

## Tritone Modal Relationships and the Circle of Fifths

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Warning: heavy music theory geek alert.

While this article is not an essential ingredient for understanding music theory in the same way that the Circle of Fifths on its own would be, or memorizing the names and characteristics of each Mode would be, the advantages of reading this are:

- a) You will better understand the relationship of each mode to each other, and how, presented in a certain order, they are only one note different from each other
- b) You will recognize parallels between modes and the Circle of Fifths
- c) You will better appreciate the significance of the Tritone relationship

This article also assumes you know the Circle of Fifths as well as the names & functions of the modes. Ready to tackle it?

First, consider the fact that the notes in C Lydian are the same as that of G Ionian, and C Mixolydian is the same notes as F Ionian, and that the modes in C show a correlation to the Circle of Fifths:

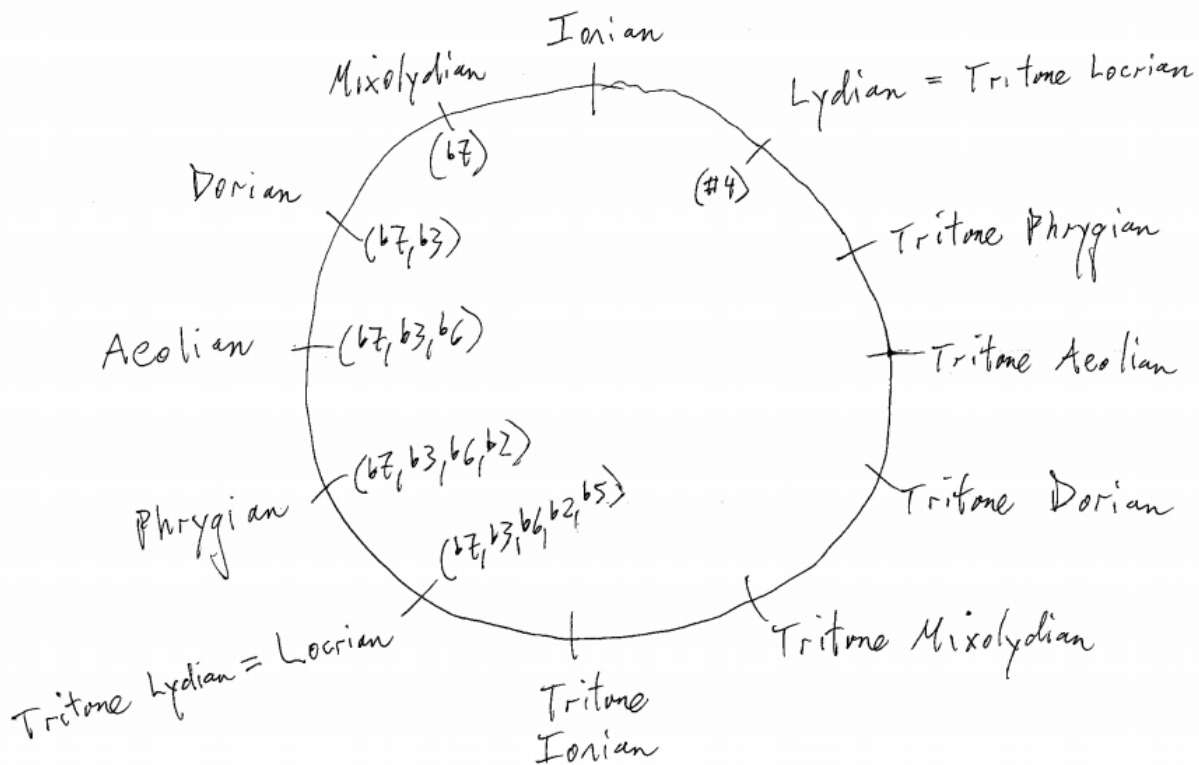
**Figure 1 – Modes in C and their equivalent keys**

mode in C	equivalent Ionian
C Lydian	G
C Ionian	C
C Mixolydian	F
C Dorian	Bb
C Aeolian	Eb
C Phrygian	Ab
C Locrian	Db

Even if we were to go no further, the chart shows the “brightest” (least flatted/ most sharped notes) modes at the top, and the “darkest” (most flatted notes) at the bottom, which has great value.

If we were to plot each mode out on the Circle of Fifths, it might look like this:

**Figure 2 – Modal Plotting Along the Circle of Fifths**



Notice that, just as the keys in the Figure 1 moved in 4ths (ex: G to C is a 4<sup>th</sup>, C to F is a 4<sup>th</sup>, and any counterclockwise movement on the Circle of Fifths is in 4ths), each mode is changed by the interval that is a 4<sup>th</sup> from the previous one. For example, C Lydian lowers its 4<sup>th</sup> to get to C Ionian, which then lowers its 7<sup>th</sup> to get to C Mixolydian, which then lowers its b3 to get to C Dorian etc. Movement in intervals of fourths exactly parallels this because the order is 1 – 4 – b7 – b3 – b6 – b2 – b5. In other words, in C, movement in fourths goes *c, f, bb, eb, ab, db, gb* which is the first, fourth, flat 7, flat 3, flat 6, flat 2, and flat 5 of the key of C.

Since there are only seven modes in a key, when we get to the eighth position, which is the 6 o'clock position because we started at the 1 o'clock position and proceeded counterclockwise, an interesting relationship is discovered between the original key and its tritone.

The word tritone means “3 whole steps” away. Go three whole steps from C and you arrive at Gb or F#. Jazz musicians are familiar with the relationship between a key and its tritone because they use “tritone substitutions” which is a subject for a whole other article. Why would, according to Figure 2, they key of Gb / F# occupy the 6 o'clock position?

First of all, understand that so far, we have been flattening notes that are a fourth from each other. Going from Lydian all the way to Locrian, we first flattened the *f* (or in this

case un-sharped it), then we flatted the *bb*, then the *eb*, then the *ab*, then the *db*, then the *gb*. We have flatted all 6 out of 7 notes in the key of C. The only other note left to flat is the C itself, and of course when we do that, we won't be in the key of C anymore. We will be left with, in the order we flatted them: *f, bb, eb, ab, db, gb, cb*. If we re-arrange the notes as follows we have the key of Gb, the tritone of C: *gb, ab, db, cb, db, eb, f*.

Also notice that the C Locrian mode, which is the equivalent of Db Ionian, is the same notes as Gb Lydian. So the 7 o'clock position can be considered from either perspective. Going from Gb Lydian at 7 o'clock to Gb Ionian at 6 o'clock starts the whole cycle over again, and as we proceed counter-clockwise, we eventually get to Gb / F# Locrian, which is the same as the key of G Ionian, which is the same as C Lydian, and the whole cycle starts over again in the key of C.

Any tritone relationship can be plotted the same way. There are only 5 remaining ones because there are 12 keys, which is a total of 6 pairs. The tritone pairs are:

**Figure 3 – Tritone Pairs**

key	tritone
C	Gb
F	B
Bb	E
Eb	A
Ab	D
Db	G

So, try it for yourself. Try it for the keys of F and B, for example. Start at F Lydian at the 1 o'clock position. This is the same as the key of C Ionian as well as B Locrian. If you do it right, in the 7 o'clock position you'll get F Locrian, which equals Gb or F# Ionian, which in turn equals B Lydian. Have fun and geek out!