

Finding the Prime Form of a Pitch-class Set for which you know the Normal Form

Here is pitch-class set [569te] from the document showing you normal form. To calculate the prime form you start at one end. That number is 0. In prime forms, 0 means "I'm starting to count the number of 1/2 steps from here."

You might think to start at the F-natural, or pitch-class 5. Let's say you do that. Pitch-class 5 is now 0; from F-natural to F-sharp = 1, so the second number is 1. So far, we have prime form (01... from F-natural to A-natural is 4, so now we have so far (014... from F-natural to B-flat = 5 so we have (0145... and from F-natural to B-natural = 6, so we have (01456).

You look up that prime form on Straus' list, and it's not there! Why? because you picked the wrong note from which to start counting.

In calculating the prime form, some pitch-class sets start counting left to right (if most of the half steps, or smallest intervals are on the left); some pitch-class sets start counting right to left (if most of the half steps, or smallest intervals are on the right). Such is the case with this pitch-class set. Right? There are only one half step on the left (F-natural to F-sharp); there are two half steps on the right (A-natural to B-flat and B-flat to B-natural).

So we start over, making B-natural our 0; from B-natural to B-flat = 1 so we have (01... From B-natural to A-natural is 2, so we have (012... From B-natural to F-sharp is 5, so we have (0125... And from B-natural to F-natural = 6. So we have (01256). We look it up on Straus' list and it's there!

So the prime form of pitch-class set [569te] is (01256)

