



world scales mts pack

This free pack contains new tunings and scales for your Xen-Arts virtual synthesizer. The same scales are included in Anamark TUN and Scala formats so that you can tune various other synthesizers.

Information

The world is a massive place, with many creatures living on its surface. One such creature is called the human. Humans all over the world just love to make music; it's one of a few things that can unite us all. But where you go in the world, you'll notice that the musical scales differ just as much as the food, the clothes, the language, the customs, the creation stories...

This microtuning pack brings together authentic tuning systems from a select few of the world's musical traditions. I say "a select few" because humanity has such a varied approach to tuning that not every culture could possibly be represented here. Not even close.

If you're looking for scales to take your music to a transcendental place, then these long-lived musical traditions may have something for you.

Pack contents

Indonesian Gamelan

Slendro—Average of 30 measured slendro gamelans, W. Surjodiningrat et al., 1993. Mapped to black keys.

Pelog—Average of 39 Javanese gamelans, Kunst, 1949. Mapped to white keys.

Arabic Maqam

Maqam is the system of melodic modes used in traditional and popular Arabic music. Actually, maqam means more than just “scale”; it encompasses improvisation techniques and other concepts. Included in this pack are scales based on the following maqams:

Rast/Penchgah

Hijaz

Saba

Buselik

Thailand

Ranat (Thai xylophone) tuning from *Sudsaboun* on the record *Thailand—Ceremonial and Court Music*.

Mapped to white keys.

Chopi Xylophone

A xylophone tuning from the Chopi tribe in Southern Mozambique. The notes are mapped to the white keys, with 'dikokoma de wumbila' (Chopi keynote) on middle C. C = 253.8Hz.

The xylophone was built by Venancio Mbande, the master Chopi builder. The frequencies of this scale were provided by Dr Andrew Tracey, and are available from <http://www.anaphoria.com/CHOPI.PDF>

Bagpipes

Various bagpipe tunings from <http://www.anaphoria.com/bagpipe.PDF>

Scotland—Contains some interesting neutral intervals. Mapped to the white keys.

Bulgaria—Doesn't deviate too much from equal temperament, but has one very pure sounding major third G-B. Mapped to keys C D E F G G# A# B C'.

Macedonia—Exotic and mapped to keys C D E F G G# A A# B C' C# D'.

North Indian

Raga Bageshri—

Aroha (ascending): C E F A B C'

Avaroha (descending): C' B A D G A F E D C

Raga Bhairavi—

Aroha (ascending): C Eb F Ab Bb C' D' Eb' Db' C''

Avaroha (descending): C' Bb Ab G F G Eb F Db C

Raga Kafi—

Aroha (ascending): C D F G A B A C'

Avaroha (descending): C' B A G F E D C

Raga Todi—

Aroha (ascending): C D E F A B C'

Avaroha (descending): C' B A G F E D C

Raga Yaman—

Aroha (ascending): C B D E F A B C'

Avaroha (descending): C' B A G F E D C

Shrutis—the full set of 22 notes in the classical Indian system.

Historical Western well-temperaments

For a short while before equal temperament became common, well-temperaments were used to play chromatic music. They are related to the 12-tone scale, but some keys sound better than others.

Werckmeister III (1681)—Fifths are mostly tuned purely, but the fifths of C-G, G-D, D-A and B-F \sharp are tempered by $\frac{1}{4}$ comma.

Young (1807) —Young's second temperament, where half of the fifths are tuned purely, but the fifths of C-G, G-D, D-A, A-E, E-B, and B-F \sharp are tempered by $\frac{1}{6}$ comma.

Zimbabwe Mbira

A scale measured from a mbira made by Josephat Mandaza in Chitungwiza, Zimbabwe in 2002.

The mbira is an instrument with long strips of metal, which are plucked with a thumb or finger to produce a beautiful percussive tone. Sometimes bottle-caps are attached to the mbira to add a buzzing sound.

Mapped to keys:

C E F G A B C' D' E' F' G' A' B' C'' C \sharp '' D'' E'' F'' G'' A'' B'' C'''

The tuning data was provided in the following paper by L.E. McNeil and S. Mitran:

[https://www.academia.edu/2847668/Vibrational frequencies and tuning of the African mbira](https://www.academia.edu/2847668/Vibrational_frequencies_and_tuning_of_the_African_mbira)

Ancient Greek

Ancient Greek scales were based on the tetrachord, meaning four strings, and intended for instruments such as the lyre. The Greeks categorised those scales into 3 genera: the diatonic, chromatic and enharmonic.

Diatonic tetrachords contain two whole tones and a semitone. Chromatic tetrachords contain a minor third and two semitones. Enharmonic tetrachords contain a major third and two quartertones.

Many tetrachordal scales were recorded by Ptolemy. 5 were selected for this pack:

Archytas' Diatonic—a common tuning from around the 4th century BC to the 2nd century AD.

Ptolemy's Diatonic Hemiolon.

Ptolemy's Diatonic Ditoniaion.

Didymus' Chromatic.

Archytas' Enharmonic.

All are mapped to the white keys, with the tonic on E.

Japanese Hirajoshi

A pentatonic scale observed in koto tuning. Each note in the scale can be used as the tonic, giving 5 modes.

Mapped to the black keys.

Some thoughts on authenticity

Many musical traditions are resistant to the idea that we can authentically play their music by adopting the tunings alone.

For example, the North Indian classical tradition doesn't see a *raga* as a mere set of pitches. Certain notes of the *raga* vary, depending on whether the melody is ascending or descending. Certain notes must be played with emphasis. Faithful performance within this style takes years of dedicated practice and listening.

The Indonesian (and many other) scales in this pack—which were measured from recordings—can't be authentic either. They are merely snapshots of larger, multi-faceted traditions where the performers and instrument builders have differing tone sensibilities. There is no standard of tuning.

For this reason, if we take something like a *raga* or a bagpipe scale and just jam away, it's unlikely that we'll create something authentic to their original culture.

But don't despair. These scales are just tools for us to define our own sounds. Cultures shift and change. New cultures are inspired and guided by older ones. If you are going to blend a traditional scale with something else, there's no shame in that.

Thanks

Kraig Grady, who manages the scale archive on the website of the [North American Embassy of Anaphoria Island](#). Many of the tuning files in this pack were created based on documents available from this site.

Kaviraj Singh, who consulted with me about North Indian classical music.

Keenan Pepper, who consulted with me about gamelan tuning.

Dr. Ozan Yarman, who consulted with me about maqam scales. Those included in this pack were taken directly from his own Scala files.

X. J. Scott, who has a scale archive at [nonoctave.com](#).

William Sethares, who included a few scales in his book *Tuning, Timbre, Spectrum, Scale*.

This pack of microtunings was downloaded from sevish.com – Head there for more tuning packs and to check out [my microtonal music](#).

The microtuning files (.mid) are designed to work with the outstanding, free VST synthesizers from [Xen Arts](#). Download them and make some microtonal music!