Cleaning Your Telescope Mirror

This is a necessary part of maintaining a reflector, as the mirror is exposed to dust, moisture and pollutants during observation. To minimize dust collecting on the mirror whilst not in use, store the telescope with the mirror facing down, and you can cover the secondary with a cut-off soft drink bottle secured with some elastic (taking special care not to scrape it on the secondary when you put it on and take it off). The frequency of cleaning depends on how often you use your telescope and whether you are in a "clean" environment. (Cities and beaches are the worst.) Also, don't make your decision based on inspection of your mirror at night with a torch – even clean mirrors look terrible when you do that! Have a look in the daytime under ordinary light – it may not be as dirty as you thought.

You will need:

- Cotton balls
- Household washing up detergent (any brand, but a cheap one like "Bushland" has fewer additives)
- Soft towels
- Distilled water (available from the supermarket – people use it in irons)
- Something solid on your workbench that you can lean the mirror on while it is drying
- A "texta" or waterproof marker
- A screwdriver (usually phillips-head)

DO NOT wipe the aluminized surface of the mirror with any kind of cloth or tissue.
DO NOT get your fingerprints on it. Always handle the mirror carefully by the back or edges.

REMOVING THE MIRROR *

1. Make registration marks or write numbers in texta on the base, in line with the fastening screws (their heads are around the outside of the tube) and corresponding positions on the telescope tube.

2. Remove the mirror cell from the telescope by undoing these fastening screws.

3. Make marks on the edge of the mirror itself to correspond with marks on the mirror cell.

4. You will then need to undo the screws which hold the mirror in the mirror cell (these are the ones done up all the way in – the screws standing off a bit are the collimating screws used to realign the mirror).

Now your mirror is ready to be cleaned. Have some towels handy on a nearby bench so that you can safely put the mirror down between steps.

This fact sheet is supplied by
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CLEANING THE MIRROR

1. First, give the **SINK** a good clean with detergent and steel wool (for stainless steel) or plastic scourer, and rinse it very thoroughly with tap water.

2. If you have a china or porcelain sink, lay a towel in the bottom of the sink so that if you lose your grip on the mirror, it will not land on the china and crack.

3. With the plug out, turn on the tap and allow the tap water to wash freely over the front aluminized surface of the mirror – you can rotate the mirror so that any visible particles are washed towards the nearest edge. This will remove any large visible deposits.

4. Rinse the sink again (feel the bottom of the sink with your hand – you will notice if there is any grit).

5. Put the plug in and half-fill the sink with tap water. Add several drops of detergent and agitate gently by hand.

6. Lower the mirror into the sink, allowing it to rest on the bottom with the front aluminized surface up.

7. Take a cotton ball and, holding it so that it JUST makes contact with the surface of the mirror, start at the far edge and drag the cotton ball gently across the centre of the mirror to the opposite edge.

DISCARD THE COTTON BALL!

Repeat step 7 with a fresh cotton ball each time, carefully cleaning the entire surface of the mirror in parallel strips.

8. Empty the sink and hold the mirror on its edge to allow excess water & detergent to drain.

9. Lay the mirror down in the sink again, and pour distilled water all over it.

10. Take the mirror out of the sink and lean it on its edge against something which won't slip, with a towel underneath (making sure the towel doesn't bunch up and come into contact with the front aluminized surface of the mirror).

Your mirror will air dry.
When it has dried, inspect it for visible deposits, streaks or oily or detergent film. If not completely happy with it, start again from step 3.

Reassemble the telescope, aligning all registration marks. You will more than likely need to re-collimate the telescope (this is a process of realigning the mirror using the collimating screws mentioned earlier).

The same cleaning process can be used to wash the secondary (flat) mirror, but the secondary tends to be more difficult to collimate, and each telescope has different methods for securing the "spider" which holds the secondary in place. Certainly, the most benefit is gained from cleaning and collimating the **PRIMARY MIRROR**.

* If you have information which was originally supplied with the telescope, this may give you diagrams and labeling of parts mentioned, and may have clearer instructions for disassembling the mirror cell.