

S. C. R. A. P. S.

Society's ChRonological Astronomical PaperS



## From the President - Lee Erickson

It has been some time since we have had an issue of our news letter and I want to thank Jim Sanders for volunteering to resume the publishing of SCRAPS. Jim will publish as his time allows and as we, the members of SMAS, contribute content. We cannot place the burden of SCRAPS on any one member. So drop Jim an email with observing reports, images, sketches, questions for SMAS members and contribute to the vibrant dialog which makes a club fun. At this time I also want to thank our past publishers and contributors to SCRAPS.

Since our last SCRAPS The International Year of Astronomy has come and gone. We have now entered what I want to call the fifth century of modern astronomy or Fifth Century Astronomy for short.

It is four hundred plus one years ago that Galileo built a telescope, pointed it up and began to publish what he saw. It is the combination of these three things which are the hall mark of the good science which have improved so much the lives of humans on Earth since his times.

All three pieces of Galileo's accomplishments are critical. Galileo was not the first to build a telescope and he may not have been the first to point it up. But he did both and then he published his observations.



Scientists take for granted now that we must build tools to help us observe, but it became so much more obvious after Galileo that we must build tools specifically designed to do so. Galileo's writing and sketches about his observations are our earliest records about the phases of Venus, the direct evidence that Venus goes around the sun. With evidence, stronger than any a priori assumption, Galileo thus settled the debate between the earth centered world view of the universe and the sun centered solar system world view. Doing so, he drastically remodeled humanity's view of the entire cosmos. A process, which continues to this day, as the great observatories gather yet more observations.

Just today, an image from the [Nordic Optical Telescope](#) (a ground based observatory!) of the Cat's Eye nebula remodeled my expectations of all planetary nebulas by revealing an extended halo I have never before seen.



With our small telescopes we can retrace and relive the roots of the exciting times in which we live. Speaking from personal experience it is fun (and gratifying and humbling) to stumble along the paths first trodden by Galileo as I observe the phases of Venus, see the specks of light dance around Jupiter, look down on the mountains on the Moon and see the weird "ears" on Saturn.

I hope we can share with one another and the public some wonderful observations of Fifth Century Astronomy and remember with gratitude the pioneer of modern astronomy, Galileo Galilee.

Lee Erickson

## Events – Past and Future

In case you missed these, here are some significant items that have occurred this year:

### Election of officers for 2010:

At the February 12, 2010 meeting the following officers were elected:

President: Lee Erickson to serve for a second term  
Vice President: Michael Reuter  
Secretary: Jim Sanders  
Treasurer: Michael Littleton to serve for a second term

Thanks to this year's nominating committee which consisted of the following: Jim Sanders (club Secretary), Michael McCulloch (club Vice President), and Duane Dunlap (club member).

### Star Party for Students and Faculty at Pellissippi State Technical Community College April 24, 2010:

The clouds held off for a few hours to allow some night sky viewing at our annual PSTCC event. We had 6 club members on hand but attendance was light.

Here is Lee Erickson's report:

The weather cooperated and we had the 2010 PSTCC star party last night.

While I wish we had had more visitors, the ones we did have were of very high quality.

I concentrated on speaking to the visitors the moon and visiting Mount Hadley. I brought a sequence of images, to help visitors find the gap in the Montes Apenninus. Then we used high magnification to see the shadows in the cove surrounded by Mount Hadley. I had a few images taken by the Apollo 15 astronauts who visited this site too.

I had a good time and I hope the visitors I spoke to did also. I think they all asked how to find the club and I gave out the sketching note sheet with our contact information.

I especially hope we inspired the 9 year old girl who was up at the eye piece of the 20 inch scope to see the moon and Mount Hadley. She also remarked to me about seeing Saturn so that made a good impression too.

Several anthropology students stopped in after their class and were fun to speak to. I admired their curious, bright minds beginning their life's journey.

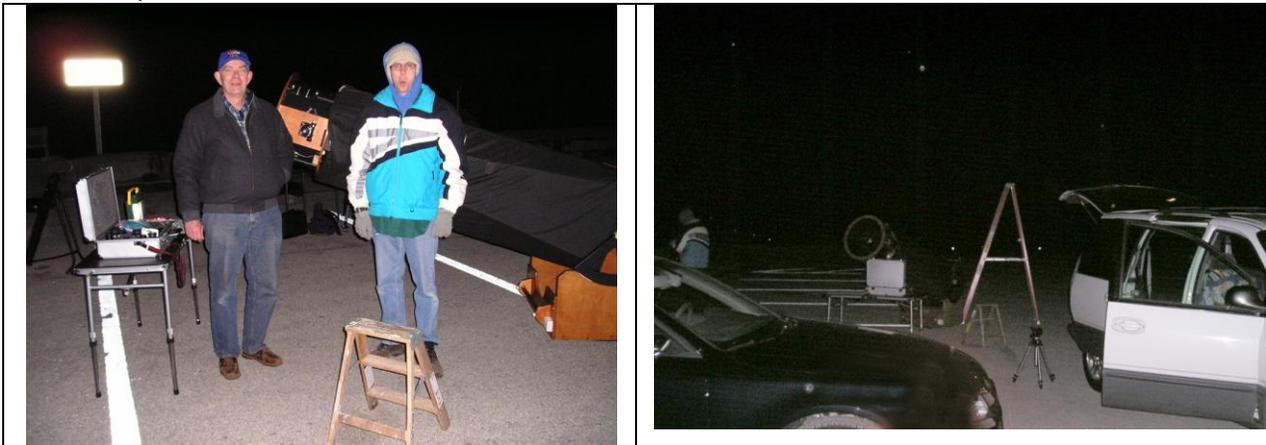
Some photos from the PSTCC event on April 24, 2010:





Other Star Parties:

Unicoi Crest, April 24, 2010 Photos:



Look Rock, May 8, 2010

Lee's report:

We had a nice night up on Look Rock Saturday night. The winds were not bad and we had a few visitors. Below are some of the Anonymous Amateur Astronomers.



Janice and I brought our 90 mm ETX and observed Saturn and spotted a small moon just off the very narrow rings. Duane Dunlap brought his 9.5 inch SCT through which we enjoyed galaxies and most especially globular clusters. His scope is pictured above. He took us to M3, M13 and then Omega Centauri. Omega Centauri was easy to find in binoculars but not naked eye. It was fun to compare M13, M4 and Omega Centauri with my 10x50 binoculars.

Michael McCullough brought his large binoculars and we observed the Leo Triplet and the nice pair of galaxies, M81 M82 in Ursa Major. There were several very fast meteors spicing up the evening. I hope the weather stays good for next weekend.

Lee

#### Michael McCulloch's report:

We had good conditions until clouds started moving in about 11:30 PM. By midnight the sky was about 80% covered and everyone headed home. The wind was surprisingly never much of a problem up there even though flags I saw in Maryville on the way up were flapping in a strong breeze. Strange, Sasquatch did not attend due to the predicted wind -- it probably would have been fine in hindsight. The temperature dropped to the low 50's during the evening, and although chilly at times it was not unbearably cold with appropriate dress.

We had four club members attend and four visitors. Scopes included a 9.25" SCT, 70mm ETX, and 100mm binos. The views of various galaxies, globs, and Saturn did not disappoint throughout the evening as the sky was initially quite clear. The clear southern horizon once again allowed us to observe Omega Centauri and Centaurus A, as well as a nice view of M83.

#### Future Club Events:

Regular SMAS meeting – May 14, 2010

Program: **Observing club activities and awards**, Ron Dinkins will present certificates, Jim Sanders: Double stars Micheal Reuter: Lunar club, and discussion on Observing club observing techniques.

Activity: **Getting Familiar with Your Telescope** by Michael Reuter, magnification work sheet, view orientation through eyepieces, then adjourn to parking lot to measure field of view and orientation through eyepieces.

## Minutes of April, 2010 Meeting

Any corrections to these minutes should be sent to JC Sanders ([sandersj@chartertn.net](mailto:sandersj@chartertn.net))

The regular SMAS business meeting was held at PSTCC on Friday, April 9, 2010. At 7:30 PM, the meeting was called to order by President Lee Erikson. Those in attendance were:

Vicente Diaz, Duane Dunlap, Lee Erikson, Jerry Korngay, Michael Littleton, Michael McCulloch, Michael Reuter, Jim Sanders, and guest Jim Golden.

Observation reports: Michael Reuter reported on his recent observations of Mercury and Venus. Here is his photograph with both planets visible (look closely to see Mercury southwest of Venus):



Program #1: "Age of Light" was presented by Michael Reuter.

This presentation covered the following topics:

1. How long will the sun last.
2. How old is a photon that reaches the earth.
3. Age of a star cluster based on use of the HR diagram.

Michael presented several methods previously used to calculate the age of the sun. The gravitational method predicted about 100 million years. This is way short because some rocks on earth are known to be older than 3 billion years. The Chemical method calculated the age to be less than the gravitational method. The accepted method is based on nuclear equations for the Photon-Photon chain. This method produces a total age of 100 Billion years; however, only 10% of the sun is suitable for "Fusing" thus the life expectancy is 10 Billion years.

How old is light? Light takes only 8 minutes to reach the earth; however, a photon takes a tortuous random path to move from the core to the surface of the sun. Michael lead us though an exercise to illustrate the random nature of the path to the surface. The estimate is that it takes a photon about 30,000 years to reach the surface of the sun (versus 2.3 seconds if it had a straight shot).

Michael explained how the color index of a star is calculated and plotted on the HR diagram. The "turn off point" (the point where stars from the cluster are leaving the main sequence line) gives a clue to the age of the cluster.

Program 2:

Jim Sanders presented information about what objects will be suitable for viewing at the upcoming Public event that SMAS has planned for April 22 at PSTCC. The following is a quote from the flyer to be distributed to the PSTCC faculty and students: "Smoky Mountain Astronomical Society (SMAS) invites PSTCC students to see craters and mountains on the Moon, see the rings of Saturn and see the cradle of star formation in the great nebula in Orion. This is a rain or

shine event. Thursday April 22. Starting at 7:00 PM at the PSTCC Hardin Valley campus parking LOT 08." If it's raining, we will use Alexander Building, Room 150.

A list of possible targets was distributed and discussion of pros and cons followed. Because of the first quarter moon, the best targets will be moon, double stars, and open clusters. Preliminary assignments are:

Michael McCulloch – Operation of Sasquatch

Lee Erickson – 90mm ETX concentration on moon features

Michael Littleton – 13" dob looking at M37

Vicente Diaz – 8" SCT looking at Saturn

Michael Reuter – 10x50 Binoculars or 4" refractor targeting M44

Jim Sanders – 3" refractor targeting double stars

Duane Dunlop (if available) – 4" refractor targeting double stars

The meeting concluded at 9:15 PM. A small group of members gathered after the meeting and Lee Erickson discussed the construction of his "Barn Door" mount. See photograph below:



Submitted by J. C. Sanders, April 9, 2010

# May 2010

SUNDAY	MONDAY	TUESDAY	WEDNESDA	THURSDAY	FRIDAY	SATURDAY
						1 TAO
2	3	4	5	6	7 UT K	8 SMAS Star Party Look Rock
9	10	11	12	13	14 SMAS Meeting at PSTCC @ 7 PM	15 SMAS Star Party Location TBD TAO
16	17	18	19	20	21 UTK	22
23	24	25	26	27	28	29
30	31	UTK – roof of Neilson Physics Building on the Hill At UT on 1 <sup>st</sup> and 3 <sup>rd</sup> Fridays <a href="http://www.phys.utk.edu/trdc/telescope.html">http://www.phys.utk.edu/trdc/telescope.html</a>			TAO – Tamke-Allen Observatory Public Stargaze Watts Bar Lake, Roane County 1 <sup>st</sup> and 3 <sup>rd</sup> Saturdays <a href="http://www.roanestate.edu/obs/">http://www.roanestate.edu/obs/</a>	