

Research Committee report for September 2015

**September has been a most remarkable month, with spectacular progress in several areas.**

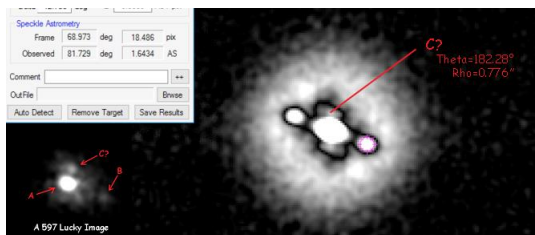
First of all, thanks to everyone who assisted with the class on “Astrophotography for Beginners” on September 20 at Sperry, especially Steve Lowe, Tolga Gumusayak, and Dan Silber. Ten people learned a lot and hopefully were inspired to try their hand at this rewarding technology.

In the solar system, Clif Ashcraft imaged the First Quarter Moon and took close-ups of craters Copernicus, Clavius, and Eratosthenes. Tolga took images during the total lunar eclipse on September 27 at Riker Hill Art Park through brief holes in the cloud cover. Tony Sharfman imaged details on Uranus and Clif found distant blue Neptune.

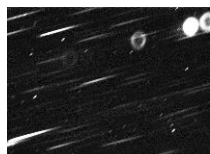
The most exciting science was done by Clif’s new expertise in speckle interferometry of close double stars. His fast planetary camera turns out to be ideally suited to this mathematical technique. This was quickly reported by a friend at a conference in Barcelona, Spain on September 19. An amateur with a back yard observatory and a \$359 camera could do speckle interferometry at all, and getting down to tenth magnitude stars with separations less than 1/2 arc second was astounding. This work normally needs a 2 meter telescope and cameras costing \$14,000 to \$50,000. He also found a third component of A597, changing this from a double to a triple star system.

In the deep sky category, Helder Jacinto captured NGC 7380, the Wizard Nebula, and also M 39 (NGC 7902), an open cluster in Cygnus. Tolga imaged the detailed Crescent Nebula. However, the most beautiful image this month was his stunning view of the extremely faint Soap Bubble in Cygnus after 15 hours of integration in narrowbands. This planetary nebula is a delicate blue sphere hanging in front of a red H II region tapestry. Tolga made contact with the discoverer, Dave Jurasevich, a California amateur astronomer, and later this image was featured as “the image of the week” on the Astro Imaging Channel on YouTube (<https://www.youtube.com/watch?v=j1Z-V3h6UM4>).

Mary Lou West took the spectrum of another planetary nebula, M57 the Ring Nebula in Lyra with the SA 100 grating. The image of M57 itself is followed on the right by an overexposed image in O III (green) and then another image in hydrogen alpha (red). This clearly demonstrates that the nebula is low density gas, not a compact body like a star.



Triple star A597 by Clif Ashcraft



M57 spectrum by Mary Lou West      Soap Bubble Nebula by Tolga Gumusayak  
Respectfully submitted, Mary Lou West, Research Committee Chair