



First Light

The Newsletter of the Cape Cod Astronomical Society



May, 2011

Vol.22 No. 5

Editorial

For more than a year now, a theme from ancient times or an editorial has occupied this beginning space in First Light. To date, the topics were all chosen or composed by the First Light Editor. Perhaps you might have a theme or editorial position related to astronomy which you might enjoy sharing with others in this space. If so, please send to us at info@ccas.ws Thank you.

- Limitations in time necessitate this being a much abbreviated edition of First Light. Hopefully we can return to full features in next month's edition.
- **Next Monthly Meeting:** is Thursday, May 5th at the D-Y Library. Dr. Gregory Skomal, marine biologist, underwater explorer, photographer, aquarist, and author, leads the Massachusetts Shark Research Program (MSRP). Greg will present information on technology used to track sharks and provide information on his current projects including tagging and subsequent tracking of Great White Sharks found off Chatham Harbor. (Please see the moving banner and the "tail of the rocket" on our website's home page for more information on future speakers and topics.)
- **In this issue:** Sharks are coming! / Astro Jam / Harwich Observing / Solar Observing Capabilities / Summer Star Parties 2011 (please see "From the Dome")

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*.

If you are a regular contributor, thank you very much!

CCAS and Related Events:

Many thanks to Peter Howes for his presentation: "Evolution of Large Mirror Telescope Systems at the Haleakala Observatory," at our April meeting. Peter gave an informative and entertaining talk on the evolution, operation, and maintenance of large

telescopes at the Air Force Maui Optical Station beginning with "old technology" large solid mirror scopes through some of the earliest important events in the development of compensated imaging. Peter provided a tutorial in large telescope technology spiced with most amusing stories about the foibles of self-important military commanders.

At our meeting on May 5th, Dr. Gregory Skomal will present "**Magnetic Navigation Clues in Sharks**". Greg is an accomplished marine biologist, underwater explorer, photographer, aquarist, and author. He has been a senior fisheries biologist with Massachusetts Marine Fisheries since 1987 and currently heads up the Massachusetts Shark Research Program (MSRP). Much of his current research centers on the use of acoustic telemetry, satellite-based technology, and animal-borne imaging to assess the physiological impacts of capture stress on the post-release survivorship and behavior of sharks. Recently, Dr. Skomal has headed a team tagging Great White sharks off Light House Beach and south in Chatham in an effort to understand their migratory patterns and behavior.

On June 2nd, our own Dr. Michael Hunter will present

“Practical Astrophotography Using Digital Single Lens Reflex Cameras.” Mike is the Director of the Werner Schmidt Astronomical Observatory in South Yarmouth, MA. He has an extensive background in the use of computer driven "go to" telescopes and understands the pitfalls and application of DSLR cameras with these units. If you ever considered imaging at this scale you should not miss this talk.

Thanks again to Tom Leach, who continues to put together great programs of speakers for our meetings. Speakers for the CCAS Lecture Series are now fully scheduled through our June meeting!

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 President and Program Chairman. For sure he will follow up.

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

Astro Jam at Barnstable High School: Mike Gyra, Astronomy Teacher at Barnstable High School and Director of the High School’s Astro Park, and Cillea Houghton, Senior Student who completed an Astronomy Class project profiling CCAS astronomers, sent an invitation to all CCAS members to attend/participate in the annual Astro Jam on Friday, May 13, from 5:30 – 8:00 pm at the high school. Students enrolled in the Astronomy program will be displaying their projects. Members, please *do* participate in this event, an opportunity to view some great projects and promote interaction with our young astronomy students.

Explore the Night Sky at Harwich Elementary School
Join Harwich Harbormaster, Tom Leach, at the Harwich Observatory located at Harwich Elementary School, #263 South Street, Harwich Port, on Tuesday, May 24th at 9:00 pm. Clouds cancel. *Directions:* From Harwich Center, go west on Great Western Road 0.4 miles. Turn left onto South Street. Turn left onto School House Drive

The **minutes** of our April meeting prepared by Gail Smith and Charlie Burke, our Secretary, are on our website; click on the “Minutes” button at www.ccas.ws or go to <http://www.ccas.ws/minutes/ccasminutes040711.pdf>

Executive Corner

Members of The Executive Board exchange ideas by email and phone on a continuous basis and now and then

formally convene by conference call. Anyone wishing to offer an item to the agenda, please contact Tom, Paul, Peter or Charlie.

From the Foundation...

Werner Schmidt sent in this announcement concerning plans to add to Solar Observing capability at our Observatory:

We have decided to add sun scope activity to our observatory for a number of reasons. It is of course a day-time activity which has been judged by the high school administration as being capable of stimulating interest among the students in our observatory.

There are actually two distinct types of observations of the sun, the common use of aluminized mylar screens used to safely display the sun and sun spots using standard telescope equipment and the more sophisticated use of the hydrogen alpha filter which displays the sun texture and prominences as well as plages and flares.

As prelude to the new capabilities, we have observed the sun spots using our mylar sun screen on the 16" scope. While we managed an impressive display, we discovered that all Meade telescopes do not have the sun in the database and it takes a combination of standard Meade alignment procedures and the laptop computer to find the sun and track the image. Tracking is important. The Celestron and all other “Go To” scopes we have examined do have the sun in their database and will track.

Some of us, Jon Greenberg, Greg McCauliff, Mike Hunter, and Ed Swiniarski have made preliminary runs with Jon's 40 mm Solar Max sun scope. I made an adapter so we can mount Jon's Max Scope 40 piggy back on the 16" Meade scope without any problems.

It is still difficult to find the sun on Meade scopes, as ridiculous as this may sound. In essence, we need more practice.

If things go as planned, we visualize a 40 mm Solar Max scope piggy-backed on our 8" Celestron scope equipped with a mylar sun filter. This would give us views of the sun spots on the 8" Celestron and of the prominences with the Solar Max 40. The Solar Max 40 weighs only 2 lbs. 9 oz., so it would seem a possible solution.

Since the Celestron shouldn't have any trouble finding the sun, we would then entertain the idea of training a high school teacher to use this equipment outside the observatory.

From the Dome...

While the viewing weather from November through April has been somewhat poorer than terrible, staff activities went forward. Bernie Young very astutely planned observation of an occultation of kappa Piscium by the moon for one of the better seeing nights. His recording of the timing of the moment that the moon crossed in front of the star was even better; his time was in the center of the distribution of all observations made by others as well as closest to the expected value for the occultation time. Those results came as the result of much hard work and very close attention to detail. Good science is not a random event.

Bernie, teaming with Gail Smith and Charlie Burke, has the Losmandy G11 mount functioning well and is now working on making the computerized remote control of the mount work properly. It was quite exciting to watch them align the scope from inside the main room of the observatory while the scope was outside in the cold. It was also quite warm.

Speaking of warm, the 2011 Summer Star Party schedule has been set. **2011 Summer Star Parties** will begin on Thursday, June 16 and continue each Thursday evening, except for first Thursdays of each month when our Society has its monthly meeting, through the end of August. Starting time will be 8:30 pm.

Werner Schmidt has reported above on the work Greg McAuliffe, Jon Greenberg, and he have been doing to provide smooth access to solar observing capabilities at our observatory.

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

May Observing:

Please see the May issues of *Astronomy Magazine*, pp 36-51, and/or *Sky and Telescope*, pp 43-49, for good overviews of sky highlights for May. See reference 4 for the web address for *AM's* online edition of "The Sky this Month" for May.

Highlights for May include the following:

- The Eta Aquarid meteor shower peaks under dark skies on the evening of May 6th. Observers in the northern hemisphere can expect to see up to 25 meteors per hour.
- Saturn and its moons continue their special seasonal appearance in the evening skies this month.
- Pre-dawn viewing will provide spectacular views of groups of any of the planets noted as "predawn" in the adjacent table.
- There are two seasonal overviews in the April issues of *AM* and *S&T*: eight galaxy challenges in spring skies for large telescopes (*AM*, p 58) and Deep Sky Showpieces for Spring (*S&T*, p 34.)

Mooncusser's Almanac and Monthly Alert¹			
By Peter Kurtz			
May 2011			
Object	May 1 (EDT)	May 15 (EDT)	May 31 (EDT)
Sun	R: 05:37 S: 19:38	05:21 19:53	05:09 20:07
Moon	R: 04:34 S: 18:18	18:02 04:07	04:16 19:08
Mercury (predawn)	R: 04:47 S: 17:21	04:29 17:37	04:29 18:52
Venus (predawn)	R: 04:37 S: 17:09	04:22 17:40	04:09 18:17
Mars (predawn)	R: 04:55 S: 18:01	04:26 18:01	03:53 17:59
Jupiter (predawn)	R: 04:56 S: 17:59	04:09 17:20	03:14 16:35
Saturn (evening)	R: 16:55 S: 04:46	15:56 03:49	14:50 02:45
Uranus (predawn)	R: 04:09 S: 16:19	03:15 15:27	02:13 14:27
Neptune (after midnite)	R: 02:53 S: 13:35	01:58 12:41	00:56 11:39
Pluto (late night)	R: 23:40 S: 09:28	22:44 08:32	21:39 07:27

Note that the setting times for Mars in preceding table are very close to constant at 6:01pm during May. It turns out that this is very close to true for Mars all the way from December, 2010 through June, 2011. The “constant” set times for these many months is explained by the orbital speeds and relative orbital positions of Mars and Earth at and on either side of the date of conjunction which took place February 4th, 2010. We would all welcome an analysis of this phenomenon if someone cares to volunteer same: either as a feature article in First Light or a presentation at a CCAS meeting. Volunteers?

Moon Phases, May, 2011

New Moon Tuesday, May 3rd, at 2:51am EDT
First QTR Tuesday, May 10th, at 4:33pm EDT
Full Moon Tuesday, May 17th, at 7:09am EDT
Last QTR Tuesday, May 24th at 2:52pm EDT

Anyone having an interest in monthly **Libration and Declination Tables for the Moon**² or **Dates and Times for the Minima of Algol**^{1,3} during this month please contact your editor for information or sources.

**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 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) Here is the web address for Astronomy Magazine's online "The Sky This Month" online for May:
http://www.astronomy.com/en/News-Observing/Sky_this_Month/2011/03/Morning_planet_spectacular.aspx
