

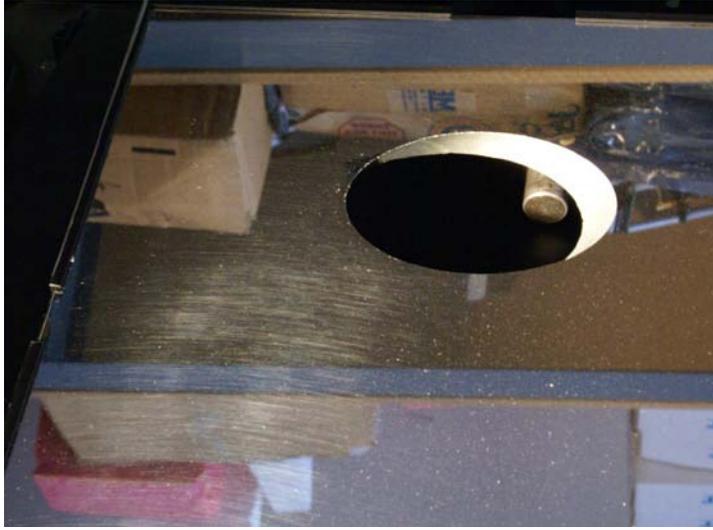
Mt. Hamilton Optics Cleaning Trip #7

David Hilyard and Brian DuPraw

5/17/11

120" Telescope Diagonal Mirror with small hole

This diagonal mirror had a relatively small oblong hole, compared to a similar mirror with a large hole. This one is used for the KAST camera, primarily. It had light sleeves over much of its surface. Dave blew it off with canned air and cleaned it with ethanol, then acetone. After cleaning it was measured to have 78% reflectivity with both red and blue filters (relative to the standard witness kept with the reflectometer)



There was a periscope attached to the frame, and Dave cleaned it with acetone. He cleaned the outside of the lens, only, using ethanol (didn't remove it from the assembly).

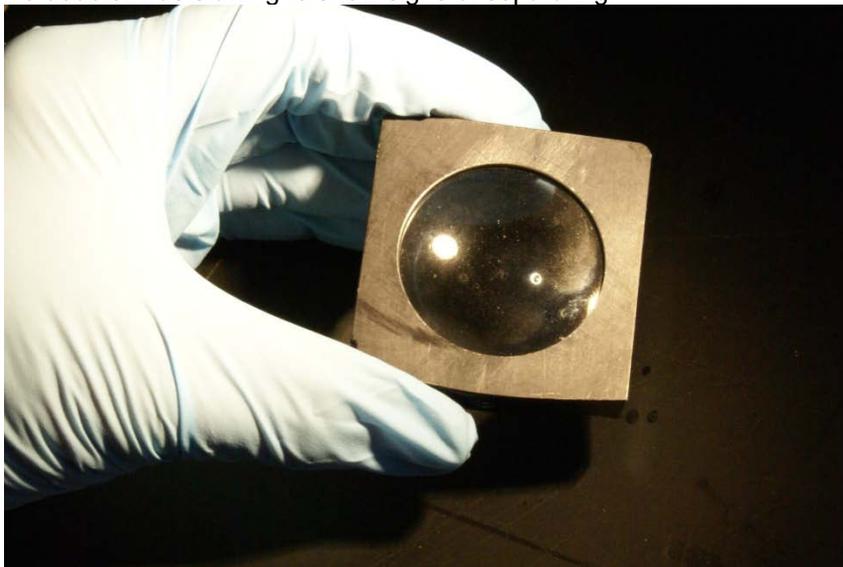


120" Telescope Guider Camera Assembly

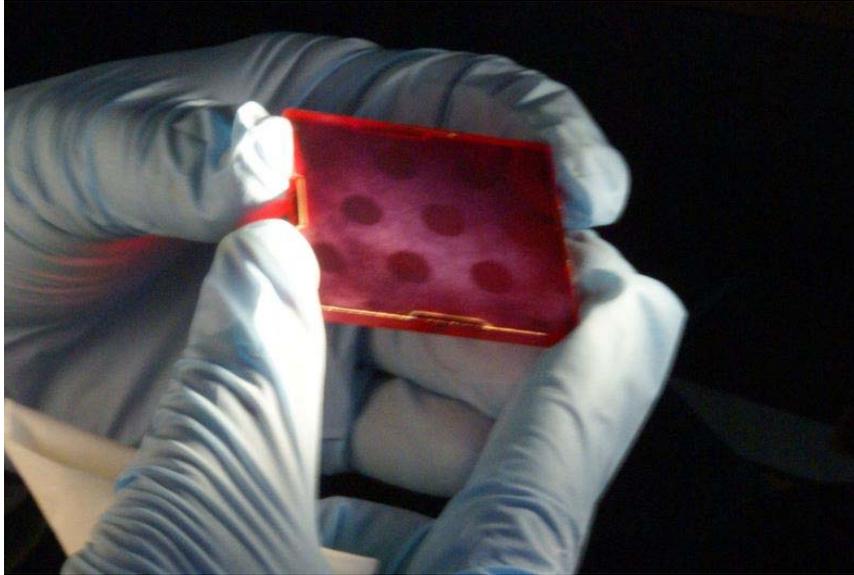
The light from the 120" primary is brought in via the diagonal mirror, goes through the transfer optic (large lens on the side), then is folded back around to the camera by two flat mirrors. In front of the camera there are a number of filters and a focusing lens that can be flipped in or out.



The focusing lens was dusty and had fingerprints. Dave took it out of its frame to clean it and found that the doublet was starting to show signs of separating.



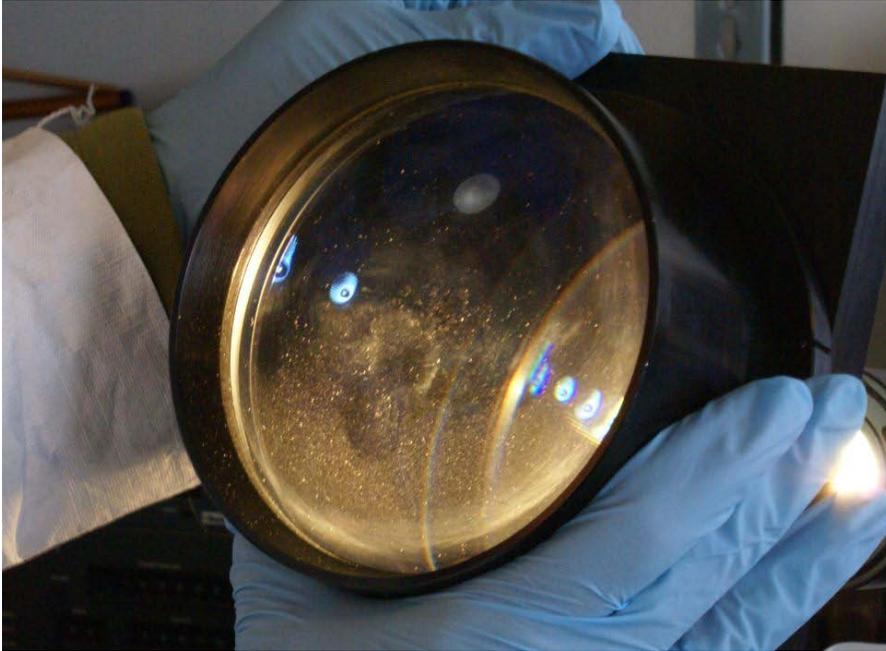
He cleaned the lens and the filters with breath and ethanol. The H-alpha filter had 7 weird dots about 5-10 mm diameter visible in it.



The flat mirrors were dirty and sleeked but robust (probably commercial) and cleaned up with breath.

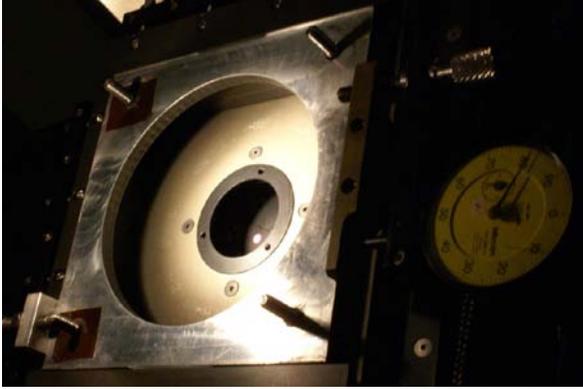


The transfer lens was removed by turning the entire camera assembly on its side and unscrewing it. Dave brushed off both the lens and the frame with a camel-hair brush, then he wiped the lens with acetone and breath, followed by ethanol.

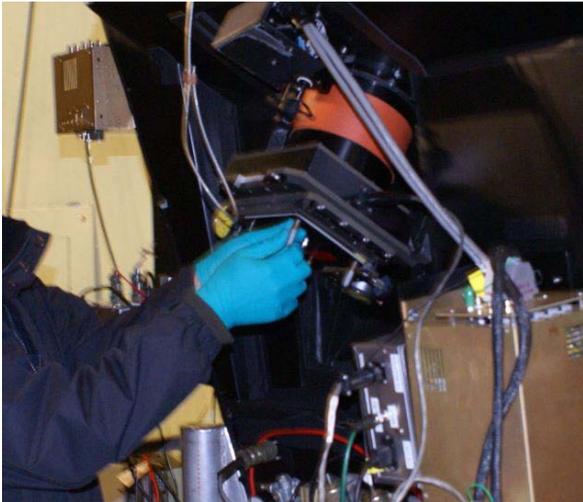


KAST Red and Blue cameras

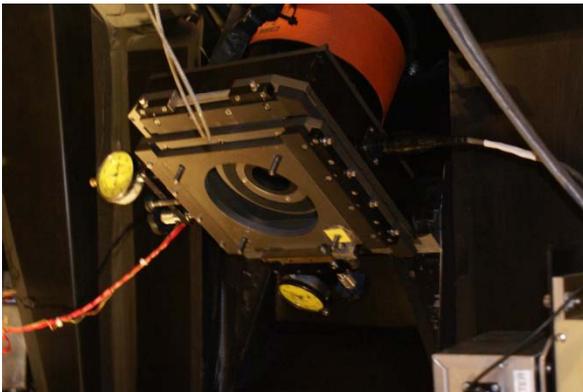
Dave cleaned both the red and the blue side KAST cameras. Kostas removed a cover on the red camera, mentioning that there were shims that needed to not get dropped or lost. Both lenses were slightly dusty before cleaning.



Blue camera after cleaning



Red Camera cover removal



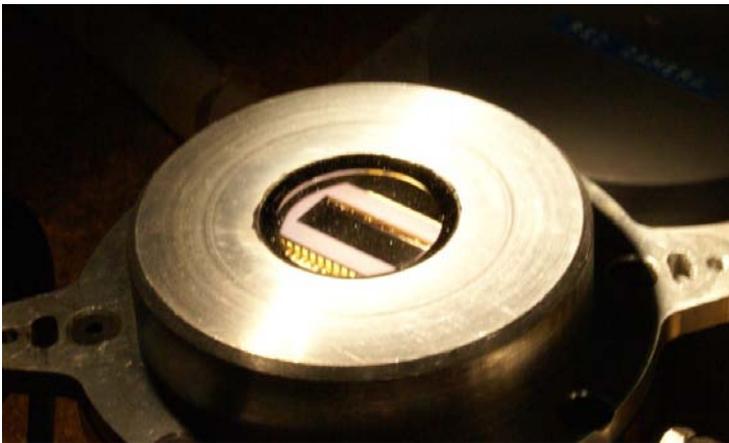
Red camera uncovered

KAST Dewar Windows

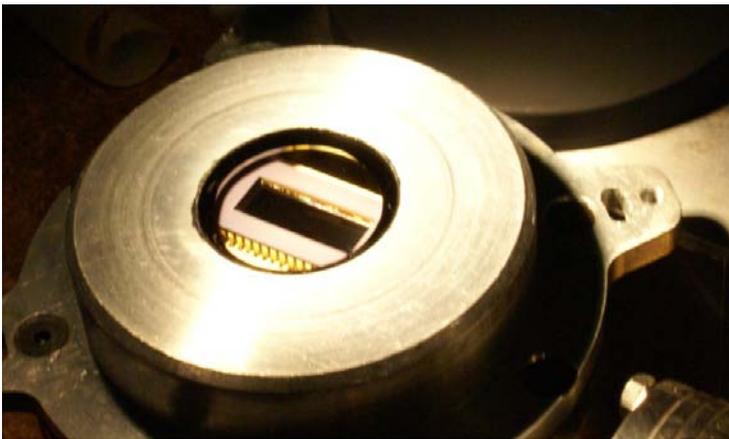
Dave cleaned the Red and Blue KAST Dewar windows. They weren't too bad beforehand but were even cleaner after.



Cleaning blue side Dewar



Red side Dewar window dusty



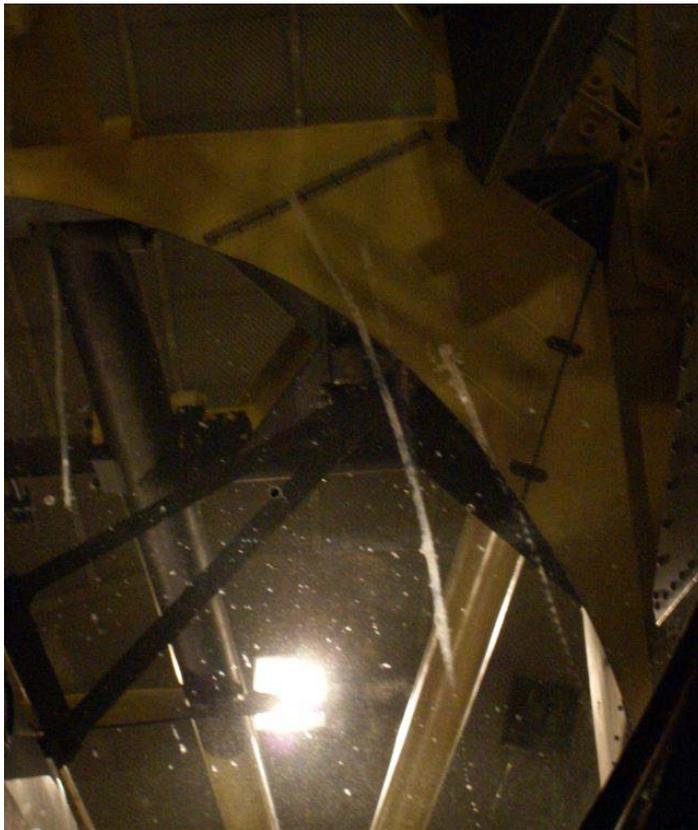
Red side Dewar after cleaning

120" Telescope Primary

The 120" Primary mirror had a number of oil spots and several long streaks of what appeared to be water marks.



Oil and other spots



Water stain streaks (long curved lines)

Dave was not able to reach much of the mirror surface, since the wedge-shaped cover pieces formed a formidable fence. The scaffold was not in place, since we weren't scheduled to wash it. Dave was able to reach one sizeable oil spot and clean it, though. It is the unfocused smudge in this photo.



120" Telescope Cass Secondary

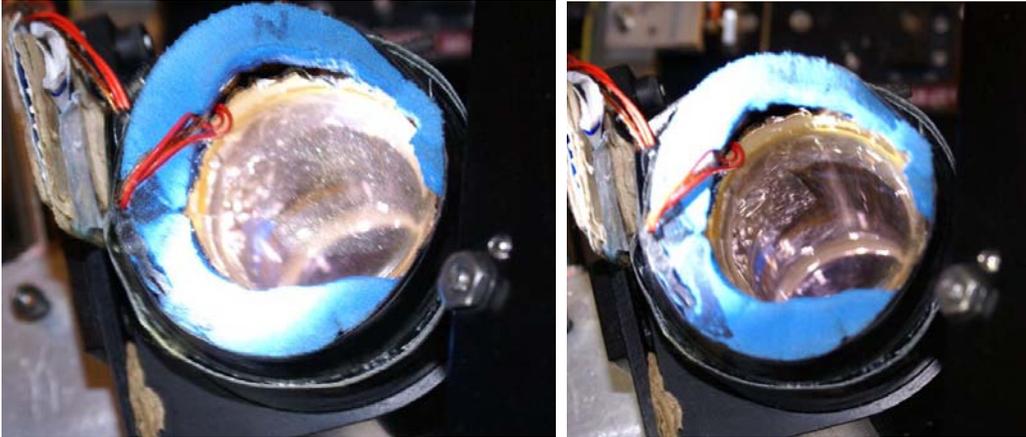
We had found on a previous trip that the Cass secondary was uniformly pitted. We were only able to take more pictures; couldn't clean it.



Slit Room

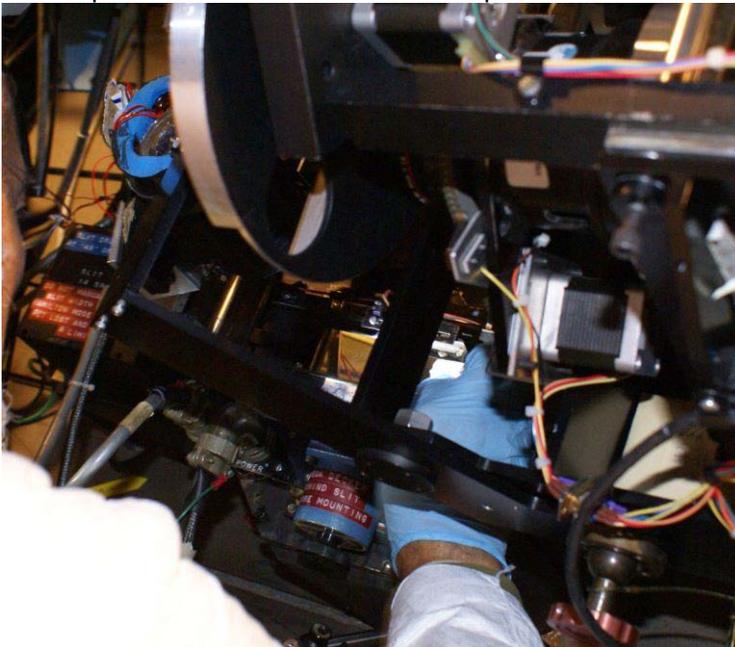
a) Iodine cell

Heated to 50 deg C.... Dave cleaned dusty outer surface with ethanol



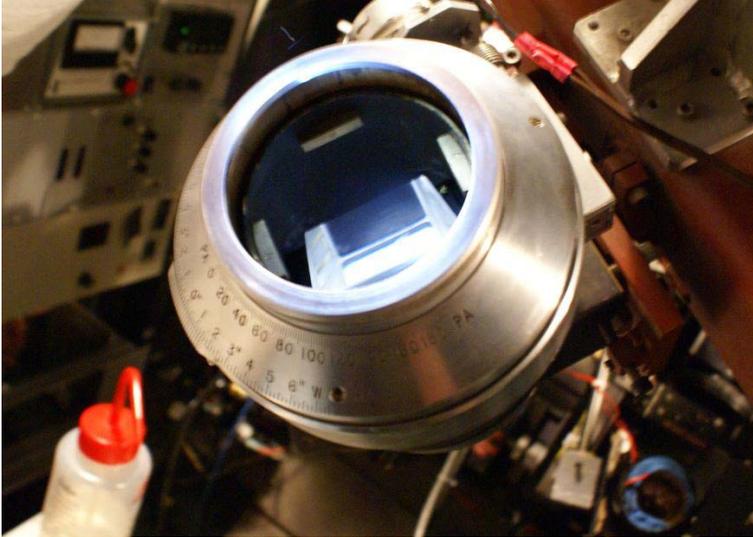
b) Decker Plate

Dave wiped off the surface of the Decker plate



c) Image Rotator

At first we couldn't find how to lower the image rotator to a more accessible position, so Dave did the initial assessment of the prism inside it via a stepladder. Then Kostas found the switch hidden behind some cabling on the side of an electrical panel in the slit room, and Dave cleaned the prism.



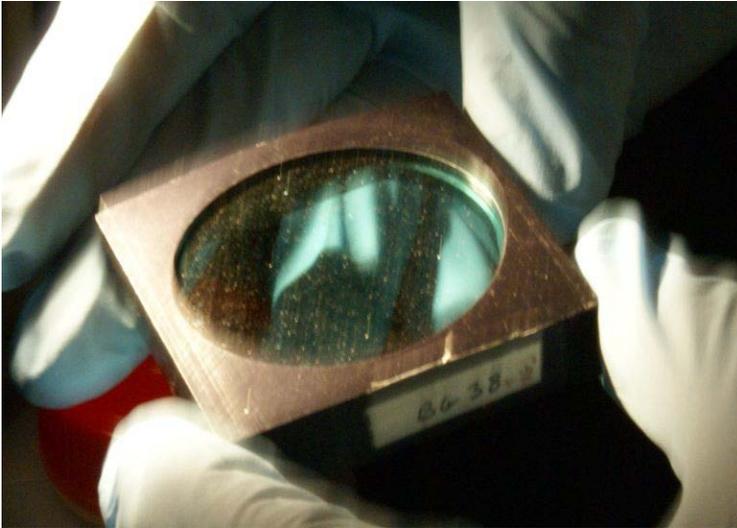
Prism in image rotator can



Rotator switch found

d) Filter Wheel

Dave cleaned several dirty filters from the filter wheel using breath and acetone, including this BG-38, an NG-4, and one labeled "BG-?"



Hamilton Camera Room

Dave used canned air to blow the dust off the Hamilton Collimator. It had the known defective area on the right side, and also appeared sleeky.



The prism access was open, so Dave wiped it with ethanol. That streaked, so he wiped it again with acetone. In this photo he blows the dust off the grating.

