

LMIRCam Final Report

The University of Minnesota was responsible for the design and fabrication of the main structural components, mechanical supports, baffles, shipping crate, and the detector and optical mounts. We were also responsible for coordinating and checking the aperture and filter wheel components fabricated by the University of Notre Dame. The collimator and camera mirror mounts were critical components and required precise machining and subsequent metrology.

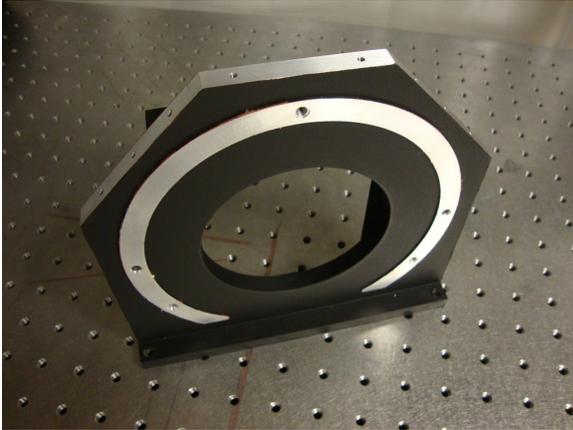


Figure 1. Camera mirror mount. Pictures courtesy Jarron Leisenring, UVa.

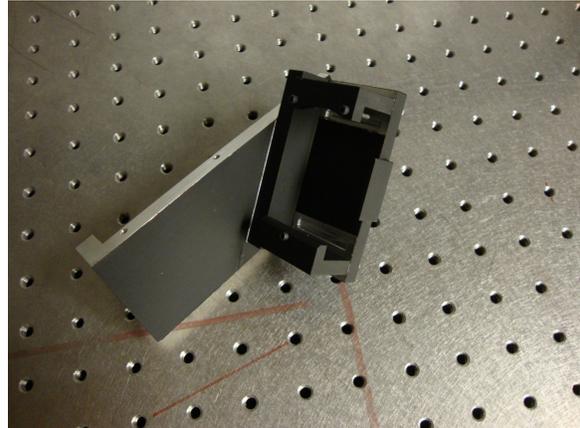


Figure 2. One of the 45 deg. mirror mounts.

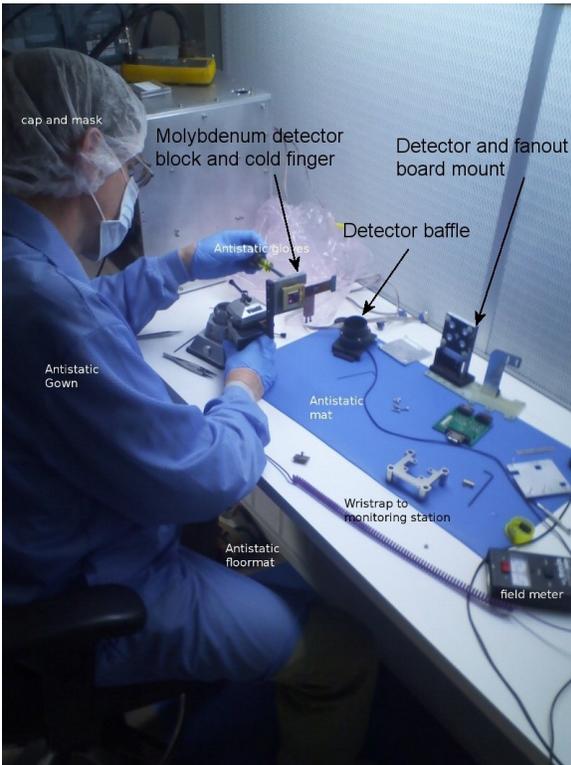


Figure 3. Jarron (I think) at UVa assembling the detector in its mount.

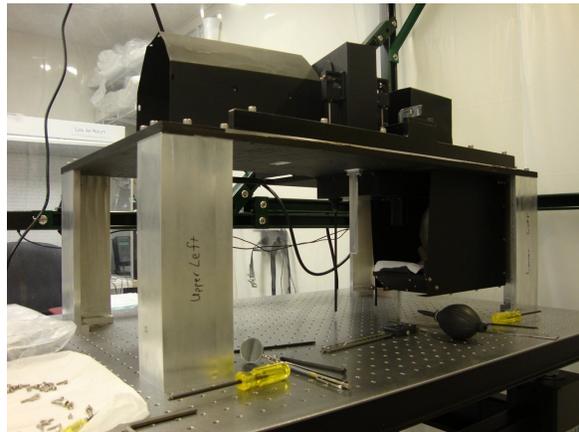


Figure 4. LMIRCam on the test bench at UVa. The collimator mirror mount and baffle are on the lower right. The beam comes in from the left below the main plate and over to the collimator, back to a diagonal, then up through the main plate.. Above left is the baffle for the camera mirror, which was not mounted for this picture.

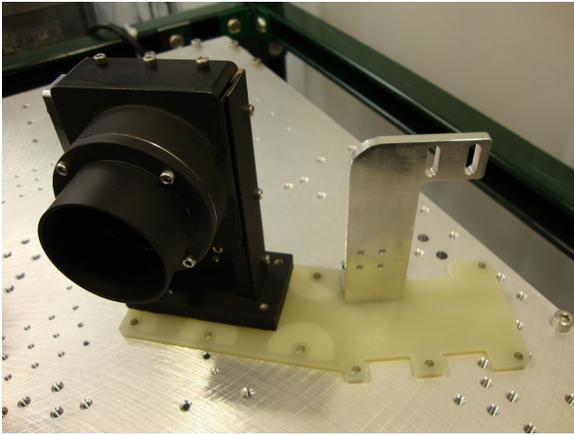


Figure 5. The detector mount with fanout board mount and G10 base prior to modifications by UVA for temperature sensing and control. The thermal performance of the G10 base was modeled before fabrication.



Figure 6. LMIRCam test fit in the NIL/NOMIC dewar. The 10 micron nuller sits below LMIRCam in this image. They are side-by-side when mounted on the telescope. The 'top' where the beam enters is on the left, about mid-thigh.

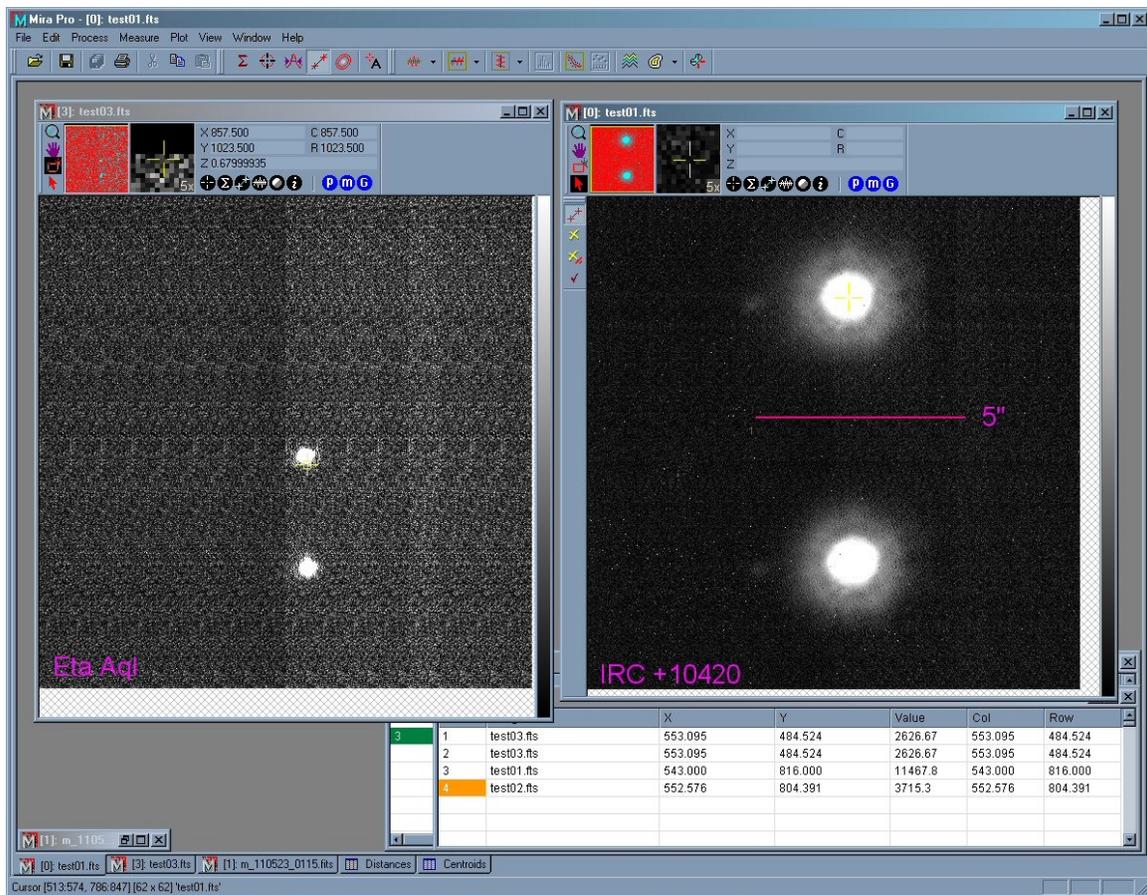


Figure 7. Rough cut image of IRC+10420 taken with LMIRCam in the L band. The FWHM of Eta Aql and the inner core of 10420 is 0.11". The image of 10420 has been adjusted to bring out the faint emission surrounding the extended core. North is 30 deg. clockwise. The faint source to the left is also seen in the R band in HST images.