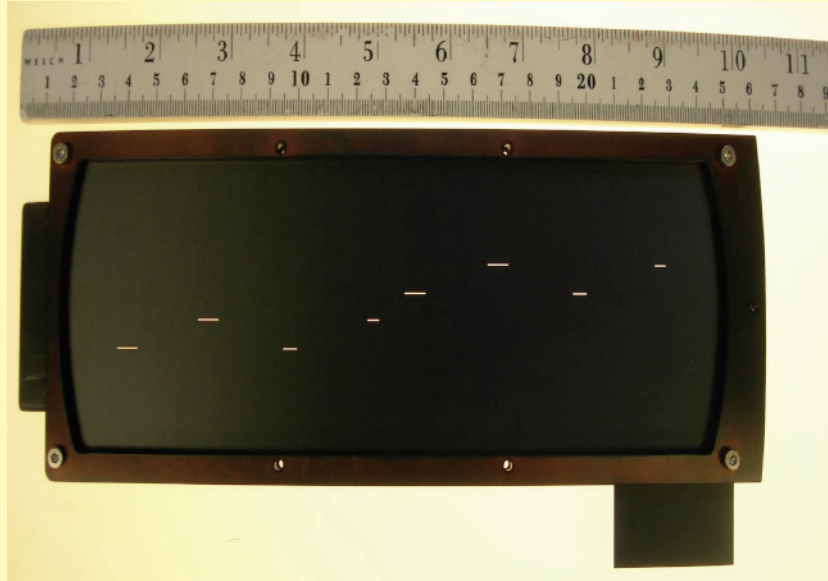


For more information on F2, please see the following Web pages:  
<http://www.gemini.edu/sciops/instruments/flamingos2/Flam2Index.html>  
<http://www.astro.ufl.edu/flamingos-2/>



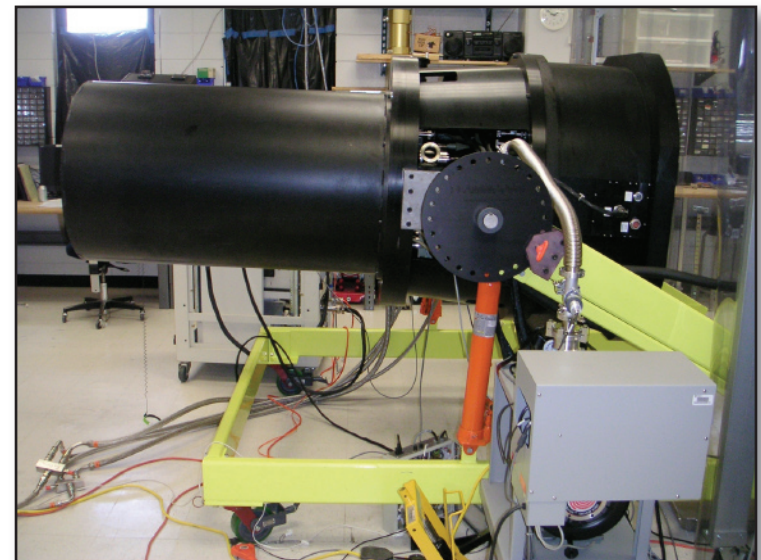
An F2 MOS mask. The masks allow for targets within an approximately 2 by 6 arcminute field of view. The example shown above is for a relatively low target density.

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F2 is being built at the University of Florida (PI Stephen Eikenberry)  
and is expected to be delivered to Gemini in 2008.

# FLAMINGOS-2 (F2)

## Near-IR Imager and Multi-Object Spectrograph



FLAMINGOS-2 (aka F2) in the lab at the  
University of Florida. The right side of the  
instrument mounts to the telescope.

Planned for **Gemini South**



December 2007



**FLAMINGOS2, FLorida Multi-object Imaging Near infrared Grism Observational Spectrometer 2, is a near infrared imager and medium resolution multi-object spectrometer for seeing limited and adaptive optics use.**

## F2 Instrument Properties

**Detector:** 2048×2048 HAWAII 2 by Rockwell Scientific. The detector is sensitive to light over 1–2.5 microns, and has 18-micron pixels.

The F2 detector is expected to operate with read out noise and dark current similar to other recent HgCdTe devices, i.e., RN ~10 electrons and dark current ~ 0.01 electrons per second.

**Grisms:** F2 deploys three grisms on a rotating wheel to provide R=1200 (two pixel) spectra covering the J and H or H and K bands in a single spectrum or R=3000 (two pixel) for one of J, H, or K.

**Field of View:** The F2 field covers a 6-arcminute-diameter circle on the sky for seeing-limited observations (0.18 arcseconds per pixel). With the MCAO system and f/32 input to F2, the field is 120 arcseconds in diameter (0.09 arcseconds per pixel).

The seeing-limited field is designed to be used with multiobject spectra (MOS) masks which cover 2 by 6 arcminutes on the sky, the smaller dimension being along the dispersion direction on the array.

**MOS Masks:** F2 is equipped with a front end MOS dewar. This cryogenic front end can be warmed up and re-cooled on a daily basis, allowing different sets of MOS masks to be observed on a fast duty cycle. The dewar is designed with a side port through which a MOS cartridge can be accessed and mask plates changed. When cycling masks, the main dewar and MOS dewar are isolated with an internally deployable vacuum barrier. The MOS dewar holds 9 masks plus additional long slit and imaging stops. Typical MOS masks will have 10–100 slitlets depending on target density and observing strategy.

**Adaptive Optics:** F2 is designed to be used with the multi-conjugate adaptive optics (MCAO) module on Gemini South. This adaptive optics system will provide diffraction-limited images over a two arcminute field. Such highly concentrated images will greatly enhance the sensitivity of F2.

**Guiding Options:** Apart from MCAO, F2 will be routinely used with its own on-instrument wavefront sensor (OIWFS) for seeing-limited observations. Since the field of view is larger in this mode than for MCAO, it may prove efficient for targets with high source density spread over a larger area than the MCAO field (particularly for distant galaxies which are not point like).

**Deployment:** F2 should be delivered to Gemini South around the middle of 2008, with commissioning and early science use beginning in 2008B-2009A. The MCAO system is being integrated in La Serena and will begin on-telescope integration in 2008.

**Telescope:** Gemini South