



First Light

The Newsletter of the Cape Cod Astronomical Society



May, 2015

Vol. 26 No. 5

The Annual Saturn Show begins in May and lasts thru September...



Saturn peaks for the year on May 22.

On or around that date.....

- It is at opposition; i.e. in the sky all night.*
- It is at its brightest (mag 0.0).*
- Appears as big as we will see it this year (42" in diameter).*
- Nicely tilted for study of rings, interesting phenomena of rings and moons.....*

Next Monthly Meeting: is Thursday, May 7th, at 7:30pm. Bernie Young, Research Director at our Schmidt Observatory, will discuss spectroscopy in astronomy: relevance, capabilities, equipment, goals, and software demo. The meeting will be held, as usual, in the DY High School library. Come learn about spectroscopy and see our new Samsung 65" TV. Public welcome.

Reminder: The next "Quarter Moon Saturday" Star Party takes place at The Dome on May 23rd, at 8:30pm. Public welcome.

In this issue: Saturn season begins /Don't forget AmazonSmile / CCAS 65" TV / Mattacheese 6th Graders Visit Dome /Last "Quarter Moon Saturday" Star Parties May 23 and June 20 / Summer Thursday SP begin July 9th / "Four -planet" May /

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 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).

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

CCAS News Items and Current Events:

Dues:

If you have not yet paid your dues for the 2014-2015 cycle, [please bring your check to the May 7th meeting](#) or mail to: CCAS, 34 Ridgewood Rd., Orleans, MA 02653. Thank you.

President:

We have yet to find a member to serve as CCAS President since the end of Mike Hunter's term. If you know of anyone who might consider serving in this position, please let one of the current officers know.

The Cape Cod Astronomical Foundation is now participating in the AmazonSmile program (<http://www.smile.amazon.com>); please go to this amazon login page and sign up. Going forward, 0.5% of the price of all your Amazon purchases will be donated to the Cape Cod Astronomical Foundation when you are a signed up participant.

CCAS Meetings:

Thanks to Joel Burnett, Director, for his excellent presentation of the "**State of the Observatory**" at our meeting in the Observatory on April 2nd.

The leadership and staff of our Werner Schmidt Observatory are gearing up to improve significantly in the near future our capabilities to make spectroscopic observations of celestial targets. (Please see the information on new equipment below at "Under the Dome".

Bernie Young, Director of Research at the WSO, will present "**Astronomical Spectroscopy**" at our meeting on May 7th. He will describe the relevance of spectroscopic observations, the capabilities we want to develop at the WSO, the equipment we have or will acquire, and what we hope to do with it. If internet access is available, Bernie will show a demo of the software we will be using. Public welcome.

Mike Hunter, former President of CCAS and current at-large member of the Executive Committee, will help us understand key cutting edge research areas in cosmology at our meeting on June 4th. His presentation is entitled: "**No Theory of Everything, Why Strings, and a Whole Lot of Inflation.**" Come to this meeting and you might begin to understand some important key concepts in current cosmological thinking better than you do now! As always, public welcome. Please join us.

Alicia Soderberg, a professional astronomer from Harvard, will speak on **Supernovas** at our meeting on July 2nd. As always, public welcome. Please join us.

Yes, in case you had any doubts, the July meeting [will be on July 2nd](#) this year even though Independence Day is the following Saturday.

Special News Item:

NEW 65" Samsung TV in the DY Library

We are pleased to announce that a new big screen 65" Samsung TV has been purchased by CCAS for use in our meeting presentations at the DY High School Library. The older smaller TV we have used for a few years was a great improvement over the old fuzzy projector we had, but the images in the old TV were just too small to see easily. While it still may be a good idea to sit in or near the front row of the church, images and text will be much easier to see clearly with the larger TV during meeting presentations.

Reminder:

Gus Romano (or his delegate) "hosts" a Dutch-treat dinner gathering for members and friends on each CCAS meeting night (before the meeting) at the South Yarmouth Hearth & Kettle restaurant at 5:45pm; (the meetings begin at 7:30 at D-Y.) The speaker for each meeting is always invited.

Please join the group each month on meeting night to dine and talk about all things interesting, including astronomy. The H&K is at 1196 Rte 28, South Yarmouth, about a half mile west of the Station Avenue/Main Street intersection with Rt. 28 (traffic light).

Mike Hunter, former President, and Charlie Burke, CCAS Vice-President are our Program Co-chairs. Please contact either one of them or info@ccas.ws if you have any leads on speakers for upcoming meetings.

Members, **PLEASE** participate in the effort to recruit good speakers to present programs in astronomy and related sciences at our meetings.

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

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

Minutes:

The minutes of the April meeting are on our website; click on the "Minutes" button at www.ccas.ws or go to <http://www.ccas.ws/minutes/ccasminutes040215>.

From the Dome:

Visits from Mattacheese Middle School (DY Regional School District) Sixth Graders to The Schmidt:

Sixth Graders from Mattacheese visited the Dome on five recent evenings: March 31, April 3, April 7, April 9, and April 10.

This was a wonderfully orchestrated effort. The Mattacheese coordinator, Ms. Hyde-McGuire, reviewed key elements accomplished already in the science curriculum in the classroom for these students ahead of time for us so Joel Burnett and Observatory staff members could plan connections between those curriculum items (e.g., density) and the properties of items we might view in the night sky (e.g., density of Jupiter.) Good job, teachers and Observatory folks!

The last two **once-a-month "Quarter Moon Saturday" Star Parties** are scheduled for May 23rd and June 20th.

Please note: each event begins at 8:30pm, an hour later than has been recent practice (because the sun sets later.)

These gatherings are held on the Saturday closest to the date of the First Quarter Moon. All events are open to the public.

Our summer season "every week" Thursday Star Parties begin July 9th and run through August 27. Start time: 8:30pm. Public always welcome.

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, please send an email to <mailto:info@ccas.ws>.

Observing:

Observing Resources:

Please see resources in the May issue of *Astronomy Magazine*, pp 36-43, and *Sky and Telescope*, pp 43-61, and Reference 5 for good guides to the sky. See p 41 in *Astronomy*, and p 52 in the *S&T* and also reference 6 for positions of the moons of Jupiter for May. Details for special phenomena of Jupiter's moons for May can also be found on p52 of the *S&T*.

Sky Highlights for May:

We highlighted the beginning of **Saturn** season on page 1. Of nearly equal interest in this "four planet month" are the continuing show of **Jupiter and its moons**, maybe the best **Mercury** viewing of the year, and a blazing **Venus** migrating slowly toward Jupiter from Taurus through Gemini during May.

Jupiter and its moons start May high (55° at 9pm) in the western sky at month's beginning and is still in great viewing position (37° altitude) at prime time at month's end.

Moonscuser's Almanac and Monthly Alert¹			
MAY 2015			
Object	May 1 (EDT)	May 15 (EDT)	May 31 (EDT)
Sun	R: 05:37 S: 19:38	05:20 19:53	05:09 20:07
Moon	R: 17:23 S: 04:45	04:06 17:07	18:07 04:25
Mercury (evening)	R: 06:24 S: 21:28	06:14 21:29	05:15 19:48
Venus (evening)	R: 07:47 S: 23:18	07:59 23:32	08:19 23:31
Mars (evening)	R: 06:10 S: 20:37	05:45 20:33	05:21 20:26
Jupiter (evening)	R: 11:57 S: 02:17	11:09 01:25	10:16 00:27
Saturn ("sll nite")	R: 21:14 S: 07:03	20:14 06:04	19:05 04:57
Uranus (predawn)	R: 04:43 S: 17:36	03:49 16:44	02:48 15:45
Neptune (predawn)	R: 03:15 S: 14:19	02:21 13:25	01:18 12:23
Pluto (late nite)	R: 00:22 S: 09:55	23:26 08:59	22:22 07:55

And don't forget to research cool things still going on with Jupiter's moons this month, for example, on May 27th, the moon Ganymede eclipses Io at 11:50pm resulting in Io

“disappearing” and shadows of both on Jupiter. Maybe Bernie will open the Dome for a visit?

Don't miss likely the best appearance all year of **Mercury** this month. Mercury is at greatest eastern elongation (separation from the sun as we view it) of 2015 at 1am on May 7th. That night the bright (mag 0.2, 8” diameter one-third-lit crescent) is 11° high in the evening sky 45 minutes after sunset at Cape Cod. Spend an hour at a Bay beach and enjoy the sunset and gradual appearance of Mercury on the evening of the 6th and evenings before and after. How long after sunset until you can see the planet with binoculars? How about with unaided vision?

And don't forget to enjoy Venus in the same picture: a very brightest (mag -4.2) “half-planet” generally 17° above and to the left of little Mercury.

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

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 is one convenient evening occurrence of the Minima of Algol at Cape Cod during evening hours in May: Saturday, May 16th, at 9:24pm.

Using binoculars or a small telescope, try to begin viewing two to three hours before the minima to watch the dimming (record magnitudes now and then by comparing Algol with neighboring constant magnitudes) and up to two to three hours after the minima to watch the brightening.

Moon Phases, May, 2015

Full Moon, Sunday, May 3rd, at 11:42pm EDT

Last QTR, Monday, May 11th, at 6:36am EDT

New Moon, Monday, May 18th, at 12:13am EDT

First QTR, Monday, May 25th, at 1:19pm EDT

“Quarter Moon Saturday” Star Party: May 23rd.

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

Continued on next page.....

Cape Cod Astronomical Society

President	Position is Open	
Vice President	Charles Burke	5083949128
Secretary	Gus Romano	7819294770
Treasurer	Peter Kurtz	5082550415
Observatory Director	Joel Burnett	5082217380
<i>First Light</i> Editor	Peter Kurtz	5082550415

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

Cape Cod Astronomical Foundation

Chairman	Werner Schmidt	5083629301
Vice Chairman	Michael Hunter	5083859846
Director of R&D	Bernie Young	5083941960
Secretary	Ed Swiniarski	5088965973
Treasurer	Pio Petrocchi	5083621213
Observatory Director	Joel Burnett	5082217380
Observatory Phone Line		5083984765

The **Cape Cod Astronomical Society** meets at 7:30 pm on the first Thursday of every month in the library of the DennisYarmouth 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 K12 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 May: <http://www.astronomy.com/magazine/sky-this-month/2015/03/saturn-at-its-glorious-best> 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>