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. 22, No. 4 April 2010

This Month's Meeting…

Thursday, April 8th, 2010 at 8:00 PM
Phillips Auditorium
Harvard-Smithsonian Center for Astrophysics
Parking at the CfA is allowed for duration of meeting

"You too can discover an extrasolar planet"
Dr. Peter McCullough

In the past decade, one of the fastest growing fields of astronomy has been the discovery and characterization of planets that pass in front of (or "transit") their host stars. From telescopes in backyards to ones in space, observations of our "XO Project" and many others around the globe are contributing to this burgeoning field of inquiry (e.g. Garcia-Melendo & McCullough (2009) and others' discovery of the transit of the 111-day-period HD 80606b). I will review how the XO Project made discoveries in the past, and describe its reincarnation as a growing network of collaborators to increase the rate of discovery. May this presentation inspire you to join us in a future discovery.

Dr. Peter R. McCullough is an employee of the Space Telescope Science Institute in Baltimore MD, currently on sabbatical at the Smithsonian Astrophysical Observatory in Cambridge MA. He is an astronomer with expertise in detectors, instruments, and planets orbiting other stars. He has lead international teams in the discovery of extrasolar planets and their characterization with space telescopes such as Hubble and Spitzer. In 2009 he participated in the verification of one of the instruments installed by a NASA space shuttle crew into the Hubble Space Telescope. He is a husband and father of two children.

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…

I hope everyone has survived the heavy rains that have hit us recently and you each have a non-soggy piece of ground to set-up your telescope for spring viewing. We're now in that short period of time when you can see all of the Messier objects in one evening. I must admit, I have always been a planetary observer/imager but I can still be wowed by looking at a deep-sky object – as I was when I was at the clubhouse last Friday night (March 19th). Steve Clougherty had one of the big scopes out and was giving a few of us a tour of some very faint galaxies – all of which he can find from memory. I enjoyed noting a few dark lanes on one galaxy and was pleasantly surprised at the view rather than using a camera – as I have been for the past several years.

We have two good sized instruments at the clubhouse for member use, the first being a the seventeen-inch in the southern most end of the observing field and the second being the twenty-inch in the Ed Knight Observatory. Both are fine instruments, easy to use and a real boon for those who want to see how many Messier objects they can find in one night.

In addition to those telescopes, we also have the C-14 on the Paramount in the Ed Knight Observatory. Thanks to Bruce Berger, John Blomquist and others, the mount was upgraded with the latest electronics from Software Bisque and the problems of the past electronics are behind us. Since this is a computer driven instrument, club members who wish to use it, must first undergo training. Stay tuned for announcements as to when the training sessions will take place.

We also have an eight-inch Dall-Kirkham Cassegrain telescope in the clam shell observatory and we expect it to be ready for use in the coming months. This will be a fine instrument to use on Saturn as it comes into opposition later this year. In addition, we have telescopes of different sizes and designs that are available for member use.

So, take advantage of the club's resources this spring and come to the clubhouse when the mosquitos are still asleep, the nights are dark and faint fuzzies are to be seen!

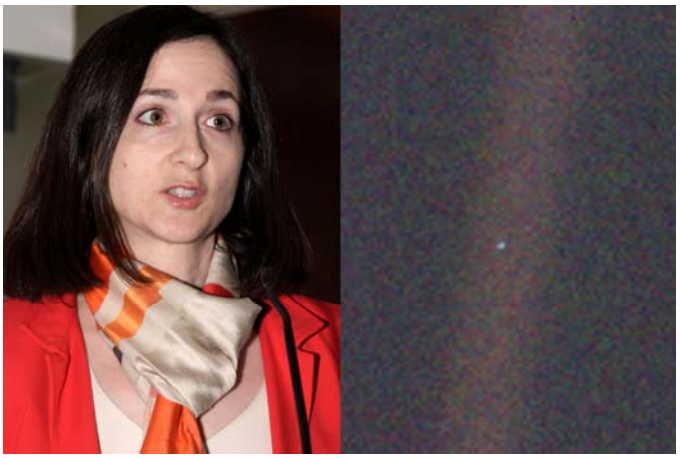
Finally, I would like to note the passing of Harvey Benoit, the father of Treasurer Nanette Benoit. Mr. Benoit was a US Navy veteran who along with his shipmates received the rarely awarded, "Presidential Unit Citation" for action in North Africa while aboard the USS Dallas during WWII.

He was connected to the space exploration industry not only through his work as an employee at Lucent, but also by his daughter Nanette and his son Bob, who has twice spoken at our monthly meetings about the optics his company SSG Precision Optics, has designed for satellites and space probes.

Clear Skies,

~ Stephen Beckwith, President ~

March Meeting Minutes . . .



(L-R) Dr. Sara Seager and the Pale Blue Dot (Earth image from Voyager 1)

The March meeting of the Amateur Telescope Makers of Boston featured Dr. Sara Seager, planetary scientist and astrophysicist at the Massachusetts Institute of Technology (MIT). Seager's talk was on "Exoplanets and the Search for Habitable Worlds."

The lecture focused on answering the four questions that Dr. Seager is routinely asked about exoplanets. (1) "What can aliens see by looking at Earth from afar?" (2) "When will we find another earth?" (3) "Can we go there?" and (4) "If we cannot go there, why look?"

In answering the first question about looking at Earth from far away, Dr. Sager noted that the any search will have to be in the local neighborhood. Any alien would still have to use a space based telescope that would have to be as large as 50-meters in diameter. With that type of telescope they can start to gain a direct view in the Infrared (IR) and near IR part of the spectrum. "They would see a pale blue dot that varies in brightness with time, an atmosphere that has water vapor which indicates liquid water and oxygen and ozone which are indicators of life on a habitable planet."

The 2nd question was; "When will we find another earth?" The answer would depend a lot on the ability to observe or detect the exoplanet. If it is orbiting a star like our own, the habitable zone would be very close to the sun. If one is attempting to view a direct image, the diffraction of starlight would make the airy disk 5 orders of magnitude or 100,000 times brighter them the planet you are looking for. New optical telescope designs would have to be developed to reduce this glare. It may take 25 years to find an Earth mass planet in an earth-like orbit using the direct view method.

An easier method to discover earth sized exoplanets is by the transit method. Dr. Seger predicts finding an earth-like transiting planet in 1-3 years.

At present it is impossible to fulfill the 3rd question: "Can we go there?" The distance to Alpha Centauri, the nearest star system, is 4 light years away. If it is possible to travel at 1/10th the speed of light, it would take 40 years to reach it.

The 4th question, "If we cannot go there, why look?" is asked about all remote sensing of exoplanets. Telescopic observations allow us to learn details about a planet's interior, its atmosphere, and in the future its biosignature.

Dr. Seager stated that "We really think we have a chance to change history… And what we want to do in exoplanets is to be able to take our children or grandchildren or nieces or nephews out to a really dark sky and to be able to point to a star in the sky and say that star has a planet like Earth."

Sky and Telescope Editor in Chief, Bob Naeye, gave away books and magazines at the meeting.

David Aguilar, Director of Public Affairs at the CfA, invited the club to bring telescopes to assist with the 80th anniversary of the Observatory Nights on Saturday, April 24.

Al Takeda gave the Secretary's report for the February meeting.

Tom McDonagh gave the Membership report. Tom also mentioned that he had attended the Acton Star Party and saw how a star party can be a great way to advertise the club.

Steve Beckwith gave the Treasurers report. If anyone has to get reimbursed for any expenses please submit the expense report and send them to Nanette before the end of the fiscal year (May 31st).

John Mahre of the Observing Committee announced that a new course on Black Holes will be starting in two weeks at the Clubhouse on Friday nights.

Steve Clougherty of the Clubhouse Committee announced that a Messier Marathon is being planned for April 17th, weather permitting. If Friday, March 12th is a good night observing will be held at the Clubhouse. A notice for observing will be placed onto the Announce list.

Steve C. also reported that work was performed on the machine shop, the bathroom and the Clamshell Dome.

March Events:
Clubhouse Work Party - March 27

March Star Parties:
Harvard Elementary School – March 15 (16)
Wilson Middle School – March 17
Sullivan Middle School - March 22
Innovation Academy, Tyngsboro - March 31

Dick Koolish wanted to mention the contribution of John Sheff and John Small in helping with the Harvard University Open Nights every month. He also related his experience with the Healey School Star Party in Somerville.

Bruce Tinkler was also at the Healey School Star Party and noted that ATMoB was presented with a donation of a Celestron Dual Viewing System with illuminator.

Steve thanked Chuck Evans and his wife June for providing the evening's refreshments.

Mario announced that he gave a light pollution talk at Newbury, MA (Plum Island). Many people showed up including the entire city council. The council will be proceeding with a Dark Sky Bill.

Bob Naeye reported that the major professional and amateur observatories that he visited in Chile have not been affected by the devastating earthquake or the aftershocks.

Steve Beckwith thanked the members that volunteered to be candidates for the Nominating Committee. The vote will be held at the April meeting.

New Event Announcements:

- Monthly ATMoB Meeting – April 8
- NEAF – Sat. / Sun., April 17, 18
- Clubhouse Work Party – Sat., May 1

New Star Parties:

- Linden School – April 13
- 80th Anniversary Open Nights at the CfA - April 24, starting at 7:00
- Sidewalk Astronomy in Cambridge – April 29 (7:15 pm)
- Astronomy Day at the Clay Ctr. – May 15 (2:30 pm)

~ Al Takeda, Secretary ~

Nominating Committee Selection . . .

At the April monthly meeting, the three member Nominating Committee will be selected by the membership from the following six candidates:

Virginia Renehan, Paul Valleli, Eric Johannson, Bruce Berger, Mario Motta and Steve Clougherty.

All members are encouraged to attend the meeting and participate in this part of the process to select upcoming club officers.

Many thanks,

~ Stephen Beckwith, President ~

Clubhouse Report . . .

March 2010

The February 27th work effort took place, as scheduled, through the courtesy of Bruce Berger, John Blomquist, Paul Cicchetti, Steve Clougherty, Nina Craven, Mike Hill, Eric Johansson, Dick Koolish, John Maher, Dave Prowten, John Reed, Sergio Simoniovic, Art Swedlow, Al Takeda and Sai Vallabha. The skies were cloudy with the temperature just above freezing. Major items accomplished follow.

The clam shell observatory stairs were modified, fitted, and secured in place. The electrical control components were tested in place and proof of concept completed. Additional parts identified will be available for assembling and testing during the next work sessions. Further mechanical work on the internal and external stair sections will also be tackled.

The bathroom walls and ceiling received final sanding, priming, and first top coat of paint. The next action will be the final coat of paint and shelves installation during the next work party.

The old machine shop cleanup started in earnest and layout measurements made to start modification during the next work party.

The four-holer off the new machine shop was framed for insulation and wallboard. Insulation was installed during later work sessions. Electrical components will be finished after wall board installation during the next work sessions.

Nina Craven donated a Meade #495 Hand Controller to the clubhouse. Thank you, Nina.

The usual cold weather usual luncheon treat of baked chicken, spaghetti, garlic bread, with "Salads by Sai", was again presented to a famished crew by our intrepid team of Art, Sai, and Nina assisted by the most hungry of the crew. The next work session will be held on March 27th and will feature the last spaghetti luncheon of the season. The grill will be reactivated for the following work party on May 1st. Come on up the hill to the farmhouse and lend a hand. Your donation of your time is greatly appreciated.

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

Bruce Berger and Mike Hill sawing wood for the workshop. Image by Al T.

Clubhouse Saturday Schedule

Apr 3	Henry Hopkinson	Tom Wolf
Apr 10	George Paquin	Dave Prowten
Apr 17	Kosicki + Siegrist- **Messier Marathon**	
Apr 24	J. Blomquist, J.Maher, T. McDonagh	
May 1	Brian Maerz	John Panaswich
May 8	Shilpa Lawande	Nitin Sonawane
May 15	Steve Clougherty	Steve Mock
May 22	Bernie Kosicki	Glenn Meurer

(L-R) Paul Cicchetti and Tal Mental. 10-inch Meade Donation. Image by Al. T

Donations by Tal Mental . . .

We would like to express our appreciation to ATMoB club member Tal Mental for graciously donating telescopes, optics and books (see below) to the club.

10" Meade LX200 w/tripod and fork mount + manual
(Originally tested by S&T, S/N# 1)

Original 3" Skyscope (1945) w/o mirror

6x13x18 hard aluminum camera case

Burnham's Celestial Handbook - Paperback set of 3 volumes
Hipparcos Star Catalog - Set of 17 volumes
Uranometria - Volumes 1&2
Carl Sagan's COSMOS -VHS tapes

Big military eyepiece w/ 2 5/8" dia eyepiece barrel
10 inch TRANSPAQUE f/3 projection lens
Magnifier lens in 1 3/8" OD eyepiece barrel
Spencer 16" projection lens
LINK GROUP Advanced Optical Division;General Precision Systems inc. 2.89xf/2 PatNo646063 7 element lens
(Total of 5 lenses)

~ John Reed ~

Membership Report . . .

Membership as of 03/24/2010 - 325 members.

March was a great growth month for the club with 9 new or returning members helping to swell our ranks. Star parties are a great venue for recruting new members. I have ATMOB contact cards available for distribution. Do you need a new name tag? Please drop me a line and I will make one up for you.

Having trouble with your Astronomy or Sky and Telescope Magazine subscription? Please feel free to contact me via email. I'll do my best to sort out any problems.

The Amateur Telescope Makers of Boston, Inc. is a 501(c)3 organization. Donations are gladly accepted and are tax deductible to the extent allowed by law. Please consider making a tax-deductible contribution to the club when planning for 2010.

All members are encouraged to seek out and welcome our new members:

James Chamberlain
Andrew MacKenzie
Ken Martin
Kathleen Granchelli
Bradford Steele
John Muresianu
Scott Chizzo
Rita Sud
Lexi Granchelli

membership@atmob.org

~ Tom McDonagh – Membership Secretary ~

Sky Object of the Month . . .
April 2010 - Sirius

An unwritten law in astronomy states that you should avoid observing any sky object when it's near the horizon. First of all, incoming light has to pass through a greater amount of earth's atmosphere when approaching from a low altitude. Secondly, ripples from escaping ground heat create turbulence that's most troublesome near the horizon.

However, if you want to experience one of the night skies loveliest treats, ignore that law and look at Sirius when it's low in the sky. When the night sky's brightest star is situated high above the southern horizon as it is after sunset on February and March evenings, it's a magnificent sight. A gleaming, sparkling diamond, Sirius captivates the beholder, no matter whether viewed with unaided eye, binocular, or telescope.

Sirius is now on the wane, setting soon after sunset. As it nears the horizon, something magical happens. That same atmospheric turbulence that wreaks havoc on sky objects refracts the light from Sirius, causing it to sparkle in a dazzling array of gemlike hues. Its diamond like radiance is interrupted

by flashes of ruby red and emerald green - a visually entrancing sight.

Next time you set out to do some “serious” astronomy, try a moment to make a “Sirius” observation. You’ll be delighted you did.

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

~ Glenn Chaple ~

.Thoreau on Astronomy . . .

“How novel and original must be each new man's view of the universe! For though the world is so old, and so many books have been written, each object appears wholly undescribed to our experience, each field of thought wholly unexplored. The whole world is an America, a New World. The fathers lived in a dark age and throw no light on any of our subjects. The sun climbs to the zenith daily, high over all literature and science. Astronomy, even, concerns us worldlings, only, but the sun of poetry and of each new child born into the planet has never been astronomized, nor brought nearer by the telescope.”

Journal, 2 April 1852

~ Submitted by Tom Calderwood ~

C14/Paramount Training . . .

We are looking for several people to become familiar with operating the club's C14/Paramount in order to refine the training materials. Please contact Bruce Berger at bruce@scopemaker.com to set up an appointment. Also a reminder that because this instrument is regularly used for research and has been painstakingly adjusted to have a pointing accuracy of <3 arc minutes, members must be trained and certified before operating the scope. There is a plan in place to add an equipment scheduling module to the ATMoB website, and once this is done we can open up training and the reservation system to more members.

~ Bruce Berger~

4th Grade Acton Star Party . . .

The 8th Annual 4th Grade Acton Star Party was a huge success. It was a two part affair; indoors on Thursday April 4th and outdoors on Saturday April 6.

Part One - Clouds and Rainy Skies

As many as 600 Acton and Boxboro students, siblings, family members, and volunteers braved the elements and came to learn about our wonderful hobby, space, and more. There were plenty of fabulous presentations inside by Sky and Telescope senior editor and Globe columnist Alan MacRobert and Sky and Telescope Editor in Chief and ATMoB member, Bob Naeye.

Also inside, ATMoB members Bernie Kosicki (Galileoscope Lending Project), Bruce Tinkler ("What to do next" table), George Roberts (Star Lab shows), David Siegrist (Mirror Grinding), Derek Lowe and Mike "Galileo" Francis kept everyone entertained and informed at the same time. Everyone also enjoyed Bob Phinney's space exhibit.

Part Two - Clear and Cold Skies

And that wasn't all… we had an observing session at NARA Park in Acton on Saturday night.

The night began with a high and bright pass of the ISS… a spectacular start to a great evening. We had close to 20 telescopes lined up on the walking path in Acton's NARA Park and they were pointing in all directions; The Great Orion Nebula, rising Saturn, the open cluster M35, Pleiades, and more. The turnout was great too; approximately 250 people turned out to take in the sights.

Many thanks go out to all the ATMoB astronomers who brought their telescopes including: Neil Fleming, Tom McDonagh, Harry Drake, Derek Lowe, John Maher, David Wilbur, Phil Rounseville, Tom and Carolyn Lumenello, Scott Chizzo, Olivia Chizzo, and John Blomquist.

The 4th Grade Star Party is certainly a team effort. Any "thank you" omissions are purely by accident. Let me know and I will correct.

~ Steven Feinstein ~

For Sale . . .

iOptron SmartStar E-R80 Go-To 80 mm, f5 refractor, cosmic orange color, with stainless steel tripod. Like new, used only once. For photo and complete specs see www.ioptron.com. **Price: $250**. Contact Ted Poulos, 617-566-5127 or TPoulos829@aol.com.

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May *Star Fields* DEADLINE
Wednesday, April 28th

Email articles to Al Takeda at
secretary@atmob.org

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ATMoB April 2010 Newsletter Addendum

We have a surplus clamshell type dome available to any ATMOB member in good standing for a minimum bid of $200. This is a homemade 9 ft. fiberglass dome which was donated by longtime ATMOB member Don Dilworth from Maine.

If you are interested, please contact one of the three clubhouse committee directors by April 21.

We also have a donated EQ5 equatorial mount with a wooden tripod (no hand control) available to any ATMOB member for a minimum bid of $100. Please respond to one of the clubhouse committee directors by April 21.

~ Clubhouse Committee Directors ~
~ John Reed (781) 861-8031 ~
~ Steve Clougherty ~
~ Dave Prowten ~

POSTMASTER NOTE: First Class Postage Mailed Mar 31st, 2010

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

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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.

Heads Up For The Month . . .

To calculate Daylight Savings Time (DST) from Universal Time (UT) subtract 4 from UT.

Apr 6 Last Quarter Moon
Apr 14 New Moon
Apr 21 First Quarter Moon
Apr 22 Lyrid Meteor Shower
Apr 28 Full Moon
May 6 Last Quarter Moon – Eta Aquarid Meteor Shower
May 13 New Moon