



## 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. 26, No. 7 July 2014

### This Month's Meeting...

Thursday, July 10<sup>th</sup>, 2014 at 8:00 PM

Phillips Auditorium

Harvard-Smithsonian Center for Astrophysics

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

### Member Night

Our July meeting will be a Member Topic Night. This year, we have lined up the following speakers:

- Mike Hill will give a talk on his 4 1/4" reflector rebuild.
- Bruce Berger will give us all an update on our ATMoB Research and Imaging Observatory (ARIO).
- Steve Clougherty will do a presentation on the reconstruction and installation of the twenty five inch Dobsonian which is housed in the "Ed Knight" roll off observatory at our Westford clubhouse.
- Nick Bealo will speak on the observatory he built for his high school.
- Paul Valleli will present a history of "ATMoB participation in Operation Moonwatch".

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

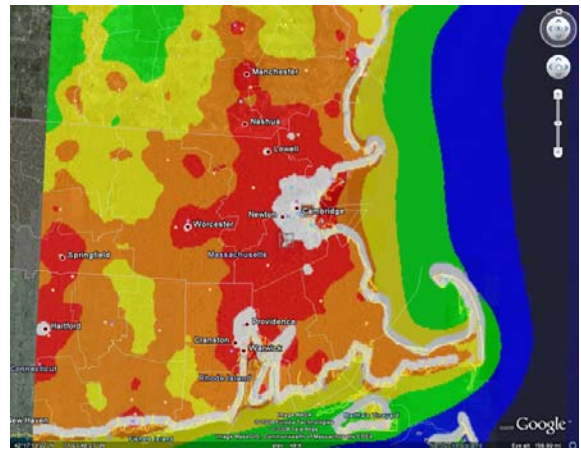
### President's Message...

Hello there! I guess I've been fortunate enough to step into Mike's shoes as President this year, so I thought I'd take a minute to briefly introduce myself. My name is Neil Fleming, and I joined ATMoB around 2007. My interest in astronomy, however, predates that by a few decades. Like many of you, I grew up during the Apollo era, so had developed a keen interest in astronomy early in life. Through my pre-teen and early-teen days, a friend of mine and I used a Tasco 4 1/4" Newtonian, which I still have to this day. We spent long nights looking at deep sky objects, and even doing some primitive film-based photography of the sky. Nothing to write home about, but it was fun.

Education, career, and life intervened, and I drew away from the hobby until about 2005.

Sometime in 2005, I happened to be in a local Sam's club, and while walking down an aisle noticed a cheap \$200 computerized (!!) goto scope. Amazing, I thought. What a nifty idea! I ended up buying it for my kids, and that was the magnet that attracted me back into the hobby. Once I started using that beginner scope, one thing led to another, and after some research, I acquired a Televue scope and a decent mount. Soon, I acquired a CCD camera with the intention of producing high-quality RGB images of deep sky objects. I found that given the local sky conditions, and given that I had already spent a lot of time doing visual astronomy, I wanted to get into the astrophotography side of the hobby...it seemed that the possibilities were endless.

That is...until I ran into the reality of the effects of local light pollution. Here is the light pollution map from where I imaged:



...and I found that the results were less than impressive:



On to "Plan B"... I soon learned about narrowband imaging, which basically uses filters that block out all but the smallest slivers of bandwidth associated with the wavelengths of light from the gases within an excited (emission) nebula. So...I could image even from the Boston area and get reasonable results:



Should you be interested in seeing some more of my work - from the very earliest (poor) images to those taken more recently - you can go to [www.flemingastrophotography.com](http://www.flemingastrophotography.com). Astrophotography has remained a passion of mine, and still provides me with a lot of enjoyment.

Enough of the intro, and back to the present... This club, along with the tremendous support from the board members, has been involved in a very wide range of focus areas and interests that span many aspects of our hobby. This ranges from telescope and mirror making, through member education nights, star parties, clubhouse events, and of course, our monthly speaker nights. It has been a while, however, since we have collectively examined the range of what we do and the priorities that we assign to those activities. One of my near-term goals is to run one or more in-person workshops to work with any and all interested members to see if we are on the right track in our efforts. Does our energy go into the right activities? Should there be different areas added to our focus? Should our public outreach change in some way? Who knows...maybe nothing will change at all...maybe some activities will be added or dropped. Look for this to happen in the late summer/early fall timeframe when everybody is back from their vacations. Drop me a line at [president@atmob.org](mailto:president@atmob.org) if you have some ideas about the approach to this effort.

I'd like to thank the board and the entire membership of the club for allowing me to serve you as club President for a while. I look forward very much to working with you all to continue to advance the high quality of this organization.

Regards...

~ Neil Fleming - President ~

## June Meeting Minutes . . .

Minutes of ATMob meeting held June 12, 2014.

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 May 8, 2014, meeting was given by Sidney Johnston.

- Mike Hill had the paper ballots for the election of officers of the ATMob distributed to all members present.
- Mike Hill gave the Treasurer's Report which had been prepared by Nanette Benoit.
- Mike Hill gave the Membership Secretary's report.
- Glenn Chaple gave the Observing Committee Report: Glenn mentioned:  
The upcoming Solstice;  
That Ceres and Vesta would be in conjunction; and  
That Aphelion is around July 5, when the Sun Earth distance will be about 94,500,000 miles.

There will be an ATMob Planet Marathon on July 4-5, as 8 planets will be visible, some easier to locate than others: Jupiter, Mars, Saturn, Pluto, Neptune, Uranus, Venus, and Mercury.

- Steve Clougherty gave the Clubhouse Report. At the last work party the snow blowers were put away and the lawn mowers brought out.

Bruce Berger announced that an SBIG ST-8300 monochrome CCD camera with a filter wheel, owned by the Chuck Evans' family, was donated to the club. The club's SBIG ST-8300 color CCD camera was then given to the Evans' family as an exchange. Bruce also mentioned that a Starlight Instruments Feathertouch™ focuser was donated to us by club member Eric Buehrens.

Mike Hill announced that the Harvard University Summer Solstice Party is scheduled for June 21, and that volunteers are needed.

Dick Koolish announced that the Stellafane Amateur Telescope Makers Convention is scheduled for July 24-27 in Springfield, VT.

- Old Business: None
- New Business: Bernie Volz spoke about the total solar eclipse trip planned for August 21, 2017. The plan is to stay at the Stony Creek Hotel in Columbia, Missouri. Viewing is, hopefully, planned for a site about half way between Kansas City, MO and Columbia, MO, at Les Bourgeois Vineyards in the town of Rocheport. A bus is being retained in case of clouds, which hopefully can drive to a location without clouds, if any appear.

Mike Hill announced the results of the paper ballot election of the new officers for the coming year.

**President: Neil Fleming**  
**Vice President: Glenn Chaple**  
**Secretary: Sidney Johnston**  
**Treasurer: Eileen Myers**  
**Membership Secretary: Tom McDonagh**  
**Member at Large: Bruce Tinkler**  
**Member at Large: Al Takeda**

President Mike Hill introduced three of our club members who spoke about aspects of our 80 year history of the ATMoB.



Anna Sudaric Hillier, John Reed and Paul Valleli. \*

Anna S. Hillier spoke about the quest for a Clubhouse for the ATMoB. She traced ATMoB activities, starting with the formation of the club through the efforts of Wagn Hargbol and the start of its monthly meetings at the Harvard College Observatory, and showed photos of its many past workshop locations, through 1977, when ATMoB received its first lease to use the present Clubhouse on the MIT property in Westford, MA.

John Reed spoke about the history of the present Clubhouse. He showed photos of the site taken before and after development of the MIT structures. John presented many photos of the improvements made by ATMoB members to the Clubhouse building.

Paul Valleli spoke about the growth of amateur astronomy at the present Clubhouse. Paul showed many interesting photos of the development of the Clubhouse into an amateur astronomy facility.

It is hoped that the presentations and many photos and images will soon be incorporated into the official ATMoB history, along with text based on the presentations of Anna, John, and Paul.

The meeting was adjourned at 10:32 PM

~ *Sidney Johnston, Secretary* ~

## Membership Report . . .

Membership count as of July 3, 2014 is at 332 individuals.

Please welcome our newest and returning members: Jason Merrill, Budd Miller, Nazia Haider, Steven Mancini, Andrew Lo, James Reif, John DeCenzo, Gary Phillips, Kaixun Hua, & Peter Allen.

The club's fiscal year began June 1st. The membership renewal period begins at this time. Please renew today! Many members' subscriptions to S&T and Astronomy magazine are tied to their last renewal date. You can avoid interruption of subscription delivery by renewing now! Please follow the instructions outlined in the June 2014 Starfields newsletter. New members in 2014 are not required to renew at this time.

If you cannot access the website or have forgotten your password, please contact me via email at [membership@atmob.org](mailto:membership@atmob.org)

Our communication lifeline includes the ATMOb-Announce and ATMOb-Discuss mailing lists as well as our fantastic newsletter. Please refer to these tools for up to date information on Clubhouse openings, events and interesting astronomy related discussions. Contact me with questions regarding accessing these options at: [membership@atmob.org](mailto:membership@atmob.org)

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. It is a simple way to make your donation go twice as far.

~ *Tom McDonagh – Membership Secretary* ~

## Clubhouse Report . . .

June 2014



(L-R) Dave Prowten, John Blomquist and John Maher installing the G-11 pier. \*

The largest investment of member power was invested on Full Moon Saturday, June 14<sup>th</sup> when 21 members signed the log book and donated another day of work at our Clubhouse. Thanks go to Sai Vallabha, Bob Toop, Al Takeda, Art Swedlow, Alan Sliski, John Reed, Cheryl Raynor, Dave Prowten, Eileen Myers, John Maher, Eric Johansson, Kaixun Hua, Marion Hochuli, Jim and Charlie Gettys, Nina Craven, Steve Clougherty, Paul Cicchetti, John Blomquist, Bruce Berger and Joshua Ashenberg. Trimming and hand mowing supplemented the later tractor mowing for the

monthly insect control efforts. Consumables, drinks, Nutty Bars, etc., were replenished. Work continued on the ATMoB Research and Imaging Observatory (ARIO) dome drive actuators as well. A needed application of urethane was applied to both sides of the exterior ARIO door.

The greatest use of manpower took place with the clamshell mount replacement effort. Following the many attempts to activate an observing program with the clamshell observatory telescope, the executive board supported the purchase of a new Losmandy G-11 equatorial mount with new goto electronics. Many hours were spent this day dismantling the old mount/pier/pedestal adaptor and fabricating the new adaptor/pier/mount from collected materials. Contacts made at the NEAF conference were utilized by Steve C. to obtain the necessary components at considerable cost savings. Heavy cutting and drilling took place both in the observatory and machine shop. Work has continued since the 14th and will continue during the July work session.

A hearty meal was prepared by Eileen M., Eric J., and Sai V. with assistance from other hungry members. The lunch was consumed with quiet exuberance by all. Cleanup was spearheaded by Art S. as the obligatory hike up the hill commenced. Work continued on outdoor projects until twilight fell and the observing pads continued to fill with eager observers. We'll start over at next month's work party on July 12 at 10 am. Please join us. And remember the Thursday evening mirror grinding sessions, Friday night member Astro class, and Saturday night observing sessions at your Clubhouse.

~ Clubhouse Committee Directors ~  
 ~ John Reed, Steve Clougherty and Dave Prowten ~

**Clubhouse Saturday Schedule**

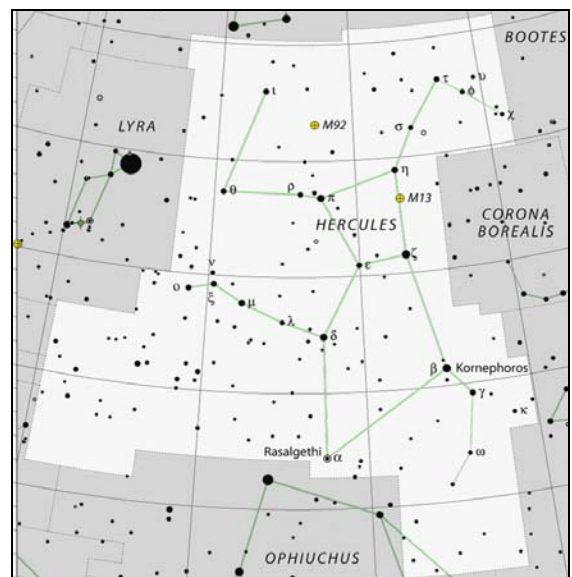
July 12	Bill Robinson and Rich Burrier <b>WORK PARTY # 7</b>	
July 19	John Maher	Glenn Meurer
July 26	<b>Clubhouse Closed</b> <b>STELLAFANE CONVENTION</b>	
August 2	Henry Hopkinson	Eileen Myers
August 9	Brian Maerz and John Panaswich <b>WORK PARTY # 8</b>	
August 16	Rich Nugent	N. & S. Sonowane
August 23	Dave Siegrist and Bill Toomey <b>THE CONJUNCTION</b>	
August 30	Bruce Berger and Mike Hill <b>ARUNAH HILL DAYS</b>	
September 6	Brian Leacu and Phil Rounseville <b>WORK PARTY # 9</b>	
September 13	John Maher and Tom Wolf <b>ATMoB PICNIC</b>	

**Sky Object of the Month . . .**

**July 2014**

**Rasalgethi (alpha [α] Hercules)**

**Double Star in Hercules**



[www.constellation-guide.com](http://www.constellation-guide.com)

A number of years ago, I conducted a “Top Ten Doubles” survey for Deep Sky Magazine. One of the top vote-getters was Rasalgethi, the alpha (α) star in Hercules. Few would dispute its inclusion on the list.

For starters, it’s comprised of bright stars - the magnitude 3.5 primary being attended by a magnitude 5.4 partner. Secondly, a reasonably close separation of 5.0 arc-seconds puts it within range of small-aperture telescopes while making for an eye-pleasing sight in larger instruments. Most notable are the colors. Through my 127mm f/12 Maksutov/Cassegrain reflector and a magnifying power of 171X, they seemed to be orange-yellow and light blue – typical of the hues reported by other observers. The ruddy color of the primary is in keeping with its M5 spectral class; the bluish tint of the secondary is not. With a spectral class of G5, it should be yellow like the sun. The color discrepancy seems to be a result of the magnitude difference between the two stars. Quite often the secondary of a close unequal double star takes on a bluish tinge, regardless of spectral class.

Not only is Rasalgethi a noteworthy telescopic target, it’s a noteworthy system – period! The main star is a red supergiant with a diameter of 340 million miles. Were it put in place of our sun, it would engulf the entire inner solar system to beyond the orbit of Mars. Like many stars of its class, Rasalgethi varies in brightness. Its 2.7 to 4.0 magnitude fluctuations occur in a 4-month cycle superimposed over one of 6 years. The companion is no slouch, either. It’s a tight binary pair comprised of a four-solar-mass G5 giant circled every 52 days by a 2.5-solar-mass F2 dwarf. Hipparchus data place the Rasalgethi system at a distance of 360 light years. The actual separation between the two main components is roughly 46.5 billion miles. Their orbital period likely exceeds 3500 years.



Jeremy Perez ([perezmedia.net/beltofvenus](http://perezmedia.net/beltofvenus))

~ Glenn Chaple – Observing Committee and VP ~

## Summer Reading: Book Review . . .

### *Nearest Star: The Surprising Science of our Sun*

by Leon Golub (Harvard College Observatory) and Jay M. Pasachoff (Williams College) 2nd Edition-Cambridge University Press. New York City, N.Y.

I came across this book at the Solar Physics Division meeting, which was a part of the American Astronomical Society Meeting in Boston, Massachusetts. The writing is excellent and understandable by both technophiles and non-scientists. It has abundant photos, graphs and text.

### *The Case for Mars, The plan to settle the red planet and why we must*

by Robert Zubrin with Richard Wagner. Touchstone, First Edition. New York City, N.Y.

The second book: A reread from 1996. I was struck by the information on Pages 182-186 on the manufacturing of plastics, glass and searching for water. The book also has lots of plans for structures on Mars and a time line for the future years beyond 1996. Just enjoy the story and note that this was written in 1996.

~ Submitted by Anna Sudaric Hillier ~

## 2014 Stellafane Convention . . .

The 79th Convention of Amateur Telescope Makers on Breezy Hill in Springfield, Vermont, known as the 2014 Stellafane Convention, will be held **Thursday, July 24th through Sunday, July 27, 2014.**

- Online registration discounts are available until July 18th. See [Registration](#) for details.
- The keynote talk will be given by Christina Dunn at the Saturday Evening Program, and will address the challenges of creating a telescope mirror wider than the wingspan of a Boeing 737 aircraft.
- This year's Hartness House Workshop will be on Binary and Multiple Star Astronomy and will be held on Thursday. It requires separate registration and fees.
- First Homemade Telescope Certificates will be given to people who bring their first homemade telescope for display on Breezy Hill, and they will be recognized at the Saturday Evening program.
- Bring your Solar Scope. There will be designated times and places to set up for solar observing, and by having all the scopes in one area, conventioners will be able to compare various solar viewing options.
- There will be talks on comet imaging (presenter is ATMob's own Al Takeda), mirror coatings for large research telescopes, radio astronomy for amateurs, understanding what to look for when solar observing on the Internet, evolution of CCD cameras and how to use them to perform photometry, and many more subjects.
- There will be demonstrations on all aspects of mirror making and telescope making. There will also be special activities geared for kids and teens.

Still wondering if you should go to Convention? Take a look at this [Informational Brochure](#) (pdf) to see all that is offered. And look at this year's programming at [Schedule](#).

~ Submitted by Eileen Myers ~  
~ Member of the Springfield Telescope Makers ~

Editor: \* Photos by Al Takeda unless otherwise noted.

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**September Star Fields DEADLINE  
Sunday, August 24<sup>th</sup>**

Email articles to Al Takeda at  
[newsletter@atmob.org](mailto:newsletter@atmob.org)

**Articles from members are always welcome.**

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**POSTMASTER NOTE:** First Class Postage Mailed July 6, 2014

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

**EXECUTIVE BOARD 2014-2015**

PRESIDENT:	Neil Fleming	<a href="mailto:president@atmob.org">president@atmob.org</a>
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	Steve Clougherty	(781) 784-3024
	David Prowten	(978) 369-1596
OBSERVING:	Bruce Berger	(978) 387-4189
NEWSLETTER	Al Takeda	<a href="mailto:newsletter@atmob.org">newsletter@atmob.org</a>
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<b>PUBLIC OUTREACH</b>		
STAR PARTY COORDINATOR:	Virginia Renehan	<a href="mailto:starparty@atmob.org">starparty@atmob.org</a>

**How to Find Us...**

**Web Page [www.atmob.org](http://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 see [www.atmob.org](http://www.atmob.org) and check your email on the ATMOB-ANNOUNCE list.

**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 Eastern Daylight Time (EDT) from Universal Time (UT) subtract 4 from UT.**

July 12 Full Moon  
July 18 Last Quarter Moon (Moonrise at midnight)  
July 26 New Moon  
July 29 S. Delta Aquariid Meteor Shower peaks (09:00 UT – 05:00 EDT)  
Aug 3 First Quarter Moon (Moonset at midnight)  
Aug 10 Full Moon  
Aug 17 Last Quarter Moon (Moonrise at midnight)  
Aug 25 New Moon