



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. 9 October 2014

This Month's Meeting . . .

Thursday, October 9th, 2014 at 8:00 PM
Phillips Auditorium

Harvard-Smithsonian Center for Astrophysics

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



LIGO - Hanford, Washington. Image courtesy of LIGO Laboratory

LIGO and Gravitational Waves & Detection

Gravitational waves are among the most interesting predictions of Einstein's theory of general relativity. These ripples in the curvature of space-time are emitted by various types of astrophysical bodies, particularly compact objects moving at high velocities. Almost a century after Einstein first predicted gravitational waves, we are on the brink of directly detecting them for the first time.

Gravitational-wave astrophysics promises to become a radically new way of exploring the universe. Dr. Peter Fritschel will discuss the Laser Interferometer Gravitational-wave Observatory (LIGO), the world's leading project to build and operate gravitational wave detectors. He'll describe LIGO's principles of operation, design, current status and plans for observation.

Dr. Fritschel is a physicist and a Senior Research Scientist at M.I.T., in the Kavli Institute for Astrophysics and Space Research. He has spent much of his career working on a project aimed at building new instruments to detect gravitational waves that are emitted by astrophysical objects in the nearby universe. He studied physics and engineering in college, and then worked for a couple of years doing laser development in an industrial R&D lab before going to graduate school in physics. After gaining a PhD he did a postdoctoral stint in France, and then returned to M.I.T.

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 . . .

During last month's meeting, we held our "ATMoB Direction Checkpoint Workshop". This workshop was designed to determine whether or not our collective energy goes into the right activities. Should there be different areas added to our focus? Should our public outreach change in some ways? I would like to give a hearty thanks to those who attended! It was a spirited and lively session, with a lot of good ideas generated. There will be behind-the-scenes follow-up to seek "owners" for the various new ideas, and to solicit more information on prioritization.

Among the ideas generated were:

- Create a new web site (which will be undertaken as a separate initiative).
- Implement social tools like Facebook and Twitter.
- Find a location to do more outreach in the form of "open" star parties, unlike the very directed and specific ones we are restricted to at the Clubhouse location.
- Set up some "Solar Star Parties".
- Hold a series of CCD imaging classes.
- Similarly, do some additional training/classes on how to collect imaging data.
- See if we can integrate usage of the 9" scope at the CfA into our monthly meetings.
- Think about doing some light pollution education and outreach.
- Reach out to related but tangential groups to solicit members.
- Do an electronic "push" of notices of astronomical events
- Reach out to people who have scopes, but do not know how to use them.
- Create an "organization of organizations" to better liaise with other astronomy clubs.
- Create brochures to be available during our meetings and star parties.
- Develop a standard telescope specification that people can use to take some of the design work out of the process of building your first scope.

Folks, on the whole, want to do *more* of:

- Star Parties.
- "Outreach educational lectures" to engage external organizations.

- CCD imaging.
- Mirror/telescope and instrumentation making.

There wasn't anything identified that members wanted to do "less" of.

Look for future information being disseminated and advice sought via our "Announce" mailing list.

~ *Neil Fleming – President* ~

September Meeting Minutes . . .



President Neil Fleming *

Minutes of ATMoB meeting held September 11, 2014.
Meeting held in Phillips Auditorium, Harvard-Smithsonian Center for Astrophysics.
Neil Fleming, President: called the meeting to order at 8:00 PM.

- No verbal Secretary's Report of the July meeting was given. The minutes were written by Eileen Myers and are on the club's website and in the September newsletter. Secretary Sidney Johnston wishes to thank Eileen for her excellent minutes and for covering for him in his absence.
- Eileen Myers gave the Treasurer's report.
- Tom McDonagh gave the Membership Committee Report.
- Glenn Chaple gave the Observing Committee Report.
- Steve Clougherty gave the Clubhouse Report.

Announcements:

Mario Motta mentioned that the Dark Sky Bill died in the Massachusetts Legislature's Ways and Means Committee.

Eileen mentioned that the ATMoB Club Picnic would be held on the following Saturday.

Glenn Chaple discussed the program to give names to newly discovered planets (exoplanets) around stars other than the Sun.

Old Business: None

New Business: None

An ATMoB Direction Workshop to discuss ideas for current and potential future activities was conducted by President Neil Fleming. The results of the discussion are presented below as numbered paragraphs. These notes were compiled from notes furnished by Neil.

CURRENT ACTIVITIES

Demographic, Kids

Star parties:

Should we do more?

Need handouts, indoor "StarLab"

Lead Person, Virginia; Notes

Astronomy Day

CfA in October

Clay Center

Harvard Summer Solstice

Cambridge Science Festival

Demographic: All

Monthly meetings:

Webcast the meeting and/or archive?

Hands-on talks?

"Meetup"

Lead Person, President (Neil):

Mirror/telescope making:

Should we do? Yes

Also Instrumentation:

Monthly Newsletter

Lead Person, Al Takeda:

Saturday night at the Clubhouse:

We also get a lot of mentoring

Advertise a "clinic"

Educational courses:

Lead Person, John Maher

Annual club picnic:

New Year's Eve party

Other events twice a Year

Work Parties

Outreach; Educational Lectures

Should we do? Yes

Notes (Mario): Identify topics and possible owners/speakers (speakers bureau)

Publicize

Web site:

Gallery
Reminder tools for events
Swap area?

Eclipse trips

Should we do? Yes

Imaging (CCD)

Should we do? Yes More
Imaging in light polluted locales
Processing courses,
How to do image acquisition
How to do science (photometry, astrometry, exoplanet research):

Citizen science/research

Variable stars
Occultations
Exoplanet Research

Support open houses (Harvard)

General observing

Project Astro/Schools

Technical consulting on telescopes

Field trips

Mailing lists/discussion groups

Specialized observing

Variable stars, occultations
Double stars
Spectroscopy
Solar
Astronomy calendar, almanac

Magazine discounts

Astronomy calendar
RASC handbook (almanac)

Awards program

Lead Person, Glenn Chaple

Messier marathon

Annually, semi-annually, quarterly
Lead Person, Glenn Chaple

Telescope lending

Book Lending

NEW ACTIVITIES

To be decided. Should we do?

Social tools

Facebook site
Twitter?
Lead Person/s; Dave Stanley, John Harrington;

Access to the 9" scope at the CfA

Observing at the end of standard monthly meetings?
John S. and Dick K. have keys. There is an on-line list for reservations.
Lead Persons, John Sheff / Dick Koolish;

Light pollution education/outreach

Lead Person, Mario Motta

Solar star parties

"General/Open" star parties

Team up with Halibut (GAAC)
Northshore club,
Arlington Astronomy Nights at Robbins Farm Park,
Mass. Audubon, Drumlin Farm
Wachusset,
Greenspace at Clinton, MA
Lead Person, Dick Koolish

Partner with other groups

Artisan's Asylum
Make Magazine:

Modernize "How to Understand Optics", by Sam Brown,

"How to make a telescope"
Create a digital version?

Liaise more with other astronomy clubs

Share our newsletters, share theirs.
Star party assistance
Refer folks to other local astro clubs

Participate in science fairs

Offer prizes

Push notices of astronomical events

Lead Person, Eric Johansson

Reach out to people with scopes but don't know how to use them

Craigs list
Towns' Listserves
Public service announcements through cable channels
Classic media: town papers

Create an "organization of organizations" group for coordination among astronomy clubs of the Boston Area

At least create better contacts and liaise on activities.

The meeting was adjourned by President Neil Fleming at 10:00 PM.

~ *Sidney Johnston, Secretary* ~

Clubhouse Report . . .



Alan Sliski working on the ATMoB Research and Imaging Observatory circuits *

SEPTEMBER 2014

A pre-picnic work session was held on Saturday, September 6th starting at 10 am. Thanks to 23 members who donated their time: John Blomquist, Bruce Berger, Paul Cicchetti, Paul Coultemanche, Nina Craven, Jim Gettys, Charlie Gettys, Joe Henry, Eric Johansson, Ben Kleschinsky, Bernie Kosicki, Penny Lucinion, John Maher, Sue Mallen, Leanne McDonald, Eileen Myers, Dave Prowten, Cheryl Rayner, John Reed, Alan Sliski, Al Takeda, Bill Toomey and Sai Vallabha. The weather was clear and 92 degrees F. It was a very warm day.

- The lawn was cut by John B. and several folks worked to get the weed cutters operating to complete the insect mitigation. Push mowers finished the sloped areas. Later, all visible poison ivy leaves were saturated with Roundup Brush Killer to eradicate all dangers.
- The last damaged electrical box was replaced with new box and couplers by Joe H. and Penny L. Also, protector panels made out of plywood were cut and installed by Paul C. around two new outlet boxes to protect them from impact damage.
- In front of the porch, the shrubs were trimmed, weeds pulled and debris removed. The trellis was level checked, removed, painted white and reinstalled. During the next work party we will refurbish the remaining trellis and tackle the painting of the railings and porch supports.
- Further work on the bulkhead outlet did not correct its puzzling condition. For the present, the old working configuration was reinstated. The bulkhead doors were repainted with a new paint to test its durability. And since the weather was too hot to paint the rear house wall, that job was completed by Dave P. during the week before the picnic.
- Work continued in the ATMoB Research and Imaging Observatory (ARIO); new motors were installed while wiring work continued by the team of Alan S., Jim G., Charlie G., Bill T., Paul C., Bruce B and others.
- The Chase hutch, Clamshell and Knight Observatories were spruced up for the picnic. While the weather did not indicate summer's end, our oil tank needed filling while prices were lower.

- Following the picnic, the scheduled furnace inspection was performed by Healey Oil, and at the procedure's end the visual internal inspection found a major crack in the burn chamber. The Clubhouse Committee is assisting the Exec. Board in discussions with the oil company to repair the furnace.
- Lunch was provided by our intrepid team of Sai V., Eileen M., Chef Eric J., Cheryl R., Sue M., Leanne M. and several others were pressed into service. Several items were added to augment our normal dogs & burgers menu. Those included chicken, salad, beans and concluding with a cold watermelon for dessert.
- Phil R. and Brian L. took over clubhouse duty as evening fell. Clouds prevented observing (scopes were set up).
- Further work was accomplished by the picnic committee members before and after the picnic held on September 13th. A report on this effort is included in this edition of Star Fields. It was a great picnic in spite of the rain. A big THANK YOU!

The next work party will take place on Saturday October 11th, starting at 10am. Getting ready for winter weather will be in the background, as we tend to fall cleanup chores.

Come on out and join in as we tackle the new challenges.

~ *Clubhouse Committee Directors* ~

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

Clubhouse Saturday Schedule

October 11	Nina Craven and Rich Burrier WORK PARTY # 10	
October 18	Bruce Berger	Mike Hill
October 25	Neil Fleming	Bill Toomey
November 1	John Panaswich	Dave Siegrist
November 8	Henry Hopkinson and John Small WORK PARTY # 11	
November 15	Bill Robinson	N & S Sonawane
November 22	George Paquin	Dave Prowten
November 29	Art Swedlow	Sai Vallabha

Picnic Thank You . . .



John Reed samples a chicken leg. *

The Picnic Committee thanks the participants of all ages who talked, walked, ate, sang, played musical instruments, made planetariums, made telescopes, drew geometric designs, and basically had a real good time despite the rain, at the ATMoB Clubhouse on Saturday, September 13 at the 2014 Annual Picnic.

Highlights



(L-R) Eileen Myers and Penny Lucinian *

- Eating our fill from so many tasty main dishes available in the outside food tent and the varied appetizers and attention-drawing desserts in the Clubhouse, and listening to the wonderful stories behind the making or selection of each and every dish.



Julie Kaufmann (center) at the Projects Table. *

- Watching folks walk up-the-hill despite the challenge of the soon-to-arrive rain. Leader Bill Toomey was absolutely resplendent in his long, black mackintosh raincoat.
- Julie Kaufmann and Cheryl Rayner working diligently and patiently with all young attendees, skillfully encouraging and helping them to make planetariums and telescopes.
- Tony Costanzo and his nimble fingers playing his wonderful-sounding guitar, as did Sue Mallen and Marsha Bowman.



Tony Costanzo and sing along. Photo by Eileen Myers.

- Joining in or listening in to the chorus of 10 or more singers accompanying the guitar. What fun that was, especially with young Ben Kleschinsky feeding us the words and leading us with his strong, talented voice.
- Enjoying the day laughing with friends.

Thanks go out to the Picnic Committee for their hard work: Marsha Bowman, Steve Clougherty, Eric Johansson, Sidney Johnston, Julie Kaufmann, Penny Lucinian, Sue Mallen, Eileen Myers, David Prowten, Cheryl Rayner, John and Monique Reed, Al Takeda and Sai Vallabha. Thanks go out to Steve C. for his donation to the club of a sturdy tent for craft activities.

344 days to go (give or take a day) until the 2015 Picnic!



Setting up the Food Tent. (L – R) Cheryl Rayner, Sue Mallen, Al Takeda, Eileen Myers, Eric Johansson and Penny Lucinian. Photo by Sai Vallabha.

~ Submitted by Eileen Myers ~

Membership Report . . .



Tom McDonagh (4th from left) in the Clamshell Obs., holding an impromptu New Member Night at the Clubhouse. Photo by Gary Phillips (Rt/bottom).

Membership count as of September 23, 2014 is at 207 individuals.

Please welcome our newest and returning members: Frank Zeven, Sal LaRicca , Robert Lembree, Roman Rasenas, James Barron, Steve Simon, John Gianforte and Michael Jasper.

The membership renewal period ended September 1st. Please renew today, time is running out! 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! Instructions for renewing are outlined in the August Star Fields Newsletter.

New members on record in 2014 are not required to renew at this time.

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 openings, events 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 ~

Sky Object of the Month . . .

October 2014

Messier 30 – Globular Cluster in Capricornus



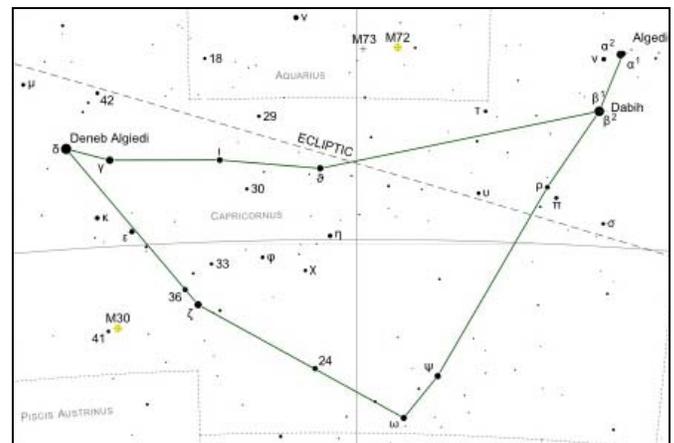
Messier 30, photo by Mario Motta, MD

During October, Ophiuchus, Scorpius, and Sagittarius depart the evening sky, taking with them their ample cargo of globular star clusters. A few stragglers remain accessible to backyard telescopes – among them, Messier 30 in Capricorn.

M30 was discovered by Messier in 1764. He described it as a round nebula, containing no stars. Its stellar nature fell to the watchful eye of William Herschel, who resolved M30 twenty years later.

Recently, I observed M30 from a suburban location on an evening when the naked eye limit was about 5th magnitude. It was readily visible through 10 X 50 binoculars, appearing as an out-of-focus 7th magnitude star just a half degree west of the 5.5 magnitude star 41 Capricorni. A 4-inch f/10 reflector at 120X didn't resolve any stars, but it did reveal M30's highly concentrated nucleus. In my 10-inch f/5 reflector at 208X, the outer parts of M30 were resolved. The cluster spanned some 5-6 arc-minutes and seemed elongated in an east-west direction. Two stellar streams radiated outward towards the north.

M30 lies about 27,000 light-years from earth. It harbors several hundred thousand stars and has an estimated diameter of 90 light-years.



freestarcharts.com

~ Glenn Chaple – Observing Committee and VP ~

Surplus Telescopes . . .

These telescopes are available for a limited time for members at no cost (one only per member). First reply gets it. Contact:

Bernie Kosicki pastpresidents@atmob.org or

Tom McDonagh membership@atmob.org



A18. Quality Optical Support Systems Refractor; 50 mm, f/12



A25. Saturn Refractor. 60 mm, f/15



A13. Celestron Maksutov. 200 mm, f/10



A47. Homemade Reflector. 150 mm, f/8

Editor: Images in this article by Bernie Kosicki.

~ Submitted by Bernie Kosicki ~

Mario images Asteroid (133537) Mariomotta . . .

On September 23, 2014, Mario Motta, using his 32-inch relay telescope, imaged the asteroid named after him. The photo is a single, 10 minute, unfiltered image. It has a very inclined, 3.2 year orbit. The asteroid is currently in the constellation of Aries and is at magnitude 19.75. It will be at opposition in December. Details at <http://archive.is/dYXmx> .



Image by Mario Motta

~ Submitted by Mario Motta ~

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

**November Star Fields DEADLINE
Sunday, October 26th**

**Email articles to Al Takeda at
newsletter@atmob.org**

Articles from members are always welcome.

POSTMASTER NOTE: First Class Postage Mailed October 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

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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.

Oct 8 Full Moon, Total Lunar Eclipse, Draconid Meteor Shower
Oct 15 Last Quarter Moon (Moonrise at midnight)
Oct 21 Orionid meteors peak
Oct 23 New Moon, Partial Solar Eclipse
Oct 31 First Quarter Moon (Moonset at midnight)
Nov 1 Venus at greatest western elongation (morning)
Nov 2 Daylight Saving Time Ends
Nov 6 Full Moon