

Approximately ten weeks will be needed for integration of the instrument within the CFHT environment: tests to check the performances of the instrument after the shipment, compared to the DAO performances; integration of the control/user interface system; handling at the summit; preliminary tests on the telescope (daytime).

Commissioning Phase

We expect to follow the following schedule for commissioning the instrument on the sky: (gray time, 2 quarter moon):

1. First light on the telescope end of April 1992: 5 nights of engineering tests of the MOS (and SIS).
2. Five nights of engineering tests for the SIS (and MOS), end of May 1992.
3. Four nights of engineering for the MOS/SIS, including the scanning Fabry-Pérot configuration, end of June 1992.

This will complete the series of engineering tests needed for a proper check-out of the behavior of the 2 spectrographs.

We are planning on performing the full scientific performance evaluation on eight nights early in the second semester 1992.

The final commissioning and release to the general observers will then take place in August/September 1992.

O. Le Fèvre

MONICA Performances

The University of Montreal's Infrared Camera, MONICA, will be opened to general use within the CFHT community during 1992. Anyone interested in using the camera should contact René Doyon, Daniel Nadeau, or Neil Rowlands, at the Université de Montréal. MONICA is intended to satisfy the immediate need for a near infrared camera while the facility cameras are completed, which is expected in late 1992. Briefly, MONICA employs a science grade NICMOS 3 256x256 pixel Hg:Cd:Te detector that is sensitive from 1-2.5 μm . Some of the basic performance characteristics of MONICA, as derived from a September 1991 run with this instrument mounted at the f/8 focus of CFHT, include:

1. plate scale: 0.22 arcsec/pixel yielding a 56" field of view
2. filters: J, H, and K available plus a CVF covering the 1.9 - 2.5 μm range with $\sim 1.5\%$ spectral resolution
3. detector read noise: 30 e- per read
4. dark current: ~ 2 e-/second
5. Throughput and Background Flux:

Filter	Throughput (%)	Sky (mag/arcsec ²)
J	7	14.9
H	14	13.0
K	16	12.1

These numbers translate to $K=17.9$ and $J=19.0$ per arcsec² for a $S/N=1$ in 1 second of integration, when background limited.

6. Cosmetics: Approximately 250 bad pixels with most either in the form of single "hot" or "cold" pixels and a few 3x3 clumps. No bad rows or columns exist.
7. Flat Field: Typical rms deviation from the mean is $\sim 5\%$. It

is straightforward to remove pixel-to-pixel variations to $<1\%$ for background limited frames, which will usually be the case given the low read noise of the detector. The flatfields obtained during the September run show a 30% drop in the signal towards the corners of the array. At this time it is not clear whether this is intrinsic to the detector or due to some vignetting caused by a misalignment inside the dewar. In the latter case it will be corrected.

8. Image Quality: During the September run stellar PSFs were generally between 0.6 and 0.7" FWHM, with values of 0.5" seen occasionally. A simple reimaging lens system was used, which was appropriate for the scientific programs allocated time (narrowband imaging near 2.15 μm and imaging of a source extending over 10"). Aberrations were expected and were seen at the edge of the field, mostly in the J band. At the moment, J images have significant chromatic aberration, creating stellar PSFs that appear somewhat elliptical for stars that are $>20''$ from the center of the field of view. J-band stellar PSFs near the corners of the field have long-axes $\sim 50\%$ greater than their short-axes. Also, chromatic aberration causes a non-linear change of plate scale with wavelength, yielding as much as a $\sim 3\%$ difference in plate scale between J and K. Therefore, programs involving accurate multi-color photometry of multiple point sources in the field (e.g., a globular cluster field) or precise astrometry are discouraged at this time.

Raw data are written in FITS format and transferred from MONICA to the CFHT computer network automatically, where they can be manipulated or stored on Exabyte tapes. A TCS link that will permit automatic beam-switching during data acquisition is expected to be available, which will help to reduce the overhead often associated with IR imaging.

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Coudé Detector Environment

In November of 1989, the initial specifications for a six motions detector environment to be used at the new F/4 spectrograph were defined. The six motions will be computer controlled, consisting of an X, Y, Z (focus), X & Y ± 2 degree Tilt, and a ± 15 degree Rotation. The tilt and rotation will allow precise alignment of the CCD chip during set up, and the X and Y stage will allow precise on demand positioning of the detector along the spectrum during observing.

The detector environment will be able to accommodate any dewar body up to 25 cm in diameter and 60 centimeters long. Initially, the dewar is clamped to an adapter plate in the CCD laboratory. The assembly is then inserted from below the detector environment up into the Rotation stage which supports a 30 cm diameter bayonet system conceptualized by T. Gregory. This will eliminate having to fumble around with fasteners and tools to mount the dewar. It also allows additional adapter plates to be custom fitted to any unusual dewar configurations we may encounter in the future.

The X & Y stage is a complete unit supplied by Daedal Corporation. All of the other motions as well as the structure were designed by W. Knight using his CAD system. This took