

ASTROGATOR



October 2024

Grand Strand Astronomers

An Astronomical Journal of the Grand Strand Astronomers
of the Greater Myrtle Beach Area
GSA Founded on September 24, 2020

Grand Strand Astronomer's Monthly Events:

General Membership Meeting:
Thursday October 24, 2024 @ 7:00 pm
Meeting: VIA Zoom.
Please see email or Facebook for link

Observing Sessions:

Saturday October 5, 2024
Location: Hampton Plantation
Gates open @ 6:00 pm



North American Nebula
Ken Legal

Grand Strand Astronomer's Social Media

Grand Strand Astronomer's Website



Grand Strand Astronomer's Facebook



GSA Leadership



**Executive
Officer**
Ian Hewitt

Treasurer
John Defreitas

Photograph
not available
at this time



Secretary
Gerald Drake

**Social Media
Coordinator**
Denise Write

Photograph
not available
at this time



**Newsletter
Coordinator**
Tim Kelly

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Photograph of the Month

North American Nebula

Photographer: Ken Legal

Place: Myrtle Beach, SC

80mm Refractor with focal reducer

Canon 60Da camera at ISO 1000

UHC filter

Unguided, 88 minutes total exposure time

slightly cropped

Call For Volunteers

Tim Kelly

Grand Strand Astronomers are looking for volunteers to help with the social media platforms such as Facebook, YouTube and Twitter if the need arises. Presently Facebook needs a new face lift and be brought up to present time activities. Our website can also use some TLC and someone responsible to keep it updated with club activities and astronomy related items. If anyone would like to help in these categories, please contact Ian Hewitt at the email address below.

We are looking for new and older club members to help contribute articles for the GSA Newsletter. You can be a novice level, medium level, or a experienced level astronomer. Knowledge such as types and location of numerous stars, nebula or galaxies to share with other club members. GSA would like to provide topics for all level of members and non-members that are both hands-on projects and educational sharing. You can either write you own or use one already written and published. See Megan's, Chris' and Gerald's contributions for self written articles. See Tim's contributions for an example of non-written subject matter or from an article written from another person. Please provide the title, name of the originator and website link that the original article can be found. You will not be required to submit articles every month, however every second or third month would be nice and a benefit to all members and non-members. Please send articles to t.m.kelly349@outlook.com

GSA Telescope Loaner Program

Gerald Drake

Did you know our club has telescopes available for loan? They are Dobsonians that were donated to the club when we first started. These are available for club members to use at no charge. All you have to do is take care of them and return them if someone else wants to borrow one. The first one is an Orion XT 8. It's in great shape. It gives beautiful views of the moon, planets, and galaxies. Comes with accessories that include a 2X Barlow, 25mm eyepiece, 9mm eyepiece, and laser collimator tool. The other one is an Orion Skyquest XT 10 with Orion's IntelliScope computerized object locator. It includes more than 14,000 objects in its database so you'll be able to locate those dim galaxies. Should be hours of fun. Accessories are included. Both of these are begging to be used. Send us an email if you're interested in borrowing one.

GSA Monthly Newsletter Articles

Tim Kelly

This is our club and our newsletter. Lets help each topic to continue to grow.

Grand Strand Astronomer's is looking for individuals who would like to participate in submitting newsletter articles dealing with anything astronomy. We can not rely on the same four (4) members to write and send in articles month after month. New thoughts and ideas make for good reading and beneficial growth for the club and the public of the Greater Myrtle Beach area.

One member's simple advancement could just be what a newbie is looking for to get over a hurdle that has been impeding their progress forward. The expertise by many members can be a form of mentoring.

Grand Strand Astronomers – Membership

John Defreitas

Grand Strand Astronomer's had no new members for the month of September.

GSA Meeting Recap September 19, 2024 *

Gerald Drake

Ian opened the meeting, with Dr. Patrick Tritthart, an astrophysicist from the North Carolina Museum of Natural Sciences, serving as the guest speaker. Club members were also in attendance.

Opening Remarks:

Ian welcomed everyone to the September session of the Grand Strand Astronomers club. The meeting began with a brief discussion about a recent lunar eclipse. While some members were able to observe it, others could not due to weather conditions.

Announcements:

Ian announced that the next observing session will be held on October 5th at Hampton Historic Site. The previous session on August 31st offered great viewing conditions, with impressive views of the Milky Way, particularly in the southern sky. Gerald Drake, who was absent due to travel, will lead the October 5th session if the weather permits.

The next monthly meeting is scheduled for October 24th, with details about the program to follow.

Ian also informed the members that the club's latest newsletter is available on the website, thanking Tim for his efforts in putting it together. Members were encouraged to submit articles, tips, or observations for the newsletter, with Tim handling any formatting issues.

Public Observing Event:

There is potential interest in organizing a public observing event at Huntington State Park in Murrells Inlet. Ian mentioned that park staff had expressed interest in hosting such an event this fall, and he will initiate a discussion via email to gauge member interest.

Presentation: Where to Look for Life in the Milky Way

Presenter: Dr. Patrick Treuthardt, Astrophysicist at the North Carolina Museum of Natural Sciences

Dr. Treuthardt's presentation focused on the concept of the Galactic Habitable Zone, exploring regions of the Milky Way where conditions might be more favorable for the development of life. Drawing from early 2000s research, he explained how the idea has evolved but remains an ongoing topic of investigation.

The concept of the Galactic Habitable Zone mirrors the circumstellar habitable zone but applies on a larger scale, focusing on regions of the galaxy rather than just planets orbiting stars. According to the early research, certain areas of the Milky Way might offer more suitable conditions for life due to a combination of factors including star distribution, planetary formation, and the frequency of disruptive events like supernovae.

Dr. Treuthardt explained that regions with high supernova activity, such as the center of the Milky Way, are less likely to host life. He also highlighted the role of metallicity, noting that areas with too few metals (typically found outside the galactic disc) are unlikely to form terrestrial planets, while overly metal-rich regions near the center are prone to forming disruptive gas giants like "hot Jupiters." Stars that avoid frequent passage through dense spiral arms, where dangerous radiation is more common, are considered better candidates for hosting planets capable of sustaining life.

The sun's position in the Milky Way is ideal, lying in what is known as the co-rotation radius, a region that avoids frequent exposure to spiral arms and their associated hazards. This position offers stability, which is a key factor in the potential for life to evolve. Dr. Treuthardt emphasized that current models suggest the most favorable region to search for life in the Milky Way is between 23,000 and 30,000 light years from the galactic center.

Dr. Treuthardt also pointed out that since the early research, newer studies have presented different views on the Galactic Habitable Zone. Some suggest the galactic bulge could be hospitable to life, while others propose that the entire galactic disc might be a potential zone for life. However, no definitive conclusions have been reached.

Q&A Session:

The presentation was followed by a Q&A session. Members asked about the distribution of stars in the Milky Way, star formation in the spiral arms, and how the habitable zones are determined. Despite technical difficulties interrupting the presentation, the session continued smoothly after each restart, and the discussion provided further insights into the evolving understanding of galactic habitable zones.

Conclusion:

The meeting concluded with Ian thanking everyone for attending and reminding them of the upcoming observing session on October 5th. Members were also encouraged to stay updated for further information regarding the October 24th meeting.

* This recap is generated by ChatGPT using the YouTube transcript of the meeting. Submitted by G.Drake

Comet Tsuchinshan-ATLAS (C/2020 M3)

Comet Tsuchinshan-ATLAS, also known as C/2020 M3, is a long-period comet discovered in June 2020 by astronomers using the Tsuchinshan Observatory in China. It was later observed by the Asteroid Terrestrial-impact Last Alert System (ATLAS).

The comet is notable for its bright appearance and potential for visibility to the naked eye during its approach to the Sun. Its orbit brings it close to the Sun, which can enhance its brightness due to increased sublimation of its ices



Comets like Tsuchinshan-ATLAS can provide valuable insights into the early solar system, as they are made up of ancient materials. Observations of its trajectory, composition, and behavior can help scientists learn more about the formation and evolution of comets and the solar system as a whole.

Key Details

Discovery: June 2020 by Tsuchinshan Observatory, China, with contributions from ATLAS.

Type: Long-period comet, which means it has an orbit that takes it far from the Sun and back, often over hundreds or thousands of years.

Orbital Period: Estimates suggest it has an orbital period of several years, but precise calculations can vary.

Composition: Like many comets, it consists of ice, dust, and rocky material, which can produce a coma and tail as it approaches the Sun.

Best Observation Locations

Dark Sky Areas: Ideally, observe from locations far from city lights, such as national parks or rural areas.

Mountains or High Elevations: These can provide clearer views and less atmospheric interference.

Best Observation Times

Closest Approach to the Sun (Perihelion): Comets are often brightest around this time due to increased solar heating. For Tsuchinshan-ATLAS, perihelion was around late 2020.

Post-Sunset or Pre-Dawn: Early morning or evening times are often best for comet viewing, as the sky is darker.

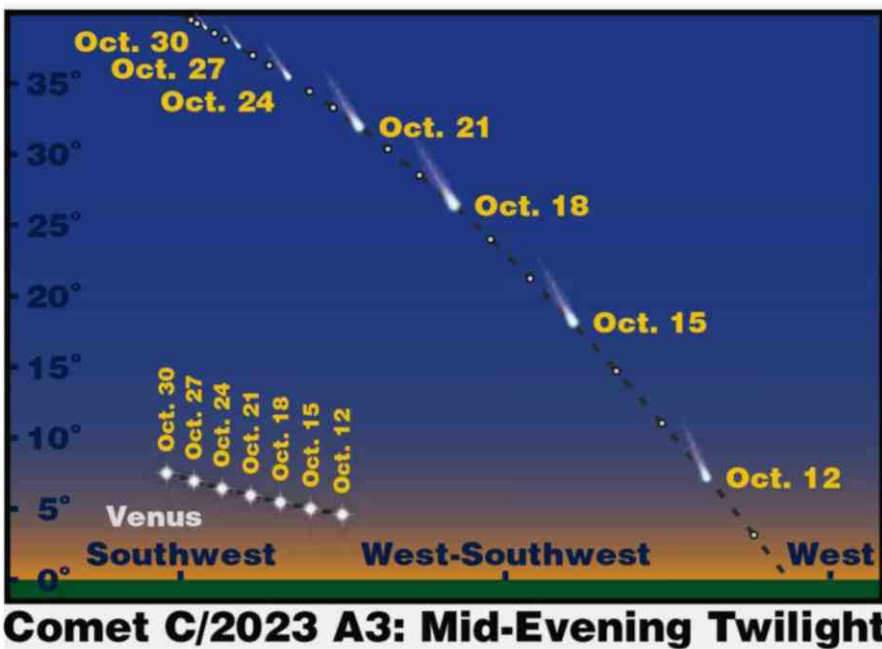
Viewing Tips

Use Binoculars or a Telescope: While some comets can be visible to the naked eye, binoculars or telescopes can provide a better view of their structure. Check Astronomy Apps or Websites: They can provide real-time tracking information, including location in the sky and best viewing times based on your geographical location.

Observing Conditions

Clear Skies: Look for nights with minimal cloud cover and low humidity.

Low Light Pollution: Avoid areas with significant light pollution to enhance visibility.



This sky chart provides a simulated view of the sky looking toward the western horizon. It shows the changing positions of Comet Tsuchinshan-ATLAS and planet, Venus, from October 11 to November 1, 2024. (Image credit: Rod Nerdahl)

This sky chart provides a simulated view of the sky looking toward the western horizon. It shows the changing positions of Comet Tsuchinshan-ATLAS and planet, Venus, from October 11 to November 1, 2024. (Image credit: Rod Nerdahl)

The accompanying illustration assumes that Comet Tsuchinshan-Atlas' behavior will follow the "Naked Eye Comet" scenario. The illustration shows the comet's position and its predicted appearance during "mid-evening twilight (45 minutes after sunset). Sunset times change a lot near the September equinox, averaging about a minute-and-a-half per day during the last half of October. Sunset on October 12 (the first day Comet Tsuchinshan-ATLAS is shown on the illustration) will be at 6:34 pm. Sunset on October 30 (the last day the comet is depicted on the illustration) will be at 6:05 pm.

Compass direction marks have been added to the illustration, showing that Comet Tsuchinshan-ATLAS will be visible in the western sky. The only other object that will be visible in the sky then, will be the planet, Venus. It will be easy to find 45 minutes after sunset, sitting a little over five degrees above the southwestern horizon. It will not be dark enough to see stars at that time, but you will be able to use dazzling Venus to help locate the comet.

A Distant Quasar May Be Zapping All Galaxies Around Itself

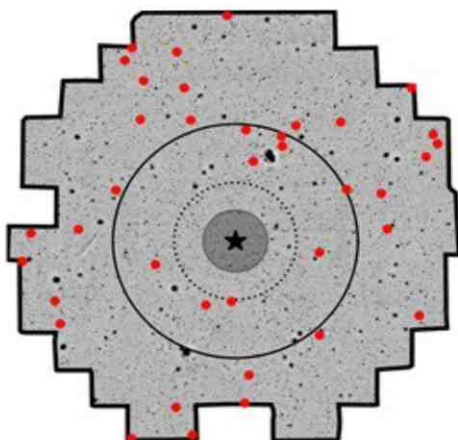
Ken Crowell

August 16, 2024

One of the farthest known quasars seems to have shut down the creation of new stars in all the galaxies within its vicinity.

A quasar is a powerful source of light, created by torrid gas orbiting a gargantuan black hole at the center of a galaxy. The intense radiation from one quasar, named VIK J2348-3054, has probably stopped star formation at least 16 million light-years away from itself, astronomer Trystan Lambert and colleagues report in a paper to appear in *Astronomy and Astrophysics*.

The quasar is so distant that its light took 13.0 billion years to reach us, so we see it when the universe was just 770 million years old. By that early epoch, however, the black hole powering the quasar was already 2 billion times as massive as the sun, which means the black hole had swallowed a lot of material in a relatively short time (*SN: 1/18/21*). That, in turn, means the quasar galaxy must reside in a dense part of the universe: the center of a big cluster of galaxies, many of which should be creating new stars.



Astronomers detected 38 star-making galaxies (red dots) in the neighborhood of quasar VIK J2348-3054 (five-pointed star.) But not a single such galaxy lies within 16.3 million light-years (dotted black circle) of the quasar, which suggests that its radiation has thwarted star formation in neighboring galaxies. T.S. Lambert et al/Astronomy & Astrophysics 2024.

The discovery occurred because Lambert's team searched a much larger region around this quasar for star-forming galaxies than similar searches had in the past. "Quasars aren't quiet neighbors," Lambert says. "They're violent; they are bursting with energy, and that energy is influencing the nearby galaxies." The quasar's radiation, he suspects, heats up gas in other galaxies, which prevents it from collapsing and making new stars.

But further work is needed to make a persuasive case for this scenario, says Martin Rees, an astronomer at the University of Cambridge. The large number of star-making galaxies found far from the quasar - 38 in all - could merely reflect the larger volume of space surrounding the quasar at those greater distances. After all, the volume of space around the quasar is proportional to the third power of the distance from the quasar. Thus, Rees says, the absence of a star-forming galaxy in the small volume right around the quasar may arise simply by chance.

"It's a fair point," Lambert says, but he notes that no other similarly sized region near the one closest to the quasar lacks a star-making galaxy. Rees says that if more sensitive observations reveal additional star-forming galaxies far from the quasar but none near it, that will strengthen the statistical significance of the finding.

Our own galaxy may have once been the victim of a quasar. M87, an enormous galaxy about 54 million light-years from the Milky Way, hosts a huge black hole that probably powered a quasar when the universe was young. But at the time that quasar was active, it was much closer to our galaxy. When the universe was a quarter of its current size, for example, the distance between us and M87 was presumably a fourth of what it is now. A quasar that close could have caused a lull in star formation that astronomers might someday detect by measuring precise ages for our galaxy's oldest stars. (*SN: 3/23/22*)

Preparing To Enjoy A Hampton Plantation Dark Sky Outing

Gerald Drake

August 31 was our last Hampton Plantation Dark Sky Outing, and the weather predictions were all over the place. I use two apps to determine if the night is going to be clear or not. One is *Astrospheric*: <http://www.astrospheric.com/>, which gives an easy-to-read table predicting cloud cover, seeing, transparency, dew point, temperature and other variables. The other is *Clear Outside*: <http://clearoutside.com/>, which gives the same information in a slightly different table format. Note the Clear Outside defaults to UK location, so be sure to change location. The week of the event, I start checking these to see if we'll be able to see anything if we go. It is about an hour and half drive for me, so I want to make sure the trip will be worthwhile.

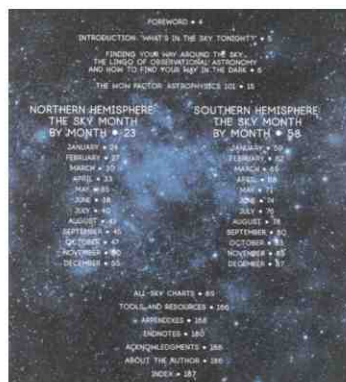
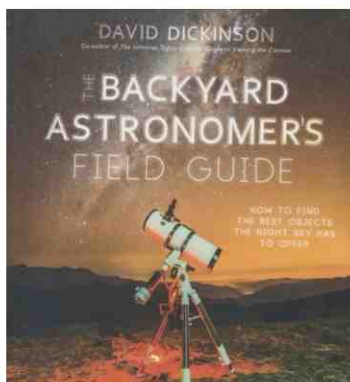
Now these two apps are not always accurate or they don't always agree. On August 31, Clear Outside said there will be clouds, but they'll dissipate by 9:00 PM, where Astropheric said there would not be many clouds at all. It is also good to check the local weather apps like Weather Bug: <http://weatherbug.com/> and look at their maps to make sure no storms are popping up. Given the app information (and conferring with Ian Hewitt who has a ton of experience in this), I decided to give it a go and head to Hampton. Turns out Clear Outside was correct, there were clouds, but they cleared out by 9:00 PM.

So now that I've decided to go, I must decide what to take. My plan was for visual observing only. Not wanting to forget anything, I made the following checklist and marked each item that as I loaded:

- Telescope, CPC 9.25
- Telescope, 90mm Refractor
- Various 2" lenses
- Accessory case
- Battery (Celestron Power Tank) and power cord
- Battery powered inverter as a backup with power cord
- Dew Shield
- Folding chair
- Observing stool
- Fold up table
- Clip Board and sketch tools
- Tarp 6'x6'
- Mosquito Repellent (very important)
- Drinking Water (also important)
- Observing plan

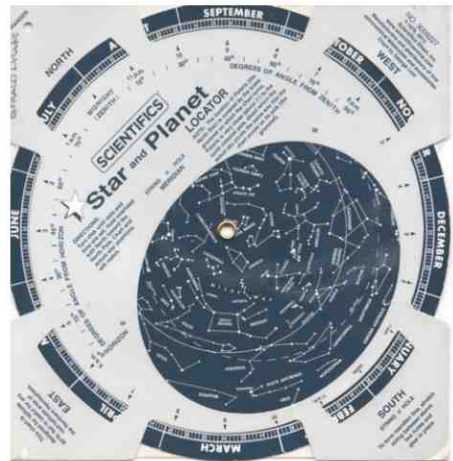
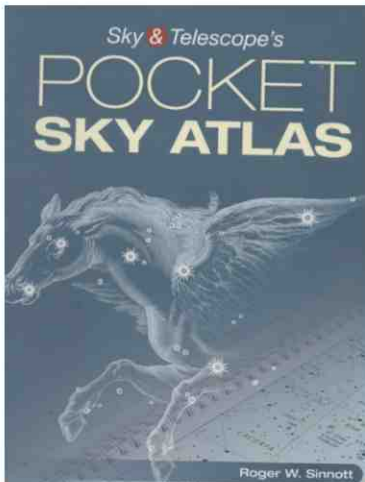
I've started taking an extra telescope in case guest show up and want to use it. This is usually one of my simple refractors or the 8" Dobsonian. I've started laying down a tarp under my telescope because I tend to drop things throughout the evening and it can be very hard to find them in the grass. Mosquitoes can be very bad at Hampton Plantation even in the Fall months so, I always pack some sort of repellent. It is very important to stay hydrated while you're observing so having water on hand is a must. Snacks can be helpful too to keep your energy up.

What to look at? I usually try to put together a viewing plan anytime I stargaze. I use a variety of tools such as apps, books, star charts, and planisphere. One of my favorite books is by David Dickinson called the Backyard Astronomer's Field Guide.



I like this book because it describes in detail what I should be able to see in the night sky, each month of the year. See contents page. For example, in September, the author shared 7-star charts that I could use for that time of year.

With this information, I developed a plan for what I wanted to see that night. Some of his charts were not detailed enough for me, so I always keep on hand the Sky & Telescope's Pocket Sky Atlas. That, along with Scientific's Planisphere help me determine what all I should see.



Using the above information telling what was available to look at, I made a list of the things I wanted to see. My list was quite extensive.

Plan for the night:

Set up CPC 9.25 and check that the finder scope is aligned with the main scope.

Set up the 90mm and check that its finder is aligned. Make sure the batteries are good.

Do a Sky Align with the CPC 9.25 when there are 3 bright stars visible in the sky that are spaced far apart.

In the **Constellation Cygnus**, locate the following:

Albireo, a double star. See if you can split it.

Deneb, a variable star and double

M39

M29

M27

North America Nebula (NGC 7000)

NGC 6811

NGC 6866

In **Pegasus** look for:

M15

M2

Andromeda Galaxy M31

In **Cassiopeia**, look for:

M103 (open cluster)

NGC 654

NGC 663

NGC 659

Lyra is high overhead. Look for:

Epsilon Lyra – double star, use high magnification

M57 the Ring Nebula. Use high magnification with a filter.

M56 a globular cluster

In **Ursa Major** find the following:

M81 and M82 using low magnification

M51 the Whirlpool Galaxy

M63 the Sunflower Galaxy

M94

M106 (NGC 4258)

M97 the Owl Nebula

M108 the Surfboard Galaxy

M40 which is actually a star known as Winnecke 4

In **Hercules** locate the following:

M13 Hercules Globular Cluster

M92 Globular Cluster

M12 Gumball Cluster

In **Serpens Caput** locate:

M5 the Rose Cluster

In **Sagittarius** locate the following:

M16 the Eagle Nebula

M17 the Swan Nebula

M18 Black Swan Cluster

M25 an open cluster

M22 the Great Sagittarius Cluster

M21 Webb's Cross

M28 a globular cluster

M20 the Trifid Nebula

M8 the Lagoon Nebula

M7 the Ptolemy's Cluster

M6 The Butterfly Cluster

In **Scutum** locate

M11 the Wild Duck Cluster

Whew! I put a note after my list that if I get through this, it will be a great night. So how did I do? It was indeed a great night! Visibility was below average, but seeing was above average.

I arrived at Hampton Plantation around 7:15 and began my set up. It was cloudy, but clearing. I began by laying down my tarp. The last time I used this I found it annoying. This time was more tolerable and the tarp came in handy when I dropped a screw out of my eyepiece holder and easily found it. I've lost these in the grass before. Mosquitoes were bad. Repellent was applied immediately. I set up the CPC 9.25 which I bought last year. I'm getting better with it. The tube with fork mount weighs 65 lbs. so with practice I'm lifting it correctly and getting it on the stand and locked in much faster. The Celestron Power tank, which is the battery power supply for the CPC 9.25 was fully charged and performed well throughout the evening. In case it failed, I brought an inverter that uses a 40-volt battery with an AC adapter that can also supply the CPC 9.25 with the 12 volts DC it needs.

On the CPC 9.25, I use a Rigel Quick finder and a 9x50 finder scope. I made sure both of these were aligned to the main scope by spotting them on tree tops while it was still daylight. Doing this is a must as finder scopes often get bumped during transportation and set up. The 9x50 finder is a new purchase from Celestron and I'm happy with it. It aligns well and has lighted cross hairs that prove useful.

I also set up a 90 mm refractor. This is a low-end telescope that I've made some improvements to and it actually gives some pretty good views. The park ranger at Hampton Plantation used it some, but it was pretty much on standby throughout the evening.

Around 8:30 there were enough stars visible to do the Sky Align on the CPC 9.25. I picked one in the east, north, and west. By then the clouds were pretty much cleared out. The Sky Align was successful and stayed true throughout the evening. The object I was looking for was always within the eyepiece. Note that I did the Sky Align with a 32 mm eyepiece, as Celestron recommends using low magnification for this process.

Now the observing can begin! In Cygnus, the CPC 9.25 found Albireo the double star. Easily split with the 32mm eyepiece which is about 73X magnification. The double star Deneb did not split at this magnification, but still provided a great view. M29 and M39 were great open clusters to look at. M27 looked a bit like a gray cloud. This is an object that I have not been able to see from my home in Myrtle Beach. Too much light. I was glad to get to see it at Hampton Plantation.

Easily observed NGC 6811 and 6866, open clusters. In Pegasus, M15 and M2 were very impressive. This was my first time seeing these objects in a telescope. In Cassiopeia, I saw M103 and the 3 GCG's, open cluster. In Lyra, I found Epsilon Lyra and was able to split the double double using the 23 mm eyepiece (102X). Also saw the Ring Nebula which is never visible from my home, but was clear enough here at Hampton. I also saw M56, a globular cluster. I switched back to the 32 mm eyepiece for this as globular clusters look better with the lower magnification. Lyra is high overhead, but the CPC 9.25 had no trouble finding it. The views were awesome.

Next, I went to Ursa Major and saw M81 (Bodes Galaxy) and M82 (Cigar Galaxy). These were very faint even under dark skies. My first time viewing these. Should have sketched them. Maybe next time. M63 and the others were below the tree line as Ursa Major is low in the sky now. So, I moved on the Hercules where I found M13 (Great Globular Cluster). Very impressive. Equally impressive were M92 and M12.

In Serpens Caput, I saw M5 (the Rose Cluster) for the first time ever in a telescope. Moving on to Sagittarius, there were many open clusters and nebules to see. The nebules were not clear. I attributed this to the below average transparency. In Scutum, I saw M11 (the Wild Duck Cluster). I finished the night looking at the planet Saturn. I tried out various eyepieces and even a Barlow to get a max magnification of 300X. I tried various filters as well, but none produced better views. My favorite view was with a 26 mm eyepiece which provided a clean 90X view where the ring separation was visible. Ian Hewitt share with me some of his 1-1/4" Televue eyepieces. These were really good and I enjoyed trying them out. Could look into purchasing Televue in the future.

So, I got though my list with the exception of a few objects that were below the tree line. The CPC 9.25 performed well doing everything I asked it to do. All-in-all, it was a great night. I packed up my things and left around 11:30.



View of the NW Sky from Hampton Plantation, just after sundown.

Hope to see you all at the next outing. I'll be sure to have a new list of objects to find.

What's Up, Doc? †

September 2024

Dr. Aaron B. Clevenson, Observatory Director, Insperty Observatory

This document tells you what objects are visible this next month for many of the Astronomical League Clubs. If you are working on one of the more advanced club, then I assume that you are tracking where your objects are all the time. I have concentrated on the common and starter level clubs. This information is based on 9 PM. All times are US Eastern Time in Washington DC.

Naked-Eye Clubs

Meteors

<u>Showers</u>	<u>Duration</u>	<u>Maximum</u>	<u>Type</u>
Gamma Aquarids	9/1 to 9/14	9/7 & 9/8	Minor
Alpha Triangulids	9/5 to 9/15	9/11 & 9/12	Minor
Alpha Aurigids	8/25 to 9/6	9/1 & 9/2	Minor
Eta Draconids	8/28 to 9/23	9/12 & 9/13	Minor
Gamma Piscids	8/26 to 10/22	9/23 & 9/24	Minor
Southern Piscids	8/12 to 10/7	9/11 to 9/20	Minor

Constellations, Northern Skies – any night, any time, anywhere, the darker the sky the better.

Last Chance this cycle: Draco, Canes Venatici, Bootes, Serpens, Libra, Scorpius, Telescopium.

Transit: Cygnus, Lyra, Sagitta, Vulpecula, Delphinus, Aquila, Scutum, Sagittarius.

New arrivals: Andromeda, Pisces, Pegasus, Aquarius, Microscopium, Piscis Austrinus.

Binocular Clubs

Binocular Messier – Monthly highlights include:

Easy – 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 16, 17, 18, 22, 23, 24, 25, 27, 29, 31, 39, 52, 55, 92, 103.

Medium – 14, 19, 28, 30, 33, 40, 62, 63, 80, 81, 82, 94.

Hard – 9, 26, 32, 51, 54, 56, 71, 75, 101, 106.

Big Binoculars – 69, 70, 72, 102, 107, 109, 110.

Deep Sky Binocular – Monthly highlights include (by Astronomical League numbers):

1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60.

Other Clubs

Messier

In addition to those listed under Binocular Messier, check out: 21, 57, 73, 76, 108.

Caldwell

1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 33, 34, 37, 42, 43, 44, 47, 55, 57, 63, 68, 69, 76, 78.

Double Star (by Astronomical League numbers):

1, 4, 7, 9, 10, 12, 13, 14, 15, 18, 21, 22, 26, 29, 31, 35, 36, 37, 38, 39, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 56, 57, 58, 60, 61, 62, 63, 64, 66, 67, 68, 69, 70, 71, 72, 84, 86, 87, 88, 89, 90, 91, 93, 94, 96, 97.

What's Up Doc? (continued)

Other Clubs (of the Solar System)

Solar System – These are the tasks that can be done this month:

Sun – Any clear day is a good time to get those sunspots. The Sun is in Leo.

Sunset mid-month is at 1915.

Moon:

The Maria requirement can be done any time the moon is visible. Look before 9/24 and after 9/9 for the fullest views.

The Highlands requirement can be done at the same time.

The Crater Ages requirement is best done on 9/8 and 9/9.

The Scarps requirement is best done on 9/10.

Occultations occur all the time, the bright ones can be found on the internet. Objects disappear on the East side of the moon.

Mercury, Mars, and Jupiter are not available in the evening sky mid-month.

Asteroids – Course Plotting and Measuring Movement requirements can be done at any time on any asteroid.

Venus is in Leo and sets at 2047 mid-month.

Ceres is in Sagittarius and is up all evening mid-month.

Saturn is in Aquarius and rises at 2039 mid-month.

Uranus is in Taurus and rises at 2334 mid-month.

Neptune is in Pisces and rises at 2104 mid-month.

Pluto is in Capricornus and is up all evening mid-month.

Lunar (times are shown for Central US Time)

Key timings are indicated below:

New, 9/2 4 days, 9/6 7 days, 9/9 10 days, 9/12 14 days, 9/16

Old moon in new moon's arms – before 2155 on 9/5, ~10 % illuminated. (72 hr > New)

New moon in old moon's arms – after 2249 on 9/28, ~10 % illuminated. (72 hr < New)

Waxing Crescent – before 2155 on 9/4, ~4 % illuminated. (40 hr > New)

Waning Crescent – after 2249 on 9/29, ~4 % illuminated. (48 hr < New)

Major Astronomical Events:

- 9/4 – Mercury at Greatest Elongation – East
- 9/4 – Moon at Ascending Node
- 9/5 – Moon at Apogee
- 9/7 – Saturn at Opposition
- 9/9 – Mercury at Perihelion
- 9/12 – Lunar Apogee
- 9/17 – Saturn – Moon Conjunction (0.3')
- 9/17 – Partial Lunar Eclipse
- 9/18 – Moon at Perigee
- 9/18 – Moon at Ascending Node
- 9/20 – Neptune at Opposition
- 9/22 – Autumnal Equinox
- 9/30 – Mercury at Superior Conjunction

* - Although these clubs are not detailed in this "What's Up Doc?" handout, you can get information on many of their objects by using the "What's Up Tonight, Doc?" spreadsheet (version 4.1). To get your copy, talk to the Doc, Aaron Clevenson, by sending an email to aaron@clevenson.org. It is also available on the club website.

† - "What's Up Doc?" is used with permission from Warner Bros. Entertainment Inc.

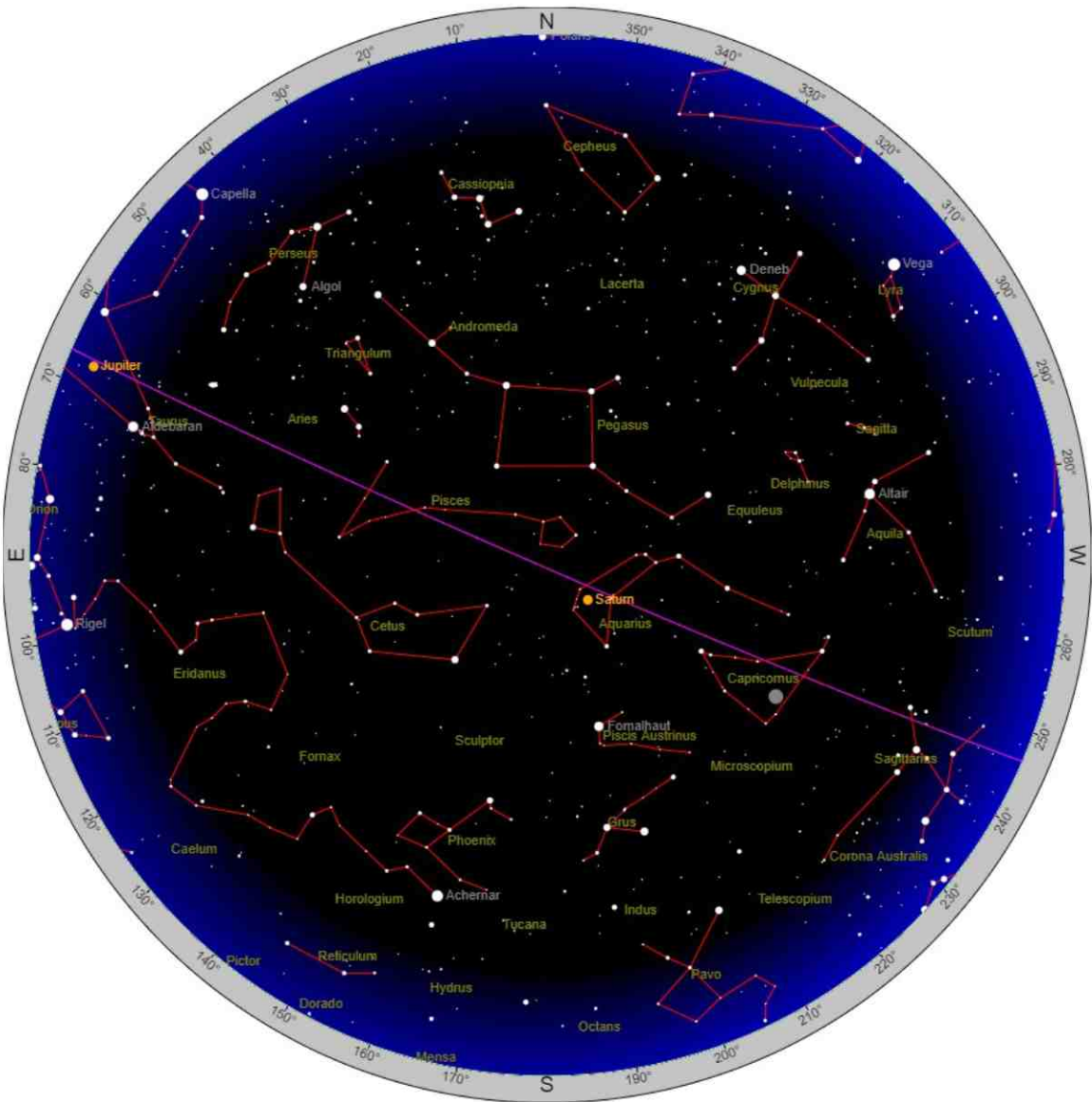
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Interactive sky chart Home

Year	Month	Day	Hour	Minute
2024	October	15	00:00	0:0



Until next Month

Remember to always look up!