

Prime Focus Observing

In July, about half of the observing time was lost due to poor weather conditions; in particular no plates were obtained for C. Turon's astrometric program. For their photographic photometry in globular clusters D. Vandenberg and J. Hesser had good images part of the time. M. De Robertis and A. Gower got only three hours and obtained few broad band plates of 3C 296 but were not able to take interference filter exposures for their study of underlying optical jets with the ITT image tube. Also using the ITT tube, M. Shara and A. Moffat obtained several good plates for the search of cataclysmic binary stars in globular clusters.

After further tests on the wide field corrector, the valve electronographic camera was mounted at prime focus for J.P. Picat, G. Lelièvre and G. Mathez. However, during 9 nights, only one and a half were clear. This camera was used again in October and November by G. Lelièvre, J.P. Picat and B. Sicardy with more successful results (see Electronography at CFHT).

Next the CCD of UBC was installed on the prime focus bonnette by P. Hickson and G.

Falman. Despite poor weather, telescope problems, and instrumentation troubles, they obtained images of six compact groups of galaxies.

In September, with the ITT tube, P. Massey and L. Stryker had a highly productive run for their deep search for additional Wolf-Rayet stars in the Local Group of Galaxies. B. Madore and W. Freedman were extremely disappointed by telescope problems during their three nights: jumps, glitches, rotator motions occurred.

Using the grens, P. Massey and D. Crampton, had excellent weather, good seeing (0.5-1.5"), and great success in their deep grens survey of nearby galaxies. Using the wide field corrector and the green grens, M. Azzopardi and J. Lequeux obtained deep exposures with good seeing quality for their search for Wolf Rayet stars and other objects in external galaxies.

In November, W. Harris had also a good run, collecting 18 deep plates of selected elliptical galaxies in Fornax and other small groups for detection of globular clusters. Unfortunately, H. Harris could not even open the dome and for 3 nights poor weather ruined observations for A. Fresneau and C. Christian.

Electronography at CFHT

In deciding to construct a large optical telescope and choosing an excellent observing site; by insuring the best final quality, and by building sophisticated instrumentation, the CFH community made known its desire to compete in the most crucial fields of current research in astronomy requiring the best spatial resolution, limiting magnitude, and spectral resolution.

For this purpose, major effort has been devoted to electronography. Two camera models have been used since the opening of the telescope, the valve camera and the so-called "wide field" camera. They showed their true operational capability, and reliability and they reached the expected limiting performances:

- image quality 0.8" or better during long exposures (greater than 1 hour)
- limiting magnitude fainter than 26, in B on 2 hour exposures direct imagery
- limiting magnitude equal to 23 on 2 hour exposures slitless spectroscopy.

Performances of this kind are actual limits that can only be matched by CCD's, but in a field 100 times smaller in surface area.

The use of these electronographic detectors, with their high photometric quality and detection power in conjunction with the 3.6m Telescope, opens new fields for research. Already ambitious observing programs can be done and have been proposed at CFHT. These include systematic research on quasars, high resolution studies on distant objects, precise photometry in rich fields, and detection of faint distant clusters of galaxies.



Green grens spectra of the field pulsar 3C 36 (see arrow) taken with the valve electronographic camera mounted on the wide field corrector. The quasar is as faint as magnitude $B=22.3$. Despite this, it was obtained with the grens in two hours exposure on Ilford L 4 emulsion, with a high signal-to-noise ratio.

Valve Electrostatic Camera

This camera, built by INAG and Paris-Meudon observatory, has been used at CFHT for more than 2 years and is now in a routine operational phase. The prior approval of INAG is required for its use by visiting astronomers. Its photocathode is 30 mm in diameter, and a special valve projects the photocathode during the plate-holder exchanges. Once installed in the Prime Focus cage, its operation is