THE RADIANT

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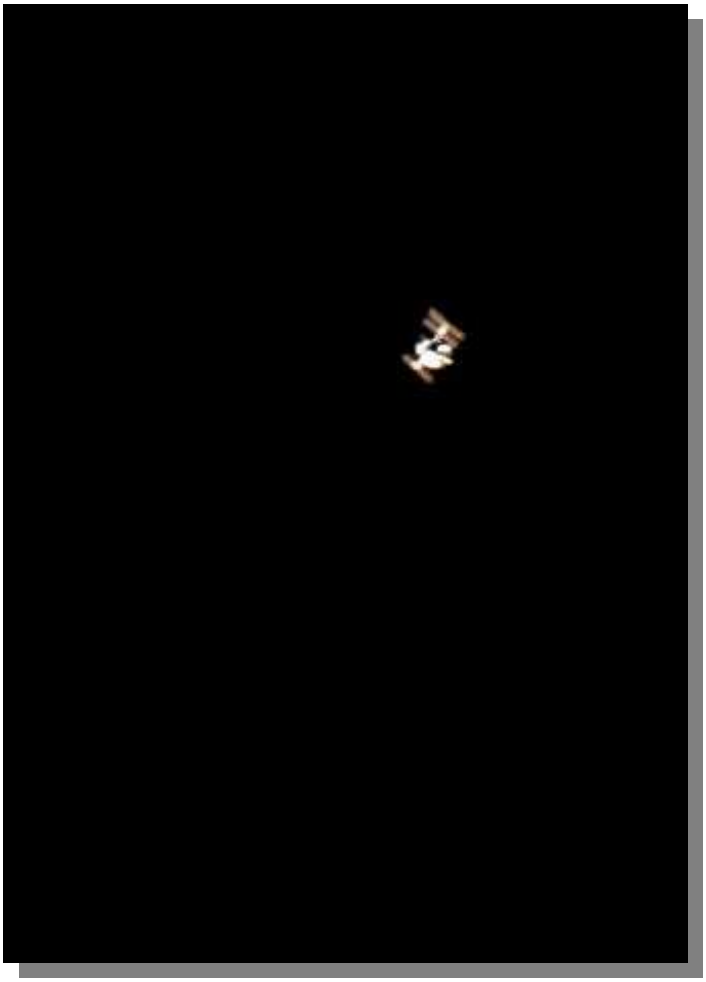

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In this Months Newsletter

On November 20th the ISS made a very nice high pass as seen and photographed by Bob Hunt of the Catawba Valley Astronomy Club in Hickory.
Settings were: Canon Rebel on 6"f12 refractor prime focus, 1/250 sec, ISO 400.
Photo by Bob Hunt

Observing Reports

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November Meeting for PAA

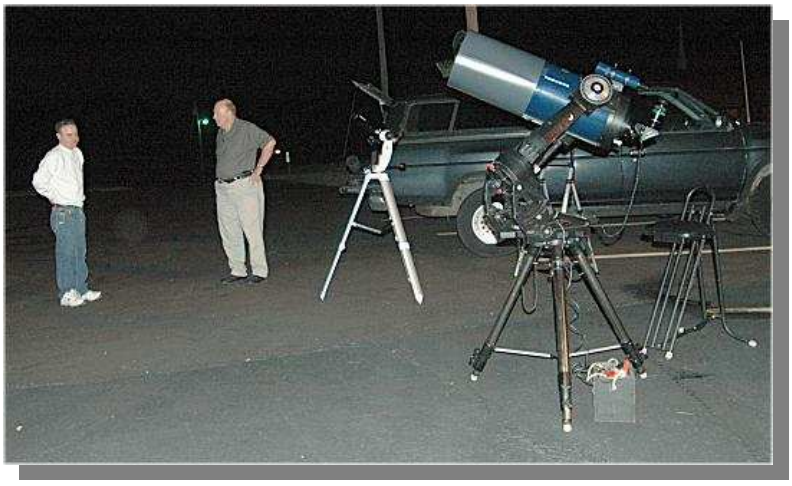
By Charles Tilley 06 November 2008

How much power can be used with a telescope? Some telescopes are sold advertising over 550 powers for a 2.25-inch objective lens.

Theoretically you can add around 50 to 60 power per inch of aperture of a telescope, theoretically!

Realistically this number drops at least by half and more to around 20 to 30 power per inch of aperture. All this is mainly due to our atmosphere. There are many days where we cannot even use the lowest number 0f 20 power due to many things in our atmosphere but sometimes, for a very few days our of a year, it seems all just goes right and we can move closer to that theoretical number of 60 power per inch of aperture.

Last night was such a night and I was blown away with the views I was getting of the Luna surface. Details were there that I have never seen before. I attribute a lot of this to the steadiness of the seeing. It was dead calm.



I was using my old Meade 10", f/10 SC telescope and my 13 mm Ethos Televue eyepiece. With this I was also using a new 2" Dielectric diagonal and my new 2" Televue Powermate Barlow. The Barlow was placed between the diagonal and the telescope to make it closer to a 3x power instead of a 2x power. With a focal length of 2500 and the 13mm eyepiece this gave a power of 576 and still the image of the craters was dead still. I can't

remember the last time I was able to use this kind of power. The Alpine Valley was bathed in a lot of sunlight but **there was a little shadow cast down onto the floor. As I looked closer I could even make** out the rile that ran down the floor of the valley.

Usually with this high power the image begins to take on a muddy dim appearance but this time it was nice and white and bright.

This did not last all night as we soon found out but it did come and go as the evening wore on. Some of this, I'm sure, was due to our location, the middle of a black top parking lot that had been bathed in hot sunlight all day. We were at this spot for out monthly program that required us to set up some telescopes.

The program for this month was "What to look for when purchasing a telescope". The club was doing this in order to help interested personal that may be considering purchasing a telescope for Christmas of in the near future.
We had advertised in the local newsletter and radio station but it seems it did little or not good. Several new faces were seen walking around but these people were for the most part came with present members.

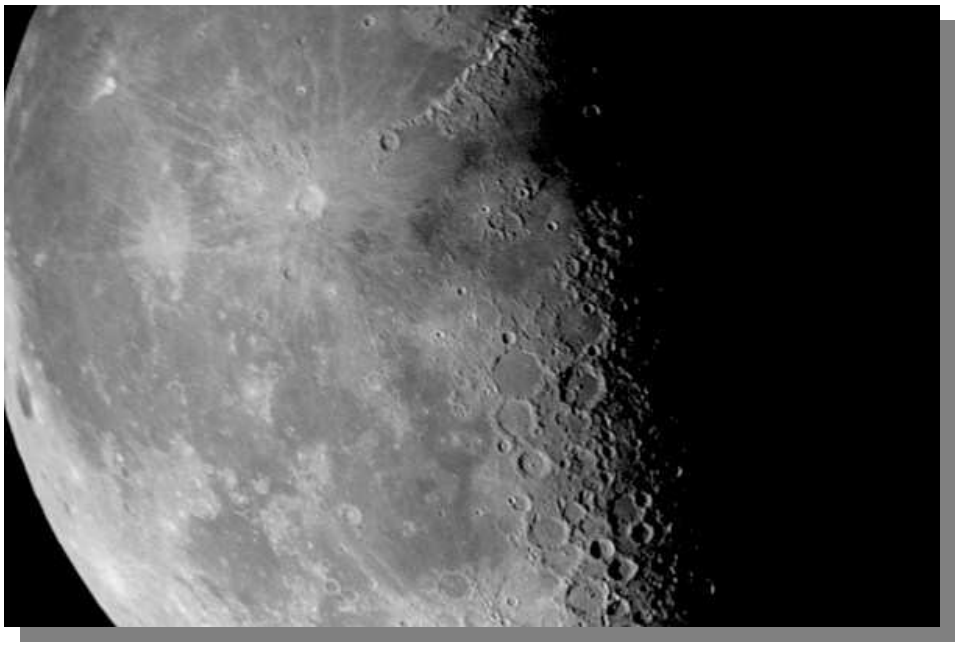
We did some observing of Venus, Jupiter and the Moon, talked about different equipment and upcoming events. All in all it was a different but great meeting.

/cT

Very few observing reports for November 21, 2008:

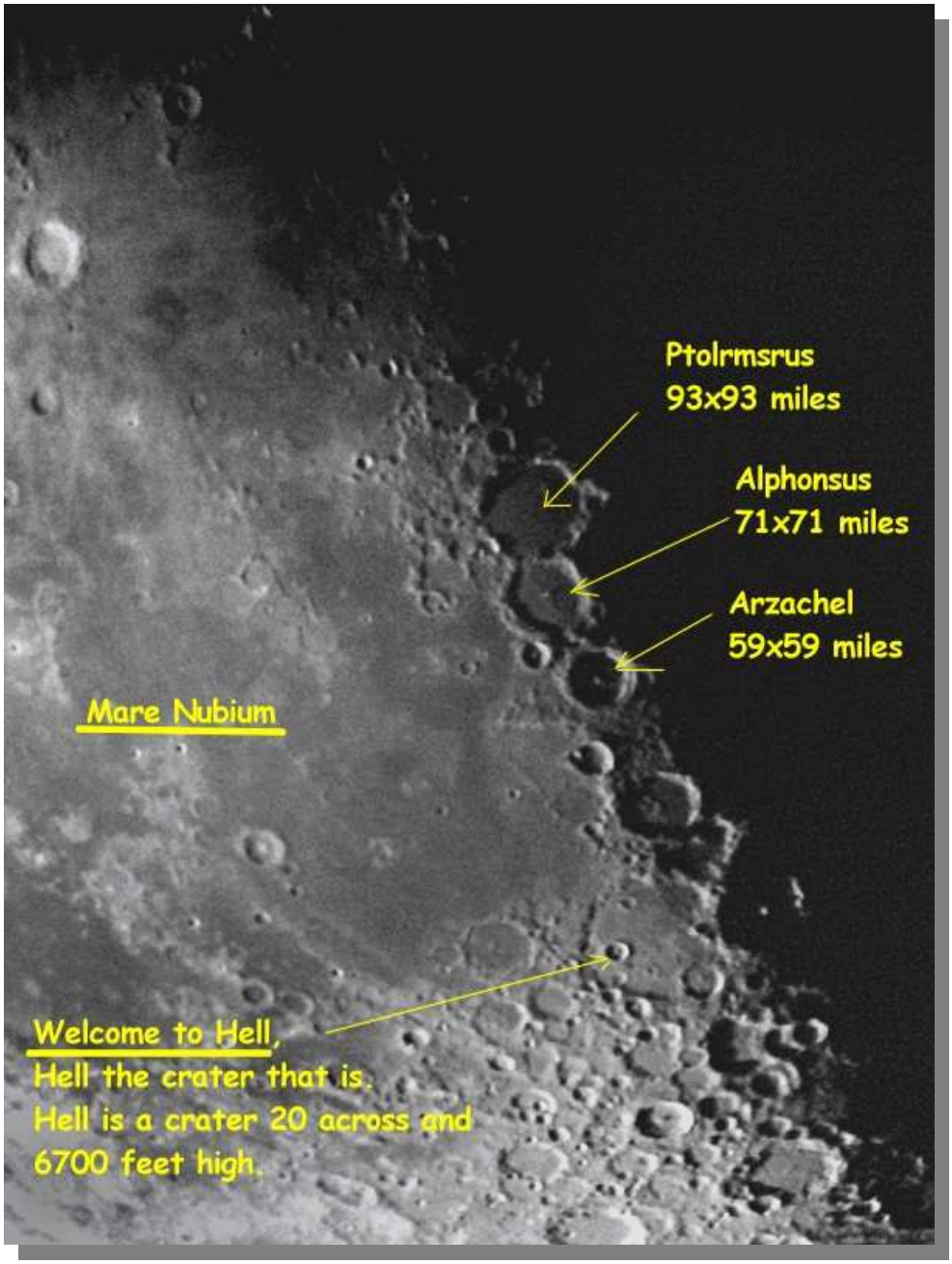
According to the number of reports I have received from around North Carolina there have been very few observing sessions during the month of November, but there have been a few, like the photo on the first page of the ISS taken by CVAC member Bob Hunt. If you will notice the solar panels are an orange color and are the reason the ISS will sometimes have a very distinct orange appearance as it passes over.

During the week of 17-22 November I had the Meade 10" SCT set up in the observatory in hopes of also getting a photo of the ISS. However each time the ISS made a decent pass clouds would move in.



Jupiter and the four Galilean Moons
In order to capture the four Moons I had to over expose Jupiter. The seeing was so bad anyway that it was almost impossible to get any detail on the planet.

During this time I would practice on focusing on objects such as the Moon, Jupiter and Venus. I took several photos, which proved to be very hard to get a clear shot due to the unstable seeing conditions.



It is much easier to find a clear frame to work with on videotape than trying to take a single still photo that is sharp.
I never did get a photo of the ISS but I did learn to appreciate the little heater I had blowing hot air on my feet during the early morning hours.
Do you think the hot air rising from the heater may have caused some of my seeing problems??????
Nauh ---
These photos were taken at prime focus with a Nikon D70s, asa 200.

Crescent Moon with Earthshine

Charles Tilley

All shots of the Moon do not need to be taken when it is dark.
Mornings and evenings can offer some great mood photos of the Moon.
On November 25th I stepped outside a few minutes before Diane was to leave for work to check out the sky.
Hanging low in the East-southeast was a beautiful crescent Moon with a great view of Earthshine. I wish I did not have to reduce the quality of the photo, as it does not come near showing what the actual view was.

Even during the bright hours of daytime when the sky is a real dark blue and the Moon is nice and bright, some interesting shots can be

Our Moon

Moon, planets, stars and clusters

01st = Jupiter 1.3 degrees North of Moon
Venus .8 degrees south of Moon
11th = Moon 0.7 degrees North of M45
15th = Moon 1.4 degrees South of M44
21st = Winter Solstice (info in next box)
25th = Antares 0.1 deg South of Moon
27th = Venus 1.5 deg South of Neptune
29th = Jupiter 0.6 deg North of Moon

Luna Phase for December 2008

05th = First Quarter
12th = Full Moon
19th = Last Quarter
27th = New Moon

What is the winter solstice?

As the Earth travels around the Sun in its orbit, the north-south position of the Sun changes over the course of the year due to the changing orientation of the Earth's tilted rotation axes with respect to the Sun.

In the northern hemisphere, the Winter solstice is day of the year (near December 22) when the Sun is farthest south.

The winter solstice is the shortest day of the year, respectively, in the sense that the length of time elapsed between sunrise and sunset on this day is a minimum for the year.

For a more in-depth explanation look up Winter Solstice on the Internet

December 1st – Crescent Moon, Venus and Jupiter just 24 degrees above the southwest horizon. Look closely at Venus and you will see it displays just over a first quarter phase as the planets orbit ever so slowly brings it closer to us.

Meteor Shower for December 2008

The **Geminid Meteor Shower** peaks in the evening of the 13th but a gibbous Moon will overpower all but the brightest meteors.

The Geminids are one of the year's best meteor showers. It's a consistent and prolific shower that typically produces 50 or more meteors an hour, or about one every minute. You can expect the Geminid meteors to start flying around mid-evening tonight.

The moderately fast Geminid meteors slice through Earth's atmosphere at some 35 kilometers – or 22 miles – per second. These meteors originated in a mysterious object called 3200 Phaethon which looks like a cross between an asteroid and a burned-out comet.

Why doesn't my Green Lazar shine

By Charles Tilley

If you own a Green Lazar Pointer you have most likely run across the problem with it not working too well in cold weather. One solution is to keep it in your pocket as much as possible and keeping your hand around ti also helps keep it warm. While this will work, it also keeps one of your hands tied up and that's not good.

I have found a better solution that some of you may already know about so this is for those who do not.

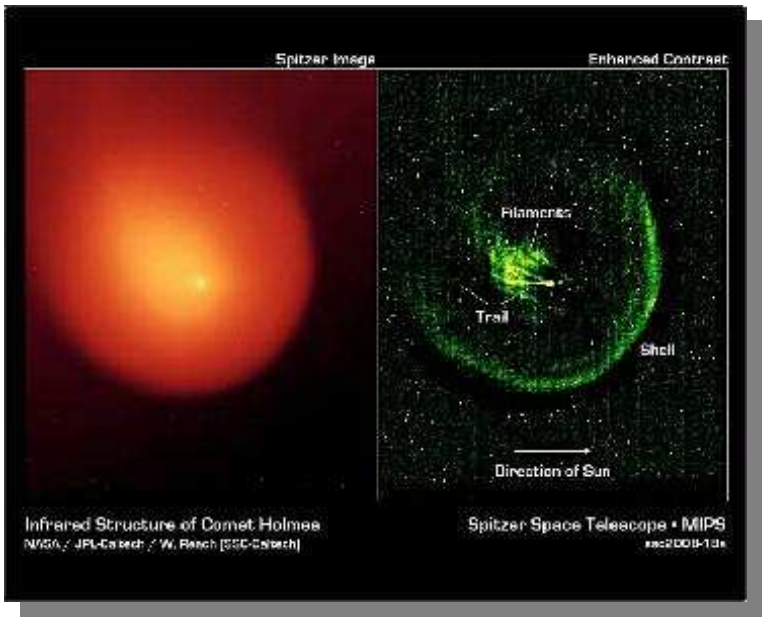
While looking around Wal-Mart the other day I found some packs of chemical warmers. Hunters use them to keep their hands and feet warm while doing their thing in the wild woods. These come in a pack of six each for the small and three each for the large. Once each individual unit is removed from the outer pack all you do is shake it for a few minutes to get the dry chemicals to work and it will last up to 10 hours per unit. That's sixty hours for the small pack and 30 hours for the large pack.

The nice part of this is they are disposables and only cost $1.98 per pack. For the small packs that comes to about 33 cents each and for the large packs about 66 cents each. Not bad for something that will keep your lazar and hands warm all night.

I have tried this and it really does work wonders with the Green Lazar.

What Happened to Comet Holmes?

By Dr. Tony Phillips



One year after Comet 17P/Holmes shocked onlookers by exploding in the night sky, researchers are beginning to understand what happened.

"We believe that a cavern full of ice, located as much as 100 meters beneath the crust of the comet's nucleus, underwent a change of phase," says Bill Reach of NASA's Spitzer Science Center at the California Institute of Technology. "Amorphous ice turned into crystalline ice" and, in the transition, released enough heat to cause Holmes to blow its top.

Anyone watching the sky in October 2007 will remember how the comet brightened a million-fold to naked-eye visibility. It looked more like a planet than a comet—strangely spherical and utterly lacking a tail. By November 2007, the expanding dust cloud was larger than Jupiter itself, and people were noticing it from brightly-lit cities.

Knowing that infrared telescopes are particularly sensitive to the warm glow of comet dust, Reach and colleague Jeremie Vaubaillon, also of Caltech, applied for observing time on the Spitzer Space Telescope—and they got it. "We used Spitzer to observe Comet Holmes in November and again in February and March 2008," says Reach.

The infrared glow of the expanding dust cloud told the investigators how much mass was involved and how fast the material was moving. "The energy of the blast was about 10^{14} joules and the total mass was of order 10^{10} kg." In other words, Holmes exploded like 24 kilotons of TNT and ejected 10 million metric tons of dust and gas into space.

These astonishing numbers are best explained by a subterranean cavern of phase-changing ice, Reach believes. "The mass and energy are in the right ballpark," he says, and it also explains why Comet Holmes is a "repeat exploder."

Another explosion was observed in 1892. It was a lesser blast than the 2007 event, but enough to attract the attention of American astronomer Edwin Holmes, who discovered the comet when it suddenly brightened. Two explosions (1892, 2007) would require two caverns. That's no problem because comets are notoriously porous and lumpy. In fact, there are probably more than two caverns, which would mean Comet Holmes is poised to explode again.

When?

"The astronomer who can answer that question will be famous!" laughs Vaubaillon.

"No one knows what triggered the phase change," says Reach. He speculates that maybe a comet-quake sent seismic waves echoing through the comet's caverns, compressing the ice and changing its form. Or a meteoroid might have penetrated the comet's crust and set events in motion that way. "It's still a mystery." But not as much as it used to be.

See more Spitzer images of comets and other heavenly objects at www.spitzer.caltech.edu. Kids and grownups can challenge their spatial reasoning powers by solving Spitzer infrared "Slyder" puzzles at http://spaceplace.nasa.gov/en/kids/spitzer/slyder.

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

Caption: *Comet Holmes as imaged by the multiband imaging photometer (MIPS) on the Spitzer Space Telescope. The enhanced contrast image at the right shows the comet's outer shell and mysterious filaments of dust.*

What's Going On With the Planets this Month?

Mercury: Mercury was at superior conjunction on Nov 25th and will emerge into evening twilight by mid-December.

Venus: Venus will brighten to magnitude –4.4 during December and continues to dominate the evening sky, setting long after full dark.

Mars: Mars continues to hide behind the Sun, being in conjunction with the Sun on Dec 5th.

Jupiter: Jupiter still sets in a dark sky in the west-southwest at mid-month, but by year-end it is down before twilight ends.

Saturn: Saturn is still in Leo and rises in the east near midnight at mid-month.

Uranus and Neptune: Uranus is in Aquarius and Neptune is in Capricorn.

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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:

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

What's Up for 2008

There will be no program or "What's" for December due to our Christmas Party.
Hope to see everyone there.

Club Events For December 2008

04th Dec – Club meeting cancelled due to our Christmas Party on the 13th.
In place of the meeting we will meet at Allison's Woods for a stargaze shortly before dark.

13th Dec – Club Christmas Party

Additional club events will be announced by e-mail as they are scheduled.

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

December – Christmas Party on the 13th – no program

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

Thanks to all the members who came out and supported club events.

/cT - Editor