



First Light

The Newsletter of the Cape Cod Astronomical Society



March, 2008

Vol.19 No. 2

Thoughts on First Light

We enter equinox month marking our progress halfway to the longest daylight day of the year. How's that for optimistic! This issue of First Light has wonderful articles supplied by our members: a most amusing "self-profile" from Jon Greenberg, a great Snoopy cartoon (remember: a beagle won the Westminster Kennel Club Best in Show a week or so ago!), a writeup on an 8" Dob available for loan, and remarkably different and spectacular photos of the recent lunar eclipse from members Tom Leach and Chris Cook. And thanks to Werner Schmidt for his views on possible future developments for our Observatory.

Please continue to send in articles for inclusion in First Light; suggested areas: Member Profiles, "Light Side" articles about members, astronomy resources, favorite observing targets or techniques, astrophotography and photos, special observing experiences you have had. As we can see from the contributions made by members for this issue, this newsletter is most vibrant when it has input from many members.

CCAS Events

Mark your calendars:

Astronomy Day this year will be May 10th.

We need to begin planning our activities for that day which, for sure, will include a star party.

At our **February 7** meeting, member Gary Derman presented his wonderful non-mathematical tutorial on Relativity and Space-Time. His most imaginative and creative approach to teaching the first steps to understanding this very difficult subject left only a few of us fully comprehending... but nearly all of us beginning to appreciate the kind of thinking we need to learn to do to begin to grasp these important concepts. Gary also generated a strong interest in many of us to study more on the subject. Thank you, Gary for a wonderful teaching job. Mission accomplished!

We all look forward to Mike Hunter's presentation

upcoming at the March 6th meeting. Just returned from more than a month in Australia visiting family, Mike will regale us with "Observing the Stars in Australia and Other Far Off Places". Don't miss this one. One comment from Mike to whet your appetite (I paraphrase:) "Imagine looking out at the sky on a dark night in early February and having Orion be at best a very minor player in the sky above?"

**8" DOBSONIAN REFLECTOR TELESCOPE
AVAILABLE FOR LOAN TO CLUB MEMBERS**

A "new" (old) 8" Dobsonian telescope is now available for members to borrow.



Last year, Mr. Paul Robinson of Orleans donated an 8" Dobsonian telescope to our club. It was constructed by his son Michael about ten years ago when Michael was a student at the Orleans Charter School. John Dobson conducted a one day workshop in which students were assigned to make different components of the scopes in assembly-line fashion so that each student would end up with his own scope.

Our 8" Dob is probably the only one in the world with an LP recording by the Mormon Tabernacle Choir as its azimuth bearing! (Unfortunately, the hole in the LP had to be enlarged to accommodate the bolt between the rocker platform and the base; so that the record is no longer

playable.)

The donated scope was recently upgraded by Jon Greenberg and Greg McCauliff : a rack and pinion focuser, new eyepiece, a spider vane for the secondary mirror, a Telrad reflex finder, and a new mirror cell for better collimation were added. It works!

The scope is available to club members as a loaner for a period of two months each. If you are interested, contact Jon at 508-255-8605 or jonbg@comcast.net.

Jon Greenberg 2/20/08

Reminder: CCAS also has a 14" Dob for loan to members. Russ Dessault has had that scope for several months but it can be made available to any other member who might wish to use it.

MYTHS AND CONTROVERSIES IN ASTRONOMY OVER THE AGES

Jarvis Hunt will present a four session course on these areas on Wednesday mornings at 10:30am at Eldredge Public Library in Chatham beginning March 5th. He will explore myths and misinterpretations about astronomy that have sprung up over the centuries. Time will also be devoted to the spring sky and sights to be observed at that time and there will be at least one nighttime observing session, possibly at the CCAS Observatory. For information, call Eldredge Library at 508-945-5170 or program chairman Eileen Dunn at 508-945-3226. There is a nominal fee.

Don't forget to remind your friends and neighbors about the upcoming sessions of Jon Greenberg's course "Observational Astronomy for Beginners" beginning Wednesday, April 9th. Details on Jon's course are given in last month's First Light.

Executive Corner

The CCAS Executive Committee had a special meeting on Monday, February 11, to discuss ways of improving publicity and public outreach for our society. The objective of these deliberations is to broaden enjoyment of and participation in Observational Astronomy by improving communications (public outreach) and attracting new members.

Topics discussed included:

- Better dissemination of the Society's brochure. Among other ideas, we will make a point of having available copies for members to disseminate at each

monthly meeting and explore asking Town Libraries to make our brochures available for pickup.

- Better outreach at the DY highschool to include special postings inviting students and parents to our star parties.
- Better outreach to youth groups. Offer special group star parties.
- More aggressive use of newspapers and radio in public outreach; more aggressive outreach to clubs and organizations such as seniors groups and sailing/yacht clubs.
- A proposal for creating a supply of decals for car windows of members.
- The idea of club members alternating in writing short astro columns for publication in local newspapers.

Note added while editing: At a recent meeting of the Observatory Staff, Tom Leach volunteered to build "Sandwich Board" type signs to be put out to alert drive-bys about public starparties when they begin in June.

We will continue work in this area at our meeting on March 10th. Please let us have your ideas; please contact any member of the EC or send your ideas to your editor at www.ccas.ws before March 5th.

From the Dome

The construction to install a motorized system to open the lower shutter was completed during the cooler months and other initiatives for improvement are under consideration as reported by Werner below.

Mike Hunter called the first of what will become monthly meetings of the Observatory Staff: members who have been trained in the processes of opening up and closing the building and operating the principal telescopes.

The following items were addressed at that meeting and will become agenda for the Staff over the next months:

- Staff Duties: including "Keeper" of the 18" Dob, "Keeper of the 8" SCT, Optics Cleaning Expert.
- Star Party Committee: Publicity, Schedules, Programs, Observing Targets
- Building Maintenance and Cleanup
- Special Interest Groups: so far: Good star targets for Amateurs, Astrophotography, Asteroids and Comets, Moons of Jupiter, Messier/Caldwell Objects.
- Plans for Astronomy Day

From the Dome will report progress in these areas as it takes place.

Peter Kurtz

Foundation News

We are currently in the process of modifying the observatory to improve the operations and make it easier for all people to use. You may have observed the changes we have made in the operation of the dome shutter; it must be considered an unqualified success.

Items under examination include the noisy and somewhat inadequate heating system, the leaky wooden entrance doors and the telescope performance in the pointing and tracking behavior.

There is no question that the future demand in the imaging field will put more emphasis on scope tracking behavior in multiple hour-long exposures. In all likelihood, our conventional Meade equipment will not satisfy us in this regard and we may have to install a different type mount like the Paramount unit. This investigation will take a fairly long time, perhaps as long as a year, and will be spearheaded by Bill McDonough, our most experienced astronomer. At this point in time, we firmly believe that the optics of our 16" scope are excellent and that our CCD camera is fully capable of all present and future demands.

If you have any comments on these projects I am sure that Bill McDonough will be only too happy to discuss them with you.

Werner Schmidt, Feb 6, 2008

Astro Trivia

The question of the month is: "What is Dawe's Limit?"

Hint: You should know this if you like to look at double stars!

...to be discussed at our February meeting.

**NOTE: DAYLIGHT SAVINGS
TIME BEGINS SUNDAY,
MARCH 9 AT 2AM**

Mooncusser's Almanac and Monthly Alert¹

By Peter Kurtz

MARCH 2008

New Moon Friday Mar 7 at 12:14pm EST
First QTR Friday Mar 14 at 4:46am **DST**
Full Moon Friday Mar 21 at 2:40pm **DST**
Last QTR Saturday Mar 29 at 5:47pm **DST**

Object	Mar. 01 (EST)	Mar.15 (DST)	Mar.31 (EST)
Sun	R: 06:14 S: 17:31	06:51 18:47	06:24 19:05
Moon	R: 02:49 S: 11:10	12:20 03:54	03:43 13:03
Mercury (dawn)	R: 05:06 S: 15:11	06:04 16:38	06:02 17:44
Venus (dawn)	R: 05:14 S: 15:18	06:06 17:51	05:51 17:29
Mars (night)	R: 11:08 S: 02:45	11:36 03:10	11:06 02:33
Jupiter (predawn)	R: 03:31 S: 12:47	03:44 13:02	02:49 12:10
Saturn (night)	R: 16:44 S: 06:15	16:43 06:17	15:35 05:11
Uranus (-----)	R: 06:34 S: 18:03	06:40 18:12	05:39 17:13
Neptune (-----)	R: 05:29 S: 15:51	05:35 15:59	04:33 14:58

More on March Observing:

More on the moon for March: Special Shadow Show!

For viewers on Cape Cod, on March 14th, the moon will be positioned in the evening sky such that shadow play at the terminator on the craters Archimedes, Autolycus, Aristillus and others along with the always interesting Mons Piton will be spectacular as the evening moves along. If you are observing with good binoculars or telescope that evening, check out the shadows at the locations just mentioned about once each half hour. Early in the show, Mons Piton casts a long shadow all the way to the terminator. Later in the evening the shadow shortens as sunrise on the moon progresses hour to hour.²

Libration and Declination Tables for the Month ¹

MARCH	
Max Longitudinal	Min Longitudinal
3/18 (5°)	3/5 (-6°)
Max Latitudinal	Min Latitudinal
3/26 (7°)	3/12 (-7°)
Max Declination	Min Declination
3/14 (28°)	3/1 & 3/28 (-28)

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.

In March, **Mercury** and **Venus** continue their dance not far from higher Jupiter in the dawn sky. The show is better early in the month than later since as the month moves along, Mercury begins to move closer to the sun. Venus and Jupiter stays relatively constant in our dawn sky relative to the sun; Venus grows more completely globular during the month (95% “full” at month’s end). If you like looking at Venus, do it before June since during June and July it passes behind the sun to become once again, in July, an “evening star.”

Uranus and **Neptune** are in the vicinity of **Mercury** and **Venus** in March dawn skies but not in any useful way for us. The two outer planets are so dim at dawn that now is not a good time to look for them. From the point of view of earthlings, they will be too close to the sun for viewing even with large scopes for several months until the earth moves in its orbit closer to points between the sun and those outer two.

The **ZODIACAL LIGHT**, a wispy yellow cone of light from the horizon up to as high as about 40° altitude, may be visible 80-120 minutes after sunset particularly during the period March 23 through April 6.

“Close Encounters” with moon:

- 3/3 Jupiter 4° N of **crescent Moon**
- 3/5 Mercury, near greatest elongation (27°W) only 0.2° North of **crescent Moon**; Venus only 0.2° South of moon.
The moon will actually occult Venus late afternoon if you are observing from locations well south and west of the Cape.
- 3/10 **Crescent Moon** 1.2° North of Pleiades
- 3/19 **Nearly full moon** 0.6 South of Regulus

VISIBLE ASTEROIDS, MINOR PLANETS

Ceres, the 2nd largest dwarf planet with diameter near 1000km, magnitude about 8.5, will be a good telescope target during March moving from about 5° SW of the Pleiades March 1 to about 5° direct south of the asterism by end month. Most star programs give day to day coordinates as does Heavens-Above.com.

Minima of Algol visible after dark at Cape Cod: ^{1,3}

Also of Interest

- 3/3 Jupiter 4° N of **crescent Moon**
- 3/5 Mercury, near greatest elongation (27°W) with Venus, bracket the moon as noted preceding. Mercury is still close (1° South of Venus) on 3/23.
- 3/20 Vernal Equinox at 1:49 **DST**
- 3/29 Double shadow transit on Jupiter, 0:22 **DST**

MARCH

3:47AM DST	Thursday 3/13
1:36AM DST	Sunday 3/16
9:26PM DST	Tuesday 3/18

Member Profile: Jon Greenberg

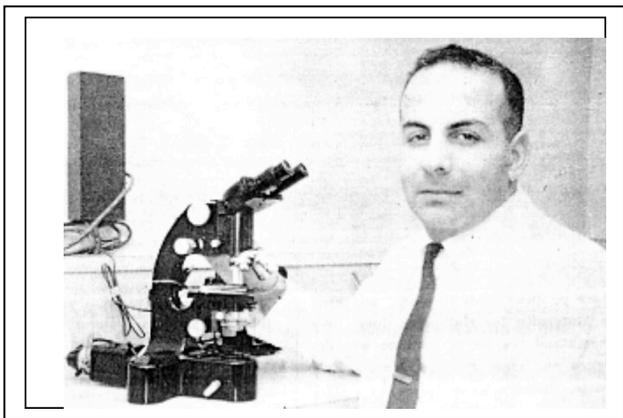
There is a Jewish saying that everyone has his own mishagoss (craziness). For me and, I suspect, most of our members, that mishagoss is astronomy.

My certifiable acts of insanity include:

1. Spending thousands of dollars to buy equipment to view astronomical objects when far better images can be seen in a book, video or on-line.
2. Spending thousands more dollars and traveling thousands of miles to see total and annular solar eclipses lasting from two to seven minutes.
3. Spending even more thousands of dollars to build a roof deck observatory... with no protection from cold winter winds and even less from blood-thirsty no-see-ums and mosquitoes in the warm months.
4. Staying up to ridiculous hours of the night to see "just one more" deep sky object.
5. Lying on a lounge chair for hours in the dark to see so-called "shooting stars".
6. Getting my butt out of a warm sack before dawn to see a small black dot cross the solar disk (aka: transit of Venus).
7. Howling like a wolf at a full moon because it zaps out almost everything.
8. Meeting with other nuts monthly to discuss these strange, bizarre doings.

My active involvement in this mishagoss began as an adult and probably was an outgrowth of my professional involvement with another type of scope through which I saw very small things that were very close. (See photo). My parents wanted me to be a doctor and bought me a fairly decent B & L microscope as a teenager. Through it I viewed plant cells, bacteria and the like... hardly celestial objects.

I obtained my B.A. at Yale and then went to Switzerland and studied medicine in French in Lausanne and in German in Zurich where I obtained my MD degree in 1956. After a rotating internship at Albany (NY) Medical Center, I did my first year of residency in pathology in Cleveland Metropolitan General Hospital and the last three years at the Brigham and Women's Hospital in Boston. I was an Air Force pathologist for two years stationed near London and when I returned to the States, I accepted a position as pathologist at The Cooley Dickinson Hospital in Northampton, MA where I worked for 27 years.



with 'scope, 1963 ("Where's M42?")



with scope, 2008 ("Ah, aperture is everything! ...I found it!")

In 1969, I acquired my first telescope for \$75.00, not small change then. It was a fairly decent Unitron refractor (probably 60 mm.) on an equatorial mount. As I viewed the moon from my driveway, a neighbor asked me if I could see the astronauts who had just landed on the moon for the first time!

About 1970, I enrolled in a summer course in astronomy at the observatory of Mt. Holyoke College in South Hadley. The instructor was an enthusiastic young man who informed us that as we walked around we took our own personal zenith with us – kind of neat! I have always been interested in languages and etymology and as I listened to the lectures I was struck by the beauty of astronomical terms - declination, right ascension, celestial sphere, meridian, zenith, aurora borealis, nebulae, novas, galaxies - to name just a few. We learned the history of astronomy and how to identify constellations and planets.

Mt. Holyoke Observatory possessed an 8inch Alvan Clark refractor (1880) and we also had about six of the original orange Celestron 8” SCT’s at our disposal. Outside the observatory there were metal piers set in the ground with equatorial wedges so that we could bolt the Celestrons onto the piers. We calculated the hour angle and set the declination angle and, to my amazement, we actually found the desired objects in the sky.

After completing the course, I bought a beast of a scope - an 8” Cave Astrola on a heavy German equatorial mount. My best sighting was the giant red spot on Jupiter. The focal length was too long for Deep Space Objects. I sold the scope for about half of what I paid for it and got an 8” Coulter Odyssey with a Telrad finder. That’s when I really started to enjoy using a telescope and finding things much more easily than I was able to do with a finder scope.

About that time I became active in two local astronomy clubs: The Springfield Stars Club and the Amherst Area Amateur Astronomy Association or AAAAAA; some people interpreted that acronym as resulting from a merger of the American Automobile Association and Alcoholics Anonymous.

In the fall of 1978, I went to a meeting of amateur astronomers in New Hampshire. I told a participant that I was toying with the idea of going to central Montana in February 1979 to see the last total solar eclipse in the continental U.S. until 2017. I said that I probably wouldn’t go because the odds of decent weather for the eclipse were about 50%. He replied: “Jon, if you don’t go the odds are 100% that you won’t see it”. That convinced me and I saw my first total eclipse over a cow field in central Montana. Subsequently, with my wife, I saw total solar eclipses in Baja, California (1991), and Aruba (1998) and annular eclipses in South Carolina (1984) and New Hampshire (1994). If you don’t believe that eclipse chasers are crazy, listen to a recording of their utterances during totality!

In 1986 I went to Peru with my wife for a better view of Halley’s comet. The southern skies at high altitude with little light pollution were a revelation. Everyone should get south of the equator at least once. Did I mention that we were in an earthquake in the ancient Inca capital of Cuzco? It dropped big slabs of wall plaster on our pillows at our hotel; this fortunately while we were visiting the Incan Temple of the Sun.

In 1975 we bought a cottage in Eastham and in 1990 when I retired I joined CCAS and attended summer meetings. In 1996 we sold our house in Amherst and became year-round Cape residents. We expanded our cottage twice and I had a roof deck observatory built over the second story. My wife gave me with a 10” Meade LX-200 SCT which I mounted on a permanent pier on the roof deck. I already had the Coulter 8” Dob and a Coulter 13” Dob.

In the fall of 2000, I took a course offered by Nauset Community Education. The class was small and the instruction was poorly organized and presented. That made me think: “Hey, I can do better! Why don’t I offer a hands-on course in observational astronomy on my roof deck?” The course was first offered in the winter of 2001 and 24 students signed up for 8 places. With the help of Bill Boyd, we expanded the class to 12 students and the remaining 12 were shifted to the spring semester. When the course started, the Werner Schmidt Observatory was in the planning stage and I decided to donate the instructor’s portion of the tuition toward construction of our observatory. This spring, assisted by Betsy Young, Bill Boyd and Peter Kurtz, I will be giving the course for the 18th time. So far we have raised over \$7,000 towards construction and maintenance of our observatory.

In 2006, I was elected president of CCAS for a two year term. My interests in astronomy are primarily in naked-eye observing, as well as with binoculars and telescopes and sharing my enthusiasm for astronomy with my students and fellow members.

Let’s remember that the word “amateur” comes from the Latin “amator” - a lover. If you don’t love it, don’t do it!

A Blast from the Past:

Jon sent us this "Peanuts" cartoon which appeared in a recent Cape Cod Times. He points out that "Peanuts" started in 1954 and when Charles Schulz died about 6 years ago, the paper has been reprinting the series. So this cartoon probably came out about 1960.



What is interesting is that those two eminent astronomers, Lucy and Linus Van Pelt are using a Newtonian reflector instead of the clunky refractors usually shown in cartoons. Makes one suspect that maybe Charles Schulz might have been an amateur astronomer? In any event, "the sky's the limit" for Snoopy this month since his cousin Uno won Best In Show at the Westminster Kennel Club event this month, the first time a beagle ever won Best in that show in more than 100 years!

A PORTION OF THIS PAGE IS INTENTIONALLY LEFT BLANK TO REMIND ALL MEMBERS OF OUR SOCIETY THAT THERE IS ALWAYS PLENTY OF ROOM IN FIRST LIGHT FOR YOUR CONTRIBUTIONS.

THIS MONTH WE HAD INPUT FROM FIVE CLUB MEMBERS! NEXT MONTH, HELP US MAKE IT SIX OR SEVEN!

PLEASE SEND NOTES ON THINGS THAT INTEREST YOU OR SPECIAL EXPERIENCES YOU HAVE HAD TO YOUR EDITOR BY EMAIL (info@ccas.ws) OR SNAIL MAIL. IF THE LATTER, I CAN SCAN IMAGES YOU MIGHT INCLUDE FOR ENTRY INTO FIRST LIGHT.

ASTROPHOTOS FROM CCAS MEMBERS!!!!!!!

This month we are blessed with two spectacular and very different studies of the February 20th total eclipse of the moon from two club members, Chris Cook and Tom Leach.



To the left, the first of these, is an amazing time exposure which covers the entire period of the eclipse from start to finish; contributed by professional photographer Chris Cook.

Exposure: 2hr 50min @ ISO 100
Processing: Adobe Photoshop CS3
Lens: Canon EF 17-40mm f/4 L @ f/16
Camera: Canon EOS 20D
Mount: Manfrotto tripod
Guiding: none
Location: Cape Cod Imaging Station - Harwich, Massachusetts
Date: February 20, 2008

The second picture, to the right, is an extraordinary photo from Tom Leach. Tom, he of the new old dome atop his garage in Harwich, is just beginning to experiment with afocal digital photography through a telescope.

Tom says this was taken through a “primitive” afocal (through the eyepiece) adapter with a simple 2.0 megapixel Sony digital camera through the 10” Schmidt-Newtonian scope in his dome.



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Cape Cod Astronomical Foundation

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, no charge 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) *Astronomy Magazine*, March 2008, p.53.

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.