



First Light

The Newsletter of the Cape Cod Astronomical Society



August, 2014

Vol. 25 No. 8

Consider this alternative to the Big Bang Theory...



This little pearl of wisdom appeared in the Comics section of the Cape Cod Times for Sunday, July 27, 2014.⁷

This goes to show that one need look further than just Astronomy or Sky & Telescope magazines to really understand all there is to know about origins of the cosmos.

Next Monthly Meeting: is Thursday, August 7th, at 7:30pm: We will have a special tour of and introduction to the Harwich Observatory at [Harwich Elementary School](#) conducted by Director and CCAS member, Larry Brookhart and member Gus Romano.

**REMINDER: NO MEETING AT D-Y; MEETING IS AT THE HARWICH OBSERVATORY (SEE Map page X).
REMINDER: NO STAR PARTY AT SCHMIDT on August 7th. WE MAY DO SOME OBSERVING IN HARWICH.**

In this issue: August meeting in Harwich / 3 new members / CCAS Elections / Dues / Astrophoto / Jupiter Meets Venus... in public, no less / Grazing Meteors / Big Moon – Very High Tides / Directions to Harwich Observatory / Starlab Planetarium /

Bright New Stars:

We are pleased to welcome Michael Calabrese to membership in CCAS. Michael was given a membership to CCAS by the staff of his dental office. We are newly in contact with him by email and hope to provide more information in the next issue of *First Light*. Meanwhile, welcome, Michael!

We are also pleased to welcome Shaun and Amy Willets to membership. Shaun and Amy, former Staten Islanders, find themselves on the Cape through Shaun's current duty assignment as a Petty Officer in the U.S. Coast Guard. More on that in a bit. Amy is a certified graphic artist and has offered to help with the newsletter or website. That would be most welcome. Amy says "We are both very excited to visit the observatory, and to learn more about...well, everything...;we're what you would call greenhorns, as far as astronomy goes, but very eager!" Well, Amy and Shaun, we were all newbies once. Welcome aboard! And we do hope, Amy, that when you can find the time, you will send an email to us to open a dialog on how you could help with *First Light* or the website.

We enjoyed informing Shaun and Amy that they tread in pretty special footsteps: most of you know that CCAS "life" member and USCG officer Daniel Burbank spent time with us when he was assigned to duty in this area many years ago. Dan Burbank graduated from writing *First Light* as a CCAS member to becoming an astronaut with several missions to and on the ISS!

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 might 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*.

CCAS News Items and Current Events:

Annual Elections:

Foundation member Ed Swiniarski presided over the election of CCAS officers and a CCAF trustee position at our July meeting.

Mike Hunter was re elected for a new term as a trustee of CCAF.

The following gentlemen were elected to CCAS office as noted:

Vice President	Charles Burke
Secretary	Gus Romano
Treasurer	Peter Kurtz

There was no nominee for President. This vacancy will be addressed at an upcoming session of the new Executive Committee.

Would YOU like to be President of CCAS?

CCAS Meetings:

Thanks to Harwich Middle School teacher Nancy Gifford for her presentation on her involvement with a NASA program on **Global Precipitation Measurement** at our **July meeting**.

http://www.nasa.gov/mission_pages/GPM/main/-U8gYH_IdU2F

Through a joint effort between NASA and the Japanese Aerospace Exploration Agency (JAXA,) scientists can now receive an accurate picture of rain- and snow-fall worldwide every three hours. The GPM satellite can also coordinate data with other scientific satellites. In the past, observations were primarily limited to land-based instruments. Now, the entire planet can be observed in far greater detail. Some of the benefits of these observations include better predictions of storms and their longer term effects such as droughts, floods and landslides. Through newer technologies, storm forecasters now have a clearer picture of how storms form.

Besides being a Master Teacher for NASA, Nancy has been able to involve her middle school students in many hands-on science projects.

Our **August 7th meeting** will take place *at the Harwich Observatory at the Harwich Elementary School* **NOT at the D-Y library**.

Please see Directions and a map on our page 5.

Beginning at 7:30pm, after a short business meeting, we will have a special tour of and introduction to the **Harwich Observatory** at the school. These will be conducted by Director and CCAS member, Larry Brookhart and CCAS member Gus Romano.

We are happy to announce that Charles Burke, our new Vice President, has arranged for **Dr. Michael J. West, Director of the Maria Mitchell Observatory** on Nantucket Island, to speak to us at our **October 2nd meeting**. We will announce his topic in an upcoming *First Light* and on the website when we know it.

Effort continues to find a speaker and topic for our September meeting and meetings after October.

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 Charlie, Gus, or Peter or to info@ccas.ws. For sure we will follow up.

Please let us know if you have any leads...

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

Reminder: If you have not yet paid your dues for the July 2013 – June 2014 cycle, please do so. You may bring your check to the August meeting or mail to CCAS, 34 Ridgewood Rd. Orleans MA 02653. Thank you.

Minutes:

The minutes of our July meeting are on our website; click on the “Minutes” button at www.ccas.ws or go to <http://www.ccas.ws/minutes/ccasminutes071014.pdf>

From the Dome:

The summer schedule of weekly Thursday Star Parties at The Schmidt began Thursday, June 26, at 8:30pm and will continue thru the end of August.

As always, “Private” group or individual observing sessions at the Werner Schmidt Observatory may be scheduled by contacting Observatory Director Joel Burnett at Joelburnett@comcast.net 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. If you wish to borrow one of these ‘scopes, contact info@ccas.ws

Astrophoto of the Month!

Alex (age 12) and April Houser took this photo of Saturn using an iPhone through an Astro-Physics 6 inch Refractor on a German Equatorial mount on 6/19/2014. Best astrophoto from a “junior” member of CCAS we’ve received to date. Alex and April joined CCAS in April of this year.



Thanks, Alex and April. Nice job!

August Observing:

Please see resources in August’s *Astronomy Magazine*, pp 36-43 and *Sky and Telescope*, pp 37-58, and Reference 5 for good guides to the August sky. See p 41 in *Astronomy*, and also reference 6 for positions of the moons of Jupiter for August.

Here are observing highlights for August at Cape Cod:

- Holy Toledo! Jupiter meets Venus! ...in public! Even though the Mooncusser’s Almanac shows **Jupiter** as “very near the sun”, if you get up before the sun on Monday, August 18th, and look to the left and a bit below the bright star Procyon in the east, you will see the big planet only 0.2° from bright **Venus**. Don’t miss it.
- Yes, it is true that this year the often spectacular summer **Perseids** meteor shower will be fighting with a nearly full moon on peak night, August 12-13 this year. But don’t pass on it. A most thought-provoking article on how to look at a shower like the Perseids is offered by *S&T*’s Alan MacRobert in the August issue, p.65. Alan suggests we focus on “grazing” meteors, different from the standard “go out and look at the radiant between midnight and dawn”.

The standard practice of looking toward the radiant in the predawn hours does usually offer the opportunity to see the highest counts of meteors.

But at predawn, the radiant, in this case, the constellation Perseus, is situated high in the sky with the bright moon right above it so it will not be easy to see the possibly many meteors coming “from the radiant” which will be

coming “right at you”.

Alternatively, earlier in the evening, say from 9 pm through midnight (which means you can be sleeping in the prdawn) meteors from the radiant will be hitting your position on earth at a “glancing” rather than “directly at you” angle. Glancing meteors are fewer than those “right at you”, but they usually last much longer as they travel sometimes from horizon to horizon ; often a grazing meteor will be much brighter and colorful than the “direct on” type.

So, two suggestions:

- Go out at 9pm on August 12th and look toward Perseus on the northern horizon and see what might run completely across the sky from north to south. The 9pm-midnight strategy also has the advantage of having the bright moon lower in the sky and you can also get a good night’s sleep.
- And remember, a shower like the Perseids is “not just at peak time on peak night”. Look for meteors anytime when the sky is dark any time from two or three nights before peak night and for two or three nights after.

Good luck!

Minima of Algol^{1,3}, August:

Algol, a variable double star in Perseus, shines normally at mag 2.1 but once every 2.87 days dims to mag 3.4. The dimming is caused by the dimmer of two self-orbiting stars eclipsing the brighter as viewed from earth.

There are two evening occurrences of the Minima of Algol at Cape Cod during August: Friday, August 1, at 10:28pm; and Sunday, August 24th, at 8:57pm.

Using binoculars or a small telescope, try to begin viewing two to three hours before the minima to watch the dimming and up to two to three hours after the minima to watch the brightening.

Mooncusser’s Almanac and Monthly Alert¹ AUGUST 2014

Object	AUG. 1 (EDT)	AUG. 15 (EDT)	AUG. 31 (EDT)
Sun	R: 05:35 S: 19:58	05:49 19:40	06:05 19:16
Moon	R: 11:07 S: 22:28	22:18 11:39	11:58 22:12
Mercury (very near sun)	R: 04:52 S: 19:40	06:24 20:06	07:46 20:00
Venus (pre dawn)	R: 03:44 S: 18:43	04:12 18:49	04:50 18:44
Mars (evening)	R: 12:49 S: 23:17	12:36 22:42	12:24 22:06
Jupiter very near sun	R: 05:05 S: 19:42	04:26 18:56	03:40 18:03
Saturn (evening)	R: 13:49 S: 00:09	12:56 23:15	11:58 22:14
Uranus (late night)	R: 22:37 S: 11:25	21:41 10:29	20:37 09:24
Neptune (late night)	R: 21:06 S: 08:04	20:10 07:07	19:06 06:01
Pluto (late night)	R: 18:02 S: 03:36	17:06 02:39	16:02 01:35

Declination Tables for the Moon² during this month please contact your editor for information or sources.

Moon Phases, August, 2014

First QTR Sunday, August 3rd, at 8:50pm EDT

Full Moon Sunday & perigee, August 10th, at 2:09pm EDT

Note: “largest full moon of the year; VERY high tides.

Last QTR Sunday, August 17th, at 8:26am EDT

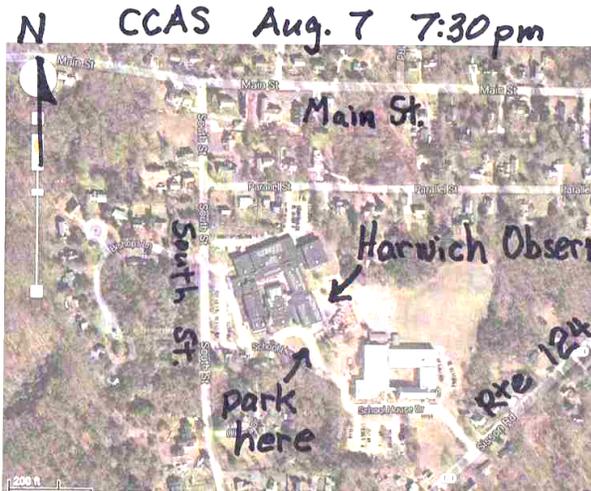
New Moon Monday, August 25th at 10:13 am EDT

A PORTION OF THIS PAGE IS INTENTIONALLY LEFT BLANK TO REMIND ALL MEMBERS THAT THERE IS ALWAYS PLENTY OF ROOM IN *FIRST LIGHT* FOR YOUR CONTRIBUTIONS

Directions to Harwich Observatory

Harwich Elementary School, South Street, Harwich Center

Our August 7th Meeting will be held at the Harwich Observatory. The point end of the arrow marked “Harwich Observatory” in Mike Hunter’s map is pointing to a garage door in a flat part of the school building. That “garage” contains the observatory room and equipment storage. Weather permitting, equipment, especially the 32” Dob and its ladder will be brought out on the tarmac outside the garage where we will meet.



You get to Observatory as follows: From Harwich Center (intersection of Rt 39 and Rt 28 (Main Street) at the top of the photo (about under the “7” of “7:30”,) drive a bit west and turn left on South Street (about under the “S” of “CCAS” on the map.) As you go south on South Street, pass Parallel Street on the left and begin to see the school building on the left. Drive past the first entrance way to the school on your left, and enter the more southerly entrance way (a bit left of the “Park Here” arrow on the map). Park where you can find a spot and walk around the south and then east

side of the school building to the Observatory “garage.”

Problems? Try contacting Larry Brookhart, Director of the Observatory at either 508-432-8787 or 508-430-7216.

STARLAB Portable Planetarium Comes to the Cape Cod Museum of Natural History

Terry Izzo, Program Coordinator for the Cape Cod Museum of Natural History in Brewster, sent us this notice inviting all who haven’t seen it yet to visit the *Starlab Portable Planetarium* at the MNH on August 12. The portable planetarium (which I think some of us saw at CCMNH several years ago) will be used to present a show called **Light The Night** by the Museum of Science, Boston.

There will be four showings on Tuesday, August 12: 4:00, 4:45, 5:30 and 6:15pm.

Starlab will take you on a tour of the solar system and beyond, and help you discover which stars, planets, and other astronomical wonders are visible this evening including the wonder of the Perseid meteor shower! In addition, *Starlab* educators will provide useful tips on how you can navigate the night sky from your own backyard! Appropriate for all ages.

Reservations are required; space very limited; call 508-896-3867, x133. Tickets: Museum admission and show combo: Adults \$18, Seniors \$16, Children \$13; Show only: Members \$8; Non-members \$10.

The Museum is open 9:30am until 7pm on August 12.

Cape Cod Astronomical Society

President	Position is Open	
Vice President	Charles Burke	508-394-9128
Secretary	Gus Romano	781-924-4770
Treasurer	Peter Kurtz	508-255-0415
Observatory Director	Joel Burnett	508-221-7380
<i>First Light</i> Editor	Peter Kurtz	508-255-0415

Mailing Address: A. P. Kurtz, CCAS Treasurer, 34 Ridgewood Rd,
Orleans MA 02653

Cape Cod Astronomical Foundation

Chairman	Werner Schmidt	508-362-9301
Vice Chairman	Michael Hunter	508-385-9846
Director of R&D	Bernie Young	508-394-1960
Secretary	Ed Swiniarski	508-896-5973
Treasurer	Pio Petrocchi	508-362-1213
Observatory Director	Joel Burnett	508-221-7380
Observatory Phone Line		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 January2007-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.
- 5) Here is the web address for Astronomy Magazine's "The Sky This Month" online for August: <http://www.astronomy.com/magazine/sky-this-month/2014/06/venus-meets-jupiter>
See also S&T resources online at <http://www.skyandtelescope.com/>
- 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> :
for Saturn's moons: <http://www.skyandtelescope.com/observing/objects/planets/3308506.html>
- 7) Cape Cod Times Comics Section, Sunday, July 27, 2014; Credits: Go to the "Close to Home" website at www.closehome.com to learn more about the creator of this gem, John McPherson and related information.