



the Skyscraper

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June 2018

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

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Saturday, June 9, 7pm at Seagrave Observatory

Adventures in Skyscraping: A Trip to the Kovac Planetarium

Many of us are familiar with home-built backyard telescopes, but how many can say that they have seen a home-built backyard planetarium? Francine Jackson, our resident planetarian, and Jim Hendrickson present a tale of an adventure they took in late 2017 to the faraway North Woods of Wisconsin to visit Frank Kovac and his planetarium. Built over the course of eleven years using over \$100,000 of his own funding, Frank was inspired by a childhood visit to Chicago's Adler Planetarium with his father, Frank Sr., to build his own planetarium and share the wonders of the Universe in a unique way that no one else has ever done.

We plan to have a dessert buffet prior to

the program. So start thinking about what you plan to bring.

If you have any questions, please contact Kathy Siok kathys5@cox.net.

Upcoming Meetings

Mars Party

Saturday, July 28

Augusts Meeting

Saturday, August 4

September Meeting

Friday, September 7

AstroAssembly

September 28 & 29

**Skyscrapers
Board Meeting**
Monday, June 11, 7pm
All Members Welcome

Phases of the Moon

Last Quarter Moon
June 3 18:32

New Moon
June 13 19:43

First Quarter Moon
June 20 10:20

Full Strawberry Moon
June 28 04:53



Seagrave Memorial
Observatory
Open Nights

Saturdays st 9:00 pm
weather permitting

President's Message

by Steve Hubbard

I have lots of exciting news to share this month! Firstly, I wish to welcome Tracy Prell as our newest appointed position, "New Member Steward." In this position, Tracy will act as the first point of contact for new members joining our group, helping them to learn who we are, who to get help from and more about events and opportunities they can be involved with. Along with this, we have a number of members who have graciously volunteered to be paired up with new members as mentors. If you aren't brand new, but still have questions or need help, get in touch with Tracy and I'm sure she'll help you too!

Secondly, I want to congratulate junior member Weston Ambrose. Weston has agreed to take on the job of Assistant Librarian. Check out our library at our next meeting. Weston and head librarian Dave Huestis will be there to help you.

We received 51 responses to the recent member survey I sent out. This is a GREAT response rate and I sincerely thank everyone who took the time to provide us with their input. Your leadership team has started the process of review and analysis of the results. I can tell you that one of the things that stuck out was a strong desire for more star parties / observing opportunities and associated learning. To that end, we will be setting up member focused star parties on June 2, June 23, July 7, July 21, August 11 and August 18. Come join us and if you have questions about how your telescope works, want to learn how to find constellations or just want to view the night sky with us, these are a terrific opportunity for you!

By the way, if you are interested in seeing the results from the survey, just let me know. I can provide you with a PDF with all of the answers and comments.

Our June meeting on Saturday the 9th, 7pm features a talk about a recent trip that Jim Hendrickson and Francine Jackson took to the Frank Kovac Planetarium and will also feature a pot luck style dessert buffet.

In July, we are working on plans for a special "Mars Party" on Saturday, July 28 in honor of the very close approach of Mars this



year.

If you haven't been to Seagrave Observatory for a while, check it out. The Trustees have been working hard and our grounds look great! Thank you!

This year, we have a close approach of Mars this summer and great views to come of Saturn and Jupiter. Please come out to view them and join us for some of the fun activities we have in store!



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.

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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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.

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You shop. Amazon gives.

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

Friday, June 8: IBEX Comes to the URI Planetarium

University of Rhode Island Planetarium
Kingston Campus
Upper College Road
Friday, June 8th, 2018, 6:00 P.M.

Contact: Francine Jackson 401-527-5558

Much has been written as to where the solar system ends. Here, right above Earth, is a space craft with a mission as to where the influence of the Sun does just that. What has it learned? Is there any other proof as to how far the Sun is a factor within our galaxy? Come to the URI Planetarium and learn the extent of our neighborhood.

IBEX will be preceded by a short program on light pollution and its effects on the Earth, and followed by an introduction to the Skies over our Heads. Admission, to benefit the URI Planetarium Fund, is \$5.00, and will include an image of the IBEX space craft.

The University of Rhode Island Planetarium is located on the URI campus, on Upper College Road, across from the Art Center. It is available for school and other group presentations. For further information, please call Francine Jackson at 401-527-5558.



Astronomy Nights at River Bend Farm

Ranger Joshua Bell from the Blackstone River Valley National Historical Park has asked Francine Jackson and Jim Hendrickson to help with summer Friday Night Sky Programs at River Bend Farm once again for summer 2018.

The park has partnered with local Civil Air Patrol Squadrons to run the program. They'll be explaining basic stuff to visitors like how telescopes work and what it is that they'll be looking at. They'll have some beginner telescopes, but folks should feel free to bring their own. The following tentative dates have been suggested. All dates are Fridays and there are no rain dates. In the event of inclement weather, an indoor presentation will be given.

June 15 - start at 20:30; Sunset 20:22; Waxing crescent Moon sets at 22:18; Venus, Jupiter visible; Saturn rises later; dark night for deep sky, but sky isn't dark until very late.

July 27 - start at 20:30; Sunset 20:09; Full Moon rises at 20:10; **Mars Opposition** - best Mars has been in 15 years - potential big turnout; Venus, Jupiter, Saturn & Mars

visible.

August 17 - start at 20:00; Sunset at 19:43; Waxing crescent Moon (almost 1st quarter); Venus, Jupiter, Saturn & Mars visible.

September 21 - Blackstone Valley GO Event - Kent Cameron Memorial Sky Gaze - start at 18:30; Sunset at 18:44; Waxing gibbous Moon occults delta Cap (3rd magnitude star) beginning at 19:06; Venus sets early; Jupiter, Saturn & Mars visible.

October 5 - start at 19:00; Sunset at 18:20; Waning crescent Moon not visible in evening; Jupiter sets early; Saturn & Mars visible; dark night for deep sky; best night

for Milky Way viewing.

These events have been a lot of fun for us in past years and River Bend Farm is an ideal location with a large, open field away from lights which is ideal for observing. Additionally, we will be dedicating the September 21 night in memory of Kent Cameron, who had hosted night sky events at River Bend Farm for over 20 years. For more information, contact Jim Hendrickson at hendrickson.jim@gmail.com, Francine Jackson at Francine.Jackson@brown.edu or Josh Bell at joshua_bell@nps.gov

River Bend Farm Visitor Center
287 Oak Street, Uxbridge MA 01569



A Parade of Planets for Summer Stargazers: June is for Jupiter

by Dave Huestis

Recently there's been a drought of naked-eye planets to observe. Although amateur astronomers had been able to sneak a few peeks of Jupiter, Saturn, and Mars between midnight and dawn during spring, inclement weather once again limited their observations. Over the coming summer months we will explore Saturn and Mars. However, last month I promised to present a brief Jupiter observing guide. And now that our solar system's largest planet is visible soon after sunset, June is for Jupiter.

Back on May 9, Jupiter was at its closest distance to the Earth for 2018 ... just over 409,000,000 miles away. Now about a month later on June 1 that distance has grown to about 416,000,00 miles. Regardless, views of this massive planet (you could fit 1,321 Earths within its volume) and his four Galilean moons are still splendid.

Once the Sun sets and evening twilight deepens bright Jupiter will be easily noticeable high above the southeastern horizon in the constellation of Libra. If you have your own telescope you can begin observing immediately. Otherwise, you will need to visit one of the local observatories listed at the end of this column during their public observing nights.

First-time telescopic views of Jupiter astound casual stargazers. They are often amazed at the wealth of detail a telescope provides. While the disk of the planet is quite impressive through even a small instrument, what most observers first notice are the small star-like dots accompanying Jupiter. These are the four largest and brightest of Jupiter's moons, called the Galilean moons in honor of their discoverer, Galileo Galilei. On January 7, 1610, Galileo used a lens 1.5 inches in diameter with a

magnification of only 20X to observe Jupiter. He observed three little stars in the planet's vicinity. (The fourth one was either in Jupiter's shadow, behind the planet's disk, or in transit in front of the disk.) At first Galileo thought they were background stars, but after careful observation he deduced they were orbiting Jupiter.

Galileo's telescopic work and the calculations that followed proved the Copernican Sun-centered theory (still controversial at the time) for the layout and motion of the solar system, versus the Aristotelian Earth-centered view. Jupiter and his retinue of moons was a solar system in miniature.

The Galilean satellites now have names from Greek mythology: Io, Europa, Ganymede and Callisto. When several of the moons are visible at the same time, they often appear in a straight line, parading around Jupiter in the plane of its equator. This arrangement presents many interesting phenomena for us earth-bound astronomers to observe.

When a moon passes in front of Jupiter and casts a shadow onto the Jovian cloud tops, it is called a shadow transit. Besides seeing the satellite's shadow, you may also see the bright disk of the satellite traversing Jupiter's clouds at the same time, though this event is more difficult to observe. A moon may also pass behind the planet, which is called an occultation. Jupiter's shadow can even eclipse a satellite as well; gradually the moon will either blink out or reappear. Also, it's fun to watch all four moons line up on one side of the planet. I love to watch Jupiter over an extended period of time during the course of one evening because the view is dynamically changing as you watch.



Jupiter image by Steve Hubbard

While you can be pleasantly surprised at the eyepiece of a telescope by any of these satellite events during a random observing session, you can use the following website to plan ahead to ensure you experience a special Galilean satellite event (http://www.skyandtelescope.com/wp-content/observing-tools/jupiter_moons/jupiter.html).

Once you've explored Jupiter's moons, turn your attention to the disk of the planet. Jupiter's striped appearance is due to the prominent dark bands/belts and lighter zones in Jupiter's cloud tops. A six-inch telescope or larger may be needed to catch a glimpse of the Great Red Spot, a centuries old storm in Jupiter's atmosphere. Though not as red (some observers describe it as salmon colored) as it once was many years ago, it should be fairly easy to see if it has rotated into view.

Additionally, since its discovery the GRS has shrunk by 50%, and in more recent years its oval shape has become more circular. Some astronomers speculate that the storm may be dissipating. Only time will tell. Keep in mind that Jupiter rotates once in ten hours, making it possible to see the entire planet in one or two nights of observing. You can visit the following website to determine when favorable views of the Great Red spot will occur: <http://www>.



Image sequence of Jupiter's innermost Galilean satellite Io transiting in front of the planet on May 30, 2018 by Jim Hendrickson.

skyandtelescope.com/observing/interactive-sky-watching-tools/transit-times-of-jupiters-great-red-spot/

Use whatever optical aid you have at hand, but if you wish to marvel at the beauty of Jupiter and all it has to offer, then set aside some time to visit one of the local observatories for a splendid visual experience. During the Seagrave Observatory celebration of Astronomy Day on April 28 we observed the GRS using the society's eight-inch Alvan Clark refractor.

Furthermore, be sure to check out brilliant Venus in the west northwest sky after sunset all month. On the 15th a waxing crescent Moon will be below and to the

right of Venus. On the night after it will be to Venus' upper left.

I encourage you to visit one of the following local observatories for splendid views of Jupiter and other astronomical objects throughout the months to come. I will provide observing guides to Saturn and Mars in the upcoming months. 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. Check the respective websites for any schedule update before venturing out for a visit.

And finally, the summer solstice occurs at 6:07 a.m. EDT on the 21st. Summer begins in the northern hemisphere.

May all your skies be cloud free.



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>

What Is the Asteroid Belt?

By Linda Hermans-Killiam

There are millions of pieces of rocky material left over from the formation of our solar system. These rocky chunks are called asteroids, and they can be found orbiting our Sun. Most asteroids are found between the orbits of Mars and Jupiter. They orbit the Sun in a doughnut-shaped region of space called the asteroid belt.

Asteroids come in many different sizes—from tiny rocks to giant boulders. Some can even be hundreds of miles across! Asteroids are mostly rocky, but some also have metals inside, such as iron and nickel. Almost all asteroids have irregular shapes. However, very large asteroids can have a rounder shape.

The asteroid belt is about as wide as the distance between Earth and the Sun. It's a big space, so the objects in the asteroid belt aren't very close together. That means there is plenty of room for spacecraft to safely pass through the belt. In fact, NASA has already sent several spacecraft through the asteroid belt!

The total mass of objects in the asteroid belt is only about 4 percent the mass of our Moon. Half of this mass is from the four largest objects in the belt. These objects are named Ceres, Vesta, Pallas and Hygiea.

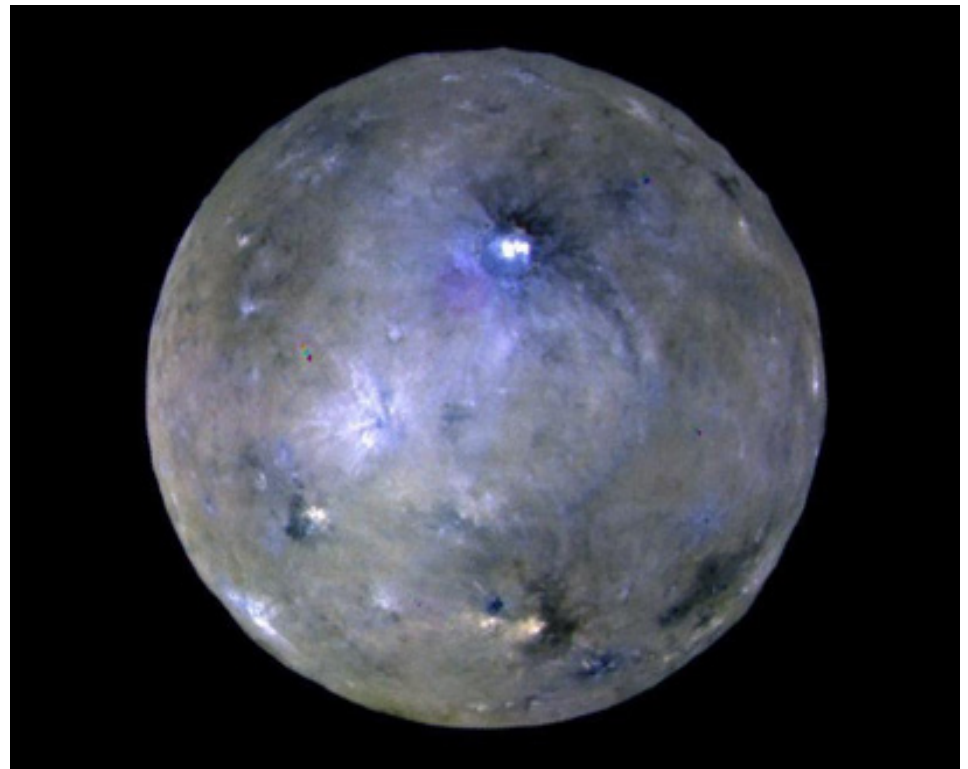
The dwarf planet Ceres is the largest object in the asteroid belt. However, Ceres is still pretty small. It is only about 587 miles across—only a quarter the diameter of Earth's moon. In 2015, NASA's Dawn mission mapped the surface of Ceres. From Dawn, we learned that the outermost layer of Ceres—called the crust—is made up of a mixture of rock and ice.

The Dawn spacecraft also visited the asteroid Vesta. Vesta is the second largest object in the asteroid belt. It is 329 miles across, and it is the brightest asteroid in the sky. Vesta is covered with light and dark patches, and lava once flowed on its surface.

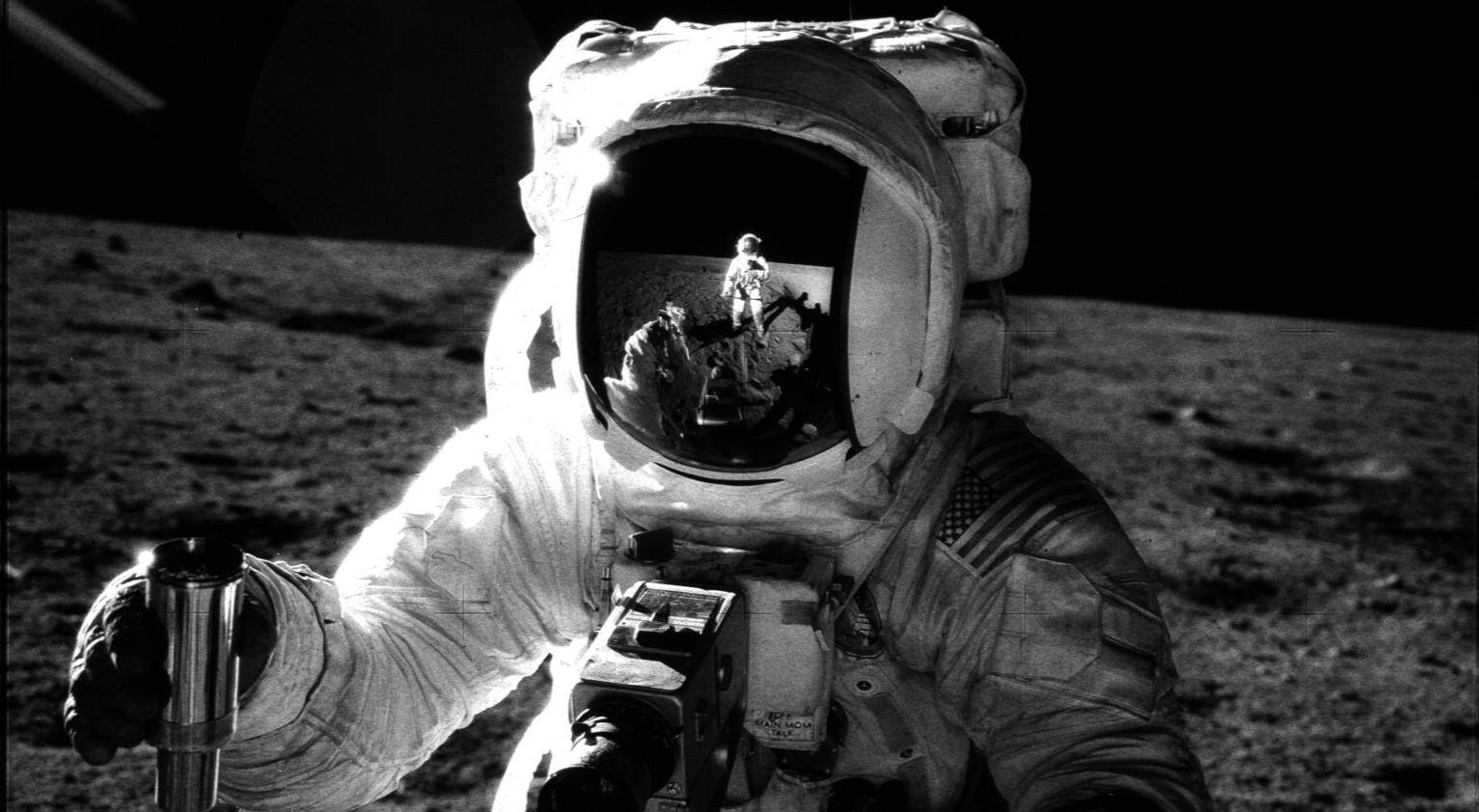
The asteroid belt is filled with objects from the dawn of our solar system. Asteroids represent the building blocks of planets and moons, and studying them helps us learn about the early solar system.

For more information about asteroids, visit: <https://spaceplace.nasa.gov/asteroid>

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!



This image captured by the Dawn spacecraft is an enhanced color view of Ceres, the largest object in the asteroid belt. Credit: NASA/JPL-Caltech/UCLA/MPS/DLR/IDA



Remembering Alan Bean, Fourth Moonwalker: 1932 - 2018

by Francine Jackson

We're very quickly losing our greatest era in modern history. Another one of the 12 astronauts to walk on the Moon has recently died: Alan Bean, 86, a Navy test pilot who made his first trip into space November 14, 1969, on Apollo 12, four months after the first Apollo 11 landing with Armstrong and Aldrin.



Bean next became the commander of the second crewed expedition to Skylab, America's first space station, in July of 1973. In all, Bean totaled 69 days, 15 hours and 45 minutes in space.

His first trip, the Apollo 12 with Charles "Pete" Conrad and Richard "Dick" Gordon, though, almost ended badly, as their booster was struck twice by lightning, knocking out their power and garbling their communication with Mission Control. Fortunately, a flight controller recalled there was a separate switch within the craft, which saved the mission. Once on the Moon, in addition to feeling Bean was able to "hop like a bunny," he and Conrad played Frisbee, probably opening the door to Alan Shepard's golf game when he set down on the Moon during Apollo 14. Bean and Conrad also witnessed an eclipse of the Sun by the Earth, which Bean described as "the most spectacular sight of the whole flight."

Bean was unique in his background, as, when he retired from his astronaut duties, he spent the next four decades attempting to interpret what he had seen and felt by means of paint. He believed he had the skill to interpret his memories of the Moon, call-

ing it a great human adventure that should be memorialized. To personalize his works, he embedded tiny pieces of Moon dust he took from the sole of a boot he wore and the head of a geology hammer he had used during his lunar visit at the Ocean of Storms. His online collection lists over 160 paintings, about a quarter of which have been exhibited at Smithsonian's National Air and Space Museum.

His awards as both an astronaut and as an artist are numerous, and he was inducted into the U.S. Astronaut Hall of Fame in 2010.

With Bean's passing, there are now only four living members of the elite Apollo Moonwalkers: Edwin "Buzz" Aldrin, Davis Scott, Charles Duke, and Harrison Schmidt, all of whom are in their 80s.



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>

Face-on Spiral Galaxy in Canes Venatici

Messier 51

by Glenn Chaple for LVAS

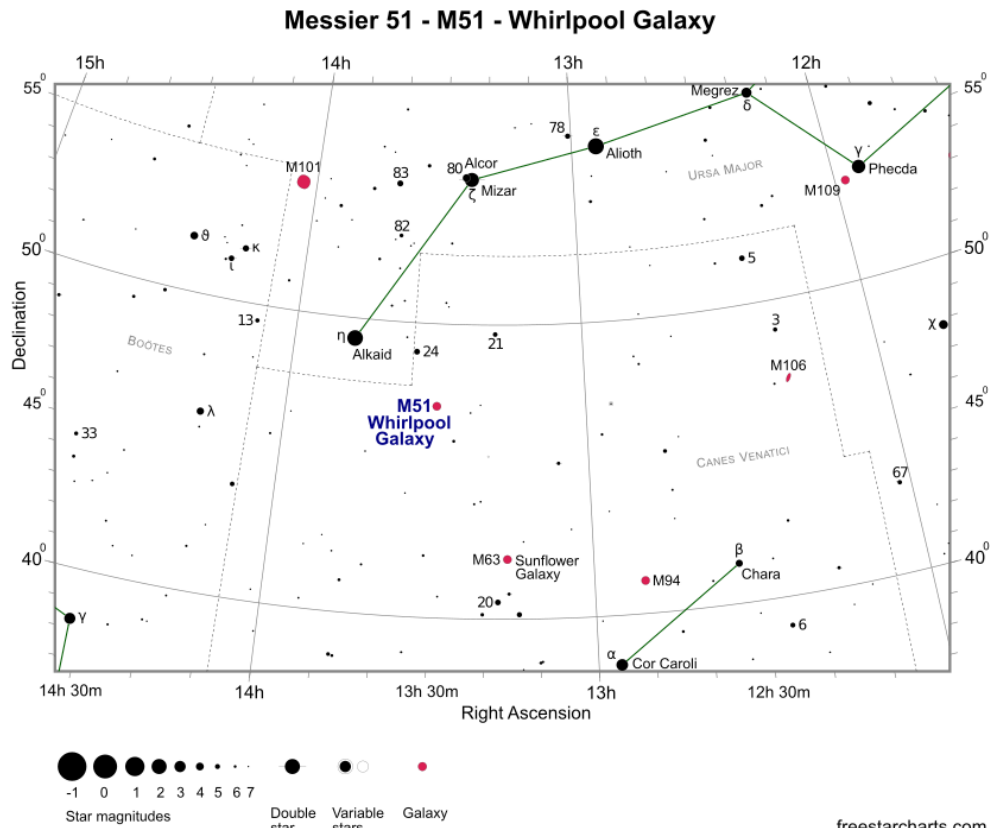
(Mag. 8.4; Size 11.2' X 6.9')

If you've been actively engaged in backyard astronomy for any length of time, you must certainly have trained your telescope in Messier 51. One of the brightest of Messier Catalog galaxies (it was discovered by the French comet hunter in 1773), it can even be glimpsed with binoculars from dark sky locations. M51 is actually two galaxies in one – an interacting system comprised of a face-on spiral (M51a [NGC 5194]) and a smaller galaxy of indeterminate type (M51b [NGC 5195]).

Through a small aperture scope (or medium sized instrument under hazy or slightly light-polluted skies), this galactic pair bears the “double nebula” appearance that Messier noted. The spiral nature of M51 was discovered by William Parsons, the 3rd Earl of Rosse, who viewed it with a 72-inch reflecting telescope (the “Leviathan of Parsonstown”) in 1845. Compare his drawing (below left) with a recent photographic image made by Amateur Telescope Makers of Boston member Mario Motta (below right).

The speculum metal mirror of Parsons' 72-inch scope reflected a fraction of the light that the aluminum-coated glass mirrors of modern-day reflectors do. You won't need a 72-inch scope to capture the spiral arms of M51 or the bridge of light that connects the two. What is the smallest aperture that will reveal both?

M51 is easily located 3½ degrees south-west of the 2nd magnitude star eta (η) Ursae



Majoris. A quick search method is to make a low power sweep of the area one-fourth of the way between eta UMa and Cor Caroli (alpha [α] Canum Venaticorum). This magnificent spiral is about 25 million light years away and is about half the size of the Milky Way.

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



www.astroblogs.nl



Mario Motta, MD

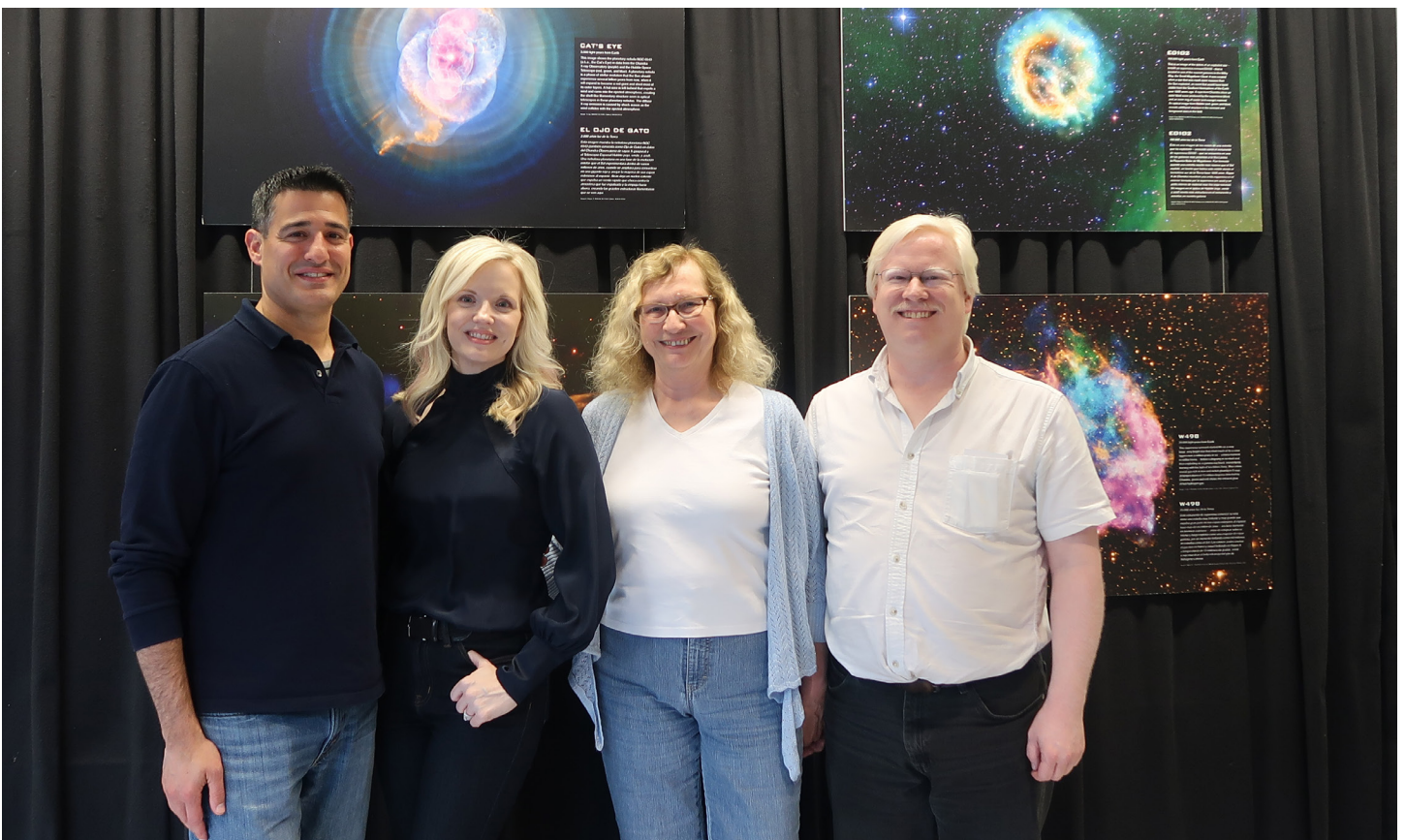
The Sun, Moon & Planets in June

This table contains the ephemeris of the objects in the Solar System for each Saturday night in June 2018. 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	2	4 39.5	22 08.8	Tau	-26.8	1892.6	-	-	-	1.01	05:13	12:44	20:16
	9	5 08.4	22 54.2	Tau	-26.8	1890.8	-	-	-	1.02	05:10	12:45	20:20
	16	5 37.4	23 19.9	Tau	-26.8	1889.3	-	-	-	1.02	05:10	12:47	20:23
	23	6 06.6	23 25.5	Gem	-26.8	1888.4	-	-	-	1.02	05:11	12:48	20:25
	30	6 35.6	23 10.9	Gem	-26.8	1887.9	-	-	-	1.02	05:14	12:50	20:25
Moon	2	19 24.5	-20 58.0	Sgr	-12.4	1758.2	142° W	90	-	-	22:50	03:41	08:34
	9	0 59.6	0 37.4	Cet	-11.3	1845.6	64° W	28	-	-	02:40	09:01	15:32
	16	7 45.7	19 29.8	Gem	-9.9	2005.9	31° E	7	-	-	08:16	15:46	23:09
	23	14 09.3	-8 12.1	Vir	-12.3	1858.1	121° E	76	-	-	16:07	21:38	03:01
	30	20 01.5	-20 25.1	Sgr	-12.5	1760.2	160° W	97	-	-	21:31	02:25	07:21
Mercury	2	4 18.1	21 24.8	Tau	-2	5.1	5° W	98	0.31	1.31	04:58	12:26	19:56
	9	5 23.7	24 20.8	Tau	-2.3	5.1	4° E	99	0.31	1.31	05:23	13:04	20:47
	16	6 28.9	25 07.6	Gem	-1.2	5.4	12° E	89	0.33	1.25	05:57	13:42	21:26
	23	7 26.9	23 53.9	Gem	-0.6	5.8	18° E	75	0.37	1.15	06:33	14:11	21:48
	30	8 15.0	21 19.7	Cnc	-0.1	6.5	23° E	63	0.41	1.04	07:05	14:30	21:54
Venus	2	7 10.4	24 22.5	Gem	-3.9	13.4	35° E	80	0.72	1.26	07:36	15:16	22:55
	9	7 46.1	23 13.7	Gem	-3.9	13.9	36° E	78	0.72	1.22	07:50	15:24	22:57
	16	8 20.8	21 34.6	Cnc	-3.9	14.5	38° E	75	0.72	1.17	08:04	15:31	22:56
	23	8 54.2	19 28.3	Cnc	-4	15.1	39° E	73	0.72	1.12	08:20	15:36	22:52
	30	9 26.4	16 58.7	Leo	-4	15.8	40° E	70	0.72	1.07	08:35	15:41	22:46
Mars	2	20 35.1	-21 42.6	Cap	-1.3	15.5	126° W	91	1.45	0.61	23:59	04:38	09:18
	9	20 42.6	-21 43.6	Cap	-1.5	16.7	131° W	92	1.45	0.56	23:39	04:18	08:57
	16	20 48.1	-21 53.4	Cap	-1.7	18	136° W	94	1.44	0.52	23:18	03:56	08:34
	23	20 51.3	-22 13.1	Cap	-2	19.3	142° W	95	1.43	0.48	22:55	03:32	08:08
	30	20 52.0	-22 42.8	Cap	-2.2	20.7	149° W	96	1.42	0.45	22:30	03:05	07:39
1 Ceres	2	9 44.4	23 58.8	Leo	8.7	0.5	69° E	96	2.56	2.74	10:10	17:46	01:22
	9	9 54.1	22 55.4	Leo	8.7	0.4	65° E	97	2.56	2.82	09:57	17:28	00:59
	16	10 04.0	21 49.4	Leo	8.7	0.4	61° E	97	2.56	2.9	09:44	17:11	00:37
	23	10 14.3	20 40.9	Leo	8.8	0.4	57° E	97	2.56	2.97	09:32	16:54	00:14
	30	10 24.7	19 30.3	Leo	8.8	0.4	53° E	97	2.57	3.04	09:20	16:36	23:52
Jupiter	2	14 53.6	-15 18.9	Lib	-2.3	44	154° E	100	5.4	4.47	17:47	22:53	03:59
	9	14 50.9	-15 08.5	Lib	-2.3	43.5	147° E	100	5.4	4.53	17:16	22:23	03:29
	16	14 48.6	-15 00.0	Lib	-2.2	42.9	139° E	100	5.4	4.59	16:46	21:53	03:00
	23	14 46.8	-14 53.9	Lib	-2.2	42.2	132° E	100	5.4	4.66	16:17	21:24	02:31
	30	14 45.6	-14 50.3	Lib	-2.2	41.5	125° E	99	5.4	4.75	15:48	20:55	02:03
Saturn	2	18 33.0	-22 20.3	Sgr	0.1	18.1	154° W	100	10.07	9.15	22:00	02:36	07:12
	9	18 31.1	-22 22.1	Sgr	0.1	18.2	161° W	100	10.07	9.1	21:30	02:07	06:43
	16	18 29.0	-22 24.0	Sgr	0.1	18.3	168° W	100	10.07	9.07	21:01	01:37	06:13
	23	18 26.8	-22 26.0	Sgr	0	18.3	175° W	100	10.07	9.05	20:31	01:07	05:43
	30	18 24.6	-22 27.9	Sgr	0	18.3	177° E	100	10.07	9.05	20:02	00:38	05:13
Uranus	2	1 55.7	11 16.9	Ari	5.9	3.4	41° W	100	19.89	20.65	03:14	09:58	16:41
	9	1 56.9	11 23.4	Ari	5.9	3.4	47° W	100	19.89	20.56	02:48	09:31	16:15
	16	1 58.0	11 29.3	Ari	5.9	3.4	53° W	100	19.88	20.47	02:21	09:05	15:49
	23	1 59.0	11 34.5	Ari	5.9	3.5	60° W	100	19.88	20.38	01:54	08:38	15:23
	30	1 59.9	11 39.1	Ari	5.8	3.5	66° W	100	19.88	20.27	01:27	08:12	14:56
Neptune	2	23 11.5	-6 14.1	Aqr	7.9	2.3	85° W	100	29.94	30.01	01:34	07:14	12:54
	9	23 11.7	-6 13.1	Aqr	7.9	2.3	92° W	100	29.94	29.9	01:07	06:47	12:26
	16	23 11.8	-6 12.8	Aqr	7.9	2.3	98° W	100	29.94	29.78	00:39	06:19	11:59
	23	23 11.8	-6 13.1	Aqr	7.9	2.3	105° W	100	29.94	29.66	00:12	05:52	11:31
	30	23 11.7	-6 14.0	Aqr	7.9	2.3	112° W	100	29.94	29.55	23:44	05:24	11:04
Pluto	2	19 30.3	-21 34.8	Sgr	14.2	0.3	141° W	100	33.57	32.79	22:54	03:33	08:13
	9	19 29.7	-21 36.6	Sgr	14.2	0.3	147° W	100	33.58	32.72	22:26	03:05	07:45
	16	19 29.1	-21 38.6	Sgr	14.2	0.3	154° W	100	33.58	32.67	21:58	02:37	07:16
	23	19 28.5	-21 40.6	Sgr	14.2	0.3	161° W	100	33.59	32.63	21:30	02:09	06:48
	30	19 27.8	-21 42.7	Sgr	14.2	0.3	168° W	100	33.59	32.6	21:02	01:41	06:20



Presentation, dinner & book signing with Chasing New Horizons authors Alan Stern & David Grinspoon at Discovery Museum & Planetarium and Galaxy Diner in Bridgeport, CT, May 5. L-R: Andy Poniros (WPKN Cosmic Perspective Radio), Alan Stern, Jim Hendrickson, Francine Jackson, Tracy Prell, Stefanie Walker, Elliot Severn (STEM Educator at Discovery Museum & Planetarium), David Grinspoon, Stacey Severn, & Bill Finch (Director of Discovery Museum & Planetarium).

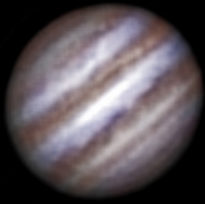


Kin Arcand presents at the Christa McAuliffe Center in Framingham, MA, with John Arcand, Francine Jackson & Jim Hendrickson.

Image Gallery



First light with a Celestron C8 Edge on May 24 by Jeff Padell. Unprocessed image sharpened from astrostakkert with a ASI174 camera.



Jupiter on April 15 by Jeff Padell.



Bob Horton took this shot of Jupiter on May 23 showing a shadow transit of Io. Taken with a 6" F6.5 home-built Newtonian and a Celestron Skyris 236c camera. Seeing was not good. This is a stack of 350 out of 3500 images.



Jupiter on May 29 by Tracy Prell.



Lyra rises from behind trees at Seagrave Observatory 2018 May 21. Light cloud was passing through the area, which helped to spread the starlight. Flash was used to light the foreground. First light with a Skywatcher Star Adventurer tracker. Image by Jim Hendrickson using an 85mm lens.

There has finally been some solar activity. Solar activity on June 1 by Conrad Cardano. Photo taken with a Lunt 60mm H α scope and a ZWO 174mm camera; 3000 images were processed with Autostakker.



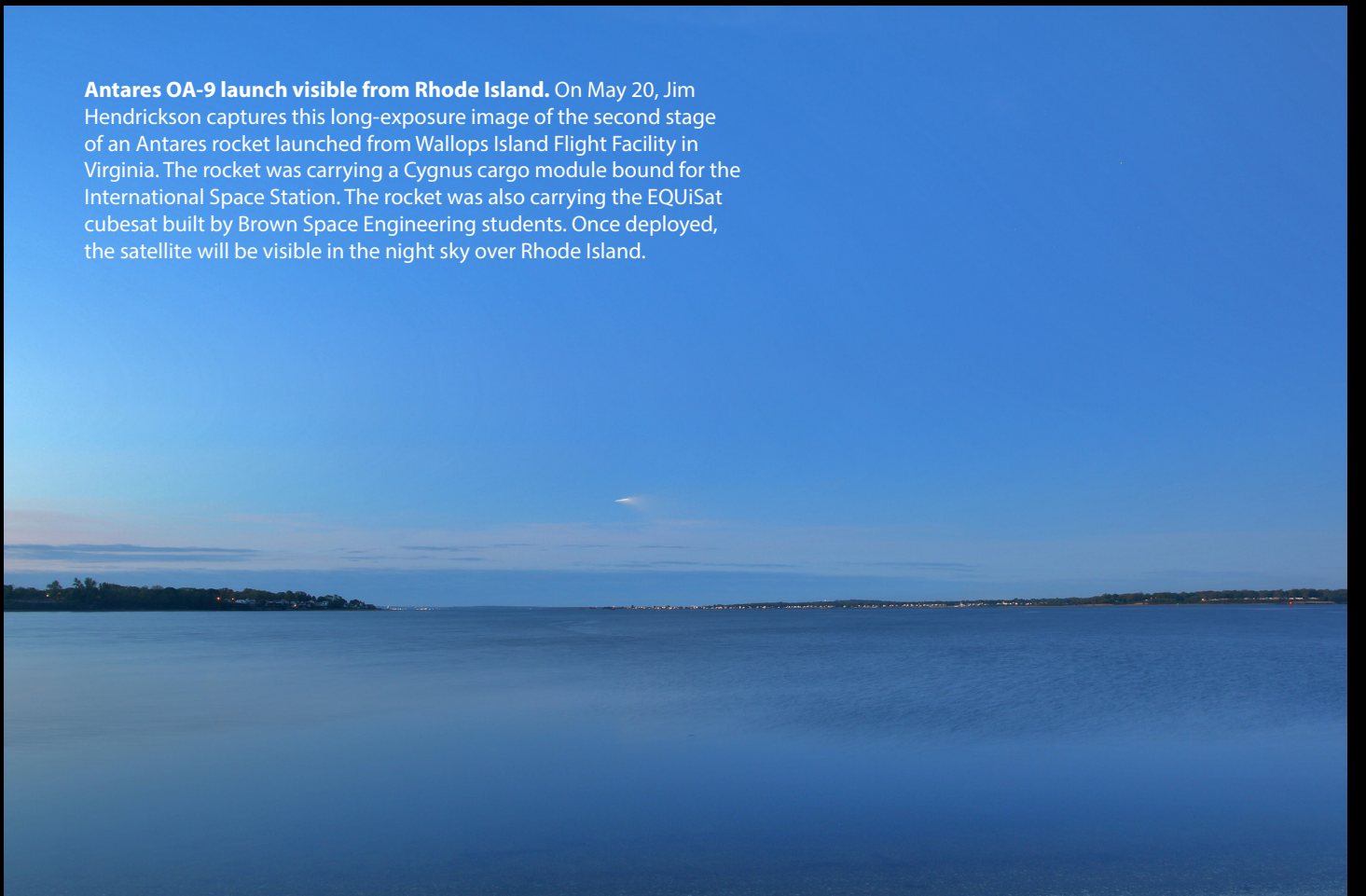


Messier 61, reworked my M61 from May 21, shot with the 16" Meade on a ASI071mc 20 frames 10 stacked, it is noisy due to the lack of frames it is only a 5 minute exposure. Image by Jeff Padell.



Messier 3 by Jeff Padell;; ZWO ASI071MC cooled to 5C 20 15 second subs

Antares OA-9 launch visible from Rhode Island. On May 20, Jim Hendrickson captures this long-exposure image of the second stage of an Antares rocket launched from Wallops Island Flight Facility in Virginia. The rocket was carrying a Cygnus cargo module bound for the International Space Station. The rocket was also carrying the EQUiSat cubesat built by Brown Space Engineering students. Once deployed, the satellite will be visible in the night sky over Rhode Island.



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