

JANUARY, 1987

The January meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, January 8, 1987 at 8:00 PM

The topic will be "Cygnus X-3: Nature's Particle Accelerators. Our speaker will be Dr. Larry Molnar of The Center For Astrophysics, who did his undergraduate work at the University of Michigan at Ann Arbor, where he earned his BS in Astronomy. He then earned his MS and PhD in Astronomy at Harvard University. Dr. Molnar is that most happy of individuals whose hobby, amateur astronomy, has become his career. He plays piano and guitar and also enjoys camping (especially in dark sky areas).

Please join us for dinner with the speaker before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge avenue in Cambridge, at Route 16, near the (former) Route 2 rotary.

BULLETIN BOARD

AURORA ALERT HOTLINE

Dave Heustis has announced the revival and reorganization of the Aurora Alert Hotline, which is a phone network that lets members know about an aurora quickly, as it's happening, rather than a week or two later. The basic idea is that you receive one phone call and make two. Ed Wallner will coordinate the Boston area network and anyone interested in participating should let him know at: 32 Barney Hill Road, Wayland, Mass 01778 or by phone at (617) 358-7938, or at the next meeting. If you write, be sure to let him know how late you can be called (not everyone wants to be woken up at 3 AM)!

INTERNATIONAL FLASH NETWORK

An international network is being set up to monitor these phenomena (see December Sky & Tel, p. 560). Any observers who can work in tandem 1 km or more apart are urged to contact Andy Noymer at (617) 891-0770 evenings, or write:

78 King's Grant Road, Weston, Mass 02193

You do not need specialized equipment to start. This is a golden opportunity to help pioneer a new aspect of astronomy.

FOR SALE

Bausch and Lomb 8000: 8" Schmidt-Cassegrain with wedge, tripod, equatorial head, clock drive, piggyback camera mount, 3 eyepieces, original cases, 8 x 50 finder, all in perfect condition. \$1250.00, call Gene Lyons at 688-5221 (H) or 275-9200 x 2657 (W)

Complete bound set of Sky and Telescope from Volume 1, Number 1 to the present. Contact Dennis DiCicco for more information at 443-8493.

8" f5 Newtonian with full thickness 1/20 wave Coulter mirror from 1970. Equatorial mount, Unitron 10 x 40 finder, 3 eyepieces. \$450.00, Call Phil Rounseville at 527-1080.

Here is the remainder of the 1986-1987 meeting schedule, with corresponding bulletin deadlines. We are happy to publish news notes, as well as information about items for sale or wanted. Send to: Ken Launie, 15 Salem Street, Cambridge, MA 02139 or call either 577-3603 or 491-6855.

MEETING DATE	BULLETIN DEADLINE
February 12	January 28
March 12	February 25
April 9	March 25
May 14	April 29
June 11	May 27
July 9 *	June 25

* (If held)

If you'd like to help with refreshments at our monthly meetings occasionally, please see or call Tal. Remember, the club reimburses the expenses.

FEBRUARY, 1987

The February meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, February 12, 1987 at 8:00 PM

Dr. John Kohl of the Center For Astrophysics will present a talk on "Astronomy Without a Telescope-Laboratory Astrophysics". Dr. Kohl is a physicist at the Center For Astrophysics and Lecturer in Astronomy at Harvard, and has been at CFA since 1969. His work involves atomic collision physics and solar physics from space platforms (rockets). In his spare time he enjoys camping, canoeing and hiking, and he recently retraced Thoreau's nature walk.

Please join us for dinner with the speaker before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge avenue in Cambridge, at Route 16, near the (former) Route 2 rotary.

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FOR SALE

17mm and 10mm Celestron Plossls, both 2 months old. Cost \$75 each, will sell for \$60 each. Also a Meade 10mm Widefield for \$40. See Dave Aucoin at the meeting or call 899-0796 after 6PM.

9mm Nagler eyepiece, 6 months old, \$145.00; 32mm, 16mm, 12mm Brandon eyepieces at \$30.00 each. Contact Eric Bunn at 692-9592.

Tele Vue: 4.8mm Nagler, \$90.00; 32mm Plossl, \$75.00; 2.5x Barlow, \$70.00. Meade: 12mm Illuminated Double Crosshair Reticle Eyepiece, \$75.00; Off-Axis Guider Assembly, \$55.00; Basic Camera Adapter (1 1/4") w/ Eyepiece Extension Tube, \$25.00; #62 T-Adapter, \$25.00; #924 Erecting Prism, \$45.00. Celestron Series 6 Photographic Drop-In Filter Set, \$60.00. 12 volt Porta-Pak rechargeable battery w/ 117 volt AC charger (output is a standard cigarette lighter receptacle), \$60.00. 8" Dew Shield, \$40.00. Aluminum accessory case (19" x 12" x 6"), \$35.00. All items are less than 6 months old, in excellent condition, and in their original packaging/boxes. Contact Randy Page at (617) 935-6951 M-F 10-11 PM and any time Sat. & Sun.

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MARCH, 1987

The February meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, March 12, 1987 at 8:00 PM

Samuel Palmer of the Center for Astrophysics will present a talk titled "Meteorites; The Real Space Invaders". Mr Palmer was at the Goddard Institute for Space Studies from 1970 to 1986. He also taught Astronomy at Lehman College in New York as well as the science honors program at the same college. He earned his BS and MS in Physics at Columbia University, and is a faithful pilgrim to Stellafane every year. He has amateur astronomy as a hobby and is presently working on a millimeter wave radio telescope for mapping the Galaxy.

Please join us for dinner with the speaker before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge avenue in Cambridge, at Route 16, near the (former) Route 2 rotary.

FOR SALE

8' x 8' roll-off roof observatory. New owner will be responsible for moving the observatory from its current location in Mt. Vernon, N.H. Contact Edward Los at (603) 880-6219 or Rob Flynn at (603) 673-5700.

Eyepieces: 16mm and 12mm Clave Plossl eyepieces, 6 months old. Cost \$95.00 each, sell \$62.00 each. 24mm Brandon \$30.00, new 24mm Brandon Erfle, \$35.00. University Optics 1 1/4" colored filters in orange, yellow, green and blue, \$8.00 each. Contact Eric Bunn at 692-9592.

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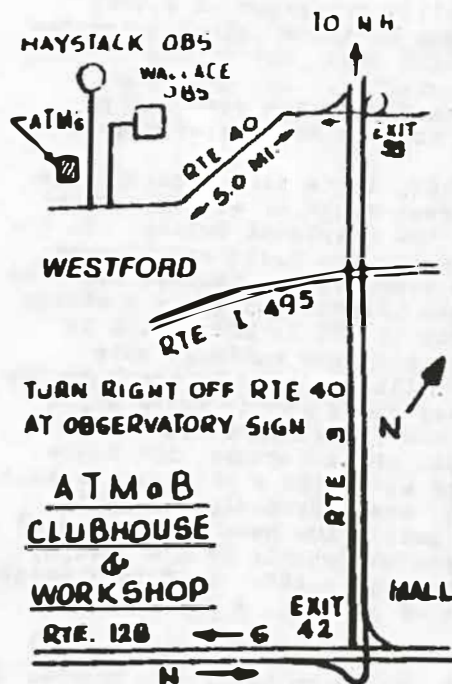
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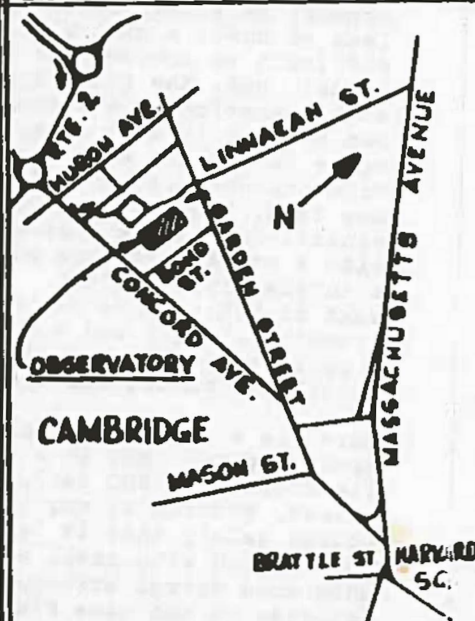
APRIL 1987



OBSERVING

Haystack Observatory
Westford, Massachusetts

Every Saturday
starting at noon



MEETINGS

Philips Auditorium
Building D
Harvard College Observatory
60 Garden Street
Cambridge, Massachusetts
8 p.m.
Second Thursday each month
September to June

HARVARD COLLEGE OBSERVATORY
CENTER FOR ASTROPHYSICS



Amateur Telescope Makers
of Boston, Inc.

Including the Bond Astronomical Club

Established in 1934
in the interest of Telescope Making & Using

EXECUTIVE BOARD 1986-87

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E. Talmadge Mentall, 119 Henry St., Lynn, MA 01902, 598-0766

VICE PRESIDENT

Patrick Quinn, 38 Jackson St., Apt. 3, Ayer, MA 01423, 772-5250

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Kenneth Laurie, 15 Salem St., Cambridge, MA 02139, 577-3603

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Bill Murphy, 6 Peabody Place, Pepperell, MA 01463, 433-5450

MEMBERSHIP SECRETARY

Adrian Levesque, 42 Deerhaven Rd., Nashua, NH 03060, 603-889-4056

MEMBERS AT LARGE

Mario Motta, 7 Bishops Lane, Lynnfield, MA 01940, 334-3648

Frank Novotny, 25 Lumb Ave., Nashua, NH 03080, 603-888-4067

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1983-85 Max Ben-Aaron, 61 South Rd., Bedford, MA 01730, 275-7257

1981-83 Kenneth Laurie, 15 Salem St., Cambridge, MA 02139, 577-3603

1979-81 Philip R. Shutt, Whitney Rd., Harvard, MA 01451

COMMITTEES

OBSERVING COMMITTEE

Stennis Wilson, 8 Grant St., Weymouth, MA 01754, 897-7512

SHOP COMMITTEE

Kenneth Laurie, 15 Salem St., Cambridge, MA 02139, 577-3603

STELLAFANE

Debbie DiCicco, 60 Victoria Rd., Sudbury, MA 01776, 443-8493

APRIL, 1987

The April meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, April 9, 1987 at 8:00 PM

Stephen J. O'Meara of Sky and Telescope magazine will present a talk on "Volcanoes in the Solar System". Mr O'Meara, who is an Assistant Editor at Sky and Telescope magazine, is a distinguished visual observer, credited with the first visual sighting of Comet Halley for this apparition, as well as the first visual sighting of the spokes in Saturn's rings (before Voyager's "discovery").

Please join us for dinner with the speaker before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge avenue in Cambridge, at Route 16, near the (former) Route 2 rotary.

FOR SALE

16" Dia F2.5 Schlieren mirror, \$75.00; 4" F15 Refractor tube assembly with 26mm Kellner eyepiece and Edmund equatorial head (no tripod) \$90.00; 7" F2.5 Aero Ektar lens with wooden camera body, \$50.00; 3" and 4" reflector tube assemblies (no eyepieces), free. Contact Jon Lingel, Mt Washington Observatory, Gorham, NH 03581.

WANTED: 13" or 14" Newtonian, such as the 13.1" Odyssey. Please call Steve Mock at 625-5870.

WANTED: Sky and Telescope Bulletin "A", "Oblique and Catadioptric Systems" by Anton Kutter. It is needed by the ATM library for photocopying (or donation), as it is out of print. Please call Ed Wallner at 276-2050 (W) or 358-7938 (H).

If you would like to list anything in the ATM Bulletin, please send to: Ken Launie, 15 Salem Street, Cambridge, MA 02139 or call either 577-3603 or 491-6855.

MEETING DATE	BULLETIN DEADLINE
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Spring has sprung, and there is no better time to view two of the most impressive galaxy groupings in either hemisphere. Literally hundreds of these island universes glow like fireflies in the night sky! One of the groupings is the Coma galaxy cluster. So, grab your Tiration Atlas, a big scope (the bigger the better this time) and come with me on a tour of the spring night sky.

Before we reach our destination, let's take a quick stop in Canes Venatia. A few degrees south of eta Ursa Major is everyone's favorite, M51, the Whirlpool Galaxy. In the club's 16" scope the galaxy shows two faint spiral arms and a hint of connecting arm nebulosity. Nearby, NGC 5198 is quite obvious, showing some brightening and a distinct shape. 12 to 15 degrees south of M51 is M63, which is also a spiral galaxy, showing a bright nucleus, some suspected arms (barely) and a falloff of brightness at the edges. Nice! Halfway between and a little above alpha and beta Canes Venatia is where you'll find M94. It's very bright with no noticeable arm structure, but has a faint, dim ring of nebulosity much like a planetary nebula. Finally, at the end of a line drawn from alpha to beta Canes Venatia, close to but just below beta, lie NGC 4485 and NGC 4490. Both were observed faintly in a 6" scope, as well as with a 10" and the club's 16". 4485 is a bright streak while 4490 forms sort of a hook. A good test of visual acuity!

Here are a few galaxies that belong to the Virgo cluster of galaxies. First is NGC 4565 in Coma. At mag 10.2 it appears as a thin needle of light. It has an obscuring lane of dust, a central bulge and thin arms so it is difficult to notice, but once seen it will remain a favorite! M64, the Black Eye galaxy, is another strange galaxy with a portion of its nucleus hidden by a cloud of dust. At mag 8.8, it is easy to spot but you'll need at least a 10" scope to see the dust cloud. Next is M85, a bright, easy transitional type of galaxy shining at mag 9.3. M88, at mag 10.2, looks like a version of M31, having a quite bright central core and symmetrical arms. M98 is almost edgewise, with a compressed core and sparse outer disc structure, like a subtle wisp of light. It shines at mag 10.7. M99 is just east of M98, and is almost face on, shining at mag 10, with symmetrical arms and a moderately bright core. Next is M100, a relatively undistinguished face-on galaxy of mag 10.6 brightness having two spiral arms and a bright nucleus.

Here are a few bright galaxies in Virgo to look for on warm April nights. M60 is a pale hazy spot at mag 8.9. Look for its companion, NGC 4647, a small, loosely wound spiral galaxy, shining at mag 12. Next is M61, which is a wonderful spiral galaxy that is face on at mag 10. Little detail can be observed with small apertures, but a 14" - 17" scope might show some spiral structure. Look for two other elliptical galaxies in the same field, M84 and M86. With a conglomeration of smaller galaxies around the two, they will take some time to digest. The mags are 9.7 and 9.3 respectively and both are pale smudges of light with no detail visible whatsoever. Until next month, clear skies to all!

- Sky Dave (Dave Augoin)

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MAY, 1987

The May meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, May 14, 1987 at 8:00 PM


This month we will have our annual "Show and Tell" meeting. Everyone who is interested is invited to talk about current projects, observing plans or results, show slides; in short, anything astronomical. A slide projector will be available, and arrangements can be made for 16mm or 8mm movie projectors as well as an overhead projector by calling Tal Mentall at 598-0766 or Ken Laurie at 577-3603. All we ask is for talks to be fairly short (under 10 minutes) to allow everyone to speak without the meeting running late.

Please join us for dinner before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge avenue in Cambridge, at Route 16, near the {former} Route 2 rotary.

Elections for the 1987-1988 slate of officers are coming up at the June meeting. A nominating committee consisting of Dave Aucoin, Dick Koolish and Mario Motta was elected at the April meeting. The committee has met and nominates the following slate of officers:

President	Gary Walker
Vice President	Dave Aucoin
Secretary	Ken Laurie
Treasurer	Bill Murphy
Membership Secretary	Adrian Levesque
Members-at-large	Mario Motta
	Frank Novotny

Members have the right to offer additional nominations from the floor of the annual meeting. Written notice containing the name or names of persons to be nominated must be filed with the secretary at least ten days before the annual meeting (June). These nominations must include the signatures of at least seven club members.

Telescope operators are often needed to  with the observing held after each talk (weather permitting, of course), so for more information, please call Arlene Walsh of the SAO at 495-7461. You can bring your own scope or use one of the Observatory's.

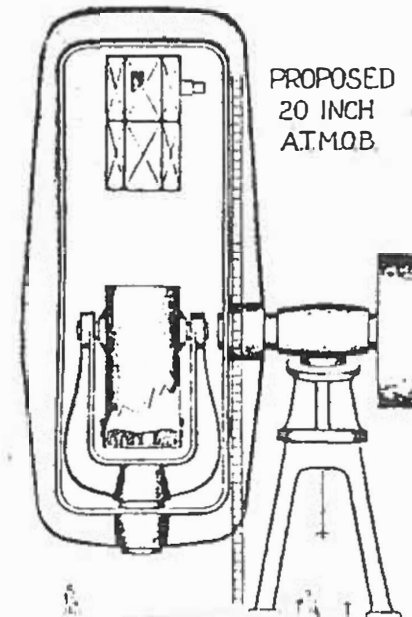
JANUARY-FEBRUARY

THE TELESCOPE

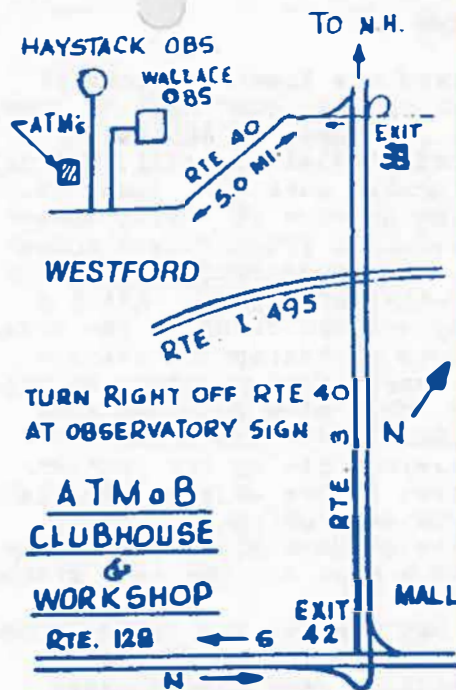
1938

Members of the Amateur Telescope Makers of Boston, ATMQB, one of the most active organizations of its kind in the country, are planning to build a twenty-inch reflector for club use. As is only natural, there has been much discussion as to the type of mirror, mounting, etc., to be employed. A compromise suggestion recently submitted to the Committee for the twenty-inch included the drawing reproduced herewith. We hope that professional astronomers, especially those engaged in designing large telescopes, will find the diagram helpful.

The mounting is a combination of the German equatorial, the closed "yoke," and the ordinary fork. The tube embodies the advantages of the closed tube, no tube at all, and the lattice-work tube. We asked the designers what held the lattice section in position and received the reply that the "no tube" section did this very effectively. When we countered with the query as to what held the "no tube" section in place, the answer was given that "nothing is required since the no tube section doesn't weigh anything." Perhaps you can figure this out. Part of the mirror has a ribbed back and part is plain, to satisfy two schools of thought. Half a hole in the mirror is provided for the Cassegrainian observers. The face of the mirror is supposed to be parabolic. To allow for a possible "turned down" edge, the instrument has been designed large enough, with the hope that twenty inches or so at the center will be satisfactory. An optical workshop is provided for at the base of the pier.



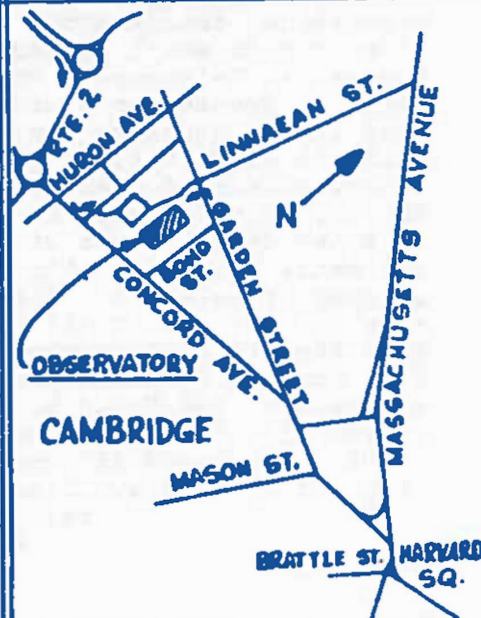
JUNE 1987 -



OBSERVING

Haystack Observatory
Westford, Massachusetts

Every Saturday
Starting at noon



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SHOP COMMITTEE

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STELLAFANE

Dennis diCicco, 60 Victoria Rd., Sudbury, MA 01776, 443-6493

JUNE, 1987

The June meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, June 11, 1987 at 8:00 PM

This month's talk is titled "The East Observatory; A Lifelong Dream Coming True". George East, a 20 year member of the ATM's who has built several telescopes, including a prize winning 8" Maksutov, will talk about his latest project, an impressive home observatory. George earned his PhD in Mechanical Engineering at MIT in 1971, and in addition to astronomy, is interested in photography, electronics, computers and travel. His long suffering wife Marie has formed an observatory widows' club, with Dennis DiCicco's wife Hilary and Joyce Motta as two other charter members. No doubt George's talk will inspire other observatory projects!

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Many Amateurs have acquired the five handbooks of the Webb Society, so it will come as good news to them that there are now two more. Volume 6, "Anonymous Galaxies" covers those galaxies labelled Abell, UGC and MCG. Authors Thomson and Morales used 13.1 inch, 16.5 inch and 17.5 inch telescopes to view 165 faint uncataloged galaxies, making meticulous drawings and notes of curious things they saw, thus producing a manual of how to hunt down these celestial strangers. After a brief historical review, the authors describe the older visual catalogs and the modern photographic catalogs and atlases upon which the search for anonymous galaxies must be based. In part two, they give detailed star charts for locating the galaxies with positions for 2000.0, as well as field drawings giving the authors' first hand observations. Most of the objects are listed in special catalogs, but some are "unlisted", truly anonymous galaxies, which the authors claim are unique discoveries. This volume is a must for the real diehard deep sky observers like me.

Volume 7, "The Southern Sky", shows the curiosities of the Southern Hemisphere. Only a few of us have glimpsed these celestial beauties (remember Bonaire - hint, hint), and here you will find described some of the more striking celestial wonders, richly illustrated with visual observations made with instruments ranging in size from small binoculars to the 3.9 meter Anglo-Australian Telescope. The first of the book's three parts is devoted to a concise history of optical astronomy in the Southern Hemisphere, ranging from Edmund Halley's expedition of 1676-77 to St Helena, to the establishment of present day observatories in South Africa, South America and Australia. Next there are selected descriptions of objects that include the large and small Magellanic Clouds, Eta Carinae and the Fornax cluster of galaxies. Finally, the main catalog lists some 300 objects of all classes as seen using instruments from 15 x 80 binoculars to the 3.9 meter telescope. Some wonders described in detail are: the center of our galaxy, the Gould belt, stretching from Scorpius to Carina, the Coal Sack and Omega Centauri and 47 Tucanae.

Up to date and informative, this volume is a valuable item for those travelling 'south of the border'.

Til next time,

Dave Aucoin

Reminder- The next Harvard Open Night will be held on June 18. Volunteers are needed. Contact Arlene Walsh at 495-7461.

JUNE, 1987

The June meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, June 11, 1987 at 8:00 PM

This month's talk is titled "The East Observatory; A Lifelong Dream Coming True". George East, a 20 year member of the ATM's who has built several telescopes, including a prize winning 8" Maksutov, will talk about his latest project, an impressive home observatory. George earned his PhD in Mechanical Engineering at MIT in 1971, and in addition to astronomy, is interested in photography, electronics, computers and travel. His long suffering wife Marie has formed an observatory widows' club, with Dennis DiCicco's wife Hilary and Joyce Motta as two other charter members. No doubt George's talk will inspire other observatory projects!

Please join us for dinner before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge avenue in Cambridge, at Route 16, near the (former) Route 2 rotary.

Elections for the 1987-1988 slate of officers will be held at the June meeting. The nominating committee consisting of Dave Aucoin, Dick Koolish and Mario Motta, elected at the April meeting, has met and nominated the following slate of officers:

President	Gary Walker
Vice President	Dave Aucoin
Secretary	Ken Launie
Treasurer	Bill Murphy
Membership Secretary	Adrian Levesque
Members-at-large	Mario Motta
	Frank Novotny

Members have the right to offer additional nominations from the floor of the annual meeting. Written notice containing the name or names of persons to be nominated must be filed with the secretary at least ten days before the annual meeting (June). These nominations must include the signatures of at least seven club members.

Many Amateurs have acquired the five handbooks of the Webb Society, so it will come as good news to them that there are now two more. Volume 6, "Anonymous Galaxies" covers those galaxies labelled Abell, UGC and MCG. Authors Thomson and Morales used 13.1 inch, 16.5 inch and 17.5 inch telescopes to view 165 faint uncatalogued galaxies, making meticulous drawings and notes of curious things they saw, thus producing a manual of how to hunt down these celestial strangers. After a brief historical review, the authors describe the older visual catalogs and the modern photographic catalogs and atlases upon which the search for anonymous galaxies must be based. In part two, they give detailed star charts for locating the galaxies with positions for 2000.0, as well as field drawings giving the authors' first hand observations. Most of the objects are listed in special catalogs, but some are "unlisted", truly anonymous galaxies, which the authors claim are unique discoveries. This volume is a must for the real diehard deep sky observers like me.

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Dave Aucoin

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June 87

Imagine a clear, moonless night. Stars dot the sky as the Milky Way flows from one horizon to the other with lacy filaments like wisps of smoke. You select a star field, center an object in your finder, insert your favorite eyepiece, and wow! The field abounds with nebulosity as you've never seen before! On my last trip to Vermont, at the end of April, such wondrous observing was evident. Many objects were seen in such a clear, deep, dark sky. This month I intend to whet your appetite, and I've a collection of galaxies in the bowl of the big dipper for the diehard observers among you. So grab your Tirion and let's head for the stars.

At midnight later this month, Scorpius and Hercules will have just passed the meridian. Globular clusters abound in the sky, and here are a few easy ones. If we start in the south with M4, nestled between Antares and σ Scorpii, you'll notice that it can barely be considered a globular, having a magnitude of 6.4 due to the fact that we are looking at it through the thick part of our atmosphere. Its coordinates are 16h 22m and -26° . Above it is M5. Comparable to M13, it is a truly eye watering sight: At mag 6.2, this cluster is highly resolvable, having many members as bright as 11th and 12th magnitude. Find it at 15h 18m and $+02^\circ$. M13, the northern skys' brightest globular is also a wondrous sight. Located at 16h 41m and $+36^\circ$, this great Hercules cluster is the most spectacular next to Omega Centaurus and 47 Tucanae. At mag 5.7 the eyepiece is filled with many of its 11th mag members.

In Ophiuchus, there are a few of Messier's globulars. M107, a mag 9.2 object, is a small, loose, distant globular that is located at 16h 29m and -13° . M10, at 16h 54m and -4° , and M12, at 16h 44m and -1° , are mag 7.6 and 8.0 brightness respectively; both are similar in apparent diameter and distance from us (5 kpc). At 17h 35m and -3° , M14 may not be particularly bright (mag 9.4 with its brightest members at mag 15) or very large, but Herschel once described it as "a most beautiful and delicate cluster, not very bright, but of the finest stardust." Also, in 1938 a nova was discovered there.

There are a few planetaries and some magnificent nebulae that should be noted such as M57 in Lyra. At mag 9.3 and 18h 51m and $+33^\circ$, this is a wonderful planetary that is very much observed, yet a little mysterious. Everyone tries to see its mag 14.7 central star. Have you ever seen it? Any telescope will reveal its donut ring, and a nebular filter further enhances it. Try it! M27, another planetary, is also a crowd pleaser. Messier called it "a nebula without a star." Its surface mag is 7.6 and its central star is mag 13.4. It has two triangles of nebulosity, hence its dumbbell shape. Fantastic! It is located at 19h 57m and $+22^\circ$.

FINAL 5

Final, three great nebulae in Sagittarius. First, M8, the Lagoon. Located at 18h 02m and -24° , and of mag 6.0, it contains a sparkling star cluster (NGC 6530), pale billows of nebulosity, and a dark lane of obscuring dust across its center. M20, the Trifid, located at 17h 58m and -23° , it is named for its triple division. At its center is the bright double star HN 40. It has a network of obscuring dust lanes that create an illusion of flower petals! The Omega or Horseshoe nebula, at mag 7.0, is easily found at 18h 20m and -16° . It is a region of ionized hydrogen gas excited by the hot stars within its distinctive shape. Wow!

That's it for the 'easy' stuff! Now for the tuff stuff! In the bowl of Ursa Major is a collection of 17 galaxies between mags 10.0 and 13.0. Most are easy to find. Look for the clusters of 2 or 3 first, then starhop to the rest. M108 is just outside the bowl, so it doesn't count. Between γ and χ U Major are 14 galaxies, also within the same 10 - 13 mag range. M109 is included with these, so it's a head start. Finally, between χ and ψ are five more galaxies that are a little tougher to find. Once you've found them, the night is almost over! Good luck, and clear skies to all!

Deep Sky Dave (Dave Aucoin)

FOR SALE

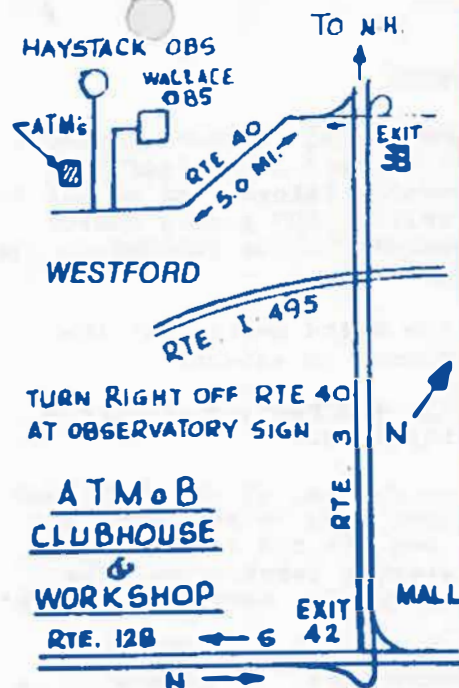
FOR SALE: 6" f5.6 reflector. Contact Keith Kreuger at 745-6894

FOR SALE: University 2" 32mm Konig 60 degree field eyepiece, \$75.00. Also, Pentax K1000 35 mm camera with case, neck strap and 50mm f1.7 lens, \$90.00 or best offer. Celestron 1.25" LPR filter, \$15.00. See Dave Aucoin at the meeting or call 899-0796 after 6:00 PM.

WANTED: Used altaz or equatorial mount suitable for a 4" refractor. Must include tripod. Please contact E. G. Stocks Jr, 20 Surrey Lane, Holden, MA 01520.

If you would like to list anything in the ATM Bulletin, please send to: Ken Launie, 15 Salem Street, Cambridge, MA 02139 or call either 577-3603 or 491-6855. Please note that this includes articles, reviews, etc, in addition to items for sale!

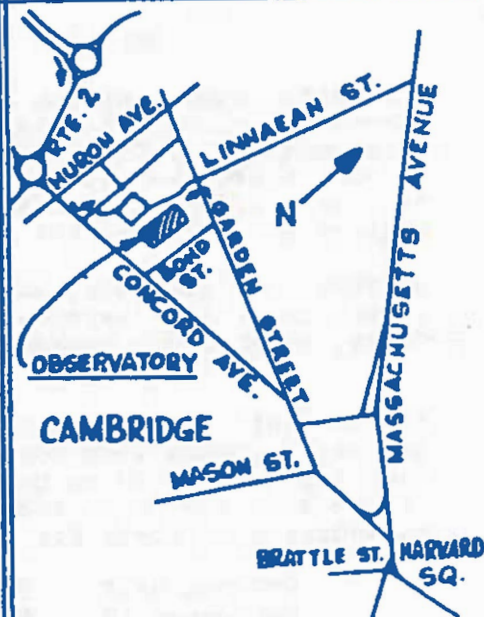
MEETING DATE	BULLETIN DEADLINE
July 9	June 25
September 10	August 27



OBSERVING

Haystack Observatory
Westford, Massachusetts

Every Saturday
Starting at noon



MEETINGS

Philips Auditorium
Building D
Harvard College Observatory
60 Garden Street
Cambridge, Massachusetts
8 p.m.
Second Thursday each month
September to June

HARVARD COLLEGE OBSERVATORY
CENTER FOR ASTROPHYSICS



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Including the Bond Astronomical Club

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Frank Novotny, 25 Lumb Ave., Nashua, NH 03060, 603-888-4067

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1981-83: Kenneth Launie, 15 Salem St., Cambridge, MA 02139, 577-3603

1979-81: Philip R. Shutt, Whitney Rd., Harvard, MA 01451

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SHOP COMMITTEE

Kenneth Launie, 15 Salem St., Cambridge, MA 02139, 577-3603

STELLAFANE

Dennis diCicco, 60 Victoria Rd., Sudbury, MA 01776, 443-8493

JULY, 1987

The July meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, July 9, 1987 at 8:00 PM

This month's meeting, our Summer meeting, will include a talk by our newly elected President, Gary Walker, as well as an open show and tell (by popular demand). Bring your latest astrophotos, observatory or telescope progress reports, etc. As usual, we will have a slide projector available, and 8mm and 16mm sound movie projectors are available by prior arrangement with Ken Launie at 577-3603. Please call before 4PM on the day of the meeting.

Please join us for dinner before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge avenue in Cambridge, at Route 16, near the (former) Route 2 rotary.

RENEWAL NOTICE

You will be soon be receiving your 1987-88 membership renewal notice from Membership Secretary Adrian Levesque, as well as a separate notice from Sky and Telescope. It simplifies matters if you send both to Adrian with your renewal check.

The election for the 1987-1988 slate of officers was held at the June meeting, and our new officers are as follows:

President	Gary Walker
Vice President	Dave Aucoin
Secretary	Ken Launie
Treasurer	Bill Murphy
Membership Secretary	Adrian Levesque
Members-at-large	Mario Motta Frank Novotny

They will appear on the September bulletin cover.

Help is needed with refreshments at some of our meetings. If you are interested in taking care of refreshments on an occasional basis, please call Gary Walker. The club reimburses expenses.

UPCOMING EVENTS

July 24, 25 Stellafane, the annual amateur telescope making and astronomy convention held in Springfield, Vermont. If you haven't attended before, you owe it to yourself to see what keeps nearly 2000 people coming year after year! Contact Dennis DiCicco (listed on the front cover) for information.

September 8 7:00 PM Executive Board meeting at the clubhouse. Any member is welcome to attend.

September 10 8:00 PM Monthly ATM Meeting, Phillips Auditorium, subject to be announced.

September 12 The annual club picnic, at the clubhouse in Westford. This is of course open to everyone, but bring your own food; we'll provide the barbecue pit, with observing after dark, weather permitting. The picnic will be held rain or shine (we have a big porch)!

October 5 Astro-Assembly, North Scituate, RI. The annual convention of the Skyscrapers. Details will be in the September Bulletin.

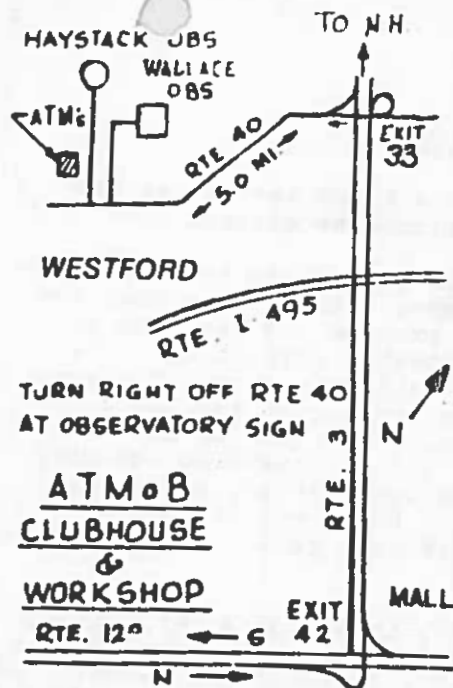
FOR SALE

FOR SALE: Astro-Physics dual-axis drive corrector with electric declination motor and bracket for fork mounted telescopes, \$225.00 or best offer. University Optics 2" 32mm Konig eyepiece, less than one year old, \$50.00. Brandon 1 1/4" 24mm and 8mm eyepieces, \$35.00 each. Contact Eric Bunn at 692-9592.

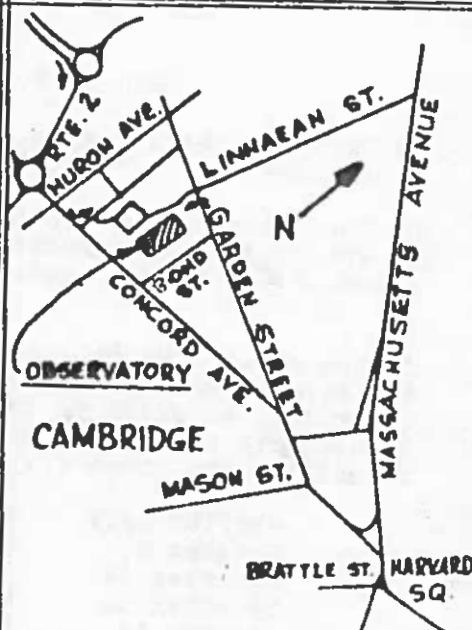
WANTED: Antique astronomical telescopes and accessories in any condition, especially by American makers such as Clark, Fitz, etc. Please contact Ken Launie at 491-6855.

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MEETING DATE	BULLETIN DEADLINE
September 10	August 26
October 8	September 23
November 12	October 28
December 10	November 25
January 14	December 30



OBSERVING
Haystack Observatory
Westford, Massachusetts
Every Saturday
starting at noon



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CENTER FOR ASTROPHYSICS

MEETINGS
Philips Auditorium
Building D
Harvard College Observatory
80 Garden Street
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8 p.m.
Second Thursday each month
September to June

September 1987



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STELLAFANE

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UPCOMING EVENTS

SEPTEMBER, 1997

The September meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, September 10 1997 at 8:00 PM

Samuel Palmer of the Center for Astrophysics will present a talk titled "The New Moon- 15 Years After Apollo". Mr Palmer was at the Goddard Institute for Space Studies from 1970 to 1985. He also taught Astronomy at Lehman College in New York as well as the Science Honors Program at the same college. He earned his BS and MS in Physics at Columbia University, and is a faithful pilgrim to Stellafane every year. He has amateur astronomy as a hobby and is presently working on a millimeter wave radio telescope for mapping the Galaxy.

Please join us for dinner before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge Avenue in Cambridge, at Route 16, near the (former) Route 2 rotary.

There will be a brief discussion following the September meeting for anyone interested in the club's 20" telescope project. Scott Milligan has interesting mirror test results, and would like to move ahead with the project.

People interested in ordering a copy of the atlas "Uranometria" at a discount are urged to bring their money (\$27.94 + tax) to the meeting so we can place our order right away.

Help is needed with refreshments at some of our meetings. If you are interested in taking care of refreshments on an occasional basis, please call Gary Walker. The club reimburses expenses.

September 8 7:00 PM Executive Board meeting at the clubhouse. Any member is welcome to attend.

September 12 The annual club picnic, at the clubhouse in Westford. This is of course open to everyone, but bring your own food; we'll provide the barbecue pit, with observing after dark, weather permitting. The picnic will be held rain or shine (we have a big porch)! Special events to be held at the picnic include a telescope collimating clinic, to be held by Scott Milligan from 3:00 to 5:00, and an observing workshop, "Let's find the most interesting deep sky objects we can before moonrise (about 10 PM)", run by Dave Auccin. This will start as soon as it gets dark.

October 3 Astro-Assembly, North Scituate, RI. The annual convention of the Skyscrapers. Details will be available at the meeting. The featured speaker will be Clyde Tombaugh, the discoverer of Pluto.

FOR SALE, WANTED

WANTED: 7mm Nagler eyepiece. Please contact Dave Auccin at the meeting, or call 999-0796.

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October 1987

The October meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on:

Thursday, October 8, 1987 at 8:00 PM

Dr. John Huchra, Professor of Astronomy at the Center for Astrophysics will give a talk titled "A Universe of Galaxies Redshift Surveys". Dr. Huchra received a BS in Physics from MIT in 1970 and a PhD from Caltech in 1976.

Please join us for dinner before the meeting at the Joyce Chen Restaurant at 6:00 PM. The restaurant is on Rindge Ave. in Cambridge, at Route 16, near the former Route 2 rotary.

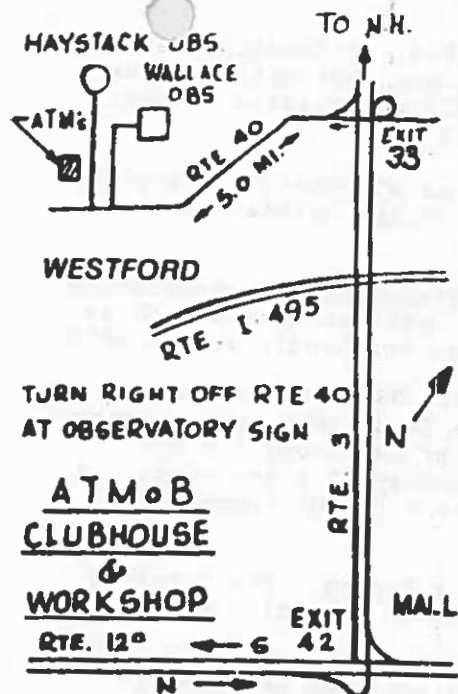
There will be work sessions at Stellafane on October 3 and 24, and November 7 and 21. They start at 10:00 AM at the new land.

The next ATM Executive Board meeting will be 8:00 PM, Thursday, November 5th, at the clubhouse.

Adam Gould, a club member and student at Phillips Academy in Andover desperately needs rides to club meetings and observing sessions. If you can help him, please call him at 475-9757.

For Sale: Meade 2080 LX3 with multi-coated silvered optics. Comes with field tripod, equatorial mount, quartz drive, dew cap, off axis guider, illuminated reticle, tele extender, tele compressor, 7mm, 9mm, 20mm and 40mm eyepieces, drop in filter set, astronomers flashlight, single/dual axis controller, ac converter, T adapter and other accessories. \$1500 or \$2500 with video camera. Call Mark Fallon (day) 603-884-5042, (evening) 603-883-9339.

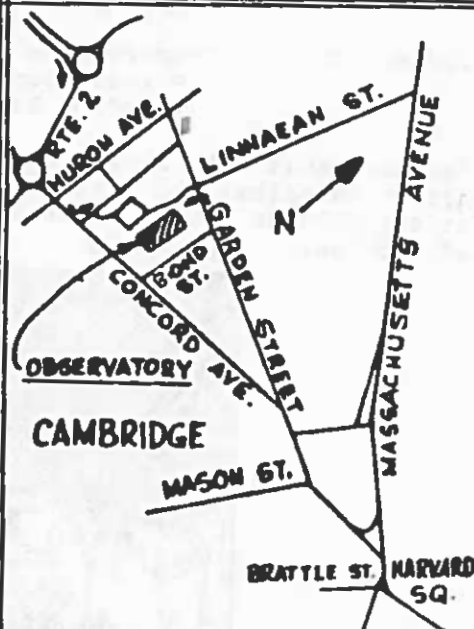
The Custer Institute's Astronomy Jamboree will be held the weekend of October 23-25 at the Custer Institute on Long Island, NY. There will be talks on Friday night: "Celestial Poetry" and "Steering by the Stars", Saturday afternoon: "Messier Observing Program with Binoculars", "Space Station", "Amateur Astro-Photography", "Exploding Stars", and Sunday morning: "Cosmic Walk" and mini-talks. There will also be a telescope clinic on Saturday morning. If clear, there will be observing with the 6" Eichner refractor, 5" Clark refractor and 17.5, 24, and 30 inch reflectors. For more information, contact Charles Cardona, 11610 Main Bayview Rd, Southold, NY 11971.



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Every Saturday
starting at noon



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NOVEMBER, 1987

The November meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, November 12, 1987 at 8:00 PM

Our November speaker will be Dr. Jeffrey McClintock of the Center For Astrophysics. His talk will be titled: "Do Black Holes Exist?"

Please join us for dinner before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge Avenue in Cambridge, at Route 16, near the (former) Route 2 rotary.

UPCOMING EVENTS

- November 13 Public Star Party, sponsored by the ATM's at the Ponkapoag Golf Course of the Blue Hills Reservation. Further information at the meeting
- November 14 Deep Sky Seminar, with Dave Aucoin and Scott Milligan, at the Clubhouse. This will help people find their way around the skies.

If you would like to list anything in the ATM Bulletin, please send to: Ken Launie, 15 Salem Street, Cambridge, MA 02139 or call either 577-3603 or 491-6855. Please note that this includes articles, reviews, etc, in addition to items for sale!

MEETING DATE	BULLETIN DEADLINE
December 10	November 25
January 14	December 30
February 11	January 27
March 10	February 24
April 14	March 30
May 12	April 27
June 9	May 25
July 14*	June 29

(* If held)

Help is needed with refreshments at some of our meetings. If you are interested in taking care of refreshments on an occasional basis, please call Gary Walker. The club reimburses expenses.

FOR SALE, WANTED

WANTED: 2" Star Diagonal for a C-8, preferably the 1/10 wave mirror rather than the 1/8 wave, but will consider either. Please contact Adam Gould at Phillips Academy, Andover, MA 01810, or phone 475-9757.

WANTED: An inexpensive used 6" or 8" Schmidt Cassegrain (Celestron, Meade, etc.). Call Philip Zaleski at 498-3095 anytime.

WANTED: Antique astronomical telescopes and accessories in any condition, especially by American makers such as Clark, Fitz, etc. Please contact Ken Launie at 491-6855.

CENTER FOR ASTROPHYSICS MONTHLY OBSERVATORY NIGHTS

The Harvard-Smithsonian Center for Astrophysics sponsors free programs in popular astronomy for the general public on the third Thursday of every month, at Phillips Auditorium, starting at 8:00 PM. Upcoming lectures include:

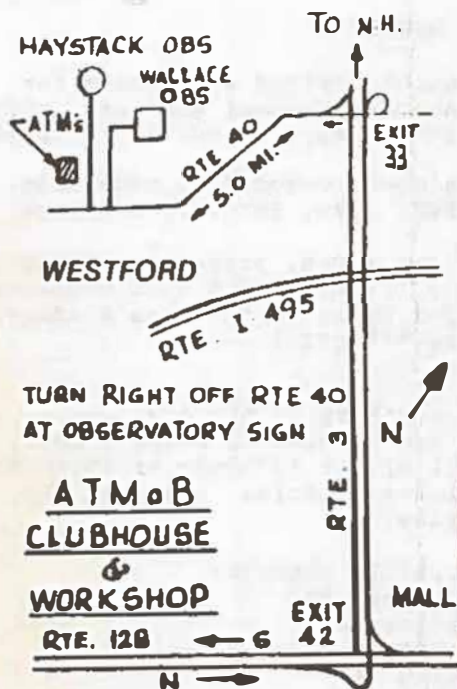
- November 19 "Satellites on a String: The Tethered Satellite System" by Enrico Lorenzini of CFA
- December 17 "Astronomical Highlights of 1987: A Retrospective" by Richard Tresch Fienberg, Sky and Telescope Magazine
- January 21 "Report from Mars: An update on the Red Planet from Viking Flights and Meteorites" by Samuel Palmer of CFA

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THE FAR SIDE By GARY LARSON



All day long, a tough gang of astrophysicists would monopolize the telescope and intimidate the other researchers.

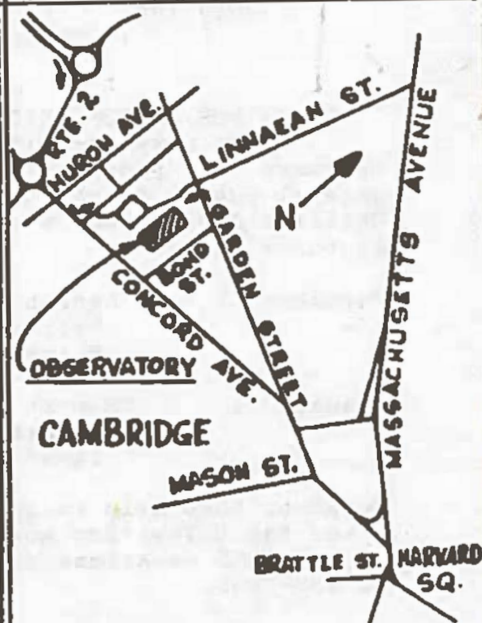


OBSERVING

Haystack Observatory
Westford, Massachusetts

Every Saturday
starting at noon

CLUBHOUSE PHONE
692-8708



HARVARD COLLEGE OBSERVATORY
CENTER FOR ASTROPHYSICS

MEETINGS

Philips Auditorium
Building D
Harvard College Observatory
60 Garden Street
Cambridge, Massachusetts
8 p.m.
Second Thursday each month
September to June



Amateur Telescope Makers
of Boston, Inc.

Including the Bond Astronomical Club

Established in 1934
in the interest of Telescope Making & Using

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FOR SALE, WANTED

DECEMBER, 1987

The December meeting of the Amateur Telescope Makers of Boston, Inc. will be held in Phillips Auditorium at Harvard College Observatory on

Thursday, December 10, 1987 at 8:00 PM

Our December speaker will be Dr. Lee Hartman of the Center For Astrophysics. His talk will be titled: "The Formation of Stars".

Please join us for dinner before the meeting at the Joyce Chen Restaurant at 6 PM. The restaurant is on Rindge avenue in Cambridge, at Route 16, near the (former) Route 2 rotary.

We are happy to report that long time member Ed Doherty was recently married. We offer our best wishes to the happy couple!

Help is needed with refreshments at some of our meetings. If you are interested in taking care of refreshments on an occasional basis, please call Gary Walker. The club reimburses expenses.

UPCOMING EVENTS

- December 12 Clubhouse Seminar: "To Buy or Not To Buy Your First Telescope, and What Accessories Do You Need?" This will be run by Dave Aucoin, Scott Milligan and Gary Walker. Time to be announced at the meeting.
- December 19 Stellafane work weekend, starting at 10 AM at the "Convention Center" (new land). To be followed by observing, weather permitting.

FOR SALE: Celestron adjustable tripod with wedge for C-8 or large base C-5. Includes no-tool knob set. \$100. Call Tom Calderwood at 873-2602 days or 666-2137 evenings.

WANTED: 8" Cave Astrola in good, unmodified condition. Call Peter Foukal at 491-2627 days, 581-7537 evenings.

WANTED: 2" Star Diagonal for a C-8, preferably the 1/10 wave mirror rather than the 1/8 wave, but will consider either. Please contact Adam Gould at Phillips Academy, Andover, MA 01810, or phone 475-9757.

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Dec-87

THE DEEP SKY TONIGHT

The late autumn sky is alight with brilliant stars, wreaths of flowing nebulosity and distant galactic islands. Some of these wonders can be seen with the unaided eye, while the rest are visible with the aid of binoculars or a telescope. The evenings are longer and begin earlier than during the summer months, so more time can be spent 'neath a celestial canopy. With enough warm clothing, your star atlas and scope, you can begin your journey to the stars!

Our first stop is the Andromeda Galaxy, or M31 as most of us know. At 2.2 million light years away, it is a long distance to see an object, but it is a close celestial neighbor. Many overlook this galaxy, and fail to see any detail or structure, but a few dust lanes and an HII region or two can be seen with modest sized telescopes and a little patience. It has two satellite galaxies, M32 close to its northern edge, and NGC 205 or M110, south of the great galaxy. The magnitudes of M31, M32, and M110 are 4.8, 9.5 and 10.8 respectively, and the coordinates are 00.42 h and +41.09 degrees.

Two planetary nebulae are worth discussing, one in Andromeda and the other in Perseus. M76 in Perseus is known as the Little Dumbbell (or barbell or butterfly, etc.), and is an interesting planetary, though the magnitude listed in references is too faint by about a mag or so. The shape suggests an elongated hourglass. I had a chance to view it through an 18 inch Clark refractor at Amherst College. Using a 24mm eyepiece (about 320x) and an O III filter, the view was spectacular! Two hooks were visible on either side of the nebula, with much inner detail! Wow!! Its mag is 12.2 and its position is 1h 38.8m, +51.9 degrees. In Andromeda, NGC 7662 (sorry no M #) shines quite brightly at mag 9.2. It has a very high surface brightness and measures only 20" across. At high powers it appears bright blue! Look for it at 23h 25.9m and +42.33 degrees.

Between Cassiopeia and Perseus is the noteworthy double cluster, NGC 884 and NGC 869. To the eye they appear as a single patch of light, but under some magnification the view is quite astonishing! It takes too many words to describe it, so look for it and enjoy! They are located at 21.5h and +56.55 degrees, with magnitudes of 4.4 and 4.7.

We'll take a side trip to M33, the Pinwheel galaxy in Triangulum. Though the 6.3 mag may seem bright, its large size gives it a low surface brightness. Finding it is a challenge, unless you know where to look. It is face on to us, and shows a magnificent display of spiral arm structure, visible in most scopes. There are also many H II regions visible, most notably NGC 604, an enormous nebula 6 times larger than our own M42! Most of these regions are detectable in larger aperture scopes. Look for it at 1h 31.1m and +30.24 degrees.

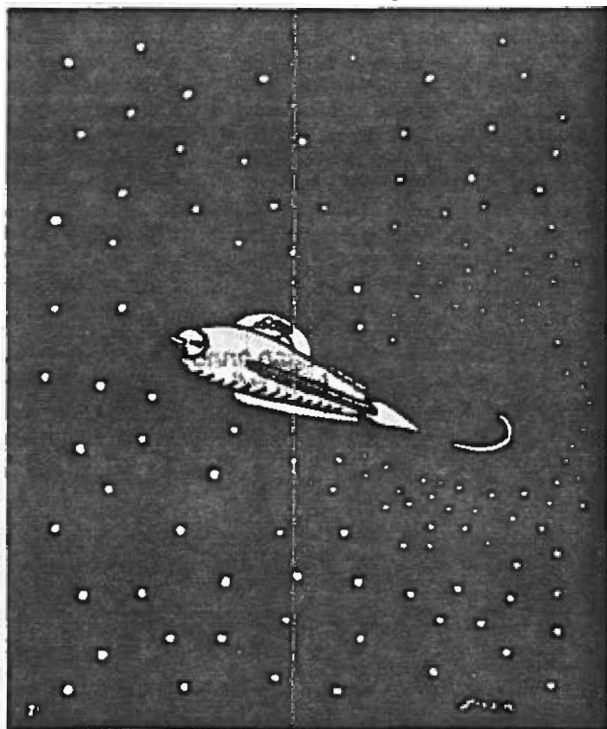
A most wondrous sight is the Pleiades, M45 or Seven Sisters (Subaru in Japanese). The cluster mag is 1.4 and many stars are visible in binocs or a scope. The next time you are out, count how many stars you can see with your unaided eye. From Westford I have seen 9, and only on a very transparent night. How many can you see? A reflection nebula accompanies this cluster, surrounding the stars Maia, Merope, Electra and Alcyone. It is a reflecting nebula, so a filter may not work!

One last object, seen later in the evening, is so spectacular that I cannot describe all of its beauty. M42, NGC 1976 and its surrounding nebulosity are such a splendid sight that words aren't enough. The enveloping wreath of gas surrounding the four infant stars of the "Trapezium" flows away left and right like the wings of a bat. Filters such as UHC, O III and H-beta greatly enhance the view, showing detail not visible without them! The mag is 3.0, and it is found at 5h 33m and -5.57 degrees. Happy hunting, and clear skies to all!

Deep Sky Dave (Dave Aucoin)

THE FAR SIDE

By GARY LARSON



Houdini escapes from a black hole