



# the Skyscraper

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July 2011

Amateur Astronomical Society of Rhode Island ★ 47 Peepoad Road ★ North Scituate, Rhode Island 02857 ★ [www.theSkyscrapers.org](http://www.theSkyscrapers.org)

## July Cookout & Meeting with Adam Jermyn

Saturday, July 9, 4:00pm  
Seagrave Memorial Observatory



Adam Jermyn is a 2011 graduate of Longmeadow, Massachusetts, High School, a member of the 2011 U.S. Physics Olympiad Team, a participant at Stellafane, and was recently accepted for admission at Harvard, MIT, Princeton, Caltech, and University of Chicago. Adam is thinking about becoming a cosmologist. He chose to attend Caltech starting this fall. Adam's presentation will include anecdotes from his intense experience participating at the U.S. Physics Olympiad training camp as well as general reflections from his work as a serious student of science and mathematics.

### Skyscrapers Annual Summer Cookout

It's that time of year, the weather has warmed and what better way to spend an afternoon than with friends enjoying food cooked on the grille. Skyscrapers Summer Cookout will be held at Seagrave

Observatory on Saturday, July 9th beginning at 4pm. All members and their guests are invited to attend. The cost is only \$7.50 per person (\$3 for kids under 12) for all you can eat. We will be serving hamburgers, hotdogs, veggie-burgers, clam chowder, salads and desserts.

Some members have asked if it is okay to bring some additional potluck items. Well the answer is "yes", the more the merrier! Just let me know at [DeepSpaceViewer@aol.com](mailto:DeepSpaceViewer@aol.com), what you're planning to bring so that we can coordinate our efforts. Some of you have already sent in your money for the cookout, which is greatly appreciated. If you have not already done so, please send us a check before July 6th. Our address is Skyscrapers, Inc., 47 Peepoad Road, North Scituate, RI 02857, Attn: Members Cookout. You may also pay at the door, but please let us know that you're planning to attend so that we know how much food we need to purchase. We're also looking for volunteers to help set up for the cookout, starting at noon on July 9th. If you are willing to help out, please let me know. In addition to the cookout, we are planning on having a 90mm Coronado solar telescope set up to offer some spectacular views of the sun, weather permitting.

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Phases of the Moon



1



8



15



23



30

Seagrave Memorial Observatory  
is open to the public

weather permitting

Summer hours begin May 7  
Saturdays: 9:00-11:00 pm

# President's Message

Tom Thibault

We've entered the summer season, the solstice has past and our latest sunset has occurred. The evenings have warmed and many of us are spending our evening taking in the wonderful objects offered by the summer sky. We've had a tough first half of the year weather wise, at least for astronomical viewing, and I'm optimistically looking for improvement during the second half of 2011.

This time of year we are sometimes provided with another type lightshow in the night sky. On June 8th, on yet another cloudy night, just after I decided to turn in, the winds began to pick-up and the sound of thunder could be heard in distance. As the sound of raindrops on the roof increased, flashes of lightning began to illuminate the interior of the house. I rose out of bed and proceeded to close the skylights and windows. I cannot resist a great electrical storm, so I grabbed a glass of milk and sat on the front porch and enjoyed the lightshow. The lightning became intense; the bolts were hot white in color with the majority traveling horizontally while never making contact with the ground. As the storm began to subside, the distant flashes lit the clouds with hues of blue. The colors reminded me of the hues of Uranus and Neptune as seen through the eyepiece. What a great show I had just witnessed. So chins up even when our skies are cloudy. We all can take in the wonders of our own planet from time to time.

Our June meeting featured Professor Bryan Penprase of Pomona College. He provided a great overview of his recently released book, "The Power of the Stars". The presentation outlined how celestial observa-

tions have shaped civilization. Bryan noted numerous cultures and their interpretations of constellations that make up the night sky. He also presented numerous examples of the impact on these cultures as it pertains to the construction of their societies building, infrastructure, and observational sites. It was a fascinating presentation topped off with Bryan autographing copies of his book.

Our business meeting followed and included recommendations from our Trustees in regards to the Observatory Committee and member participation on Public Nights. It appears Skyscrapers will be busy this year sharing the night sky, so I urge all members to consider volunteering to assist in our mission of educating both our membership and the public to the wonders of astronomy.

It was also noted that a Special Election will be held to fill a recently vacated Trustees position. The vacancy is for the final year of a three year term. Those interested in being considered for the Trustee position, please contact our society's Secretary, Ed Haskell. Ed is heading the Nomination Committee for this election. During the business portion of the July Meeting the committee's nomination will be announced, as well as, acceptance of nominations from the floor. The election will occur at our August Meeting.

Lastly, please note our July Meeting will be held on Saturday, July 9th at 7:30pm following our Annual Members Summer Cookout scheduled at 4:00pm. Both are being held at Seagrave Observatory. Last year's Cookout was a smashing success and I look forward to repeating the festivities this year. Please refer to the additional details concerning our Cookout within this month's newsletter and on our website, <http://www.theskyscrapers.org/>.

My final note is a reminder to all: 2011/2012 membership dues were payable beginning in April. If you haven't remitted your dues please do so at your earliest convenience to continue your support of Skyscrapers. Dues can be mailed to Skyscrapers Inc., 47 Peepoad Road, North Scituate, RI. 02857, Attn: Jim Crawford, or feel free to see Jim personally during any of our functions he is in attendance.



The Skyscraper is published monthly by Skyscrapers, Inc. Meetings are usually held on the first Friday of the month. Public observing is usually held every Saturday night at Seagrave Memorial Observatory, weather permitting.

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## 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 22** 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.

## Newport Folk Festival

Several members of Skyscrapers will be participating in a day-time solar star party at Newport Folk Festival on **Saturday, July 30**, rain date Sunday, July 31



# The Constellations in July

Francine Jackson

The really warm weather is here, and with it come the two giants in the sky: Hercules and Ophiuchus. Just about everybody's heard of Hercules, because of the many movies made of him, based on his incredible myths and legends, and the fact that we've already encountered two of his labors in the sky, Leo, the Lion, and Hydra, the Water Snake. And now, as we are just fully getting into the hot days of July, the man himself is climbing toward his highest southern position.

Although his stars aren't the brightest, Hercules is rather easy to find, because his body is a distinct crooked square almost directly overhead, the asterism the Keystone. Lines from each direction outward from this shape actually seem to have his body resemble his initial, a thick, blocky "H." Also, if you're still at the Keystone, and happen to be in a very dark sky, you might just be able to see one of the largest globular clusters in our sky – M13. From the right, or western side of the Keystone, follow to about 1/3 of the way downward, then gaze just a tad to the right. If you can't make it out naked eye, a pair of binoculars will show you this object rather easily.

According to sky legends, Hercules is positioned upside-down in the sky so he can be head-to-head with the second of our celestial giants, Ophiuchus, the Doctor. Ophiuchus discovered the magic formula to eternal life; unfortunately for him, this didn't bode well for Pluto, the god of the Underworld, who would then lose all his future inhabitants, so Pluto sent a serpent down to Ophiuchus, under the premise that should the good doctor prove victorious, we would all live forever; if the serpent won, Pluto would continue to receive us at the end of our lives. We can see the battle still raging, because on either side of Ophiuchus is a section of the snake, the constellation Serpens.

Once you've found the head of Hercules, the star just below this, which looks like the tip of a rooftop, is the doctor's head. His entire body is more reminiscent of a blown-out house than a great physician, but he does use up a lot of the sky. Moving down each side of his body, you can see a squiggly

line of stars, a short, almost straight line on his left, or east side, and an elongated set on his west, ending with a triangle, the serpent's head, although some think it looks more like Satan's tail. You can actually follow the entire serpent, as it slithers across Ophiuchus's body, but because of the physics law that no two objects can occupy the same space at the same time, the doctor takes precedence. Therefore, Serpens is the only constellation in two parts – the section on the right, or west, is Serpens Caput, the Serpent's head, leaving the tail, Serpens Cauda, to the left, or east.

Lately, there's been publicity about Ophiuchus, as he happens to be a part of the sky through which the Sun passes during the course of the year. This region, known as the zodiac, contains the ecliptic, the defined path of the Sun. For about three weeks of the year, the Sun is within the Doctor, as opposed to the constellation which is normally listed as the relevant "sign" of that time, one of the most recognizable shapes of the sky, Scorpius, the Scorpion. From our latitude, the entire body of this amazing arachnid is visible. His tail scrapes the southern horizon as it moves across our sky.

Scorpius is usually considered the animal that put an end to Orion, the Hunter, who boasted he would kill every animal on Earth. Because of the scorpion's great deed, he and Orion are diametrically opposed in the sky – Orion can only show himself in the winter sky, when the scorpion allows. As soon as Scorpius wishes to rise above the horizon, Orion must set in the west.

The scorpion's stinger was often considered similar to tracks made by rabbits as they hop in soft sand, and, their position in the sky was related to planting time. When the rabbit tracks were rising out of the east, it was time to seed; the best part of the growing period was when they were visible in the south, and as they set in the west, harvest time.

In the Pacific isles, as there are no scorpions in their lands, this constellation took on a very important part of the natives' lives – a fishhook. Scorpius was the fishhook that the fisherman Maui cast into the ocean. Somehow, it got caught on the ocean floor, and when Maui was finally able to extricate it and bring it back up, attached to the hook was the Hawaiian Islands.

## Members Night: Summer Constellations

If you think the Summer Triangle is a specialty orchestra instrument used for Vivaldi's The Four Seasons, then the next Member's Night Program is just for you. Skyscrapers will host its second Member's Night Program on the evening of Friday, July 22. Appropriately we will be exploring the constellations of the summer sky.

In the meeting hall Dave Huestis will briefly review the motion of the sky and why different constellations are visible throughout the year. Then using Starry Night Pro computer software, Dave and Francine Jackson will explore the summer constellations, providing clues to identifying them and getting to know their varied mythologies.

Bring your planispheres with you. It can be a commercial one, or download one from the web—Uncle Al's Starwheels, and construct it ahead of time. We will use Starry Night Pro to simulate the night sky for you to practice on.

If you need instruction on how to use a planisphere we would ask that you indicate that need to

us before you arrive. We can then schedule some additional time before our start time to help you familiarize yourself with its operation.

After the lecture session, we will venture outdoors (weather permitting) to put your new found skills to the test under the dark skies of Seagrave Observatory.

We encourage all members to attend and participate, especially those of you who have had little experience with constellation identification.

So we may plan accordingly, you must pre-register by email or phone by Wednesday July 20. My information follows below:

Tom Thibault Phone: 1-401-489-1957 Email: Deepspaceviewer@aol.com

The start time for this program will be 8:00 pm. If you need instruction on how to use a planisphere you can arrive at 7:30 pm for training. Please indicate this to us when you pre-register.

Come learn about the sky pictures which sweep across our night sky and share your knowledge with your fellow Skyscrapers.



## Space Places in Rhode Island Frosty Drew Observatory

Dave Huestis

Several years ago I wrote a series of articles highlighting “space places” in Rhode Island. I neglected one important astronomical facility located down on Rhode Island’s south coast. Natives of the smallest state don’t like to drive far for any event. We often joke that someone from the northern environs of our state needs to bring a passport, lunch, and an overnight bag to make a journey to Newport or Westerly. That state of mind even has a name, it’s called being provincial.

Well, if you wish to observe the heavens from perhaps the darkest site in Rhode Island then you must shrug off those inhibitions to visit Frosty Drew Observatory, located in Ninigret Park off Route 1 in Charlestown. For you GPS folks, the address is 62 Park Lane, Charlestown, Rhode Island, 02813.

Back on July 3, 1983, a nature center opened on the grounds of the former Charlestown Naval Auxiliary Landing Field. It is located on the edge of the Ninigret National Wildlife Refuge and the Ninigret Conservation Area. The center, built next to a small pond, displays a variety of sea shells and other objects of the natural world. A deck on the edge of the pond allows one to

watch birds and other wildlife close-up.

Then in 1988, a domed observatory was erected across the street. It currently contains a 16-inch Meade LX200 Schmidt-Cassegrain telescope. Every clear Friday night the facility is open to the public free-of-charge. One should make every opportunity to visit Frosty Drew because the skies are the darkest ones I know of anywhere in southern New England. In fact, many members of Skyscrapers observe the major meteor showers from this location or at one of the parking lots further down the road. They also conduct telescopic observing sessions at these sites as well because the skies are exceptionally dark, thereby providing excellent views of our beautiful universe.

The only problem during certain times of the year can be the fog. While it may be clear up in Pascoag, Scituate, Warwick, Coventry and even Wakefield, by the time one travels closer to Ninigret Park and the water, you may soon find yourself in a dense fog bank. However, if the skies remain clear you are in for a treat.

The knowledgeable staff, including Director Francine Jackson, Associate Director Scott McNeil, and volunteers Rachel Flaksman and Dave Kerber will be

your guides to the wonders of the heavens. Whether it is the Moon, a planet, open clusters, globular clusters, galaxies, double stars or simply constellation identification, the views will be magnificent under steady and haze-free sky conditions.

In addition, in 2010 a Sky Theater was added to the Nature Center. This auditorium provides an indoor facility to hear astronomy and nature lectures alike.

The Frosty Drew Observatory is open every clear Friday night year-round. Please check out the web page for weather closures before venturing down: <http://www.frosty-drew.org/>. Click on “Observatory and Sky Theatre” to access the Observatory home page. Click on “Contact FDO” for the open/close status. The website also contains other interesting information for a budding amateur astronomer.

And should the weather cooperate on Friday, July 29, two minor meteor showers, the Delta Aquarids (medium speed) and the Alpha Capricornids (slow with occasional fireballs), will grace our skies. Though these two showers are more productive after midnight, the dark skies of Frosty Drew will most certainly reveal more shooting stars than almost any location in southern New England.

While the drive from northern Rhode Island to Frosty Drew can take upwards of one hour and fifteen minutes, if the night sky is clear your journey will be well worth the effort. Or, if you have a Friday off from work and have spent the day in the sun and surf at one of the south coast beaches, you can stop over at the Observatory before the drive home. Depending upon the day you may also wish to visit the Nature Center. Either way you’ll most assuredly enjoy your visit.

And don’t forget that Seagrave Memorial Observatory (<http://www.theskyscrapers.org>) in North Scituate is open to the public every clear Saturday night. Also, Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) in Providence is open every clear Tuesday night. Special notice: since the weather has forced Ladd to close an inordinate number of Tuesdays so far this year, it was decided that Ladd will remain open during the summer months. Be sure to check both websites for the public night schedules and opening times.

Seagrave Observatory will be closed to the public on July 9 for a special members’ program.

Keep your eyes to the skies.

## Glenn Chaple's Sky Object of the Month

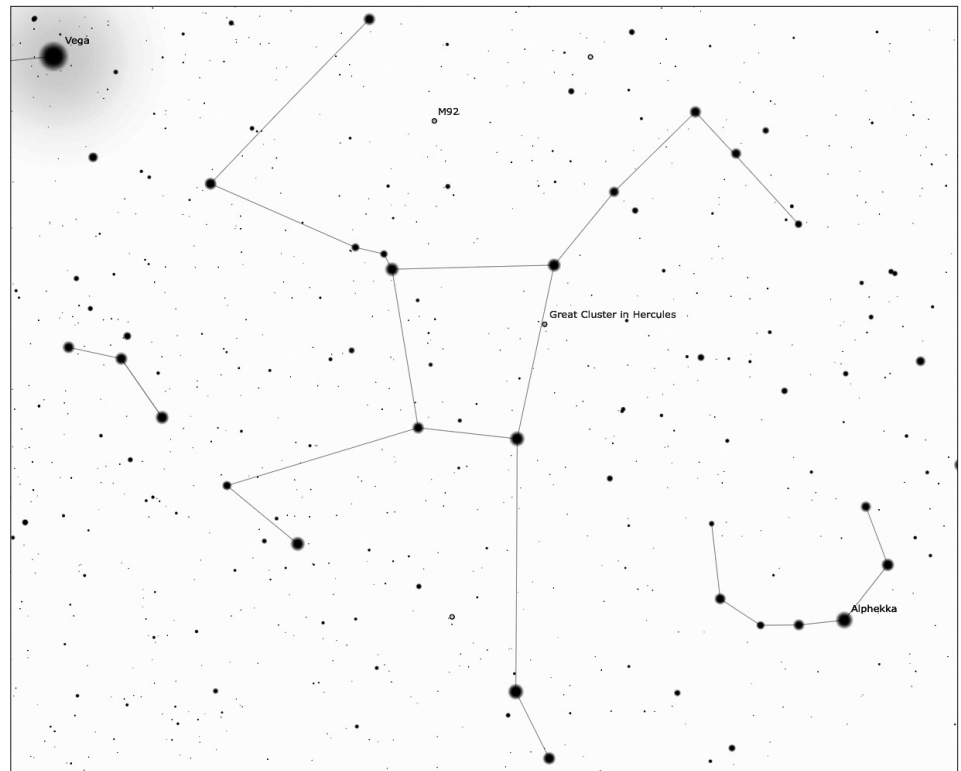
# M92

## Globular Cluster in Hercules

Quick question. How many times (to the nearest thousand) have you viewed the great globular cluster M13 with your telescope? Next question. How many times (nearest thousandth) have you visited Hercules' other great globular cluster M92? I doubt it would be an exaggeration to say that I've seen M92 once for every hundred times I've viewed M13.

The reason for M92's relative anonymity can be summed up in three words – location, location, location! M13 is conveniently placed on the western edge of the “Keystone” of Hercules. M92, on the other hand, is positioned in a part of Hercules devoid of such landmarks. One way to find M92 is to trace line from delta ( $\delta$ ) to pi ( $\pi$ ) Herculis and extend it further by about half that length.

M92 may not be as impressive as M13, but it's a marvelous sight, nonetheless. Were we to grade the two clusters on their visual impact, M13 would receive an “A+”, while M92 would garner an “A”. M92 shines at magnitude 6.5 – about a half magnitude



fainter than M13. Its 14 arc-minute diameter is about half that of M13. Because the two lie at about the same distance from Earth (about 25,000 light years), M13 is intrinsically the larger.

Binocular users will have no trouble viewing M92. I captured it with a pair of 10X50 binoculars during a Messier Marathon last April. A 4-inch telescope at 120X will begin to resolve the cluster's outer portion, while an 8 to 10-inch or larger Dob at 150-200X will capture M92's true

splendor. While comparing M92 with M13, I noticed that the latter had a brighter, more condensed core. I also discovered that M92 deserves far more attention than I've given it in the past.

M92 was discovered by Johan Bode (of Bode's Law fame) in 1777. Next clear night, take a few moments to discover (or rediscover) this dazzling globular.

Your comments on this column are welcome. E-mail me at [gchaple@hotmail.com](mailto:gchaple@hotmail.com).

# Finding Planets among the Stars

Dr. Tony Phillips

Strange but true: When it comes to finding new extra-solar planets, or exoplanets, stars can be an incredible nuisance.

It's a matter of luminosity. Stars are bright, but their planets are not. Indeed, when an astronomer peers across light years to find a distant Earth-like world, what he often finds instead is an annoying glare. The light of the star itself makes the star's dim planetary system nearly impossible to see.

Talk about frustration! How would *you* like to be an astronomer who's constantly vexed by stars?

Fortunately, there may be a solution. It comes from NASA's Galaxy Evolution

Explorer, an ultraviolet space telescope orbiting Earth since 2003. In a new study, researchers say the Galaxy Evolution Explorer is able to pinpoint dim stars that might not badly outshine their own planets.

“We've discovered a new technique of using ultraviolet light to search for young, low-mass stars near the Earth,” said David Rodriguez, a graduate student of astronomy at UCLA, and the study's lead author. “These M-class stars, also known as red dwarfs, make excellent targets for future direct imaging of exoplanets.”

Young red dwarfs produce a telltale glow in the ultraviolet part of the electromagnetic

spectrum that Galaxy Evolution Explorer can sense. Because dwarf stars are so numerous—as a class, they account for more than two-thirds of the stars in the galaxy—astronomers could reap a rich bounty of targets.

In many ways, these stars represent a best-case scenario for planet hunting. They are close and in clear lines-of-sight, which generally makes viewing easier. Their low mass means they are dimmer than heavier stars, so their light is less likely to mask the feeble light of a planet. And because they are young, their planets are freshly formed, and thus warmer and brighter than older plan-



etary bodies.

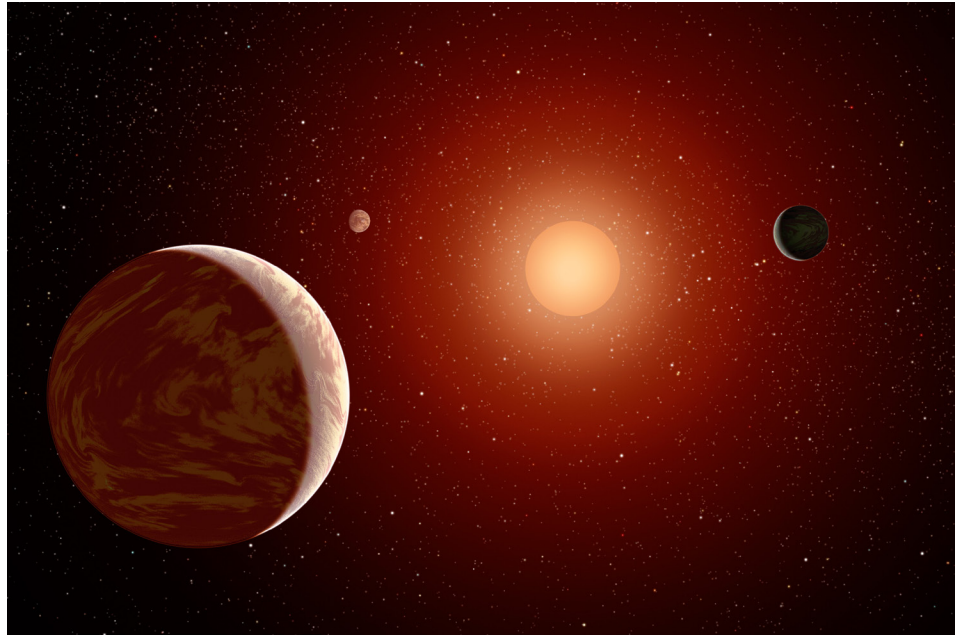
Astronomers know of more than five hundred distant planets, but very few have actually been seen. Many exoplanets are detected indirectly by means of their “wobbles”—the gravitational tugs they exert on their central stars. Some are found when they transit the parent star, momentarily dimming the glare, but not dimming it enough to reveal the planet itself.

The new Galaxy Evolution Explorer technique might eventually lead to planets that can be seen directly. That would be good because, as Rodriguez points out, “seeing *is* believing.”

And it just might make astronomers feel a little better about the stars.

The Galaxy Evolution Explorer Web site at <http://www.galex.caltech.edu> describes many of the other discoveries and accomplishments of this mission. And for kids, how do astronomers know how far away a star or galaxy is? Play “How Old do I Look” on The Space Place at <http://spaceplace.nasa.gov/whats-older> and find out!

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*



Exoplanets are easier to see directly when their star is a dim, red dwarf.

## A Visit to Vesta

Jim Hendrickson

On July 16, NASA’s Dawn spacecraft will enter into orbit around Vesta, one of the largest asteroids in the asteroid belt between Mars and Jupiter. The ion-propulsion spacecraft will spend a year observing Vesta with its three on-board instruments before breaking orbit and traveling on to dwarf planet Ceres, the largest of the main-belt asteroids and the first minor planet discovered.

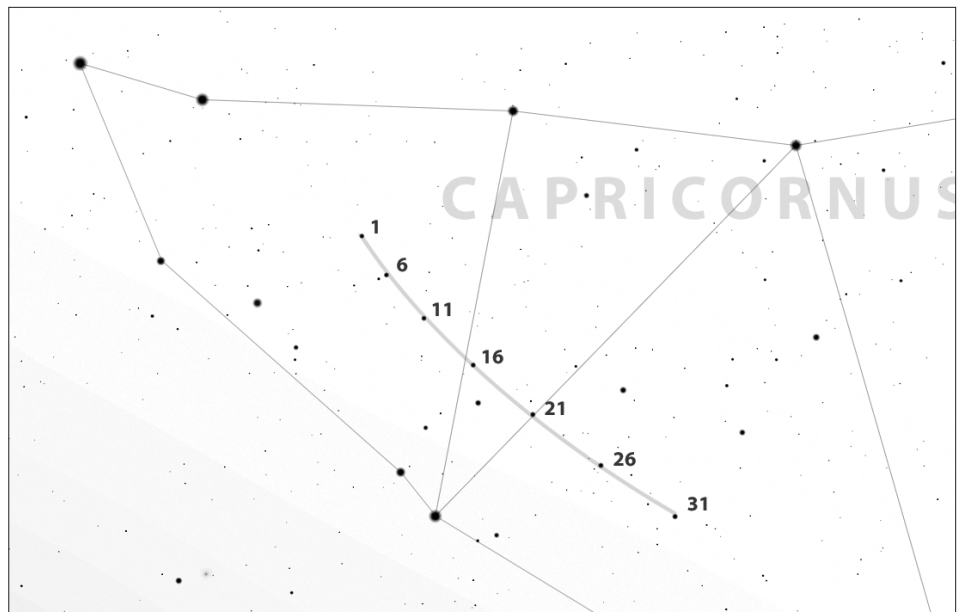
Due to a favorable combination of

distance from Earth, large size, and highly reflective surface, Vesta is most often the brightest asteroid in the sky. Near opposition it can even outshine Uranus and become naked-eye visible under a dark sky.

July 2011 presents an opportunity to spot Vesta as it loops through eastern Capricornus on its way to opposition on August 5. Its motion with respect to the background stars will be readily apparent on successive nights through binoculars. Through a telescope

at moderate power you should be able to detect its starlike appearance moving over the course of an hour.

The chart shows the position of Vesta at 1:20 am EDT on 5-day intervals through July and the shaded line marks the approximate path it follows between the marked dates. The asteroid will brighten from magnitude 6.3 to 5.7 as its distance from Earth closes from 1.34 to 1.23 AU.



# June Reports

Ed Haskell, Secretary  
Jim Crawford, Treasurer

## Executive Committee Meeting June 6, 2011

An untitled paper from the Trustees was circulated and discussed at great length. The subjects of the paper dealt with staffing during public observations and weather notifications. The paper will be discussed further at the June meeting and later at the Observing Committee meeting.

There was a discussion of how to fill unexpected vacancies. It was decided to follow the process that exists in the Standing Rules and to refer the question to the committee working on documents revisions as well.

The Star Party fee structure, or lack thereof, was discussed at length. As no consensus was forthcoming, Kathy Siok moved that the president appoint an ad hoc committee to propose a fee structure. Motion passed.

The Annual Picnic will be July 9th. • The July meeting has been scheduled for the 9th at 4pm. • AstroAssembly will be October 1st.

Meeting adjourned at 8:45pm.

## Monthly Meeting June 10, 2011

### Seagrave Observatory

**Program:** President Tom Thibault introduced the speaker, **Dr. Bryan E. Penprase**, professor of Physics and Astronomy and Director of the Brackett Observatory at Pomona College, who has recently been awarded a Downing Exchange Award to become a visiting fellow at Downing College, Cambridge, to continue his work on quasar absorption lines. **Abstract:** Dr. Bryan Penprase discussed his new book "The Power of Stars" and described the variety of constellations, cosmologies and calendars from cultures across the world and through the centuries. Using a wide variety of sources, Dr. Penprase presented a visual feast of astronomy, with constellation maps, aerial views of aligned celestial structures, and images of the universe as created by a wide range of cultures. He also discussed how our modern civilization responds to the sky, both with architecture and the dazzling array of new discoveries such as Dark Matter and Dark Energy, and how our modern picture of the universe arose from the work of astronomers such as Herschel, Hale, Hubble and others.



### Business Meeting

**Secretary's Report** adopted with no changes from floor.

**Treasurer's Report** was heard.

**1st Vice President** reports that the July 9th meeting will feature Adam Jermyn.

**2nd Vice President** reviewed early plans for AstroAssembly, which occurs on the first weekend in October, and this year has the theme Fifty years of Space Exploration. Invitations to speak have been issued and have received early acceptances from Peter Schultz and John Mustard. Donations of prizes are solicited.

**Outreach Coordinator Bob Forgiel** has stimulated so much activity that he now needs help handling the coordination of all the public observing activities. Conrad Cardano has kindly agreed to share the burden.

**Trustees** are grappling with the perennial problems how best to staff the observatory on Saturdays and how to handle notifications of closings caused by weather conditions. Steve Siok offered a paper to stimulate discussion of ways and means of improving how these sticky issues are handled. A number of suggestions were offered from the floor and will be taken up at the next meeting of the Observatory Committee. Members are reminded that active participation in the OC is not limited to Key Holders. All interested members are welcome at committee meetings.

**For the Good of the Organization:** Bob Napier reported that the Town of Scituate held a recognition event to express appreciation for organizations benefiting the Town.

**President Tom Thibault** has for sale a DSI-1 color camera for \$75.00.

**Presidential Announcements:** There will be a special election to fill a vacant position

on the Trustees. The election will be held following the procedures in the Standing Rules. Ed Haskell and Linda Bergemann will chair the Nominating and Elections committees respectively. Nominations should be submitted as soon as possible and will be reported out at the July meeting and voted on at the August meeting. • The second Members' Night session, covering Summer constellations will occur in late July, Details to be announced. • The CCD Imaging All Night Marathon will be rescheduled. • Only fifty percent of members have renewed as of this date. Only dues paying members in good standing may vote at the upcoming election. Please renew now. • Public Night volunteers are needed. • Members may preview items for the Donation Sale in the Observatory ante-room tonight and at the July meeting. • The annual picnic will be July 9th. Please reserve now.

Adjourned at 9:35 pm.

## Cash Flow

May 2011

INCOME	2011/12 Budget	Actual YTD	Difference
Astroincome	\$3,500.00	\$0.00	-\$3,500.00
Cookoutinc	\$500.00	\$0.00	-\$500.00
Donation, Other	\$300.00	\$171.20	-\$128.80
Dues	\$3,075.00	\$1,070.00	-2,005.00
Interest Inc	\$125.00	\$26.45	-\$98.55
Starparty Donations	\$500.00	\$37.00	-\$463.00
<b>TOTAL INCOME</b>	<b>\$8,000.00</b>	<b>\$1,304.65</b>	<b>-\$6,695.35</b>

EXPENSES	2011/12 Budget	Actual YTD	Difference
Astroexp	\$2,750.00	\$0.00	\$2,750.00
Cookoutexp	\$423.00	\$0.00	\$423.00
Corporation, State Fee	\$22.00	\$22.00	\$0.00
Domain Name	\$20.00	\$0.00	\$15.00
Donations	\$50.00	\$0.00	\$0.00
Electric	\$175.00	\$32.31	\$142.69
Insurance, Property	\$2,625.00	\$0.00	\$2,625.00
Postage and Delivery	\$220.00	\$14.00	\$206.00
Presidents Fund	\$150.00	\$25.00	\$125.00
Printing and Reproduction	\$140.00	\$0.00	\$140.00
Propane	\$375.00	\$80.25	\$294.75
Refreshment Expense	\$350.00	\$32.29	\$317.71
Trustee Exp	\$700.00	\$110.08	\$589.92
<b>TOTAL EXPENSES</b>	<b>\$8,000.00</b>	<b>\$315.93</b>	<b>\$7,629.07</b>

### Cash Accts

Citizens Checking	\$8,635.90
Capital One	\$11,476.75
<b>Total:</b>	<b>\$20,112.65</b>

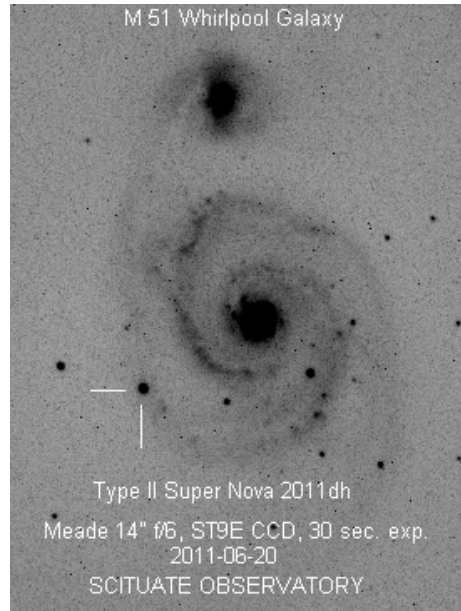
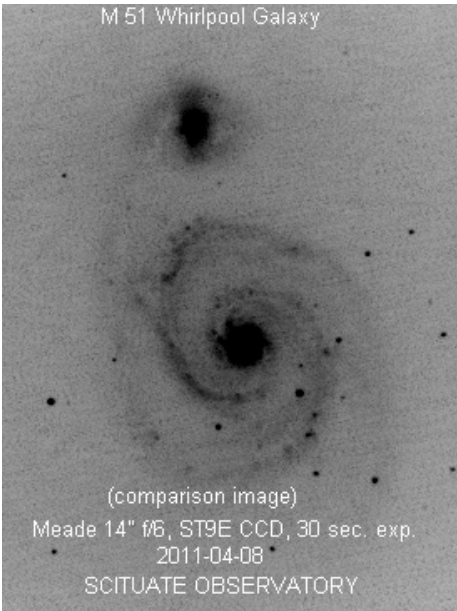


The center of the Milky Way as seen from Seagrave Observatory. Photo by Jim Hendrickson using a 35mm f/1.4 lens and 10 second exposure.



Bob Horton took this photo of sunrise on the solstice (June 21) during an 18 mile backpacking trip in the White Mountains of New Hampshire. This photo is from the summit of Mt. Bond showing the sun rising from behind Mt. Washington.





Supernova 2011dh, a type IIb supernova, reached magnitude 12.5 by mid-June. Photos by Bob Napier.

Left: Saturn near Porrima (gamma Virginis) on June 4. Photo by Jim Hendrickson using an 80mm f/6 refractor and Canon DSLR; 20 second exposure. Right: Conrad Cardano took this image of Saturn using the 16-inch Meade SCT and eyepiece projection.



Among many interesting items that were uncovered during an organization session by the archives committee was this logbook recorded by Frank Seagrave in September 1878, a few months after installing his new 8-inch Alvan Clark refractor at his Benefit Street Observatory. Photo by Jim Hendrickson.

# 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.
- 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