



STAR FIELDS

NEWSLETTER OF THE AMATEUR TELESCOPE MAKERS OF BOSTON, INC.

Vol. 1, No. 3

October 1990

THIS MONTH'S MEETING...

Thursday, Oct. 11, 1990, 8 p.m.
Phillips Auditorium, Harvard-Smithsonian
Center for Astrophysics

CCD's FROM A TO Z is the title of this month's multispeaker program. ATM members Gary Walker, George East (both past presidents) and Ed Dougherty will introduce us to the use of CCD imaging systems in amateur astronomy.

Please join us for dinner before the meeting at the Changsho Restaurant at 5:45 p.m. The restaurant is located at 1712 Mass Ave. in Cambridge, near Linnean St.

LAST MONTH'S HIGHLIGHTS...

The president opened the September meeting with about 80 individuals in attendance. A discussion grew out of the report of the Workshop committee chairman, Greg Chase, when he brought up the subject of keys to the clubhouse. He presented a list of 15 members who would be given keys and another list of 20 members who would have access to a key at the guard station. Ted Poulos questioned if it is in the interest of good security for so many individuals to have keys or access to them. He also wanted to know what criteria that was used to select the members on the two lists (see Announcements) John Reed presented a list of telescopes, parts and accessories that the Hayden Planetarium is offering for sale. Mario Motta explained the reasons for the final the Eclipse 91 trip costs and why other local clubs could not receive the ATM discount. Ed Dougherty asked for volunteers to move the dog house and set the post so that the club's 6-inch Maksutov can be mounted and housed. Marion Hochuli and John Reed announced that the ATM's were considering hosting ALCON 91, the Astronomical League annual convention next summer. Volunteers who could work on this project were asked to sign up. Our speaker for the evening, Steve O'Meara, talked about Limiting Magnitudes and showed that published aperture/magnitude tables should not be taken as the absolute truth. Individual visual acuity and other environmental factors in addition to dark skies have a major affect on the limiting magnitude. An individual alcohol, coffee, and carbohydrate intake also has an affect as pointed out by Mario Motta during the question period.

ANNOUNCEMENTS...

CLUB HOUSE KEYS. Any ATM member who would like to be added to the list of authorized individuals that can sign out a Key at the Haystack Observatory guard station must undergo training in the proper procedures for opening up and closing the clubhouse. Workshop committee chairman, Greg Chase, will conduct a training session on Saturday, October 6 at 6:30 p.m. If you can't make this session, another will be scheduled in about 6 months.

Apparently, unannounced to the membership, the executive committee voted last year for a 'key plan' which made Greg responsible for key control. Had I (Ted Poulos) known this I would not have raised the issue at our last meeting.

BOSTON UNIVERSITY Astronomy Club which has about 40 student members will visit the clubhouse on Saturday, October 27 starting at about 6:30 p.m. Although there will be no formal program for them, a demonstration of mirror grinding and an opportunity to observe through any telescopes members may have set up would be appreciated.

OUR PRESIDENT, Marion Hochuli, asks that we all try to keep the business section of our meetings as short as possible by putting your announcements in STAR FIELDS. This also has the advantage of your message reaching more of our membership.

LEND A HELPING RIDE. John Moore, a new ATM member living near Union Square in Somerville, would like a ride to the clubhouse on Saturday's when some other member is going there. He would be happy to meet the individual at some convenient spot. Lend a helping hand and call John at 617-628-4996.

INFORMATION NEEDED. Bernie Volz asks that you bring to the October meeting the names and addresses of any publications or other media you know of that include calendars of events. He would like to use these to announce and promote coming ATM events.

A PAIR OF GLASSES was found by Steve Mock at our September meeting. Did anyone lose them? Call Steve at 617-625-5870.

STARCONN '90, The Astronomical Society of Greater Hartford conference at Wesleyan University on September 8, was attended by ATMer's Steve Beckwith, Marion Hochuli, John Reed, Vladimir Vudler, and Gary Walker. Although the program was great, John said that the 1.5-inch, f/30 solar telescope shown by Al Nagler was fascinating. It employed a red filter over the objective, two barlows and an out-of-spec (and therefore cheaper) hydrogen alpha filter. By manually tilting the filter spectacular views of sunspots and prominences could be seen.

FIRST LIGHT...

At least three telescopes made by ATMer's saw first light late this past summer.

AN 8-INCH TRI-SCHIEFSPIEGLER scope, built by Brian Lareau of Jamestown, RI, won first prize in both craftsmanship and design at Stellafane. This newtonian scope employs tilted components so that there is no secondary mirror obstruction. Brian's unique adaptation of this design uses a third mirror to place the eyepiece on the declination axis. All parts were drawn, including the conceptual drawings, with the inexpensive CAD program, Drafix Plus. The drive base parts were cut from 5/8" steel plate, the fork arms from 6" scrap aluminum channel, and the beautifully finished wood tube from 3/4" mahogany. The optics were fabricated by an amateur and friend. The project has taken over two years and was Brian's second scope of this type. The first, a 6-inch, was shown at Stellafane two years ago. Brian, an ardent double star observer and 9-year ATM member, is delighted with the optical and mechanical performance of the scope. With an f/20 focal ratio and the unobstructed view, the scope has great resolution. He said "I expected a minor nightmare balancing this odd shaped/off centered animal, but the problems were solved with parts gathered from my many scrap yard hunts."

POISED FOR OBSERVING at the clubhouse recently, it looked like a refractor to me. But actually it was Phil Rounseville's new 6-inch Gregorian reflector. It is similar in design to a Schmidt-Cassegrain, but it employs a flat corrector plate, a concave ellipsoid secondary, a spherical primary (all easier to make), and gives an erect image. The long tube (180 inch focal length) is due to its large focal ratio of f/30. Representing an out-of-pocket outlay of some \$1800, it took Phil three years to fabricate the 1/16 wave optics and to build the scope. Using a Byers drive the equatorial mount (machined by former ATMer, Pat Kelly) and tripod is incredibly rigid and sturdy. This new scope joins five other telescopes that Phil owns. He's now thinking about building a refractor as his next project.

Phil has been an ATM member for some 18 years and has helped a lot of members, young and old, to figure excellent mirrors. He works in the field of optics making aspheric mirrors that are used in space borne applications for Lambda 10, a Westford optical company. Often at the clubhouse on Saturday's, Phil is always ready to help you out with making of your new mirror.

AN 8-INCH DOBSONIAN was a family project of Andrea and Richard Burrier, and their 12 year old son Richard Jr. A view of Saturn recently through this new scope was surprisingly bright and sharp--probably due to 1/16 wave mirror figure the Burrier's obtained under the tutelage of Phil Rounseville.

Living in Groton, the Burrier's decided to visit the clubhouse last year while coincidentally a Learning Adventure program was being conducted. They sat through the program and decided to become members. Richard senior is an electrical engineer and Andrea works as a customer service representative for NEBS. Richard Jr. likes to observe deep sky objects, Richard Sr. double stars, and Andrea wants to view the planets. One telescope is not enough to keep peace in the family, so a new 6-inch mirror is now being fabricated.

LATEST ATM NEWS...

AN EVENING WITH CLYDE TOMBAUGH is the title of a lecture to be given by Clyde in the Hayden Planetarium on October 18 at 8 p.m. Admission is \$10 with all proceeds going to the Clyde Tombaugh Scholarship Fund. For tickets send check payable to Museum of Science with a SSAE to Tombaugh Lecture, c/o Hayden Planetarium, Boston Museum of Science, Boston, MA. 02114.

THE MAGELLAN AND GALILEO KITS ordered through David Aucoin have arrived. You can pick yours up at the October meeting.

THE CLUB'S MATZUTOV PROJECT under the direction of Ed Dougherty is proceeding well. Thanks to a group of volunteers that reportedly included Steve Beckwith, Ed Knight, Bernie Volz, Tim Solinski, Greg Chase, and John Reed, the mounting post is now supported in concrete.

ATM MEMBERS AND HAYDEN PLANETARIUM staff people have been conducting monthly star parties beginning at the Arnold Arboretum in cooperation with the Boston Park District. Friday, October 26 at 6:30 p.m. is the date for the next one so come out and help us. Call John Reed (617-861-8031) for more information.

ROMANCE UNDER THE STARS is a hackneyed phrase, but it does occur. Case in point. Liza Cacoulidis, a computer programmer, was introduced to the ATM's at one of our early Learning Adventure programs. I noticed that during my talk, she and Scott Milligan kept exchanging glances. Well, it took a while--the

time for Liza to get her 8-inch mirror to about the polishing stage with Scott's help--but they became engaged at the end of August with plans to be married next Fall. Congratulations Liza and Scott.

A BIG THANKS Ken Fye for donating a 4-head, remote operated, VCR to the ATM clubhouse in response to our need as expressed by Steve Mock at our last meeting. Steve now reminds us "any used refrigerators in good condition out there folks?"

NEW MEMBERS...

The ATM's of Boston extend a warm welcome to the following new members:

Fred Burgher	Brookline, NH
Mark F. Clohecy	Merrimac, MA
Peter Cone	Bedford, MA
John D. Galloway	Cambridge, MA
David A. Hazen	Arlington, MA
Timothy M. Huntington	Boston, MA
Tom Knight	Belmont, MA
Thomas McPherson	Wakefield, MA
John S. Moore	Somerville, MA

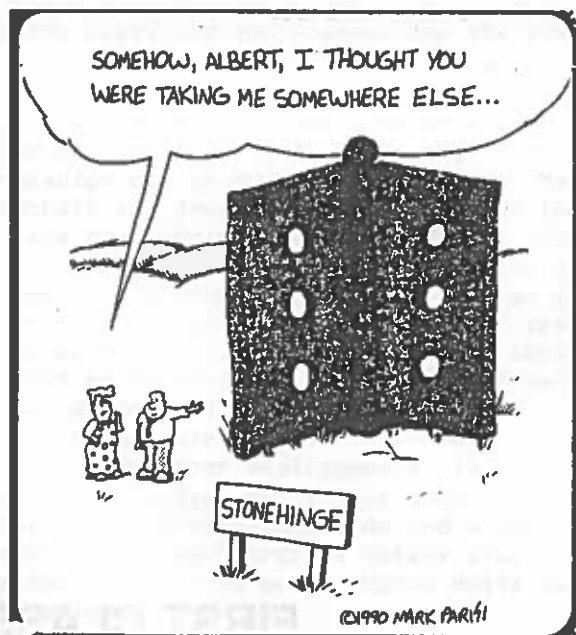
THE MARKETPLACE...

FOR SALE UNUSED Celestron 8-inch full aperture #4 density glass solar filter. Original price \$350, for sale at \$150. Bob Henderson, 227 Linwood St., Lynn, MA 01905. 617-598-3378.

WANTED to buy a used 10-inch Dobsonian telescope. Call Sai Vallabha, 603-893-7884.

FOR SALE TO THE HIGHEST BIDDER. Dr. Badri Aghassi has generously donated from Bentley College 20 items that will be auctioned off by closed bids. All proceeds go to the club.

ASTRO-FUNNIES...



Send your bids to: Steve Mock, 470 Medford St. #3, Somerville, MA 02145. The items are:

1. Computer video to RF interface
2. Star spectroscope by Goto, Min. bid \$50
3. Critical focuser
4. Cheap clock, Min bid \$2
5. Lens cleaning brush, Min bid \$1
6. Tube and objective for 50 mm finder
7. Complete 50 mm finder
8. 6x25 finderscope & rings
9. (2) Opticell drop in filter holders for 1-1/4" eyepiece
10. 1-1/4" camera coupler
11. Optical b/c lens coupler
12. T-ring
13. Nebula filter, 1-1/4", Min bid \$30
14. Approx. 25 mm eyepiece, 2-5/8"
15. 40 mm Kellner eyepiece, 1-1/4"
16. 50 mm Plossl Celestron eyepiece, 2", \$55
17. 60 mm Kellner eyepiece, Uni. Optics, 2"
18. 8.4 - 21 mm Edmund zoom orthoscopic eyepiece, 1-1/4", Min bid \$55
19. 12.5 mm Celestron illum. reticle orthoscopic eyepiece, 1-1/4", Min bid \$50
20. Eyepiece case for six 1-1/4" eyepieces

CLUBHOUSE STORE...

MIRROR MAKING KITS for 6,8,10, and 12 inch mirrors are available at discount prices for ATM members at the clubhouse. Kits include a full thickness fine annealed pyrex mirror blank, a tool blank, all required grinding grits, polishing pitch, and cerium oxide polishing agent. Prices:

6"	\$35.00	10"	\$152.00
8"	\$67.00	12"	\$263.00

Contact Greg Chase at the clubhouse or by phone at 617-272-9394. If Greg is not available search out either Phil Rounseville or Scott Milligan.

ASTRO-TRIVIA...

WHY IS THE SUN HOT? The nuclear fusion in its core might be your immediate answer. Not true says Professor Tom Dennis of Mount Holyoke College. In fact, the nuclear fusion actually keeps the sun cool. The sun, like all stars, condensed out of an immense, diffuse cloud of cool gas. As the cloud collapsed toward its center under its own gravity, the potential energy of the gas is converted into increasing motion of its molecules, or higher and higher temperatures. Eventually, the core temperature becomes high enough to kindle thermo-nuclear reactions. Now, the radiation pressure from nuclear burning balances the force of gravity and stops the star from contracting further--preventing it from getting any hotter. So the initial gravitational collapse of the sun is what makes it hot.

THE TOTAL NUMBER OF METEORS entering the atmosphere daily has been estimated at 75 million for meteors of magnitude 5 or brighter. Under ideal dark sky conditions, an observer could normally expect to see about 10 meteors per hour. The maximum velocity of meteor entry is around 72 km/sec. Most meteors vaporize above 80 km. Meteors smaller than about 0.1 mm in diameter, are too small to produce any observable luminosity.

COMING EVENTS...

Oct. 18 CfA MONTHLY OBSERVATORY NIGHTS. "Molecular Clouds: Where Real Stars Are Born" by Phil Myers, CfA. 8 p.m. Phillips Auditorium, CfA, Cambridge, MA. More info call 617-495-7461.

EXECUTIVE BOARD 1990-91

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AMATEUR TELESCOPE MAKERS OF BOSTON

c/o Edward J. Los
7 Cheyenne Drive
Nashua, NH 03063

- Oct. 18 An Evening with Clyde Tombaugh. 8 p.m., Hayden Planetarium. See info elsewhere in this issue.
- Oct. 26 Clubhouse star party for the Teacher on the Hill group. More info call Bernie Volz 508-897-0822.
- Oct. 26 Star Party, Arnold Arboretum, 6:30 p.m. More info call John Reed.
- Oct. 27 Boston University Astronomy Club visits the clubhouse. More info call John Reed 617-861-8031.

COMMITTEES

OBSERVING

John Reed, 1437 Mass Ave., Lexington, MA 02173, 617-861-8031

WORKSHOP

Greg Chase, 29 Beacon St. 65F, Burlington, MA 01803, 617-272-9394

HOW TO FIND US...

MEETINGS: Held the second Thursday of each month (September to July) at 8 p.m. in Phillips Auditorium, Harvard-Smithsonian Center for Astrophysics, 60 Garden St., Cambridge, MA. Parking available on the grounds.

CLUBHOUSE: Open every Saturday from mid-afternoon 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 495 to exit 33 and proceed west on Rt. 40 for 5 miles. Turn right at the MIT Lincoln Lab NEROC sign at the Groton town line. Proceed to the farmhouse on the left side of the road. Clubhouse telephone 508-692-8708.

NEWSLETTER DEADLINE...

The 30th of this month is the deadline for items to be included in next month's STAR FIELDS. Mail or telephone your contribution to Ted Poulos, 18 Cushing Rd., Brookline, MA 02146, 617-566-5127.

FIRST CLASS