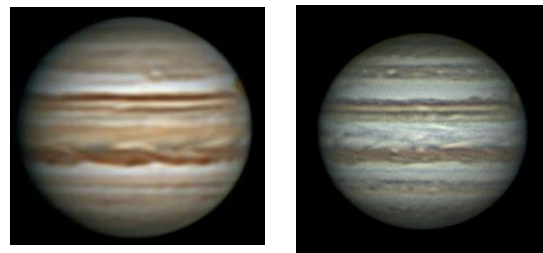


AAI Research Committee Report for March 2019

Spring brought lots of clouds and turbulent weather but also lots of opportunities for presentations.

Solar system: Clif Ashcraft and Jim Nordhausen used the Sperry 24" to image *Jupiter at dawn* and confirmed that the Equatorial Zone has a strong tan coloration, a major change since Jupiter went around behind the sun. In recent years the *Equatorial Zone* has been snow white with blue festoons. (Clif surmised that perhaps there had been a major industrial pollution event by the Jovians.) In 2016 Jupiter had two distinct brown zones.



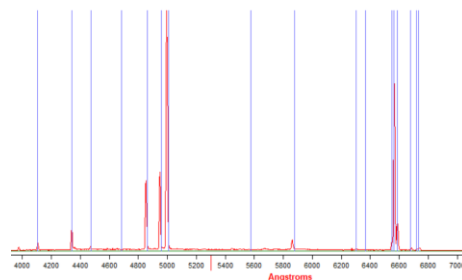
Clif also described how Grischa Hahn's program "WinJUPOS" maps each image to a Lambert projection, a rectangular grid of latitude vs longitude so that they can be stacked de-rotated.

Isbel Gonzalez contributed several pictures of Jupiter and its moons which he took some years ago.

Clif also produced closeups of several regions of the Moon.

Stars: Dennis Conti has done several exoplanet transit observations, and also an observation of a classical Cepheid variable star in Lyra in support of an X-ray observation from the ESA XMM-Newton space observatory. We are very proud of such professional and amateur collaborations.

Nebulae: Clif imaged M42 in Orion and Steve Lowe provided a *spectrum of M42* showing emission lines to explain its beautiful colors. Note the strong lines of Hydrogen at 4861 and 6563 Angstroms.



Presentations: "The KELT Follow-up Network and Transit False-positive Catalog: Pre-vetted False Positives for TESS" paper has been referenced many times. Five AAI members (Clif, Dennis, Tolga Gumusayak, Jim Nordhausen, and I) are among the 111 authors.

Mark Zdziarski and I helped Caldwell Cub Scouts begin their astronomy badge. We had them do the Dance of the Moons and the Dance of the Planets and then go outside for binocular and telescope viewing on a very cold evening.

Al Witzgall presented "Lunar Geology - A History of the Earth-Moon System" at a joint meeting of the New Jersey Mineralogical Society and the New Jersey Lapidary Society at Trailside Nature and Science Center.

Clif presented "How I Built my Observatories" at Sperry on an Informal Friday.

Other: John Kozimbo wrote the text for a Carl Sagan history card. Many people were inspired by Carl as they watched Cosmos or Contact, but few know that he grew up in Rahway, not far from Sperry Observatory.

One of the reasons for the very poor seeing (atmospheric turbulence) this spring is the *contorted jet stream* which is often right over New Jersey. It is thought that this is due to climate change. Christopher Go says that the best place to do planetary imaging is in the tropics on an island for laminar wind flow.

Respectfully submitted, Mary Lou West, Research Chair

