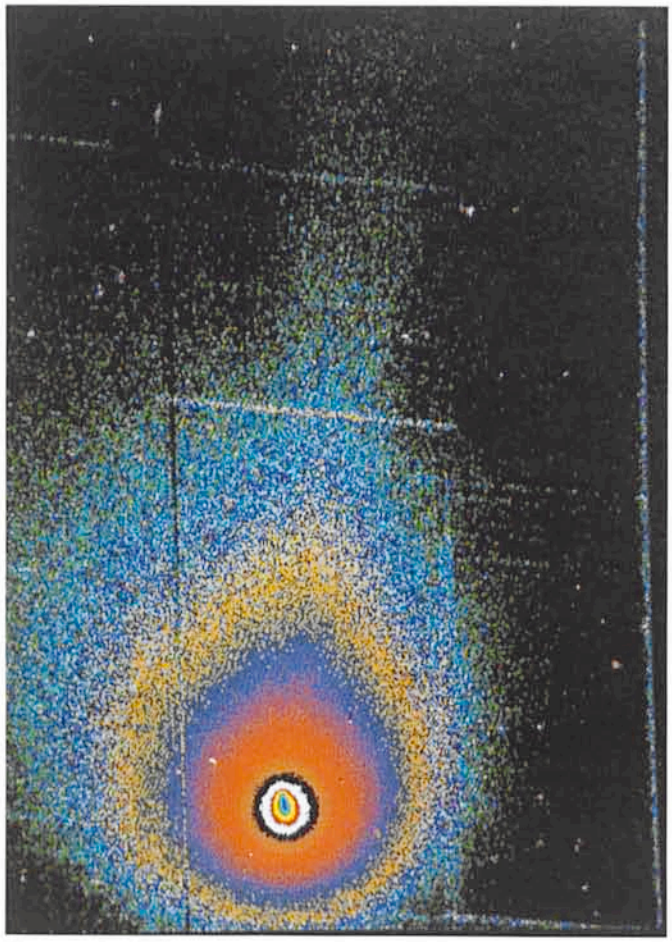

Figure 3: *A CCD raw image of Comet Wilson taken through an interference filter of 10 nm bandwidth centred at 426 nm ($CO^+$, $N_2^+$, $CH^+$). Exposure 30 min, April 29, 1987.*

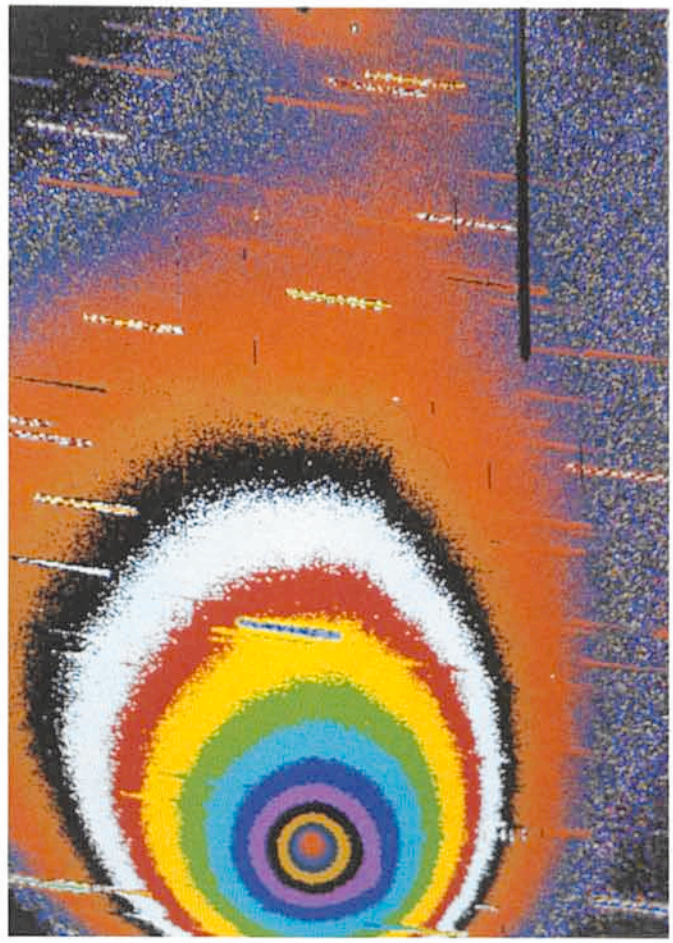

Figure 4: *A CCD raw image of Comet Wilson taken through an interference filter of 20 nm bandwidth centred at 660 nm ($H_2O^+$, $NH_2$, $C_2$). Exposure 5 min, April 29, 1987.*

very successfully with Comet Halley (3). Despite good transparency of the atmosphere in this night, we were unable to obtain any useful $CO_2^+$ images but, to our surprise, we found an $N_2^+$ ion tail at 391.4 nm. In the third night we used the "red" camera to record images and spectra in the range 420–650 nm. Figure 3 shows a false-colour image in the light of the $CO^+$ ion at 426 nm. Some $N_2^+$ or even $CH^+$ emission may contribute to the image. In this raw image each new colour represents a factor of 1.4 in the signal. The plasma tail is well visible. The dust continuum is noticeable from the elongation of the isocontours towards west (left side of figure). In Figure 4 we present an image of the comet taken through an interference filter centred at 660 nm with a bandwidth of 20 nm. Again each new colour represents a factor of 1.4. This image shows the $H_2O^+$ tail (O-7-O band) and a strong dust continuum. In addition, a neutral coma of $NH_2$ and of the $\Delta v = 3$ band of the $C_2$ Swan sequence fall into the filter bandpass (notice the strong intensity gradient around the nucleus). In the top of the frame a ghost image of the inner coma (scattered back from the CCD and reflected at the interference filter) appears. The spectra, which were taken with the slit intersecting the tail at right angles 5 arcmin from the nucleus, show the $C_2$ Swan band and some $H_2O^+$ lines against the background of an extensive night sky spectrum.

We would like to thank S. Deiries and S. D'Odorico for the coating of our CCD to make it UV sensitive and D. Hofstadt and his crew for their effort to find a possibility to point to the comet with our focal reducer. We appreciate help from P. Sinclaire concerning our CCD camera.

### *References*

(1) Jockers, K., Geyer, E.H., Hänel, A.: 1986, *The Messenger* No. **44,** 12.
(2) Cullum, M., Deiries, S., D'Odorico, S., Reiß, R.: 1985, *A & A* **153,** L 1.
(3) Jockers, K., Geyer, E.H., Rosenbauer, H., Hänel, A., 1987, *A & A,* in press.

# MIDAS Memo

*ESO Image Processing Group*

## 1. Application Developments

The routines for calculating centres of stellar images have been improved by M. Ghigo to take into account the finite pixel size. This gives a significantly better accuracy for undersampled images such as direct EFOSC frames taken with a good seeing. For well exposed images a positional error of less than 0.02 pixels can be reached.

The first MIDAS version of the ROMAFOT photometry package (ref. R. Buonanno) is foreseen for the 88JAN15 release. Although the user input to the package differs in some respect from the original version, the MIDAS implementation will provide all basic fea-

tures of the original. The first release will still be based on the internal ROMAFOT data format; subsequent future releases will work on MIDAS images directly and will use the table file system for the storage of the extracted parameters.

In the new release the plot package will be upgraded by adding the possibility of specifying the formats of the axis tick labels. In addition, a command PLOT/GRAY is now implemented which allows the production of gray scale plots on all graphic devices supported. The 88JAN15 release of MIDAS will use the AGL version 2.1.4.

A new context has been included in collaboration with M. Pierre. The context, in this preliminary version, contains three commands to model interstellar lines.

Work on the reduction and analysis of IRSPEC data is in progress.

### 2. Manual

As the MIDAS manual has now outgrown its present folder, it has been decided to split it into two volumes. The first volume will contain a description of the MIDAS system including system commands, syntax, data structures and general applications. It will also give the full help text of all available commands. The second volume will deal with data reduction using MIDAS. There will be chapters describing the general reduction of different types of astronomical data and several appendices each devoted to a specific ESO instrument.

### 3. Measuring Machines

The upgrade of the OPTRONICS measuring machine with a high speed scanning is in progress. The problems associated with the reticon array were solved and it is now possible to digitize and calibrate its 256 elements in approximately 20 msec. The main limitation on the speed is the MC68010 processor which does the dark current and flat field corrections. Due to significant delays in the delivery of disk drives and network equipment it is unfortunately not yet possible to offer the scan mode to users. We expect to switch to the new microprocessor control system in the spring of 1988 and offer the scanning mode to visitors in the summer.

After reviewing the usage of the GRANT machine it has been decided to discontinue its operation as of August 1988. After this date, measurement of coudé spectra must be done on the OPTRONICS machine. Those who want to use the GRANT machine are strongly encouraged to arrange for time as soon as possible.

### 4. MIDAS Hot-Line Service

The following MIDAS Support services can be used in case of problems to obtain fast help:

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

Also, users are invited to send us any suggestions or comments. Although a telephone service is provided, we prefer that requests are submitted in written form through either electronic networks or telex. This makes it easier for us to process the requests properly.

# NTT Status

*M. TARENGHI, ESO*

Work on the NTT telescope is progressing at full speed both in Europe and on its location at La Silla. During September and October this year there was extensive preparation of the ground and roads on La Silla. Civil engineering work began on the small hill next to the 3.6-m telescope at the place which was used during the past years for the Geneva Observatory Telescope. About 3000 $m^3$ of earth was removed by means of a sequence of minor and finely controlled dynamite explosions. Figure 1 shows the Chilean workers in the process of checking the locations of 28 explosions. The picture also shows their precautions to avoid excessive damage to the surrounding area. Large lorry tyres are placed on the ground and a strong metallic net is used as a protective cover. Figure 2 shows the explosion some minutes later. The smoke on the top of the hill indicates the future location of the NTT.

Following the excavation work the task of ensuring a flat surface began and a bulldozer opened the way for the 3 access roads foreseen in the project. Figure 3, taken on 28 October 1987, shows the subsequent preparation of the concrete slab upon which the NTT will stand.

The civil engineering work is expected to be completed in February 1988. In the meantime construction of the rotating building has been completed in Europe and it will be shipped to Chile during the course of the next weeks. The unconventional shape of the building optimally combines the highest thermo-fluid dynamic demands resulting in greater protection of the telescope without introducing a dome seeing component.

The rotating building was conceived by F. Franza and W. Bauersachs at ESO

Figure 1.

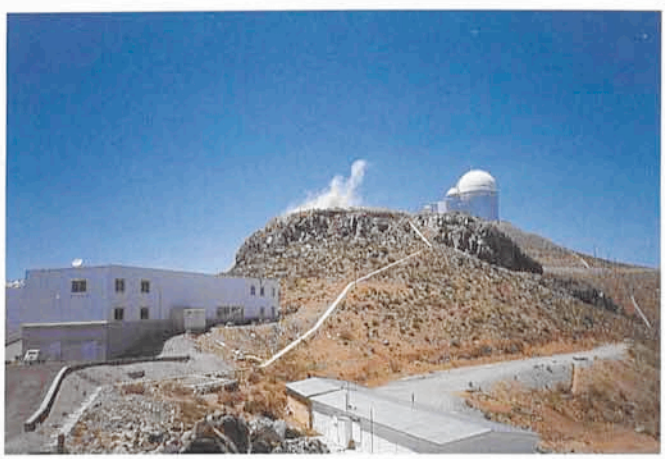

Figure 2.