



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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Saturday, July 9, 5:00pm at Seagrave Memorial Observatory

Cosmic Rays: What are they. Where do they come from. How do they relate to astronomy and cosmology by Arthur Wallace

5:00 pm Skyscrapers Annual Pot Luck Dinner

Participants are asked to bring a dish to share - appetizers, casseroles, salads, deserts. Beverages, plates etc will be provided. Please contact Kathy Siok at kathys5@cox.net by July 5th to let us know what you plan to bring.

7:00 pm Featured Speaker: Arthur Wallace, We've all heard about them; they've been a part of many of our oldtime science fiction movies - but, really, where do they fit in the realm of astronomy and cosmology? Come to the next meeting of

Skyscrapers, Inc., and find out.

Join Arthur Wallace, Professor Emeritus of Physics and Engineering at Fairleigh Dickinson University, and be introduced to this fascinating topic. Dr. Wallace received his Ph.D. from New York University, and has written extensively on the subject. This is sure to be an interesting talk.

9:00 pm Observing the skies through the 138-year-old Alvan Clark Refractor at Seagrave Observatory. In June, the planets Mars and Saturn will be well-placed for observing. (weather permitting)

Skyscrapers Board Meetings Third Monday of the Month All Members Welcome

Phases of the Moon

New Moon
July 4 11:01

First Quarter Moon
July 12 00:52

Full Apollo Moon
July 19 22:57

Last Quarter Moon
July 26 23:00



Seagrave Memorial Observatory Open Nights

Saturdays at 9:00 pm
weather permitting

President's Message

by Steve Siok

Summer is the time for outdoor picnics and for observing. I want to share with you what we will be doing for the next several months at Skyscraper meetings. I hope most of you will attend our meetings and share a bite to eat as well as share great company.

Our July meeting will be on Saturday, July 9. Starting at 5:30 we will have our annual Pot Luck picnic. Please plan on coming and sharing a dish with all of us. If you can attend please let Kathy know what you will be bringing. Send her a line at kathys5@cox.net. Skyscrapers will supply coffee and drinks, as well as paper goods. Our speaker that evening will be Wallace Arthur, who will talk about cosmic rays. You may re-

member we had to cancel his talk in February because of a snow storm.

Our August meeting will be held on Saturday, August 13. (On the previous weekend Stellafane will be held and many of our members plan to attend the annual event) This meeting will be a cookout meeting. If you would like hot dogs and hamburgers, please let Kathy know so we can get a head count. Cost will be \$5 per person. This meeting will celebrate Solar Eclipses. Steve Hubbard will discuss his trip to Indonesia for the 2015 eclipse. Ian Dell'Antonio will review the aspects for the 2017 eclipse. And everyone who is traveling to an eclipse site is invited to share their plans with all of us. Please let me know if you would like

a few minutes. My e-mail is ssiok@cox.net. Again, picnic at 5:30 and meeting at 7:30.

Our September meeting will be held on Friday, September 16, due to the availability of the speaker. It will be a normal meeting, refreshments at 7:00, meeting at 7:30. Our speaker will be Adam Sarafian and his topic will be "The Origin of the Water on the Earth". We will also invite the members of our local Section of the American Chemical Society, as the June meeting had to be canceled.

October 1st is AstroAssembly. More on that next month.

Keep looking up and please attend our upcoming meetings.



Steve Siok is president of Skyscrapers, Inc. See more at <http://www.theskyscrapers.org/steve-siok>

Friday, July 8: Dawn of the Space Age at the URI Planetarium

University of Rhode Island Planetarium
Upper College Road, Kingston, RI
Friday, July 8th, 2016 6:00 P.M.

Contact: Francine Jackson: 401-527-5558

Come enjoy a tour of the Seven Wonders of the Ancient World! These incredible features were built before modern-day equipment was even a thought, and yet, today, one of these is still a major feature. Why were these made? How? Come learn of the beauty and majesty of the Seven Wonders of the Ancient World. In addition, learn

what are considered the Seven Wonders of the Universe, through the beauty of 21st century technology.

In addition to the featured presentation, *Losing the Dark*, a short introduction to light and its problems in our society will be given, as well as a tour of *The Skies* above the URI campus.

Admission to this presentation is \$5.00, to benefit the URI Planetarium Fund. The URI Planetarium is on Upper College Road, at the end of Engineering Row and

across the parking lot from East Hall.

The University of Rhode Island Planetarium is available for programs of many varied topics of astronomical interest. For more information, please call 401-527-5558.



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 **July 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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Waning gibbous Moon on June
15 by Jim Hendrickson

Finding Pluto

by Jim Hendrickson

After last year's visit by the New Horizons spacecraft, Pluto is no longer as mysterious and enigmatic as it once was. Gone are the days of peering across our planetary system at a dim point of light barely shimmering some 10,000 times dimmer than the stars we can see with just our eyes, not knowing what it really looks like. This dim point of light is now known to be a dynamic world with ice mountains, shifting plates, and atmospheric haze. A world that has place names such as Tombaugh Regio, Cthulhu Regio and Sputnik Planum. Al-

though we won't see any detail in even our biggest telescopes other than the dim point of light we've always seen, it still fascinates us and draws up back year after year as we pay our own visit to this amazingly dynamic world worthy of exploration.

Finding Pluto may be simpler than you think. If you're a visual observer and have access to a 12-inch or larger telescope, all you'll need is a clear, moonless night to locate it. If you're an imager, you may not need anything larger than a 3-inch telescope, but you'll need to have a polar aligned mount that tracks in order to take a long enough exposure to capture it.

In order to find Pluto, we need a highly detailed star chart or a software planetarium to plot its position. In 2016, Pluto

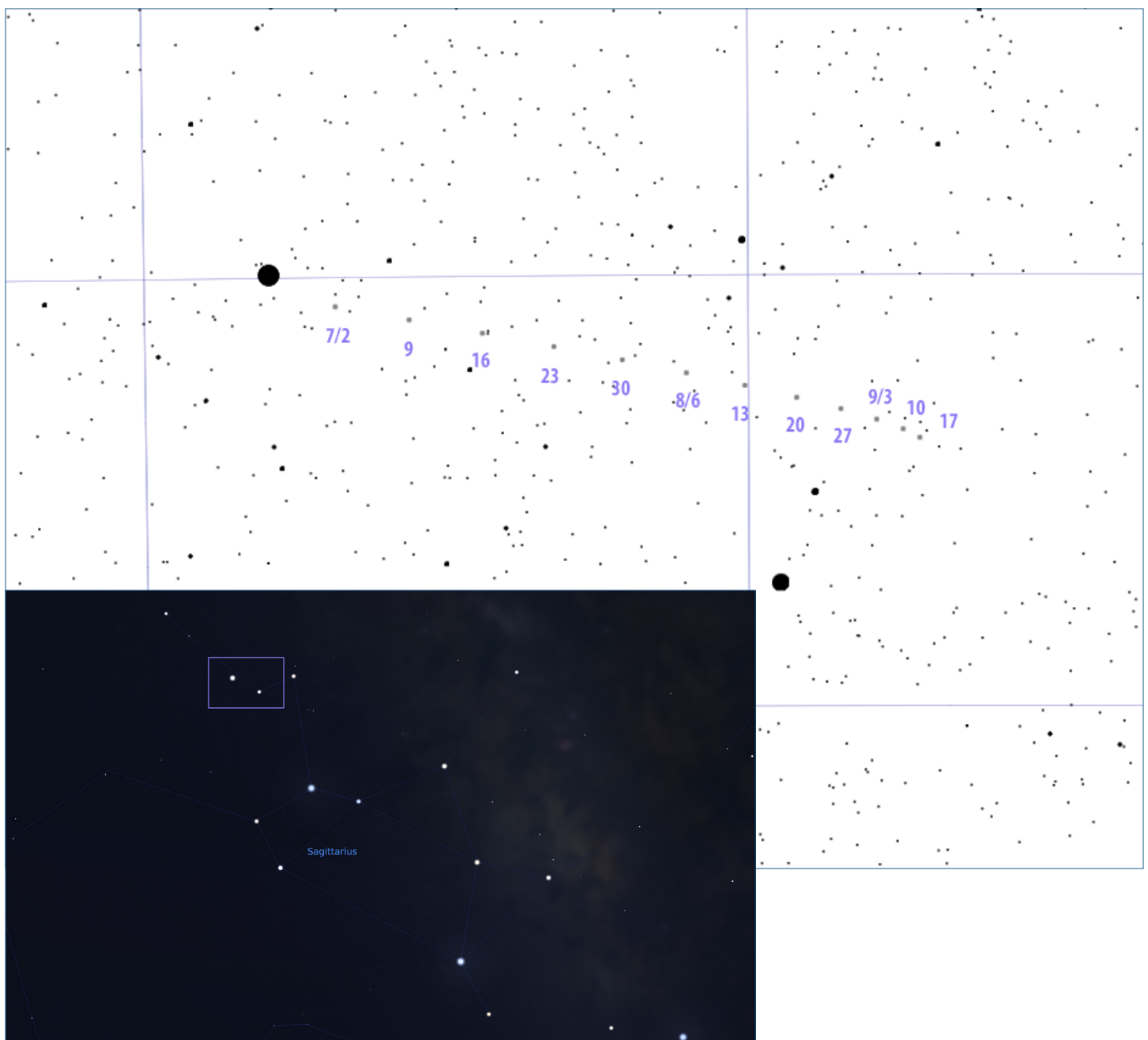
reaches opposition on July 7 and shines at a magnitude of 14.1.

If you remember hunting Pluto last year, you'll be familiar with the part of eastern Sagittarius where Pluto remains this year. You'll be starting in the "teaspoon" asterism. The chart below was produced by TheSkyX and shows the location of Pluto every week on Saturdays, 2300 EDT.

Good luck and happy hunting. If you manage to find it or capture an image, please send your report to jim@distantgalaxy.com for future publication.



Jim Hendrickson is newsletter and web editor and has been a member for 20 years. See more at <http://theskyscrapers.org/jim-hendrickson>



The Sun, Moon & Planets in July

This table contains the ephemeris of the objects in the Solar System for each Saturday night in July. Times are in Eastern. Time calculated for Seagrave Observatory (41.845N, 71.590W).

Object	Date	RA	Dec	Const	Mag	Size	Elong	Phase(%)	Dist(S)	Dist(E)	Rise	Transit	Set
Sun	2	6 45.9	23 00.8	Gem	-26.8	1887.7	0° W	-	-	1.02	05:15	12:50	20:25
	9	7 14.7	22 19.4	Gem	-26.8	1887.8	0° W	-	-	1.02	05:20	12:51	20:22
	16	7 43.1	21 19.2	Gem	-26.8	1888.3	0° W	-	-	1.02	05:25	12:52	20:19
	23	8 11.1	20 01.3	Cnc	-26.8	1889.2	0° W	-	-	1.02	05:31	12:52	20:13
	30	8 38.7	18 27.0	Cnc	-26.8	1890.5	0° W	-	-	1.02	05:38	12:52	20:06
Moon	2	4 24.1	15 48.1	Tau	-10.0	1946.7	33° W	8	-	-	03:44	11:05	18:31
	9	10 56.3	5 54.2	Leo	-10.9	1839.7	56° E	22	-	-	10:47	17:13	23:32
	16	16 27.3	-17 17.9	Oph	-12.4	1808.4	133° E	84	-	-	17:24	22:27	03:28
	23	22 43.9	-8 29.0	Aqr	-12.6	1902.8	142° W	89	-	-	21:54	03:38	09:30
	30	5 06.9	16 53.0	Tau	-10.8	1916.9	50° W	18	-	-	02:29	09:54	17:20
Mercury	2	6 18.9	24 03.6	Gem	-1.9	5.2	6° W	97	0.31	1.30	04:47	12:27	20:07
	9	7 25.2	23 33.9	Gem	-2.2	5.1	3° E	99	0.32	1.33	05:29	13:05	20:41
	16	8 26.9	21 02.0	Cnc	-1.2	5.2	10° E	93	0.35	1.30	06:14	13:39	21:02
	23	9 20.2	17 10.7	Cnc	-0.6	5.4	17° E	84	0.39	1.24	06:56	14:04	21:09
	30	10 05.0	12 41.5	Leo	-0.2	5.8	22° E	75	0.43	1.16	07:31	14:20	21:08
Venus	2	7 16.0	23 12.7	Gem	-3.8	9.9	7° E	99	0.72	1.72	05:47	13:21	20:55
	9	7 53.0	22 02.4	Gem	-3.8	9.9	9° E	99	0.72	1.71	06:02	13:30	20:58
	16	8 29.2	20 20.9	Cnc	-3.8	10.0	11° E	98	0.72	1.69	06:18	13:39	20:59
	23	9 04.5	18 11.3	Cnc	-3.8	10.1	13° E	98	0.72	1.67	06:35	13:46	20:57
	30	9 38.8	15 37.0	Leo	-3.8	10.2	15° E	97	0.72	1.65	06:52	13:53	20:53
Mars	2	15 19.9	-21 05.8	Lib	-1.4	16.2	132° E	93	1.47	0.58	16:38	21:20	02:02
	9	15 22.0	-21 19.7	Lib	-1.3	15.4	126° E	91	1.46	0.61	16:14	20:55	01:35
	16	15 26.7	-21 40.9	Lib	-1.1	14.6	121° E	90	1.45	0.64	15:53	20:32	01:11
	23	15 33.7	-22 07.9	Lib	-1.0	13.9	116° E	89	1.44	0.68	15:35	20:12	00:49
	30	15 42.9	-22 39.2	Lib	-0.8	13.2	111° E	88	1.44	0.71	15:19	19:54	00:29
1 Ceres	2	1 51.9	0 58.9	Cet	9.1	0.4	74° W	97	2.94	3.04	01:49	07:54	14:00
	9	1 58.8	1 23.0	Cet	9.1	0.4	79° W	97	2.93	2.95	01:27	07:34	13:41
	16	2 05.2	1 42.6	Cet	9.0	0.4	84° W	97	2.93	2.85	01:04	07:13	13:21
	23	2 11.0	1 57.5	Cet	8.9	0.5	89° W	97	2.93	2.76	00:42	06:51	13:00
	30	2 16.2	2 07.5	Cet	8.8	0.5	95° W	97	2.93	2.66	00:19	06:28	12:38
Jupiter	2	11 14.8	6 09.1	Leo	-1.7	34.1	67° E	99	5.44	5.77	10:52	17:16	23:40
	9	11 18.5	5 44.6	Leo	-1.7	33.5	61° E	99	5.44	5.86	10:29	16:52	23:15
	16	11 22.5	5 18.1	Leo	-1.6	33.0	55° E	99	5.45	5.96	10:07	16:28	22:49
	23	11 26.8	4 49.8	Leo	-1.6	32.5	50° E	99	5.45	6.04	09:46	16:05	22:24
	30	11 31.3	4 19.9	Leo	-1.6	32.1	44° E	100	5.45	6.12	09:25	15:42	22:00
Saturn	2	16 39.3	-20 22.5	Oph	0.1	18.1	151° E	100	10.03	9.13	17:54	22:39	03:24
	9	16 37.7	-20 20.4	Oph	0.2	18.0	143° E	100	10.03	9.20	17:25	22:10	02:55
	16	16 36.2	-20 18.9	Oph	0.2	17.9	136° E	100	10.03	9.27	16:56	21:41	02:26
	23	16 35.1	-20 18.0	Oph	0.3	17.7	130° E	100	10.03	9.36	16:27	21:12	01:57
	30	16 34.3	-20 17.7	Oph	0.3	17.5	123° E	100	10.03	9.45	15:58	20:44	01:29
Uranus	2	1 30.5	8 48.9	Psc	5.8	3.5	76° W	100	19.96	20.17	00:59	07:33	14:07
	9	1 31.0	8 51.8	Psc	5.8	3.5	83° W	100	19.96	20.06	00:32	07:06	13:40
	16	1 31.4	8 53.8	Psc	5.8	3.5	89° W	100	19.96	19.94	00:04	06:38	13:13
	23	1 31.6	8 54.9	Psc	5.8	3.6	96° W	100	19.96	19.82	23:37	06:11	12:45
	30	1 31.7	8 55.1	Psc	5.8	3.6	103° W	100	19.96	19.71	23:09	05:44	12:18
Neptune	2	22 54.7	-7 51.9	Aqr	7.9	2.3	119° W	100	29.96	29.46	23:24	04:57	10:31
	9	22 54.5	-7 53.9	Aqr	7.8	2.3	125° W	100	29.96	29.36	22:56	04:29	10:03
	16	22 54.1	-7 56.4	Aqr	7.8	2.3	132° W	100	29.96	29.26	22:28	04:02	09:35
	23	22 53.6	-7 59.4	Aqr	7.8	2.3	139° W	100	29.96	29.18	22:00	03:34	09:07
	30	22 53.1	-8 02.9	Aqr	7.8	2.3	146° W	100	29.95	29.11	21:33	03:06	08:39
Pluto	2	19 10.2	-21 03.7	Sgr	14.1	0.3	174° W	100	33.13	32.12	20:31	01:13	05:55
	9	19 09.5	-21 05.7	Sgr	14.1	0.3	178° E	100	33.13	32.12	20:03	00:45	05:27
	16	19 08.8	-21 07.6	Sgr	14.1	0.3	172° E	100	33.14	32.13	19:31	00:13	04:54
	23	19 08.0	-21 09.5	Sgr	14.1	0.3	165° E	100	33.14	32.16	19:03	23:45	04:26
	30	19 07.4	-21 11.4	Sgr	14.2	0.3	158° E	100	33.15	32.20	18:35	23:16	03:58

Astro Humor & Two Late-July Meteor Showers

by Dave Huestis

A neutrino walks into a bar... and keeps right on going.

I've loved cartoons and jokes for about as long as I can remember. There's a scrapbook of cartoons somewhere in my attic that I had cut and pasted (literally) from magazines in my collection of "stuff" from my childhood. I was a big fan of Rowan and Martin's Laugh-In from the late 1960s to the early 1970s. And I watched (and still do) episodes of The Three Stooges slapstick comedy episodes, which now broadcast along with parental warnings. "Pick two." Then there are the old classics like the Marx Brothers, as well as Abbott and Costello. Kids, ask your parents and grandparents.

I also like parodies and spoofs that are really clever. From 1991 to 1994 a series created by Jim Henson simply called Dinosaurs, featured a Pangaean family of dinosaurs who spoofed every facet of human culture.

There was DTV (MTV spoof) and an occasional spoof of the 1950s science show Watch Mr. Wizard called Ask Mr. Lizard with an assistant named Timmy who always ended up getting hurt during the experiments, prompting the line, "We're going to need another Timmy!" See one of the Ask Mr. Lizard spoofs here: <https://www.youtube.com/watch?v=MM1S27fPUOQY>. The whole show was very well thought out and executed, and always left me in stitches.

One of my absolutely favorite programs was Mystery Science Theater 3000 (MST3K for short). This cult series featured Joel, and later Mike, sent into orbit to watch "cheesy movies" as a plot by two mad scientists to eventually take over the world. Joel creates some "robot friends" as companions from parts of the ship to cope with this torture. Throughout their movie "reviews" they make jokes and wisecracking remarks at a lightening pace. You really have to pay attention because they come at you at the speed of light. At various intermission times they perform skits to pass the time. This show was hilarious. Here's a link to the opening sequence: <https://www.youtube.com/watch?v=VF7cO4t0o9c>.

I know I left many shows off this brief review, but I wanted to leave space for a few astronomy, space and physics jokes. Many of the ones that follow I had heard before.

Only a couple of them were new. And after much internet research to refresh my memory, I found many variations of the same theme.

Humor for Youngsters

Q: What happened to the astronaut who stepped on chewing gum? A: He got stuck in orbit!

Q: What type of songs do the planets like? A: Nep-tunes!

Q: Why can't Saturn take a bath? Because he leaves a ring in the tub!

Q: Why couldn't the astronaut book a room on the moon? A: Because it was full!

Q: How do you know when the moon is going broke? A: When it's down to its last quarter!

Q: Did you hear about the bones they found on the moon? A: The cow didn't make it after all!

Q: What should you do if you see a green alien? A: Wait until it's ripe!

Humor for General Science Folks

I was up all night wondering where the sun had gone ... then it dawned on me.

Did you hear about the new restaurant on the Moon? Great food ... no atmosphere!

Q: Where are black holes more commonly found? A: Black socks.

The library book club is reading a book

about anti-gravity. It's impossible to put down.

A lecture on time travel will be held last Thursday at Seagrave Memorial Observatory.

Q: Why can't you trust an atom? A: Because they make up everything.

Humor for the Scientifically Minded

Heisenberg is out for a drive when he's stopped for speeding. The policeman says "Do you know how fast you were going?" Heisenberg says "No, but I know where I am."

Q: How do astronomers see in the dark? A: They use standard candles!

Astronomers say the universe is finite, which is a comforting thought for those people who can't remember where they leave things.

Einstein developed a theory about space. And it was about time too!

Copernicus is well known for his theory of the Sun centered scheme of our solar system. However, there is no truth that his parents once said to him at an early age, "Copernicus, when are you going to realize that the world does not revolve around you?"

There was a young lady named Bright
Whose speed was far faster than light;

She set out one day

In a relative way

August 19, 2012

Curiosity Zaps Its First Martian Rock

In the first test of a key mineral-identification technique, Curiosity's mission scientists commanded the

ChemCam instrument to fire its high-power laser at a small, nearby rock. *



This small Martian rock, lying about 10 feet from Curiosity, was the first target for the rover's ChemCam instrument and its vaporizing laser. NASA / JPL / MSSS / LANL

* A memorial service will be held tomorrow for the 12.3 billion microbes that were instantly blasted to smithereens.

And returned on the previous night.

Once a well-kept secret, NASA astronauts discovered the well-preserved remains of Alice Cramdem during one of their lunar excursions. Authorities assume it was one of those days.

Also, on several occasions I have seen a news item that I couldn't resist modifying by digitally cutting and pasting! One of them accompanies this column.

These representations are just a handful of the more humorous sides of science. There are many, many more. If I left out one of your favorites just send me an email including it. I'm always looking for a good laugh.

I've often said that you either have a sense of humor, or no sense at all. What

category best describes you?

In conclusion, there is a "Sirius" nature to this column. From July 28-30 there are two overlapping meteor showers you can watch for between midnight and dawn. These meteor streams do not produce high meteor counts, but a waning crescent Moon will not severely hamper observing as many shooting stars as possible from a dark sky location. The Delta Aquarids can produce about 20 bright, yellow meteors per hour at peak, while the Alpha Capricornids produce only about 15 of the same color. However, the Alpha Capricornids are noted for producing brilliant fireballs.

Aquarius and Capricornus, the constellations from which these shooting stars appear to emanate, will be just less than

halfway between the southern horizon and zenith (straight up) around 2:00 a.m. Spend a little time on successive mornings to see if you catch peak activity. Observing only a few bright meteors will get you excited about the upcoming Perseid meteor shower display on the night of August 12-13 when many more shooting stars will blaze across the sky. Good luck and good observing.

I'll leave you with these final words. I'm proud to be a supernova remnant!

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>

Asteroid Day

by Francine Jackson

There's always something new in the sky – and sometime it's right over our heads. Occasionally, we even get to see some of our new visitors, in the form of meteors, those fascinating streaks that leave us sky worshipers breathless and waiting for another.

And, then, there are the not-so-tiny ones that come to Earth and make a statement. Although many of these meteorites are relatively small, and we probably are walking among them, not realizing they aren't native to Earth, some of these can upset our peaceful ground. Witness, for example, Meteor, or Barringer, Crater, the best known and most preserved of our known impacts. Located in our Southwest, this giant hole was made by a rather large falling object thousands of years ago. Its beauty and continuity lies in the fact that it wasn't made here, in Southern New England, where hurricanes, snow, and all-around unpredictable weather, in addition

to being the starting point for many of our European descendants, would have caused the ground to have changed drastically over the centuries.

Just several years ago, the world was treated to one of the most impressive sights ever to be observed by automobile dash cams. A huge rock fell in Russia, reminding us that the sky can be very dramatic when it wanted to be. Fortunately, no humans were seriously injured, although the major cause of injury was glass, which was blasted out of windows that onlookers were a little too near.

Also, looking back just a few decades, Russia had been previously damaged, when "something" occurred in the fortunately out-of-the-way region of Tungusta, in Siberia. A shock wave was heard around the world, but, luckily, except for minor injuries, no one suffered major injuries. One of the sadder parts to this was that the country was undergoing major political change at

that time, allowing no scientific expeditions to venture into the region for nearly two decades. What was discovered then was the remnants of some form of intrusion by some body that decided to come too close to the Earth.

The possibility of similar happenings such as this isn't that far-fetched. Much like the recent event in Chelyabinsk, we really have no warning as to whether a strike such as this can ever come again. To remind us of this, the astronomy community has now declared the anniversary of the Tunguska event, June 30th, to become Asteroid Day, a reminder that we are not alone, and sometimes an occasional space object may want to come and visit. Yes, this is being mentioned a little late for us to do anything about it this year, but, as next month we will be observing one of the year's better periodic meteor showers, and we are now aware that astronomers do want us to remember how easily it is for a fairly large object to penetrate our atmosphere and create havoc here, we might want to, not only look ahead to next June, but also remind us to keep looking up. We never know what might be up there, waiting for us.



Francine Jackson is Skyscrapers Public Relations Spokesperson, writes the weekly newsletter for Ladd Observatory and serves as planetarian at the University of Rhode Island. See more at <http://theskyscrapers.org/francine-jackson>

Skyscrapers Inc. E Board Meeting May 16 2016

Prior to the meeting, we found that the grounds had been freshly mown and looked great with one glaring exception. 2 blades of rather tall grass had been overlooked in the front of the observatory. Your secretary took it upon himself to manually remove them. The trustees were duly notified to pay more attention in the future. • Meeting commenced at 7:12pm. In attendance, Steve Siok, Steve Hubbard, Jim Crawford, Jim Hendrickson, Lloyd Merrill, Ian Dell'Antonio, Bob Napier • Photographic Documentation: Upon the utterance of the first word from President Siok, Jim commenced numerous photographic clicks of all attendees. This was in support of his project to document our entire lives from birth to death.

Financial Report: Lloyd has transferred \$20,000 of our money to a 24 month CD bearing 1.25% interest with Pawtucket Credit Union. This leaves us about \$8000 still in checking. There was too much money sitting in checking not earning any interest. • Just under 50% of our membership from last year has renewed for 2016 thus far. Still working on this. • Audit has not been done yet, hope to get to this sometime next week.

Trustees Report: An inventory of the property is complete • The step going into the gazebo needs to be re supported. Kent Cameron and Jim Crawford will work on this • The Radio club will running their contest the weekend of June 25 and 26. We will be getting a donation from them. They will run some short cables sessions to be planned. • Jim Crawford fixed the clock at the back of the meeting hall so that our officers and future speakers will be able to tell when they've gone on too long in a more objective manner than by counting the nodding off heads. • Several people have come to Steve Siok to ask about training to use the 16" telescope. Jim Crawford suggests getting them trained on the 12" first. Essentially a type of astronomical training wheels

Star Parties and Special Events: No updates on upcoming star parties as Francine was not in attendance • There was some discussion about the last series of workshops. It was felt that the subjects were good, but attendance was sketchy. It was thought that maybe making them start later to be able to tie in with open nights might help. We will start thinking about a

new series of workshops for the fall.

Planewave Telescope Status: Ian Dell'Antonio reported that there was a response from the Champlin Foundation received about 10 days ago. Champlin does not have the capitol funds available for a grant the size of the one submitted this year. They did not send it for a review which would have provided at least an idea of any concerns that needed to be addressed. A discussion was held about breaking the grant request into smaller chunks to be submitted to more than one foundation. Ian is going to be working with Brown University's foundation office to investigate other potential grant sources.

Astroassembly Status: Kathy Siok was unable to be in attendance. She therefore gave Steve permission to speak in her stead. 3 speakers have been confirmed. Scott McNeal will talk about imaging, Jeff Norwood of Camera Concepts will talk about changes with amateur equipment over the years, Gerry Dyck will talk about visually observing variable stars and Dennis Conti PHD will talk about amateur detection of exoplanets with modest size instruments by amateurs. He is the head of the exoplanet section of the AAVSO. 2 additional speakers are still being worked on. The same banquet caterer as last year has been confirmed as has the Scituate Community Center for the evening program. The secretary has placed announcements of Astroassembly on the appropriate websites of Astronomy, Sky and Telescope and Amateur Astronomy Magazines.

Light Pollution Status: Steve Siok shared a recent report from the Council of Science and Public Health. This is a group supported by the American Medical Association. One of the authors is Mario Motta, a member of the ATM's of Boston and friend of Skyscrapers. This report has some great information about the effects of LED lighting, especially that tinged strongly with blue light. There was a discussion about the new Citizen's Bank campus not too far from the observatory. It was suggested that we try to get someone from the town of Scituate to talk with their counterpart in the town of Johnston. Bob Napier is the volunteer lighting coordinator for the town of Scituate. Bob talked about some of his efforts, many of which have been successful to help control outdoor lighting in town. We are still working on making contacts with the appropriate people on the Citizen's

Cash Flow YTD 2016 4/1/2016 through 5/31/2016

Category	4/1/2016-5/31/2016
INFLOWS	
Donation	
Misc Donation	1,592.70
TOTAL Donation	1,592.70
Dues	
Family	300.00
Regular	800.00
Senior	275.00
TOTAL Dues	1,375.00
Misc Income	
Interest Inc	3.05
TOTAL Misc Income	3.05
Star Party Donations	70.00
Subscription Income	
Astronomy	68.00
Sky & Telescope	32.95
TOTAL Subscription Income	100.95
TOTAL INFLOWS	3,141.70
OUTFLOWS	
Misc Expenses	96.68
PayPal Fee	5.60
Postage and Delivery	48.72
Subscription Payments	
Astronomy	68.00
Sky & Telescope	32.95
TOTAL Subscription Payments	100.95
Trustee Expense	
Property Maintenance	173.73
TOTAL Trustee Expense	173.73
Utilities	
Internet	139.98
Porta-John	99.00
Propane	80.25
TOTAL Utilities	319.23
TOTAL OUTFLOWS	744.91
OVERALL TOTAL	2,396.79

Cash and Bank Accounts - As of 5/31/2016

Account	5/31/2016 Balance
Bank Accounts	
Capital One Bank	0.00
PayPal Account	156.85
PCU Checking	27,902.37
TOTAL Bank Accounts	28,059.22
Cash Accounts	
Cash Account	0.00
TOTAL Cash Accounts	0.00
OVERALL TOTAL	28,059.22

Bank project and or the town of Johnston.

July and August Meetings: Both will be on the SECOND SATURDAY of each month this year. Both will start at: 5:30pm with a talk to be given at 7:30pm. • The July meeting will be a potluck affair

The August meeting will be a cookout. A \$5 donation to help defray expenses will be collected for this one.

Miscellaneous Stuff: Bob Napier reported that the Clark telescope did not seem to be tracking well when it was being used last Saturday. • A group of us went to investigate, nothing was found to be obviously wrong. The trustees will investigate further.



On Thursday, May 19 Skyscrapers members Francine Jackson, Steve Siok, David Eicher, Kathy Siok, Steve Hubbard, Ray Kenison & Jim Hendrickson traveled to Harvard-Smithsonian Center for Astrophysics to meet with Astronomy Magazine editor David Eicher.



Mars on June 24. I used my 14" for this. The air was as usual, very turbulent. I had to take down part of one of the walls of my building to get this because it's so low.

I used my ZWO1224 color imager, firecapture, AS!2 and Astra imaging processing software to pull out as much as I can. Mars is a bit gibbous now, not totally full. Image by Steve Hubbard



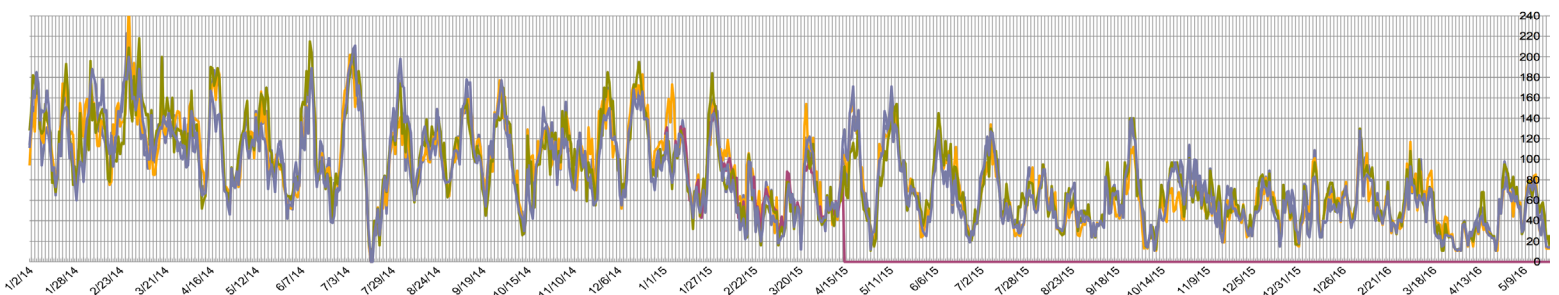
The satellites of Saturn can be captured using just a 3-inch telescope and SLR camera. A tracking mount is required due to the long exposure necessary to reveal them. This image was taken on June 24 by Jim Hendrickson using a Canon SLR on a 3-inch refractor at an effective focal length of 2000mm. Exposure time was 13 seconds.

Skyscrapers Sunspot Count Update

Contact Dave Huestis for more information or to participate.

Skyscrapers Daily Relative Sunspot Number Comparisons

— Dave — Glenn — Jim C — Tom B





Star Party Update

Thursday, May 12: Newport Art Museum

Star Party at Newport Art Museum - STEAM Education - Where Art and Science Come Together! "Art After Dark!"

Here are some images I took of some memorable moments on the evening of May 12th at our "Star Party" at the Newport Art Museum. Our dedicated Skyscraper volunteers put on a Spectacular show for the museum's guests generating many smiles, excitement and enthusiasm as they peered through the eyepieces and displays of our cameras connected to our telescopes! I want to personally thank Cristin Searles Bilodeau, Director of Visitor Services and Community Engagement for contacting us about hosting a "Star Party" and her enthusiastic support! Many Kudos are in order for our Skyscraper volunteers, Francine Jackson, Jim Hendrickson, Brown University Professor Ian Dell'Antonio, Jim Crawford, and Kent and Connie Cameron for bringing and setting up their personal equipment which allowed the public to enjoy the wonders of our night sky! My organization

loves to star gaze and share their experiences and educating others in the field of Astronomy! You can visit the Newport Art Museum where they display some really beautiful and interesting artwork. They are also on Facebook at <https://www.facebook.com/NewportArtMuseum/?fref=nf> Twitter @NewportArtMuse or their website at

<http://www.newportartmuseum.org/>

You can visit our website at www.skyscrapersinc.org for additional information about our organization, and where you will also find many well written articles by our seasoned experts on the various topics of Astronomy. We also provide a list of upcoming meetings, star parties and other



events. We would like to encourage all members to spend a couple of hours with us and bring your telescopes and cameras to the star parties we host and assist us in educational public outreach especially for our children which supports STEM/STEAM Education. Afterwards our volunteers treated themselves to a late dinner at a local restaurant in Newport. It's great to get out of the house every now and then and have fun educating the public and enjoying the camaraderie with my many friends at Skyscrapers!

Skyscrapers, Inc. is open every Saturday night (weather permitting) for star gazing. We also offer presentations from world renown astronomers and scientists that are free for our members and the public. Additionally, we offer astronomy workshops free if you are a member and only \$5 for non-members. Tell your friends and co-workers about us and see if they'd like to attend one of our meetings or workshops.

Our Spring workshops included, The Sun & the Upcoming Mercury Transit on May 7th, Astronomical Definitions on May 14th, Observing the Sky & Light Pollution on May 21st, Globular Clusters on June 4th. Our last workshop for the Spring was on Building a Backyard Observatory on June 11th.

Don't forget about registering your Amazon.com account with the Amazon "Smile Program!" This is a great program that donates monies to Skyscrapers everytime you make a purchase. Just go to this link which will allow you to select Skyscrapers, Inc. as your charity http://smile.amazon.com/ref=smi_ge_rl_rd_gw?_encoding=UTF8&ein=05-0382371&ref_=smi_ext_ch_05-0382371_cl

When you shop at amazon.com, ensure you return to www.smile.amazon.com so your purchases will donate to Skyscrapers. If you just go to www.amazon.com, even though you registered Skyscrapers, we will not receive any donations from your purchases. Thank you and Clear Skies!

Tracy Karin Prell

Saturday, June 18 Seagrave Observatory Night

On Saturday, June 18 we had our first clear Saturday open night in seven weeks. These are the latest sunsets of the year so even at our seasonal opening hour of 9pm the sky wasn't dark yet.

For this evening we had a waxing gibbous Moon and three planets, Jupiter, Mars & Saturn. About 35 guests came out to see



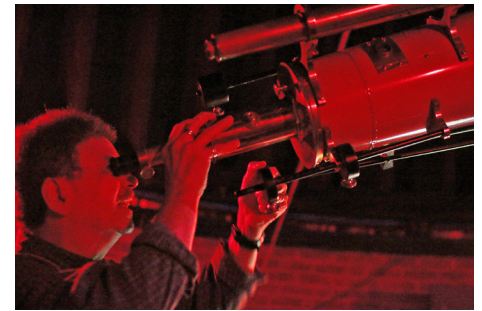
the solar system tonight. Thanks to volunteer members Bill Guca, Tom Rinaldi and Jeff Padell for putting on tonight's show.

Saturday, June 25 Seagrave Observatory Night

A clear & crisp late June night provided for some excellent viewing of our three evening planets, Jupiter, Mars & Saturn, as well as a host of summertime deep sky targets. Dave Huestis and Kent Cameron ran the 8-inch Clark telescope, pointing out the planets, and later some double stars, Jim Brenek aimed the 12-inch Meade at Saturn

and its moons for much of the evening, but also showed some of the seasons selection of bright Messier objects, Glenn Huestis showed our guests the Ring Nebula with his 4.5" Newtonian reflector, and Jim Crawford went through the process of polar aligning a GEM-mounted Schmidt-Cassegrain telescope.

Also with us this evening was the CTRI Contest Radio Group, who set up radio gear and antennas in an attempt to establish around-the-globe communications.



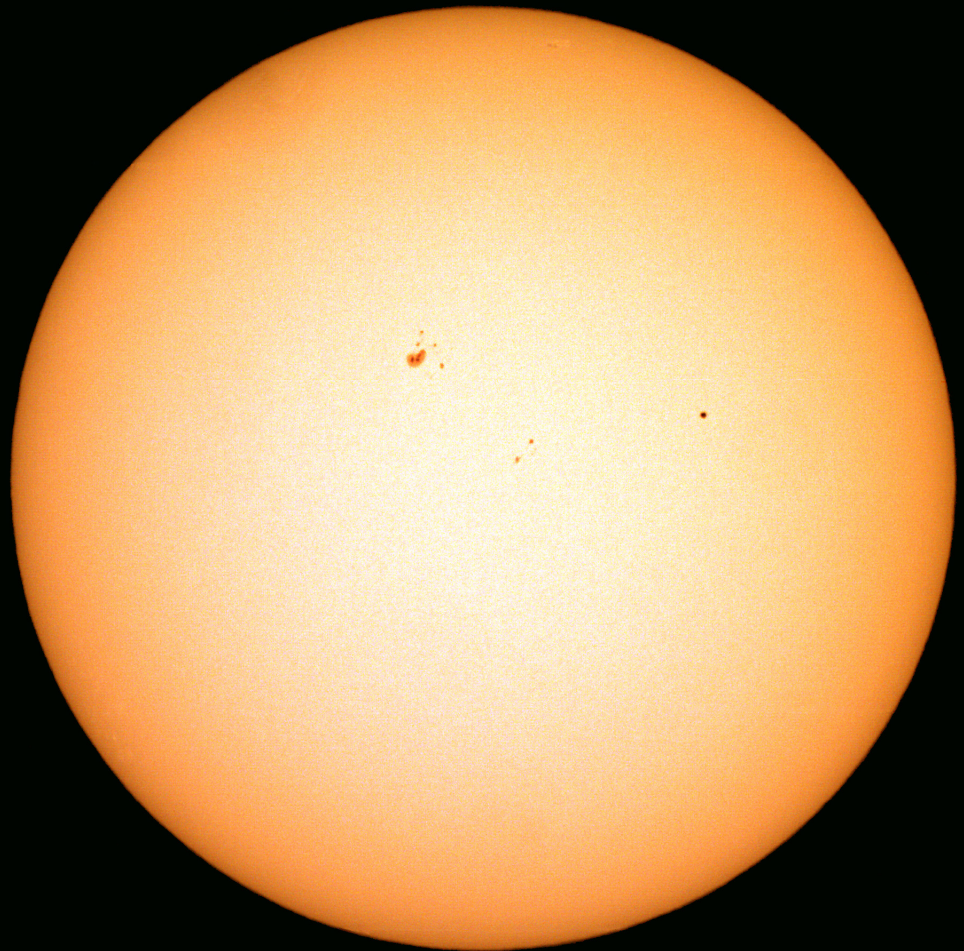
Thursday, June 23 Blackstone River Watershed Council

Francine Jackson and Jim Hendrickson conducted a star party for about 10 visitors at Blackstone River Watershed Council, showing the waxing gibbous Moon, Mars and Saturn.

Mercury Transit 9 May 2016



Star party on the front lawn at Ladd Observatory viewing the Mercury Transit.



Mercury Transit captured by Tom Thibault using AstroTech 65EDQ with a Celestron NexImage5 & Orion white glass solar filter.

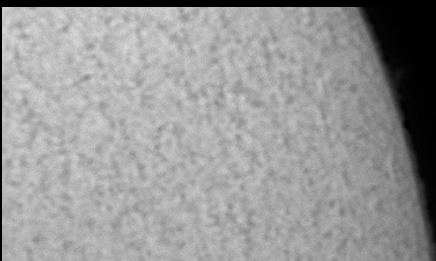
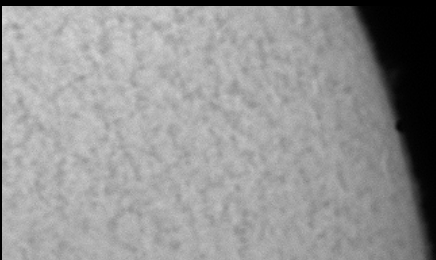
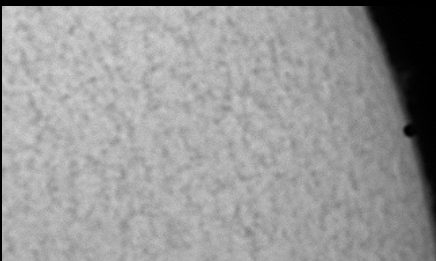
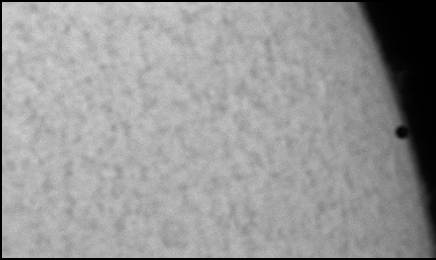
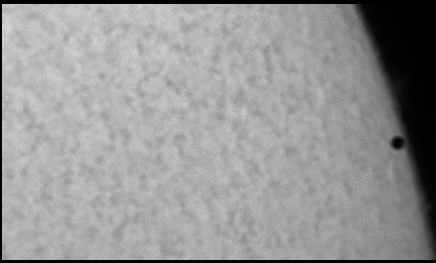


Image sequence by Jim Hendrickson showing third and fourth contact, taken with Imaging Source camera with a Lunt 35mm H-alpha telescope.



Mercury Transit using a 100mm Lunt H-alpha telescope by Steve Hubbard.

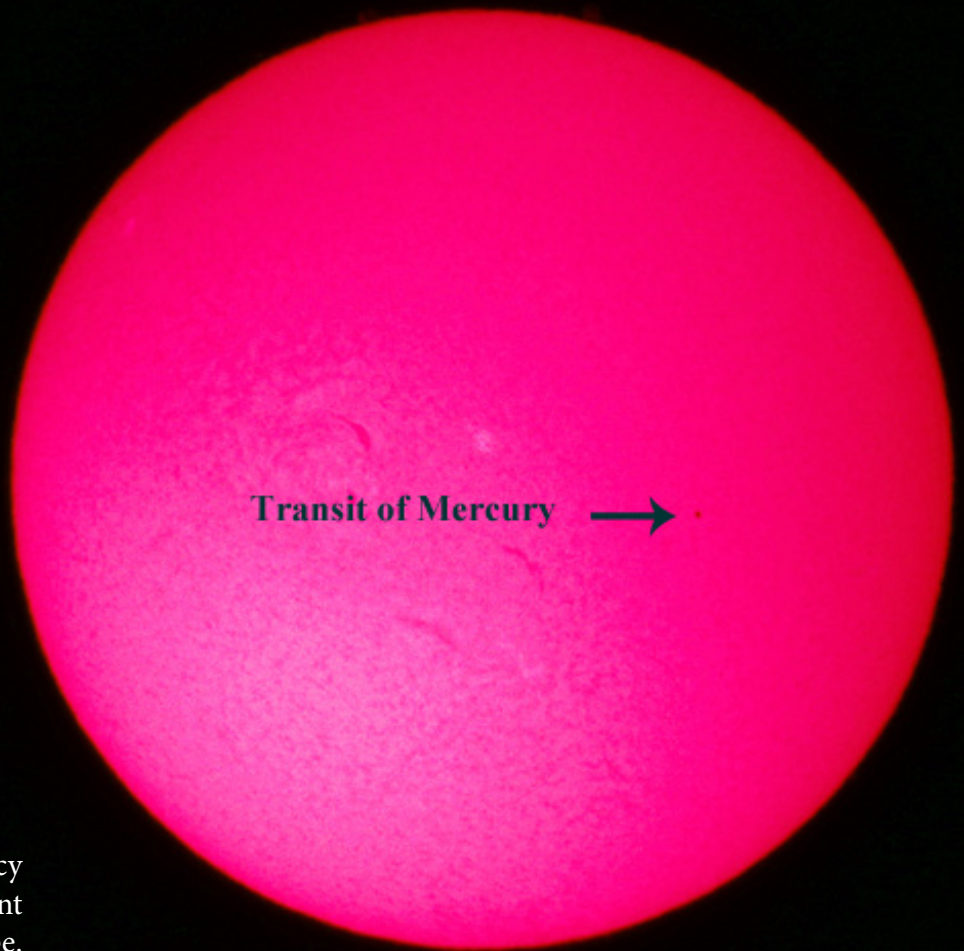


Image of Mercury Transit by Tracy Prell using a Canon SLR on a Lunt 35mm H-alpha telescope.



Hubble's bubble lights up the interstellar rubble

by Ethan Siegel

When isolated stars like our Sun reach the end of their lives, they're expected to blow off their outer layers in a roughly spherical configuration: a planetary nebula. But the most spectacular bubbles don't come from gas-and-plasma getting expelled into otherwise empty space, but from young, hot stars whose radiation pushes against the gaseous nebulae in which they were born. While most of our Sun's energy is found in the visible part of the spectrum, more massive stars burn at hotter temperatures, producing more ionizing, ultraviolet light, and also at higher luminosities. A star some 40-45 times the mass of the Sun, for example, might emit energy at a rate hundreds of thousands of times as great as our own star.

The Bubble Nebula, discovered in 1787 by William Herschel, is perhaps the classic example of this phenomenon. At a distance of 7,100 light years away in the constellation of Cassiopeia, a molecular gas cloud is actively forming stars, including the massive O-class star BD+60 2522, which itself is a magnitude +8.7 star despite its great distance and its presence in a dusty region of space. Shining with a temperature of 37,500 K and a luminosity nearly 400,000 times that of our Sun, it ionizes and evaporates off all the molecular material within a sphere 7 light years in diameter. The bubble structure itself, when viewed from a dark sky location, can be seen through an amateur telescope with an aperture as small as 8" (20 cm).

As viewed by Hubble, the thickness of the bubble wall is both apparent and spectacular. A star as massive as the one creating this bubble emits stellar winds at approximately 1700 km/s, or 0.6% the speed of light. As those winds slam into the material in the interstellar medium,

they push it outwards. The bubble itself appears off-center from the star due to the asymmetry of the surrounding interstellar medium with a greater density of cold gas on the "short" side than on the longer one. The blue color is due to the emission from partially ionized oxygen atoms, while the cooler yellow color highlights the dual presence of hydrogen (red) and nitrogen (green).

The star itself at the core of the nebula

is currently fusing helium at its center. It is expected to live only another 10 million years or so before dying in a spectacular Type II supernova explosion.

This article is provided by NASA Space Place. With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!



NASA, ESA, and the Hubble Heritage Team (STScI/AURA), of the Bubble Nebula as imaged 229 years after its discovery by William Herschel.

Globular Cluster in Hercules

M92

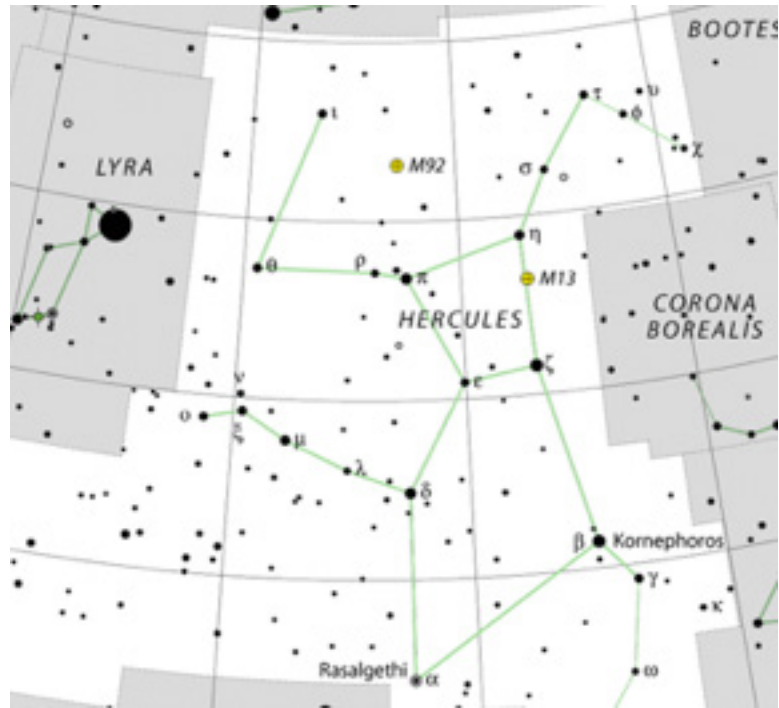
Magnitude 6.5, Size 14'

by Las Vegas Astronomical Society

This month's LVAS Observer's Challenge takes us to the "other" Messier globular in Hercules. Overlooked in favor of the brighter and easier to find M13, M92 is a noble object in its own right. Discovered by Johan Bode in 1777, it was independently found and catalogued by Messier four years later. Its distance of 26,000 light years is similar to that of M13.

Locating M92 isn't all that difficult. It's bright enough to be picked up with binoculars and finderscopes. Just scan the region about two-thirds of the way from eta (η) to iota (ι) Herculis and look for a hazy round patch about half the size of M13. The challenge isn't in observing M92, but in determining the smallest aperture that will resolve this cluster.

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 lvastronomy.com/observing-challenge.



IAU and Sky & Telescope



Image by Mario Motta, M.D.

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