



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

Vol. 20, No. 7 July 2008

This Month's Meeting...

Thursday, July 10th, 2008 at 8:00 PM
Phillips Auditorium
Harvard-Smithsonian Center for Astrophysics
Parking at CfA is allowed for duration of meeting

Member Night and Flea Market

In a vote at the June meeting, the membership agreed to have the meeting in July be the Member Night and Flea Market. This gathering allows members to talk about their astronomy projects, travels and other tales with the group.

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

Please join us for a pre-meeting dinner at 5:45PM, at the Chang Sho Restaurant located at 1712 Massachusetts Avenue in our fair city, Cambridge, MA.

President's Message...

This is my twenty-fifth year as an ATM of B – long enough for my hair to grow gray and to watch members' children grow-up, go to college and then start families of their own. The amateur astronomy world has changed quite a bit since I first walked into the clubhouse and was warmly welcomed by Tom Britton, Greg Chase and Bernie Murphy. It now costs less to buy a telescope than it is to make one. The accessories you purchased for your telescope were a DEC drive and maybe a drive control for your RA motor. Astrophotography meant you'd be at the guide scope for upwards of thirty minutes or longer keeping a star centered via a controller in one hand and swatting mosquitoes with another. Oh, and nobody's eyepieces cost more than their telescope.

Now we have CCD cameras that in five minutes time can provide us views of the galaxies that rival those of years past when hours of exposure time was required with film cameras on larger aperture telescopes. Star-hopping has been replaced with Digital Setting Circles and GoTo telescopes, and planetarium software has kept some of our quaint star atlases left on their shelves.

Of course, some things haven't changed. I can go to the monthly meetings and see the same faces I first saw in 1983. This is a comfort to me to know that in these fast times there is some continuity in my life as it moves forward. It also is a source of concern as while I like my old friends, I've often wondered why the majority of the faces are those of people familiar to me. Where are the "newbies"? Sure we have a number of new members join every year and a few of them become extremely active and make valuable contributions to the club.

However, we need more members who have absolutely no idea of what the "old days" were like. Something akin to walking up to a teenager at the mall and showing them an adaptor that went in the hole of a 45rpm record that allowed it to be used on the spindle set-up for an album. We need to catch these "newbies" and keep them. They need not be limited to today's youth, but to any age that brings vigor and vitality to the club. We need their energy, enthusiasm and their ideas.

We need to offer programs that help current members grow their skills – from the beginner learning how to set-up their first telescope to the advanced amateur starting in CCD imaging, etc. We need to learn about and take advantage of the new and wonderful technologies that have brought the worlds of professional and amateur astronomers closer together.

If you've made it this far in the President's Message and you've been keeping count, the word "we" has been used eight times. This is "our club" – yours and mine. All of us need to pull-together to make things happen. We need our experienced members teaching and mentoring those less experienced, we need more people showing up at the clubhouse to build and operate the two new observatories and machine shop. We need new members, their ideas and their excitement of astronomy. It's up to all of us.

Virginia Renahan had a vision for the club and did a wonderful job moving the club in a direction that is both inwardly and externally focused. She established the new member night at the clubhouse, revived the Observing Committee and established the Telescope Advisory Committee that was the cornerstone of establishing how to best use the club's telescopes and directly led to the start of two new observatories. I'd like to give Virginia a big "thank-you" for her leadership, courage and all the hard work (and worrying) she did for the club as both President and Vice President.

~ *Stephen Beckwith, President* ~

June Meeting Minutes . . .

The June meeting of the Amateur Telescope Makers of Boston featured Dr. Alan Marscher of Boston University who gave a talk on “*Jets from Black Holes in Active Galactic Nuclei*”.

Dr. Marscher directed our attention to the active galaxies of 3C120, 3C279 and M87. When one observes these galaxies they look normal with their spiral arms but “its nucleus has emission line gas. It just looks like a galaxy but doesn’t talk like a galaxy.” They are in fact blazars which are active galaxies that have relativistic jets pointing toward us. Blazars are a combination of two classes: the highly variable quasars and BL Lacertae objects.

The center of these galaxies harbors a super massive black hole that is theorized to be up to 100 million to a few billion solar masses. A 10 billion solar mass black hole’s “event horizon could go out to around Saturn’s orbit.” When the material around them is accreting onto themselves it produces an enormous amount of energy. The x-rays produced are changing rapidly and also violently. There are also “clouds that are in a turbulent wind blowing off the accretion disk and those are the clouds that give us the broad emission lines.” The jet is sent out and accelerated out of this region up to 99.9 % of the speed of light.

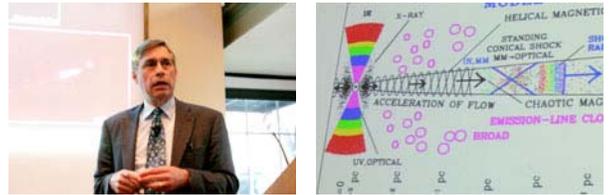
In 2005, 8 active objects were intensely studied with visible light, the Very Long Baseline Array and the Rossi X-ray Timing Explorer satellite. By chance one of the objects that had the most data also was the most interesting. This blazar had produced a double flare. It was during the first flare that the polarization direction had rotated more than 200 degrees. Marscher noted that “theorist had speculated that when the black hole spins, it drags space around itself producing the ergosphere where the magnetic field gets twisted up. This helical magnetic field is threaded in the direction of the rotational poles of the accretion disk of the black hole. Since only a small amount of matter is in the magnetic field, most of the magnetic energy will go into pushing this stuff out away from the black hole region at speeds very close to the speed of light.”

The GLAST mission that was just launched will hopefully add gamma ray light curves to the blazar observations. Dr. Marscher noted that gamma rays contain most of the apparent luminosity that we see from the object. He hopes that “the gamma ray light curves will be detailed enough that we could figure out more of what the jets are like in there.”

Of particular interest to the astronomical community, NASA is now sending out information for amateurs to participate in getting the brightness of these blazars as a function of time. Marscher commented that “you can be part of the excitement of trying to figure out what is going on and he hoped that many of you can become involved.” Mario Motta, ATMob member participating in the GLAST monitoring program, announced

that if you want to help that you should join the AAVSO and join the group.

To finish his talk, Dr. Marscher showed a movie of the blazar Beta Lacertae produced by Dr. Wolfgang Stefan, of the University National of Mexico. After the movie, Marscher entertained the crowd by singing *Superluminal Love* from his album *Cosmic Connection*. To listen to this and other songs by Dr. Marscher go to: <http://www.soundclick.com/cosmosii>



(L-R) Dr. Alan Marscher and a blazar diagram

Virginia Renehan thanked outgoing Executive Board members Gary Jacobson (Treasurer - 5 years), David Siegrist (Membership Secretary) and Bruce Tinkler (Member at Large) for their service to the club.

The Secretary report was given by Al Takeda.

David Siegrist, outgoing Membership Secretary, introduced new members and announced that the membership renewal deadline is approaching. Members can (1) use the on-line PayPal feature (you do not have to have a PayPal account), (2) renew using the website but mail in a check, (3) sign up and pay at the monthly meeting or (4) telephone the Membership Secretary and make other arrangements.

The Treasurer’s report was given by Gary Jacobson. He gave an end of the fiscal year report breakdown on the club’s income and expenditures.

The Clubhouse report was not given.

The slate of officers for the 2008/2009 Executive Board was introduced. Since no other nominations were put forward by the membership, Mario Motta offered a motion to accept the slate of candidates by acclamation. Fred Ward seconded the motion. The candidates were voted in by a unanimous voice vote. See the “New Executive Board” section for the names of the officers.

If anyone is interested in helping out with Project Astro, please contact Virginia.

“Sputnik Mania” opens at the Coolidge Corner on June 13th. Virginia presented 2 tickets to Anna Hillier and Paul Valleli.

Virginia presented the gavel and the Chang Sho Restaurant reservation card to the new President, Steve Beckwith.

Steve thanked Virginia for her 4 years of service as Vice President and then President. Steve then talked about the ongoing projects such as the launch of the Observing Committee, New Membership nights and educational programs

being started as well as the community programs and star parties that were begun under her leadership.

He then talked about where he would like to take the club. He would like to continue to drive the inward focus through the Observing Committee. Steve and Mike Mattei will be hosting a class on how to balance your equatorial mount. Another program will be on how to do photometry and how to do variable star observing with your CCD camera.

Steve would like to keep the club's outward focus by attracting new members and start focusing inwards so that members can develop their skills in astronomy and telescope making.

Bruce Berger announced that Fred Ward has donated a new all-in-one Canon printer, copier and scanner for the Clubhouse. The new Norton's antivirus upgrades have been made to the main and observatory computers in the Clubhouse.

Bruce related his experiences as a speaker at the Beijing University of Aeronautics and Astronautics. He showed some images that were taken at some of his talks. He also donated his homebuilt 4.5 inch refractor to the Beijing Planetarium Outreach program.

Bruce also discussed his upcoming trip to see the August 2008 solar eclipse in China.

Bernie Volz asked the membership if they would be interested in having thumbnail portraits taken at the meeting and uploaded to the website.

Ken Launie talked about and recommended the books Skyscrapers 75th Anniversary and Keep Watching the Skies about the Moonwatch program.

Mario Motta spoke to the membership about the problems in getting legislative sponsorship of the light pollution bill. Mario would like to know if your town has passed a light pollution bill. Send him an email with this information. Mario thanked Virginia for her outreach programs and Bob Naeye's return to *Sky and Telescope*.

Bob Naeye spoke to the membership about his return to *Sky and Telescope* magazine as the Editor in Chief. He asked for all ideas on what kind of material they should be running.

A motion to have a July Membership meeting was voted on and accepted.

Paul Valleli announced that a new book has been written about the life of Maria Mitchell called Among the Stars. The observatory is also celebrating its 100th anniversary.

Paul related the trials and tribulations of moving his new dome onto the top of his observatory building. The wooden crane was unsuccessful but an inclined plane worked. Chase Green showed some images of the construction.

Paul mentioned that Gary Walker, a fellow ATMob member, is working at the Maria Mitchell observatory as an Astronomer and Telescope Engineer. He has replaced the SBIG cameras with Pixis-512 cameras. With this equipment one of his students was able to measure the light curve of an extra-solar planet, TRES-2. It was the first time that one of our members, with a 17-inch RC instrument, was able to achieve this feat.



Dr. Alan Marscher sings the blazar song *Superluminal Love* to the membership

~ Al Takeda, Secretary ~

New Executive Board ...

At the June Annual Meeting the members voted in the following members.

| | |
|-----------------|-----------------|
| President | Steven Beckwith |
| Vice President | Bernie Kosicki |
| Secretary | Al Takeda |
| Treasurer | Nanette Benoit |
| Membership | Tom McDonagh |
| Member at Large | David Prowten |
| Member at Large | Chuck Evans |

Clubhouse Report ...

June 2008 Clubhouse Report

Thursday evening mirror grinding and Friday's astronomy lecture on DVD continued during June. Many thanks to the attendees who picked up and removed the trash after those sessions. Keeping the summer critters (ants and mice) to a minimum is appreciated. Several members mowed the lawn during these extended daylight hours. This contribution keeps the field in good shape for observing.

The monthly full moon work session took place on June 21st. Steve Beckwith and Mike Hill grabbed the gas mowers and John Maher manned the weed whacker. The results really helped keep the bug population at a lower level.

Post hole diggers brought by Brian Maerz and Sergio Simunovic saw repeated action in removing stone and soil as the observatory support sonotube holes were brought to full depth. Al Takeda, Steve Clougherty, Junichi Sano, Steve Beckwith and John Maher contributed muscle to this effort. Dave Prowten leveled, measured and guided the operation. Adding rebar is the next job, then the concrete pour will proceed.

Dave Prowten spent considerable time engineering and milling a fully adjustable aluminum wedge which mates with the existing Boston mount donated by Steve Clougherty. This construction used aluminum castings from the ATMob 1950's workshop output under Ed Knight. Later machining was done by Ken Launie on the stainless steel polar and declination shafts. Additional aluminum stock, donated by Mike Mattei, was used to complete the assembly. It now mates with an aluminum pier also donated by him. Gary Jacobson donated a smaller diameter steel pier which is being held as a back up.

Eileen Myers modified the menu to accommodate her single person culinary effort. A spaghetti & meatball and salad lunch was enjoyed by all.

Anna Hillier continued working in the library and provided additional working volumes of 1950's *Sky and Telescope* magazines. The newly donated laser printer (thanks again Fred) was installed in the meeting room. Eileen started the house cleanup to prepare for the club picnic. Sydney Johnstone repaired one vacuum cleaner when it stopped working and Al Takeda tackled the second when it failed. The clubhouse needs a good vacuum cleaner in good repair. Please call Eileen if you know of an available unit.

Later Mike Mattei provided optical/astronomical consulting and the discussions continued well into the evening. By twilight, favorable weather brought out more than a dozen additional members and guests onto the observing field. As darkness fell every pad on the observing field was occupied. June was an active month at the clubhouse in spite of the rains.

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



Working on the Observatory supports. (L-R) Sergio Simunovic, Dave Prowten, Steve Clougherty, Brian Maerz and John Maher.

Clubhouse Saturday Schedule

| | | |
|---------|------------------------|----------------|
| July 12 | Henry Hopkinson | John Panaswich |
| July 19 | Al Takeda – Work Party | |
| July 26 | Bill Toomey | Tom Wolf |
| Aug 2 | Eric Johansson | Glenn Meurer |
| Aug 9 | Chuck Evans | Mike Hill |

Membership Report . . .

Membership as of 6/22/2008 - 299 members.

Same time last year - 248.

Membership renewal can now be completed on-line using paypal. No paypal account is required.

<http://www.atmob.org/members/person.php?frid=renewals>

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. Consider making a tax-deductible contribution to the club when renewing your membership.

Please take the time to seek out and welcome new club members:

| | |
|----------------|-----------|
| Tom Bergman | Billerica |
| Rick Burwen | Danvers |
| Kate Floyd | Quincy |
| Zachary Folcik | Arlington |
| Joseph Rose | Watertown |

~ *Tom McDonagh – Membership Secretary* ~

Deep Space Mysteries 2009 Calendars for Sale . . .

I will once again have the Kalmbach Publishing calendar (Deep Space Mysteries 2009 Calendar) available for sale for \$8.00/copy. More details about the calendar are at <http://kalmbachcatalog.stores.yahoo.net/68154.html>.

This calendar retails for \$12.99, so this is almost a 40% savings (profit of about \$1.50/calendar will go to the club treasury).

PLEASE HAVE EXACT CHANGE! Or, make checks payable to the Amateur Telescope Makers of Boston, Inc.

I will *NOT* take "reservations". These are for sale ONLY AT THE MEETING. If you'd like one and can't make the meeting, perhaps I'll have some left at future meetings or, better yet, make arrangements with someone going to the meeting to purchase (and deliver) a copy for you.

~ *Bernie Volz*

Mike Matti selected for Walter Scott Houston Award . . .

It is my great pleasure to announce that, by unanimous vote of the NERAL Executive Committee, this year's **Walter Scott Houston Award of the North East Region of the Astronomical League (NERAL)** is being awarded to **Mike Mattei of Littleton, MA** at this year's Stellafane Convention in Springfield, Vermont on Saturday evening, August 2, 2008.

Mike Mattei has been an active observer for many decades and a member of ALPO and AAVSO. He worked at Harvard Observatory's Agassiz Station (now Oak Ridge Obs.), and met his future wife (Dr. Janet Akyuz Mattei 1943 -2004) at AAVSO. He became very active in optics and amateur telescope making, and later went professional, specializing in the fabrication of aspherical optics at Space Optics Research Labs, and Optical Systems and Technology Inc (O.S.T.I.). There he worked on optics for space exploration such as an Ultraviolet Telescope for Goddard Space Flight Center. Eventually Mike was asked to join the staff at Lincoln Labs to work on special Government 'Star Wars' projects using Laser Imaging Optical Radar Systems. He also worked at MIT's Wallace Astrophysical Observatory. He taught courses at University of Hawaii and spoke at local club events. Mike is possibly best known for his hundreds of nights teaching beginners the art and craft of mirror making at the ATMoB workshop in Westford, Massachusetts. He still works full time at Lincoln Labs, and continues to spend his nights searching for Novae for the AAVSO in his home-built observatory.

We are very pleased to give this award to this innovative, self-educated man who took the time to pass on his knowledge to so many amateurs, while he worked alongside many professionals and researchers in astronomy.

Congratulations Mike!

Very sincerely,
Maryann Arrien

Chair: NERAL - The NE Region of the Astronomical League

Summer Double Stars – Draco . . .

A hazy summer evening may prevent you from observing nebulae and galaxies, but it could afford ideal seeing conditions for high power targets like double stars. Draco is a sprawling north circumpolar constellation teeming with double and multiple stars. Using a modest 3-inch f/10 Newtonian reflector, I have observed and sketched over sixty stellar partnerships, including the half dozen presented here. All are found in and around the four-star group that outlines the Dragon's head. (Data from the Washington Double Star Catalog - WDS)

16,17 (StruveI 30) magnitudes 5.4 and 5.5, separation 89.8", Position Angle 196o (2003)

This pretty binocular pair has a surprise for anyone who observes it telescopically. It's actually a triple star! Carefully examine 17 Draconis with high power (120X, or more), and you'll see that it's a close double (Struve 2078; mags 5.4 and 6.4, sep 3.0", P.A. 107o (2003).

mu (Struve 2130) mags 5.7 and 5.7, sep 2.3", P.A. 14o (2004)

Binary (Period = 482 years) Beautiful twin pair that requires 100X or better for a clean split. A showpiece!

Struve 2138 mags 9.0 and 9.4, sep 22.7", P.A. 133o (2004)

To find this faint, but pretty pair, point your telescope about one degree east of mu Draconis.

Struve 2180 mags 8.0 and 8.1, sep 3.0", P.A. 260o (2000)

Like Struve 2138, this is a rarely-observed double that deserves attention. Located about 1.5 degrees south of beta Draconis, Struve 2180 resolves best when viewed with a magnification of 100X or more.

Nu (StruveI 35) mags 4.9 and 4.9, sep 63.4", P. A. 311o (2003)

Faintest of the four stars in the Head of Draco, nu is a noble sight in a low power telescope. 30-60X gives the most dramatic view of these identical white stars.

Struve 2278) mags 7.8 and 8.1, sep 35.9", P.A. 28o (2004)

A faint triple, as the secondary has a close partner (mag 8.5, sep 6.0", P.A. 146o (2004).

~ Glenn Chaple ~

Condolences . . .

We send heartfelt sympathy to ATMoB member Tom Wolf and his wife Pat on the loss of their son Jonathan, aged 19. Although diagnosed with spinal muscular atrophy as a child, Jonathan was able to pursue his interests. He had the devoted support of his family and friends, and a wheelchair to get him around. Jonathan visited the Westford clubhouse many times. The handicapped accessible ramp built for the roof-off roof observatory was built with Jonathan in mind.

Jonathan became an Eagle Scout last year and John and Monique Reed represented ATMoB at the ceremony. Jonathan was a local ambassador for the Muscular Dystrophy Association and a sophomore at Rivier College in Nashua, majoring in psychology and studying marketing, with plans to start his own company. A review of Jonathan's accomplishments was featured on page E14 of the Friday, June 27th issue of *The Boston Globe*. His funeral was attended by hundreds of friends, fellow students and family. This remarkable young man will be missed.

**September Star Fields deadline
Friday, August 29th**

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

POSTMASTER NOTE: First Class Postage Mailed July 8th, 2008

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

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HISTORIAN: Anna Hillier (781) 861-8338

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

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

July 10 First Quarter Moon
July 18 Full Moon
July 25 Last Quarter Moon
July 28 S. Delta Aquarid Meteors peak
Aug 1 New Moon
Aug 8 First Quarter Moon
Aug 12 Perseid Meteors peak