ODI News: Hardware Checks & Dewar CDR

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The team at the NOAO instrument shop has started to assemble ODI parts. Currently, the front lens holder, telescope interface ring, atmospheric dispersion compensator, and filter mechanism have progressed significantly, allowing a first fit check. Figure 1 shows ODI mounted on the WIYN rotator simulator cart. After this first check, there is still a lot of detail work remaining, but this first assembly was a very impressive demonstration of ODI's dimensions. Congratulations to the NOAO instrument shop team for reaching this milestone! In the meantime, we also received the outer shell for the ODI dewar and the base plate for the focal plane. Construction of the shutter made great progress as well. The large shutter was designed and is being fabricated by Klaus Reif and his team at the University of Bonn and the Hoher List Observatory.

Figure 1: Major components of ODI's instrument support package are assembled on the instrument rotator simulator cart (yellow). The blue-colored parts will hold a third of the filter exchange mechanism. Three swing arms are visible: One is positioned in the beam, one out of the beam, and the outermost is in a position where the filter could be exchanged.

Figure 2: Gary Muller and Roger Repp inspect the ODI dewar shell. The CCD flex-circuit interface plate will mount on the large rectangular opening. One of the four cryo-coolers will be mounted to the large round opening at the right.

Figure 3: The Silicon-Carbide focal plane base plate. The 64 square openings are the locations for the OTA detectors; the focus sensor CCDs will be placed in the rectangular openings. The surface of the focal plate is polished flat to 10µm and provides the reference plane for mounting the OTA detectors.

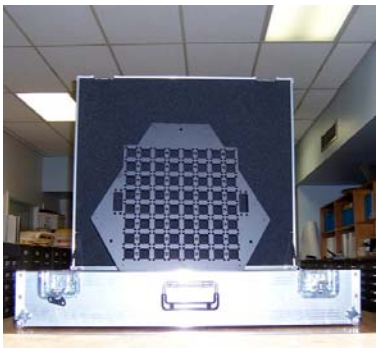

Figure 4: The Bonn Shutter for ODI during assembly. The two-blade design will allow linear exposures ranging from tens of milliseconds to hours with homogeneous illumination of the focal plane.

The last remaining review of an ODI hardware system took place in September when the ODI dewar subsystem underwent an external critical design review. Bruce Bigelow, Tim Pickering, and Tom O'Brien served on the panel. After a day of design presentation—mostly carried out by Gary Muller, ODI mechanical engineer—and intense discussions, we received a very positive response from the panelists. Along with some very positive findings, we also received advice on improved handling of risk areas such as the timely delivery of the focal plane with packaged OTA detectors, and the heat removal from the CCD controller. The ODI team thanks the panelists, all of whom had previously served on earlier ODI reviews. We appreciate their willingness to share their expertise to enhance our project. A review of the ODI software will be held in November.~