



# the Skyscraper

vol. 46 no. 06  
June 2019

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

## In This Issue:

- 2 Sharing the Universe
- 3 The Sun, Moon & Planets in June
- 4 Summer Stargazing
- 5 Beyond the Clouds
- 6 Barred Spiral Galaxy in Canes Venatici: NGC 5377
- 7 NASA Night Sky Notes:
- 7 Jupiter Shines in June
- 8 2019 Reports

## Friday, June 7, 7:00pm at Seagrave Observatory

### What it's like to observe at Kitt Peak by Ian Dell'Antonio

Ian Dell'Antonio will talk about and show pictures from the most recent trip to observe at Kitt Peak National Observatory in May, 2019. He'll introduce the telescopes he used (and the others on the Mountain), talk about the observations he was making there, and describe how days and night at the observatory are spent, as well as how the mountaintop has changed in the 25 years since he started using the telescopes there.

Ian has been a professor of physics at Brown since 1999, and a member of Skyscrapers since 2003. Before that, he was a postdoctoral researcher at Bell Labs and a research fellow at the National Optical Astronomy Observatories in Tucson, Arizona. His research involves using the bending of light due to gravity to study galaxies, galaxy clusters, and the contents of the Universe as a whole.



## Phases of the Moon

**New Moon**  
June 3 10:02

**First Quarter Moon**  
June 10 05:59

**Full Strawberry Moon**  
June 17 08:31

**Last Quarter Moon**  
June 25 09:46



## Seagrave Memorial Observatory Open Nights

**Saturdays at 9:00 pm**  
weather permitting



# Sharing the Universe

by Linda Bergemann, Outreach Coordinator

Watch this space each month for opportunities to connect with the public. Our goal is to spark curiosity in astronomy and provide basic tools to get started with observing.

All Skyscrapers events are posted on the Night Sky Network calendar at <https://nightsky.jpl.nasa.gov>.

**June 1, 8, 15, 22 and 29 @ 9 PM: Open Nights at Seagrave Memorial Observatory.** Hosts: Members of the Observatory Committee. Volunteers are needed to greet visitors and answer questions. Contact one of the Trustees if you wish to volunteer for a single event, be trained on the use of the Society's telescopes or join the Observatory Committee.

**June 14 @ 8 PM: Star Party at River Bend Farm Visitor Center,** 287 Oak

Street, Uxbridge MA 01569. Hosts: Jim Hendrickson and Francine Jackson. 4 volunteers with telescopes are needed. Contact Jim at [hendrickson.jim@gmail.com](mailto:hendrickson.jim@gmail.com) if you are able to help.

**June 25 @ 2 PM: Presentation at Warwick Public Library,** 600 Sandy Lane, Warwick, RI 02889. Introduction to Astronomy and the Library Telescope, Hosts: Kathy & Steve Siok. No additional help is needed.

**June 28 @ 9 PM: Star Party at Jesse M. Smith Memorial Library,** 100 Tinkham Ln, Harrisville, RI 02830. Host: Dave Huestis. 6 volunteers with telescopes are needed. And, one volunteer to do constellation identification. Set-up begins at 8:15 PM behind the library. Contact Dave at [dhuestis@aol.com](mailto:dhuestis@aol.com) if you would like to participate.

## Save the date!

We have a few dates for you to save to participate in some great Skyscraper activities this summer. More details for all to follow.

### Friday, June 7: Monthly Meeting

Our own Ian Dell'Antonio will be our featured speaker- 7:00pm

**Saturday, June 8: Member Star Party** Seagrave Observatory- 8:30pm start

**Saturday, July 13 Saturday. Monthly Meeting with Potluck and Observing** 6:30pm start with program to be announced. Possible Solar Observing too!

**Saturday, August 10: Monthly Meeting** 7:00pm

## Setting up and Using the Star Analyzer

The workshop portion of Conrad Cardano's spectroscopy demonstration will be held at 7pm on Saturday June 29 at Seagrave Observatory. It's open to all of our members. Topics include:

1. The Star Analyzer setup between the camera and telescope.
2. How to get a good focus
3. What the raw image looks like
4. Calibrating the image from pixels to angstroms.
5. Create the instrument response curve. How to applying it to your calibrated image.
6. Making a pretty picture of the spectra

If it is clear, Conrad will demonstrate on either the 12" or 16" scope.



*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 **June 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

Bob Horton [Shootingsta98@gmail.com](mailto:Shootingsta98@gmail.com)

### Secretary

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

### Treasurer

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

### Members at Large

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

Lloyd Merrill [lloydmerrill@gmail.com](mailto:lloydmerrill@gmail.com)

### Trustees

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

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

Conrad Cardano [cardanoc@verizon.net](mailto:cardanoc@verizon.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)

# The Sun, Moon & Planets in June

This table contains the ephemeris of the objects in the Solar System for each Saturday night in June 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>1</b>	4 34.5	21 58.8	Tau	-26.8	1892.8	-	-	-	1.01	05:13	12:44	20:15
	<b>8</b>	5 03.3	22 47.7	Tau	-26.8	1891.0	-	-	-	1.01	05:11	12:45	20:19
	<b>15</b>	5 32.3	23 16.9	Tau	-26.8	1889.6	-	-	-	1.02	05:10	12:46	20:23
	<b>22</b>	6 01.4	23 26.0	Gem	-26.8	1888.5	-	-	-	1.02	05:11	12:48	20:25
	<b>29</b>	6 30.5	23 14.9	Gem	-26.8	1887.8	-	-	-	1.02	05:13	12:49	20:25
<b>Moon</b>	<b>1</b>	2 35.8	9 39.2	Cet	-9.7	1835.6	30° W	7	-	-	04:20	11:16	18:23
	<b>8</b>	9 19.1	17 40.7	Cnc	-11.2	1972.2	60° E	25	-	-	10:37	17:52	00:56
	<b>15</b>	15 36.6	-15 42.5	Lib	-12.6	1893.7	151° E	94	-	-	18:45	23:46	04:43
	<b>22</b>	21 48.0	-17 10.0	Cap	-12.3	1761.0	127° W	80	-	-	23:39	04:48	10:03
	<b>29</b>	3 07.7	12 10.5	Ari	-10.7	1841.9	49° W	17	-	-	02:49	09:55	17:10
<b>Mercury</b>	<b>1</b>	5 27.1	25 00.9	Tau	-1.2	5.5	12° E	87	0.33	1.23	05:55	13:40	21:25
	<b>8</b>	6 25.1	25 24.9	Gem	-0.5	6.1	19° E	71	0.36	1.11	06:24	14:09	21:54
	<b>15</b>	7 13.3	24 10.5	Gem	0.0	6.9	23° E	56	0.40	0.98	06:50	14:29	22:06
	<b>22</b>	7 50.0	21 57.8	Gem	0.4	7.9	25° E	43	0.43	0.86	07:09	14:37	22:03
	<b>29</b>	8 14.2	19 23.9	Cnc	0.8	9.0	24° E	30	0.46	0.75	07:16	14:32	21:46
<b>Venus</b>	<b>1</b>	3 12.4	16 33.3	Ari	-3.8	10.7	20° W	94	0.72	1.59	04:16	11:22	18:29
	<b>8</b>	3 46.9	18 49.7	Tau	-3.8	10.5	18° W	95	0.72	1.61	04:14	11:29	18:45
	<b>15</b>	4 22.2	20 42.4	Tau	-3.8	10.3	16° W	96	0.72	1.64	04:14	11:37	19:01
	<b>22</b>	4 58.5	22 07.7	Tau	-3.8	10.2	15° W	97	0.72	1.66	04:16	11:46	19:16
	<b>29</b>	5 35.3	23 02.8	Tau	-3.8	10.1	13° W	98	0.72	1.68	04:21	11:55	19:29
<b>Mars</b>	<b>1</b>	6 44.8	24 11.7	Gem	1.8	3.9	30° E	98	1.63	2.43	07:15	14:53	22:31
	<b>8</b>	7 04.4	23 47.0	Gem	1.8	3.8	28° E	98	1.64	2.46	07:09	14:45	22:21
	<b>15</b>	7 23.8	23 13.5	Gem	1.8	3.7	26° E	98	1.64	2.50	07:03	14:37	22:10
	<b>22</b>	7 42.9	22 31.5	Gem	1.8	3.7	23° E	98	1.65	2.53	06:58	14:28	21:58
	<b>29</b>	8 01.8	21 41.5	Cnc	1.8	3.7	21° E	99	1.65	2.56	06:53	14:20	21:46
<b>1 Ceres</b>	<b>1</b>	16 22.2	-17 48.9	Sco	7.0	0.7	175° E	100	2.77	1.76	19:30	00:26	05:21
	<b>8</b>	16 15.6	-17 59.8	Sco	7.2	0.7	168° E	100	2.77	1.77	18:57	23:51	04:46
	<b>15</b>	16 09.5	-18 12.1	Sco	7.4	0.7	160° E	100	2.78	1.80	18:24	23:18	04:12
	<b>22</b>	16 04.2	-18 25.9	Sco	7.6	0.7	152° E	99	2.79	1.85	17:53	22:45	03:38
	<b>29</b>	15 59.9	-18 41.5	Lib	7.7	0.7	145° E	99	2.79	1.90	17:22	22:14	03:05
<b>Jupiter</b>	<b>1</b>	17 19.7	-22 30.6	Oph	-2.5	45.7	170° W	100	5.30	4.30	20:52	01:28	06:03
	<b>8</b>	17 15.9	-22 27.5	Oph	-2.5	45.9	177° W	100	5.30	4.29	20:21	00:56	05:32
	<b>15</b>	17 12.0	-22 24.2	Oph	-2.5	45.9	175° E	100	5.30	4.29	19:45	00:21	04:57
	<b>22</b>	17 08.3	-22 20.7	Oph	-2.5	45.8	168° E	100	5.30	4.30	19:13	23:49	04:26
	<b>29</b>	17 04.7	-22 17.2	Oph	-2.4	45.5	160° E	100	5.29	4.33	18:42	23:18	03:55
<b>Saturn</b>	<b>1</b>	19 25.1	-21 37.5	Sgr	0.3	17.9	141° W	100	10.05	9.25	22:53	03:33	08:12
	<b>8</b>	19 23.6	-21 41.1	Sgr	0.2	18.0	148° W	100	10.05	9.18	22:25	03:04	07:43
	<b>15</b>	19 21.8	-21 45.0	Sgr	0.2	18.2	155° W	100	10.05	9.12	21:56	02:35	07:13
	<b>22</b>	19 19.9	-21 49.3	Sgr	0.1	18.2	162° W	100	10.05	9.08	21:27	02:05	06:44
	<b>29</b>	19 17.8	-21 53.8	Sgr	0.1	18.3	169° W	100	10.05	9.05	20:57	01:36	06:14
<b>Uranus</b>	<b>1</b>	2 10.2	12 36.8	Ari	5.9	3.4	36° W	100	19.84	20.66	03:29	10:17	17:05
	<b>8</b>	2 11.5	12 43.4	Ari	5.9	3.4	42° W	100	19.84	20.59	03:02	09:51	16:40
	<b>15</b>	2 12.7	12 49.6	Ari	5.9	3.4	48° W	100	19.84	20.50	02:35	09:25	16:14
	<b>22</b>	2 13.8	12 55.1	Ari	5.8	3.5	55° W	100	19.84	20.41	02:09	08:58	15:48
	<b>29</b>	2 14.8	13 00.1	Ari	5.8	3.5	61° W	100	19.84	20.31	01:42	08:32	15:21
<b>Neptune</b>	<b>1</b>	23 19.7	-5 25.7	Aqr	7.9	2.3	82° W	100	29.94	30.07	01:44	07:27	13:10
	<b>8</b>	23 19.9	-5 24.4	Aqr	7.9	2.3	88° W	100	29.94	29.95	01:17	07:00	12:42
	<b>15</b>	23 20.1	-5 23.8	Aqr	7.9	2.3	95° W	100	29.94	29.83	00:50	06:32	12:15
	<b>22</b>	23 20.1	-5 23.8	Aqr	7.9	2.3	102° W	100	29.94	29.71	00:22	06:05	11:47
	<b>29</b>	23 20.1	-5 24.4	Aqr	7.9	2.3	108° W	100	29.94	29.60	23:55	05:37	11:20
<b>Pluto</b>	<b>1</b>	19 38.8	-21 50.9	Sgr	14.3	0.2	137° W	100	33.81	33.06	23:08	03:47	08:25
	<b>8</b>	19 38.3	-21 52.8	Sgr	14.3	0.2	144° W	100	33.82	32.99	22:40	03:19	07:57
	<b>15</b>	19 37.8	-21 54.8	Sgr	14.3	0.2	151° W	100	33.82	32.93	22:12	02:51	07:29
	<b>22</b>	19 37.1	-21 57.0	Sgr	14.2	0.2	158° W	100	33.82	32.88	21:44	02:22	07:00
	<b>29</b>	19 36.5	-21 59.2	Sgr	14.2	0.2	165° W	100	33.83	32.85	21:16	01:54	06:32

# Summer Stargazing

by Dave Huestis

As we approach the Summer Solstice in the northern hemisphere, this year on June 21 at 11:54 a.m. EDT (Eastern Daylight Time), here in Rhode Island many folks revel in the extra daylight hours, especially in the evening. Astronomers are not among those individuals because our skies do not get fully dark until about 10 p.m., and dawn's early light starts around 4 a.m. That leaves little time to explore the universe with telescopes and cameras to capture the beauty of the heavens. Then as the summer months continue, we must contend with high humidity and pesky mosquitoes.

However, there are a couple of planets we will welcome back to the evening sky over the course of this summer. They are Jupiter and Saturn. These distant worlds reveal much detail in the telescopes at the local observatories.

## Jupiter and Saturn

Jupiter will reach opposition on June 10. That means it will rise as the Sun sets. That is also the date of its closest approach to the Earth for this year. Unfortunately, the late rise time on June 10 means some of the local observatories may not be able to focus on Jupiter due to their respective horizon views. Also, because Jupiter will rise in the southeast and travel along a shallow arc across the sky, it will take some time to clear the often murky atmospheric conditions low to the horizon.

I do not wish to discourage one from observing Jupiter if you can. Even as this column goes to press during early June you could wait until Jupiter rises much higher into the sky to begin observing it. My associates have been observing Jupiter in the early morning sky for months (when the weather cooperated). I will provide a Jupiter observing guide in my July column.

Two hours after Jupiter rises, our solar system's most beautiful ringed-world Saturn will rise. Saturn too will take a similar arced path into the sky, so it also will not rise very quickly above the horizon. You should wait a few hours before observing Saturn and his magnificent rings. Saturn reaches opposition one month later on July 9. My observing guide to Saturn will also be included in my July column.

## Mercury and Mars

Within 20 minutes or so after sunset

(8:24 p.m. EDT) on the evening of June 23 you can catch a glimpse of our solar system's innermost planet Mercury. Look about 10 degrees (a fist held at arm's length provides this measurement) above the west-north-west horizon. You'll require an unobstructed view to succeed in this observing challenge. Furthermore, an even more challenging task will be to locate the red and dimmer planet Mars 2.5 degrees below and to the right of Mercury. The gauntlet has been dropped. Who will accept and succeed in this challenge?

## Hercules

One of the jewels of the summer sky resides in the constellation of Hercules. I'm referring to the showpiece of northern hemisphere globular clusters, M13, so designated for being the 13th entry in the sky catalog of 18th century astronomer Charles Messier. This object contains hundreds of thousands of stars. Once you know where to look, M13 can still be detected with the naked-eye as a fuzzy patch from dark-sky locations in Rhode Island.

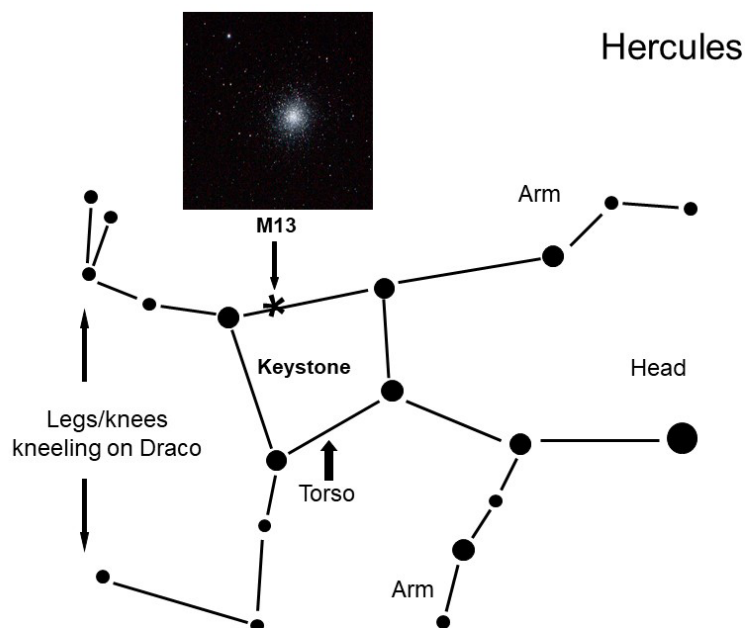
You can locate Hercules on June 1 about halfway up in the eastern sky around 9:30 p.m. Find the bright star Vega in the constellation of Lyra and Hercules will be the neighboring constellation to its upper right. Four main stars called the keystone outline the body of Hercules, while two streams

of stars form his arms and another stream comprise his legs. Though his extremities look like a stick figure, Hercules has been bulking up on his body. While the constellation has a rich mythological history, space does not permit me to relate it here. Just suffice it to say that the star pattern represents the mighty Hercules of "twelve labors" fame kneeling upon the head of Draco the Dragon, holding a club in one hand, and a branch in the other.

To locate the globular cluster please reference the accompanying star map. M13 lies between the two stars that form the western side of the keystone. It is about one-third of the way from the northern most star of the keystone. If you can't detect it with your naked-eye, try using a pair of binoculars. It looks like a small tail-less comet.

Once you've found M13, use a telescope if you have one. A small refractor will show it as a small diffuse patch of light, much like the nucleus of a comet. Larger scopes, say a four- or six-inch reflector, will begin to resolve individual stars within this beautiful beehive of stars. And the beehive description is quite apt, for if one could speed up time you would see these stars, which are all gravitationally bound to the cluster and number about 300,000, orbit the cluster like bees around a hive.

One of my favorite turn of the 20th century authors is Garrett P. Serviss. I often



Hercules will be about halfway above the eastern horizon around 9:30 pm in June, rising on his side.

Graphic created by David A. Huestis. M13 image by Jim Hendrickson.

quote him in my columns because he had such a descriptive and poetic style of writing. For your enjoyment I have excerpted a quote concerning M13 from his wonderful book, Pleasures of the Telescope.

“...smaller instruments reveal only the in-running streams and the sprinkling of stellar points over the main aggregation, which cause it to sparkle like a cloud of diamond dust transfused with sunbeams.” “It is a ball of suns. Now you need a telescope. You must have one. You must either buy or borrow it, or you must pay a visit to an observatory, for this is a thing that no intelligent human being in these days can afford not to see. Can it be possible that any man can know that fifteen thousand suns are to be seen, burning in a compact globular cluster, and not long to regard them with his own eyes?”

On the next clear and moonless night, go out and locate the great Hercules in the sky. Binoculars will certainly show you M13, but a telescope will reveal all its splendor. Telescopic views through the larger telescopes at the local observatories are quite impressive. Think about the above description while you enjoy the image.

Take advantage of the viewing opportunities provided by the local observatories as the summer months progress. Jupiter and Saturn will be the primary focus of attention from mid-summer onwards into fall. In addition will be various phases of the Moon, as well as looks up and down the expanse of our own Milky Way galaxy. Remember, summer brings late sunsets, so please check the respective observatory websites for their open dates and times before venturing out for a visit. Seagrave Memorial Observatory

(<http://www.theskyscrapers.org>) in North Scituate is open every clear Saturday night. Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) in Providence is open every 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 Thursday night. Frosty Drew Observatory (<http://www.frostydrew.org/>) in Charlestown is open every clear Friday night.

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>*

## Beyond the Clouds

By Francine Jackson

Lately, it seems we've been spending more time looking up at clouds, rather than the sky, resulting in Seagrave, and other public observatories, having to be closed. In some ways, the clouds can be beautiful, but, of course for us, they prevent us from doing what we love best: enjoying the beauty of the sky; however, they can also be the source of many weather problems.

In this neighborhood, we are now priming for our annual hurricane season, where we are never really sure the outcome of the storm until it reaches us, but we at least have several days' warning to prepare for whatever it wreaks here. According to AccuWeather, this season should be a bit less active than last year, although a couple hurricanes might turn out to be major.

Right now, however, our hearts go out to the residents of the central U.S., which is undergoing a devastating bout of tornadoes, an event that arises virtually immediately. Already this year those residents are suffering untold numbers of deaths and destruction, and the season has just begun.

Tornadoes do occur here in Southern New England: You might recall the two that struck just last year in Rhode Island, in Lincoln and North Providence. Fortunately, they were not the strongest type, but they did cause quite a bit of damage where they set down. Again, as in other parts of the country, there was no warning – the resi-

dents had no idea tornadoes were going to come into their neighborhoods.

With both major storms, the change that occurs with the clouds is evident. Some who study tornadoes can almost observe the slight swirling effect happening, waiting for the beginning of the funnel cloud, then racing to it in attempts to better understand its potential. With those who study hurricanes, it is the run to the airport, to fly in toward the eye.

As the season of these storms come on us, we must remember that it is believed that the increase of the Earth's temperature, leading us to the massive problem of climate change, is a factor in the number of

hurricane and tornado events. All we can hope is that both storms, when they do occur, will not continue to wreak the havoc that is being seen elsewhere in our country, and that the clouds we see will mainly be cumulus, not of the storm variety, allowing us eventual clear skies and safe conditions.



*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>*



DISCOVER EPIC image of Earth from September 10, 2018 showing hurricanes in the Atlantic Ocean. NASA Langley Atmospheric Science Data Center

# Barred Spiral Galaxy in Canes Venatici: NGC 5377

by Glenn Chaple for LVAS

**Mag: 11.3 Size: 3.7' X 1.8'**

On the evening of May 12, 1787, William Herschel came upon a nebulous object in what is now the extreme northeast corner of Canes Venatici. He considered it bright enough to qualify as a Class I object (Bright Nebulae), and it became his 187th entry in that group.

H187-1, better known by its New General Catalog designation NGC 5377, is an 11th magnitude barred spiral galaxy. It lies some 85 million light-years away, which means that the photons greeting your eye as you peer into the telescope left during the latter part of the Cretaceous period when dinosaurs still roamed the land.

With my 10-inch f/5 Dob and a magnification 141X, I found NGC 5377 to be extremely faint – an “amorphous averted vision object at best.” In all fairness to my scope (and my eyes!), I was observing under typical suburban skies with a limiting magnitude of about 5. Its appearance in a similar-sized instrument under darker skies is described in Kepple and Sanner’s *The Night Sky Observer’s Guide – Vol. 2*. They write: “This galaxy has a fairly faint 2.5' X 0.5' NNE-SSW halo containing a bright oval core with a stellar nucleus.” This

would correspond to its interesting similarity to the Greek letter theta as shown in the accompanying Mario Motta image.

Locating NGC 5377 is somewhat of a challenge as it lies in rather barren area 2 degrees south and slightly east of Alkaid (eta Ursae Majoris). Those of you with GoTo technology can plug in coordinates R.A. +47° 14' 08", dec. 13h, 56m 16.7s. Star-hoppers can use the accompanying finder charts created using AAVSO’s Variable Star Plotter program.

---

*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 [rogerivester.com/category/observers-challenge-reports-complete](http://rogerivester.com/category/observers-challenge-reports-complete).*

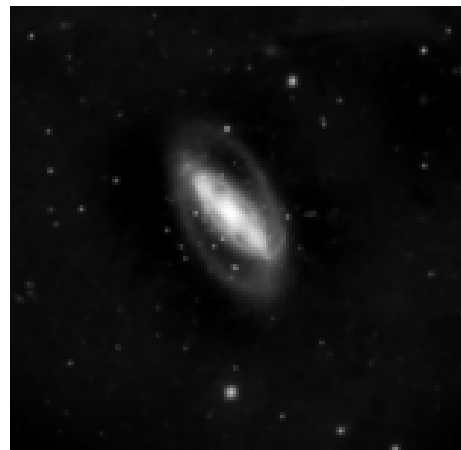
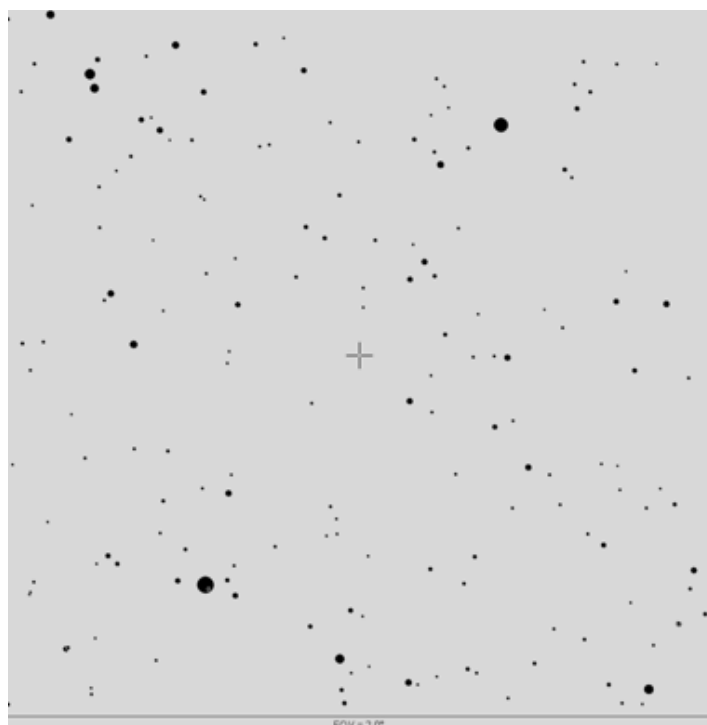
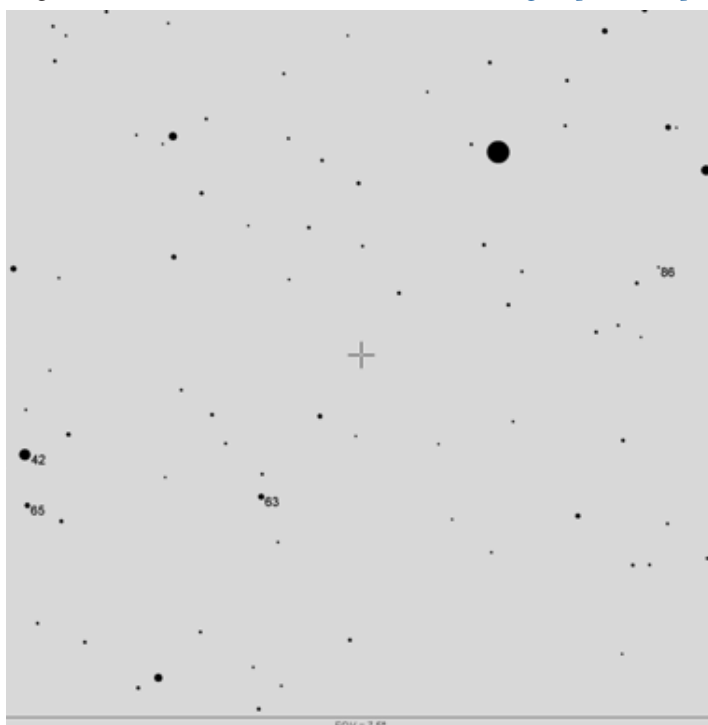


Image by Mario Motta, MD (ATMoB)



Image by Doug Paul (ATMoB)



Finder charts for NGC 5377. In each, north is up, and NGC 5377 is plotted by an + at the center. (left) wide field (7.5 degrees) chart showing stars to 9th magnitude. Bright star near upper right is eta Ursae Majoris. (right) narrow field (2 degrees) chart showing stars to 13th magnitude.

## NASA Night Sky Notes:

# Jupiter Shines in June

By David Prosper

**Jupiter** stakes its claim as the king of the planets in June, shining bright all night. **Saturn** trails behind Jupiter, and the **Moon** passes by both planets mid-month. **Mercury** puts on its best evening appearance in 2019 late in the month, outshining nearby **Mars** at sunset.

Jupiter is visible almost the entire evening this month. Earth will be between Jupiter and the Sun on June 10, meaning Jupiter is at **opposition**. On that date, Jupiter rises in the east as the Sun sets in the west, remaining visible the entire night. Jupiter will be one of the brightest objects in the night sky, shining at magnitude -2.6. Its four largest moons and cloud bands are easily spotted with even a small telescope.

What if your sky is cloudy or you don't have a telescope? See far more of Jupiter than we can observe from Earth with NASA's **Juno** mission! Juno has been orbiting Jupiter since 2016, swooping mere thousands of miles above its cloud tops in its extremely elliptical polar orbits, which take the probe over 5 million miles away at its furthest point! These extreme orbits minimize Juno's exposure to Jupiter's powerful radiation as it studies the gas giant's internal structure, especially its intense magnetic fields. Juno's hardy JunoCam instrument takes incredible photos of Jupiter's raging storms during its flybys. All of the images are available to the public, and citizen sci-



A giant storm in Jupiter's north polar region, captured by JunoCam on February 4, 2019. Image processing performed by citizen scientists Gerald Eichstädt and Seán Doran. Source: [bit.ly/JupiterSpiral](http://bit.ly/JupiterSpiral)

entists are doing amazing things with them. You can too! Find out more at [bit.ly/Juno-Cam](http://bit.ly/Juno-Cam)

**Saturn** rises about two hours after Jupiter and is visible before midnight. The ringed planet rises earlier each evening as its own opposition approaches in July. The **Moon** appears near both gas giants mid-month. The Moon's tour begins on June 16 as it approaches Jupiter, and its visit ends on June 19 after swinging past Saturn.

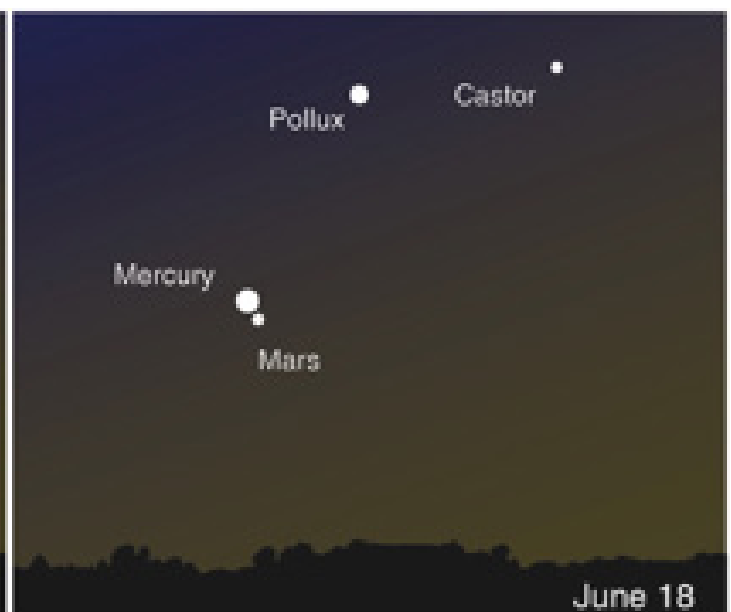
**Mercury** is back in evening skies and

will be highest after sunset on June 23, just two days after the summer solstice! Spot it low in the western horizon, close to the much dimmer and redder **Mars**. This is your best chance this year to spot Mercury in the evening, and nearly your last chance to see Mars, too! The two smallest planets of our solar system pass close to each other the evenings of June 17-18, coming within just  $\frac{1}{4}$  degree, or half the width of a full Moon, making for a potentially great landscape photo at twilight.

Discover more about 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.



Mars and Mercury after sunset the evenings of June 17-18, 2019. Image created with assistance from Stellarium.

# 2019 Reports

## Skyscraper Monthly Meeting February 1, 2019 @ Brown University (Barus & Holley Building)

Called to order by President Steve Hubbard

There was a very brief business meeting that was highlighted by the appointment of a nominating committee for the 2019-2020 election. Named were: Bob Horton, Steve Siok and Kathy Siok.

The membership was invited to speak to a member of the committee if they were interested in running for a position in Skyscrapers this year.

The nomination committee will report at the monthly meeting in March and a ballot will be sent to members to be returned at the Annual Meeting in April. The outcome of the election will be announced at the end of the April meeting.

There were a few announcements regarding outreach and membership.

The speaker for the evening was member Conrad Cardano who shared his techniques for imaging astronomical objects.



Conrad Cardano

## Skyscraper Monthly Meeting Saturday, March 9, 6pm North Scituate Community Center

1. Welcome by President Steve Hubbard.  
2. Nominations Committee Proposed the following Officers for 2019-20

President: Steve Hubbard, First VP: Jim Hendrickson, Second VP: Robert Horton, Secretary: Kathy Siok, Member at Large 1: Bob Janus, Member at Large 2: Lloyd Merrill Trustee: Conrad Cardano. • There were no nominations from the floor and nomi-

nations were closed. • The Election Committee (Linda Bergemann & Francine Jackson) will send out ballots and they should be returned by mail or at the April Meeting (Annual Meeting).

3. The April meeting (Annual Meeting) will be held at Seagrave Observatory at 7PM. • McKenna Cisler from Brown Space Engineering will present details about EQUiSat, a cubesat currently in orbit, and the team's ongoing and future projects.

Good of the Organization:

4. It was announced that there will be showing of Apollo 11 at the IMAX Theater in Providence on Monday 3/11 at 7PM.

The program featured Jeff Padell, who is the Skyscraper ALCor (Correspondent) for the Astronomical League. He described the programs that are available to members, including ways to earn awards for observing and for outreach to the local community.

Several Skyscrapers are also members of the Astronomical League. If anyone would like to join, please contact Jeff at [jeffpadell@gmail.com](mailto:jeffpadell@gmail.com).



Jeff Padell

## Skyscraper Annual Meeting April 12, 2019 @ Seagrave Observatory

1. The meeting was called to order by President Steve Hubbard at 7:15.

2. Persons new to Skyscrapers were introduced.

3. Ballots for our annual election were collected and counted by the Elections Committee.

4. All were reminded that it was time for 2019-2020 dues to be paid.

5. Annual Budget Report: No given since the treasurer was not present.

The new budget had been discussed and

approved by the Executive Committee and will be presented at the next meeting.

6. There was no Trustee's Report

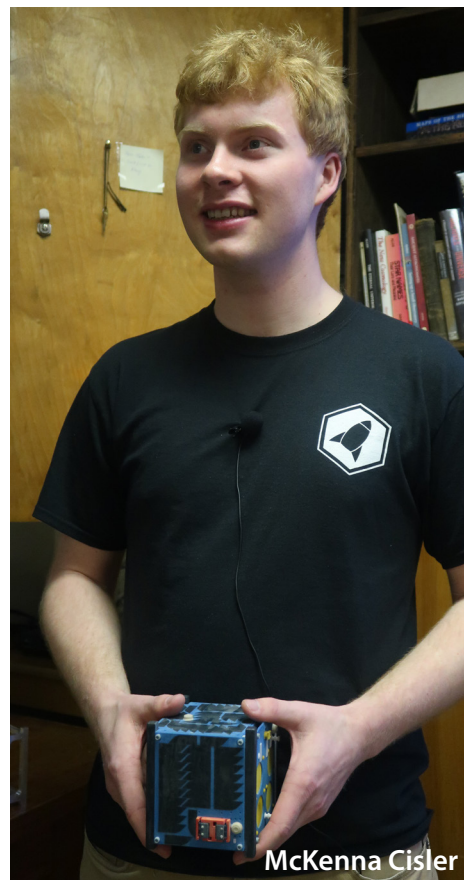
7. For the Good of the Organization:

Members Star Parties will be held on Saturday April 27 and May 11, weather permitting. • A group of Boy Scouts will be visiting the Observatory on April 13 • A reminder that Cambridge Science Weekend will be held on April 13 • A new PBS series called "Breakthrough" will feature the telescope in the first episode • The new photo of a black hole was discussed • Bob Horton was thanked for cleaning the finder scope on the Alvan Clark telescope.

8. The Ballot count for the 2019-2020 Election was 35 votes and the Slate of officers was elected. They are: President: Steve Hubbard, 1st Vice President: Jim Hendrickson, 2nd Vice President: Bob Horton, Secretary: Kathy Siok, Treasurer: Matt Ouellette, Member at Large: Bob Janus, Member at Large: Lloyd Merrill, Trustee: Conrad Cardano.

9. The meeting was adjourned at 7:45PM.

This month's speaker was McKenna Cisler, a member the Brown University Space Engineering Club. • He talked about the group's project to put an EQUiSat in orbit.



McKenna Cisler



## **Skyscraper Executive Committee Meeting April 15, 2019 at Seagrave Observatory**

Present: Steve Hubbard, Bob Horton, Kathy Siok, Steve Siok, Linda Bergemann, Jeff Padell, Jim Hendrickson, Matt Oulette, Jim Brenek and Jim Crawford by phone.

1. Dues for 2019 Members should be sent an email to remind them to send 2019 dues

2. Discussion of Potential Donation of a small observatory building and 17" Telescope by Gerry Dyck

Many pros and cons were discussed regarding our acceptance of this donation.

There was a consensus that this would not be a good match for Skyscrapers at this time.

Steve Hubbard planned to meet with Gerry to explain our position.

3. Most of the meeting was dedicated to discussing the Trustees plan for future work at Seagrave. • There has been too items for which maintenance has been deferred. These items were described in detail with approximate costs. • The trustees prioritized the list (1-4). Approximately \$3500 will be needed to fix these first priority items. There is a \$2400 line item for Trustee repairs in the 2019-20 budget. After a detailed discussion, the Board voted to authorize up to \$3500 to repair expenses. Approved.

4. Ideas to raise funds in the future & other items • It was suggested that the group think about holding a "Capital Campaign" to repair and upgrade our facilities. Obtaining a grant was also suggested.

There was a further discussion of putting up larger surplus items for sale and of advertising small items to members at no cost.

Permanent Sign on our wood fence: Bob Horton will check whether this is acceptable to the Town of Scituate.

It was also suggested that we offer Skyscraper membership at a reduced cost to residents of Scituate.

Raising senior citizen dues was also discussed, as well as having a single, flat rate for all dues, but no final decision was made on these ideas.

It was decided that if any members or non-members wish to advertise items for sale, there will be a section established in the newsletter for that purpose, rather than emails sent out to the membership.

## **Skyscraper Executive Committee Meeting Tuesday, May 21, 2019 7PM @ Seagrave Observatory**

Present: Steve Hubbard, Jim Hendrickson, Bob Horton, Kathy Siok, Jim Crawford, Jeff Padell, Lloyd Merrill, Bob Janus, Linda Bergemann, Tracy Prell, Steve Siok, Bob Napier.

1. President Steve Hubbard reported a discussion with Gerry Dyck about the donation of his observatory. Gerry is considering donating the observatory to Stellfane or AAVSO.

2. Upcoming Monthly Meetings and planned events: June 7th (Friday) Speaker is Ian Dell'Antonio – topic is his observing trip to Kitt Peak • July 13th (Saturday) 6:30 Member's Pot Luck Dinner and Observing session • August 10th (Saturday) No speaker yet • There will be Member Observing Sessions on: June 8th and July 13th • The HAM Radio Club will use Skyscraper facilities on June 22-23, 2019.

3. AstroAssembly 2019 will be held on October 5th

Bob Horton is looking for speakers and has confirmed Ed Ting (NH) to talk about his experiences observing in Australia. Several names were mentioned as potential speakers and Bob will follow-up.

There was a discussion of this year's schedule since we cannot use the Community Center after 8PM.

It was agreed that we would start our evening activities at 5 PM and plan to be finished by 8 PM.

4. The 50 yr Anniversary of Apollo will be celebrated on July 20th. Bob Horton has been in contact with Peter Schultz (PDC at Brown) and we have been invited to participate in some of the events in Providence. There are also celebrations planned all over the state. A large Moon Globe will be unveiled at the RI State House earlier in the month. Bob is the contact person for us.

5. The Members at Large have been tasked with presenting ideas from the membership to the executive committee. They had no report this evening.

6. The Trustees reported on plans to make repairs of the roofs of our observatories and other repairs.

They will organize work parties in 2 teams to continue routine upkeep and these special projects.

Members will be invited to assist.

7. A letter will be sent out to ask members to make a contribution in addition to their regular dues to help defray the cost of essential repairs to our buildings.

8. The audio component of the onsite security cameras was discussed.

9. Jim Crawford made a motion to sell one of our older CCD cameras to Bob Napier for \$50. It passed unanimously.

10. Linda Bergemann reported on the current activities in the area of Outreach. • She has started a small column to appear monthly in the Skyscraper that describes outreach events and asks for volunteers when needed. She is also posting our events in the Night Sky Network Calendar (accessible to all Skyscrapers and anyone looking for astronomical activities). • There have been many requests from libraries around the state due to the fact that this year's summer reading theme is "A Universe of Stories". They are asking for presentations about basic astronomy. More Library Telescope programs have been established and libraries have asked for information. The telescopes are purchased by the library with all the needed modifications already completed. Skyscrapers will provide assistance and instruction about using the telescope and observing. • Events are planned in June: 14th • Jim Hendrickson – Observing at River Bend Farm • 25th Steve & Kathy Siok Warwick Library afternoon talk • 28th Dave Huestis Harrisville Library Presentation • Also, May 31st Kathy & Steve Siok Reading at Glen Hills School (Cranston)

11. Conrad asked about the status of Programs at Seagrave on cloudy nights. Linda and the trustees will discuss this further and report back to the group on progress towards resolution.

12. Bob Napier and Kathy Siok mentioned astronomically-related stories recently experienced.

The Meeting was adjourned at 8:14

NB. Pending confirmation from the Executive Committee, the next meeting will be held on Monday June 18th.

Reports Submitted by Kathy Siok • Secretary

## **Minutes from Skyscraper meeting, May 3, 2019**

Called to order by Pres. Steve Hubbard, 7:20pm

• New Visitors, introduced by Steve Hubbard: "Will," A senior in High School

undertaking an astrophotography project. Guest of member Ron Zincon. "Max," high school age visitor interested in Astronomy. Both were welcomed.

- **Observatory Committee:** Trustee Jeff Padell explained the purpose and function and put out a plea for more members to help. You don't need to run a telescope to help, you can also act as a greeter. We have mentors available to help you learn the telescopes and also observing in general.

- **Astronomical League coordinator, Jeff Padell:** Reminded people of the function of the Astronomical League, asked for more participation, gave out a handout about the league. Dues for this of \$7.50 will be due soon and he will get out the notices to those participating. Reach out to Jeff with any questions.

- **Presidential announcements, Steve Hubbard:** Star party planned for April 27 clouded out. Looks like the one for next Saturday, May 11 will be cloudy too. The members in attendance were interested in an alternative program in the meeting hall in case of clouds. It was decided that we will have a clear or cloudy members night. If cloudy, we will stream a past public presentation from the Harvard Center for Astrophysics and Jeff Padell will live stream an imaging session from SLOOH. Thanks to Jim Crawford and Bob Horton for getting the coffee going and bringing some snacks for the meeting.

- **Bob Horton presented a half dozen of his celestial landscape prints.** He explained them and let us know that he had the large scale prints done by "Printworks" in Pawtucket on special silver paper.

- **Members At Large:** Steve Hubbard introduced Bob Janus and Lloyd Merrill as our current members at large. Steve has tasked both with being eyes and ears of the club to talk to members and visitors about how we are doing, what suggestions they may have, what they'd like us to do and any concerns. They will report back to the executive board on any results on a regular basis.

- **Item for Sale:** Member Gerry Dyck reported that he has a 12" Inch Orion Dob telescope for sale. See him after the presentation if interested.

- **River Bend Farm, Uxbridge:** Jim Hendrickson reported that there will be a series of star parties available for anyone interested in going starting on Friday, May 10. More details to be published in the Skyscraper.

- **Budget for 2019-2020:** Proposed budget projected on front screen, treasurer Matt Ouellette reviewed details of all line items for the members. We anticipate the possibility of having to use up to \$2000 from our reserve funds to make up a possible shortfall. Due to quite a bit of deferred maintenance to be done by the trustees this year. Trustee, Jim Crawford explained what the trustees have ahead of them. The roofs on the roll off observatory housing the Patton and 12" Meade scopes are rotting and need to be re done. The slit, skirt and floor in the Clark need to be done. Windows in the meeting hall need attention due to some rotting. There are more items, but these are the highlights. After presentation, there was time for questions. One question of clarification from the audience. A motion to approve the budget then made. The members in attendance voted in the budget unanimously.

- **Dues for 2019 to 2020:** Steve Hubbard reminded everyone that dues are payable now. He also asked that members consider an extra donation this year to help us defray the amount we will be taking out of our reserves.

- **Evening Presenter:** Following the meeting, member Conrad Cardano gave a very entertaining and informative talk about doing spectroscopy from his backyard with "RSPEC."

Report submitted by Susanne Hubbard, appointed acting secretary for the night by her husband as our society secretary was unable to make the meeting.



Conrad Cardano



## For Sale

**10" f/6 Dobsonian scope.** The mirror needs to be realuminized. Accessories include a Telerad & 24mm Televue Wide Field eyepiece. This is a real good buy at \$300. Email Conrad at [cardanoc@verizon.net](mailto:cardanoc@verizon.net)

**ZWO ASI 120MC Color Camera**  
The ZWO ASI120 USB 2.0 Color Astronomy Camera has a CMOS AR0130CS 1/3" Sensor with a resolution of 1280x960 pixels (1.2 megapixels) and can capture beautiful color images. \$75. Email [cardanoc@verizon.net](mailto:cardanoc@verizon.net)

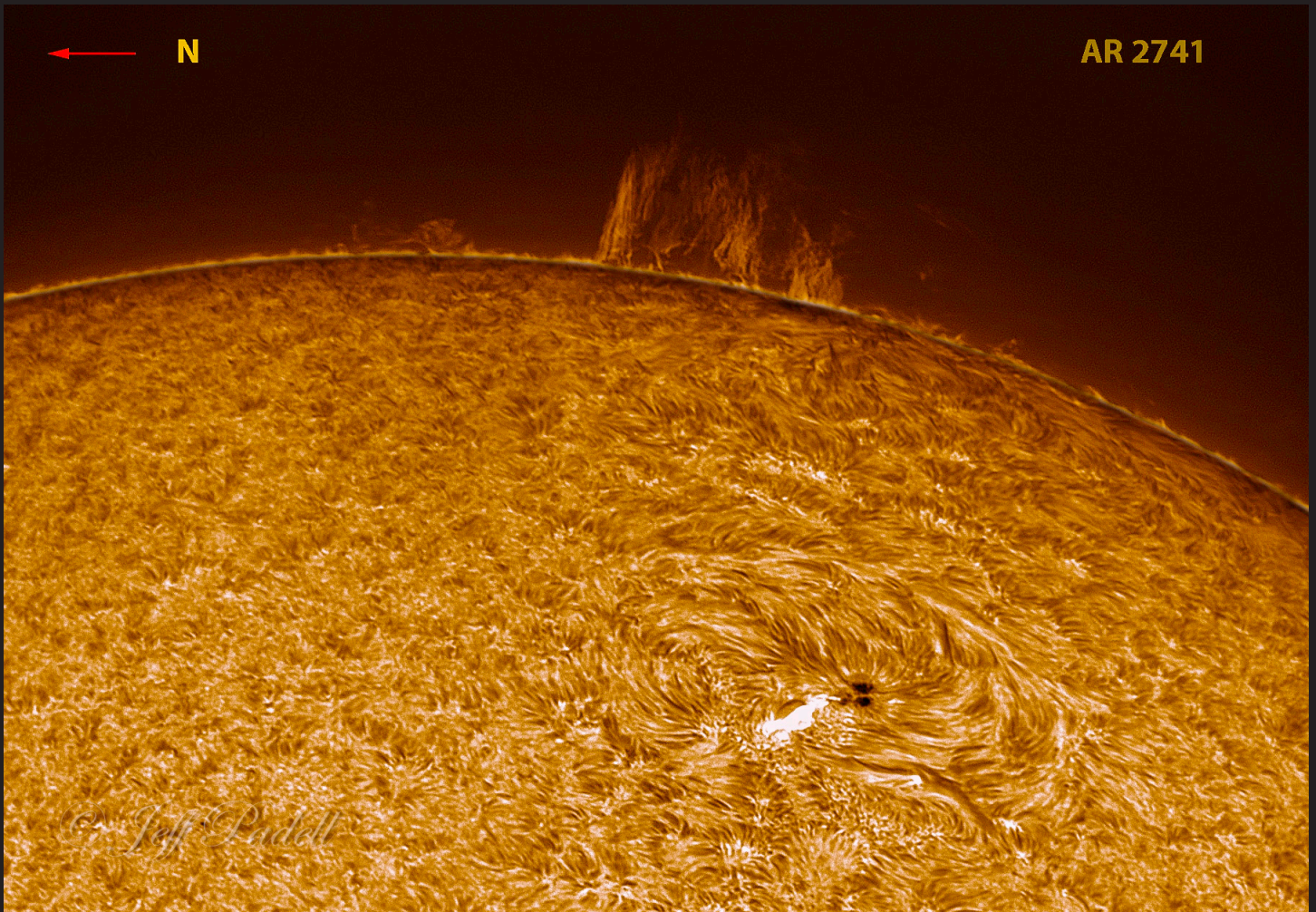
**amazon smile**  
You shop. Amazon gives.

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

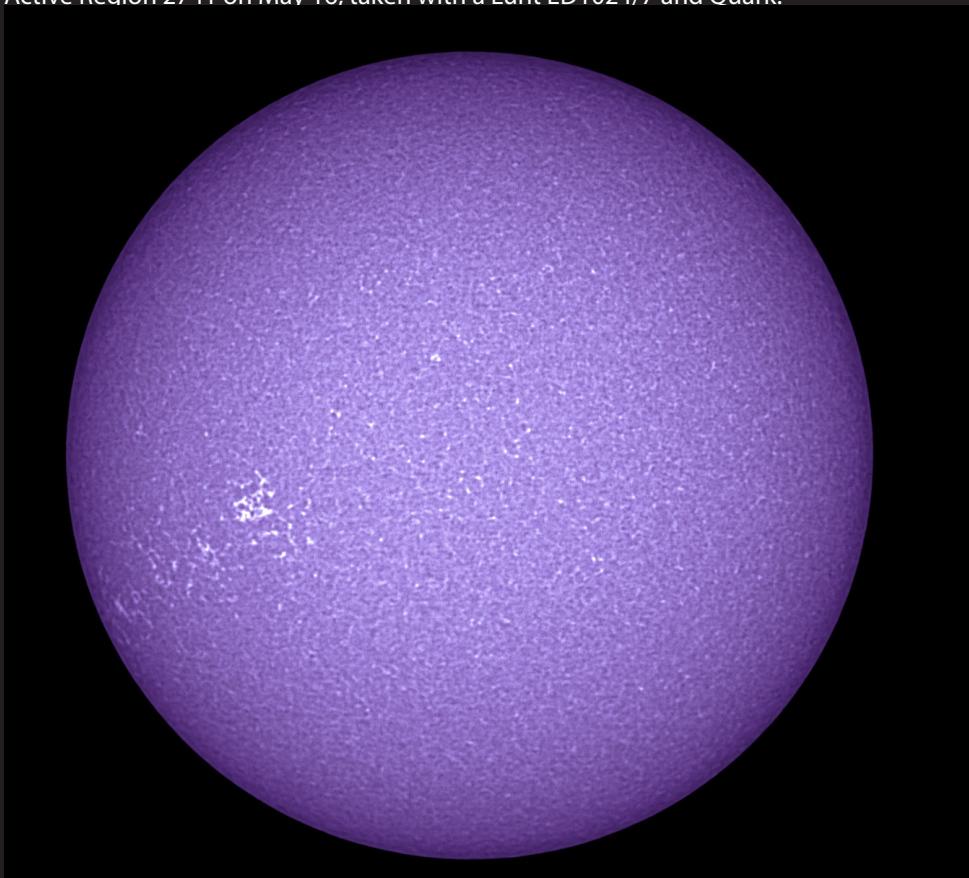


Jim Crawford, Tom Thibault, Bob Janus & Jeff Padell worked on Seagrave Observatory roof repairs on Saturday, June 1.





Active Region 2741 on May 16, taken with a Lunt ED102 f/7 and Quark.



Sun in Calcium K emission taken with Lunt Cak 1800 blocking filter, and Lunt ED102 f/7 and ZWO ASI174mm. Image by Jeff Padell



Hercules and Corona Borealis. Nikon Df with 50mm f2 Nikon lens and a diffusion filter. Taken at Rangeley Lake, Maine by Bob Horton



Bright Milky Way over Rangeley Lake in Maine by Steve Hubbard

# 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