

Research Committee Report for December, 2014 by Mary Lou West, January 7, 2015

1. RASKEL exoplanet project

Several training sessions were clouded out, and then the holidays took people's attention. The sessions will begin again the second week of January.

2. Spectra

Steve Lowe, Scott Gerum, Brian Moreira, Tolga Gumusayak, and I have tried to take some spectra of bright stars. Finding a clear focus distance is still a problem, perhaps to be solved by the OPTEC digital focuser. Tolga's guide camera in the finderscope running PHD (Push Here Dummy) software will be very helpful for long time exposures, more than 30 seconds in duration.

I have used RSpec software to analyze the spectra we took with the Star Analyzer 100 grating on the 24" Sperry telescope in September. The scale factor is about 13.5 Angstroms/pixel, as expected. Here is a 1 second spectrum of one of the stars in Epsilon Lyrae, the double double. Since this star is type A3 or A5 it has strong hydrogen Balmer absorption lines, and was calibrated by the position of the second (beta) line at 4861 Angstroms. Also notice the telluric oxygen lines which show up in the near infrared at 6867 and 7594 Angstroms. It is comforting to see that the Earth still has a lot of diatomic oxygen in its atmosphere. These earthly lines can be seen as slight dips even on an overexposed stellar spectrum, such as our spectrum of Vega of a 1 second duration.

