



# the Skyscraper

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April 2019

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

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## Friday, April 12, 7:00pm at Seagrave Observatory

### Brown Space Engineering by McKenna Cisler

McKenna Cisler will present on Brown Space Engineering, a club at Brown University which created Brown's and Rhode Island's first satellite, EQUiSat. The club employs a novel low-cost engineering approach and focuses on educational outreach and the democratization of space—EQUiSat itself was built using commercial off-the-shelf parts (it costs \$3,776.61) and features a flashing LED payload that can be seen from the ground. McKenna will highlight the club's history and the 8 years of work that went into EQUiSat, as well as the club's outreach projects, high altitude balloon program, and the latest work on the club's next satellite. This satellite, dubbed "FutureSat," will feature an articulating robot arm with a camera and will be designed to allow everyone from kids to Amateur Radio enthusiasts to interact with the satellite through its arm and camera.

McKenna Cisler came to Brown in Fall

2016 from New Hampshire, intending to major in computer science. He joined the "flight software" team of Brown Space Engineering as the club was two years away from launching its first satellite, EQUiSat, and eventually contributed to several components of the satellite's operating system. After EQUiSat deployed successfully and began functioning in July 2018, McKenna worked on ground software, telemetry analysis, and radio systems (he had received his Amateur Radio license that year), and was elected as the technical lead of the club. As EQUiSat continued to perform admirably for the rest of 2018 and into 2019, the club began to transition to planning the next satellite. McKenna helped apply what he had learned working on EQUiSat to the club's efforts to design FutureSat, and today the club is working toward submitting an application for launch in Fall 2019.

## Seagrave Memorial Observatory Open Nights

Saturdays st 8:00 pm  
weather & conditions permitting

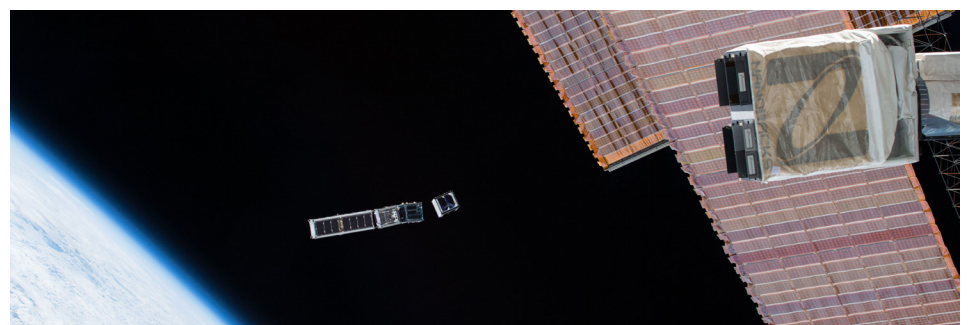
## Phases of the Moon

**New Moon**  
April 5 08:50

**First Quarter Moon**  
April 12 19:06

**Full Pink Moon**  
April 19 11:12

**Last Quarter Moon**  
April 26 22:18



# President's Message

by Steve Hubbard

Time to get those telescopes, binoculars and eyeballs out of storage and get them out under the wide open skies again!

That's right, the long cold winter is at an end and it's getting easier to enjoy what the night sky has to offer us.

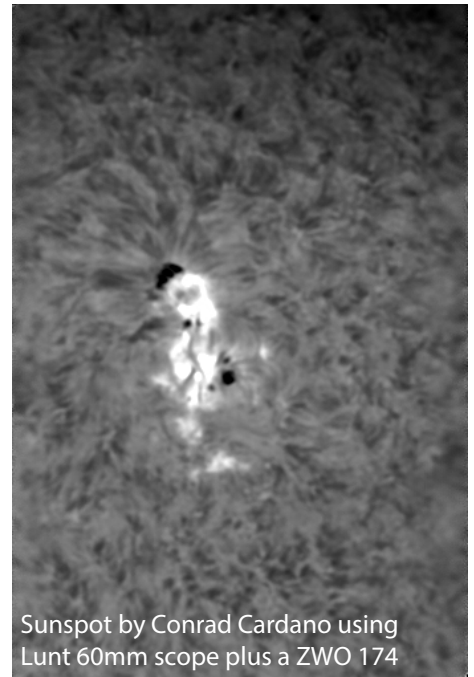
This is the season of galaxies with many of the spring constellations like Virgo, Ursa Major, Coma Berenices, Canes Venatici and more offering an abundance of galaxies to hunt. There are many opportunities to see some truly amazing sights during this season.

As part of our return the outdoors, I am proposing a monthly series of star parties at our observatory for members, guests and any of the public who show up.

I hope to combine these with some of the special award programs that the Astronomical League has to make them more fun.

If you have a telescope that you'd like to learn more about, want to know the sky better or just want to look through a bunch of other instruments, these events are for you!

As soon as you see the announcements, please put the dates into your calendar and try to come out to join us. We were able to get a few of these in last year and they were a lot of fun. Hope to see you there!



Sunspot by Conrad Cardano using Lunt 60mm scope plus a ZWO 174

## Skyscrapers Food Basket

Skyscrapers has now started a food donation program! Just simply bring a caned good or two each time you visit the meeting hall or observatory; place it in the Food Donation box in the hall and they will be donated to our local food bank on a monthly basis.



<https://smile.amazon.com/ch/05-0382371>

## Skyscrapers Library Borrowing Procedure

The catalog of available items to borrow is available at <http://www.theskyscrapers.org/library-procedures>, as well as in the meeting hall in proximity to the bookcases.

To borrow an item a member can: 1) review the list online before coming to a meeting 2) review a hard copy of the list on a meeting night.

Once a member chooses an item they can ask **Dave Huestis** or **Weston Ambrose** to retrieve it from the bookcase. The member will then sign the item out. This check out procedure will occur only between 7:00pm and 7:30pm on monthly meeting nights held at Seagrave.

Borrowed items should be returned at the next meeting unless other arrangements are made.



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](mailto: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](mailto:jim@distantgalaxy.com). Note that you will no longer receive the newsletter by postal mail.

### President

Steve Hubbard [cstahs@gmail.com](mailto:cstahs@gmail.com)

### 1st Vice President

Jim Hendrickson [hendrickson.jim@gmail.com](mailto:hendrickson.jim@gmail.com)

### 2nd Vice President

Terry Turner [turnerlawcenter@cox.net](mailto:turnerlawcenter@cox.net)

### Secretary

Kathy Siok [kathys5@cox.net](mailto:kathys5@cox.net)

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Matt Ouellette [matt80844@yahoo.com](mailto:matt80844@yahoo.com)

### Members at Large

Bob Janus [janus68@cox.net](mailto:janus68@cox.net)

Tracy Prell [tracy.prell@gmail.com](mailto:tracy.prell@gmail.com)

### Trustees

Jeff Padell [jeffpadell@gmail.com](mailto:jeffpadell@gmail.com)

Tom Thibault [DeepSpaceViewer@aol.com](mailto:DeepSpaceViewer@aol.com)

Jim Crawford [jrcrawford@cox.net](mailto:jrcrawford@cox.net)

### Outreach Chairperson

Linda Bergemann [lbergemann@aol.com](mailto:lbergemann@aol.com)

### Observatory Committee Chairperson

Jeff Padell [jeffpadell@gmail.com](mailto:jeffpadell@gmail.com)

### New Member Steward

Tracy Prell [tracy.prell@gmail.com](mailto:tracy.prell@gmail.com)

### Librarian

Dave Huestis [dhuestis@aol.com](mailto:dhuestis@aol.com)

### Assistant Librarian

Weston Ambrose

### Historian

Dave Huestis [dhuestis@aol.com](mailto:dhuestis@aol.com)

### Editor

Jim Hendrickson [hendrickson.jim@gmail.com](mailto:hendrickson.jim@gmail.com)

### Astronomical League Correspondent (ALCor)

Jeff Padell [jeffpadell@gmail.com](mailto:jeffpadell@gmail.com)

# Astronomical Events Determine Easter Observance

by Dave Huestis

In simpler times our forefathers paid close attention to the clockwork motion of the heavens. One didn't have to observe the sky for too long a period of time to notice the cyclic phases of the Moon, or the changing position of the Sun relative to the horizon over the course of a year. Nature provided a precise clock and calendar that could be used to determine when to celebrate special events.

It should therefore not be surprising that many religions observances would likewise be established in accordance with those same astronomical circumstances. Christians, for instance, observe Easter every year, but the date for the celebration changes. Since we can barely even remember birthdays and anniversaries that always occur on the same date, it's time for me to enlighten you with the facts of how the date for Easter is determined.

Easter can occur as early as March 22 or as late as April 25. Why this range? The

story began many moons ago when the Christian Church first developed. Since this holy day was determined in conjunction with Passover, Easter often fell on a weekday. However, in 352 CE the Council of Nicaea declared that it should always fall on a Sunday. They determined that Easter would fall on the first Sunday after the Full Moon on or next after the vernal equinox (spring—March 19, 20 or 21). However, if the Full Moon occurred on a Sunday, Easter is celebrated on the following Sunday. This scenario happened in 2001.

When I looked up the date for Easter 2019 (April 21) I immediately realized something was not right. When one has followed the motion of the heavens for as long as I have you can anticipate when and where events will happen. Being well aware of the "formula" for determining the date for Easter, I initially expected it would fall on Sunday, March 24.

Why? This year the vernal equinox was

on Wednesday, March 20, at 5:58 p.m. EDT (Eastern Daylight Time). The Full Moon on or after that date occurred on the same day at 9:43pm EDT. Therefore, I calculated that Easter would be observed on the following Sunday, March 24, almost as early as it can be celebrated.

So why was my reasoning incorrect? Because of the fact that the vernal equinox date does vary, the Easter date depends on the "ecclesiastical approximation of March 21 for the vernal equinox" according to <https://www.timeanddate.com>. This stipulation holds true even if the vernal equinox falls on the 19th or 20th of March.

Considering this additional qualification using March 21 as the date for the vernal equinox, the next Full Moon after March 21 will be on April 19 this year. Therefore, Easter will be celebrated on Sunday, April 21

It is always a great day when you learn something new!

## April Observing Opportunities

by Dave Huestis

April is a fairly quiet month for most casual stargazers. Jupiter and Saturn are still early morning objects in a pre-dawn sky. Venus is still prominent but very low above the eastern horizon as the month begins. On the 11th you may spot Mercury about five degrees to the lower left of Venus. Mercury will only be about seven degrees above the horizon at 6:00 a.m. You'll need an unobstructed view to the east to observe these two planets to best advantage. Venus' brilliance will guide you to this sky location.

Just after sunset on April 13 you'll find a waxing gibbous Moon within two degrees of M44, the Beehive Cluster of stars, in the constellation of Cancer. This conjunction of celestial bodies will look great with binoculars.

In addition, on the night of April 22-23, you should scan the skies for members of the April Lyrids meteor shower. The Lyrids are the oldest known shooting star display, having been observed by Chinese astronomers on March 16, 687 BCE. Being an old display, the number of meteors populating

the stream of particles has greatly diminished. While some astronomers predict a rate of 15 meteors per hour under dark sky conditions, ten per hour is more likely.

However, a bright waning gibbous moon (full on the 19th) will reduce the peak number down to ten or less shooting stars per hour. The Lyrids are swift and bright meteors which 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 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. I let my eyes roam the heavens while facing this general direction. Remember, even though you can trace back the dust train left by a Lyrid meteor back to its radiant point, members of this shower can appear anywhere in the sky.

And finally, on that same morning a beautiful sight will greet your eyes. Two and a half degrees to the lower left of the Moon will be bright Jupiter. Try using a camera with a telephoto lens, a pair of binoculars, or even a small telescope using low power to enhance your view of this beautiful sky scene.

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>*



## Book Review

# The Cosmic Mystery Tour: A High-Speed Journey Through Space and Time by Nicholas Mee

Oxford University Press, New York, 2019, ISBN 978-0-19-883186-0, hardbound, \$24.95 U.S.

Reviewed by Francine Jackson

The Cosmic Mystery Tour: A High-Speed Journey Through Space and Time, by Nicholas Mee, New York: Oxford University Press, 2019, ISBN 978-0-19-883186-0, hardbound, \$24.95 U.S.

Every so often a book comes along that attempts to introduce the universe to a reader in as short a context as possible. Some work, others don't. The Cosmic Mystery Tour does. It starts long before any of us were born, familiarizes us with the giants of science through the ages, then stops for awhile to let us know what's been happening during the past several decades.

It almost seems as if any scientist born within the 20th century has been thrown into the magic of our neighborhood. From

Einstein, Eddington, Bell-Burnell, Feynman, and many others, the universe has become a place of such wonder that it is hard to describe in such a small, under 200-page book. And, yet, the author has done his share to make

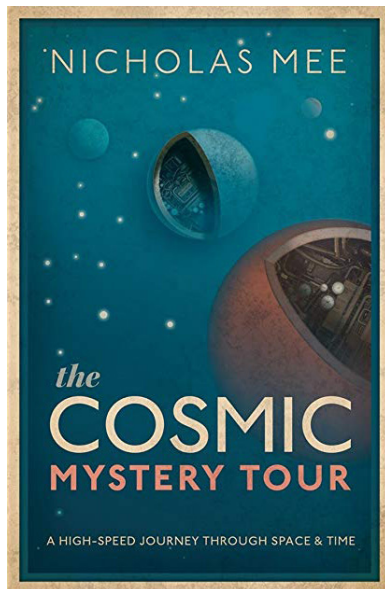
these and other names virtual household words. In detail he explains the workings of the instruments that create theory into a form of reality:

LHC, LIGO, LISA, and all else that opens up the universe into much more than anyone could have ever dreamed of just a few centuries ago.

The author also ventures into the future, taking the infamous Drake equation, and does his best to wonder what happened: Are we the only civilization in the

universe? Are we just one of many all over the place? Are there any with either the technology we have, or much more, therefore deciding we aren't worth the effort to communicate with? He ends this topic with the famous words of Sir Arthur C. Clarke on the terrifying concept of being alone, or not. Goose bumps either way.

In a very small, readable format, with way over a hundred illustrations, most of which are in color, the author has given us a handy, portable collection of the cosmos. And, the reader doesn't have to read from cover to cover: Anywhere you open it up, and start to read, you will be fascinated with the study of our universe – past, present, and future.



Francine Jackson is a NASA Solar System Ambassador, writes the weekly newsletter for Ladd Observatory and teaches astronomy at the Community College of Rhode Island. See more at <http://theskyscrapers.org/francine-jackson>

FOCAL POINT by Francine Jackson

## Why Stargaze?

*"Let me list the reasons," an astronomer tells an inquiring young person.*

■ FRANCINE JACKSON is the staff astronomer at Brown University's Ladd Observatory. A long-time member of Skyscrapers, Inc., Rhode Island's amateur astronomy association, she likes nothing more than to see young people become interested in amateur astronomy.

Congratulations to Francine Jackson, whose article "Why Stargaze?" appeared in Focal Point on page 84 of the May 2019 issue of Sky & Telescope magazine.

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# Mars the Wanderer

By David Prosper

April's skies find Mars traveling between star clusters after sunset, and a great gathering of planets just before sunrise.

**Mars** shows stargazers exactly what the term “planet” originally meant with its rapid movement across the evening sky this month. The ancient Greeks used the term *planete*, meaning wanderer, to label the bright star-like objects that traveled between the constellations of the zodiac year after year.

You can watch Mars as it wanders through the sky throughout April, visible in the west for several hours after sunset. Mars travels past two of the most famous star clusters in our night sky: the **Pleiades** and **Hyades**. Look for the red planet next to the tiny but bright Pleiades on April 1st. By the second week in April, it has moved eastward in Taurus towards the larger V-shaped Hyades. Red Mars appears to the right of the slightly brighter red-orange star **Aldebaran** on April 11th. We see only the brightest stars in these clusters with our unaided eyes; how many additional stars can you observe through binoculars?

Open clusters are made up of young stars born from the same “star nursery” of gas and dust. These two open clusters are roughly similar in size. The Pleiades appears much smaller as they are 444 light years away, roughly 3 times the distance of the Hyades, at 151 light years distant. Aldebaran is in the same line of sight as the Hyades, but is actually not a member of the cluster; it actually shines just 65 light years away! By comparison, Mars is practically next door to us, this month just a mere 18 light minutes from Earth - that's about almost 200 million miles. Think of the difference between how long it takes the light to travel from these bodies: 18 minutes vs.

65 years!

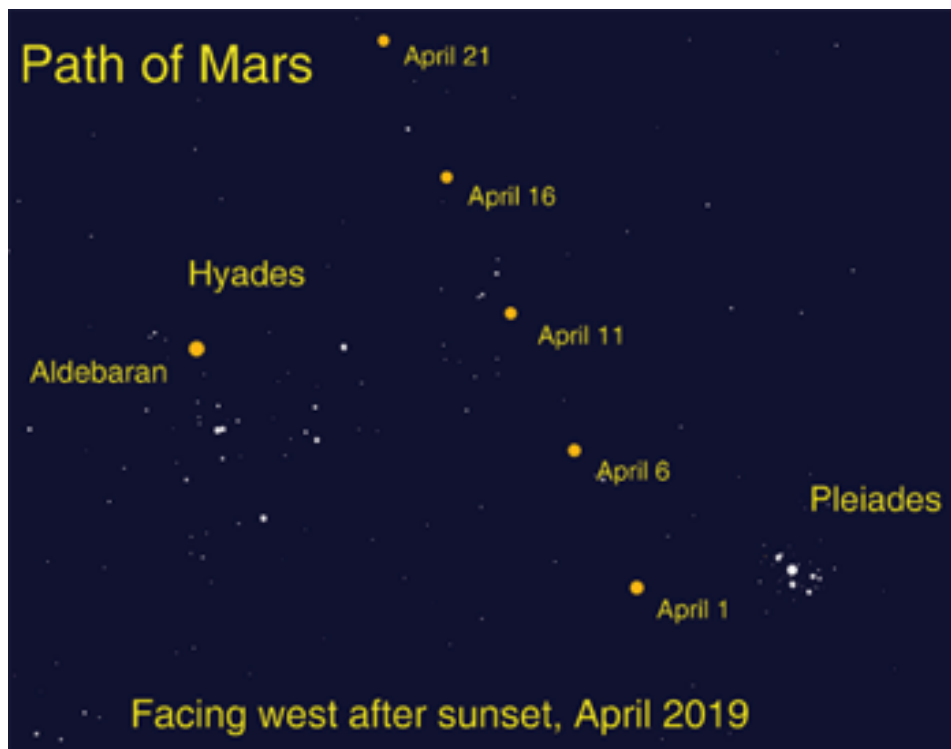
The rest of the bright planets rise before dawn, in a loose lineup starting from just above the eastern horizon to high above the south: **Mercury**, **Venus**, **Saturn**, and **Jupiter**. Watch this month as the apparent gap widens considerably between the gas giants and terrestrial planets. Mercury hugs the horizon all month, with Venus racing down morning after morning to join its dimmer inner solar system companion right before sunrise. In contrast, the giants Jupiter and Saturn move away from the horizon and rise earlier all month long, with Jupiter rising before midnight by the end of April.

The **Lyrids** meteor shower peaks on April 22nd, but sadly all but the brightest meteors will be washed out by the light of a bright gibbous Moon.

You can catch up on all of NASA's current and future missions at [nasa.gov](http://nasa.gov)



*This article is distributed by the NASA Night Sky Network, a coalition of hundreds of astronomy clubs across the US dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.gov](http://nightsky.jpl.nasa.gov) to find local clubs, events, stargazing info and more.*



The path of Mars between the Pleiades and Hyades in April. Image created with assistance from Stellarium.

## Galaxies in Leo

# NGC 2964/2968

by Glenn Chaple for LVAS

### NGC 2964

**Mag: 11.3 Size: 3.0' X 1.7'**

### NGC 2968

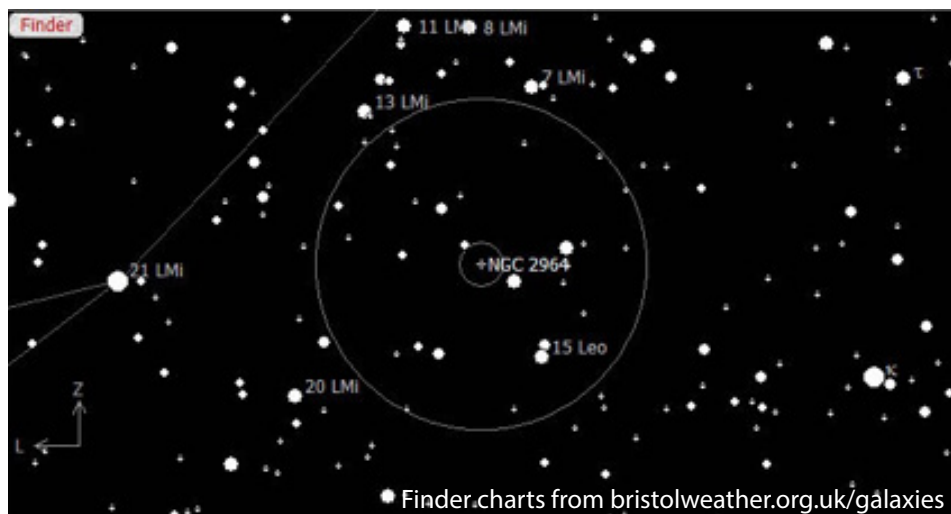
**Mag: 11.8 Size 2.2' X 1.5'**

As was the case last month, our Observer's Challenge consists of a pair of galaxies – in this case, NGC 2964 and NGC 2968, located in the northwest corner of Leo above the Lion's head. NGC 2964, an inclined spiral, is the brighter and slightly larger of the two. NGC 2968, classified as a lenticular galaxy, lies 5.8' northeast.

A third galaxy, NGC 2970, is 4.6' further northeast and appears in the upper left-hand corner of Mario Motta's image below. With NGC 2964 and 2968, it forms what is sometimes called the Leo Triplet 2 or forgotten Leo Triplet (Leo Triplet 1 being consisted of the galaxies Messier 65, Messier 66, and NGC 3628). At 13th magnitude and less than 1.0' in diameter, this elliptical galaxy appears almost star-like in large-aperture scopes.

NGC 2964 and NGC 2968 were discovered by William Herschel in 1785. The brighter NGC 2964 was designated as H114<sup>1</sup>, his 114th Class 1 (Bright Nebulae) object, while NGC 2968 was relegated to Class 2 (Faint Nebulae) and designated as H491<sup>2</sup>. Herschel's son, John, discovered NGC 2700 in 1828. NGC 2964 is believed to be 60 million light years away, while NGC 2968 and NGC 2970 are about 75 million light years distant.

*The purpose of the LVAS Observer's Challenge is to encourage the pursuit of visual observing. It is open to everyone that is interested, and if you are able to contribute notes, drawings, or photographs, the LVAS will be happy to include them in our monthly summary. If you would like to contribute material, submit your observing notes, sketches, and/or images to either Roger Ivester ([rogerivester@me.com](mailto:rogerivester@me.com)) or Fred Rayworth ([queex@embarqmail.com](mailto:queex@embarqmail.com)). To find out more about the LVAS Observer's Challenge or access past reports, log on to*



Finder.charts from [bristolweather.org.uk/galaxies](http://bristolweather.org.uk/galaxies)



Image by Mario Motta M.D.

# The Sun, Moon & Planets in April

This table contains the ephemeris of the objects in the Solar System for each Saturday night in April 2019. 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
<b>Sun</b>	<b>6</b>	0 58.6	6 15.4	Psc	-26.8	1918.2	-	-	-	1	06:20	12:48	19:17
	<b>13</b>	1 24.3	8 51.6	Psc	-26.8	1914.5	-	-	-	1	06:09	12:46	19:25
	<b>20</b>	1 50.3	11 20.5	Ari	-26.8	1910.8	-	-	-	1	05:58	12:45	19:32
	<b>27</b>	2 16.5	13 40.2	Ari	-26.8	1907.1	-	-	-	1.01	05:48	12:44	19:40
<b>Moon</b>	<b>6</b>	1 30.4	3 43.6	Psc	-7.0	1809.7	9° E	1	-	-	07:20	13:55	20:40
	<b>13</b>	7 49.2	20 59.5	Gem	-12.0	1960.8	93° E	52	-	-	12:35	20:08	03:34
	<b>20</b>	14 27.1	-9 52.2	Lib	-12.7	1937.6	171° W	99	-	-	21:03	02:23	07:35
	<b>27</b>	20 40.7	-20 11.5	Cap	-11.8	1757.5	89° W	49	-	-	02:33	07:29	12:29
<b>Mercury</b>	<b>6</b>	23 21.9	-5 26.2	Aqr	0.7	8.6	27° W	38	0.46	0.79	05:28	11:11	16:55
	<b>13</b>	23 45.8	-3 55.3	Aqr	0.4	7.6	28° W	50	0.47	0.89	05:19	11:08	16:58
	<b>20</b>	0 17.0	-1 03.8	Psc	0.2	6.8	26° W	60	0.45	0.99	05:12	11:12	17:13
	<b>27</b>	0 53.8	2 51.1	Psc	-0.1	6.2	23° W	70	0.43	1.09	05:07	11:22	17:38
<b>Venus</b>	<b>6</b>	22 56.3	-7 59.1	Aqr	-3.9	13	34° W	82	0.73	1.30	05:12	10:47	16:22
	<b>13</b>	23 28.0	-4 54.7	Aqr	-3.8	12.6	32° W	84	0.73	1.35	05:05	10:51	16:38
	<b>20</b>	23 59.4	-1 42.7	Psc	-3.8	12.2	30° W	86	0.73	1.39	04:57	10:54	16:53
	<b>27</b>	0 30.7	1 33.0	Cet	-3.8	11.9	29° W	87	0.73	1.42	04:49	10:58	17:08
<b>Mars</b>	<b>6</b>	4 06.4	21 50.4	Tau	1.5	4.5	48° E	94	1.57	2.06	08:28	15:55	23:23
	<b>13</b>	4 26.0	22 40.9	Tau	1.5	4.4	46° E	95	1.58	2.11	08:16	15:47	23:19
	<b>20</b>	4 45.7	23 22.4	Tau	1.6	4.3	43° E	95	1.59	2.16	08:05	15:40	23:14
	<b>27</b>	5 05.6	23 54.5	Tau	1.6	4.2	41° E	96	1.60	2.21	07:55	15:32	23:09
<b>1 Ceres</b>	<b>6</b>	16 54.9	-16 41.8	Oph	8.1	0.6	121° W	97	2.72	2.07	23:43	04:43	09:43
	<b>13</b>	16 54.8	-16 49.4	Oph	8.0	0.6	128° W	98	2.73	1.99	23:16	04:16	09:15
	<b>20</b>	16 53.3	-16 56.9	Oph	7.8	0.6	135° W	98	2.74	1.93	22:48	03:47	08:46
	<b>27</b>	16 50.6	-17 04.6	Oph	7.7	0.7	143° W	99	2.74	1.87	22:18	03:16	08:15
<b>Jupiter</b>	<b>6</b>	17 35.4	-22 40.9	Oph	-2.1	40.4	112° W	99	5.32	4.87	00:49	05:24	09:59
	<b>13</b>	17 35.5	-22 40.9	Oph	-2.2	41.3	118° W	99	5.32	4.77	00:21	04:56	09:31
	<b>20</b>	17 34.9	-22 40.6	Oph	-2.2	42.1	125° W	99	5.32	4.67	23:53	04:28	09:03
	<b>27</b>	17 33.7	-22 39.9	Oph	-2.3	42.9	133° W	100	5.31	4.58	23:25	03:59	08:34
<b>Saturn</b>	<b>6</b>	19 26.5	-21 32.2	Sgr	0.6	16.4	86° W	100	10.06	10.08	02:35	07:15	11:55
	<b>13</b>	19 27.5	-21 30.4	Sgr	0.5	16.6	93° W	100	10.06	9.96	02:08	06:48	11:28
	<b>20</b>	19 28.2	-21 29.3	Sgr	0.5	16.8	99° W	100	10.05	9.85	01:41	06:21	11:01
	<b>27</b>	19 28.5	-21 28.9	Sgr	0.5	17	106° W	100	10.05	9.73	01:14	05:54	10:34
<b>Uranus</b>	<b>6</b>	1 58.3	11 33.3	Ari	5.9	3.4	16° E	100	19.85	20.81	07:01	13:45	20:30
	<b>13</b>	1 59.8	11 41.6	Ari	5.9	3.4	9° E	100	19.85	20.84	06:35	13:19	20:04
	<b>20</b>	2 01.4	11 49.9	Ari	5.9	3.4	3° E	100	19.85	20.85	06:08	12:53	19:39
	<b>27</b>	2 02.9	11 58.2	Ari	5.9	3.4	4° W	100	19.85	20.85	05:42	12:27	19:13
<b>Neptune</b>	<b>6</b>	23 14.7	-5 55.5	Aqr	8.0	2.2	29° W	100	29.94	30.81	05:21	11:02	16:43
	<b>13</b>	23 15.5	-5 50.2	Aqr	8.0	2.2	35° W	100	29.94	30.75	04:54	10:35	16:17
	<b>20</b>	23 16.3	-5 45.2	Aqr	8.0	2.2	42° W	100	29.94	30.68	04:27	10:09	15:50
	<b>27</b>	23 17.1	-5 40.7	Aqr	7.9	2.2	49° W	100	29.94	30.59	04:00	09:42	15:24
<b>Pluto</b>	<b>6</b>	19 39.8	-21 42.9	Sgr	14.3	0.2	83° W	100	33.77	33.88	02:49	07:28	12:07
	<b>13</b>	19 40.0	-21 43.1	Sgr	14.3	0.2	90° W	100	33.78	33.77	02:21	07:00	11:40
	<b>20</b>	19 40.1	-21 43.5	Sgr	14.3	0.2	96° W	100	33.78	33.66	01:54	06:33	11:12
	<b>27</b>	19 40.1	-21 44.1	Sgr	14.3	0.2	103° W	100	33.79	33.54	01:27	06:06	10:45



# Image Gallery



Lloyd Merrill's "roll-off roof" observatory.



Sirius  
8.6 Light Years from Earth

Astrophotography by  
Tracy Karin Prell  
TKP



Hip 55262

Leo Triplet  
35 million light years from Earth

M66

M65

Astrophotography by  
Tracy Karin Prell  
TKP



NGC 2261 - Hubble's Variable Nebula  
in Monoceros by Steve Hubbard using  
a Meade 14-inch SCT and Malincam.



Orion Nebula  
1,344 light years from Earth







Jeff Padell has been experimenting with image processing using images from the Slooh robotic telescope network. This one of NGC 5139, Omega Centauri globular cluster was taken with Slooh's 17-inch Planewave telescope.

## For Sale

### Orion 12-inch f/5 Dobsonian

Dear Friends: This is to tell you that I have an Orion 12' f/5 Dobsonian telescope for sale. It comes without any of the electronic drives. I has a 7x35 straight-through finderscope, a 2" focuser, and a canvas cover. It is in excellent condition. The purchase price was \$800 six years ago. I will sell it for the best offer over \$250 (1/3 new price). The buyer must pick it up at my place. Gerald P. Dyck 29 Pleasant St Assonet MA 02702 USA 508-644-2419 [geraldpdyck@yahoo.com](mailto:geraldpdyck@yahoo.com)



### Canon EF 75-300 mm f/4-5.6 III lens

Tracy Prell ([tracy.prell@gmail.com](mailto:tracy.prell@gmail.com)) have a friend that is selling her Canon EF 75-300 mm f/4-5.6 III lens for \$50 plus shipping. The lens is in good condition and she lives in PA and I've known her for several years. If someone is interested in this lens, they can contact Tracy Prell. She accepts PayPal payments.



# 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  \$ \_\_\_\_\_

(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 Peepload Road  
 North Scituate, RI 02857

# Skyscrapers Inc. Fiscal Year 2019-2020 Proposed Budget

## INCOME

AstroAssembly	4,000
Dues	3,100
AL Membership	90
Donations	1,300
Sale of Equipment	100
Star Party Donations	300
Transfer from Savings/CD	935
<b>TOTAL INCOME</b>	<b>9,825</b>

## EXPENSES

Astro Assem Exp	1,450
AL Membership Exp	100
Contingency	258
Corporation, State Fee	22
Domain Name	20
Donation	50
PayPal Fees	50
Outreach	300
Postage and Delivery	75
Property Insurance	2,500
Refreshment Expense	200
Trustee Expense	2,400
Utilities	2,400
<b>TOTAL EXPENSES</b>	<b>9,825</b>

**OVERALL TOTAL** **0**

As agreed by eBoard on 03/30/19



# 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