



the Skyscraper

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April 2021

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

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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
April 4 10:02

New Moon
April 12 02:31

First Quarter Moon
April 20 06:59

Full Pink Moon
April 27 03:32

Small Radio Telescopes for Amateur Astronomy

An Online Presentation by David Iadevaia
Saturday, April 3, 7:00pm EDT via Zoom

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

About the talk "Small Radio Telescopes for Amateur Astronomy":

- Describe the three frequencies used for small radio telescopes.
- Explain how to construct a small radio telescope to detect the 21 cm line of neutral hydrogen based on his personal experience.
- Give examples of three radio telescopes he built and used to collect data
- Explain the three types of small radio telescopes that are available for the amateur community and the organizations supporting the small radio telescopes.

Prof. David Iadevaia graduated from each of the three public higher education instituted in RI...AS degree in electronics from RIJC, BA in Philosophy of Science from URI and MAT with astronomy specialization from RIC. While in Tucson his PhD from Pacific Western University was in online science education before it was popular but at the time it was not looked upon favorably.

Professor Iadevaia was hired in 1983 by the Smithsonian Astrophysical Observatory (SAO) and the University of Arizona as an instrument specialist for the Eschell Spectrograph at the Multiple Mirror Telescope... and moved to Tucson. When grant money ran out he was hired by Pima College to teach Astronomy and Physics retiring in 2013.

Known as Dr. I by his students, he developed various astronomy outreach programs while at the college. Most notable was the Professor Pima Portable Planetarium Program...an outreach to elementary schools with an inflatable planetarium... designed the teaching observatory and the Planet Walk at the East Campus. Initiated the "Lectures Under the Stars"...a series of informal lectures featuring famous local astronomers talking about their research to the public under the observatory ramada. Developed various online courses in astronomy most notable was the first astronomy online course with online observing from his private observatory 60 miles south of the college in Patagonia, Arizona...presented the results at a American Astronomical Society (AAS).

He was a member of the AAS and head of its archaeoastronomy working group for a brief time. He developed 3D visualization techniques to determine possible stellar alignments at archaeological sites.

He conducted several Total Solar Eclipse and archaeoastronomy expeditions for a science tour company to Peru and India.

He also wrote a science fiction book "Of Stranger Things" available on Amazon.

One cannot retire from science so he is still doing what he likes...having fun with astronomy, currently spectroscopy from his private observatory and his mobile observatory for public outreach.

President's Message

by Steve Siok

Happy Vernal Equinox to everyone! So now it's early Spring and it means good things in Skyscraperland. First, it is time for elections! The executive committee has decided to run the election electronically this year. You have been sent an email from the Election Committee with a link to vote. It's easy and quick! Please participate.

Annual dues are payable in April and an email reminder is on its way. You can use PayPal on our website or send a check. You may send a donation at the same time. Thanks for your financial support of Skyscrapers!

Spring is an exciting season. Kathy and I

heard the peep toads chirping in our yard. Think back to years gone by when we would come out of the meeting hall after a spring meeting and the peeper chirp was deafening. It still is. We are starting to think about reopening the Observatory. The trustees have had the internet service turned on. If you have any ideas about reopening, please share your thoughts with me by e-mail. I am confident that we can do this safely and renew our enjoyment of observing at Seagrave Observatory.

So stay safe, get your shots and keep looking up.

New Members Welcome to Skyscrapers

Martin Broess
of Lincoln, RI

Debra Slocum
of Bow, NH



It is with great sadness that I tell you of the passing of Ed Turco, a member of Skyscrapers for the last 60 years. He joined the group when he was in high school and remained active until he died. Ed attended AstroAssembly every year and also attended our most recent monthly Zoom meetings. Ed's passion was telescope making and optics. He participated in many Stellfane competitions, winning honors, and held classes at Seagrave for those who wanted to make their own telescope mirrors. Ed will be greatly missed. We will notify members of a memorial service to be held.

— Kathy Siok



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 **April 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.

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Farewell Winter Constellations, Mars Still Visible & April Lyrids Meteor Shower

by Dave Huestis

Weatherwise spring has hopefully sprung as we begin April. But did you realize that many of the prominent winter constellations can still be observed? If the cold and snowy conditions in February and March prevented you from exploring the winter sky, it's now time to say farewell to some star patterns that often get overlooked during mid-winter in our region of the country. With public night viewing at Seagrave Observatory and Ladd Observatory closed due to COVID-19, even I did not observe my winter sky friends. It's difficult to set up a telescope in one's backyard with 18 inches of snow on the ground.

Once this column is published, I want you to scan the western sky after sunset to bid goodbye to many of the skies' brightest star patterns. See the accompanying star map. Start with Perseus towards the northwest, then move your gaze south (to the left). Here you will encounter Taurus, with the prominent star clusters named the Pleiades (aka the Seven Sisters) and the Hyades. While a binocular view of the Pleiades

does show a nice image, the ideal sight you want to achieve is with a telescope under low magnification so the entire cluster fits into the field of view. In a dark moonless sky the Pleiades remind me of sparkling diamonds scattered upon black velvet.

Above Perseus and Taurus, you'll find Auriga. To the south (left) of Taurus you'll encounter the Mighty Hunter Orion. And further to the left will be Canis Major, home of Sirius, the brightest star we can see in our sky other than the Sun. You'll find Gemini the twins above Orion, and this star pattern will be the last of the winter constellations to set below the horizon.

If you don't explore anything else in this region of the heavens before the constellations set, then make an effort to observe the Orion Nebula if you haven't already done so this past winter season. Usually, the local observatories would have focused on this beautiful region of stellar dust and gas for many weeks, but closures prevented that activity during the winter of 2020-2021. In

past columns over the years, I have highlighted this remarkable region of space where new stars are in the process of being born. Following is a brief description.

The grandeur of Orion resides in the region of his sword. Using binoculars, you'll see a wispy, hazy patch of green light enshrouding the stars. Using a telescope even under low magnification will reveal a greenish tinged nebula of dust and gas, the magnificent Orion Nebula. I never tire of observing this vast dust cloud, often imagining what this region of space will look like when upwards of 1000 stars will be born here.

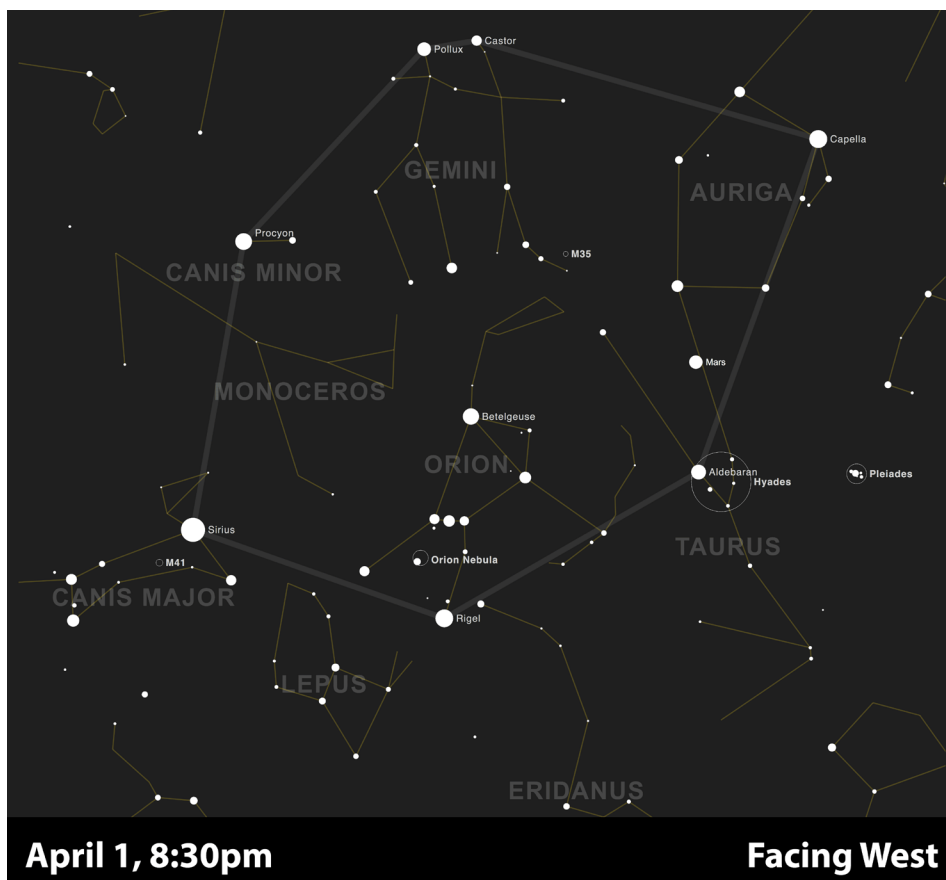
Mars Still Visible

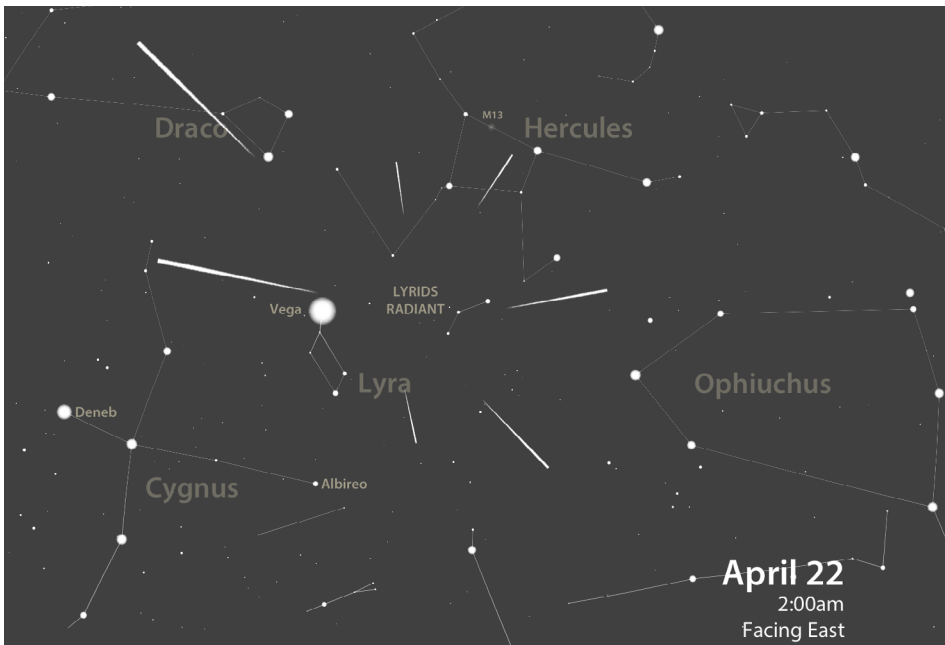
Due to the orbital paths of Mars and the Earth, when Mars is visible it remains so for an extended period of time. The contrary is also true. When Mars disappears from view it remains hidden for an extended period of time. Right now, you can still observe Mars, as it resides in the constellation of Taurus. See star map. You may recall that Mars and the Earth had a close encounter back on October 6 of last year when our two worlds were only 38.6 million miles away from one another. At that time Mars was a very bright pumpkin-orange in the night sky and its disk was sufficiently large to see a wealth of detail using a telescope. On April 1 that distance will be 164.5 million miles. Mars will be much dimmer than it was back in October. In fact, it will now be fainter than Taurus' brightest star Aldebaran. While the planet will appear small even in a modest-sized telescope, perfect seeing conditions may allow one to discern a Martian surface feature or two. It doesn't hurt to try.

April Lyrids Meteor Shower

I always look forward to a decent display of shooting stars. While the upcoming April Lyrids meteor display on the night of April 21-22 is not a blockbuster event, one can potentially observe upwards of 20 meteors per hour in a dark country sky. The Lyrids appear to radiate outward from an area of sky on the Lyra-Hercules border near the bright star Vega, which will be about 45 degrees (halfway between the horizon and zenith) above the eastern horizon at midnight and well placed for observing.

A bright waxing gibbous Moon, about 70% illuminated, will somewhat reduce visibility of the fainter meteors. However, it will be located more than 100 degrees away to the west in the constellation of Leo, to the right of the backwards question mark asterism. While still a nuisance light source,





the Moon shouldn't compromise your observing session. Try to block the its brightness using a building or some trees.

These swift and bright meteors disintegrate after hitting our atmosphere at a moderate speed of 29.8 miles per second. They often produce luminous trains of dust that can be observed for several seconds. The Moon will set just before 4:00 a.m. EDT, leaving a little more than an hour of moonless sky before dawn's early light will begin to overwhelm the stars and the meteors.

Best of luck in all your observing endeavors. 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>

Space for Birds

by Francine Jackson

At this time of year, some of us possibly think of bird watching, as many species are returning to their “summer homes.” To do so, the natural thought is to look up; but, in fact, there is a program where the opposite occurs, as members of the International Space Station look downward, to view migration paths that many bird species take across the Earth.

This program is called Space for Birds, and it especially concentrates on several endangered or threatened species. It also highlights the routes that changes in habitat, caused mainly by humans, occurs. In the several years that this program, the Avian Migration Aerial Surface Space project, or AMASS, has been occurring, thousands of images from the ISS have shown the migrations many birds travel across our planet.

The AMASS images are a part of the space station's Crew Earth Observation (CEO) project, which supports many varied research and education projects. AMASS began working with the ISS in 2016, photographing areas along the North American migratory path of the whooping crane, but the project expanded in 2018 when Canadian astronaut David Saint-Jacques, an engineer and physician, who had always wanted to travel in space, came aboard the station.

At present, the main species within this project are the curlew sandpiper, the black-tailed godwit, the lesser flamingo, piping plover, Sprague's pipit, red knot rufa, and



Canadian Space Agency astronaut David Saint-Jacques takes a photograph through the windows of the space station's cupola. Credits: Canadian Space Agency/NASA

the whooping crane. It had been hoped to plan exhibits and educational events on these birds, but the pandemic only allowed the scientists to create online story maps (spaceforbirds.com), giving information on the threats to survival for each species. At present, only the lesser flamingo's information is complete.

With the possibility of over 1,500 bird species facing extinction, many caused by differences in their migratory routes (including the addition of overlighting), it is

hoped that these studies can bring attention to the potential loss of these animals.

To learn more about this effort, and to check daily updates, follow the ISS Research, Space Station Research and Technology News, or just the ISS Facebook.



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

Watch the Lion: Celestial Wonders in Leo

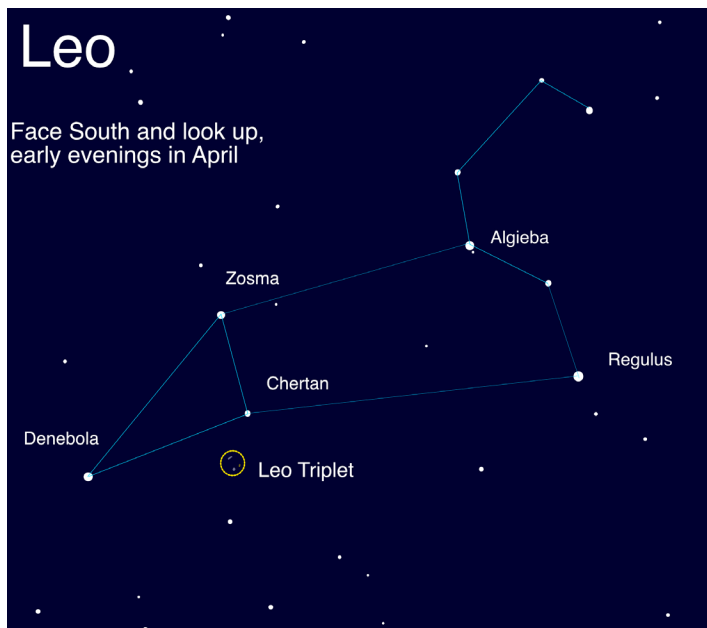
By David Prosper

Leo is a prominent sight for stargazers in April. Its famous sickle, punctuated by the bright star Regulus, draws many a beginning stargazer's eyes, inviting deeper looks into some of Leo's celestial delights, including a great double star and a famous galactic trio.

Leo's distinctive forward sickle, or "reverse question mark," is easy to spot as it climbs the skies in the southeast after sunset. If you are having a difficult time spotting the sickle, look for bright Sirius and Procyon - featured in last month's article - and complete a triangle by drawing two lines to the east, joining at the bright star Regulus, the "period" in the reverse question mark. Trailing them is a trio of bright stars forming an isosceles triangle, the brightest star in that formation named Denebola. Connecting these two patterns together forms the constellation of Leo the Lion, with the forward-facing sickle being the lion's head and mane, and the rear triangle its hindquarters. Can you see this mighty feline? It might help to imagine Leo proudly sitting up and staring straight ahead, like a celestial Sphinx.

If you peer deeper into Leo with a small telescope or binoculars, you'll find a notable double star! Look in the sickle of Leo for its second-brightest star, Algieba - also called Gamma Leonis. This star splits into two bright yellow stars with even a small magnification - you can make this "split" with binoculars, but it's more apparent with a telescope. Compare the color and intensity of these two stars - do you notice any differences? There are other multiple star systems in Leo - spend a few minutes scanning with your instrument of choice, and see what you discover.

One of the most famous sights in Leo is the "Leo Triplet": three galaxies that appear to be close together. They are indeed gravitationally bound to one another, around 30 million light years away! You'll need a telescope to spot them, and use an eyepiece with a wide field of view to see all three galaxies at once! Look below the



The stars of Leo: note that you may see more or less stars, depending on your sky quality. The brightness of the Leo Triplet has been exaggerated for the purposes of the illustration - you can't see them with your unaided eye.

star Chertan to find these galaxies. Compare and contrast the appearance of each galaxy - while they are all spiral galaxies, each one is tilted at different angles to our point of view! Do they all look like spiral galaxies to you?

April is Citizen Science Month, and there are some fun Leo-related activities you can participate in! If you enjoy comparing the Triplets, the "Galaxy Zoo" project (galaxyzoo.org) could use your eyes to help classify different galaxies from sky survey data! Looking at Leo itself can even help measure light pollution: the Globe at Night project (globeatnight.org) uses Leo as their target constellation for sky quality observations from the Northern Hemisphere for their April campaign, running from April 3-12. Find and participate in many more NASA community science programs at science.nasa.gov/citizenscience. Happy observing!



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!



Your view of the three galaxies in the Leo Triplet won't look as amazing as this image taken by the VLT Survey Telescope, unless you have a telescope with a mirror 8 feet or more in diameter! Still, even a small telescope will help your eyes pick up these three galaxies as "faint fuzzies": objects that seem blurry against a background of pinpoint stars. Let your eyes relax and experiment with observing these galaxies by looking slightly away from them, instead of looking directly at them; this is called averted vision, a handy technique that can help you see details in fainter, more nebulous objects. Image Credit: ESO, INAF-VST, OmegaCAM; Acknowledgement: OmegaCen, Astro-WISE, Kapteyn I.

Interacting Galaxies in Leo: NGC 3226/3227

by Glenn Chaple for LVAS

NGC 3226 (Mag: 11.4, Size: 2.8' X 2.4")
NGC 3227 (Mag: 10.3, Size: 4.1' X 3.9')

This month's Observer's Challenge, NGC 2685, is a lenticular galaxy with a twist. It has a ring of stars, gas, and dust that runs perpendicular to the plane of the main galactic disk. Such rarities are known as polar ring galaxies. These cosmic oddities are likely a result as a collision or gravitational interaction between two galaxies, one of which is lenticular. The appearance of the whorls surrounding NGC 2685 give it the nick-name the "Helix Galaxy."

Those with computer-controlled scopes will find NGC 2685 at coordinates RA 8h 55m 34.8s, Dec +58° 44' 03.9". If you locate deep sky objects via the star-hop method, begin your search at the 3rd magnitude star Muscida (omicron [o] Ursae Majoris), shown in upper right of Chart A. Aim your telescope midway between Muscida and 5th magnitude 17 Ursae Majoris (Chart B), and you should come across a pair of stars of magnitude 6 and 7 that are about a degree apart. Chart C shows the location of NGC 2685 between these two stars.

NGC 2685 was discovered by the German astronomer Wilhelm Tempel on August 18, 1882. Studies indicate a distance of around 40 million light years and a visual diameter of some 50,000 light years- about half that of the Milky Way.

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.



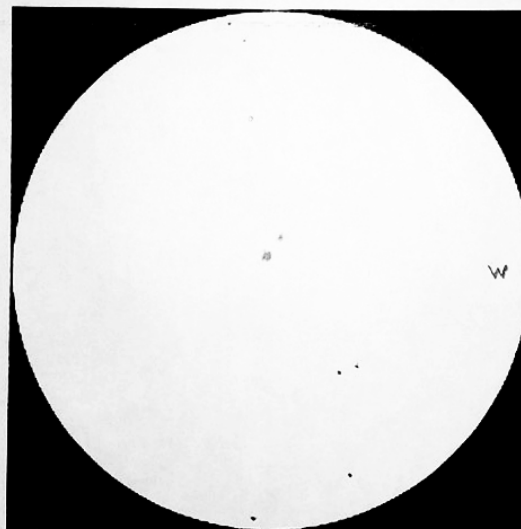
Image by Mario Motta (ATMoB) 32-inch f/6.5 scope, ASI6200 camera, 4 hrs total exposure.



OBSERVING LOG

NAME: Glenn Chaple
 DATE (M/D/Y) 3/13/2021 TIME: 9:45 pm EST
 OBSERVING SITE: 82 S. Harbor Rd. Townsend MA
 SKY CONDITIONS: Seeing (Antoniadi Scale) IV Limiting Magnitude 5.0
 OBJECT: NGC 3226/3227 TYPE: EG/SG CONSTELLATION: Leo

SKETCH (note direction of west)



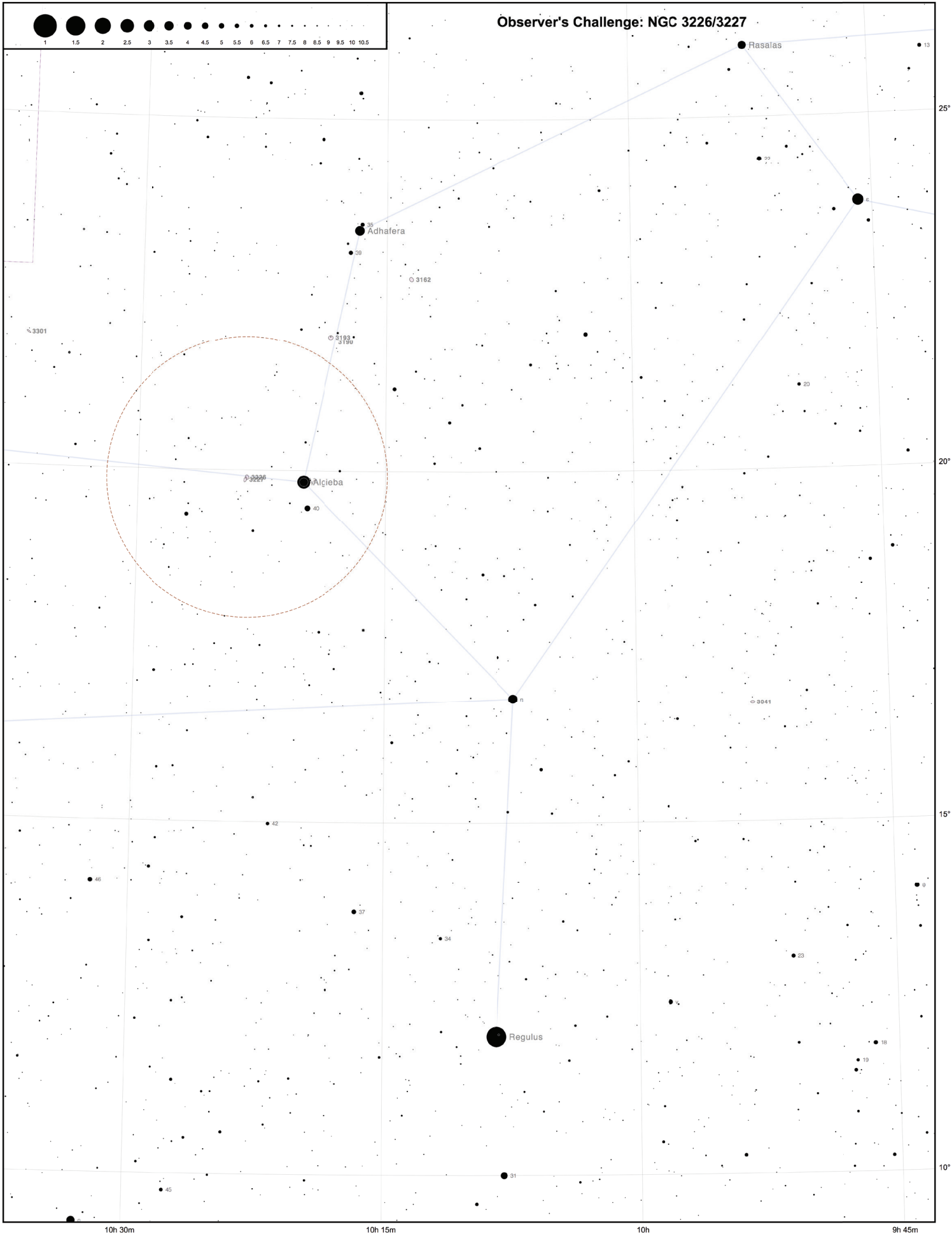
NOTES:

Visible in 10-inch as double Nebula. Only nucleus of NGC 3227 visible
 NGC 3227 barely visible in 4.5-inch at 150x

OBSERVING EQUIPMENT

Binoculars X
 Telescope: 10-inch f/5 reflector Eyepiece: 9mm Nagler
 Mag: 141 X Field Diam: 0.6° Filter (if any): _____

Observer's Challenge: NGC 3226/3227



The Sun, Moon & Planets in April

This table contains the ephemeris of the objects in the Solar System for each Saturday night in April 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	3	0 49.5	5 18.6	Psc	-26.8	1919.7	-	-	-	1.00	06:25	12:49	19:14
	10	1 15.2	7 56.8	Psc	-26.8	1915.8	-	-	-	1.00	06:13	12:47	19:22
	17	1 41.0	10 28.6	Psc	-26.8	1912	-	-	-	1.00	06:02	12:45	19:30
	24	2 07.2	12 51.8	Ari	-26.8	1908.4	-	-	-	1.01	05:51	12:44	19:37
Moon	3	17 40.7	-24 48.7	Oph	-12.3	1912.5	108° W	66	-	-	01:30	06:03	10:33
	10	23 54.1	-6 20.5	Aqr	-9.2	1784.8	24° W	4	-	-	05:58	11:55	18:01
	17	5 15.4	23 29.7	Tau	-10.8	1796.3	53° E	20	-	-	09:11	17:05	01:01
	24	11 34.1	7 59.2	Leo	-12.6	1969.6	136° E	86	-	-	16:40	23:05	05:17
Mercury	3	23 56.1	-2 53.5	Psc	-0.5	5.3	16° W	88	0.41	1.28	06:03	11:57	17:53
	10	0 42.7	2 38.9	Cet	-1.0	5.1	10° W	95	0.38	1.32	06:02	12:17	18:33
	17	1 33.6	8 47.8	Psc	-2.1	5.0	2° W	100	0.34	1.34	06:03	12:41	19:20
	24	2 28.8	14 59.6	Ari	-1.8	5.2	6° E	97	0.31	1.29	06:07	13:09	20:12
Venus	3	0 58.7	4 56.5	Psc	-3.8	9.8	2° E	100	0.73	1.72	06:37	12:59	19:22
	10	1 30.8	8 21.8	Psc	-3.8	9.8	4° E	100	0.72	1.72	06:29	13:03	19:39
	17	2 03.4	11 37.9	Ari	-3.8	9.9	6° E	100	0.72	1.72	06:22	13:08	19:56
	24	2 36.7	14 40.4	Ari	-3.8	9.9	7° E	99	0.72	1.71	06:16	13:14	20:14
Mars	3	5 05.7	24 20.3	Tau	1.3	5.3	64° E	92	1.62	1.78	09:25	17:04	00:43
	10	5 24.1	24 39.6	Tau	1.4	5.1	62° E	92	1.62	1.84	09:15	16:55	00:36
	17	5 42.7	24 50.9	Tau	1.4	4.9	59° E	92	1.63	1.90	09:05	16:46	00:27
	24	6 01.4	24 53.8	Gem	1.5	4.8	56° E	93	1.63	1.96	08:56	16:37	00:19
1 Ceres	3	1 10.5	-0 10.2	Cet	8.9	0.3	8° E	100	2.91	3.90	07:06	13:08	19:11
	10	1 20.6	0 58.0	Cet	8.9	0.3	7° W	100	2.91	3.90	06:45	12:51	18:57
	17	1 30.8	2 04.7	Cet	8.9	0.3	9° W	100	2.90	3.89	06:24	12:34	18:44
	24	1 41.0	3 09.8	Psc	9.0	0.3	12° W	100	2.90	3.88	06:02	12:16	18:30
Jupiter	3	21 44.7	-14 16.0	Cap	-1.9	34.8	50° W	99	5.07	5.65	04:33	09:43	14:53
	10	21 49.8	-13 51.0	Cap	-1.9	35.4	55° W	99	5.06	5.56	04:09	09:20	14:32
	17	21 54.6	-13 27.2	Cap	-2.0	36.0	61° W	99	5.06	5.47	03:44	08:57	14:10
	24	21 59.1	-13 05.1	Aqr	-2.0	36.6	67° W	99	5.06	5.37	03:20	08:34	13:49
Saturn	3	20 56.5	-17 49.5	Cap	0.8	15.9	62° W	100	9.97	10.40	03:59	08:54	13:50
	10	20 58.6	-17 42.0	Cap	0.8	16.1	68° W	100	9.97	10.30	03:33	08:29	13:25
	17	21 00.3	-17 35.5	Cap	0.7	16.3	75° W	100	9.97	10.19	03:06	08:03	13:00
	24	21 01.8	-17 30.3	Cap	0.7	16.4	81° W	100	9.97	10.07	02:40	07:37	12:34
Uranus	3	2 27.4	14 08.7	Ari	5.9	3.4	26° E	100	19.76	20.66	07:30	14:24	21:19
	10	2 28.9	14 16.0	Ari	5.9	3.4	19° E	100	19.76	20.70	07:03	13:58	20:53
	17	2 30.5	14 23.5	Ari	5.9	3.4	13° E	100	19.76	20.74	06:37	13:32	20:28
	24	2 32.0	14 31.1	Ari	5.9	3.4	6° E	100	19.76	20.76	06:10	13:06	20:02
Neptune	3	23 30.4	-4 21.7	Aqr	8.0	2.2	22° W	100	29.93	30.85	05:41	11:28	17:14
	10	23 31.3	-4 16.1	Aqr	8.0	2.2	29° W	100	29.93	30.80	05:14	11:01	16:48
	17	23 32.2	-4 10.7	Aqr	8.0	2.2	35° W	100	29.93	30.74	04:47	10:34	16:21
	24	23 33.0	-4 05.7	Aqr	7.9	2.2	42° W	100	29.92	30.67	04:20	10:08	15:55
Pluto	3	19 55.9	-22 09.3	Sgr	14.4	0.2	77° W	100	34.25	34.47	03:16	07:54	12:31
	10	19 56.2	-22 09.4	Sgr	14.4	0.2	84° W	100	34.26	34.35	02:49	07:26	12:04
	17	19 56.4	-22 09.7	Sgr	14.4	0.2	90° W	100	34.26	34.24	02:22	06:59	11:36
	24	19 56.5	-22 10.3	Sgr	14.4	0.2	97° W	100	34.27	34.13	01:55	06:32	11:09

From the Archives

by Dave Huestis

Donald S. Reed was a long-time member of Skyscrapers and a contemporary of our founder Charles H. Smiley. Don and his wife Connie accompanied Smiley on several solar eclipse expeditions, including Araxa, Brazil, May 20, 1947, and Bangkok, Thailand, June 20, 1955.

In my past research of our archives to compile our 75 Years of Skyscrapers book, I got to “know” many of the individuals from our past that I never met in person.

I can tell you that Don, like many of us, had a great sense of humor. This declaration was determined by my discovery of a “newsletter” Don created around Christmas, 1954. It is called “The Thomas Street Astrologer.” Don was an architect by trade.

I do not know if this piece of work was a one-time publication or a true monthly publication as stated in the issue. I know of no other issues. It is obvious to me that it was targeted for a very specific audience, and I assume the audience was members of Skyscrapers.

The page I hereby present to you is interesting. I do not know if the play was entirely a work of fiction or if it was actually performed. It immediately reminded me of The Observatory Pinafore performed by Harvard College Observatory astronomers on December 31, 1929. See this link for more on that parody: <https://hea-www.harvard.edu/~jcm/html/play.html>

I welcome your comments and opinions. Enjoy.

On December 17 and 18, 1954
The Providence Art Club and the Friday Knights

present
OUT OF THIS WORLD

or
THE SKY'S THE LIMIT
an astronomical effort by Roger T. Clapp

Produced by.....	THEODORE R. JEFFERS	Costumes.....	ALBERT E. LOWNES
Directed by.....	RUFUS C. FULLER, JR.	Properties.....	AUGUSTUS W. CALDER, JR.
Setting design by.....	WALTER O. HOLT	Scene Painter.....	STOWELL B. SHERMAN
Production manager.....	DIXWELL GOFF	Music Director.....	DONALD MACDONALD

CHARACTERS

Dr. Ambivalent Asteroid, <i>Burleigh College</i>	J. HAROLD WILLIAMS
Dr. Harold Low Grade, <i>Dr. Asteroid's assistant</i>	JOHN W. STEERE
Dr. Peter Peeper, <i>Starvard University</i>	THEODORE R. JEFFERS
Dr. Magnus Coombe Loudie, <i>President of Burleigh College</i>	S. EVERETT WILKINS JR.
John D. Craggyfellow, <i>a philantropist</i>	H. CUSHMAN ANTHONY
Joe Sweeper, <i>janitor at the Farnsworth Observatory</i>	C. PRESCOTT KNIGHT JR.
Dr. Hi Sun Yat Noon, <i>Hong Kong University</i>	EVERETT B. NELSON
Rt-Hon. Dr. Nebulous Stargazer, <i>Astronomer Royal</i>	RUFUS C. FULLER JR.

VISITING ASTRONOMERS PLAYED BY CHORUS MEMBERS

Dr. Stellar Squinter, <i>Johannesburg, South Africa</i>	WALTER R. MORRIS
Dr. Milk Ewei, <i>Beirut, Lebanon</i>	DONALD F. BLOUNT
Dr. Ivan Igoe, <i>Nijni Novgorod, U.S.S.R.</i>	HUGH B. ALLISON
Dr. Solar Plexus, <i>Ringside, N. J.</i>	H. MARCHANT DUDLEY
Dr. Corona Corona, <i>Havana, Cuba</i>	JOHN S. CUMMING
Dr. Clare de Lune, <i>Mont St. Michel, France</i>	WARREN D. KENT JR.
Dr. Arturo Sunburno, <i>Siena, Italy</i>	H. A. W. HAYWARD
Dr. Meteoric K. Rear, <i>Princeton, N. J.</i>	ROBERT M. SAYWELL
Dr. Zechariah Zodiac, <i>Zanzibar, Zanzibar</i>	ARTHUR C. SISSON
Dr. Docken Dorriss, <i>Kirkintilloch, Scotland</i>	DONALD J. MACDONALD
Mynheer Dr. Ey Wynken Blynken, <i>Utrecht, Holland</i>	MANTON F. TAYLOR
Dr. U. Saw Me, <i>Ist, Bangkok, Thailand</i>	J. HARRY MARSHALL
Dr. Melodius Tinkle, <i>Piano Key, Florida</i>	EARL P. PERKINS
Dr. Planit Pandit, <i>Darjeeling, India</i>	ROBERT S. ALLINGHAM

SCENE: The Farnsworth Observatory at Burleigh College. TIME: Dec. 17, 1954. ACT I: Late Afternoon. ACT II: 10.30 p. m.

STAFF CARPENTERS AND PAINTERS AT THE FARNSWORTH OBSERVATORY:

PAINTERS			
David Aldrich	George E. Nerney	William M. Muncy	Raynor Ahmuty
W. I. Duphiney	C. Ben Johnson	James Wainwright	James Herbert
Burges Green	Deus La Vallee	Phillips D. Booth	Leslie A. Jones
C. Gordon Harris	A. E. Lownes	Spencer Crooks	Dean Williams
CARPENTERS			
Read Shaw	David Anthony	John Cooke	Carleton Goff
John Steere	Harold Allan	Russ Davis	Dix Goff
Woody Calder	George Bliven	Pearce Drummond	John Hitchcock
Dean Williams	Roger Clapp	George Fraser	Bob Hollingworth
Bill Farnsworth	Phil Creer	Clarke Freeman	Clint Knight
PROGRAM DRAWINGS		Burges Green	Joseph Carpenter
			Allan Halladay

Astronomical League Update

by Jeff Padell

Here we are at the beginning of April and the weather is slowly warming up. The weather here at Bright Skies Observatory has been up and down, when it is clear it is very windy up to 30 mph gusts, not good for imaging or staying warm. I have been working on my award programs using the SLOOH telescope array and have gotten confirmation that this way of imaging is acceptable.

For a note – Astronomical League considers the scopes at Seagrave not as remote scopes but as owned scopes because the members of the Skyscrapers technically

own them jointly. That is good because that means if you use the Seagrave scopes you are not limited to the programs allowing Remote Scopes.

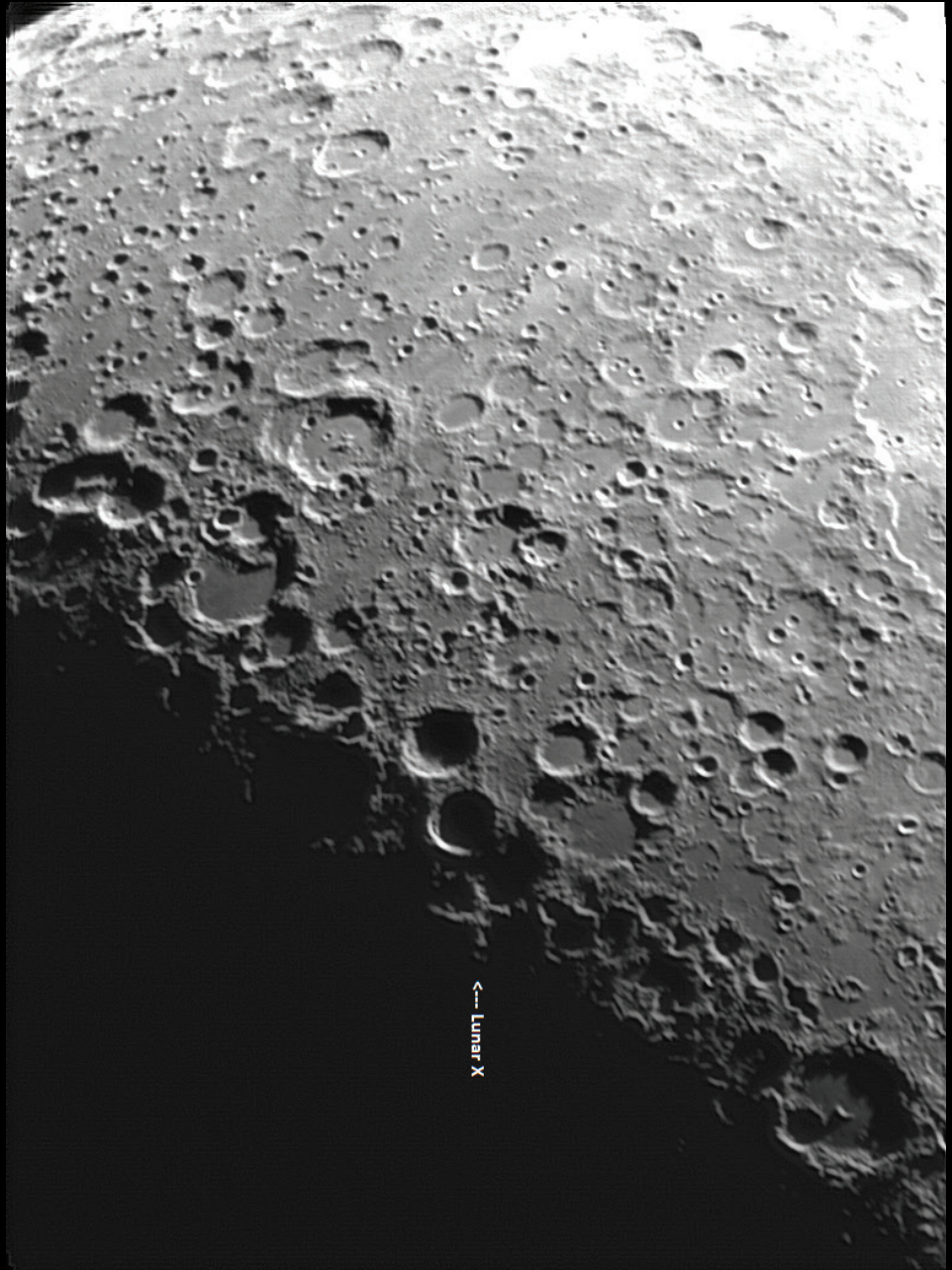
I have been working on two different programs, the Planetary Nebula and the Open Cluster programs and because most of the objects I still need are above 18 hours right ascension I started the Galaxy groups and clusters so that I can still be imaging with a purpose over the next couple of months. Also one of the more tedious parts of the programs is documenting what you are observing but at the same time this is

one of the most rewarding parts of the programs and you expand your knowledge of the sky and universe as you describe what you are observing. Today on a nice rainy day I have updated my Excel spreadsheets with my latest images and observations. I now have 30 more open clusters out of 125 to observe and 35 out of 110 Planetary Nebulas left to observe. Remember that there are programs for all skill levels and interests! If you are a member of the AL pick out a program and get started, if you are not join now!



The world of amateur astronomy has lost one of its great ones, as Ed Turco left us this past weekend. A stalwart believer in making telescopes, he made hundreds, and innumerable eyepieces, all with the best optics anyone could ever ask for. Ed also was famous for traveling, and seeing, dozens of total solar eclipses. A decades-long member of Skyscrapers, Inc., Ed will always be revered as a part of the astronomy community he loved.

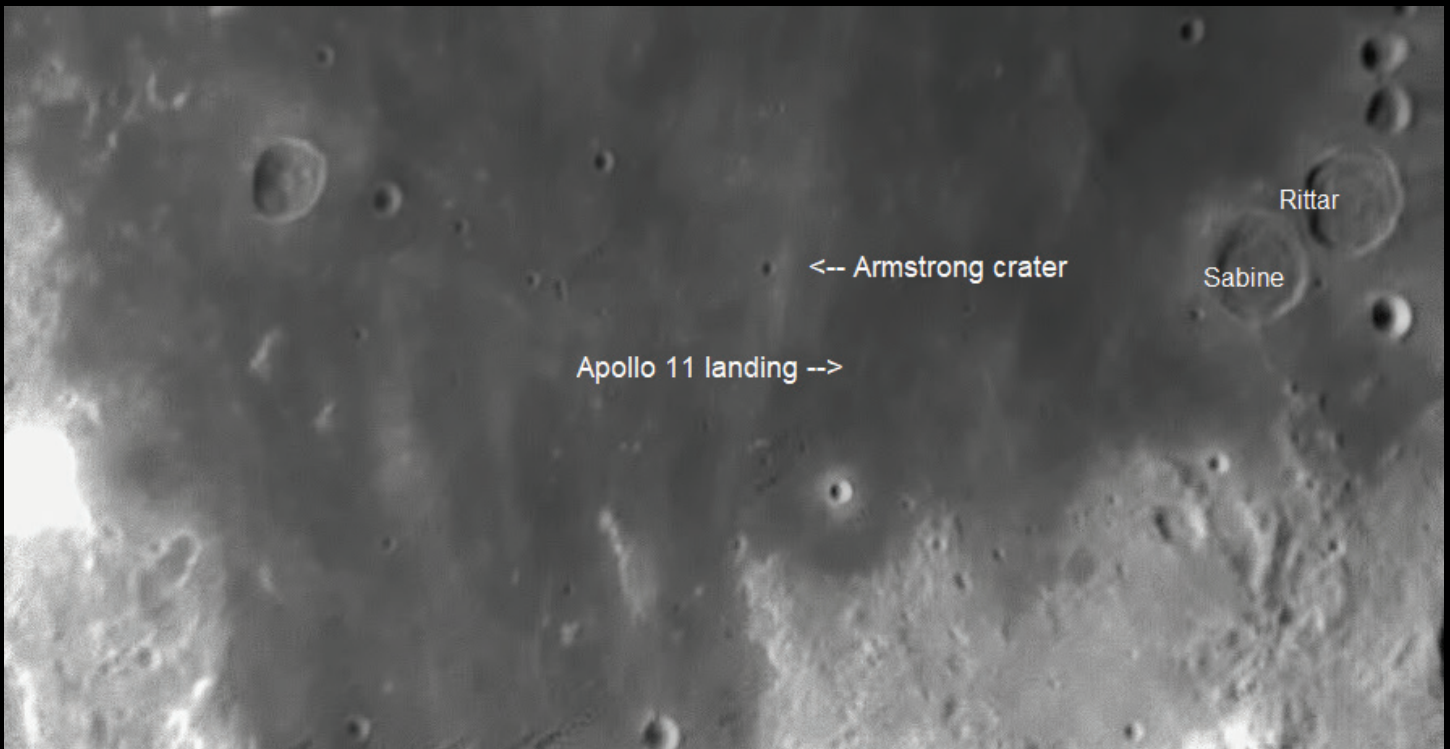
— Francine Jackson



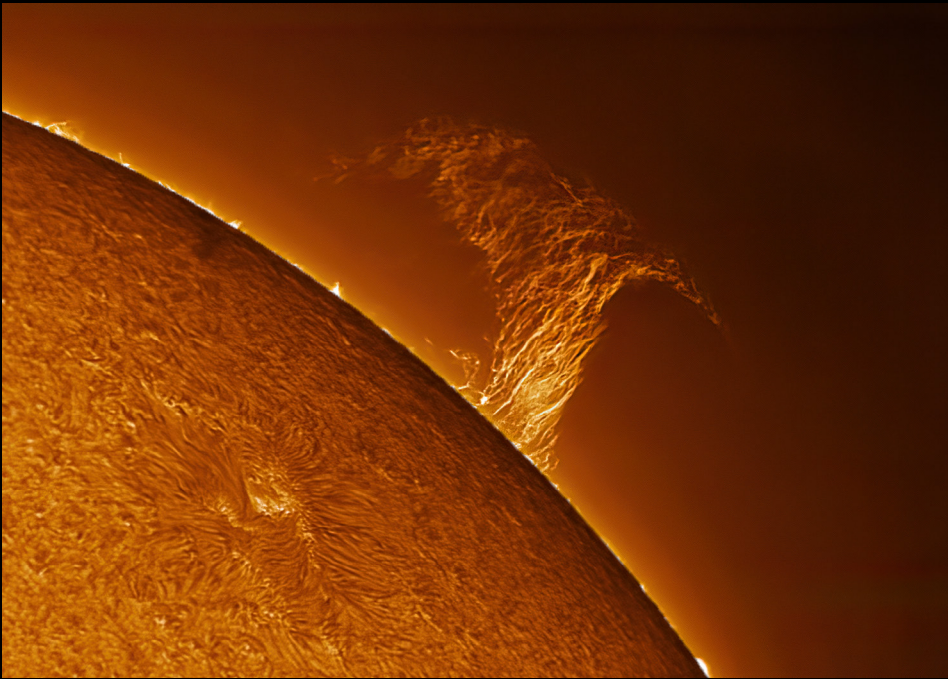
Monthly Presentation Videos on YouTube

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>



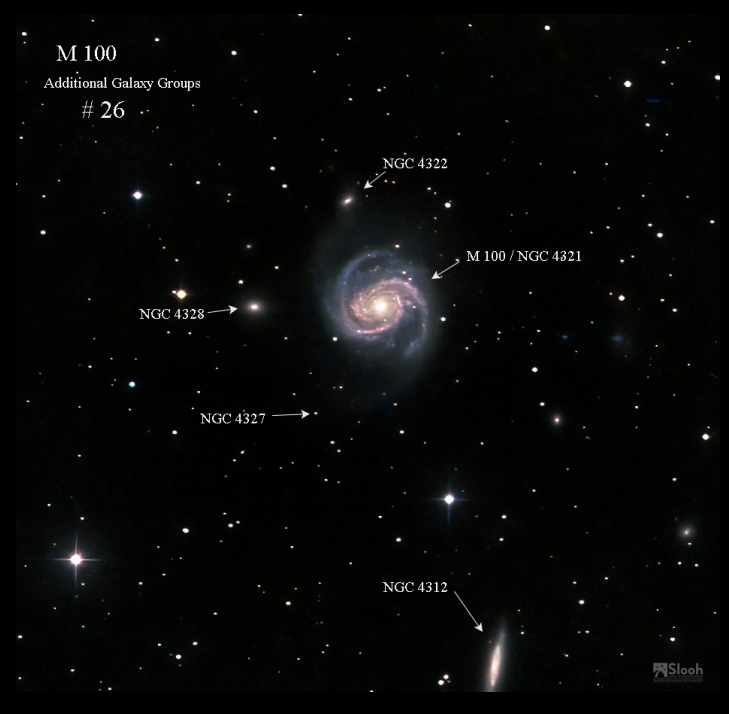
Lunar images by Steve Hubbard from the evening of March 20, all taken with 152mm scope and ZWO 120MM camera.



There was a really large prominence on the sun on March 30., Earth would be about the size of the large triangle on the edge of the Sun in the middle of the edge. Millions of tons of plasma shooting off into space. Taken with Lunt ED100 refractor, Quark Chromosphere, ZWO ASI174mm. 50 frames out of 1,000 stacked. By Jeff Padell



Open cluster NGC2158 in Gemini is # 39 on the Astronomical League Open Cluster program. This is a very tight cluster and very interesting, taken with the SLOOH 17" Planewave by Jeff Padell.



The M100 Galaxy Group in Coma Berenices taken by Jeff Padell using Slooh.

STARRY SCOOP

Editor: Kaitlynn Goulette



WHAT'S UP

High in the south, the constellations Leo and Virgo are dominating the sky and signal the start of galaxy season for stargazers. This is because Virgo contains the Virgo Cluster, which is home to a large collection of galaxies.

Looking to the western sky, you can find the Winter Hexagon sinking towards the horizon. While the winter stars may have already disappeared past your treeline, the summer stars are rising. By month's end, you can spot them peeking above the eastern horizon a little more than an hour after sunset.

Jupiter and Saturn remain in our morning sky and with the unaided eye, appear to be the brightest starlike objects in the southeast. These two gas giants are joined by the moon on April 5th, 6th, and 7th. In the evening sky, throughout the entire month, the red planet Mars can be found high in the west.

This month the Lyrid meteor shower runs from the 16th to the 25th, peaking on the 22nd and 23rd. The Lyrids is an average meteor shower, producing about 20 falling stars per hour. The meteors radiate from the constellation Lyra, but can be seen anywhere in the sky. It's best viewed from a dark location after midnight.

60 years ago, on April 12th, Soviet cosmonaut Yuri Gagarin became the first human in space, as well as the first person to orbit the earth. This 27-year old man remained in space for 89 minutes inside a Vostok space capsule. Less than a month later, America followed up on this feat by sending Alan Shepard into space.

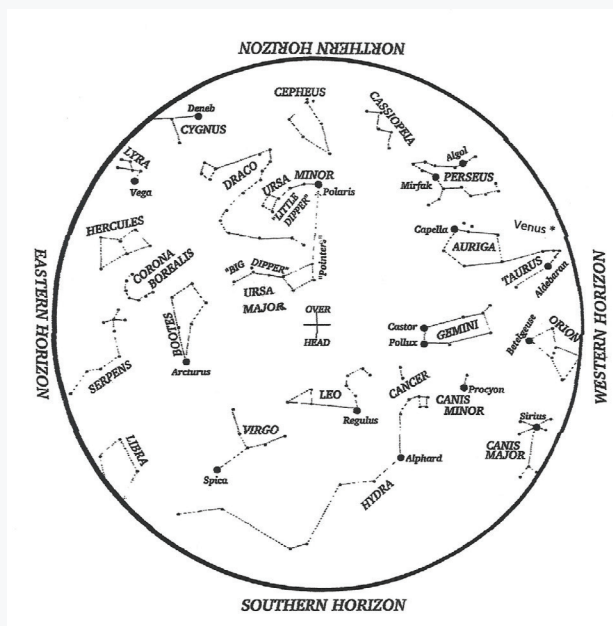
In April of 1845, Louis Fizeau and Leon Foucault captured history's first photograph of the sun. The anniversary of this achievement brings to mind that we need to start preparing for the annular solar eclipse on June 10th of this year. During this eclipse, the moon will not completely cover the sun like a total solar eclipse, but instead, the sun will appear as a ring. For those of us in the eastern portion of the United States, it will be a partial eclipse occurring as the sun rises, so a low eastern horizon is needed to view it. Make sure to have the proper filter for viewing the sun, and never look directly at the sun without it.

APRIL'S SKY

12: New Moon

22-23: Lyrid Meteor Shower Peak

27: Full Moon



Credit: Roger B. Culver

Hold star map above your head and align with compass points.

OBSERVATIONS

With the winter Milky Way region soon to be leaving us, I focused much of my observing in this area. W Canis Minoris, a star invisible to the unaided eye, was a red beacon amongst its neighboring stars when viewed through my telescope. It is a late-stage red giant known as a carbon star. An abundance of carbon in its atmosphere absorbs blue light, giving it a red appearance. I observed many galactic clusters in this region, including M46, M47, M93, M41, M50, and M48. Each of these loosely bound clusters has its own unique pattern and the contrast with the background sky is breathtaking. Another fine observation was NGC 2261, also known as Hubble's Variable Nebula. Using my high-power eyepiece, the nebula was stunning and resembled a miniature comet. My most memorable recent observation was Nova Cas 2021, which I viewed only two days after its March 18th discovery. A nova is a star that suddenly gets brighter (often more than 1000x) and appears as a "new" star, then typically dims after several weeks or months. This nova is in the constellation Cassiopeia.

During twilight, I often observe the moon as I wait for the sky to darken. Whilst doing this one evening, I was very excited to glimpse the "Lunar X." This observation is somewhat difficult to make because the X is only visible for a few hours before the first quarter phase. The Lunar X is an optical feature where the lighting and shadows, along with the topography, create this recognizable pattern.

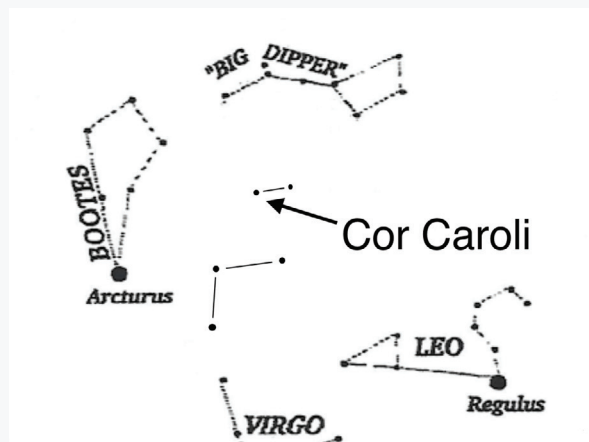


The purpose of the Starry Scoop is to communicate current astronomy and space events. If you want to share your observations or get digital copies of the Starry Scoop, contact starryscoop@gmail.com. The Starry Scoop is now on Facebook. Clear skies!

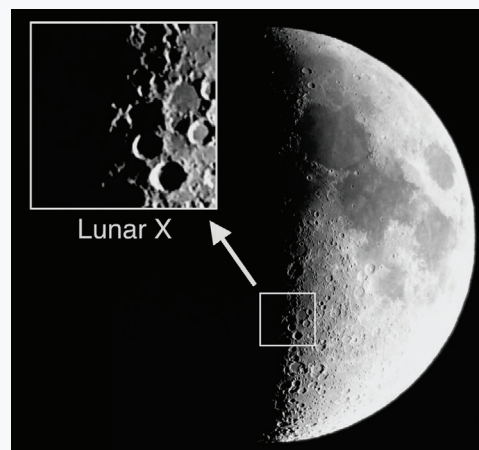
OBJECT OF THE MONTH

This month's featured object is Alpha Canum Venaticorum, commonly called Cor Caroli. Cor Caroli, the brightest star in the constellation Canes Venatici, is actually a binary star system located about 110 light-years from the earth. This means it consists of two stars orbiting a common center of mass.

Cor Caroli, to the unaided eye, will appear to be a single point of light. With a telescope, however, you can resolve the two separate stars, one blue-white and the other yellow. To find Cor Caroli, look for a bright star about 20 degrees south of the Big Dipper's handle



Cor Caroli



The Lunar X
Photo by Kaitlynn Goulette

Membership

Name _____

Address _____

City _____

State _____ Zip _____

Phone _____

Email _____

How did you hear about us? _____

Membership Dues

All renewals are due on 1 April for the beginning fiscal year. Dues received from new members after 1 April will be applied to the current fiscal year. Dues received from new members during the months of January through March are applied to the remainder of the current fiscal year and the whole of the next fiscal year.

Today's date:	Annual Dues (choose one category)	
	Junior <input type="checkbox"/>	\$15
	Regular <input type="checkbox"/>	\$50
	*Family <input type="checkbox"/>	\$60
	Senior <input type="checkbox"/>	\$25
	Contributing <input type="checkbox"/>	\$

(any amount in excess of annual dues is gratefully accepted as a donation)

*The Name of the primary family member is listed above. Please identify on separate paper the name, address, email and phone number of the second family member. The second member shall have voting rights during election cycles if 18 years of age.

Total \$
(Make check payable to Skyscrapers, Inc.)

Mail to:
Skyscrapers, Inc.
47 Peepoad Road
North Scituate, RI 02857

March Reports

Skyscrapers Executive Committee March Meeting via Zoom Monday March 15, 2021 at 7PM

Meeting called to order at 7:07 PM by President Steve Siok. The meeting was recorded.

Present: Steve Siok, Kathy Siok, Steve Hubbard, Sue Hubbard, Linda Bergemann, Francine Jackson, Bob Janus, Jim Hendrickson, Jeff Padell, Laura Landon, Ian Dell'Antonio, Bob Horton, Angella Johnson
Total: 13

1. Election and Electronic Voting (112 eligible to vote Total members=126)

Election Committee Chair: Linda Bergemann. Kathy S. and Linda B. introduced a proposal to conduct our election using an electronic platform this year. The software: Electionbuddy costs \$19.00 for each election which would save on time and postage. A motion: "to suspend our current election protocols concerning the use of US mail (only)" was made by Kathy and seconded by Linda. It passed unanimously. The few

members who do not have an email address will have a ballot mailed to them as before.

2. **Membership Renewals**-Treasurer Kathy Siok will be emailing renewal notices out to current members (mailed to those who do not have an email). The secretary, as of April, will mail the monthly newsletter to members without email.

3. **Starting up internet service at Seagrave**- Trustees Jim and Bob requested that we authorize starting up internet service at Seagrave as of April. We currently have a 1 month credit. All agreed and Jim will contact the provider.

4. **AstroAssembly 2021**- Saturday October 2, 2021. There was a discussion about whether to hold our event as virtual or onsite and all agreed it was too early to decide. For now plans will continue for an in-person event. Suggestions made included: bringing in a food truck for lunch and making changes to our evening buffet dinner format. Monthly updates will be discussed at EC meetings.

5. **Survey to Members using electronic polling** - How can we serve our mem-

bership and how can they help Skyscrapers?? We need to come up with a series of questions for the membership. Bob Janus will collect questions sent by board members and they will be edited to fit into a user-friendly electronic poll. Jim Hendrickson will help deal with technical issues.

While there is no time limit on this, we hope to get something out by late spring.

6. **Preliminary Reopening Discussion**- We decided to table this discussion until our April EC meeting. We all agreed to keep informed about RI state COVID updates.

7. **Next Meeting Date**- Monday April 19 at 7PM via Zoom. A budget for this year will be prepared and sent to the Executive Committee before the April meeting. Saturday April 3 at 7PM is our regular monthly meeting via Zoom. We will have our Annual Meeting at that time and election results will be announced.

There being no other business, we adjourned at 8:20PM.

Respectfully submitted, Sue Hubbard-Secretary, March 23, 2021

Renew online at <http://www.theskyscrapers.org/join-renew> or mail the renewal form below.

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