



First Light

The Newsletter of the Cape Cod Astronomical Society



November, 2012

Vol.23 No.11

Next Monthly Meeting: is Thursday, November 1st at 7:30pm in the D-Y Library. Stan Rivers, Vice President of CCAS, will present “**Electrical Power for the Amateur Astronomer.**” Public welcome. Please join us.

Reminder: The next “Half-Moon Saturday” Star Party is scheduled for November 17th. More information on page 3.

In this issue: New members / [Astronaut Dan Burbank visits CCAS in December!](#) / Star Party October: 20 guests / November Observing / Where’s the moons? / DST>>EST / Leonids / Ceres

Bright New Stars:

We are pleased to announce that two new members joined CCAS in October; that brings us to eight new members since July 1!

Welcome to Debra Herbst. As a retired astronomer now living in West Harwich, Debra brings a wealth of background to us. She spent her graduate & professional years at Wesleyan University. Debra was married to Bill Herbst, a professional astronomer and John Monroe Van Vleck Professor of Astronomy at Wesleyan. Debra ran an educational outreach program for the Connecticut state chapter of a national program called Project Astro developed by the Astronomical Society of the Pacific.

We also welcome Ben Carnevale, longtime participant in CCAS meetings and star parties and “Friend of CCAS.” Ben lives in North Falmouth and looks at the sky through a 5” reflector scope.

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 might 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*.

CCAS News Items and Current Events:

CCAS Meetings:

Many thanks to Dr. Michael Hunter, President of CCAS and Director of our Observatory, for his excellent presentation “**A Tour of Southern Skies**” at our meeting on October 4th. Mike has first hand knowledge of the night sky “down

under”, as he often visits family members living in Australia. Mike “wowed” us with highlights of the Australian night skies including many observing targets near and around the “Southern Cross” among them the Large and Small Magellanic Clouds. Mike accomplished a second “teaching” objective by explaining how he made his presentation. The entire presentation was a virtual star party as seen from the ground in Australia using the broad and flexible sky simulation capabilities of the software Sky Safari. Various levels of Sky Safari (plain, plus, and pro) are available at better than very reasonable prices to run on iPods, iPhones, iPads, Mac computers, and Android systems: see

<http://www.southernstars.com/products/skysafari/index.html>

[Editor’s Note: Werner Schmidt Observatory staff have begun experimenting using Sky Safari as a complementary alternative to our regular program “The Sky6” to drive one or more of our “Go To” telescopes communicating with the scopes through a wireless accessory also sold by Southern Stars called “Sky Fi”. Sky Safari does indeed work in this application but there may be computing power limitations on the platforms running the software. Experimentation will continue.]

Do you know everything you should know about ways to power your telescope and accessories for viewing of the night sky? If not, be sure to attend CCAS Vice President Stan Rivers’ presentation at our November 1st meeting at 7:30pm: “**Electrical Power for the Amateur Astronomer.**”

[SPECIAL SPEAKET—DECEMBER CCAS MEETING!](#)

Dan Burbank, Lifetime Member of CCAS and former editor of *First Light*, former Coast Guard Rescue team member at Air Station Cape Cod, former two-time Shuttle Astronaut and Commander of a recent mission on the International

Space Station, has agreed to present a talk, **“Life and Science Aboard the International Space Station”** at our meeting on December 6th (severe winter weather alternate date: January 3rd.)

Dan will describe his experiences aboard the ISS, with emphasis on earth and astronomical photography. (Most of us remember the photo of Comet Lovejoy “over thunderstorms” he sent *First Light* from the ISS several months ago.)

Arrangements are being made with the D-Y high school to accommodate a good audience at this particular event.

Lee Labarre, recently joined CCAS member and active CCAS Star Party participant, will present **“Designing, Building, and Using a Home Observatory”** at our meeting on January 3rd (February 7th should Burbank need to move his talk to January from December.) Lee has built a home observatory.

Peter Kurtz, Treasurer of CCAS, *First Light* editor, and member of the Observatory Staff will present **“How to Enjoy Fast and Slow Variable Stars”** at our February meeting. We will review the basics of recording magnitude estimates from naked eye and binocular observations of variable stars and (if you wish) reporting same to AAVSO (American Association of Variable Star Observers.) Main classes and favorite VS targets will be reviewed.

For the March meeting, former CCAS president, Gary Derman, will present a program called **“Where is that star?”** If you ever wondered how today's go-to telescopes know where to point to find a sky object or how planetariums can present the sky as it appeared from 2,000 years ago to 2,000 years from now, this talk is for you. Don't worry. You will not have to deal with complex equations. We will talk about what the mathematics is doing, but only in terms that everyone will understand.

Thanks to Mike Hunter, our Program Chair, for lining up these very good topics and speakers and to Mike, Stan, Dan, Lee, Peter, and Gary for agreeing to present.

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 Mike Hunter, our Program Chairman. For sure he will follow up.

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

Minutes:

The minutes of our August meeting are on our website; click on the “Minutes” button at www.ccas.ws or go to <http://www.ccas.ws/minutes/ccasminutes100412.pdf>

From the Dome:

At our “Quarter-Moon-Saturday” Star Party on October 20, some 20 guests and six staff enjoyed night skies that started out a bit hazy but by 9pm or so dried out to some of the clearest viewing in 2012. Our visitors, about an equal mix of adults and children, enjoyed the “best of the season” including Jupiter and its moons, the Great Hercules cluster, and the occasional Orionid meteor (Saturday was peak night!) This photo, sent in by one of our guests, captures well the fun we had at this event. Thanks, Sharon and family for sending in the picture.



We will have even a better time on November 17. See next page for a short listing of some of the spectacular sights we will see then.

Here's the “Quarter-Moon Saturday” schedule from now through May; all 7:30pm.

Nov. 17	<i>No SP in December</i>
Jan. 19	Feb. 16
Mar. 16	April 20
May 18	June 15

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. If you wish to borrow one of these ‘scopes, contact info@ccas.ws

November Observing:

SPECIAL TARGETS FOR NOVEMBER 17th STAR PARTY!

Besides viewing Jupiter and its moons, Uranus and Neptune, favorite deep sky fuzzies or an amazing asterism, [participants at CCAS' November "Half-moon Saturday" Star Party at 7:30pm on November 17th](#) can view the spectacular million star cluster in Hercules, dissect a "double-double" star system in Vega, see a Flying Duck, and pick out their favorite crater system along the terminator of a 5 day old waxing crescent moon. Like big things? Take a look at the Andromeda Galaxy! Like hard to find things? See if you can see dwarf planet Ceres in one of our telescopes. Ceres is about 1000km in diameter, which *should* make it easy to see. And maybe we may see a meteor or two left over from the peak of the Leonid shower which occurs earlier on the 17th at 4am for Cape Codders.

OBSERVING HIGHLIGHTS FOR NOVEMBER, 2012 AT CAPE COD:

Please consult the November issues of *Sky and Telescope* (pp 43-58), *Astronomy Magazine* (pp 36-43), and *Astronomy Magazine Online* (See Ref 5) for more information on these highlight topics and others.

STANDARD TIME BEGINS 2AM SUNDAY 11/4

Jupiter season is finally here! Where we live, the planet, blazing (mag -2.8) and large (48"), rises at 7:42 pm ([will be a bit before 7 pm when DST starts](#)) on November 1 so is well up in the sky, altitude 17° by 9pm, altitude 27° by 10pm. Check out Jupiter's moons at our Star Party on November 17th. At the October Star Party all four main moons were on one side of the planet; where will they show up this month?

See the reference given later for resources to show positions of moons of Jupiter during November and also unique phenomena of the moons of Jupiter taking place during the month. For example, on the night of the CCAS Star Party this month, Saturday, November 17, the moon Io reappears from behind the planet at 6:28pm EST. Perhaps we should start the Star Party early! On the other hand, for nighthawks that same evening, the moon Ganymede slides into the shadow of Jupiter at 11:26pm.

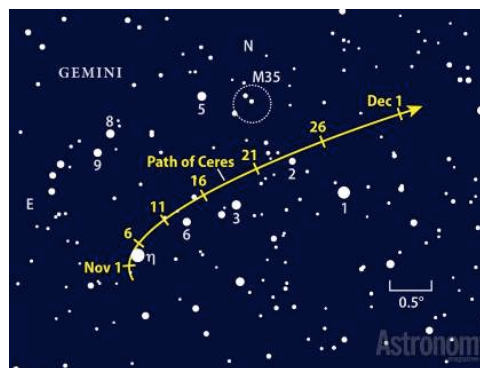
Participants at our October 20th Star Party had excellent views of blue-gray mag 7.9 **Neptune** and even bigger and brighter mag 5.8 blue-green **Uranus** high in the sky about 10pm; both will be equally well placed high in the sky for our Star Party on November 17. Can you see Uranus with your binoculars?

The **Leonid meteor shower** should peak around 4:30 a.m. EST November 17. The small crescent moon sets early which leaves the prime viewing hours after midnight unencumbered by moonlight. Astronomers expect the shower to produce 15 to 20 meteors per hour shortly before dawn. Don't miss the excellent story on the Leonids in the November issue of *Astronomy Magazine*, p58, for info not only on the Leonids but for a tutorial on such things as why "after midnight is always better" and how to photograph meteors.



One of the brighter Leonids in 2011⁵

Asteroid **1 Ceres** glides through western Gemini in November, passing less than 1° south of open star cluster M35 after midmonth. The biggest asteroid brightens from magnitude 8.0 to 7.3 this month, bringing it within reach of small telescopes and even good binoculars.



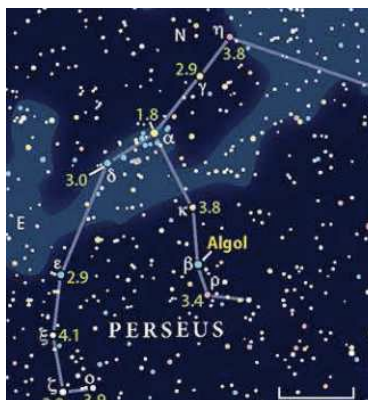
Resources for the moons of Saturn and Jupiter:

The November *S&T*, page 53, gives the positions of Jupiter's main moons at any date and time during the month. *Astronomy Magazine* for November provides similar information on page 40. A chart on page 54 of the *S&T* issue lists the times and dates during the month for interesting phenomena of the moons such as occultations behind the planet, reappearances, etc. ONLINE: If you don't have *Gas Giants*, the iPod/iPad app for moons of Saturn and Jupiter discussed in the April, 2011 *First Light*, please see the interactive resources online at reference 6 for positions of Jupiter's or Saturn's moons for any date and time.

Mooncusser's Almanac and Monthly Alert¹ NOVEMBER 2012 [Nov 1 column data is DST, rest EST (starts 11/4)]			
Object	Nov. 1 (DST)	Nov. 15 (EST)	Nov. 31 (EST)
Sun	R: 07:13 S: 17:34	06:30 16:20	06:48 16:11
Moon	R: 19:15 S: 09:54	08:36 17:57	17:54 08:28
Mercury (eve then dawn)	R: 09:21 S: 18:28	06:54 16:31	05:02 15:19
Venus (predawn)	R: 04:14 S: 16:17	03:46 15:03	04:21 14:50
Mars (evening)	R: 10:33 S: 19:35	09:26 18:23	09:15 18:16
Jupiter (all nite)	R: 19:23 S: 10:17	17:22 08:15	16:15 07:06
Saturn (predawn)	R: 06:36 S: 17:27	04:49 15:36	03:58 14:42
Uranus (evening)	R: 16:07 S: 04:24	14:11 02:27	13:11 01:26
Neptune (evening)	R: 14:45 S: 01:26	12:49 23:30	11:51 22:32
Pluto (evening)	R: 11:37 S: 21:16	09:43 19:22	08:46 18:24

Minima of Algol: What better way to introduce yourself to the wonder and fun of observing variations in the brightness of “variable” stars than watching the dimming or re-brightening of the star Algol during a prime time occurrence of its dimming about once every three days.

This month, a minimum of brightness (mag 3.3 from mag 2.1) is reached at 10:45pm EST on Sunday, November 18th; a minimum also occurs in prime time at 7:34pm EST on Wednesday, Nov 21, the day before Thanksgiving. Here's Algol and comparator stars (mag 1.8 to 3.8)) to get you started; please see Ref. 3 for more information.



Anyone having an interest in monthly **Libration and Declination Tables for the Moon**² during this month please contact your editor for information or sources.

Moon Phases, November, 2012

Last QTR Tuesday, November 6th at 7:36pm **EST**
New Moon Tuesday, November 13th, at 5:08pm **EST**
First QTR Tuesday, November 20th, at 9:31am **EST**
Full Moon Wednesday, November 28th, at 9:46am **EST**

[2013 MAY BRING A VERY SPECIAL COMET! \(PLEASE SEE REFERENCE 4.\)](#)

**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 December 2007-January 2008 *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) Please see the story in the October *First Light*. Brian Ventudo, creator of the regular online feature "One Minute Astronomer", reported recently that we may be able to look forward to a **spectacular comet**, maybe even better than 1996's Hale-Bopp, toward the end of next year. One Minute Astronomer on Comet C/2012 S1 (ISON) <http://www.oneminuteastronomer.com/6713/c2012-s1-ison/>. Currently at magnitude +18, the comet is currently beyond the reach of amateur telescopes. But the orbital elements have been calculated, and *they show the comet will come amazingly close to the Sun—just 2 million km—on November 28, 2013*. In mid-November through December 2013 and into January 2014, the comet may reach **negative magnitudes**, possible as bright as -11 to -16, which means it might be visible during the day! So get your binoculars, telescopes, and cameras ready. Next year should be a good one for bright comets, perhaps the best year since 1996 when Comets Hyakutake and Hale-Bopp graced our skies. And Google "Comet C/2012 S1 (ISON) at least monthly to be sure you can see it "on the come" during 2013.

5) Here is the web address for Astronomy Magazine's online "The Sky This Month" online for November: http://www.astronomy.com/News-Observing/Sky_this_Month/2012/09/A_day_with_two_dawns.aspx

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>