1989Msngr..56...65J

Deep images of extremely distant radio galaxies such as 3C 255 (and 3C 300.1 observed during the same run) taken in excellent seeing conditions, show that these objects do not look like nearby giant elliptical radio galaxies. Evolutionary links between these objects and nearby giant elliptical radio galaxies are still speculative. They may well constitute a different population.

The presence of very faint objects near 3C 255, having similar colours, speaks in favour of a very distant aggregate of galaxies. It might be a cluster core in the process of formation as 3C 326.1 (McCarthy et al., 1987) or 3C 294 (Spinrad et al., 1988) could also be.

I express my thanks to Professor H. van der Laan for the observing time allocated to this project, and to J. Breysacher and D. Hofstadt. This work was greatly helped by information on the seeing coming from Vizcachas. In particular, it was extremely important to know that before and when I was taking long exposures at the 2.2 m telescope, the seeing was constant and near 0.65 arcsec. It is a pleasure to thank M. Sarazin and the team at the seeing monitor for making these data available. I am grateful to all the ESO staff at La Silla who made these observations possible, in particlar P. Le Saux and C. Gouiffes (resident astronomers), E. Barrios and L. Baudet (setting of the instrument), Bahamontes (assistance at the telescope), and S. Vidal (data retrival).

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A New and Improved Camera for the 1.5 m B & C Spectrograph

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A new dioptric camera was installed on the Boller and Chivens spectrograph at the ESO 1.52 m telescope in February 1989 to replace the old Schmidt camera. This allowed the removal of a focal reducing lens in front of the spectrograph slit designed to match the f/15 beam of the telescope to the f/8 focal ratio input of the spectrograph. The focal length of the new camera is 127.0 mm compared with 143.5 mm for the old camera. This means that the effective dispersions of all gratings as found in the recently published Boller and Chivens manual must be multiplied by 1.13 (= 143.5/127) when used at the 1.52 m telescope. The new slit scale is 9.2 arcsec mm^{-1} (compared to 19.4 arcsec mm^{-1} before) and the detector scale along the slit is 0.68 arcsec $pixel^{-1}$ (with 15 μm pixels, compared to 1.28 arcsec $pixel^{-1}$ before). Note also that the new TV slit-viewing field is now reduced by a factor of 2 giving a new field of about 1.5′ × 1.1′. The Nyquist sampling criterion is satisfied with a slit-width of 1.5 arcsecs (15 μm pixels and a small grating angle). For larger grating angles (say 10° or more), the grating demagnification must be considered (see Users' Manual).

Observers should also note that, like the old camera, a ghost spectrum will appear on the detector when the grating angle is between 21.5° and 29°. This will occur for all gratings. The ghost spectrum appears (at much reduced intensity) parallel to the real spectrum but displaced symmetrically with respect to the real spectrum about the optical axis of the spectrograph. This poses a problem for long-slit spectroscopy.

A major advantage of the new camera is that observers now have an almost unvignetted field along the spectrograph slit. Also, a three times improvement in efficiency over the old camera is obtained from 4000 Å up to at least 10000 Å (the longest wavelength measured). Using CCD # 13 (RCA) with grating # 13 (508 Å mm^{-1}), the absolute efficiency of the system (telescope + spectrograph + CCD) was measured to be 18% at 5445 Å. Figure 1 shows the total system efficiency from 4000 Å to 10000 Å for CCD # 13 and this grating and CCD combination.

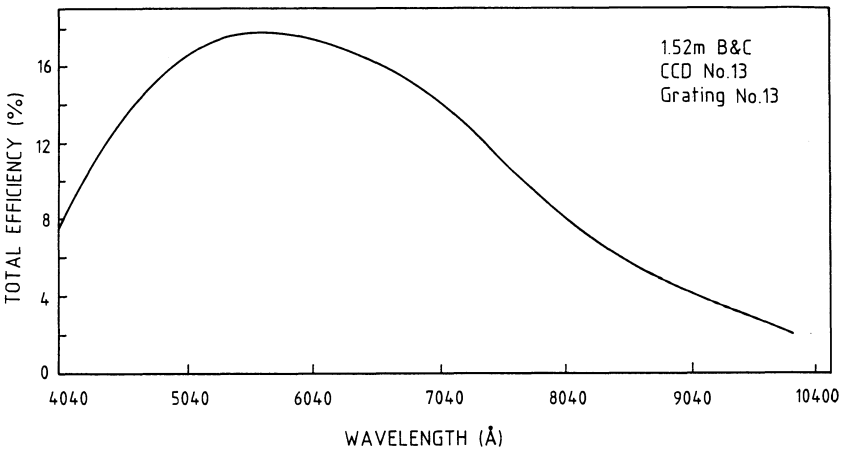

Figure 1: *Total system efficiency of the 1.52 m telescope and Boller & Chivens spectrograph fitted with the new camera.*

MIDAS Memo

ESO Image Processing Group

1. Application Developments

The echelle package for reduction of CASPEC spectra has now been ported to the new MIDAS. This new version is basically compatible with the previous one, with minor modifications to support other instrument formats like ECHELEC and EFOSC in echelle mode.

The Table File Editor has been significantly improved. The new editor uses the Term Window package in such a way that it is device independent, using a terminal definition file which also

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