



the Skyscraper

vol. 48 no. 05
May 2021

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

In This Issue:

- 2 President's Message
- 3 2021-2022 Elections
- 3 A Meteor Shower & A Look at Venus and Mercury
- 4 In the Seventeen Years Since...
- 5 My "Souvenir" of Ed Turco
- 6 NASA Night Sky Notes:
- 6 Virgo's Galactic Harvest
- 7 Globular Cluster in Canes Venatici: Messier 3
- 8 The Sun, Moon & Planets in May
- 9 April Reports
- 10 Astrophoto Gallery

Seagrave Observatory is closed until further notice.

Due to the outbreak of coronavirus, Seagrave Memorial Observatory will remain closed to the public until further notice.

Phases of the Moon

Last Quarter Moon
May 3 19:50

New Moon
May 11 09:00

First Quarter Moon
May 19 19:13

Full Flower Moon
May 26 11:14

The Search for Intelligent Life in the Cosmos

An Online Presentation by Seth Shostak
Saturday, May 1, 7:00pm EDT via Zoom

Contact Linda Bergemann (L.Bergemann@aol.com)
for Zoom Meeting link and information.

It has been nearly 60 years since the first attempt to sift the skies for radio signals that would betray the existence of intelligent beings beyond Earth. So far, nothing has been heard.

Why? Could it be that we simply need to give these experiments more time to examine additional star systems? Or should we put more emphasis on other strategies?

In this talk, we discuss the fundamental assumptions that underlie our current SETI searches, and how we might expand our efforts to lessen their inherent limitations. What else should we be doing to look for ET?

We will also consider the anthropocentric nature of the experiments so far, and suggest how our conservative assumptions about ET's nature and behavior may be hindering our attempts to find him.

Seth Shostak is the Senior Astronomer at the SETI Institute in Mountain View, California, and the Director of the Institute's Center for SETI Research.

He has an undergraduate degree in physics from Princeton University, and a doctorate in astronomy from the California Institute of Technology. For much of his career, Seth conducted radio astronomy research on galaxies, and has published approximately 60 papers in professional journals. During more than a decade, he worked at the Kapteyn Astronomical Institute, in Groningen, The Netherlands, using the Westerbork Radio Synthesis Telescope. He also founded and ran a company pro-

ducing computer animation for TV.

Seth has written nearly 500 popular magazine and Web articles on various topics in astronomy, technology, film, and television. He lectures on astronomy and other subjects at various academic venues, and gives approximately 60 talks annually at both educational and corporate institutions. Seth has been a Distinguished Speaker for the American Institute of Aeronautics and Astronautics. He was also Chair of the International Academy of Astronautics' SETI Permanent Committee for a decade.

Frequently interviewed for radio and TV, Seth has been seen or heard on Discovery Channel, Learning Channel, History Channel, the BBC, "Nightline," "The O'Reilly Factor," "Good Morning America," "Larry King Live," "Coast to Coast AM," NPR, CNN News, and National Geographic Television. He is the host of a one-hour weekly radio program on astrobiology entitled "Big Picture Science."

Seth has edited and contributed to nearly a dozen books. His first popular tome, *Sharing the Universe: Perspectives on Extraterrestrial Life* (Berkeley Hills Books), appeared in March 1998, followed by *Cosmic Company* (Cambridge University Press) in 2002. He has also co-authored an astrobiology text, *Life in the Universe* (Pearson), and his latest trade book is *Confessions of an Alien Hunter* (National Geographic). In 2004, he won the Klumpke-Roberts Award for the popularization of astronomy.

President's Message

by Steve Siok

Hello everyone,

Happy May! Just think. We can observe and image without parkas and gloves. It doesn't matter that we need to wait a little longer for twilight to end. This is the season to go after all those galaxies in the Virgo/Coma/Ursa Major region.

I have news to share that I think will ex-

cite all of you. This Saturday, the trustees called the first work session of the year. Jim Crawford has been busy cutting saplings around the perimeter of the grounds to improve our horizons and all that debris needed to be gathered up and hauled out back. Saturday turned out to be a beautiful day and thirteen Skyscrapers came to help out.

It was great to see everyone again. Thank you to the Trustees and to the volunteers.

Next, we should all be excited that our Governor has announced a tentative lifting of Covid restrictions for Memorial Day weekend. Certainly it is very possible that astronomical gatherings can resume. We have been told that Stellafane will take place in August at reduced capacity. So far, we are planning on an in person AstroAssembly in October.

Well that's it for now. I hope to see you all at the May 1st Skyscraper meeting on Zoom. We have a terrific speaker lined up. Stay healthy,



Widening the Sky at Seagrave: Members cleared brush and tree saplings at the observatory on April 24th to open up the sky for better viewing in the east and southwest. Masking and social distancing were practiced. This is the first time members have gathered at Seagrave since activities were suspended in March 2020. Normal operating conditions are planned to gradually resume as pandemic conditions improve.

New Members Welcome to Skyscrapers

Prithwish (Prit) Basu of
Providence

Mark Munkacsy of
Portsmouth



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 **May 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.

President

Steve Siok

1st Vice President

Steve Hubbard

2nd Vice President

Jim Hendrickson

Secretary

Sue Hubbard

Treasurer

Kathy Siok

Members at Large

Francine Jackson

Laura Landen

Matt Ouellette

Trustees

Bob Janus

Jeff Padell

Outreach Chairperson

Linda Bergemann

Observatory Committee Chairperson

Jim Crawford

New Member Steward

Tracy Prell

Librarian

Dave Huestis

Assistant Librarian

Weston Ambrose

Historian

Dave Huestis

Editor

Jim Hendrickson

Astronomical League Correspondent (ALCor)

Jeff Padell

2021-2022 Elections

by Linda Bergemann

The Election Committee is pleased to announce the results of the recent election. Thank you to all who voted.

For the first time, our election was conducted using an online service called Election Buddy. At a cost of \$19 per election, this provided us with anonymous voting at a lower cost (financial and labor) than mailing paper ballots to our 100+ members. The plan is to use this, or a similar product, for future elections.

Elected to office for the next year:

President:	Steve Siok
1st Vice President:	Steve Hubbard
2nd Vice President:	Jim Hendrickson
Secretary:	Sue Hubbard
Treasurer:	Kathy Siok
Members at Large:	Francine Jackson Laura Landen Matt Ouellette
Junior Trustee (3-year term):	Jeff Padell

The newly elected 2nd VP, Jim Hendrickson, and Trustee, Jeff Padell, assumed their duties at the end of the April meeting. The remaining officers and members at large will continue with their second and last year. Bob Janus will begin his second year as a Trustee with a promotion to Senior Trustee. There remains one unfilled position for Trustee.

Please join me in thanking outgoing members Ian Dell'Antonio (2nd VP) and Jim Crawford (Sr. Trustee), for their service to Skyscrapers. And, let's wish our Executive Committee well as we venture into re-opening the observatory post-pandemic.

A Meteor Shower & A Look at Venus and Mercury

by Dave Huestis

For decades I have been informing local stargazers about astronomical events through my monthly columns. How many times have you read that I never tire of watching "burning rocks" blazing across the sky, no matter what time of the year? At least a couple of hundred I would estimate.

While the "burning rocks" description may seem appropriate, the outer surface of a meteor is actually being vaporized as it slams into the Earth's atmosphere at many miles per second. That's the glow or streak we observe as a shooting star. Some meteors

may explode into fragments and continue to vaporize until they are completely annihilated. Once in a while a piece may survive its plunge and fall to the ground as a meteorite.

During the first week of May, we will be treated to the annual meteor display called the Eta Aquarids. This year the peak of activity occurs on the night of the 5th to the early morning of the 6th with perhaps 15 swift and yellow meteors radiating from the constellation of Aquarius (hence the name of the shower). The Earth will be sweeping through a stream of particles shed by Halley's Comet

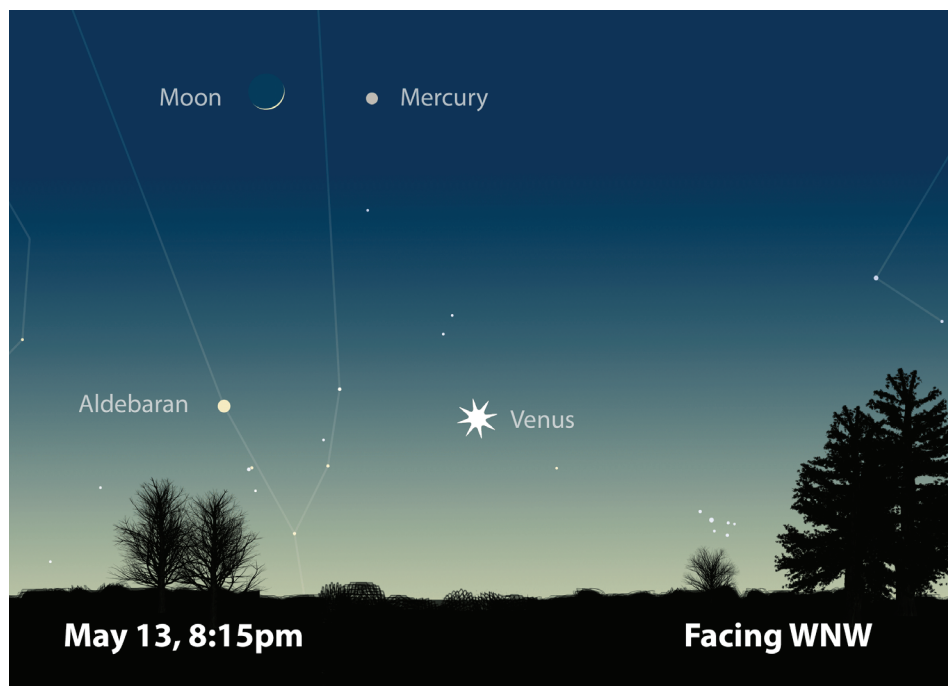
long ago. The meteors comprising this meteor shower enter the Earth's upper atmosphere head-on at 41-miles per second.

To locate Aquarius, look about 12 degrees above the east-southeast horizon around 4:00 a.m. The shower's radiant point is in the Water Urn asterism (looks like a Y-shaped group of stars). While the meteors emanate from this region of the sky, scan around the entire sky to maximize your chances of observing one.

This recommendation is especially advisable, since a slender waning crescent Moon will also be residing in Aquarius just 14 degrees away from the radiant point. Regardless, this circumstance should not greatly interfere with observing as many meteors as possible in a dark sky away from light pollution. In fact, with the radiant so low in the sky you might even see some earth-grazers, meteors that skip along the top of our atmosphere like stones being skipped across a pond.

Also, during the first week of May keep your eyes on the west-northwest sky after sunset. We have several sky scenes that will grace this region of the heavens over a 20 day or so period. First, the planet Mercury will ascend into the evening sky. You'll need an unobstructed view towards this direction. Each evening Mercury will be seen higher and higher above the horizon.

If you don't identify it right away, wait for the evening of May 13 during deepening twilight around 8:15 p.m. when a slender waxing (growing larger) crescent Moon will be just about two degrees to the south (left) of Mercury. On this evening, or perhaps on the evening or two before, note a brilliant object below and slightly to the right of Mercury. This beacon will be Venus. As each night



passes, Venus will rise higher into the night sky. On the night of the 17th Mercury will be at its highest elevation above the horizon. It will then begin to sink lower towards the horizon each night.

At the same time, Venus will continue to rise until it is in conjunction (close together) with Mercury on the 28th. The two worlds will be only one-half of a degree (angular size of a Full Moon) apart in the sky. Plan your observing location in advance, as this sky scene will only be about ten degrees above the west-northwest horizon. Mercury and Venus will be easy to view with the unaided eye, but binoculars or even a small telescope will enhance the view. Good luck.

On May 26 there is a total lunar eclipse, but unfortunately it will not be visible from Rhode Island. The May Full Moon, which Native Americans called the Full Flower Moon, is also the second supermoon of three for 2021. Since it will be closer to the Earth it may appear a little larger and brighter than a regular Full Moon. Technically the

penumbral phase, when the Moon slides into the Earth's lighter shadow, begins just before moonset from our location, in bright morning twilight. If you wish to observe more of this lunar eclipse you will have to travel much farther westward to do so.

You'd have to venture out to Wichita, Kansas to get a look at some part of totality. Or farther west to Pueblo, Colorado to observe all of totality. Coastal California will observe from the first penumbral shading through the end of the outgoing partial phase after totality. To experience this lunar eclipse in its entirety you'd need to be out in Hawaii.

Fear not. Lunar eclipses are far more numerous than solar eclipses. The next total lunar eclipse for us to see from start to finish will be on May 15-16, 2022.

And finally, if you are a regular reader of this column you may remember I asked you back in January if you knew where you had stored the solar eclipse glasses you had procured for the August 21, 2017 partial solar

eclipse. Hopefully that inquiry encouraged you to begin your search in every nook and cranny in your home. If you didn't, you now have just over a month to find them. Hint, they'll be in the "last place you look" (late comedian George Carlin observation).

I want everyone to be prepared for the June 10 sunrise partial solar eclipse beginning at 5:15 a.m. As the Sun rises above the horizon on that morning the eclipse will already be in progress. While we often observe sunrises and sunsets through the dense atmosphere on the horizon, don't be tempted to stare at the partially eclipsed Sun without those special solar eclipse glasses.

Next month's column will be exclusively about this absolutely beautiful phenomenon.

Keep your eyes to the skies.



Dave Huestis is Skyscrapers Historian and has been contributing monthly columns to local newspapers for nearly 40 years. See more at <http://theskyscrapers.org/dave-huestis>

In the Seventeen Years Since...

by Francine Jackson

Rip Van Winkle slept for 20 years. Although [cicadas](#) didn't rest that long, only 17 years, it is amazing how much has happened since the time they set down for their long nap. While they've been sleeping underground, waiting for their triumphant return to the surface for that all-important mating season, a lot has occurred in astronomy:

In 2004, when they started to bed down, they missed the [discovery of Sedna](#);

In 2005, [Eris](#) became a newly found solar system neighbor.

2006 marked the first ever [return of cometary material](#) to Earth, as Stardust returned from a successful trip to Comet Wild 2. And, of course, our ninth planet, Pluto, suddenly found itself left out of the list, as it became a part of the new category [dwarf planet](#).

2007 was a year of several [planets discovered](#) around other stars, including a planet considered potentially within its star's so-called "Goldilocks zone," implying a possible candidate for having liquid water;

In 2008, astronomers found what could have been the smallest black hole, at [3.8 solar masses](#), and the largest black hole, weighing about 33 suns;

LCROSS in 2009 slammed into our

Moon's south pole, and out came [evidence of water](#). Also, a massive black hole overshadowed that of the previous year, [6.4 billion times the mass of the Sun](#), within the giant galaxy M87;

2010 marked the 75th [Stellafane](#) Convention;

2011 was called the [Year of the Restless Sun](#), as it "erupted" with numerous strong



Brood X cicadas mating in 2004. Photo by superbatfish

flares and waves of charged particles;

2012, of course, was the alleged end of the world, as the Mayan calendar stopped; plus, it signaled the last [transit of Venus](#) for over a century;

In 2013, Comet ISON was originally thought to be a good view for all of us aboveground, but it broke apart and [completely disintegrated](#) as it ventured toward the Sun; 2016 was also the year of the [meteor](#) that shocked the town of Chelyabinsk, Russia;

Although a set of two Full Moons is nor-

mally thought to be a unique event, January, 2014 had us celebrating [two New, or Black, Moons](#);

And, what a shame to have missed the incredible discoveries of New Horizons as it [approached Pluto](#), showing its surface as never before in 2015;

In August, 2016, [Venus and Jupiter](#) appeared just 0.06 apart in the western sky;

Of course, 2017 was the year of the great U.S. [total solar eclipse](#);

2018 saw two [total lunar eclipses](#);

In 2019 the last [Mercury transit](#) until 2032 occurred; also we watched the New Horizons pass of Ultima Thule, soon re-named [Arrokoth](#).

And we will never forget 2020's [Comet NEOWISE](#).

And, now, in 2021, while they will be enjoying their time above the Earth's surface, if they happen to look up for even just a moment, will they realize how magnificent the sky is, and what wonders they miss while on their many-year rest periods?



Francine Jackson is a NASA Solar System Ambassador, writes the weekly newsletter for Ladd Observatory See more at <http://theskyscrapers.org/francine-jackson>

My “Souvenir” of Ed Turco

by Craig Cortis

When I first heard the sad news of Ed’s passing, I thought of a large object, unused now for a quarter-century, that is stored in an unheated small room that was added to a rear corner of my house back around 1982. This storeroom is only accessed by its double door which opens directly to the outdoors. The object is a 6-inch Newtonian reflector, F-10, on an alt-az pipe mount attached to a very heavy metal pier supported by three wheeled struts on its base. The whole arrangement is big, heavy and a bit difficult to move. Ed Turco made this scope perhaps a few years before I bought it from him around 1994 or so. Back then, a 60mm refractor was the largest optical instrument I owned and graduating to a 6-inch aperture was an exciting step up for me.

Ed had used a tough cardboard sonotube for the OTA and he’d mounted an optical window to support the diagonal mirror at the front. The outside of the tube is decorated with stenciled little images of stars and planets, probably sprayed on over a white painted background. He told me that he’d chosen a fairly long focal length for the primary mirror – also made by him – so as to make it mainly for lunar and planetary observing. The optical window was intended to eliminate diffraction spikes around images that a vaned spider diagonal mirror mount would’ve yielded. The heavy scope is offset at one side of the azimuth pipe swivel and is counterbalanced by a concrete filled coffee can attached to the end of the azimuth bar on the opposite side. The primary mirror, after so many years now, badly needs recoating. I regret to say that I only used the scope for about two to three years after buying it from Ed, due to it being unwieldy and not really suited for transporting in the car I had back then.

I first heard of Ed Turco in 1992 while attending public nights at Ladd Observatory. The Skyscraper members and observatory people I met spoke of him respectfully, informing me he was well-known as a prolific and highly skilled telescope maker. Upon meeting him and gradually becoming acquainted, I formed a high opinion of Ed’s knowledge, kindness and soft-spoken courtliness. He was a true gentleman in every sense of the word, and is deserved of the little-heard descriptive “an eighteenth century man” – one seemingly guided in his words and deeds by a certain code of hon-

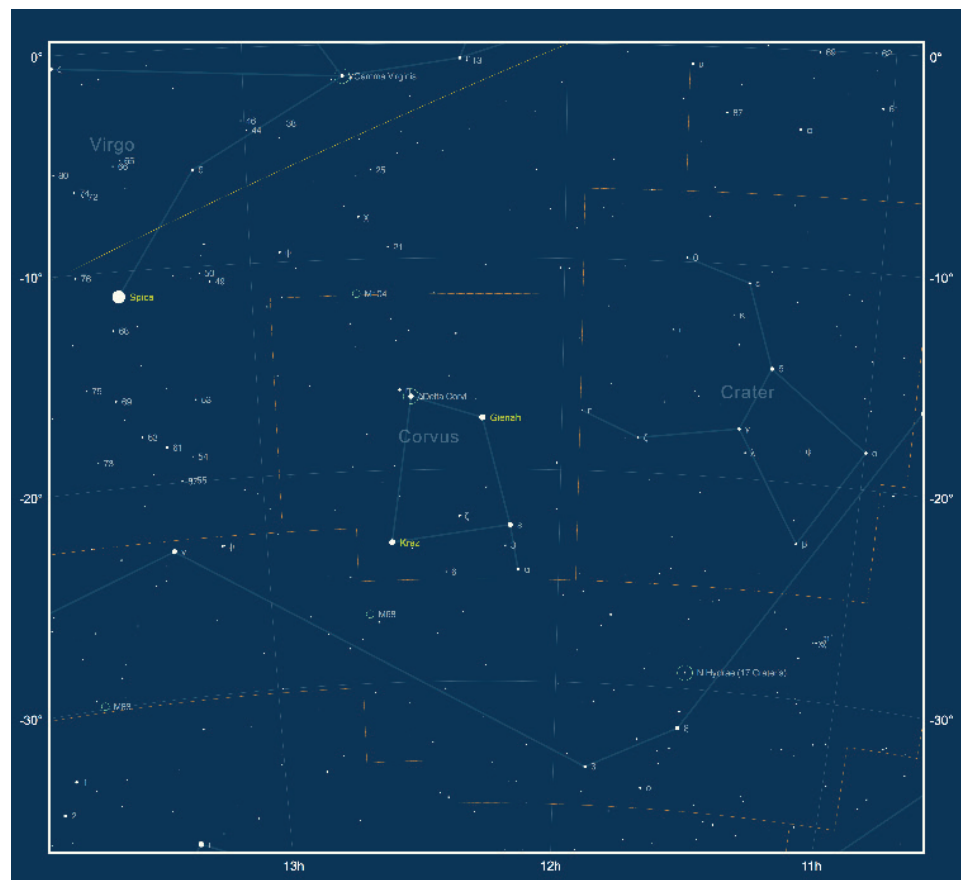
orable conduct personified by gentlemen in the 1700s, some of whom were instrumental in the founding of this nation. Even in the midst of his own pain and limited mobility several years ago, Ed was kind enough to inquire sympathetically about a painful arthritic hip condition that affected me then, but was corrected by two surgeries in 2019.

Perhaps I will become motivated to refurbish my 6” scope in honor of Ed, and use it once again as I did all those years ago. Although we were not in frequent or regular contact through the years, I like to think Ed might’ve regarded me as a friendly acquaintance in astronomy. In a country that has become increasingly unrecognizable to me, one of the few things in which I still believe is that there do exist some good and decent people, like the members of this club and Ed Turco. Rest in Peace, Ed.

Observe a Fine Double Star in Hydra

I’d like to close by recommending a fine and fairly easy double star in southeastern Hydra, N Hydrae, sometimes listed as 17 Crateris. John Flamsteed must’ve thought this star to be part of the constellation Crater when he assigned the latter designation.

Sir William Herschel supposedly was the discoverer of the star’s binary nature, back in 1783. I have been aware of it for at least twenty-plus years but only put a scope on it and resolved the components recently, on March 20 at about 12:20 a.m. when the star came close to culminating. I used a 16 to 48 x 65mm variable power spotting scope with the eyepiece at its maximum power to split the two stars rather easily. (I wrote an article describing this scope for this newsletter several years ago.) The components are magnitudes 5.64 and 5.76 – both of spectral class F8 V – and make this a combined magnitude 4.93 star. N Hydrae lies approximately 2.7 degrees due north of Xi Hydrae, which is about mag 3.4 and is lowest of a row of three stars, with N at the top. Separation of N is 9.6 arc seconds and its position is RA 11 32’ 16”, Dec. - 29 15’ 43”. A good time to catch it will be close to New Moon on May 11 at around 9:30 p.m. local time, when the star will be near its transit of the meridian. P.S.: I’ve seen asteroid Vesta many times since March 2 in a 15 x 70mm binocular and a couple of times using the spotting scope mentioned above. (This was written on April 19.)



Virgo's Galactic Harvest

By David Prosper

May is a good month for fans of galaxies, since the constellation Virgo is up after sunset and for most of the night, following Leo across the night sky. Featured in some ancient societies as a goddess of agriculture and fertility, Virgo offers a bounty of galaxies as its celestial harvest for curious stargazers and professional astronomers alike.

Virgo is the second-largest constellation and largest in the Zodiac, and easily spotted once you know how to spot Spica, its brightest star. How can you find it? Look to the North and start with the Big Dipper! Follow the general curve of the Dipper's handle away from its "ladle" and towards the bright orange-red star Arcturus, in Boötes – and from there continue straight until you meet the next bright star, Spica! This particular star-hopping trick is summed up by the famous phrase, "arc to Arcturus, and spike to Spica."

This large constellation is home to the Virgo Cluster, a massive group of galaxies. While the individual stars in Virgo are a part of our own galaxy, known as the Milky Way, the Virgo Cluster's members exist far beyond our own galaxy's borders. Teeming with around 2,000 known members, this massive group of galaxies are all gravitationally bound to each other, and are themselves members of the even larger Virgo Supercluster of galaxies, a sort of "super-group" made up of groups of galaxies. Our own Milky Way is a member of the "Local Group" of galaxies, which in turn is also a member of the Virgo Supercluster! In a sense, when we gaze upon the galaxies of the Virgo Cluster, we are looking at some of our

most distant cosmic neighbors. At an average distance of over 65 million light years away, the light from these galaxies first started towards our planet when the dinosaurs were enjoying their last moments as Earth's dominant land animals! Dark clear skies and a telescope with a mirror of six inches or more will reveal many of the cluster's brightest and largest members, and it lends itself well to stunning astrophotos.

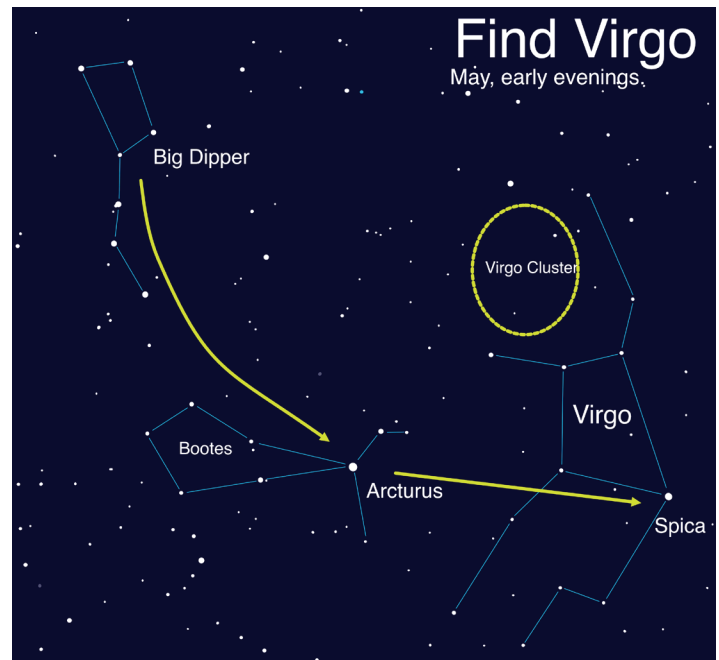
Virgo is naturally host to numerous studies of galaxies and cosmological research, which have revealed much about the structure of our universe and the evolution of stars and galaxies. The "Universe of Galaxies" activity can help you visualize the scale of the universe, starting with our home in the Milky Way Galaxy before heading out to the Local Group, Virgo Cluster and well beyond! You can find it at bit.ly/universeofgalaxies. You can further explore the science of galaxies across the Universe, along with the latest discoveries and mission news, at nasa.gov.



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!



The first image of a black hole's event horizon was taken in the center of one of the most prominent galaxies in Virgo, M87! This follow up image, created by further study of the EHT data, reveals polarization in the radiation around the black hole. Mapping the polarization unveils new insights into how matter flows around and into the black hole - and even hints at how some matter escapes! More details: apod.nasa.gov/apod/ap210331.html Credit: Event Horizon Telescope Collaboration



Find Virgo by "arc to Arcturus, then spiking on to Spica." Please note that in this illustration, the location of the Virgo Cluster is approximate - the borders are not exact.

Globular Cluster in Canes Venatici: Messier 3

by Glenn Chaple for LVAS

(Mag: 6.2, Size: 18")

After a steady diet of faint Observer's Challenges in recent months, we can relax our eyes with the bright globular cluster Messier 3. At a magnitude of 6.2, it ranks among the 10 brightest of the roughly 250 globular clusters that inhabit our galaxy. It can be glimpsed with the unaided eye from remote dark-sky locations and is easily spotted in binoculars from suburban areas.

M3 was discovered by Charles Messier on May 3, 1764. To him, it appeared as a nebula without stars. Twenty years later, William Herschel resolved it into a stellar mass.

Finding M3 is one of its biggest challenges. It lies in a star-poor region of the constellation Canes Venatici. Owners of GoTo scopes can dial in its coordinates - RA 13h42.2m, DEC +28°22.6'. Star-hoppers will find M3 by aiming their telescopes towards an area roughly midway between Arcturus and Cor Caroli (alpha [α] Canum Venaticorum) and then slowly scanning the area with low power until a hazy circular patch of light comes into view.

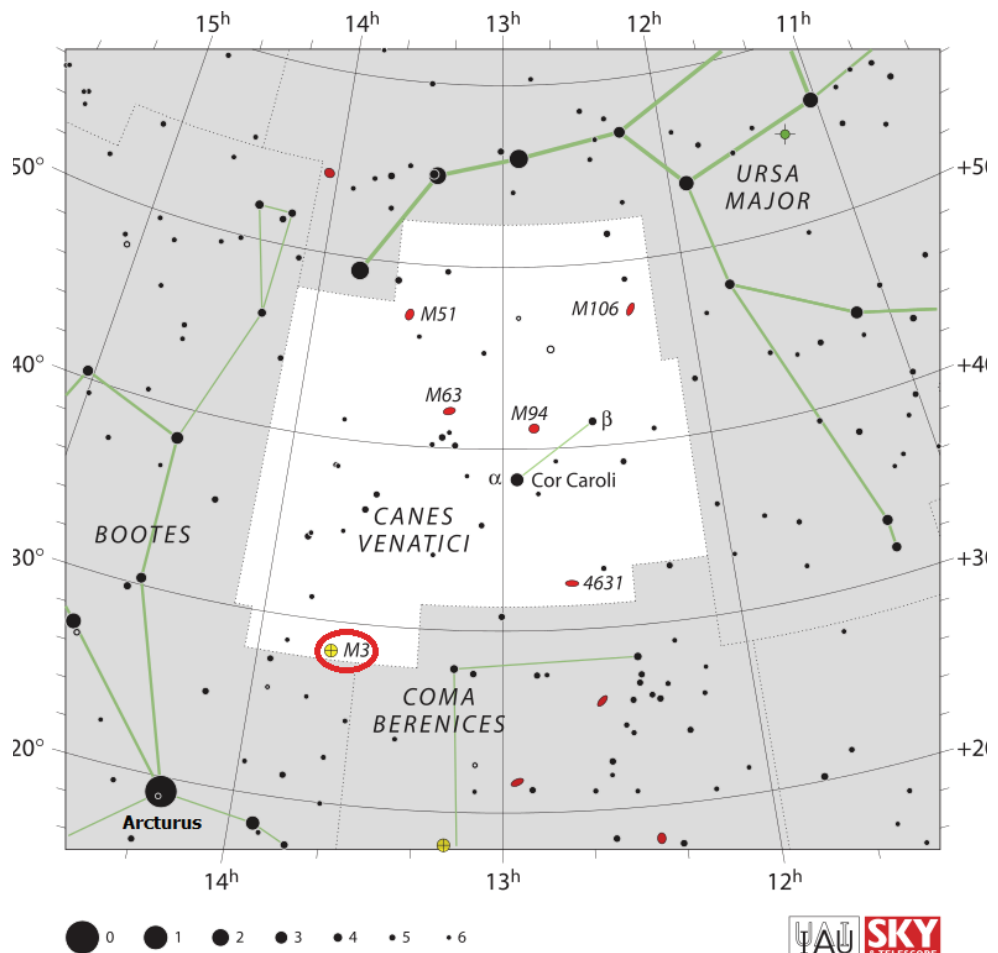
A switch to high power brings M3 to life, especially in scopes with apertures of 6 to 8 inches and above. Smaller instruments at high magnification will hint at its stellar nature. Amateur Telescope Makers of Boston President Rich Nugent reports a grainy appearance when viewing M3 with a 5-inch refractor. Through a 4-inch rich-field scope at high magnification, I suspected a hint of graininess.

M3 lies about 33,000 light years away. Its estimated half million stars occupy a sphere 180 light years across.

The purpose of the Observer's Challenge is to encourage the pursuit of visual observing. It is open to everyone who is interested. If you'd like to contribute notes, drawings, or photographs, we'll be happy to include them in our monthly summary. Submit your observing notes, sketches, and/or images to Roger Ivester (rogerivester@me.com). To find out more about the Observer's Challenge or access past reports, log on to rogerivester.com/category/observers-challenge-reports-complete.



Image by Mario Motta (ATMoB) Taken with 32-inch telescope, SBIG STL 1001E Camera, RGB filters.



The Sun, Moon & Planets in May

This table contains the ephemeris of the objects in the Solar System for each Saturday night in May 2021. 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	2 33.7	15 04.6	Ari	-26.8	1905.0	-	-	-	1.01	05:42	12:43	19:45
	8	3 00.7	17 05.3	Ari	-26.8	1901.6	-	-	-	1.01	05:33	12:42	19:53
	15	3 28.1	18 52.0	Tau	-26.8	1898.6	-	-	-	1.01	05:25	12:42	20:00
	22	3 56.0	20 23.0	Tau	-26.8	1896.0	-	-	-	1.01	05:19	12:43	20:07
	29	4 24.3	21 37.0	Tau	-26.8	1893.7	-	-	-	1.01	05:14	12:43	20:13
Moon	1	18 23.2	-25 51.0	Sgr	-12.5	1932.0	126° W	80	-	-	00:23	04:52	09:21
	8	0 28.6	-2 29.6	Cet	-10.3	1770.7	42° W	13	-	-	04:26	10:36	16:55
	15	5 53.8	24 39.3	Tau	-9.9	1793.9	35° E	9	-	-	07:54	15:52	23:49
	22	12 05.2	4 22.9	Vir	-12.4	1961.5	118° E	73	-	-	15:30	21:42	03:42
	29	19 02.0	-26 06.0	Sgr	-12.7	1948.3	145° W	91	-	-	23:08	03:37	08:08
Mercury	1	3 25.5	20 14.5	Ari	-1.1	5.7	13° E	83	0.31	1.19	06:15	13:38	21:02
	8	4 17.2	23 39.6	Tau	-0.5	6.5	19° E	62	0.34	1.04	06:23	14:01	21:39
	15	4 58.5	25 07.8	Tau	0.2	7.7	22° E	42	0.38	0.88	06:30	14:13	21:57
	22	5 25.8	25 01.1	Tau	1.0	9.1	21° E	26	0.42	0.74	06:29	14:11	21:53
	29	5 36.7	23 45.3	Tau	2.0	10.6	17° E	12	0.45	0.63	06:18	13:53	21:27
Venus	1	3 10.8	17 25.0	Ari	-3.8	10.0	9° E	99	0.72	1.70	06:11	13:21	20:31
	8	3 45.8	19 47.7	Tau	-3.8	10.0	11° E	98	0.72	1.68	06:09	13:28	20:49
	15	4 21.7	21 44.3	Tau	-3.8	10.1	13° E	97	0.72	1.67	06:09	13:37	21:05
	22	4 58.3	23 11.3	Tau	-3.8	10.3	15° E	97	0.72	1.65	06:11	13:46	21:21
	29	5 35.6	24 05.8	Tau	-3.8	10.4	17° E	96	0.72	1.63	06:17	13:56	21:34
Mars	1	6 20.1	24 48.2	Gem	1.6	4.6	54° E	93	1.64	2.02	08:47	16:28	00:09
	8	6 38.8	24 34.3	Gem	1.6	4.5	51° E	94	1.64	2.08	08:40	16:19	23:59
	15	6 57.5	24 11.9	Gem	1.6	4.4	49° E	94	1.65	2.13	08:33	16:11	23:48
	22	7 16.1	23 41.4	Gem	1.7	4.3	46° E	95	1.65	2.18	08:26	16:02	23:37
	29	7 34.6	23 02.8	Gem	1.7	4.2	44° E	95	1.66	2.23	08:20	15:52	23:25
1 Ceres	1	1 51.2	4 13.0	Psc	9.0	0.3	15° W	100	2.90	3.86	05:41	11:59	18:17
	8	2 01.5	5 14.2	Psc	9.1	0.3	19° W	100	2.89	3.83	05:20	11:42	18:03
	15	2 11.7	6 13.2	Cet	9.1	0.3	22° W	100	2.89	3.79	04:59	11:24	17:49
	22	2 21.9	7 09.9	Cet	9.1	0.3	26° W	99	2.88	3.75	04:38	11:07	17:36
	29	2 32.1	8 04.0	Cet	9.2	0.3	30° W	99	2.88	3.71	04:18	10:49	17:21
Jupiter	1	22 03.1	-12 44.8	Aqr	-2.1	37.3	72° W	99	5.06	5.27	02:55	08:11	13:26
	8	22 06.8	-12 26.6	Aqr	-2.1	38.1	78° W	99	5.05	5.16	02:30	07:47	13:04
	15	22 10.0	-12 10.8	Aqr	-2.2	38.9	84° W	99	5.05	5.05	02:05	07:22	12:40
	22	22 12.7	-11 57.6	Aqr	-2.2	39.8	90° W	99	5.05	4.94	01:39	06:58	12:16
	29	22 14.9	-11 47.3	Aqr	-2.3	40.7	96° W	99	5.05	4.83	01:13	06:32	11:51
Saturn	1	21 03.0	-17 26.2	Cap	0.7	16.6	88° W	100	9.97	9.96	02:13	07:11	12:08
	8	21 03.9	-17 23.4	Cap	0.7	16.8	94° W	100	9.97	9.84	01:47	06:44	11:41
	15	21 04.4	-17 22.0	Cap	0.7	17.0	101° W	100	9.96	9.72	01:19	06:17	11:14
	22	21 04.7	-17 22.0	Cap	0.6	17.2	108° W	100	9.96	9.61	00:52	05:50	10:47
	29	21 04.6	-17 23.4	Cap	0.6	17.4	114° W	100	9.96	9.50	00:25	05:22	10:19
Uranus	1	2 33.6	14 38.7	Ari	5.9	3.4	0° W	100	19.76	20.76	05:44	12:40	19:37
	8	2 35.2	14 46.3	Ari	5.9	3.4	7° W	100	19.76	20.76	05:18	12:14	19:11
	15	2 36.8	14 53.7	Ari	5.9	3.4	13° W	100	19.75	20.74	04:51	11:48	18:46
	22	2 38.3	15 00.9	Ari	5.9	3.4	19° W	100	19.75	20.71	04:25	11:22	18:20
	29	2 39.8	15 07.9	Ari	5.9	3.4	26° W	100	19.75	20.66	03:58	10:56	17:55
Neptune	1	23 33.8	-4 01.1	Aqr	7.9	2.2	48° W	100	29.92	30.58	03:53	09:41	15:29
	8	23 34.4	-3 57.0	Aqr	7.9	2.2	55° W	100	29.92	30.49	03:26	09:14	15:02
	15	23 35.1	-3 53.4	Aqr	7.9	2.2	62° W	100	29.92	30.39	02:59	08:47	14:35
	22	23 35.6	-3 50.3	Aqr	7.9	2.3	68° W	100	29.92	30.28	02:32	08:20	14:08
	29	23 36.0	-3 47.9	Aqr	7.9	2.3	75° W	100	29.92	30.17	02:05	07:53	13:41
Pluto	1	19 56.5	-22 11.2	Sgr	14.4	0.2	104° W	100	34.27	34.01	01:27	06:04	10:41
	8	19 56.5	-22 12.4	Sgr	14.4	0.2	111° W	100	34.28	33.9	01:00	05:37	10:13
	15	19 56.3	-22 13.8	Sgr	14.4	0.2	118° W	100	34.28	33.8	00:32	05:09	09:46
	22	19 56.0	-22 15.5	Sgr	14.4	0.2	124° W	100	34.29	33.7	00:04	04:41	09:18
	29	19 55.6	-22 17.3	Sgr	14.3	0.2	131° W	100	34.29	33.61	23:37	04:13	08:50

April Reports

Minutes-Skyscrapers Monthly Meeting-via Zoom Saturday April 3, 2021 at 6:45PM Annual Meeting

1. Called to order by President Steve Siok.

2. 1st VP: Steve Hubbard-Steve reported that the Zoom monthly meetings have brought in a bigger, more diverse crowd. There also has been a lot of good “cross pollination” with other astronomy societies. When we resume in-person meetings, we are investigating continued access to some remote speakers and also live streaming the meetings so that they are accessible to all.

3. 2nd VP: Ian Dell’ Antonio-Astro Assembly- Astro Assembly will be held on Saturday October 2, 2021. At this time, we are planning on an “in person” convention at Seagrave. We continue to monitor the RI guidelines. A remote convention is our Plan B.

4. Treasurer: Kathy Siok- Dues notices will be emailed out to members very shortly. We did not spend much money this past year. A budget is forthcoming and should be ready by May’s monthly meeting. Astro League dues are due soon. If you have any questions about Astro League, please reach out to Jeff Padell.

5. Elections: Linda Bergemann- Elections were held electronically this year. 103 ballots were emailed out and 37 were returned. Results are as follows:

President- Steve Siok

1st VP - Steve Hubbard

2nd VP - Jim Hendrickson

Treasurer- Kathy Siok

Secretary - Sue Hubbard

Trustee (3 year term 2021-2023)- Jeff Padell

Members at Large - Francine Jackson, Laura Landon, Matt Ouellette

6. The Meeting was adjourned at 7:08PM, followed by a moment of silence (see below) and the evening speaker.

Respectfully submitted,

Sue Hubbard-Secretary

NB. Prior to the evening’s program a moment of silence was held for Ed Turco, who passed away recently. Steve Siok shared some remembrances of Ed’s long history with Skyscrapers.

This year’s AstroAssembly will be dedicated to Ed Turco. Steve asked members and friends to be prepared to share their memories of Ed during that event in October.

Minutes- Skyscrapers Executive Committee April Meeting via Zoom Monday April 19, 2021 at 7PM

Meeting called to order at 7:02 PM by President Steve Siok. The meeting was not recorded.

Present: Steve Siok, Kathy Siok, Sue Hubbard, Linda Bergemann, Francine Jackson, Jim Hendrickson, Bob Janus, Jim Crawford, Bob Horton, Jeff Padell, Bob Napier, Laura Landon Total: 12

1. Finances and Budget 2021-2022- Treasurer Kathy Siok presented a spreadsheet with YTD information and the proposed budget. In discussion, some changes were brought up to better reflect the coming year. Trustee Jeff Padell mentioned some capital improvements needed at Seagrave (new roof and fencing) and these were also discussed. Bob Napier suggested that we attempt to get a grant to cover large projects and was asked by President Steve Siok to get further information and deadlines for applications to RI Foundation and Champlin Foundation. Kathy will make suggested revisions and update the budget. It will be presented to the membership at the May meeting for final approval.

2. Membership Survey Update- Kathy & Linda are working to put together this survey to focus on Skyscrapers’ mission, as stated in the current Constitution.

“The object of this society shall be to educate the membership and general public on matters pertaining to astronomy. “How can we: Provide appropriate opportunities for members and public, Attract and retain

members, Grow our organization?”

Questions for our members will be formatted into a Goggle Forms survey. (99% of our members have email.) This will allow the data to be presented in a spreadsheet and sorted for maximum ease of use and involves no cost. Hopefully we will collect a good sample of opinions and information. However, some people may have to be contacted further by email phone. It is hoped that this project can be accomplished soon.

3. Planning process for Reopening of Seagrave Observatory- President Steve Siok has meet with the Trustees and they have formed a committee to examine and put together a plan for reopening our facilities. Needed is up to date information from the State of RI regarding guidelines for in person events. All agreed that opening should start with members before public is invited. Bob Horton and Scott McNeil will also be asked to join the committee. Laura Landen mentioned the need to update the Skyscraper brochure and hand it out at star parties and open nights. There was some discussion and interest in this project.

4. Other:

a. A work session to clean up the property at Seagrave will be organized by the Trustees for Sat. April 24. A detailed email will go out to the membership looking for volunteers.

b. Laura Landon reported that the Quaker Church will have a Zoom memorial service for Ed Turco on Sat. May 1, at 11 AM. The details will be emailed to the membership.

c. Bob Napier expressed his serious concern about the Skyscraper website and related security issues. Steve Siok suggested that a subcommittee continue this discussion and report back to the group.

d. Next Executive Committee meeting set for Monday May 17, at 7PM via Zoom.

Meeting adjourned at 8:14 PM.

Respectfully submitted: Sue Hubbard, Secretary, April 20, 2021



Monthly Presentation Videos on YouTube

With our monthly meetings going virtual this year, we have begun to record and publish, with permission, our monthly Zoom presentations on the Skyscrapers YouTube channel. Go to the URL below to view recent presentations.

<https://www.youtube.com/channel/UCEZ5UnO-Sly0DXsSrUAXONG>



I had taken a short break from doing any imaging but now I've reconfigured my observatory with my C-14 @f11 and have added off-axis guiding to the imaging train. In addition to that, I have replaced my previous guiding software which was built into Maxim DL with PHD2 and I'm utilizing multi-star guiding. The change in guiding hardware and software has made a huge difference.

Image: NCG-2392 (Caldwell 39)

Distance to Earth: 5,000 light-years

Constellation: Gemini

Scope: C-14 @ f/11

Camera: SBIG STF-8300C

Guide Camera: Starlight Xpress Lodestar 2 through SBIG OAG-8300

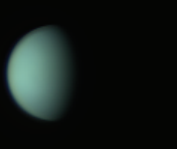
Exposures: 30X300 sec images binned 1X1 cooled -20 C

All capturing, calibration, and integration performed using Maxim DL

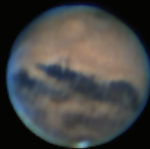
Post-processing performed using PixInsight

Final imaged cropped

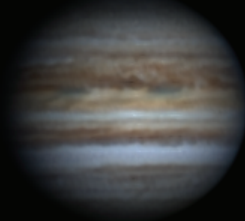
All Six Planets Imaged on October 11, 2020
 by Gregory T. Shanos
 Meade LX200GPS 10 inch 2500mm f/10
 ZWO 290MC color camera



Venus
 11h 18m UT
 mag -4.1 dia 14.6"
 phase 75%
 CMI 259.1° CMIII 139.8°



Mars
 01h 08m UT
 mag -2.6 dia 22.5"
 CM 215.0°



Jupiter
 00h 07m UT
 mag -2.3 dia 39.2"
 CMI 80.7° CMII 116.9° CMIII 217.1°



Saturn
 00h 54m UT
 mag +0.6 dia 16.8"
 CMI 273.4° CMII 203.0° CMIII 344.7°



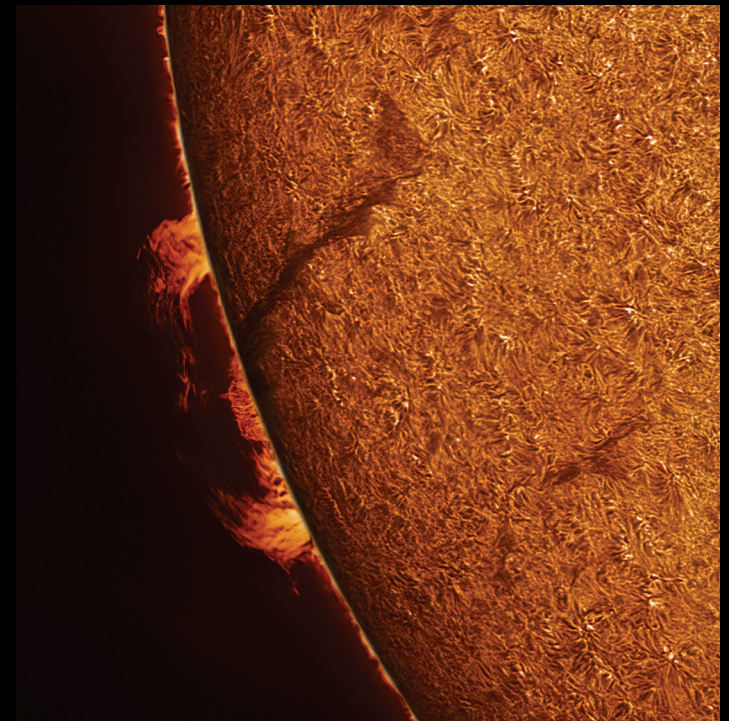
Uranus
 04h 27m UT
 mag +5.7 dia 3.7"
 CM 32.1°



Neptune
 03h 49m UT
 mag +7.8 dia 2.4"
 CM 112.1°



Solar active regions AR 2818 2820 2821: Great sunspots but horrible conditions, 20-30 mph winds, April 26 by Jeff Padell.



Solar prominences 4/20/2021 by Jeff Padell
 Lunt ED100, Quark Chromosphere, ZWO ASI174mm-cool. 1000 frames for surface and 500 for proms.

Directions to Seagrave Memorial Observatory

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.



47 Peeptoad Road
North Scituate, Rhode Island 02857