

<b>ARCS PROCEDURE:</b>	<b>REMOVING THE MPLHR SCHMIDT CORRECTOR PLATE</b>	<b>PRO(MPLHR)-009.000</b>
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## Removing the MPLHR Schmidt Corrector Plate

### I. Purpose:

To describe the procedure for removing the Schmidt corrector plate to allow the telescope to dry out if condensation occurs inside the MPL telescope.

### II. Cautions and Hazards:

- This is a two-person procedure, please read over the entire procedure before starting to make sure you understand the procedure.

### III. Requirements:

- Phillips screwdriver, medium-sized.
- Needle-nosed pliers.
- Lens paper or lint-free tissues (such as Kim Wipes).
- De-ionized water, or 99% Methanol, or 99% Ethanol.
- **Parts:**
  - MPL telescope: the black cylinder (8" diameter, perhaps 14" long)
  - Schmidt corrector plate: the 8" diameter glass plate covering the end of the MPL telescope
  - The small circle in the middle of the Schmidt corrector plate is the mount for the secondary mirror of the telescope. (The secondary mirror faces into the telescope, so the reflective surface isn't visible until the Schmidt corrector plate has been removed).
  - The large mirror at the bottom of the telescope is the primary mirror.

### IV. Procedure:

#### A. Steps:

1. After reading the procedure, look at the MPL and decide if you need to move the entire MPL to work on it. If you need to move the MPL, move the entire cabinet.
2. Collect the required tools and lint-free paper in the I-Van. The chemicals should be in the X-Van in a yellow cabinet. This procedure can be completed without the use of the chemicals.
3. Reduce the laser power to zero. Press the \* key on the handset until 'WATTS' appears in red.

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4. Press the down arrow on the handset until 0.0 is displayed in red.
5. Spread out several sheets of lens paper or lint-free tissues to prepare a clean workspace about 12" x 12" (30 cm x 30 cm).
6. Six Phillips screws are visible along the inside rim of the telescope when viewed from above. Loosen the six screws in an alternating fashion. (When working with fasteners in delicate instruments, it is important to alternate from one side to the other. Because the pieces fit so closely, if you loosen one side too much before the other, the pieces may bind together, making removal difficult and possibly damaging the mating surfaces). First loosen one screw a little bit. Then loosen the screw on the opposite side of the rim, just until it begins to feel loose. Go back to the opposite side and loosen the screw next to the first one, and then the one on the opposite side from it. Finally, loosen the two remaining screws, each just a little bit. Repeat until the screws are loose enough to remove by hand. We will put the screws back in the same fashion.
7. When all the screws are removed, put them in a safe place where they will not get lost.
8. After all six screws have been removed, use the needle-nose pliers to remove the plastic-retaining ring. This takes a bit of wiggling, since two small tabs prevent easy removal. Be careful not to touch the glass surface of the Schmidt corrector plate with fingers.
9. Place the plastic-retaining ring on the lint-free paper you set up.
10. With the retaining ring removed, notice the alignment marks on the Schmidt corrector plate and the telescope housing.
11. Tightly fold a sheet of lens paper or tissue into a bundle. Place the bundle on the clean workspace. We will place one edge of the Schmidt corrector plate on this bundle.
12. The Schmidt corrector plate has the secondary mirror attached to its center. Being careful not to touch the glass surface, grasp the Schmidt corrector plate by the secondary mirror mount. Lift the plate out of the telescope and set it on the clean workspace with one edge resting on the workspace and the other edge leaning on the tightly folded paper bundle. This should minimize contact between the glass surface and anything else.
13. Before manually drying the telescope optics, please answer the following questions and send them to the contact:
  - Regarding Schmidt corrector plate and secondary mirror:
    - a) Is the condensation heavy enough to cause droplets?

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- b) Are droplets large enough to drip or run if tilted sideways?
- c) Are there visible spots or patterns from previous droplets which may have already dried up?
- Regarding the primary mirror:
  - a) Is there visible condensation?
  - b) If yes, then is the condensation heavy enough to cause droplets?
  - c) Are droplets large enough to drip or run if tilted sideways?
  - d) Are there visible spots or patterns from previous droplets which may have already dried up?
  - e) Is there pooling of condensation in the primary mirror?

**V. References:**

None.

**VI. Attachments:**

None.