



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. 20, No. 10 November 2008

This Month's Meeting...

Thursday, November 13th, 2008 at 8:00 PM
Phillips Auditorium
Harvard-Smithsonian Center for Astrophysics
Parking at CfA is allowed for duration of meeting



The 400th Birthday of the Telescope

This month's guest speaker is Ken Launie, a long time, active member of the Amateur Telescope Makers of Boston. He joined in January 1971 while still in high school. Over the years he filled various positions in the club including President from 1981-83, Shop Chairman (which later evolved into the Clubhouse Committee) from 1975-90, and Secretary from 1986-1990. Ken is one of the founding members of the Antique Telescope Society, and currently is President of the organization, which has about 275 members from 14 countries. He is a refractor telescope enthusiast with a particular interest in local makers of the 19th century such as Alvan Clark, RB Tolles and John Clacey, but living in Cambridge, Ken's "deep sky" observing is looking at Neptune. Ken is an engineer who spent 28 years designing cameras for Polaroid. He now

designs inkless digital printers for Zink Imaging, a startup spun off from Polaroid.

In October 1608, Middelburg spectacle maker Hans Lippershey, carrying a letter of introduction and a telescope traveled to The Hague, in order to present it at the States-General Council, and claim a patent. Within a few weeks, telescopes were readily available at markets all over Europe, and Galileo turned one skyward, helping to start our hobby, and inadvertently getting its optical design named after him. How did the telescope spread so quickly once discovered? There is some interesting current research that offers a plausible explanation. Ken will talk about the history of the telescope and the recent conferences celebrating the 400th anniversary that he attended in Holland, and will show images from associated special telescope exhibitions, as well as the Leiden and Lisbon observatories.

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

President's Message...

What happened to summer? One evening Cygnus is directly over-head and now it's winging its way westward. While we're on the subject of time flying, how many people knew that this is the 400th anniversary of the telescope? I for one did not know of this major milestone until last August. Fortunately, the occasion has not passed us by and long time ATMob Member, Ken Launie, will be at this month's meeting to talk about one of man's most important inventions and its history over the past four millennia. I expect this to be a great talk, so don't miss it!

I need to give a tip of the hat to the clubhouse committee on the great work that has happened there this summer. The clamshell observatory is just about complete and I expect after a few more work parties, this observatory will be housing our Dall-Kirkham telescope and in full operation. The outside of the house looks great too and is the result of lots of members scraping and painting. This facility is one of your benefits of being a member so I encourage those of you who do not been there lately, to take a drive to Westford and give it a look. You also may want to give some thought to attending a few of the classes or seminars that have been held there, maybe even begin grinding your own mirror during the Thursday night mirror making nights.

Clear Skies to all!

~ Stephen Beckwith, President ~



October Meeting Minutes . . .

AAVSO (American Association of Variable Star Observers) Director, Dr. Arne Henden, was the featured speaker at the October meeting of the Amateur Telescope Makers of Boston. His talk was about “**Amateur Contributions in the Era of Surveys**”.

Dr. Henden started by showing the group “pretty pictures” of the Cone Nebula, light echos from nebulas surrounding novae and images of the star Mira plowing through interstellar medium. While pretty, the primary target is the variable star within the field and “it’s one of those deals where you can both enjoy the beauty of the sky at the same time you gain some science out of it.”

In recent years brand new variable star surveys such as PanSTARRS and LSST have started to come on-line in the professional community. Many have expressed concern that these developments might prevent amateur contributions but Dr. Henden noted that there are gaps in the observations. These surveys provide all-sky coverage but their sensors tend to saturate below 17th magnitude while the small telescope surveys are limited to a maximum of 8th magnitude. Henden pointed out that amateurs can exploit these limitations. He suggested that “you find the stars in the survey that are neat and wait until they fall outside of those limits of the surveys”. Also, measurements can be gathered in the early morning or late in the evening before solar conjunction. “Those are the data points that the professionals can’t do”.

Some variables that amateurs are able to measure are Mira types, supernovas, cataclysmic variables (interacting binary), eclipsing binaries (pair of stars in eclipse), Cepheid variables (pulsating stars) and exoplanet transits. Many of these objects are too bright for most professional telescopes. Another limitation is that professional telescopes are not able to perform long term studies of a single variable but that amateurs can.

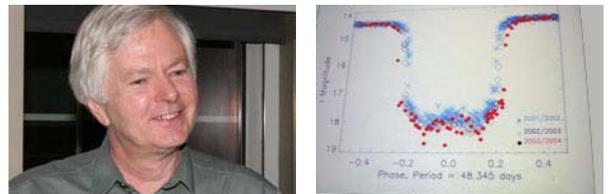
The AAVSO was founded in 1911 by Harvard College Observatory professors needing assistance in cataloging variable stars that were discovered in the photographic surveys. Boston amateurs were enlisted to do estimates of the brightness of the stars as a function of time. In 1954, Harvard severed the relationship with the AAVSO and the organization moved to different facilities but has stayed in Cambridge. The organization has 1200 members in 45 countries. It also has 3000 observers that are not part of AAVSO and about 15% that are professionals. Professionals are asking for the data and sometimes forming collaborations with amateurs.

Current projects are the archiving of all variable star observations not only from the AAVSO but also from the British Astronomical Association, the German groups and the Royal Astronomical Society of New Zealand. The AAVSO is actively pursuing these records since many of these records are not electronic and is not generally available.

The AAVSO is also using the Aspect camera on-board the Chandra x-ray telescope for variable star work. He also spoke about the 3 satellite campaign in which the group would monitor a star for an outburst and alert the scientists who would then shift the UV and x-ray satellite to the target star and measure it.

Robotic telescopes are also being employed in Arizona, New Mexico and New Zealand for use by AAVSO members.

In his closing remarks, Dr. Henden commented that you are “learning something if you start studying variable stars. You learn something about your equipment or you learn something about the stars you are studying”. He asked that “if you are taking deep sky observations to also take some photometry”. If you are a visual observer: “to take a few estimates of a few variable stars as part of your warm-up before you start looking at your favorite objects. I think you will find variable stars are a lot of fun”.



(L-R) Dr. Arne Henden and variable star data plots

Ross Barros-Smith introduced Mark Hartman from the Kavli Institute for Astrophysics and Space Research at MIT who is involved in the education and outreach for high school research programs. His new middle school program: “Kids Capture Their Universe” is an astrophotography apprenticeship program and he is looking to expand it throughout the New England area. Students will learn how to use the micro-observatory robotic telescopes to take their own astrophotos and process those images. The program will take place between 3-5 p.m. once a week. He is asking for volunteers to get partnerships to develop the student’s interest and excitement. His goal is to make small teams that will go to these after school organizations.

He also announced the “Citizen Science Project” to observe the eclipse of epsilon Auriga in 2009. He is attempting to create the largest citizen/science collaboration in history and to add the data to one huge worldwide light curve.

The Secretary’s report was given by Al Takeda. Tom McDonagh presented the Membership report, welcomed new members and visitors and reminded the group that membership dues are due. The Treasurers report was made by Nanette Benoit. Nanette also reported that all annual reports have been filed.

Steve Clougherty of the Clubhouse Committee announced that there will be a Work Party this Saturday (Oct. 18). Scraping the Clubhouse, working on the Clamshell dome and mowing the lawn are on the agenda.

Virginia Renehan gave the Star Party report. Star Party announcements are on the web. Help is needed with the Plastow, New Hampshire star party.

Steve Beckwith of the Observing Committee recognized Tom Williams of Texas who is attending the AAVSO meeting and is visiting the ATMoB group. Paul Valleli noted that Tom received his PhD on the "History of Amateur Astronomy" when he over the age of 60.

Steve announced some upcoming seminars:

- October 11th - Balancing an equatorial mount.
- November - "How to Navigate Your Way around the Stars: Sky, Constellation and Sky Lore".
- November - Variable stars (If the C-14 is operational).
- TBD - Class on using star charts. (Dick Koolish).
- TBD – Collimation Class (Phil Rounseville).
- TBD – Optics (Paul Valleli).

Steve B. mentioned John Sheff's email about NASA asking people to observe a crater at the lunar South Pole.

Mario Motta submitted a resolution that states that light pollution is bad for drivers at night to the American Medical Association (AMA) and it has been accepted as an order of business. He will also be speaking to the Western Mountain Coalition and get them to support this. If this passes it will go to the Council of Science and Public Health.

Mario has asked the membership if he may send an off-topic (non astronomical) message link about the health plans of Senator McCain and Senator Obama on the Announce and Discuss list. Through a show of hands the measure was approved by the membership.

Steve C. announced that the South Shore Astronomical Society (SSAS) in Norwell, MA will be celebrating their 50th anniversary on Oct. 25th. Dennis di Cicco will be one of the guest speakers.

~ Al Takeda, Secretary ~

Clubhouse Report . . .

We had a total of 22 volunteers to help with various projects on Saturday October 11. The weather was very pleasant; sunny with temps in the mid-sixties. These were perfect conditions for outdoor work.

Bill Toomey and Al Takeda lugged many wheelbarrows full of dirt to fill in and around the newly poured concrete pad in front of the barn. Additional grass seed was also sprinkled around several of the observing pads. Scraping of the barn and clubhouse was dutifully performed by Jun-ichi Sano and Al Takeda and much progress was made. John Mahr spent quite a

few hours mowing the lawn around the observatories, clubhouse and barn. We are hopeful that this will be the last effort for the season!

Several volunteers assisted Dave Prowten with the "raising of the dome." Our newly acquired clamshell dome was successfully placed on the platform which occupies an area in the North East corner of the observing field. Paul Cicchetti, Harry Drake, Dick Koolish, John Blomquist, Sai Vallabha, Steve Clougherty, Eric Johannson, Sidney Johnson, Chuck Evans and Mike Mattie helped to carry and place a total of eight large sections of the dome while Dave Prowten joined them together and caulked the joints. Many hours were spent building the observatory and the project is nearing completion. One drawback to this project was the lack of decent assembly instructions. However, Dave P, Paul C and John B figured out the correct orientation and began installing the hardware that will open and close the clamshell.

John Blomquist, Paul Cicchetti and Dave Prowten, Art Swedlow and Al Takeda made a second trip to the clubhouse on Saturday 11/1 to continue work on the pulley system for the dome. We are optimistic that the dome will be completed during the next work session scheduled for 11/15.

We would also like to thank our cooks and clean up crew for the great effort on this day! Thank you Eileen Myers, Jack Drobot, Sai Vallabha, Nina Craven and Eric Johannson.

Later in the evening Mike Mattie and Steve Beckwith taught a workshop on balancing an equatorial mount which was attended by 7 students.

We would also like to thank Ed Knight, John and MJ Deluca for helping out as well.

Please let me know if I have forgotten anything or anyone for this excellent work session!

Thanks.

~ John Reed, Steve Clougherty and Dave Prowten ~



Clamshell Crew (L-R) Dave Prowten, John Blomquist, Bruce Berger, Sai Vallabha, Eileen Myers, Art Swedlow and Paul Cicchetti . Image by Al Takeda

Clubhouse Saturday Schedule

Nov 15	Ed Budreau, John Small – Work Party	
Nov 22	Bernie Kosicki	Rich Nugent
Nov 29	Shilpa Lawande	Tom Lumenello
Dec 6	Brian Leacu	Phil Rounseville
Dec 13	Bruce Berger, Glenn Meurer–Work Party	

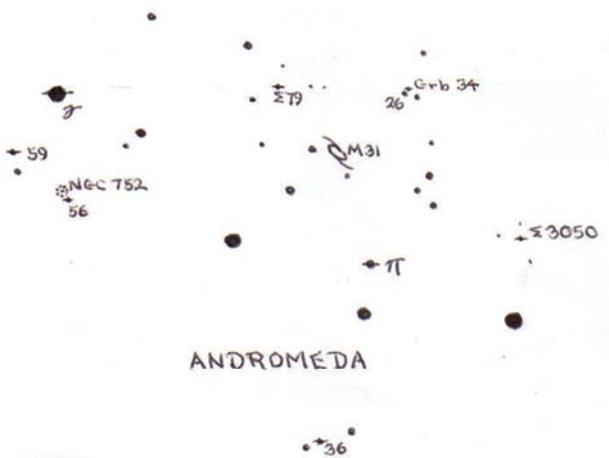
Thoreau on Astronomy . . .

I require of any lecturer that he will read me a more or less simple and sincere account of his own life, of what he has done or thought...He must describe those facts which he knows and loves better than anybody else...Yet incredible mistakes are made. I have heard an owl lecture with perverse show of learning upon the solar microscope, and chanticleer upon the nebulous stars, when both ought to have been sound asleep, the one in a hollow tree, the other on his roost.

Journal, undated

~ Submitted by Tom Calderwood ~

Autumn Double Stars – Andromeda . . .



Andromeda is a wonderful constellation to explore on a chill November evening. We can spend many an hour at the telescope admiring the grandeur of the Andromeda Galaxy (M31) or the delicate beauty of the planetary nebula NGC7662 (the “Blue Snowball”).

Andromeda is also home to a fine collection of double stars. Here are eight of the best. Data on magnitudes and separation were taken from the *Washington Double Star Catalog*.

Struve 3050 And mags 6.5 and 6.7, sep 2.0”, P.A. 334° (2004)

We start out with a pair that will challenge a 3-inch scope, but should be easy in a 4-inch or larger *if* the seeing is good. Use 150-200X. Both components have been described as yellowish.

Groombridge 34 And mags 8.1 and 11.0, sep 34.8”, P.A. 65° (2004)

Grb 34 may not be a visually spectacular pair, but the interest factor makes it worth a look. A red dwarf binary with an orbital period estimated at 2600 years, it’s one of the nearest binary stars to our solar system (D = 11.7 LY). Grb 34 is 1/4° north and slightly east of 26 Andromedae.

Pi And (H V 17) mags 4.3 and 7.1, sep 36.0”, P.A. 173° (2003)

This wide, unequal pair is easily split with small scopes. Its colors have been described as white and blue. What do you see?

36 And (Struve 73) mags 6.1 and 6.5, sep 1.0”, P.A. 314° (2004)

For moderate-sized scopes only, this tight binary pair (Period = 165 years) requires a 6 to 8 inch telescope, optimum seeing conditions, and a magnification between 200-300X. Are you up to the challenge?

Struve 79 And mags 6.0 and 6.8, sep 7.8”, P.A. 193° (2004)

Countless thousands of backyard astronomers have gazed at the Andromeda Galaxy. But how many have taken the time to look 4° to the northeast for this lovely gem? Both are white and stand out well at 100X.

56 And (Struve I 4) mags 5.8 and 6.1, sep 200.5”, P.A. 299° (2001)

Still reluctant to engage in double star observing? Next time you’re checking out the open cluster NGC 752, look for a wide pair of stars immediately southwest. This is the optical pair 56 Andromedae. It’s better suited for binoculars, but if you use a telescope, look about a degree west and slightly north for the delicate little pair Struve 179 (mags 7.6 and 8.1, sep 3.8”, P.A. 314°).

Gamma And (Struve 205) Almach mags 2.3 and 5.0, sep 9.7”, P.A. 63° (2004)

Now for the showpiece. This magnificent pair sports rich golden yellow and sapphire blue hues – a definite rival for the celebrated Albireo. Almach is a wonderful target for star parties, especially on moonlit nights when clusters and galaxies are hard to see.

59 And (Struve 222) mags 6.1 and 6.7, sep 16.5”, P.A. 36° (2003)

To capture this lovely pure-white duo, look 4° south and slightly east of Almach. A magnification of 50X will do the trick.

~ Glenn Chaple ~

Clamshell Dome Assembly . . .

September through November 2008. Images by Al Takeda



For Sale . . .

Stellarvue AT-1010 80 mm f/6 refractor. Includes 2" Williams Optics diagonal, GSO 2 speed focuser, rings, plate, and red dot finder.

\$245 - Joseph Rothchild 781-744-5412 wk.

November *Star Fields* DEADLINE
Saturday, November 29th

Email articles to Al Takeda at
secretary@atmob.org

POSTMASTER NOTE: First Class Postage Mailed Nov 10th, 2008

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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 (EDT) from Universal Time (UT) subtract 5 from UT.

Nov 13 Full Moon
Nov 17 Leonid Meteors peak (10 hr UT – 5 EST)
Nov 19 Last Quarter Moon
Nov 27 New Moon
Dec 1 Jupiter 1.3 deg. N of Moon
Dec 3 Neptune 1.4 deg S of Moon
Dec 5 First Quarter Moon
Dec 12 Full Moon