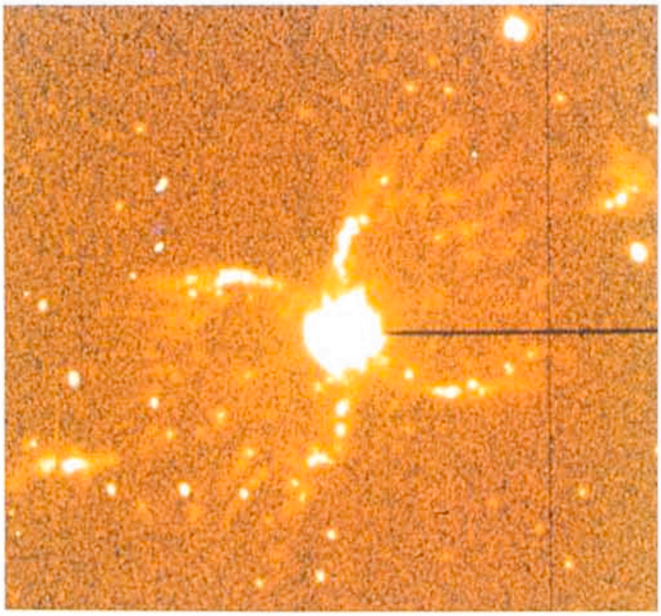

Figure 4: *H_α image of the Southern Crab (He 2-104) obtained with EFOSC 2 at the NTT. Notice the features visible in this image that are not visible or not resolved in the images published in the March 89 issue of the* Messenger.

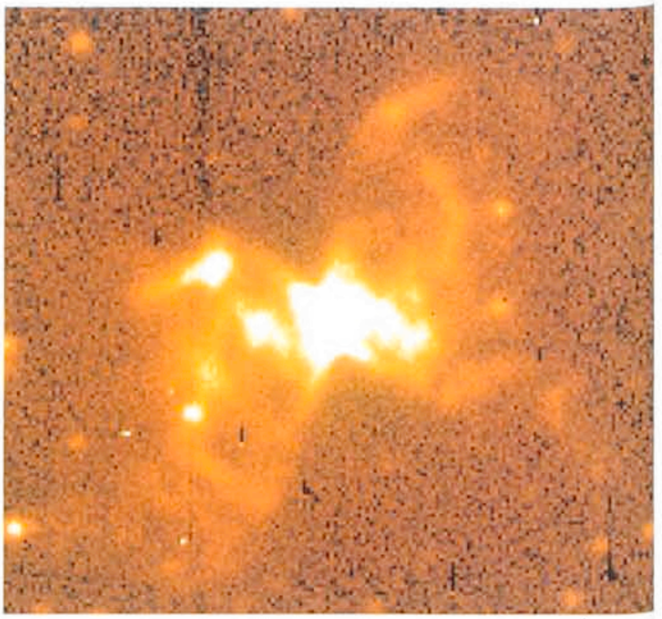

Figure 5: *H_α image of the planetary nebula He 2-84 for which very little information exists in the literature.*

Table 1: *Pixel matching EFOSC 2*

2.2-m telescope		
Detector	10 × 15 mm	25 × 25 mm
Pixel Field of view Scale	15 μm 3.2 × 4.7 arc min 1 pixel = 0.29 arc sec	25 μm 7.9 × 7.9 arc min 1 pixel = 0.48 arc sec
NTT		
Detector	10 × 15 mm	25 × 25 mm
Pixel Field of view Scale	23 μm 1.5 × 2.2 arc min 1 pixel = 0.20 arc sec	25 μm 3.7 × 3.7 arc sec 1 pixel = 0.22 arc sec

Table 2: *EFOSC 2 grism*

	g/mm	blaze λ
B1000	100	4500
R1000	100	6500
UV300	400	3800
B300	360	4500
R300	300	6000
new grating	300	4900

only minor software modifications were required to handle the data acquisition.

EFOSC 2 saw the first astronomical light on May 11 at the NTT. The first scientific programme of EFOSC 2 was to make a pictorial atlas of compact southern planetary nebulae. About 200 nebulae were imaged through narrow-band Hα and [O III] filters, many for the first time. But many previously well studied nebulae were imaged with unprecedented detail thanks to the superb seeing conditions which prevailed during the first EFOSC 2 run and to the outstanding quality of the NTT. Figures 4 and 5 show Hα images of two planetary nebulae observed with EFOSC 2. The elongated shapes of stellar images are due to field rotation, unavoidable during exposures lasting a few minutes until the installation of the adapter later this year.

EFOSC 2 has been largely a background task adventure for the La Silla mechanical, electronic and optical workshops. W. Eckert was responsible for the mechanical design and supervision of the assembling while A. Macchino and J. Santana built and integrated the electronic part. L. Baudet aligned the optical path. We are grateful to B. Delabre for the layout calculations, to H. Dekker for handling the FISBA contract and to B. Buzzoni for the optics commissioning at Garching.

At La Silla we were happy to see a new instrument emerging from our workshops. A change in our activity scope where patching, mending and grumbling around equipment delivered from other horizons is our usual fate.

Improved Shutter Timing at La Silla

The shutter timing accuracy of most instruments using shutters at La Silla are to be considerably improved. By the time that you read this, new CAMAC module cards will have been installed which control exposure times independent of the acquisition computers. These new cards allow an on-card timing resolution of 1 mS between 1 mS and 32,000 mS. From 32 S to 32,000 S, the timing resolution is 1 S but the internal counting accuracy remains at 1 mS in all cases. Some exposure definition forms are being updated to allow a 0.1 S resolution between 0 S to 32 S. For exposures longer than 32 S, the resolution will remain at the present value of 1 S.

Tests have been done with the new shutter timing cards using the CCD cameras on the 2.2-m and Danish 1.5-m telescopes. For the 2.2-m telescope, the shutter error has decreased by a factor of nearly 16 from about 190 mS to 12 ± 3 mS. For the 1.5-m Danish telescope, the improvement is about a factor of seven to 27 ± 3 mS, both in the sense that the resultant exposures are greater than those requested by the above amounts. It is expected that these delays will be reduced even further with the installation of a system of detecting a feedback signal from the actual shutters. Observers should find that they can now do accurate photometry (one per cent or better) using bright stars with exposures as short as two or three seconds. *B. Jarvis, ESO*

A New IHAP Feature: Images in Polar Coordinates

J. A. STÜWE, Astronomisches Institut der Ruhr-Universität Bochum, F. R. Germany

Many astronomical objects show special symmetries, which generally need special techniques for image enhancement. At our institute, for example, investigations on structures in Cyan coma images of comet Halley and in electronographic images of several S0 galaxies are at work. In the course of these analyses it showed up that for morphological studies it is useful to represent the images in a way which already takes the (circular) symmetry of the objects into account. For this purpose I developed an algorithm which performs the transformation of images between cartesian and polar coordinates. In polar coordinates the images still have two dimensions with the abscissa representing the radial distance r from the centre of the object and where the ordinate shows the azimutal angle φ. $\varphi = 0°$ represents the direction of the x-axis in the original cartesian image and then φ runs positive anticlockwise. Because the transformation is not isometric the resulting r,φ-image does no longer contain e.g. counts per pixel, but nevertheless gives the information that at a position defined by radial distance r and azimutal angle φ the counts per area of the cartesian pixel have a certain value. This means: if you already calibrated the cartesian image in physical units like erg/cm^{2}s or mag/(″)^2, the resulting polar image shows the correct flux or surface brightness distribution.