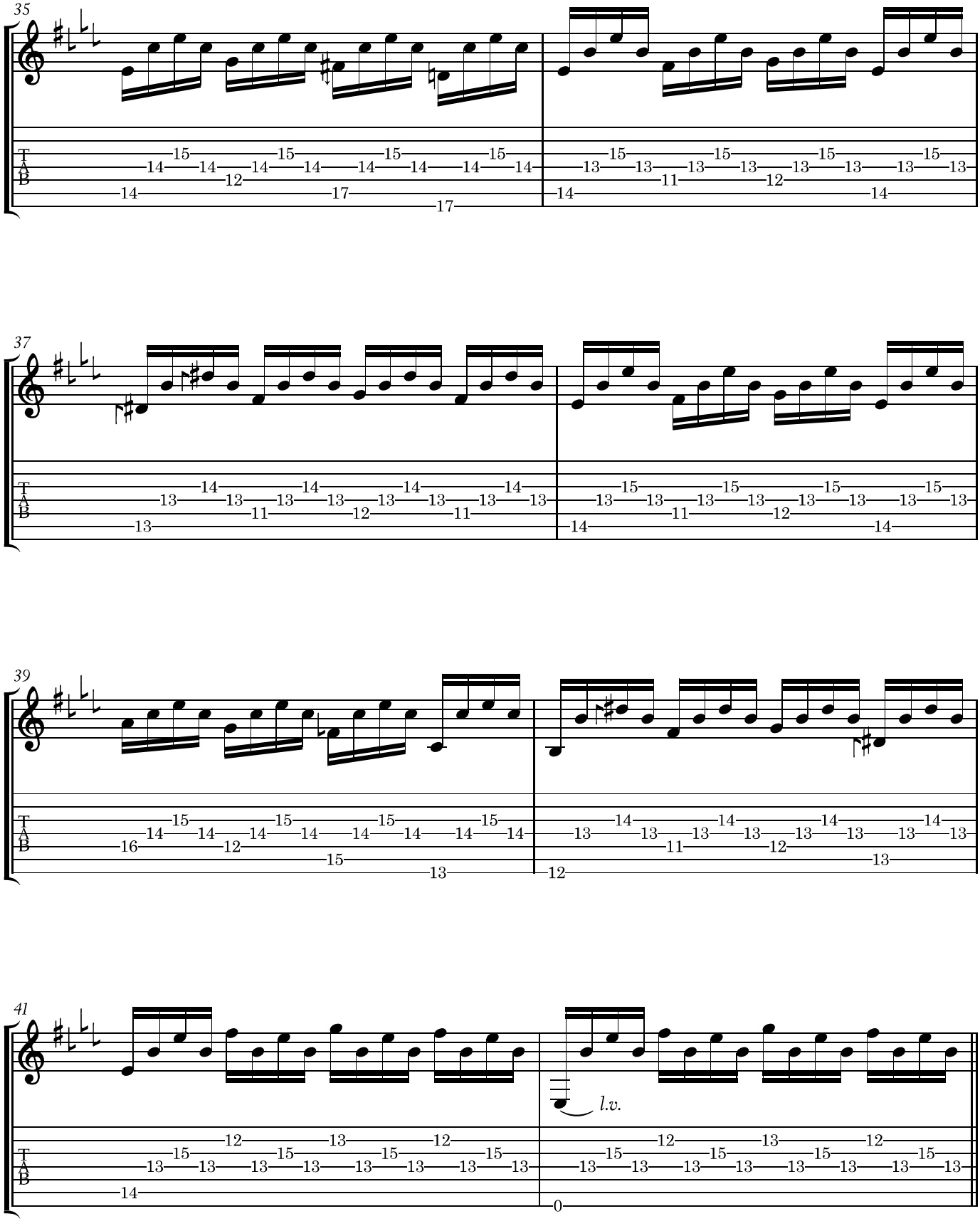


Transition I



Theme Ia

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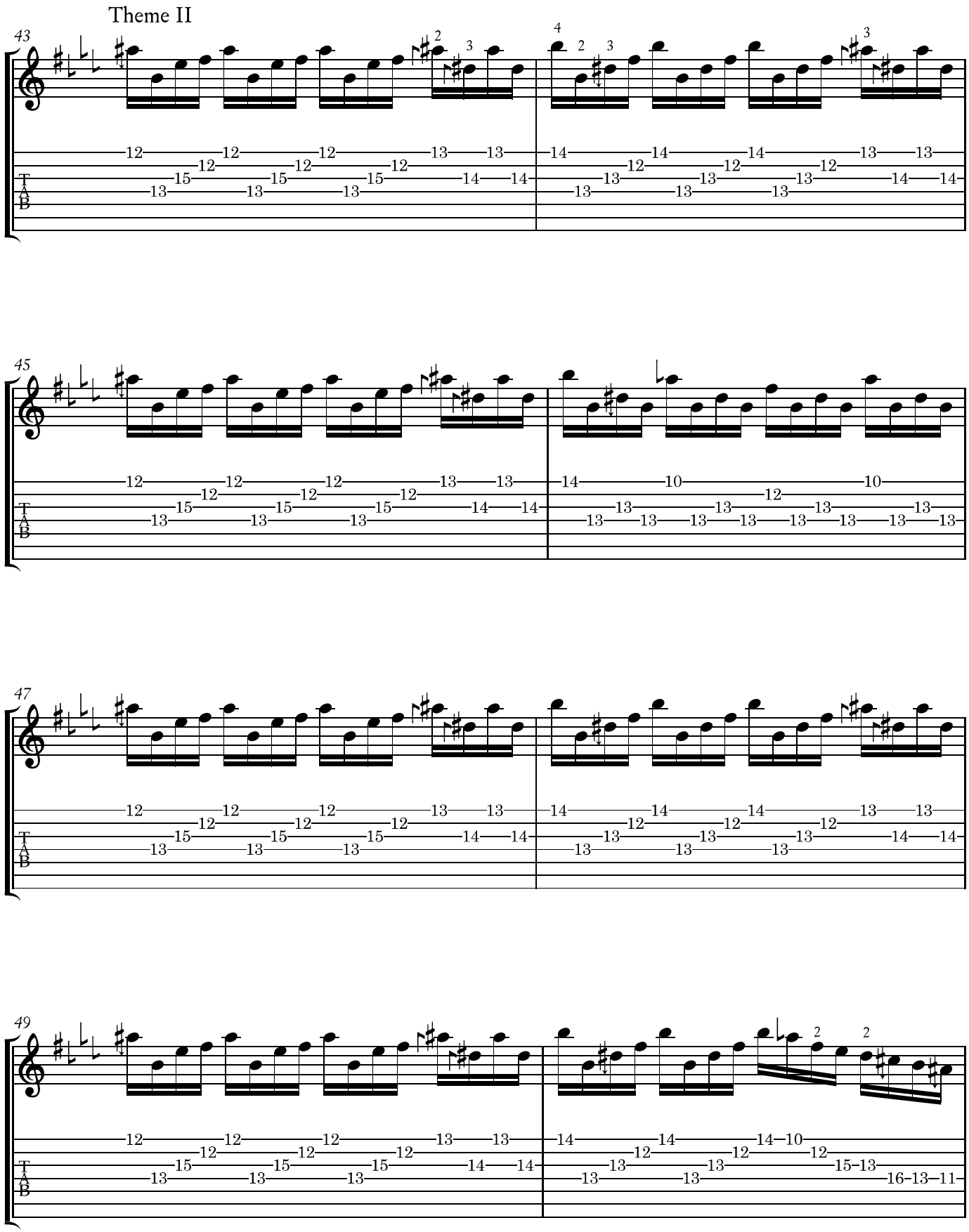
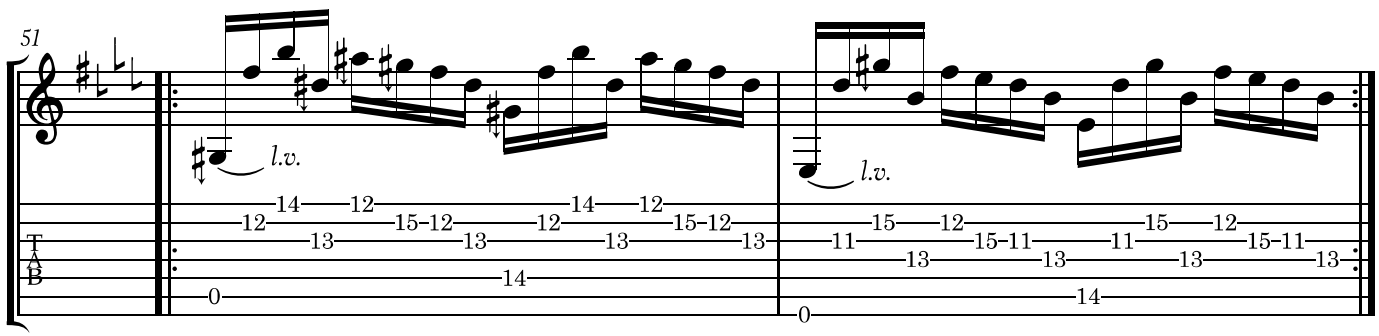
Theme II



Verse II



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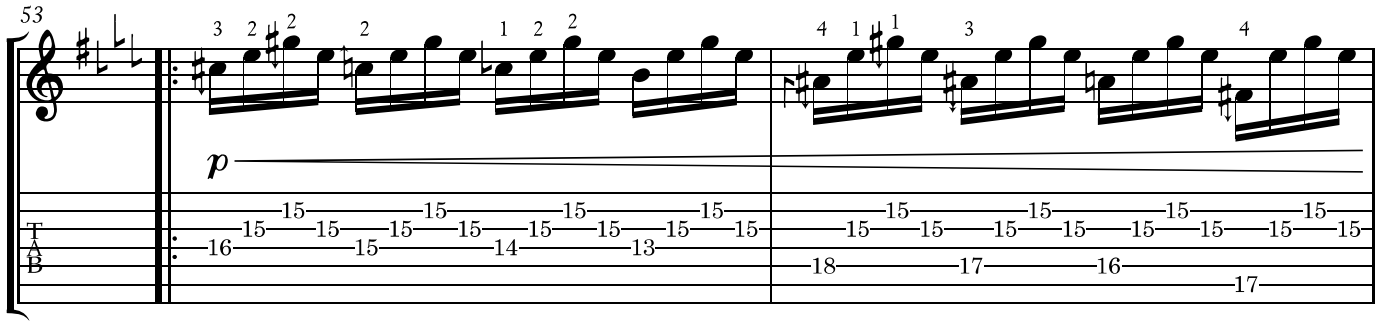
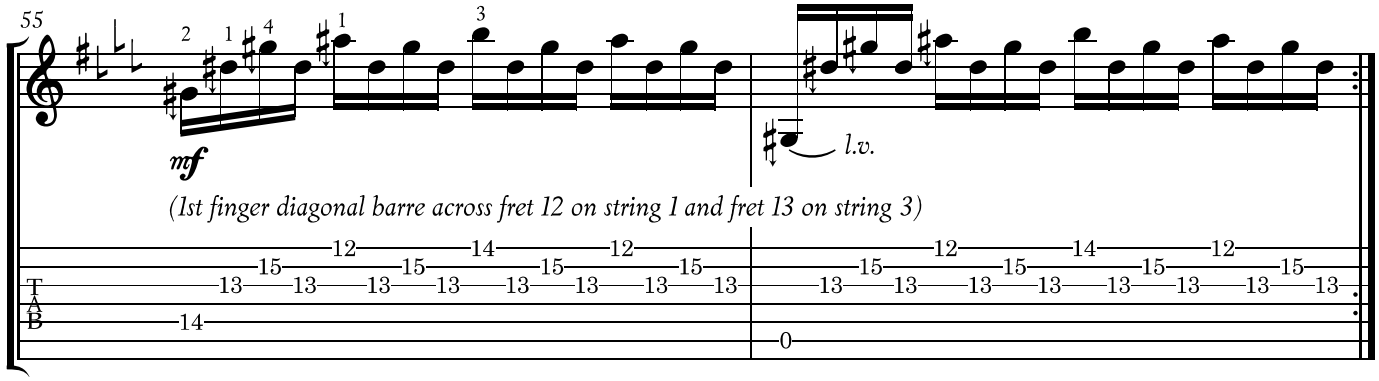
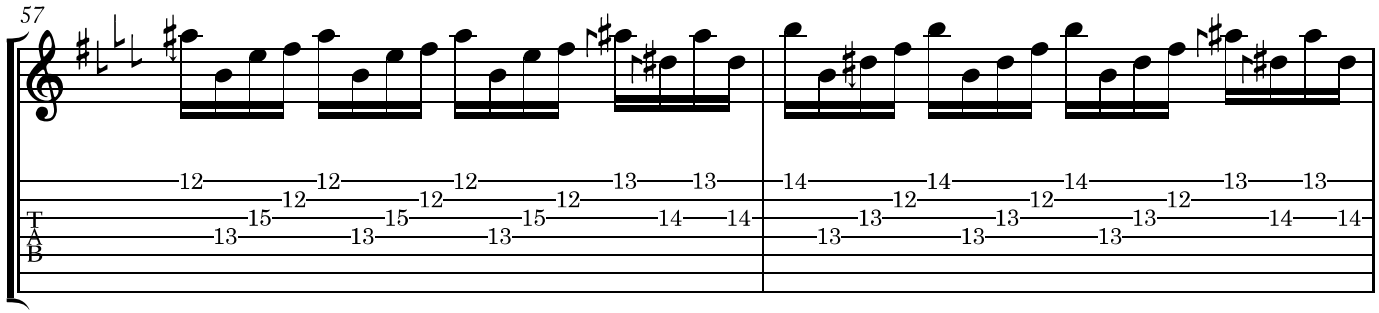
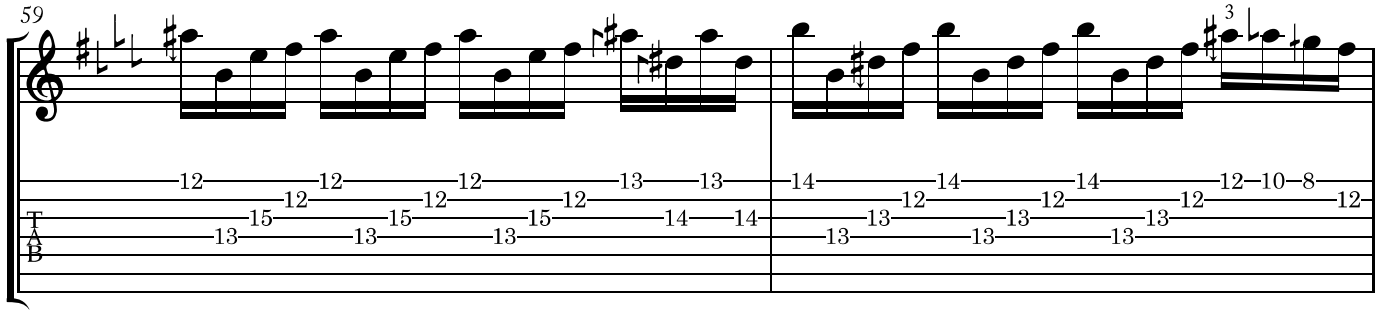
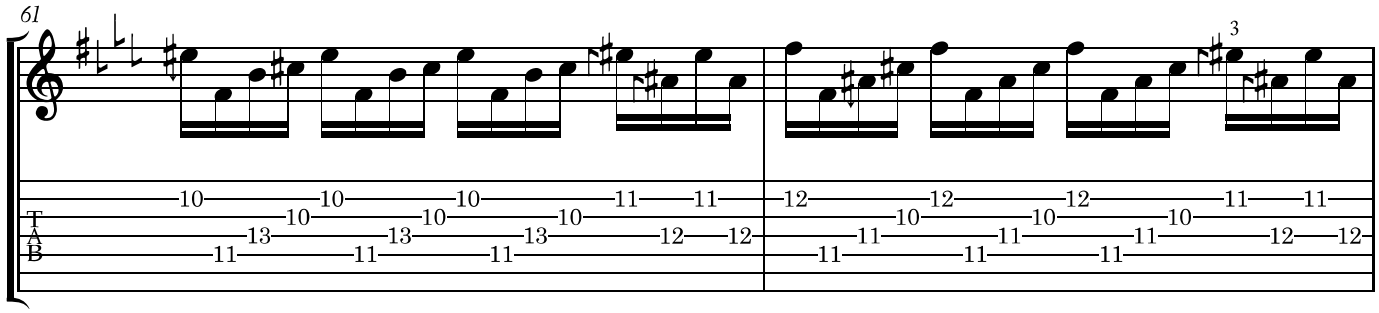


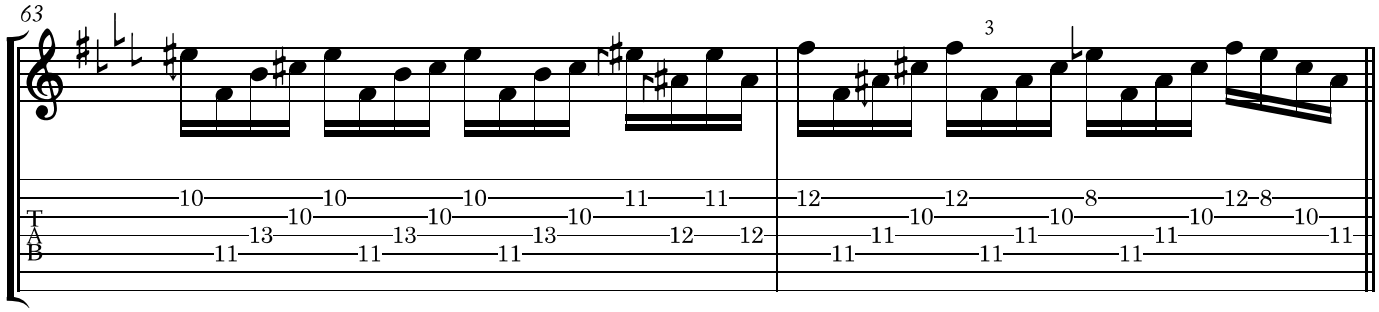


Theme IIa

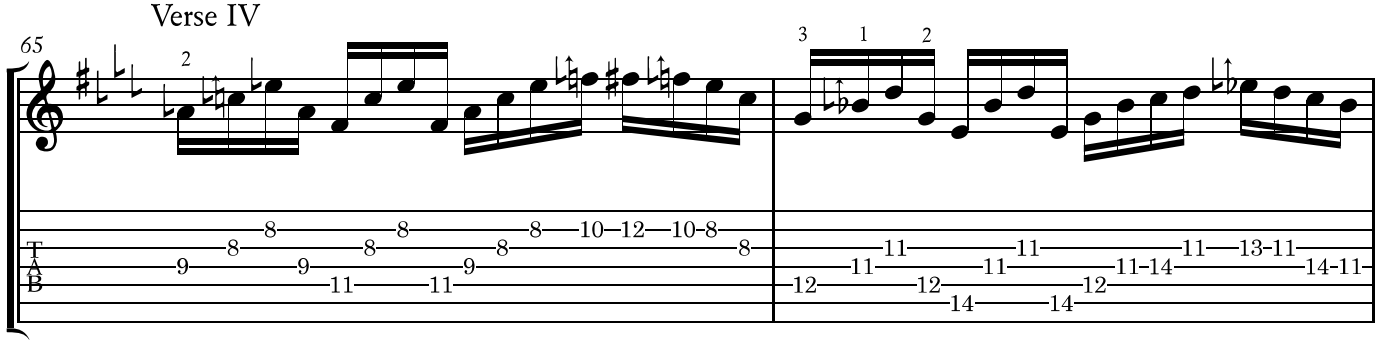


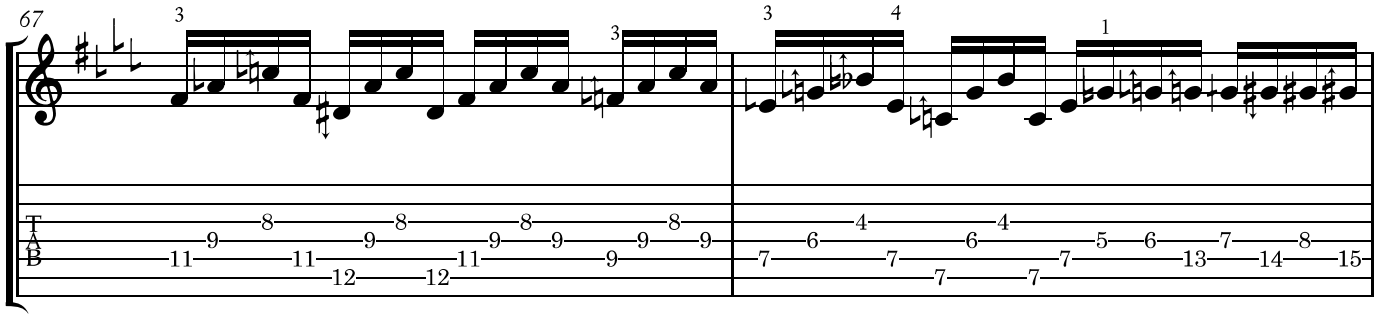


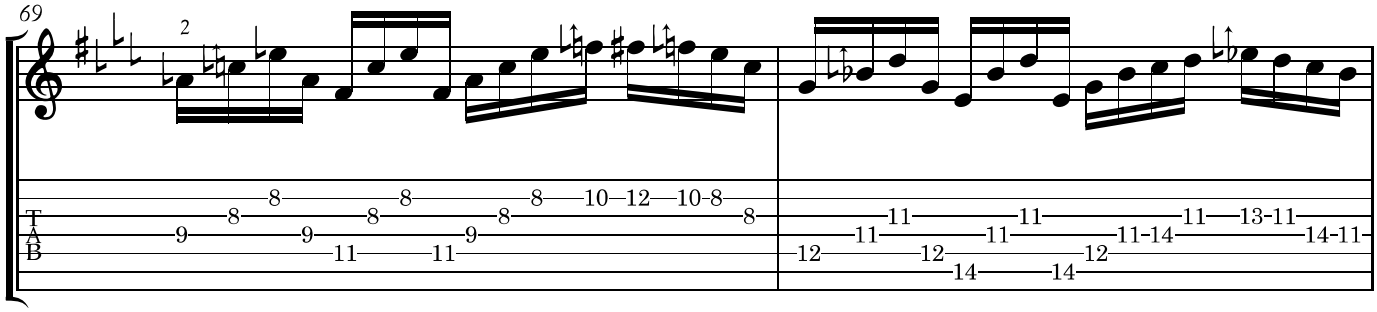


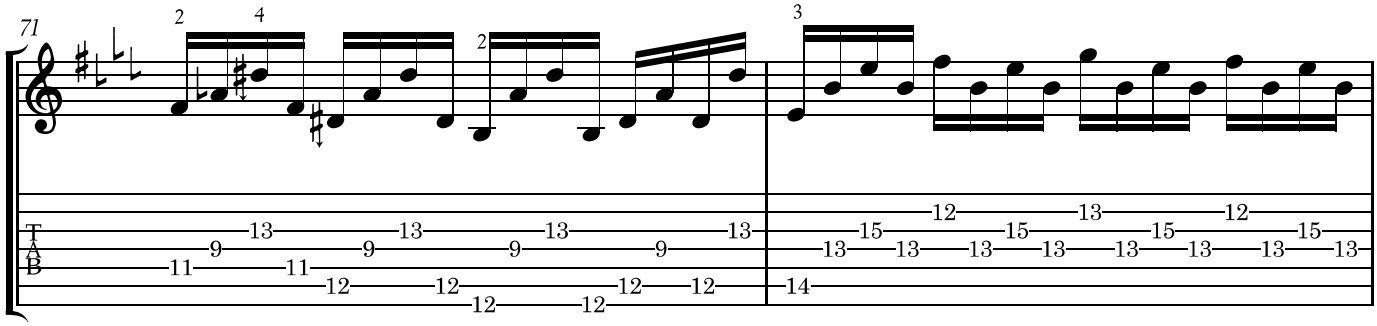


Verse IV

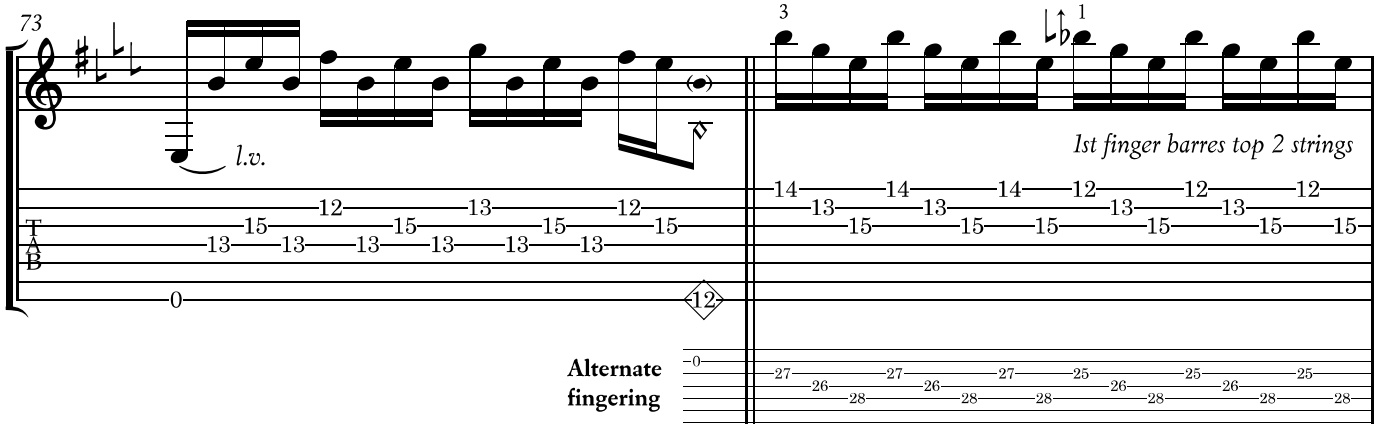


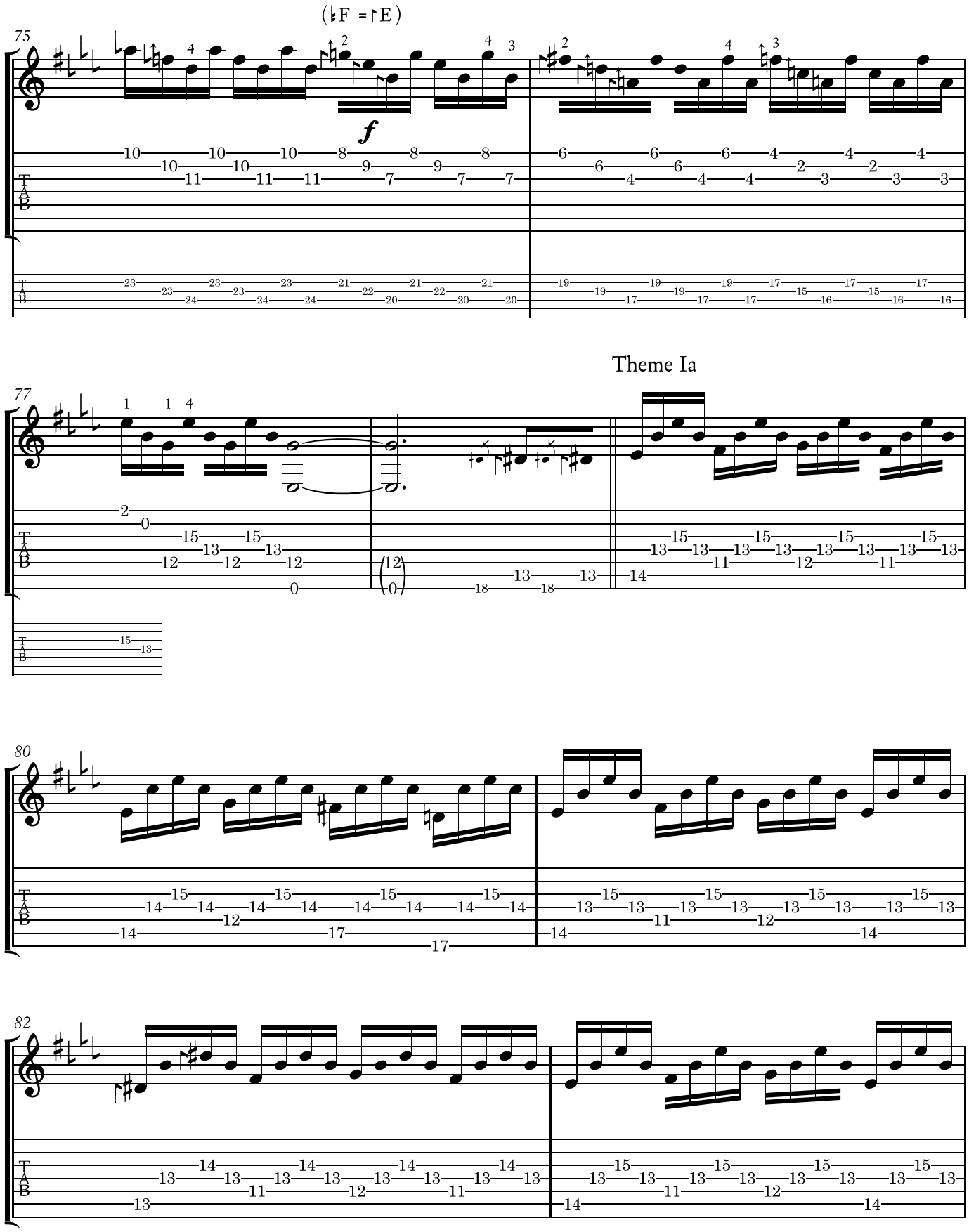


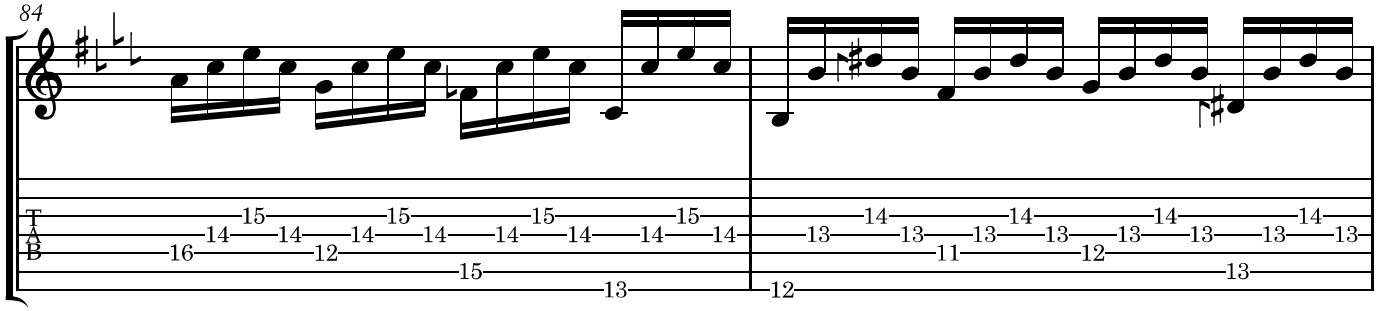


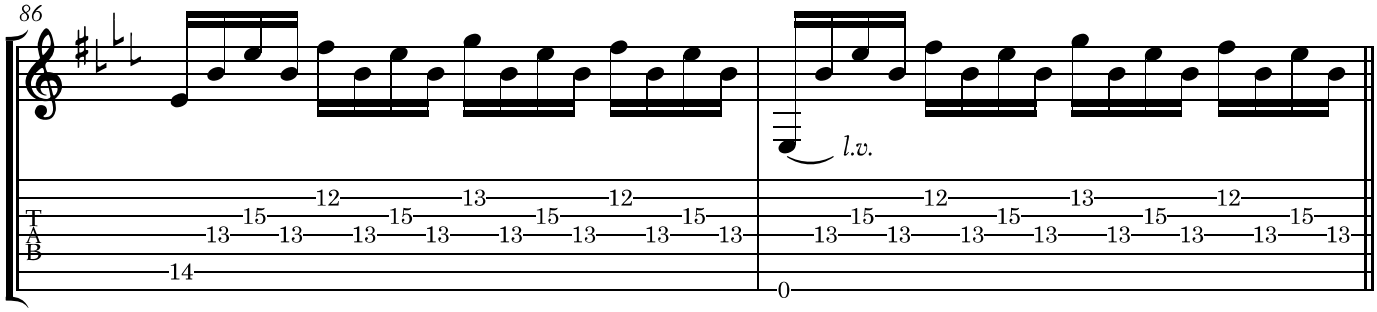


Transition II

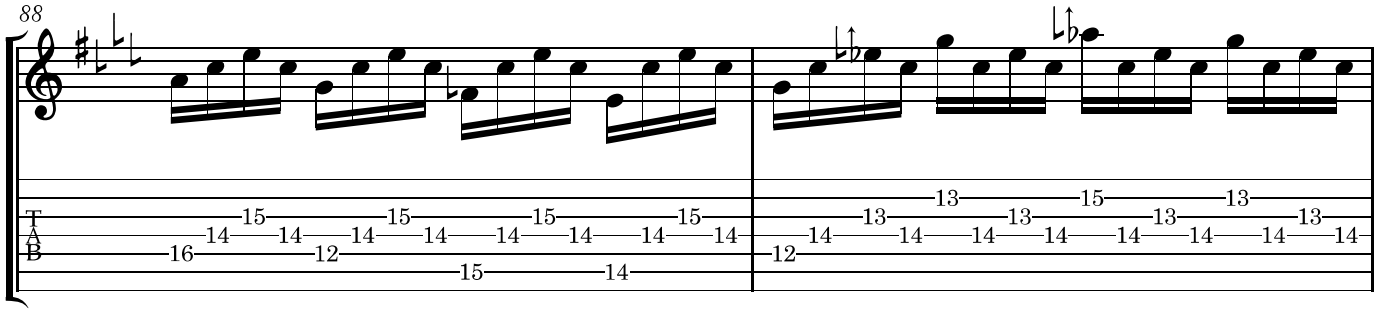


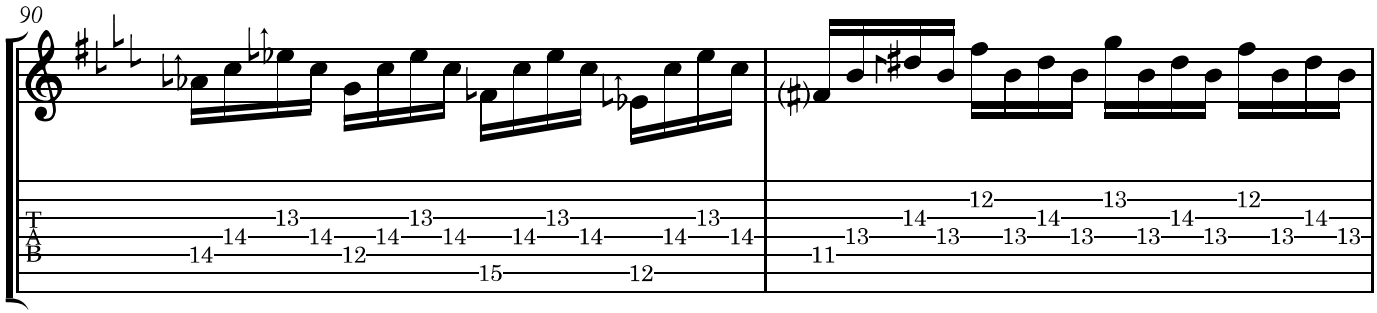

(♭F = ♮E)
75
f
Theme Ia
77
80
82

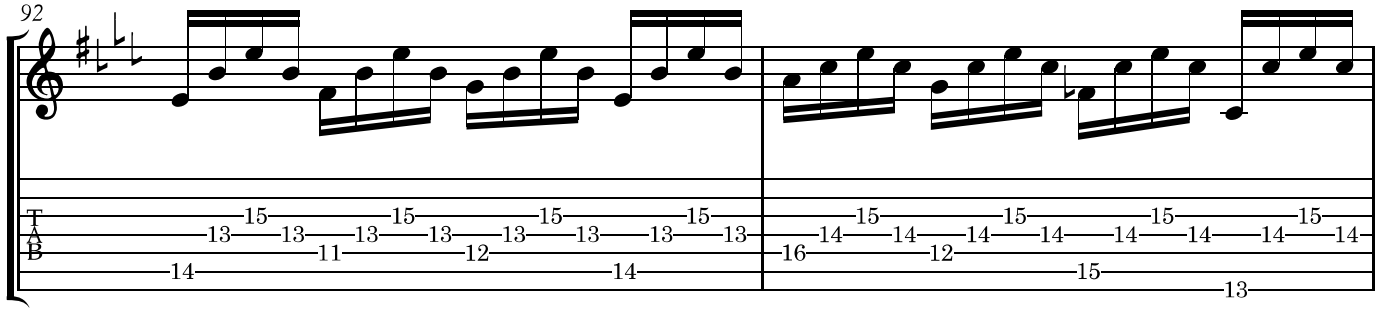


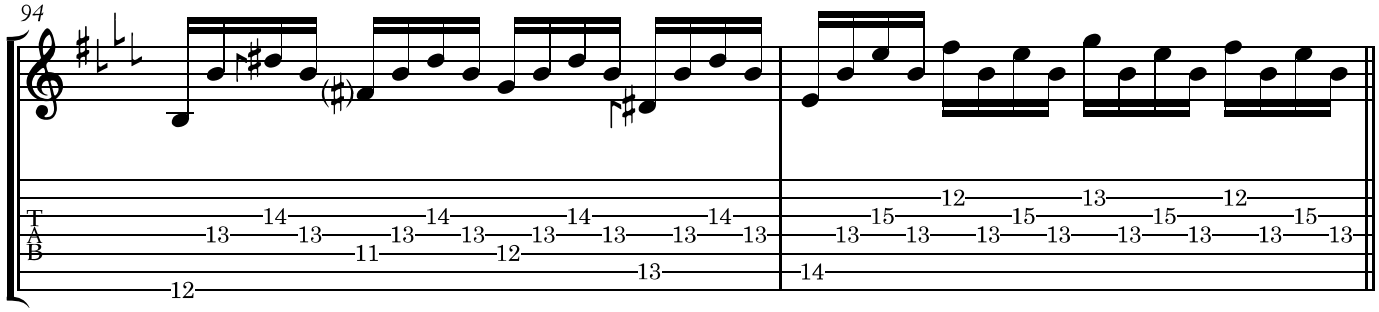


Variation Ia

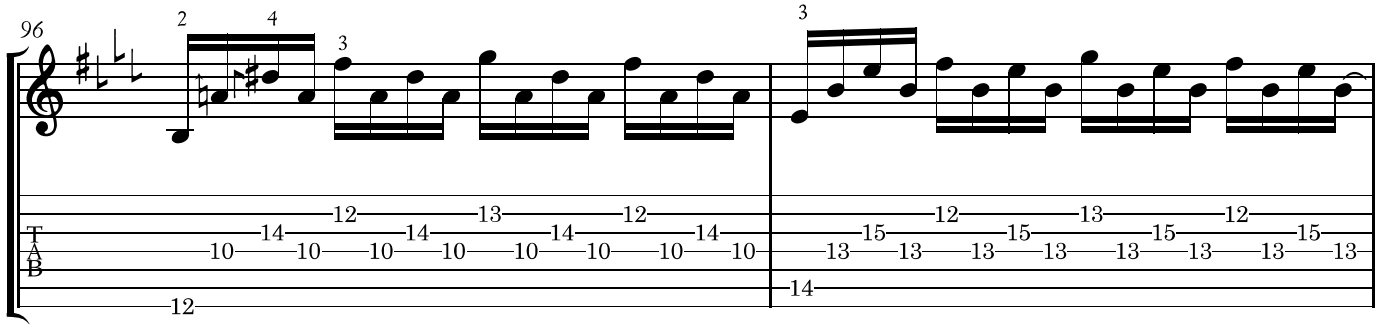


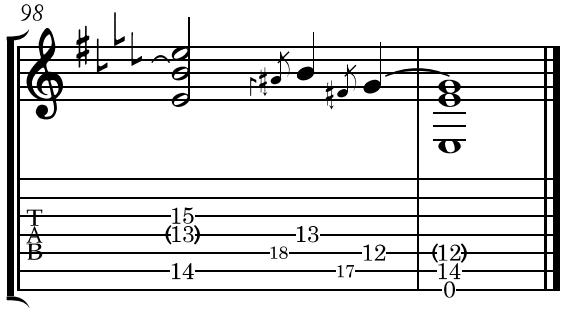






Coda





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Edition Zalzal is named in honor of the medieval oud player Mansur Zalzal. His talents were legendary, and his contribution extends to music theory: The interval with a size between that of a minor and major third—an interval which we now consider "microtonal"—has long been known as the "third of Zalzal."

This series aims to make microtonal guitar music available to the general public in clear, readable, and beautiful editions. We strive to bring to light important unpublished works of the past, as well as the vibrant and vital music of today. We celebrate the radical diversity and creativity of microtonal music. And—for maximum clarity—we use a single standard notation, adapted to the many idiosyncratic tuning systems in our catalogue.