



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. 11, No. 11 December 2000

This Month's Meeting...

Thursday, December 14th, 2000, at 8:00 PM
Phillips Auditorium, Harvard-Smithsonian
Center for Astrophysics

This Month's Meeting...

THIS MONTH'S speaker will be Dr. Andrea Prestwich, Staff Scientist at the Smithsonian Astrophysical Observatory. Born in Bristol, England, she has been interested in astronomy since she was about 5 years old. She graduated from Queen Mary College, London, with a degree in physics, completed her Ph.D. in Astrophysics at Imperial College London, then worked as NRC Resident Research Associate at NASA-Marshall Space Flight Center. In 1991 she moved to the Smithsonian Astrophysical Observatory and has been a staff scientist at the Chandra X-ray Center for 5 years. Her research interests focus on extragalactic astronomy, especially starburst galaxies and star formation in colliding galaxies. Her current position at the Chandra X-ray Center involves managing the science web site and organizing the science help desk. Her topic will be "Making Monsters? Chandra observations of starburst galaxies reveal mid-sized black holes".

Join us and our most excellent speaker for dinner at 5:45 PM at the Changsho Restaurant located at 1712 Mass Ave. in our fair city, Cambridge.

President's Message...

WHILE AT our clubhouse one Thursday night I was thumbing through an old astronomy magazine from the early 60's. There weren't many ads, only a few manufacturers, and some accessories. A conclusion I drew was that the group of amateur astronomers and those interested in popular astronomy was small enough to limit commercial interest. The variety of commercially manufactured equipment was limited. One was

inclined to build it yourself. In fact, there were whole page ads featuring surplus equipment at bargain prices. There was even an ad for a mirror grinding and polishing machine for the do-it-yourself enthusiast. In contrast, today, as I read the latest issue of an astronomy magazine, I could not help notice the large number of ads. Normally, lots of ads in a magazine annoy me. However, because almost all of the ads are related to our hobby, I find that I look forward to reading them, as well as the magazine's main content. It is often in the ads that I become aware of the latest hardware and software available. But the conclusion I make now is that our hobby has grown. There is now an increased interest in space and astronomy and the commercial aspect of this is now reflected in the number of ads in the most popular astronomy magazines as well as the array of telescopes for sale in the shopping malls. If there is this much commercial endeavor, it means there is a vast number of people interested in our hobby. It becomes more evident to me how important our mission of education through outreach programs such as star parties and Astronomy Day activities at the Museum of Science is. I would like to think it is because of our public outreach programs that we are contributing to the popular interest of astronomy. I would like to personally, and on behalf of the club, thank RICH NUGENT for organizing our star parties and to all the club members that freely lend their time to make these activities possible.

-Bob Collara-

Executive Board Meeting...

AN EXECUTIVE Board meeting was held at the clubhouse in Westford on Sunday, November 19th.

A temporary copy of the current club history will be put on a non-public URL for six months for review and proofreading. Members interested in proofreading it are invited to contact Member-at-Large BRUCE BERGER (berger@mediaone.net) for the address. After it is proofread it will be made available permanently at www.atmob.org. Past presidents and older members of the club are encouraged to proofread the history.

A list of telescopes belonging to the club and who donated them will be made. Information from older members (prior to 1990) is needed to create an accurate list. Contact STEVE CLOUGHERTY, JOHN REED, or PAUL CICCHITTI.

An ATMob Honor Roll plaque will be created for the clubhouse. It will commemorate illustrious club members and those with many years of service to the club. Please suggest names and send them to MARIO MOTTA (mmotta@massmed.org). R.P. Hale has offered to create the plaque for the cost of the materials. It will be constructed so that names on brass plaques can be added with pins.

A copy of the club's bylaws including proposed bylaw changes will be put on the web for members to comment on or suggest any further changes. Since it costs an additional \$85 to submit the bylaws to the state, the Executive Board will wait until the next annual report is due in next year and will submit the bylaws at the same time at no extra charge. Send comments to DICK KOOLISH.

The budget for the clubhouse was approved.

The budget for mirror grinding and polishing supplies was approved.

The Clubhouse Committee will come up with a plan to handle the storage and loaning out of club telescopes and other equipment.

The next Executive Board meeting will be in April 2001.

-Eileen Myers-

November's Minutes...

THE 731st meeting of the Amateur Telescope Makers of Boston, including the Bond Astronomical Club, was opened by President BOB COLLARA. Bob reported on several current events in astronomy, including the "good news" that Asteroid SG344 which was predicted to strike the Earth in 2030 has now been postponed to possibly strike on September 16, 2071.

Bob introduced R.P. Hale, who spoke to us last year. After his talk last year, R.P. went up to the roof of the CfA, and while observing through the refractor there did a hand drawing of Mars. He later matted it and donated it to the club. Thank you R.P.

The title of R.P.'s talk was "In Caxtolcuaúhtli Tlatoliztli - A Talk on the Aztec Calendar Round". Being of Mexican origin (Aztec and Yaki Indian) R.P. explained that the Olmec and Mayans of Mesoamerica had many characteristics of Mongols, therefore indicating that their ancestors crossed the Bering Strait. Oriental mother tongues also have a commonality with the mesoamerican language. He also noted that the Mayans were the first to define zero, as "something in progress".

The Mayan calendar is based on the number 13 (equal to the number of lunations per solar year), the number 20 (total of fingers and toes), and 260 (lowest common denominator of 13 and 20). This 260-day cycle also corresponds to the human gestation period. Time was calculated by the zenith position of the sun at a sacred city just below the Tropic of Cancer where the sun has 260 days between zeniths. The Mayan Long Count is based on a hierarachial day-count based on twenty. It is written using dots to indicate placement values (ex. 8.15.6.0.4). The Mayans never used fractions. They counted full moons until all calendrical and lunar cycles matched. 149 lunations took exactly 12 tun (12x360 days) + 80 kin (80 days) = 4400 days. Thus the divisional values of one lunation by their count is 20.9.0.0.0. The Aztec calendar has two systems, the 260 day sacred calendar round, and the 365 solar days which describe the days and rituals related to the seasons. No provision was made to show which cycle an historical event took place. Time has no beginning and no end in Aztec philosophy. R.P. went through the symbols on the Aztec Calendar Stone, describing them in detail.

At the business meeting Membership Secretary JOHN SMALL reported that 80 members still have not renewed. There were six new members in October. A tape was made by PETER BRUCKNER of David Malin's talk at the October meeting. A duplicate will be made. Please contact Eileen for a copy to view. Observing Committee RICH NUGENT announced seven upcoming star parties. He also alerted us to watch the November 30th up-the-coast launch of Space Shuttle Endeavour. It will be bringing the first solar panel array to the International Space Station. At times it will be the 3rd brightest object in the sky. Bob thanked EILEEN MYERS and MARSHA BOWMAN for planning a great trip to NYC to visit the Rose Center for Earth and Space and the Hayden Planetarium. MARIO MOTTA thanked the members who helped out at the Lynnfield star party (270

kids). There was a discussion concerning the disappearance of the Tom Britton telescope, continuing the exchange of ideas already on atmob-discuss. It was noted that nothing was missing in the key closet the one time it was left unlocked. Mario mentioned that the clubhouse is named after Tom, and that other names of famous club members need to be recognized. BRUCE BERGER pointed out that DAVID PROWTEN has restored the Shupmann telescope, Bruce has restored the 8" Blue Dob, and has now corrected the collimation problem of the C8 donated by JAMES DOUGLAS BROWN. Bob Collara also reported that the 6" mirrors for the new club Dobs are still being worked on. Some have turned down edges. A reminder was made that non-club members are also subscribed to atmob-discuss. Clubhouse Director PAUL CICHITTI asked again that any donations to the clubhouse be coordinated with JOHN REED or himself. It was noted that the Solar Eclipse trip to Africa has been canceled due to insufficient interest. MARIO MOTTA presented a mix of astronomy and medicine in "Ten Ways That Old Stars Are Like Old People": a correlation between the light curves of stars with the graphs produced by electrocardiograms. *-Eileen Myers-*

Treasurer's Report...

FOR THE month of October we had \$1,146.90 in revenue and \$831.62 in expenses for a net income of \$315.28 for the month.

As of October 31st, 2000 our assets were:

Checking Account - Regular	\$19,680.04
Investments	\$18,553.21
Total Current Assets	\$38,233.25

Of the total, \$2,219.41 is in the Land Fund and \$160.00 is for clubhouse key deposits. *-Bernie Volz-*

Clubhouse Report...

SATURDAY OPEN CLUBHOUSE SCHEDULE

Dec 2	Richard Burrier	David Prowten
Dec 9	CLOSED	WORK PARTY # 10
Dec 16	Phil Rounseville	Steve Herzberg
Dec 23	CLOSED	HOLIDAYS
Dec 30	John Reed	Jack Drobot
Jan 6	CLOSED	WORK PARTY # 1
Jan 13	John Small	Gary Walker
Jan 20	Dave Richardson	Jim Suslowicz
Jan 27	Eric Johansson	Al Mazurka

AT Work Party #9 framing continued on the roll-off roof observatory. Outside work stopped at 4:30 p.m. but inside work continued until much later. The following week the framing was finished, level checked, and sub-flooring installed. The observatory floor was wrapped in plastic to protect it from the elements until work resumes in the spring. All of the near barn contents saved for future construction were stored on the new concrete floor, cleaning the view in front of the barn. The heater installation was completed and heat is now available in the testing, polishing, and evaporator rooms. Thanks to foreman DAVID PROWTEN and all who helped out.

In regard to the emails that have come down from atmo-announce concerning the lack of clubhouse security, I want to ensure my fellow club members that there has always been a clubhouse security protocol/procedure that the clubhouse committee members instituted and follow when they are on duty. JOHN REED and I ensured that this was in place from the beginning when we took over the clubhouse over six years ago. Even with this procedure, there will be times when steps are missed because of a long night of observing and tired people sometimes miss a step or two. That is why we instituted the two-man rule or "buddy system" in order to minimize this situation. I hope that this dispels any misconception you may have. The clubhouse is a team effort and we attempt to support each other in all of our endeavors. *-Paul Cicchetti-*

2001 New Year's Eve Party...

2001 IS the true first year of the Third Millennium, so come and celebrate this New Year's Eve at the clubhouse. Together let's observe the night sky during the last minute of the last day of the true last year of the last century of the second millennium of the Common Era. Join us at 7:00 p.m. and bring a tasty dish to share. Dress warmly and start the new year with good food, good friends, and good observing. Show your spouse or guests the night sky in the 17" or bring your own scope. Win lots of prizes! Find and determine the magnitude of Algol. Be the first to spot the shadow of Ganymede crossing Jupiter (over at 7:43 p.m.) or Io's shadow, which starts at 8:18 p.m. and will be over at 10:20 p.m. There will be a moon drawing contest - most detailed, shows the rabbit, and more. Between December's Geminid's and Ursids and January Quadrantids there should be quite a few meteors to count. Enter a ten-minute meteor counting contest. We'll think up more contests depending on the weather! RSVP to me at starleen@ma.ultranet.com or 978-456-3937 so we'll know how many to plan for. Last minute and late arriving partygoers are of course welcome too. *-Eileen Myers-*

Star Party Announcement...

FULLER MIDDLE SCHOOL, Flagg Drive, Framingham. Monday, 12/11 (Rain Date is 12/12). We are expecting over 200 6th graders and their families for this first time star party. I do have a number of member volunteers planning to attend but, the more the merrier! Contact me at 508-879-3498 for details.

-Rich Nugent-

Star Party Thanks...

WE WERE very busy on the evening of December 4th! Three star parties were held at schools in Lowell, Groton, and Framingham. The sky was crystal clear for observing the first quarter Moon, Venus, Jupiter and Saturn. At the Framingham event we also observed a few clusters and galaxies and colorful stars!

IVA GARDNER hosted the event at the Groton-Dunstable Regional Middle School. GLENN CHAPLE gave a lecture and he and members EILEEN MYERS, JOHN SMALL and MIKE BROWN set up scopes for observing. For braving the cold the crowds were rewarded with a special visitor! After the club's

secret service agents checked out the situation, the Presidential Limousine arrived and BOB COLLARA joined in the observing!

At the Brophy School in Framingham, I was joined by Vice President STEVE HERZBERG, JOHN REED, GEORGE ROBERTS, DAVE SIEGRIST, MIKE HILL, ERNIE GINETTI, and STEVE SARGENT. George set up an excellent Solar System model in the ball field beyond the observing area. Over 200 third graders and their families enjoyed the views! Later in the evening we were all comparing favorite colorful stars...fantastic!

BILL TOOMEY organized the star party held at the Rogers School in Lowell.

If I've missed you, please let me know so I can recognize your efforts! Thanks to everyone for helping out at these events...we could not run them without your help! *-Rich Nugent-*

Astronomy Waits For No One!!!...

IT'S ONE of my favorite expressions for certain astronomical events! And so it was on Thursday, November 30th. The Shuttle Endeavour was poised on its launch pad counting down to a 10:06 p.m. liftoff which would carry the vehicle up the East coast for all of us to observe. The only problem was the clouds! Weather maps on the Internet showed that the only patch of clear sky in all of New England was in Rhode Island. What's an astronomer to do? Road trip!

My son Sean was especially interested in watching the launch, so when he got home at about 9 p.m. from his extracurricular activities we hopped into the car and set out. Routes 495 and 95 move very quickly and before we knew it we were south of Providence, somewhere (we think!) near Cranston. As the launch time approached we were still heading south and still looking for clear skies. At 10 p.m. we took the next exit and found ourselves in a nice, lonely industrial complex parking lot. I couldn't believe my eyes when I got out of the car and looked up to see...stars!! With minutes to go, we set up my 8-inch Dob and a little contraption I built to mark off azimuth. WBZ covered the launch and at "liftoff..." I started my stop watch to measure elapsed time. I aligned the finder and right at T+ 7:20, Sean spotted the Endeavor right where we expected to see it! I got it in the finder, took a quick look through the scope and then handed it off to him. Sean reports: When I was looking at the Shuttle through the scope I saw a little shooting star with a tail of bright orange and yellow fire. It looked like a colorful comet! When the main fuel tank was released there was a big burst of light and exhaust. After that, "It was very hard to keep up with in the finder scope!" my dad said.

Two minutes later it was over....and two kids were laughing and jumping up and down and high-fiving each other in a nice, lonely industrial complex parking lot! We had succeeded in our little quest! We got gas for the car, had a little McDonald's (It's probably just as well that the tattoo parlor across the street was closed! In such a giddy state....who knows what might have happened!!!) and headed home.

So why are we reporting this? Just to comment on how it is sometimes possible to beat the odds and catch an astronomical event that might have come and gone unobserved. Should everyone do this sort of thing? Probably not. Could everyone do this sort of thing? ABSOLUTELY! With a little bit of info and

the interest in the event we were able to share the evening, do a little father-son bonding, and see a really cool shuttle launch! Seize the moment...astronomy waits for no one!

-Rich and Sean Nugent-

Leonid Counting at the Clubhouse...

DESPITE THE 26°F cold and wind, I was joined at the clubhouse on Friday night, November 17th by no less than fifteen club members and friends from all levels of experience and interest, including two of my fellow meteor observers, Rachel Aubuchon and MIKE ARAMINI. Rachel logged a solid group of showers and magnitudes during the critical period of 7-9 UT: her total count for that period was 182 Leonids, with a limiting magnitude of 5.1. This was a great job of perseverance and quick learning. The highlight of the night was certainly the brief bursts of as many of 5 meteors in very short periods of a few seconds, not to mention the two -5 and four -3 fireballs shared among our raucous and satisfyingly appreciative group!

Here is a more detailed breakdown of activity in the critical time periods of 6:40 to 8:45. Note the peak of activity appears to occur earlier than the IMO news release's prediction of 7:50 UT - perhaps beginning as early as 7:00, and ending somewhere just after the predicted time of 7:50.

Start	End	LEO	Others
6:40	6:50	22	5
6:50	7:00	17	5
7:00	7:10	30	10
7:10	7:20	55	11
7:20	7:30	40	5
7:30	7:40	48	3
7:40	7:50	52	4
7:50	8:00	25	4
8:00	8:10	32	1
8:10	8:20	15	4
8:20	8:30	15	1
8:30	8:45	12	0

The times are given in UT. The limiting magnitude was 6.0.

A search of our history indicates that this may be the first time that a meteor session was held at the clubhouse where the measurements were taken in a way that would be usable to the international community.

-Lew Gramer-

Partial Solar Eclipse on XMAS Day...

Always use safe solar filters when viewing the sun. The sun filter must be used in front of any optical device and not before the eyepiece, where the intense sunlight can destroy the filter and your eye.

THE LAST eclipse of the Second Millennium will be a partial solar eclipse on Christmas day. The event will be well placed for observers in New England. For Boston, first and last penumbral contacts occur at 16:15 UT (11:15 a.m. EST) and 19:24 UT (2:24 p.m. EST) respectively.

Greatest eclipse occurs at 17:52 UT (12:52 p.m. EST) with a maximum eclipse magnitude (fraction of the Sun's diameter obscured by the Moon at greatest eclipse) of 0.575 or almost 58%. The Sun's altitude will be 22°, azimuth 197°. Obscuration (the Sun's obscured area, a quantity associated with brightness and temperature changes) will be 0.462 or 46%. Looking

through a properly filtered solar scope, watch the Moon's jagged limb eclipse sunspots as lunar mountain peaks and valleys slip by. See *December's Sky & Telescope* article pg. 109-113 for more information.

This event is the fifty-seventh eclipse of saros series 122. The last central eclipse of the series was annular and occurred in 1874. The series ends with a partial eclipse in 2235. Not up on the saros? Can't predict when the next exact eclipse will occur? After 18 years and 11 1/3rd days (or possibly a whole day more or less depending on how the leap years work out), the Sun and the Moon are back to almost precisely the same positions in the sky as viewed from the Earth. As a result, 18-years 11 1/3rd days after an eclipse, there will be another eclipse that is almost identical to the first in duration of totality. Almost identical because the 1/3 day has the effect that the Earth rotates an extra 120°. The next eclipse in the series will occur 1/3 of the way further around the globe. Since the alignment of the Sun and Moon varies slightly with respect to the node, eclipses in a saros series drift slightly in latitude either from north to south or from south to north, usually until they are lost to view off one of the poles. A saros series takes more than a thousand years. It begins and ends with slight partial eclipses. The 18-year loop is called the saros, and was known by the ancient Babylonians, who passed on their knowledge to the Greeks. An understanding of eclipse geometry and certain lunar time-units is necessary to comprehend saros and saros series. Confused? You might be! A thorough explanation would take several pages, but you can find one in the Royal Astronomical Society of Canada *Observer's Handbook* pg. 114, Guy Ottewell's *Astronomical Companion*, or a good college astronomy.

-Eileen Myers-

ATMoB's Integrating Video Camera...

READING THE review of a new integrating video camera in the January *S&T* (p. 67) prompted me to remind everyone that the ATMoB owns a similar camera. It is a Zeiss unit designed for microscope use and as such a bit heavy, 3 lb. It is cooled to 37 degrees. below ambient and permits exposures up to 2 minutes. Its resolution is 470 TV horizontal pixels by 350 vertical pixels. To view the image, a TV monitor or TV set with video input is required and the image can be recorded on any VCR. PETER BEALO donated a C to T adapter which permits mounting the camera head to a Meade or Celestron SCT. To mount the head in place of a standard eyepiece requires a C to 1.25" tube adapter. I installed the control unit, keyboard, and camera head in a convenient carrying case donated by GARY WALKER.

The camera has had little use. JOHN REED, STEVE MOCK, and I used it back in February 1997 to image M42 with the Bentley's 12" SCT, and Peter Bealo used it briefly a year or so ago. Anyone with an observatory telescope who would like to use this camera, contact Clubhouse Director PAUL CICHETTI.

-Ted J. Poulos-

Polar Alignment Class A Success...

SEVEN club members were students at the clubhouse on Saturday, November 18th when RICH NUGENT taught a class on polar alignment and the use of setting circles. Rich was

exhausted from his all-night Leonid shower observing the night before, so we thank him doubly for his devotion to the club and his teaching.
-Eileen Myers-

Trip to Hayden Planetarium in NYC...

A GREAT time was had by all on the trip to the Rose Center for Earth and Space and the Hayden Planetarium in New York City on November 4th. Forty-seven club members and guests arrived at 10:15 a.m. after enjoying coffee, OJ, muffins, bagels with cream cheese (not toasted - oh, no!), and clementines during a smooth four hour ride to the city.

The highlight of the trip was the first five minutes of the Planetarium show which showed the exquisite resolution of the new Zeiss projector. The difference in one's response to pinpoint stars verses the normal circular stars on a planetarium dome was amazing. The fact that every deep space object shown during the rest of the show (without the Zeiss) was accurately portrayed from all the latest Earth based and space based positional, orientational, brightness, and structural data was awe inspiring, but lacked that same exquisite beauty of the first five minutes. The public was actively involved with the exhibits on the spiral ramps and the displays on the ground floor. The meteorite, gem, and mineral collection was astounding, and it was nice to see Dr. Peter Schultz (Brown University - Sky Scrapers of Rhode Island) narrating the video on meteor impact.

The Mexican dinner was tasty. The sci-fi videos on the way home lulled some to sleep and others to lively discussions on Robby The Robot et.al. More trips like this one should be planned.

Thanks go to EILEEN MYERS and MARSHA BOWMAN for all of their month's of planning and effort. Thanks also to John Pazmino from the Amateur Astronomers Association of New York, who gave some of us a tour of the exhibits and of the overall construction of the museum.
-John Reed-

ATMoB Camping/Astronomy Trip...

I'M TRYING to plan the ATMoB Camping/Astronomy trip to Baxter State Park in Maine. We need to get our reservations in as early as possible (January 2nd.) It's \$3 per night in the Nesowadnehunk group area and a one time \$8 car fee for the duration of the trip. Because of the popularity of the park, it fills up very quickly ! A reminder to folks that it is a wilderness area - moose, mountains, deer, aurora, hiking, canoeing, fishing, bear, coyote!

I need to find out:

Who is interested in going.

Which dates are better for you: July 13 - 23 or August 12 - 22 ?

Remember that folks don't have to go for the entire trip. I know the August dates conflict slightly with Stellafane, but since I don't go there, it's not a problem for me. I would prefer not to concern myself with potential conflicts unless it's a major problem for people.

Please contact me ASAP. People can also check out www.mainerec.com/baxter1

(617)625-5870 steve-mock@excite.com *-Steve Mock-*

Announcement: Dark Sky Area...

THE BEST dark skies in the East? New member ED ENGELMANN has a modest farmhouse near Dover-Foxcroft in central Maine. It can sleep 5 to 10 people depending on whether some of the group sleeps on the floor. The ride up there takes about four and a half hours, including a 10 minute rest stop. Leaving before 5 p.m. on Friday, there would still be plenty of time that night for observing. There is a large open field, and the seeing is excellent. The skies are truly dark in this area. The skyglow from lights is very low. The nearest cities of any size are Bangor and Augusta--both about 70 miles away. To the north there is nothing for 200 miles. Check out one of the skyglow maps in *Sky & Tel*. Of course there could always be a problem with an aurora! I can't vouch for the atmospheric steadiness and its affect on the seeing.

Club members who would like to organize a weekend trip there can contact me at (978) 779-5212. No charge except for utility use.
-Ed Engelmann-

For Sale...

ORION ShortTube™ 90mm Rich-Field Refractor Telescope. Brand new, never used. \$280 (Orion price \$299). Padded Carrying Case for \$34. Accessory Case \$19.95 (optional). This will also save you \$43 shipping and handling charges which are extra if you buy it from Orion. Included are a 90° prism star diagonal, 6x30 achromatic finder scope with six-point alignment, 26mm (19x) Sirius Plossl eyepiece (1.25"), aluminum rack-and-pinion focuser with focus lock knob, aluminum dew/glare shield, and built-in 1/4"-20 plate. Weighs 5 lb. One-year limited warranty. Short-tube is fully coated 90mm (3.5") achromatic objective lens of 500mm focal length (f/5.6). Originally bought for traveling overseas but never taken. I've since bought a Meade LX-200. Contact: Zahid at (978) 244 5773 / evening (603) 888 5535 or iszahid@cisco.com

ATTENTION

January *Star Fields* deadline is SUNDAY, December 31st
email articles to ATMoB Secretary/*Star Fields* Editor
Eileen Myers at starleen@ma.ultranet.com
Articles from members are always welcome.

POSTMASTER NOTE: First Class Postage Mailed December 8, 2000

Amateur Telescope Makers of Boston, Inc.
c/o John Small, Membership Secretary
9 Bear Hill Terrace
Westford MA 01886-4225

FIRST CLASS

EXECUTIVE BOARD 2000-2001

PRESIDENT:	Bob Collara	day (978) 250-8648
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	Steven Clougherty	(781) 784-3024
HISTORIAN:	Anna Hillier	(781) 861-8338
OBSERVING:	Richard Nugent	(508) 879-3498

How to Find Us...

Web Page www.atmob.org

MEETINGS: Held the second Thursday of each month (September to July) at 8:00PM in Phillips Auditorium, Harvard-Smithsonian Center for Astrophysics, 60 Garden St., Cambridge MA. For INCLEMENT WEATHER cancellation listen to: WBZ (1030 AM)

CLUBHOUSE: The Tom Britton Clubhouse is 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 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 farm house 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 December...

Subtract 5 from UT to get EST.

Mon Dec. 11 - Venus 3°S of 8th-magnitude Neptune. Mars 4°N of Spica.

Charts for Neptune and Uranus appear on pg. 133 of April's *S&T*.

Thur Dec. 13 - Peak of Geminid Meteor shower.

Thur Dec. 21 - Solstice at 8:37 a.m. EST. Shortest day 9hr 20min.

Fri Dec. 22 - Ursid meteor shower.

Sat Dec. 23 - Venus 1.3°S of 6th-magnitude Uranus.

Mon Dec. 25 - **Partial Eclipse**, New Moon.

Sun Dec. 31 - Officially the last day of the Second Millennium.

Wed Jan. 3 - Quadrantid meteors peak.

Tues Jan. 9 - Full Moon, **Total Lunar Eclipse**.