



First Light

The Newsletter of the Cape Cod Astronomical Society



October, 2007

Vol. 18 No. 7

Thoughts on First Light

All members: please consider writing a short article and emailing it to me for inclusion in First Light.

This month our Feature Article is a Member Profile on Werner Schmidt, a founder of our observatory.

Please let me know if you would be willing to contribute a Member Profile on a fellow member or yourself for First Light. We have a rich history as well as enthusiastic new members and learning each other's stories will strengthen us as a Society.

CCAS Events

The Society's next formal meeting is Thursday, October 4th, beginning promptly at 7:30pm in the Dennis-Yarmouth Regional High School library. Mike Hunter will coordinate a program addressing the subject "So you want to buy a telescope?" Many members will bring their own telescopes and related equipment to the indoor session. All attendees will have an opportunity to browse the equipment and talk with each owner "ad lib" about pros and cons of each instrument.

Thanks to all for bringing dues payments up to date. Anyone still "late", please see Kelvin Parkinson.

It turns out there are two "Astronomy Days" at least in the United States in 2007 and 2008. The first is the traditional one on April 21st on which hundreds of groups celebrated astronomy events. This year, the Astronomical League, which represents 240 astronomy clubs across the US and which coordinates the event, is trying something different: exploring interest in moving Astronomy Day from the spring to possibly generally warmer weather in the fall. So 2007 and 2008 will each feature two dates — one in late spring and one in early fall. This year the fall event fell (already) on September 15th (S&T online 9/14/07.)² It seems S&T almost missed the date as did we! So while for us the barn door has been shut after the horse has left for this year,

next year CCAS might consider planning a public "event" on both the spring and fall Astronomy Days.

Jon Greenberg's fall class session, **Observational Astronomy for Beginners** started September 26.

CCAS member Jarvis Hunt, former astronomy teacher, and lecturer well known to CCAS members, is giving a four-session course entitled **Great Discoveries In Astronomy** at the Eldredge Library in Chatham, Monday mornings, 10:30, Sept. 24, Oct 1, 15, 22. Call the library at 508-945-5170 to inquire about joining this series which will have already begun by the time this newsletter issues. There is an administrative fee of \$5.00 for registration. Please tell your friends.

Special observing sessions at the Schmidt Observatory for students of Jon and Jarvis are planned for the night of October 24th and (Chatham group) for another date in October.

Executive Corner

The Executive Committee of CCAS met on September 17th. Highlights:

- Kelvin Parkinson announced that at this time our Society has 40 active members: 38 dues-paying and 2 "Lifetime". Just a year or so ago, we counted only about 20 members. Kelvin requested that new business-card-like CCAS membership cards be created and printed for our membership. Peter will accomplish same. The cards will include info for both website access and inquiries to info@ccas.ws that can be shared with prospective members.
- Approved the idea developed by Jon and Mike that CCAS would be pleased to invite the students participating in Jon's Nauset Community Education program (Observational Astronomy For Beginners, weekly, Sept 26-Oct Oct 17) to an observing evening at The Schmidt, Wednesday Oct 24 at 7:30, weather permitting. Students participating in groups Jarvis Hunt has organized will also be invited this fall.

- Approved the concept pertinent to this newsletter, our website, and the membership in general that where possible, scholarly authoritative references for definitions and citations of astronomical facts should always be preferred to information from less dependable sources. In particular, the Cambridge Dictionary of Astronomy, J. Mitton, ed., Cambridge University Press, was noted as a reliable source of definitions in Astronomy.
- Kelvin is working with Astronomy Magazine to qualify CCAS members for significant discounts on subscriptions to the magazine (includes online information services) and also a special arrangement to acquire their annual “Deep Sky” wall calendars. Since Kel will not be at our October meeting, Peter will present further information on this subject on his behalf at the meeting.

From the Dome

When my phone rang late Thursday the 13th, I noticed that the call was from Vermont and almost ignored it. I don't know anyone from Vermont and didn't want to make any new acquaintances at that hour. But, I answered the phone, for some reason or other. Well, it turned out to be John Mackey, former CCAS member, CCAF Trustee, and resident lawyer. He had never looked through the 16" and was wondering if we could give him and some family members a star party.

A quick check with wunderground.com showed that Monday the 17th would most likely be clear. The date was booked. The Mackeys, Ed Swiniarski, and I had a great time observing with both the 16" and 18" scopes. It was even cool enough to put on the heater in the viewing room. It was good renewing old ties.

But that's not what I'm writing about. I'm writing about how easy it is for you to book your own private star party. While we can't always guarantee the weather, just some of the time, we can take care of everything else.

.....Mike Hunter, Director Werner Schmidt Observatory

Foundation News

... when we have news from the Board of Directors of the CCAF.

Astro Trivia

The “questions of the month” are:

What is a Pasadena Mount? and....

Who invented the German Equatorial Mount?

...to be discussed at the October meeting...

Member Profiles

A profile on Werner Schmidt appears later as this month's main feature story.

Moocusser's Almanac and Monthly Alert¹			
By Peter Kurtz			
Suggestions for Improvement are welcome.			
Last QTR	Wednesday	Oct. 3 at 6:06am EDT	
New Moon	Thursday	Oct. 11 at 1:01am EDT	
First QTR	Friday	Oct 19 at 4:33am EDT	
Full Moon	Friday	Oct 26 at 12:52am EDT*	
Last QTR	Thursday	Nov 1 at 5:18pm EDT	
* At perigee; high tides			
Object	Oct. 01 (EDT)	Oct.15 (EDT)	Oct. 31 (EDT)
Sun	R: 06:37 S: 18:23	06:52 18:00	07:11 17:37
Moon	R: 21:04 S: 12:49	11:30 19:54	22:08 13:21
Mercury (eve>morn)	R: 08:56 S: 19:08	08:24 18:24	05:55 17:06
Venus (morning)	R: 03:06 S: 16:25	03:02 16:07	03:14 15:48
Mars (late evening)	R: 22:31 S: 13:40	21:58 13:10	21:13 12:27
Jupiter (evening)	R: 12:13 S: 21:31	11:29 20:45	10:40 19:53
Saturn (morning)	R: 03:38 S: 17:09	02:51 16:17	01:55 15:18
Uranus (evening)	R: 17:28 S: 04:50	16:32 03:52	15:28 02:47
Neptune (evening)	R: 16:20 S: 02:36	15:25 01:40	14:21 00:36

October Observing Events

<u>“Close Encounters” with moon:</u>	
Oct. 5	M44, Beehive bright Open Cluster, 1.1° S of crescent moon
Oct. 7	Saturn 1.3° N of crescent moon (am)
Oct. 16	Jupiter 5° N of crescent moon (eve)
Oct. 22	Uranus/Neptune/ Moon /Pallas (see below)
Oct 27	The Pleiades 1.0° S of “full” moon (evening)
Oct. 30	Mars 3° south of “full” moon .

More on October Observing

Jupiter and its moons continue to be a favorable evening target through October. Because the sun sets earlier and earlier, the planet stays at just above 23° altitude at sunset on Cape Cod until nearly the end of the month.

As you can see from the wonderful Milky Way long exposure shot from Chris Cook later in this issue, summer **treasures in the Milky Way** continue to be available in the October evening sky as systems new for fall begin to appear in the east. If you look early in the evening, you can still see the Milky Way stream out of Sagittarius past Ophiucus and the Eagle. Lyra, Cygnus, and Vulpecula, are just a bit west of overhead, and Andromeda and Perseus are on the come this month. All are rich in double stars and Deep Sky opportunities.

The **Draconid Meteors** peak on October 8th (crescent moon). **Venus** is separated from **Saturn** by only 3° near Regulus before dawn on/ around October 15th. The **Orionid meteor shower** peaks on October 21; best in pre-dawn after the moon sets, about 1 am.

On October 22, at evening prime time, **Uranus**, in Aquarius at magnitude 5.8 bright enough, hopefully, will be seen only 1.8° south of the **85% lit moon**; an interesting pairing for wide-field scopes or good binoculars.

Nearby, the same evening, about 14° west and a bit north, look for the magnitude 9.5 asteroid **Pallas**. Magnitude 7.9 **Neptune** completes the triangle about 14° west and a bit south of Pallas on the east side of Capricornus.

Venus achieves greatest western elongation on October 28th. That means it is as separable from the sun as it will get this cycle as viewed from the earth (rises to 46° altitude before the sun rises). An earth/sun/venus angle of 90° also means we see a 50% lit gibbous planet, having been a larger sight back in August when it was closer, but then just a crescent. From now as we move into winter, Venus will grow toward “full” at the same time as it becomes smaller and smaller moving towards superior conjunction.

Look for the **Zodiacal light** this month especially before twilight for the two weeks following October 20th.

On October 3rd, Mars is located only 0.9° south of the Open Cluster M35 in Gemini in late evening. On October 18th, a double moon shadow transit of Jupiter takes place at 3:42 am EDT; another double shadow transit on the 28th at 6:34 EDT in the evening.

Make a printout of the preceeding sections and use it to help plan your next personal or group Observing Session!

Member's Observing Notes:

Perseid Meteor Shower, August 12-13:

On August 12th, the night before the predicted maximum of the meteor shower, I observed 15 very bright Perseids from 10PM to 11:30 PM. On the night of the predicted maximum, I went out at 11:30 to about 1:15 and sighted 25 bright Perseids and about 10 dim. I believe all the sightings were Perseids. Although few in number (compared to previous years observations) they were quite bright and, if I may say, beautiful. Did anyone else observe?

Ed Swiniarski

Perseid Meteor Shower, August 13-14:

I was really fortunate to get some great sky watching during the Perseids on two consecutive evenings August 13th and 14th. At 10:10PM, Monday evening, I stepped out onto my deck where I have a good view to the north-northeast and within two minutes came one of the most spectacular "fireballs" I had ever seen. I mean a real barn burner coming from below and left of Casseopeia with a 1° wide swath ending at about the star Scheat on the corner of the Great Square in Pegasus! Holy Cow! This was really a great start and I spent the next hour until the humidity closed around me. .

Tuesday, there I was again on the back porch and observed three or four OK "shooting stars" before it misted over. At 2AM, I awoke to an absolutely clear sky and stepped outside. The "show" was on. Counted a dozen strikes from various positions of the sky, mostly north and northeast. I'd read that the early morning would be the best show, however, my 4 AM visit had only two small strikes. All in all, quite remarkable, definitely not disappointing and worth the time.

Tom Leach

Vesta and Jupiter, August 29 – Sept 2:

One of the most enjoyable aspects of observing is to verify predictions for the positions of moving sky targets such as planets, their moons, and asteroids with one's own eyes.

Vesta is the second most massive object in the asteroid belt. With a mean diameter of about 530km, it is smaller than the biggest solar system asteroid, Ceres, but, because of its whitish color, Vesta is the brightest asteroid, at this time, magnitude 7.1. I spent some time chasing Vesta this summer but had trouble confirming I had found it. Because it was forecast to be close to **Jupiter** near end August, I made a point to look for it at a Star Party at The Schmidt on August 29th. Using the 16" at 100 power. After a "Go To" to Jupiter (all four moons blazing as expected) we found Vesta at a visually estimated angular distance of about half a degree at about "10 o'clock" relative to Jupiter as viewed in the eyepiece. This finding is exactly as predicted by several

planatarium programs for the date: angular separation 26' to the NorthWEST of Jupiter; i.e., at about "2 oclock" with no telescope horizontal inversion. Since Vesta is known to be moving to the east relative to Jupiter day-to-day, the 8/29 observation was confirmed on Sunday, September 2, using my ETX-90 5inch scope at 48x at Skaket Beach: we found Vesta that night as predicted by planetarium programs, about 0.8° NorthEAST of Jupiter; there was only empty space where we had found it on the 29th

Peter Kurtz

All members: Please contribute short accounts of enjoyable or meaningful observing experiences you have had.

Special Photo-op:

To the right is a picture of member Tom Leach showing that the astro bug has indeed given him a big bite:



Astrophotograph of Note:

Thanks to Chris Cook for this wonderful photograph of the Milky Way, Perseus and Andromeda (Note M31 at lower right) at bottom:



The Summer Milky Way at Cape Cod National Seashore (Marconi), Chris Cook, 9/13/07; Canon 5D with 15mm f2/8 fisheye lens; 90 seconds @ ISO 1250 on tripod.

Other pictures (and larger images of this one) are available⁴ at sites given in the References, last page of this newsletter.

FEATURE ARTICLE FOR OCTOBER

Member Profile: Werner Schmidt



This month we are pleased to present a member profile on Werner Schmidt, longtime CCAS member, a founder of our observatory, and current Chairman of the Cape Cod Astronomical Foundation.

Biographical:

I received a BS degree in Chemical Engineering in 1936 from Tufts University. My first job was with a Chemical Consulting firm in N. Y. City. Late in 1936 I went with Lever Brothers Company in Edgewater, NJ, staying with this company until 1978. I got married in 1940 to Martha, our department secretary, and had two children, Marsha, and Paul.

After attending management seminars at Columbia and Harvard, my job eventually led to the position of Director of Development of the Foods Division of Lever Bros Co.

At that time I had three pilot plants for various product lines, operating at Edgewater, NJ, Cambridge, MA and Hammond, IN.

Overseas contacts became a routine matter, mainly with research centers in England, Holland, and Germany. Travelling to these locations took place frequently and so did receiving visitors from these countries. During my tenure, about a dozen new products were developed and put into production. Many of these are still on the US market.

Werner's Life in Astronomy, the CCAS, and the CCAF:

A lifetime in photography, with a high interest in optics, led to an investigation of Astronomy. My first venture was the purchase of a 5" mirror which was used in a home-built Newtonian telescope. Optical quality of the mirror was less than perfect, and at the urging of Hayden Planetarium astronomers, I made two 5" mirrors in 1957, one with soft glass and one with Pyrex glass, figuring and parabolizing the mirrors with the conventional Foucault test equipment. Viewing the planets with a Newtonian telescope with these mirrors made a lasting impression on me and essentially led to my activities in CCAF.

After retiring in 1978 we moved to Cape Cod. I worked part time in a local Electronics Laboratory, developing a digital display unit that was never marketed. I moved into a Condo in 1996 in Kings Way in Yarmouth Port to escape all gardening work.

During my years at the Cape I continued to equip my hobby shop extensively, now having a metal cutting lathe, a milling machine, a large drill press, a band saw, and a table saw, in addition to ancillary hand tools of all types.

I joined CCAS sometime in the high eighties, became a trustee in CCAF in 94 and CCAF chair in July 99.



“Stairway to the Stars”

The Story of our Observatory.....

The primary objective of CCAF was of course the building of an observatory. Realizing that our CCAS financial income might not support the maintenance for the type and size of observatory we had in mind, we searched for possible locations all over the Cape for a solution.

Our initial plans were to build a Sliding Roof observatory, the type used by many amateur organizations. I made a wooden model of our intended observatory and used it to demonstrate our plans to various town officials. The Nickerson State Park people became quite interested in this proposition, but the State did not give us a permit for this location. While this installation would have cost only about \$45 K, the maintenance cost, utilities, and insurance would have been appreciable.

At that time we visited the Thayer Academy in Braintree to view their new observatory. The installation represented a typical Astronomical Observatory, with a rotating dome on top of a 20 by 30 ft building. While the cost of this building was about \$ 100,000, we were convinced that we wanted this type of observatory. This presented us with a dual problem, how to raise about \$100,000, and where to put the building, hopefully in a cost-sharing arrangement.

We were fortunate in finding two school superintendents, one from the Dennis-Yarmouth Regional High School, and one from the Cape Cod Regional Technical High School to give us a location and in addition supply a good part of the labor cost for the building of the observatory. The chosen D-Y installation also covers the cost of utilities and building maintenance, a tremendous help for our financial resources. Our fund-raising efforts also became gradually more and more effective, as we reached our \$100,000 goal in 2002.

The building of the observatory took place from 2002 to 2004. During this period I spent most of my time at the building site to help in the needed day-to day-decisions.

Operating our Observatory is not simply a turnkey operation, there is always something that needs to be changed. My hobby shop has been invaluable in making small parts which we simply could not afford to have made outside.

Eyeieces and Telescopes.....

As we get older, the size and weight of our personal telescopes are an important factor; my scopes are relatively small, 4", 5" and 6" in diameter. My interest in viewing planets, particularly Jupiter and Saturn, led to an analysis of the best eyepieces for this application. Planets are basically low-contrast images, making the choice of eyepiece design an important factor. The four-element orthoscopic eyepieces are judged to be the best for planetary viewing, but have a somewhat narrow angle of viewing, about 40°. If the four moons of Jupiter are of interest, then an 82° wide-angle eyepiece, like the Nagler 6 or Meade Ultrawide, is needed at high magnifications. Due to their 8 air-to-glass surfaces, about 6 % of the image, even with the best anti-reflection coatings, is scattered and slightly lowers the contrast of the image. However the moons are always of great interest, particularly if one comes in front of Jupiter and its shadow can be followed.

In order to enjoy astronomy with small scopes, the scopes must have excellent optics. They must be properly collimated and should be tested with diffraction patterns. I use both an artificial star and various diffraction patterns for evaluating and adjusting telescopes, which can be done anytime of day.

If you would like to test and adjust your telescope, please let me know and we can do this either at the DY library or in my backyard at Kings Way.

When I examine my role in CCAF, I feel that I have met my most important goal, the building of a modern observatory in a friendly and accessible location. My responsibility however still exists in keeping the observatory in a technically competitive position, without jeopardizing the safety of the equipment or method of operation.

For the day-to-day operations, it soon became apparent that we needed a Director of Observatory. Jim Carlson was chosen early in 2004 to fill this position. We all remember Jim's many contributions to CCAS and his friendly help in all matters. Jim had to resign in 2007 for personal reasons and we will surely miss him. We were fortunate in persuading Mike Hunter to take Jim's place and look forward to Mike's help in his new position as Director of Observatory.

Editor's Note: Special thanks again to Werner for writing this profile. And thanks to Greg McCauliff for helping coordinate transmission of text, photos, etc.

Other Items of Interest:

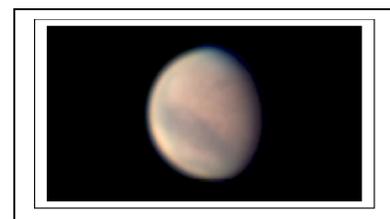
The Weather Has Cleared; Opportunity Has Dived Into Duck Bay!

As we left Opportunity at the end of July on the edge of Duck Bay of the Victoria crater on Mars, movement of the rover into the crater was suspended because of power losses related to dust storms.

Last month we relayed the report from NASA that the dust storms on Mars were beginning to abate and that Opportunity (and Spirit) were beginning to warm up.

NASA press releases on September 11 and 13th 3 indicate first, that, now up to power, Opportunity has cautiously crept into Victoria Crater. To generate confidence that the craft could, when commanded, get back out, it was commanded to do a backout.

But, because some of the wheels were slipping beyond set



The Weather is Clearing; Geographical Features on Mars resolvable as of September 13th.
S&T, Sean Walker

limits on the backout, the craft was suspended on the edge for two days. On the 13th it was reported that the backup had been completed successfully and John Callas, Mars rover project manager could report: "We want to maintain a safe egress route out of the crater for Opportunity by completing the back-up drive over the sand ripple at the rim, we have confirmed that we have one." Opportunity is now exploring the crater.

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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, 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>), and *Astronomy Magazine*, *Sky & Telescope Magazine*, *Sky and Telescope Skywatch 2007*, and other sources.
- 2) Sky and Telescope online: <http://www.skyandtelescope.com/community/skyblog/observingblog/9784027.html>
- 3) NASA: <http://marsrovers.jpl.nasa.gov/newsroom/pressreleases/20070911a.html> and [/20070913a.html](http://marsrovers.jpl.nasa.gov/newsroom/pressreleases/20070913a.html)
- 4) <http://www.abmedia.com/astro/capecod/mw-ccns-1.html> and <http://www.abmedia.com/astro/capecod/mw-ccns-2.html> and <http://www.abmedia.com/astro/capecod/mw-ccns-3.html>