## Microtonal Scordatura in the Guitar Works of A. Castilla-Ávila (1996-2021)

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**Abstract:** In 1996, during my guitar studies, I read for the first time about microtonal guitars. I was so fascinated about it. Trying to experiment to hear microtones in my instrument, I created a 36EDO scordatura system, which I have been using now for 25 years. In this article, I would like to present my ideas in a personal and biographical way about how I decided to create my 36-divisions system and to compose with it. I would also like to explain about the challenges and the decisions I took as a composer during this time.

Keywords: Microtonality, Guitar, Scordatura.

n an ordinary guitar, there are a few ways how to obtained microtones: a) by manipulating the tuning pegs using any microtonal intervals; b) by bending the string (like in blues guitar music); c) by plucking between left hand and upper nut (bitones, so that the proportions of the fret divisions are inverted) or; d) by manipulating the pegs and tuning the strings in any scordatura (from fret to fret the semitones cannot be changed).

In 1996, as I was studying guitar at the Conservatorio Superior de Sevilla, I read for the first time about microtonal guitar in John Schneider's book *The Contemporary Guitar*. Although I was very much fascinated about them, it was not so easy to get one of those microtonal guitars or to invest the time to learn a specific technique for the left hand for a rather limited repertoire. I could also sense what it would be a problem for me with the resonance: using open strings E, A, D, G, B, E.

There is a wide range of microtonal guitars using fix frets, movable frets or fretless systems. They also provide a wide range of microtonal scales like equal divisions, just intonation, Gamelan, Japanese, Arabic, Middle East scales, etc. The following picture of the different switchboards shows some of these systems.



FIGURE 1 – Different Switchboards by John Schneider.

Source: SCHNEIDER, JOHN (2004)

We can observe in the picture that the microtones are produced on the fingerboards from fret to fret, like I read in his book. I was not planning to specialize in microtonal guitar repertoire; my aim was to incorporate some microtonal music in my guitar playing. I had to find my own way to produce the microtones from string to string effectively without changing my instrument or my technique.

# 1. Advantages and disadvantages of tuning in sixths of a tone. Personal decisions as a composer. Examples from solo to sextet for classical or electric guitars

I was experimenting changing the tuning of the guitar, mainly using equal strings and trying out different microtonal intervals in different registers (I.e. quarter tones, eighth tones or thirds of a tone from string to string). Among all, I preferred the sixths of a tone (especially using six G strings). By doing so, all six open strings form a cluster within a tone (from the sixth to first strings: F sharp -66, F sharp -33, F sharp, G -66, G -33 and G). By most of the microtonal guitars, playing open strings is exactly the same as by ordinary guitars. Having the microtones between the strings gives a special resonance, which I personally like very much.

In August 1996, I wrote my first composition for guitar in 36EDO: *Solsticio Microtonal para Guitarra*, which I played myself in different occasions in the following years.

In 1999, I used the same scordatura for *Momento Microtonal*, which I enlarged to *Tres Momentos Microtonales*<sup>1</sup> in 2001 following a suggestion by my guitar professor at the Guildhall School of Music in London, Robert Brightmore.

<sup>&</sup>lt;sup>1</sup> A video of a performance of *Tres Momentos Microtonales* by Joseph Mirandilla at a concert at UST Museum in Manila (Philippines) can be found at: <u>https://www.youtube.com/watch?v=sTl6U9LkWG0</u>

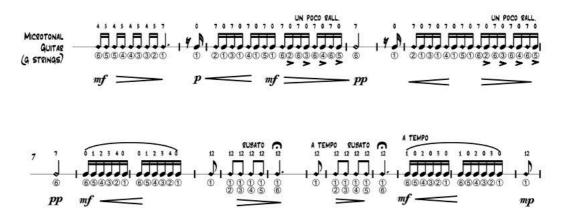
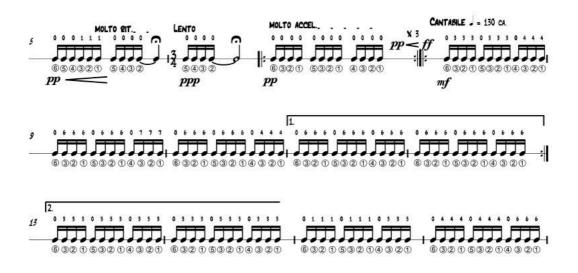


FIGURE 2 - Tres Momentos Microtonales for solo guitar. First movement, bars 1-16

Source: CASTILLA-ÁVILA, AGUSTÍN (2001)

One of the possibilities that I liked the most of this microtonal scordatura was to construct a cluster-melody using an arpeggio, which can be perceived almost like a tremolo because of the microtonal intervals, moving within the frets of the ordinary guitar:

FIGURE 3 - Tres Momentos Microtonales for solo guitar. Third movement, bars 5-16



Source: CASTILLA-ÁVILA, AGUSTÍN (2001)

I find the sonority of this scordatura extraordinarily beautiful. I prefer as a composer to use microtones on this cluster scordatura rather than on the existing microtonal guitars using fix frets, movable frets or fretless systems. As an artist, I use this 36EDO system as a bridge between

contemporary music and folk music. Another advantage, in my opinion, is the fact that all strings are made of the same material, making the timber more homogenous.

One of the main disadvantages that I found with this scordatura was the limited register: barely an octave and a fifth (with all the microtones in between). To enlarge it, I wrote *Das klingt sehr mikrotonalisch*<sup>2</sup> (2005) for two guitars – one with all E strings and the other all G ones, both tuned at sixths of a tone between the strings. By doing this, the register is expanded to two octaves and a third. These guitars also offer a timbre contrast; a set of six high E strings sound much more sharp than one of six G strings.

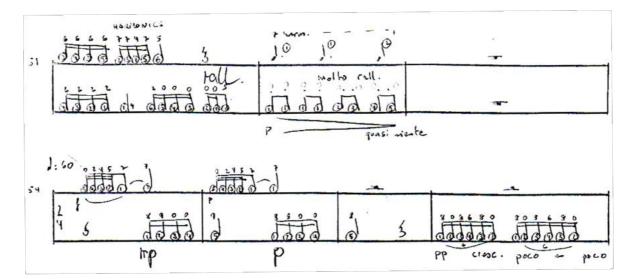


FIGURE 4 – Das klingt sehr mikrotonalisch for two guitars. Bars 51-57

Source: CASTILLA-ÁVILA, AGUSTÍN (2005)

<sup>&</sup>lt;sup>2</sup> A video of a performance of *Das klingt sehr mikrotonalisch* by Cecilio Perera and Emerson Salazar at a concert at Solitär Hall in Salzburg (Austria) can be found at: <u>https://www.youtube.com/watch?v=kH0i3DurLbk</u>

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#### FIGURE 5 - Rubaiyats for six guitars. Bars 51-57

Source: CASTILLA-ÁVILA, AGUSTÍN (2008)

A way to have both the ordinary register of the guitar and the 36EDO microtones was to write for guitar sextet, in which every instrument has the same intervals but with a different sets of strings<sup>3</sup>. I developed these ideas in the composition *Rubaiyats*<sup>4</sup> (2008).

I would like to emphasize that microtonality (in most cases on the guitar) is only a small part of my work as a composer. As an artist, I am also active as guitarist, improviser, graphic artist, author and artistic researcher. Coincidences have played an important role in my involvement with microtones. Five years after I wrote *Solsticio Microtonal para Guitarra*, Robert Brightmore's suggestions made me consider about the 36EDO system on the guitar and was very much responsible for the motivation of creating *Tres Momentos Microtonales* and further pieces. In 2005, after a concert in which the Israeli guitarist Shiri Coneh was playing *Tres Momentos Microtonales* at the Theatersaal of the Orff-Institut in Salzburg, Gertraud Steinkogler-Wurzinger informed me

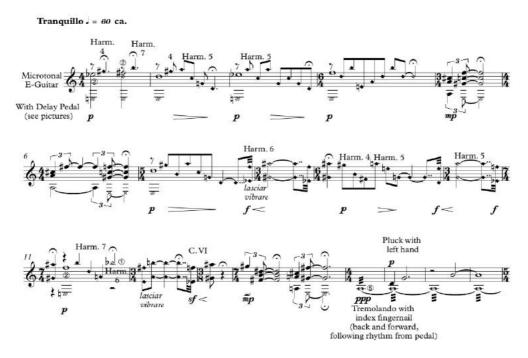
<sup>&</sup>lt;sup>3</sup> First guitar using six first strings, second guitar using six second strings, etc.

<sup>&</sup>lt;sup>4</sup> A video of a performance of *Rubaiyats* by Sara Hilger, Mariana Salgado, Barbara Giusto, Emerson Salazar, Pedro Izquierdo and Agustín Castilla-Ávila at a concert at Bösendorfer Hall in Salzburg (Austria) can be found at: <u>https://www.youtube.com/watch?v=xjd-zEXorXo</u>

about the International Ekmelic Music Society, a microtonal society in Salzburg founded in 1981 by Franz Richter Herf and Rolf Maedel. I became a member of the society and started a deeper involvement with microtonality. In 2015, I started with my colleagues to organize the microtonal symposium in Salzburg Mikrotöne: Small is beautiful. I 2019, I was appointed president of the International Ekmelic Music Society.

Another coincidence, which made a considerable impact in my microtonal repertoire was the participation at the SGAE creation lab *Semana de Autor* at La Térmica in Málaga in 2014. Within a week, I was expected to fuse my microtonal guitar with the work of the rock singer Pablo und Destruktion and create new music together. I decided to export my 36EDO system to the electric guitar. It was an incredibly fruitful week and every since I have used more this instrument than the classical guitar, not only for composition but also for improvisation projects. It became as well a main tool for stage works. One of the first microtonal pieces for electric guitar was *Le Fay*<sup>5</sup> (2015), using 36EDO on six G strings.



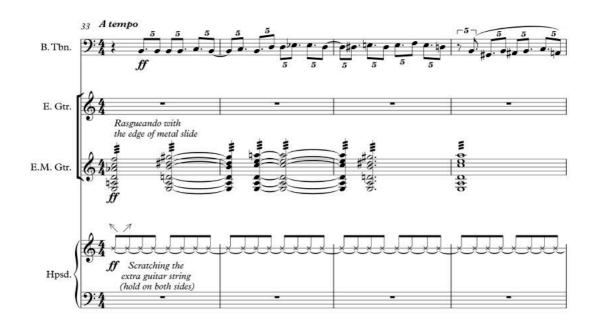


Source: CASTILLA-ÁVILA, AGUSTÍN (2015)

<sup>&</sup>lt;sup>5</sup> A video of a performance of *Le Fay* by Pilar Rius at a concert at Manicomio Hall in Madrid (Spain) can be found at: <u>https://www.youtube.com/watch?v=dcujta5nq0c</u>

The electric guitar opened new possibilities for me in chamber music works, such as *Das Lied Inannas* (2018) for trombone, one guitarist on two electric guitars (one of them using 36EDO on six bass E strings) and cembalo.

FIGURE 7 - Das Lied Inannas for trombone, one guitarist on two electric guitars and cembalo. Bars 33-36



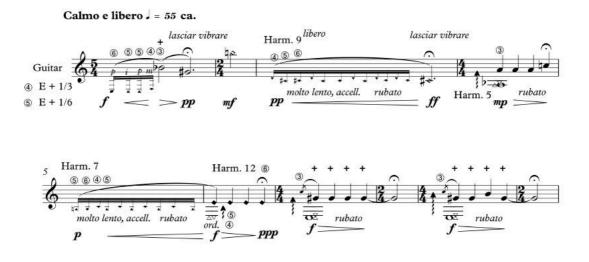
Source: CASTILLA-ÁVILA, AGUSTÍN (2018)

## 2. How to plan microtonality in the guitar (Scordatura vs. retuning)

After experimenting several years with microtones changing the guitars strings, I am able to plan their use in a composition in a wider way all the possibilities to obtain microtones, changing or not the strings, adapting the instrument to my desired compositional material. I would like to present some compositions in which my approach to microtonality was different.

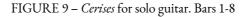
In *Hurrian Song* (2015), the fifth and the fourth strings are tuned very low (using ordinary strings) in order to get three consecutive ones with distances of sixths of a tune: E, E +33, E +66, G, B, E. The very low tension of the two retuned strings offers new timber possibilities as well.

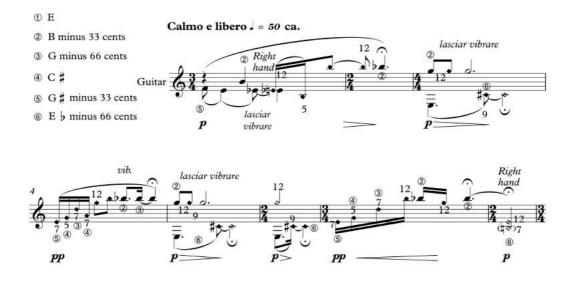
#### FIGURE 8 - Hurrian Song for solo guitar. Bars 1-10



Source: CASTILLA-ÁVILA, AGUSTÍN (2015)

In *Cerises*<sup>6</sup> (2018) for solo guitar, I used a very different scordatura: D sharp -66, G sharp -33, C sharp, G -66, B -33 and E.





Source: CASTILLA-ÁVILA, AGUSTÍN (2018)

<sup>&</sup>lt;sup>6</sup> A video of a performance of *Cerises* by William Anderson at a concert at the Nowe Fale Festival of Contemporary Music in Gdansk (Poland) can be found at: <u>https://www.youtube.com/watch?v=\_PKtkm-TfaE</u>

In the first movement of *Tres Tristes Trios* (2012) for three guitars, I distribute the sixths of a tone among three guitars without changing the strings at all.

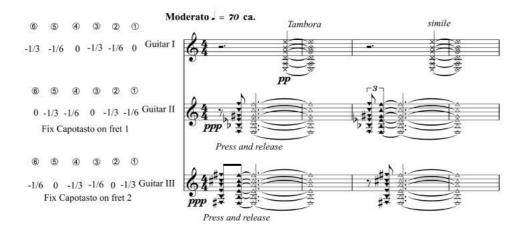


FIGURE 10 - Tres Tristes Trios for three guitars. Bars 1-8

Source: CASTILLA-ÁVILA, AGUSTÍN (2012)

Through the composition, the pegs are manipulated to change the tuning to its ordinary 12EDO system.

Using equal strings for microtonal purposes is very flexible and can be easily adapted to established microtonal systems on other instruments (Quarter-tone piano, quarter-tone accordion, etc.). In the composition *Canto de Nezahualcóyotl* (2018) for quarter-tone marimba and quarter-tone guitar, I used again six third strings, but this time tuned at quarter tones having a G on the first string.

FIGURE 11 - Canto de Nezahualcóyotl, for quarter-tone marimba and guitar. Bars 5-11



Source: CASTILLA-ÁVILA, AGUSTÍN (2018)

### 3. Notation: Transcription vs. Tablature

How to notate the microtones has been very challenging for me since the very first composition in 1996, *Solsticio Microtonal para Guitarra*.

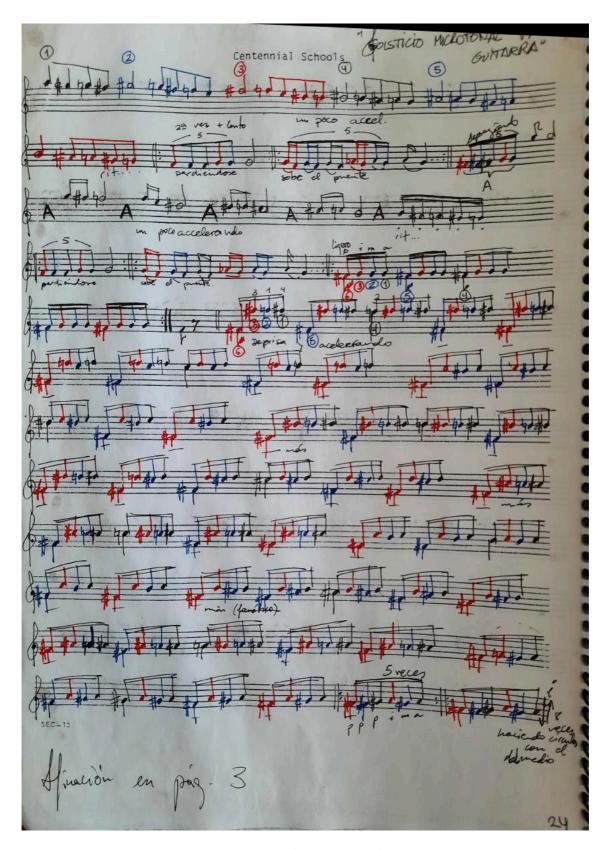


FIGURE 12 - Solsticio Microtonal para Guitarra, for solo guitar. Page 1

Source: CASTILLA-ÁVILA, AGUSTÍN (1996)

I used three different colors to differentiate the 0, the -33cents and the -66cents notes. I was never convinced that this system was practical enough but I urged to write the music and it worked for me to play it at my concerts.

Since most of guitarists are familiar with different kinds of tablature, I decided to create one indicating the string and the fret (the head of the note to indicate ordinary, harmonic, percussive, etc.). This seemed to be very neutral for me as there is no strong association between the notes and the sounds produced. I used this system in compositions such as *Tres Momentos Microtonales*.

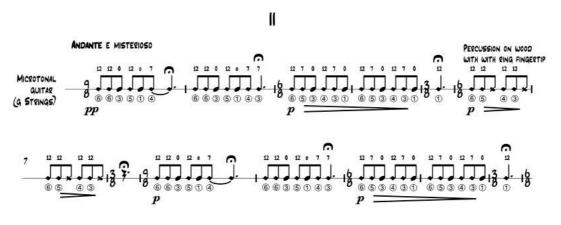


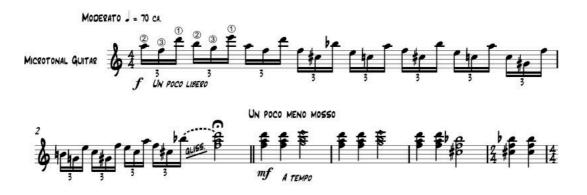
FIGURE 13 - Tres Momentos Microtonales for solo guitar. Second movement, bars 1-13

Source: CASTILLA-ÁVILA, AGUSTÍN (2001)

Using transcription is a possibility for the guitarist to learn the piece in a very quick time. It depends on the textures – thick textures are much better for the performer when they are transcribed. But here the association between the written note and its sound might be a little bit confusing for players, as they have to recognize the notes in completely new positions. I used a transcription in compositions such as *Sakura*.

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FIGURE 14 - Sakura for solo guitar. Bars 1-6



Source: CASTILLA-ÁVILA, AGUSTÍN (2012)

Sometimes I provide an ossia line with the sounding pitches, (or at least some of them), especially when I use this system in chamber pieces or in pieces with singer, like in *Dos Sonetos* (2014) for mezzo-soprano and guitar.

FIGURE 15 - Dos Sonetos for mezzo-soprano and guitar. Second movement, A la Entrada de un Valle. Bars 39-43.



Source: CASTILLA-ÁVILA, AGUSTÍN (2014)

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## **ABOUT THE AUTHORs**

Agustín Castilla-Ávila, president of the International Ekmelic Music Society and director of the symposium *Mikrotöne: Small is beautiful* in Salzburg, worked as a composer in Europe, Asia and USA. His music has been conducted by D. Russell-Davies, J. Kalitzke, T. Ceccherini, A. Soriano, H. Lintu and H. Schellenberger among others. He has published for Doblinger Verlag, Joachin Trekel, Da Vinci Edition, Verlag Neue Musik, Mackingerverlag and Bergmann Edition. His music has been recorded on 15 CDs. He has given over one hundred lectures about his musical ideas through Europe, Asia, USA and Mexico. These ideas are published in Austria, Poland, France, Slovenia, USA and Brazil. <u>http://www.castilla-avila.com/</u>. ORCID: <u>https://orcid.org/0000-0001-7975-1875</u>. E-mail: <u>castillaavila@hotmail.com</u>