

1. Parallel to the edge/mark and remove parallax between the two to achieve parallel rays. This sets the spectrometer for parallel rays.
2. See on the sodium light source through the telescope and collimator aligned along a common axis. On setting the collimator by the rack and pinion arrangement we achieve a good quality image of the slit.

(ii) SETTING OF THE GRATING NORMAL TO THE RAYS: Set the sodium lamp opening (i.e. slit) ; the collimator axis and the telescope axis (T) in one line (see Fig. 2) . Adjust the telescope so that the cross-wire coincides with the image of the slit. Note down the reading of the telescope position. Next turn the telescope exactly through 90° from T to T' position and clamp it. Mount the grating on the turntable and turn the latter till the reflected image of the collimator slit coincides with the cross-wire on the telescope. This sets the grating (in position 'G') at an angle of 45° to the incident rays and record this reading. Now rotation of the turntable exactly through 45° in the right sense sets the grating normal to the incident rays(i.e. in position 'G'). Clamp the turntable firmly in this position.

(iii) MEASUREMENT OF θ : For this measurement, release the telescope from the position 'T' and set it on the yellow line of the sodium light spectrum on either side of position 'T' of the telescope for the first and second order spectra in succession and record these readings. The half of the difference between these readings corresponding to 1st and 2nd orders yield the angle of diffraction (θ) for these orders respectively.

RECORD, RESULT AND REPORT: Record image positions for 1st and 2nd order spectra in a suitable table. With (a+b) given, equal to the reciprocal of the number of lines on the grating, compute the dispersive power for the Na D- line.

