



## 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. 21, No. 3 March 2009

### This Month's Meeting...

Thursday, March 12<sup>th</sup>, 2009 at 8:00 PM  
Phillips Auditorium  
Harvard-Smithsonian Center for Astrophysics  
Parking at CfA is allowed for duration of meeting

The March meeting will feature a Show and Tell. This gathering allows members to talk about their astronomy projects, travels and other tales with the group. Please contact President Steve Beckwith at [president@atmob.org](mailto:president@atmob.org) if you would like to give a 15 - 20 minute presentation.

This meeting also allows members to sell, trade or give away items they no longer need.

Please join us for a pre-meeting dinner discussion at [Changsho, 1712 Mass Ave, Cambridge, MA](http://Changsho, 1712 Mass Ave, Cambridge, MA) at 6:00pm before the meeting.

### President's Message...

I'd like to bring to the membership's attention, the work some ATMoB volunteers have quietly been doing. Work that will benefit the club. Groton and Westford both held town meetings on March 2<sup>nd</sup> and each had an agenda item that involved light pollution. The first, a proposal for the construction of a lighted baseball field in Groton, was attended by Bernie Volz and Bernie Kosicki. Bernie Volz, who maintains a residence in Groton, had a letter read into the meeting minutes that represented the clubs views of the impact of a lighted field and suggestions for mitigating the light-pollution footprint if the ball fields were built.

The second regarded an automobile dealership wishing to build a facility in Westford. It was attended by Kelly Beatty, Gary Jacobson, John Small, Eric Johansson and Glenn Meurer. During the meeting, concern over light trespass was not only conveyed by these members but also by some of the town board members. However, constructive, post-meeting

conversations were held between the dealership representatives and the club members. Decisions on both items are far from resolved. The good news is we're out in front of these projects before anything is finalized and by taking a "work with" rather than a "fight against" position, a positive outcome for all parties is more likely to occur.

Of course this local grass root effort supports the state-wide legislation of a light pollution bill that is currently being driven by Mario Motta and Kelly Beatty

None of this work is glorious, rather, it is tedious, trying and is played out over months and in some cases years. Thank you to all of those mentioned here and all of the others who have been working light pollution issues.

On another note, the club will be establishing a monthly "Kid's Night at the Clubhouse" to be held on the first quarter moon Saturday of each month. This will not be a public event, rather it will be held for the children, grandchildren, etc. of members. They'll be invited to the clubhouse for a few hours to learn about the sky, telescopes and astronomy in general. Virginia Renehan has volunteered to put together a program that will cover varying subjects for the attendees. An email announcement will be going out later this month with more details. All members are encouraged to participate by helping out or by bringing their family members!

Clear Skies, - Steve.

~ *Stephen Beckwith, President* ~

### February Meeting Minutes . . .

The February meeting of the Amateur Telescope Makers of Boston featured Dr. Russell Pinizzotto who spoke about stellar evolution and how it is related to the color of the stars.

Dr. Pinizzotto first projected the Hertzsprung-Russell (H/R) diagram and remarked that it was his favorite picture in that it shows that stars have a lot of different colors that most people that look at the night sky do not realize. The stars can be blue, red, white, orange and yellow.

Pinizzotto paid homage to Annie Jump Cannon whose pioneering work at the CfA on classifying solar spectra and her reorganizing of the sequences to O, B, A, F, G, K, M created the system that astronomers continue to use today.

It was through the work of Annie Jump Cannon, Joseph Stefan and Ludwig Boltzmann (Stefan-Boltzmann law) that allowed Ejnar Hertzsprung and Henry Norris Russell to find that the surface temperatures of stars were related to their luminosity.

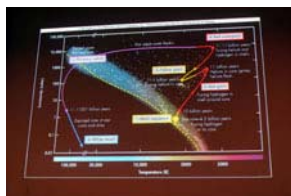
Next he talked about stellar evolution and how "gravity is the magic word of astronomy because it controls everything." Interstellar clouds of hydrogen and helium and other elements from dead stars contract with this force and heat up to form

protostars. When sufficient mass and heat is available, fusion turns on. “Depending on how much stuff the protostar started with determines what the temperature will be when it stabilizes and reaches the main sequence phase. This temperature determines its color.”

The Sun is a small G2-5 main sequence star. It is a stable star fusing hydrogen to helium. “When the hydrogen is almost gone in 5 billion years the outer shell starts getting bigger and the star turns into a red giant. Helium will start to fuse and turns into carbon and releases more energy. This continues down the periodic table until it reaches iron. Iron cannot create a stable fusion reaction and cannot turn into a heavier element to get energy back. The core will be at 15 million degrees and will push off the shell because it is so far away and a planetary nebula will form.” After that the sun stops fusion and becomes a white dwarf.

For massive stars the evolutionary track is the same until it reaches the iron core / red giant stage. At this point gravity is so strong that the core collapses at once and rebounds causing a supernova explosion. Depending on the mass, all that will be left is a neutron star. The colors started from bluish-white to yellow then changed to red and then exploded. If it is super massive it will turn into a black hole and no colors will be visible.

Dr Pinizzotto concluded by saying “now we look at the H/R diagram and hopefully you don’t just say there is just a bunch of stars. There are a bunch of stars that are all in different stages of their life and they are all different sizes and masses and will go through different ends. I think once you understand the science behind anything, especially the science behind a picture like this you can certainly appreciate it a lot more.”



(L-R) Dr. Russell Pinizzotto and the H/R diagram showing our Sun’s future

Al Takeda gave the Secretary’s report on last month’s meeting.

Membership Secretary, Tom McDonagh, reported that there were 6 new and returning members.

Nanette Benoit presented the Treasure’s report. She thanked the membership for the \$3200 donated during this fiscal year (June –May).

Steve Beckwith gave the Observing Committee report. There were 2 classes at the Clubhouse last month. John Maher gave the “How to use your Meade GoTo Telescope”. Rich Nugent also gave a talk on the night sky and constellations. Due to popular demand, both classes will be held again in the near

future. If any member has an idea for seminars or classes please let Steve know about it.

Steve Clougherty gave a quick status on the Clubhouse. A new digital TV converter box was hooked up and working. Thanks to Bernie Kosicki for donating the DTV coupon. A lot of work was also performed on the furnace. Work continues on the near barn workshop. Visitors to the Clubhouse should be advised that because of the thawing temperatures a serious mud problem exists on the rear driveway. The next Work Party will be held on Saturday, March 14<sup>th</sup>.

Steve Beckwith mentioned that the wireless router is now operational at the Clubhouse. This is limited to Club members and a security key is necessary to access the site. Please log in to the [www.atmob.org](http://www.atmob.org) and go to “About ATMoB” and the “ATMoB Clubhouse” and select the “Network link” for the network policy and security key.

John Briggs mentioned that Bert Willard has offered to conduct a Thursday evening “design workshop” with the OSLO optical design and analysis software. It is a freeware for educational purposes and can be found at the Lambda Research Corp web site. If people are interested please contact Steve Beckwith and John Briggs.

#### Upcoming events:

Executive Board meeting – Tues, Feb 17<sup>th</sup>.

A Dark Sky Awareness teleconference – Feb. 19<sup>th</sup>

Clubhouse Work Party – March 14<sup>th</sup>

For additional events visit [www.atmob.org](http://www.atmob.org) and log-in. You must be a member to see those details.

Star Party Coordinator Virginia Renehan asked for more volunteers for the Healy School and Butler School Star Parties. As an added incentive, the Butler School is hosting a Spaghetti dinner for participants. Bernie Kosicki also mentioned that the Acton Town Wide Star Party is on March 2<sup>nd</sup>.

Virginia Renehan also announced that Steve Beckwith will be assisting the Boy Scouts of America with their Merit Badge University / Friends of Harvard and the Boston Minuteman Council. They host a 2 weekend event so that the Scouts can earn their astronomy merit badge. If a member is interesting in helping out please contact Virginia or Steve.

#### Announcements:

John Sheff announced the Cambridge Science Festival on the first weekend in April (3 – 5). He has gotten permission to do some sidewalk astronomy during the first 4 days of the festival.

Kelly Beatty announced that on February 24<sup>th</sup>, the city of Cambridge is beginning an investigation on a light pollution / outdoor lighting regulation. The counselor, Henrieta Davis is going to have a meeting at 5 pm. For details visit the [www.nelpaq.org](http://www.nelpaq.org) website.

Mario Motta reported that through membership efforts, 30 legislatures have agreed to cosponsor (HD 2745) "An Act to Promote Energy Efficient Lighting, Conserve Energy, Regulate Outdoor Night Lighting, and Reduce Light Pollution." The bill still has a long legislative path before it is voted upon. All bills are on a 2 year cycle.

Bob Naeye reported on a new exoplanet discovery called CoRoT-Exo-7b, by a European team using the Convection Rotation and planetary Transits (CoRoT). The planet is the smallest terrestrial planet outside of our solar system, 1.7x the size of Earth, has a 20 hour orbit and has a surface temperature of 1000 – 1500 degrees C. It orbits a K0 type star about 400 light years away.

Gary Walker is thinking about attending the Imaging Conference that is being held 2 days before the NorthEast Astronomical Forum (NEAF) on April 18-19. If you are interested in attending let Gary know.

Joseph Rothchild reminded the members that Comet Lulin is in the morning sky but in a few weeks the comet should attain naked eye visibility. He was able to view it one morning with an 80-mm refractor. It is presently at 7<sup>th</sup> magnitude.

An auction was held for 2 copies of the Five Millennium Catalog of Solar Eclipses donated by Bob Nayeye. The winners were Ken Launie and Mario Motta.

*~ Al Takeda, Secretary ~*

## Clubhouse Report . . .

### February Clubhouse Report

Having just finished shoveling the latest 12 inches snowfall, somehow SNOW is uppermost in our memory as we welcome March onto our calendars. However it was clear and near freezing as our fellow members volunteered their Saturday February 7th to the Clubhouse work session.

Thanks to Bruce Berger, John Blomquist, Anna Briggs, John Briggs, Liz Briggs, Nicholas Briggs, Steve Clougherty, Nina Craven, Mike Hill, Eric Johansson, Dick Koolish, John Maher, Eileen Myers, Carolyn Peterson, Dave Prowten, Art Swedlow, Al Takeda, Sai Vallabha, and Dave Wilbur.

The day's accomplishments follow:

Sheet rock continued to be installed in the near barn workshop room by Bruce B, Mike H., Dave P., Dave W. Several more evening and weekend days were donated to keep this project moving.

Outside the clear weather provided incentive to clear the observing pads once more. John B., John M., Al T., and Steve C. chopped, shoveled, swept, and plowed the snow clear of the observing field.

The newly installed wireless router was reconfigured and relocated by Al T. and Bruce B.

Binding Sky and Telescope magazines continued in the library, and additional binding material was ordered. This project was tackled by Eileen M. and Nina C.

Mirror making was continued by Anna B. following the instructions and demonstrations provided by her father John B.

A collection of Astronomy books was donated to our library by Carolyn Peterson and accepted by Eileen M. Thank you Carolyn.

The lunch of hamburgers, hot dogs, salad, fruit salad with an array of condiments was provided by Eric J. on the grill, and orchestrated by Eileen M., Art S., Nicholas B., and Sai V. Enjoyed by all.

The security guard notification system was activated to alert the folks on the hill of the failure of the water pump off the evaporator room. The problem was subsequently fixed and water was again available for mirror grinding and polishing. We have had remarkably few interruptions in water pumping from the house's cistern.

The next work party or session is scheduled for Saturday March 14th. The weather man will have something to say about when we will start our outside clean up and continue outside projects. Right now MUD season has started so park carefully, and if you are not sure if the ground is solid enough, park along the road and check that the area is safely solid. The situation does change with rising temperatures. An announce message will be posted as we develop confidence in the forecast for the 14th.

## Messier Marathon . . .

The Clubhouse will be hosting a Messier Marathon on two New Moon Saturdays, March 28<sup>th</sup> and April 25<sup>th</sup>.

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



(L-R) Dave Prowten and Glenn Meurer working on the Near Barn Workshop. Image by Al Takeda

## Clubhouse Saturday Schedule

Mar 14	H. Hopkinson, E. Johansson -Workparty	
Mar 21	Bernie Kosicki	Rich Nugent
Mar 28	Steve Clougherty	Steve Mock
Apr 4	Al Takeda	Tom Wolf
Apr 11	John Maher, Art Swedlow - Workparty	
Apr 18	Shilpa Lawande	Nitin Sonawane
Apr 25	John Blomquist	Bill Toomey
May 9	Gary Jacobson	John Small

## Thoreau on Astronomy ...

The ground is thinly covered with crusted snow, through which the dead grass and weeds appear, telling of the nearness of spring. Though snow-crust between me and the moon reflects the moon at a distance, westward it is but a dusky white; only where it is heaped up into a drift, or a steep bank occurs, is the moonlight reflected to me as from a phosphorescent place. I distinguish thus large tracts an eighth of a mile distant in the west, where a steep bank sloping toward the moon occurs, which glow with a white, phosphorescent light, while all the surrounding snow is comparatively dark, as if shaded by the woods. I looked to see if these white tracts in the distant fields corresponded to openings in the woods, and found that they were places where the crystal mirrors were so disposed as to reflect the moon's light to me.

Journal, 7 March 1852

~ Submitted by Tom Calderwood ~

## Alcon 2009 ...

The Alcon 2009 (Astronomical League Convention and Exposition, Fri-Sat, August 7 -8 in Long Island, New York) will be registering this month in March. If you have never gone it would be a good opportunity to go to something on the East Coast as the Astronomical League Convention is seldom here. The web site is <http://www.alcon2009.org/>. Also, Take note in the fact that it is well attended most years. The rooms at the Hofstra University student housing are \$65.00 for one person and the website site says that is for one person and that more than one person will be double that rate. I suggest that you consider other accommodations.

~ Submitted by member Anna Hillier~

## Executive Board Meeting Notes ...

The following decisions were made at the Executive Board meeting on February 17, 2009.

Form a Shop Committee, equip shop with tools and install the electrical system in the workshop.

Establish a Kids Night at the Clubhouse.

Options are being explored to repair or replace C-14 mount.

Define the responsibilities of the Historian and look for a volunteer.

Finishing the New Member Packet.

Place International Year of Astronomy logo on the website.

~ Al Takeda, Secretary ~



John Maher teaching the Meade GoTo class at the Clubhouse.

## Membership Report ...

Membership as of 3/1/2009 - 314 members.

The club is always looking to recruit new members. If you know of any individual that may enjoy the benefits and camaraderie associated with membership, please feel free to invite them to a monthly meeting. You can also forward their contact information to me via the [membership@atmob.org](mailto:membership@atmob.org) address.

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. While the deadline for 2008 charitable donations has past, please consider making a tax-deductible contribution to the club when planning for 2009 and beyond.

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

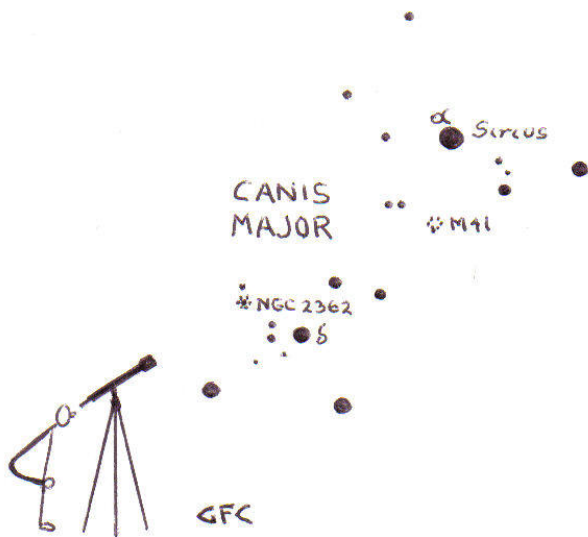
Brian Delaney   Michael Dalterio  
Michael Jasper   John Gallagher  
Salvador Casanas

It is with great sadness I must report the passing on of one of our members. Pat Collins of Belmont joined the club in April of 2008. He was an avid amateur astronomer and especially enjoyed solar observing, as it was the focus of his undergraduate studies at UPenn. I spent many hours observing with Pat over the years and continue to benefit from his enthusiasm for life. He is missed by his many friends and loving family.

<mailto:membership@atmob.org>

~ Tom McDonagh, Membership Secretary ~

## Sky Object of the Month - March 2009 NGC 2362 – Open Cluster in Canis Major . . .



A remarkable, yet little-known open cluster is NGC 2362 which surrounds and includes the star tau Canis Majoris. This neat little stellar gathering is located three degrees east and slightly north of delta Canis Majoris. Observing guides describe NGC 2362 as a 4<sup>th</sup> magnitude object, but this figure is misleading. Much of the cluster's brightness is taken up by tau. The rest of the 40-odd member stars are magnitude 7 to 13, and are concentrated in an area about 6 arc-minutes across. A 5000 light year distance translates to an actual diameter of 9 light years. From this distance our sun would appear as a magnitude 15.5 speck!

What makes NGC 2362 such a visual delight is its appearance in small-aperture scopes. When I look directly at tau with my 3-inch f/10 reflector, I see a handful of tiny stars around it. When I turn my gaze to the side (averted vision) the field fairly explodes with stars. It's an amazing transformation!

Considering the fact that William Herschel was enchanted by the beauty of NGC 2362 and that Sir Patrick Moore recently included it in his Caldwell Catalog as one of the finest non-Messier objects, this cluster deserves your attention. Before Canis Major fades into the sunset, give NGC 2362 a look-see!

Your comments on this column are welcome. E-mail me at [gchaple@hotmail.com](mailto:gchaple@hotmail.com)

~ Submitted by Glenn Chaple ~

## Healy School Star Party Report . . .

It was a very successful event with John Sheff, Bruce Tinkler, Tom Calderwood, Neil Fleming, Tony Flanders and yours truly (Haldun Menali) participating.

There must have been more than 50 students and their parents looking thru our scopes at a diverse list of objects; Venus, M42, Saturn, M45 being just a few of them.

There were astronomy related activities organized indoors by the teachers, where Bruce also displayed many books, a planisphere and his Astroscan, and provided hands-on lessons to the kids. Despite the 34F mercury reading, the skies were clear, albeit light-polluted; the participants enjoyed their first time event. We even got inquiries from teachers in other schools for helping them with similar events, one being a private school in Arlington.

Hope to see you all at the upcoming events!

Clear skies. Haldun

~ Submitted by Haldun Menali ~



Comet Lulin , 28 February 2009 – 11 images stacked, 180 sec each, Imaged using a Takahashi E-180 and a Canon 20D, Chester, VT, Image by AI Takeda

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**April Star Fields DEADLINE  
Saturday, March 28<sup>th</sup>**

**Email articles to AI Takeda at**

**secretary@atmob.org**

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**POSTMASTER NOTE:** First Class Postage Mailed Mar. 9<sup>th</sup>, 2009

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

#### EXECUTIVE BOARD 2008-2009

PRESIDENT: Stephen Beckwith (978) 779-5227  
[president@atmob.org](mailto:president@atmob.org)

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#### COMMITTEES

CLUBHOUSE : John Reed (781) 861-8031  
Steve Clougherty (781) 784-3024  
David Prowten (978) 369-1596

OBSERVING: Stephen Beckwith (978) 779-5227  
Mike Mattei (978) 264-0017  
John Maher (978) 568-1253

#### OBSERVING AND PUBLIC OUTREACH

STAR PARTY COORDINATOR:  
Virginia Renehan [starparty@atmob.org](mailto:starparty@atmob.org)

## How to Find Us... Web Page [www.atmob.org](http://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.

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## Heads Up For The Month . . .

*To calculate Eastern Daylight Time (EDT) from Universal Time (UT) subtract 4 from UT.*

Mar 10 Full Moon  
Mar 18 Last Quarter Moon  
Mar 20 Vernal Equinox  
Mar 26 New Moon  
Apr 2 First Quarter Moon  
Apr 9 Full Moon  
Apr 17 Last Quarter Moon  
Apr 22 Lyrid meteors peak, 10 hrs. UT