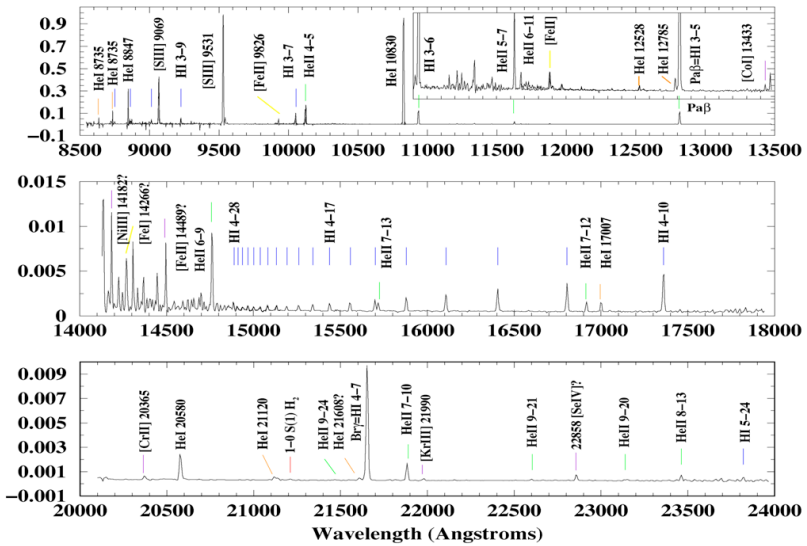
Some information herein was excerpted from Gemini Web pages. For complete information, please see:

http://www.gemini.edu/sciops/instruments/gnirs/



GNIRS spectrum of the planetary nebula NGC 3918 at a spectral resolution of ~1700, obtained in the short camera cross-dispersed mode, covering the 0.85 – 2.4 μm range in a single observation. Spectra from five orders were corrected for telluric absorption and combined; the gaps in wavelength coverage between the three panels are regions of strong telluric absorption. The inset in the upper panel shows the 1.1 – 1.35 μm region scaled up in intensity to highlight the weaker emission lines. Spectrum and line identifications courtesy of C. Winge and K. Volk (Gemini).

NOAO Staff Contacts for GNIRS are:
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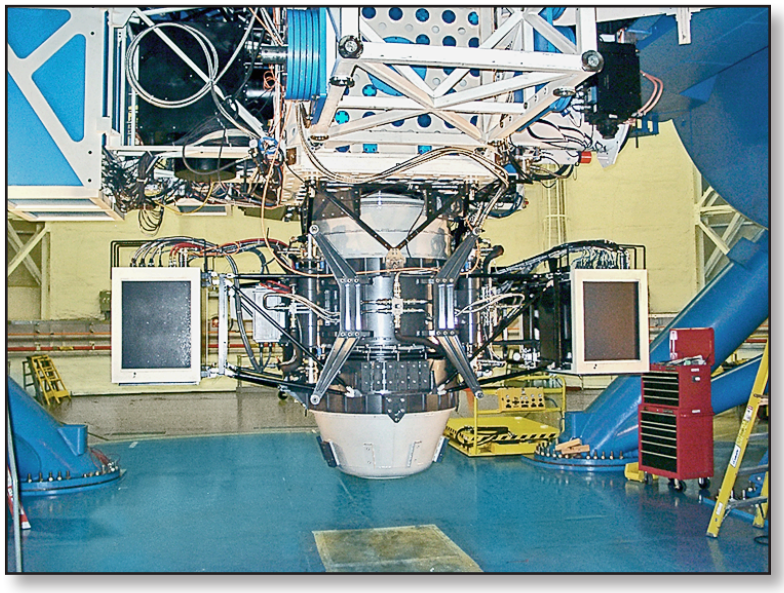
Queries for Gemini-specific issues should be directed to the Gemini HelpDesk at:
http://www.gemini.edu/sciops/helpdesk

December 2008

GNIRS

Medium-Resolution Near-IR Spectrograph



GNIRS on the uplooking port of Gemini South in December 2003, during the final post-ship acceptance testing.

Offered at ***Gemini North***

GNIRS
GEMINI NEAR INFRA-RED SPECTROGRAPH

The Gemini Near Infrared Spectrograph is a cryogenic spectrograph that operates over the range 0.85-5.5 microns. It can be used in a variety of different observing modes, including two pixel scales, three spectral resolutions, and cross-dispersion options. Adaptive optics modes should eventually become available. The instrument was designed and built by the National Optical Astronomy Observatory (NOAO) at facilities located in Tucson, Arizona. GNIRS was delivered to Gemini South in October 2003 and was used for science observations from March 2004 until April 2007, when it was seriously damaged in an accident. The instrument is being repaired in Hilo and will become available for science observations at Gemini North, probably around mid-2009. Performance is expected to be similar to that before the accident.

Because of the complexity of the instrument, not all possible observing modes are supported; the available modes are listed below.

Telescope
Gemini North (starting in 2009)

Instrument Properties

Wavelength coverage: 0.85-5.5 microns

Detector: 1024×1024 pixel InSb (ALADDIN III)

Slit Widths: 0.10, 0.15, 0.20, 0.30, 0.45, 0.675, and 1.0 arcsec (>2 pixels [see below] lowers spectral resolution)

Modes supported:

- Long slit (6 order sorting filters cover 1.03-5.5 microns; only one grating order is observed at a time)

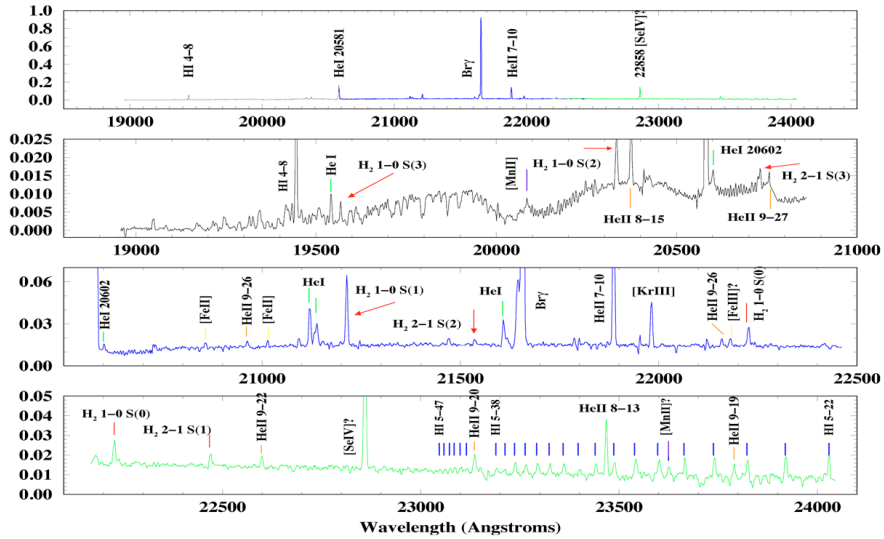
  Long camera:
  - 0.05 arcsec pixels
  - 50 arcsec slit length
  - R=1700, 5100 or 18000 (2 pixel slit = 0.1")

  Short camera:
  - 0.15 arcsec pixels
  - 100 arcsec slit length
  - R=1700 or 5900 (2 pixel slit = 0.3")

- Cross-dispersed:
  - 0.15 arcsec pixels
  - 7 arcsec slit length (new)
  - R=1700 or 5900 (2 pixel slit, short camera)
  - Complete wavelength coverage 0.85-2.5 microns in single grating setting only at R=1700
  - Complete coverage at R=5900 requires 3 grating settings

- Integral field: no longer available

Adaptive optics modes: GNIRS was designed to work with the Altair AO system on Gemini North. Commissioning activities will identify and characterize configurations that can be productively used with AO. These capabilities may be offered later in 2009.



GNIRS spectrum of the planetary nebula NGC 2867 at a spectral resolution of 5900 in longslit mode, integrated over the 14 arcsec diameter of the nebula. The observations cover the wavelength range 1.90 – 2.40 μm in three grating settings. The top panel shows the three spectra combined and displayed so that the strong Br γ line fits on the graph. The three lower panels display the individual spectra for the three grating settings, scaled up to show the weaker emission lines. The observations of both NGC 2867 and NGC 3918 were obtained by C. Winge (Gemini), J. Elias (NOAO) and A. Ardila (Laboratório Nacional de Astrofísica, Brazil), during the January 2004 commissioning run.