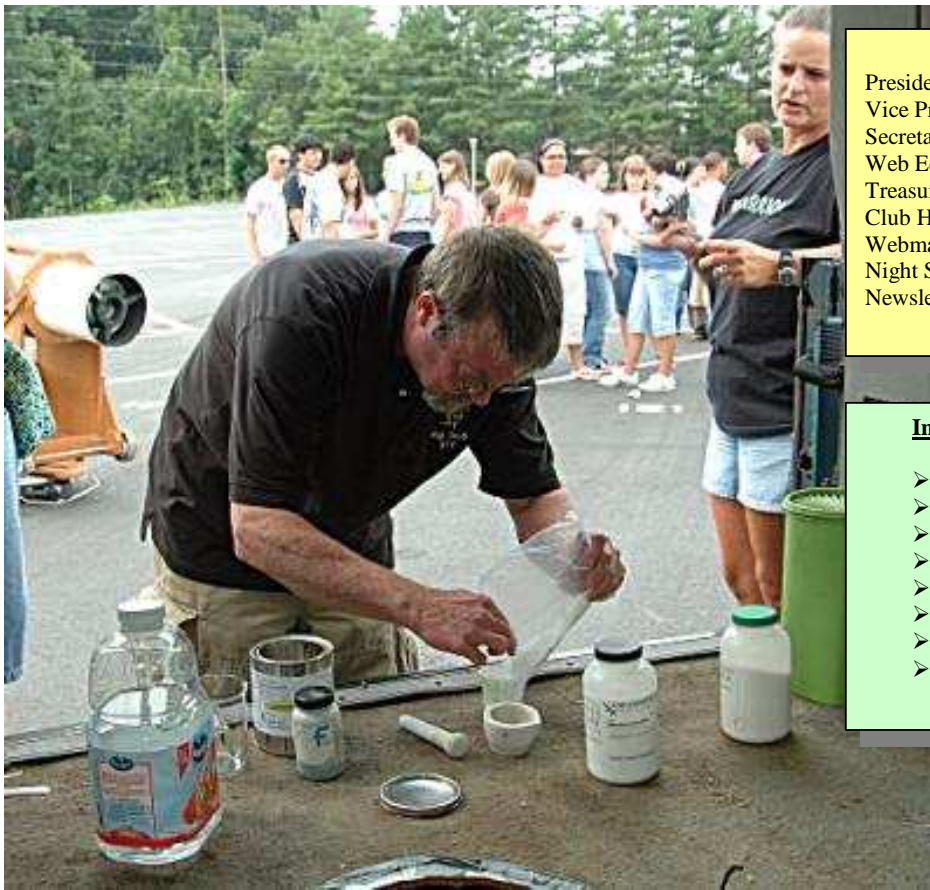

THE RADIANT

August 2008



Volume 08 Issue # 8

Official Newsletter of the Piedmont Amateur Astronomers
Statesville, NC



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Vice President: **Danny Hepler**
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Night Sky Coord: **Mark Smith**
Newsletter Editor: **Charles Tilley**

In this Months Newsletter

- Observing reports
- Meteor showers
- Articles
- The Moon
- Planets this month
- NASA's Space Place
- Club News
- And much more!!!

You can almost hear the sinister chuckles coming from what appears to be a mad scientist mixing a mysterious concoction of chemicals. Will he turn these kids into Frogs or better yet --A+ students? Will they beg their parents to let them do their homework twice?

Not to worry, as this is club member Charles Lail demonstrating how some chemicals react to water to upcoming high school freshmen. See article and more photos inside.

Observing Reports from Club Members

No! Not clouds again.....!!!!

By Charles Tilley

**Wednesday morning, July
23rd 2008**

I loaded up the van with the Meade 10" telescope (SCT), H-Alpha solar filter, chairs, books, and soft drinks, photos, charts, camera equipment and a lot of other stuff that you end up throwing in the car just in case and headed off for a viewing under a cloudy sky knowing there was very little chance of seeing anything.



It was science day at West Iredell High School where Charles Lail works and we hoped the clouds would clear long enough to see the Sun in Charles' white light filter and my H-Alpha filter. The Clear-Sky-Clock did not give us much

hope but we could only try.

Several groups of new freshmen were gathered this week to be introduced to their new school and today was Science Day.

We set up the telescopes and as the kids gathered around Charles L. explained each telescope and some of the objects we looked for in the night sky and of course the Sun. As the Sun remained covered with clouds Charles L. later pointed his telescope across the parking lot for them to take a look at a far off tower.

Later he demonstrated how mixing some chemicals together would cause some nice fireworks effects.

Just as the last group of kids was about to leave the Sun popped out just enough for four or five kids to at least see the edge of the Sun. Then it was gone again.

All in all it was a nice event and we have been invited back later in the year under a clear sky. By that time I should have my new Coronado SolarMax 60 telescope.



Stargaze at Stan and Marie's 26 July 2008

Article by Charles Tilley; Photos by Charles Tilley and Ronnie Sherrill

What are those things up there? Are they stars? No, they can't be stars. The Clear-Sky-Clock said it would be cloudy' so much again for the accuracy of the CSK.

Club members Stan



and Marie Giera, Charles and Diane Tilley, Ray and Rona Gwinner, Jim and Diane Smith, Ronnie Sherrill, Danny Hepler, Kevin Chapman, Charles Lail, Dean Archie, and Al Banner met at the Giera home last night. We were there to present a star gaze for Stan and Marie's neighborhood.

Members began arriving as early as 7:30 PM to set up telescopes, photos and displays of various types and soon the area was taking on the look of a well-organized event. We sat around talking and meeting guest until around 8:30 PM when

someone noticed **Jupiter** hanging low in the southeast.

All telescopes swung into action and



soon the giant planet filled the eyepieces of seven telescopes and three binoculars mounted on tripods. The **Great Red Spot** was in the

process of moving into view and over the course of several hours we observed it make its transit across the planet.

The sky was by no means the best. Moisture and other stuff hanging high up made it all but impossible to bring out the dim galaxies and nebula. On the other hand the muck in the air did have a calming effect and I was able to split Antares and its tiny green companion.



Seeing conditions came and went and during the good seeing some faint detail was seen in the structure of Whirlpool Galaxy M-51 and some structure was even seen in the Veil Nebula in the constellation Cygnus. Ronnie Sherrill spent some time taking photos through Stella (20" Dobsonian telescope) with some very good results.

Marie was the perfect host as she had baked lots of chocolate chip cookies and as she passed them around she introduced the

guest to each of us. True to her word she only provided water for us to wash them down with. To add to the treats Jim and Diane brought a big batch of chocolate brownies.

Along about midnight the sky began to deteriorate once again so we packed up and headed our separate ways. All the time we were packing up with lights from cars, while flashlights and the interior lights from the garage Ronnie



was still snapping pictures. Now that is devotion.

The club has a busy schedule coming up for the next few weeks with several events scheduled but I guess club member Danny Hepler will have the hardest time of any of us.

Poor guy, he will have to miss our trip to Hanging Rock State Park in August, as he must travel out to Las Vegas. All those bright lights, how will he ever see any stars? Guess he will just have to hit each **Casino**

and look at all the stars on stage. **Oh the agony, the agony some of us must endure.** OK Danny, remember what I said about all your **nickels?** ☺

Our Moon

The Moon during August 2008

Date: Event

02nd - Moon 2 degrees south of Venus
10th - Moon .4 degrees south of Antares
16th - Moon 1.1 degrees north of
Pleiades (M45).
28th - Moon 0.6 degrees south of
Beehive (M44).

Luna Phase for August 2008

1st - New Moon
8th - First Quarter
16th - Full Moon
23rd - Last Quarter
30th - New Moon



Something about the Moon I bet you did not know.

In China, the dark shadows that are on the moon are called **"the toad in the moon"**.

/cT

If you have not paid your club dues please see Chick Adams as soon as possible.

Remaining Dates for he Hanging Rock State Park events for 2008

- 1) August - 8th -9th-- plus solar viewing from 2 to 4 PM
- 2) October - 24th - 25th -plus solar viewing from 2 to 4 PM

In my opinion this event is more of a vacation than anything else. Beautiful scenery, always a bit cooler than the flat lands and a great place for a stargaze. We always have a great turnout with campers and park personnel could not be nicer. If you have never attended this event then do yourself a favor and do.

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.

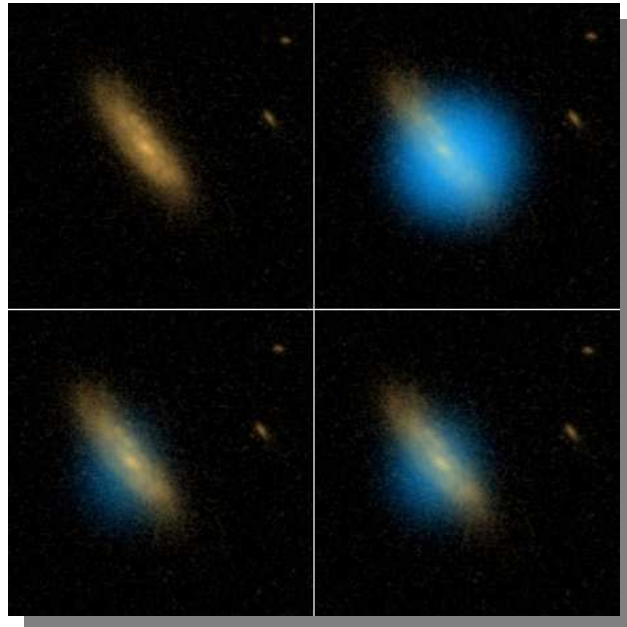
With these advantages, GALEX is uniquely equipped to catch a supernova before it explodes. "Just when we like to see it," Schawinski says.

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.

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

Caption:

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.

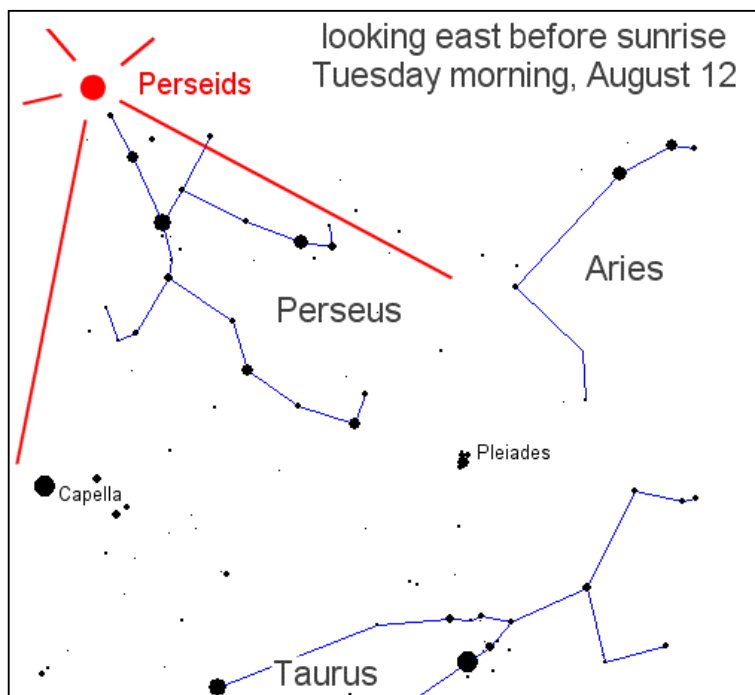


The 2008 Perseid meteor shower Peaks on August 12th and it should be a good show.

[This article taken from the Internet](#)

"The time to look is during the dark hours before dawn on Tuesday, August 12th," says Bill Cooke of NASA's Meteoroid Environment Office at the Marshall Space Flight Center. "There should be plenty of meteors--perhaps one or two every minute."

Right: A Perseid meteor over Joshua Tree National Park in California, August 11, 2007. Credit: Joe Westerberg, [\[more\]](#) The source of the shower is Comet Swift-Tuttle. Although the comet is far away, currently located beyond the orbit of Uranus, a trail of debris from the comet stretches all the way back to Earth. Crossing



the trail in August, Earth will be pelted by specks of comet dust hitting the atmosphere at 132,000 mph. At that speed, even a flimsy speck of dust makes a vivid streak of light when it disintegrates--a meteor! Because, Swift-Tuttle's meteors streak out of the constellation Perseus, they are called "Perseids."

(Note: In the narrative that follows, all times are local. For instance, 9:00 pm means 9:00 pm in your time zone, where

you live.)

Serious meteor hunters will begin their watch early, on Monday evening, August 11th, around 9 pm when Perseus first rises in the northeast. This is the time to look for Perseid Earthgrazers--meteors that approach from the horizon and skim the atmosphere overhead like a stone skipping across the surface of a pond.

"Earthgrazers are long, slow and colorful; they are among the most beautiful of meteors," says Cooke. He cautions that an hour of watching may net only a few of these at most, but seeing even one can make the whole night worthwhile.

On a warm summer night, with bright meteors skipping overhead. and the peak is yet to come. What could be better?

The answer lies halfway up the southern sky: Jupiter and the gibbous Moon converge on August 11th and 12th for a close encounter in the constellation Sagittarius: [sky map](#). It's a grand sight visible even from light-polluted cities.

For a while the beautiful Moon will interfere with the Perseids, lunar glare wiping out all but the brightest meteors. Yin-yang. The situation reverses itself at 2 am on Tuesday morning, August 12th, when the Moon sets and leaves behind a dark sky for the Perseids. The shower will surge into the darkness, peppering the sky with dozens and perhaps hundreds of meteors until dawn.

What's Going On With the Planets this Month?

Mercury: Mercury was at superior conjunction on July 29th and will reach greatest elongation (east) 27 degrees on September 11th but will fade as this elongation increases.

Venus: Venus continues to move away from the Sun this month, becoming better placed in the early evening sky.

Mars: Mars moves eastward this month from Leo into Virgo and continues to move closer into evening twilight.

Jupiter: Jupiter was at opposition on July 9th. In mid-August it transits in mid-evening and sets in the west-southwest shortly after 3:00 PM at mid-month.

Saturn: Saturn moves ever closer to the Sun and will be in conjunction with the Sun on September 4th. If you have a low western horizon look for Saturn and Venus about 8 degrees above the horizon and less than $\frac{1}{2}$ degree apart. Can you also spot Mercury 3 degrees below these two planets? Saturn will drop into the Sun's glare by mid-month.

Early Ammonia Servicer Something to look for in the months to come

The Early Ammonia Servicer (EAS) is a 1400-lb piece of space junk as large as a double-wide refrigerator. Astronauts onboard the ISS threw it overboard on July 23rd 2007.



The EAS was installed in 2001 as an ammonia reservoir for the station's internal cooling system, but it was no longer needed after an improved cooling system was activated in 2006. So,

astronauts pushed it overboard to make room for new construction.

The Early Ammonia Servicer (EAS), pictured above, was thrown overboard from the International Space Station on July 23, 2007, almost one year ago. At the time, the castaway was in a high orbit and barely visible from Earth's surface. Not anymore: Twelve months later, with its orbit decaying, the EAS has become easy to see.

"The EAS has noticeably brightened," reports veteran satellite observer Marco Langbroek of Leiden, the Netherlands. "A year ago it was a difficult naked eye object at mag. +4 to +4.5, but on July 20, 2008, I easily observed it at mag. +2.5 to +2.0, moving very fast due to its low orbit: [photo](#)."

The EAS is expected to reenter Earth's atmosphere and disintegrate near the end of 2008 or early 2009. Until then, you can see it, growing brighter as it descends, with your own eyes. Europeans are favored with flybys this week, North Americans next week. Check our [Simple Satellite Tracker](#) to find out when to look.

Something fun to observe on Jupiter during August 2008

04th – Shadow of Ganymede begins transit at 10:43 PM on the 4th and ends at 01:55 AM on the 5th.

06th – Shadow of Io begins transit at 11:32 PM on the 6th and ends at 01:45 AM on the 7th.

For this event you will need steady seeing to allow more power.

07th – The moon Io begins to emerge from behind Jupiter at 10:18 PM while immersed in Jupiter's shadow. This will give the tiny moon a reddish appearance just as our Moon appears red while in Earth's shadow.

At 10:57 PM Io will begin to emerge from the shadow and take on a brighter appearance. As it emerges from the shadow look for the moon Europa as it slides past just 9-arc sec above Io.

Watch this planet often as there is always something going on. /cT

Which Direction From North Do You Set that Tripod???????????????

By Charles Tilley

At the last viewing we had at Doughton Park there was a little confusion on MY part as to which direction off of north the telescope should be moved in order to polar align it.

I had read to set it off (7) degrees to the west and everyone else said to set it off (7) degrees to the east. Well needless to say I knew I was right as I read it on the Internet and we all know that everything you read on the Internet must indeed be the truth.

Finally someone came forth and set me straight and it seems I had misunderstand what I had read. I know, I know, I didn't believe it either but this time I was w wrrroo- er-wroo uhm -I was not "wrong" I had just been led amiss.

The below information was submitted by club member **Dean Archie** and sets the record straight.

From Dean,

Here is the Airmav info for Statesville Airport...

The variation is 5 degrees west...

When I was doing pilot training we learned "East is least and West is best" East means you must subtract degrees and West means you must add.

FAA Identifier: SVH

Lat/Long: 35-45-53.9850N / 080-57-14.0250W

35-45.899750N / 080-57.233750W

35.7649958 / -80.9538958

(estimated)

Elevation: 968 ft. / 295.0 m (surveyed)

Variation: 05W (1985)

From city: 3 miles SW of STATESVILLE, NC

Time zone: UTC -4 (UTC -5 during Standard Time)

Zip code: 28677

Here is a pretty neat government site that computes magnetic variation. If you think its OK you might want to put it in the newsletter also.

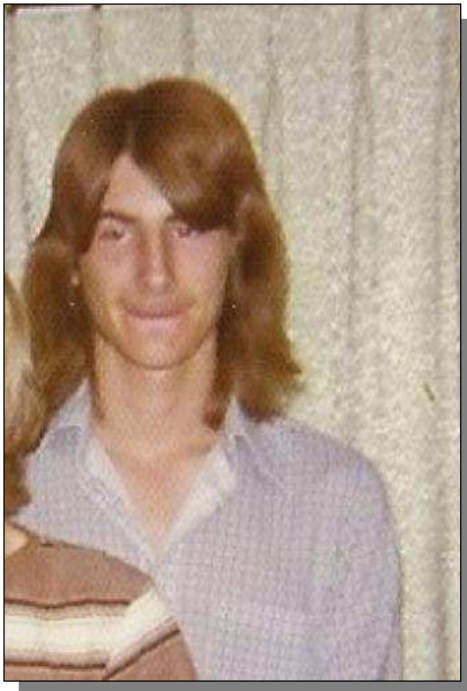
<http://www.ngdc.noaa.gov/geomagmodels/struts/calcDeclination>

Dean

Do you recognize these people?

Photos sent in by Charles Lail

(Remember who sent this in Ronnie, it wasn't me--/cT)



For the next several months I want to try something new.

If you have a special photo of a club member taken at a club event send it in and I will post it. /cT

Note: Let's be nice with these photos and remember that someone just may want to send in your photo.

Also note that if it does not pass my scrutiny, I will not post it. This is for photos that present members in a positive manner only.

Behold the power of the newsletter editor.

Club News

Thanks to all who contributed material this month.

When submitting articles/photos please include the source. For photos please give specs such as camera, speed, f#, lens, conditions and place.

Send newsletter articles/correspondence/photos to:

Charles Tilley (editor)
ctvideo@yadtel.net
PH: (704) 546-2686

What's Up for 2008

August, Jessie Jackson
September, Kevin Chapman
October, Dean Archie
November, Charles Tilley

Club Events For August 2008

02nd – Picnic at Doughton Park
07th – Club meeting
08th–09th–10th – Scheduled stargaze at Hanging Rock State Park. Members Jesse Jackson, Ronnie Sherrill, Ray Gwinner, Diane and Charles Tilley, will cover this event.
11th-12th – Perseid Meteor Shower. See info in newsletter.

Where and when do we meet?

We meet on the first Thursday of each month in the conference room of the Iredell County Rescue Squad Building. Our meetings start at 19:30 hrs (7:30 PM) and last up to two hours. Each meeting covers club business, observing reports and upcoming observing events. We also have an educational or entertaining presentation from a club member or guest speaker with observing afterwards (weather permitting).

If you have an interest in astronomy please feel free to stop by and check us out.
You just may want to join.

Programs for 2008

August – Kevin Chapman
September – Ronnie Sherrill
October – Open
November – Jim Smith
December – Christmas Party – no program

Club members who sent in material for this month's newsletter are:

Ronnie Sherrill, Charles Lail, Charles Tilley, Dean Archie.

Thanks to all the members who came out and supported each of these events.

Many thanks from the editor.

/cT