

CLEANING OPTICAL SURFACES

If you use binoculars or a telescope, sooner or later you are going to need to clean the surfaces of the lenses or the mirrors. Here are some pointers about safely removing light deposits of dust, dirt, and fingerprints from optical surfaces. Optical surfaces are easily damaged. If the lenses or mirrors are very dirty, have them cleaned by a professional optician.

The Golden Rule: When in doubt, DON'T! Clean optics only when it's really necessary to do so!

DO:

- Clean optical surfaces infrequently (once per year is usually adequate, unless the surface is accidentally smudged with a fingerprint or foreign substance).
- Remove fingerprints and foreign fluids as soon as possible to avoid permanent damage to optical anti-reflection coatings on lenses or to the protective overcoating on mirrors.

DO NOT!

- Disassemble the component lenses of a refracting telescope.
- Apply pressure to any optical surface by rubbing or other means.
- Do not use any cleaning solution not specifically intended for optical components.

EQUIPMENT LIST

- Lens cleaning solution (from camera shop or recipe below)
- Lens tissue (camera shop)
- Lens brush (camera shop)
- Canned "compressed air" for blowing dust off lens or mirror (camera shop)

CLEANING PROCEDURE - SMALL REFRACTOR OR CATADIOPTRIC

Make certain the surface really needs cleaning. A dusty lens works better than a lens accidentally scratched during cleaning.

1. Remove loose dust with compressed air (be careful not to tilt can, or frost can develop on lens).
2. Remove remaining dust with lens brush (usually camel's hair brush).
3. Remove smudges with lens cloth moistened with lens solution. Gently dab the surface, do not rub (do not use too much, or excess fluid could leak in between component lenses of the objective).
4. If a more thorough cleaning is needed, have it done by a professional!

AstroPointers: Cleaning Optical Surfaces

CLEANING PROCEDURE -- SMALL REFLECTOR

Make certain the mirror needs cleaning. Optical coatings on the mirror are delicate. A dusty mirror works better than a mirror accidentally scratched during cleaning.

1. Remove the primary mirror from the supporting cell (following manufacturer's directions).
2. Remove remaining dust with lens brush (usually camel's hair brush).
3. Remove smudges with lens cloth moistened with lens solution. Gently dab the surface, do not rub. Do not use too much.
4. If a more thorough cleaning is needed, have it done by a professional!
5. More thorough cleanings can be performed by the novice, but he or she should have someone experienced help them the first time.

FORMULA FOR OPTICAL CLEANING FLUID

- 3 quarts distilled water; absolutely no tap water (Available at a pharmacy or grocery store).
- 1 quart isopropyl alcohol, 90% purity or better (Available at a pharmacy).
- 2 drops of dish washing fluid

Smaller batches can be made, but stick to the above proportions. Clean plant sprayers make great containers for the cleaning fluid.

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