Chile:

AUGUSTEIJN, Thomas (NL), Student
HUTSEMEKERS, Damien (B), Fellow
JARVIS, Brian (AUS), Fellow
PASQUINI, Luca (I), Fellow
VAN DROM, Eddy (B), Coopérant

Departures

Europe:

GIRAUD, Edmond (F), Fellow
MAGAIN, Pierre (B), Fellow
RICHICHI, Andrea (I), Student

RUSSO, Guido (I), Fellow (Data Archivist)

Chile:

BOHL, Thomas (D), Infrared Instrumentation Engineer

EMMI Grating Unit under Test

The photograph shows a grating unit of EMMI (ESO Multi-Mode Instrument, the optical-range spectrograph for one of the Nasmyth foci of the NTT) that is currently being tested in ESO's integration laboratory in Garching. The mechanical parts for this unit have been manufactured by Enraf-Nonius in the Netherlands using designs made by the ESO mechanics group. The concept and design had been successfully tested on a prototype in the fall of 1987. Two gratings are mounted back to back in the grating holder of which the angular position is servo-controlled. Selection of the central wavelength will be remotely controlled as well as flipping the grating holder 180 degrees to select the other grating.

For precise positioning we selected the Heidenhain ROD 905 incremental encoder which is the most accurate encoder currently available. It has a radial grating with 36,000 lines/revolution and (by using 100 × subdividing electronics) a measuring step size of 0.36 arcsec. Although this could be marginally sufficient to achieve the +/− 0.5 to +/− 1 arcsec stability that is required for the complete unit, the ESO electronics group developed a new servo technique which locks on a zero-crossing of the basic sinewave. This so-called "phase-locked servo loop" has an electronic stability of +/− 0.1 arcsec. The tests measure the mechanical flexure of the unit in the orientations in which it will be used at the telescope as EMMI turns to follow the field rotation.

Five gratings are currently on order, three blue and two red ones. They are blazed at 400 and 550 nm for the blue and red arms of EMMI, respectively and provide resolving powers of up to 4,000 assuming a one arcsec wide slit. In a later stage, gratings with larger groove densities will be purchased that yield R up to 10,000 as well as an echelle for the red arm with R = 24,000.

The integration of the EMMI spectrograph in Garching will commence in the fall of 1988 and tests will continue during the first months of 1989. In the second part of that year the instrument will come into operation at the NTT.

H. DEKKER, ESO
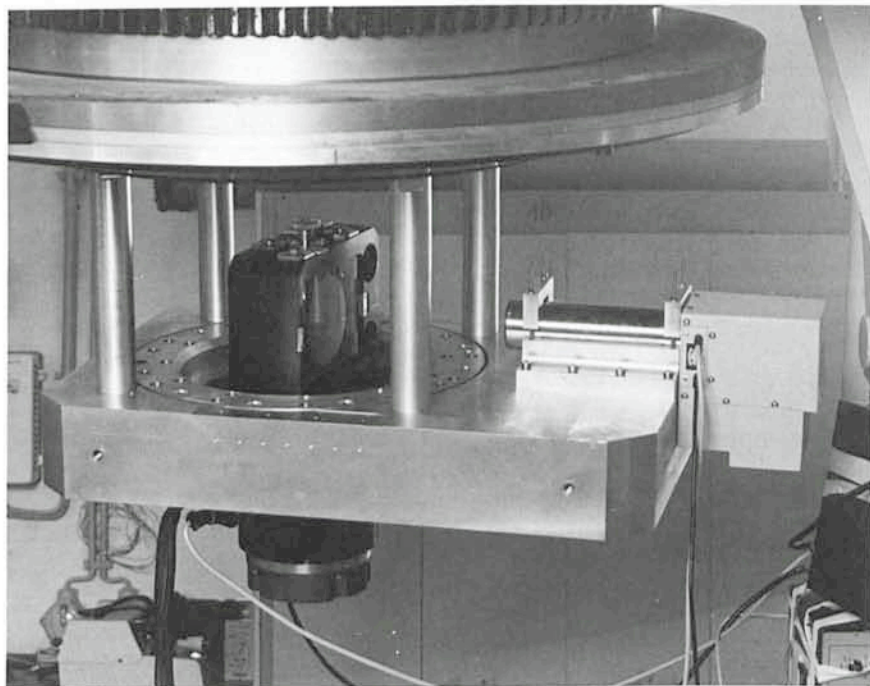
MIDAS Memo

ESO Image Processing Group

1. Application Developments

The table file system is being enhanced with a number of astrometric functions which will make it possible to perform full astrometric reductions in MIDAS. They include transformations between different coordinate systems, correction for epoch and equinox differences, and general astrometric reduction programmes.

Reduction procedures for data from the Infrared Array Camera (IRAC) are being developed in collaboration with A. Moneti. Besides extensive use of the existing CCD package, some new programmes were made to optimize the extraction of data utilizing the special characteristics of IR array detectors.

A new context implementing relational algebra on tables has been included. This context, developed in collaboration with the IFCAI in Palermo, is an experiment to extend the functionality of the table system.

2. Work Stations

To relieve the situation of interactive image processing with MIDAS both in Garching and at La Silla, a decision was made to purchase 5 work stations out of which 3 will be placed at La Silla. These work stations will be used in single user mode for interactive usage of MIDAS and linked to the main computer facilities through a Local Area Network using TCP/IP protocols.

During the spring of 1988 more than 20 different UNIX systems were benchmarked with the portable MIDAS. A detailed report of these tests will be given in the next issue of the *Messenger*. On the basis of these results and offers received, the systems were ranked according to their price-to-performance ratio. Three single user work stations