



First Light

The Newsletter of the Cape Cod Astronomical Society

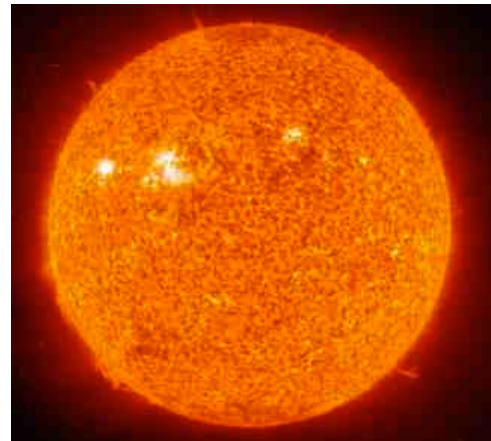


July, 2014

Vol. 25 No. 7

Lots Going on at the "Dome" in May and June... (Stories follow on page 3.)

- **Joseph Bernier's Wixon 5th Graders visit Saturday, May 31st.**
- **Last "Quarter Moon Saturday" Star Party takes place Saturday, June 7th.**
- **275!!! Dennis-Yarmouth Regional High School Students view the sun using CCAS' solar scopes during June.**
- **Kim Sullivan's Wixon 5th Graders visit Friday, June 20th; teacher sends donation to CCAF!**



Next Monthly Meeting: is Thursday, July 10th, at 7:30pm. Please note that is the **SECOND THURSDAY** of the month. Educator Nancy Gifford of Harwich will introduce us to the NASA GPM (NASA Global Precipitation Measurement) mission and her work in that area. Public welcome. Please join us. The annual CCAS election of officers takes place July 10th.

Reminder: Summer Star Parties began June 26 and continue every Thursday at 8:30pm until end August. Public welcome.

In this issue: Lots Going On at the Dome / New member / Election coming: need nominees / Looking for speakers August & later / Equipment notes / "Discover Astronomy" app for newbies / Dark Skies in Maine / Ceres and Vesta 10" / many planets

Obsession Dob. Gail had the 16" working well also providing views of Saturn using our excellent new

[Thanks to Kim Sullivan for her note and donation.]

Ethos 13mm eyepiece. The highlight for the evening was a "good as it gets" five-minute horizon-to-horizon overpass of a *blazing* (mag -3.2) International Space Station; this was as good an ISS viewing as many of us have ever seen.

Many thanks to Joel and Bernie for sending us these informative and entertaining reports on an amazing spectrum of outreach taking place these days at our observatory. Thanks also to teachers in the D-Y system, their students, and many supportive parents for taking up the challenge and coming out to learn about the day and night sky!

Some Equipment Notes from the Dome:

Joel reports that Gus Romano has facilitated non-profit donations of computers from his former employer: much needed upgrades to existing equipment. Gus is helping set up these new machines including assistance in accessing copies of Windows 7 operating system software from D-Y sources.

Many thanks to Werner Schmidt for underwriting our purchase of a new 13mm Ethos eyepiece!

... and a big thank you to Mike Hunter for building a new parallelogram mount for use with binoculars at the observatory. The mount is modeled after the one Gail Smith has lent to the observatory. A parallelogram mount for binoculars is especially valuable when multiple observers wish to look at the same target: once someone has centered that target in the viewing field, the binoculars can be raised or lowered to fit the eye-level of all interested observers without losing the target in question.

Minutes:

The minutes of our June meeting are on our website; click on the "Minutes" button at www.ccas.ws or go to <http://www.ccas.ws/minutes/ccasminutes061214.pdf>

Special Announcements:

We have two somewhat unusual announcements to make this month, one offering an iPad app that should prove very valuable to "new" amateur astronomers and the other offering a special opportunity for very dark sky viewing.

"Discover Astronomy" app for iPad and Android tablets:

Get to know the night sky with Astronomy magazine's new app for iPad and Android tablets. Only \$1.99 - Great for beginners.

Google "Discover Astronomy App" or go to website address provided in our reference 7 at the end of this *First Light*.

I have downloaded the app and think it would be a most valuable tool for "new" aficionados of our amateur astronomy hobby to learn "how to" think about and observe the night sky. Anyone interested please contact me and I'll be glad to give you a demo. Useful for us grizzled old observers, also.

Dark Sky Star Party and Retreat at Medomak Retreat Center in Washington, Maine:

David Brenner sent this announcement to info@ccas.ws and asked if we might put it in our newsletter. This looks like a very attractive opportunity.

My name is David Brunner, and I am the Director of Medomak Retreat Center in Washington, Maine. We are located in the mid-coast region of Maine (approximately 3 hours outside of Boston), and we have some of the darkest skies in the northeast with a limiting visual magnitude of 6.3 (SQM value: 21.3 MPSAS).

This year, August 19-23, 2014, we are putting on a 4 night star party and retreat aimed at providing excellent observing, along with some creature comforts that are often lacking at your standard star party. Medomak is an adult retreat center and family camp that has comfortable cabins, excellent food, as well as a power ready observing pad for your telescopes and equipment (We have some house telescopes, too). Additionally, this retreat is being limited to a maximum of 50 people, so there's plenty of space to spread out and not worry about anyone tripping over your equipment.

Our retreat is facilitated by Sky and Telescope's Senior Contributing Editor J. Kelly Beatty, amateur telescope maker Bruce Berger, and renowned artist (and amateur

astronomer) Greg Mort. We hope you can join us for four days and nights of spectacular viewing, fascinating talks and presentations, and some nice creature comforts.

For more information check out this website:
<http://www.medomakretreatcenter.com/starparty.php>

or contact David at family@medomakcamp.com

July Observing:

Mooncusser's Almanac and Monthly Alert¹			
JULY 2014			
Object	JULY 1 (EDT)	JULY 15 (EDT)	JULY 31 (EDT)
Sun	R: 05:10 S: 20:19	05:19 20:13	05:34 19:59
Moon	R: 09:30 S: 22:30	22:02 09:32	10:13 22:00
Mercury (predawn)	R: 04:23 S: 18:52	03:53 18:43	04:46 19:37
Venus (predawn)	R: 03:13 S: 17:57	03:21 18:22	03:42 18:42
Mars (evening)	R: 13:34 S: 00:45	13:11 00:03	12:50 23:19
Jupiter (early evening)	R: 06:32 S: 21:21	05:53 20:36	05:08 19:45
Saturn (evening)	R: 15:52 S: 02:12	14:55 01:16	13:53 00:12
Uranus (late nite)	R: 00:38 S: 13:27	23:44 12:32	22:40 11:29
Neptune (evening)	R: 23:09 S: 10:09	22:14 09:12	21:10 08:08
Pluto (predawn)	R: 20:06 S: 05:41	19:10 04:44	18:06 03:39

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

Here are observing highlights for July at Cape Cod:

- Asteroids Vesta and Ceres are only 10' apart the night of July 4-5, 2014:
 Please revisit the cover story in our May issue on the very close approach asteroids Ceres and Vesta will make this month after more than two months of a slow and steady approach to one another. Finder charts can be found in our May *First Light* as well in articles in the July issues of *S&T* and *Astronomy*. A very special observing opportunity: not only the night of closest approach (7/4) but many nights preceding and following. Try binoculars!
- July is the second month in a row this year when you can see **every planet** at least some time of night at Cape Cod. Check out apparition times in our Almanac at left. Even Pluto: the dwarf planet is at opposition on our 4th of July and "blazes away" at mag 14.1! Try it a couple of hours after rise times as shown at left.

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

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 late night and one *prime time* occurrences of the minima of algol for us this month: Friday-Saturday 7/4-7/5 at 1:01 (am), Wednesday-Thursday 7/16-7/17 at 00:16 (am) and (prime time) Saturday, 7/19 at 9:05pm.

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.

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

<p>Moon Phases, July, 2014</p> <p>First QTR Saturday, July 5th at 7:59am EDT</p> <p>Full Moon Saturday, July 12th at 7:25am, EDT</p> <p>Last QTR Friday, July 18th at 10:08pm EDT</p> <p>New Moon Saturday, July 26th at 6:42pm EDT</p>

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

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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 July:
<http://www.astronomy.com/magazine/sky-this-month/2014/05/pluto-comes-to-the-fore>
See also S&Tresources 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) Website for Astronomy Magazine's "Discover Astronomy" App:
http://cs.astronomy.com/asy/b/astronomy/archive/2014/06/18/get-to-know-the-night-sky-with-astronomy-magazine-39-s-new-app.aspx?utm_source=SilverpopMailing&utm_medium=email&utm_campaign=ASY_News1_Sub_140620_Final&utm_content=