



# First Light

Newsletter of the Cape Cod Astronomical Society



APRIL 2006

Vol. 17 No. 1

## Mooncusser's 21<sup>st</sup> Century Almanac

by Jim Carlson

**First Quarter** – Mon. Mar. 06 at 15:17 EST

**Full Moon** – Tue. Mar. 14 at 18:36 EST

**Last Quarter** – Wed. Mar. 22 at 14:12 EST

**New Moon** – Wed. Mar. 29 at 05:17 EST

Object	Mar. 01 (EST)	Mar. 16 (EST)	Mar. 31 (EST)
Sun	R: 06:15 S: 17:31	05:51 17:48	05:25 18:05
Mercury	R: 06:41 S: 18:53	05:19 17:04	04:31 15:49
Venus	R: 03:54 S: 13:59	03:42 13:57	03:32 14:08
Moon	R: 07:10 S: 19:51	19:41 06:28	06:23 21:16
Mars	R: 09:45 S: 00:51	09:16 00:32	08:50 00:13
Jupiter	R: 23:05 S: 09:13	22:05 08:14	21:01 07:13
Saturn	R: 14:17 S: 04:53	13:14 03:52	12:14 02:52
Uranus	R: 06:20 S: 17:26	05:23 16:31	04:26 15:36
Neptune	R: 05:21 S: 15:31	04:23 14:34	03:25 13:38
Pluto	R: 01:45 S: 11:53	00:47 10:55	23:44 09:56

### March 2006 Events (UT)

- 01 – Mercury 4° north of the Moon.
- 02 – Mercury stationary.
- 05 – Mercury at greatest ecliptic north latitude.
- 06 – Mars 3° south of the Moon.
- 10 – Saturn 4° south of the Moon.
- 12 – Mercury at inferior conjunction.
- 13 – Moon at apogee (252,449 miles).
- 14 – Full penumbral eclipse of the Moon in progress at 18:23 EST. Moonrise at 17:38 EST.
- 17 – Spica 0.3° south of the Moon.
- 19 – Jupiter 5° north of the Moon.
- 20 – Vernal equinox at 13:26 EST.
- 25 – Venus at greatest western elongation rising before the Sun. Venus 6° north of the Moon.
- 26 – Neptune 4° north of the Moon.
- 27 – Uranus 1.4° north of the Moon. Mercury 2° north of the Moon.
- 28 – Moon at perigee (223,176 miles).
- 29 – Double shadow transit of Jupiter in progress at 05:53 UT (00:53 EST). Total solar eclipse starting in Brazil, crossing northern Africa, central Asia, and ending in Mongolia.

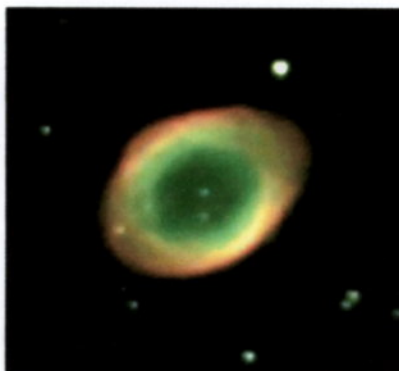
## The Werner Schmidt Observatory

*Have you gazed on naked grandeur where  
there's nothing else to gaze on,  
Set pieces and drop-curtain scenes galore,  
Big mountains heaved to heaven, which the  
blinding sunsets blazon,  
Black canyon where the rapids rip and roar?...*

"The Call of the Wild", Robert W. Service, 1907

Have you gazed on the great nebula in Orion with its bright stars and filaments of gas shining against the nothingness of black space? It makes quite a view when you're looking through the observatory's 16" main scope. Housed in a 12.5' Ash Dome, it's a Meade Schmidt-Cassegrain on an alt-azimuth fork mount. The scope and mount are controlled by a laptop computer in the dome room which in turn can be controlled by a computer in the ground level 20' x 18' warm room seven feet below the dome room.

That's right, by mounting the SBIG ST-8XE CCD camera on the scope, you can see those set pieces and scenes on the computer screen while sitting in the toasty comfort of the warm room (the warm room also serves as a meeting place and classroom for up to twenty people). And what set pieces and scenes they are. Neptune is a powder blue disk through a high power eyepiece. M13, the globular cluster in Hercules, shows individual stars right down to its compact center, just like a sparkling ball. Of course, both of those objects can be imaged in either black and white or color using the CCD camera. Observatory Director Jim Carlson has a beautiful color shot of the Ring Nebula, M57.



Jim Carlson



For those big mountains, on the moon, you might want to use the 4" TeleVue apochromatic refractor. Mounted on the tube of the 16" scope, it has the same GOTO capability of that scope. Punch a few keys on the Autostar control and you have the selected object in the center of the eyepiece. Ok, almost the center, but well within the field of view. The image has the crisp sharpness of a quality refractor. And, because it is an apochromat, it has none of the color fringing of an achromatic refractor. Those big mountains on the lunar terminator seem to be just beyond the trees across the field.

The blinding sun, sunsets or any other view, is usually handled by the 8" Celestron NexStar equipped with a full aperture solar filter. Stored either in the warm room or in one of the two storage rooms. This tripod mounted scope can be easily moved outdoors for use. It is a great GOTO scope for bright to moderately dim deep sky objects.

The really dim deep sky objects are the target of the 14", f/4.25 Dobsonian reflector. Those little smudges of light you see in most scopes can be seen for what they are in this big, fast light bucket. With it's 2" low power eyepiece, this scope gives very wide fields of view that are equally bright. It's not hard to find those dim smudges; and, once you do you get a great view. This scope is a big hit at star parties.

"Black canyons where the rapids rip and roar?"? Welllll...., The Schmidt is a fine observatory; but, it can't quite show the recently discovered ancient stream beds on Mars.

The Schmidt began as a fond wish of some of the members of the Cape Cod Astronomical Society: "Wouldn't it be nice to have an observatory". The Society took the first step in 1990 by forming the Cape Cod Astronomical Foundation, a 501(c)3 charitable foundation.

While building, managing, and maintaining the observatory were major down stream goals; the goal, the first goal was to raise funds. Direct solicitations were made to Society members and selected local area citizens. A continuous flow of proposals resulted in grants of \$20,000 from the Commonwealth of Massachusetts, \$10,000

from Cape Cod Five Bank, \$5,600 from Cape Cod Economic Development Council, and \$2,500 from the Kelley Foundation of Hyannis. The sale of hats, shirts, and patches with the Society's logo on them and donations from the Society were also a significant source of funds.

With funding well underway, the Foundation began discussions with Cape Cod towns, the Commonwealth, and the Cape Cod Museum of Natural History for an observatory site. Those discussions, and especially the fund raising, continued right on through the 90's on into the new millennium (hmmm, that does make it sound like a long time). Finally, in 2002, the Foundation and Dennis-Yarmouth Regional School District reached agreement to place the observatory on the Dennis-Yarmouth Regional High School site.

Ground breaking was in July 2002. Construction began almost according to the plans prepared by the Foundations architect Richard Morongell as there were only a few owner initiated change orders. However, there was one owner change order that was kind of big. The originally specified Meade 12" main scope was replaced by a Meade 16".



16" Meade SC with piggybacked  
4" TeleVue refractor in 12.5' Ash Dome

The newly appointed clerk of the works Kelvin Parkinson (a retired contractor and Society member), Foundation Board, and the architect were quickly able to make the necessary changes and keep moving ahead. It helped that the new scope and seven or eight persons could still fit in the originally specified 12 ½ foot Ash Dome.



In a much appreciated cost saving move, the students and instructor from the Cape Cod Technical High School building program in Harwich agreed to be the primary contractor. The Cape Tech electrical instructor and the Ash Dome installers completed the construction team. Long before the end of the project, the high quality of the students' work was added to the "much appreciated" list.

observatory. The remaining Foundation board members, Society members, and various other Cape Codders have pitched in to make it work.

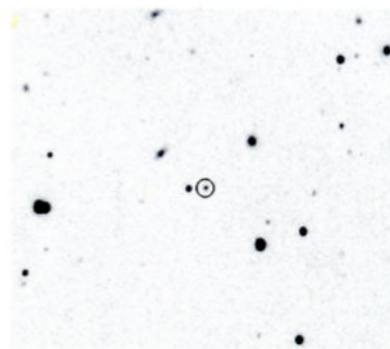
And how it works. The image of M57 above is just one example of the products of The Schmidt. Would you like to record the transit of a planet across it's star all at a distance of 63 light years? How about keeping tabs on one of those nasty near Earth orbiting asteroids? Or, maybe take a look at the latest supernova in a far off distant galaxy. You would? Then come to The Schmidt it's calling you. MH

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Editor's Note: The Schmidt was selected as the topic for the feature article for this rebirth issue of "First Light" since it was considered to be most significant event affecting our Society since the last issue of "First Light" in December, 2001. Additional articles on The Schmidt, other Society activities, and topics of interest to amateur astronomers in general will follow in succeeding monthly issues of "First Light".

Let this short note be a call for articles, short items, astroimages, etc. from all readers, members of the Society or otherwise. It is also a plea, a prayer, a summons, a command for those items. If that is not sufficient groveling, I can resort to other methods.

Finally, please join us on April 6, 7:30pm at Dennis-Yarmouth Regional High School for our monthly meeting. Society member and retired physicist Bill McDonough will be speaking on the "Formation of Elements".



New planet 2003-UB313, aka Xena  
Jim Carlson



The Schmidt nearing completion

By April 2004, Clerk Parkinson had the observatory completed and ready for dedication. At that time, the Cape Cod Astronomical Foundation deeded the \$150,000 Werner Schmidt Observatory to the Dennis-Yarmouth Regional School District and signed a twenty year agreement with the school district to occupy and manage the observatory. Under the agreement, the equipment including computers and software remain the property of the Foundation.

The final task to complete the observatory was to fill the position of Director. It was also the easiest task. Being a founding member and past president of the Cape Cod Astronomical Society, the Society's most active and experienced observer, and a founding board member and only secretary of the Cape Cod Astronomical Foundation; Jim Carlson was the logical and immediate choice Foundation's board of directors to be the Director of the Werner Schmidt Observatory.

Since then, Jim has spent countless days and nights and innumerable hours putting the separate pieces together to make a functioning

# *First Light*

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The **Cape Cod Astronomical Society** meets at 7:30 pm on the first Thursday of every month at 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.

## Cape Cod Astronomical Foundation

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Director	James Carlson	508-432-4316
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