Dancing Cat Records Hawaiian Slack Key Information Booklet, SECTION III:
TECHNICAL ESSAY ON SLACK KEY GUITAR TUNINGS

Table of Contents:

Note: *In this section, tunings are followed by a letter & number that correspond to the individual tuning's location in the* ***CHART OF RECORDED TUNINGS - SECTION IVa****, as well as in the* ***HAWAIIAN RECORDINGS IN THE SLACK KEY TUNINGS -SECTION V****.*
Also, the Slack Key tunings are always listed from the lowest pitched string to the highest pitched string.

1. INTRODUCTION

The Hawaiian Slack Key guitar tradition has many tunings that have been played, and out of these there are 13 tunings that have been most commonly used, and within those 13 there are 4 tunings that are the very most commonly used (*see the* ***SUMMARY OF RECORDED TUNINGS - Section IV, #3***). Each tuning has a uniquely beautiful sound, feeling, and resonance. These tunings are very ingenious and are designed to play songs in Major keys with natural fingerings, and so that the guitar can have a nice resonance. It's as if each tuning is a different delicious kind of fruit in a big basket or a different color in a rainbow (as with the many banjo and fiddle tunings that are played in the Appalachian Mountains in the southeastern part of Mainland America, and the many other guitar tunings in Mainland America, Europe, Canada, Africa, Madagascar, Papua New Guinea, and other places).

Most Slack Key guitarists play most of their pieces in their favorite two, three, four, or five tunings; some play in more tunings, though often just for one or two songs. Some guitarists play certain songs in more than one tuning depending on their mood; and also they sometimes do this rather than retuning the guitar when playing live.

In the Slack Key tradition some of the strings are (usually) loosened or slacked from the Standard Tuning *(E-A-D-G-B-E) –(#C-33)*, so that the bass notes for both the tonic I chord and the dominant V chord are almost always present on the two open (unfretted) lowest pitched sixth and fifth strings, and the fourth string also very often functions as a bass note as well.

Sometimes bass notes for other chords than the tonic I chord and the dominant V chord are on open strings:
The open bass note for the subdominant IV chord is present in the Samoan C Mauna Loa Tuning *(F–G–C–G–A–E) -(#C-25)*, where the lowest pitched sixth string open F note is the bass note for the IV chord (the F Major chord), and the tonic I chord bass note (the C note) is on the fourth string and the dominant V chord bass note (the G note) is on the fifth string. These three bass notes are the same for the similar Samoan C Major Tuning *(F–G–C–G–C–E) -(#C-4)*, as well as in a theoretical C Wahine tuning *(F–G–C–G–B–D) -(#C-16)*. Some other theoretical C tunings would also have the F note for the IV chord on the sixth string – *(also see the **SUMMARY OF NON-RECORDED TUNINGS –Section VI**, in the **C tunings** sections).*
An open bass note for the IV chord is also present in an F tuning that is both Wahine and Mauna Loa, invented by Mika'ele Mike McClellan *(F-Bb-C-F-A-E) –(#F-5)*, where the fifth string open B*b* note is the bass note for the IV chord (the Bb Major chord). Some other theoretical F tunings would also have the B*b* note for the IV chord on the fifth string or the sixth string – *(also see the **CHART OF RECORDED TUNINGS –Section IVa**, in the **F tunings** section; and also see the **SUMMARY OF NON-RECORDED TUNINGS –Section VI**, in the **F tunings** sections).*

Also, sometimes the open bass note for the II chord is present on an open string – for example in two C Wahine Tunings: *(C–G–D–G–B–D) -(#C-5)* [and the related B*b* tuning *(F–Bb–C–F–A–C) -(#Bb-5)***,** which is often tuned up to the key of C *(G-C-D-G-B-D) -(#C-5)*], and *(C–G–D–G–B–E) -(#C-7)* [and the related B*b* tuning *(F–Bb–C–F–A–D) -(#Bb-8)***,** which is often tuned up to the key of C *(G-C-D-G-B-E) -(#C-8)*]. In these C Wahine tunings the fourth string open D note is the bass note for the II chord (or the II7 chord), here the D Major chord (or the D7th chord) [and in the related B*b* tunings the bass note for the II chord is the C note].

Also, in more modern times the minor ii chord or the minor ii7 chord is sometimes used (in the key of C it is the D minor chord or the D minor 7th chord). Some other theoretical C tunings would also have the D note for the II chord on the fourth string or the sixth string – *(also see the **CHART OF RECORDED TUNINGS –Section IVa**, in the **C tunings** sections; and also see the **SUMMARY OF NON-RECORDED TUNINGS –Section VI**, in the **C tunings** sections).*

Slack Key guitarists almost always play in the key that the tuning is in, although sometimes they modulate to, or even play the whole song in the key of the IV chord, or sometimes the key of the V chord.

The late great Slack Key guitarist Leland "Atta" Isaacs, of the celebrated Isaacs musical family, often played in keys other than the one the guitar was tuned to. In his C Major Tuning *(C-G-E-G-C-E) -(#C-1),* in addition to the key of C, he often played in the key of F (the IV chord) – one of the most notable examples is his classic rendition of the song *How'd Ya Do*, where he played the song in the key of F, and the bridge modulates to the key of B*b* (the flat VII chord). He also sometimes played songs (or modulated to in parts of songs) in the key of G (the key of the V chord) and the key of D (the key of the II chord), and occasionally in the keys of A (the key of the VI chord) and B*b* (the key of the flat VII chord) [see ***HAWAIIAN RECORDINGS IN THE SLACK KEY TUNINGS -SECTION V***, under the C Major Tuning *(C-G-E-G-C-E) -(#C-1)*].

Atta almost always played with accompaniment by other musicians, and he usually concentrated on mainly playing the four highest pitched strings, rather than keeping his own bass pattern going on the lowest pitched strings (although of course, he could keep the bass pattern going when he wanted to, as other Slack Key guitarists usually do).

Bla Pahinui, when playing in the Dropped D Tuning *(D–A–D–G–B–E) -(#D-8)*, occasionally plays in the key of the IV chord (the key of G) - for example, on the song *Wahine U'i.* He also occasionally plays in the key of C in this tuning (the flat VII chord) - for example on the song *Pupu Hinuhinu,* and for part of the song *Moonlight Lady*.

Keola Beamer, playing in his C Wahine Tuning *(C–G–D–G–B–E) -(#C-7),* also occasionally plays in the key of the IV chord (the key of F) - for example, on the song *Ka Wailele O 'Akaka ['Akaka Falls]*.

The most prominent example of temporarily modulating to the key of the IV chord within a song, is the classic *'Opihi Moemoe* by Leonard Kwan, played in the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1),* which modulates twice to the key of C (the IV chord). Another example is Ray Kane's version of *Na Hoa He `e Nalu*, which is also in the same G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1),* and he modulates two or three times to the key of C, depending on the length of the version he is playing. (Also see three paragraphs above about Atta Isaacs, and his rendition of *How'd Ya Do*).

Examples of playing in the key of the V chord of a tuning are: Ozzie Kotani plays the Queen Lili'uokalani composition *Ka Hanu O Evalina* in the key of D, when tuned to the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1)*; and Wayne Jacintho also plays in the key of D in the same G Major "Taro Patch" Tuning on

his unrecorded version of *He Aloha Mele.* Atta Isaacs, when tuned to his C Major Tuning *(C-G-E-G-C-E) -(#C-1)*, also often played in the key of the V chord (the key of G), or he often modulated in parts of some songs to the key of G. {For more on Atta Isaacs, see four paragraphs above; and also see ***HAWAIIAN RECORDINGS IN THE SLACK KEY TUNINGS -SECTION V***, under the C Major Tuning *(C-G-E-G-C-E) -(#C-1)*}.

2. THE FIVE CATEGORIES OF TUNINGS

There are four basic types of Slack Key tunings. Note, though, that there are various others that do not fit into these categories, and they will be put into a fifth ***Miscellaneous*** category throughout these documents.

1. ***Major Tunings –*** Tunings in a Major chord; or tunings containing a Major chord, usually on the three highest pitched strings.

2. ***Wahine Tunings –*** Tunings with the Major 7th note in them (the "ti" in the Major scale, the note just below the tonic 1st note). The open (unfretted) Major 7th note has two functions:
first, it can easily be "hammered on" to produce the 1st note of the tonic chord (the I chord) - a hammer-on is created by plucking a note and immediately fretting above the note to sound a second tone, which very successfully mimics and complements the Hawaiian vocals;
and second, this note is also the open 3rd note of the very strong dominant chord (the V chord), in Wahine Tunings. (For more on Wahine Tunings, see *Wahine Tuning* in the ***Glossary -Section VII***).

Sometimes Wahine Tunings will have the whole open (unfretted) dominant V chord in the tuning, such as in the following tunings:

a. The F Wahine "Gabby's F Tuning" *(F–C–E-G–C–E) -(#F-2)* – it has the whole V chord, the C Major chord, on the five highest pitched strings.

b. The F Wahine "Leonard's F Tuning" *(C–F–C–G–C–E) -(#F-3)* – it has the whole V chord, the C Major chord, on the four highest pitched strings.

c. The C Wahine "Leonard's C Tuning" *(C–G–D–G–B–D) -(#C-5)* – it has the whole V chord, the G Major chord, on the five highest pitched strings.

d. In a theoretical A Wahine Tuning invented by Mika'ele Mike McClellan, that no one has yet recorded in *(D–A–C#–E–G#–B,* and it can be tuned up one half step to the key of B*b*, yielding *Eb-Bb-D-F-A-C* - see *tuning #Wahine Bb-1* in ***Summary of Non-Recorded Tunings -Section VI*** *)* -

it has the whole open V chord, the E Major chord (or the F Major chord in the key of B*b*), on the three highest pitched strings.

Also, in Hawai`i, the dominant V chord is often called the "Second" chord. For example, in the key of C, the dominant V chord would be the G Major chord or G7th chord, and it would be called "Second C." In the key of G, it would be the D Major or D7th chord, and it would be called "Second G."

For reference, see the chart below of "Second Chords" for the six families of keys:

Key	**Second chord**
G:	D, D7
C:	G, G7
D:	A, A7
F:	C, C7
B*b*:	F, F7
A:	E, E7

(For more on this see *Second G* in the ***Glossary -Section VII****).*

3. ***Mauna Loa Tunings —*** Tunings based on a Major chord with the two highest pitched strings tuned a fifth interval apart. This way, the two highest pitched thinnest strings in a Mauna Loa Tuning can easily be played in sixth intervals (intervals that in many other tunings {where most of the four highest pitched strings are tuned a fourth interval apart, a Major third interval apart, or a minor third interval apart}, are played on the first and third strings, or on the second and fourth strings), producing the recognizably sweet sound that Mauna Loa Tunings bring out. The sixth intervals on the two highest pitched strings can also be "frailed" (strummed rapidly) with the index finger, producing another characteristic sound of this tuning.

4. ***Ni`ihau*** or ***Old Mauna Loa Tunings —*** Tunings in which two successive strings are tuned a fourth interval apart, with the 6th note of the scale on the lower pitched string of the two strings and the 2nd note of the scale on the higher pitched string of the two. This allows the player to hammer-on notes on these two successive strings, starting on the lower of the two, which is a characteristic sound of this type of tuning (a hammer-on is created by plucking a note and immediately fretting above the note).

5. There is a fifth category of ***Miscellaneous*** tunings that don't fit into any of these categories.

3. THE SIX FAMILIES OF KEYS

Each of the five types of Slack Key tunings listed just above in ***THE FIVE CATEGORIES OF TUNINGS***, are found within the six families of keys of tunings, which are the keys of G, C, D, F, A, and B*b*. The most common tunings are in the key families of G and C. The second most common is D; the third most common are F and B*b*; and the fourth most common is A.

Within these families, there can be many tuning variations depending on the taste of each player. In addition, these keys can be raised or lowered from standard concert pitch for the sound desired on the guitar, and more commonly, to accommodate the vocal range of the singer. For example, Ray Kane often tunes the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1)* down to F#, F, or E; and the late Sonny Chillingworth sometimes tuned the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1)* up to A*b* or A. The late Gabby Pahinui sometimes tuned his C Wahine "Gabby's Hi'ilawe" Tuning *(C-G-E-G-B-E) -(#C-11)* and the C Mauna Loa Tuning *(C-G-E-G-A-E) -(#C-22)* down to the keys of B, B*b*, A, A*b*, or even very occasionally as low as G, and he also occasionally tuned them up to the key of C#. Slack Key guitarist Dennis Kamakahi often tunes the same C Mauna Loa Tuning *(C-G-E-G-A-E) -(#C-22)* down to the keys of B*b*, A, or A*b*; and he often tunes the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1)* down to the keys of F, E, E*b*, or even very occasionally as low as D.

Also, some guitarists use a capo (a clamp or strap on the fretboard) to raise the pitch. In the early years of Slack Key, guitar capos were not available, so tunings were developed in the six keys to accompany the range of the vocalists. Taking into account the raising or lowering of the keys from concert pitch, the whole range of twelve keys within an octave was covered. *(See **CHART OF RECORDED TUNINGS -SECTION IVa**).*

KEY (CONCERT PITCH) OF THE TUNING	KEYS TO WHICH THESE TUNINGS ARE SOMETIMES LOWERED	KEYS TO WHICH THESE TUNINGS ARE SOMETIMES RAISED
C	B, B*b*, A, A*b*, G	C#
D	C#, C, B	E*b*, E
F	E, E*b*	(Rarely Raised)
G	F#, F, E, E*b*, D	A*b*, A
A	A*b*, G, F#, F	B*b*, B
B*b*	A, A*b*	B, C

1. ***G Tunings***: The key of G is the most common one used in the Slack Key tradition. One of the main characteristics of G Tunings is they have the fifth note of the scale, the D note, on the fourth string; and they have the tonic note, the G note, on the fifth string.

The G Major Tuning *(D–G–D–G–B–D) -(#G-1),* usually called "Taro Patch Tuning" in Hawai'i, is the most common tuning used in the Slack Key tradition, and the key of G is the most common key used. This tuning is prominently used by most Slack Key guitarists. (The G Major "Taro Patch" Tuning is also very common in Mainland America and was often called "Spanish Tuning" in the late 1800s and early 1900s, after the well known 1800s American instrumental piece *Spanish Fandango*, which is in the G Major Tuning. It is also popular in Europe, and is sometimes used in other parts of the world.)

Also often used are the G Wahine Tuning *(D–G–D–F#–B–D) -(#G-4)*, and the G Mauna Loa Tuning *(D–G–D–D-G–D) –(#G-6).*

Occasionally Leonard Kwan played in a G Old Mauna Loa/ Ni'ihau Tuning *(D–G–D–E-A–D) -(#G-11).* Sonny Chillingworth occasionally played in another G Old Mauna Loa/ Ni'ihau Tuning *(C–G–D–E-A–D) -(#G-12),* which is one note different from the one that Leonard Kwan used, with the lowest pitched sixth string tuned down to C.

Also, the G Sixth Tuning *(D–G–D–G–B–E) -(#G-13)*, is used prominently by Keola Beamer and Cindy Combs (it is also popular in Mainland America and Europe, and is often called "Dropped G Tuning").

2. ***C Tunings***: The key of C is the second most common key that is used in the Slack Key tradition. One of the main characteristics of C Tunings is they have the second or the third note of the scale, the D or the E note, on the fourth string; and they have the tonic note, the C note, on the sixth string

Wahine Tunings are the most frequently played tunings in the key of C. The late Gabby Pahinui played almost completely in C tunings in the last decade of his life, using his C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) -(#C-11)*; and he also used the popular C Mauna Loa Tuning *(C–G–E-G-A-E) -(#C-22)*, which he easily retuned to from his C Wahine Tuning, by lowering the second highest pitched string from the B note in the C Wahine Tuning down two half steps to the A note (making it the C Mauna Loa Tuning).

The late Leonard Kwan's favorite tuning was the commonly used C Wahine "Dropped C" Tuning *(C–G–D–G–B–D) -(#C-5)*, and it has often been called "Leonard's C." This C Wahine Tuning is the second most used tuning in the

Slack Key tradition (after the G Major "Taro Patch" Tuning *[D–G–D–G–B–D] -[#G-1],* which is one note different from this C Wahine Tuning, on the lowest pitched sixth string, which is why this C Wahine Tuning sometimes is called "Dropped C" Tuning). It has also been prominently and often used by Sonny Chillingworth, Led Kaapana, George Kuo, Ozzie Kotani, George Kahumoku, Jr., and occasionally by Keola Beamer.

Also, there are some C Wahine tunings from the Island of Ni`ihau that have the fourth string tuned down to C. For example, the Kaua'i Slack Key guitarist Wayne Jacintho occasionally plays a C Wahine Tuning *(C–G–C–G–B–D) -(#C-15),* that he learned from a woman from Ni'ihau who had moved to Kaua'i. The Ni'ihau Slack Key guitarist Malaki Kanahele occasionally uses a different C Wahine Tuning *(G–C–C–G–B–E) -(#C-18)*, with the fourth string also tuned down to C.

Mauna Loa Tunings are also very often played in the key of C, and the most common C Mauna Loa Tuning *(C-G–E–G–A–E) -(#C-22)* has been used prominently by the late Gabby Pahinui, as well as by George Kuo, Dennis Kamakahi, and Pat Cockett, and occasionally by Cyril Pahinui, and Ozzie Kotani.

Leonard Kwan occasionally played a C Mauna Loa Tuning *(C–G–C–G–A–E) -(#C-24)*, that has been used in Samoa (and maybe in Ni'ihau as well), with the fourth string tuned down to C.

Sonny Chillingworth played another C Mauna Loa Tuning *(F–G–C–G–A–E) -(#C-25)*, that also appears in Samoa, with the fourth string tuned down to C and the lowest pitched sixth string tuned up to F. He also occasionally used a Samoan type C Major Tuning *(F–G–C–G–C–E) -(#C-4)*. These two Samoan tunings are unique because: they have the lowest pitched string open (unfretted) for the F chord (the IV chord); and also because the C chord (the I chord), the F chord (the IV chord), and G chord (the V chord) in these two tunings all have open strings - the C on the fourth string, the F on the sixth string, and the G on the fifth string.

The C Major Tuning *(C–G–E–G–C–E) -(#C-1)* has been used prominently by the late Atta Isaacs, Sr. and by his son, the late Atta Isaacs, Jr., as well as by Cyril Pahinui, and Atta's nephew Wayne Reis. A different C Major Tuning *(C–G–C–G–C–E) -(#C-3)* is used often in Mainland America and Europe, but just occasionally in Hawai'i. Sonny Chillingworth also occasionally used a Samoan type C Major Tuning *(F–G–C–G–C–E) -(#C-4)*, described in the paragraph just above, which is the same tuning as the C Major Tuning used in Mainland America and Europe *(C–G–C–G–C–E) -(#C-3)*, except that the lowest pitched sixth string is tuned up to F.

3. ***D Tunings***: The key of D is the third most often used key in the Slack Key tradition. One of the main characteristics of D Tunings is they have the tonic note, the D note, is on the sixth string; and the fifth note of the scale, the A note, is on the fifth string. The D Tunings have often been: Wahine Tunings, the D Major Tuning, the Ni'ihau/ Old Mauna Loa Tunings, and various miscellaneous tunings.

D Wahine Tuning *(D–A–D–F#–A–C#) -(#D-4)* was played more often in the past and has been used occasionally by Leonard Kwan, Ray Kane, Keola Beamer, Sonny Chillingworth, and Led Kaapana, as well as by older recorded players, including the late Tommy Blaisdell, the late Tommy Solomon, and the late George Keoki Davis.

Cyril Pahinui prominently uses the D Major Tuning *(D–A–D–F#–A–D) -(#D-1)*. Sometimes Keola Beamer, Moses Kahumoku, and Kapono Beamer use the D Major Tuning as well. (The D Major Tuning is a common tuning in Mainland America, where it was sometimes called "Vestapol Tuning" in the late 1800s and the early 1900s, named for the late 1800s American instrumental piece *The Siege of Sebastapol*, which is in the D Major Tuning, with the word "Sebastapol" shortened to "Vestapol" for the name of the tuning. It is also popular in Europe, and is sometimes used in other parts of the world.)

Cyril Pahinui also uses the D Ni`ihau/Old Mauna Loa Tuning *(D–A–D–F#–B–E) -(#D-7)*, which is a variation on the D Major Tuning (*D–A–D–F#–A–D) -(#D-1),* using the four lowest pitched strings of that tuning; and it is also a variation on the Standard Tuning *(E-A-D-G-B-E) -(#C-33)*, using the first and second highest pitched strings as well as the fourth and fifth strings of the Standard Tuning. Kapono Beamer and Pat Cockett also occasionally use this D Ni'ihau/ Old Mauna Loa Tuning *(D–A–D–F#–B–E) –(#D-7).* (This tuning is also occasionally used in Mainland America, Europe, and very occasionally in the Classical guitar tradition and in the Spanish Flamenco guitar tradition).

Also Cyril Pahinui's D Ni'ihau/ Old Mauna Loa Tuning *(D–A–D–F#–B–E) -(#D-7)* is one note different from the Dropped D Tuning *(D–A–D–G–B–E) -(#D-8),* where the fourth string would be tuned from the G note down to the F# note for Cyril's D Ni'ihau/ Old Mauna Loa Tuning *(D–A–D–F#–B–E) -(#D-7).*

The Dropped D Tuning *(D–A–D–G–B–E) -(#D-8),* is most prominently used by Bla Pahinui, and it is also one note different from the Standard Tuning *(E–A–D–G-B–E) –(#C-33)*, with the lowest pitched sixth string tuned from the E note down two half steps to the D note. It is also used occasionally by Led Kaapana.

(It is also very common in Mainland America, Europe, in the Classical guitar tradition, and elsewhere).

Another D tuning is the D Sixth Tuning *(D–A–D–F#–B–D) -(#D-9)*, where the second highest pitched string in the D Major Tuning *(D–A–D–F#–A–D) -(#D-1)* is tuned from the A note up to the B note. It is used often by Carlos Andrade, Pat Cockett, and Kapono Beamer, as well as occasionally used by Moses Kahumoku, and the Japanese Slack Key guitarist Yuki Yamauchi.

4. ***F Tunings***: The key of F is the fourth most used tuning in the Slack Key tradition. F Tunings have no common characteristics.

F tunings are almost always Wahine Tunings. The late Gabby Pahinui prominently used an F Wahine Tuning *(F–C–E-G–C–E) -(#F-2),* that is often called "Gabby's F." The late Leonard Kwan prominently used another F Wahine Tuning *(C–F–C–G–C–E) -(#F-3),* that is often called "Leonard's F", and Keola Beamer often uses this tuning as well.

Mike McClellan has also recorded one song in an unusual F Mauna Loa Tuning *(F–Bb–C–F–A–E) -(#F-5)*, which is of his own invention, and which is also a Wahine Tuning since it has a Major 7th note in it (as well as having a fifth interval between the two highest pitched strings, making it a Mauna Loa tuning as well).

Sometimes the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1)* is tuned down to the key of F.

5. ***Bb Tunings***: The key of B*b* is the fifth most often used key in the Slack Key tradition. As with C Tunings, one of the main characteristics of B*b* Tunings is they have the second or the third note of the scale, the D or the E note, on the fourth string; and they have the tonic note, the B*b* note, on the fifth string.

B*b* tunings are almost always Wahine Tunings and Mauna Loa Tunings. B*b* tunings and C tunings are related - to convert a C tuning to a B*b* tuning, the fifth and sixth lowest pitched strings are reversed in pitch and tuned up: the lowest pitched sixth string in a C tuning is tuned from the tonic (the 1st note of the scale) up to the dominant (the 5th note of the scale); and the next to the lowest pitched fifth string is tuned from the dominant (the 5th note of the scale) up to the tonic (the 1st note of the scale). The result is a B*b* type tuning..

Thus, in changing from a C to B*b* tuning, on the two lowest pitched strings, the tonic chord (the I chord) becomes the dominant chord (the V chord) and the dominant chord becomes the tonic chord. Otherwise, the other intervals relative to each other on the four highest pitched strings stay the same. The whole tuning is often tuned down from the key of C to the key of B*b*, since the fifth and sixth strings are tuned up several pitches to create a B*b* tuning, to reduce the tension on those two lowest pitched strings (or if the player and/or vocalist wants the tonality of B*b*).

The B Flat Tunings also reflect the

[*Therefore, in all sections of this Slack Key Information Book the Bb tunings are listed with the same number as the C tunings that they are related to*]

The following chart compares the common C and B*b* Mauna Loa Tunings:

String # *(highest pitched string to the lowest pitched string)*	**C Mauna Loa Tuning** *The scale note to which open strings are tuned to in the C Mauna Loa Tuning, and the scale tone of that note*	**B*b* Mauna Loa Tuning** *The scale note to which open strings are tuned to in the Bb Mauna Loa Tuning, and the scale tone of that note (in this chart this Tuning is listed here tuned up to the key of C)*
1	E –3rd note of the scale	E –3rd note of the scale
2	A –6th note of the scale	A –6th note of the scale
3	G –5th note of the scale	G –5th note of the scale
4	E –3rd note of the scale	E –3rd note of the scale
5	G –5th note of the scale	C –1st note of the scale *(tuned up five half steps from the C Mauna Loa Tuning fifth string G note)*
6	C –1st note of the scale	G –5th note of the scale *(tuned up seven half steps from the C Mauna Loa Tuning low sixth string C note)*

The B*b* Mauna Loa Tuning *(F–Bb–D–F–G–D) -(#Bb-23)* [or *(G-C-E-G-A-E) -(#C-23)*, when it is tuned up to the key of C] has been used prominently by Led Kaapana and Peter Moon, both who often tune their B*b* Mauna Loa Tunings up to the key of C, which is a common practice.

Led Kaapana also sometimes uses a B*b* Wahine Major 7th/9th Tuning *(F-Bb–D–F–A–C) -(#Bb-14)* [or *(G-C-E-G-B-D) -(#C-14)* , when it is tuned up to the key of C], and Leonard Kwan occasionally used another B*b* Wahine Tuning *(F–Bb–D–F–A–D) -(#Bb-12)* [or C *(G-C-E-G-B-E) -(#C-12)*, when it is tuned up to the key of C].

Also, C tunings are often tuned down to the key of B*b* without reversing the pitches of the lowest pitched sixth and fifth strings, and sometimes the A Mauna Loa Tuning *(E–A–E–E–F#–C#) -(#A-1)* can be tuned up to the key of B*b*.

6. ***A Tunings:*** The key of A family of tunings is the one used least in the Slack Key tradition. As with the G Tunings, one of the main characteristics of an A Tuning is the fifth note of the scale, the E note, is on the fourth string; and the tonic note, the A note, is on the fifth string.

The one A Tuning that has been used on recordings is an A Mauna Loa Tuning that is played by Ray Kane *(E–A–E–E–F#–C#) -(#A-1)*.

Gabby Pahinui sometimes tuned his C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) -(#C-11)* and the C Mauna Loa Tuning *(C–G–E–G–A–E) -(#C-22)* down to the key of A; and sometimes George Kuo and Dennis Kamakahi also do this for the C Mauna Loa Tuning *(C–G–E–G–A–E) -(#C-22)* as well as for the C Wahine "Dropped C" or "Leonard's C" Tuning *(C–G–D–G–B–D) -(#C-5).*

Sonny Chillingworth often tuned the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1)* up to the key of A. Also sometimes the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1)*, the G Wahine Tuning *(D-G-D-F#-B-D) -(#G-4)*, the G Mauna Loa Tuning *(D-G-D-D-G-D) -(#G-6),* the G Ni`ihau/Old Mauna Loa Tuning *(D-G-D-E-A-D) -(#G-11)*, and other G Tunings are also tuned up to the key of A.

Also sometimes the B*b* tunings are tuned down to the key of A.

4. POSSIBLE EVOLUTION OF SLACK KEY TUNINGS

These tunings and keys are related to each other like a family tree. Some C tunings and D tunings are related to G tunings and may have been derived from them. F tunings are related to C tunings and may have been derived from them. B*b* tunings are closely related to C tunings (as they are the same as the C

tunings, except they are tuned down from C to B*b*, and the two lowest pitched strings are reversed in pitch - *see #5 in the above section* ***THE SIX FAMILIES OF KEYS***). Also, A tunings are somewhat related to G tunings.

Though no one knows for sure how Slack Key tunings may have evolved, below is a discussion of possible ways.

(Note: For the rest of this section, the B*b* tunings [with the two lowest pitched strings reversed in pitch from the C tunings, and tuned up], will appear in brackets just after the C tuning [since tuning a C tuning to a B*b* tuning is often an option] – they will also be in brackets when the B*b* tunings are listed with the respective pitches when the whole B*b* tuning is tuned up two half steps to the key of C, to make it easier to refer the B*b* tunings to their related C tunings. The respective C tuning listed after a B*b* tuning will also be in brackets to clearly accent their relationship. And in all sections of this Slack Key Information Book, the B*b* tunings are listed with the same chart number as the C tunings that they are related to).

At least seven of the C tunings have been (or could be) converted to B*b* tunings - *see the* ***CHART OF RECORDED TUNINGS –Section IVa****, and go to* ***Bb Tunings****; and also see the* ***SUMMARY OF NON-RECORDED TUNINGS – Section VI****, and go to* ***Bb Tunings;*** *also see #15 below in this* ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section.*

1. It is likely that one of the earliest Hawaiian tunings was derived from the Standard Spanish Tuning *(E–A–D–G–B–E) –(#C-33)*, by retuning the two lowest pitched strings of the guitar. The lowest pitched sixth string in the Standard Tuning, the E note, may have been tuned down four half steps to the C note; and the next lowest pitched fifth string, the A note, may have been tuned down two half steps to the G note. This would have put the guitar in a C Wahine Tuning, often called "Keola's C Tuning" *(C–G–D–G–B–E) -(#C-7)*, with the four highest pitched strings remaining the same as the Standard Tuning *(E–A–D–G–B–E) –(#C-33).*

[Alternatively, the sixth string E note may have been tuned up three half steps to the G note and also the fifth string A note tuned up three half steps to the C note, to create a related B*b* Wahine Tuning *(F–Bb–C–F–A–D) -(#Bb-8),* which is often tuned up to the key of C *(G-C-D-G-B-E) -(#C-8),* with the four highest pitched strings also remaining the same as the Standard Tuning *(E–A–D–G–B–E) –(#C-33)*].

This C Wahine Tuning allows the Standard Tuning fingerings to be played on the four highest pitched strings, and it also allows two open (unfretted) bass notes on the two lowest pitched strings: the C note for the tonic I chord (the C chord) on the lowest pitched sixth string, and the G note for the dominant V chord (the G chord) on the next lowest pitched fifth string.

[Or in the related B*b* tuning *(F–Bb–C–F–A–D) -(#Bb-8),* which is often tuned up to the key of C *(G-C-D-G-B-E) -(#C-8)*, the two bass notes (listed here in the key of C) would be: the G note for the dominant V chord (the G chord) on the lowest pitched sixth string; and the C note for the tonic I chord (the C chord) on the next lowest pitched fifth string].

Many of the early (and current) Hawaiian songs used just the tonic I chord and the dominant V chord, and these two Slack Key tunings listed in the previous paragraphs just above (and in the paragraph and chart just below) allow those songs to be played easily with the two open (unfretted) bass notes; and these tunings, like most Slack Key tunings, also produce a nice resonant sound.

For this C Wahine "Keola's C" Tuning *(C–G–D–G–B–E) -(#C-7)* [and the related B*b* Wahine Tuning *(F–Bb–C–F–A–D) -(#Bb-8),* often tuned up to the key of C *(G-C-D-G-B-E) -(#C-8)*], the guitar is retuned from the Standard Tuning *(E–A–D–G–B–E) –(#C-33)* as follows:

String Number *(from highest pitched to lowest pitched string)*	Standard Tuning		C Wahine Tuning
1	E	=	E (same note)
2	B	=	B (same note)
3	G	=	G (same note)
4	D	=	D (same note)
5	A	➔	Down two half steps to G [or up three half steps to C for tuning]
6	E	➔	Down four half steps to C [or up three half steps to G for a B*b* tuning]

(Also see #13 and #14 below in this ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section).*

2. Further experimentation probably led to the fourth string D note being tuned up two half steps to the E note, yielding another C Wahine Tuning, often called "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) -(#C-11)* [and the related B*b* Wahine Tuning *(F-Bb-D-F-A-D) -(#Bb-12)*, often tuned up to the key of C *(G-C-E-G-B-E) -(#C-12)*]. This C Wahine Tuning *(C–G–E–G–B–E) -(#C-11)* also enabled the fourth string E note to be easily fretted to produce the F note, which is the 7th note of the dominant V chord (the G chord).

3. Further experimentation, by tuning the second string B (the Major 7th) note down two half steps to the A note (the 6th), would have yielded the C Mauna Loa Tuning *(C–G–E–G–A–E) -(#C-22)* [and the related B*b* Mauna Loa Tuning *(F-Bb-D-F-G-D) -(#Bb-23)*, often tuned up to the key of C *(G-C-E-G-A-E) -(#C-23)*].

In Mauna Loa Tunings, the two highest pitched strings are tuned a fifth interval apart, so that the commonly played sixth intervals in Hawaiian music are played on the two highest pitched strings (intervals which in many other tunings are normally played on the first string and the thicker third string, or on the second and fourth strings - in most other tunings the four highest pitched strings are tuned either a fourth interval apart, or a Major third interval apart, or a minor third interval apart).

This main principle of Mauna Loa Tuning (with the two highest pitched strings tuned a fifth interval apart) may have also led to experimentation in the key of G, creating the most common Mauna Loa Tuning in that key (*D–G–D–D–G–D*) -*(#G-6)*, which was derived from the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1)* as follows: by tuning the second string B note (the 3rd note) down to the G note (the tonic 1st note), in order to have the fifth interval between the first and second strings; as well as tuning the third string G note (the tonic 1st note) down to the D note (the 5th note), which is the same note as the fourth string D note, to create a powerful drone quality, which is a unique characteristic of this G Mauna Loa Tuning *(D–G–D–D–G–D) -(#G-6)*. Another characteristic of this tuning is that all the strings are only tuned either to the tonic 1st note (the G note) or the dominant 5th note (the D note):

String Number *(from highest pitched to lowest pitched string)*	G Major "Taro Patch" Tuning	G Mauna Loa Tuning
1	D	= (same note) D
2	B	➔ Down four half steps to G

	3	G	➔ Down five half steps to D
	4	D	= (same note)
D			
	5	G	= (same note)
G			
	6	D	= (same note)
D			

The drone characteristic is also present in the A Mauna Loa Tuning *(E-A-E-E-F# -C#) -(#A-1)* – also, the A Mauna Loa Tuning has the 6th note (the F# note in the key of A) on the second string, and the 3rd note (the C# note in the key of A) on the first string, as does the popular C Mauna Loa Tuning *(C–G–E–G–A–E) -(#C-22)* [and the related B*b* Mauna Loa Tuning *(F-Bb-D-F-G-D) -(#Bb-23)*, often tuned up to the key of C *(G-C-E-G-A-E) -(#C-23)*]. *(For more on the A Mauna Loa Tuning, see #16 below in this* ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section).*

4. Subsequent experimentation possibly resulted in the C Major Tuning, which is often called "Atta's C Tuning" *(C–G–E–G–C–E) -(#C-1)*, by tuning the second highest pitched string in the C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) -(#C-11)* from the B note (the Major 7th note) up one half step, to the C note (the tonic I note) – yielding the C Major "Atta's C Tuning" Tuning *(C–G–E–G–C–E) -(#C-1)*

Another way the C Major "Atta's C" Tuning (*C–G–E–G–C–E*) -*(#C-1*) could have evolved, is from the popular C Wahine Tuning, which is often called "Dropped C Tuning" or "Leonard's C Tuning" *(C–G–D–G–B–D*) -(*#C-5).* Here the guitarists could have created the C Major "Atta's C" Tuning *(C–G–E–G–C–E) –(#C-1)* by first forming a C Major chord in the "Dropped C" Tuning *(C–G–D–G–B–D*) -(*#C-5)*, by fretting three strings: the first string on the second fret (the E note), the second string on the first fret (the C note), and the fourth string on the second fret (the E note) - then the three fretted first, second, and fourth strings could have been tuned up to the notes they were fretted to, which would allow those notes to be played open (unfretted), producing the C Major "Atta's C" Tuning (*C–G–E–G–C–E*) -*(#C-1)*.

String Number *(from highest pitched to lowest pitched string)*	Dropped C Tuning	C Major "Atta's C" Tuning
1	D	➔ Up two half steps to E
2	B	➔ Up one half step to C
3	G	= (same note) G
4	D	➔ Up two half steps to E
5	G	= (same note) G
6	C	= (same note) C

{This same process (of creating a new tuning, by tuning the strings to the notes of a chord formed with the left hand fingers on the fretboard) is also a way that four other tunings could have evolved out of the Standard Tuning *(E–A–D–G–B–E) –(#C-33) - also see #5 below, the* ***Possible Standard Tuning Roots of Some Tunings*** *part, in this* ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section*}.

Then, going in another direction to yield the C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) -(#C-11)*, going to it from the C Major "Atta's C" Tuning *(C–G–E–G–C–E) -(#C-1*), the guitarists could have tuned the second highest pitched string down one half step from the C note (the tonic 1st note) to the B note (the Major 7th note) - yielding the C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) -(#C-11)*.

Then from here, the guitarists probably evolved the C Mauna Loa Tuning *(C–G–E–G–A–E) -(#C-22)*, by tuning the second highest pitched string in the C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) -(#C-11)* from the B note (the Major 7th note) down two half steps to the A note (the 6th note), making a fifth interval between the second string and the highest pitched first string - yielding the C Mauna Loa Tuning *(C–G–E–G–A–E) -(#C-22)*.

Still further experimentation could possibly have evolved the F Wahine Tuning, often called "Gabby's F" *(F–C–E–G–C–E) -(#F-2)*, in which the four highest pitched strings are tuned the same as in the C Major "Atta's C" Tuning (*C–G–E–G–C–E) -(#C-1*), and the lowest pitched sixth string is tuned up from the C note to the F note (the tonic 1st note), and the next lowest pitched fifth string is tuned up from the G note to the C note (the 5th note) - yielding the F Wahine "Gabby's F" Tuning *(F–C–E–G–C–E) -(#F-2)*;

String Number (from highest pitched to lowest pitched string)	C Major "Atta's C" Tuning	F Wahine "Gabby's F" Tuning
1	E	= (same note) E
2	C	= (same note) C
3	G	= (same note) G
4	E	= (same note) E
5	G	➔ Up five half steps to C
6	C	➔ Up five half steps to F

Also, from the F Wahine "Gabby's F" Tuning *(F–C–E–G–C–E) -(#F-2),* the lowest pitched sixth string could have been tuned down from the F note (the tonic 1st note) to the C note; with the fifth string tuned down from the C note to the F note; and the fourth string tuned down from the E note to the C note - yielding another F Wahine Tuning (*C–F–C–G–C–E*) *-(#F-3)*, often called "Leonard's F."

String Number (from highest pitched to lowest pitched string)	F Wahine "Gabby's F" Tuning	F Wahine "Leonard's F" Tuning
1	E	= (same note) E
2	C	= (same note) C
3	G	= (same note) G
4	E	➔ Down four half steps to C
5	C	➔ Down seven half steps to F
6	F	➔ Down five half steps to C

*– (Also see #12 below in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section).*

This F Wahine "Leonard's F" Tuning (*C–F–C–G–C–E*) *-(#F-3)*, could also have evolved from the G Major "Taro Patch" Tuning in this way:

String Number *(from highest pitched to lowest pitched string)*	G Major "Taro Patch" Tuning	F Wahine "Leonard's F" Tuning
1	D	➔ Up two half steps to E
2	B	➔ Up one half step to C
3	G	= (same note) G
4	D	➔ Down two half steps to C
5	G	➔ Down two half steps to F
6	D	➔ Down two half steps to C

*– (Also see #12 below in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section).*

Another possibility is that Slack Key guitarist Atta Isaacs could have evolved the C Major "Atta's C" Tuning (*C–G–E–G–C–E) –(#C-1*), from hearing Gabby Pahinui play both the C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) –(#C-11)*, and the F Wahine "Gabby's F" Tuning *(F–C–E–G–C–E) –(#F-2)* - and Atta could have then combined elements of both of them, by using basically the C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) -#C-11)* - but tuning the second highest pitched string B note (the Major 7th) one half step up from the B note to the C note (the tonic 1st note), the same note that the second string is tuned to in the F Wahine "Gabby's F" Tuning *(F–C–E–G–C–E) –(#F-2)*.

Or very possibly, when Atta Isaacs was playing with Gabby Pahinui, for example when Gabby was playing in the C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) –(#C-11)*, Atta could have wanted to play in a different tuning to compliment Gabby's playing (as is common with Slack Key guitarists playing together), so he could have tuned the second highest pitched string B note (the Major 7th) up one half step to the C note (the tonic 1st note) - to yield the C

Major "Atta's C" Tuning *(C–G–E–G–C–E) –(#C-1). (Also see the sixth paragraph of #5 below, in the* ***Possible Standard Tuning Roots of Some Tunings*** *part, in this* ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section).* ***[Link]***

5. ***Possible Standard Tuning Roots of Some Tunings:***
Also, the F Wahine "Gabby's F" Tuning *(F–C–E–G–C–E) -(#F-2)* might have evolved from the five highest pitched strings being tuned to the same notes as the ones that are fretted to form the first position C Major chord in the Standard Tuning *(E-A-D-G-B-E) -(#C -33).* In the Standard Tuning, these strings are fretted to form the notes of the full C Major chord: the lowest pitched sixth string is fretted on the third fret, making the G note; the fifth string is fretted on the third fret, making the C note; the fourth string is fretted on the second fret, making the E note; the third string is the open (unfretted) G note; the second string is fretted on the first fret, making the C note; and the highest pitched first string is the open (unfretted) E note. Then the four fretted sixth, fifth, fourth, and second strings could have been tuned up to the notes they were fretted to, which would allow those notes to be played open (unfretted), yielding a C Major Tuning *(G–C–E–G–C–E) -(#C-2)*. Then the lowest pitched sixth string G note, would be tuned down two half steps to the F note {or the open (unfretted) E note in the Standard Tuning *(E–A–D–G–B–E) -(#C-33)*, would be tuned up one half step to the F note} for the tonic bass note - yielding the F Wahine "Gabby's F" Tuning *(F-C-E-G-C-E) -(#F-2)*.

This process is the one by which Slack Key guitarist Leonard Kwan went from the Standard Tuning to the F Wahine "Gabby's F" Tuning, which he occasionally used:

String Number *(from highest pitched to lowest pitched string)*	Standard Tuning	F Wahine "Gabby's F" Tuning
1	E	= (same note) E
2	B	➔ Up one half step to C
3	G	= (same note) G
4	D	➔ Up two half steps to E
5	A	➔ Up three half steps to C
6	E	➔ Up one half step to F

– (Also see #4 above, in the sixth paragraph, in this ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section).*

The B*b* tunings could have evolved from the Standard Tuning *(E–A–D–G–B–E) -(#C-33)*, in a similar way. The B*b* tunings all have the tonic 1st note (the B*b* note) on the fifth string, and the 3rd (the D note) on the fourth string – those

are the same relative notes on those same strings as the ones in the first position C Major chord in the Standard Tuning *(E–A–D–G–B–E) -(#C-33)*, where the tonic 1st note (the C note) is made when fretted on the fifth string at the third fret, and the 3rd (the E note) is made when fretted on the fourth string at the second fret.
In the Standard Tuning *(E–A–D–G–B–E) -(#C-33)*, these strings are fretted to form the notes of the full C Major chord: the lowest pitched sixth string is fretted on the third fret, making the G note; the fifth string is fretted on the third fret, making the C note; the fourth string is fretted on the second fret, making the E note; the third string is the open (unfretted) G note; the second string is fretted on the first fret, making the C note; and the highest pitched first string is the open (unfretted) E note.
Then the four fretted sixth, fifth, fourth, and second strings could have been tuned up to the notes they were fretted to, which would allow those notes to be played open (unfretted), yielding a C Major Tuning *(G–C–E–G–C–E) -(#C-2)* [or the B*b* Major Tuning *(F–Bb–D–F–Bb–D) -(#Bb-2)*, which is the same tuning, tuned down two half steps to the key of B*b* {the B*b* tunings are often tuned down to the key of B*b* because of the extreme raising of the two lowest pitched strings}]. Then, the four highest pitched strings could have been tuned in different ways, in the same ways as they are in their corresponding C tunings.

String Number *(from highest pitched to lowest pitched string)*	Standard Tuning	C Major Tuning *(Bb Major Tuning, tuned up to C for reference)*
1	E	= (same note) E
2	B	➔ Up two half steps to C
3	G	= (same note) G
4	D	➔ Up two half steps to E
5	A	➔ Up three half steps to C
6	E	➔ Up three half steps to G

*(Also see #15 below, **Bb Tunings**, in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section).*

Also, this C Major Tuning *(G–C–E–G–C–E) -(#C-2)* [or the B*b* Major Tuning *(F–Bb–D–F–Bb–D) -(#Bb-2)*, which is the same tuning, tuned down two half steps to the key of B*b*] could then have evolved to the C Major "Atta's C" Tuning *(C–G–E–G–C–E)-(#C -1)* by reversing the pitches on the lowest pitched sixth and fifth strings, while tuning them down in this way (staying in the key of C for reference): tuning the sixth string down seven half steps from the G note to the C note, and tuning the fifth string down five half steps from the C note to the G

(this is the opposite process of creating a B*b* tuning from a C tuning – *also see* ***Bb Tunings*** *in the* ***SIX FAMILIES OF KEYS*** *section above).*

Another tuning that could have been formed from a chord in the Standard Tuning *(E–A–D–G–B–E) -(#C-33)* is from the first position A Major chord, which is formed in this way: with open (unfretted) notes on the sixth string (the E note), the fifth string (the A note), and the first string (the E note); and three notes fretted on the second fret of the fourth, third, and second strings (making the E, A, and C# notes respectively). Then the three fretted fourth, third, and second strings could have been tuned up to the notes they were fretted to, which would allow those notes to be played open (unfretted), producing an A Major Tuning *(E-A-E-A-C# -E)*.

String Number *(from highest pitched to lowest pitched string)*	Standard Tuning	A Major Tuning
1	E	= (same note) E
2	B	➔ Up two half steps to C#
3	G	➔ Up two half steps to A
4	D	➔ Up two half steps to E
5	A	= (same note) A
6	E	= (same note) E

Then, when this whole tuning *(E-A-E-A-C# -E)* is tuned down two half steps (which it usually is because of the fairly extreme raising of the second, third, and fourth strings when this tuning is pitched to the key of A), it yields the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#-G-1).*

The G Major Tuning *(D–G–D–G–B–D) -(#G-1)* is the most popular of all tunings in the Slack Key tradition, and it is commonly called "Taro Patch" Tuning, which is a term used for this tuning more for the relationship of these intervals between the strings, than for what key the guitar is pitched to (which can be the keys of A, A*b*, G, F#, F, E, E*b*, or D). The intervals between the strings in "Taro Patch" Tuning are as follows:

Between strings #	half steps between strings	interval between strings
6 & 5	five	fourth
5 & 4	seven	fifth
4 & 3	five	fourth
3 & 2	four	Major third
2 & 1	three	minor third

*– (Also see #6 just below in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section).*

Another tuning that could have been formed from a chord in the Standard Tuning *(E–A–D–G–B–E) -(#C-33)* is from the first position E Major chord, which is formed this way: with open (unfretted) notes on the sixth string (the E note), the second string (the B note), and the first string (the E note); and with these three notes fretted in this way - the fifth string on the second fret (making the B note), the fourth string on the second fret (making the E note), and the third string on the first fret (making the G# note). Then the three fretted fifth, fourth, and third strings could have been tuned up to the notes they were fretted to, which would allow those notes to be played open (unfretted), producing an E Major Tuning *(E-B-E-G# -B-E)*. Then, when this whole tuning is tuned down two half steps (which it often is because of the fairly extreme raising of the three strings), it yields the D Major Tuning *(D-A-D-F# -A-D) -(#D-1)*.

String Number *(from highest pitched to lowest pitched string)*	Standard Tuning	E Major Tuning
1	E	= (same note) E
2	B	= (same note) B
3	G	➔ Up one half steps to G#
4	D	➔ Up two half steps to E
5	A	➔ Up two half steps to B
6	E	= (same note) E

*– (Also see #6 just below in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section).*

6. Another early tuning derived from the Standard Tuning *(E-A-D-G-B-E) –(#C-33),* was the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1),*with the lowest pitched sixth string E note tuned down two half steps to the D note, the fifth string A note tuned down two half steps to the G note, and the highest pitched first string E note tuned down two half steps to the D note - yielding the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)*.

Also the second, third, and fourth strings can be tuned up from the Standard Tuning *(E-A-D-G-B-E) –(#C-33)* to make a tuning that has the same relationship of intervals between the strings as the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)*, except the whole tuning is pitched up two half steps to the key of A in the following way: the second highest pitched string B note is tuned up two

half steps to the C# note, the third string G note is tuned up two half steps to the A note, and the fourth string D note is tuned up two half steps to the E note - yielding *E-A-E-A-C#-E*. *(Also see #5 above, in the next to last paragraph {the ninth paragraph}, in the **Possible Standard Tuning Roots of Some Tunings** part, in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section; and also see #14 below in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section).*

For the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) –(#G-1)*, the guitar is retuned from the Standard Tuning *(E–A–D–G–B–E) -(#C-33)* as follows:

String Number *(from highest pitched to lowest pitched string)*	Standard Tuning		G Major "Taro Patch" Tuning
1	E	➔	Down two half steps to D
2	B	=	(same note) B
3	G	=	(same note) G
4	D	=	(same note) D
5	A	➔	Down two half steps to G
6	E	➔	Down two half steps to D

The G Major Tuning *(D–G–D–G–B–D) -(#G-1)* is the most popular of all tunings in the Slack Key tradition, and it is commonly called "Taro Patch" Tuning, which is a term used for this tuning more for the relationship of these intervals between the strings, than for what key the guitar is pitched to (which can be the keys of A, A*b*, G, F#, F, E, E*b*, or D). The intervals between the strings in "Taro Patch" Tuning are as follows:

Between strings #	half steps between strings	interval between strings
6 & 5	five	fourth
5 & 4	seven	fifth
4 & 3	five	fourth
3 & 2	four	Major third
2 & 1	three	minor third

7. Further experimentation with the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)*, could have resulted with the lowest pitched sixth string being tuned down two half steps to the C note, which would have yielded the aforementioned very popular C Wahine "Dropped C" or "Leonard's C" Tuning *(C–G–D–G–B–D) -(#C-5). (Also see #13 and #14 below in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section).*

8. More experimentation with the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)*, was to tune the third highest pitched string G note down one half step to the F# note, yielding the popular G Wahine Tuning *(D–G–D–F#–B–D) -(#G-4)*, which has an open Major 7th note (the F# note in the G chord, the tonic I chord - and this same note is also the 3rd of the dominant D7th chord, the V7 chord).
A characteristic of this G Wahine Tuning *(D–G–D–F#–B–D) -(#G-4)* is a distinctive Spanish sound when playing the D7th chord. The intervals on the three highest pitched strings in this D7th chord (the open {unfretted} F# note on the third highest pitched string, the C note on the first fret of the second highest pitched string, and the open {unfretted} D note on the highest pitched first string) – these intervals are exactly the same intervals as a first position E7th chord in the key of A in the Standard Tuning *(E-A-D-G-B-E) –(#C-33)*, which is very common in Spanish and Mexican music (with the A*b* note on the first fret of the third highest pitched string, the D note on the second fret of the second highest pitched string, and the open {unfretted} E note on the highest pitched first string).

[Also, the B Flat Tunings also reflect the Spanish and Mexican influence – also see #15 below in this Section 4].

Tunings with a Major 7th note in them, such as this one, commonly called Wahine Tunings, enable the Major 7th note to be easily fretted (or rapidly hammered) back to the tonic 1st note, which very successfully mimics and complements Hawaiian vocals.

9. Then from the G Wahine Tuning *(D–G–D–F#–B–D) -(#G-4)*, further experimention could have yielded the D Major Tuning *(D–A–D–F#–A–D) -(#D-1),* by tuning the second string B note down to the A note, and tuning the fifth string G note up to the A note:

String Number *(from highest pitched to lowest pitched string)*	G Wahine Tuning		D Major Tuning
1	D	=	(same note) D
2	B	➔	Down two half steps to A
3	F#	=	(same note) F#
4	D	=	(same note) D
5	G	➔	Up two half steps to A

	6	D	= (same note) D

From here the D Wahine Tuning would have easily evolved, by tuning the highest pitched first string D note (the tonic 1st note) in the D Major Tuning *(D–A–D–F#–A–D) -(#D-1)* down one half step to the C# note (the Major 7th) – yielding the D Wahine Tuning *(D–A–D–F#–A–C#) -(#D-4)*.

10. Also, from the G Major "Taro Patch" Tuning *(D-G-D-G-B-D) -(#G-1)*, the G Mauna Loa Tuning (*D–G–D–D–G–D*) *-(#G-6)* probably evolved in this way: by tuning the second string B note (the 3rd) down to the G note (the tonic 1st note), in order to have the fifth interval between the first and second strings; as well as tuning the third string G note (the tonic 1st note) down to the D note (the 5th note), which is the same note as the fourth string D note, creating a powerful drone quality, which is a unique characteristic of this G Mauna Loa Tuning *(D–G–D–D–G–D) -(#G-6)*. Another unique characteristic is that this tuning has just the tonic 1st notes (the G notes) and the dominant 5th notes (the D notes):

String Number *(from highest pitched to lowest pitched string)*	G Major "Taro Patch" Tuning	G Mauna Loa Tuning
1	D	= (same note) D
2	B	➔ Down four half steps to G
3	G	➔ Down five half steps to D
4	D	= (same note) D
5	G	= (same note) G
6	D	= (same note) D

11. The D Major Tuning *(D–A–D–F#–A–D) -(#D-1)*, could also have evolved from the Standard Tuning *(E–A–D–G–B–E) -(#C-33)* in another way, by keeping the fifth string A note and the fourth string D note the same, and by lowering four strings: tuning the lowest pitched sixth string down from the E note to the D note; the third string down from the G note to the F# note; the second string

down from the B note to the A note; and the first string down from the E note to the D note - yielding the D Major Tuning *(D–A–D–F#–A–D) -(#D-1)*:

String Number	Standard Tuning	D Major Tuning
1	E	➔ Down two half steps to D
2	B	➔ Down two half steps to A
3	G	➔ Down one half to F#
4	D	= (same note) D
5	A	= (same note) A
6	E	➔ Down two half steps to D

From here, the D Major Tuning *(D–A–D–F#–A–D) -(#D-1)* would have easily evolved into the D Wahine Tuning *(D–A–D–F#–A–C#) -(#D-4)*, by tuning the highest pitched first string one half step down from the D note (the tonic 1st note) to the C# note (the Major 7th note).

12. The F Wahine "Leonard's F" Tuning *(C–F–C–G–C–E) -(#F-3)*, could also have evolved from the Standard Tuning *(E–A–D–G–B–E) -(#C-33)* in another way, by keeping the first string E note and the third string G note the same, and by lowering four strings: tuning the lowest pitched sixth string down from the E note to the C note; the fifth string down from the A note to the F note; the fourth string down from the D note to the C note; and the second string up from the B note to the C note - yielding the F Wahine "Leonard's F" Tuning *(C–F–C–G–C–E) -(#F-3).*

String Number	Standard Tuning	F Wahine "Leonard's F" Tuning
1	E	= (same note) E
2	B	➔ Up one half step to C
3	G	= (same note) G
4	D	➔ Down two half steps to C
5	A	➔ Down four half steps to F
6	E	➔ Down four half steps to C

*(Also see #4 above, paragraphs seven and eight, in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section.*

13. Another direction the experimentation might have taken, from the C Wahine "Keola's C" Tuning *(C–G–D–G–B–E) -(#C-7)* [and the related B*b* Wahine Tuning *(F–Bb–C–F–A–D) -(#Bb-8),* often tuned up to the key of C *(G-C-D-G-B-E) -(#C-8)*] - *also see #1 above in this* ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section about these two tunings)*, could have been to tune the highest pitched first string E note down two half steps to the D note - yielding the very popular C Wahine "Dropped C" or "Leonard's C" Wahine Tuning (*C–G–D–G–B–D) -(#C-5)* [and the related C Wahine Tuning *(G–C–D–G–B–D) -(#C-6)*, often tuned down to the key of B*b (F–Bb–C–F–A–C) -(#Bb-6)*]. *(Also see #7 above in this* ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section.)*

14. Further experimentation with the C Wahine "Dropped C" or "Leonard's C" Wahine Tuning *(C–G–D–G–B–D) -(#C-5),* could have yielded the very popular and versatile G Major "Taro Patch" Tuning by tuning the lowest pitched sixth string C note up two half steps to the D note *(D–G–D–G–B–D) -(#G-1).*

The G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)* could also have evolved straight from the Standard Tuning *(E–A–D–G–B–E) -(#C-33) – (See #6 above in this* ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section; also see #5 above, paragraph nine [the next to last paragraph], in the* ***Possible Standard Tuning Roots of Some Tunings*** *part, in this* ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section).*

15. ***Bb Tunings:*** B*b* tunings are related to C tunings, except that the two lowest pitched bass strings are tuned up and reversed in pitch from the C tunings. To convert a C tuning to a B*b* tuning, the lowest pitched sixth string in a C tuning is tuned from the tonic note (the 1st note of the scale, the C note) up to the dominant note (the 5th note of the scale, the G note); and the next lowest pitched fifth string is tuned from the dominant (the 5th note of the scale, the G note) up to the tonic (the 1st note of the scale, the C note). The result is a B*b* type tuning (pitched here for reference in the key of C).

Thus, in changing from a C to a B*b* tuning, on the two lowest pitched strings, the tonic chord (the I chord, the C Major chord) becomes the dominant chord (the V chord, the G chord), and then conversely, the dominant chord (the V chord, the G chord) becomes the tonic chord (the I chord, the C chord) {pitched here for reference in the key of C}. Otherwise, the other intervals relative to each other on the four highest pitched strings stay the same. The whole tuning is often tuned down from the key of C to the key of B*b*, due to the extreme raising of the fifth and sixth strings.

[*Therefore, in all sections of this Slack Key information book the Bb tunings are listed with the same chart number as the C tunings that*

they are related to*]. *(Also see the chart and explanation for the Bb tunings, #5 in the **SIX FAMILIES OF KEYS** section above).

B*b* tunings may also have evolved from tuning the sixth, fifth, fourth, and second strings to the same notes as the fretted notes in the first position C Major chord in the Standard Tuning *(E-A-D-G-B-E) -(#C-33)*, yielding a C Major Tuning *(G-C-E-G-C-E –(#C-2)* [or when it is tuned down two half steps, it is the B*b* Major Tuning *(F–Bb–D–F–Bb–D) -(#Bb-2).*
In the Standard Tuning *(E–A–D–G–B–E) -(#C-33)*, these strings are fretted to form the notes of the full C Major chord in the following way: the lowest pitched sixth string is fretted on the third fret, making the G note; the fifth string is fretted on the third fret, making the C note; the fourth string is fretted on the second fret, making the E note; the third string is the open (unfretted) G note; the second string is fretted on the first fret, making the C note; and the highest pitched first string is the open (unfretted) E note. This tuning also reflects the Spanish and Mexican influence, with the fifth, fourth, and third strings being the first, third, and fifth notes notes of the chord, which is a common bass line in Spanish and Mexican music.

[The G Wahine Tuning also reflects the Spanish and Mexican influence – also see #8 above in this Section 4].

Then the four fretted sixth, fifth, fourth, and second strings could have been tuned up to the notes they were fretted to, which would allow those notes to be played open (unfretted), yielding a C Major Tuning *(G–C–E–G–C–E) -(#C-2)* [or the B*b* Major Tuning *(F–Bb–D–F–Bb–D) -(#Bb-2)*, which is the same tuning, tuned down two half steps to the key of B*b* {the Bb tunings are often tuned down to the key of Bb because of the extreme raising of the two lowest pitched strings}]. Then, the four highest pitched strings could have been tuned in different ways, the same ways as they are in their corresponding C tunings. *(Also see #5 above, the **Possible Standard Tuning Roots of Some Tunings** section, in this **POSSIBLE EVOLUTION OF SLACK KEY TUNINGS** section).*

String Number *(from highest pitched to lowest pitched string)*	Standard Tuning	C Major Tuning
1	E	= (same note) E
2	B	➔ Up one half step to C
3	G	= (same note) G
4	D	➔ Up two half steps to E
5	A	➔ Up three half steps to C
6	E	➔ Up three half steps to G

The B*b* tunings all have the tonic 1st note (the B*b* note) on the fifth string, and the 3rd (the D note) on the fourth string – those are the same relative notes on those same strings as the ones in the first position C Major chord in the Standard Tuning *(E–A–D–G–B–E) -(#C-33)*, where the tonic 1st note (the C note) is produced when fretting the fifth string at the third fret, and the 3rd note (the E note) is produced when fretting the fourth string at the second fret. Other B*b* tunings then would have evolved as well.

For a B*b* Wahine tuning, the second string would have been tuned down one half step from the C note to the B note, yielding a C Wahine Tuning (*G-C-E-G-B-E) -(#C-12);* and then the whole guitar could be tuned down two half steps, to the key of B*b,* thus yielding a B*b* Wahine tuning *(F–Bb–D–F–A–D) -(#Bb -12).*

For the B*b* Mauna Loa Tuning, the second highest pitched string (with the guitar pitched to the key of C) could then have been tuned down a half step from the B note to the A note, making a fifth interval between the highest pitched first string E note and the second string A note - yielding a C Mauna Loa Tuning *(G–C–E–G–A–E) -(#C-23);* and then the whole guitar could be tuned down two half steps, to the key of B*b*, thus yielding the Bb Mauna Loa Tuning *(F–Bb–D–F–G–D) -(#Bb-23).*

(Also see #5 above, paragraphs three, four, five, and six, in this ***POSSIBLE EVOLUTION OF SLACK KEY TUNINGS*** *section; and also see above in the* ***SIX FAMILIES OF KEYS*** *section, the* ***Bb Tunings****, #5).*

Also, to create C tunings, the two lowest pitched strings in the B*b* tunings could have been tuned down and reversed in pitch. In the B*b* tunings, the fifth string is the raised tonic 1st note from the Standard Tuning *(E-A-D-G-B-E) -(#C-33)* - the C note in the key of C [and the B*b* note in the key of B*b*]; and the lowest pitched sixth string is the raised 5th note from the Standard Tuning *(E-A-D-G-B-E) -(#C-33)* - the G note in the key of C [and the F note in the key of B*b*].

In the C tunings, the fifth string is the lowered 5th note from the Standard Tuning *(E-A-D-G-B-E) -(#C-33)* – tuned down two half steps from the A note to the G note; and the sixth string is the lowered tonic 1st note from the Standard Tuning *(E-A-D-G-B-E) -(#C-33)* – tuned down four half steps from the E note to the C note.

16. In the key of A family of tunings, there is so far just one tuning that songs have been recorded in - the A Mauna Loa Tuning *(E-A-E-E-F# -C#) -(#A-1).* The

A Mauna Loa Tuning *(E-A-E-E-F# -C#) -(#A-1)*, has the same intervals on the four lowest pitched strings as the G Mauna Loa Tuning (*D–G–D–D–G–D) -(#G-6)*. The two highest pitched strings in the A Mauna Loa Tuning *(E-A-E-E-F# -C#) -(#A-1)* are tuned differently from the G Mauna Loa Tuning (*D–G–D–D–G–D) -(#G-6)* as follows: the next to highest pitched second string is tuned to the 6th note (the F# note in the key of A), and the highest pitched first string is tuned to the 3rd note (the C# note in the key of A) - this is the same relationship of intervals between the two highest pitched strings as in the popular C Mauna Loa Tuning *(C–G–E–G–A–E) -(#C-22)* [and the related B*b* Mauna Loa Tuning *(F-Bb-D-F-G-D) -(#Bb-23)*, often tuned up to the key of C *(G-C-E-G-A-E) -(#C-23)*].

The reason this A Mauna Loa Tuning *(E-A-E-E-F# -C#) -(#A-1*) is usually pitched in the key of A (or higher), is that the two highest pitched strings would be too loose to have a good tone quality if this tuning was tuned down to the key of G (in the key of G, the highest pitched first string would be tuned to the B note, and the next to highest pitched second string would be tuned to the E note; and this tuning pitched in the key of G would be *D–G–D–D–E–B*).

So, in summary, the A Mauna Loa Tuning *(E-A-E-E-F# -C#) -(#A-1)* combines the qualities of these two common Mauna Loa tunings: the G Mauna Loa Tuning (*D–G–D–D–G–D*) *-(#G-6)*, with the drone sound (with the fourth and third strings tuned to the same note, the dominant 5th note), and it also has the same way of playing the sixth, fifth, and fourth strings with the thumb – this is combined with the voicings on the two highest pitched strings of the C Mauna Loa Tuning *(C–G–E–G–A–E) -(#C-22)* [and the related B*b* Mauna Loa Tuning *(F-Bb-D-F-G-D) -(#Bb-23)*, often tuned up to the key of C *(G-C-E-G-A-E) –(#C-23)*].

Other tunings in the key of A resulted from all the strings in the G tunings sometimes being tuned up two half steps to the key of A; and sometimes all the strings in the B*b* tunings are tuned down one half step to the key of A; and sometimes all of the strings in the C tunings are tuned down three half steps to the key of A.

5. RELATED COMMON FINGERINGS WITH DIFFERENT TUNINGS

*(Also, for the relationship between C and Bb Tunings, see #5, the **Bb Tunings** part of the **SIX FAMILIES OF KEYS** section above).*

Some tunings are related to other tunings in that they are played with the same fingerings as another tuning, but on different strings.

1. The common G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)* and the D Major Tuning *(D–A–D–F#–A–D) -(#D-1)* have similar voicings, except that in the D Major Tuning the phrases and chords are played down one string in pitch. For example, what is played on the highest pitched first string, and the second, third, fourth, and fifth strings in the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)* is played on the second, third, fourth, fifth, and sixth strings respectively in the D Major Tuning *(D–A–D–F#–A–D) -(#D-1)*.

2. There is also a relationship between the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)* and these two C Major Tunings: the C Major "Atta's C" Tuning *(C–G–E–G–C–E) -(#C-1)*, and the related C Major Tuning *(G–C–E–G–C–E) -(#C-2)* [and the B*b* Major Tuning *(F–Bb–D–F–Bb–D) -(#Bb-2)* - which is the same tuning as *#C-2*, except it is tuned down two half steps to the key of B*b*]. In these two C Major Tunings the voicings are similar to the G Major "Taro Patch" Tuning, except that in these two C Major Tunings the phrases and chords are played up one string in pitch. For example, what is played on the second, third, and fourth strings in the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)* is played on the highest pitched first string, and the second and third strings respectively in these two C Major Tunings: the C Major "Atta's C" Tuning *(C–G–E–G–C–E) -(#C-1)*, and the related C Major Tuning *(G–C–E–G–C–E) -(#C-2)* [and the B*b* Major Tuning *(F–Bb–D–F–Bb–D) -(#Bb-2)* - which is the same tuning as *#C-2,* except it is tuned down two half steps to the key of B*b*].

3. There is also a relationship between the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)* and the C Major "Mainland Open C" Tuning *(C–G–C–G–C–E) -(#C-3)* {and the related Samoan C Major Tuning *(F-G-C–G–C–E) -(#C-4)*}*.* In these two C Major Tunings the voicings are similar to the G Major "Taro Patch" Tuning, except that in these two C Major Tunings the phrases and chords are played up one string in pitch. For example, what is played on the second, third, fourth, fifth, and sixth strings in the G Major "Taro Patch" Tuning *(D–G–D–G–B–D) -(#G-1)* is played on the highest pitched first string, and the second, third, fourth, and fifth strings respectively in these two C Major Tunings: the C Major "Mainland Open C" Tuning *(C–G–C–G–C–E) -(#C-3)* {and the related Samoan C Major Tuning *(F- G–C–G–C–E) -(#C-4)*}*.*

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4. The common C Wahine "Dropped C" or "Leonard's C" Tuning *(C–G–D–G–B–D) -(#C-5),* and also the C Wahine "Keola's C" Tuning *(C-G-D-G-B-E) –(#C-7),* have similar voicings to an F Wahine "Leonard's F" Tuning *(C–F–C–G–C–E) -(#F-3)*, except that the phrases and chords in the F Wahine Tuning are played up one string in pitch. For example, what is played on the highest pitched first string,

and the second, third, fourth, and fifth strings in the F Wahine "Leonard's F" Tuning *(C–F–C–G–C–E) -(#F-3)* is played on the second, third, fourth, fifth, and sixth strings respectively in the C Wahine "Dropped C" or "Leonard's C" Tuning *(C–G–D–G–B–D) -(#C-5)*, and also the C Wahine "Keola's C" Tuning *(C-G-D-G-B-E) –(#C-7);* also the fifth and sixth strings are played the same way in all three of these tunings.

Also the C Wahine "Dropped C" or Leonard's C" Tuning *(C–G–D–G–B–D) -(#C-5),* and also the C Wahine "Keola's C" Tuning *(C-G-D-G-B-E) –(#C-7),* have similar voicings to "Gabby's F" Wahine Tuning *(F-C-E–G–C–E) -(#F-2),* except that the higher pitched phrases and chords in the F Wahine Tuning are played up one string in pitch. For example, what is played on the highest pitched first string, and the second, and third strings in the F Wahine "Gabby's F" Tuning *(F-C-E–G–C–E) -(#F-2),* is played on the second, third, and fourth respectively in the C Wahine "Dropped C" or "Leonard's C" Tuning *(C–G–D–G–B–D) -(#C-5)* and also in the C Wahine "Keola's C" Tuning *(C-G-D-G-B-E) –(C-7);* also the fifth and sixth strings are played the same way in all three of these tunings.

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5. The C Wahine "Gabby's Hi'ilawe", or "Hi'ilawe" Tuning *(C–G–E–G–B–E) -(#C-11)* has similar voicings to the D Wahine Tuning *(D–A–D–F#–A–C#) -(#D-4)*, except that the phrases and chords in the D Wahine Tuning are played up one string in pitch. For example, what is played on the highest pitched first string, and the second and third strings in the D Wahine Tuning *(D–A–D–F#–A–C#) -(#D-4)* is played on the second, third, and fourth strings respectively in the C Wahine "Gabby's Hi'ilawe" Tuning *(C–G–E–G–B–E) -(#C-11)*.

6. The B*b* Wahine Tuning *(F–Bb–D–F–A–D) –(#Bb-12)* [and the C Wahine Tuning *(G–C–E–G–B–E) -(#C-12)* - which is the same tuning as *#Bb-12*, except it is tuned up two half steps to the key of C], has similar voicings to the D Wahine Tuning *(D–A–D–F#–A–C#) -(#D-4)*, except that the phrases and chords in the D Wahine Tuning are played up one string in pitch. For example, what is played on the highest pitched first string, and the second, third, fourth, and fifth strings in the D Wahine Tuning *(D–A–D–F#–A–C#) -(#D-4)*, is played on the second, third, fourth, fifth, and sixth strings respectively in the B*b* Wahine Tuning *(F–Bb–D–F–A–D) –(#Bb-12)* [and the C Wahine Tuning *(G–C–E–G–B–E) -(#C-12)* - which is the same tuning as *#Bb-12*, except it is tuned up two half steps to the key of C].
*(Also, for the relationship between C and Bb Tunings, see #5, the **Bb Tunings** part of the **THE SIX FAMILIES OF KEYS** section above).*

7. The C Major "Atta's C" Tuning *(C–G–E–G–C–E) -(#C-1)* [and the B*b* Major Tuning *(F–Bb–D–F–Bb–D) –(#Bb-2)* - and the C Wahine Tuning *(G–C–E–G–C–E)*

-*(#C-2)* - which is the same tuning as *#Bb-12*, except it is tuned up two half steps to the key of C], has similar voicings to the D Major Tuning *(D–A–D–F#–A–D) -(#D-1)*, except that the phrases and chords in the D Major Tuning are played up one string in pitch. For example, what is played on the highest pitched first string, and the second and third strings in the D Major Tuning *(D–A–D–F#–A–D) -(#D-1)* is played on the second, third, and fourth strings respectively in the C Major "Atta's C" Tuning *(C–G–E–G–C–E) -(#C-1)*.

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8. Tunings with the "My Dog Has Fleas" intervals on four successive strings (from the lowest pitched string of the four strings to the highest pitched string of the four strings) are tuned with the following intervals between them: a fourth interval between the two lowest of the four strings, a third interval between the second and third lowest of the four strings, and a fourth interval between the two highest of the four strings.

For example, the same "My Dog Has Fleas" intervals and notes are in the four highest pitched strings of all of these tunings: Standard Tuning *(E–A–D–G–B–E) -(#C-33)*, Dropped D Tuning *(D–A–D–G–B–E) -(#D-8)*, G Sixth Tuning *(D–G–D–G–B–E) -(#G-15)*, and the C Wahine "Keola's C" Tuning *(C–G–D–G–B–E) -(#C-7)* [and the related B*b* Wahine Tuning *(F-Bb-C-F-A-D) –(#Bb-8)*, often tuned up to the key of C *(G-C–D–G–B–E) -(#C-8)*].

Also there are similar "My Dog Has Fleas" intervals in the middle four strings (the second, third, fourth, and fifth strings) of these two D tunings: the D Sixth Tuning *(D–A–D–F#–B–D) -(#D-9)*, and the D Ni'ihau/Old Mauna Loa "Cyril's D" Tuning *(D–A–D–F#–B–E) -(#D-7)* – and what is played on the highest pitched first string, and the second, third, and fourth strings in the four tunings listed in the previous paragraph just above, is played on the second, third, fourth, and fifth strings respectively in the D Sixth Tuning *(D–A–D–F#–B–D) - (#D-9)* and the D Ni'ihau/Old Mauna Loa "Cyril's D" Tuning *(D–A–D–F#–B–E) -(#D-7)*.