



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. 27, No. 6 June 2015

This Month's Meeting . . .

Thursday, June 11th, 2015 at 8:00 PM

Phillips Auditorium

Harvard-Smithsonian Center for Astrophysics

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

Annual Meeting and Member Night

This month will be devoted to presentations from our members (after our elections and discussion/vote on the dues issue):

- Dr. Mario Motta will do a short presentation on the 3rd International Artificial Light at Night (ALAN) conference in Quebec.
- Bernie Voltz will give us a recap of the upcoming 2017 eclipse trip.
- Penny Lucinian will present her personal radio astronomy project involving Jupiter.
- And finally, Glenn Chaple has an "Astronomy Humor" presentation.

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 . . .

Call for input on our new ATMoB website!

I've had a few suggestions come in for desired features for our new website. These are being factored into our process for evaluating the different approaches for delivering that new site. Keep those suggestions coming in, they are of tremendous help!

One of the alternatives that is on our radar to evaluate is the possibility of (re) developing a solution ourselves, on WordPress for example. If there are any coders/developers in our membership who might be amenable to helping out on a project like this, please drop me a note at president@atmob.org, so I can add you to our list. The availability of people to help on this alternative will weigh heavily on the decision as to go to a hosted/commercial solution versus build it ourselves.

As always, let me know your thoughts...

~ Neil Fleming – President ~

Nominations for 2015-2016 . . .

The 2015 Nominating Committee has proposed a slate of nominations to be voted on at the Annual Meeting in June. The nominees are:

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

Exec Board Meeting Summary . . .

This is a summary of the Executive Board meeting that was held on April 27, 2015.

- Discussion on the budget for the next fiscal year
- Proposed dues increase

A motion was passed to present a proposal to increase the dues at the May meeting and to allow the membership to vote on that proposal at the June meeting. See this month's Membership Report for details on the proposal.

- Web site/server situation update

President Neil Fleming created a Web Site Evaluation Committee with Neil as the chairperson. Bruce Berger and Bernie Kosicki will be members of that committee.

- Discussions on the ATMoB Research and Imaging Observatory (ARIO)

A full report of the Executive Board meeting will be posted on the ATMoB website.

May Meeting Minutes . . .



Dr. Ryan Allured *

Minutes of the ATMob meeting held on May 14, 2015, in the Phillips Auditorium of the Harvard-Smithsonian Center for Astrophysics.

Report submitted by Glenn Chaple.

President Neil Fleming called the meeting to order at 8:00 PM

- Vice President Glenn Chaple read the Secretary's Report of the April 9, 2015 meeting for Secretary Sid Johnston, who was unable to attend.
- President Neil Fleming gave the Treasurer's Report for Eileen Myers, who is attending the Texas Star Party.
- The Membership Report was not given.
- Glenn Chaple gave the Observing Committee Report
Upcoming sky events:
 - May 22 Saturn at Opposition
 - May 27-27 Double Shadow Transit by Jupiter moons Ganymede and Io
 - June 6 Venus reaches Greatest Evening Elongation
- Sky objects to observe:
 - Sue French Fan Club - NGC 4631 (Edge-on Spiral Galaxy in Canes Venatici)
 - LVAS Observers' Challenge - NGC 4244 Edge-on Spiral Galaxy in Canes Venatici
 - Sky Object of the Month - Messier 98 (NGC 4192) – Spiral Galaxy in Coma Berenices
- Joseph Rothchild gave an update on Nova Sagittarii
- Bruce Berger gave the Clubhouse Committee Report for Steve Clougherty, who is attending the Texas Star Party.

Announcements:

- Bruce Berger announced the upcoming Maine Astronomy Retreat, to be held from August 15-22, 2015.

- Glenn Chaple announced that former ATMob member and Sky and Telescope staffer, Norm Sperling, will be in the Boston area during the second week of July and is interesting in presenting a talk at the July ATMob meeting.
- Mario Motta announced that some communities are replacing their old streetlights with bright 4000K lights, which do not solve the light pollution problem. He recommends that members attend town meetings and encourage community leaders to use 3000K or lower LEDs or filtered 4000K LEDs.

Old Business

- The Nominating Committee (Glenn Chaple, Mario Motta, and Alan Sliski) reported that all Board Members will continue their positions for another year.

New Business:

- President Neil Fleming reported on the ATMob Board's decision to look into dues increases for the coming year. A vote will be taken by the membership at the next ATMob meeting in June.

Neil Fleming introduced Dr. Ryan Allured as the invited speaker. Dr. Allured is the Leon Van Speybroeck Fellow at the Harvard-Smithsonian Center for Astrophysics. He earned an undergraduate degree in physics and mathematics at Illinois State University and a PhD in physics at the University of Iowa. Besides his work on adjustable X-ray optics (described in tonight's talk), Dr. Allured is involved in the Arcus Small Explorer proposal and the recently approved MaGIXS X-ray spectrometer rocket.

Dr. Allured's talk was titled "X-ray Observatories and Optics." He opened with a discussion of the value of X-ray observatories in helping astronomers determine the nature of exotic objects like neutron stars and black holes. Because the earth's atmosphere absorbs much of the X-ray radiation from space, astrophysicists rely on balloons, rockets, and satellites to collect critical data.

He then described and compared two past X-ray satellites – Chandra, launched by NASA in 1999 and XMM-Newton, launched by ESA in the same year. For each, he described in detail the optics (mirror or grating), detectors, and instrument electronics.

Dr. Allured concluded with a description of the proposed X-ray Surveyor Mission, which will achieve the same 0.5 arcsecond resolution as Chandra while covering a greater effective area. He showed current laboratory developments in the project, which included a design that reduces payload weight and adjustable X-ray optics to enhance resolution. The ultimate goal of the X-ray Surveyor Mission Project is to gain credence by earning top priority at NASA's 2020 Astronomy Decadal Survey.

For more information on NASA's 2020 Astronomy Decadal Survey, go to

http://science.nasa.gov/media/medialibrary/2015/01/02/White_Paper_-_Planning_for_the_2020_Decadal_Survey.pdf

For a detailed description of the X-ray Surveyor Mission, go to <http://arxiv.org/abs/1505.00814>

The astrophysically-inclined might wish to read Dr. Allured's PhD thesis "An Examination of Black Hole Binaries Using X-ray Observations and the Development of the Bragg Reflection Polarimeter." Editor's note: This paper contains 116 pages. <http://ir.uiowa.edu/cgi/viewcontent.cgi?article=3560&context=etd>

The meeting was adjourned at 9:36 PM

~ *Glenn Chaple – Vice President* ~

Membership Report . . .

Membership count as of May 24, 2015 is at 316 individuals.

Please welcome our newest and returning members: Susan Adam, Diane Savickas, Robert Collara, Robert Bryson and Brian Zemba

The club's fiscal year begins **June 1st**. The membership renewal period begins on this date also. 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! You can renew by following the instructions outlined below:

- **On or after June 1st**, please log into the www.ATMoB.org website using your email on record with the club as your login ID. If you cannot access the website or have forgotten your password, please contact me via email at membership@atmob.org.
- Once you have successfully logged in, click the "Your Details" tab found on the top right portion of the page.
- In the middle of the page, click on the "Renewals" tab.
- Click on the "Renew your membership" tab and follow the instructions. One can pay using PAYPAL or personal check.

Please feel free to contact me with any questions, concerns or issues.

New members on record in 2015 are not required to renew at this time.

As discussed at the May monthly meeting, the Board of Directors for the Amateur Telescope Makers of Boston has carefully considered the current dues schedule paid by all members of the club. The recommendation of the Board is to increase dues on September 1st, 2015 to cover the increased cost

of maintaining our facilities and outreach efforts. Members can avoid the dues increase for the 2015-2016 fiscal year by paying dues prior to September 1st. The proposed increase can be seen below for the classes of membership:

	Current	New
General	\$ 25.00	\$ 35.00
Family	\$ 35.00	\$ 45.00
Senior	\$ 12.50	\$ 15.00
Student	\$ 12.50	\$ 15.00

Club members will have an opportunity to approve this increase at the June Meeting. Please note, club dues have not increased over the last 15 years while all expenses large and small have increased considerably over this period of time. Please support your club by voting to approve the board recommended change in dues at the June monthly meeting.

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 club events, Clubhouse openings and interesting astronomy related discussions.

Contact me with questions regarding accessing these options at: 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* ~

Mirror Cleaning Session . . .



Mirror Cleaning at the Clubhouse (L-R) Phil Rounseville and Joe Henry *

Clubhouse Report . . .



Tree Trimming. (L-R) John Reed and Paul Courtemanche *

May 2015 Clubhouse Report

A work session was held at the ATMob Clubhouse on Saturday, May 2nd, with a good number of helpful volunteers on hand. The weather was cooperative and a lot of outdoor chores were tackled. Several members climbed ladders and used branch trimmers and a chain saw to cut back the evergreen trees on the East side of the observing field. Another group of volunteers hauled away branches and brush and helped to clear the field.

Dave Prowten is installing a small hot water heater in the grinding room, to be available soon.

John Maher conducted a clinic for members who are interested in using the clam shell dome and 10-inch Meade telescope.

Thanks to those who helped to clean the Clubhouse.

A BBQ lunch was prepared by our lunch crew, and "meteorite" peanut butter and chocolate cookies were brought for dessert!

Our next work session at the Clubhouse will be held on Saturday May 30th.

A full list of volunteers will be published in the next issue of Star Fields.

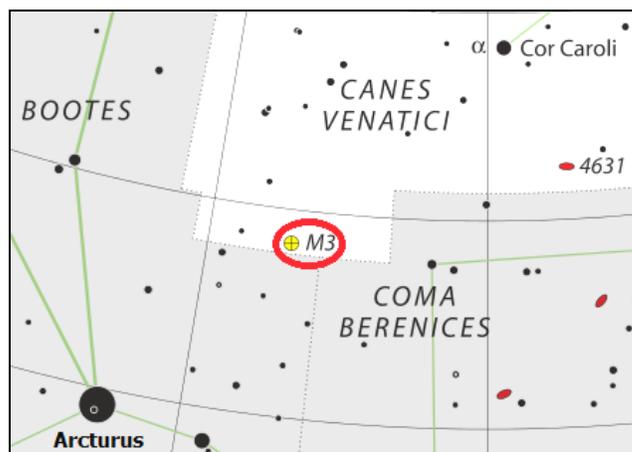
~ Clubhouse Committee Chairs ~
~ Steve Clougherty, John Reed and Dave Prowten ~

Clubhouse Saturday Schedule		
June 13	STARCONN Jim Gettys + Al Takeda	
June 20	Dave Prowten	Phil Rounseville
June 27	George Paquin	John Small
July 4	CLOSED	
July 11	THE CONJUNCTION Joe Henry + Cheryl Rayner	
July 18	Eric Johansson	Bill Robinson

Sky Object of the Month . . .

June 2015

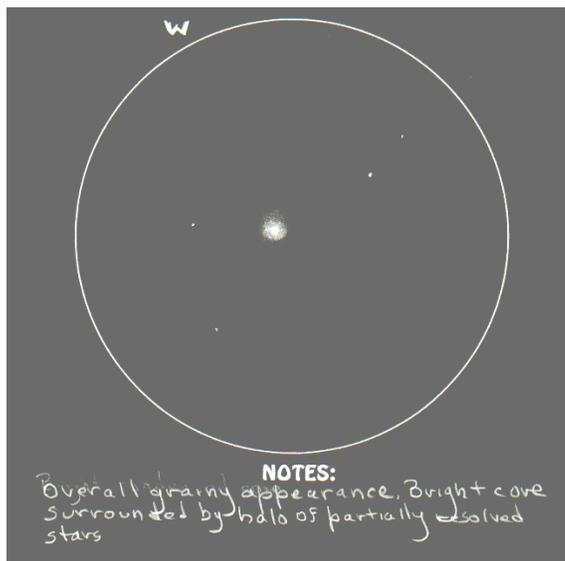
Messier 3 (NGC 5272) – Globular Cluster in Canes Venatici



www.messier-objects.com

As May gives way to June, backyard astronomers begin to anticipate the arrival of summer's globular clusters, and with good reason. The globular-laden constellations Ophiuchus, Scorpius, and Sagittarius are beginning to show up in the early evening sky. We needn't wait for this globular onslaught. Already well-placed for after-sunset viewing is Messier 13 in Hercules - grandest of all the northern sky globulars. Also available is Messier 3 in Canes Venatici. Compared to M13, it's slightly fainter (magnitude 6.2 to M13's 5.8) and smaller (18 arcminutes to 20 arcminutes). Looks can be deceiving, as M3 is about half again as distant as M13 (33,000 LY to 26,000 LY) and is intrinsically the larger of the two.

M13 is my globular cluster of choice at public star parties. Conveniently placed between zeta (ζ) Herculis and eta (η) Herculis in the "Keystone" of Hercules, it's quick and easy to locate – something I consider when a line of people is waiting by my telescope.



4.5-inch f/8 reflector at 100X (Sketch by G. Chaple)

When time constraints aren't an issue, I like to place M3 on the observing menu. It isn't really all that hard to find, being bright enough to be easily spotted in binoculars and finderscopes (it's even been seen without optical aid by keen-eyed observers in dark-sky locations). To capture M3, point your telescope midway between alpha (α) Canum Venaticorum (Cor Caroli) and alpha (α) Bootis (Arcturus), but slightly closer to the latter (refer to the accompanying finder chart). A low-power sweep should pick up a roundish smudge of light. Switch to higher magnifications, and you're in business!

While most globular clusters require apertures of 6-inches and above to resolve their individual stars, M3 can be partially resolved in small-aperture scopes. The accompanying sketch shows its appearance as seen through a 4.5-inch reflector. Visible is the core and a smattering of stars near its outer edge. Large telescopes bring the outermost reaches of M3 into view – a spectacular sight, as an image taken by Amateur Telescope Makers of Boston President Neil Fleming shows. Rotate the Fleming photo about 30 degrees clockwise, and scale and orientation of both fields will be identical.

Think of this as you gaze at M3. You're looking at a half million stars packed into a sphere just 190 light years across!



Photo by Neil Fleming

~ Glenn Chaple – Observing Committee and VP ~

Clay Center Family Night Under the Stars Thank You



Paul Cicchetti (left) shows the Sun at the Clay Center *

Partly cloudy skies greeted our members at the Clay Center Star Party on Saturday, May 9th. Despite this hurdle we were still able to allow the public to view a few sunspots and teach them about our nearest star. After darkness fell, attendees also viewed the planets Venus and Jupiter. Many people commented that Venus looked like a quarter Moon (Venus was in a gibbous phase that evening).



Ali Allison observing the Sun in white light *

Thanks to the members that set up telescopes; Ali Allison, Paul Cicchetti, Brian Leacu, Monique & John Reed, Phil Rounseville and Al Takeda.



John and Monique Reed explaining the optics of a telescope*

Thanks to Dick Koolish, who set up the "Telescope Advice Table" and to Bruce Tinkler who assisted inside the Clay Center.



Dick Koolish at the "Telescope Advice Table" *

Thanks to Bob Phinney and the staff at the Clay Center Observatory.



Sunset *

My apologies if I missed anyone.

~ Submitted by Al Takeda ~

For Sale . . .

I am assisting a former club member in selling some astronomical items. If you are interested in any of the following, please contact me at newsletter@atmob.org and I will give you the contact information. Please do not post any of the contact information on the ATMoB discuss list. Thank you for your cooperation.

ASTRONOMICAL

- 1) Fork and side bearing from 16" Meade SC: \$300
- 2) Folded 4" Refractor – so-so quality // good for parts: \$100
- 3) Keuffel and Esser Transit [made in 1931]: \$450
- 4) Lumicon Giant Easyguider for SC: \$200

OTHER

Bicycles for Sale:

- 1) 1970's Raleigh Supercourse [red]: \$350
- 2) mid 1980's Trek 620 Touring Bike Reynolds 31 frame: \$500



~ Submitted by Al Takeda ~

For Sale . . .

Meade DS-2114 Newtonian reflector for sale. \$50

4-1/2" mirror, f/8.8

Meade Autostar mount and controller for go-to operation.

6x30 finderscope

Tripod

No eyepieces are provided with this scope.

This scope will require a bit of minor work to make the go-to functional, including:

- screws to mount the go-to motor into the base
- spring to hold the motor gears engaged

I also recommend adjustment of how the secondary spider mounts to the tube to improve consistent alignment, but this is not absolutely necessary. Cloudy Nights has a very good document on how to do this, as well as how to convert this to a rich field telescope.

Contact Gary Jacobson

gdjacobson@verizon.net

Upcoming Conventions . . .



StarConn

Presented by the Astronomical Society of Greater Hartford with the kind and generous cooperation of the Astronomy Department of Wesleyan University

Saturday, June 13, 2015

Wesleyan University in Middletown, Connecticut

Highlights: Lectures, swap tables, vendors, raffle prizes

Speakers:

- Colin Littlefield - "Variable Star Observing ..."
- Alan Friedman – Solar Photography
- Albert Carcich (IOTA) - Timing Occultations

- Wayne Bailey (ALPO) - Lunar Observing
- Jack St. Louis (VAS) - "Amateur Radio Astronomy"
- Keynote Speaker: Leslie 'Doc' Brown
PhD Associate Professor of Physics, Connecticut College
"Photometry for the People, CCD Photometry & Citizen Science"

<http://www.asgh.org/starconn/index.htm>

Connecticut River Valley Astronomers Conjunction

Friday, July 10, 2015 through Sunday, July 12, 2015

Some ATMob members stay over Friday night to observe; some go only for the day on Saturday

Northfield Mountain Recreation and Environmental Center

99 Millers Falls Road (Route 63), Northfield, MA 01360

Highlights: Solar observing ("Barlow Bob" Memorial Solar Star Party), dark sky observing, lectures, swap tables, raffle prizes

Speakers:

- Jack Megas - "The Universe According to Chaple"
- Steve Hubbard - "Dance of the Polar Lights"
- Dick Parker - "Building Your Own Antique Telescope"
- Ed Faits - "Humans or Robots: The Future of Space Exploration"
- Keynote Speaker: J. Kelly Beatty – "Encounter with Pluto"

<http://www.philharrington.net/astroconjunction/>

Editor: * Photos by Al Takeda unless otherwise noted.

July Star Fields DEADLINE
Sunday, June 21st

Email articles to Al Takeda at
newsletter@atmob.org

Articles from members are always welcome.

POSTMASTER NOTE: First Class Postage Mailed June 9, 2015

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	president@atmob.org
VICE PRES:	Glenn Chaple	(978) 597-8465
SECRETARY:	Sidney Johnston	(978) 505-9169
MEMBERSHIP:	Tom McDonagh	(617) 966-5221
TREASURER:	Eileen Myers	(978) 456-3937
MEMBERS AT LARGE:	Bruce Tinkler	(781) 862-8040
	Al Takeda	(508) 494-7877
PAST PRESIDENTS:		
2012 – 14	Mike Hill	(508) 485-0230
2010 - 12	Bernie Kosicki	(978) 263-2812
2006 - 08	Virginia Renehan	(978) 283-0862
COMMITTEES		
CLUBHOUSE :	John Reed	(781) 861-8031
	Steve Clougherty	(781) 784-3024
	David Prowten	(978) 369-1596
OBSERVING:	Bruce Berger	(978) 387-4189
NEWSLETTER	Al Takeda	newsletter@atmob.org

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 see 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.

Jun 9 Last Quarter Moon (Moonrise at midnight)
Jun 11 Uranus 0.5-deg N. of Moon
Jun 16 New Moon
Jun 21 Summer Solstice
Jun 24 First Quarter Moon (Moonset at midnight)
Jun 24 Mercury at greatest western elongation (morning)
Jun 30 Jupiter/Venus visible all month at dusk, conjunction
July 1 Full Moon
July 8 Last Quarter Moon (Moonrise at midnight)