



First Light

The Newsletter of the Cape Cod Astronomical Society



September, 2011

Vol.22 No.9

Editorial

I first spotted the Andromeda Galaxy with my binoculars back in December 2003.

I stood along the edge of a farmer's field stomping my feet to stay warm and craning my neck until that ghostly object suddenly appeared.

Then my casual interest in astronomy became an obsession bordering upon madness.

In January 2004 I finally viewed M31 through my 4.5" Newtonian reflector leaving no doubt in my mind about what it is.

Yet I could understand how past astronomers could mistake Andromeda for one of the Milky Way's many nebulae.

...Chet Raymo once wrote that looking through a telescope is 50% vision and 50% imagination.

...As an observer of galaxies, I am driven as much by a sense of wonder as a desire to understand.

As Raymo wrote in The Soul of the Night:

"The night sky is the hunting ground of the mystic and the philosopher, the scientist and the theologian."

Deep space is fertile ground for anyone drawn to abstractions. Every galaxy is one more piece of the jigsaw puzzle.

Every new object is another clue in the great mystery of the universe.

...Deep space is where nature with a capital "N" unfolds in all its glory.

And its all right there for anyone to see.

...taken from the August S&T's Focal Point essay "Galaxy Hunting" by Walt McLaughlin

Next Monthly Meeting: is Thursday, September 1st at 7:30pm in the D-Y Library. CCAS President Tom Lynch will present: **Sentinels of Nantucket Sound**, a brief history of the Nantucket lightships.

In this issue: A brand new supernova / [Please pay your dues!](#) / The Great Jupiter & Moons Show is back in town! / We have asteroids! We have comets! / A new indictment of light pollution

Bright New Stars:

We like to profile new members in our Society in this section of *First Light* each month. If you are a new member and have not yet been so recognized, or have new information for us (background, astro equipment preferred, interests, etc.) on yourself or someone else, please let us know (email info@ccas.ws).

PLEASE CONSIDER SUBMITTING AN ITEM OR ARTICLE FOR PUBLICATION IN *FIRST LIGHT*.

Thanks to Mike Hunter and Joel Burnett for their inputs to this month's "From the Dome" report.

CCAS and Related Events:

Many thanks to Ed Ting for his informative presentation "Making use of a Webcam in Astrophotography, What You May Not Know", at our August meeting. Webcam astrophotography is relatively inexpensive and can be mastered in a fairly short time using readily available components. It works best for capturing images of bright objects such as the Moon and planets. Images can be enhanced by stacking individual exposures using the free downloadable software program Registax for image processing. As with any astronomy project, time and patience are required to master the process. Further information and references are given in Charlie Burke's Minutes of the Meeting (see below for link.)

At our meeting on September 1, CCAS President Tom Lynch will present: **Sentinels of Nantucket Sound**, a brief history of the Nantucket lightships. We are most pleased to have finally persuaded Tom to bring this talk to CCAS after multiple presentations to other groups on the Cape.

And, once more, thanks to Tom who continues to put together great programs of speakers for our meetings.

Members, **PLEASE** participate in the effort to recruit good speakers to present programs in astronomy and related sciences at our meetings. Please send any ideas or contact information to Tom Leach, our Program Chairman. For sure he will follow up.

Or, even better, volunteer to give a talk yourself!

The minutes of our August meeting are on our website; click on the "Minutes" button at www.ccas.ws or go to <http://www.ccas.ws/minutes/ccasminutes080411.pdf>

SPECIAL NOTICE!!!!
2011-2012 Dues were Due July 1, 2011

As of August 27, more than half of those members not exempted from dues (life members, spouses, etc.) have not yet paid this year's dues!

Members: Please plan to make your payment either by bringing to the September meeting or mailing directly to CCAS at PO Box 207 Harwich Port MA 02646.
Thank you.

And Thank You to the many members who already have made payment.

Executive Corner

The new Executive Board plans to meet for the first time in September.

From the Dome...

...by Peter Kurtz for Mike Hunter

We had good weather, good attendance, and lively participation at three of the four star parties scheduled since the writing of the previous *First Light*; the August 25 event was clouded out. We averaged five staff and about eight guests over the events on July 28, August 11, and August 18. The group of guests on the July 28 were most precocious and interesting; good questions; good answers.

Late on the evening of the July 28 star party, Bernie announced that a lunar occultation of a star would take place at a specific time, about 10:30 as I remember it. Precisely at 10:30 the leading dark edge of the moon snuffed out the star. We've seen that before.

But this was the first time folks up in the Dome room and folks down on the lower level all saw the phenomenon simultaneously on good quality monitors that both fed off the video camera Bernie had on the 16" scope.

Bernie and his aides (Joel, Gail, and Charlie) have brought us a long way in the capabilities we have to observe with multiple monitors on two levels at the Dome. Thanks to Bernie and team!

Bernie Young and Joel Burnette worked on systems development at the Dome on a crystal clear night, Tuesday, August 23. Joel sent in this summary report of his work that night.!

We had “Goldilocks conditions” at the observatory. Everything was sharp with our equipment and the atmosphere—we could make out all the stars in Ursa Minor without optical aid.

I couldn't pick out any of the Messiers with the Orion USB camera on the 18” Dob. I was successful using the 9mm eyepiece to pick up Neptune and the asteroid Vesta, but again couldn't capture the images with the USB Cam. Bernie and I talked about how the Orion video cam couldn't pick up anything better than 5 mag on the Meade 16”, so I'm not surprised to see the USB camera not going any farther on the 18”. It worked fine with Pi-Sagittarii and the Moon, as well as Albireo so I'll keep those limits in mind when next we use these particular cameras.

I was using the 9mm eyepiece in the 18” and was not able to split the double-double in Lyra. I still think we could use the 6mm Ethos with a Barlow. We can hit that double double with the 16”, but what I'm really after is the great red spot on Jupiter with the Obsession 18”.

I see the Obsession being a wonderful Star Party telescope, an outreach tool and a complementary scientific instrument to the 16”. It already is a stellar piece of equipment (bad pun there). With a few upgrades, I think the Obsession will take us forward as an instrument with which to “wow” ourselves and be something the observatory staff can show with great pride to the public and scientific community.

As always, “Private” group or individual observing sessions at the Werner Schmidt Observatory may be scheduled by contacting Observatory Director Mike Hunter at mamhunter@yahoo.com or sending an email to info@ccas.ws

Our Society exists to promote observing! Help us promote this objective by asking for time at the Dome!

CCAS has both 8” and 14” Dobsonian telescopes for loan to members. Currently, Tom Leach is using the 14” for outreach in Harwich. Robert Tobin has the 8”. If you wish to borrow one of these ‘scopes, contact info@ccas.ws

September Observing:

Observing Highlights for September, 2011 at Cape Cod:

LOOK ASAP IF YOU WANT TO CATCH A NEW SUPERNOVA!

An alert published August 26th from Sky and Telescope announced the discovery of a new Type Ia Supernova in the Pinwheel Galaxy by a survey telescope on Mount Palomar: it wasn't there on August 24th (scopes limit: mag 20) but had already brightened to mag 13.8 by the next day. Never before has a Type Ia supernova been observed so early in its brightening.

This supernova should brighten by at least 250 times and might well reach 11th magnitude or slightly better at its peak — easily within visual reach of a 6-inch telescope.

But do not delay; the Pinwheel is getting lower in the sky day by day after the end of twilight, and the moon returns in early September. See reference 4 for more information.

The **autumnal equinox** takes place at 5:05am EDT on Friday, September 23. On this day hours of daylight and night are approximately equal (“equinox”) and hours of darkness begin to exceed hours of daylight until the winter solstice in December.

Please consult the September Issues of *Sky and Telescope* (pp 43-49), *Astronomy Magazine* (pp 36-43), and *Astronomy Magazine Online* (5) for more information on these highlight topics and others.

Planets:

Saturn disappears from the evening sky during September while **Venus** reappears after a long absence.

Neptune (mag 8) is up at sunset this month and **Uranus**, mag 5.7, almost visible without optical aid, and at opposition on 9/25, rises just a bit after sunset at month's beginning. **Pluto** is also positioned for viewing in the evening albeit, at mag 14, it will be tougher to find in the morass of observing targets low in the sky in Sagittarius.

The great **Jupiter and Galilean Moons** show returns to prime time this month for another season. The mag -2.7 gas giant rises at 9:40pm on 9/1 and an hour earlier by mid-month; it will reach opposition next month; so the viewing during this and the next several months is as good as it gets. The moons' show goes on nightly (resources given below.)

Of special interest on the night of 9/14 – 9/15 will be the moving of Ganymede into Jupiter's shadow at 11:29pm EDT, reappearance at 1:33am EDT, and later movement

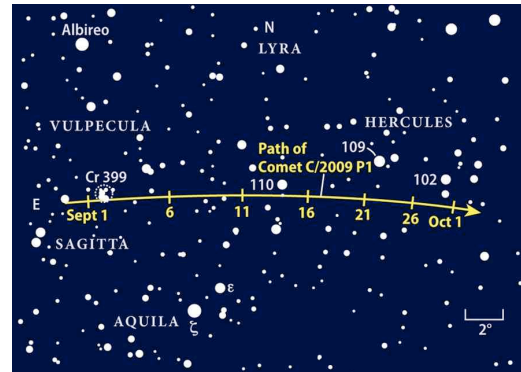
behind the planet at 4:01am EDT.

Resources for Jupiter and its moons: if you don't have Gas Giants, the ipod app for moons of Saturn and Jupiter discussed in the April, 2011 *First Light*, please see the September *S&T*, p 47; September *Astronomy*, p 37, or the interactive resource online at reference 6. A chart of special eclipses, occultations, and transits is given in the September *S&T*, p54.

September will be another good month to observe the mag 7 asteroid Vesta in Capricorn; it moves very little and does a hairpin turn mid-month as shown in reference 7 (finder charts for both Ceres and Vesta from May thru December.) Vesta is very close to the bright star psi-Capricorni this month so should be easy to find, even with binoculars.

Mag 8 Ceres continues its trip in Cetus; it will be at its brightest when at opposition on 9/16.

For two months now, we have been promising that **Comet C/2009 P1 (Garradd)** will become a brighter and brighter target as we get into fall. The comet is now mag 7 and can be tracked easily through Vulpecula, Sagitta and Hercules this month. It will provide a special treat passing through The Coathanger asterism, Cr 399, on September 2 and 3. The comet will be a reliable binocular and telescope target as it brightens to at least mag 6 over the next several months.



[Path of Comet C/2009 P1 (Garradd) from ref 5.]

Mooncusser's Almanac and Monthly Alert ¹ By Peter Kurtz September 2011			
Object	Sept. 1 (EDT)	Sept. 15 (EDT)	Sept. 30 (EDT)
Sun	R: 06:06 S: 19:14	06:21 18:50	06:36 18:24
Moon	R: 10:41 S: 20:50	19:54 09:45	10:48 20:11
Mercury (dawn)	R: 04:36 S: 18:26	05:21 18:32	06:43 18:33
Venus (early eve)	R: 06:28 S: 19:31	07:01 19:14	07:38 18:56
Mars (late nite)	R: 01:50 S: 16:53	01:38 16:30	01:25 16:00
Jupiter (evening)	R: 21:38 S: 11:25	20:42 10:27	19:40 09:22
Saturn (-----)	R: 09:08 S: 20:47	08:21 19:56	07:31 19:00
Uranus (evening)	R: 20:06 S: 08:18	19:10 07:20	18:09 06:18
Neptune (evening)	R: 18:45 S: 05:23	17:49 04:26	16:49 03:25
Pluto (evening)	R: 15:26 S: 01:11	14:31 00:15	13:32 23:16

Moon Phases, September, 2011

First QTR Sunday, Sept. 4th, at 1:39pm EDT
Full Moon Monday, Sept. 12th, at 5:27am EDT
 Last QTR Tuesday, Sept. 20th, at 9:39am EDT
 New Moon Tuesday, Sept. 27th, at 7:09am EDT

Anyone having an interest in monthly Libration and Declination Tables for the Moon² or Dates and Times for the Minima of Algol^{1,3} during this month please contact your editor for information or sources.

Special Note:

Many of us will remember the excellent presentation on **approaches to fighting light pollution** given by **Mario Motta** at a CCAS meeting several years ago. You may be interested then in the Focal Point article Mario writes in the September issue of *S&T*, p 86: *Light Pollution's Medical Effects*. In this essay the author, a cardiologist, highlights recent research indicating that excess night light disrupts circadian rhythm which, in turn, has biochemical consequences increasing the risk of cancer!

Cape Cod Astronomical Society

President	Tom Leach	508-237-9291
Vice President	Paul Cezanne	508-487-1456
Secretary	Charles Burke	508-394-9128
Treasurer	Peter Kurtz	508-255-0415
Observatory Director	Michael Hunter	508-385-9846
<i>First Light</i> Editor	Peter Kurtz	508-255-0415

info@CCAS.ws

Mailing Address: PO Box 207 Harwich Port MA 02646

Cape Cod Astronomical Foundation

Chairman	Werner Schmidt	508-362-9301
Vice Chairman	Michael Hunter	508-385-9846
Director R&D	Bernie Young	508-394-1960
Secretary	Ed Swiniarski	508-896-5973
Treasurer	Pio Petrocchi	508-362-1213
Observatory Director	Michael Hunter	508-385-9846
Observatory		508-398-4765

The **Cape Cod Astronomical Society** meets at 7:30 pm on the first Thursday of every month in the library of the Dennis-Yarmouth Regional High School in Yarmouth, Massachusetts. Meetings are open to the public. Membership dues are \$30 for adults, \$15 for students in two year colleges and part year residents, and no charge for spouses or for students in K-12 schools.

References and Notes for this issue:

- 1) Information for The Mooncussers Almanac and Monthly Observing Alerts was extracted from Sky Events, Astronomy Magazine Online (Astronomy.com), Stargazing.net's Planet Rise/Transit/Set calculator (<http://www.stargazing.net/mas/planet2.htm>), *Astronomy Magazine*, *Sky & Telescope Magazine*, *Sky and Telescope Skywatch 2011*, and other sources. The *Observer's Handbook, 2010 and 2011*, published by The Royal Astronomical Society of Canada is also an important reference, particularly for information on lunar libration and declination and the minima of Algol.
- 2) Information on how Libration and Declination Maxima and Minima can make visible parts of the moon normally hidden was reviewed in the December2007-January2008 *First Light*. Quick recap: Max Long brings to view extra right side; Min Long, extra left side; Max Lat, extra north side; Min Lat, extra south side. Max Dec puts it high in our sky during its transit; Min Dec puts it low.
- 3) Algol is an eclipsing variable star in Perseus which has its brighter component eclipsed or covered by its companion once every 2.87 earth days. When the dimmer component is not eclipsing the brighter, Algol appears typically about magnitude 2.1; when eclipsed, magnitude 3.3 The minima usually lasts about two hours with two hours on either side to bring it back to mag 2.1. Good comparison stars are γ -Andromedae to Algol's west, mag 2.1, and ϵ -Persei to its east, mag 2.9.
- 4) <http://www.skyandtelescope.com/community/skyblog/observingblog/128430288.html>
- 5) Here is the web address for Astronomy Magazine's online "The Sky This Month" online for September: [http://www.astronomy.com/News-Observing/Sky this Month/2011/07/See Uranus with naked eyes.aspx](http://www.astronomy.com/News-Observing/Sky%20this%20Month/2011/07/See%20Uranus%20with%20naked%20eyes.aspx)
- 6) S&T's interactive Java utility for showing the positions of Jupiter's main moons for any date and time: <http://www.skyandtelescope.com/observing/objects/planets/3307071.html>
- 7) Ceres and Vesta charts from May to December from S&T: <http://www.skyandtelescope.com/observing/objects/asteroids/122249184.html>. The finder chart for Vesta for September can be found in the September issue of Astronomy, p43, or online at reference 5.