



the Skyscraper

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

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Friday, May 3, 7:00pm at Seagrave Observatory

Backyard Spectroscopy by Conrad Cardano

Conrad Cardano has been looking at the stars for 50 years. He's enjoyed it, but he always wished he could do a little bit more. Stars are much more than just a tiny, bright pinpoint of light. Just look at our Sun. It is an incredibly dynamic ball of gas, with ever changing sunspots, flares, and prominences. The Star Analyzer finally gave him the ability to see the different star types and temperature from their spectral curves.

All of this started back in 2011 when he used the Star Analyzer with just a DSLR and no motor drive. Now, he uses it with my ZWO 174mm and a 6" reflector.

The Star Analyzer is designed for amateur astronomical spectroscopy. It can be

mounted on your telescope just like any 1.25" filter. It's easy to use, and works with most cameras. Capturing the spectrum of a star is easy!

Haven't you always wanted to "do some science" with your telescope?

This presentation will be about:

- Stellar Spectral Classes
- What is spectroscopy?
- The electromagnetic spectrum
- Types of Spectra
- What is diffraction?
- High/Low resolution spectroscopes
- Software Used for Processing
- Results from my setup

Board Meeting

Monday, May 13, 7pm at Seagrave Observatory
All Members Welcome

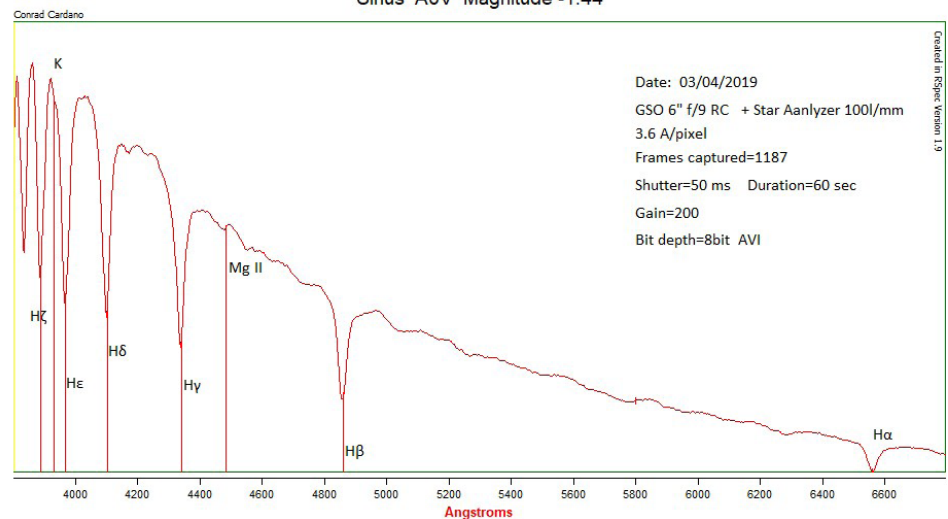
Phases of the Moon

New Moon
May 4 22:46

First Quarter Moon
May 12 01:12

Full Flower Moon
May 18 21:11

Last Quarter Moon
May 26 16:34



Seagrave Memorial Observatory
Open Nights

Saturdays at 9:00 pm
weather permitting



President's Message

by Steve Hubbard

FINANCES!

It's a topic that excites almost no one, but one that we will be tackling at our May meeting.

It's that time of year for folks to renew their membership with Skyscrapers and this year, we will be tying that in with some significant projects to be done at Seagrave Observatory.

There are a number of items that we have deferred, put up with or otherwise patched together that we have to face up to. At our May meeting, our trustees will be reviewing what is ahead of us, we will be reviewing and voting on our next fiscal year budget and talk about a capitol campaign that we intend to roll out.

I know this may not be exciting, but we hope that everyone will try and attend to understand what is ahead of us and to learn how they can help out.

As a reward, you'll get to hear a great presentation by one of our own, Conrad Cardano who is always entertaining and quite knowledgeable.

By the time of the May meeting, we will hopefully have our first special star party at the observatory. I'm hoping for good weather for a change because there's lots to look at out there in the spring sky. AND.... NO mosquitos yet!

That to me, is always a bonus!

See you at our next meeting or star party.



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.

amazonsmile
You shop. Amazon gives.

<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 **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.

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A Relatively Significant Eclipse: May 29, 1919

By Francine Jackson

Many of us were fortunate to travel to the eclipse of 2017; others here were still thrilled to observe about 3/4 of our Sun blocked by the New Moon, and we have another U.S. total eclipse ahead of us, in just 2024.

There will be two occurring just below us, in South America this year and the next, and this year's falls just two months shy of one a century ago that meant a lot to physicists of the day: It can be said the total eclipse of May 29, 1919 confirmed Einstein's 1915 theory of relativity.

It had been known that the planet Mercury's orbit slowly precesses in space over time. Sir Isaac Newton's laws were able to calculate this motion a little bit, but not enough to perfectly fit the orbit; utilizing Einstein's general relativity, the numbers were perfect, although there were still skeptics who, not only denied the result, but accused Einstein of fudging his numbers

because he knew the result beforehand.

Despite this naysaying, it appears Einstein had actually proposed an alternate test years before. In 1911, he had continued a process first thought in the early 19th century by von Soldner concerning the impact of the Sun's gravitational field on light. To come to an accurate determination of this change, all that was needed was to temporarily block out the Sun's light, i.e., to observe the apparent positional change of stars very near the Sun during a total solar eclipse. Attempts were made in preceding years, but it was the eclipse of 1919 that astronomers were finally sure of, and were counting on, the accuracy of the observations.

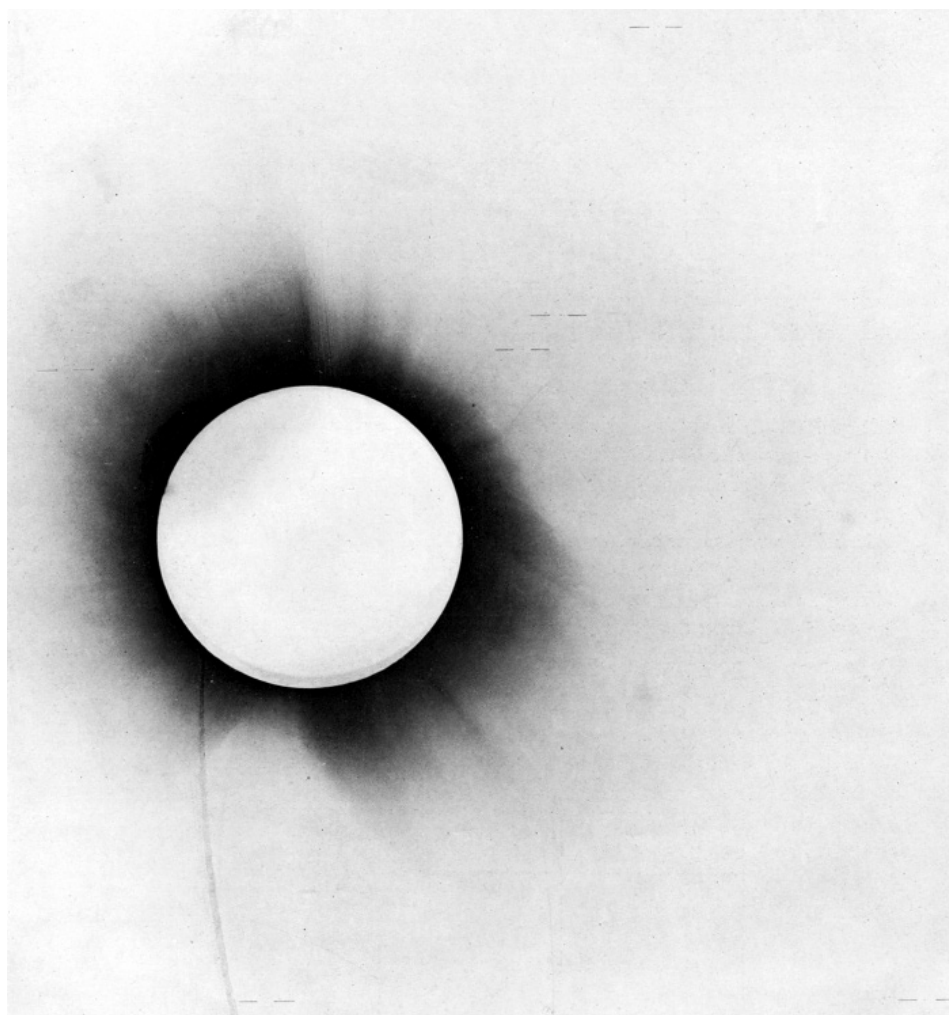
Two spots to observe this phenomenon were determined: Sobral, Brazil would be visited by Andrew Crommelin and Charles Davidson, and Principe, off the coast of Africa, where Cambridge Observatory Direc-

tor Arthur Eddington and Edwin Cottingham would set up their instruments.

Today, of course, we are aware that the observations from both sites validated Einstein's theory, although many did not fully believe the results, and called for further study; however, the press of the day did hail it as the discovery of the century, bringing Einstein's name into the realm of the commonplace.

Total solar eclipses are only observable here on Earth; therefore, it should be a must for everyone's bucket list. And, although for most of us the most important aspect of a total solar eclipse is its absolute beauty, they are still often observed in attempts to once again "confirm" the results obtained a century ago.

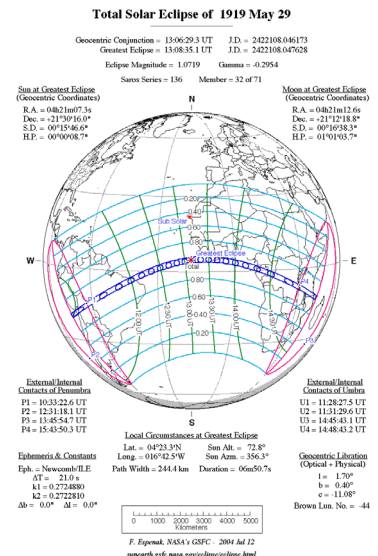
Most likely, many of us will not be able to travel down to the Southern Hemisphere for either this year's or the next, but 2024 isn't really that far away. Let us begin to think about traveling to one of its best observing sites. Whether you've seen one or more, or if you're new to this phenomenon, the word for these, in the words of a foremost eclipse researcher, Fred Espenak, is "Awestruck!"



Negative of the 1919 solar eclipse taken from the report of Sir Arthur Eddington on the expedition to verify Einstein's prediction of the bending of light around the sun.



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>



A Meteor Shower, a Blue Moon, and No More Iridium Flares, Oh My!

by Dave Huestis

It's challenging to explain to someone that you spent a below-freezing December night sitting on your back porch bundled up in a sleeping bag on a lounge chair just to watch a few meteors blaze across the sky. Why? Because sometimes even I question why I choose to do so. A few months back the Geminid meteor shower did not perform well around here, at least not when I decided to observe it. After about an hour and a half I counted less than a dozen meteors, and not all of them were Geminids. Only a couple of them were bright enough to elicit a wow, though not loud enough to wake my neighbors!

That's the way it is with meteor showers. Sometimes you're in the right place at the right time to see the meteors to best advantage. Other times you are not. It can be frustrating when the latter occurs, especially when the weather conspires against you. Still, after all my decades of stargazing I never tire of watching for meteors to fall from the sky.

The early days of May present us with warmer weather prospects to enjoy a somewhat "meteor-ocre" display of shooting stars. During the pre-dawn hours of May 5 and 6, the Earth will be sweeping through a stream of particles shed by Halley's Comet long ago. (Either morning will be a fine time to observe since the Eta Aquarids do not have a sharp peak. The meteors comprising this meteor shower enter the Earth's upper atmosphere head-on at 41 miles per second. While the Moon will not interfere with observing this shooting star display this year (New Moon is on the 4th), one can expect to see no more than 10-15 swift and yellow shooting stars per hour from Southern New England. Why? The Eta Aquarids, are best observed from the southern hemisphere.

The meteors appear to radiate from the constellation of Aquarius, not a very prominent star pattern. Around 4:00 a.m. Aquarius will be located about 12 degrees above the east-southeast horizon. 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.

What's in a name? Many of the full moon names have been borrowed from

Native American cultures. Whereas others have come from the early American settlers who brought them over from Europe. There does not seem to be any rhyme or reason for favoring the use of one over the other. Native Americans called May's full moon the Full Flower Moon because spring flowers were heralding a new season, Other names less frequently used are Full Corn Planting Moon and the Milk Moon.

I'm sure you're familiar with the term Full Blue Moon. In 1946 it was mistakenly ascribed to having two full moons in a month. Two full moons in a month can occur when one happens at the very beginning of a month and at the very end because there is approximately 29.5 days between successive full moons. This modern definition apparently resurfaced in the mid-1980s.

See this Sky and Telescope article for a detailed explanation: <https://www.skyandtelescope.com/observing/celestial-objects-to-watch/what-is-a-blue-moon/> The original definition of a Blue Moon was used to describe the third of four full moons during an astronomical season. That is, from winter solstice to vernal equinox, from vernal equinox to summer solstice, etc. Usually only three occur, but occasionally there can be four. Having made that distinction, the full moon of May 18 qualifies as a Blue Moon. Here's the reasoning.

Spring began on March 20 at 5:58 p. m., EDT. The first full moon of the spring season was on the same day at 9:43pm EDT. The second one was on April 19. The third is on May 19. And the fourth will be on June 17. The summer solstice begins on June 21.

So using the original definition for a Blue Moon that means the full moon of May 18 will be a Blue Moon. Just remember, the Moon will not be blue in appearance. That only happens when particulates of a specific size are suspended in the Earth's atmosphere after volcanic eruptions or large fires. The particles scatter the red light so a predominant blue end of the spectrum prevails.

Finally, the end of an era has come for getting flashed by a "constellation" of satellites orbiting the Earth. Iridium satellites were low-earth orbit communications satellites that were designed to be the "cell

phone" technology of its day (1997). The service was too expensive for the general public and the technology quickly changed, so that business venture went bankrupt. The satellites were purchased by private investors for cents on the dollar and were spared a fiery re-entry into Earth's atmosphere.

A ground observer could observe a flash of light off the satellite's highly reflective antennae. These Iridium flares were very predictable. Sometime the flares would be many times brighter than Venus. Others not so much. The brightness of the flare depended upon an observer's location, location, location!

When very bright flares were predicted I would even interrupt my astronomy labs at Bryant and usher my students outside to witness these events. Students were amazed how bright the flares would be. And during public nights at the local observatories Iridium flares were always crowd pleasers.


Unfortunately the original Iridium satellites are being replaced by Iridium NEXT, a next generation of communication satellites. An old satellite is initially positioned into a parking orbit. After the NEXT version is moved into place and tested, the old spacecraft will be de-orbited. Many have already met their fiery demise. Unfortunately for us observers the design of the Iridium NEXT satellite is not expected to produce any flares.

The Heavens Above (<http://www.heavens-above.com/>) website where predictions for the flares could be found continues to be a valuable resource for a variety of astronomical information. One can still find predictions for many other satellites, as well as observing windows for viewing passes of the ISS (International Space Station). That orbiting laboratory is an inspiring sight, especially when you realize a crew of six (April, 2019) orbit the Earth every 90 minutes or so at an altitude on average of 248 miles. Even though you won't get flashed, the experience is still impressive.

Now that spring is in full swing, let's hope that the April showers brought May flowers as well as cloud and rain free skies. The volunteers at the local Rhode Island observatories will be happy to share their knowledge of the heavens with you using the magnificent telescopes available. Seagrave

Memorial Observatory (<http://www.theskyscrapers.org>) in North Scituate is open to the public every clear Saturday night. Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) in Providence is open every clear Tuesday night. The Margaret M. Jacoby Observatory at the CCRI Knight Campus in Warwick (<http://www.ccri.edu/physics/observatory.htm>) is open every clear Wednesday night. Frosty Drew Observatory (<http://www.frostydrew.org/>) in Charlestown is open every clear Friday night year-round. Be sure to check all the websites for the public night schedules and opening times before visiting these facilities. All public nights are free of charge.

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>

Lenticular Galaxy in Ursa Major: NGC 4036

by Glenn Chaple for LVAS

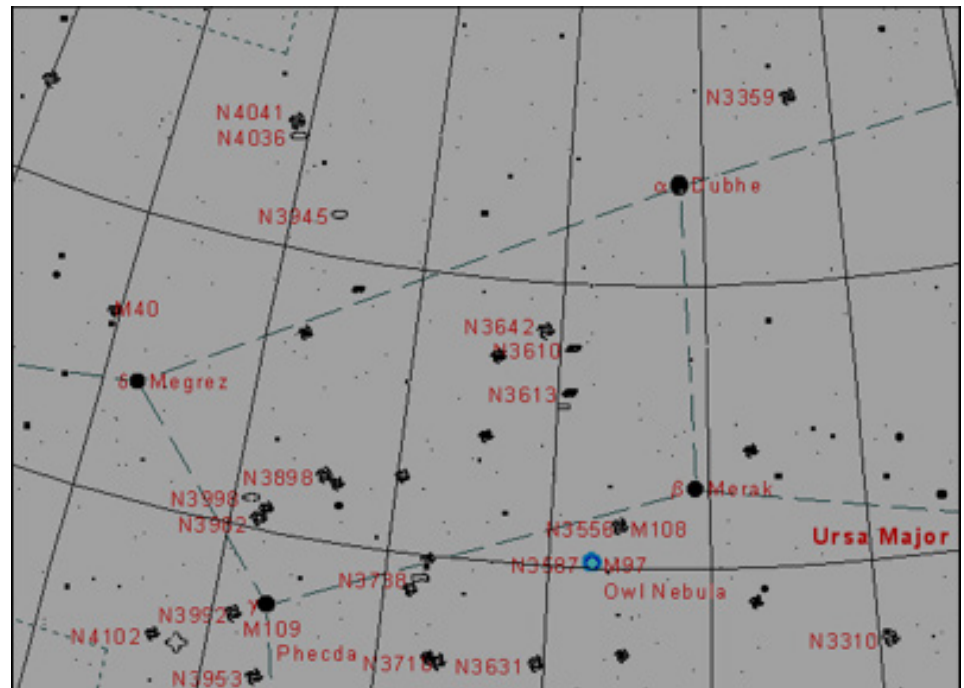
Mag: 10.7 Size: 3.8' X 1.0'

For the third month in a row, the Observer's Challenge brings us face-to-face with a pair of galaxies – this time, in Ursa Major. Our main quest is the lenticular galaxy NGC 4036 (we'll look at its field-of-view neighbor, NGC 4041 later). NGC 4036 was discovered by William Herschel in 1790 and in early star atlases bears the Herschel Catalog designation H I-253 – his 253rd Class I (Bright Nebulae) object. A potential catch in a 4-inch scope (dark skies a must!), NGC 4036 normally requires apertures 2 or 3 times greater, especially when viewed from average suburban skies. Look for a misty oval patch about a half degree NE of a row of three 6th and 7th magnitude stars.

NGC 4041 shares the same medium-power field with NGC 4036, ¼ degree to its NNE. Also discovered in 1790 by Herschel (Herschel Catalog number H I-252), it's a magnitude 11.3 face-on spiral with 2.6' X 2.6' dimensions and is the more challenging of the two.

Both galaxies appear to be gravitationally connected and lie about 70 million light years away. Gaze at this distant pair, and the photons entering your eye left when dinosaurs still roamed the earth.

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) or Fred Rayworth (queex@embarqmail.com). To find out more about the LVAS Observer's Challenge or access past reports, log on to rogerivester.com/category/observers-challenge-reports-complete.



www.hawastsoc.org/deepsky/maps/uma/uma2.gif



NGC 4036 Image by Mario Motta, MD, ATMob

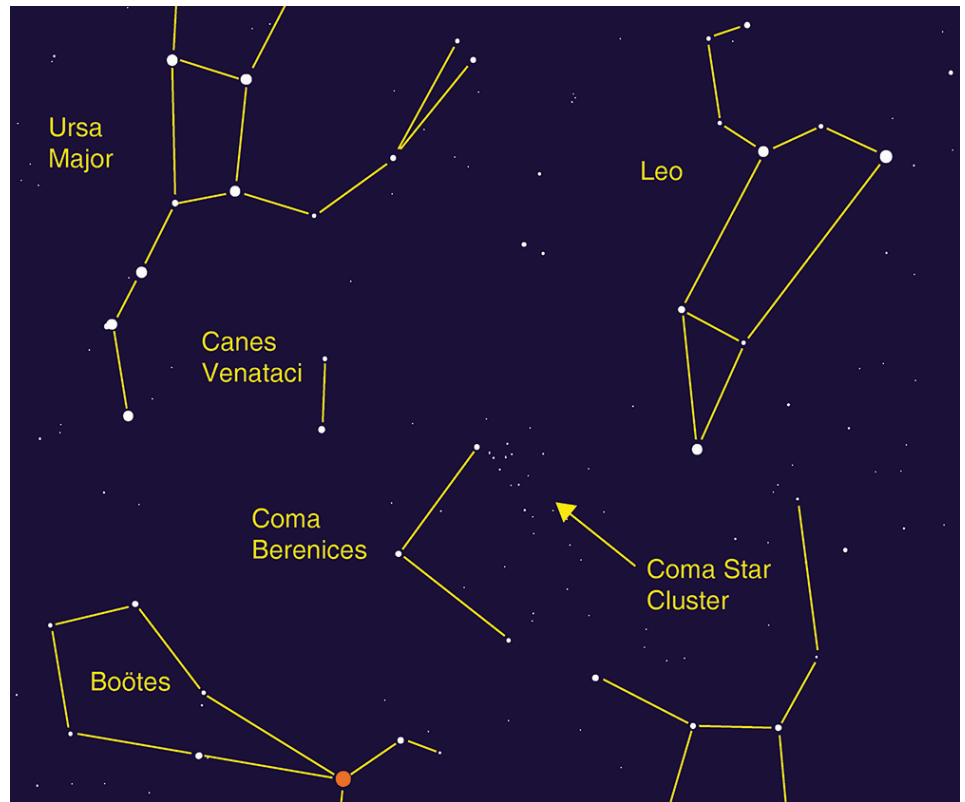
Watching the Late Spring Skies

By David Prosper

Late spring brings warmer nights, making it more comfortable to observe a good showing of the **Eta Aquarids** meteor shower. Skywatchers can also look for the delicate **Coma Star Cluster**, and spot the **Moon** on the anniversary of **Apollo 10's** "test run" prior to the Moon landing in 1969.

The **Eta Aquarids** meteor shower should make a good showing this year, peaking the morning of May 6. This meteor shower has an unusual "soft peak," meaning that many meteors can be spotted several days before and after the 6th; many may find it convenient to schedule meteor watching for the weekend, a night or two before the peak. You may be able to spot a couple dozen meteors an hour from areas with clear dark skies. Meteors can appear in any part of the sky and you don't need any special equipment to view them; just find an area away from lights, lie down on a comfy lawn chair or blanket, relax, and patiently look up. These brief bright streaks are caused by Earth moving through the stream of fine dust particles left by the passage of Comet Halley. While we have to wait another 43 years for the famous comet grace our skies once more, we are treated to this beautiful cosmic postcard every year.

While you're up meteor watching, try to find a delightful naked eye star cluster: the **Coma Star Cluster** (aka Melotte 111) in the small constellation of Coma Berenices. It can be spotted after sunset in the east and for almost the entire night during the month of May. Look for it inside the area of the sky roughly framed between



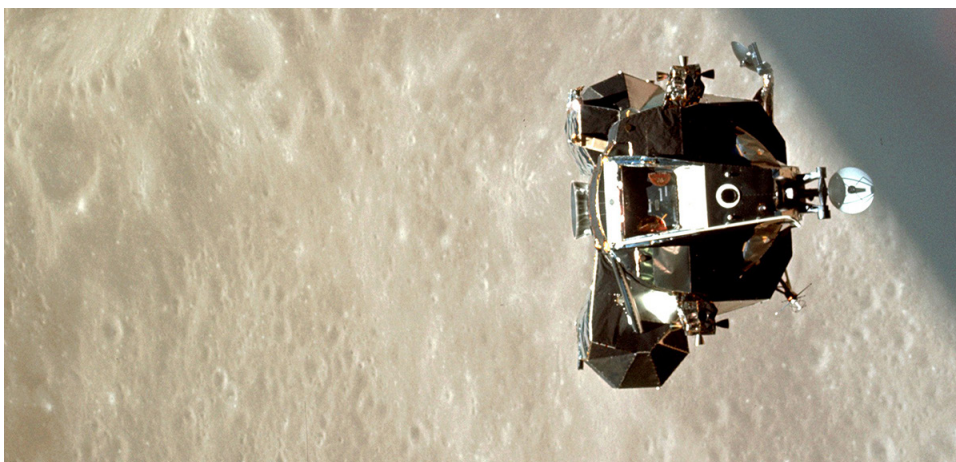
Try to spot the Coma Star Cluster! Image created with assistance from Stellarium

the constellations of Leo, Boötes, and Ursa Major. The cluster's sparkly members are also known as "Berenice's Hair" in honor of Egyptian Queen Berenices II's sacrifice of her lovely tresses. Binoculars will bring out even more stars in this large young cluster.

May marks the 50th anniversary of the Lunar Module's test run by the **Apollo 10** mission! On May 22, 1969, NASA astronauts Thomas Safford and Eugene Cernan

piloted the Lunar Module - nicknamed "Snoopy" - on a test descent towards the lunar surface. Undocking from "Charlie Brown" - the Command Module, piloted by John Young - they descended to 47,400 feet above the surface of the Moon before returning safely to the orbiting Command Module. Their success paved the way for the first humans to land on the Moon later that year with Apollo 11. Look for the Moon on the morning of May 22, before or after dawn, and contemplate what it must have felt like to hover mere miles above the lunar surface. You'll also see the bright giant planets Saturn and Jupiter on either side of the Moon before sunrise. When will humans travel to those distant worlds?

You can catch up on all of NASA's current and future missions at nasa.gov



A view of Apollo 10's Lunar Module from the Command Module as it returned from maneuvers above the lunar surface. Photo Credit: NASA. Source: <http://bit.ly/apollo10view>



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 to find local clubs, events, stargazing info and more.

The Sun, Moon & Planets in May

This table contains the ephemeris of the objects in the Solar System for each Saturday night in May 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
Sun	4	2 43.2	15 48.9	Ari	-26.8	1903.7	-	-	-	1.01	05:38	12:43	19:48
	11	3 10.4	17 44.8	Ari	-26.8	1900.6	-	-	-	1.01	05:30	12:42	19:55
	18	3 38.0	19 26.1	Tau	-26.8	1897.7	-	-	-	1.01	05:23	12:42	20:02
	25	4 06.0	20 51.2	Tau	-26.8	1895.1	-	-	-	1.01	05:17	12:43	20:09
Moon	4	2 03.6	6 52.1	Psc	-7.8	1823.6	12° W	1	-	-	05:50	12:36	19:33
	11	8 34.7	19 44.9	Cnc	-11.7	1961.1	76° E	38	-	-	11:35	19:00	02:16
	18	15 00.2	-12 49.2	Lib	-12.7	1918	168° E	99	-	-	19:52	01:03	06:07
	25	21 14.6	-18 54.2	Cap	-12.1	1760.3	108° W	66	-	-	01:07	06:09	11:16
Mercury	4	1 36.1	7 35.0	Psc	-0.5	5.7	18° W	80	0.39	1.19	05:05	11:37	18:11
	11	2 24.6	12 50.4	Ari	-1.0	5.3	12° W	90	0.35	1.27	05:06	11:59	18:53
	18	3 20.7	18 06.8	Ari	-2.1	5.1	4° W	99	0.32	1.32	05:14	12:28	19:44
	25	4 23.3	22 29.9	Tau	-2.3	5.2	4° E	98	0.31	1.31	05:31	13:04	20:38
Venus	4	1 02.1	4 48.8	Psc	-3.8	11.6	27° W	89	0.73	1.46	04:41	11:02	17:24
	11	1 33.8	8 00.7	Psc	-3.8	11.3	25° W	90	0.73	1.50	04:33	11:06	17:40
	18	2 05.9	11 04.7	Ari	-3.8	11.1	24° W	91	0.73	1.53	04:26	11:11	17:56
	25	2 38.7	13 56.9	Ari	-3.8	10.9	22° W	93	0.73	1.56	04:21	11:16	18:12
Mars	4	5 25.5	24 17.1	Tau	1.6	4.1	39° E	96	1.60	2.26	07:45	15:24	23:03
	11	5 45.4	24 30.1	Tau	1.7	4.1	37° E	96	1.61	2.30	07:37	15:16	22:56
	18	6 05.3	24 33.4	Gem	1.7	4.0	34° E	97	1.62	2.35	07:29	15:09	22:49
	25	6 25.1	24 27.3	Gem	1.7	3.9	32° E	97	1.62	2.39	07:22	15:01	22:40
1 Ceres	4	16 46.5	-17 12.5	Oph	7.5	0.7	150° W	99	2.75	1.82	21:47	02:45	07:43
	11	16 41.4	-17 20.8	Oph	7.4	0.7	158° W	100	2.75	1.79	21:15	02:12	07:09
	18	16 35.5	-17 29.5	Oph	7.2	0.7	166° W	100	2.76	1.76	20:42	01:39	06:35
	25	16 28.9	-17 38.9	Oph	7.0	0.7	174° W	100	2.76	1.75	20:09	01:05	06:01
Jupiter	4	17 31.9	-22 38.9	Oph	-2.3	43.7	140° W	100	5.31	4.50	22:55	03:30	08:05
	11	17 29.5	-22 37.5	Oph	-2.4	44.4	147° W	100	5.31	4.43	22:25	03:00	07:35
	18	17 26.6	-22 35.6	Oph	-2.4	45.0	154° W	100	5.31	4.38	21:55	02:30	07:05
	25	17 23.3	-22 33.3	Oph	-2.4	45.4	162° W	100	5.30	4.33	21:24	01:59	06:34
Saturn	4	19 28.5	-21 29.2	Sgr	0.4	17.2	113° W	100	10.05	9.62	00:46	05:26	10:06
	11	19 28.1	-21 30.3	Sgr	0.4	17.4	120° W	100	10.05	9.52	00:18	04:58	09:39
	18	19 27.4	-21 32.0	Sgr	0.4	17.6	127° W	100	10.05	9.42	23:50	04:30	09:10
	25	19 26.4	-21 34.5	Sgr	0.3	17.8	134° W	100	10.05	9.33	23:22	04:02	08:41
Uranus	4	2 04.4	12 06.4	Ari	5.9	3.4	10° W	100	19.85	20.84	05:15	12:01	18:48
	11	2 06.0	12 14.5	Ari	5.9	3.4	16° W	100	19.85	20.81	04:49	11:35	18:22
	18	2 07.4	12 22.2	Ari	5.9	3.4	23° W	100	19.85	20.77	04:22	11:09	17:57
	25	2 08.9	12 29.7	Ari	5.9	3.4	29° W	100	19.85	20.72	03:55	10:43	17:31
Neptune	4	23 17.8	-5 36.6	Aqr	7.9	2.2	55° W	100	29.94	30.50	03:33	09:15	14:57
	11	23 18.4	-5 33.0	Aqr	7.9	2.2	62° W	100	29.94	30.40	03:06	08:48	14:30
	18	23 18.9	-5 30.0	Aqr	7.9	2.3	68° W	100	29.94	30.29	02:39	08:21	14:04
	25	23 19.3	-5 27.5	Aqr	7.9	2.3	75° W	100	29.94	30.18	02:12	07:54	13:37
Pluto	4	19 40.1	-21 45.0	Sgr	14.3	0.2	110° W	100	33.79	33.43	00:59	05:38	10:17
	11	19 39.9	-21 46.2	Sgr	14.3	0.2	117° W	100	33.80	33.33	00:31	05:10	09:49
	18	19 39.6	-21 47.5	Sgr	14.3	0.2	124° W	100	33.80	33.23	00:04	04:42	09:21
	25	19 39.3	-21 49.1	Sgr	14.3	0.2	131° W	100	33.81	33.14	23:36	04:15	08:53



Hyades, Pleiades, Mars & International Space Station; April 6; by Bob Horton



Globular Cluster M3 by Tracy Prell

SINCE 1926

STELLAFANE CONVENTION

The Original Star Party

AUGUST 1-4, 2019

Keynote Speaker **Dr. Alan Stern**
of the New Horizons Mission

- Observing • Workshops & Talks
- Homemade Telescope Competition
- Fabulous Raffle • Legendary Swap Meet

**SAVE THE DATES! ONLINE
REGISTRATION OPENS IN EARLY MAY.**

**HARTNESS HOUSE
WORKSHOP AUGUST 1**

Advanced Telescope Making

- Daylong workshop • Keynote speaker **Richard Berry**, former editor, Astronomy Magazine.
- (Separate Registration)

MORE INFO AT STELLAFANE.ORG

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)	
	<input type="checkbox"/> Junior	\$15
	<input type="checkbox"/> Regular	\$50
	<input type="checkbox"/> *Family	\$60
	<input type="checkbox"/> Senior	\$25
	<input type="checkbox"/> 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 Peeptoad Road
North Scituate, RI 02857

Skyscrapers Inc. Fiscal Year 2019-2020 Proposed Budget

INCOME	
Astro Assembly	4,000
Dues	3,100
AL Membership	90
Donations	1,300
Sale of Equipment	100
Star Party Donations	300
Transfer from Savings/CD	2,035
TOTAL INCOME	10,925
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	3,500
Utilities	2,400
TOTAL EXPENSES	10,925
OVERALL TOTAL	0

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