



STAR FIELDS

Newsletter of the
Amateur Telescope Makers of Boston
Including the Bond Astronomical Club
Established in 1934
In the Interest of Telescope Making & Using

Vol. 25, No. 8 September 2013

This Month's Meeting...

Thursday, September 12th, 2013 at 8:00 PM
Phillips Auditorium

Harvard-Smithsonian Center for Astrophysics

Parking at the CfA is allowed for the duration of the meeting



32-inch Mirror. Image by Mario Motta

A Day in the Life of a 32 Inch Telescope Mirror

This month's speaker will be long time member Mario Motta who will be talking to us about his recent trip to Italy to oversee the installation of the mirror he donated to the AAVSO to be placed on permanent loan at the Schiaparelli Observatory. Mario has been building large telescopes for some time now starting in 1983 with a 16" Newtonian, quickly followed by a 32" (using the mirror now residing in Italy) and then a second 32" telescope but with significant improvements over his first. Please join us for his interesting account of the life of his first 32" mirror - past, present and future.

Please join us for a pre-meeting dinner discussion at [Changsho](#), 1712 Mass Ave, Cambridge, MA at 6:00pm before the meeting.

President's Message...



As amateur astronomers and telescope makers our loftiest dream, spoken or unspoken, is the building of an observatory. With our telescopes growing in size and stature as the years go by and images of great observatories captivating our imagination, we plot to have the same – on a smaller scale – a model of sorts of the world we long to be a part of. For some of us these are just dreams; for some of us reality; for some of us – dreams cut short . . . Chuck Evans, a member of the ATMob for over ten years now and a past member of the executive board has realized that dream – and unfortunately has had it cut short.

In 2006 he started his grand observatory. A 10 foot dome housing a 5-inch Astrophysics telescope on an AP900GTO Mount. It was to be computerized, coupled with CCD cameras and remotely controlled. It was to be his astronomical culmination of his involvement with astronomy, telescope making and his long time interest in the fabrication of fine instruments.

In 2007 he was diagnosed with Parkinson's disease and life for him and his wife June would change in ways they never imagined. At first the symptoms were minor, almost unnoticeable. He continued living a normal life and even completed the mechanical and optical aspects of the observatory. All that was left was the final networking, programming and integration of all the subsystems. But surely as the night is dark, the symptoms would progress and sadly they did; much faster than expected.

Today Chuck can hardly move and is bound to a wheelchair. His movement about the house is very restricted and his ability to communicate quite diminished. But his mind is still sharp, still thinking, still dreaming. He still has spirit and isn't ready to quit yet. His options are indeed very limited but one thing for sure - Chuck Evans wants to finish his observatory. Or rather he wants us to help him finish his observatory. Help him reach this goal.

We are looking for few volunteers who might be able to help make this happen. What we need are members who know the Astrophysics mount, know something about networking a telescope to the computer and setting up the software to control the telescope and the CCD camera. The goal is for Chuck to be able to sit in his den, remotely control the telescope and take

some images. This will be his observing. This will be his dream come true.

If you would like to help, please contact his good friend Tom Lumenello, who will be coordinating this work. Lumen.tal@verizon.net. Depending on the response we might setup a weekend work party or perhaps have you come to the house individually. We will work that out. Chuck, I'm sure, will be grateful for any help he can get.

~ Michael Hill – President ~

July Meeting Minutes . . .



Member Night Speakers and Cake. Images by Al Takeda

Minutes of ATMoB meeting held July 11, 2013.
Meeting held in Phillips Auditorium, Harvard-Smithsonian Center for Astrophysics.

- Mike Hill, President: called the meeting to order at 8:00 PM.
- The Secretary's Report of the June 2013 meeting was given by Sidney Johnston.
- Mike Hill gave the treasurer's report which was prepared by Nanette Benoit.
- Mike Hill gave the Membership Report which was prepared by Tom McDonagh.
- Steve Clougherty gave the Clubhouse Report

Mike Hill announced that the coffee pot was not properly cleaned after the last monthly meeting and had to be replaced because of mold. The new coffee pot was expensive at around \$50.00. Mike asked that everyone who uses the coffee pot: "Please be sure and clean it thoroughly after use".

A Stellafane Workshop on the early (before Stellafane) history of spectroscopes was announced.

Mario Motta spoke on the Telescope Drive Master (TDM). The TDM is available from Explore Scientific, and according to the Explore Scientific web page (<http://www.explorescientific.com/telescope drivemaster>) was invented by two Hungarian amateur astronomers. Mario mentioned that TDM tracks to about 1/8 arc second, and "that it works great".

Mario Motta mentioned that the Light Pollution Bill before the Massachusetts Legislature (General Court) was discussed at a hearing. ATMoB members who testified at the hearing included Tal Mentall who spoke of glare lighting and its effect of impeding safe driving and Mario Motta who spoke of the adverse health effects of bad lighting, including disruption of the melatonin cycle. Mario also pointed out that both the AMA and the Mass. Medical Society support the bill. Glenn Chaple spoke of the loss of stars in the sky and that rural Massachusetts is also being affected. Kelly Beatty was in attendance and spoke in favor of the bill. Mario submitted his 35 page AMA Monograph as written testimony. The Sierra Club, NEMA (National Electric Manufacturers), and IESNA (Illuminating Engineering Society of North America) submitted written testimony in support of the light pollution bill.

The Annual ATMoB Club Picnic was announced and is scheduled for Saturday, September 7th.

Old Business: None

New Business: None

The annual July Meeting club member's talks included:

Mike Hill spoke about his project of making a telescope, and presented a photograph of the telescope.

James Chamberlain spoke about doing astrophotography on a modest budget. He presented several wonderful photographs taken by a camera simply mounted on a photographic tripod.

Bruce Berger spoke about the ARIO (ATMoB Research and Imaging) Observatory which is nearing completion. The C-14 is installed and working, and the dome slit tracks the telescope. The club now has a SBIG CCD camera and a guider camera, and they are in working order. Sky X is installed on the computer and is working.

John Sheff spoke about his website, as a source of information about astronomy events in Boston. www.bostonastronomy.net,

Jim Gettys spoke about CCD chip design.

Dick Koolish spoke about ATMoBs participation in the June 21st Summer Solstice Festival held at Harvard University in Cambridge. He along with Sara Schecner, placed hour lines on a

flat surface so that visitors could stand at the point and tell time with their shadow. Dick also mentioned his participation in the Arlington Astronomy Nights with Jeff Alexander. Good pictures of the Summer Solstice moonrise were taken at Robins Farm Park. The program was written up in the newspaper, *Arlington Heights Examiner*. Astronomy events are presented at the web page www.arlingtonastronomy.org.

Kelly Beatty urged all ATMob members to work at the local level to support passage of the Massachusetts Light Pollution bill, and to work with the towns to change street lights, to pass local light pollution bylaws, etc.

The meeting was adjourned at 9:30 PM

~ *Sidney Johnston, Secretary* ~

Clubhouse Report . . .

Summer 2013



John Reed cleaning up tree debris. Image by Al Takeda

Nineteen members volunteered their day to staff the July 20th Saturday work session held under a hazy hot sun, viewed through mostly cloudy skies with the temperature near 90° F.

A big thank you goes to Sai Vallabha, Al Takeda, Art Swedlow, Phil Rounseville, John Reed, Cheryl Rayner, Dave Prowten, Eileen Myers, John Maher, Ed Los, Dick Koolish, Eric Johansson, Marion Hochuli, Mike Hill, Paul Cicchetti, Nina Craven, Glenn Chaple, John Blomquist, and Bruce Berger.

A list of projects worked on follows:

- Sky&Tel magazine room organization effort led by Eileen M, Mike H, and Glenn C.
- Evaporator room floor remnant linoleum removed, broken concrete extracted, and floor preparation begun by Paul C and John R.
- Near barn sill replacement continued led by Dave P.

- Far barn reorganized and layout update planned by Dave P and John R.
- Home Dome update continued by Mike H and Bruce B.
- Clamshell cleanup, critter extermination, and electrical distribution improvement team led by John M.
- Lunch was prepared by our intrepid team of Eileen M, Nina C, Cheryl R, Eric J, Art S, and Sai V. The preparation and cleanup take hours of work; the consumption was over in short order.

The second summer work party of August 17th was staffed by thirteen volunteer members. Thank you to: John Blomquist, Paul Cicchetti, Nina Craven, Karl & Jeffrey Dean, John Harrington, Dick Koolish, John Maher, Eileen Myers, Cheryl Rayner, Art Swedlow, Al Takeda, Bill Toomey, and Sai Vallabha (visited later by Vlad Vudler and several new members). Projects tackled after coffee and donuts were:

- Grass was mowed by John B and Al T. Earlier; Brian Maerz had spent several days chipping tree debris collected since last winter. Weed whacking was led by Al T and Eric J. A new trimmer was tested and it worked well. Clippings were raked and removed.
- Weeding the front flowerbed was accomplished by a team led by Bill T and John H.
- Solar viewing thru Paul C's H-alpha filtered scope was enjoyed by all attendees. Solar Imaging was carried out by Al T and Paul C.
- Vacuuming the house was handled by Nina C and Karl D. Cleaning the clubhouse for the September 7th Picnic was led by Eileen M and Al T.
- Four members were trained by John M in the operation of the 10" Meade LX200 in the Clamshell observatory.
- Lunch was prepared, served, enjoyed by all, and cleanup ensued thru the diligence of our team of Eileen M, Eric J, Sai V, Nina C, Cheryl R, and Art S.

Thursday night mirror grinding, Friday night Astro class, and Saturday night observing continue each week for our members. The next work party is Saturday, September 21st, and we are all looking forward to our annual picnic on September 7th.

Thank you all for cleaning our Clubhouse, and clear skies to all.

~ *Clubhouse Committee Directors* ~

~ *John Reed, Steve Clougherty and Dave Prowten* ~

Clubhouse Saturday Schedule

September 7	Brian Leacu + Phil Rounseville ATMoB PICNIC	
September 14	John Maher	Rich Nugent
September 21	Eileen Myers + Tom Wolf WORKPARTY # 9	
September 28	Brian Maerz	Glenn Meurer
October 5	Eric Johansson + Rich Burrier ASTRO ASSEMBLY CONV.	
October 12	Joe Henry	Tom Lumenello
October 19	Bruce Berger + Mike Hill WORKPARTY # 10	
October 26	Neil Fleming	Bill Toomey
November 2	John Panaswich	Dave Siegrist
November 9	Henry Hopkinson	John Small

Membership Report . . .

Membership count as of August 31, 2013 is at 327 individuals. 93 members have renewed their membership thus far. If you have renewed, thank you!

The membership renewal period begins in June and ends September 1st. Many S&T and Astronomy Magazine subscriptions are tied to the September deadline so don't delay in renewing membership and subscription payments! This will ensure you do not miss any magazine issues.

If you are a new member or returning in the 2013 calendar year, renewal is not required. If you have questions regarding your membership status, please contact me.

A new class of membership is available this year. Consider a Family Membership for yourself and direct family members.

The renewal process can be completed on-line using PayPal. A PayPal account is not required. Follow the link below and login using your email address on record with the club. When using PayPal, please consider using the "send money to family and friends option". This reduces fees the organization pays and maximizes your contribution to the club. If you cannot gain access to the website, please contact me before renewing online.

<http://www.atmob.org/members/person.php?frid=renewals>

Renewal checks may also be mailed:

ATMoB
c/o Tom McDonagh
48 Mohawk Drive
Acton, MA 01720

The renewal form can be downloaded from the following link:

<http://www.atmob.org/about/join.php>

Contact me if you require a renewal form and do not have access to a computer / printer by phone (617-966-5221) or mail.

Don't delay, renew today!

Please take the time to seek out and welcome our new and returning club members:

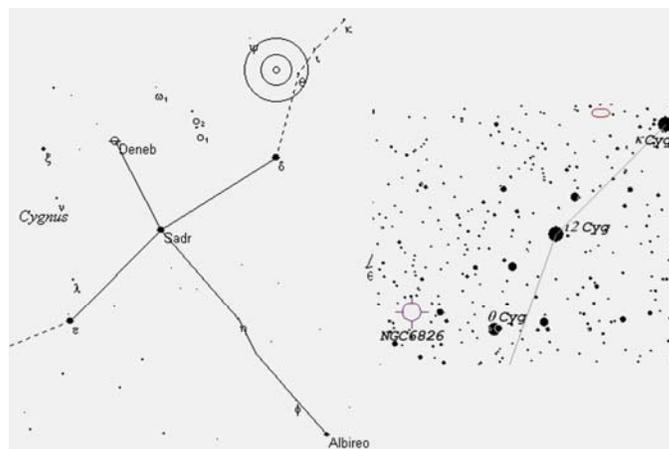
Joseph Wolfe
Joshua Houghton
Laura Sailor
Thomas Dineen

The Amateur Telescope Makers of Boston, Inc. is a 501(c)3 organization. Donations are gladly accepted and are tax deductible to the fullest extent allowed by law. Consider making a tax-deductible contribution to the club during your estate and tax planning this year. Many companies make matching contributions at an employee's request. This is a simple way to make your donation go twice as far.

~ Tom McDonagh – Membership Secretary ~

Sky Object of the Month . . .

August 2013 - NGC 6826 "the Blinking Planetary", Planetary Nebula in Cygnus



Finder charts. (Left) utahskies.org and (Right) astrosurf.com

Backyard astronomers are familiar with the tactic of using averted vision to capture faint detail in deep-sky objects. A sideward glance allows photons to fall on the light-sensitive region of the retina, rendering the invisible visible. The effect of averted vision is particularly dramatic when the telescopic target is NGC 6826.

This 9th magnitude, 25 arcsecond-wide planetary nebula is dominated by a magnitude 10.6 central star. Gaze directly at NGC 6826, and all you see is the central star. Look to the side, however, and a bluish shell surrounding the star pops into view. Return your gaze to the central star, and the nebula disappears. Here is a deep sky object that does something!

This remarkable planetary nebula was discovered by William Herschel in 1783. The first documented description of the blinking effect seems to have come from James Mullaney, who described the phenomenon in the August, 1963, issue of Sky and Telescope and coined the nick-name "Blinking Planetary."

Although NGC 6826 is visible in a modest 2.4-inch refractor, the blink effect is best-seen with medium-aperture scopes. Last September, I viewed NGC 6826 with 4-inch and 10-inch reflectors and noted: "Located near a pretty double star (16 Cyg). Unable to detect "blinking" illusion with the 4-inch. With a 10-inch Dob and 6mm eyepiece (208X), blinking effect obvious but not immediate unless I stared at the nebula for several seconds. When I did, the nebulosity faded until just the central star was visible. A quick sideward glance and "voila," the nebula reappeared."

16 Cygni, located just one-half degree west of NGC 6826, is a striking twin system consisting of magnitude 6.0 and 6.1 G-type stars separated by 39 arcseconds. Double star and planetary nebula can be captured together in a low-power field. Don't go too low, however. With magnifications of 25X or less, NGC 6826 appears starlike and may elude detection.

As telescope size increases, the blinking affect lessens because a large-aperture instrument begins to reveal nebulosity even when NGC 6826 is viewed head-on. If your scope is too big to make NGC 6826 blink, try your luck with its FLIERS. In her book *Deep-sky Wonders*, author Sue French invites users of medium- to large-aperture telescopes to look for a tiny bright patch at each end of the planetary's long axis. Each is a so-called FLIER (Fast Low-Ionization Emission Region) – an enigmatic feature possibly caused by the interaction of material being ejected by the central star with gases already in the shell.



NGC 6826 and 16 Cygni. Image by Michael Siniscalchi (helixgate.net)

September 2013 NGC 6939– Open Cluster in Cepheus



NGC 6939 Finder Chart. Image by www.nightskyinfo.com

Our September "Sky Object of the Month" takes us to the southwest corner of Cepheus and the 8th magnitude open cluster

NGC 6939. Discovered by William Herschel in 1798, it contains some 80-100 stars occupying an area 7 arcminutes across.

My first encounter with NGC 6939 was with a 3-inch f/10 reflector at 30X back in September of 1979. I entered the following description in my logbook. "Nice; intriguing object. Surprisingly easy – a dull glow w/slight condensation; almost stellar." Earlier this summer, I revisited NGC 6939, this time with a 10-inch f/5 reflector and a magnification of 78X. As might be expected, the boost in aperture and magnification garnered more detail. My logbook entry reads, "Seems fan or V-shaped with perhaps a dozen stars mags 11-13, plus a glow from fainter members."

The finder chart shows the location of NGC 6939 about 2 degrees southwest of the magnitude 3.4 star eta (η) Cephei – and a similar distance south of magnitude 4.2 theta (θ) Cephei. Note the presence of the galaxy NGC 6946 just 40 arcminutes southeast of NGC 6939. Both can be picked up in the same low-power field. Be forewarned, however, that NGC 6946 is no piece of cake. We'll take a closer look at this elusive spiral next month.



NGC 6939 and Galaxy NGC 6946. Image by John Mirtle (www.astrofoto.ca)

Your comments on this column are welcome. E-mail me at gchapple@hotmail.com.

~ Glenn Chaple – Member at Large ~

Refurbishing an Old Edmund Scientific Telescope . . .

About six months ago I was given an old telescope, a 4¼" Reflector on an equatorial mount. It was destined for the trash heap but was rescued by Mario Motta who asked me if I wanted to take it up to the clubhouse. Now we already have a fair assortment of telescopes up there but I recognized this one as having special value. It was in rough shape but was essentially complete and sound. At about the same time a new young member, Dylan Paré, expressed interest in making a telescope and after talking with him about his goals and expectations I steered him in the direction of refurbishing a telescope instead. I had just the telescope for him – a 4¼" Reflector on an equatorial mount! The value I had seen in this was that it was an old Edmund Scientific telescope and mount. Both simple yet rugged; A classic in its own right. Dylan accepted the challenge and went

to work first carefully disassembling it then working at removing all the loose paint and rust. This was followed by a thorough cleaning and de-greasing. I worked with him to design a new counter weight which was missing and to make this he had to learn to use our metal lathe – something he was first quite intimidated by but now has first hand experience setting up and using. In between the rainy days and blistering heat he managed to get all the parts painted and with some new hardware we set about the process of final re-assembly. And what a beauty it is now. What was once destined for scrap is now a freshly renewed very sharp looking 4¼" Reflector on an old Edmund mount. Nice Job Dylan!



Dylan Pare's scope and mount. Image by Michael Hill

~ Michael Hill ~

Nova Delphinus 2013 . . .

On August 14, 2013, a nova suddenly erupted in the constellation of Delphinus. Discovered by Koichi Itagaki of Teppo-cho, Yamagata, Japan, at magnitude 6.3, it soon brightened to a magnitude of 4.5. This white dwarf star became the brightest nova seen in the northern hemisphere since Nova Aql 1999, which brightened to magnitude 4.0.

Results from spectra taken after the discovery show this to be a classical nova. A classical nova occurs when a white dwarf star, in a close orbiting binary system, picks up hydrogen gas from its companion star. At a certain point, when the white dwarf's surface becomes very dense with this new hydrogen gas, the bottom of this layer ignites in a fusion reaction.

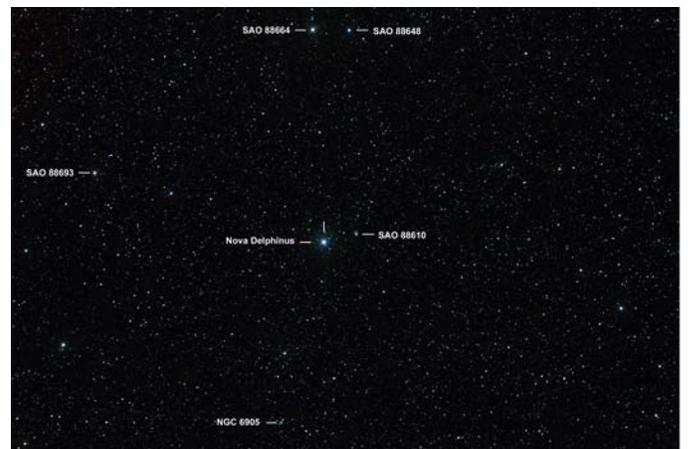
After the alert was issued, some members of ATMob were able to see the nova with their naked eye while others could easily see it with a pair of binoculars.

Nova Del 2013 has dimmed below naked eye visibility and is currently below 6th magnitude. Go to the [AAVSO website](http://www.aavso.org) to check on its current brightness.

~Submitted by Al Takeda ~



Nova Del 2013 near Delphinus and Sagitta. 70mm lens. Image by Mario Motta



Nova Del 2013 and NGC 6905. E-180 f/2.8. Image by Al Takeda



Nova Del 2013 and SAO 88610. Orion 8" f/3.9. Image by Qiu Hongyun

Lou Cohen 1937 - 2013 . . .



Lou Cohen. Image by Lou Bunk

Just lost a good friend. Lou Cohen was born in 1937 and died from pancreatic cancer just a few hours ago. Something like that wouldn't normally be news, but you had to know Lou. On the technical side, he was an engineer at the legendary D.E.C. and was responsible for compilers and early versions of many of the tools we use today. He began using computers when they still had vacuum tubes! His book on quality engineering is still available on Amazon.

On the musical side, he was a student of both John Cage and John Gibbons (harpsichord). He was part of the new music scene in Boston in the early 1960s, then again after his retirement around the year 2000. He was a prolific writer of computer music and had converted a Wii to use as a realtime controller in his performances. He's one of the few people I knew who could talk about Karl Bach and Ioannis Xenakis with equal enthusiasm. You can get the flavor of Lou's music from [here](#).

I got to know Lou through astronomy--yet another shared interest. I visited his house to see the astronomical dome on his roof, spotted the harpsichord, and a fast friendship was born. Despite the difference in our ages, Lou's thinking was as quick and flexible as anyone I've known.

I got to spend a few hours with him as he went into hospice a couple of weeks ago. We talked about computers and Bach, the rhythms of Purcell and the playing of Mauricio Pollini. Lou was thinking about music and listening up till the moment that he just couldn't go on. His realistic acceptance of what was to come was an example to me of real courage. My best wishes to his wife Jane and his wonderful family. There's a hole in the world now.

<http://www.exponentialaudio.com/News.php>

~ Submitted by Michael Carnes ~

Clay Center Thank You . . .

A special "Thank you" to all the ATMs who helped at Astronomy Day last spring at the Clay Center Observatory. We topped over 2,500 attendees! Mark your calendars now for next

year's date: Saturday, May 10th. Please let us know if you would like to be on the planning committee.

~ The Clay Center Staff ~

AstroAssembly 2013 . . .

Please join us on Friday, October 4 and Saturday, October 5 as Skyscrapers, Inc. celebrates AstroAssembly 2013 with a program on "Automated Observatories and Remote Astronomy." Details are available on our website at <http://www.theskyscrapers.org/astroassembly2013>.

In addition to an array of speakers, we will feature Swap Tables, Astrophotography Competition, an exhibit of Homemade Telescopes (bring your telescope!) and the unique Astro Bake-off Contest. The reception and banquet on Saturday night promise to be another delicious meal and time to connect with old friends. *Editor: This year's Saturday keynote speaker will be Dr. Mario Motta talking about "The Design, Construction and Use of a Large Private Research Observatory".*

Seating for the banquet is limited and advance reservation is required. Registration is \$20. Banquet is \$20.

We look forward to seeing you.

~ Submitted by Skyscrapers, Inc. ~

Astronomy Star . . .

Dick Koolish became a celebrity during the Arlington Astronomy event on June 15. Jeff Alexander, the organizer of the event, and Dick were [interviewed](#) by the local cable TV station. The TV crew consisted of Gareth Williams, associate director of the Minor Planet Center, and Gareth's wife Cynthia Marsden Williams, daughter of the late Brian Marsden.



October Star Fields DEADLINE
Sunday, Sept. 22nd

Email articles to Al Takeda at
newsletter@atmob.org

Articles from members are always welcome.

POSTMASTER NOTE: First Class Postage Mailed September 9, 2013

Amateur Telescope Makers of Boston, Inc.
c/o Tom McDonagh, Membership Secretary
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Acton, MA 01720
FIRST CLASS

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Virginia Renehan starparty@atmob.org

How to Find Us...

Web Page www.atmob.org

MEETINGS: Held the second Thursday of each month (September to July) at 8:00PM in the Phillips Auditorium, Harvard-Smithsonian Center for Astrophysics, 60 Garden St., Cambridge MA. For INCLEMENT WEATHER CANCELLATION listen to WBZ (1030 AM)

CLUBHOUSE: Latitude 42° 36.5' N Longitude 71° 29.8' W

The Tom Britton Clubhouse is open every Saturday from 7 p.m. to late evening. It is the white farmhouse on the grounds of MIT's Haystack Observatory in Westford, MA. Take Rt. 3 North from Rt. 128 or Rt. 495 to Exit 33 and proceed West on Rt. 40 for five miles. Turn right at the MIT Lincoln Lab, Haystack Observatory at the Groton town line. Proceed to the farmhouse on left side of the road. Clubhouse attendance varies with the weather. It is wise to call in advance: (978) 692-8708.

Heads Up For The Month . . .

To calculate Daylight Saving Time (DST) from Universal Time (UT) subtract 4 hours from UT.

Sept 5 New Moon
Sept 8 Venus 0.4-deg North of Moon
Sept 12 First Quarter Moon (Moonset at midnight)
Sept 19 Full Moon
Sept 22 Autumnal Equinox
Sept 26 Last Quarter Moon (Moonrise at midnight)
Oct 4 New Moon
Oct 8 Draconid Meteor Shower peaks
Oct 11 First Quarter Moon (Moonset at midnight)