

Smoky Mountain Astronomical Society

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

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Society's **Ch**Ronological **A**stronomical **P**aper**S**

Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing had happened.
-Winston Churchill



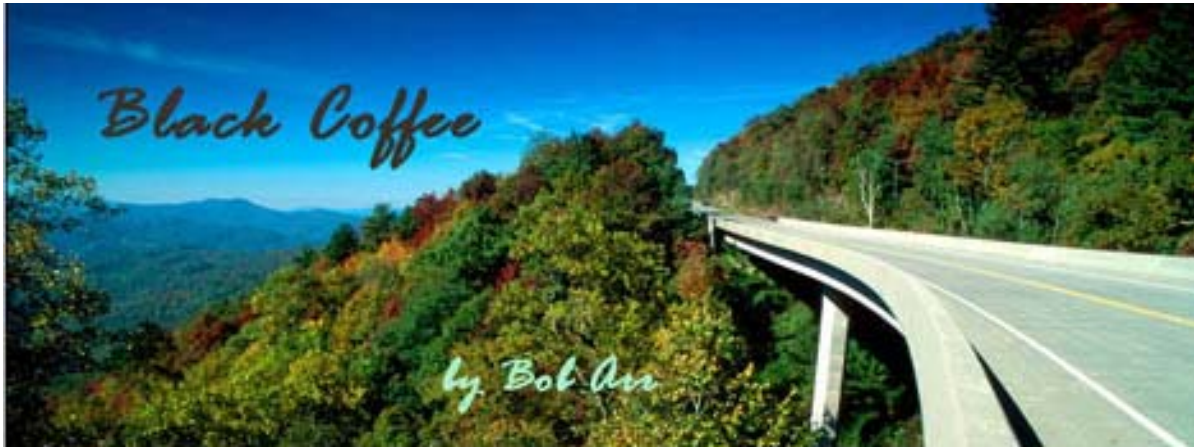
**Public Observing
at GSM Heritage Center
in Townsend, TN**

Date: Saturday August 9, 2008

Time: 8:30 pm - 11:00 pm

Location: 3/4 mile from entrance to
Great Smoky Mountains
National Park

Notes: Setup your scope before 8:30
PM for public viewing.
Restrooms will be available.



Probably, it was inevitable.

Maybe we depended on our pretty-good-past-record for successful Unicoi Crest star parties a little too much. In mid-afternoon of August 2, when the local weathermen indicated that the front would quickly pass, and the satellite images showed the last clouds scouting across the mountains, we felt like CSC was simply playing CYA, and hanging onto cloud cover a little too long. Maybe they're a little conservative north of the border.

Out west, where single mountains rise to glorious peaks, that bonnet of mist is called a cap cloud. I suppose it's the same meteorological process, but around here we have entire ridge tops that stretch for tens of miles. The result might be called a ridge cap. Anyhow, that's what happened at UC last Saturday. CSC got it right. Sassafras ridge wore its foggy ridge cap until 1 am.

Sometimes, there are other disappointments.

If you pay attention to such things, you may notice that this issue of SCRAPS is a week late. It has been ready to publish since July 31. I have been waiting for one promised article to arrive since July 11.

Since becoming editor in March 2007, I have worked hard to email this newsletter on time, which means on the first day of the month. There are, no doubt, reasons that the article never got delivered to me, despite my prodding. Someone might have said, "The article will not be forthcoming," but no one did. So I waited.

I apologize to my readers; I have been an editor for 59 years, and this is the first deadline I have missed. Perhaps the time has come for the club to reconsider publication of SCRAPS. It may be worthy of discussion at some future meeting.

Probably, it was inevitable.

Minutes of July Meeting

By Dennis Hutcheson

The SMAS meeting was brought to order by President Scott Byers at 7:30 PM on July 11, 2008. In attendance were 11 SMAS members and 1 guest, Mr. Joe Medron. Announcements were made about the September 26th, 27th, and 28th camping trip star party at the Big South Fork and confirmation of the Great Smoky Mountain Star Party in October.

An additional announcement was also made requesting old or unused copies of astronomy related magazines such as Sky & Telescope and Astronomy. A label will be placed on the magazines with SMAS information to take into doctor's offices as a way of promoting amateur astronomy and SMAS in the area.

In addition to club activity announcements a discussion of the August 9th Star Party in Townsend Star was began. It was determined that due to poor lighting conditions, and lack of restroom facilities, an alternative Star Party location in Townsend would be researched and recommended for use by SMAS for club star parties.

The topic of program for the evening was Astrophotography with a modified DSLR camera presented by Mr. Nick Schepis. At the conclusion of the presentation the meeting was adjourned by President Byers.

From Lee Erickson:

Big South Fork National Park Camping

Friday night and Saturday night September 26 and 27 is SMAS camping observing at the Big South Fork.

Please bring a deposit for your camp site to the next SMAS meeting on August 8.

Lee will again bring the "Vault" for deposits for camping Camping is \$15 for two nights and \$7.50 for one night.

If possible, please bring a check so that I do not have to be responsible for cash.

Please note, in addition to dark skies, Lee would like to repeat the hike to see the wonderful natural bridges.



Photos by Mike Littleton

Death of a Supergiant

By all outward appearances, the red supergiant appeared normal. But below the surface, hidden from probing eyes, its core had already collapsed into an ultra-dense neutron star, sending a shock wave racing outward from the star's center at around 50 million kilometers per hour.

The shock wave superheated the plasma in its path to almost a million degrees Kelvin, causing the star to emit high-energy ultraviolet (UV) radiation. About six hours later, the shock wave reached the star's surface, causing it to explode in a Type IIP supernova named SNLS-04D2dc.

Long before the explosion's visible light was detected by telescopes on Earth, NASA's Galaxy Evolution Explorer (GALEX) space telescope captured the earlier pulse of UV light — scientists' first glimpse of a star entering its death throes.

“This UV light has traveled through the star at the moment of its death but before it was blown apart,” explains Kevin Schawinski, the University of Oxford astrophysicist who led the observation. “So this light encodes some information about the state of the star the moment it died.”

And that's exactly why astronomers are so excited. Observing the beautiful nebula left behind by a supernova doesn't reveal much about what the star was like before it exploded; most of the evidence has been obliterated. Information encoded in these UV "pre-flashes" could offer scientists an unprecedented window into the innards of stars on the verge of exploding.

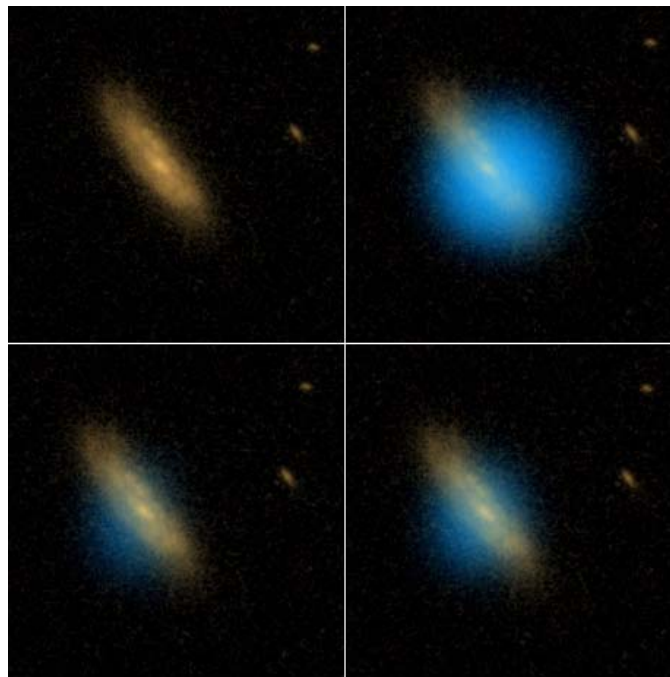
In this case, Schawinski and his colleagues calculated that just before its death, the star was 500 to 1000 times larger in diameter than our sun, confirming that the star was in fact a red supergiant. “We've been able to tell you the size of a star that died in a galaxy several billion light-years away,” Schawinski marvels.

“GALEX has played a very important role in actually seeing this for a few reasons,” Schawinski says. First, GALEX is a space telescope, so it can see far-UV light that's blocked by Earth's atmosphere.

Also, GALEX is designed to take a broad view of the sky. Its relatively small 20-inch primary mirror gives it a wide, 1.2-degree field of view, making it more likely to catch the UV flash preceding a supernova.

With these advantages, GALEX is uniquely equipped to catch a supernova before it explodes. “Just when we like to see it,” Schawinski says.

For more information, visit www.galex.caltech.edu, “Ultraviolet Gives View Inside Real ‘Death Star’.” Kids can check out how to make a mobile of glittering galaxies at spaceplace.nasa.gov/en/kids/galex_make1.shtml.



Sequence of images shows supernova start to finish. The top left image shows the galaxy before the supernova. At top right, the bright UV flash called the shock breakout indicates a red supergiant has collapsed. At bottom left, moments later, the flash is mostly gone. As the debris expands, it heats up again and becomes brighter (bottom right). The supernova became 10 times the size of the original over the following few days, thus becoming visible to supernova hunters.

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

August 2008

SUN	MON	TUE	WED	THU	FRI	SAT
					1 New Moon UTK	2 SMAS Star Party UC TAO
3	4	5	6	7	8 PSTCC Meeting 7 pm	9 SMAS Star Party Townsend
10	11	12	13	14	15 UTK	16 TAO
17	18	19	20	21	22	23
24	25	26	27	28	29	30 SMAS Star Party UC
31					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	
SCRAPS depends Upon its friends	Help! Help!					