



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. 28, No. 4 April 2016

This Month's Meeting . . .

Thursday, April 14th, 2016 at 8:00 PM
Phillips Auditorium

Harvard-Smithsonian Center for Astrophysics

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

“From the Great Wall to the Great Collider: China and the Quest to Uncover the Inner Workings of the Universe”



Proposed Circular Electron Positron Collider (CEPC) Credit: IHEP

Our guest speaker this month is Steve Nadis, a graduate of Hampshire College and contributing editor to *Astronomy* and *Discover* Magazines. He is co-author, with Shing-Tung Yau, of *From the Great Wall to the Great Collider: China and the Quest to Uncover the Inner Workings of the Universe*. The 2012 discovery of the Higgs boson completed the “Standard Model” of particle physics. But where does particle physics go from there?

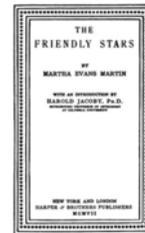
In this talk, Steve will discuss the history and future of particle physics, focusing on China’s plans to build an accelerator, the so-called “Great Collider,” that could supersede the Large Hadron Collider as the biggest and most complicated machine ever built—and one capable of opening new frontiers in science.

Besides *Astronomy* and *Discover*, Steve’s articles have also appeared in *Nature*, *Science*, *Scientific American*, *New Scientist*, *Omni*, *Popular Science*, *Sky & Telescope*, and *Air & Space*. He was a science journalism fellow at MIT and has worked or consulted for: the Union of Concerned Scientists, the World Resources Institute, the Woods Hole Oceanographic Institution, the Harvard Physics and Mathematics Departments, and WGBH NOVA

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 . . .

“What more gracious day’s progress in beauty could there be than to travel with the eye from the cheerful hepaticas dotting the soft ground among the trees to the round, white, silent blossoms of the dogwood fringing the late April woods and thence, when evening falls, to the bright yet gentle light of Arcturus in the sky, announcing the end of purple twilight.” Martha Evans Martin: *The Friendly Stars*.



There’s something magical about seeing Arcturus on a spring evening, and few have described it more poetically than Martha Evans Martin, whose book *The Friendly Stars* appeared in print over a century ago. As backyard astronomers, we relate the passing of the seasons with the comings and goings of the nighttime stars – Vega, Deneb, and Altair in the summer, Fomalhaut in autumn, Betelgeuse and Rigel in winter, and, of course Arcturus in spring.

Deep sky aficionados associate spring with the galaxy-rich skies of Coma Berenices and Virgo. I think of the first time I gazed across the 55 million light year void separating me from M84 and M86 and I’m brought back to an early-April 1978 evening, standing with my telescope on the soft carpet of a newly-raked lawn while listening to a chorus of spring peepers from the cranberry bog across the street. OK – now I’m channeling Ms. Martin. Spring, Arcturus, and Coma-Virgo galaxies tend to do that to me.

Clear Skies!

~ Glenn Chaple – President ~

March Meeting Minutes . . .



Marc Stowbridge *

Minutes of the ATMob meeting held on March 10, 2016 in the Phillips Auditorium at the Harvard-Smithsonian Center for Astrophysics. President Glenn Chaple started the meeting at 8:00 pm.

- Phil Levine gave the Secretary's report
- Eileen Myers gave the Treasurer's report. Eileen mentioned that \$120 was collected from the membership to sponsor the [Ed Knight Observatory Clear Sky Clock](#) for a year. If anyone else would like to make a contribution, please contact Eileen.
- Glenn Chaple gave the Membership report for Tom McDonagh who was unable to attend.
- Glenn Chaple and Bruce Berger gave the Observing report. A Messier Marathon will be held at the ATMob Clubhouse on March 11,12. In addition there will also be a "Double-Star-a-Thon" Double Star Marathon. For a listing of those 110 double stars, email Glenn Chaple at president@atmob.org

Bruce Berger mentioned double shadow transits on Jupiter. They will occur on the nights of March 14, March 21 and March 23. <http://www.astrosurf.com/rondi/jupiter/>

The Sue French Fan Club observing Object of the Month is NGC 2420, an open star cluster. https://www.noao.edu/image_gallery/html/im0726.html

- Steve Clougherty gave the Clubhouse report. Steve mentioned that 15 people participated at the February 20th Clubhouse work party. Steve indicated that work was performed on refurbishing club telescopes and observatories. All telescopes and observatories are now functional.

Bruce Berger and Paul Courtemanche repaired the shutter on the ATMob Research and Imaging Observatory (ARIO) .

Steve Clougherty and Dave Prowten repaired the access door to the 17-inch Dobsonian. Steve encouraged club members to take

advantage of the 25-inch Dobsonian, currently on loan to the club. Viewing the Eskimo nebula via the 25-inch was highly recommended by Steve. Steve and John Maher mentioned a number of club members have been checked out on operating the Clamshell and the ATMob Research and Imaging observatories.

- **Announcements:**

Gary Walker mentioned the upcoming Maria Mitchell Star Party at the Loines Observatory on Nantucket on April 2. Informational fliers were available to the membership. Ten club members have thus far volunteered.

John Sheff announced the upcoming Sidewalk Astronomy - Cambridge Science Festival Star Party, to be held on Friday, April 15 at 8:00-10:30 pm, at Harvard/Degugliemo Square. John indicated that street lights in the immediate area will be turned off and seven parking spaces will be available for club members who volunteer.

Mario Motta made several announcements. The Dark Sky Bill has now made its way out of the Massachusetts Ways and Means Committee, and is up for consideration.

The American Association of Variable Star Observers (AAVSO) has established a Transit Group for objects in the range of 7-10 magnitude and viewable in scopes of 8-inches of aperture and above.

Mario also mentioned his involvement in an interesting research project headed up by Andrew Vanderburg of the CfA. This research project is a collaboration between ground observers and utilization of the Hubble and Spitzer space telescopes. The project involves recording light data from a white dwarf star designated WD 1145+017 located in the constellation Virgo. The white dwarf is orbited by what appears to be a short-period, rocky, low-mass disintegrating planetesimal, with an orbital period of 4.5 hours. Due to the proximity of the orbit, the supposed planetesimal is in the process of being torn apart, the resultant dust residue modifies the light signature from the white dwarf. <https://www.cfa.harvard.edu/news/2015-21>

Glenn Chaple announced that three club members, Steve Clougherty, Bruce Berger, and Tom McDonagh, have volunteered to sit on a search committee, formed to address the current open club office positions of vice-president and membership secretary. *Editor: A vote will be cast at the April meeting to formally elect this year's Nominating Committee.*

- **Old Business:** Glenn mentioned that the committee established to review the club's website will be meeting on March 21st. Anyone else who is interested please contact Glenn.
- **New Business:** Glenn informed the membership of the topic for next month's talk. It will be given by Steve Nadis, co-author of *From the Great Wall to the Great Collider: China and the Quest to Uncover the Inner Workings of the Universe*. Steve will be selling autographed copies his book at the April meeting. If club members are interested in obtaining a copy, let Glenn Chaple know. The cost is around

\$14.00. <http://www.amazon.com/From-Great-Wall-Collider-Workings/dp/1571463100>

- Virginia Renahan provided refreshments for this meeting.

Glenn Chaple introduced the guest speaker for the evening, Marc Stowbridge, of the New Hampshire Astronomical Society (NHAS). Marc started the NHAS Library Telescope Program (LTP) as an outreach project designed to provide user friendly loaner telescopes to the general public, via local libraries.

Marc demonstrated how a small portable tabletop Newtonian reflector (Orion 4.5-inch Starblast) can be modified/customized, and made more user friendly and resilient. The LTP started out as a public outreach telescope project at Marc's local library, and has since expanded to 71 libraries in New Hampshire.

The LTP has now gained wide adoption nation-wide, and has been helped by the donation of many telescopes by various astronomy businesses, such as Oceanside Photo and Telescope (OPT). <http://nhastro.com/ltp.php>

The New Hampshire Astronomical Society website <http://nhastro.com/ltp.php> has videos, modification and maintenance information, instruction manuals, and other materials.

Glenn Chaple adjourned the meeting at 9:30 pm.

~ Phil Levine - Secretary ~

Clubhouse Report . . .



Phil Rounseville and crew working on the 25-inch Dob *

March 2016 Clubhouse Report

We had a very productive work session at the Clubhouse during the month of March. On Saturday, March 26, there were 29 members and friends of the ATMob who volunteered.

The weather was pleasant and a lot of outdoor work was done. Two groups of volunteers shoveled, raked and graded the driveway and parking area. The grassy areas were raked and cleared of debris from the winter.

John Blomquist removed the snow fence posts and other volunteers filled pot holes in the driveway.

Sai Vallabha cleaned the 17-inch Dob shed and checked the telescope collimation. This telescope is now in good working order and available for members to use.

Thanks to Paul Courtemanche for vacuuming the Ed Knight roll off observatory.

Bruce Berger and friends of the ATMob Research and Imaging Observatory (ARIO) discussed plans to deal with the snow and ice problem which plagues the dome each winter. One solution discussed would involve building a walkway and rail system just below the roof in order to improve access for snow and ice removal.

Dave Prowten fabricated new altitude bearings for the 25-inch Dob and cut new Formica for the trunions. A group of six volunteers lifted the scope off of the ground board while the new bearings and Formica were installed. Later in the evening Phil Rounseville collimated the optics and carefully assessed the image. He gave a very favorable review of the optics and other members joined Phil in observing Jupiter as well as several deep sky objects that night. The motions of this Dob are very smooth and the telescope now holds collimation well.

Thanks to our lunch crew of Eric Johansson, Art Swedlow, Eileen Myers, John Reed, Leanne and Amber McDonald and Sai Vallabha for providing a wonderful feast!

The next work session will be held on Saturday April 23. We would like to thank the following members and friends for all their efforts during the month of March: Maria Batista, Bruce Berger, John Blomquist, Barbara Bosworth, Paul Cichetti, Steve Clougherty, Paul Courtemanche, Karl and Jeffrey Dean, Chris Elledge, Chet Freeman, Eric Johansson, Dick Koolish, Sergio Lafontaine, Penny Lucinian, John Maher, Tom McDonagh, Leanne and Amber McDonald, Vladislav Mlch, Eileen Myers, Dave Prowten, John Reed, Phil Rounseville, John Stodieck, Art Swedlow, Al Takeda, Sai Vallabha and Dave Wolfendale.

~ Clubhouse Committee Chairs ~

~ Steve Clougherty, John Reed and Dave Prowten ~

Clubhouse Evening Schedule

Thursday Night Mirror Making	7:00 pm - #
Friday Night Educational Videos	7:00 pm - 10:30 pm #
Saturday Night Observing	7:00 pm - ##
# Closing time is determined by the organizers	
## Closing time is determined by the "A" members on duty	
Note: The Clubhouse is closed on the 2nd Thursday of the month for our monthly meeting in Cambridge.	
Due to inclement weather or cloudy conditions on Saturday evenings, the "A" members on duty may elect to close the Clubhouse. Please call the Clubhouse at (978) 692-8708 or check for messages posted to ATMOb-ANNOUNCE.	

Clubhouse Saturday Schedule		
Apr 9	Eric Johansson and Bill Toomey NorthEast Astronomy Forum MESSIER MARATHON #2	
Apr 16	John Maher	Tom McDonagh
Apr 23	WORK PARTY # 4 Al Takeda **	
Apr 30	Dave Prowten	Dave Siegrist
May 7	Eileen Myers	Al Takeda
May 14	Steve Clougherty and Karl Dean Clay Center Astronomy Day	

**Duty member is supplemented by a work crew volunteer. If a volunteer is not available, the work crew closes the Clubhouse

Membership Report . . .

Membership count as of 3/30/2016 is at 293 individuals.

A number of members have experienced problems with the Mailing List subscription. If you believe you have experienced an issue with this function, please contact me via email at temcdonagh@gmail.com.

Please don't forget to update your personal information such as email and mailing addresses. Send me a note or log into the ATMoB website to edit your personal information today.

New and returning members in March 2016: Bryce Parazin, Victoria Donescu and Joseph Tansey.

Please take the time to welcome our newest members.

~ Tom McDonagh – Membership Secretary ~

Sky Object of the Month . . .

April 2016

Courtesy LVAS Observer's Challenge***

**3077– Peculiar Irregular Galaxy in Ursa Major
(Magnitude – 9.9, Dimensions – 5.5' X 4.0')**



Image by Russell Croman (www.rc-astro.com)

NGC 3077 is a small member of the [M81 Group](#), visible in the same low power field as M81 and M82. It was discovered by William Herschel on November 8, 1801. To the casual observer, NGC 3077 looks like an [elliptical galaxy](#). However, it is classified as a [peculiar](#) irregular galaxy due to its wispy edges,

scattered dust clouds, and active nucleus. Studies suggest a distance for NGC 3077 of 13 million light years.



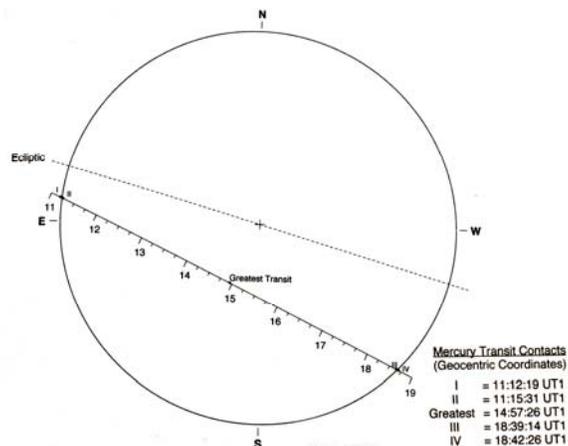
Astronomy Magazine

***The purpose of the LVAS Observer's Challenge is to encourage the pursuit of visual observing. It is open to everyone who is interested, and if you are able to contribute notes, drawings, or photographs, the LVAS will be happy to include them in their monthly summary. If you would like to contribute material, submit your observing notes, sketches, and/or images to either [Roger Ivester \(rogerivester@me.com\)](mailto:rogerivester@me.com) or [Fred Rayworth \(fred@fredrayworth.com\)](mailto:fred@fredrayworth.com). To find out more about the LVAS Observer's Challenge or access past reports, log on to lvastronomy.com/observing-challenge.

~ Glenn Chaple – Observing Committee ~

Mercury Transit . . .

Take a vacation day on Monday, May 9th to witness the transit of the planet Mercury across the face of the Sun. The Americas will be able to see the entire event from 11:12:19 - 18:24:26 UT (07:12:19 - 14:24:26 EDT). **IMPORTANT: Use proper solar filters to safely view this transit.**



F. Espanak (EclipseWise.com) & The Royal Astronomical Society of Canada

A TSE with a Total Difference . . .



A billboard at the airport announcing the eclipse. Photo by Ramaswamy

The forecast for the entire week of March 6 indicated thunderstorms and I was reluctant to journey to Indonesia for what sounded like a very long shot. But the trip had been paid for, so I flew 23,200 miles in 3 days to spend 3 days on land for a 2 minute 4.4 second total solar eclipse on March 9. I decided to stick to a visual experience and took no gear with me except for my trusty old Canon S2 IS point-and-shoot.



The crescent Sun filtered only by the clouds. Photo by Ramaswamy

I didn't care to tour the islands before the event (4 hotels and 5 flights in 6 days) and joined the group only for their last 2 days, to be spent on Bangka Island off Sumatra. We were based in Pangkal Pinang, just north of the track of totality. Under partly clear skies we drove south to Penyak Beach at 3:30 am, for the eclipse beginning at 6:21 am. Half of the island's population was along that stretch, it seemed! Clouds rolled in on cue and first contact was obscured, but when all hope of viewing totality appeared lost, a Hollywood script took over. About 5 minutes before totality, at 7:22 am, a hole opened up in the overcast that lasted some 10 minutes. It was magical.



Totality and Corona. Photo by Ramaswamy

This was my first experience of a total eclipse along a beach. At totality it felt as if a pale greenish-bluish curtain had been thrown over the locale, with us inside the bubble. It was surreal, almost a hallucination, and unexpected. I heard an explanation involving the amount of water vapor in the air, which took away from the poetry of the moment. It was, as Michael Deneen might put it, a sublime couple of minutes.



Totality with Mercury and Venus to the right and above. Photo by Ramaswamy

~ Submitted by Ramaswamy ~

Corrections . . .

March Sky Object of the Month: Dimensions should be 47" X 43"

Clubhouse Saturday Schedule: MESSIER MARATHON #1 should be on March 12th.

Editor: * Photos by Al Takeda unless otherwise noted.

May Star Fields DEADLINE
Sunday, April 24th

Email articles to Al Takeda at
newsletter@atmob.org

Articles from members are always welcome.

POSTMASTER NOTE: First Class Postage Mailed April 7, 2016

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

EXECUTIVE BOARD 2015-2016

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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 Standard Time (EST) from Universal Time (UT) subtract 5 from UT.

Apr 7 New Moon

Apr 13 First Quarter Moon (Moonset at midnight)

Apr 18 Mercury at greatest eastern elongation, 20-deg. (evening)

Apr 22 Full Moon, Lyrid Meteors peak

Apr 29 Last Quarter Moon (Moonrise at midnight)

May 5 Eta Aquariid Meteors peak

May 6 New Moon