



Newsletter of the
Amateur Telescope Makers of Boston
Including the Bond Astronomical Club
Established in 1934
In the Interest of Telescope Making & Using

Vol. 19, No. 1 January 2007

This Month's Meeting...

Thursday, January 11th, 2007 at 8:00 PM
Phillips Auditorium

Harvard-Smithsonian Center for Astrophysics

Parking at CfA is allowed for duration of meeting

This month, "focus-in" on astro-imaging with astrophotographers' Jim Foy of the North Shore Amateur Astronomy Club and John Boudreau of ATMoB. For many amateur astronomers the next logical step beyond visual observing is astrophotography: imaging in detail not only what we can see through the eyepiece, but much fainter detail and brilliant color beyond that visible to the eye. More and more amateurs are undertaking astrophotography and it surely opens a new door to the hobby.

Jim Foy started out in astronomy ten years ago with a pair of binoculars and a sky map. After learning the constellations he purchased a 6" Dob and continued exploring the night skies in search of Messier objects. He joined the Amateur Astronomy Club of Pittsburgh and participated in several star parties. Seven years ago Jim moved to Andover and joined NSACC. He has been the star party coordinator there for five years. Jim has upgraded his equipment which currently includes an Astro-Physics 900 Goto mount, Takahashi FSQ106N and Meade 10" SCT, Webcam and SBIG 2000-XM camera which he uses to acquire some beautiful images.

John, an ATMoB member for over 25 years, has been doing astrophotography since he was a kid. He did film astrophotography up until 2002, when he started using a webcam for planet imaging, and later that year, an ST-10 CCD camera for deep sky work. John does most of his imaging from his backyard observatory in Saugus, unfortunately under strong light-polluted skies. While John sometimes travels to New Hampshire for a few hours of imaging under dark skies, those images taken from back

home in Saugus are stunning. Currently, John's main deep sky work is done with a TEC140 refractor, and a few images have taken with a Takahashi FS60C. He uses a Celestron C11 for webcam imaging of the planets and the C11 sees some limited deep sky work too.

Their experiences should give you ideas on how to get more out of your hobby. Come and hear about some of the fundamentals and techniques of imaging through a telescope: settings, image processing, cameras, filters, planetary imaging, and deep sky. As always, members are invited to bring examples of their work to share with the group.

Please join us for dinner with our speaker at 5:45PM at the Changsho Restaurant located at 1712 Massachusetts Ave. in our fair city, Cambridge, MA.

President's Message...

Happy New Year to ATMoB members, friends and family! I hope the year is a prosperous one for you. We have seen some changes in the club roster with several new members. Welcome all! If you have not already visited the clubhouse, we hope you will attend our New Member's Night planned for this spring.

Hopefully, this month's speakers will inspire some of you, members new and old, to take a hand at astrophotography using the club's C14 currently set up in the Ed Knight Observatory. Check the website for upcoming C14 training sessions and unfolding new plans for our other telescopes and observatories. All members welcome!

On another note, I am very sad to say Dr. Martha Hazen passed away of leukemia on December 23, 2006. Dr. Hazen, curator of the Harvard College Observatory's Photographic Glass Plate Collection for some 40 years, was a personal inspiration to me. Dr. Hazen was kind enough to help with me with a graduate writing project on women in astronomy. She was very pragmatic and matter-of-fact about her early career experiences as a woman in a field dominated by men. Dr. Hazen quietly championed a place for women in science as she deliberately moved past the discrimination she faced to pursue her passion for the stars. Her work preserving the glass plate collection and the work of mostly women researchers like Annie Jump Cannon, Henrietta Leavitt, and "Pickering's girls," even during her so-called retirement, was a labor of love. For insight into a bit of her life see the following link:

http://www.boston.com/news/globe/obituaries/articles/2007/01/06/martha_locke_hazen_at_75_astronomer_found_lost_stars?p1=email_to_a_friend

I should also mention, Bob Naeye, ATMoB member and Sky and Telescope editor will be leaving us at the end of the month. Bob is moving to the DC area in February where he will be working to promote some of NASA's astronomy missions. Bob was always someone you could count on to talk astronomy at area star parties. He is committed to educating students about astronomy. We will really miss his positive energy, and wish him the very, very best on his new adventure. Again, best wishes in the New Year. I hope your skies are clear and starry

~ Virginia Renahan, President ~

Dec. Meeting Minutes . . .

Tal Mentall started the December meeting with the ATMoB holiday tradition of his reading of "Twas the Night Before Christmas" and "The Cremation of Sam McGee".

The December speaker was Dr. Max Tegmark, Associate Professor of Physics at Massachusetts Institute of Technology. In his talk, "The History of Our Universe in One Hour", Dr. Tegmark with the help of his "cosmic flight simulator" shows us the view of the cosmos from our solar neighborhood to the edges of the known universe and from the instant of the Big Bang to the present.

He first started by traveling around the universe. "We can drive as fast as we want... and go for a drive around the neighborhood". He then showed that the galaxies like to clump together. "Gravity is an attractive force. Everything pulls on everything else." Basically as the universe expands, it starts out being uniform, smooth and boring as Dr. Tegmark likes to point out. But, as the universe cools off it starts to get "clumpy" and more interesting. "Before you know it space is teeming with stars, galaxies and clusters and all the structure you see around us."

It has been found that the formation of our Milky Way galaxy was a "messy process" and "is very different from the way that many people envisioned it before." It was formed with a series of galactic mergers. Even today you can see the galaxy cannibalizing the Sagittarius dwarf cluster.

Tegmark then starts to look outward, first passing the stars in our galaxy, then only seeing galaxies and more galaxies and then reaches a time where galaxies have not yet formed. That is the region of transparent hydrogen gas. If you continue to look farther back into time the hydrogen gas is so hot that it turns into a wall of opaque plasma. Hydrogen plasma is visible to the eye, just like the surface of the sun, but since space has been stretched by a factor of a thousand since then, the wavelength of the light is also stretched out by a factor of a thousand. This is why you need a microwave camera to image the plasma.

He then went into an explanation of the Big Bang evidence that "space is obeying the laws of gravity ever since. Expanding, cooling off - it makes a whole series of predictions. Each of which we can test." Dr. Tegmark then cited Olber' paradox and Edwin Hubble's discovery of the expanding universe.

Tegmark started to list some of the evidence for expansion and other confirming measurements such as the 24% helium residue of the universe. His view is that "long gone are the headlines that revolutionary breakthrough. Rather what you do see bolsters standard cosmology. It's

not real big news any more. Rather what you're seeing is one after another the measurements come in and agree with previous things."

The business meeting followed with the standard reports. Secretary (Al Takeda), Treasurer (reported by Virginia Renehan), Clubhouse (Steve Clougherty), Membership (Dan Winchell), Star party (Virginia Renehan)

Virginia announced that UMass Boston has an opening to teach astronomy for the next semester. Ed Ginsberg has asked to post an announcement. If anybody is interested please e-mail Virginia.

Bernie Volz reports that Peter Richardson is working on the ability to perform membership renewals online through to the club website. This is only an option. You can also review your payment history for the past seven years. Basically go to your profile and click on the renewal tab. Bernie is also asking for images for inclusion on various pages of the website. If you have an image that you think could be appropriate for a particular page, e-mail Bernie and let him know.

Virginia read a letter from Elizabeth Wolcott, a student who would like to interview an ATMoB member for her class project. Volunteers were requested for the entire class.

Dick Koolish showed some images from the club work party on December 2.

Howard LeVaux showed some slides from his trip to the Griffith Observatory. Howard used to work at the observatory many years ago.

Bob Naeye reported that Babak Tafreshi from Iran, who gave a talk 2 months ago to the group, will be moving with his wife to the United States. Bob also reported that the new owners of Sky and Telescope, New Track Media, decided to discontinue the publication of the Night Sky magazine. The last edition will be the March/April magazine.

Mario Motta announced details on the extension Trip to the 2009 China eclipse. He also talked about preventing a minor revolt between IDA and the dark sky organization. Mario is also going to be presenting the dark sky bill to the Gloucester city Council on January 9.

Eileen Myers reminded everybody about the ATMoB New Year's party starting at 6:30 on New Year's Eve.

Paul Valleli asked for volunteers to help with the light pollution video with Matt Arsenal, our Eagle Scout candidate. Paul reported on a trip that he and Gary Walker made to Texas to evaluate a 24 inch Riche-Cretian for the Maria Mitchell Observatory. He also reported that the sale was made for the scope, mount, electronics and cameras. He also had some images that he showed the group.

Charlie McDonald announced the Reading star party to be held on Jan. 23.

~Al Takeda, Secretary ~

Clubhouse Report . . .

The December 2nd Work Party #12 allowed our volunteers to clean the west side of tree growth down the road side of the observing field. While this was taking place, the sonotubes were positioned in four freshly cleaned holes, concrete was mixed in the wheelbarrows and four corner supports were finished for the clamshell dome site. The first frosty weather threatened, so Dave P. and crew fashioned four cubic pumpkins illuminated by light bulbs out of rigid foam insulation (to be used later in the near barn). A delicious lunch of home made stew and salad was provided by Eileen M. and crew. Thanks to George P. for leading the tree crew. The first work party of 2007 takes place on Saturday Jan 6 starting at 10AM. The tree debris will be chipped, the near barn interior will be tackled, and some electrical updating is scheduled. Dogs and burgers are on the lunch docket; so come on out and enjoy the predicted warm weather as we start the New Year. Speaking of the new year, another great new years eve party is reported elsewhere in Star Fields. And don't forget the first ATMob Workshop of 2007 at 3pm Saturday after the work party.

I just wanted to drop you a note regarding the great turnout for the observing session which was held on December 16 at the clubhouse. Approximately 22 people attended that night and several who arrived early got their last peek at the comet which was just barely visible low in the western sky. During the evening folks got to look at planetaries in Cygnus and Cepheus, along with bright galaxies in Andromeda. Saturn was peeking up just above the tree line by 11PM, and for those who stayed the extra hour the view was excellent. ~S.C.~

~ John Reed, Steve Clougherty, and Dave Prowten ~ Clubhouse Saturday Schedule

Jan. 13	Shilpa Lawande	John Budreau
Jan. 20	Glenn W Meurer	Steve Mock
Jan. 27	Richard Burrier	Joseph Rothchild
Feb. 3	Dave Prowten + workshop leader	
Feb. 10	Gary Jacobson	Eileen Myers
Feb. 17	Rich Nugent	John Panaswich

Workshop Thank You...

The club would like to extend a big "Thank You" to Phil Rounseville for instructing 9 students at a very successful Newtonian Collimation Workshop on Saturday, January 6th at the clubhouse. After instruction on what to look for, the class went outside and each student had a chance to analyze and correct collimation issues with their scopes and to look at those of the other students. Some of the problems actually turned out to be problems with bent tubes and rusted screws, preventing good collimation. The class learned more about the structure of their scopes than they expected!



Two Upcoming Workshops...

Group Session for Meade DSI Astrophotography Software...

An astrophotography software group session for members who have the Meade Deep Sky Imager DSI Camera will be held on Saturday, February 3rd starting at 4:00 PM at the Tom Britton Clubhouse in Westford. At the session, the group will practice image processing using the Autostar Suite Software that comes with the DSI camera. Attendees will work on images taken previously using the club's C14 and a DSI. Techniques and results will be compared and discussed. Participants should bring their own laptops (including power supply) and the Autostar Suite Software. John Maher will be coordinating the session. Space is LIMITED TO 8 PARTICIPANTS. Use the ATMob website under Events, then Calendar, to reserve a space. Email John with any questions at budman54a@verizon.net. In addition, anyone interested in using the C-14 and DSI to help acquire the images to be used in this session please contact John Maher.

SCT Collimation Workshop

On Saturday, March 3rd Phil Rounseville will provide instruction on how to collimate a Schmidt-Cassegrain telescope. The workshop will begin at 4:00 PM at the Tom Britton Clubhouse in Westford. Due to the size of the clubhouse, and because each attendee will get individual assistance directly after the workshop, class size will be LIMITED TO 12 STUDENTS. To reserve a space you may: reserve through the ATMob website, email Eileen Myers at starleen@charter.net or call Eileen at 978-456-3937. Students should bring their Meade or Celestron Schmidt-Cassegrain telescopes to collimate right after the workshop. Don't forget the rest of your gear and warm clothing.

~ Eileen Myers ~



Welcoming in 2007 at the Clubhouse...



Happy New Year to all ATMoB members and their families! We had a fun time at the clubhouse this New Year's Eve. Everyone brought wonderful food and lots of it, and the enthusiasm was high. The decorations and party hats transformed the rooms and people, and everyone was a good sport and had a good laugh over the gag prizes. An event of this size does not happen by itself. I would like to thank Art Swedlow for vacuuming and cleaning the clubhouse before the party, Art and Al Takeda for setting up tables, Al and John Blomquist for setting up all the decorations, Art for leading the dictionary game, John Reed for shopping and all over help, Paul Cicchetti for giving tours of the observatory and Ed Los for his fiddle music. Thanks go to Anna Hillier who willingly danced Scottish dances with me! Bob Naeye of S & T surprised us all with his news and an impromptu book sale. All early arrivals pitched in to help wherever needed, and many stayed until almost 2 AM to help clean up. Thank you Al for the door prize donations and all of your clever ideas. If I left any names out please excuse me - I was partying too! Due to the threat of an ice storm we did miss a few regulars, but at least 45 individuals attended. Sai Vallabha was particularly missed. If anyone knows of his whereabouts please let one of us know.

~Co-hosts Eileen Myers and Art Swedlow~





Star Parties, Thank You! . . .

Cambridge, Harvard CfA

December 16th Boston public school students participating in the Chandra Astrophysics Institute Community Science project got to look through volunteer telescopes and see some of the objects they had previously seen via computer imaging. These students, over the course of the year, conducted research and analysis of real Chandra data. But visual observing is also an important part of the “astronomy tool kit.” Students were surprised to see with their own eyes those objects they had studied in more abstract terms.

Thank you Ross Barrow-Smith, Nanette Benoit, Dick Koolish, Virginia Renehan, John Sheff and Bruce Tinkler for showing students and parents the night sky. All of you mentioned the good conversation and earnest attitude of students who are now eager to host a star party at their own schools.

~Virginia Renehan~

Astro Trivia...

THE NEW STANDARD COSMOLOGY can be summed up in five statements according to John Gribbin in his latest book:

The Universe we live in emerged from an early epoch of rapid expansion (inflation), then slowed its expansion rate.

The Universe today is flat and its expansion is accelerating.

The irregularities in the Universe today (galaxies, stars, and all the rest including ourselves) result from quantum fluctuations during inflation.

The Universe is made up of roughly 70% dark energy and 30% matter.

The matter in the Universe is made up of roughly seven times more dark matter than ordinary matter, with only 10% of the normal matter (0.4% of the total mass-energy of the Universe) in the form of bright stars.

Neutrinos contribute as much mass, overall, as bright stars.

If you want to read the details, see Gribbin’s clearly written book: *The Origins of the Future*, Yale University Press, 2006.

~ Ted Poulos ~

Membership Report . . .

We have two new members this month:

Anne-Marie Chernosky from Littleton
Jack Richardson from Acton

~ Dan Winchell, Membership Secretary ~

Executive Board Meeting...

There will be an Executive Board Meeting on Tuesday, February 27th, 7PM at the clubhouse in Westford. The meeting is open to the membership.

~ Virginia Renehan ~



New member Julie Kaufmann cuts designs from favorite astronomy t-shirts and sews the patches to this blanket. Julie attached snaps, hooks and pockets, and wears the blanket as a jacket at star parties and other astronomical events.

**February *Star Fields* deadline
Friday, Jan. 26th**

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

POSTMASTER NOTE: First Class Postage Mailed January 8th, 2007

Amateur Telescope Makers of Boston, Inc.
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FIRST CLASS

EXECUTIVE BOARD 2006-2007

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David Prowten (978) 369-1596

HISTORIAN: Anna Hillier (781) 861-8338

OBSERVING: Virgina Renehan (978) 283-0862

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

Jan. 3 Full Moon
Jan. 10 Moon at Apogee
Jan. 11 Last Quarter Moon
Jan. 18 New Moon
Jan. 25 First Quarter Moon