



First Light

The Newsletter of the Cape Cod Astronomical Society



July, 2009 **Vol.20 No. 7**

- **MEMBER DUES, \$30*, due NOW!**
 All members, please be reminded that the 2009-2010 dues are due end of June. Our next meeting, July 9th (meeting moved to evade the week of the 4th), presents an easy opportunity to hand your check to our Treasurer be he old or new. Please remember that many of our outreach activities and excellent speakers programs do entail moderate expenses and both these vital activities cannot grow and prosper without your annual support.
 * Student: \$15; Summer Only: \$15; Spouse of Member: No charge.
- **Annual Election of Officers:** at our upcoming July 9th meeting. We need a nominee for either Treasurer or Secretary. Peter Kurtz, a current nominee for Treasurer, has agree to accept the nomination for Secretary if someone will volunteer to be nominated for Treasurer. If you are willing to serve, please contact one of the members of the nominating committee before July 7th: Mike Hunter, Jon Greenberg, or Gary Derman.
- **Next Monthly Meeting:** is Thursday, July 9th at the DY Library. Program notes below.
- **Public Star Parties:** every Wednesday, at 8:30pm at the Schmidt. Star parties will be held every Wednesday night from June 3 through August 26th, weather permitting. Check the main page of our website after 6pm to find out about cancellations when the weather looks poor.
- **Next Executive Board Meeting:** is Tuesday, July 21st at the Snow Library. The date, time and place may be changed after the election on July 9th.[†]

Bright New Stars:

We like to welcome new members in our Society in this section of First Light each month. If you are a new star 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).

Thoughts on First Light

“First Light wants YOU!”

CCAS Events

Many thanks to Tom and Jackie Leach for their wonderful presentation at our June meeting on their visit to Philadelphia, the Franklin Institute, and the special exhibit “Galileo, the Medici, and the Age of Astronomy.” All

present were inspired to see the exhibit which runs through 7 September. It is worthy of note that the main editorial in the July issue of S&T Magazine, page 7, reviews the exhibit at the Franklin Institute and exhorts all who can to make a visit.

In his presentation, Tom also made clear that wearing a shirt or jacket bearing the CCAS emblem (available online; click on “Gift Shop” at our website) is guaranteed to get you special privileges at the exhibit.

Many thanks to our current slate of officers:

- Gary Derman, President
- Tom Leach, Vice President
- Stan Rivers, Secretary
- Kelvin and Anne Parkinson, Treasurer

for their most recent year of important service to the Society and its mission. Very special thanks to Kel Parkinson for his five years of faithful and careful service as our Treasurer.

Don't miss our July 9th meeting at D-Y! Hugh Blair-Smith will present his experiences working with NASA on Apollo, the Space Shuttle, and the current Lunar Reconnaissance Orbiter. Hugh's specialty was the embedded computers required for inertial navigation and other functions on these projects.

Our annual election of Officers will take place at the Business Meeting following Hugh's talk.

On August 6th, our own Betsy Young will give a presentation on astronomer Maria Mitchel's journey from Nantucket to become the first Director of the Observatory at Vassar College. In 1847, Maria, aged 29, discovered a comet from the rooftop of her home in Nantucket. She was an abolitionist, a suffragette, and cofounder of the American Association for the Advancement of Women.

On September 3rd, former CCAS president Gary Derman will talk about Einstein's telescope and its use in the search for the Dark Matter and Dark Energy that occupies 95% of the universe. Discarded as not practical by Einstein when he first suggested it, the phenomenon has already been used to find new planets and to see objects too distant for even the Hubble telescope alone. Amateurs and professionals alike will use it for the new astronomy of the 21st century.

Highlights of the June 4th CCAS Business Meeting are available in the minutes of Secretary Stan Rivers. Click on the "Minutes" button at www.ccas.ws or go to (<http://www.ccas.ws/minutes/ccasminutes060409.html>).

Subjects covered include Tom Leach's presentation on the Galileo exhibit, nominations for CCAS officers, changes in CCAS plans for the International Year of Astronomy (the next major activity will be a special slate of presentations and star party on the fall National Astronomy Day, October 24) and discussion of ideas on local **light pollution abatement**. In connection with this last, we have found a very good online resource for the Power Point presentation of Dr. Mario Motta on how to fight light pollution. This resource also includes the url for the anti-light pollution ordinance of the city of Gloucester, and related links. The leading url is <http://www.atmob.org/library/resources.php>

Would you like to serve as an Officer of the Society on the Executive Board?

Know someone who might be willing that you would like to recommend? We vote for officers at our July meeting. Please ask for information and/or volunteer nominees to any member of our nominating committee: Mike Hunter (Chair), Gary Derman, Jon Greenberg.

Executive Corner

The Board met June 16th. Topics included a year end

report from the Treasurer indicating a tight budget for the upcoming year, Gary Derman's summary of membership at present (55 dues-paying members), the need to grow membership, kudos to the outgoing officers, and a commitment by all to facilitate the transition to new officers after the upcoming election.

Unless the new officer slate chooses otherwise, the next meeting is planned for Tuesday, July 21st at Snow library. As of this writing, the room is not yet reserved.

From the Dome

Most of the action at the Dome in June can be described in two words, clouds and rain. However, we did have a very good star party on Wednesday, June 17. Eleven society members and three guests were treated to dark, stable skies. It was great to see such a large contingent of members.

The views of M13 and M51 were personal lifetime bests for Mike Hunter. With hundreds of individual stars visible, M13 was a WOW! The spiral arms of M51 were clearly visible. Both were viewed through the 16" which has been performing quite well lately. Paul Cezanne's Cube-mounted 8" Schmidt-Cass also performed well.

Ed Swiniarski and Bernie Young were performing R&D on the 18" Obsession Dob to develop/revive its "Go To" capabilities. Between "Go To" trials and realignments, the big scope once again showed off its fine optics. If only it would start to make the right moves. We're getting closer. Special thanks to Bernie Young for discovering and fixing the need for correct electrical fuses in the electronics responsible for "Go To." The scope continues to work in "Push To" mode; we think "Go To" and tracking might be worked out by the next clear night.

Mark Wednesday nights on your calendar. Bring friends, bring family. Come out to The Schmidt. (Only stay home if the "red box" noting weather cancellation shows up on our website main page after 6pm.)

Mike Hunter, Director

Reminders:

Your editor has prepared a flyer on our summer star parties which can be posted anywhere. If you do not yet have your own copy for reproduction and distribution, please let us know at info@ccas.ws and we will send you a copy.

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.

Foundation News...

FL received this very interesting information in a note from Werner Schmidt...

We are rethinking our plans for imaging objects with our observatory equipment. While our thoughts have always been to use the 16" scope for this purpose, we now believe it makes more sense to use other scopes for this purpose, stationed outside the dome, within 20 or 30 feet from the observatory. This would mean purchasing a good quality go-to mount, using either our 4" refractor or other available 6 or 8" telescopes with our CCD camera. We might want to pour a 4 by 4 foot concrete pad to have a solid mounting for the equipment when imaging is taking place. This proposed change would simplify the 16" scope use by removing the derotator, the CCD camera, the flip mirror box and the 4" refractor. We could then use the electric focuser, eliminating the mirror shifting now encountered with mirror focusing. It would also shorten the distance of the eyepiece location so that the eyepiece would clear the bottom of the telescope fork at all times. The use of shorter focal length scopes-the 16" Meade scope covers only about 11 arc minutes-would also make it much easier to locate and utilize guide stars to get better tracking when imaging. The go-to mount we are considering - among others-is the Losmandy G11, at a cost of about \$3600. The available Foundation funds are well above this amount so we would not have a money problem. We would plan to start this project very soon and would appreciate any comments from our members. The question of light pollution at our observatory location and its possible effect on our proposed outdoor imaging has been raised and we will try and check this before we make any major purchases.

Werner Schmidt

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

July Observing:

Mercury is behind the sun for much of June; it is best viewed toward the end of the month (sets 53 minutes after the sun on July 31.)

Venus (magnitude -4.3) and **Mars** (magnitude a much dimmer 1.1) make a close (about 10°) but unequal pair for naked eye viewing in the predawn sky this month. The pair make an especially attractive naked eye or zoom-lens photo opportunity predawn on/around the 18th when a crescent moon, the Pleiades, and the Hyades complete the picture all within a 15° diameter circle.

Jupiter rises late evening (10:43pm) at the beginning of July but by month's end, rising at 8:38pm, it replaces Saturn as the "star of the show" for evening hours' observing. Jupiter dances very near Neptune for most of July; you will never find a better pointer for the dim blue planet: the two are separated by only 41' on July 1 and only 1° 46' at month's end. Look for Neptune only 34' NNW of Jupiter on the 9th and only 37' N on the 13th; amazingly, during these three special days, the 5th magnitude star μ -Cap sits between the two planets. So, if you are looking at Jupiter and its moons in a good telescope this month [*always available at our Wednesday night star parties*], try to see the nearby blue planet.

Hurry! Hurry! Supplies last only to end month: **Saturn** with its moons is still the main attraction in evening hours for most of July but by end month it sets only two hours after sunset and will not be a prime evening observing target again until well into 2010.

Check out the wonderful locator charts in the July issue of S&T Magazine for the positions and antics of the **moons of both Jupiter and Saturn** (p. 49) occultations and eclipses of Jupiter's moons on each other for July and August (pp. 51 and 52) and finally, movement of Jupiter's moons and their shadows behind the big planet or its own shadow or across its face. All of these happenings can easily be seen *through CCAS scopes at our Wednesday night star parties.*

If you have a good telescope at hand [*once again, always available at our Wednesday night star parties*] **Pluto** rises early enough at start July (an hour before sunset) to be a challenging but available evening target during all of the month.

July marks the beginning of a two month period of heightened **meteor activity**. The biggest meteor shower of the year, the Perseids, peak on August 12th during an almost full moon. Middle (quarter moon) to late (new moon) July may be a better time to look for Perseids because of weaker moonlight. While higher and flashier activity is usually seen after midnight when the leading edge of the earth's rotation is heading into the debris, good activity should be observable whenever the sky is dark.

The Delta Aquarids peak July 27/28. This lesser shower will provide a few "shooting stars" for Cape Codders; however, the best viewing will be possible at locations farther south where the radiant is farther above the horizon.

Other Observing Highlights for July:

If you are looking for an excuse for a world excursion, a total eclipse of the sun takes place over parts of India, China, and some Pacific islands on July 21.

Mooncusser's Almanac and Monthly Alert¹

By Peter Kurtz

JULY, 2009

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Object	July 01 (EDT)	July 15 (EDT)	July 31 (EDT)
Sun	R 05:10 S: 20:19	05:19 20:13	05:34 19:59
Moon	R: 15:29 S: 01:08	23:41 13:39	16:25 01:02
Mercury (predawn)	R: 04:11 S: 19:16	05:25 20:27	07:04 20:53
Venus (predawn)	R: 02:33 S: 16:44	02:28 17:05	02:33 17:28
Mars (predawn)	R: 02:12 S: 16:32	01:47 16:28	01:22 16:20
Jupiter (late night)	R: 22:43 S: 09:11	21:45 08:11	20:38 06:58
Saturn (evening)	R:10:45 S: 23:44	09:56 22:51	09:01 21:51
Uranus (late night)	R: 23:53 S: 11:45	22:58 10:50	21:54 09:45
Neptune (late night)	R: 22:39 S: 9:10	21:43 08:14	20:39 07:09
Pluto (evening)	R: 19:10 S: 05:06	18:13 04:09	17:09 03:04

Moon Phases, July, 2009

First QTR Monday, July 29th at 7:28am EDT

Full Moon* Tuesday, July 7th at 9:21am EDT

Last QTR Wednesday, July 15th at 9:53 EDT

New Moon** Tuesday, July 21st at 10:35pm EDT

First QTR Tuesday, July 28th at 4:00pm EDT

*Smallest of 2009. **Closest of 2009; Large Tides.

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 and the information or sources will be provided.

News and Stories of Interest:

Update on Mars Rover Opportunity:

Now and again for over a year, First Light has promised an update on the intrepid and steadfast Mars rover Opportunity. What happened after leaving Victoria crater?

A recent article in Astronomy Magazine Online gives us a concise update: After two years in and around Victoria Crater from September 2006 through August 2008, the rover Opportunity has left the Victoria Crater area. Since then, the rover has been on its way to study a crater named Endeavour that is about 20 times bigger than Victoria. AS of now, it has driven about one-fifth of what could be a 10-mile (16-kilometer) trek to this new destination.

The present online article⁴ nicely summarizes what Opportunity learned about geologic, wind, and water history of Mars while in and near Victoria crater for two years. What will Opportunity teach us next?

In this connection, the July issue of S&T magazine, page 22, has a very interesting article reviewing the scientific yield from all the recent several years of research involving orbiters, landers, and rovers on Mars. Accomplishments of rovers Opportunity and Spirit are highlighted in this review.

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.

.....A Project Idea?
A Photo?
A Piece of Club History?
A Short Profile on Yourself, New or Old Members!?

Cape Cod Astronomical Society

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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.



Reference Information:

- 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 2007*, and other sources. The *Observer's Handbook, 2007 and 2008*, 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 December-January 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.astronomy.com/asy/default.aspx?c=a&id=8303>