



# *First Light*

The Newsletter of the Cape Cod Astronomical Society



May, 2012

Vol.23 No.5

## *“With My Own Eyes”*

*My observations don't lack meaning simply because they don't advance the cause of science...*

*I bought a telescope because I've discovered that seeing...things for myself...*

*...is deeply satisfying.*

*It's like taking a trip to the Grand Canyon. Would anyone seriously support the notion that such a wonder isn't worth a visit simply because it is so well known? The best picture postcard of the Grand Canyon will never replace standing on the rim and gazing into it with your own eyes.*

*I need to see these things for myself.*

*That was true when I studied the Moon in my youth, and that need has grown stronger as I've grown older.*

*All the photos, sketches, and image... cannot replace the feeling of seeing for myself shadows cast by lunar mountains...*

*...or the diamond-dust glitter of a globular cluster...*

*The depth and beauty of the universe gain a new level of meaning when you take the time to see things for yourself.*

*For me, that's reason enough to spend time at the eyepiece.*

*...Thomas Watson, Amateur Astronomer, Tucson AZ<sup>4</sup>*

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***The CCAS meeting on May 3<sup>rd</sup> will be devoted to Venus Transits and Planning for this June's Event; don't miss this meeting if you plan to view the June 5<sup>th</sup> transit!***

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**Next Monthly Meeting:** is Thursday, May 3<sup>rd</sup> at 7:30pm in the D-Y Library. The meeting will be devoted to Venus Transits and planning for this June's event; Bernie Young and Jon Greenberg will lead the discussion. Public welcome. Please join us.

**Reminder:** “Dark Saturday” Star Party at the Schmidt, 7:30pm, Saturday, May 19<sup>th</sup>; members and public welcome!

**In this issue:** SPECIAL ANNOUNCEMENTS / Summer Star Parties / May Observing Notes /Feature Story: “Postcards from Space” / Burbank Safely Back to Earth / Footnote to Feature Story / Eclipse Trip

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## **Bright New Stars:**

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 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*.**

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

### **CCAS Meetings:**

Many thanks to Michael T. Renzi, for his presentation on Light Pollution at our April meeting. Michael is an amateur astronomer with an observatory in Lakeville, MA and has been a champion against light pollution for many years. Instead of a traditional lecture, Michael showed and commented on an award winning documentary film called "The City Dark". Check out the following link for a preview of the film and background information <http://www.thecitydark.com/>

The film takes a very unusual approach to the subject of light pollution. Rather than just show the viewer statistics and maps of problem areas, the film gives an in depth history of the severe impact that light pollution has caused worldwide and looks not only at effects that light pollution has on the astronomical community, but also how it affects everyone on the planet. The film asks, "What do we lose when we lose the night sky?" Subjects such as a possible implication in the increase of breast cancer, and negative effects to wildlife such as birds and turtles are examined.

If you have an interest in improving the lighting in your town, check the following link <http://nelpag.harvee.org/> You may also be interested in the IDA (International Dark Sky association) Outdoor Lighting Forum on Yahoo: <mailto:IDAOLF@yahoogroups.com>

Bernard Young and Jon Greenberg will lead a program called **Understanding and Preparing For the Last (in our Lifetime!) Transit of Venus** at our meeting on May 3<sup>rd</sup>. Don't miss this presentation! Please see the Feature Story in the April *First Light* for warmup information. This will be the last transit of Venus to occur in our lifetime. *Mark your calendar. Read the story in First Light. Plan your observing location and techniques to assure eye safety. Tell friends. Come to our meeting* to "learn all about it." Plan to enjoy the event!

Mike Hunter, Tom Leach, and Charlie Burke will present **Pretty Astronomy Pictures: Learning By Mistake** at the CCAS meeting on June 7<sup>th</sup>. Whether you are new to astrophotography or an experienced veteran, you will enjoy this trip through travails and learning curves to astrophotos of really remarkable quality.

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Once more, thanks to Tom Leach who continues to put together great programs of speakers for our meetings.

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 Tom Leach, our Program Chairman. For sure he will follow up.

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

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### **SPECIAL ANNOUNCEMENTS:**

#### **Special Date for July Meeting; Mark your Calendars!**

- Because DY High School is closed down during the week containing the 4<sup>th</sup> of July, **our July meeting will be held on Thursday, July 12<sup>th</sup>**, the "second Thursday," rather than the day after the 4<sup>th</sup> of July.
- With the meeting change in July, the regular weekly summer star party, usually suspended on "first Thursday" meeting nights, **will take place on "first" Thursday, July 5<sup>th</sup>**; there will be no Star Party on July 12.

#### **Upcoming Election of Officers**

- The annual election of officers will take place at our July 12<sup>th</sup> Meeting. A Nominating Committee will be named shortly. Please consider communicating your ideas about nominations to members of the Nominating Committee between now and the beginning of July.

#### **New Cycle for Payment of CCAS Dues:**

- Payment is due for the 2012-2013 Membership Year at our meeting on July 12<sup>th</sup>. Please bring your check or mail to the Treasurer, A.P. Kurtz at 34 Ridgewood Rd., Orleans, MA 02653.

### **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/ccasminutes040512.pdf>

## Star Parties

The last **“Dark Saturday”** (winter season) **Star Party** at The Schmidt will take place:

7:30pm, May 19

Weekly Summer Star Parties will begin June 21, and will be held every Thursday except the second Thursday in July and the first Thursday in August (CCAS meeting nights)... through the end of August.

Star Parties will take place “Rain or Shine”, that is, if there are clouds or worse, participants will enjoy demonstrations and viewing tutorials, “virtual” or previously recorded sky events and phenomena on the “big TV” in our lower room indoors. Cancellations will take place only if dangerous weather is about. Detailed information will be made available in the “Green Box” on our website during May.

**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](mailto:mamhunter@yahoo.com) 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. Currently, Tom Leach is using the 14” for outreach in Harwich. Robert Tobin has the 8”. If you wish to borrow one of these ‘scopes, contact [info@ccas.ws](mailto:info@ccas.ws)**

## May Observing:

### Observing Highlights for May, 2012 at Cape Cod:

Please consult the May issues of *Sky and Telescope* (pp 44-54), *Astronomy Magazine* (pp 36-43), and *Astronomy Magazine Online* (See Ref 5) for more information on these highlight topics and others.

### PLANETS:

- Evening planets are Venus, Mars, and Saturn. Jupiter (conjunction May 13) and Mercury are in the sun. Neptune, Uranus, and Pluto are pre-dawn or very late night targets. Wait for June to try Pluto again a bit before midnight.
- Venus will pair up nicely with a crescent moon on May 22. It is beginning its dive toward the sun. By end month, it will set only 40 minutes after the sun. As we know, it will be in conjunction (and between us and the

sun) on June 5<sup>th</sup>. See last month’s *First Light* for a feature story on the upcoming Transit of Venus and be sure to attend the CCAS meeting devoted to that subject on May 3<sup>rd</sup>.

- *DO* continue to enjoy bright Saturn and its moons during May (See “Resources” below for information on Saturn’s moons.

## Mooncusser’s Almanac and Monthly Alert<sup>1</sup> May 2012

Object	May 1 (EDT)	May 15 (EDT)	May 31 (EDT)
<b>Sun</b>	R: 05:36 S: 19:39	05:20 19:53	05:08 20:08
<b>Moon</b>	R: 14:26 S: 02:51	02:31 14:57	15:37 02:25
<b>Mercury (in sun)</b>	R: 04:51 S: 17:30	04:50 18:39	05:23 20:36
<b>Venus (evening)</b>	R: 07:21 S: 23:14	06:44 22:32	05:35 20:53
<b>Mars (eve-night)</b>	R: 13:47 S: 03:17	13:11 02:28	12:38 01:36
<b>Jupiter (in sun)</b>	R: 06:06 S: 20:20	05:21 19:42	04:29 18:58
<b>Saturn (all night)</b>	R: 17:59 S: 05:15	16:59 04:18	15:52 03:12
<b>Uranus (pre-dawn)</b>	R: 04:15 S: 16:36	03:22 15:44	02:20 14:44
<b>Neptune (predawn)</b>	R: 02:57 S: 13:44	02:02 12:50	00:59 11:48
<b>Pluto (late night)</b>	R: 23:48 S: 09:32	22:52 08:36	21:48 07:32

### AN ASTEROID:

- As can be seen in this finder chart from *Astronomy Magazine Online*, the mag 11 main-belt asteroid



5 Astraea slides 0.5° south of 4th-magnitude Iota (ι)

Leonis May 11 and 12 and moves near 5th-magnitude Omega ( $\omega$ ) Virginis by end month. This region rides high in the south as darkness falls in May.

**Resources for the moons of Saturn and**

**Jupiter:** 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.

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.

**Two minima of Algol**<sup>1,3</sup> occur in Prime Time for Cape Codders in May: at 9:17pm EDT on May 11<sup>th</sup> and at 11:00pm EDT on May 31. Begin observing 3 hours before or peek now and then during the 3 hours before and after the minimum to watch the dimming and brightening.

**Moon Phases, May, 2012**

**Full Moon** Saturday, May 5<sup>th</sup>, at 11:35 EDT\*\*\*

**Last QTR** Saturday, May 12<sup>th</sup>, at 5:47pm EDT

**New Moon** Sunday, May 20<sup>th</sup>, at 7:47pm EDT

**First QTR** Monday, May 28<sup>th</sup>, at 4:16pm EDT

\*\*\* Full and at perigee, simultaneously;  
will create VERY HIGH TIDES.

[High Tide is at 11:51pm at Nauset Beach.]

**News Note:**

Most of you will remember the spectacular photo of Comet Lovejoy at the horizon over Australia sent to us by "our own" astronaut Dan Burbank from the International Space Station in December and published on the front page of the January 2012 *First Light*. That same photo is published in the May issue of *S&T*, p 41, as part of an article on comet Lovejoy, a "star" in the southern hemisphere this past winter.

**FEATURE STORY:**

**AN ENDING...**

THE FINAL LANDING OF SHUTTLE DISCOVERY, DESTINED FOR A MUSEUM, AT DULLES AIRPORT, APRIL 17, 2012



## BUT NOW, A CONTINUATION...

### “POSTCARDS FROM SPACE”

#### **[NEWS FLASH: BURBANK HAS LANDED! SEE PAGE 7!]**

#### A FEW NOTES AND PHOTOS SENT TO CCAS BY EMAIL BY ASTRONAUT DAN BURBANK FROM THE ISS DURING THE THREE WEEKS PRECEDING UNDOCKING AND RETURN TO EARTH SCHEDULED FOR FRIDAY, 4/27/12

Following six months on the ISS, three International Space Station Expedition 30 crew members including American Astronaut Dan Burbank are set to return to Earth Friday morning, April 27 (Russia time?) aboard their Soyuz TMA-22 spacecraft. [See p7.]

#### [ HIGHLIGHTS OF MESSAGES / PHOTOS SENT TO CCAS, FAMILY, & FRIENDS, BY DAN BURBANK DURING APRIL:

##### APRIL 9:

I don't know where the time has gone, but Anton, Anatoly and I are now less than three weeks from landing. Before we launched I somehow naively thought I'd have lots of time to send out notes to you throughout the mission. It turned out that life on ISS was a lot busier than I anticipated or maybe I was just a lot less efficient than I anticipated.

Either way this has been a wonderfully rewarding mission and something I'll never forget.

There are around seven billion people on planet earth and currently just six of them are living in space. Although I sincerely hope that ratio will approach unity at some point in the humanity's future, the fact is each of us on this crew is tremendously fortunate to be one of those six. As Don puts it, this experience is literally “one in a billion”. We've each won the mega-BILLION lottery, so to speak. One of the most amazing things about life in space is the breathtakingly beautiful things you see from the vantage point of 400km above the surface of our planet.

I'm going to try to send you a few notes between now and our landing on April 27th with some of our imagery “greatest hits”. Hopefully this will give you a taste of what it's like to live and work on this incredible space station.

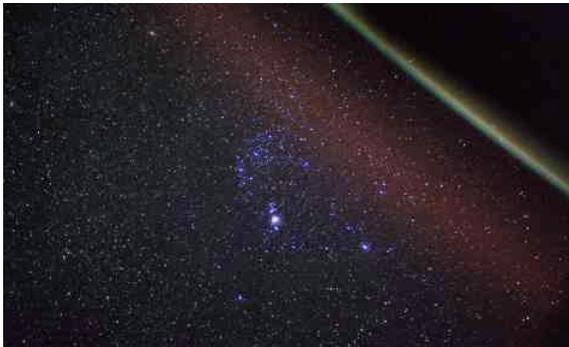


Photo A. Orion Setting  
Betelgeuse top left; M42 in center; horizon top right

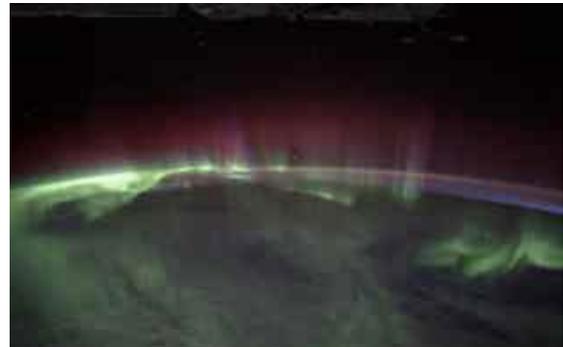


Photo B. Aurora

The first [photo A] is a nighttime shot of the constellation Orion setting headfirst behind the earth's limb. [Note: The “setting” of stars here is caused by our 17,500 mph motion over the surface of earth rather than earth revolving about its axis.] In this picture Orion's two brightest stars, the young blue giant Rigel and the dying red giant Betelgeuse, are outshone by the “Orion nebula” just below the center of the image. Stars look a little different when you see them in space. They don't twinkle like they do when you see them through 50+ miles of atmosphere. Up here they're steady, piercing points of light and so numerous that it's sometimes hard to pick out the constellations from among the thousands of fainter stars.

##### APRIL 17:

Anton, Anatoly and I have been busy this weekend, getting things squared away for our return a week from Friday. It's amazing how deeply interwoven our lives have become with this new home we've lived in this past half year. Unweaving those strands and connections is a slow process, at least if you want to do it right. We're busy packing, checking out our spacesuits and Soyuz capsule and handing over to Don, Andre and Oleg. Hard to believe it's time to leave, but it'll be wonderful to see family and friends again!

The first photo [Photo B on previous page], is of that ever-changing space physics chameleon, the aurora. This is a good example of a “moderate” aurora where most of the earth below us is illuminated by aurora, but the range of intensity is narrow enough that the image doesn’t have too many saturated or over bright areas. Auroras are generated by the interaction of radiation trapped in the earth’s magnetosphere with the rarified gases like atomic oxygen in the upper atmosphere. That interaction temporarily boosts electrons in those atoms of gas to higher energy states and then when the electrons return to their original state, they emit a photon of specific energy that we see as the greens, reds and purples of the aurora. Auroras are generally limited to the northern and southern latitudes where the magnetic lines of force curl downward toward the earth’s core intersecting the atmosphere on the way down. When the sun is especially active like during a coronal mass ejection or solar particle event we see higher levels of radiation on the ISS (generally not a good thing), but are compensated by spectacular displays of aurora.

APRIL 22:

Here is another window into our always wonderful if occasionally strange world living aboard the ISS. Dust is a bigger part of our daily experience here than it is on earth. Up here it tends to float for a while before accumulating on a surface or eventually getting picked up by the inlet filters of our ventilation systems. If you’re not careful your own ventilation system, your lungs, may become the inlet filters. You also find that your eyes are unfortunately very effective dust collectors. Because of that, we often use safety goggles when opening up panels where dust may have built up. We’ve even found that shaving with an electric razor is best done with your eyes closed as tiny hair particles seem to get liberated and make a beeline for your eyes.

On earth gravity generally limits the amount of “hang time” that dust has. I say generally because we often see spectacular examples of gravity losing out to strong winds during sandstorms, for instance. Here’s a picture [Photo C] of one of those examples covering 100’s of miles in northern Syria and Turkey. The sand sometimes gets lofted high into the upper atmosphere and transported 1000’s of miles away. Sand from the Sahara has occasionally made its way across the Atlantic to North America.



Photo C: Sandstorm over northern Syria and Turkey



Photo D: Moon (bright), its reflection on the sea, and Zodiacal Light (triangle a bit right of moon mid photo down to horizon).

We don’t just see dust when we look down at earth. From the ISS cupola windows we can also see it when we look out into space shortly before one of our 15 daily sunrises. Before the sun comes up over the horizon we start to see what looks like a *glowing haze extending in a growing triangular wedge upwards from the horizon*. It starts to wash out the fainter stars and creates the impression that we’re literally flying through some shimmering mist. But look 90 degrees to the side and you’ll see thousands of stars as bright points of light against the ink black of deep space. This effect, which requires really dark skies to see from earth, is created by billions of particles of dust that lie in the plane of our solar system. These dust grains “forward scatter” the light from the rising sun, which is why the glow tapers off as the angular distance from the sun grows. Here’s what it looks like [Photo D.] The bright over-exposed object on the left near the JEM exposed facility (dark patch) is the moon. If you have Picassa try opening the image for editing and then select the Tuning tab and darken the image using the Shadows slider. As you do you’ll see the triangular shape of the zodiacal light. More interesting, you’ll also see that it’s centered, not on the moon and its reflection on the ocean below, but instead *on a point above them in the image*. That’s because the forward scattering particles are located in the orbital plane of the planets about the sun rather than in the orbital plane of the moon about the earth. You’re literally seeing the collective contribution of those billions of particles that extend 10’s of millions of miles toward the sun.

Many thanks to Astronaut Burbank for sending CCAS his wonderful "Postcards From Space". By the time you read this, may Dan be safely back on earth!

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[\[Flash: Dan and colleagues landed safely in Kazakhstan at 7:45am EDT, Friday, April 27!\]](#)



Photo of Dan Burbank on ISS available from NASA: [http://www.nasa.gov/mission\\_pages/station/main/index.html](http://www.nasa.gov/mission_pages/station/main/index.html)

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#### FOOTNOTE TO OUR COMMUNICATIONS WITH ASTRONAUT DAN BURBANK

Your editor had earlier shared Dan's email and photos of April 9<sup>th</sup> with members of the CCAS Observatory Staff. Joel Burnett, a member of the Staff, sent me an email indicating he had forwarded Dan's email to his supervisor at Pave PAWS, Lt. Col. Shawn Smith, Commander of the 6<sup>th</sup> Space Warning Squadron, Cape Cod Air Force Station,. That is the Pave PAWS radar facility at the Mass. Military Reservation. Many of you will remember Col. Smith's excellent presentation on Pave PAWS at the February CCAS meeting.

Joel also shared with me the note Col. Smith sent to his Squadron members; i.e., the folks who work, among other things, to alert our astronauts about space debris.

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Here's the exchange (italics by editor of *First Light*):

Joel to Peter: April 13:

Subject: Dan Burbank e-mail

Thank you for sharing the Dan Burbank e-mail. I sent it to my leader at PAVE PAWS, Lt.Col. Shawn Smith (our guest speaker) earlier this week, *so he could see something of the people he is working so hard to protect*. I was hoping he might share his thoughts on it with our team (*at Pave Paws*). He did (see below). He has a gift for sharing ...

I also summarized the e-mail with the Station Avenue elementary school principal and PTO team who were thrilled to hear such inspiring news. I know some will wish to come listen to Dan's lecture to the CCAS group!

Lt. Col Smith's email to his squadron, including Joel, April 11:

Subject: FW: Just So You Know

Team Six,

The attached photos were taken by U.S. astronaut Dan Burbank (CAPT, USCG(Ret)) from aboard the International Space Station (ISS), where he has been orbiting the earth since 13 Nov 2011, on his third voyage into space. These photos could only be taken from space, and like other photos of the same vein, they change the way we view our planet and the universe we live in.

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Just so you know, what you are doing every single day helps protect CAPT Burbank's life, the lives of his fellow astronauts, our \$52 billion dollar national investment in the ISS, and the rest of our national security space architecture, upon which our nation's standard of living and security are critically dependent.

Think of these photos as being a receipt for the time you're investing to perform our mission to perfection, and thank you- V/R sas SHAWN A. SMITH, Lt Col, USAF Commander 6th Space Warning Squadron (AFSPC)

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Thank you, Joel, for sharing these emails with us. And thank you, Col. Smith. We are privileged to be able to learn some very good things about very special people in the astronaut corps and our military.

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## Bristol College Professor (Fall River) to Lead Trip to Australia for November Solar Eclipse

Steve Martin, Asst. Prof. of Astronomy, Bristol College, Fall River, MA, and Speaker at CCAS Meeting 11/4/2010, sent us this notice during April:

Steve Martin here. I teach astronomy full-time at Bristol Community College in Fall River. Thanks for keeping me on the email list for the CCAS newsletter – I always enjoying reading the articles and wish I could join you all more often for meetings and observing. Maybe for the transit of Venus in June! I wanted to let you and your members know that I'm leading a trip to Australia this November for the total eclipse there (See flyer: <http://www.elevatedestinations.com/eclipse.html>) and I'm spreading the word to those who might be interested in a once-in-a-lifetime trip.

Best wishes and clear skies,  
Steve Martin  
Asst. Professor of Astronomy  
Bristol Community College  
Stephan Martin <[smartin@copper.net](mailto:smartin@copper.net)>

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## CCAS Member APOM

Please remember to send your astroimages in to [info@ccas.ws](mailto:info@ccas.ws) for consideration as posting as the CCAS AstroPhoto Of the Month in a future issue of *First Light*.

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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	Tom Leach	508-237-9291
Vice President	Michael Hunter	508-385-9846
Secretary	Charles Burke	508-394-9128
Treasurer	Peter Kurtz	508-255-0415
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<i>First Light</i> Editor	Peter Kurtz	508-255-0415

Mailing Address: PO Box 207 Harwich Port MA 02646

## Cape Cod Astronomical Foundation

Chairman	Werner Schmidt	508-362-9301
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Director R&D	Bernie Young	508-394-1960
Secretary	Ed Swiniarski	508-896-5973
Treasurer	Pio Petrocchi	508-362-1213
Observatory Director	Michael Hunter	508-385-9846
Observatory		508-398-4765

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.

4) From the "Focal Point" essay in the May issue of *S&T*, p86. Mr. Watson is a freelance writer, naturalist, and amateur astronomer living in Tucson, Arizona; as he says "right next door to some very dark and often clear skies."

5) Here is the web address for Astronomy Magazine's online "The Sky This Month" online for May: [http://www.astronomy.com/News-Observing/Sky\\_this\\_Month/2012/03/An\\_afternoon\\_ring\\_of\\_fire.aspx](http://www.astronomy.com/News-Observing/Sky_this_Month/2012/03/An_afternoon_ring_of_fire.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>

7) A Russian Soyuz spacecraft carrying the three members of Expedition 30 landed safely in Kazakhstan at 7:45 a.m. EDT after successfully undocking from the International Space Station (ISS) and returning home from their nearly 6 month stay on the high-flying lab. For more details, see: <http://www.redorbit.com/news/space/1112523397/iss-expedition-30-touches-down-safely-in-kazakhstan/>