

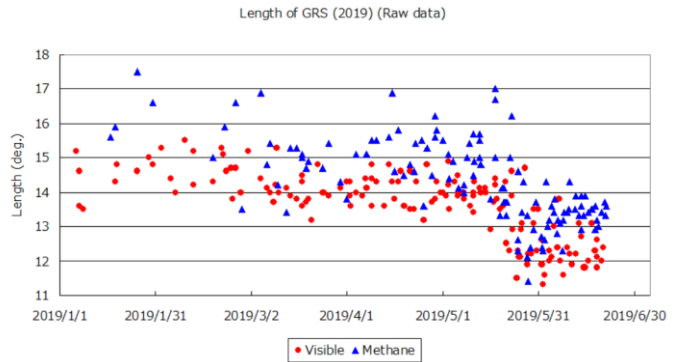
AAI Research Committee Report for June 2019

The most exciting news this month is the NASA APOD by Tolga Gumusayak and Bob Vanderbei.

Solar system: Helder Jacinto has imaged the First Quarter Moon through NJ clouds.

Clif Ashcraft has continued to image Jupiter as its Great Red Spot storm appears to shrink. However, his images taken in Near InfraRed light show that the storm remains large, but is being overrun by a collar of white fog at high altitudes. The Japanese

Association of Lunar and Planetary Observers made a *graph of this apparent shrinkage* at visible and methane wavelengths this year. Note the sudden shrinkage at the middle of May.



Bobby Marinov imaged *Saturn* from Texas where it is higher in the sky than it is here.



Stars: Dennis Conti has observed two more exoplanet transits with the KELT program.

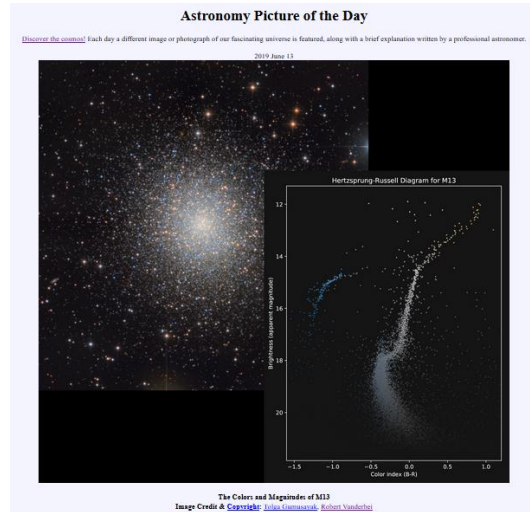
Helder made a beautiful image of the globular cluster M13.

Presentations: Tolga Gumusayak and Bob Vanderbei were honored with a NASA *Astronomy Picture of the Day* on June 13. Bob analysed Tolga's deep images of the globular cluster M13 and plotted a Hertzsprung-Russell diagram of the stars' brightness vs. color. Rejuvenated blue straggler stars show up as an arc in the upper left region of the HR plot. More research on them continues.

<https://apod.nasa.gov/apod/ap190613.html>

Also, Bob made an animated gif of the stars in globular cluster M15 using the data from the GAIA satellite. This shows the twinkling of the RR Lyrae variable stars in this cluster and was an APOD on March 28. (<https://apod.nasa.gov/apod/ap190328.html>).

Mary Ducca spoke on "My Northern Lights Adventure" at the North Jersey Astronomical Group meeting at Montclair State University on June 12.



Other: Alan Midkiff invited others to join in his graduation gift to Emily Mailhot, a half night at the 100” Hooker Telescope at Mt. Wilson in California. Bonnie and Al Witzgall and Clif reported that they really enjoyed looking through that iconic telescope.

Bonnie Witzgall pointed out instructions on how to make a pin-hole camera to take a LONG exposure Solargraph from a tall beer can and duct tape. Who will try this? See the APOD on June 27, and instructions at <https://pinholephotography.org/Solargraph%20instructions%202.htm>

Aaron Zuckerman pointed out that astrophotographer Phil Hart has finally released a short film of the Great American Solar Eclipse, using seven cameras in Idaho and Wyoming showing the total solar eclipse above a rugged mountain foreground.

Jim Nordhausen pointed out that the American Astronomical Society will buy Sky and Telescope magazine, a really grand professional/amateur collaboration.

John Kozimbo pointed out that Dr. Gregory Mountain (!) of Lamont-Doherty and Professor Ken Miller of Rutgers will drill seafloor cores to determine the location of the NJ shoreline for millions of years in the past, forming a baseline for a worldwide study.

John also noticed the successful launch of LightSail 2 by the Planetary Society on June 25. Johannes Kepler (1610) was the first to propose using light to propel a spacecraft, and Robert Forward (1984) used that idea in his science fiction novel “Flight of the Dragonfly.”

Respectfully submitted, Mary Lou West, Research Chair