



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. 23, No. 8 September 2011

This Month's Meeting...

Thursday, September 8th, 2011 at 8:00 PM
Phillips Auditorium
Harvard-Smithsonian Center for Astrophysics
Parking at the CfA is allowed for the duration of
the meeting.

Real-Time Spectroscopy for Amateur Astronomers

The light spectrum of a star reveals information on its composition, temperature, and movement. In the past, only professionals had the skill and equipment to study star spectra. Recently, the cost and complexity of the necessary hardware and software has dropped. Today, an amateur can easily study the spectrums of stars and planets with a very modest expense.

Our speaker, Tom Field, is the author of an article on the subject of amateur spectroscopy in *Sky and Telescope*. He will describe how to do spectroscopy on small telescopes with a CCD camera, webcam or DSLR, and a small diffraction grating. He is also the author of new analysis software that is capable of real-time display of star spectra. Tom will also describe what the user can learn from the spectra. A few examples include: characterization of star types; identification of emission lines from an emission nebula; observation of methane bands in Neptune or Uranus; measurement of red shift of a quasar; solar spectroscopy; and identification of variable stars types, novae and the occasional bright super-novae.

This will be our first web-talk, in which the speaker will be giving a live talk from a remote site (in this case, Seattle). He will take and answer your questions just like he was in the auditorium. After this talk, I'd like to get club feedback on what you think of this medium. If it works well, it will potentially open up a much wider range of speakers in the future.

President's Message . . .

Our club has had a number of different clubhouse sites over the years. For the past thirty years, we have been fortunate to be located at the base of Haystack Hill in Westford, leasing our clubhouse (an old farmhouse) from MIT at a very nominal rate. Our primary contact with MIT has been the Director of Haystack Radar facility at the top of our hill. He and all the Haystack folks have been and continue to be very supportive of us over the years, and we appreciate this very much.

Our astronomy and outreach work is not so well known on MIT campus. As many of you know, our clubhouse is old and therefore not up to code standards, although the Clubhouse Committee is continually making improvements. At our last lease renewal, the MIT real estate department had been looking into all old and not-up-to-code MIT properties to see if some should be decommissioned. Our clubhouse was initially among this group. The Haystack folks vigorously intervened on our behalf, made known our very strong outreach component that is very much appreciated by MIT, and pointed out that we have installed (with MIT's blessings) an extensive set of observing facilities on the site. The real estate group learned that the clubhouse is used for far more than just casual meetings, and that ATMOB was a strong contributor to the overall MIT outreach efforts. I'm happy to say that our lease is now in the works for renewal.

This fall ATMOB will be a part of the Haystack outreach programs, which will increase our relationship and collaboration with MIT on outreach. About twice a year, Haystack invites residents from neighboring towns to its facilities for a show and tell, and this year ATMOB will be there also to tell about our club and what it does. We also plan to set up a few telescopes outside Haystack for the visitors to look through. Look for an announcement on our web site for this mini-star party. Maybe we'll get some new members out of this event too!

Then, in November and December, we'll have a repeat of an ATMOB open house and telescope observing session for MIT folks, primarily those who work on Haystack hill. Several past presidents last ran this event about 5 years ago, and it was a great success. We'll announce this event when it is planned and invite your participation meet with these folks and their families.

With our present generous clubhouse arrangement with MIT, the club is spared many thousands of dollars in yearly rental expense, and we have a site that is very remote and well-protected from the direct lights of neighbors. The bottom line is that there has been a long MIT-ATMOB relationship that has grown over the past 30 years, but this relationship- like all others- will require work and nourishing to continue to flower. Thanks to all of you for your support!

~ Bernie Kosicki, President ~

July Meeting Minutes . . .

Minutes of ATMOB meeting held July 14, 2011

Meeting held in Phillips Auditorium, Harvard-Smithsonian Center for Astrophysics

Bernie Kosicki, President, called the meeting to order at 8:08 PM.

The Secretary's Report of the June meeting was prepared by Bruce Tinkler, and was given by Sidney Johnston.

Steve Clougherty gave the Clubhouse Report.

Eileen Myers announced that the Club Picnic will be held at the Clubhouse on September 10, 2011 at 3PM.

Ross Barros-Smith announced that he is moving to London until January 2012, but will continue as Editor of *Starfields*. Eileen Myers will do the local mailing work.

Members made presentations of their astronomical activities:

Joseph Rothchild described his Travel Telescope. After closely examining several telescopes, Joseph settled on a Bushnell Ares 5" collapsible dobsonian which is available at Optics Planet. The OTA was mounted on a Manfrotto 405 gear head, with an added Kydex light shield. When fitted into a carrying case, the telescope assembles in less than a minute.



Photo by Al Takeda

Joseph Rothchild sharing his portable telescope project

Mario Motta and **Kelly Beatty** discussed outdoor lighting and the International Dark Sky (IDA) standards as presented in a recent Bill before the Massachusetts Legislature. The bill has a "total lumen rating" and a prescriptive standard that limits vertical illumination. The present bill is the first time that a proposed Massachusetts lighting law has prescriptive standards. This Bill is supported by professional lighting organizations. Mario mentioned that 38 Towns in Massachusetts have a lighting ordinance.



Photo by Al Takeda

Mario Motta (left) and Kelly Beatty (right) pose at the July Meeting

Mario Motta gave a presentation on the silvering of his 32" mirror. Silver was selected rather than aluminum because of its better reflection qualities. Taking the old aluminum coating off presented problems, but was accomplished. The new silver coated mirror works wonderfully.

At the conclusion of the meeting, refreshments were served courtesy of Ross Barros-Smith.

~ *Sidney Johnston, Secretary* ~

Clubhouse Report . . .

The last issue of *Star Fields* provided an activities report through the June 18th work session. This report begins the next day as our efforts focused on the construction of the Home Dome Observatory. During April and May, needed materials began to be collected. But activity ramped up as thirty members donated 125 days of work during the 63 days of this period. The number of members involved is in parentheses.

6-19(2): This meeting reviewed materials purchased and needed to be purchased for the observatory project. Still awaiting the Groton building permit. Engineering drawings were reviewed and Paul Cicchetti outlined the sequence of construction activities.

6-21(4): New commercial building permit issues were reviewed, including safety and insurance requirements and MIT concerns. Ed Knight's professional engineer plans were reviewed.

6-24(2): Delivered the remaining iron fixture materials and tools from Ed Knight's workshop along with the 200 galvanized bolts modified for this project to the Clubhouse. Received the officially approved Groton Building Permit delivered by Larry Swezey on August 23, 2011. This was the culmination of a considerable amount of work by Mr. Swezey on the club's behalf.

6-26(7): Bulk of structural lumber purchased and delivered to site; area cleanup, trimming and chipping prepared work area.

6-28(1): Remaining lumber purchased and delivered to site.

7-2(12): 12ft 2x8 triple beams cut, bolted, assembled on the existing platform; 1st of 4 iron clamp systems installed.

7-4(8): All 4 iron clamp systems installed securing the square truss; 1st 45deg triple beam corner cut, fit, tested ok. Meanwhile the clamshell observatory 8" Dall-Kirkham mount testing started.

7-9(8): All 4 triple beam corners cut, fit, bolted, tested ok; iron clamp system started. Dall-Kirkham 8" mount testing continued:promising. Schupmann tested on loaned G-11 GEM: promising.

7-16(16): Work Party; mowing, trimming, raking, brush cutting&chipping; truss iron clamp system finished; ready to move off platform and begin wall construction.

7-20(2): Set up site with off ground supports next to platform for truss relocation.

7-21(2): Truss relocated with forklift.

7-23(8): North and South walls constructed and braced.

7-24(2): Bracing inspected & holding.

7-29(7): Cut 4-4x6 vertical support columns & fastened 1st support in place. Started E & W walls. 20" Shapley Newtonian scope mirror size and separations measured for ray trace verification.

8-6(7): Fastened all four 4x6 vertical support columns in place and constructed East and West walls and cap board placement started. Ready for truss to be hoisted onto structure.

8-8(2): Top of support columns marked the same as corresponding truss ends to specify placement.

8-9(2): Crane flipped truss and placed same on waiting supports.

8-13(20): Work party; grass mowed, brush cutting & chipping continued; wall cap plates installed and truss fasteners installed. Roof and dome support measurements determined final size of iron "Z" supports. Eight iron "Z" supports were welded by John Blomquist the following week.

8-20(11): Wood spacers and eight iron "Z" supports were lag bolted in place. Guided by Dave Prowten's Laser Level, the dome support ring was reassembled with RTV and stainless bolts and secured to the "Z" supports with fender washers and bolts. The reassembled dome rests on the walled structure. Next is the application of wall boards and roof structure and sheathing and covering. We are now securing the clubhouse for Hurricane Irene but still hope to have the observatory presentable for the September 10th club picnic.

A thank you is in order to the following members for their efforts, the number of days donated follow each name. Joshua Ashenberg(2), Bruce Berger(3), Barbara Bosworth(2), John Blomquist(11), Tom Calderwood(1), Greg Chase(1), Paul Cicchetti(8), Nina Craven(4), Steve Clougherty(3), Harry

Drake(1), Eric Johansson(4), Ed Knight(5), Dick Koolish(2), Bern Kosicki(1), Brian Maerz(6), John Maher(6), Mike Mattei(2), Eileen Myers(4), Dave Prowten(3), John Reed(14), Phil Rounseville (5), Sergio Simunovic(1), Gennady Solodar(1), Gerry Sussman(2), Art Swedlow(10), Larry Swezey(4), Al Takeda(9), Bill Toomey(2), Sai Vallabha(11), Vlad Vudler(2), and Wayne Wagner(3).

We appreciate the crew among us who work hard to provide nourishment and cold water during this very hot season. And the donated air conditioner that allows revival of spirit after the hot sun drains. The 17" Wray Newtonian reflector continues to give good service; the 8" Tanguay Dall-Kirkham gives great images and Sergio S.'s new pressure plate is showing promise at correcting the drive problem being checked by John M. The 20" Shapley Newtonian is giving good images and with Dave P.'s upgrade and assistance offered by Gary Walker we may get maximum magnitude from this great scope. And the Schupmann is awaiting the completion of the Home Dome observatory so the C-14 will yield its old home to great planetary views again. Gerry and Eric just keep the faith, Jupiter will be rising soon.

The next work session is the week after the September 10th picnic; that is we work on Sep 17th. We haven't lifted a paint brush lately, and the fall is a great time to give the house a new look Plan on both the 10th and 17th. See you then.

~ Clubhouse Committee Chairs ~

~ John Reed, Steve Clougherty and Dave Prowten ~

Clubhouse Saturday Schedule

September 10	Maher & Nugent Club Picnic
September 17	Myers & Wolf Work Party #9
September 24	Mearz & Meurer
October 1	Budreau & Burrier
October 8	Evans & Lumenello Work Party #10
October 15	Berger & Hill
October 22	Mock & Toomey
October 29	Panaswich & Siegrist

Thoreau on Astronomy . . .

Ah, what a poor, dry compilation is the "Annual of Scientific Discovery!" I trust that observations are made during the year which are not chronicled there, that some mortal may have caught a glimpse of Nature in some corner of the earth during the year 1851. One sentence of perennial poetry would make me forget, would atone for, volumes of mere science. The astronomer is as blind to the significant phenomena, or the significance of phenomena, as the wood-sawyer who wears glasses to defend his eyes from sawdust. The question is not what you look at, but what you see.

Journal, 5 August 1851

~ Submitted by Tom Calderwood ~

Announcement – Long Range Planning Committee Report...

Announcement- Long Range Planning Committee Report
The Long Range Planning Committee, which I commissioned last summer with the approval of the board, has finished its report and submitted it. It is also posted on our web site: Look under "Message Boards" and "Club Events."

The committee was composed of the following club members: Mario Motta, Chair, Nanette Benoit, Chuck Evans, Neil Fleming, Gerald Sussman, Gary Walker, and Bernie Volz. I want to thank this group very much for the time and effort that they made in preparing this report. The entire club owes these folks a debt of gratitude for their work. Their report will guide the club as we move forward.

The Board will discuss this report in a future meeting. Please let the board know your thoughts and comments as we get ready for this meeting.

~ *Bernie Kosicki, President* ~

Report of the ATMOB Strategic Planning Committee...

This committee was designated by our President (Bernie Kosicki) to review the current status of the ATMOB, and to develop a long-term planning document for our organization.

The committee has met twice over the past 6 months, and also has communicated by e-mail to develop this report. The goal of the report is to utilize our resources to the best possible advantage of our members and to position the ATMOB to continue and expand its mission into the future. As such we have made the following suggestions.

1. The first item of business was to explicitly compose a mission statement for the ATMOB. After some discussion the following was chosen:

The mission of the ATMOB is to promote the science of astronomy, and to share the beauties of the universe, through the construction and use of telescopes.

2. The ATMOB will continue to be an organization that provides for social interaction among its members or like minded in the pursuit of the science of astronomy. The club will continue as part of its core structure in the sharing of information and knowledge to aid members in the building and using of telescopes. We also will share our knowledge and enthusiasm to promote this activity among the general public to the best of our ability.

3. Our current clubhouse is of concern to the committee. We note that we have only short-term leasing commitments. Though MIT has been quite generous to us in the past, we should strive to secure this location on a longer term basis. Though we already

have made significant investments in the clubhouse property, our suggestion is that any large term funds be carefully considered without a commitment from MIT regarding our future use of the location. Though the location is not ideal due to encroaching light pollution, it is a convenient location for the organization and should be maintained, if possible. We should explore either long-term leasing, and/or outright purchase and should it ever become available.

4. Due to strong relationships, our monthly meeting location at the Phillips auditorium of the CFA, is of less concern for a long-term venue for meetings. However, we should periodically renew our relationship with the Harvard CFA to secure this location long-term.

5. The ATMOB should as an organization promote scientific collaboration between professional astronomers, and specifically with MIT, Harvard CFA, and our organization in professional amateur collaborations. This will promote interest among members, aid in scientific research, cement our relationships with these institutions, and aid in recruitment of members. We should also aid MIT and Harvard in their public outreach efforts to further solidify our value to those organizations.

6. Specific activities for the benefit of our members are suggested as follows:

- A. Organized classes
 - a. introductory observing and imaging
 - b. planetary observing and imaging
 - c. deep-space observing and imaging
 - d. telescope design and construction
- B. A venue for building instruments
 - a. optical shop
 - b. machine shop
- C. Observatories with interesting instruments
 - C14, Schupmann, Dall-Kirkham, 20-inch Dobsonian, etc.
- D. Loaner telescopes to help get one started

7. An important conclusion that we came to was that the idea that the club would someday directly purchase a dark-sky site was not practical. Indeed, dark-sky sites would be too far away from the center of the population of the club to be useful. Furthermore, the effort to maintain a distant site would be beyond our resources. What was more appealing was the idea that we might enter into a partnership with another entity (such as Stellafane) to share in a site. We provide some service in exchange for permanent use of that site.

In particular, we advise the club to revise the purpose of the "dark-sky land" fund. Those funds could be used for clubhouse acquisition, if needed. Or they could be used for improvements in the facilities of an eventual partnership entity, or for some ongoing partnership costs.

8. In the urban/suburban area, where most of the members reside, and

where the reservoir of young potential members are concentrated, we believe it to be a good idea to investigate the possibility of making a deal with a public park or other sister organization to be able to have a convenient observing site for both members and the public.

9. In order to have a financially sound organization, we suggest that ongoing operating expenses be covered by member dues, and as that is not currently the case, suggest a dues increase to be discussed by the executive board. (Suggest \$35?). Donations should be used for reserves, extraordinary expenses, and special projects. The club should run on a balanced budget for ordinary expenses.

10. Consideration should be made for a "large project" that could attract donations, inspire members, and attract new members. It is suggested an observatory with a substantial telescope for use by members could be such a project. This would require careful planning, and not be undertaken until a secure location is assured, possibly the current clubhouse location.

~ The Task Force on Long Range Planning, Mario Motta (Chair), Nanette Benoit, Chuck Evans, Neil Fleming, Gerald Sussman, Gary Walker, Bernard Volz ~

Sky Object of the Month...

M56 – Globular Cluster in Lyra

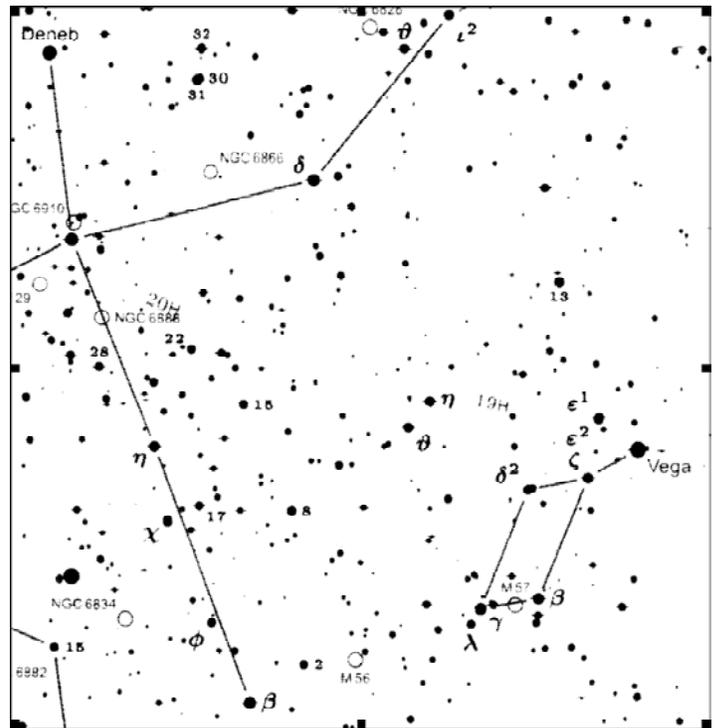
In July, we looked at M92, a fine globular cluster in Hercules that's overlooked in favor of the easier-to-find M13. The same misfortune has befallen another globular cluster - M56 in Lyra. M56 is often bypassed by backyard astronomers who favor the planetary nebula M57, conveniently positioned midway between the stars beta (β) and gamma (γ) Lyrae.

Locating M56 isn't as difficult as you might think. Aim your telescope towards a point roughly midway between gamma Lyrae and Albireo (somewhat closer to Albireo) and begin a low-power search. You should come across a small roundish puffball quite similar in appearance to a tail-less comet.

Admittedly, M56 doesn't rank among the finest deep-sky objects in the Messier Catalog. At a magnitude of 8.3 and angular size of 7', it pales in comparison with M13 and M92. Recently, I viewed M56 with a variety of instruments. Through 10X50 binoculars, it resembled an out-of-focus star. A 4.5-inch f/8 reflector at 150X showed the barest hint of resolution. 200X with a 10-inch Dob resolved much of the cluster, although the center still appeared hazy.

M56 was discovered on the evening of January, 1779, by Charles Messier - the same night he independently discovered

the Comet of 1779. Recent distance studies put this globular cluster at about 30,000 light-years from Earth, corresponding to an actual diameter of some 60 light-years.



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

~ Glenn Chaple ~

Annual Club Picnic...

Eileen Myers writes to remind us that the Club Picnic will be held at the Clubhouse at 3PM on Saturday, September 10. Complete details were published in the July issue of *Star Fields* and reminders have been posted on the email lists.

~ Reported by Ross Barros-Smith ~

Stellafane 2011...

In keeping with tradition, the convention started out in true "Stella-rain" conditions on Friday afternoon. Undaunted, ATMOB members braved the elements to attend the annual Stellafane Convention on Breezy Hill in Springfield, Vermont.

ATMOB members gave many presentations throughout the convention starting with the Friday Technical Talks. As Al Takeda started his seminar on "Deep Sky Imaging with a Digital Single Lens Reflex (DSLR) Camera," the heavens opened up with a deluge of water prompting many to seek the shelter of the pavilion (that's one way to have a captive audience). Later, Mario Motta spoke about the "Medical Effects of Light Pollution" and

Noreen Grice gave a talk on how "You Can Make the Universe More Accessible." At 10PM Dave Siegrist gave a beginners course on "Learning and Enjoying the Night Sky" in the McGregor Observatory.

Right on schedule, Saturday became a clear and sunny day. ATMOB member and AAVSO director, Arne Henden, gave an AAVSO Workshop on "Monitoring Bright Stars for Fun and Profit" and a talk on "What we Learned about Epsilon Aurigae during its Recent Eclipse."

Up on Breezy Hill there were many homebuilt scopes being judged for mechanical design and craftsmanship. Every telescope maker had an interesting story to tell and their pride was unmistakable.

Paul Valleli had a lightweight Dobsonian set up next to the Pink Clubhouse and next to him; Marion Hochuli was displaying her mineral collection. Down at Stellafane East, Eileen Myers could be seen selling items at the T-shirt booth.

Later that evening, John Boudreau won one of the ultimate raffle prizes by garnering four Televue Panoptic eyepieces and a 4X Powermate.

A candlelight ceremony was performed to honor the memory of Fran Flanders, Springfield Telescope Makers member and benefactor, who passed away this year. The last ceremony of this type was performed when Walter Scott Houston was memorialized at Stellafane.

Dr. Jane Luu gave the keynote address with the talk: "Pluto, Comets, and the Kuiper Belt: Taking an Inventory".

After the evening program, Al Takeda gave a deep sky imaging demo by showing how to capture and process the North American nebula and Comet Garradd in real time. Another "Learning and Enjoying the Night Sky" lecture was given at the McGregor Observatory by John Briggs.

The Stellafane convention is a treasure for the telescope maker but the event is much more. It is a gathering of astronomers who enjoy meeting up with friends and sharing their knowledge with the entire astronomical community.

~ Al Takeda ~

Photos from Stellafane

Each month, ATMOB's Al Takeda submits far more photographs than there is room to include in each month's issue of *Star Fields*. There is *always* a selection of work party photos, several portraits of guest speakers, and the occasional event shots to choose from. This month, his written report on Stellafane came with so many wonderful images from the convention, that they plainly warrant their own small feature.



"Pink Club House"



Paul Valleli seated behind lightweight telescope



Eileen Myers working the vending stand



Left to right (and wearing hats): John Reed, Harry Drake, and Art Swedlow



John Bodreau showing off his loot



Candlight remembrance for Fran Flanders

~ All photos by Al Takeda ~

~ Introduction by Ross Barros-Smith ~

October Star Fields DEADLINE

Noon, Sunday, September 25

**Email articles to the newsletter editor at
newsletter@atmob.org**

POSTMASTER NOTE: First Class Postage

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

EXECUTIVE BOARD 2010-2011

PRESIDENT: Bernie Kosicki (978) 263-2812
president@atmob.org

VICE PRES: Mike Hill
SECRETARY: Sidney Johnston
MEMBERSHIP: Tom McDonagh (617) 966-5221

TREASURER: Nanette Benoit (978) 290-2802
MEMBERS AT LARGE: Chuck Evans (978) 649-7157
Neil Fleming

PAST PRESIDENTS:
2008-10 Steve Beckwith (978) 779-5227
2006-08 Virginia Renehan (978) 283-0862
2005-06 Bernie Volz (603) 968-3062

COMMITTEES

CLUBHOUSE : John Reed (781) 861-8031
Steve Clougherty (781) 784-3024
David Prowten (978) 369-1596

NEWSLETTER: Ross Barros-Smith (978) 263-6599

OBSERVING: Bruce Berger (978)-387-4189

OBSERVING AND PUBLIC OUTREACH

STAR PARTY COORDINATOR:
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.
