

1.1. The New Dioptric Camera

The standard solid Schmidt camera for the B & C spectrograph has too small a back focal distance to be used with the PCD, whose front head is of difficult access because of the permanent magnet surrounding the tube. For this reason a new dioptric camera was designed, tendered out, built and put into operation at the spectrograph. The whole procedure was completed with success in 10 months, that is about one half of the time normally required for this type of project. The optical design was made at ESO and is shown in Figure 2.

Tentative Time-table of Council Sessions and Committee Meetings in 1985

November 12	Scientific Technical Committee
November 13-14	Finance Committee
December 11-12	Observing Programmes Committee
December 16	Committee of Council
December 17	Council

All meetings will take place at ESO in Garching.

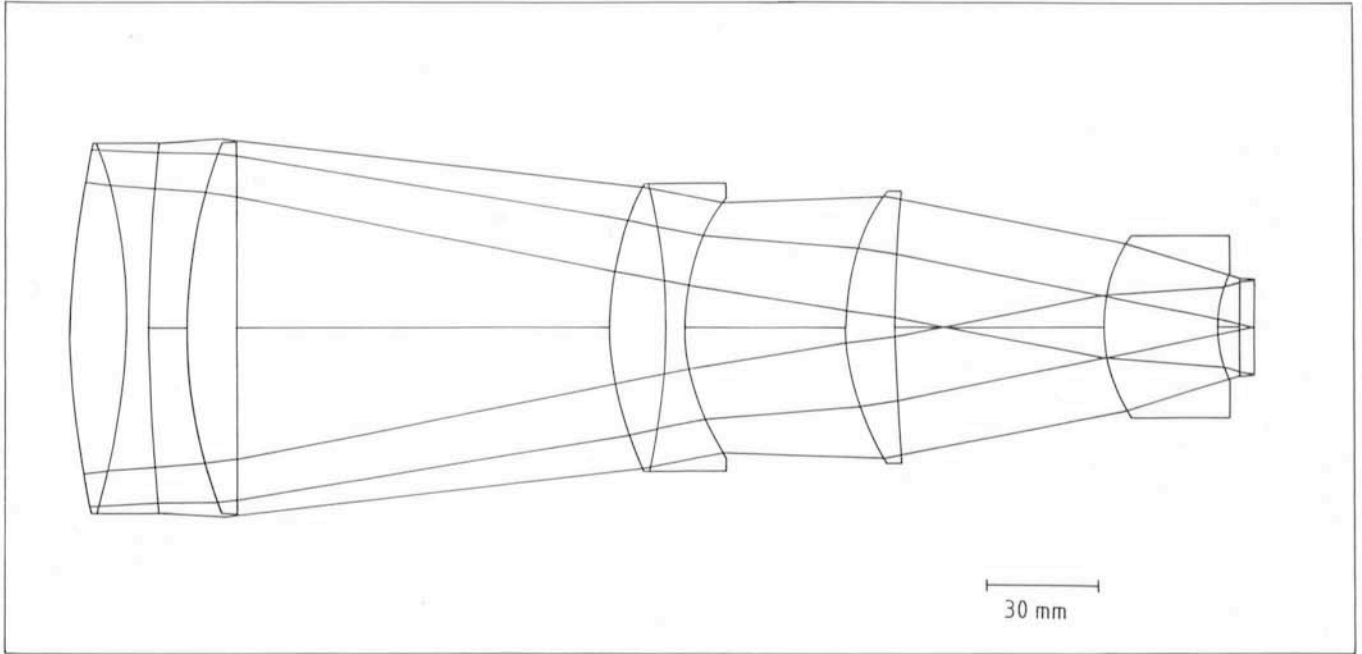


Figure 2: The optical design of the new dioptric F/2 camera for the Boller & Chivens spectrograph and the ESA PCD.

The characteristics of the camera are: Focal length : 190 mm; Diameter of the entrance lens : 98 mm; Aperture : F/2; Wavelength range : 3400-6600 Å; Field diameter : 25 mm; Scale factor : 1 arcsec = 22 µm at the detector.

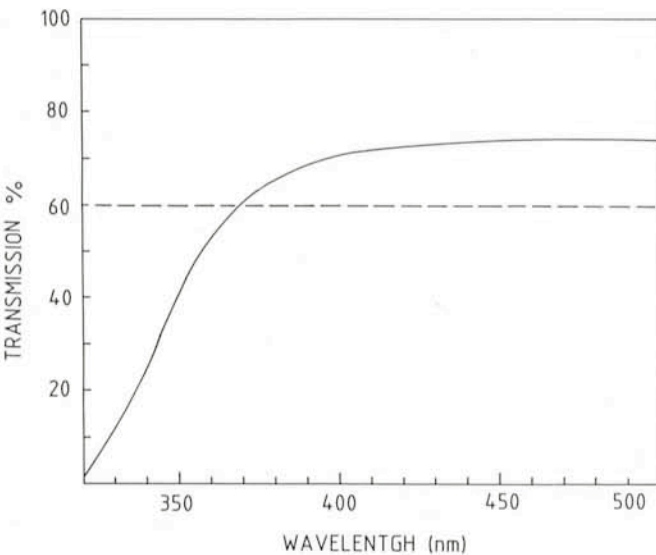


Figure 3: The transmission of the new F/2 camera as measured at ESO. The broken line shows the average efficiency (transmission and vignetting) of the solid Schmidt camera which is used at the spectrograph with the CCD detectors.

The image quality is about 20 µm and the vignetting is very small (5% at 10 mm from the axis). The camera was built according to the ESO specifications by the Officine Galileo, Italy. Figure 3 shows the measured transmission curve of the new camera with that computed for the solid Schmidt. The fall at short wavelengths is due to the low UV transmission of the FK 54 glass components of the optical train. By using glass from a melt with a better UV transparency, one should be able to rise the efficiency of the camera at 3500 Å by 15%. This option will probably be implemented at the end of the year.

1.2. Performance

The camera and the detector were mounted at the B & C spectrograph in February 1985 (Fig. 4) and have been used for several observing programs. The standard format used in the spectroscopic mode is 1024 × 256 pixels, 25 µm in size. In a typical configuration, the detector was used with the ESO grating # 7 to work in the blue, UV region. The linear dispersion is then 85 Å/mm, the spectral coverage about 2100 Å. With a slit 1.5 arcsec wide, the average FWHM of the comparison lines is 5 Å. Table 1 shows the characteristics of the gratings recommended for use with the B & C and the PCD.

By observations of standard stars close to the zenith with a widely open slit, we have derived the relative spectral response of the telescope-spectrograph-detector combination when grating # 7 is used (Fig. 5). It is also found that stars of $m = 12.6, 13.8$ and 13.8 give one count/sec/Å at 3500, 3800 and 4440 Å respectively. In order to stay within the linear part