



# the Skyscraper

vol. 37 no. 10  
October  
2010

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

## Seagrave Memorial Observatory is open to the public

weather permitting

**Saturdays 7pm - 9:00pm**

Please note that the observatory may be inaccessible for after extended periods of heavy rain. See web site for updates.

Phases of the Moon



Sept 30



7



14



22



30

**OTHER NOTABLE EVENTS:** Saturn is in conjunction with the Sun on the 1st. Draconid meteor shower peaks on the 8th. Mercury is at superior conjunction on the 16th. Orionid meteor shower peaks on the 21st. Double shadow transit on Jupiter on the 23rd. Venus is at inferior conjunction on the 28th. Another double shadow transit on Jupiter on the 30th.

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## AstroAssembly 2010

FRIDAY, OCTOBER 1 & SATURDAY, OCTOBER 2

SEAGRAVE MEMORIAL OBSERVATORY

NORTH SCITUATE COMMUNITY CENTER



### Saturday Talks

#### Dave Huestis

The Sesquicentennial Birthday of Frank Evans Seagrave

#### Todd Kozikowski

Measuring the Expansion of the Universe from the Backyard!

#### Rev. Robert Bachelder

Protecting the Outer Space Environment

#### Ruben Kier

Best Targets For Autumn Astrophotography

#### Bob Berman

Light and Color in the Universe



### Friday Night Talks

#### Mike Umbricht

Timekeeping at Ladd Observatory

#### Glenn Jackson

Dark Skies and Radio Telescopes: A trip to the National Radio Astronomy Observatory in Green Bank West Virginia

#### Al Hall

CAD Modelling the Clark: An Overview of the Telescope's Mechanical Systems and Personality

Tom Thibault

# President's Message



Dear Skyscrapers Members,

Where has the time gone? I'm sure everyone is having this same thought. Here we are in October with a flurry of activities occupying our time. Steve Hubbard and Kathy Siok, along with a cast of other volunteers, have been working diligently to organize this year's AstroAssembly. Steve has scheduled an impressive line-up of speakers that I'm sure will provide topics of interest for all. I encourage everyone to pre-register for both the AstroAssembly Event and Banquet to follow. Please note that Banquet tickets must be pre-ordered and no tickets will be available the day of the event.

In addition, Al Hall and our Trustee's, with their legion of member and non-member volunteers, have been expending a monumental effort in refurbishing the Alvan Clark Refractor and Observatory in preparation for AstroAssembly. These historical properties, once owned by Frank E. Seagrave, are the center pieces of our facility, and I am looking forward to their completion. We should all take pride in the displaying of this beautiful instrument and its observatory here at Seagrave. Let me extend a heartfelt appreciation to all the volunteers

for their time and efforts from our entire membership. I would also like to extend a special thank you to the Kusmierz's for their generous donation of the ocular lenses to restore the Alvan Clark to its original configuration.

As I mentioned at our September Monthly meeting, historian Dave Huestis has some exciting new artifacts to reveal to the membership and guests attending AstroAssembly. I have been sworn to secrecy and am unable to even provide a hint to the items generously donated and acquired recently, but will say, in addition to our currently publicized speakers, this should definitely entice all to attend AstroAssembly. I look forward to seeing everyone who can attend and participate in our exciting yearly event.

Lastly, we continue to accept membership dues for 2010. If you have not yet renewed, please remit to our Treasurer, Jim Crawford. Your continued support is greatly appreciated and will insure Skyscrapers will continue to maintain and improve our facilities during the upcoming year.

Clear Skies  
Tom Thibault

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 **October 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.

# Neptune

## THE BLUE WORLD

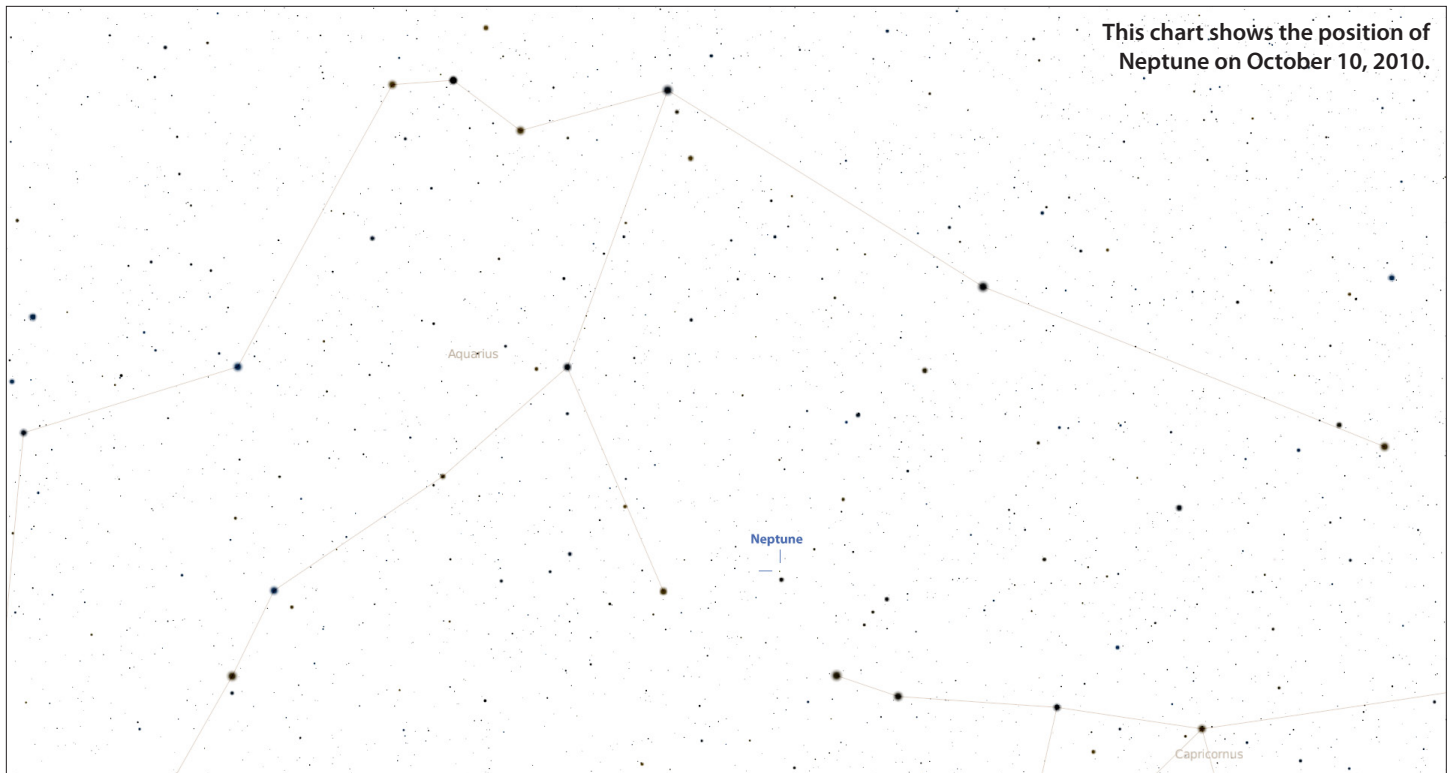
Craig Cortis

Jim Hendrickson's September article on locating Uranus prompts me to submit this piece dealing with how to easily find the famously blue outer planet, Neptune. Although it reached opposition back on August 20, Neptune will be favorably positioned close to a fifth magnitude star in northeastern Capricornus in early October, making it a fairly easy find. Absence of any background stars of comparable brightness close to Neptune during this time will also work in your favor. The planet's current *apparent* direction of motion on the sky is *retrograde* (westward); it resumes direct, eastern motion on November 7. The New Moon of October 7 will be a big help, too, as well as Neptune's transit (culmination) times in mid-evening during early October—the best time of night for viewing works out to a convenient schedule for most people.

A simple and straightforward star-hop to Neptune begins with spotting the bright-

est star in Capricornus, magnitude 2.9 Delta Cap, also known as Deneb Algedi. This white star marks the northeast tip of the roughly heart-shaped main outline of Capricornus and is paired with magnitude 3.7 Gamma Cap (Nashira), which lies about 1.75° to the WSW. You can't miss noting this conspicuous, very wide pair, the brighter of which is your "jumping-off" point for this star-hop. Delta Cap is at RA 21h 47m 02s, Dec -16° 08'. The next star involved in forming a triangle for navigating to Neptune lies 5.2° to the ENE of Delta, in Aquarius: magnitude 4.3 Iota Aqr, also listed as 33 Aqr. This star qualifies as naked-eye *if* local sky clarity and light pollution will enable you to spot it; the position is RA 22h 06m 26s, Dec -13° 52'.

Consider the 5.2° line joining Delta Cap with 33 (Iota) Aqr as being the *base* of a "coathanger"-shaped triangle; the star marking the "hook" is close to Neptune



and lies  $3^\circ$  to the NNE of Delta Cap. The star in question is magnitude 5.1 Mu Cap, also listed as 51 Cap, located at RA 21h 53m 18s, Dec  $-13^\circ 33'$ . Using binoculars is the best way to note the triangle I've described, especially when you must deal with light pollution and/or a less than ideal sky condition. Once you've isolated 51 (Mu) Cap, finding Neptune shouldn't be difficult—on October 5, it'll be just  $0.4^\circ$  northeast of the star at RA 21h 54m 26s, Dec  $-13^\circ 15'$ , and on the night of the 10th the position will be *slightly* closer to 51 (Mu), still to the northeast.

Neptune has a distinct bluish hue as opposed to nearly all stars seen anywhere in its vicinity, a factor which greatly helps in positive identification but only to a certain

point—you must use high telescopic magnification (greater than about 150x; 200+x is even better) to resolve the planet as being a tiny dot or *disk*. Neptune's angular diameter on October 10 is only  $2.32''$  of arc, but if you can determine, at sharpest focus, that you're seeing a very small *disk* that's blue in color, you've found it. The magnitude is 7.9 and there won't be *any* stars as bright or brighter than Neptune in its immediate area *northeast* of 51 (Mu) Cap during the dates I've indicated. If we're lucky enough to get clear skies in early October, I hope some of you who may not ever have glimpsed the 8th planet can finally manage to do so. By the way, Neptune will transit locally at about 9:25pm on October 10—not too early or too late for

most of us!

(Remember: If it's a small disk as opposed to a star-like *point* of light, you've found it. Use lower power to isolate it, then *high* power to verify.)

Neptune is slightly smaller in diameter than Uranus, but is still nearly 3.9 times the size of Earth. The tiny visual size is due to its vast distance from us, which on October 10, will be 29.384 AUs, or over 2.73 *billion* miles. Neptune's lovely blue color is attributed—in part—to the presence of a small percentage (1%) of methane in its upper atmosphere. Exactly *why* this is relevant to the perceived color makes for a good trivia question to look into, if some readers might be so inclined.

## October Meteor Showers Dave Huestis

Are you as frustrated with the August Perseid meteor shower as I am? I can't remember the last time the peak night of this very productive shower of shooting stars was not "mooned" or clouded out. Though some of the local meteorologists predicted the clouds might part just after midnight on the night of August 12-13, that scenario did not happen. Jim Hendrickson, Skyscrapers' newsletter editor and web master, and I gave up around 3:30 am and headed home from Frosty Drew Observatory in Charlestown. Low clouds persisted until well after sunrise.

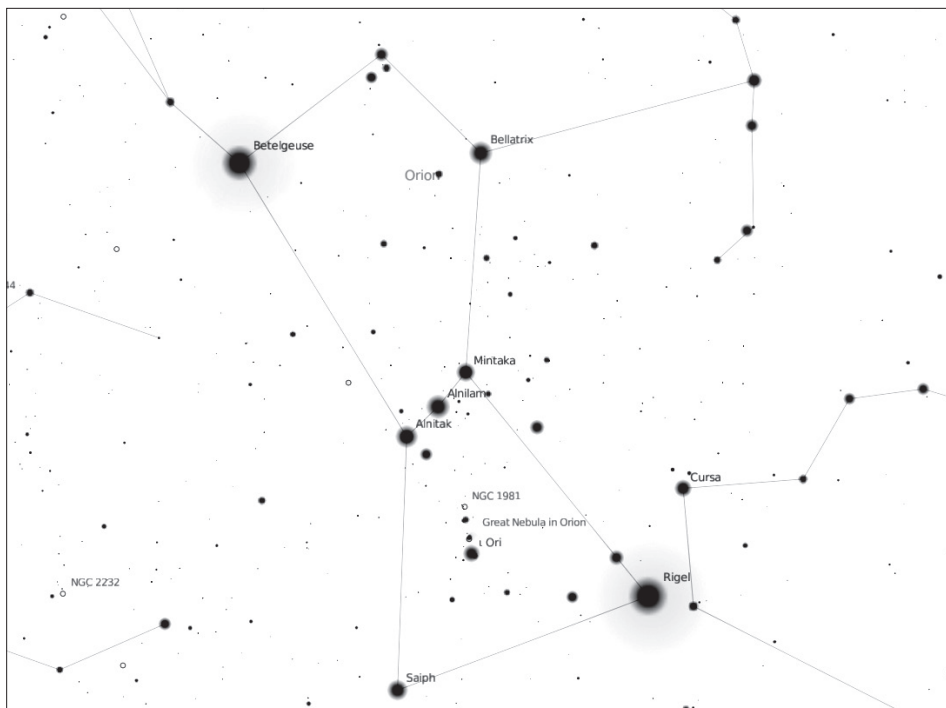
Some folks perhaps attributed the bad luck to Friday the 13<sup>th</sup> superstition. For me and my associates, it was just typical southern New England weather once again interfering with an astronomical event

The following night I did spend a couple of hours observing what remained of the Perseid meteor shower from my home in Pascoag. While I did see a dozen or so bright meteors on either side of the midnight hour, the activity was unfortunately (and predictably) far less than peak level. At least I knew that in two months the Earth would plunge

through more comet debris and produce two upcoming meteor shower displays.

Well, that may have been wishful thinking. October does host one minor and one major meteor display. The minor Draconid shower is indeed quite minor these days, with perhaps 10 or less meteors per hour at peak on October 8-9. The Full Hunter's Moon on the 22<sup>nd</sup> will wash out all but the brightest members of the major Orionid meteor shower in the predawn hours of the 21<sup>st</sup>.

However, despite the minor activity for



one and moonlight for the other, if clear skies do prevail, at least some of the brighter shooting stars will be visible if you are patient. Though much better prospects are forecast for the Geminids in December, who knows what the weather will bring then. So let's make the best of what Mother Nature offers for October. At least the temperature will still be moderate.

First up is the Draconids on October 8-9. Look towards the northern sky to spot these meteors.

If you can see the Big Dipper (part of Ursa Major the big bear) then you'll see the potential Draconid meteors. They hit our atmosphere at about 12.5 miles per second – slow in comparison to many other meteors. The Moon will be a day past new, so it will not brighten the sky.

Unfortunately as mentioned earlier, the Full Hunter's Moon, prominent in the sky all night, will overshadow all but the brightest meteors of the Orionid shower on the morning of the 21<sup>st</sup>. While the normal peak rate calls for 30 yellow and green meteors per hour, bright moonlight will certainly cut that number down to no more than ten meteors per hour at best. These remnants of Halley's Comet intercept the Earth's orbit nearly head-on at 41.6 miles per second, so they are very fast as they blaze across the sky from a point in the sky just above Orion's head. The accompanying basic constellation graphic will help you to identify Orion.

At 3:30 am Orion will be due south of your location and about halfway up above the horizon. The Moon will be in the southwest. Between that time and dawn would be

a good window to conduct your observing session. As dawn's early light approaches, the Moon may be blocked by trees or houses. It will set beneath the western horizon around 5:41 am, and the brighter stars of Orion will still be visible in twilight until around 6:41 am in the southwestern sky. That timeframe could provide the best observing opportunity of the entire morning if you are short on time.

Keep in mind that any light pollution will also reduce the number of meteors that one can observe.

Don't forget that Jupiter is now well placed for observing early in the evening, and the telescopes at Seagrave Memorial Observatory on Peetoad Road in North Scituate are open to the public every clear Saturday night for excellent views. (Seagrave Observatory will be closed on October 2.) Please check the web site for the opening times schedule (<http://www.theskyscrapers.org>).

In addition, Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) on the corner of Hope Street and Doyle Avenue in Providence is scheduled to re-open after months of renovations for public viewing on October 5 and every clear Tuesday night thereafter. Check the Ladd web site before visiting in case the re-open date changes. Jupiter will be the primary focus of the 12-inch Brashear refractor. Come and enjoy the beauty of astronomy with the Ladd observatory staff and all our friends.

And finally, as the late Jack Horkheimer (1938-2010) used to say when closing his long running PBS astronomy show "Star Hustler" (later changed to "Star Gazer"), "Keep looking up!"

Francine Jackson

## Sky Notes

We were really lucky last month to have had not only the Autumnal equinox, the beginning of many peoples' favorite season, but the Harvest Moon happen within just a few hours of each other. This year the season of fall began at 11:09 p.m. Wednesday, September 22nd. This is one of two times in the year when the Sun, which has its own path in the sky, the ecliptic, intersected with the celestial equator, letting us watch the Sun rising exactly in the east, and setting perfectly in the western horizon. In September, as soon as the Sun crosses the

celestial equator, it is working toward giving us our colder, wintry weather. Let us hope that doesn't start too soon.

And then, just a few hours later, the Moon became full. This full phase, the closest to the autumnal equinox- but after it - was a very important Moon to our ancestors, who depended on its light to be able to stay outside and harvest their crops a little longer after sunset. It's kind of sad that we don't really treat such celestial events as the important times they were during our early days.

Although the International Year of

Astronomy occurred last year, there's a great book that came out later in 2009 to help celebrate the times. *Eyes on the Skies: 400 Years of Telescopic Discovery*, by Govert Schilling and Lars Lindberg Christensen is a great introduction to the wondrous world of telescope observing. It highlights the history of the instrument, all the way up to the under-study Thirty Meter Telescope. It also has incredible celestial images, in all wavelengths. Plus, it includes the Official IYA DVD, which is quite worth watching. Enjoy.

# Delta ( $\delta$ ) and Mu ( $\mu$ ) Cephei

Glenn Chaple's  
Sky Object of the Month

In the southern part of Cepheus is a pair of naked eye variable stars worthy of note. The first, delta ( $\delta$ ), is the prototypical Cepheid variable. It ranges between magnitudes 3.5 and 4.4 in a precise 5.37 day period. The rise from minimum to maximum brightness takes about 1½ days;

the fade back to minimum involves an additional four.

Its short period and one-magnitude amplitude make delta Cephei an ideal variable star for the novice. Even better, delta Cep is part of a triangle formed by zeta ( $\zeta$ ) and epsilon ( $\epsilon$ ). Their respective magnitudes of

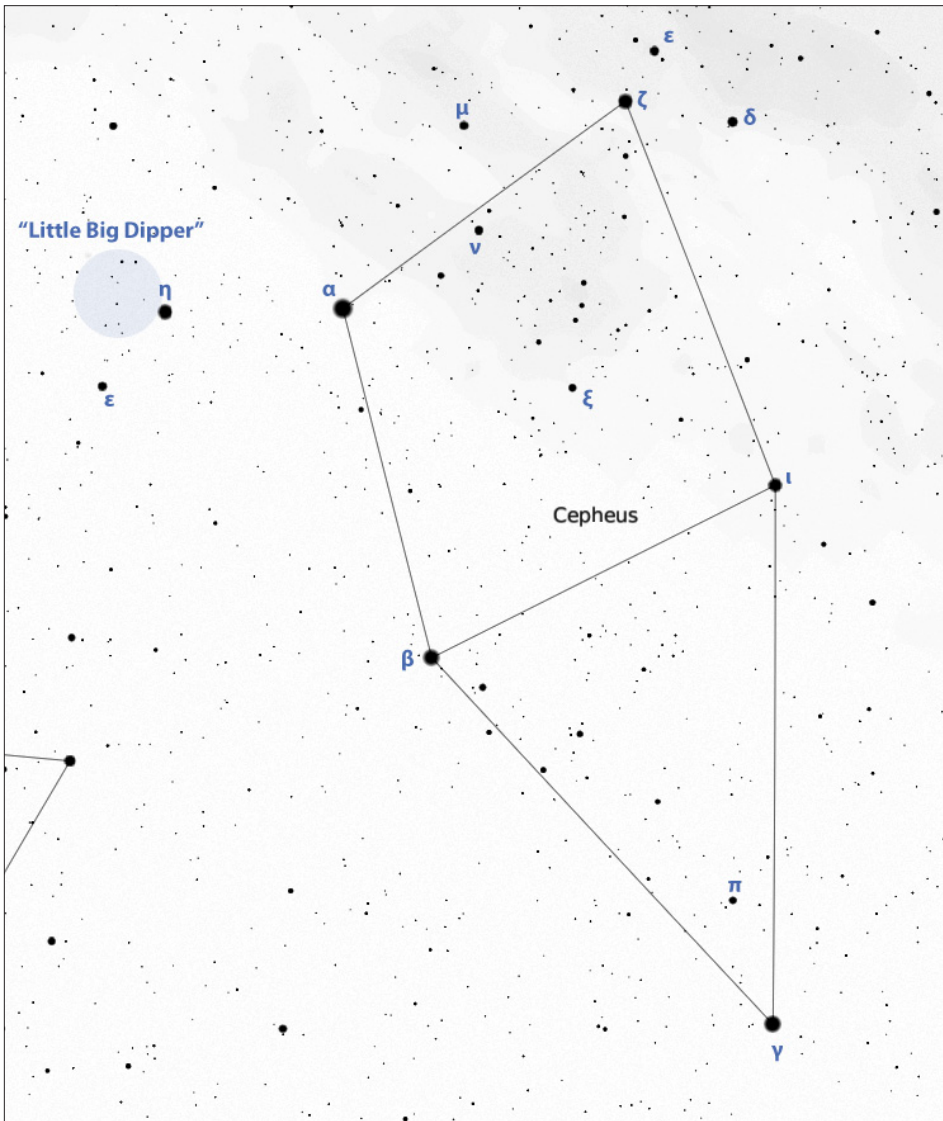
3.6 and 4.2 closely match delta's maximum and minimum brightness, making them convenient markers for magnitude estimates. A week of nightly observations (weather permitting) will allow you to follow delta Cep through a complete cycle.

A telescope isn't needed to follow delta's variations, but it will reveal a 7<sup>th</sup> magnitude companion 41 arc-seconds away. Pale yellow and blue, they make a nice low-power sight.

About 6 degrees east of delta Cep is mu ( $\mu$ ) Cephei. Its ruddy hue was first noticed by William Herschel, and the star is now known as Herschel's "Garnet Star." The name is misleading, because mu Cep appears more of a Betelgeuse-like yellow-orange when viewed with binoculars or telescope. Just as the ruddy hue of Betelgeuse seems more striking when compared to the pure-white star Rigel, so is mu Cep's color more evident when compared with alpha ( $\alpha$ ) Cephei. Like Betelgeuse, mu Cep is a red supergiant undergoing the death throes of a massive, aging star. Betelgeuse may be celebrated as one of the larger stars in our galactic neighborhood, but it pales in comparison to mu Cep. Approximately two to three times the diameter of Betelgeuse, mu Cep would engulf the entire solar system out to beyond Saturn's orbit were it put in place of our sun!

Unlike delta, mu Cep has an irregular cycle. Varying between magnitudes 3.4 and 5.1, mu Cep undergoes a complex set of superimposed cycles between 700 and 4500 days. Right now, it shines at about magnitude 4.0 – easily seen with the unaided eye. Unlike the nightly observations required to follow delta Cephei, a monthly sighting of mu Cephei will suffice.

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



# September Reports

Ed Haskel, *Secretary*  
Jim Crawford, *Treasurer*

## AUGUST SECRETARY REPORT

JIM CRAWFORD

MONTHLY MEETING 7:30

P.M.

Tom Thibault welcomed all members.

.....Speaker: Was Ken Slater, Stellafane Webmaster. Presented brief history of Stellafane.

**SECRETARY'S REPORT:** August report accepted by membership.

**FINANCIAL REPORT:** August report submitted with no corrections

**1ST VP:** John Briggs Future Speakers. November speaker will tentatively be Professor Josh Grindlay

**2ND VP:** Steve Hubbard announced that our speakers for Friday Oct 1st are: Glenn Jackson, on his trip to a Star Party in Green Bank, VA. • Bob Horton on refurbishment of the Transit Room at Ladd Observatory • Al Hall will talk about his Cad Model for the Clark Telescope. • Saturday Oct 2nd featured speakers for AstroAssembly are: Dave Huestis, 150 year Birthday Celebration of Frank Seagrave. • Mr. Bob Berman, Light and Color in the Universe. • Mr. Stan Kozikowski, Measuring the Expansion of the Universe (The Hunt for Supernovae) • Ruben Kier, Best Targets for Autumn Astrophotography • Rev. Robert Bachelder, Protecting the Outer Space Environment

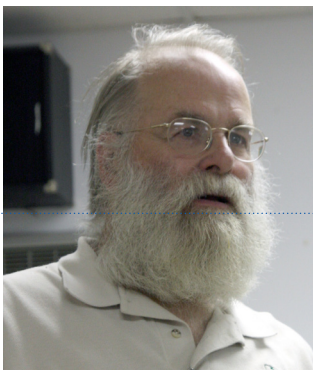
**HISTORIAN:** No report

**LIBRARIAN:** No report

**STAR PARTY COORDINATOR:** Bob Forgiel reported that the next Star Party will be Oct 7th for a home schooling group, details to follow. Friday Oct 15th will be the Women's Wilderness weekend at the URI campus. A group of Scouts are also planning a Star Party but no date was provided as yet.

**TRUSTEE REPORT:** No Report. Tom Thibault noted that Jim Hendrickson developed an hours of operation schedule which lists the times Seagrave would be open for public nights. It accounts for the changing seasons and daylight savings time change. The schedule will be released upon its complete review. He also noted that the Observatory Committee Meeting and Grounds clean-up is scheduled for 9/18, rain date is 9/25. E-mail will be sent to all volunteers.

**OLD BUSINESS:** Funds not to exceed



\$600.00 for repairs to the Clark Observatory floor and material to make minor repairs to the roof. Voted on and approved by membership.

**NEW BUSINESS:** Al Hall updated members on the progress of repairs and maintenance of the Clark Telescope. Notified members that \$150.00 in additional unforeseen expenses was incurred. It was also reported that the Magnifiers (ocular lenses) needs replacing. They are used as a magnifying glass to view the vernier scales. • Motion made and seconded to provide additional funds not to exceed \$200.00 for material.

**GOOD OF THE ORGANIZATION:** Al Hall notified members that Francis O'Rielly, President of ASGH, was requested by Sky & Tel to write a 4-5 page article about our Alvan Clark Telescope. A request was also made of the membership for old photographs that could be used for the article. Anyone having old photos or documents about the Clark can contact Tom Thibault by e-mail. • The membership expressed their deep appreciation for all the work that the restoration team has done to bring the Clark Telescope back to its original design and operation. • Gene Kusmierz donated \$150.00 to help defray some of the costs incurred as noted in old business above. It also allows for the replacement lenses for the vernier magnifiers. Thanks to Gene from the membership. • Tom requested the membership to send in their 2010 dues. We are currently reviewing the list for those who have not sent in their dues. We will send one more e-mail reminder.

Business Meeting Adjourned at 9:00pm

## EXECUTIVE COMMITTEE MEETING

INUTES - 9/8/10

Agenda Items:

AstroAssembly Status Update: Steve Hubbard provided status to date • Parking arrangements with neighbor all set • About 17 Pre-registrations have been received • Tent cost \$680, to be set-up on Friday morning • Port-a-John all set • Request for refreshment donations (pastry and snacks) • Food (hamburgers and hot dogs) • Raffle

Prize donations requested

Review un-used Seagrave equipment for consideration

Seagrave Observatory Repair: Clark: Well underway – will approach membership for funds to cover materials- \$300.00

Roof: Repairs Completed - \$81.00 materials • Floor: \$600.00 not to exceed expense to be discussed and voted on at the September Monthly Meeting

Grounds (tree trimming) • Neighbor approved, further discussions to occur on trimming and funds

Public Viewing Hours Proposal by Jim Hendrickson approved, Jim to implement on Web • Open hours: begin no earlier than 19:00. • begin after Civil Twilight ends. • begin no later than 21:00.

Observatory Committee Meeting: Trustee's to schedule meeting to discuss items below: Key Holders • Recruit more members • Members Night

Develop a survey to question members on their interest in order to determine activities.

## Cash Flow

8/6/2010- 9/17/2010

### INFLOWS

Uncategorized	214.00
Astro-registration	867.00
Donation	171.00
Dues	
Regular	40.00
Senior	20.00
TOTAL Dues	60.00
Interest Inc	15.50
<b>TOTAL INFLOWS</b>	<b>1,327.50</b>

### OUTFLOWS

Return Check Fee	10.00
Astroexp	
Raffle	15.76
Discretionary	50.00
Astronomymagexp	34.00
Postage and Delivery	21.69
Presidents Fund	28.51
Trusteexp	445.66
Electric	34.20
<b>TOTAL OUTFLOWS</b>	<b>639.82</b>
<b>OVERALL TOTAL</b>	<b>687.68</b>

### Cash Accts

Citizens Checking	4,700.77
Capital One	16,428.20
<b>Total</b>	<b>21,128.97</b>

# The Hunt is On!

By Carolyn Brinkworth



The world of astronomy was given new direction on August 13, 2010, with the publication of the Astro2010 Decadal Survey. Astro2010 is the latest in a series of surveys produced every 10 years by the National Research Council (NRC) of the National Academy of Sciences. This council is a team of senior astronomers who recommend priorities for the most important topics and missions for the next decade.

Up near the top of their list this decade is the search for Earth-like planets around other stars—called “extrasolar planets” or “exoplanets”—which has become one of the hottest topics in astronomy.

The first planet to be found orbiting a star like our Sun was discovered in 1995. The planet, called “51 Peg b,” is a “Hot Jupiter.” It is about 160 times the mass of Earth and orbits so close to its parent star that its gaseous “surface” is seared by its blazing sun. With no solid surface, and temperatures of about 1000 degrees Celsius (1700 Fahrenheit), there was no chance of finding life on this distant world. Since that discovery, astronomers have been on the hunt for smaller and more Earth-like planets, and today we know of around 470 extrasolar planets, ranging from about 4 times to 8000 times the mass of Earth.

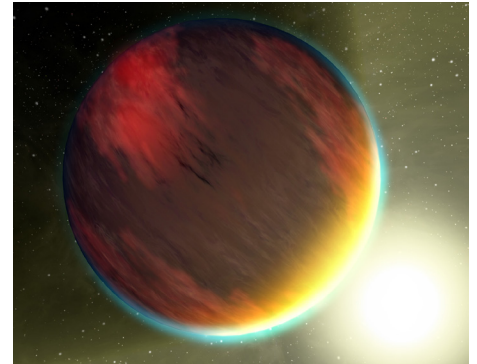
This explosion in extrasolar planet discoveries is only set to get bigger, with a NASA mission called Kepler that was launched last year. After staring at a single small patch of sky for 43 days, Kepler has detected the definite signatures of seven new exoplanets, plus 706 “planetary candidates” that are unconfirmed and in need of further investigation. Kepler is likely to revolutionize our understanding of Earth’s place in the Universe.

We don’t yet have the technology to search for life on exoplanets. However, the infrared Spitzer Space Telescope has detected molecules that are the basic building blocks of life in two exoplanet atmospheres. Most extrasolar planets appear unsuitable for supporting life, but at least two lie within the “habitable zone” of their stars, where conditions are theoretically right for life to gain a foothold.

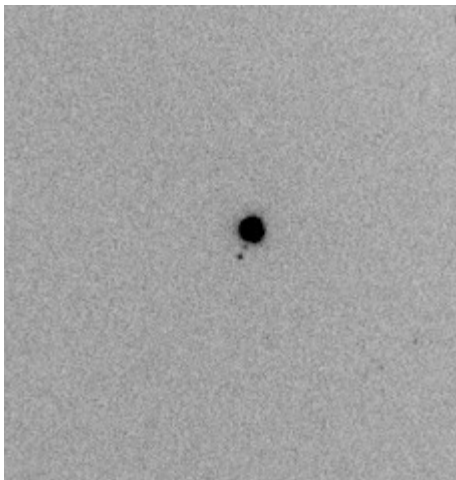
We are still a long way from detecting life on other worlds, but in the last 20 years, the number of known planets in our Universe has gone from the 8 in our own Solar System to almost 500. It’s clear to everyone, including the Astro2010 decadal survey team, that the hunt for exoplanets is only just beginning, and the search for life is finally underway in earnest.

Explore Spitzer’s latest findings at <http://www.spitzer.caltech.edu>. Kids can dream about finding other Earths as they read “Lucy’s Planet Hunt” at <http://spaceplace.nasa.gov/en/kids/storybooks/#lucy>.

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



Artist’s rendering of hot gas planet HD209458b. Both the Hubble and Spitzer Space Telescopes have detected carbon dioxide, methane, and water vapor—in other words, the basic chemistry for life—in the atmosphere of this planet, although since it is a hot ball of gas, it would be unlikely to harbor life.



The Planet Uranus with two moons, Umbriel (about 14.5 magnitude just below overexposed image of Uranus) and Titania (about 14th magnitude and immediately below Umbriel) 8-28-10, about 6 hrs UT. Taken with 14" Meade SCT @f/6 and SBIG ST9 CCD camera. Photo by Bob Napier.



Left: Jupiter and Uranus at opposition, September 20, 2010. 80mm refractor at f/4.8, Canon 40D, 4 seconds at ISO 800. The four Galilean satellites are (left to right) Europa, Io, Ganymede, and Callisto. Below: Jupiter on September 6; APM 130/780 using eyepiece projection; 300 frames stacked each channel RGB, Imaging Source DMK 41AU02.AS. Photos taken from Seagrave Observatory 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