



# *First Light*

The Newsletter of the Cape Cod Astronomical Society



May, 2013

Vol.24 No. 5

## Do you know what this is?

[With a little help, you too can see a magnitude 16 object.]



...please see story page 3....

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### **PROGRESS ON UPGRADING AND SIMPLIFYING THE CCAS WEBSITE:**

During April, one key new button was added to the new home page: "Upcoming Speakers/Topics". This button opens a subpage providing information on all topics and speakers for our monthly meetings now scheduled complete through August of this year. It replaces speaker/meeting topic information formerly in the "rocket" on the "old website."

Work has begun on the long task of updating, cleaning out, and simplifying the "old website" main home page; our target is to yield a reference page containing fewer links than of old but having all important up-to-date and active links pertinent to astronomy.

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**Next Monthly Meeting:** is Thursday, May 2nd, at 7:30pm. Recently joined member and former professional astronomer Harvey Patachnik will speak on "**Design and Building of a Home Observatory.**" Public welcome. Please join us.

**Reminder:** The next "Half-Moon Saturday" Star Party is scheduled for May 18<sup>th</sup> beginning at 8:30pm. [Note the new STARTING TIME, one hour later than events held earlier in the year.](#)

**In this issue:** Website / Two Dark Saturday Starparties Left / Comet of the Decade? Of the Century? / Last chance for PANSTARRS / When Heavenly Bodies Align / New Solar Telescope / Telescopes etc. for sale /

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## **Bright New Stars:**

We are pleased to welcome back Dakota De Smet to membership in CCAS. Dakota was a member for many years and, after a hiatus, we are very pleased to have her back with us. Welcome back, Dakota!

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](mailto:info@ccas.ws)).

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**PLEASE CONSIDER SUBMITTING AN ITEM OR ARTICLE FOR PUBLICATION IN *FIRST LIGHT*.**

## **CCAS News Items and Current Events:**

### **CCAS Meetings:**

Many thanks to Schmidt Observatory Staff Members Ed Swiniarski, Lee Labarre, Bernie Young, and Mike Hunter for their engaging update on “**The State of the Observatory**” at our April meeting. Ed spoke on capabilities and operation of the new Meade Lightswitch telescope: it aligns itself! Lee Labarre highlighted how a sharing attitude and a good learning atmosphere among members provides a welcoming experience for new members; he also noted that new capabilities provide all with an opportunity to participate in genuine astronomical research. Bernie Young covered upcoming visit to the WSO by 9<sup>th</sup> graders; an NSO(National School Observatories) program whereby children in England can do remote observing using a telescope in Africa; and new procedures making possible streamlined use of our big 16” Meade. Mike Hunter spoke on the availability of loaner scopes and invited members to take advantage of training opportunities leading to membership on the Observatory Staff. The indoor presentations were supplemented with some “hands-on” demos out in the Dome after the meeting.

Recently joined member and former professional astronomer Harvey Patachnik will speak on “**Design and Building of a Home Observatory**” at our May meeting.

We are pleased to announce that Hans Moritz Günther, a Post-Doctoral Researcher at the Harvard-Smithsonian Center for Astrophysics has agreed to speak to us at our June 6th meeting on “**Star and Planet Formation and**

**How We Found Out What We Know Today.**” Moritz promises to highlight some of his own research work and to overview how HSCfA folks use the Hubble Space telescope and process data therefrom to extract information of scientific value. He received his PhD in Physics from the Hamburger Sternwarte (Hamburg Observatory) located at the University of Hamburg in northern Germany. His primary research is on young, low mass stars using X-ray and UV spectroscopy data from telescopes like Chandra, XMM-Newton and Hubble. Dr. Günther has focused on processes of accretion, high-energy emission, and other aspects of outflows, winds and jets involved in star and planetary system formation.

Mark your calendars: Larry Marschall, Professor of Physics associated with Gettysburg College, will speak on “**Wrong Way Planets and Other Strange Solar Systems**” at our meeting on July 11<sup>th</sup>. Dr. Marschall is the author of two books on astronomy: *GALILEO'S NEW UNIVERSE* and *PLUTO CONFIDENTIAL* and has taught courses in astronomy, physics, and science writing at Gettysburg. Whatever Dr. Marschall brings to CCAS is always interesting and informative.

Dr. Colin Bischoff, a post-doctoral fellow at the Harvard-Smithsonian Center for Astrophysics will speak on “**Observing the Origin of the Universe from the South Pole**” at our meeting on August 1<sup>st</sup>. Colin received a PhD in physics from the University of Chicago in 2010 with advisor Bruce Winstein for work on QUIET, a Cosmic Microwave Background polarization experiment based in the Atacama desert of Chile. He currently works at HSCfA on studies of the universe primarily with the Keck Array microwave polarimeter operating at the South Pole. At our meeting, he will present this work and its contributions to our understanding of the origins of the universe.

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Program planning is in progress to confirm speakers and topics for our meetings in September and thereafter.

Thanks to Mike Hunter, our Program Chair, for lining up these special topics and speakers; we also thank Harvey, Moritz, Larry, and Colin for agreeing to present.

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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. For sure he will follow up.

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

## Minutes:

The minutes of our April meeting are on our website. Click on the "Minutes" button at [www.ccas.ws](http://www.ccas.ws) or go to <http://www.ccas.ws/minutes/ccasminutes040413.pdf>

## From the Dome:

### Reminder:

The next "Quarter-Moon-Saturday Star Party will take place Saturday **May 18th**, beginning at 8:30pm. PLEASE NOTE THE STARTING TIME OF 8:30pm, an hour later than events earlier in the season. Remaining dates before we start our summer schedule in July are:

May 18

June 15

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We are pleased to announce that the WSO Observatory will host a Star Party for members of the Girl Scouts of Eastern MA based in Brewster at 8:30pm on Tuesday, June 25<sup>th</sup>.

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As always, "Private" group or individual observing sessions at the Werner Schmidt Observatory may be scheduled by contacting Observatory Director Joel Burnett at [Joelburnett@comcast.net](mailto:Joelburnett@comcast.net) or sending an email to [info@ccas.ws](mailto: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](mailto:info@ccas.ws)**

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## May Observing:

Please see resources in the May issues of *Astronomy Magazine*, pp 36-43 and *Sky and Telescope*, pp43-62, and Reference 5 for good guides to the May sky. Please see the May issue of *Astronomy*, p41 and Reference 6 for positions of the moons of Jupiter this month.

**...looking a bit forward:**

**Expectations Still High for Comet C/2012 (ISON) late in 2013:** We first mentioned the possibility of a very special comet, ISON, coming late in 2013 in the October 2012 issue of *First Light*. At that time comet ISON,

discovered by a team of Russian astronomers at the International Scientific Optical Network (ISON) was at magnitude 18, well outside the orbit of Jupiter and well outside the range of amateur telescopes. The following information, along with the Hubble photo shown on page 1, extracted from an article on NASA's Hubblesite (<http://hubblesite.org/newscenter/archive/releases/2013/14/>) webpage strongly suggests that *expectations are still very high for ISON later this year.*

April 23, 2013: Comet ISON is [still] potentially the "comet of the century" because around the time the comet makes its closest approach to the Sun, on November 28, *it may briefly become brighter than the full Moon.* Right now the comet is far below naked-eye visibility, and so Hubble was used to snap the view of the approaching comet [shown on page 1], which is presently hurtling toward the Sun at approximately 47,000 miles per hour. When the Hubble picture was taken on April 10, the comet was slightly closer than Jupiter's orbit at a distance of 386 million miles from the Sun. Even at that great distance the Sun is warming the comet enough to trigger outgassing from the frozen gases locked up in the solid nucleus. Hubble photographed a jet blasting dust particles off the sunward-facing side of the comet's nucleus. Preliminary measurements from the Hubble images suggest that the nucleus of ISON is no larger than three or four miles across. The comet was discovered in September 2012 by the Russian-led International Scientific Optical Network (ISON) using a 16-inch telescope.

Comet ISON is presently (April 27, 2013) mag 15.7. So, for now, you need a bit of optical help to see it (presently located between Gemini and Auriga.)

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## Highlights for May observing:

For now 7<sup>th</sup> magnitude comet **C/2011 L4(PANSTARRS)** remains within easy reach with binoculars until mid-May as it fades quickly on its outbound journey to the distant Oort Cloud. It is nicely located about 30° above the horizon passing very close to γ-Cepheus (the top of the "house") on its way past Polaris during May. If you want to observe PANSTARRS, seize the moment. This month the comet "never sets" because of its circumpolar location.

**Jupiter** and its moons end their reign over the sky for this season as they get lower and lower in the western

early evening sky (setting at 9:06pm on May 31.) But Jupiter will star in a series of special showings this month.

As the giant planet moves toward the sun, Venus and Mercury are “rising” in the evening sky during May providing spectacular viewing later in the month for anyone with a low western horizon. At dusk on May 24, 45 minutes after sunset, **Jupiter, Mercury, and Venus** form an isosceles triangle with Jupiter “at the top” all fitting within a circle having a 5° diameter. Two nights later, the triangle is equilateral with Mercury “at the top” all inside a 2° diameter circle. By the 31<sup>st</sup>, the three are in an almost perfectly spaced straight line with Mercury on high and Jupiter at bottom. Don’t miss these events. Truly a special “alignment of heavenly bodies.”

As Jupiter “decreases” this season, **Saturn** and its rings and moons become the show-stoppers of the evening. Saturn rises at 7:06 for Cape Codders on May 1 and is an “all night” observing target for most of the month.

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

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### Moon Phases, May, 2013

**Last QTR** Thursday, May 2<sup>nd</sup> at 7:14am EDT  
**New Moon** Thursday, May 9<sup>th</sup> at 8:28pm EDT  
**First QTR** Saturday, May 18<sup>th</sup> at 12:35am EDT  
**Full Moon** Saturday, May 25<sup>th</sup> at 12:25am EDT  
**Last QTR** Friday, May 31<sup>st</sup> at 2:58pm EDT

### Mooncusser’s Almanac and Monthly Alert<sup>1</sup> MAY 2013

| Object                          | May 1<br>(EDT)       | May 15<br>(EDT) | May 31<br>(EDT) |
|---------------------------------|----------------------|-----------------|-----------------|
| <b>Sun</b>                      | R: 05:41<br>S: 19:33 | 05:25<br>19:47  | 05:13<br>20:01  |
| <b>Moon</b>                     | R: 00:54<br>S: 10:56 | 10:08<br>00:02  | 00:44<br>12:07  |
| <b>Mercury</b><br>(am then pm)  | R: 05:19<br>S: 18:30 | 05:36<br>20:13  | 06:24<br>21:46  |
| <b>Venus</b><br>(evening)       | R: 06:07<br>S: 20:17 | 06:05<br>20:51  | 06:15<br>21:24  |
| <b>Mars</b><br>(in sun then am) | R: 05:34<br>S: 19:16 | 05:06<br>19:14  | 04:38<br>19:11  |
| <b>Jupiter</b><br>(evening)     | R: 07:40<br>S: 22:33 | 06:56<br>21:52  | 06:08<br>21:06  |
| <b>Saturn</b><br>(most of nite) | R: 19:06<br>S: 05:46 | 18:06<br>04:49  | 16:58<br>03:43  |
| <b>Uranus</b><br>(predawn)      | R: 04:28<br>S: 16:52 | 03:34<br>16:00  | 02:33<br>15:01  |
| <b>Neptune</b><br>(predawn)     | R: 03:07<br>S: 13:52 | 02:12<br>12:58  | 01:10<br>11:56  |
| <b>Pluto</b><br>(late evening)  | R: 00:05<br>S: 09:36 | 23:05<br>08:40  | 22:01<br>07:36  |

### “Daytime Star Parties” Now Possible with WSO’s 60mm Coronado SolarMax II Solar Telescope:

...Many thanks to Bernie Young for sending us this update on a key new capability at the WSO.

Werner Schmidt and Jim Carlson have been evaluating the new 60 mm Coronado SolarMax II hydrogen-alpha telescope with Meade DS2000 mount. Jim is an experienced solar observer. I used to see him sitting in his yard plotting sunspots as I rode my bicycle past his house, years before the Werner Schmidt Observatory was built, and even longer before I joined the society. Jim's first report [on the Coronado] was that he has seen things with this telescope he has never seen before. He and Werner discussed adding a second stage Etalon filter to obtain even sharper details.

The second filter was obtained, and Bernie Young wired up an external battery to replace the 8 AA cells powering the mount for extended viewing. On April 18, Mike and Werner moved the apparatus to the observatory for further evaluation. Bernie and Greg McAuliffe joined in and for two hours we explored how to use the new solar telescope. It is easy to use, but for convenience a short manual must be written for new users. After leveling, pointing north, and slewing to the sun the process of

focusing and tuning begins. Focusing gets a sharp image of the edges of the sun. Then a tuning lever is adjusted to bring out desired details: active regions and sunspots, granularity of the surface, or solar prominences, etc. "Tuning" is the operative word since the hydrogen-alpha band of the telescope is so precise that the doppler shift from the edge of the sun moving toward the observer reveals different details than the center of the sun and the opposite edge moving away. A thumb-wheel is adjusted, which bends the axis of the secondary filter with respect to the axis of the telescope in order to eliminate internal reflections. Then the second stage filter is tuned to refine the details of interest. A solar observer should plan on spending a few sessions getting accustomed to the telescope and its capabilities. Even moving the telescope in altitude or azimuth reveals different solar features. We also explored the capabilities of the Vixen 8mm-24mm zoom eyepiece.

Next we decided to replace the optical eyepiece with a video camera. The extension tube on the telescope offers enough range to do this, and it was easy to put the solar image on our wide screen TV in the viewing room. We enjoyed another half hour learning the capabilities of this configuration. We hope to have a short video tape or digital movie for the May meeting.

We will probably replace the tripod with a more rigid one we have [see below], and power the TV camera with the same battery running the mount. After a little more experience is gained, [we will be able to schedule] daytime local star editions of our regular nighttime star parties.

Meanwhile, observers can brush up on their understanding of the solar surface by searching the internet for the keywords hydrogen alpha, Etalon, solar with prominences, granularity, active regions, sunspots, filaments, and further search on words that come up that you do not understand. Then develop your own personal viewing plan for the next "local star edition" star party.

I have modified a heavy duty tripod we had on hand at the Dome (for a 10" SCT?) and it will now accommodate the new solar telescope. This will eliminate most of the wind-induced vibration we experienced in an earlier trial.

I'm going to bring it back to the WSO on a day soon when the sky is clear. My schedule is flexible though May 2, so if any of you see a sunny day coinciding with a couple hours of your free time, and want to view the local star, let me know.

Bernie

PS: I will continue with the preparation of a "User's Guide" on how to setup and use the scope and tripod.

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### **Telescopes Available:**

- We received this notice in an email to [info@ccas.ws](mailto:info@ccas.ws) on April 8:

Hello...I have a very lightly used Celestron 5" Nexstar for sale with a 25 mm lens, tripod and other accessories here in Dennis . I'm putting it on Craigslist for \$500.00. I also have other lens for sale (TeleVue 8mm , Meade 6.7mm and a 2x barlow , etc. ) if you have any members interested.

Thanks ,

Randy Fisher

508-385-2880

email contact: elaine f [elaine.fl116@gmail.com](mailto:elaine.fl116@gmail.com)

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- Paul Cezanne, a former member, sent this email April 20:

FOR SALE:

- Criterion RV-8, eq mount, speed controller.

See: <http://www.cloudynights.com/classifieds/showproduct.php?product=78596&sort=&cat=10&page=1>

- I also have an Edmunds 6" with clock drive, a Celestron 8" (bronze, not orange tube) with a dewbuster and 2x 2" focuser, and a halfway working Celestron ASGT computerized mount with pier.
- \$100 for the Edmunds, don't know what the others are worth, not too much probably.
- Contact Paul Cezanne in Provincetown; email: [oblique@alum.mit.edu](mailto:oblique@alum.mit.edu)

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**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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## **Cape Cod Astronomical Society**

|                           |                |              |
|---------------------------|----------------|--------------|
| President                 | Michael Hunter | 508-385-9846 |
| Vice President            | Stanley Rivers | 508-945-6126 |
| Secretary                 | Charles Burke  | 508-394-9128 |
| Treasurer                 | Peter Kurtz    | 508-255-0415 |
| Observatory Director      | Joel Burnett   | 508-221-7380 |
| <i>First Light</i> Editor | Peter Kurtz    | 508-255-0415 |

Mailing Address: A. P. Kurtz, CCAS Treasurer, 34 Ridgewood Rd,  
Orleans MA 02653

## **Cape Cod Astronomical Foundation**

|                        |                |              |
|------------------------|----------------|--------------|
| Chairman               | Werner Schmidt | 508-362-9301 |
| Vice Chairman          | Michael Hunter | 508-385-9846 |
| Director of R&D        | Bernie Young   | 508-394-1960 |
| Secretary              | Ed Swiniarski  | 508-896-5973 |
| Treasurer              | Pio Petrocchi  | 508-362-1213 |
| Observatory Director   | Joel Burnett   | 508-221-7380 |
| Observatory Phone Line |                | 508-398-4765 |

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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.

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### **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  $\gamma$ -Andromedae to Algol's west, mag 2.1, and  $\epsilon$ -Persei to its east, mag 2.9.

5) 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%20this%20Month/2013/03/Bright%20planets%20meet%20at%20dusk.aspx> 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>