



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. 16, No. 10 November 2004

This Month's Meeting...

Thursday, November 11th, 2004 at 8:00 PM

Phillips Auditorium
Harvard-Smithsonian Center for Astrophysics

Parking at CFA is allowed for duration of meeting

THIS MONTH'S SPEAKER will be Dr. Kenneth Janes, Professor of Astronomy at Boston University. Dr Janes received a BA degree from Harvard College in 1963, an MS degree from San Diego State University in 1968 and a PhD degree from Yale University in 1972. Before coming to BU in 1973, he worked at Lick Observatory and the US Naval Observatory in Flagstaff, Arizona. His talk is titled, "One hundred and fifteen years of astronomy at Boston University"

In 1890, Boston University established an observatory on the roof of a building on Beacon Hill, equipped with a 7-inch refractor instrumented for spectroscopy and solar observations. In the past 30 years, the Boston University Astronomy Department has grown steadily; almost 100 faculty, staff and graduate students now work in our offices on Commonwealth Avenue. BU has built instruments for rockets and satellites and on the ground from Greenland to the South Pole. They also operate telescopes in Arizona and Texas. After illustrating a few of the antique instruments housed at BU Dr. Janes will describe some recent and planned projects.

Please join our speaker for a pre-meeting dinner at 5:45 PM (seating at 6:00 PM) at the Changsho Restaurant located at 1712 Mass Ave. in our fair city, Cambridge.

President's Message...

For our club's historical records only – Go Red Sox, the World Champs again after only an 86 year drought.

Gary Walker, aided by John Blomquist, John Reed, Mike Hill and me, have got the 20" Shapley Reflector working. As some may remember, in order to get an eyepiece image at the May dedication, one had to carefully hold the eyepiece about 6-7" away from the end of the focuser. There was an image all right, but certainly not a useable scope. In the ensuing months, Gary has done a **spectacular** job at fashioning this into an instrument that our club will be proud of for decades to come. Gary has almost single-handedly modified the design so that not only can you use an eyepiece, but as Gary demonstrated this past Wednesday night during the eclipse, do prime focus photography. The detail was outstanding. And a few nights before M57 looked so big and so clear that jaws dropped. We still need a few things to complete the scope, including a shroud. In certain positions the primary mirror is vulnerable to chipping if someone dropped something while at the eyepiece. A shroud will help to prevent that, for we surely can't afford to ding the mirror after waiting 70 years to use it. If you know how to sew and have a couple of hours to spare, please contact Gary or me. Watch the email lists or contact Gary, Mike or me if you want to get in line for the training that is required before you can use this scope.

The club's other large scope, the 17 1/2" Coulter, is undergoing an overhaul. Expect this scope to be back on line within a couple of weeks. Not to be forgotten, a hardy crew of volunteer engineers has poured a concrete base and erected a new storage shed just outside the rear barn door. This shed will house our outdoor power equipment and associated flammables, clearing the way for us to reinforce the rear barn's second floor, insulate the first floor and start to plan for our machine shop.

This Halloween weekend another crew starts reinforcing the main house's roof in preparation for the new roof planned for later this month. Scraping the old paint from the building exterior began last month and continues today, with VP Virginia leading the pack. Lend a hand if you can. As far as I can tell, there's only one thing that might be missing from all of this excitement. And that one thing is YOU! Whether you're a scope maker with a few spare hours, or want to learn or sharpen your home repair skills, or just want to come by to fix or brighten that one thing at the clubhouse that you wish was just so, please contact any of the club officers or clubhouse committee members and give a little back to the club that tries so hard to provide the best resources for you.

Clear skies & best regards,

- Bruce Berger, President -

October Meeting Minutes. . .

Bruce Berger opened the 763rd meeting of the Amateur Telescope Makers of Boston calling for a short moment of silence for George Foster who died this past month. Many of us had fond remembrances of George. This evening's speaker was Jim Elliot from the MIT Wallace Observatory. Jim spoke to us about the techniques and findings and the future of recording stellar occultation's of Kuiper Belt objects. This work follows on to work already done involving occultations by larger bodies such as Uranus, Pluto and its moon Charon. In fact the delicate rings of Uranus were discovered using this method. Kuiper belt objects are small bodies outside the orbit of Pluto about 150 km in diameter resulting in angular size on the order of .005". Typical magnitudes are 19 – 22. The purpose of recording these occultations is to determine accurate diameters, and search for close companions and atmospheres. This information allows astronomers to probe other physical properties of these objects thought to be the primordial material in the development of the solar system. Due to the extremely small angular subtense and low magnification much care is needed in making these observations. Options range from an airborne telescope called Sofia, giant observatory instruments such as the Keck Telescope, and smaller scopes with sensitive imaging cameras in either a fixed or mobile configuration. The need for mobility is paramount due to the difficulty in predicting the exact "path" of these occultations. The location is sometimes refined only hours before an event using up to date astrometric position measurements. Current work by Jim and a team he is working with include the refinement of the orbits of the 30 most promising candidates for measurable occultations, the design and construction of four new highly sensitive recording cameras made possible by a government grant, and the planning for upcoming events. He is hoping that part of this plan may include some pro-am collaboration, something certainly possible if he can secure further funding to build more cameras and make them available for loan to capable amateurs. A very interesting talk indeed.

The business meeting followed. Standard committee reports were given. Gary Jacobson informed us of the generous contributions made last month for the general fund, clubhouse fund and the land fund. Shilpa Lawande announced three new members as well as plans for an upcoming new member orientation. John Reed gave thanks to those that helped out with the concrete pour up at the clubhouse and announced plans for a work party to put up our new shed as well as plans to get work on the roof underway. Two star parties were announced. Joshua Roth presented the ATMoB with a copy of the Millennium star atlas with the express requirement that it be made readily available for use out on the observing field or in his words to "get dewey." We will do our best. Dick Koolish showed pictures of the Sky Scrapers astronomy convention, and lastly Mario Motta showed pictures of his new observatory

and showed us some of the tooling that will be used in the grinding of his 32" mirror. – *Michael Hill* -

Treasurer's Report...

As of October 25, 2004:

Checking account balance: \$6,120.14

Money market savings balance: \$39,097.56

Land Fund balance: \$3,067.61

Clubhouse donation fund balance: \$1,435.40

Revenues: \$1,289.60

Expenses: 2,505.62

Net outflow: \$1,216.02

The major part of the expenses recorded this month came from pouring concrete at the clubhouse.

Thanks to members for their generous donations to the club this month.

General fund donations: \$77.05

Clubhouse fund donations: 46.60

- *Gary Jacobson, Treasurer* -

Membership Report...

There were no new members this month. The club membership count as of end of October is 354.

-*Shilpa Lawande*-

Clubhouse Report

Recently, at the clubhouse we finally installed the shed on the west side of the barn. Although the design on this shed may take the winter snows we receive, we decided to beef up the structure with some wood 2x4s. I will update you on the progress from the next work party which is on 30 Oct.

Clubhouse Saturday Schedule

November 6	Brian Maerz	John Reed
November 13	Rich Nugent	John Small
November 20	Phil Rounseville	Eileen Myers
November 27	Mike Hill	Bruce Berger
December 4	Bill Toomey	??
December 11	Jack Drobot	Joseph Rothchild

New Member Orientation

New club members are cordially invited to the Tom Britton Clubhouse on Saturday night, November 6th for an early evening tour of the clubhouse, and an introduction to the Dennis Milon Observing Field and observatories.

Observing will follow, weather permitting. Please contact Shilpa Lawande at (603) 891-2702 or Virginia Renehan at (978) 283-0862, if you plan to attend or if you just have any questions. Hope to see you there!

Upcoming Star Parties

Club Star Party Coordinator
Virginia Renehan 978-283-0862 starparty@atmob.org

No star parties have been planned or announced as of this printing.

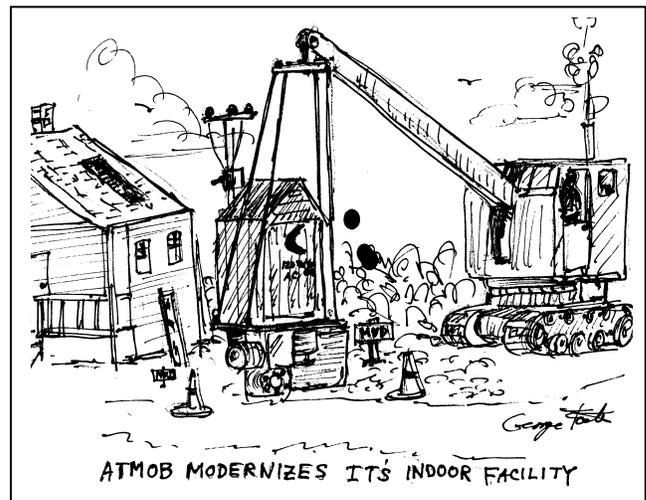
Star Party Thank-You's

Westford Star Party

On Sunday Evening, 10/10/04, 7:00 to 9:00 PM, the following ATMoB Club Members assisted with telescopes at a family-oriented star party organized by the First Parish Church United in Westford. The Venue was Meadowbrook Farm, off of Route 40 and only about a mile away from the ATMoB clubhouse site. About 25 families attended the event under overcast to scattered-cloud sky conditions, but when clear, the seeing was good. Activities included a campfire, singing, snacks, marshmallow cooking, and samours. Unfortunately, the major broken to overcast periods were during the scheduled time, but almost everyone got to see something, and those arriving early and staying late were treated to views of double stars, clusters, planetary nebulae, and several meteors.

Thanks to Bruce Berger, Chuck Evans, Tom Lumenello, Peter Nielsen, Bill Kruger -*Tom Lumenello* -

A Tribute to George Foster



All of us who knew him will miss **George Foster**. Some of us did not know him personally but knew him through his drawings that he often drew literally at the drop of a hat. His drawings have served in many cases to chronicle the history and the flavor of the club as is evident in this drawing, the last one that I had presented to me for inclusion in the newsletter. I have not been able to get around to it because there has been so much other activity filling the pages of Star Fields. I felt it was appropriate, however, to publish this now. George's witty sense of humor is evident in this comical portrayal of life up at the clubhouse. - *Michael Hill* -

Mentoring - Coming Full Circle

When I first joined the Amateur Telescope Makers of Boston, I was only 14, and Dennis DiCicco was the club president. Astronomy came to me, along with twenty of my Earth Science class mates, in the first semester of ninth grade. We learned about the history of astronomy followed by some simple physics and eventually an introduction to the up close and personal night time sky. There were no star parties then. We were given a planisphere and told to go out and find some of the more prominent constellations. I don't exactly remember those first nights out under the stars but they must have been captivating because I wanted more. My enthusiasm was obvious as was my sadness when the astronomy segment came to a close and was replaced by the geology segment of the class. My teacher, Mr. Cutler, had the sense to recognize this and decided to let me keep my planisphere and even the textbook we had been using. I used the planisphere until it was too tattered to use and the book I still have, one of the most cherished items in my book collection. I continued to pursue astronomy on my own.

I was pretty self sufficient and had already outgrown my 60mm refractor and pushed on to a 4¼" reflector put together from parts ordered out of the Edmund Scientific catalog. Eventually I joined the ATMoB and was taken to the meetings by my father and another man named Bill Thomson whom I was introduced to because of his training as a scientist working up at Westford, of all places. The ATMoB had not moved into the clubhouse yet. I spent many a night up at Westford, right across from what would eventually be our clubhouse, while Mr. Thomson was working on some sort of Ionospheric research. One of the pieces of government equipment he had at his disposal was a 3" Questar telescope, which he would let me take out in the field and use while he went about his work. I was so inspired by the man, his work, the equipment he was surrounded with and the beautiful skies I had the pleasure of observing under. Those were good times indeed. I took to studying the sun in the daytime and viewed an eclipse, once again up at Westford using the Questar. These observations led to an entry in the local, regional and state science fairs. I did well enough to attract the attention of Dennis DiCicco who asked me to give a short presentation to the club. I agreed and at the age of 15 made my first of many ATMoB member presentations. I was really, really nervous but I persevered and made it through. Dennis took a liking to me and even gave me a book on the Sun written by Donald Menzel, who was one of the past directors of the Harvard College Observatory where I gave this talk. I was delighted and this came to be the second most cherished item in my book collection. It was these kind deeds by caring adults that bolstered an interest that, to be honest, was already very strong. But the help and interest shown toward a young boy just entering the wonderful world of astronomy kept me energized, inspired and driven to do more. I am grateful to all of them.

Now I have come full circle and as an adult, have the chance to do the same for other youngsters. A most

memorable experience happened just last month. My boss's thirteen year old granddaughter, Valerie, had been given a small store bought 60mm refractor and needed some assistance using it. I had the family up to the clubhouse one Thursday night and Valerie showed up very excited and eager to get out there with her telescope. I couldn't help but look down on this "toy", knowing it was only a cheap store bought model but I was refreshed by her enthusiasm and really desensitized to this misguided notion by how happy she was with "her" very own little telescope. I should have known better. I had, after all, started with a 60mm telescope myself.

I gave them all a tour and short talk about mirror making and then we went outside and spent a good deal of time in the shadow of the 6" color-corrected Shupmann telescope happily using her 60mm "toy". It was a memorable experience for both of us. I taught her how to align the finder, focus the image, and got her familiar with observing the moon and finding some easy double stars. I showed her how to use a star atlas and I helped her find some brighter constellations. She was so enthusiastic and grateful for my help. It longingly reminded me of my youthful days gone past. But I was content – content to be the mentor – to come full circle. I had a lot of important influences when I was young. Now I take pleasure in returning the favor for kids like Valerie who have a budding interest in astronomy but need some direction and encouragement. A very little of that can go a very long way.

-Michael Hill-



A Young Astronomer with Her Telescope

Deep Sky Objects for November

Observer: Lew Gramer
Your skills: Intermediate
Date and UT of Observation: Evening, November
Location: Medford, MA, USA (42N)
Site classification: urban
Limiting magnitude: 4.8
Seeing: 3+ - medium good
Moon up: no
Instrument: Reflector 4.5" f/4.25
Magnification: 20x, 40x (Nagler), 65x
Filters used: None and Lumicon DeepSky
Object: M31, M32, M110, NGC 206
Category: Spiral, Elliptical, Lenticular, Star Cloud
Constellation: And
Data: mag 3.4 size 135'
RA/DE: 00h42m +41o16m

Description:

Easily found at 20x. Elongated core condensation, and a hint of halo were observable at this magnification, but no other detail. M32 was also noted with averted and fixated vision. At 40x and 65x, M31 showed an oblique core elongated 7'x15' ENE-WSW, with an "axis" or arm 15' long peeling off of the W end and curving to the S. The halo around of light around this core showed some unevenness with agranularity of about 5', within 10' SE of core. Sharp edge NW of core about 10'-20' may have been the edge of the halo (outer dust lane), or an inner dust lane. M110 and ngc206 (a star cloud in M31) were not apparent at 20x. M110 could be located at 40x with great difficulty, using averted and fixated vision, and jittering the telescope to help my eye pick up the faint object. To locate it under these nasty conditions, use a faint triangle of 9 to 10 mag stars NNW of the core, readily apparent in photographs of the main galaxy. No detail. At 65x, some slight elongation of M110 was apparent with averted vision and fixation. ngc206 was not apparent at either 20x or 65x, but was detected at 40x with the 12mm Nagler (which weighed almost as much as the scope! :->)

Object: NGC 7635 (Bubble Nebula)

Filters tried: None, UHC
Category: Emission nebula (with planetary features)
Constellation: Cas
Data: mag 8.5 (star 6.9) size 15'x8'
RA/DE: 23h21m +61o11m

Description:

This famous but faint enigma was easily found 30' or so SW of M52, just NE of mag. 7 star HD 220057. The brightest region surrounds a pretty double of mags 10 and 11, with a third star mag 14 involved to the NW. Diffusely visible to direct vision, with some mottling apparent, especially to W and SW. To averted vision, a distinct long arc of nebulosity stretches N, curving gracefully around to the E, toward a mag. 11 star 15' away. Three distinct hazes

were also visible to the S and SW of the main nebulosity, all needing averted vision (and usually field motion), and all showing little detail other than an irregular outline. Yet another "hook" of nebulosity was faintly visible to averted vision, arcing S and then SW of the main nebula. Quite a sight, when viewed with patience!

FREE - If you can pick it up - FREE

We're working to clean out the library at the clubhouse and this couch and a matching chair are going to go! The vinyl chair is not available. It was in much too poor condition to be desirable. If you're interested in taking this furniture then email or call me at (secretary@atmob.org) or (see last page) - *email preferred*



On the flip side, were looking to put a table in this room. What we're looking for is a medium length dining room table or equivalent that would be suitable in a library environment where people could sit around and browse books or have meetings. We would also like to replace the carpet in the room. If you have something that you would like to donate please contact me.
- *Mike Hill* -

**December *Star Fields* deadline
Saturday, November 27th**

**Email articles to Mike Hill
at noatak@aol.com**

POSTMASTER NOTE: First Class Postage Mailed November 5, 2004

Amateur Telescope Makers of Boston, Inc.
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FIRST CLASS

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

November 5 Last Quarter Moon
November 8 Taurid Meteor shower peak
November 8-11 Pretty showing of Moon and planets in the morning ☺
November 12 New Moon
November 17 Leonid Meteor shower peak
November 19 First Quarter Moon
November 20 Mercury at greatest eastern elongation
November 26 Full Moon