

1 There is an empirical way to center the bracket on the mirror box.  
2 1.. Place your OTA at 45 degrees altitude.  
3 2.. Put a large piece of masking tape on the rocker box, alongside and  
4 below/under the end of the ALT encoder arm.  
5 3.. Mark the tape with a SHARP pencil where the end of the encoder arm is  
6 currently positioned.  
7 4.. Move the OTA up to 90 degrees (vertical) and watch the end of the  
8 encoder arm relative to the pencil mark. Mark the tape as you did before,  
9 but when the OTA is 90 degrees.  
10 5.. Repeat #4, but move the OTA to 0 degrees (horizontal).  
11 6.. If the encoder arm does not remain at the 45 degree mark in steps 4  
12 and 5, loosen the screws on the bracket and slide the bracket to the left or  
13 right and repeat the process. Keep doing this process until there is  
14 minimal movement of the end of the encoder arm. You'll get the hang of it  
15 after you have done it a few times. You also can mark the original position  
16 of the bracket with masking tape, in case you get turned around in the  
17 process and want to go back to square one.  
18 It works for me.

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20 Charlie Starks  
21 Markless™ Astronomics  
22 <http://www.marklessastronomics.com>

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24 A similar empirical procedure has worked fine on my Obsession 18".  
25 I shine a green laser (with filter attenuated intensity) on the end of  
26 the encoder shaft.  
27 With the scope locked in azimuth, I change the altitude and adjust the  
28 position of the encoder until the laser spot position remains fixed on the end  
29 of the encoder shaft through changes in alt. With that procedure,  
30 the encoder can be positioned to a fraction of a millimeter.  
31 That helps prevent stress on the encoder during alt motion and, in  
32 addition, ensure minimal alignment errors due to faulty encoder position.  
33

34 Jean-Paul Richard.