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# What to do if the mirror covers don't open all the way

- 1. First you want to check to make sure the mirror cover breaker didn't trip.
  - 1. The breaker is found on the 2nd floor in the pier room, where you plug in the UPS when coming out of lightning shutdown. It's on the wall opposite of the door through which you enter the room.
  - 2. On that wall you will see a row of breakers with a white piece of paper taped under it. The white piece of paper will show that breaker #7 is for mirror covers, and is the only blue breaker pictured below.



3. You want to make sure the blue breaker is up, if it's not, push it up.

## If the breaker did not trip (was in the UP position when you checked)

- 1. Go back to the control room and verify which mirror cover is partially closed. Recently we've been having trouble with the NW & NE mirror cover so let's use that as an example...
- 2. If the NW mirror cover didn't open all the way, you want to tip the telescope low **due north** by sending the scope to El:30, Az:0. The telescope acts funny around the pole, so you want to go straight north with no RA deviation, otherwise the telescope may end up in a hard limit. By doing this the troublesome mirror cover's own weight will help open the petal stuck closed.

#### If the breaker did trip

- 1. Push the blue breaker in the UP position, and return to the control room.
- 2. Attempt to close the mirror covers. Note: the petals may close and open as they try to get back in sync.
- 3. If they don't close all the way, press open.
- 4. If they don't open all the way tip the telescope low (El: 30 in the north, 15 due south) in the direction of the stuck mirror cover. Above I used the example of the NW mirror cover being

stuck partially closed. Only tip the telescope due N, E, S, W to keep it simple. If you try to tip the telescope low in the north with any RA deviation, the telescope may get stuck in a hard limit. Tipping it low should help gravity and the mirror cover's own weight help it open.

### If you went through whichever checklist applied to you above and you are still having problems

- 1. Return to the second floor pier room and check the mirror cover breaker again. If it tripped again, repeat the steps above.
- 2. If it didn't you can try this as a last resort:
  - 1. You want to make sure the telescope is at stow and the mirror covers have power (the blue breaker is UP on the 2nd floor)
  - 2. Turn off Telescope Power, RA oilpad, whichever compressor you're using, RA preload, and DEC preload.
  - 3. Choose to either "Close Mirror Covers, or "Open Mirror Covers", and while the petals are moving, turn off Console Power using the switch. The mirror cover's motion should stop.
  - 4. Turn on Console Power
  - 5. Choose to do the opposite of what you did previously; if you chose to "Close Mirror Covers", now choose "Open Mirror Covers", and vice-versa.
  - 6. They should now sync correctly. If one is still not opening try moving the telescope to gravity assist the cover like it's described above.

#### If you've done everything above, and it's still not working

#### Call us!

- 1. Greg Stafford
- 2. Joe Hoscheidt
- 3. Melanie Waidanz
- 4. Gary Rosenbaum
- 5. Bill Wood
- 6. Dan Avner

### What to do if the mirror covers don't close

- 1. If you are ready to close up, and if one of the petals of the mirror covers don't close all the way, "Open Mirror Covers" again.
- 2. Tip the telescope in the main cardinal direction (N, S, E, W) at an elevation of at least 30 degrees in the same direction the leaf is stuck. For example, if the N, NW, or NE petals are stuck tip the scope north; if the E petal is stuck tip the scope east; if the W petal is stuck tip the scope west, if the S, SW, or SE petals are stuck tip the scope south. This should allow gravity and the weight of the petal itself to flop open. From there you should be able to close all the way.

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#### If there is no motion of any of the mirror cover petals

Most likely the mirror cover breaker is tripped.

1. Go to the 2nd floor pier room where you plug in and turn on an UPS coming out of lightning shutdown.

2. On the wall opposite the entry, there is a wall that has a row of breakers on it with a sheet of

paper taped below it.



- 3. The paper informs you breaker #7 controls the mirror covers and is blue as shown in the picture above.
- 4. This breaker needs to be UP.
- 5. If it is up, try turning it off and then back on again.
- 6. Go upstairs into the control room and try to close the mirror covers again.

## If you have tried the above steps and the mirror covers still aren't closing

- 1. Tip the telescope to El: 15 Az: 180.
- 2. Stow the dome and windscreen
- 3. Close the dome shutter
- 4. Stow telescope at zenith.
- 5. Make sure to write in the trouble report that the mirror covers wouldn't close!

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