



First Light

The Newsletter of the Cape Cod Astronomical Society



August, 2007

Vol. 18 No. 5

Thoughts on First Light

I am pleased to bring you this and future issues of First Light, the monthly newsletter of CCAS.

It is my intent to send out a monthly issue on/about the 26th of each month to provide material useful in looking forward to the coming sky-month. The features and sections planned thus far are those you see herein.

You may find more content oriented to observing the sky in this rebirth of First Light than was true in the past. Observing is the heart of our hobby and a collection of alerts in one place about what is coming up (or about to go away!) in the sky in a given month should be useful for many. It may be “old hat” to anyone who has a lot of time to browse astronomy magazines and the web but hopefully should be valuable for beginners and people who would rather spend time observing than reading. Besides, I have found that assembling alerts for the upcoming month is helpful to preparing for my own observing.

This is YOUR newsletter. It can be interesting and vital ONLY if there is strong and continuous input from all members:

- ideas for content (including opinions on and contributions for the space devoted to “Monthly Observing”.)
- ideas for articles,
- articles written by members or associates,
- astrophotos (found on the web or, especially, those taken by our members)
- notes or photos covering members “doing their thing”.

I am especially interested in short contributions from members describing favorite techniques or special observing experiences they have had.

Please email me at either my personal email address or preferably at info@ccas.ws if you have ideas or a contribution.

I look forward to all members submitting content for "First Light" on a regular basis.

Many thanks to Jim Carlson and Mike Hunter who “produced” First Light in prior months and years. I hope we can do as well or better as we move forward. First Light will be as good as broad participation by members can make possible.

The Editor

CCAS Events in August

Star Parties at the Werner Schmidt observatory will continue in August beginning before dusk ends (about 8:30pm) until after 10pm each Wednesday night. Check the website, www.CCAS.ws to confirm that the event is “on” (green) or cancelled (red) for a particular Wednesday. Bring a friend.

The Society’s next regular meeting is Thursday, August 2nd, beginning promptly at 7:30pm in the Dennis-Yarmouth Regional High School library. We look forward again to an excellent presentation by Larry Marschall, professor of physics and astronomy at Gettysburg College. The title of his talk is “**Tides: How the force that moves the ocean shapes the universe**”.

2007-2008 DUES for members should be paid by the end of July at latest: usually \$30 for full year members, \$15 for students in two-year colleges, \$0 for students K-12. If you joined after July, you pay pro rata through next July. . Contact Kelvin Parkinson to make payment.

Jon Greenberg, current President of CCAS, will be offering the 17th edition of his course “**Observational Astronomy for Beginners**” at his home observatory on four Wednesday nights this fall at 7:30pm, Sept 26 thru Oct 17. Each evening will include sit-down discussion time followed by observing on Jon’s excellent rooftop deck. This popular hands-on workshop, sponsored jointly by Nauset Community Education and CCAS, will emphasize actual observing of the glorious autumn skies without optical aids as well as with binoculars and telescopes of various types. It is designed for beginners, but participants with some observing experience are welcome.

Three CCAS members have agreed to assist Jon with the observing sessions. Fee is \$50 of which \$37.50, the instructor's fee, goes to the CCAS Foundation. To be sure to find space, any members or friends of members can pre-register by contacting NCE (508-255-4300) before the NCE Fall brochure of courses is mailed out likely in mid-August. One can also register later by filling out the form that will come with the NCE mailing. Be sure to tell people you know who might be interested that this introductory course exists and will begin 9/26. Call Jon at the number on the back page of First Light if you have questions.

Executive Corner

There was no Executive Committee meeting in July. Focus points for the June meeting included speakers and topics for future programs, plans to publish the new trifold brochure for CCAS (copies now available at meetings or starparties; we also plan to make the PDF file available on the web.) The EC also discussed the opportunity for CCAS to acquire (gift) a new Dobsonian scope, which effort, you will see below, has borne fruit.

The next EC meeting is scheduled for the second Monday in August, the 13th.

From the Dome

(by our Observatory Director, Mike Hunter)

Some members have commented on how the window of our website showing status of the coming week's star party remains green even when it is obvious that that particular Wednesday night is going to be cloudy or even raining. The green color on such nights means that staff and others will be at the observatory performing amateur astronomy activities such as planning observation sessions, training, working on equipment (e.g., collimating the Dobsonian, setting up ccd cameras, organizing proper storage, sharing observing techniques, etc.) The more time spent on planning and preparing for observing, the more rewarding the observing. The training of the three Observatory Assistants; Matt Jones, Tom Leach, and Ed Swiniarski is almost complete. The training of other society members for independent use of the observatory has begun.

An eighteen inch Obsession Dobsonian telescope has been donated to the observatory. This is a high grade, mobile, scope including GOTO capabilities that will replace the Society's fourteen inch Dob. The learning curve on the GOTO functions of this scope appears to be somewhat steep and long; thus, its initial use will not include GOTO. However, the size and quality of the finder scope is such that the absence of GOTO should not cause a problem. At f4.5 and 26% more light than our Meade 16", this scope should provide some great views of deep sky "dim fuzzies".

Foundation News

... when we have news from the Board of Directors of the CCAF.

Astro Trivia:

The "question of the month" is:

What is Duck Bay? Why do we care?

...to be discussed at the August meeting.

Member Profiles

Our Society is dedicated to helping all age groups learn astronomy, increasing public awareness and community involvement in astronomy, making available instruction, inviting people to participate, and providing mutual support and support for those with special interests.

All our members could improve their enjoyment of and take better advantage of each other's talents and capabilities in promoting these objectives if we knew more about each other.

To this end, I propose to profile one member each month in this section of First Light.

To garner information for such profiles, I propose to email at least one member each month asking him/her to answer some specific questions about interests and background as amateur (or professional!) astronomers and asking him/her to volunteer information on favorite techniques, experiences, etc. Email exchanges could be followed up by short phone interviews.

Proposed topics for emails requesting Member Profile Information:

- How many years observing or learning
- Circumstances under which name and location of first constellation, star or planet was learned
- First observing experiences and equipment involved
- Most memorable observing experience(s)
- Formal or informal education in astronomy
- Current observing sessions: frequency, favorite equipment or techniques, favorite targets.
- About equipment: do you hold it in your hand? Put it on a table? Take it out of your car? Roll it out of your garage? Hook up a tractor? Walk into a dome?
- Favorite places on the Cape or elsewhere for observing.
- Specific areas of experience or expertise and willingness to share same
- Specific areas looking for tutoring or support or just opportunities to share
- Interest in visiting with other members at each other's homes or elsewhere (Skaket beach?) to enjoy the fun of sharing observing targets and mutual give

and take of techniques, etc.

- Ideas concerning ways CCAS could be more vital for both members and the community
- Ideas concerning ways CCAS structures and tools (executive committee, newsletter, website, meetings/star parties, policies/capabilities at our observatory etc.) could be more vital for both members and the community.

Please email me at info@CCAS.ws with any ideas you have for topics for Member Profiles or ideas how best to proceed.

Emails volunteering to be profiled or providing profile information are most welcome.

| Moocusser's Almanac and Monthly Alert¹ | | | |
|---|----------------------|-----------------|------------------|
| By Peter Kurtz | | | |
| Many Thanks to Jim Carlson for the original concept for Moocusser's Almanac. Suggestions for Improvement are welcome. | | | |
| Full Moon Sunday, July 29 at 8:48pm EDT | | | |
| Last QTR Sunday, August 5 at 5:20pm EDT | | | |
| New Moon Sunday, August 12 at 7:03pm EDT | | | |
| First QTR Monday, August 20 at 7:54pm EDT | | | |
| Full Moon Tuesday, August 28 @ 9:35am EDT | | | |
| Object | Aug. 01 (EDT) | Aug.15 (EDT) | Aug. 31 (EDT) |
| Sun | R: 05:34 S: 19:59 | 05:49 19:41 | 06:05 19:16 |
| Moon | R: 21:13 S: 08:25 | 08:31 20:46 | 20:26 09:49 |
| Mercury (morning) | R: 04:19 S: 19:11 | 05:44 19:48 | 07:17 19:52 |
| Venus (evening) | R: 07:47 S: 20:36 | 06:27 19:13 | 04:43 17:46 |
| Mars (morning) | R: 00:27 S: 14:50 | 00:00 14:41 | 23:31 14:26 |
| Jupiter (evening) | R: 15:52 S: 01:17 | 14:58 00:22 | 13:59 23:22 |
| Saturn (evening) | R: 07:01 S: 20:51 | 06:15 20:00 | 05:22 19:02 |
| Uranus | R: 21:35 S: 09:03 | 20:39 08:05 | 19:34 06:59 |
| Neptune | R: 20:25 S: 06:45 | 19:29 05:47 | 18:25 04:42 |

August Observing Events

"Close Approaches"

with moon

- August 1 Uranus 2° south of (nearly full) Moon
 August 6-7 Mars 5° south of (last qtr) Moon (2AM Until sunrise)
 August 21 Antares 1.5° north of (first qtr) Moon
 August 21 Jupiter 6° north of Moon
 August 27 Neptune 1.4° north of (full) Moon

Others

- August 1 Mercury 6° south of Pollux (3:00am in the east ...until sunrise)

Other Observing Nightlights for August

- August 7 Jupiter stationary (retrograde motion begins); 5° above Antares
 August 12 Peak of Perseid meteors (see below)
 August 13 Neptune, mag 7.8 at opposition in Capricorn;
 Uranus, mag 5.8, to lower left in Aquarius
 August 15 Mercury is in superior conjunction (behind the sun); best viewing at elongation in about 22 days
 August 17 Venus in inferior conjunction
 August 21 Saturn in conjunction

Comments on August Observing Opportunities

VENUS and SATURN both set less than an hour after the sun in August so if you want to see them in the evening, **now is "last chance"** in the evening for a while.

JUPITER and its always spectacular moons continue to dominate the southern sky for evening observers; it is at its highest altitude right after sunset. It is about 5° above Antares, the brightest star in Scorpius for most of the month. Look early in the month since the moon is full on August 20th.

JUPITER has a close encounter with the "large" (330 mile diameter) "fast"-moving (well, a lot faster than Jupiter!) asteroid **VESTA** which should be an easy target during most of August. By month's end, Vesta should be an easy find in binoculars as it scoots just north of Jupiter. It's only marginally more difficult to spot earlier in the month (when the moon is less bright) when the space rock lies just a binocular field to the planet's right. Vesta shines more brightly than most of the starry background in this sky region. Vesta passes closest to Jupiter from August 26 thru September 3.

The two come within about 0.5° with Vesta passing west to east just above Jupiter August 28-29.

MOOSE FORMATION: August is really the first month where all of Perseus and Cassiopeia are up in the northeast early in the evening. Here's maybe a new look at both constellations: the Lapps of Scandinavia see a moose head (Andromeda) with Perseus and Cassiopeia making the fine great antlers. If you can see that you might use binoculars to look at the top of the moose's head between the antlers to see the double cluster: NGC869/884. Triangulum to the left of the moosehead hosts the spectacular M33 Pinwheel Galaxy. Can you see it with binoculars?

The **PERSEID** meteor shower peaks on Sunday August 12 *in a nice dark sky*, Start looking for stray meteors a couple of days on either side of that Sunday. Peak time should be 50/60 meteors in the predawn sky but any time that night should yield rewards.

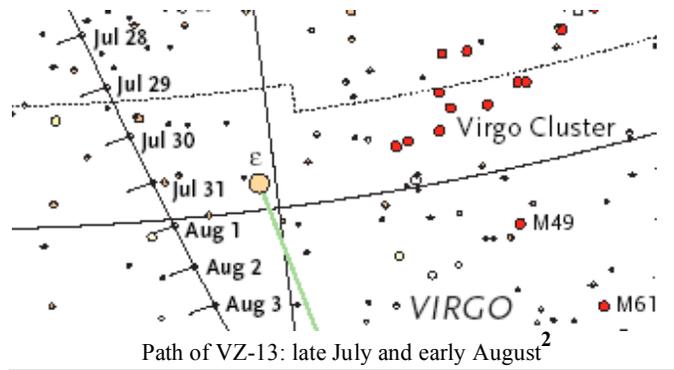
PLAY BALL!: Pegasus sets up as a baseball diamond in August with a blue home plate at bottom, three bases, and various players, umpires, and base coaches. Is this a "Field of Dreams" or can you see it?

A **TOTAL ECLIPSE OF THE MOON** will take place on August 28th with totality beginning at 5:42pm EDT. But since sunrise for us that day is about 6am and the moon sets for us at 5:58, the Cape will only see the initial faint darkening. If you're traveling far west, you can see most of the total eclipse event: the farther west you go, the higher the Moon's altitude during totality. West of the Rockies, observers will see all but the eclipse's final penumbral stages. Totality begins at 4:52 a.m. CDT, and mideclipse occurs at 5:37 a.m. CDT.

Now is a good time to look for **NEPTUNE & URANUS**. Neptune, magnitude 7.8, some 3° northeast of i-Capricorni, reaches opposition midmonth. Try near midnight when it is highest. To the east, Uranus is easier to see at magnitude 5.7 rising one or two hours later than Neptune. It is within 0.5° of 4-magnitude ϕ - Aquarii, at mid month.

COMET VZ13-LINEAR - You may already be too late!

Comet VZ13 Linear is moving away and becoming dimmer. While it was at fairly easy fuzzleball magnitude (7.5 to 8) in mid July, it is down to mag 10 on July 25 and fading. Try to look for it NOW if you want to catch it before it gets away!



If you enjoy late night observing, you might find it worthwhile staying up to about 2am the morning of August 7th. You'll find **Mars**, the **half moon**, and the beautiful **Pleiades** forming a right triangle with the longest side only 5°.

Deep Sky Observing- August:

If we can ever get some really clear nights, August is probably the best month to consider and view the Milky Way as it steams out from its hub above the teapot Sagittarius in the south all the way past the Cygnus Star cloud to the edge of its outer spirals near Cassiopeia.

Did you know that the Cygnus Star cloud is the spiral arm of our galaxy in which our sun (and we) reside?

While we still have Sagittarius, try to spend some time viewing the trio of Messier objects just above and to the right of the teapot: two emission nebulae, M8, Lagoon, and M20, the Trifid, and the nearby open cluster M21.

All should be wonderful star party targets in the big 16" and new 18" scopes at our observatory! Even the old 14" Dob!

Make a printout of the preceding sections and bring to the next CCAS Wednesday night STAR PARTY!

FEATURE STORY FOR AUGUST

"....and we think hurricanes are a problem!!"

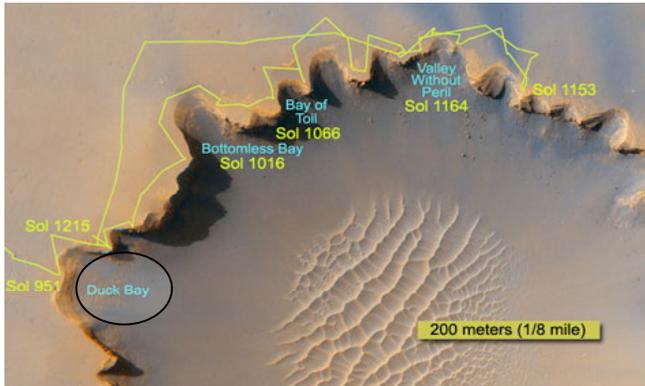
In spite of the risks, by now, rover Opportunity was to have begun exploration of massive Victoria Crater on Mars. Opportunity spent the good part of an earth year looking for a safe departure point from which to climb down into the crater. At the beginning of July, NASA had decided that it had found a good place to "climb over the edge".

For sure, we expected the rover to be at least sliding down the

crater wall by now. But no. The fierce and seemingly endless dust storms currently raging on Mars weaken Opportunity's ability to generate power from sunlight. As of this writing, the "go" signal has thus been withheld. Hopefully, when the storms abate, the rover can start its adventure into the crater!⁴ Check with NASA websites for news this month.

1999, and was never heard from again!

Editors note (July 21) : NASA is now concerned that Opportunity will "die" for lack of power if the dust storms do not abate soon. It could freeze up permanently



The route followed by NASA's Mars Exploration Rover Opportunity during its exploration partway around the rim of Victoria Crater is marked on this map. From Sol 951 at left clockwise to Sol 1153 at top right back to near start on Sol 1215 (elapsed time 264 days!) NASA³

What if the dust storm goes on and on? Well Opportunity might have to wait. But Phoenix, a new explorer scheduled to be launched August 3 might leave earth without need for delay since it will be enroute for 10 months once launched and one hopes the dust storms might be over by the time it lands.

APOD'S



4-hour SBG ST-8E exposure: IC5068 nebosity in Cygnus by our own Chris Cook⁵



Artist's rendition of Phoenix landing on Mars⁴

Phoenix is going to sample the north-polar region of Mars — a place where previous observations suggest water lies hidden just below the surface. Phoenix isn't a rover, but it's got a deep-digging robotic claw 2.3 meters (7.7 feet) long that will serve up scoops of soil to be analyzed for organic compounds. Hopefully Phoenix will fare better than the last attempt at the pole which entered the Martian atmosphere on December 3,



The constellation Leo hosts three bright galaxies known as the Leo Triplet lying 2.5° southeast of Theta Leonis, midway between it and Iota Leonis (clockwise from top right): M65, M66, and NGC3628(left). Celestron 80ED refractor at f/3.8 and Meade DSI Pro II CCD camera for a total exposure of 6 hours, 36 minutes; Photographer: Kelvin Phoon; Astronomy Magazine Online Picture of the Day, 7/13/07

Cape Cod Astronomical Society

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| | | |
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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, no charge for students in K-12 schools.



Reference Information:

- 1) Information for The Mooncussers Almanac and Monthly 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.
- 2) This is a little clip from a really great map for VZ-13 published on the following Sky and Telescope website: <http://www.skyandtelescope.com/observing/highlights/8415427.html> Click on the small map at the site to get a PDF file of the full map.
- 3) The photo image on which the track is drawn is from the High Resolution Imaging Science Experiment camera on NASA's Mars Reconnaissance Orbiter. Credit: NASA/JPL/Cornell/University of Arizona/Ohio State University[From Astronomy Magazine weekly subscriber email, July 7, 2007] and corresponding weblinks: <http://www.astronomy.com/asy/default.aspx?c=a&id=5735> and http://science.msfc.nasa.gov/headlines/y2007/28jun_descent.htm].

Take a look at the little movie about the anticipated move of Opportunity down into Victoria found at:

<http://marsrovers.jpl.nasa.gov/gallery/video/movies/opportunity/VictoriaDigitalStory.mov>

- 4) NASA: http://www.nasa.gov/mission_pages/phoenix/main/index.html
- 5) Chris Cook Photo: Go to CCAS website, click on "List Server" page and search for IC5068. Posting 122 provides info on this on the photo and a link to Chris Cook.