

# Astrofiles

## Auburn Astronomical Society E-Newsletter April, 2014

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### Events Calendar

We'll hold our **monthly meeting** on **Friday, April 11**, at **7:45pm**, in [room 215 of Davis Hall, the Aerospace Engineering Building](#), on the [main campus of Auburn University](#).

Our next dark-sky **star party** is scheduled for **April 26**, at our [new dark sky site](#).

April 04, [ISS pass](#) begins at 8:20 PM CDT

April 05, Forest Preserve Stargaze at [Kiesel Park](#), 7:00-9:00pm

April 05, [ISS pass](#) begins at 7:40 PM CDT

April 06, Jupiter 5 degrees N. of Moon

April 11, Monthly meeting in [room 215 of Davis Hall](#)

April 14, Mars closest to Earth (for this apparition)

April 15, [Total lunar eclipse](#) and [here](#)

April 17, The waning gibbous moon passes 1.2 degrees south of Saturn

April 22, Lyrid meteor shower

May 10, Astronomy Day at the [W. A. Gayle Planetarium](#)

### Member News

**Charles Lewis** and **William Sprankle** are our latest members to renew their AAS membership bringing our total for 2014, to twenty-six. Welcome back, guys!

### Public Stargazes

**Jennifer Lolley** has asked that we try again to host her [Forest Preserve group's stargaze](#) at [Kiesel Park](#) set for **April 5**. We have 5 commitments so far : Alan, Allen, Rodger, Rhon, Russell, Frank (tentatively). Please let [Rhon](#) know if you can help with this. Also in the works are a public stargazes for [Wind Creek State Park](#) near Alex City and some Cub Scouts from Opelika. [Please let Rhon know](#) if you can help with these.

# Star Party Report

Rodger Morrison

And yet again, I had the pleasure of spending the evening under the stars with my friend, Wes Schwarz, only now the astronomy club we are in has a new place to hold stargazes and it is MUCH darker. We meet at the airfield of the Auburn Planesman R/C Club, which happens to be about 5 miles or so south of the Little Texas airstrip we were meeting at before. We were again out all night, and again got a late start due to cloud cover and equipment issues. I decided to try to pick up some globular clusters and one nebula, as I have done much work on my telescope tube and clusters are a good way of checking if everything is aligned. In addition, because of clouds and wind, Wes and I only had a few hours to gather any imagery and clusters don't take much time at all because they are essentially only bunches of stars. Nebulas and galaxies take much longer, so we will have to wait and attempt those another day. April and May are good for targets in the plane of the Milky Way, and I hope to reshoot the Swan Nebula and a few other things this year that I did not get much time in on last year.

One big difference now, however, is I just had my Canon T2i (550d) camera heavily modified. Gary Honis, an engineer who specializes in such things, was kind enough to take some time and modify my camera so that the sensor also detects light in the near infrared and ultraviolet spectrums. This means that it now detects more of the radiation that stars and such give off. In particular, the alpha emissions of Hydrogen are detected. Furthermore, the camera gathers light MUCH faster than before, so my exposures can be shorter and have less thermal noise that I need to deal with. For those that are interested, I upgraded PHD autoguiding to the latest version PHD2.2.2. This allows me much more control of the guide camera and such. There have been a few other modifications to equipment and such, but nothing of any consequence, so I won't bore you with it. Let's talk about our first image, the Dumbbell Nebula.

Messier 27 (NGC6853) is also known as the Dumbbell Nebula, the Apple Core Nebula, or the Diablo Nebula. It is a planetary nebula (which means it has a defined edge and is more or less round) in the constellation Vulpecula (the fox). M27 was first discovered by Charles Messier in 1764, and is located about 1,360 light years away. This was also the first planetary nebula to be discovered, which makes sense because it is fairly bright at magnitude 7.5. It has a diameter of about a quarter that of a full moon, so it is easy to find with a good pair of binoculars. Technically speaking, it has the shape of a prolate spheroid and expanding evenly at about 2.3 arc seconds per century, which because of its diameter of 1.44 light years suggests it is about 10,000 years old. Most planetary nebula are the result of exploding stars, and this one is no exception. If you look at the picture closely, you can see a star in the very center. This star, in an earlier stage of its life, blew off most of its mass and the white dwarf is all that is left. This also just happens to be the largest known white dwarf, which is kind of neat that it is so close to us. It's mass is just over half the mass of our sun. The nebula itself (the green and red stuff) is the expanding shock wave.

Rodger Morrison

[You can see this and other of Rodger's images and exposure details on his [Webpage](#).]

## Web Links

HuffPo links courtesy of **Larry Owsley**:

'Inflation' Discovery Puts Multiverse Debate Front And Center - <http://huff.to/1ggjC7E>

New Data Suggest Theory About Black Holes Was All Wrong - <http://huff.to/1honc4h> [No, not ALL wrong — just rethinking super-massive black hole formation. Ed.]

Big Breakthrough May Bring Night-Vision Contact Lenses - <http://huff.to/1fJAwv2>

Secretive Space Plane Shatters Record - <http://huff.to/1g70Dwo>

Mass of Heaviest Elementary Particle Determined - <http://huff.to/1gT1OE7>

Lunar Orbiter Makes Discovery Apollo Astronauts Couldn't - <http://huff.to/1gK8T9U>

Mysterious New Feature Discovered On Planet's Surface - <http://huff.to/1gON4G9>

Does New Cosmic Discovery Prove We Live In A Multiverse? - <http://huff.to/1fHCDzJ>

Is THIS The Way We'll Identify Alien Life? - <http://huff.to/1i2T51E>

Has Black Hole Paradox Finally Been Resolved? - <http://huff.to/1gpZK6d>

How Black Holes Get Really, Really Big - <http://huff.to/1ge30kX>

Did Dark Matter Disk Kill The Dinosaurs? - <http://huff.to/1hXU9UE>

Multiverse Concept May Be MUCH Older Than You Think - <http://huff.to/1hzWICq>

[NASA's Space Place in a SNAP!](#) is a series of quick, narrated tours of animated infographics that illustrate key science concepts.

From **Rodger Morrison**: "The solar system has a new most-distant family member". A new dwarf planet. Article at <<http://www.nasa.gov/content/nasa-supported-research-helps-redefine-solar-systems-edge/index.html#.UzM9XRCwWSp>>

The line between comets and asteroids has become even "fuzzier" - <<http://www.reuters.com/article/2014/03/06/us-space-asteroid-idUSBREA251PE20140306>>

Duncan SCT collimating mask - <[http://www.ebay.com/sch/i.html?\\_trksid=p3984.m570.l1313.TR0.TRC0.H0.Xcollimation+mask&\\_nkw=collimation+mask&\\_sacat=0&\\_from=R40](http://www.ebay.com/sch/i.html?_trksid=p3984.m570.l1313.TR0.TRC0.H0.Xcollimation+mask&_nkw=collimation+mask&_sacat=0&_from=R40)>

## New AAS Dark Sky Site

Rodger Morrison

Well, it's done. We officially have permission to use the RC Planesmen's RC pavilion on Mr. John Sistrunk's airfield. I spoke with Mr. Sistrunk, who gave me his contact information for the Plainsmen, a Mr. Henry Helmke. Mr. Helmke and I spoke, and he formally gave us permission to use their pavilion area for our stargazes. He also gave me the gate combination to the Northwest gate, off Hwy 24. We MUST lock behind us when leaving), and Mr. Sistrunk said he would give us a key to the South gate (off Hwy 22), though he said he never locks it. I am to meet with Mr. Sistrunk the afternoon of the 30th (our next stargaze date), so he and I can shake hands again, but this is already a done deal. During our conversation today, he confirmed our permission to use the area at will. (Again, we must stay away from his hanger area because of the security system).

When I talked to Mr. Helmke today, I told him that I cannot speak for our club in terms of money, but that our group did discuss reimbursing the plainsmen for a portion of their annual lease (they pay \$900/year). I told him that we might be able to pay something club-to-club, and he said whatever we wanted to do is fine with him. He preferred to keep it informal, though, and whatever we think is fair is fine. As we would only be using the pavilion a couple of times a month, at most, I would guess something around \$100-\$200 per year should be sufficient. The specific amount would need to be determined either by our officers or the club members at a meeting, and a check sent to the Plainsmen as soon as we can, but I'll leave that to you, Rhon. Mr. Helmke also said that they almost always leave about an hour before sunset, and as we almost never arrive much before that, we would likely not see much of them nor them of us. Looks like this is a good arrangement.

Rodger

Many thanks to Rodger for initiating this and seeing it through!

[Update: At the March meeting it was decided to pay the Planesman RC Club \$180 per year (prorated to \$150 this year) to go towards their lease on the property. They insist that everything be casual with no contracts. John Zachry wrote the check and Rodger is going to pass it on. See directions and map to the new observing site on our [Star Parties Webpage](#).]

Remember our Kiesel Park stargaze on April 5 (this Saturday) and the meeting date this month will be April 11,

Russell