MIDAS Memo

ESO Image Processing Group

1. Application Developments

The test and validation of all basic MIDAS commands have now been completed with the help of the Astronomy Group in ESO. This has led to the correction of many bugs and significant improvement of the documentation. Most of these upgrades are available in the 91NOV release of MIDAS.

In the Echelle spectroscopy package (context Echelle) new routines have been implemented which perform order definition and optimal extraction and provide an improved user interface.

A package for preparation of OPTOPUS observations was implemented by A. Gemmo. It enables users to create the command files for drilling the starplates directly from an object list in a MIDAS table file.

2. Problem Report Data Base

All user reports of Midas bugs and questions as of October 1991 are now being kept in a Midas-Problems database, as they are submitted to the ESO IPG. All related information (e.g. regarding the local environment, installation, etc.) is included in the DB and is available to both Midas users as well as to the person assigned to the bug fix. Once a solution to the problem has been found, whether or not it actually leads to a real code modification, a brief summary is included in the associated solution data base and a reference to a 'patch-file' containing more details (e.g. code modification) is given.

This facility has been developed in conjunction with the ESO Archive and is available to both internal users and external Midas sites through Starcat. In order to access it, internal users just invoke *starcat ESO midas* from any of the organization's main computers. External users need to connect to ESO first and log in under the *starcat* account (no password required), within starcat type *ESO midas* to access the DB.

3. MIDAS Releases

It has become the general impression of MIDAS site managers and MIDAS users that a rapid cycle of official releases (i.e. each half year) is no longer needed as the MIDAS system has stabilized. Therefore, the MIDAS Group has decided to decrease the rate of official MIDAS releases to once per year after the 91NOV version. This will also reduce the internal overheads and enables us to put more efforts in the development of application programmes.

It is foreseen to offer new MIDAS application packages and patches through an anonymous *ftp* account to avoid unnecessary delays for external sites. This will ensure that users will have both a stable core system, and access to new applications developed between the releases. MIDAS sites managers will be informed when this facility has become available.

4. MIDAS Hot-Line Service

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

- EARN: MIDAS@DGAESO51.bitnet
- SPAN: ESO::MIDAS
- Eunet: midas@eso.uucp
- Internet: midas@eso.org
- FAX.: +49-89-3202362, attn.: MIDAS HOT-LINE
- Tlx.: 528282 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 we ask users to use it in urgent cases only. To make it easier for us to process the requests properly we ask you, when possible, to submit requests in written form either through electronic networks, telefax or telex.

More information about MIDAS can be found in the ESO-MIDAS Courier which is the biannual newsletter on MIDAS related matters issued by the Image Processing Group and edited by Rein Warmels.

IRAC TEST RUN REPORT No. 2:

Performance of IRAC with the New Pupil Stop

When originally installed on the telescope in 1988, IRAC-1 had a 2.8-mm diameter pupil stop. Following the initial tests, a very low instrumental efficiency was measured, and it was thought at one point that the pupil stop was too small and was reducing the number of detected photons. The pupil stop was then drilled out by J.-L. Lizon to 3.7 mm, but no improvement of source signal was measured, and it was deduced that the low efficiency was due to the intrinsically low DQE of the Philips array and not to anything having to do with the camera. The latter was corroborated by laboratory measurements of the pixel fill-factor which was found to be only ~15 %, much lower than expected from the data detector sheet.

Following several observing and test runs, it was realized that the sky background was significantly higher than nominal (see Moneti et al., 1991, *The Messenger* No. **64**, 66). This was not a serious problem with the 32×32 engineering arrays that were used until December 1990: these arrays had a 2.3-μm cut-off wavelength and were not sensitive in the thermal infrared, i.e. at L, where the sky (and telescope) background is very high. At that time, the limiting sensitivities were clearly imposed by poor detector quality and not by the extra noise produced by the high sky background. With the arrival of the 64×64 array we began using the camera at L and the extra high background began to impose important limitations on the integration times (DIT) that could be used with the L filter.

In early October 1991 an insert was designed and built which could be placed inside the current pupil stop and which effectively reduces the pupil to 2.6 mm. This insert was installed and tested in November 1991 and a reduction in sky background was measured, while the instrumental zero points (i.e. the source signals) were unaffected. The new sky backgrounds are summarized in Table 1, and they are generally com-