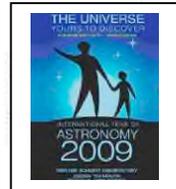




First Light

The Newsletter of the Cape Cod Astronomical Society



June, 2009

Vol.20 No. 6

- **Next Monthly Meeting:** is Thursday, June 4th at the DY Library. Program notes below.
- **Next Public Star Party:** is Wednesday, June 3rd 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, June 16th at the Snow Library.

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 Dr. Tim Barker, Professor of Physics at Wheaton College, for a most informative and spellbinding presentation at our meeting on May 7th. Tim’s talk was entitled “Visual Astrophysics,” an introduction as to how

spectrum, can do so much to enhance our ability to image distant nebulae and other deep space objects. He opened his discussion with a brief review of his own introduction to astronomy and an overview of the astrophysics program at Wheaton College. Dr. Barker used studies of the Ring Nebula (M57, NCG 6720) to illustrate how the spectrum of light emitted by nebulae can inform us as to which chemical elements are present. More importantly, if we know the wavelengths of light emitted by a given nebula, we can use light filters on our telescopes to block out non-target wavelengths to enhance the clarity and brightness of the image we see. Many thanks to Dr. Barker for a most instructive talk. We hope he returns soon.

Our next general meeting will be held on Thursday, June 4th at 7:30pm in the DY library. Tom Leach, CCAS vice president, will speak on the exhibit “Galileo, the Medici, and the Age of Astronomy” which he viewed at the Franklin Institute in Philadelphia. Tom will highlight information from a presentation given by the visiting Director of the Institute and Museum of the History of Science in Florence at the Franklin on April 2nd. That presentation was part of the USA kickoff of the worldwide “100 hours of Astronomy” celebration. The presentation showcases Galileo’s accomplishments, his relationship to the ruling Medici family, his discoveries, and his overall impact on astronomy, physics, math and the evolution of the telescope. The talk and exhibit at the Franklin which Tom attended celebrates the 400th year anniversary of Galileo’s contributions to astronomy.

On July 2nd, 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.

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



Dr. Tim Barker talks about Visual Astrophysics
CCAS regular meeting
May 2009

optical filters, which shut out specific parts of the light

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.

CCAS Programs for National Astronomy Day:

Excellent classroom programs were presented during the afternoon of May 2nd by Jarvis Hunt (“The sun and the planets- misconceptions and how we learned the truth,”) Gary Derman (“Where does this rock come from?,”) and Mike Hunter (“Lives of the stars”). Participation in the afternoon sessions and the evening star party that day was modest (about 20 people) because of showers and overcast most of the time. The half moon peeked through scattered clouds early in the evening program enough to make possible some viewing by folks who never before had observed our natural satellite with a good telescope. Many “Ooohs!” and “Wows!” ensued. Maybe it takes a novice to remind us how spectacular our moon is in the telescope. In this connection, there is a most timely article in “*Observing Basics*” by Glenn Chaple in the June edition of *Astronomy Magazine* (p 14); which reminds us that the moon is the most exciting thing for a person to see after Saturn if you want to really to interest people in looking at the night sky. We “regulars” also should welcome time to look at the moon from crescent to half moon phases whenever we can.

There existed plans to re-offer our May 2nd programs in the heart of our summer tourist season on the evening of July 22nd and again on the Fall National Astronomy Day on October 24th. The programs would consist of two sequential classroom presentations beginning about 6pm followed directly by outdoor workshops and an evening star party. Just recently the decision was made to limit the activities on July 22nd to only the regular summer weekly Wednesday night star party as noted below “Under the Dome.” We will have the classroom/star party combination again only in October.

Highlights of the May 7th CCAS Business Meeting are available in the minutes of Secretary Stan Rivers. Click on on the “Minutes” button at www.ccas.ws or go to (<http://www.ccas.ws/minutes/ccasminutes050709.html>).

Subjects covered include cancellation of our service contract with Meade, discussions on light pollution in East Harwich and the updates on public outreach part of our IYA activities: Ed Swiniarski noted the planned astro presence at Brewster in Bloom was cancelled due to bad weather; Gary Derman noted there will be sun observing sessions planned for the summer festival in Eastham.

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.

Outreach to Students

Peter Kurtz and Gary Derman visited with third to eighth graders of the Boys and Girls Club of Cape Cod in Mashpee on May 8th. Gary introduced the children to telescopes and Peter showed pictures of “what kinds of things we can see in our night sky.” Although the session was a bit chaotic, we were rewarded with strong interest and good questions from some very precocious children one of whom asked, “How big are the batteries on the Hubble Telescope?”

We have been requested to contact and possibly visit libraries of the Barnstable Library system to supplement a system-wide children’s summer reading program called “Starship Adventure”. Local libraries will be doing storytimes and other programs based on the stars, the moon, and the planets, etc. We have the names of contacts at ten local libraries who will be running this program; hopefully members will step forward to volunteer to participate in this opportunity for outreach. To this end, information on this was emailed to all members in early May. If you can participate,, please contact your editor at info@ccas.ws for further information and so volunteer efforts can be coordinated.

Executive Corner

The Board met May 19th. Topics included update on plans for activities for this summer, transition of officers after the upcoming elections, and Board members’ initiatives to promote control of light pollution in local towns. The decision was made to award Certificates of Appreciation to speakers coming to us from outside CCAS. The first such certificate will be mailed to Tim Barker.

The next scheduled meeting is planned for Tuesday, June 16th at Snow library.

From the Dome

...with input from Mike Hunter, Observatory Director

Mike provided input to the story on our May 2nd National Astronomy Day activities reported earlier.

Efforts are underway to make our 4” Televue refractor scope ready for CCD photography. Current work focuses on coalignment of the 4” which rides piggyback on the Meade

16". Progress on that project is slow since there are limitations on how the bracket mounting the 4" to the 16" can be adjusted. For now time is better spent on observing the spring sky.

Our regular summer star parties will begin the first Wednesday in June, the 3rd, and continue every week, weather permitting, through August 26th. Members and the public are invited to join us at 8:30 each Wednesday. Observatory Staff teams have been scheduled to lead these Wednesday events but all members please come to help and observe. Make your experience as a CCAS member more than two hours indoors in the library each month; come to these star parties and bring guests!

Your editor has prepared a flyer on our summer star parties which can be posted anywhere. A copy is included here as the last page of this First Light. Please make copies and post in your neighborhoods. Information on how to check on possible cancellations in the event of overcast are included.

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...

...when we have input from the Foundation...

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

June Observing:

"Binocular Highlights" in June's *S&T* Magazine (p45) suggests checking out the **globular cluster M-3** near Arcturus by scanning midway on a line from Arcturus to the double star α -Canum Venaticorum. While you won't be able to see individual stars except with larger binoculars, M-3 is clearly not a point light source in small binoculars and is fun to try to find. While in the neighborhood with your binoculars, enjoy the beautiful Corona Borealis a bit east of Arcturus and, on a clear night, the spectacular Coma Berenices, "Hair of Berinice" west of Bootes and east of Leo's back.

The Bootid meteor shower peaks before dawn on June 27. You may see weak or, in some years, spectacular meteor activity in the Bootes/Corona region two or three days on either side of the 27th. More than one meteor per minute has been observed in good years.

The bright star along the underbelly of the lion, θ -Leonis,

magnitude 3.2, sits in the middle of the **June track for the still bright and close-by asteroid Ceres** (magnitude 8.5) From June 1 thru end of month, Ceres, brighter than most stars it is passing, moves from northwest to southeast past θ . See the finder chart in the June *Astronomy Magazine*, p 43.

While you need to get up very early in the morning to see *all* the other planets (see below,) **Saturn and its moons** continue to be the stars of the evening planetary show this June. If you haven't already, now is the time to begin to get serious about studying Saturn and its moons for this year. On June 1, Saturn is nearly overhead when the sun sets; so it is nicely positioned for viewing all the month. But it moves farther west toward the sun from day to day and loses brightness as we move into July. August 18th signals the approaching end of this year's Saturn viewing season when it appears in the after sunset sky only 3° from Mercury.

Any night this month is a good night to look at Saturn and see which moons are where (see the day-to-day position chart for the four main moons for the month on page 47 of the June issue of *Sky and Telescope*.) But a special show takes place beginning at about 10 minutes before midnight the evening of June 15th. Beginning then, the shadow of the big moon **Titan** will begin to cross the surface of the planet [see model on page 4.] Unfortunately for Cape Codders, Saturn sets just about an hour later with the shadow only about one quarter of the way across... but if you set up on an Eastham beach about 11:30pm you should be able to catch the beginning of this event. And of course anyone living to our west will have the chance for a longer viewing.

There is another especially good show by Saturn's moons coming on the 10th of this month. At 10pm, a convenient hour, four of Saturn's moons form a tight **parallelogram**. If you take a look about every 20 minutes for an hour or so, you can watch the transformation from one parallelogram shape to other forms including a mirror image of the first. Take the time to look.

Where are **all the rest of the planets**? If you're willing to look predawn midmonth, you can see the full lineup as follows running from west to east: Jupiter (with Neptune less than 1° above), Uranus 30° east of Jupiter, Venus (with Mars in tow only 2° away) blazing 46° east of Jupiter, and finally, Mercury, just below the Pleiades, 22° east of Venus. If you do your viewing on the 19th, nature throws in a crescent moon near Mars and Venus. What a show! To complete the spectrum (if you still believe) start with Pluto earliest in the west between Ophiucus and Sagittarius. **If you viewed Saturn the evening before, you will have completed the planet marathon in one night.**

Other Observing Highlights for June:

There will be double moon **shadow transits on Jupiter** at 2:12am on the morning of June 2nd, and again at 4:06am on June 9th.

The solstice occurs on Sunday, June 21st at 1:46am. Don't miss it!

Mooncusser's Almanac and Monthly Alert¹

By Peter Kurtz

JUNE, 2009

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Object	June 01 (EDT)	June 15 (EDT)	June 30 (EDT)
Sun	R 05:08 S: 20:08	05:05 20:16	05:09 20:19
Moon	R: 14:21 S: 01:46	00:26 12:38	14:26 00:40
Mercury (predawn)	R: 04:27 S: 18:23	03:57 18:13	04:08 19:11
Venus (predawn)	R: 03:05 S: 16:09	02:47 16:22	02:34 16:42
Mars (predawn)	R: 03:12 S: 16:37	02:43 16:35	02:14 16:33
Jupiter (predawn)	R: 00:40 S: 11:10	23:46 10:17	22:47 09:15
Saturn (evening)	R: 12:36 S: 01:39	11:43 00:44	10:49 23:47
Uranus (predawn)	R: 01:50 S: 13:42	00:56 12:48	23:57 11:49
Neptune (predawn)	R: 00:38 S: 11:10	23:42 10:14	22:43 09:14
Pluto (predawn)	R: 21:11 S: 07:07	20:15 06:12	19:13 05:10

Moon Phases, June, 2009

First QTR Saturday, May 30th at 11:22pm EDT

Full Moon Sunday, June 7th at 2:12pm EDT

Last QTR Monday, June 15th at 6:15pm EDT

New Moon Monday, June 22nd at 3:35pm EDT

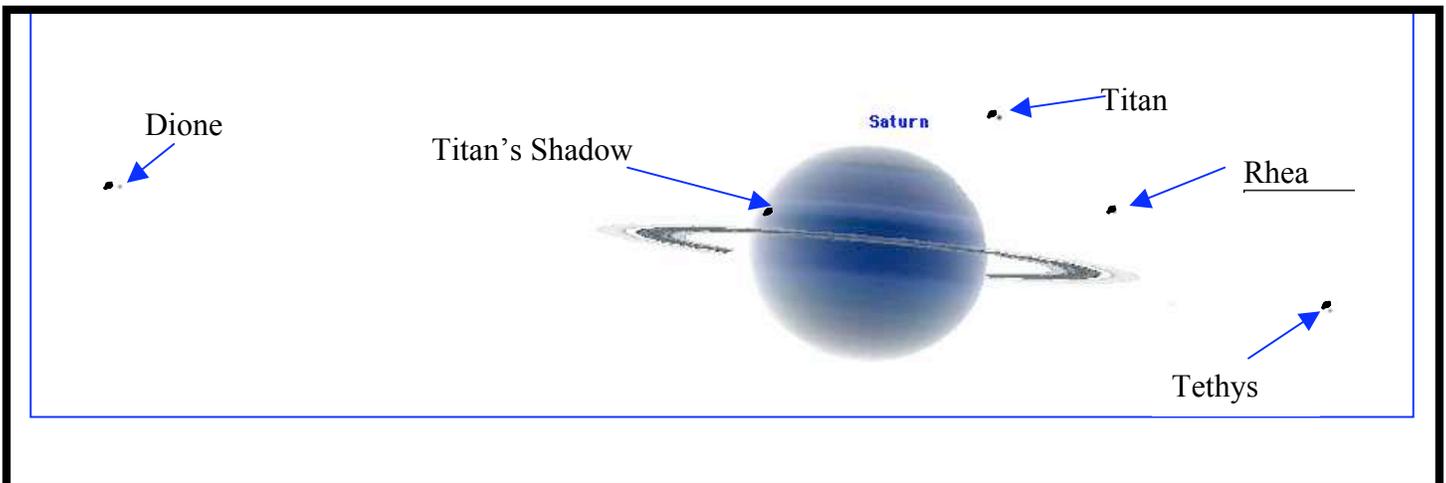
[at perigee 13 hours later: Large Tides!]

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

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.

Titan's Shadow Beginning to Cross Saturn at Midnight, 11:59EDT, Monday June 15th

[Note: This is a "true" image. In many telescopes the image will be mirrored horizontally; in this case the shadow of Titan will appear to move from right to left.]



Also of Interest:

Catch a Nova! There is a fascinating story in *Sky & Telescope Online*⁴ on a recurring nova in Scorpius that is predicted to “blow” sometime during 2009. So keep an eye on Scorpius this summer. If the binary system in question does “warm up” and “blow” this year, what sits usually for ten years at a time at magnitude 17 or weaker could reach magnitude 8 or better at explosion, easily visible in most backyard telescopes. While you would have to be very lucky to catch the main event (mag 17 to 8 nearly instantaneously) with your backyard scope, here is the good news: following the explosion for some 20 days, the brightness should degrade slowly from night to night from mag 8 to about mag 14. Anyone should be able to follow this with a small telescope. To be ready to enjoy experience this event, check out the article to learn where, and how and when the nova is likely to take place.

Congratulations to the Astronauts of STS-125! Since First Light does archive stories of events important to amateur astronomers, here, for our archive, let’s say a big thank you to NASA for the will to make this last shuttle mission to repair our wonderful Hubble scope and another big thank you to the STS-125 crew for their great and complete performance on this hazardous mission. The url to the online S&T story on the completion of this historic mission can be found in reference 5.

**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!?**

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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.skyandtelescope.com/community/skyblog/observingblog/43435242.html>
- 5) <http://www.skyandtelescope.com/news/45494102.html>