The Radiant

November 2003

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Official Newsletter of the Piedmont Amateur Astronomy Club
Statesville, NC

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IN THIS ISSUE

Plus lots of photos by club members of Sunspots, prominences and of course the Aurora of October 2003

The Aurora once again comes to North Carolina.
It happened again and this time I was actually there to see it.
I received many fine photos and choosing one for the front page was not easy. The Sun has been a star attraction for the last half of the month, allowing many fine photos to be taken. A lot more has happened this month so turn the page and find out.

Observing Reports

Even though we are three years on the downward side of the solar peak the Sun surprised everyone in October with some very large sunspot groups and very large flares. This is why the Sun, along with the Moon, is one of my favorite objects to observe.
Below are photos and comments sent in by club members.
The photos are of the sunspot groups that produced some very large flares. These flares are responsible for the aurora we saw on the 29th and 30th of October. Also some very colorful aurora photos. (Tilley)

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White Light Solar Flare
By: Mark Smith

On Sunday October 19th I was fortunate enough to catch a rare phenomenon. I saw my first white light solar flare. I didn¹t believe it was possible to see a flare with a Baader filter. I thought it was only H-alpha filters that could do that. I was keeping a promise to some visiting friends. They wanted to look through my scope but were too tired from traveling to attend the previous nights gaze. When I offered them a view of the Sun through the 8" they quickly accepted. I lined the scope up and had Krystle¹s 26mm plossl installed and was in the process of focusing when I noticed a beautiful complex of Spots. The penumbral region looked like a crater and the spot looked like a hole in the sun. It was pitch black and very sharply defined. As I looked I noticed the area just to one side of the spot got very blurry and then faded to white. At first I thought someone was in front of my scope. I glanced up but no one was. I looked back into the eyepiece and noticed most of the spot was still clear but the area beside was still white. That area then became clearer until it was even clearer than before. The detail was stunning. It looked like a river of tiny sunspots where the flash had occurred. I thought it was kind of weird but never thought about a flare. Later that evening I received an Astro Alert telling about a solar flare from that region at about the same time. I called Charles Tilley and was asking him about it. After telling him what I had seen he told me it was probably a solar flare. He went on to explain that some flares could be strong enough to be seen in a Baader. Later I received another alert advising of the same thing. I have concluded from this that what I saw was indeed a white light flare.

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Allison¹s Woods 10/18/03
By: Mark Smith

The main focus of our gaze tonight was spotting Comet Encke. Ronnie, Charlie, Chuck Dessert, Dean and myself were the ones who made it out. I had some guests visiting for the weekend so I showed up a bit late. They were supposed to join us but decided to retire to their room instead. They were really tired from all the traveling. Stella was already set up when I got there as was Project X and Baby. Dean was using his new Burgess binoculars.

There was a lot of kidding tonight as we searched in vain for comet Encke. Someone, Ronnie was accused of it, had "white lighted" CD. I never did hear that entire story. CD had his 2" eyepiece in Baby and it gave stunning views of M31 as well as M33. It was supposed to be in Andromeda but we never could find it. It could have been due to the moisture in the air or the surface brightness was just so low we couldn¹t pull it out. It was at magnitude 12.5 so Stella should have caught it with little effort. We observed several other objects such as the double cluster and some clusters in Auriga. Mars was still decent with the "thong" showing up clearly. I managed to pull out M33 in the 8". CD gave a demonstration of how to keep a Telrad clear with a dew gun. I left just after 11. This was a good gaze and we were due one after all the weather we¹ve had to endure.

Mark Smith
NO we didn't find Comet Encke last night. It wasn't because we didn't try. Ronnie was searching hard with Stella and then I took over. We were all over the area we showed it to be but we couldn't pull it out. Is there any way you can pull up a chart on Starry Night of where it's going to be tonight, save it as a JPG and send it to me? My astro program doesn't include Encke for some reason. We had a good gaze last night. I'll send you something on it later.
Mark

Mark Smith
If you haven't looked at the Sun please do so. There is a complex of spots and the clarity I'm seeing is unreal. It looks like a crater around the spots and the largest spot looks like a hole. I mean it literally looks like a hole has been punched in the Sun. It is really neat. There is some detail off to the side that looks like a river of sunspots. It is one of the most fascinating things I've seen on the Sun yet and I'm getting to share it with some friends who've never looked through a scope before. This is really neat. Check it out.

Wednesday Oct 29th
Mark Smith
Hey Gang;
I have already seen some aurora from this storm tonight. It appeared as a deep red glow with white streaks rising upwards on occasion. The event I saw was in the North at about 45 deg. above the horizon. It lasted for about 20 minutes from 7:30 to 7:50. Much less subdued than what Dean and I saw at Doughton but still good.
Mark

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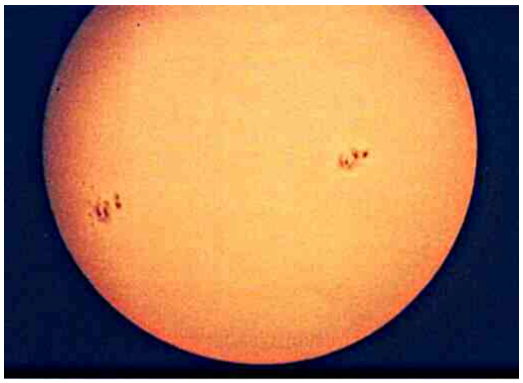
Hello everyone,
I took a few shots of the sun today and wanted to share. Two were taken through the 10" Meade and one through the C-90. I think the high clouds helped a little.

Ronnie"Galileo"Sherrill

Have a photograph you are proud of?
Send it in and display it in the newsletter.

The Sun Is Still Very Active.



Photos by Ronnie Sherrill

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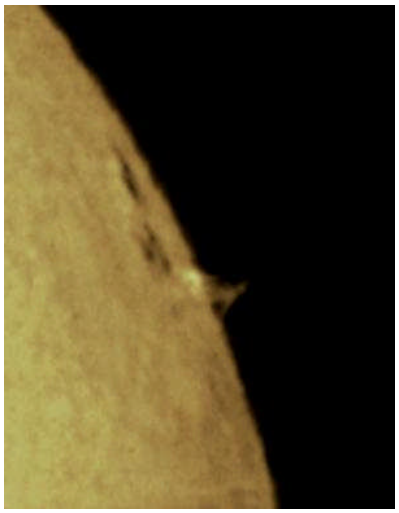
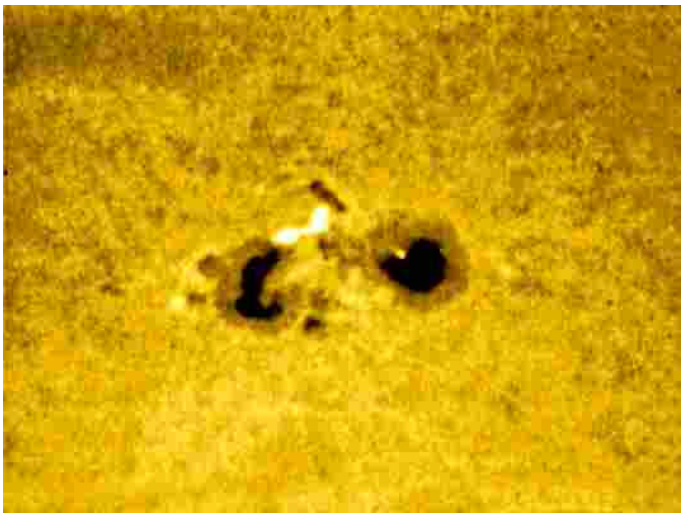
Wednesday Oct 29th
This afternoon I decided to take a quick peak at the Sun. I was hoping to get a few photos of the sunspots with the white light filter.
I decided to look first with the H-Alpha. The white light filter never left the box.
During the next three hours I observed and videotaped five (5) flares from three separate sunspots. It was beautiful.
The photos below show two of these flares.
If you have an H-Alpha or can borrow one the I highly recommend you watch these sunspots.
Hope to get more tomorrow.
Charles



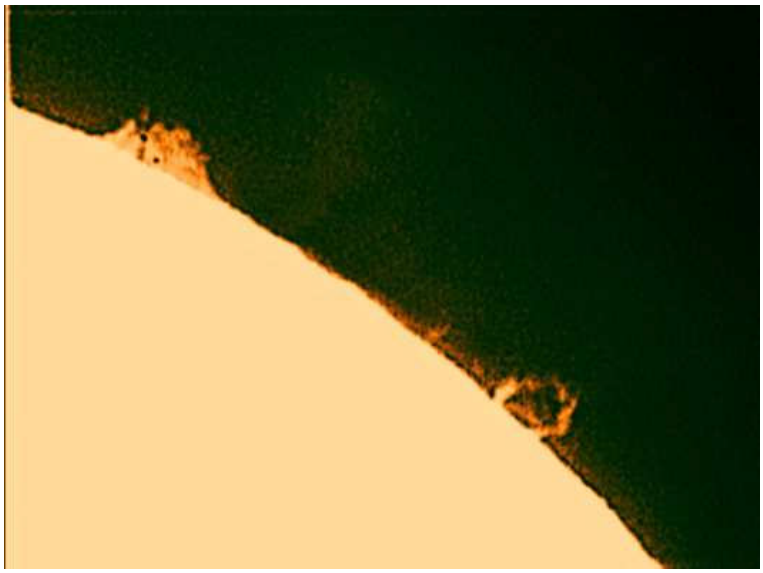
Final flare from Sunspot #484 as it approaches the western limb.



Sunspot #488 on 30 October 2003 with two flares. This group had several sunspots in its transit across the Sun.

Photos by Charles and Diane Tilley

Did You Know?
On November 11th at about 3:20 AM look for the shadow of Io as it transits Jupiter. Jupiter will only be about 20degrees high in the East.



There were also arches and blobs of many shapes. The Sun was beginning to look like it did a couple years ago.
But all good things must end sometime as this outburst from the Sun is doing as of the 2nd of November.
As the last large sunspots #488 and 486 move closer toward the Suns western limb, there are no sunspots to the east.
(Tilley)

But does something still lurk just over the eastern limb?
I did see a small prominence peaking over. Only time will tell.

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It's Aurora Man!

Wednesday Oct 29th
by Chuck Adams

Photo by Chuck Adams

Yes, PAA, tonight was one of those rare events. Out at Allison Woods there
was an incredible sighting. Attached is an action photo of that famous super-hero of astronomy: AURORA MAN. By day, a mild mannered machinist; but by night, an intrepid hunter of the Northern Lights. Tonight he and his
trusty sidekick, Ray Structure, bagged another one.

*Editors note: Does this person **"Aurora Man"** not have an uncanny resemblance to the world famous **"Hub Cab Man"?** Could they be one in the same? It is a strange place we live in.*

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Chuck Dessert
I didn't get a chance to see the early display because I was in school but around 11:20pm a faint red glow was detected in Taylorsville almost due north. This display only lasted for about ten minutes but there it was. I went out later after midnight and all was quiet. Maybe we will see more tonight.
The Mez!

Tomm Lorenzin Wednesday 29th October 2003
I took Lydia out for her first-ever viewing of the Aurora Borealis. We went up I-77 to exit 54 (Hwy 21) then about two or three miles into a lightless and trafficless neighborhood with a low horizon in the north. There we were treated to colorful auroral displays (red, green, blue) between 1930 and 2000 hrs - some veils forming directly at the zenith for us. After that, the clouds - which had been limited to the south and around the waxing crescent moon - began to form overhead and in the NW, and the chill began to get to us.
We also saw several fine meteors (sporadics), and a bright satellite sailed into the Earth's shadow while we watched.

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Mark Smith
I had promised to take Darla to a haunted trail in northern Davie county but took along the camera and tripod. Just as we got t Lake Myers the sky turned red and I pulled into the drive and set up. I shot several frames of 400 film at f8 with exposures varying from 4-30 seconds. There was some beautiful ray structure tonight and even some minor pulsing. It still wasn't like I saw at Doughton but it was good to watch. I hope the shots turn out so I can show them but if they don't we still got a good show.

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Halloween 2003

By Charles and Diane Tilley

Not knowing if the club was planning a "Spook Gaze" we excepted an invitation to set our telescope up in my daughters yard in Mooresville.
We had no idea if the people would even slow down enough from their candy and treat gatherings to even look at the telescope.
High thin clouds threatened to cancel the viewing but thinned enough at the last minute.
The Moon was bright enough for some very clear steady viewing at 235 power.

Well much to our surprise we started showing the Moon a little before 6:00 PM and never slowed down until a little after 8:00 PM. We estimated well over three hundred (yes, 300 plus) people stopped to look at the Moon.
The vast majority had never looked through anything but Wal-Mart specials or binoculars. I had some nice discussions with them about what and what not to buy in telescopes.
We had numerous requests to come back again next year. That they may rely on.

More Aurora Photos by club members.

Photos by Chuck Adams.

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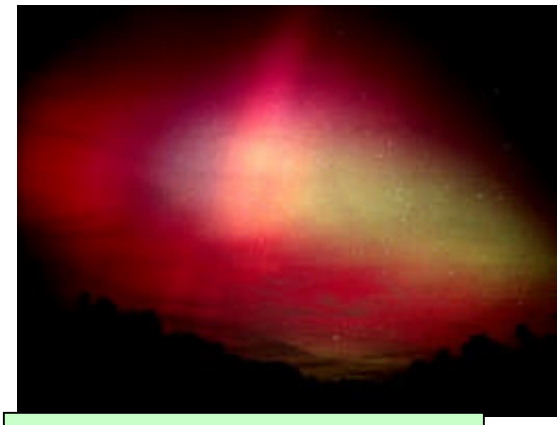
Photos by Ronnie Sherrill.



Green cloud forms among all the red.

Prominence taken during Mid-Atlantic Star Party

Photos by Charles Tilley

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Mid-Atlantic Star Party 2003

This year at the 2003 MASP we had about the largest crowd ever. By Wednesday night the field was so packed people were having a hard time finding campsites.

The weather was great with great seeing most of the time. Wednesday morning was when we first became aware that the huge sunspot #488 was coming over the eastern limb. The prominences produced by #488 were simply outstanding with every type prominence you could ask for. It would become larger than sunspot #486 with both being larger than the planet Jupiter. Both also produced many flares, giving us some beautiful aurora shots.

Diane and I had one of only three H-Alpha filters at MASP and the "Ole Blue Observatory" was kept busy all week.

Too much happened to tell it here or show all the photos. As usual it was one of the highlights of the year for us.

Articles

Hurricane Team Work

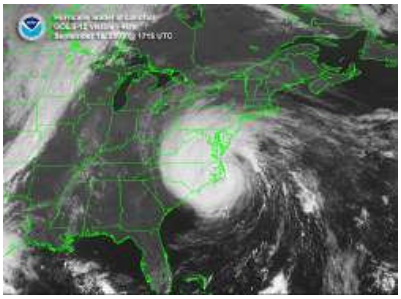
by Dr. Tony Phillips

On a gray breezy day last month thousands of people got in their cars and reluctantly left home. U.S. east coast highways were thick with traffic. Schools were closed. Businesses shut down.

Perfect!

When powerful Hurricane Isabel arrived some 38 hours later nearly everyone in the storm's path had fled to safety.

Days later Vice Admiral Lautenbacher, in a briefing to President Bush, praised the National Atmospheric and Oceanic Administration (NOAA): "Without NOAA's excellent track forecasts, hurricane Isabel's toll on lives and property would have been even more devastating. This is NOAA's first year of providing 5-day forecasts-and the 5-day forecast for Isabel was as good as our 2-day forecasts have been over the last decade."



Many people in NOAA played a role. A team of pilots, for instance, flew Gulfstream-IV High Altitude Surveillance jets right up to the approaching hurricane, logging 25,000 miles in the days before landfall. Their jets deployed devices called dropsondes-little weather stations that fall toward the sea, measuring pressure, humidity, temperature and wind velocity as they plummet. The data were radioed back to the aircraft and transmitted to forecasters on shore.

While two Gulfstream-IV crews flew night and day around the storm, a NOAA satellite named GOES-EAST monitored Isabel from above. (GOES is short for Geostationary Operational Environmental Satellite.)

From an orbit 22,300 miles above the Atlantic Ocean, GOES-EAST had a unique view. "It could see the entire hurricane at once," says Ron Gird of NOAA. "Scientists used infrared spectrometers onboard the satellite to estimate the height of the storm clouds, their temperature and water content. GOES can also measure the temperature of the ocean surface-the source of power for hurricanes."

Constant streams of data from GOES and the Gulfstream aircraft were fed to supercomputers at NOAA's Environmental Modeling Center in Maryland where sophisticated programs, developed over the years by meteorologists and programmers, calculated the storm's most likely path.

Supercomputers. Satellites. Jet airplanes. Scientists. Programmers. Pilots. It took a big team using a lot of tools to predict where Isabel would go-accurately and with time to spare.

Says Vice Admiral Lautenbacher: "I hope everyone at NOAA shares the pride of being part of a team effort that so effectively warned the public of impending danger and enabled citizens to take action to protect themselves and their loved ones."

Well done, indeed.

To learn more about the GOES, see www.oso.noaa.gov/goes/ . For kids, the SciJinks Weather Laboratory at scijinks.nasa.gov has lots of fun activities and fascinating facts about the wild world of weather.

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

Image Caption:

GOES-East satellite image of hurricane Isabel as it makes landfall on September 18, 2003 at 1715 UTC.

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Newsletter picture rainbow from Hurricane Isabel

submitted by Chuck Dessert

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Meteor Showers For October

The 2003 Leonid Meteor Shower

An unusual double Leonid meteor shower is going to peak next month over parts of Asia and North America.

October 10, 2003: The Leonid meteor shower is coming. Twice.

Bill Cooke of the Space Environments Group at the NASA Marshall Space Flight Center explains: "Normally there's just one Leonid meteor shower each year, but this year we're going to have two: one on Nov. 13th and another on Nov. 19th."

Both are caused by comet Tempel-Tuttle, which swings through the inner solar system every 33 years. With each visit the comet leaves behind a trail of dusty debris--the stuff of meteor showers. Lots of the comet's old dusty trails litter the mid-November part of Earth's orbit.

"Our planet glides through the debris zone every year," says Cooke. "It's like a minefield. Sometimes we hit a dust trail, sometimes we don't." Direct hits can spark a meteor storm, which is defined as more than 1000 shooting stars per hour. "That's what happened in, for example, 1966 and 2001," says Cooke. "Those were great years for Leonids."

"This year we're going to brush past two of the trails--no direct hits," he says. Even so, "we might have a nice display."

The first shower is expected on Nov. 13th around 17:17 UT. For about three hours centered on that time Earth will be close to some dust shed by Tempel-Tuttle in the year 1499. Sky watchers in Alaska, Hawaii and along the Pacific rim of Asia are favored. They'll see anywhere from a few to 40 meteors per hour--"if they can avoid the glare from that night's gibbous Moon," cautions Cooke. A good strategy for moonlit meteor observing: travel to high altitudes where the air is clear or stand in the shade of a tall building or hillside.

r November

know when it ecome

Have something to sell?

Put it in the newsletter. One mans junk is another's treasure.

October Moon Phases

1st Nov = 1st Quarter
8th Nov = Full moon
Total Eclipse
17th Nov = Last Quarter
23rd Nov = New Moon
30th Nov = First Quarter.

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What's Going On With the Planets in September 2003?

Mercury: Not easily visible this month by northern observers.

Venus: Continues to improve its visibility in the southwestern evening twilight this month. By months end it will set more than 1.5 hours after sunset. However, due to the unfavorable tipping of the ecliptic for northern observers it remains embedded in twilight.

Mars: Located in Aquarius, Mars stands about 35 degrees high in the southeast at the end of evening twilight and sets in the west-southwest near 1:00 AM.

Jupiter: Located in Leo, Jupiter rises near 1:00 AM in the east and stands about 40 degrees high in the southeast at the beginning of morning twilight.

Saturn: Located in Gemini, Saturn rises in the east-s\northeast in early evening.

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Club News

Hi Gang,
If anyone would like to give a program next year please let me know and I will schedule it. Also, if anyone has a topic they would like to see a program on Let me know. I will do my best to get it done. Thanks,
Mark

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).

Scout Troop 171 in Mooresville NC will have a camp out on November 8th. I
have learned that there will be a full lunar eclipse. I was interested in
trying to arrange to have a couple of telescopes on hand that evening for
the scouts to see. The camp out is just off RT 3 near Coddle Creek Church
near mooresville, I expect between 15 and 30 scouts and adults to attend.
If you could help with this request or recommend someone who could I would be grateful.

Editors note: If you can help with this event please contact Mark Smith

Club minutes for October 2nd meeting.

Chuck Adams called the meeting to order at 7:35.
There were 17 members present.
Dean Archie read the minutes from the September meeting.

Al reported on the Allison's Woods Sept 26th public gaze.
Chuck gave a report on Lake Norman Sept 30th public gaze.

Members gave some thoughts on Starfest

The following officers were elected for the upcoming year:

Charles Lail-President
Mark Smith-Vice President
Marie Giera -Treasurer
Dean Archie-Secretary/web editor
Charles Tilley- Newsletter editor/ web editor
David Clark-Webmaster
Chuck Dessert- Club Historian.

New observing dates were:
October 31st Public Halloween gaze at Board Street Methodist Church
November 16 Allison's Woods Leonid meteors
November 22 Doughton Park
November 29th Lake Norman possible public gaze.

Chuck Dessert had "What's Up for October"

Tomm Lorenzin gave the program "Astroprestioptiphysiology"

Meeting was adjourned at 9:21.

PAA Program Schedule 2003

November 6th.
Program, TBA
Dean Archie, What's Up

December 4th.
Jesse Jackson, PAA
Al Banner, What's Up

Upcoming October Events.

See club minutes to the left.

Thanks to all who contributed material to this month's newsletter.
When submitting articles please include the source.
Send newsletter articles/correspondence/photos to:

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