



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

**First Quarter** – Mon. July 03 at 12:38 EDT  
**Full Moon** – Mon. July 10 at 23:03 EDT  
**Last Quarter** – Mon. July 17 at 15:14 EDT  
**New Moon** – Tue. July 25 at 00:32 EDT

Object	July 01 (EDT)	July 15 (EDT)	July 30 (EDT)
<b>Sun</b>	R: 05:09 S: 20:19	05:20 20:13	05:33 19:59
<b>Mercury</b>	R: 07:02 S: 21:24	05:53 19:54	04:22 18:47
<b>Venus</b>	R: 03:12 S: 17:54	03:19 18:21	03:39 18:40
<b>Moon</b>	R: 10:56 S: 23:47	23:30 11:50	11:47 22:46
<b>Mars</b>	R: 08:15 S: 22:27	08:04 21:51	07:54 21:15
<b>Jupiter</b>	R: 15:15 S: 01:46	14:17 00:43	13:22 23:46
<b>Saturn</b>	R: 07:42 S: 22:05	06:52 21:11	06:03 20:17
<b>Uranus</b>	R: 23:26 S: 10:46	22:27 09:46	21:27 08:45
<b>Neptune</b>	R: 22:21 S: 08:37	21:21 07:37	20:21 06:36
<b>Pluto</b>	R: 18:35 S: 04:48	17:35 03:47	16:35 02:47

### July 2006 Events (UT)

<b>01</b> – Moon at apogee (251,312 miles)
<b>03</b> – Earth at aphelion (94,507,886 miles).
<b>04</b> – Mercury stationary and at aphelion. Spica 0.1° north of the Moon.
<b>06</b> – CCAS meeting at 7:30. Dinner at 6:00 at H 'n K restaurant on Rte. 28 in S. Yarmouth. Did everybody get a mineral from long: 70° 11' 38" W, lat. 41° 40' 39 N"? Be stealthy, people are watching.
<b>06</b> – Jupiter stationary and 5° north of the Moon.
<b>08</b> – Antares 0.2° north of the Moon.
<b>13</b> – Neptune 3° north of the Moon. Moon at perigee (226,358 miles).
<b>14</b> – Uranus 0.4° north of the Moon.
<b>18</b> – Mercury at inferior conjunction.
<b>20</b> – Moon 0.4° north of M45. Venus 1.5° south of M35.
<b>22</b> – Mars 0.7° north of Regulus.

<b>23</b> – Venus 6° south of the Moon.
<b>25</b> – Mercury at greatest southern heliocentric latitude.
<b>27</b> – Mars 1.1° south of the Moon.
<b>28</b> – Southern delta Aquarid meteors peak about 3:00 EDT. Mercury stationary.
<b>29</b> – Moon at apogee (251,908 miles).

Sources: TheSky6, Software Bisque  
*Observer's Handbook 2006*, Royal Astronomical Society of Canada  
 The times of rise and set are for the days listed. On June, for example, Jupiter will set at 03:49 EDT; rise at 17:22 EDT.

### July 6th CCAS Meeting

The presentation at the July 6<sup>th</sup> meeting will be a discussion of the results of the scavenger hunt. A list of items for the hunt was handed out at the June meeting. For those who did not attend that meeting, here they are again.

- 1., 2., & 3. Provide the right ascension, declination, constellation, and a sketch for M57, M51, and M106.
4. Describe Cepheus by providing a) what/who it is, b) when it is visible from Cape Cod, and c) what is its mythological significance.
5. Describe where Tycho Brahe's observatory was.
6. In 1450AD, what was considered to be the closest star to Earth?
7. What is the popular name for Brocchi's cluster?
8. Who was the Royal Astronomer during the year that Neptune was discovered?
9. Describe or find an optical diagram of a Gregorian telescope.
10. Locate W70 11' 36.9" N41 40' 42" and pickup a mineral found there.

## A New Career for Jon

Ya know. It's a great feeling when you find that certain dim nebula that you've been looking for over the past two years. No GOTO mind you; just you, your star chart, and a finder. Wow, what an accomplishment! Jon Greenberg must get an even greater kick out of having one of his students find that nebula. Jon, a former, aka retired, pathologist has given up finding out what's doing folks dirt for teaching astronomical newbies what to look for and how to find it.

Jon teaches, has been teaching for many years, a course on "Observational Astronomy for Beginners" through Nauset Public Schools community education program. Cosponsored by Nauset Community Education and Cape Cod Astronomical Society, the course is designed for those with no or little experience observing the skies. Jon uses binoculars, a 10" Schmidt-Cassegrain, and two Dob's to give his students a wide range of observing experiences. The photo below shows the second floor observing deck, on his house, that is the primary classroom. The secondary classroom, just off the deck, is used to cover history of astronomy, archaeoastronomy, instrument design, etc. on those nights (or days) when our Cape Cod weather doesn't cooperate.



The observing deck is the brown structure, just below the black arrow, on top of the house. It provides a good view of the sky down to the horizon. If you look closely at the tip of the arrow, you will see a white object sticking above the railing of the deck. That is a nylon bag which covers a Mylar bag which in turn covers Jon's permanently mounted 10" main scope. This is what is known as a "two bagger" observatory. It is quite effective in protecting the optics, mount, and electronics from hurricane force nor'easters, rain, snow, and occasional tropical storms. The photo below shows that scope with the bags off.



It also shows two of Jon's students conducting solar observations. Notice the full aperture solar filter on the front of the scope. Not only does it protect the observers' eyes, it protects mirrors and lenses from the concentrated rays of the sun. Readers take note.

Here we see Jon, left, discussing observation techniques with a student. The tops of the mature trees in the background show the wide open horizon that can be obtained with a house top observing deck. If an object is above the horizon, Jon and class can see it.

The Society's 14" Dobsonian telescope is back in operation! Jim Carlson and Mike Hunter took the primary and secondary mirrors to a firm in Revere, MA for new reflective coatings. That was especially harrowing for Jim who said he doesn't cross the ditch all that often, LOL. The mirrors are now pristine. The sleeves that used to cover the secondary and scatter light all over the place are now gone. We were lucky that they were only in the aluminum and not in the glass.

Mike installed all new bearings on both axes. It's amazing how the new Ebony Star laminate on the altitude bearing both makes the scope easier to move and overcomes the imbalance problems when viewing near the horizon. It's like having your cake and eating it too. Moving the scope at near zenith positions is smooth and easy.

A little boatbuilding epoxy filler here and there cured many battle scars, i.e. chips out of the rocker box, cracks in the rocker box, rips and cracks in the secondary cage. Ultra flat black paint was sprayed on the interior of the scope including the truss rods. They used to be white and caused some of the former light scattering problems.

Jim and Mike gave the scope a "quick and dirty" culmination at the Society's first summer star party on the 21<sup>st</sup> of June (Were you there?). And, what a surprise, the view of Jupiter was very sharp. The bands jumped right out at you. Not what is usually obtained from an f4.25 Newtonian.

But then, you should have seen the views of Jupiter through the 16" Schmidt-Cass and the 4" TeleVue. Why don't you stop by The Schmidt on the next clear Wednesday night? You never know what you can see if you don't come.



So, if you're looking for an introductory course in astronomy or would like to tryout a variety of telescopes, check out the Nauset Community Education catalog for Observational Astronomy for Beginners. The fee for the six week 1½ hours per week course is only \$70. By the way, Jon donates his portion of that fee to the Cape Cod Astronomical Foundation for the construction and operation of the Werner Schmidt Observatory on the grounds of Dennis Yarmouth Regional High School. To date, those donations amount to over \$7,000. A big thank you to Dr. Jon. (All photographs by Jon Greenberg.) MH

### Annual Dues

Annual dues for all members of Cape Cod Astronomical Society are due in the month of July. If you joined the Society during this last year, please contact our treasurer Kelvin Parkinson to determine the portion of the \$30 annual dues that you owe. All members, regardless of when they joined the Society, owe dues in the month of July. The list of members will be updated at the end of August. Those who have not paid their dues by that time will no longer receive the newsletter or other communications.

### Cape Cod Astronomical Society

President	Michael Hunter	508-385-9846
Vice President	Jon Greenberg	508-255-8605
Secretary	vacant	
Treasurer	Kelvin Parkinson	508-385-5982
First Light Ed	Michael Hunter	508-385-9846

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

Chairman	Werner Schmidt	508-362-9301
Vice Chairman		
Director R&D	Bill McDonough	508-394-5919
Secretary	James Carlson	508-432-4316
Treasurer	Gregory McCauliff	508-385-7929
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