

Dec 4, 2014, Research Committee Report for November, 2014, by Mary Lou West

1. RASKEL exoplanet project

Eight of us (Clif Ashcraft, Mary Ducca, Laurel Kornfeld, Steve Lowe, Jim Nordhausen, Brian Moreira, Larry Russo, and I) have joined the RASKEL project with the Rutgers Astronomy Society to verify possible exoplanet transits. Longtime friend of AAI and former member Al Ernst is also participating with hopes of using the 14" at St Joe's High School on the project. Asher Wasserman is the undergraduate president of the RAS and has organized training sessions under the advice of Professor Tad Pryor. There were five training sessions at Schommer Observatory on the roof of the Serin Physics Building in November (8, 13, 15, 20, 22) and another four sessions have been scheduled for December (4, 6, 11, 13). Each of the two dozen participants is to attend three sessions and demonstrate that they can take precision images with the Rutgers CCD and 20" telescope. We plan to do some exoplanet imaging at Rutgers and then do most of our imaging at Sperry Observatory and at Perrineville. Luckily, we have the same auto-guiding CCD (SBIG 11,000) as they do at Rutgers, so the training will be very useful. The training session on Saturday November 15 provided an unexpected adventure in bushwhacking. Because there was a big football game, police closed many campus roads and directed traffic to peripheral parking lots. We each parked and then walked toward the stadium and the physics building as best we could, worrying about locating our cars after the training ended hours later. Here is a 1 second image of M31 we took without auto-guiding.



The KELT Project (Kilodegree Extremely Little Telescope) was suggested by Josh Pepper of Lehigh U in 2002 and now has two remote 2 inch telescopes, one in southwestern Arizona and the other in South Africa. They are run by Ohio State, Vanderbilt, Lehigh, Fisk, and the South African Astronomical Observatory and provide the candidate list.

Clif has located a useful online calendar scheduling program for exoplanet transits at astro.swarthmore.edu called TAPIR. You input your observatory coordinates and time zone as well as some constraints on observability (altitude at ingress and egress as well as the depth of the event in thousandths of a magnitude) and you get out a table of names, times and coordinates of probable exoplanet transit events and links to finder charts. There may be several potential targets for observations on any given night, or none.

2. As Clif pointed out, since the SBIG STL 11,000 CCD requires the large 2" filters rather than the less expensive 1.25" filters, we should postpone buying a set of ubvri filters until we have a photometric study that really needs them. We may need to purchase a V filter for the exoplanet project.

3. Tony Sharfman has provided a quick start guide on using the SBIG STL-11,000 CCD camera. This will be very useful and is much appreciated.

4. Clif has provided a brief tutorial for doing HDR (High Dynamic Range) image processing with Photomatix Essentials. This technique brings out the subtle detail in the bright regions and also in the darker regions of an image. It was especially powerful on Helder's moon image taken November 28. Tony reports that MaximDL has a similar capability.

5. Aaron has begun a new list (news@asterism.org) for news items, populated it with members of the Research Committee, and invited anyone else to join too.

6. There were only a few new images in a mostly cloudy month, but one of Helder's earlier solar images was published in Sky and Telescope. Go Helder!