

## GNIRS PROGRESS REPORT

October 26, 2003 – November 25, 2003

### Accomplishments / Status

*Summary:* 99% of the work from the Restart Review to Final Acceptance has been completed. The instrument arrived at Cerro Pachon on October 30<sup>th</sup> with no significant damage. The GNIRS team arrived to unpack and inspect the instrument on November 4<sup>th</sup>. The instrument was opened and a thorough inspection revealed one wire in a ribbon cable abraded against a cold strap, shorting a conductor to Dewar ground. The only other items in the Dewar were several ribbon cable connectors were loose in their sockets and had to be re-inserted. The Thermal enclosures arrived in good condition, with only a couple of motor driver modules loosed from their sockets in the Components Controller. The entire trip was recorded on shock watches which indicated that the main instrument did not see >2g shock.

Several days were spent in training the Gemini staff, which participated in both the disassembly and reassembly of GNIRS, including the delicate operations of removing and replacing the detector. Training included actual hands-on and lecture. Gemini staff training is now considered complete.

The GNIRS spares were delivered to Gemini with the receipt of the instrument on Cerro Pachon. These have been inventoried and accepted.

Gemini had ordered new slit masks that did not arrive by the time the instrument was ready to close, so one of the spare science slit masks was modified to provide a few pinholes in place of the 90 micron slit (using aluminum tape and a sewing needle). Gemini will replace this mask at some convenient time in the future, probably when the IFU arrives.

Some effort was spent interfacing GNIRS software to the Gemini environment, particularly the DHS, but all seems to have been ironed out over the course of the week of November 17. There remains a residual issue with the wavefront sensor code for A&G operation, but that is being addressed by Gemini as this report is being prepared in mid-November.

After the instrument was closed and pumped down, it was cooled using the LN2 precool system and He cryocoolers. GNIRS was cold and ready for testing on Monday, November 18.

The Post-Ship AT is complete except for the software AT which will be completed on November 20<sup>th</sup>. Otherwise, the instrument is operating and is ready for fit check in December. The instrument will remain cold while Gemini continues software code check out and characterization.

Results on read noise tests are very similar to pre-ship values - 16 digital averages, 32 LNR = 6.6 electrons, etc. Initial long dark results indicate dark counts in the range of 0.05-0.07 e-/sec/pixel (based on the first 4 images only).

The first On-Telescope fit check and pupil alignment activity is scheduled for the week of December 8th. The Final AT is scheduled for early January 2004. Members of the GNIRS team will return to Chile for both of these events.

*Next Milestones:* The next major project milestones are:

- Complete on-telescope fit check and pupil alignment the week of December 8<sup>th</sup>
- Complete final AT in Early January

*Earned Value:*

	<b>December</b>	<b>Jan-Feb</b>	<b>Mar-May</b>	<b>May-June</b>	<b>July</b>	<b>Aug-Sept</b>	<b>October</b>	<b>November</b>
<b>BCWS</b>	\$3,572,138	\$3,572,138	\$3,572,138	\$3,572,138	\$3,572,138	\$3,572,138	\$3,572,138	\$3,572,138
<b>BCWP</b>	\$3,274,323	\$3,276,019	\$3,380,046	\$3,375,194	\$3,375,194	\$3,375,194	\$3,375,194	\$3,375,194
<b>ACWP</b>	\$4,502,594	\$4,581,247	\$4,724,157	\$4,745,416	\$4,840,089	No Update	\$4,840,089	\$4,840,089
<b>SPI</b>	.92	.92	.95	.94	.94	No Update	.94	.94
<b>CPI</b>	.73	.72	.72	.71	.70	No Update	.70	.70

The cost table above reflects planned and actual charges to the project up to the end of October. The project has spent \$1,631,080 in capital to date.

*Project Management:* (99% complete) The project plan may be viewed on the GNIRS web site at: <http://www.naoa.edu/ets/gnirs/> under Management, Planning.

*Systems Engineering:* (100% complete).

*Mechanical Design, Fabrication, Assembly and Test:* (100% overall).

*Electronics:* (100% complete).

*Software Development:* (100% complete).

*Alignment and Integration:* (100% complete overall).

*Deliverables:* (99% complete overall).

*Procurement:* (99% complete overall).

### **Problems / Solutions**

None.

### **Key Personnel**

No Changes.