the Skyscraper

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October 2022

AMATEUR ASTRONOMICAL SOCIETY OF RHODE ISLAND ⋆ 47 PEEPTOAD ROAD ⋆ NORTH SCITUATE, RHODE ISLAND 02857 ⋆ WWW.THESKYSCRAPERS.ORG

In This Issue:

Seagrave Memorial Observatory Open Nights
Saturdays, 7pm

AstroAssembly Eve

Friday, September 30 at Seagrave Observatory

7:30pm **Joe Rao, Hayden Planetarium**
Mars and the Moon: December 7, 2022

8:00pm **Stephen LaFlamme, Skyscrapers, Inc.**
Reporting a Backyard Astronomy Discovery

9:00pm **Observing**

AstroAssembly

Saturday, October 1 at Seagrave Observatory & via Zoom

Presentations, Swap Tables, Door Prizes, Raffle, Solar Viewing, Astrophotography Contest, Homemade Telescopes, Famous Astro Bake-Off Contest

10:00am **Registration & Refreshments**

11:00am **Michael Corvese, Skyscrapers, Inc.**
Evolution of the Moon

12:00pm **Deli Lunch**

1:00pm **Sara J. Schechner, Harvard University**
Bringing the Stars Home: Astronomical Advertising to Sell Goods

2:30pm **John Briggs, Skyscrapers, Inc.**
Noble Instruments: Hale's Solar Telescopes and his Early Vision for the Solar-Stellar Connection (via Zoom)

4:00pm **Jonathan Pober, Brown University**
Mapping the Cosmic "Dark Ages" with Radio Astronomy From the Lunar Far Side

5:00pm **Raffle Drawing & Astrophoto & Bake-off Winners Announced**

5:30pm **Dinner Break**

7:30pm **Welcome & Awards**

7:45pm **Rick Lynch, Skyscrapers, Inc.**
The Royal Observatory (City Observatory) at Edinburgh, Scotland

8:30pm **Observing**

President's Message

by Linda Bergemann

Last month, I wrote about browsing through "75 Years of Skyscrapers: 1932 – 2007". While flipping through the pages, I stopped and read several of the member profiles, the first by long-time member and good friend Dave Huestis. Most of Dave's story was familiar to me. But, what stood out most to me on that particular day was these statements by Dave: "I derive the most satisfaction from public outreach when thousands of people are enlightened to sky happenings they can observe with little or no optical aid. . . . And when I personally participate in a public outreach program that involves showing the wonders of the heavens to students of any age, I am on a euphoric high for days."

Dave's words ring true. Just ask him about the recent star party that he hosted at the Jesse M. Smith Memorial Library in Harrisville, RI. Dave and eight volunteers, and six telescopes, introduced 106 library patrons to the night sky.

I, too, get great satisfaction from public outreach. Although far less knowledgeable of the "wonders of the heavens" than Dave, I know much more than the vast majority of the people who visit Seagrave Memorial Observatory or participate in our off-site star parties.

In September, Skyscrapers returned opening the observatory to the public every Saturday night, weather permitting. To do this effectively, we need five volunteers every Saturday night for a few hours. While trained telescope operators are needed to run one or two of our main telescopes, others are needed to greet and interact with our guests. These tasks require little or no knowledge of the sky.

I, for instance, have been a member of Skyscrapers for over 40 years, but am not an experienced observer. However, I can greet people, park vehicles and show videos. I am able to recount the history of the observatory and Skyscrapers. And, every time I am asked a question I can't answer, I learn something new.

I write this because we need more volunteers and because participating in these events is the best way for you to get to know the other members of Skyscrapers. As of this writing, we have 126 members; most names are familiar, but most I have not met. Please consider participating in one of our many outreach events. Remember that you know more than most. I promise that you will learn something new, make some new friends, and have some fun. You may even experience a "euphoric high" like Dave.

New Members

Welcome to Skyscrapers

Maureen & Matthew Elliot of Douglas, MA

Upcoming Events

Oct. 1 - 8:30 PM Observing at Seagrave

Oct. 8 - 7:00 PM Public Observing at Seagrave

Oct. 9 - 5:30 PM Moonrise On the Seekonk

Oct. 14 - 7:00 PM Night Sky Program at River Bend Farm

Oct. 15 - 7:00 PM Public Observing at Seagrave

Oct. 22 - 7:00 PM Public Observing at Seagrave

Oct. 29 - 7:00 PM Public Observing at Seagrave

Volunteers needed for all events.

The Skyscraper is published monthly by Skyscrapers, Inc. Meetings are held monthly, usually on the first or second Friday or Saturday of the month. Seagrave Memorial Observatory is open every Saturday night, weather permitting.

Directions
Directions to Seagrave Memorial Observatory are located on the back page of this newsletter.

Submissions
Submissions to The Skyscraper are always welcome. Please submit items for the newsletter no later than **October 15** to Jim Hendrickson, 1 Sunflower Circle, North Providence, RI 02911 or e-mail to jim@distantgalaxy.com.

E-mail subscriptions
To receive The Skyscraper by e-mail, send e-mail with your name and address to jim@distantgalaxy.com. Note that you will no longer receive the newsletter by postal mail.

Star Party Update

River Bend Farm, Uxbridge
Friday, September 9, 2022
By Francine Jackson

September 9th, 2022 was one of the better skies we had at River Bend, in Uxbridge. With Jim Hendrickson, Francine Jackson, Bob Janus, Ron Zincone and John Kocur all bringing their telescopes, we were also joined by Abbie, Eric, and Raindrop as volunteers, thanks to the efforts of the National Park Service. In addition, Michael, who had come in August with a small telescope, looking for assistance in using it, this time brought a set of binoculars. While we were all setting up before dark, a large group of people came early, all waiting for darkness to come, and, with it, Saturn. All were amazed with its beauty, but, when the ruddy Moon, reddened by smoke from the fires in the West, rose out of the trees, no one could believe the sight our closest celestial neighbor showed. John also put his telescope on Albireo, a crowd favorite, who were amazed how beautifully its two colors showed.

When Jupiter rose after the Moon, everyone also couldn't believe how it looked through the telescopes.. All four Galilean moons were visible, in addition to its "striped" appearing surface. After Jupiter, the approximately 30 visitors left, all telling us they will be back for October's night program.

Jesse M. Smith Library, Harrisville
Friday, September 16, 2022
By Dave Huestis

Cool evening ... figuratively and literally. Most folks wore sweatshirts or light jackets.

Saturn was the main attraction. Everyone was amazed at the view through the six scopes we had set up. I also pointed out where Saturn was in the sky using my laser pointer.

I also pointed out constellations to those waiting in line to observe through the scopes.

Some high thin clouds and haze made it a little difficult to see fainter objects, but as it grew darker we were able to provide views of Albireo, Andromeda Galaxy, Ring Nebula, Alcor & Mizar and Epsilon Lyrae.

At the very end of the evening Jupiter rose above the southeast tree line and the last group of visitors got a view of Jupiter withthree visible Galilean moons, and also the shadow of Io on his cloud tops.

106 folks, mostly of families with lots of young children, had a great time. The Jesse Smith Memorial Library staff were very pleased with the turnout.

Skyscrapers Presentations on YouTube

Many of our recent monthly presentations on Zoom have been recorded and published, with permission, on the Skyscrapers YouTube channel. Go to the URL below to view recent presentations.

https://www.youtube.com/c/SeagraveObservatorySkyscrapersInc

Skylights: October 2022

by Jim Hendrickson

With October comes earlier and cooler nights. As the temperature dips, so does the chorus of our night singers. A few crickets may remain within earshot of our observing station, and the distant, raspy chirp of a lone katydid reminds us of the warm nights gone by. The nights are getting quieter.

The Milky Way still arcs high overhead after twilight, but it quickly turns away from the summer star clouds as the autumn star patterns take over, and hints of winter sky begin to appear low in the east.

The Sun spends the entirety of October, save for a few hours on the 31st, within the boundaries of Virgo, and on the 17th it is located close to the constellation's brightest star, Spica, which is 1.8° to the south. The 17th is also the first morning when the Sun begins to rise after 7am. The last 6pm sunset occurs the following day, on the 18th..

October begins with the Moon in first quarter on the 2nd. The Moon is 5.6° southeast of Saturn on the 5th, 3.4° south of Neptune on the 7th, and .2° east of Jupiter on the 8th.

The Full Hunter's Moon occurs on the 9th, in Pisces. This month's full Moon is notable as being the first one since March to occur north of the celestial equator. If you notice that the Full Moon appears higher and brighter, this is the reason why.

The waning gibbous Moon appears close to the Pleiades on the 12th-13th, passing just 2.5° south of the cluster at midnight. On the 14th, the Moon is 2.8° north of Mars.

The Moon is at last quarter on the 17th, when it resides near the twin stars of Gemini, Pollux and Castor.

On the 21st, the waning crescent is your guide to locating our closest dwarf planet, Ceres, which will be 3° north of the Moon. Also on this morning, the Moon lies within 1° from the galaxies M95, M96, and M105. A medium-sized telescope will be needed to see the galaxies.

The Moon is new on the 25th.

October mornings present a good opportunity for observing Mercury. The elusive innermost planet reaches its greatest elongation on the 8th, and although this is one of the shortest possible elongations, the high angle of the ecliptic gives Mercury a few days of visibility exceeding 90 minutes before sunrise. It remains at a favorable distance from the Sun up until the last week of October, and is joined by the Moon on the 24th, when the 1.1% illuminated 27-day crescent lies just 1.5° above the planet.

Venus rises just 30 minutes before sunrise at the beginning of October, and is at superior conjunction on the 22nd. It then returns to the evening sky, but will not be easily visible again until late November.

The evening sky belongs to our three bright outer planets. Saturn, in Capricornus, becomes stationary on the 23nd, and resumes prograde motion. This is the best time to view the ringed planet at its maximum shadow angle, giving the planet its most dramatic three-dimensional appearance. Note how close Saturn appears to be to iota Capricorni, and continue to watch it over the coming weeks as it moves east, back towards Nashira (gamma) and Deneb Algedi (delta Cap).

Jupiter, in Pisces, is the brightest starlike object in the sky and is visible for much of the night, setting before morning twilight.

We are entering the best time to watch Mars. Moving eastward through Taurus, until it reaches its stationary point on the 30th, the Red Planet brightens to magnitude -1 and grows to 15 arcseconds by month's end. In mid-October, Mars passes within 2° of the supernova remnant M1, the Crab Nebula, though bright moonlight might interfere with seeing it.

Mars reaches its stationary point on the 30th and begins to move westward, until January 12, when it resumes eastward, prograde motion.

Beyond the bright outer planets, the ice giants are also well-positioned for viewing during October evenings.

If you haven't seen Uranus yet, an opportunity exists on the night of the 11th-12th to locate it with ease. When the waxing gibbous Moon rises, Uranus will be 3° to its east, but just after 2am, you can find Uranus just 0.2° south of the Moon.

However, it is worth waiting until the bright Moon is out of the way, and trying to find it from a dark site. Uranus, at magnitude 5.7, is just at the cusp of naked-eye visibility, and presents a worthy challenge for keen-eyed observers. From less than ideal conditions, it is easily visible in binoculars, and a sizeable telescope with high magnification under reasonably steady skies will reveal its featureless teal-toned disk about 3.7 arcseconds across.

Neptune, located 8° west of Jupiter along the ecliptic, is ideally placed for early evening viewing. Directly south of the Circlet asterism of Pisces by 5° is a 1.5° elongated diamond of 6th and 7th magnitude stars. Neptune is close to the easternmost star. A small telescope will reveal its bluish, 7.8 magnitude glow fairly readily.

While Pluto is still visible in the evening sky, it is getting fairly low by the time the Moon moves out of view.

Our nearest dwarf planet, Ceres, is in central Leo in October, and the waning crescent Moon appears 3° to its south on the 22nd.

Asteroid 4 Vesta, shining at 7th magnitude in southeastern Capricornus, is an easy target for binoculars or small telescopes. It can be located about 2/5 of the way along a line connecting Saturn and Fomalhaut (alpha Piscis Austrinus), and a few degrees to the east-northeast of globular cluster M30.

You may notice meteor activity picking up in October, as there are two notable showers occurring. In early October, the Draconids peak around the 8th-9th, when a bright gibbous Moon interferes with all but the brightest of the approximately ten meteors per hour you can expect to see.

Later in the month, conditions are more favorable for the Orionids, which peak on the 20th-21st. This shower, consisting of dust left behind from Comet 1P/Halley, originates from northeastern Orion and can produce up to 20 meteors per hour.

Every few months we notice that the Big Dipper's pointer stars align with cardi-

Events in September

1	Mercury Stationary
2	**First Quarter**
5	Moon 5.6° SE of Saturn
7	Moon 3.4° S of Neptune
8	Moon 3.2° E of Jupiter
8	Mercury Greatest Elongation West (18°)
9	**Full Moon**
12	Moon 0.2° N of Uranus
14	Moon 2.8° N of Mars
17	**Last Quarter**
22	Venus Superior Conjunction
23	Saturn Stationary
24	Moon 1.6° W of Mercury
25	**New Moon (Partial Solar Eclipse)**
30	Mars Stationary

Ephemeris times are in EDT (UTC-4) for Seagrave Observatory (41.845N, 71.590W)

nal points around the north celestial pole (approximately the location of Polaris, the North Star) at an even hour of our clock. These alignments typically occur in December, March, June, and September.

While these positions do not occur during October, it is notable that during early October, the celestial coordinate grid neatly aligns with local time. This occurs on the night of October 2-3 for the range of longitudes covering Rhode Island..

To understand what this means, go out and look due south at any time during the hours of darkness on that night. Any star crossing the meridian, or culminating directly over the southern horizon, will have a right ascension that is almost exactly the current local time.

This could be a fun exercise to familiarize yourself with the coordinates of some of the sky's notable stars, the planets, or deep sky objects. First, you must identify true south from your observing location. If you can see Polaris, this should be fairly straightforward, but if the North Star is obstructed from view, you'll need to find another method. Using a compass will give you magnetic south, with which you will need to add your magnetic declination. An easier method would be to use an online mapping service. Locate your observing site, and determine its orientation and your direction due south. Additionally, many weather apps, or services such as TimeAndDate, will tell you what time the Sun transits the meridian, so you can mark your south point during the day.

Once you've oriented your observing site within a reasonable degree of accuracy, begin your observations and take note of the time some of your favorite objects cross your meridian, then take out your star catalog and look up the right ascension coordinate for each object. Note that this will be more accurate if you use current year epoch, as the J2000 coordinates will be slightly off due to precession.

On the flip side of this exercise, if you know the coordinates of a star, and you have the current time, you can determine your meridian to within about a degree of accuracy.

What if you are not able to check the coordinates of your favorite objects on the night of the 2nd-3rd? Each successive night, the stars will transit approximately four minutes earlier, and each night before, they transit about four minutes later. Note also that if you observe from a significant difference in longitude east or west of Rhode Island, the synchronization between the celestial grid and local time will occur on a different night.

Book Review

The Milky Way: An Autobiography of Our Galaxy

by Moiya McTier, New York: Grand Central Publishers, 2022,
ISBN 9781538754153, hardbound, $27.00 U.S.

Reviewed by Francine Jackson

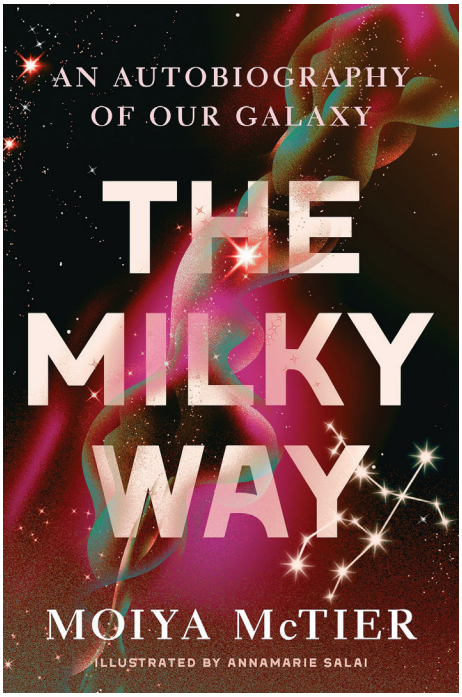
It's not often when we are able to have a chat with one of our celestial neighbors; however, in this case, it's with the one that we are inside of: The Milky Way. In fact, it introduces itself by reminding us that it made us all, although not directly in the format we see, not chairs or even humans.

We then begin a voyage through and around the Galaxy, being introduced to the various stars it has made, plus how it is put together, and where we insignificant humans fortunately have our star situated. We learn of how it has devoured smaller galaxies that have ventured too close, and how the halo clusters are often leftovers of some of these former galaxies.

Of course, we are introduced to Larry and Sammy, the neighboring Large and Small Magellanic clouds, and bratty Trin, also known as Triangulum, or M33, and the bane of the galaxy's existence, Sarge, that giant black hole right in its center.

Apparently our home's favorite neighbor is Andromeda. It not only spends time "sending" messages to it, but is actually waiting for the time when the two will become one, creating the giant Milkomeda, when their stars and gas will dance together. Oh, and, no, we are reminded, we will not be there.

This book is one of the cutest, yet one of the most informative ones on all aspects of our galactic home. We not only learn all there is to our galaxy, and the others in our Local Group – including those that the galaxy has eaten – but the possible futures of our universe. We as humans are often put down, although the galaxy does like us as sounding boards, but we are reminded that our Milky Way is a beautiful, and "intelligent," place to live. Not only will you enjoy this tour, but you may find yourself smiling more than you normally do while reading a science book. Try it.



NASA Night Sky Notes:

Fomalhaut: Not So Lonely After All

by David Prosper

Fall evenings bring a prominent visitor to southern skies for Northern Hemisphere observers: the bright star Fomalhaut! Sometimes called "The Autumn Star," Fomalhaut appears unusually distant from other bright stars in its section of sky, leading to its other nickname: "The Loneliest Star." Since this star appears so low and lonely over the horizon for many observers, is so bright, and often wildly twinkles from atmospheric turbulence, Fomalhaut's brief but bright seasonal appearance often inspires a few startled UFO reports. While definitely out of this world – Fomalhaut is about 25 light years distant from us – it has been extensively studied and is a fascinating, and very identified, stellar object.

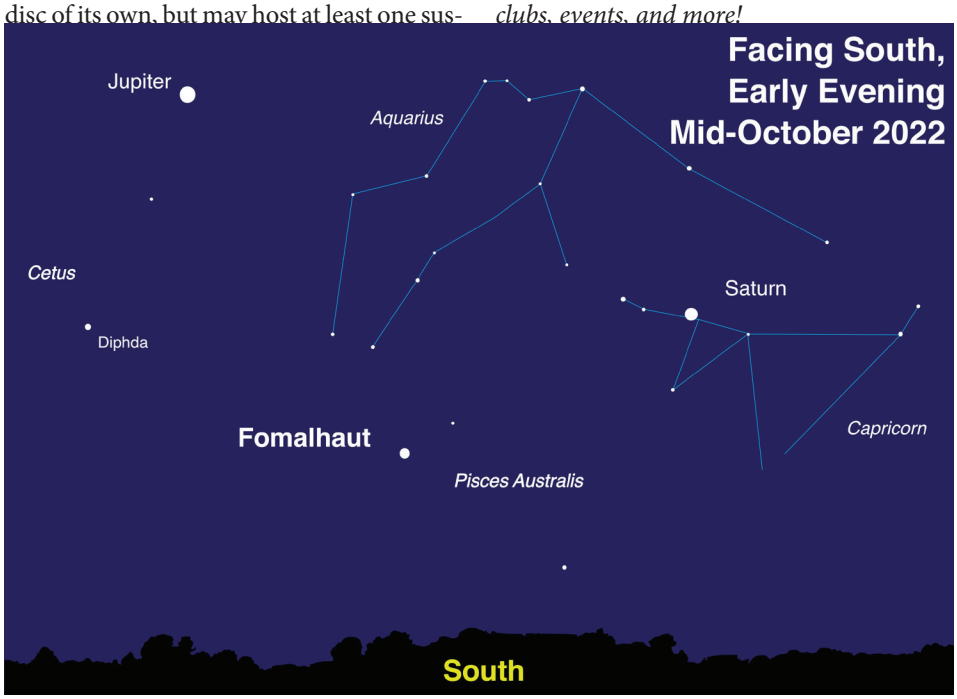
Fomalhaut appears solitary, but it does in fact have company. Fomalhaut's entourage includes two stellar companions, both of which keep their distance but are still gravitationally bound. Fomalhaut B (aka TW Piscis Austrini, not to be confused with former planetary candidate Fomalhaut b*), is an orange dwarf star almost a light year distant from its parent star (Fomalhaut A), and Fomalhaut C (aka LP 876-10), a red dwarf star located a little over 3 light years from Fomalhaut A! Surprisingly far from its parent star – even from our view on Earth, Fomalhaut C lies in the constellation Aquarius, while Fomalhaut A and B lie in Piscis Australis, another constellation! – studies of Fomalhaut C confirm it as the third stellar member of the Fomalhaut system, its immense distance still within Fomalhaut A's gravitational influence. So, while not truly "lonely," Fomalhaut A's companions do keep their distance.

Fomalhaut's most famous feature is a massive and complex disc of debris spanning many billions of miles in diameter. This disc was first detected by NASA's IRAS space telescope in the 1980s, and first imaged in visible light by Hubble in 2004. Studies by additional advanced telescopes, based both on Earth's surface and in space, show the debris around Fomalhaut to be differentiated into several "rings" or "belts" of different sizes and types of materials. Complicating matters further, the disc is not centered on the star itself, but on a point approximately 1.4 billion miles away, or half a billion miles further from Fomalhaut than Saturn is from our own Sun! In the mid-2000s a candidate planetary body was imaged by Hubble and named Fomalhaut b. However, Fomalhaut b was observed to slowly fade over multiple years of observations, and its trajectory appeared to take it out of the system, which is curious behavior for a planet. Scientists now suspect that Hubble observed the shattered debris of a recent violent collision between two 125-mile wide bodies, their impact driving the remains of the now decidedly non-planetary Fomalhaut b out of the system! Interestingly enough, Fomalhaut A isn't the only star in its system to host a dusty disc; Fomalhaut C also hosts a disc, detected by the Herschel Space Observatory in 2013. Despite their distance, the two stars may be exchanging material between their discs - including comets! Their co-mingling may help to explain the elliptical nature of both of the stars' debris discs. The odd one out, Fomalhaut B does not possess a debris disc of its own, but may host at least one suspected planet.

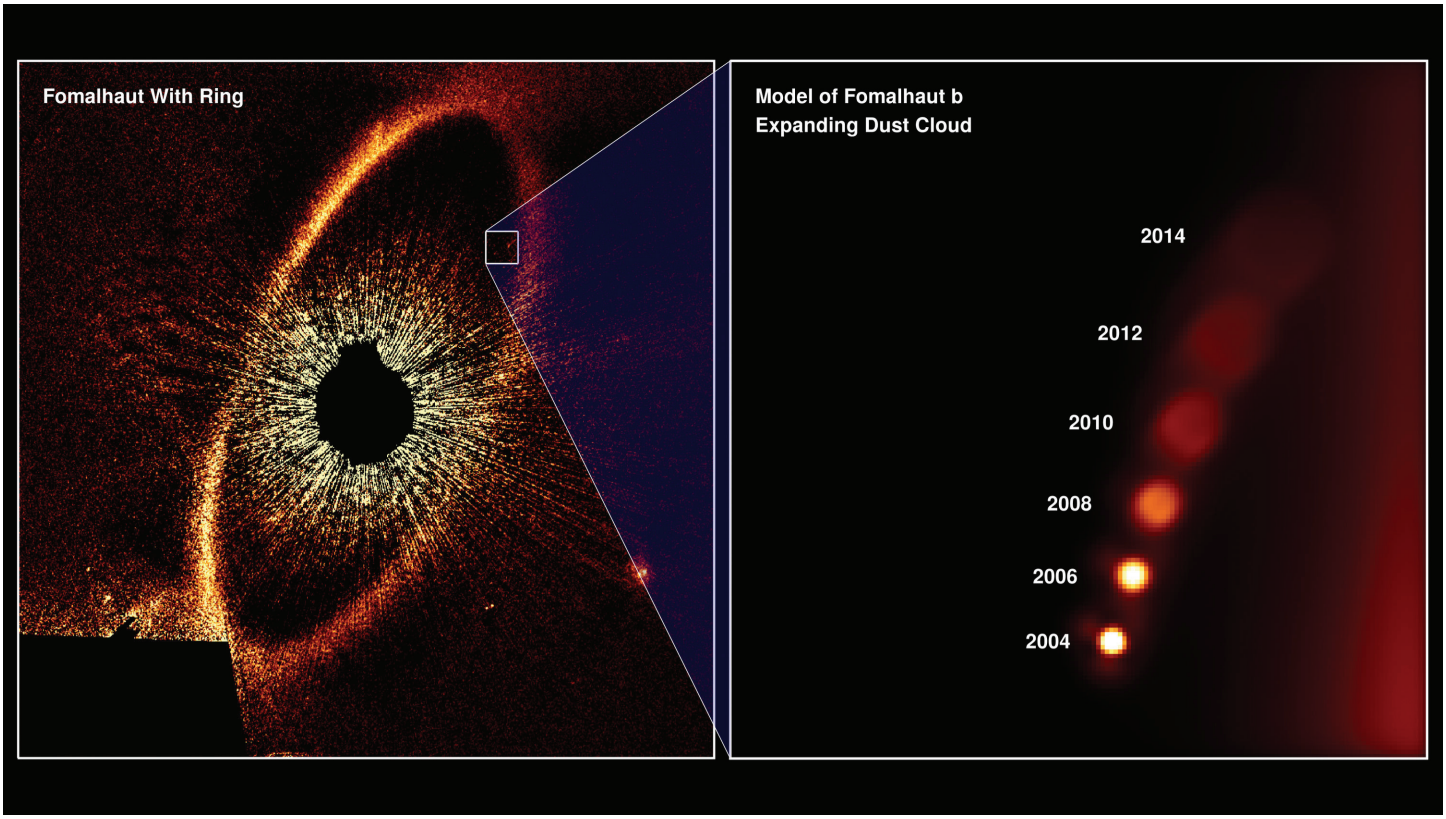
While Hubble imaged the infamous "imposter planet" of Fomalhaut b, very few planets have been directly imaged by powerful telescopes, but NASA's James Webb Space Telescope will soon change that. In fact, Webb will be imaging Fomalhaut and its famous disc in the near future, and its tremendous power is sure to tease out more amazing discoveries from its dusty grains. You can learn about the latest discoveries from Webb and NASA's other amazing missions at nasa.gov.

*Astronomers use capital letters to label companion stars, while lowercase letters are used to label planets.

This article is distributed by NASA Night Sky Network. The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!



Sky map of the southern facing sky for mid-latitude Northern Hemisphere observers. With Fomalhaut lying so low for many observers, its fellow member stars in the constellation Piscis Australis won't be easily visible for many without aid due to a combination of light pollution and atmospheric extinction (thick air dimming the light from the stars). Fomalhaut is by far the brightest star in its constellation, and is one of the brightest stars in the night sky. While the dim constellations of Aquarius and Capricorn may also not be visible to many without aid, they are outlined here. While known as the "Loneliest Star," you can see that Fomalhaut has two relatively close and bright visitors this year: Jupiter and Saturn! Illustration created with assistance from Stellarium



The magnificent and complex dust disc of the Fomalhaut system (left) with the path and dissolution of former planetary candidate Fomalhaut b displayed in detail (right).

Image credits: NASA, ESA, and A. Gáspár and G. Rieke (University of Arizona) Source: https://www.nasa.gov/feature/goddard/2020/exoplanet-apparently-disappears-in-latest-hubble-observations

Lunatic's Corner: Hesiodus A

by Michael Corvese

Lunatic's Corner is a bi-monthly column discussing all things lunar with origins in Skyscrapers Lunar Observing Program group.

This month's topic is the crater Hesiodus A. Hesiodus A is the next largest of the smaller craters close to the main crater Hesiodus. These craters are named for the Greek poet, farmer, and astronomer, Hesiod. It is thought that Hesiod lived in ancient Greece about 2,700 years ago and was a contemporary of Homer. Hesiod is credited with writing "Astronomia", a hexameter poem of which only fragments exist today. The surviving text contains information on the rising and setting mostly of the Pleiades and Hyades. Some experts theorize that these fragments may be part of an expanded version of Hesiod's poem, "Works and Days", in which he describes the changing sky in relation to agricultural activities and seasonal variations.

Hesiod A is a rare sort of crater on the moon as it contains concentric rings. It is approximately 10 miles wide and about a mile deep and is located on the southern shore of Mare Nubium (Sea of Clouds) near the craters Hesiodus and Pitatus. It is the largest of all concentric ringed crates on the Moon. Optimal viewing occurs on Lunar day 9 but it will remain visible through the full Moon. A 4.5" telescope is the recommended minimum for spotting this crater, but experienced observers might be able to see it with small apertures, high magnification, and good seeing conditions. A complete list of all 114 concentric craters can be found here: Concentric craters on the Moon - Wikimedia Commons

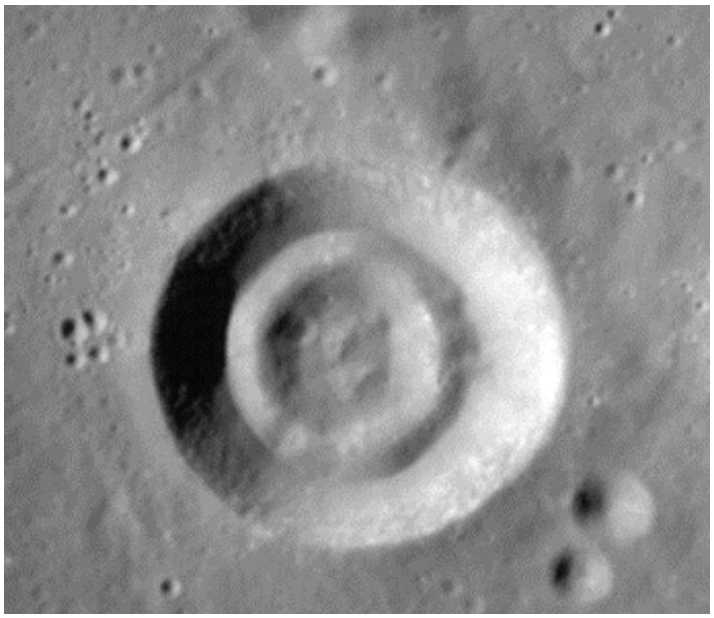
Of the thousands of craters on the moon, only 114 have been documented as having concentric craters. These craters are generally small, simple craters (bowl shaped, 2-12 miles in diameter). Several theories have been put forward as to the origin of these objects. One theory suggests that two objects may have hit consecutively in the same place. Another claimed that volcanism was responsible by lava extrusion from volcanic domes that cooled and receded. Other theories addressed the effect of differing surface layers on the impact event. Since concentric craters appear only on or near the borders of the lunar mare, spatial distribution of concentric craters would seem to eliminate external causes. Existing in regions of past volcanic activity, volcanism might seem to be the best fit. However, analytical evidence shows that the material inside the craters and outside the craters is identical, eliminating volcanic extrusion as a source of the craters.

Further investigation has indicated that igneous extrusion may be the cause. Igneous extrusion occurs when molten rock pushes against the floor of the crater from underneath. In larger complex craters, this process seems to form floor fractured craters, but in smaller simple craters, it presumably forms a ring shape and would explain why we only see small concentric craters that are distributed near the mare/

highland borders. Although this is the best explanation we have today for the existence of this phenomenon, there is still much we do not know about the formation of these interesting craters.

Next time you are out on a moonlit night, take aim at Hesiodus A or one of the other lunar bullseyes and contemplate and appreciate the complex and mysterious processes that created it.

Michael Corvese is a confirmed lunatic of many years regardless of his recent interest in lunar observing.



Note of thanks to Skyscrapers member Phil Levine

At the end of July, Phil Levine, ATMoB member and member of Skyscrapers since 2020, donated 32 volumes of the Annual Review of Astronomy and Astrophysics to Skyscrapers. We were fortunate to have a single buyer for the whole lot for a donation of $350. That buyer has been a frequent purchaser of books from Skyscrapers, having bought more than 175 volumes in past transactions.

The money realized from the sale of these books will be used to help with infrastructure projects at Seagrave, as well as to help support our public outreach programs.

Thank you Phil for your generous donation.

Dave Huestis

Historian/Librarian

Note of thanks to Telescope Trader

Skyscrapers wishes to graciously thank Telescope Trader (TelescopeTrader: Buy & Sell Used Telescope Equipment) founder Michael Blackledge for providing a complimentary Life Pass with unlimited ads to our organization. This generous gift will allow us to continue to offer books and magazines to a wide online audience. The monies realized from the sale of these items will be used to help with infrastructure projects at Seagrave, as well as to help support our public outreach programs.

Thank you Michael for your generous donation to Skyscrapers.

Dave Huestis

Historian/Librarian

The Sun, Moon & Planets in October

This table contains the ephemeris of the objects in the Solar System for each Saturday night in October 2022. Times in Eastern Daylight Time (UTC-4) . Ephemeris times are for Seagrave Observatory (41.845N, 71.590W).

Object	Date	RA	Dec	Const	Mag	Size	Elong	Phase(%)	Dist(S)	Dist(E)	Rise	Transit	Set
Sun	**1**	12 28.7	-3 05.9	Vir	-26.8	1916.6	-	-	-	1.001	06:43	12:35	18:28
	8	12 54.1	-5 47.6	Vir	-26.8	1920.5	-	-	-	0.999	06:50	12:33	18:16
	15	13 19.9	-8 25.6	Vir	-26.8	1924.4	-	-	-	0.997	06:58	12:32	18:05
	22	13 46.2	-10 57.9	Vir	-26.8	1928.1	-	-	-	0.995	07:06	12:30	17:54
	29	14 13.0	-13 22.3	Vir	-26.8	1931.8	-	-	-	0.994	07:14	12:30	17:44
Moon	**1**	16 36.1	-25 21.4	Oph	-11.3	1930.6	64° E	28	-	-	13:12	17:37	21:59
	8	23 34.8	-8 12.0	Aqr	-12.7	1935.9	156° E	96	-	-	18:01	00:05	06:22
	15	5 26.2	25 43.2	Tau	-12.2	1787.9	120° W	75	-	-	20:52	04:54	13:01
	22	11 15.5	8 43.4	Leo	-10.4	1814.6	42° W	13	-	-	03:48	10:27	16:53
	29	17 21.4	-27 13.5	Oph	-10.7	1947.6	47° E	16	-	-	12:13	16:33	20:52
Mercury	**1**	11 38.7	1 53.8	Vir	1.4	8.9	13° W	16	0.318	0.757	05:34	11:43	17:53
	8	11 50.5	2 30.6	Vir	-0.3	7.2	18° W	48	0.308	0.940	05:18	11:30	17:41
	15	12 23.4	-0 22.3	Vir	-0.8	6.0	16° W	76	0.327	1.129	05:35	11:36	17:37
	22	13 04.9	-4 56.0	Vir	-0.9	5.3	12° W	91	0.364	1.275	06:06	11:51	17:34
	29	13 48.3	-9 49.5	Vir	-1.0	4.9	7° W	98	0.404	1.371	06:40	12:06	17:32
Venus	**1**	12 09.9	0 28.2	Vir	-3.8	9.9	6° W	99	0.720	1.708	06:13	12:17	18:21
	8	12 41.9	-3 02.5	Vir	-3.8	9.9	4° W	100	0.720	1.714	06:30	12:22	18:12
	15	13 14.2	-6 30.8	Vir	-3.8	9.9	2° W	100	0.721	1.717	06:48	12:26	18:05
	22	13 46.9	-9 52.7	Vir	-3.8	9.9	1° W	100	0.722	1.717	07:05	12:32	17:57
	29	14 20.2	-13 03.6	Vir	-3.8	9.9	2° E	100	0.723	1.715	07:23	12:37	17:51
Mars	**1**	5 17.0	22 25.4	Tau	-0.6	11.9	108° W	88	1.448	0.784	21:54	05:23	12:53
	8	5 26.4	22 46.7	Tau	-0.7	12.6	112° W	89	1.456	0.744	21:34	05:05	12:36
	15	5 33.8	23 06.4	Tau	-0.8	13.3	118° W	90	1.464	0.705	21:12	04:44	12:17
	22	5 38.6	23 25.2	Tau	-1.0	14.0	123° W	91	1.473	0.668	20:48	04:22	11:56
	29	5 40.8	23 44.1	Tau	-1.1	14.8	130° W	93	1.482	0.633	20:21	03:56	11:31
1 Ceres	**1**	10 22.3	17 34.9	Leo	8.8	0.4	37° W	99	2.564	3.287	03:20	10:28	17:36
	8	10 34.3	16 43.8	Leo	8.8	0.4	41° W	98	2.563	3.228	03:07	10:12	17:17
	15	10 45.9	15 53.0	Leo	8.8	0.4	45° W	98	2.562	3.165	02:55	09:56	16:58
	22	10 57.4	15 03.1	Leo	8.8	0.4	49° W	98	2.561	3.097	02:42	09:40	16:38
	29	11 08.5	14 14.6	Leo	8.8	0.4	53° W	98	2.560	3.025	02:29	09:24	16:19
Jupiter	**1**	0 14.1	-0 14.5	Psc	-2.8	49.7	175° E	100	4.955	3.956	18:15	00:16	06:17
	8	0 10.7	-0 36.0	Psc	-2.8	49.5	167° E	100	4.954	3.974	17:45	23:45	05:45
	15	0 07.6	-0 55.8	Psc	-2.7	49.1	160° E	100	4.954	4.006	17:16	23:14	05:13
	22	0 04.7	-1 13.3	Psc	-2.7	48.5	152° E	100	4.953	4.053	16:47	22:44	04:42
	29	0 02.2	-1 27.8	Psc	-2.7	47.8	144° E	100	4.953	4.112	16:18	22:14	04:11
Saturn	**1**	21 27.4	-16 22.8	Cap	0.5	18.1	131° E	100	9.858	9.170	16:29	21:30	02:31
	8	21 26.5	-16 26.6	Cap	0.5	17.9	124° E	100	9.857	9.262	16:01	21:02	02:03
	15	21 26.0	-16 28.8	Cap	0.6	17.7	117° E	100	9.855	9.362	15:33	20:34	01:35
	22	21 25.8	-16 29.5	Cap	0.6	17.5	110° E	100	9.853	9.468	15:05	20:06	01:07
	29	21 25.9	-16 28.5	Cap	0.7	17.3	103° E	100	9.851	9.579	14:38	19:39	00:40
Uranus	**1**	3 04.0	16 56.1	Ari	5.7	3.7	139° W	100	19.684	18.912	20:04	03:10	10:15
	8	3 03.2	16 52.6	Ari	5.7	3.7	147° W	100	19.683	18.841	19:32	02:37	09:42
	15	3 02.2	16 48.6	Ari	5.7	3.8	154° W	100	19.682	18.782	19:04	02:09	09:14
	22	3 01.2	16 44.2	Ari	5.7	3.8	161° W	100	19.680	18.737	18:36	01:40	08:45
	29	3 00.1	16 39.6	Ari	5.6	3.8	168° W	100	19.679	18.706	18:08	01:12	08:16
Neptune	**1**	23 38.6	-3 38.9	Aqr	7.8	2.4	166° E	100	29.915	28.943	17:52	23:41	05:30
	8	23 37.9	-3 43.2	Aqr	7.8	2.4	159° E	100	29.914	28.981	17:24	23:13	05:01
	15	23 37.3	-3 47.2	Aqr	7.8	2.4	152° E	100	29.914	29.033	16:56	22:45	04:33
	22	23 36.7	-3 50.8	Aqr	7.8	2.3	145° E	100	29.914	29.098	16:28	22:17	04:05
	29	23 36.2	-3 54.0	Aqr	7.8	2.3	137° E	100	29.914	29.175	16:01	21:49	03:37
Pluto	**1**	19 54.3	-23 04.9	Sgr	14.4	0.2	108° E	100	34.617	34.289	15:24	19:53	00:30
	8	19 54.3	-23 05.3	Sgr	14.4	0.2	101° E	100	34.621	34.410	14:57	19:30	00:03
	15	19 54.3	-23 05.3	Sgr	14.4	0.2	94° E	100	34.626	34.533	14:29	19:02	23:35
	22	19 54.4	-23 05.1	Sgr	14.4	0.2	88° E	100	34.631	34.658	14:02	18:35	23:08
	29	19 54.7	-23 04.6	Sgr	14.5	0.2	81° E	100	34.635	34.782	13:35	18:08	22:41

Directions to Seagrave Memorial Observatory

www.theSkyscrapers.org

From the Providence area:
Take Rt. 6 West to Interstate 295 in Johnston and proceed west on Rt. 6 to Scituate. In Scituate bear right off Rt. 6 onto Rt. 101. Turn right onto Rt. 116 North. Peeptoad Road is the first left off Rt. 116.

From Coventry/West Warwick area:
Take Rt. 116 North. Peeptoad Road is the first left after crossing Rt. 101.

From Southern Rhode Island:
Take Interstate 95 North. Exit onto Interstate 295 North in Warwick (left exit.) Exit to Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

From Northern Rhode Island:
Take Rt. 116 South. Follow Rt. 116 thru Greenville. Turn left at Knight's Farm intersection (Rt. 116 turns left) and follow Rt. 116. Watch for Peeptoad Road on the right.

From Connecticut:
• Take Rt. 44 East to Greenville and turn right on Rt. 116 South. Turn left at Knight's Farm intersection (Rt. 116 turn left) and follow Rt. 116. Watch for Peeptoad Road on the right.
• or • Take Rt. 6 East toward Rhode Island; bear left on Rt. 101 East and continue to intersection with Rt. 116. Turn left; Peeptoad Road is the first left off Rt. 116.

From Massachusetts:
Take Interstate 295 South (off Interstate 95 in Attleboro). Exit onto Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

SKYSCRAPERS INC.

47 Peeptoad Road
North Scituate, Rhode Island 02857