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

Departures

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GIRAUD, Edmond (F), Fellow
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Chile:

BOHL, Thomas (D), Infrared Instrumentation Engineer

EMMI Grating Unit under Test

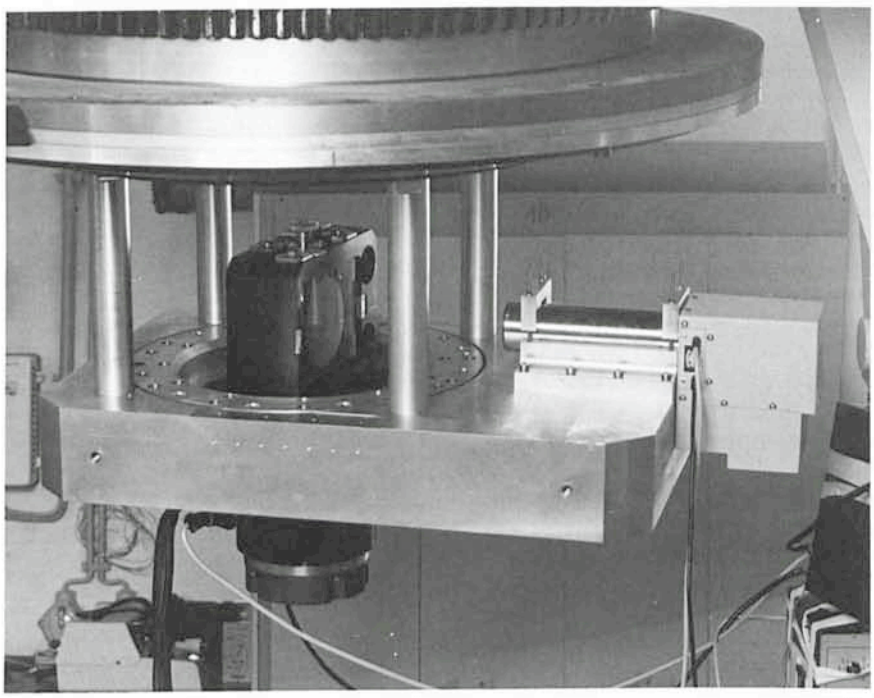
The photograph shows a grating unit of EMMI (ESO Multi-Mode Instrument, the optical-range spectrograph for one of the Nasmyth foci of the NTT) that is currently being tested in ESO's integration laboratory in Garching. The mechanical parts for this unit have been manufactured by Enraf-Nonius in the Netherlands 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

(i.e. SUN 4/110, PCS Cadmus-RC, and Bull DPX 5000-10) formed the best group with almost the same high performance per cost unit estimated over a 5-year period including maintenance. Work stations from IBM, HP, and Apollo-Domain could not be included in the evaluation due to formal issues. Due to the ESO requirement of maintenance at La Silla and a slightly better price/performance at the time of the tender, it was decided to purchase SUN 4/110 systems. It should be noted that the differences between the three systems were very minor and that slightly different criteria such as local conditions or usage for other applications than MIDAS may change the ranking. Further, both price and performance of work stations change rapidly with time altering the relative ranking (e.g. PCS improved the I/O performance of the Cadmus-RC system after the decision by modifying a driver).

3. Floppy Disk Formats

There has been a growing need for interchange of data between the ESO main computer facilities and PC-compatible systems. To accommodate this, an Olivetti M 290 (PC-AT compatible) and a PS/2 Model 30 were installed and connected to the ESO Local Area Network using TCP/IP protocols. These systems make it possible to read 3.5″ and 5.25″ floppy disks formatted in an IBM compatible format. Writing can be done on 720 kbyte and 1.44 Mbyte 3.5″ floppy disks or on 1.2 Mbyte PC-AT 5.25″ disks. Standard ASCII files can be exchanged without problems whereas other formats may be difficult due to different binary and record formats. The Image Processing Group will not be able to assist people in converting non standard files.

4. Portable MIDAS

The first official version of the portable MIDAS will be the 88NOV release which will be frozen on November 1st, 1988. This version will include the vast majority of applications available in the current VMS version. A few application packages may not be fully debugged and ready for the 88NOV release. This may include ROMAFOT and a new version of the long slit reduction package.

To make the transition easier, sites will be able to request both the portable version of MIDAS and/or a slightly upgraded version of the old VAX/VMS version of 88JAN. The MIDAS Request Forms will be sent out to all present MIDAS sites during October. Other sites may ask for the release through the MIDAS Hot-Line.

5. Measuring Machine Facility

The GRANT measuring machine was disconnected on August 1st and is no longer offered to users. Institutes interested in taking over this machine may contact ESO.

The new control system of the OPTRONICS went into operation in July. At this moment, it offers facilities to perform manual measurements of objects but will be upgraded later this year with options for scanning. However, it will not be possible to use this option efficiently before the central Measuring Machine Facility computer is replaced in the beginning of 1989.

6. MIDAS Hot-Line Service

The following MIDAS support services can be used to obtain help quickly when problems arise:

- EARN: MIDAS@DGAESO51
- SPAN: ESOMC1::MIDAS
- Tlx.: 528 282 22 eso d, attn.: MIDAS HOT-LINE
- Tel.: +49-89-32006-456

Users are also invited to send us any suggestions or comments. Although we do provide a telephone service it should only be used in urgent cases. To make it easier for us to process the requests properly we ask you, when possible, to submit requests in written form through either electronic networks or telex.

"Remote" Control of the 1.52-m Telescope!

Until recently, astronomers working with the 1.52-m spectrographic telescope had to sit at the control desk *in* the telescope dome. During long, cold and perhaps windy winter nights this could be extremely painful. Now, following improvements in the mechanical functions of the telescope and a computerized positioning system, the control desk has been moved to an adjacent room (the former dark-room, no longer used for photography). Although a few functions still have to be done manually in the dome, these will also be "remotely" controlled in the future. I and other visiting astronomers at this telescope highly appreciate this new facility of the faithful old 1.52-m telescope.

B. STENHOLM

The new control room of the 1.52-m telescope. Night assistant Luis Ramirez P. at the guiding console, while astronomer Matthias Dietrich, Göttingen, is checking the results. ▶