First Light

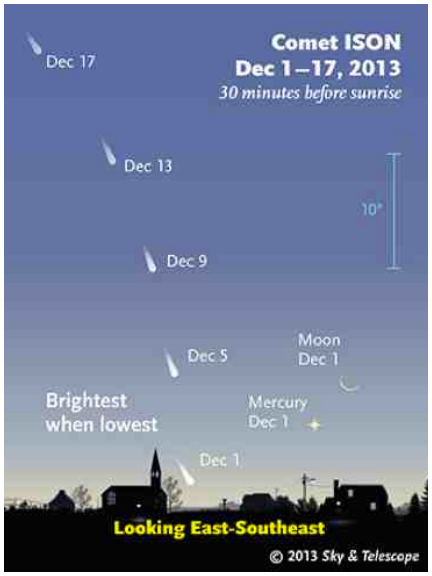
The Newsletter of the Cape Cod Astronomical Society

December, 2013 **Vol. 24 No. 12**

Whither Comet Ison?

Comet ISON, Nov. 19th, 14" telescope at Marshall Space Flight Center (NASA/MSFC/Aaron Kingery.

?



Expectations for ISON early December[7]

It's Still Not Known: Comet of the Century or Dud?

Next Monthly Meeting: is Thursday, December 5th, at 7:30pm: Bernie Young and Mike Hunter will present **"Astrophotography: Move It or Keep It Still,"** … an overview of CCD and video astrophotography for beginners. Public welcome. Please join us.

Reminder: The 2013 Dues Cycle began July 1. If you have not yet participated, please bring your check to the December meeting or mail to CCAS, 34 Ridgewood Rd. Orleans MA 02653. Thanks to all who are paid up!

Reminder: The next once-a-month "Quarter-Moon-Saturday" Star Party takes place on December 7th at 7:30pm.

In this issue: / Speculating on ISON / Upcoming meetings and topics / Please send in your stories on ISON / Geminid Meteor Shower / Resources on ISON and December Observing /

December Observing:

As profiled on page 1, here it is *only four days* before perihelion and no one knows if **Comet ISON** will, after passing the sun at 2pm on Thanksgiving day, reappear as "The Comet of the Century" …or not. There is still hope that it will be a most spectacular comet. Alternatively, though, it may reappear much as a dud, visible only with aid of big binoculars or a telescope, and, initially, only near the horizon just after sunrises in December.
Or… the sun could eat the comet.
In any event, it will most likely be worthwhile to look for it 30 minutes before sunrises over the first few days of December and then earlier in the predawn as it moves away from the sun. See the chart on page 1 for estimating comet positions in early December.

CCAS members, if you have an experience, good or bad, with ISON you would like to share, please send your story and any photos to your *First Light* editor using the email address for Peter Kurtz used in our monthly email to members.

Mooncusser's Almanac and Monthly Alert[1]
DECEMBER 2013

Object	DEC. 1 (EST)	DEC. 15 (EST)	DEC. 31 (EST)
Sun	R: 06:48 S: 16:11	07:01 16:11	07:07 16:20
Moon	R: 05:18 S: 15:13	15:08 05:31	06:09 15:44
Mercury (predawn)	R: 05:31 S: 15:26	06:28 15:38	07:23 16:18
Venus (evening)	R: 10:05 S: 19:03	09:23 18:46	07:58 17:49
Mars (predawn)	R: 00:35 S: 13:03	00:16 12:24	23:50 11:39
Jupiter (all night)	R: 18:53 S: 09:50	17:51 08:50	16:38 07:40
Saturn (predawn)	R: 04:50 S: 15:08	04:02 14:17	03:07 13:19
Uranus (evening)	R: 13:17 S: 01:44	12:22 00:48	11:19 23:46
Neptune (evening)	R: 11:54 S: 22:40	10:59 21:46	09:57 20:45
Pluto (evening)	R: 08:53 S: 18:28	08:00 17:35	06:59 16:35

Observing Hightlights:

The **Geminid Meteor Shower** peaks on the night of 13-14 December. The best time to observe is predawn after the nearly full moon has set. Expect Geminids not just on peak day but anytime from 12/12 until 12/15.

As you can see from the table above, all the "outer" planets, especially **Jupiter and its moons** are good telescope targets in evenings during December.

Please see resources at *Astronomy Magazine*, December, pp 36-43 and *Sky and Telescope*, December, pp 43-58, and Reference 5 for good guides to the December sky.

Stories on ISON/comets/comet/imaging can be found in the December *S&T* beginning pages 6, 19, 26, 30, and 70 (special article by Cape Cod's own Chris Cook); and in December's *AM* beginning on pages 36,42, 56, and 68.

There is a good follow-up story on Nova Delphini 2013 in the December issue of *S&T*, p 76. The nova, which we highlighted in many previous issues of *First Light* first showed at about mag 4, dimmed fairly steeply over the first six weeks or so and is still dimming… but at a very slow rate; in fact, it has been nearly constant at mag 11 since the middle of October.

Minima of Algol[1,3], November:

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.

These are dates and times for *evening* occurrences of the Minima of Algol at Cape Cod during December: Friday, December 13th, 9:20pm, and Monday, December 16th, 6:39pm

Using binoculars or a small telescope, try to begin viewing two to three hours before the minima to watch the dimming and two to three hours after the minima to watch the brightening.

Declination Tables for the Moon[2] during this month please contact your editor for information or sources.

Moon Phases, December, 2013

New Moon Monday, December 2nd, at 7:22pm EST
First QTR Monday, December 9th, at 10:12am EST
Full Moon Tuesday, December 17th, at 4:28am EST
Last QTR Wednesday, Dec. 25th, at 8:48am EST

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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.

5) Here is the web address for Astronomy Magazine's "The Sky This Month" online for December:
http://www.astronomy.com/magazine/sky-this-month/2013/10/ison-continues-to-shine
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

7) http://www.skyandtelescope.com/observing/objects/comets/Comet-ISON-Updates-193909261.html

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