

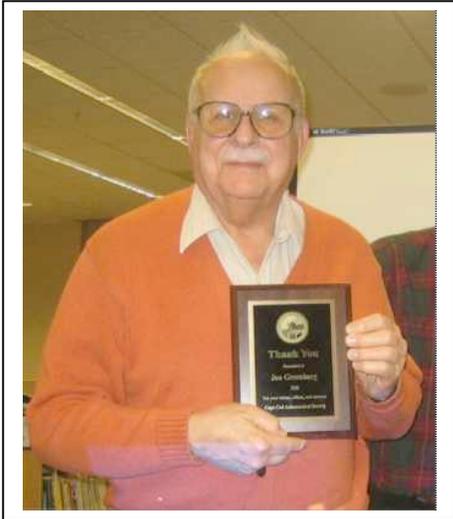


First Light

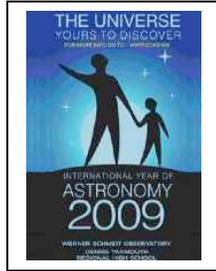
The Newsletter of the Cape Cod Astronomical Society



February, 2009 **Vol.20 No. 2**



Jon Greenberg receives CCAS recognition for his many years of teaching "Observational Astronomy for Beginners". See story page 7.



CCAS continues preparations for International Year of Astronomy



Bill McDonough, Mike Hunter, Werner Schmidt, and Jim Carlson oversee dismantling of the 16" prior to shipping to Meade for refurbishing. See story in "From the Dome", page 3.

Next CCAS General Meeting:
Thursday, February 5th at 7:30pm.
Mike Hunter will present a workshop on the construction and modification of telescopes.
PLEASE NOTE: THIS MEETING WILL BE HELD AT THE STATION AVENUE ELEMENTARY SCHOOL.
Details, Page 2.

Next Public "Dark Saturday" Star Party:
February 28th, 2009, beginning 6:30pm
"Star" attractions: "ringless" Saturn in the East, The Great Orion Nebula in the South, and crescent Venus in the West.

Next Executive Board Meeting:
Tuesday, February 17th, 2009, 7pm at Snow Lib.
A special meeting will be also scheduled during February to address IYA planning.



Member Astrophoto of the month:
Horsehead Nebula. IC434, in Orion by Chris Cook. ⁴

Bright New Stars:

We welcome to our membership Will Longstreth of Centerville, and David Martin of Marstons Mills and Fred Detschel of Mashpee. Will, if you read this online, we do not have your email address. If you have one, please email it to info@ccas.ws so we can send you important CCAS alerts when they are available.

As always, we invite recently joined members to send an email to the info@ccas.ws email address letting us know a little more about themselves: background, astro equipment preferred if any, and interests.

...and New Light from an Earlier Star...

Jim Carlson sent us a little new light on former member Mike Petrasko...

Jim heard recently from Mike Petrasko, who was one of the original members dating back to the start of the club in 1985, the year before Comet Halley made its closest approach. Jim judges Mike and his friend Muir Evenden were about 14 or 15 years old when they joined. Mike was a very active member and built his own roll-off roof observatory in Centerville. Jim received the following information from Mike a couple of weeks ago:

"I am now working for the Plymouth Public Schools as a Software/Hardware Technician. Because of my position here, one of the projects I am working on is a robotic telescope with Bill Luzader at the Blake Planetarium. It's a joint venture between the school system, the South Shore Astronomical Society and the STEP Foundation. The observatory is located at the Intermediate School where the Planetarium is."

Jim thought it would be interesting to have an occasional notice in First Light about former members, and that we should ask as well that current members update us on people we don't see too often any more.

So, members (and former members), please tell us about yourselves and your colleagues. First Light is interested in all "stars" regardless of how we receive their light. Thanks to Jim for waking up this good idea.

Thoughts on First Light

Thanks especially to Jim Carlson, Jon Greenberg (review on Astronomy Technology Today), Helen and Gary Derman (info and photos on the award to Jon Greenberg), Mike Hunter for his inputs to "From the Dome", and, one more time, to Chris Cook for sending us his spectacular photo of the Horsehead.

Thank you, members!
"First Light wants YOU!"

CCAS Events

The general meeting on Thursday, February 5th at 7:30PM will be held this month at **the Station Avenue Elementary School**. The D-Y administration has informed us that we cannot use the D-Y library that night because of a very busy Open House. Our meeting will be held in the library at the elementary school, 276 Station Avenue (just north of the entrance to D-Y High School) in South Yarmouth. Park to the right as you drive in; enter through the front door; turn left to go directly to the library.

Observatory Director Mike Hunter will speak on the construction and modification of telescopes at our February meeting: from the smallest 3" telescope he made in 1957 to a micro-observatory for an 8" Schmidt-Newtonian and beyond. This will be the first of a two part series from Mike on the construction and maintenance of telescopes. What could be more timely topics: our 16" is off to Mexico for refurbishing; Foundation members are studying the possibility of one day putting the 16" on an equatorial Paramount; Bernie Young has just rebuilt many aspects of the society's 8" Dob and is now working on refurbishment of his own 6" Newtonian; Peter may be asking for help on making improvements to a classic Coulter Odyssey 13" Dob which Jon Greenberg recently gave him and which will be on loan to the Society as long as needed; Mike already has suggested maybe one day we can mount that big old Coulter on a Go-To mount which may become available.

On March 5th, Mike will return to speak on telescope maintenance. As telescopes become more accurate, powerful, and complex, they become more susceptible to problems and more in need of proper maintenance. Mike will bring everyone up to speed on scope maintenance and alignment of the spectrum of telescopes from even the smallest Dobsonian to a permanently mounted computer-controlled 16" scope. Not to be taken lightly, maintenance is one of the single, most important things that can be done by the amateur astronomer to optimize viewing pleasure.

Thanks to Dr. John Huth, physics professor at Harvard for his very clear and informative presentation at our January meeting on how ancient peoples used star rise and set locations, sun altitudes and rise/set positions at various times of year, and birds, currents and wave turbulences, (among other "simple" tools) to navigate thousand mile trips at sea.

Highlights of the Jan 8th CCAS Business Meeting from the minutes Secretary Stan Rivers:

Now and in the future, only highlights of the Minutes will be presented in First Light since the documents will be made available on our website. Click on the "Minutes" button on the main page.

There were 22 members and nine guests in attendance. The membership approved a change in

the by-laws giving equal voting rights to appointed members of the Board. An award was made to Jon Greenberg for his many years teaching "Observational Astronomy for Beginners." (More on that elsewhere in this issue.) Tom Leach distributed copies of our new poster announcing the 2009 International Year of Astronomy and referring people to our website for more information. Gary Derman asked for volunteers to serve on a committee to nominate next officers.

Special Notice: Dr. Carter Emmart, Director of Astro-visualization for the Rose Center for Earth and Space of the Hayden Planetarium at the Museum of Natural History in New York City will present "Stars, Planets, and Life" at the Cape Cod Museum of Natural History in Brewster on Saturday, February 7, 2009, 02:00pm - 03:00pm. This exceptional program will focus on our celestial origins and address current knowledge of the continuum from stars to planets, life and us. Is the process that created our ability to understand the universe and map it across space and time unique?

Please note that we will experiment now with the following alternative to emailing copies of meeting minutes and First Light issues directly to members each month: when new issues of Minutes or FL are available, emails will be sent to each member notifying them of the availability of each on our website. Such emails will also contain an "active" URL which, when clicked, should take folks directly to the document in question.

Thanks to Tom Leach, our Programs Director, for the good work he does to bring us informative speakers and topics; please be sure to contact Tom if you have ideas for upcoming speakers or programs. Don't forget yourself!

"Dark Saturdays": Winter Star Parties

During winter one Star Party is scheduled each month at 7:30pm at the Werner Schmidt observatory. The target date is set as the Saturday evening closest to the timing of the New Moon.

Our Dark Saturday event January 24 pleased 9 people (5 members and 4 guests) with crisp, albeit frigid viewing. M42 was again the star attraction. The "Push-To" target-finding capability for the big Dob worked well and the 8" Celestron serves nicely as a surrogate for our 16". See story right.

The next "Dark Saturday" event will take place on February 28th.

Outreach to Students

Planning has begun to schedule student Star Party sessions in the spring semester for classes/clubs from 4C's, D-Y and Nauset Regional High School. Plans are also being formulated for an April outreach visit and Star Party for the Boys and Girls Club of Cape Cod.

Any members wishing to become involved in these initiatives please contact Peter Kurtz at info@ccas.ws

Executive Corner

The Board met January 21 at Snow Library. Highlights: a special meeting will be scheduled in early February to flesh out preliminary plans for CCAS activities for the International Year of Astronomy. Already planned is a special Star Party event at the Werner Schmidt Observatory on National Astronomy Day, Saturday, May 2nd. Afternoon activities preceding the actual Star Party are being planned as are other initiatives through the IYA year.

The next regular meeting of the Board is scheduled for February 17th in Snow Library.

From the Dome

...from Mike Hunter, Observatory Director

Early winter 2009 is the season for change and improvements to the Society's arsenal of telescopes.

- The main Observatory Meade 16" LX-200GPS Schmidt-Cassegrain has been shipped to Mexico for refurbishing by the manufacturer.
- Our Celestron 8" Go-To Scope has been temporarily installed in its place on the main pedestal in the Dome Room on a platform built for that purpose by Mike Hunter.
- Bernie Young and Ed Swiniarski have fitted our Obsession 18" Dob with tracking encoders which give it computerized "Push to" capability: when one moves the scope toward a sky target a handbox shows progress as the scope moves until it "sits" on the coordinates known for the target in question.
- Bernie Young has completed refurbishment of the club's 8" Dob. Bernie has written a nice report summarizing the work he did on that scope. Tom Leach has archived Bernie's report on the CCAS website.
- Peter Kurtz is readying a classic Coulter Odyssey 13" Dob given to him by Jon Greenberg for use in Star Parties at the Observatory.

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.

Foundation News...

...when we have input from the Foundation...

Reminder: CCAS has both 8" and 14" Dobsonian telescopes for loan to members. Currently, Tom Leach is using the 14" for outreach in Harwich. If you wish to borrow one of these 'scopes, contact info@ccas.ws

February Observing:

Mooncusser's Almanac and Monthly Alert¹

By Peter Kurtz

FEBRUARY, 2009

Object	Feb 01 (EST)	Feb 15 (EST)	Feb 28 (EST)
Sun	R 06:52 S: 16:56	06:35 17:14	06:16 17:30
Moon	R: 09:32 S: 23:37	00:07 09:26	07:38 21:33
Mercury (predawn)	R: 05:31 S: 15:16	05:21 15:00	05:28 15:30
Venus (early eve)	R: 08:37 S: 20:52	07:55 20:53	07:05 20:35
Mars (predawn)	R: 06:10 S: 15:34	05:49 15:34	05:28 15:35
Jupiter (predawn)	R: 06:35 S: 16:19	05:50 15:41	05:07 15:05
Saturn (evening)	R: 19:57 S: 08:45	18:58 07:48	18:01 06:54
Uranus (early eve)	R: 08:30 S: 20:05	07:36 19:14	06:47 18:26
Neptune (-----)	R: 07:23 S: 17:48	06:29 16:55	05:39 16:07
Pluto (pre-dawn)	R: 04:03 S: 13:59	03:09 13:05	02:19 12:15

Moon Phases, February, 2009

First QTR Monday, February 2nd at 6:13pm EST
Full Moon Monday, February 9th at 2:49pm EST
Last QTR Monday, February 16th at 9:37pm EST
New Moon Tuesday, February 24th at 8:35pm EST

More on February Observing

All Night:

Saturn rises at 7:57pm in Leo on 1 February. With rings nearly edge-on and the planet at magnitude 0.4, it becomes the main planetary all night show during February. One advantage of having the rings edge on this season is the opportunity to better see Saturn's moons. The February issue of Sky and Telescope Magazine has hour-to-hour charts for each day in February showing the positions of the five largest moons. Rings being nearly edge on, this is the time to try to see Saturn's moons through any reasonably large aperture telescope. There is one other tougher opportunity this season: the edge-on rings provide the chance to see the shadow of Titan cross the planet. There is one opportunity to see Titan's shadow this month and that is the night of February 24th which is also New Moon night. While this shadow crossing will be easy to see in CST, MST, and PST time zones, in the east it will be very hard to see since the crossing starts at 6am EST, very close to sunrise.

Early Evening Sky:

If you can get to it early in the month, blazing crescent **Venus** and fainter (magnitude 6) **Uranus** should make a nice pair until they start to set in the west closer to sunset later in the month. On the 1st of February, Uranus is about 10° below Venus and is brighter than most nearby targets with the exception of 4.5 magnitude λ -piscium west of Venus. By month's end, Uranus is 2 hours apart from Venus.

Venus is 1.3° north of the crescent moon on February 27th making a photogenic pairing.

As Venus sets in the west, watch for a green flash or even a rarer blue flash as the horns of Venus set through the strong inversion layers that are common in mid-northern winter.

Look for the Zodiacal Light in the west after evening twilight for the two weeks beginning February 12th.

February presents a great time to view the various nebulae and star groupings in Orion. Don't miss it. We have such wonderful tools to see so much. By contrast, Galileo made some sketches 400 years ago that suggest he couldn't see quite so well with his primitive telescope as we can. See the provocative article about this in the February issue of *Astronomy* magazine, page 66. If you use binoculars and make a sketch, your sketch will be closer to that Galileo made than what you can do from study using a modern large aperture telescope.

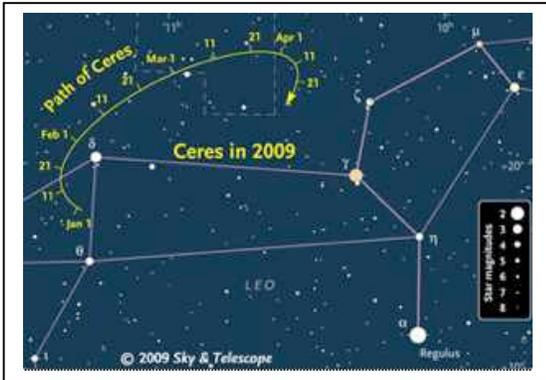
Pre-dawn Viewing:

The moon, 0-magnitude Mercury, -2.0-magnitude Jupiter

and 1.2-magnitude Mars dance together during predawn in February with the most attractive grouping starting an hour before sunrise on February 22: after the crescent moon rises it is followed in turn by Mercury (4° below/left), Jupiter (1.5° below/left) and Mars (2.5° below/left). Mercury is chasing Mars and will catch him on March 1.

Our two largest asteroids are nicely positioned for viewing during February. Magnitude 8 **Vesta** circles around at the head of Cetus setting late in the evening this month. Check daily finder charts at www.heavens-above.com if you wish to look for it on any particular evening.

Ceres, our largest asteroid/minor planet, is up nicely in the east in Leo by 8pm on February 1st. Ceres is closer and brighter this month than it will be again for 4 millenia! Because of this and the fact that it is available during prime time evening viewing hours, now is the time to track. During February it moves about one degree/day which makes it fun to track day-to-day or even over a few hours.



When Giuseppe Piazzi discovered Ceres in 1801, it was magnitude 8.0. This year you can see it nearly three times that bright, at magnitude 6.9, from mid-February through

the first week of March. Ceres reaches opposition on February 25th. A comprehensive article in S&T online⁵ finds that on that day Ceres will pass closer to Earth [1.583198 a.u.] than it has been any time since 1857. Ceres won't be this close again until 4164!" Detailed Finder Charts are available in the referenced S&T online article.

Libration and Declination Tables for the Moon²

FEBRUARY	
Max Longitudinal	Min Longitudinal
2/13 (6.5°)	2/27 (-5.5°)
Max Latitudinal	Min Latitudinal
2/15 (6.9°)	2/2 (-6.8°)
Max Declination	Min Declination
2/5 (27.1°)	2/18 (-27.1°)

Minima of Algol visible after dark at Cape Cod: ^{1,3}	
[Only minima actually timed near or after sunset thru predawn at Cape Cod are noted.]	
FEBRUARY	
4:18am	Thursday, Feb 5

Special Observing Opportunity in February: Naked Eye (?) Comet C/2007 (Lulin)⁶

Comet C/2007 N3 (Lulin), discovered in July 2007, will be the highlight comet of this season. It's predicted to reach about 5th magnitude in late February, so it should be easily seen in binoculars. It may even become detectable with the unaided eye in a dark, moonless sky.

The start of 2009 found Comet Lulin glowing at 8th magnitude in Libra, near λ- Librae not far from the border of Scorpius. Day by day Lulin moved higher in the southeast (as seen from mid-northern latitudes) just before start of dawn. It was hidden in the solar glare during November and December. Prior to that, observers visually followed it from as early as May 2008, when it was 14th magnitude, through late October, when it had risen to 8th magnitude. The comet was at perihelion (closest approach to the Sun) on January 10th, at a solar distance of 1.2 a.u. (181 million km).

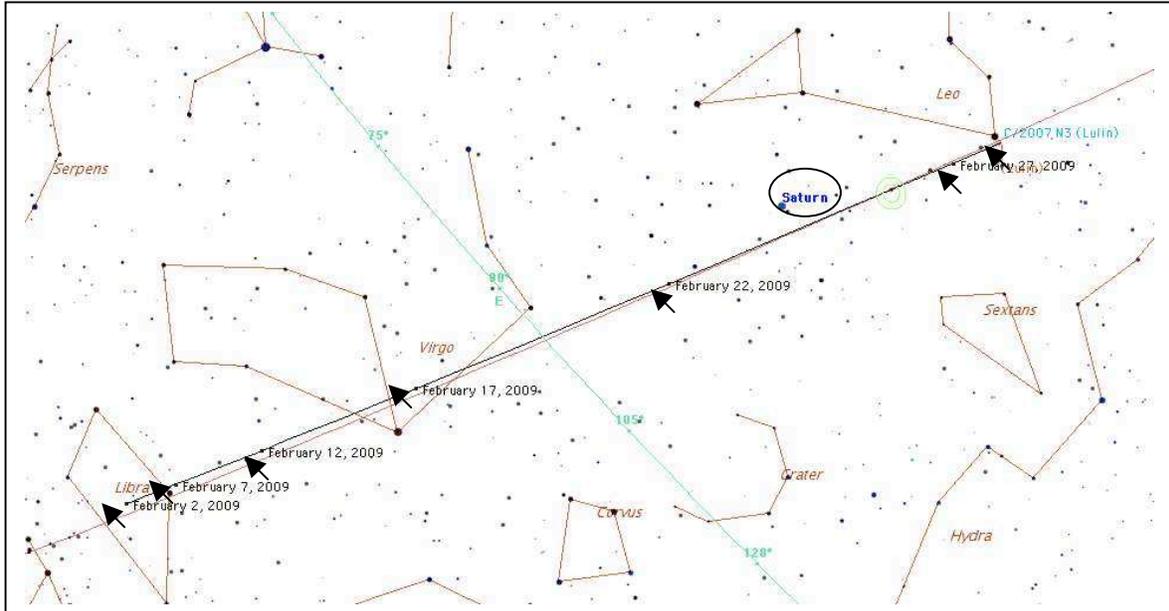
Rather than fading after perihelion, Lulin continues to brighten further as its diminishing distance from us more than compensates for it moving away from the Sun. During February, as Comet Lulin nears Earth, its brightness will intensify and its speed across the sky will increase. The beginning of February will see the 6th- or 7th-magnitude comet rising around midnight, and it passes within 1° of the wide binocular double star α-Librae on the night of February 5–6. Initially moving at about 1° per day, Lulin will be creeping westward at 2° per day by February 11th, when it crosses into Virgo and passes within a quarter degree of λ-Virginis.

Five days later, on the 16th, Lulin — now perhaps 5th or 6th magnitude — will pass 3° north of Spica, and the comet's speed

will have started to increase, perhaps to 3° per day.

On the night of February 23rd, near its peak brightness, Comet Lulin is passing 2° south-southwest of Saturn. That could be a very special photoop using a low-power telescope if the comet is bright enough. On the 24th, Lulin should be moving at about 5° per day! That's about 1 arcsecond every 5 seconds of time, enough to show obvious motion during a short telescopic observing session.

Similarly, that's 1 arcminute per 5 minutes of time if you're using binoculars; i.e. it moves while you watch!



Map For Comet Lulin for February. Arrows, left to right: 2/1 in Libra, 2/7 in Libra, 2/12 between Libra and Virgo, 2/17 in Virgo, 2/22 between Virgo and Leo, 2/27 and 2/28, near Regulus in Leo. Note that the comet is very close to Saturn 2/23-2/24 and at end month, Saturn, Ceres, and Comet Lulin will all be in Leo for most convenient evening viewing.

After that Lulin moves away from both Earth and the Sun, so it fades quickly.

You may notice from the chart that this comet is traveling almost exactly along the ecliptic — backwards! Could this really be just be a coincidence? The comet is on a nearly parabolic orbit, suggesting that it has never been greatly perturbed by the planets at all. Yet its orbital inclination is 178.4° , meaning that it's orbiting in the opposite direction from the planets. Because the comet stays nearly on the ecliptic, its tail (which points away from the Sun) aligns with the ecliptic and with the comet's own direction of motion across the sky. At certain times Lulin is expected to have a second tail as did Hale-Bopp some years ago.

Resources for Observing: Bimonthly Magazine: Astronomy Technology Today

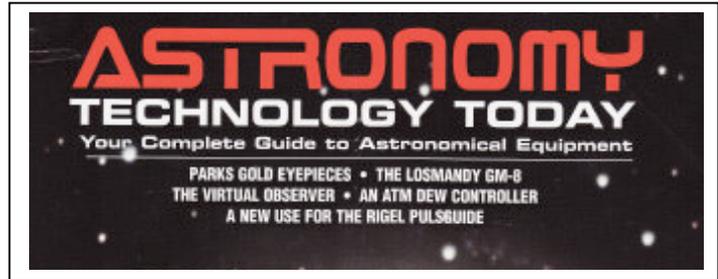
Thanks to Jon Greenberg for sending in this review. Jon adds the disclaimer: "I have absolutely no financial interest whatsoever in this publication so be sure to mention my name if you subscribe!"

"The only difference between men and boys is the price of their toys." (Anonymous)

Astronomy Technology Today is a new magazine that began publication as a monthly in April 2007 but is now printed on a bimonthly schedule. (If you wish to shake hands with a charter subscriber see me at the February 5 meeting.)

The magazine will appeal to techno-geeks since it covers more new instrumentation than *Sky & Telescope* and *Astronomy*. The articles describe new equipment sold by the usual suspects as well as many other companies that I was not familiar with. There are advertisements by the manufacturers for just about every piece of equipment that is discussed in an article. Most of the text appears to be provided by the manufacturer or retailer. You will not see the "What we liked" and "What we did not like"

equipment evaluations that you will find in *Astronomy or Sky & Telescope*. This picture shows the top of the cover of the January-February 2009 issue which I received on January 10th. (They always seem to be late but it is on a fairly consistent basis so that it doesn't really matter much.) Excerpts from the Table of Contents for that Issue: Cover Story: Evolution of a (home) Observatory Project; Parks Gold Eyepieces; The Losmandy GM-8; The Virtual Observer (computer simulations of telescope observations); Astro Tips, Tricks, and Novel Solutions.



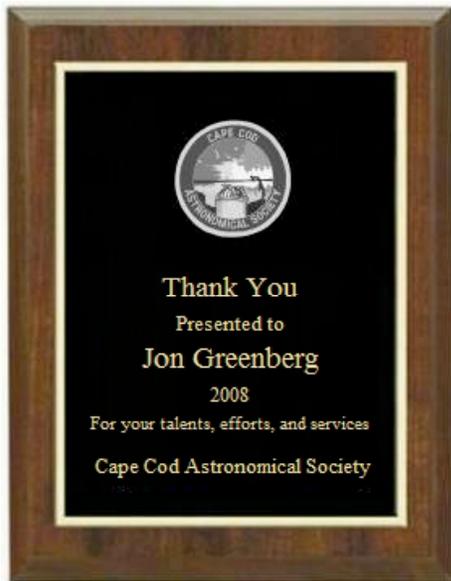
Some of the featured items are decidedly high end - how about a Stellarvue 160 Oil Spaced Apo Triplet Refractor priced from \$8990? You may drool like a Pavlovian dog as you turn the pages. There are also articles and ads about reasonably-priced scopes and accessories that you might actually consider purchasing and non-equipment related articles about building home observatories, astro tips and ATM projects, etc.

Subscription cost is \$ 15.00 a year for six bimonthly issues. For more info visit <http://AstronomyTechnologyToday.com>

.....Jon Greenberg

Jon Greenberg receives CCAS recognition for his many years of teaching “Observational Astronomy for Beginners”

Thanks to Jon for his continuing contributions to First Light, always informative, usually with a welcome spark of humor. Here’s a little more information on the award presented to Jon at our January meeting.



Presented to Jon Greenberg by the Cape Cod Astronomical Society on the occasion of his decision in 2008 to end many years of presenting his course “Observational Astronomy for Beginners”

Thank You, Jon, for your active participation in our organization, your at home teaching service to astronomy and the proceeds from that teaching which have been used for our observatory.

Jon presented 18 sessions of his introductory course to some 180 students over many years. The courses were given mostly on his roof deck observatory supplemented by inside work when weather dictated. Jon has a wonderful full horizon deck with a 10” Go-To Schmidt-Cassegrain, two Dobbs, one of which is a 13”, and a variety of binoculars including one image-stabilizing pair. All instructor fees from Nauset Community Education, a total of some \$8000, were donated toward construction and (later) maintenance of the Werner Schmidt Observatory.

[Thanks to Gary and Helen Derman for providing the photos included in this article.]

[A personal note from your editor: I took Jon’s course in the spring of 2006. This experience was key to rekindling my interest in Astronomy, joining the Society, and, a year later, beginning work as First Light editor. Thanks you, Jon.]

Cape Cod Astronomical Society

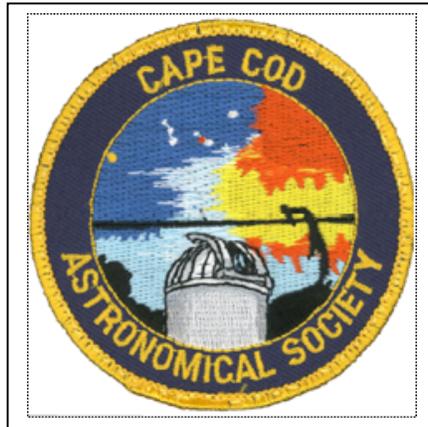
President	Gary Derman	508-240-0984
Vice President	Tom Leach	508-237-9291
Secretary	Stanley Rivers	508-945-6126
Treasurer	Kelvin Parkinson	508-385-5982
Observatory Director	Michael Hunter	508-385-9846
First Light Editor	Peter Kurtz	508-255-0415

info@CCAS.ws

Cape Cod Astronomical Foundation

Chairman	Werner Schmidt	508-362-9301
Vice Chairman	Michael Hunter	508-385-9846
Director R&D	Bill McDonough	508-771-0471
Secretary	Ed Swiniarski	508-895-5973
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.



Reference Information:

- 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 2007*, and other sources. The *Observer's Handbook, 2007 and 2008*, 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-January 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) Chris Cook Photo, 1/9/09 : <http://www.abmedia.com/astro/current/Horsehead-Ha-130EDF.html>
- 5) <http://www.skyandtelescope.com/observing/objects/asteroids/35387769.html>
- 6) Most of this story is taken from Sky and Telescope online: <http://www.skyandtelescope.com/observing/home/35992534.html>
- 7) Bernie Young's report: <http://www.ccas.ws/newsletter/footnotes/8inchdobmods2009.pdf>

This issue: http://www.ccas.ws/newsletter/Feb_2008PDF.pdf