



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. 6 June 2010

This Month's Meeting...

Thursday, June 10th, 2010 at 8:00 PM
Phillips Auditorium

Harvard-Smithsonian Center for Astrophysics
Parking at the CfA is allowed for duration of meeting



Supernova 1994D in Galaxy NGC 4526. Copyright NASA, ESA, The Hubble Key Project Team and The High-Z Supernova Search Team.

Supernovae, Lensing, and Other Transient Phenomena: What we learn from space, from the ground, and from theory

Astronomers study exploding stars called Type Ia supernovae to explore the distant reaches of space and time. Type Ia supernovae have helped us to discover dark energy and to trace the expansion history of the universe. Yet, we still do not know exactly how these special events occur. We will play the role of cosmic detectives, searching for the progenitors of Type Ia supernovae. Although this quest is one of long standing, today's space missions and ground-based telescopes are providing new clues that should help us to "crack the case."

Supernovae are just one of several transient phenomena which have been studied with significant input from amateur

astronomers. Amateurs are making important contributions to the identification and study of microlensing and mesolensing events. Dr. Rosanne Di Stefano will discuss these opportunities and several others as well.

Dr. Di Stefano received her M.A. in physics from Columbia University, and received her PhD in Astrophysics from State University of New York (SUNY) Stony Brook. She currently is an astrophysicist at the Smithsonian Astrophysical Observatory and a lecturer of Astronomy at Harvard University. Her early research was in field theory, specifically topics related to supersymmetry. She left the New York Institute of Technology to pursue research centered on the study of the formation of close binary systems. At MIT and at Harvard, she studied millisecond pulsars in globular clusters and luminous supersoft x-ray sources. She was twice selected as a Bunting Science Scholar at Radcliffe College's Mary Ingraham Bunting Institute, a center of advanced studies for women. She also served as an evaluator for the Introductory University Physics Project, the large-scale, national experiment to modernize the introductory physics course.

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...

This will be my final message as the President of the ATMOB. I had lots of help along the way by many people. I cannot thank everyone in this message but I will mention a few names. My predecessor, Virginia Renahan gave me guidance in my first few months and gentle nudges along the way when I missed something I should have been doing. John Maher who started and now runs the Friday night DVD based classes has really brought a wonderful benefit to our club members. Bruce Berger worked tirelessly with Mike Hill to get the new machine shop set-up and then work with Software Bisque to get our C-14 telescope mount upgraded (with the help of John Blomquist and others). John Reed, Steve Clougherty and Dave Prowten have been great in keeping the clubhouse humming along and the new observatory projects moving towards completion. Nanette Benoit has done a great job as Treasurer and her background in accounting has been a real boon to the club. Tom McDonough brought a very personal touch to his role as the membership secretary as he worked with both prospective and new club members. Bernie Volz was always responsive to changes to the website and to being willing to help in a pinch.

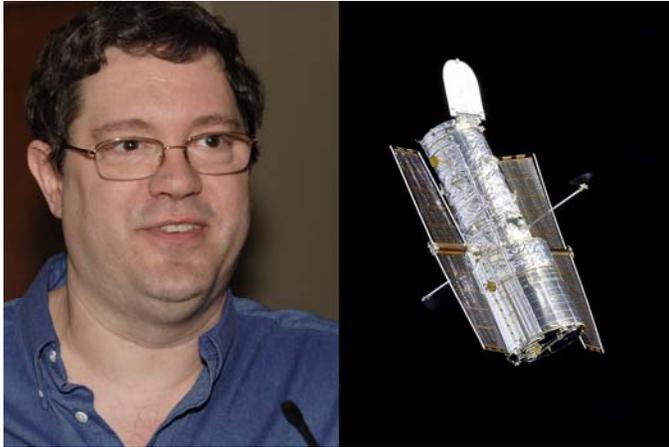
Finally Bob Naeye and Dick Koolish have been great help in suggesting names for guest speakers and helping out in getting some of them to come to our meetings. Oddly enough, during my time as president, I have spent less time with my telescope than any other similar period of my life. I'll be correcting that his summer when I bring my observatory back on line (the mosquitoes have missed me)!

It has been a pleasure folks!

Clear Skies,

~ *Stephen Beckwith, President* ~

May Meeting Minutes . . .



The May meeting of the Amateur Telescope Makers of Boston featured ATMoB member and *Sky & Telescope* Editor in Chief Bob Naeye talking about the accomplishments of the Hubble Space Telescope. April marked the 20th anniversary of this groundbreaking space based telescope whose accomplishments have spanned from planetary science to cosmology. Bob recognized the sophistication of the audience and focused on the telescope's scientific discoveries rather than the fantastic "eye candy" images that have been released.

The Hubble Space Telescope was named after the American astronomer Edwin Hubble who was given credit for determining that galaxies are "island universes" and that the Milky Way is only one of the galaxies in the universe. Later with other astronomers he determined that the universe was expanding.

The telescope weighs 12 tons and is as large as a city bus. Its 2.49-meter primary objective was made by Perkin-Elmer in Danbury Connecticut and all optics were integrated with the final assembly at Lockheed in California. The Hubble Space Telescope was launched on April 24, 1990 aboard the Space Shuttle Discovery.

Soon after launch it was discovered that Hubble telescope could not be brought to a sharp focus. According to Naeye "they realized that the mirror was made to the wrong formula and that it was only off about 1/150th of a human hair." It was enough to degrade it to a point where it could not achieve its scientific objectives.

It was fortunate that the telescope was designed to be serviced in space and a shuttle was sent on December 1993 to fix it. The astronauts installed a corrector lens called COSTAR that brought the Hubble Space Telescope almost back to specification. There have been five servicing missions in total.

Bob proceeded to give the audience a "whirlwind tour" of the Hubble telescope's science accomplishments starting first within the solar system, then to our Milky Way galaxy and finally looking outward to the Universe at large.

One of the early collaborations occurred when the Mars Pathfinder team requested that the Hubble Space Telescope perform an image survey of the landing site and another image after Pathfinder landed.

As Comet Shoemaker/Levy - 9 headed for its rendezvous with Jupiter on July 1994, the Hubble telescope imaged the 21 visible fragments ("the string of pearls"). The telescope continued to observe the post impact spots until they disappeared when they started mixing with Jupiter's high altitude winds.

A few months ago the Hubble telescope produced the best image of Pluto before the New Horizons spacecraft arrives. Using the Hubble data, 2 new moons, Nix and Hydra, have been discovered.

Moving outward into the galaxy, Hubble surveyed the Orion nebula and found that half of the stars are surrounded by disks of gas and dust. This is further evidence that the theory of planetary formation is correct.

While jets have been known for a long time, Hubble has been able to see clumps within the stream. Another jet, HH47, appears to have its jet all twisted around. It is thought that it is a binary star and that its companion is "torquing the primary star which is producing the jet."

One of Bob's favorite photos is the first exoplanet around Fomalhaut that was imaged by the Hubble Space Telescope a couple of years ago. Hubble has not only taken exoplanet images but has detected molecules of methane, carbon dioxide and water vapor in those that are transiting their host stars.

Hubble has also forced theorists back to the drawing board when a lot of complex shaped planetary nebulas were found.

As Hubble looks outward beyond the Milky Way galaxy it has been observing gamma ray bursts, galaxy collisions, Type 1A supernovas and galaxies that are billions of light years away.

Gamma ray bursts are very powerful stellar explosions that channel a lot of the supernova's energy into jets that shoot away in opposite directions from the newly formed black holes. Hubble has been imaging gamma ray bursts (GRB) and their host galaxies and it appears that they have been occurring in small irregular galaxies that are going through their first burst of star formation.

Galaxy collision imaging by Hubble has shown long tails, "tidal tails", from tidal interactions. As the galaxy's gas clouds get disrupted, tremendous star formation takes place. Collision images have also shown warped disks, disks that are perfectly perpendicular to each other (Polar Ring Galaxy) and spiral arms that are whirling around in opposite directions.

Hubble has been able to look “deep” and image Type 1A supernovas in distant galaxies. This standard candle has been used to determine that the expansion of the universe is accelerating and that the age of the universe is about 13.75 billion years.

The Hubble Deep Field is a 10 day exposure looking at a tiny nondescript area near the constellation Ursa Major. Taken in the 1990s it shows nearby elliptical galaxies and the faintest blips are billions of light years away. As Bob explained, “looking at the universe... and seeing objects at different distances, we can literally see the evolution of the universe unfold before our eyes”.

The latest images were taken a few months ago using the Hubble Space Telescope’s new Wide Field Camera 3. Bob presented to the group the most distant galaxies ever seen. “The red shift is beyond 8 which mean that we are seeing them only about 700 million years after the Big Bang.”

The telescope has been a tremendous success. It has made 110,000 orbits, collected 45 Terabytes of data, contributed to 9000 published papers and has generated 325,000 citations. In conclusion Bob stated that the “Hubble Space Telescope is alive and well. It’s had its trials and tribulations over the years but is still doing tremendous research. It is still greatly oversubscribed by a professional astronomers and it probably has many more years of life into it.

Al Takeda gave the Secretary’s report for May’s meeting.

Tom McDonagh gave the Membership Secretary’s report.

The Treasurer’s report was given by Nanette Benoit. She reported that a full accounting of the budget will be given at the Annual Meeting next month.

The Observing Committee co-chairman, John Maher mentioned that a new DVD course on “Weather” will be held in a few weeks at the Clubhouse.

The Clubhouse report was given by Steve Clougherty. He reported that there was a “very productive work session 2 weeks ago.” Special thanks were given to Harry Drake and Tony Flanders who scraped paint on the porch of the Clubhouse. He also thanked John Blomquist for mowing the grass and Brian Maerz for trimming trees. The Dall-Kirkham is operational but has some safety work to be finished before it is opened up to the membership. The next work parties are on May 29th and June 26th.

Bruce Berger announced that he has 3 Beta testers trained to use the C-14/Paramount.

May Events: Clubhouse Work Party - May 29

May Star Parties:

Wayside Inn Star Party – Sat, May 8 (7 pm)

High Plain Elementary School – Mon, May 10

ITEAMS Proj. CfA – May 18

ITEAMS Proj. Cusp School, Fall River – May 19

ITEAMS Proj. Fords School, Lynn, MA – May 20

Astronomy Day at the Clay Ctr. – Sat, May 15 (2:30 pm)

Geneva Cliffs Star Party – Fri, May 21 (7 pm)

New Event Announcements:

- Weather DVD Course (Clubhouse) – Fridays (7:30 pm)
- Clubhouse Work Session – June 26

New Star Parties:

- Hanscom Star Party – Sat, June 5 (7 pm)
- Astronomy Day at the Clay Ctr. – Sat, May 15 (2:30 pm)
- Geneva Cliffs Star Party – Fri, May 21 (7 pm)

Star Party Coordinator, Virginia Renehan spoke about the ITEAMS star parties on May 18, 19 and 20. The ITEAMS program is an ATMob partnership program with the Harvard College Observatory as an outreach program. Travel will be reimbursed and dinner will also be provided for volunteers.

The Nominating Committee Chairperson, Virginia Renehan announced the proposed slate of nominations for the Executive Board.

Virginia also proposed that the Newsletter editor and the Secretary’s position be separated. With this proposal the Secretary would be responsible for taking minutes at the meetings and Executive Board meetings as well as notifications and other duties outlined by the bylaws. The newsletter editor will not be part of the Executive Board and no changes to the bylaws will be made. The President will select a volunteer to fulfill the newsletter editor position.

President Steve Beckwith announced that Ross Barros-Smith has volunteered to be the newsletter editor, pending approval by the Executive Board.

President Steve Beckwith thanked Eileen Myers for bringing in the refreshments.

I would like to end this report by saying that it has been an honor and pleasure to serve as the ATMob Secretary for these past 4 years.

While I am stepping down from this post I will continue to offer my knowledge, experience and support to the club and to its members. In the next few months I will be collating and presenting many of the transcripts, images and interviews to the new Secretary, newsletter editor and to the ATMob archives. I will also continue to submit articles and images for publication in Star Fields. I am proud of the fact that the newsletter is an information resource, a forum for recognizing members’ accomplishments and an archival record of the club and its membership.

I would like to thank the members of the Executive board and the membership for helping me perform my duties.

~ Al Takeda, Secretary ~

Executive Board Nominations . . .

The 2010 Nominating Committee has proposed a slate of nominations to be voted on at the Annual Meeting in June. The nominees are:

President: Bernie Kosicki
Vice President: Mike Hill
Secretary: Bruce Tinkler
Treasurer: Nanette Benoit
Membership Secretary: Tom McDonagh
Member at Large: Neil Fleming
Member at Large: Chuck Evans

Per Articles IX of the ATMob Bylaws: Members shall have the right to offer additional nominations from the floor of the annual meeting, provided only that a suitable written notice, containing the name or names of the person or persons to be nominated from the floor at the annual meeting, and the signatures of at least seven members, is filed with the Secretary not less than ten (10) days prior to the date of the annual meeting.

~ Al Takeda, Secretary ~

Clubhouse Report . . .

May 2010

Two Work Sessions were held during the month of May since Full Moon Saturdays occurred on both May 1st (21 members attending) and May 29th (19 members attending).

We continued to chip away at ongoing projects at the clubhouse, thanks to Sai Vallabha(1&29), Paul Valleli (1&29), Al Takeda(1&29), Phil Rounseville(1st), John Reed (1&29), Dave Prowten (1&29), Eileen Myers (29th), Tal Mentall (1st), John Maher (1&29), Brian Maerz (1&29), Dick Koolish (29th), Ed Knight (1&29), Eric Johansson (1&29), Mike Hill (1st), Anna Hillier(1&29), Chase Green (29th), Tony Flanders (1st), Harry Drake(1st), Steve Clougherty (1&29), Tony Cheevers (1st), Greg Chase(1st), Ed Boynton(1st), Barbara Bosworth (29th), John Blomquist (1&29), and Bruce Berger(1st).

Former member Barry Sawyer stopped by on the 29th to pick up the parts and pieces of the Don Dilworth Clam-shell dome for delivery to "Starport Observatory" on Bailey Hill in NH. Thank you for your donation to the club, Barry. We await a call to assist in its reassembly. In retrospect, Bruce Gerhard was part of the team of four who retrieved the Dilworth dome from Maine; fond memories of Bruce. Also of note was a 29th visit by member Wayne Wagner and daughter Megan while on a bike trip. They were able to show us the progress our neighbors up the hill were making on the refurbishment of the big dish in the bubble. Thanks Wayne and Megan. Later in the day Ed Los and Marion Hochuli stopped by to assist.

Electronics were added to the 8" Dall-Kirkham mount in the Clamshell Observatory. Modification to the stairs and crossover

structure continued and primer and top coat paint was subsequently applied to inhibit rust developing. The observatory was vacuumed, shelves installed, mount checked for clearance and balance. Collimation had been started previously and an interim star test was reported as excellent. On the 29th, work continued on safety issues. Steve C. and Dave P. were assisted by Mike H. (1st) and Sai V. Barry S. visited the assembly to fix a picture of what his dome reassembly will need to include.

A reinforcing metal ring was added to the spider end of the 17" Wray Newtonian optical tube. The spider and secondary mirror holder were reset, followed by collimation of the optical axis. The primary mirror cell was readjusted to allow full motion of the primary to facilitate collimation. Additional wood structure was added to the Dob base to strengthen and add rigidity. Subsequent star testing showed improvement. On the 29th the Telrad mount was repositioned for ease of use; star testing had allowed re-evaluation of the human factor. Steve C., Sai V., and Dave P. were assisted by other members.

The electric focus was wired up on the C-14 in the Knight Observatory. Additional storage shelves were installed in the new shop in the Near Barn. Bruce B. and Mike H. worked these items (1st).

Three more boxes of club history material were prepared for scanning to continue the Archiving Effort. Ed B. and Anna H. were assisted by Paul V. On the 29th, extensive viewing of archived material ensued to provide info for identification of materials. Paul V. was assisted by Anna H., Eileen M., and Al T. (29th).

The peeling paint on the porch posts and adjacent house walls was scraped by Tony F. and Harry D. (1st). The house wall was given a 1st coat of stain by Al T. The corner post received a coat of primer (Chase G. & John R.) to compare durability with the solid white stain used everywhere else on the house, barn and observatories. The final coat was not possible due to showers in the afternoon. The job will continue at the next work party.



(L-R) Mikayla and Megan Wagner in front of the MIT Antenna Dome.
Images by Wayne Wagner

Window repair was started in the old machine shop room by securing the sash with new glazing material. The frames were stabilized with deck screws. The old tool storage peg board was

removed, cleaned, squared, and reinstalled with deck screws above the painted workbench. Several more sessions will be required to complete this project. John R. and Dave P. were assisted by Eric J., John B. and John M.

Mowing, trimming, weed whacking, and raking continued after starting early. John B., Brian M., John M. and Chase G. handled this effort assisted by several other members. Eileen M., Anna H., and Brian M. worked together to coordinate weed removal around the planted areas.

The combined efforts of all left the house and observing area looking super and inviting for your viewing pleasure. Ed Knight and Eric J. continued a brainstorming session looking forward to future possibilities and methods of attack. John M., Barbara B., John B. and Eileen M. hauled stone to start leveling low areas in the circular driveway, but were cut short by the rain event. Chase G. cleaned Dilworth dome storage area and placed the home dome sections there.

Lunch from the grill was started by Sai V. assisted by Eric J. (chef), and presented by a staff of hungry members coordinated by Sai V. It was enjoyed by all. A budget meeting was held later in the afternoon to address accomplishments, expenditures, unfinished work, and proposals for the annual budget approval process. Clouds prevented solar or stellar observing; however Venus was visible high in the Western sky through high thin clouds before lower clouds arrived.

Later on the 29th, Paul V. disassembled the mount from Tal's scope (made a list of the procedure, recording the part numbers of the ball bearings and the clock motor, and listed dimensional readings). The motor is a special order item with a very long shaft to contain bearings, and the worm in the adjustable mounting bracket for the RA drive (the smaller bearing is frozen up again). The RA encoder bearing is ruined and the interior coated with a water deposit. The coil of the motor is OK, but the rotor would not turn. Ed Los took the synchronous clock motor apart and found considerable rust and contamination was preventing the rotor from turning; he took the motor home for cleaning and re-assembly and it now works!

Paul has a query in at Eastern Bearings in Waltham for the replacement bearings cost and availability. The RA shaft that holds the bearings has some rust needing polishing, but the shaft is press fitted into the aluminum RA Housing. The bearing seats are pretty clean. Chase G. assisted by taking pictures of the various sub-assemblies to be used in the assembly/disassembly procedure for the instrument. (Some similarities in design to the C-8 and Meade LX200 series mounts were noted.) Re-assembly of the repaired scope may be possible by the next work party.

The next Work Session is scheduled on Saturday, June 26th at 10am. We do keep each other posted on our free time when we might assist each other in ongoing efforts to keep the old house going. Please remember that we have a buddy system in effect at the clubhouse for our safety and protection. Thursday evening mirror grinding opens at 6:30pm, Friday evening Astronomy class starts at 7pm, as does Saturday night observing. Call ahead to check the current situation before your first trip up. Please

check with the management before leaving any donations on the porch. The bugs were not too pesky last Saturday, but do bring bug spray and sun block for your protection. See you at the clubhouse.

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

Clubhouse Saturday Schedule

June 5	Chuck Evans	Tom Lumenello
June 12	George Paquin	Tom Wolf
June 19	Brian Leacu	Phil Rounseville
June 26	Prowten + Takeda	WORKPARTY #7
July 3	Ed Budreau	Rich Burrier
July 10	Art Swedlow	Sai Vallabha
July 17	Dave Siegrist	Bill Toomey
July 24	Blomquist + Jacobson + McDonagh: WORKPARTY #8	



John Blomquist mows the Observing Field. Image by Al. T.

High Plain Elementary School Star Party . . .

The Monday, May 10th, star party at High Plain Elementary School in Andover saw about 150 4th grade students and parents turn out. After Brewster LaMacchia's presentation on Venus, Mars, and Saturn, attendees were treated to views of those three planets as well as deep sky objects by volunteers from NSAAC and ATMoB.

Assisting with scopes were ATMoB members Dave Wilbur, Scott Chizzo, and Neil Fleming. NSAAC was represented by Jim Foy, Fred Sammartino, Bryan Stone, Dan Smoody, and Ted Blank. Afterwards several members of both clubs went to the local Chili's to discuss the astronomical nature of beverages, finally heading home as they closed up at 11PM.

Thank you to everyone that made it a great success. The feedback from the parents and students was immensely positive.

~ *Brewster LaMacchia* ~

Thoreau on Astronomy . . .

I observed also the same night a halo around my shadow in the moonlight, which I referred to the accidentally lighter color of the surrounding surface; I transferred my shadow to the darkest patches of grass, and saw the halo there equally. It serves to make the outlines of the shadow more distinct.

Journal, 11 June 1851

~ Submitted by Tom Calderwood ~

Sky Object of the Month . . .

June 2010 - Izar (ϵ Bootis)

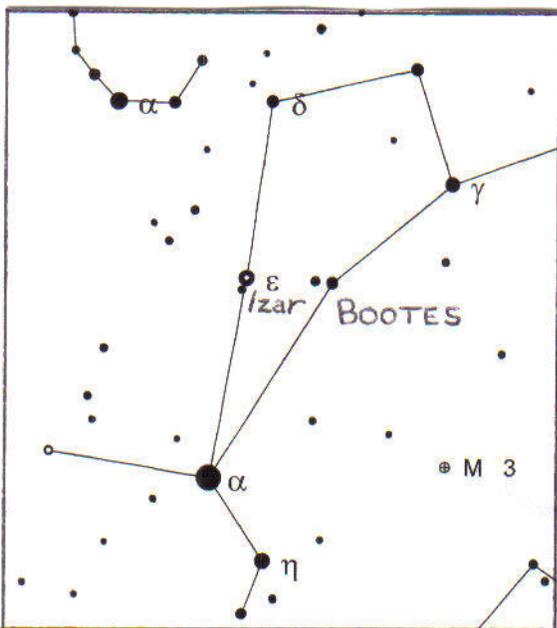


Chart for ϵ Bootis (Izar)
From Cartes du Ciel

Most of us are familiar with the novel Moby Dick, whose protagonist Captain Ahab relentlessly hunts a great white whale. I can sympathize with the obsessive Captain. For several years back in the late 1970s, I pursued an astronomical white whale—the double star epsilon (ϵ) Bootis. Instead of the Pequod, my vessel of pursuit was a 3-inch f/10 reflector.

Trying to capture Izar with a 3-inch reflector is like attempting to harpoon a whale from a rowboat. The difficulty lies in the magnitude difference between the components (2.6 and 4.8) and their closeness (2.9 arc-seconds). On numerous evenings I tried to resolve Izar's component stars without success. Notching this stellar duo became an overpowering obsession. On the evening when I at last split Izar, skies were remarkably steady and I used

the highest practical magnification (120X) my little reflector could handle. Even then, the companion played hide-and-seek in the diffraction ring of the primary.

A larger telescope and magnifying power of 200X will readily split Izar and reveal a striking color contrast between the golden yellow primary and its bluish companion. The Russian astronomer Wilhelm Struve, who conducted a double star survey in the late 1820s and early 1830s (Izar became Σ 1877 in his double star catalog), nick-named it "Pulcherrima" (The Most Beautiful).

But Izar is more than just a close pair of stellar specks. The main component is a K0 spectral class giant 30 times as large as the sun. Its A2-type companion is twice the sun's size – a virtual twin to Sirius. Separated by 180 Astronomical Units, the two undergo a slow gravitational dance, their orbital cycle encompassing perhaps a thousand years.

Imagine that Izar were moved from its current location 250 light-years away to a distance equal to that separating us from Sirius. The star would be a dazzling sight, rivaling Venus in brilliance. Viewed with even the smallest telescopes, the magnitude -3.6 and -1.4 components, separated by 85 arc-seconds, would be an absolutely magnificent sight.

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

~ Glenn Chaple ~

Membership Report . . .

Membership as of April 30th, 2010 is 330 members.

The month of May has been slow for the club with regard to growing the membership. I expect it is the calm before the storm as folks race to renew membership and recruit new members over the next few months. Please remember that it's quite easy to renew your membership online using PAYPAL. No formal membership or setup fee is required to pay through PAYPAL. See the renewal page on the ATMOb.org website for details.

I have ATMOb name cards available for distribution. Do you need a new name tag? Please drop me a line and I will make one up for you. Are you having trouble with your *Astronomy* or *Sky & 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.

membership@atmob.org

~ Tom McDonagh – Membership Secretary ~

Astronomy Day 2010 at the Clay Center Sets a Record . . .



Paul Cicchetti explains white light and Hydrogen Alpha solar viewing at the Clay Center Astronomy Day. Image by Al Takeda

What happens when you mix good planning, a little well-placed publicity, and a sunny day? You get an Astronomy Day event with an incredible turnout! On May 15th, the Clay Center in Brookline again teamed up with ATMoB for the largest Astronomy Day celebration in Greater Boston. Over the entire day there were at least 1,500 attendees, and some estimates by staff put the count as high as 2,000. Attendance was probably boosted after WCVB meteorologist Harvey Leonard mentioned the event the evening beforehand.

This year the event was shortened a bit to try to cluster activities into the evening hours and reduce the time commitment for indoor exhibitors. Outside events officially began at 4:00 pm, though the public began arriving up to an hour earlier. Indoor events ran from 5:00 to 8:30 pm, and some 16 outside telescopes were available both for solar observing and after sunset.

The weather cooperated for the most part. The afternoon was warm and mostly clear for solar viewing, but the evening had thickening clouds which put an end to stargazing a little earlier than planned.

The event had quite a menu of choices for visitors, including 2 presentations by Galileo impersonator Mike Francis, 2 NASA Ambassador lectures, songs by the 5th grade "Cosmic Choir," 6 laser light shows, 6 planetarium shows, 2 Segways for rides, 35 different types of activities/exhibits, opportunities to visit the Clay Center Observatory and roof deck, and a chance to look through up to 16 daytime and nighttime scopes. Galileo and the planetariums seemed to be among the biggest hits with the children, followed very closely by the Mars robotic arm. However, all the activities saw plenty of visitors of all ages.

Overall, Astronomy Day was a highly successful event. Many families commented to me during the event about how much they enjoyed it, and I have received quite a few e-mails about it, too.

I am very grateful to ATMoB for its partnership and assistance in bringing astronomy education to so many people in celebration

of Astronomy Day. All told, we had 88 presenters, astronomers, and other assistants — thanks to all of you who helped out. Special thanks to Dick Koolish, whose many pictures from Astronomy Day can be found at

http://www.dickkoolish.com/rmk_page/pictures_051610.html

Next year national observance of Astronomy Day falls on May 14th.

Editor: We wish to acknowledge ATMoB members that participated: Kelly Beatty, Bruce Berger, John Briggs, Paul Cicchetti, Ron Dantowitz, Dave Kelly (STM), Dick Koolish, Brian Leacu, John Maher, Haldun Menali, Eileen Myers, Bob Phinney, John Reed, Phil Rounseville, Dave Siegrist, Al Takeda and Bruce Tinkler.

~ Bob Phinney, Clay Center Director and ATMoB member ~



ATMoB telescopes at the Clay Center. Image by Dick Koolish

For Sale . . .

New polypropylene Exporadome Dome Ring. 8-foot diameter, 9 inches high with sockets for rollers.
\$120 new. **Asking \$60. Must Pick up.**

Paul Valleli, 14 Marrett Road, Burlington, MA 01803

valleli@rcn.com

781-272-8946

**July Star Fields DEADLINE
Wednesday, June 30th**

**Email articles to the Secretary at
secretary@atmob.org**

Articles from members are always welcome.

POSTMASTER NOTE: First Class Postage Mailed June 3rd, 2010

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

OBSERVING AND PUBLIC OUTREACH

STAR PARTY COORDINATOR:
Virginia Renchan 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.

- Jun 4 Last Quarter Moon
- Jun 10 Moon 0.6 deg. S. of Pleiades (M-45)
- Jun 12 New Moon
- Jun 19 First Quarter Moon
- Jun 21 Summer Solstice
- Jun 26 Full Moon
- July 4 Last Quarter Moon