Smoky Mountain Astronomical Society

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

Society's ChRonological Astronomical PaperS

To be glad of life because it gives you the chance to love
and to work and to play and to look up at the stars-
Henry Van Dyke
Footpaths to Peace

From the President - Lee Erickson

We had a great night a Unicoi Crest this past June 16. Michael McCulloch's analysis is that the weather conspired to give us pleasant temperatures, clear skies and perhaps some haze in the valley to choke down some of the light from Maryville. As we had several new members and some guests, I showed off some nice targets with the 20 inch telescope. We saw M104 but since it was somewhat low in the west it was not as good as the month before.

Up into the sky the bright Milky Ways was rising, and trailing after it came Jupiter. Jupiter has just passed opposition on June 5th, 2007. So Jupiter was rising just as the sun was setting. At midnight it was crossing the meridian, the celestial line from north to south echoing the longitude of the observer. Jupiter is so bright through the 20 inch scope that you lose your night vision when you look at it. So if you want to look at it use your non dominant eye or you will be taking an involuntary break from observing deep sky objects for a while.

A first for me was seeing M33 in my 10x50 binoculars. I have tried before, but without success. I think we had the second best night I have ever experienced. Only the night we were up on Unicoi Crest just after Hurricane Katrina was the sky darker, and I would not wish Katrina on anyone again just for the sake of clear skies. For me the highlight of the night was seeing the Dumbbell Nebula in binoculars and in the 20 inch. My thanks to Michael McCulloch for locating it for me .

There is still more great summer observing to come at Unicoi Crest, so mark your calendars for July 14. Departure from Maryville Back Yard Burger at about 7:30 will get us up there with some light left. As always, keep tuned to the Yahoo Group for last-minute coordination and spontaneous star parities.

Agenda for July 13, 2007 Meeting

7:00 Meet and greet

Return checked out library books

7:30 Formal meeting begins.

There are a limited number of Beginner DVDs to hand out.

Further discussion (and hunt for coordinator) for image processi ng class. If you want to attend, please bring a $10 check to help prepay for the class room.

Jim Sanders will speak to us about the shareware planetarium program Cartes du Ciel. This program (by the same author as the Virtual Moon Atlas) was included in the old SMAS Beginners CD. It is not on the new DVD, but the latest version is available free, online at http://www.stargazing.net/astropc/

The August speaker will be our very own exo-planet hunter Mike Fleenor

Gastronomy to follow meeting.

SCRAPS' July Question of the Month

This recent bit of conversation was posted on a Yahoo chat group:

Jack: "Well podner, I'll sign off for now. Did you know we had a Blue Moon in May?"

Jacques: "Au contraire, Jack, you 'ave ze month wrong. Eet was June. Au revoir."

They're both right. Can you explain?

SMAS 2007 Picnic

By Mike Littleton

On Saturday, June 2, 2007, SMAS held its annual picnic at Tamke-Allan Observatory. The picnickers were greeted by a bounty of goodies from scrumptious desserts to hickory smoked pork barbecue. One picnicker characterized the barbecue as the "best she had ever eaten." There was a lot more food than SMAS members could eat, but visitors to the observatory did their best to finish the leftovers. Better than the food was the conversation, usually on astronomical topics among members and guests.

In keeping with our tradition, here is the recipe for the barbecue.

Take a pork Boston butt roast and brine it overnight or longer in the following:

8 oz. (if by weight) or ¾ cup (if by volume) molasses
12 oz. pickling salt
2 qt. water

Liberally cover the roast with the dry rub below:

8 tablespoons light brown sugar
3 tablespoons kosher salt
1 tablespoon chili powder
½ teaspoon black pepper
½ teaspoon cayenne pepper
½ teaspoon jalapeno seasoning
½ teaspoon Old Bay seasoning
½ teaspoon rubbed thyme
½ teaspoon onion powder

Take your favorite wood chunks and soak them in water for a least an hour. Smoke the meat over charcoal adding a chunk of the soaked hard wood about every hour. After about 11 hours, test the meat. It should easily shred with a fork. If not cook another hour and test again. When it easily shreds, let it cool and shred or chop it.

Chew on This

The Mars robotic rovers, Spirit and Opportunity, are equipped with RATs, or Rock Abrasion Tools. Their purpose is to abrade the surface patina off the Mars rocks so that the alpha x-ray spectrometer can analyze the minerals inside the rocks, rather than just on the surface.

But future robotic missions to Mars will be asked to go even further below the surface. Scrapers and corers will gather rock samples of substantial size, that, in order to be analyzed by a spectrometer, will need to be crushed into a fine powder.

Crushing rocks on Mars? Now there's a problem that brings to mind a multitude of possible approaches: Whack them with a large hammer? Squeeze them until they explode? How about just chewing them up? It was with this latter metaphor that the planetary instrument engineers struck pay dirt—so to speak.

Thanks to NASA's Planetary Instrument Definition and Development Program, a small group of NASA engineers came up with the Mars Rock Crusher. Only six inches tall, it can chew the hardest rocks into a powder.

The Mars Rock Crusher has two metal plates that work sort of like our jaws. One plate stays still, while the other plate moves. Rocks are dropped into the jaw between the two plates. As one plate moves in and out (like a lower jaw), rocks are crushed between the two plates. The jaw opening is larger toward the top and smaller towards the bottom. So when larger rocks are crushed near the top, the pieces fall down into the narrower part of the jaw, where they are crushed again. This process repeats until the rock particles are small enough to fall through a slit where the two plates are closest.

Looking down on the jaws of the Mars Rock Crusher, we see a magnetite rock get crushed into smaller and smaller particles.

Continued next page

Chew on This (continued)

Engineers have tested the Mars Rock Crusher with Earth rocks similar to those expected to be found on Mars. One kind of rock is hematite. The rusted iron in hematite and other rocks help give Mars its nickname "The Red Planet." Another kind of rock is magnetite, so-called because it is magnetic. Rocks made by volcanoes are called basalts. Some of the volcanoes on Mars may have produced basalts with a lot of a mineral called olivine. We call those olivine basalts, and the Rock Crusher chews them up nicely too.

Visit www.jpl.nasa.gov/technology to read the latest about other NASA technologies for exploring other planets and improving life on this one.

This article was written by Diane K. Fisher and provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Tear-apart padding available

Thanks to member Ken Ferguson, SMAS has a quantity of tear-apart foam padding available. This is the stuff you use to cushion fragile items in a carrying case (eyepieces, for example). It is scored in one-half inch increments, and smaller pieces can be glued to fill almost any layout.

It will be available at the July meeting. First come, first served.

Astronomical League features Sasquatch in the June 2007 issue of Reflector

A few SMASers knew it was coming, but when it arrived it was a blockbuster. Hardly anyone or any club gets an entire page devoted to them, but Mike Marcum's article obviously turned heads at the Reflector publisher's office.

Mike's point of view had to have played a part, and while it is unique, we've got to admit it is perfectly sound. Thanks, Mike!

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Sasquatch has amazing powers!

By Mike Marcum
Member, Smoky Mountain Astronomical Society

Sasquatch, one of the names for the Bigfoot creature said to have astounding powers, is also the name of the Smoky Mountain Astronomical Society's 20-inch reflector telescope, which also has astounding powers.

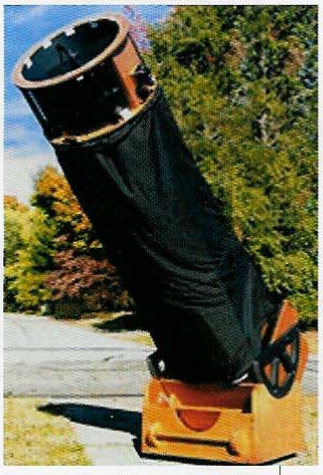
I've looked at various objects through Sas—as we affectionately call the scope—on two different nights now, and I can tell you two amazing things about the scope that you might miss if you haven't had it near you at a star party:

• Having your smaller scope sitting near Sas improves your smaller scope's light-gathering and resolving capabilities.
• Sas is a go-to scope that doesn't require batteries.

Of course, this is where several people may exclaim I'm full of it, but let me explain why I think of Sas as the most unbelievable 20-inch go-to finderscope I've ever seen for my little 6-inch Dobsonian.

My small Dob is what I've used while Sas was set up nearby at two star parties. I can tell you from experience that the way to use Sas is as a go-to scope. first, attempt to find your object in your small scope. If you can't seem to get a lock on it, look back towards Sas and say, "Has anyone pointed Sas at [insert deep sky object here]?" It's that easy. Amazingly enough, in quick order the big scope finds the specified object by using multiple and very friendly tracking computers – other club members.

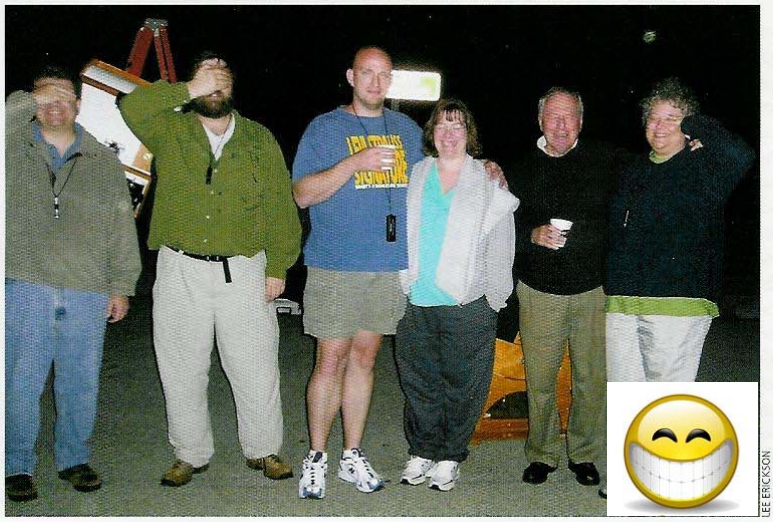
The mighty scope's ability to lend light-gathering power to smaller scopes huddled nearby was something I stumbled upon. I was looking at the Ring Nebula in my little scope when someone



behind asked, "Anyone want to look at the Ring Nebula in Sas?" Hmmm. Never heard of a 20-inch finderscope, but needless to say I took a look. Of course, it was breathtaking; however, when I went back to my little Dob, an amazing sharing of photons had occurred. While I was away from my little scope, the Ring Nebula had brightened and had resolved itself so much more. I am sure I saw many details that I just didn't see before Sas took pity on my little scope and shared some photons.

Of course, I'm being a little bit silly here. But I can tell you that I've found many more objects because of Sas. First, it's the group-used scope that you generally find at least 2 or 3 people looking through and pointing. I have found that it's not only easier to get to know your club members standing around Sas, but also easy to ask them questions as they wait their turn to point the scope at something or take a look.

Michael, Erik, Mark, Crystal, Bob and Angela, members of the Smoky Mountain Astronomical Society, with Sasquatch, the 20" go-to finder scope.



LEE ERICKSON

Sometimes that effect may be overlooked when thinking of Sas as just a big scope, but someone pointed out that when he used it he remembered why he was in a club for stargazing.

I am very serious about using Sas as a type of finder and resolver for the images you see in your smaller scope. The next object that I just can't seem to find in my 6-incher will then be attempted with the amazing, battery-free, go-to Sas before I just give up and move on. And if the mighty Sas can't find it, I'm crazy thinking 6 inches will find it. And every time that Sas completes its duty as a mighty finder, I not only have an easier time finding my object in the smaller scope, but I am positive that I will see more detail than if I had found it in the smaller scope alone.

So, the next time you think of a club's big telescope, don't just think of it as the "big club scope." In fact, I would think that all of our smaller scopes would huddle around it for its amazing light-sharing powers. The next time you are trying to push the limits of your eyes, your star-hopping abilities, getting a good sketch for a logbook, or testing your smaller scopes optics, you might just find that Sasquatch is the greatest 20-inch go-to finderscope you'll ever meet. ✶

Note: Mike Marcum joined the Smoky Mountain Astronomical Society only a short time before he wrote this article. The components of Sasquatch are big enough that it is a team effort to get them all to the club's favorite observing site and then assembled.

July 2007

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4 	5	6 UTK	7 SMAS Star Party LR #1 TAO
8	9	10	11	12	13 SMAS Meeting PSTCC 7 pm	14 SMAS Star Party UC
15	16	17	18	19	20 UTK	21 TAO
22	23	24	25	26	27	28
29	30	31				

There was a young lady named Bright
Whose speed was far greater than light
She set out one day
In a relative way
And returned home the previous night.

SCRAPS depends Upon its friends

Help! Help!

UTK—roof of Neilson Physics Building
on The Hill at UT
1st & 3rd Fridays
TAO —Tamke-Allan Observatory
Public Stargaze
Watts Bar Lake, Roane County
1st & 3rd Saturdays