



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. 23, No. 3 March 2011

This Month's Meeting...

**Thursday, March 10th, 2011 at 8:00 PM
Phillips Auditorium**

Harvard-Smithsonian Center for Astrophysics

Parking at the CfA is allowed for the duration of
the meeting.

Viewing the Universe with Infrared Eyes: The Spitzer Space Telescope

The Spitzer Space Telescope, launched in August 2003, is producing an exciting new view of the Universe seen in infrared light, allowing astronomers to see regions of space invisible to optical telescopes. Spitzer's scientific results include the study of the formation and evolution of galaxies in the early Universe, understanding energy sources in ultra-luminous galaxies, the study of star formation and evolution, observations of exoplanets and their atmospheres, and determining the structure and evolution of planetary disks around nearby stars. After a brief description of the Spitzer mission, results from Spitzer's extragalactic and galactic observational programs will be presented, showing many of Spitzer's very spectacular images.

Dr. Giovanni Fazio is presently Senior Physicist, Harvard-Smithsonian Center for Astrophysics; Lecturer, Astronomy Department, Harvard University; and a Faculty Member, International Space University, Strasbourg, France. He received BS (Physics) and BA (Chemistry) degrees from St. Mary's University, Texas, and a Ph.D. (Physics) from the Massachusetts Institute of Technology. Early in his career he pioneered the development of gamma-ray astronomy using balloon-borne telescopes, and ground-based detectors. He then led the development of large balloon-borne telescopes for far-infrared astronomical observations above the atmosphere, as Principal Investigator for the 1-Meter Balloon-Borne Far-Infrared Telescope and also the first infrared astronomical telescope to fly on the Spacelab II flight of the Space Shuttle. In 1984 he was

selected as Principal Investigator for the Infrared Array Camera (IRAC) experiment on the Spitzer Space Telescope, one of NASA's Great Observatories. Dr. Fazio was also a Co-Investigator on the Sub-millimeter Wave Astronomical Satellite. His current research interests include the development of infrared instrumentation and the use of infrared array cameras on ground-based and space telescopes to observe galaxy formation and evolution in the early Universe, ultra-luminous galaxies, star formation and evolution, and brown dwarfs.

Dr. Fazio is a Fellow of the American Physical Society and past chairman of its Astrophysics Division, a Fellow of the American Association for the Advancement of Science (AAAS), and a Fellow of the Royal Astronomical Society. He is a member of the American Astronomical Society and past chairman of its High Energy Astrophysics Division, and is a member of numerous other scientific organizations. Dr. Fazio has received a number of special awards: five NASA Group Achievement Awards; Russia's Tsiolkovsky Medal; the UNICO National Marconi Science Medal; the NASA Public Service Medal; the Royal Society of London/COSPAR Massey Award (Gold Medal); the Smithsonian Institution Secretary's Distinguished Research Lecture Award; and the Astronomical Society of the Pacific's Muhlman Award to the Spitzer Space Telescope Team.

President's message...

There were four different members' presentations at the February meeting that showed the breadth and depth of our members' activities in astronomy. Two described astronomy related travel: Mario Motta with a retrospective trip to Italy to visit his hometown and also several astronomies in the area; and Bernie Volz with a look-ahead to the eclipse trip to Australia that he and Mario will lead in 2012. Five years ago, a random conversation with a member led me to jump aboard an earlier eclipse trip to Egypt, just as the train was about to leave the station. Bernie's talk brought back fond memories of that great event. That was my first truly clear view of a solar eclipse, and I'll never forget it. Without that chance talk with a fellow member, I would have completely missed this wonderful event.

Mike Hill spoke of the history and motivation behind our newly renovated shop area at the Westford clubhouse. For those who missed his presentation, we members now have the benefit of a real shop area that is well equipped, clean and orderly. And just as important, there are expert machinists-members who are able and willing to give instructions to novices like me who are trying to learn how to use these tools and finish a small project. Then several members of our observatory committee, Glenn Chaple, Neil Fleming and Bruce Berger, finished up the series with an announcement and description of a new program designed to encourage us to get out and look at objects we otherwise might miss. There will be awards for members who observe a prescribed set of objects- different awards for different types of target objects. These awards can give us a little extra motivation, challenge and guidance to get out in the field and look. I'm looking forward to start working on observing and learning about these target lists- especially the double stars, which are targets I don't know much about.

So whether your interests lie in astronomy related travel,

experiencing solar eclipses, telescope making or learning how and what to observe, there are lots of opportunities in our club for members to take advantage of. I hope you'll join me and other members to try out some new activities that maybe wouldn't otherwise have tried.

Keep looking up,

~ *Bernie Kosicki, President* ~

February Meeting Minutes . . .

Member Presentations Night

The January meeting of the Amateur Telescope Makers of Boston featured Mario Motto speaking about his visit to Italian Observatories, Mike Hill speaking about the new ATMoB workshop, Neil Fleming, Bruce Berger, and Glen Chapple speaking about the new ATMoB Observing Awards Program, and Bernie Volz speaking about his scouting trip to Australia for the November 13/14, 2012 Solar Eclipse. The meeting was called to order at 8:06pm.

Mario Motta: "Italian Observatories"

Mario shared with us a number of pictures from his visit in September to Sicily.

Mario described his visit to several historic sites including the Greek/Roman theater at Taormina, the Greek temple at Segesta, the Vatican. His visit was highlighted by a tour of the Serra la Nave (Monte Etna) M.G. Fracastoro Observing Station, part of the Catania Astrophysical Observatory (<http://sln.oact.inaf.it/index.php/en/overview/facilities.html>). The volcano on which the observatory located is currently active and about 15 years ago, a lava flow came to within 100 feet of the observatory. Mario described his tour by Director Dr. Leto, including the 3 32" robotic telescopes (sound familiar?) and the 36" telescope. Sicily has a long and distinguished history in astronomy including solar and radio astronomy. A final observatory picture showed Monte Mario Observatory in Rome. This was the prime meridian for maps of Italy.

Mario also visited the town and house he was born in. The town, Canicattini Bagni is south of Catania and west of Siracusa near the southern end of the island. The population is about 7,400. When he visited the house, he was immediately invited in and asked to stay while some friends, what seemed like the whole town, came to visit. The ironic thing about the current occupant of the house, is that he is a cardiologist and he was born in Medford, MA. There is also an outpost of a radio astronomy group near the town (not open during Mario's visit). Mario visited museums in the area with human history going back 30,000 years to the stone age through the Greeks (5,000BC). Mario also showed pictures indicating the popularity of his family name.

Mario concluded with some new images from his observatory, including the Horse Head Nebula (Bernard 33), M1 (Crab Nebula), M81 (Bode's Galaxy), NGC 891 (Caldwell 23), and Abell 2157(?) galaxy cluster in Hercules. He included a picture of Steve O'meara's back yard in Hawaii with the glow of the

volcano lava in the background and the cover of Steve's new book with Mario's images.

Mike Hill: "The New ATMoB Workshop" Building for the future of Telescope Making

Mike Hill reviewed the project to create a new and larger workshop for the club. Mike reminded us that ATMoB has a long and distinguished history of telescope making. This began at Harvard University, through the years in various member's basements, and finally for the last 15 years or so at the clubhouse in Westford. The project to move to the new workshop began about 2002. In order to retain some of the history and character of the 1700s farmhouse, some of the existing beams were left exposed in the new walls. A lot of work went into upgrading, framing, sheet rocking and painting the new walls. The old 4-holer was also upgraded and converted to a tool crib storage area with specially reinforced floor. With the quality of the new insulation for the room, the work shop is now actually the warmest and coolest room in the whole place! The new workshop is a great asset to the club. Come make use of it!

Various people's contributions include: Dave Prowten's work on the ceiling reinforcement and the new stairs; John Reed, concrete work; John Small, electrical upgrades and installation of lighting and outlets; Dave, Glenn, Mike, creation of the workbench; Al Tekeda, band saw; Bruce Berger, table saw, tool chest, sander and many other tools; Mike Hill, lathe; John Blomquist, measuring tools, shop vac, hand tools; Fred Ward, cordless power tools; Tom Calderwood, hole set; Fred Montague, tools. Fred Ward and others donated money towards the effort to the level of \$800. Many others contributed to this effort. For the overall list of who helped out, just read back through the newsletters especially over the last 2 years.

Neil Fleming, Bruce Berger, Glenn Chapple: "ATMoB Observing Awards Program"

The Observing Committee is starting an "Observing Awards Program" to promote observing among the membership of the Amateur Telescope Makers of Boston. Initially, we're starting with 5 general areas for the awards: Messier Marathon, Double Stars, Galaxies, Globular Clusters, Open Clusters. For each category, there will be three levels of awards, each increasing in difficulty to attain: Beginner, Intermediate, Master. There will be certificates awarded for each of the five categories, with additional endorsements for each level attained. For each category, there are; instruction sheets, a catalog of objects, and a worksheet for recording your observations. Participants must be a current member of the Amateur Telescope Makers of Boston. Observing may be done from any location; you're not confined to the ATMoB Clubhouse. For each award category, there is a worksheet to be used to record your observations, and another to record your drawings (when required). The use of the Star-hop method to locate each object is recommended, but not mandatory. To qualify for your Observing Award Certificate, turn in your worksheet and drawings to an ATMoB Observing Committee member or observing@atmob.org.

Messier Marathon Awards

The Messier Marathon is a great way to test and hone your observing skills. Conditions are most ideal in March, when the

sun occupies a part of the sky devoid of Messier objects. Stay tuned for the exact date. Award Levels: Beginner: Observe and record information on 25 Messier objects in Messier Marathon worksheet, Intermediate: Observe and record information on 50 Messier objects in Messier Marathon worksheet, Master: Observe and record information on 80 or more Messier objects in Messier Marathon worksheet.

Double Star Awards

Double, triple, and multiple stars are the “Rodney Dangerfields” of the night sky. They “don’t get no respect!” That’s unfortunate, because double stars like the gold and blue Albireo in Cygnus or the pure-white twin pair gamma (γ) Arietis rank among the loveliest of celestial sights. The ATMoB double star list is comprised of 218 of the finest double stars visible from mid-northerly latitudes. All are brighter than 6th magnitude and most are readily split with telescopes with apertures as small as 3-4 inches and magnifying powers between 75-150x. This award category, unlike the Messier Marathon, can be worked on during all times of the year (like all of the remaining awards). There is no set date or place for observing. A good number of objects can be seen during any observing session, and you can incrementally add to your total during the year. The information required on your worksheet includes: Position Angle of the secondary (relative to the primary), Notes on respective colors or any unusual attributes. A rough drawing of the stars in the FOV. Award Levels: Beginner: Observe and record information on 15 objects in the worksheet, including a rough drawing of the stars in the FOV for each object, Intermediate: Observe and record information on 25 objects in the worksheet, including a rough drawing of the stars in the FOV for each object, Master: Observe and record information on 50 or more objects in the worksheet, including a rough drawing of the stars in the FOV for each object.

Galaxy Awards

This awards program is oriented towards visually observing galaxies above magnitude 10.5. There are a total of 159 galaxies on our list. Award Levels: Beginner: Observe and record information on 15 galaxies in the worksheet. Include a rough sketch of 10 of those observations, including the apparent galaxy outline and the brighter stars in the field of view, Intermediate: Observe and record information on 30 galaxies in the worksheet. Include a rough sketch of 20 of those observations, Master: Observe and record information on 60 galaxies in the worksheet. Include a rough sketch of 40 of those observations. The information required on your worksheet includes: Hubble Sequence Classification. A rough drawing of the outline of the galaxy, and the brighter stars in the FOV

Globular Cluster Awards

This awards program is oriented towards visually observing globular clusters above magnitude 10.9. There are a total of 61 globular clusters on our list. Award Levels: Beginner: Observe and record information on 10 globular clusters in the worksheet. Include a rough sketch of 8 of those observations, including the apparent globular cluster outline and the brighter stars in the field of view, Intermediate: Observe and record information on 25 globular clusters in the worksheet. Include a rough sketch of 15 of those observations, Master: Observe and record information on 50 globular clusters in the worksheet. Include a rough sketch of 30 of those observations. The information required on your

worksheet includes: Shapely-Sawyer Classification. A rough drawing of the outline of the globular cluster, and the brighter stars in the FOV.

Open Cluster Awards

This awards program is oriented towards visually observing open clusters above magnitude 9.9. There are a total of 265 open clusters on our list. Award Levels: Beginner: Observe and record information on 25 open clusters in the worksheet. Include a rough sketch of 5 of those observations, including the apparent open cluster outline and the brighter stars in the field of view, Intermediate: Observe and record information on 50 open clusters in the worksheet. Include a rough sketch of 10 of those observations, Master: Observe and record information on 100 open clusters in the worksheet. Include a rough sketch of 20 of those observations. The information required on your worksheet includes: Trumpler Classification. A rough drawing of the outline of the galaxy, and the brighter stars in the FOV

Working Documents

For each challenge category, there are three working documents: Instruction sheet, List / Catalog / Worksheet for recording your observations, A document that can be used to record your drawings (not applicable for the Messier Marathon). They are all available in two formats: Excel and PDF. The Excel spreadsheet has active functions which will assist in preparing for and obtaining the award. They will all be made available on the ATMoB web site.

Bernie Volz: “Total Solar Eclipse Trip Update”

ATMoB Australia Trip, November 2012

Bernie visited Cairns in November 2010 to scout out the situation for the ATMoB Solar Eclipse Trip to Australia in 2012.

The Observing site at the Hilton is on the hotel property, easy access. The Hilton is checking if we can have a roped off area. Power will be available. Continental breakfast will be provided. There is an additional property next to the Hilton that might be available. Observing conditions: From Nov 13-18, 50% of the mornings were good, the morning of Nov 14th, 2010 was mostly clear (some haze). Everyone was saying the weather was unusual cloudy and wet. Horizon is about 6°; sun visible by 6 AM. Totality starts at 6:38 AM with Sun at 14°. The view from the hotel rooms will face the eclipse. It might be possible to observe from the small balconies that are part of each room. Polar alignment will need to be done by the drift method. The alternate site is a campground about 5 miles before Mount Carbine at Buster Downs. It is about a 2-hour drive from Cairns. It is well organized by the owner. Bathrooms will be available. Food/drinks (for purchase) will be available. Everyone will be required to sign liability waiver. Eclipse time about 3 seconds longer. The choice will be a last minute call based on the weather charts immediately before the eclipse. Be prepared to be up at midnight, and at the observing site at 3am.

Hilton Hotel Notes: It is located downtown by wharf. It has nice views and lots of boat traffic. It is about 10 minutes from airport. There is a Woolworth’s supermarket 3 blocks away. There are hairdryers in room. There is exercise equipment and a great pool. There is wired and wireless internet but somewhat expensive

(\$29 AUS/day). The rooms a bit small but have balconies (which will face water/eclipse). There is a wedding chapel. There is a small activities desk.

Cairns Notes: There are lots of places to eat. To save money, eat dinner early. Bernie tried lots of places and had all good meals. There are lots of activities. Plan on ~\$150 AUS for full day trips. There are lots of places to sign up and get information about activities. It might be smart to plan activities ahead of time. It is easy walking all around down town Cairns. There is plenty of shopping, lots of tourist shops and even a big mall. There are even publically available gas grills available in the park.

The Next Steps: 2nd payment due by May 31st (\$400/pp). Plan your (extended) trip. Book flights in late Dec./early Jan. *You cannot purchase earlier than 330 days before return flight.* The final payment is due Jan. 31st, 2012 (total ATMoB part of the trip costs \$1100). There is 1 opening (female shared room). We will be starting waitlist (in case of cancellations). We might be able to add a few rooms. It is time for the group to begin discussing the extended trip options. The web site for trip is <http://www.atmob.org/events/travel.php>.

Eclipse links:

<http://eclipse.gsfc.nasa.gov/SEgoogle/SEgoogle2001/SE2012Nov13Tgoogle.html>

<http://eclipse.gsfc.nasa.gov/SEplot/SEplot2001/SE2012Nov13T.GIF>

January ATMoB Business Meeting: (9:25pm)

Bruce Tinkler provided the Secretary's Report.

Bernie Kosicki provided the Treasurer's Report forwarded by Nanette Benoit. Bernie also noted that the year is going by quickly and that the clubhouse and observing committees have not spent much of their budgeted funds. He encouraged all groups with budgets to try to spend their funds more evenly throughout the year. Bernie announced that Nanette has had a successful knee replacement operation. She is doing well, working hard, and is having no issues with recovery.

Tom McDonagh provided the Membership Report. He indicated he is happy to help with any membership issues. As always, the club has a lot to offer and provides great opportunities. He also reminded members to call him immediately if there are any missed subscription issues, so that can be promptly resolved.

Bruce Berger provided the Observing Committee Report. Bruce had the opportunity to observe an occultation. It was 5 degrees F when he made the observation but he noted that warmer weather is on the way. Bruce also mentioned how warm with was during his trip to Florida and that he has joined the Astronomical Society of the Palm Beaches (<http://www.palmbeachastro.org/>). Bruce also noted that the problems with the roll off roof at the clubhouse have been resolved.

Steve Clougherty provided the Clubhouse Report. He indicated John Reed's report in the newsletter provides all the details of the

last work party. A contractor has removed the snow from the observing field. The next work party will be February 19th and to include things such as snow removal, telescope room, basement, pump room, windows and floors.

March Messier Marathon will be announced by email. The current schedule is for Steve to lead the Friday, March 4th session and Glenn Chapple to lead the Saturday, March 5th session. Members are welcome to attend either session or even to come early to one and stay late for the other. There will be another Messier Marathon in the fall.

Club Events and Announcements were given by Bernie Kosicki:

Feb 16	Chenery Star Party, Belmont
Feb 18~Jul 29	Astronomy Course "Understanding the Universe", Westford Clubhouse
Feb 19	Clubhouse Work Party
Feb 25	Youth Astr. Apprenticeship Star Party, UMass Boston Harbor Campus
Feb 28	Acton Star Party, Acton (cloud dates March 1, 2, 3)
Mar 7	Healey School Star Party, Somerville 02145
Mar 10	ATMoB Club Meeting, Harvard University, Cambridge
Mar 17	Veritas Christian Academy, Wayland
Apr 11	Lexington Public School Star Party, Lexington
May 1	Urban Astronomy in Cambridge, Cambridge City Hall
May 21-26	AAS & AAVSO Joint Meeting (See below)

Ross Barros-Smith announced details of the Youth Astronomy Apprenticeship Star Party.

Mario Motta expressed appreciation to all those who contacted their local government representatives concerning the light pollution bill. Many were contacted and several committed to be co-sponsors. Please continue to support this effort as the bill moves through the committees. Mario also indicated that he will be giving a talk on the medical effects of light pollution at the Northeast Astronomy Forum April 16-17th 2011 (<http://www.rocklandastronomy.com/NEAF/index.html>).

There will be a joint meeting of the American Astronomical Society and the AAVSO, May 21-26th. There will be a special reduced rate for AAVSO members which means this is a good opportunity to join the AAVSO. You can find additional details at <http://www.aavso.org/100th-spring-meeting-aavso> and registration is at the AAS website <http://aas.org/meetings/aas218/aavso>. Note: Rates go up after April 15th.

Mario's observatory will be featured in the May, 2011, Sky & Telescope Magazine.

Bernie Kosicki was featured Feb 9th in a local online article entitled "Acton astronomer keeps looking up." You can read the article at <http://www.wickedlocal.com/boxborough/features/x1111634156/Acton-astronomer-keeps-looking-up#axzz1F65Ch4H0>.

Kelly Beatty announced that the Globe at Night sky brightness observing campaign will be Feb 21st through Mar 6th. The observations made and submitted for our area will be used in support of the light pollution bill. Kelly encouraged members to go out and make observations from several locations to assist in this effort. Given the number of astronomers in the local area, our participation in this effort in the past has been disappointing. The process is simple and takes about 20 minutes per location. Kelly challenged us to make 3 observations from widely spaced locations in your community. All the information you need is at <http://www.globeatnight.org/>. Clear (dark) skies!

Kelly also announced that this year's Astronomy Day activities would be on Saturday, May 14th. As usual, this even is co-sponsored by the Clay Center Observatory in Brookline and ATMoB and welcomes and encourages member participation. In 2010, attendance topped 1500 visitors!! Kelly is in the process of trying to find sponsors and donors for higher quality door prizes, particularly a nice telescope. Any help in this area would be appreciated. Information and volunteer sign up: <http://www.dexter-southfield.org/podium/default.aspx?t=119788&rc=0>. Outside activities, including rocket launches, kite flying and solar telescopes will begin at 4:00pm. Inside activities this year will run from 5:00pm to 8:30pm with observing continuing until 10pm.

Refreshments were provided by Bernie Kosicki. Meeting adjourned 9:44pm.

~ **Bruce Tinkler, Secretary** ~

Clubhouse Report . . .

Snow and cold weather has been the driving force behind all activities this winter. The help during snow removal on Feb 5 given by Wayne Legacy using his 20ft bucket front end loader cleared the observing field, widened the driveway, and moved all the snow berms over and beyond the old perimeter left by blower and small vehicle plowing. The two days of 50 degree temperatures this past week melted the ice from the observing pads in the field; it also packed all snow mounds into ice and snow mounds. Thursday evening grinding, Friday nite astronomy class, and Saturday nite observing has continued. The February Work Party took place on the full moon Saturday Feb 19th. The weather remained cloudy with temps in the mid-thirties. This effort was possible by 16 members contributing their Saturday to our clubhouse projects: J. Ashenberg, B. Berger, J. Blomquist, P. Cicchetti, S. Clougherty, N. Craven, J. Maher, M. Mattei, E. Myers, D. Prowten, J. Reed, A. Swedlow, A. Takeda, W. Toomey, D. Wilbur, and S. Vallabha.

The snow and ice problem was studied early by Joshua A., Dave W., and Bill T.; snow shovels were chosen to clear the covered observing pads and frozen ice areas. Joined by John M. and John B. the Knight Observatory was accessed while Steve C. and Sai V. cleared the remaining ice from the 17" Wray Dobsonian hutch pad. Afterward Bill T. cleared a path from the driveway to the rear door of the near barn and the sidewalk along the barn rear wall; and continued through to the last covered observing pad. Thanks to Paul C. for getting the blower going. We should be in good shape for the Messier Marathon. Paul C., John B. and Bruce

B. checked the measures used in making the construction drawings for the spring Home Dome Observatory project. Dave P. had set up shop on the side porch and finished the conversion of telescope room windows into bulletin boards; then scraped the urethaned floor finish smooth to receive the final coat. This was applied by Dave after lunch.

Meanwhile the required alchemy to produce the BaileyHillSpaghettiSauce took place in the kitchen by John R. and Sai V. and bubbled in the crock pots in the grinding room; where Sai created his famous salad and garlic bread. Once the pasta was cooked, the repast was set up with help from Art S. and Eileen M.; the required cleanup was handled by Nina C. and Eileen M. Then Eileen M. was seen leading the general cleanup and sanitizing of the rear rooms and outhouse area. Dave checked the drying floor urethane coat and found that all activity had to cease until it had cured again for several days. Al T., John M., Nina C. and John B. accomplished some electronic testing of a suspect power supply. Tools were cleaned and stored, and exterior doors were secured. Paul C., Dave W., and John R. conferred on the french drain basement project and Paul hand constructed a fixture for marking the gravity drain pipe to receive the floor drain inlet pipe. Steve C., Dave W., and Al T. checked Tal's donated 10", adjusted gear spacing, and will have it available for Messier Marathon hand tracking use. Phil Rounseville and Brian Leceau took over Saturday nite duty and as wind and clouds increased, movies were provided by John M.

The next work session is scheduled for Saturday March 19th at 10AM. Come on up and join us in our monthly effort to make it a better center for our astronomical activities.

~ **Clubhouse Committee Chairs** ~

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

Clubhouse Saturday Schedule

March 12	Budreau & Burrier
March 19	CLOSED Work Party #3
March 26	Swedlow & Vallabha
April 2	Hopkinson & Wolf Messier Marathon
April 9	Paquin & Prowten
April 16	Siegrist & Sonowane
April 23	Takeda & Toomey Work Party #4
April 30	Maher & McDonagh

Thoreau on Astronomy . . .

But perhaps those patches of emerald sky, sky just tinged with green, which we sometimes see, far in the horizon or near it, are produced in the same way as I thought the green ice was, -some yellow glow reflected from a cloud mingled with the blue of the atmosphere.

Journal, 8 March 1859

~ **Submitted by Tom Calderwood** ~

Membership Report . . .

Membership count as of 2/21/2011- 282
Same time last year – 316
Our most far-flung member is Julio Vannini hailing from Nicaragua, CA.

Over the past month a number of folks have asked questions regarding the club policies and bylaws. Point your browser to the address below for information on club bylaws and clubhouse related policies including red-light etiquette and green laser safety.

<http://www.atmob.org/library/policies.php>

The Amateur Telescope Makers of Boston, Inc. is a 501(c)3 organization. Donations are gladly accepted and are tax deductible to the fullest extent allowed by law. Consider making a tax-deductible contribution to the club today.

Donations made to the Clubhouse Fund help to defray the cost of special projects such as the installation the clamshell to house our 8" Tanguay Dall-Kirkham telescope. This instrument and all of the telescopes housed at the clubhouse are available for use by all members.

Check out the January 2009 issue of Starfields for a photo of the clamshell/telescope setup and some of the folks that helped make the project a reality.

<http://www.atmob.org/library/clubnewsletters.php>

Please seek out and welcome our new and returning members:

Paul Lindenfelzer James Bosco Mark Bautz

Feel free to contact me with any questions regarding your club!

~ *Tom McDonagh, Membership Secretary* ~

Atmob's New Observing Awards Program . . .

ATMoB's New Observing Awards Program

The Observing Committee is starting an "Observing Awards Program" to promote observing among the membership of the Amateur Telescope Makers of Boston.

Initially, we're starting with 5 general areas for the awards:

- Messier Marathon
- Double Stars
- Galaxies
- Globular Clusters
- Open Clusters

For each category, there will be three levels of awards, each increasing in difficulty to attain:

- Beginner

- Intermediate
- Master

There will be certificates awarded for each of the five categories, with additional recognition for each level attained (we're still considering this). For each category, there are; instruction sheets, a catalog of objects, and a worksheet for recording your observations.

This is a NEW program - feedback is welcome!

Here are the rules:

- Participant must be a current member of the Amateur Telescope Makers of Boston
- Observing may be done from any location; you're not confined to the ATMoB Clubhouse (...except for the Messier Marathon, which is done at the Clubhouse on a specific date)
- For each award category, there is a worksheet to be used to record your observations, and another to record your drawings (when required)
- The use of the Star-hop method to locate each object is recommended, but not mandatory
- To qualify for your Observing Award Certificate, turn in your worksheet and drawings to an ATMoB Observing Committee member or observing@atmob.org

Messier Marathon:

This is a great way to test and hone your observing skills. Conditions are most ideal in March, when the sun occupies a part of the sky devoid of Messier objects. The ATMoB Messier Marathon will be held on March 4th. Weather dates will be March 5th or April 1st or 2nd.

Double Stars:

Double, triple, and multiple stars are the "Rodney Dangerfields" of the night sky. They "don't get no respect!" That's unfortunate, because double stars like the gold and blue Albireo in Cygnus or the pure-white twin pair gamma (γ) Arietis rank among the loveliest of celestial sights. The ATMoB double star list is comprised of 218 of the finest double stars visible from mid-northerly latitudes. All are brighter than 6th magnitude and most are readily split with telescopes with apertures as small as 3-4 inches and magnifying powers between 75-150x. The information required on your submission worksheet includes:

- Position Angle of the secondary (relative to the primary)
- Notes on respective colors or any unusual attributes
- A rough drawing of the stars in the FOV

Galaxies:

This awards program is oriented towards visually observing galaxies. There are a total of 159 galaxies on our list, all above magnitude 10.5. The information required on your submission worksheet includes:

- Hubble Sequence Classification
- A rough drawing of the outline of the galaxy, and the brighter stars in the FOV

Globular Clusters:

This awards program is oriented towards visually observing

globular clusters above magnitude 10.9. There are a total of 61 globular clusters on our list meeting that criterion that are visible from our northern latitudes. The information required includes:

- Shapely-Sawyer Classification
- A rough drawing of the outline of the globular cluster, and the brighter stars in the FOV

Open Clusters:

This awards program is oriented towards visually observing open clusters above magnitude 9.9, of which there are a total of 265 on our list. The information required includes:

- Trumpler Classification
- A rough drawing of the outline of the galaxy, and the brighter stars in the FOV

For each challenge category, there are three working documents:

- Instruction sheet
- List / Catalog / Worksheet for recording your observations
- A document that can be used to record your drawings (not applicable for the Messier Marathon)

They are all available in two formats:

- Excel
- PDF

For further information, see the details in <http://atmob.org/about/observing/awards/awards.php>.

~ **The Observing Committee** ~

Sky Object of the Month

Alpha (α) Geminorum (Castor)

Are you looking for something new and different to add to your late winter/early spring star party repertoire – a cosmic showpiece guaranteed to elicit a gasp of surprise and wonder from anyone who peers into your telescope? I suggest the double star alpha (α) Geminorum, better known as Castor. One glance at these sparkling magnitude 2.0 and 2.9 diamonds and it's easy to understand why William Herschel's son, John, considered Castor the finest double star in the northern sky.

Castor's duplicity was discovered by the English astronomers Bradley and Pound in 1718, although evidence exists that it may have been observed by Cassini forty years earlier. Based on his own observations and those of other astronomers in previous decades, William Herschel announced in 1803 that Castor was, in fact, a true binary system and not a chance alignment of widely separated stars. Castor A (the brighter component) and Castor B (the companion) have yet to undergo a complete orbit since their discovery, but calculations point towards an orbital period of 467 years.

At the time of its discovery, Castor was an easily-resolved pair separated by a comfortable 4 arc-seconds. Throughout the 19th century and early decades of the 20th, it remained a readily accessible small-scope target. But as the pair approached periastron (the point in a binary orbit when the

stars are closest together), they became harder and harder to split. By the mid-1960s, Castor had dropped off the backyard astronomer's radar. Since then, however, Castor A and B have rapidly separated. Today, the two are nearly 5 arc-seconds apart – once again an easy split for the smallest of telescopes.

The sight of this binary pair is so spell-binding that the observer may fail to notice a 9th magnitude companion 73 arc-seconds away. Though distant both in angular and physical separation (100 billion miles), Castor C is nonetheless gravitationally bound to the main pair, orbiting them in a period that probably exceeds 10,000 years.

There's more! Spectroscopic studies reveal that each of Castor's components is a tight binary pair. Castor A and B are both comprised of almost identical A-type main sequence stars with orbital periods of 9.2 days and 2.9 days, respectively. C is also a binary twin set, this time made up of low-mass red dwarfs locked in a 19.5-hour orbit. What the unaided eye sees as a single star is actually a triplet of twins!

Besides its value as a "wow" object, there's another good reason for adding Castor to your star party repertoire. Bright double stars aren't as adversely affected by haze or light-polluted skies as are deep-sky objects like nebulae and galaxies. Can't get out to your dark-sky observing site in the country? No problem! Castor is waiting for you.

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

Brian Marsden's Memorial...

Brian Geoffrey Marsden August 5, 1937 - November 18, 2010
Hancock United Church of Christ, January 16, 2011.

I was able to attend the memorial service with Carl Hein and Dick Koolish. The Hancock Church in Lexington, Mass was filled with people and Mrs. Marsden welcomed all those who attended. A delightful mix of people and speakers which brought smiles and loving remembrances.

The after service of food, drinks and desserts made a nice ending where all 3 of us found others to exchange and discuss our interactions with Brian Marsden.

I have a copy of the Order of Worship and the service was recorded by the local media group. I left my name in hopes that I could get a copy for our archives.

Best, Anna Sudaric Hillier, Working Group of the Amateur Telescope Makers of Boston for the Preservation of Archives.

April Star Fields DEADLINE

Noon, Sunday, March 20th

**Email articles to the newsletter editor at
newsletter@atmob.org**

Articles from members are always welcome.

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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.
