

October 9, 2014 Research Committee Report for September, 2014, by Mary Lou West

In September 2014 we began research on spectroscopy with the 24" telescope at Sperry. The first targets were bright stars in order to calibrate the scale of the spectra with a specific telescope. On Tuesday, September 23 Steve Lowe and I took spectra of Vega and of Epsilon Lyrae (the Double Double). We used my Star Analyzer 100 grating and my Starlight Express CCD camera. We substituted an extender (5 inches) for the telescope's visual back diagonal and found that focusing the telescope on the camera's chip was more time consuming than we had expected. The best exposure time for Vega was .1 second, with a whole second yielding an over-exposed spectrum. The absorption lines of this A0 type star were very clearly visible. For Epsilon Lyrae we separated all four stars but got only three distinct spectra because one pair fell right along the direction of the grating, so gave a combined spectrum of the two stars slightly displaced from each other and overlapping. An exposure time of a whole second was sufficient. In the future we will try to take spectra of all four stars by adjusting the angle of the grating.

Marcus Valdez and I took spectra of Altair (1 second) and Neptune (20 seconds) with the C-14 at Jenny Jump on Saturday, September 27. The spectral absorption lines of A7 type Altair were quite distinct.

We look forward to trying fainter stars at longer exposure times.