A Second GEC CCD With UV Sensitive Coating Tested on the CASPEC Spectrograph

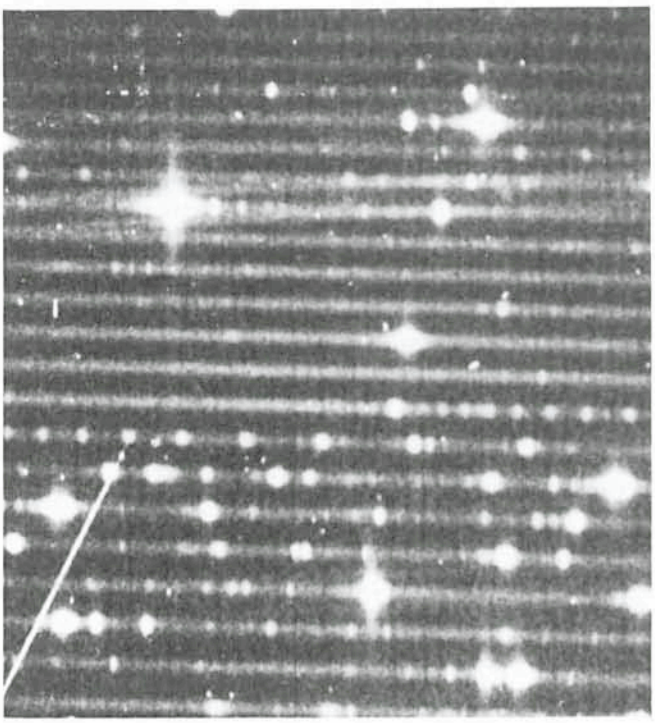
The ESO *Messenger* No. 41 contained a short summary of the properties of the CCDs in operation at the La Silla telescopes, among them a GEC CCD (ESO # 6) coated in the ESO lab to enhance the UV-blue sensitivity. A detailed description of the coating technique, the spectral response curve and the first spectroscopic results have been given elsewhere (1). A second GEC CCD was coated and tested successfully in August of this year in the ESO detector lab by Sebastian Deiries and Roland Reiß and it is now available at the telescopes. Its properties are given below.

ESO CCD #7

Telescope:	3.6 m/2.2 m
Chip type:	GEC P8603/A Fluor. coated
Pixel number:	385 × 576, 22 μm in size
e^-/ADU and gain:	6 at G100
Read out noise:	15 e^-
Dark current:	22 ADU/hr at 130°K
Peak quantum efficiency:	55% at 650 nm
Average QE 300–400 nm:	23%

The first spectroscopic tests at the telescope indicate good charge transfer properties. The sensitivity is uniform, with only a few low sensitivity spots and pixels. The quantum efficiency curve is published in (1).

The chip was tested on the ESO echelle spectrograph, CASPEC, with the 52 lines/mm echelle and the short camera.



A CASPEC spectrum of the slow nova RR Tel centered on 350 nm and covering about 100 nm. A GEC CCD coated in the ESO lab to enhance the UV sensitivity was used as a detector (ESO CCD #7). The resolving power is 22,000, the exposure time 30 m. The bright streak in the upper-left corner is present in this frame only and it is probably due to an energetic cosmic ray.

With this combination, the orders are well separated down to 310 nm and full spectral coverage is obtained to about 420 nm. The figure shows the UV spectrum of the slow nova RR Tel at a resolving power of about 22,000. From an observation of the standard star LTT 7987 (2) with a wide slit, the efficiency of the atmosphere-telescope-spectrograph-detector combination at 350 nm is such that 1 photon/A,s is recorded at 350 nm from a star of $m_{350} = 14.3$, where the magnitude is related to the flux in ergs s^{-1} cm^{-2} Hz^{-1} by the expression $m = -2.5 \log f_\nu - 48.6$. *S. D'ODORICO*

References

(1) Cullum, M., Deiries, S., D'Odorico, S., Reiß, R., 1985, *A & A*, in press.
(2) Stone, R.P.S., Baldwin, J.A., 1983, *M.N.R.A.S.* **204,** 347.

MIDAS Memo

ESO, Image Processing Group

This is the first appearance of the "MIDAS Memo" which is intended to be a regular contribution to the *Messenger* with the purpose of informing the ESO community at large of the developments, plans, and changes in the Image Processing Group in Garching. It will deal primarily with subjects related to data analysis and the MIDAS image processing system, but will also report from time to time on other aspects of the Image Processing Group's activities such as the measuring machines, the developments in archiving of data from La Silla, computer operations and policies, as well as activities related to computer to computer communications.

1. Application Developments

This will be a regular subsection of the "Memo", but will only be able to highlight recent developments and future planning and not report in detail on all the minor enhancements and changes to the MIDAS system in the intervening period.

The MIDAS table file system continues to grow as a tool for a wide range of applications. In connection with the ST-ECF project to build models of the various ST instruments, several new facilities have been added as general purpose table system functions. These include: In part new commands, access to tables from any disk directory, and more detailed explanation of errors.

The suite of programs for reducing CASPEC data has been widely used in the last year, and has recently been greatly enhanced to permit many automatic procedures. Work on the determination of absolute fluxes is in progress.

A generalized suite of programs for spectral analysis is in the process of being developed and documented. Although not specifically optimized for any particular instrument or type of data, advanced capabilities to extract and manipulate two dimensional spectra will definitely be a part of this development. In addition, these facilities will handle CES data, EFOSC spectral data, Optopus data and so on.