



NORFOLK SKIES



The Official Newsletter of the new Norfolk Astronomical Society

Glendon L. Howell, Editor

Volume I; Number 8

August 2001

Meetings And Events For August 2001

Date	Activity
Tue., Aug. 7	Advanced Fuels Research , free Sigma Series lecture given by Dr. Bryan Palaszewski, 7:30 PM at the Virginia Air & Space Center, Hampton.
Mon., Aug. 13	NAS Regular Meeting , 7 PM, at MRO Computers & Astronomy, 1620 Cedar Rd, located at the intersection of Cedar Road and Dominion Blvd in Chesapeake. Plans for a public telescope buying seminar will be discussed.
Fri., Aug. 17	NAS Observing Session , dusk until ? at Glen Howell's parents. Caravan down to Glen's parents for observing that evening, weather permitting.

Local Planetarium Shows

THE SUMMER STARS will be shown **Thursdays, August 2 and 30**, from 8 to 9 PM at the Chesapeake Planetarium, 300 Cedar Road. The program examines the constellation patterns and mythology of the Summer Sky. Telescope outing immediately after the show, weather permitting. Admission free. For reservations call 547-0153.

JOURNEY TO MARS (June 9 – Sept. 16) will be shown weekdays at 2:30 PM, and at 11 AM, 1:30 PM, and 3:30 PM Saturday, and at 1:30 PM and 3:30 PM Sundays at the Virginia Living Museum Planetarium, 524 N. J. Clyde Morris Blvd, in Newport News. The program discusses the planet through our mythology up to what we now know about it from space exploration, and projects ideas about what a future mission to the red planet might be like. Admission \$3.00. For information call 595-1900.

Poor Prospects For The Perseids This Year

The Perseid meteor shower, typically one of the best showers of the year, peaks this year at 6 AM on **Sunday morning, August 12**. While this would be a nearly ideal peak time with the radiant high overhead near the Perseus Double Cluster, the Last Quarter moon will rise just after midnight and spoil the show. Still Perseids do produce a large number of fireballs, so it still might be worth staying up for despite the moonlight.

Needs Of Our Organization

With the location of a meeting site at MRO Computers & Astronomy secured, things are beginning to truly look up for the NAS! Our next greatest need is to secure a good observing site within a reasonable driving distance that our members can use practically at any time. Until then Glen shall continue to offer his parent's place as our place to observe --- a little distant but reasonably dark site.

We need to hear from the membership. Does anyone have answers to the following questions:

1. Do you have access to, or know of dark sites we can use? When? How often? With what restrictions?
2. What weeknights from 7-9 PM are best for you to make our regular meetings at MRO?
3. Are there any fieldtrips or other activities you would like to see the club do?
4. Is there anything you do you might consider writing an article about to be published here?

Please send all responses to Glen Howell at nas2000@hamptonroads.com. Thank You!

A Report On The Mason-Dixon Star Party
March 22 & 23, 2001
 By Kent Blackwell

Though the weather forecast was not good I made the decision to attend one of my favorite star parties, the Mason-Dixon. Its location is in the foothills of Pennsylvania among stunning scenery.

I was fortunate enough to have been offered a place to stay the day before by Roy & Dee Diffrient, who conveniently live less than 30 miles from the site. I arrived at their house on Thursday, one day before the event began. The weather on Thursday was quite nice but if you looked at any weather forecast a huge cold front was headed eastward along the entire east coast. We just shrugged our shoulders and hoped for the best.

At noon on Friday only a few of us arrived at the star party. The weather was very muggy, but still sunny. An hour later a huge thunderstorm rolled in, bringing with it sheets of rain and wind. Fortunately I have a large cargo trailer for my 25" f/5 telescope, with plenty of room for me to get out of the weather. After the rain stopped the sun never came back out, and in fact conditions on Friday worsened as the day progressed.

By late Friday about 75 amateur astronomers ignored all forecasts and showed up regardless. Everyone had dismissed Friday night as a loss, but set our hopes high for Saturday. Would this huge cold front pass by Saturday night?

I can't remember seeing more rain than Friday evening. It definitely was not an ideal night for a star party. By Saturday morning most of the rain had stopped allowing vendors to set up shop under a large tent area. It was nice to see vendors such as George Kepple (author of *The Night Sky Observers Guide*), Hands-On Optics, Mrs. Cunningham of Astro Systems, Pocono Mountain Optics, MoonLite Telescope Accessories, Howie Glatter, and several others. Just as some vendors set up outside the tent area another rain shower chased them back under the big top. Thanks to all the vendors who took a chance to sell their wares on a weekend with very unpredictable weather. I know of several people who are delighted they did.

The afternoon talks began at 1:00pm. Larry Hubble's spoke about an "Astrophotography Workshop". Then Bob and Josh Hoke discussed "CCD Imaging" and finally 16-year old Ryan Hannohe told us about a very important subject, "Youth Activities Committee". Ryan stressed the importance of getting young people involved in the hobby of astronomy.

After the talks the sky was actually beginning to clear, giving all great hopes for a chance to see one tiny patch of blue sky. That didn't last very long, sure enough more dark clouds rolled in. At this point I realized I had taken my 25" telescope and trailer for a nice 300-mile ride from my home in Virginia Beach, VA. But wait, I just overheard a NOAA weather report (don't you just despise that computer twang voice on NOAA?) saying there is a 90-percent chance of showers late in the afternoon followed by clearing skies in the evening.

Apparently many heard the improving forecast because attendance had now grown from 75 to about 300. Dr. Harry Bates of Towson University, the keynote evening speaker talked about "Near Earth Objects", discussing the possibility of earth being struck by asteroids or comets. Dr. Bates is a very qualified lecturer, and I found his lecture fascinating. By 8:30pm, it was time for the highly anticipated drawing of the door prizes. It seems each year the list of prizes grows larger at Mason-Dixon.

Once the last prize was handed out all the attendees were delighted to see the sky had cleared, and each hurried to their telescopes to await the dark sky. Well, it wasn't exactly clear, but a heck of a lot better than the night before. By 10:00 pm the sky cleared fairly well for an hour or so. Then thicker clouds moved in again but these disappeared by 1:00 am. Lots of people stopped by to say hello, and lined up to look through the 25". Besides viewing the familiar sights such as *M 13*, *M 57*, *M 92* I decided to move the scope over to one of my favorite planetary nebula, *NGC 6572* in Ophiuchus. It was fascinating to hear about 50% of the people declare how green it appeared, while the rest were enamored about how blue it looked. What color do you perceive this small but bright planetary? Another very colorful, albeit small, planetary observed was the marvelous *NGC 6818*, the *Little Gem* in Sagittarius. The nearby *Barnard's Galaxy* was completely invisible on this partly cloudy night. By 2:00am the sky was quite clear near the zenith so I pointed the 25" back to *M 57*, the *Ring Nebula* in Lyra. The central star was visible with direct vision, and easy with averted vision. To see it be sure to push the magnification to at least 400x. Another

fascinating planetary observed Saturday night was *IC 4593* in Hercules. It's interesting because the central star is brilliant, and actually outshines the nebula itself. Be sure to use a nebula filter to improve your chances of seeing the nebulosity.

By 3:00am the clouds had moved back in. Since I had a 300-mile trip home on Sunday I figured it was time to go to bed. Though we were bothered with rain and clouds early on at the Mason Dixon Star Party everyone still had a good time socializing with one another, and as you can see we got in some fine observing as well.

If you have a favorite deep-sky object you'd like to talk about, or comments regarding those discussed here please E-mail me.

The Minor Planets

By William N. "Chuckwagon" Gray
From "Between The Stars", December 1980

Bode's Law, as we all know, calls for a planet to be located in the space between Mars and Jupiter. This fact had been known for almost two centuries before the "Law" was discovered.

Kepler (1571-1630) made several references to this, even before the discovery of the telescope. He was aware of the position of the orbits of the planets, although he had no idea of their actual distances. Later, in 1671, when the actual distances had become known, the place where this missing planet should have been, was easily determined. It should have been located at a point 2.8 A.U. out from the Sun!

And so, for many years, astronomers had examined this area, but no planet had ever been observed. The enormous space between these two planets seemed to be completely empty. But why was this space vacant?

According to all the known theories, a good sized planet should be located there. But there seemed to be no satisfactory reason which could explain why it was missing. And so – that's the way things stood – up until the end of the 1700's.

Then – on the first night of the new century, January 1, 1801 – an Italian astronomer by the name of Piazzi, observed a star-like object, which seemed to have moved from where he had found it, the night before. At first, he thought he had found a comet, but later observations discounted this, when it was found to be moving in an almost circular orbit – around the Sun. And, he was even able to pin-point its location. It was 2.77 A.U. out from the Sun!

Now this was almost the exact spot – out between Mars and Jupiter – where the "supposed" planet should have been! Could this be the long-looked for planet? May thought so, but others were not so sure. Then, later on, when its size had been determined, it was found to be disappointingly small! Less than 500 miles in diameter! Actually, it seems to be just a "minor" planet, whereas, a much larger planet had been expected.

But, before it had even completed one revolution after its discovery, a second was found! This was in 1802. And it was found to be in the same region. In fact, Olbers, the German physician who had discovered it, thought there must be some connection between the two. Many elements of their orbits appeared almost identical.

Orbital Element	Piazzi's Planet	Olbers' Planet
Time of revolution around the Sun	4.61 years	4.62 years
Average distance from the Sun	2.769 A.U.	2.771 A.U.

He proposed that both of them might be the remnants of a planet, that somehow had broken up. He also suggested, that later on, more of them might be found. And, sure enough, in less than 3 years, two more were found. The total was now four!

Now, it was becoming apparent, that identifying these objects could become a problem, as no one knew how many more of them there might be. And so, it was decided not to number them in with the "major" planets, but to designate them as "minor" planets, and to number them as such. Also, the choice

of their name would be left to their discoverer. This seemed to be a good solution to the problem, as no one expected that too many more of them would be found. And sure enough, during the next 40 years, none were!

Then, in 1845, a fifth one was found! After that, some were found almost every year (due no doubt to better telescopes). Within the next 10 years (1855) almost 30 more had been found, and by the year 1880, the total had risen to over 200!

Now, in naming these small planets, the first or early ones found were given dignified names, usually derived from Greek mythology, but in time, as more and more were found, there just weren't enough of these names to go around. And so, as a result, some interesting and unusual names began to appear on the list, as it continued to grow. For example, when the 250th one was found in the late 1880's by Palisa, he sold the right to name it to the Baron Rothschild, and as you might expect the price was \$250. The Baron named it Bettina after his wife.

Number 694 was given the name Ekard, which is Drake spelled backwards. It was found by several observers at Drake University. Another (1370) bears the name "Hella", and strangely enough, it was named after a priest, Father Hell, who also has a crater on the Moon named after him. Number 724 is called "Hapag" which are the initials of a German steamship line – "Hamburg-Amerika-Paktfahrt-Aktien-Gesellschaft."

By the early 1900's, when the count had almost reached a thousand, it was decided to reserve that number (1000) for a special name. It was given the name Piazzia in honor of the astronomer who had found the first "minor planet" back in 1801. And some 50 years later, when the number was approaching the 2000 mark, that number was also reserved. It was named Herschel for William Herschel, who besides his discovery of the planet Uranus, was also a pioneer of observational astronomy. It is also interesting to note that 2001 was given the name Einstein, for the greatest scientist of the 20th century.

And so, the list of these elusive objects keeps growing as more of them are being found each year. Yet, most of them are comparatively small, only 2 % being as large as 60 miles in diameter. But their number has been estimated now to be in excess of 50,000! So, you can see, there are many more up there, just waiting to be discovered. And, of course, if you find one of them, you have the right to give it any name you want to, including your own!

Finding Ceres & Pallas in August

By Glendon L. Howell

The first two asteroids to be discovered, Ceres and Pallas are currently visible in the evening skies of August. Ceres is currently located within the body of the "Teapot" of Sagittarius, shining at magnitude +7.8. M54 might make a good reference point to help in locating it since it lies nearly at the same declination. Other Messiers within the area might also be of use.

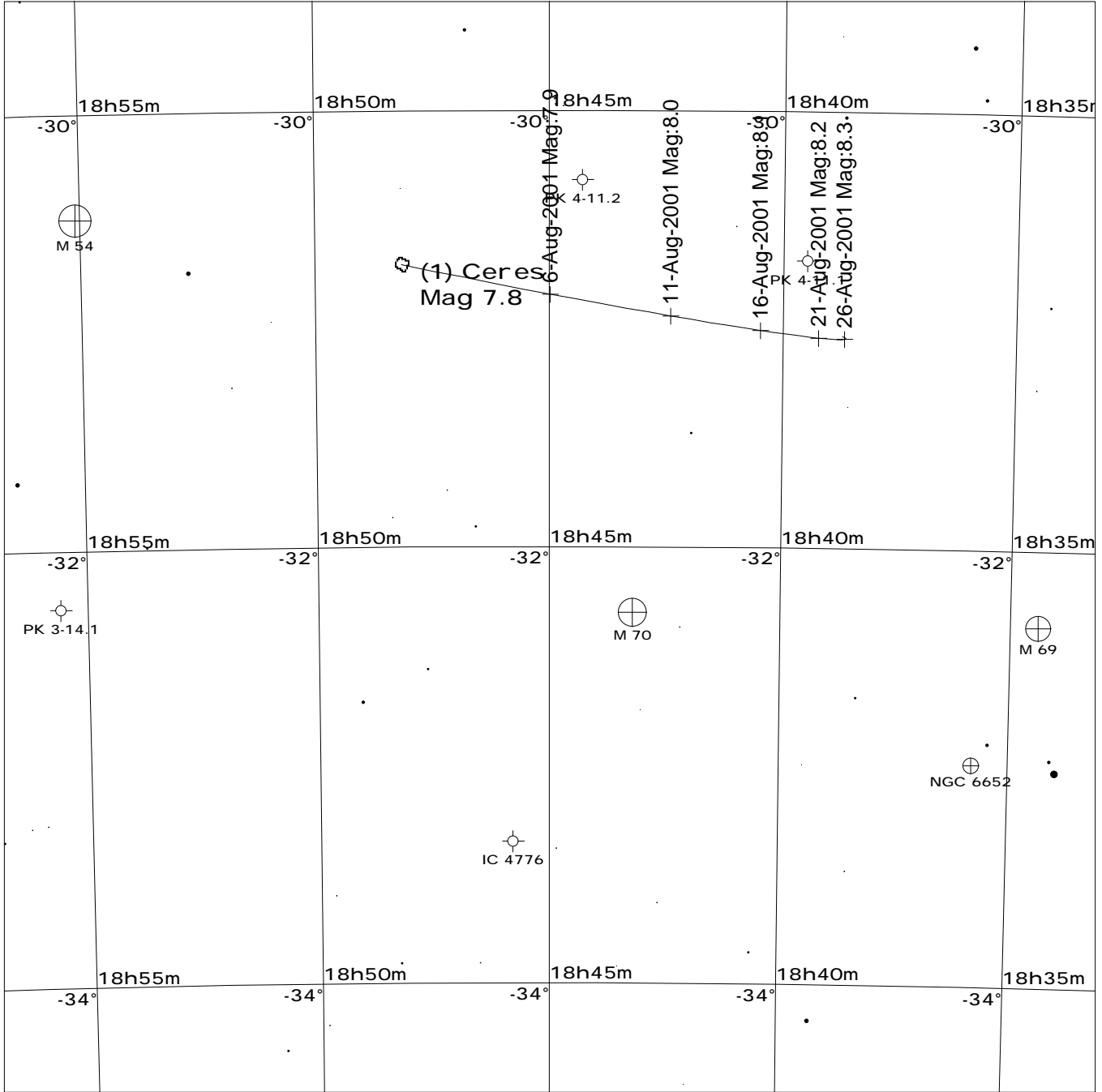
On the other hand, +9.8 magnitude Pallas lies near the 3.8 magnitude star Gamma Herculis. Its close pass by Gamma around August 6 should help substantially in locating it. Since there are few bright reference stars within this area beyond Gamma, it is recommended you try this one during the first 10 days of August.

The best way to identify asteroids is to draw the star field over several nights. A finder chart is provided in this issue. The movement of the asteroid within the field should be quite apparent. Optionally you could also photograph this region over several nights. No matter what magnification is used, asteroids will appear stellar due to their small size in all but the largest telescopes, hence their name "asteroid" meaning star-like.

Norfolk Skies is published monthly by a national award winning Editor Glendon L. Howell (Astronomical League Mabel Sterns Award for 2000). Annual dues are only \$12.00 and fund primarily production and distribution of this newsletter. Members are entitled to reduced rates on *Astronomy* and *Sky & Telescope* magazines among other benefits. For more information, visit our web site at

<http://groups.hamptonroads.com/NAS/>

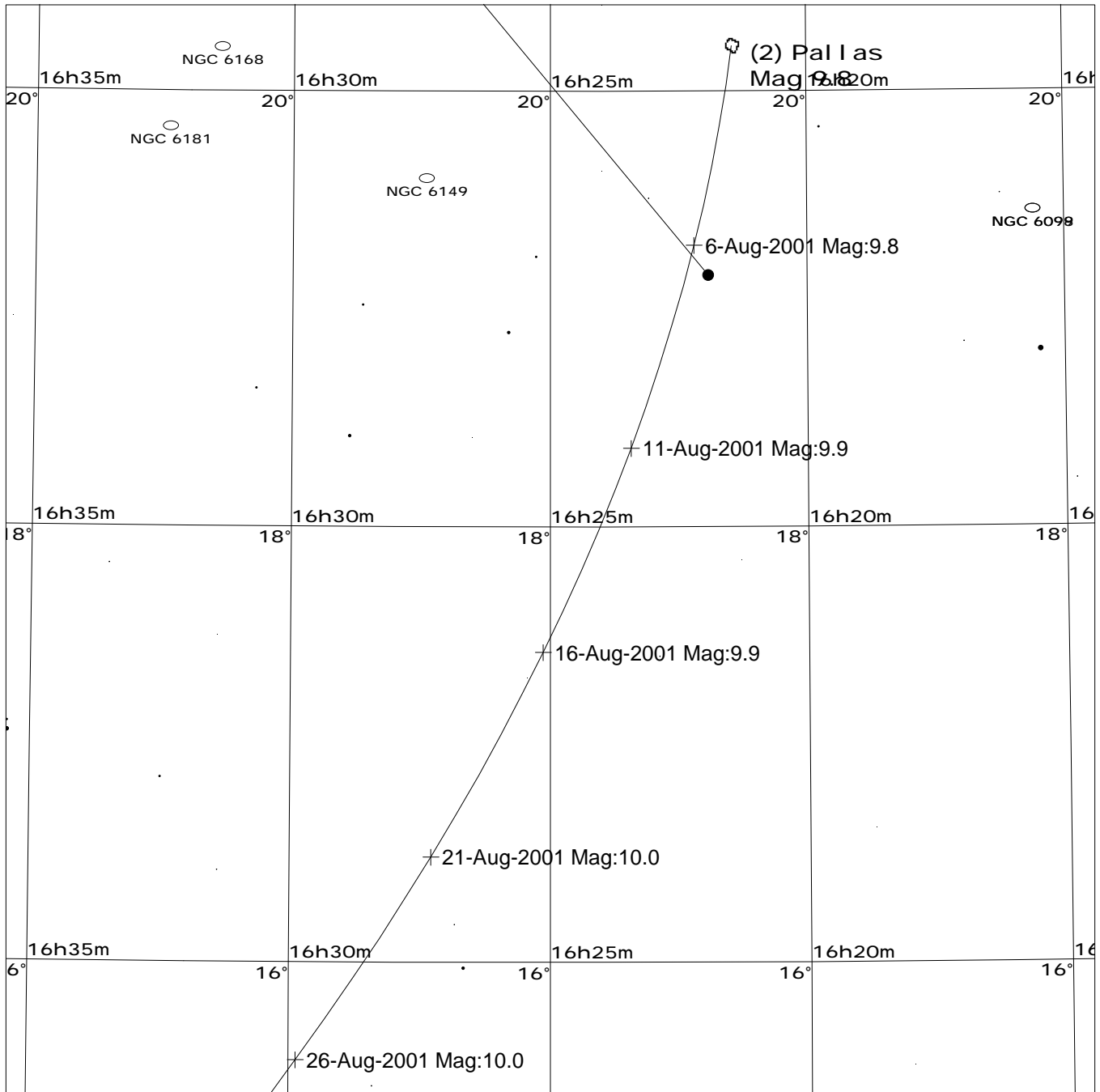
Asteroid (1) CERES



<p>STARS</p> <ul style="list-style-type: none"> ● <2 · 7 ● 3 · >8 ● 4 ● 5 ● 6 	<p>SYMBOLS</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <ul style="list-style-type: none"> Comet Asteroid Galaxy Open Cluster Bright Nebula </td> <td style="width: 50%; border: none;"> <ul style="list-style-type: none"> Globular Cluster Planetary Nebula Quasar Other Object </td> </tr> </table>	<ul style="list-style-type: none"> Comet Asteroid Galaxy Open Cluster Bright Nebula 	<ul style="list-style-type: none"> Globular Cluster Planetary Nebula Quasar Other Object 	<p><i>Ceres in August is located in the constellation Sagittarius within the body of the "Teapot".</i></p> <p><i>Chart References:</i></p> <p><i>Tirion Sky Atlas 2000 - Chart 22</i> <i>Uranometria - Volume 2 Chart 378</i></p>
<ul style="list-style-type: none"> Comet Asteroid Galaxy Open Cluster Bright Nebula 	<ul style="list-style-type: none"> Globular Cluster Planetary Nebula Quasar Other Object 			

Local Time: 00:00:00 1-Aug-2001	UTC: 03:59:59 1-Aug-2001	Sidereal Time: 19:33:55
Location: 36° 48' 0" N 76° 21' 0" W RA: 18h45m00s Dec: -32° 00' Field: 5.0°	Julian Day: 2452122.6667	

Asteroid (2) PALLAS



<p>STARS</p> <p>● <2 · 7 ● 3 · >8 ● 4 ● 5 · 6</p>	<p>SYMBOLS</p> <p>☄ Comet ☄ Asteroid ○ Galaxy ○ Open Cluster □ Bright Nebula</p> <p>⊕ Globular Cluster ⊕ Planetary Nebula ⊕ Quasar ○ Other Object</p>	<p><i>Pallas in August is located in Hercules, making its closes approach to Gamma on 6-Aug-2001.</i></p> <p><i>Chart References:</i></p> <p><i>Tirion Sky Atlas 2000 - Chart 8</i> <i>Uranometria - Volume 1 Chart 156</i></p>
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An Introduction to the Issues of Light Pollution



NOAA
Satellite photo revealing the estimated **30%** of all US outdoor lighting being directed skyward as waste. Conservatively estimated at **\$1.5 billion dollars in wasted electricity** yearly, this 30% requires the burning of **6,000,000 tons of coal** each year to generate this electricity waste.

Estimated by the
International Dark-Sky Association.

We all win

by correcting the problems of inefficient outdoor lighting at night.

- Many types of outdoor lighting designed for advertising, security and visibility are actually wasteful, invasive and a source of disabling glare.
- "Light trespass", the poor control of outdoor lighting which crosses property lines, detracts from our quality of life, and confuses the instinctive daily and seasonal cycles of animals and plants.
- Although perceived as a deterrent to crime, studies by the US Department of Justice* and the National Institute of Justice* show no conclusive evidence that lighting actually prevents crime.
- Public hazards have been created by the use of glaring, high-wattage floodlighting along roadways and business parking lots, shining directly in the driver's line of sight.
- Public safety is also being compromised by businesses competing with light levels to attract business. The eye's inability to adjust quickly to drastic changes from light to dark, leaves a driver temporarily blind when exiting an overlit business area at night. It is not uncommon to see businesses using 3 to 6 times the recognized, lighting industry recommendations for site lighting (IESNA).
- The recent awareness of global warming concerns, due in a large part to power plant emissions, now demands an effort to reduce our consumption of electricity.
- Because of this unnecessary condition, many of our children today have already lost much of the starry night sky behind the glow of wasted light, limiting their imaginations to the man-made boundaries around them.
- By correcting these outdoor lighting problems for the future we can save money and electricity, improve public safety and increase visibility, while reducing air pollution and green house gas emissions.

* "Study of Streetlighting And Crime" 7/77 by James M. Tien / US Dept. of Justice • www.darksky.org/ida/ida_2/info63.html

"Preventing Crime, What Works, What Doesn't, What's Promising" A report to the US Congress / The National Institute of Justice • www.ncjrs.org/works/wholedoc.htm

Norfolk Astronomical Society Astronomical Calendar

July 2001	August 2001	September 2001
S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7	1 2 3 4	1
8 9 10 11 12 13 14	5 6 7 8 9 10 11	2 3 4 5 6 7 8
15 16 17 18 19 20 21	12 13 14 15 16 17 18	9 10 11 12 13 14 15
22 23 24 25 26 27 28	19 20 21 22 23 24 25	16 17 18 19 20 21 22
29 30 31	26 27 28 29 30 31	23 24 25 26 27 28 29
		30

All times are EDT

<http://groups.hamptonroads.com/NAS/>

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	31	1	2	3	4
				12:16 AM Moon occults SAO 187883 (+6.3)	3:00 PM Neptune 3 degrees N of Moon	1:56 AM Full Moon 11:00 PM Uranus 3 degrees N of Moon
5	6	7	8	9	10	11
5:00 PM Moon at apogee 8:00 PM Venus 1.2 degrees S of Jupiter	1:00 AM Asteroid Pallas nearest to star Gamma Herculis	7:30 PM Advanced Fuels Research - Sigma Series lecture at VASC 10:39 PM Moon occults 30 Psc (+4.4)	12:57 AM Moon occults 33 Psc (+4.6) 4:39 AM Moon occults SAO 128621 (+5.8)			
12	13	14	15	16	17	18
3:53 AM Last Quarter Moon 6:00 AM Perseid Meteor Shower (peak)	7:00 PM NAS Meeting at MRO 11:00 PM Saturn 0.2 degrees N of Moon		11:00 AM Uranus opposition 4:00 PM Jupiter 0.4 degrees S of Moon	3:54 AM Moon occults 44 Gem (+6.0) 9:00 AM Venus 1.9 degrees S of Moon	8:00 PM NAS Observing Session in Gates Co, NC	10:55 PM New Moon
19	20	21	22	23	24	25
2:00 AM Moon perigee	8:44 PM Moon occults SAO 119057 (+8.6)		9:00 AM Venus 7 degrees S of Pollux 8:30 PM Moon occults 80 Vir		8:13 PM Moon occults 29 Lib (+6.1)	3:55 PM First Quarter Moon 6:59 PM Moon occults 14 Sco (+4.0)
26	27	28	29	30	31	1
	8:00 AM Mars 5 degrees S of Moon			8:00 PM Neptune 3 degrees N of Moon	12:51 AM Moon occults 17 Cap (+5.9)	