



## 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. 3

March 2000

### This Month's Meeting...

Thursday, March 9th, 2000, at 8:00 PM  
Phillips Auditorium, Harvard-Smithsonian  
Center for Astrophysics

OUR SPEAKER this month is club member ZAC PUJIC. He lives in Australia and is spending this year as a post-doctoral fellow in neurogenetics at Harvard Medical School. He has been an amateur astronomer for the last 20 years, with a particular interest in observing Jupiter. His talk is entitled "Observing Jupiter" and he will speak about his own observations, and about opportunities for amateur astronomers to contribute to our knowledge of Jupiter.

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...

ON FEBRUARY 14<sup>th</sup> the NEAR spacecraft went into orbit around the asteroid Eros. Watching the images of Eros on the Internet as the spacecraft closed in on its target and seeing the new images daily on the NEAR website (<http://near.jhuapl.edu/>) has been quite remarkable. I am struck by how fortunate we are to have these new views of our universe. Every month there is another incredible discovery.

A few weeks ago I came across another such astronomical leap forward. I saw some of the first images from the adaptive optics on the 8-meter Gemini North telescope. This telescope, located on Mauna Kea, uses thin mirror technology and will have even better resolution at infrared wavelengths than the Hubble Space Telescope. The images, which can be found at the "Gemini North Dedication Page

<http://www.us-gemini.naoa.edu/dedication/dedication.html> include Pluto and Charon, the core of globular cluster NGC6934,

and star forming region G45.45+0.06. Hubble is no longer the only show in town, and I am sure that this is just a preview of what we will be seeing of the next few years, particularly after the telescope's twin, Gemini South, is completed next year in Cerro Pachón, Chile. Stay tuned.  
-Joseph Rothchild-

### February's Minutes...

THE MEETING of the Amateur Telescope Makers of Boston, including the Bond Astronomical Club, was opened by President JOSEPH ROTHCHILD. Our speaker was club member TOM CALDERWOOD, who talked about what it was like during the 26-months he has been working on the Chandra X-ray Observatory project. He described the nested mirror system, adding that Chandra's high orbit of 10,000 km to 140,000 km (1/3 of the way to the Moon) will prevent it from being reached by the shuttle (max altitude 600 km), so instruments and optics cannot be repaired if they fail, or be replaced. During the testing phase on the fully assembled satellite four flawed circuit boards had to be removed, electrical power controller equipment failed, and the AXAF CCD Imaging Spectrometer (ACIS) door would not open. Because the satellite is 13.8 meters (45 feet) long, as big as a moving van, there was only one container, owned by the Air Force, which could be used to transport Chandra from TRW in California to Florida and yet still maintain the satellite in a clean environment. Only one shuttle, *Columbia*, has a payload-bay large enough to carry it, and Chandra was the largest payload ever launched by a shuttle. Arrangements for the launch posed complicated scheduling problems. Tom also explained the problems that the astronauts have during the first 24 hours in space: the body is trying to get used to zero gravity, and so is pumping too much blood to the brain and needs to calm down. The mind is not functioning at its best. Chandra was launched after only 7 hours into the mission. Tom emphasized the risks involved in satellite projects by announcing that the night before the meeting the Japanese M-V booster carrying Astro E, the X-ray satellite built by a joint project of several Japanese and American institutions, failed to reach orbit and burned up. Tom's job involves writing the software to process the telemetry from the satellite into the format that scientists can use, and provide scientists with analysis software. For the latest information on Chandra see <http://chandra.harvard.edu>.

Information about the types of shuttle aborts which Tom spoke about can be found at <http://www.shuttlepresskit.com/sts%2D93/ref86.htm> and <http://www.shuttlepresskit.com/sts%2D93/abort.htm>

MARIO MOTTA returned from his trip to Arizona and brought back and played for us a video showing the work being done on the construction of the two 8.4-meter honeycomb LBT (Large Binocular Telescope) primary mirrors by the University of Arizona Steward Mirror Labs. The LBT will have 10-times sharper resolution than Hubble. It will be 8-feet high and 31-feet across. See <http://medusa.as.arizona.edu/mlab/mlab.html>

The business meeting began with Secretary EILEEN MYERS reading the minutes. Membership Secretary JOHN SMALL reported that \$3150 has been received in donations. Clubhouse Directors PAUL CICHETTI and JOHN REED made

us aware that when the air outside of the club refrigerator (i.e. in the unheated clubhouse) is colder than the air inside the club refrigerator, the refrigerator and freezer heat up. (Editor: Note that the club refrigerator is now empty of food: no Nutty Bars, no Swiss Rolls!) John is planning to buy several tapes on astronomy from the Astronomical Society of the Pacific to use at educational seminars at the clubhouse. Paul asked if anyone could donate a 19" TV to the clubhouse. The one previously used is no longer repairable. Contact Paul or John. There will be Red Light Only observing on some Friday nights at the clubhouse. Contact STEVE CLOUGHERTY if you plan on observing. Observing Committee RICH NUGENT reported on radar mapping being done by the shuttle at a low altitude. It can be seen passing over New England skies. April 8 is Astronomy Day at the Museum of Science in Boston. Contact Rich to help out. The Boston Museum of Science will also run the Lowell lecture series in astronomy in April. MARIO MOTTA talked about AAVSO (American Association of Variable Star Observers) and how the amateur astronomer can help with gamma ray research. There will be a first ever high-energy astrophysics workshop (a "Gamma Ray 101") for amateur astronomers in Huntsville, Alabama April 13-14 at the NASA/AAVSO meeting.

CHARLIE MCDONALD reported that five students in Marblehead are now giving astronomy lectures to the public at their local starparties. BERNIE VOLZ gave the latest information on the eclipse trip to Africa. -Eileen Myers-

## Membership Report...

I AM happy to announce the engagement of DAVE AUCOIN to Marylou Conton. No date has been set yet, but they are looking forward to sharing their lives together. Congratulations to you both.

We warmly welcome the following new members:

DENNIS GAGNE, Northboro MA, NADIA BARTOLUCCI, Boston MA, NEAL ZONDLO, Arlington MA, and THOMAS PRENTICE, Westford MA. - John Small-

## Clubhouse Report...

### SATURDAY OPEN CLUBHOUSE SCHEDULE

March 4	MESSIER	MARATHON
March 4	Jim Suslowicz	Dan Feldkhun
March 11	Eric Johansson	Al Mazurka
March 18	John Drobot	Steve Herzberg
March 25	Paul Cicchetti	John Reed
April 1	Richard Burrier	Steve Mock
April 8	CLOSED	ASTRONOMY DAY
April 15	Dave Prowten	Dave Richardson
April 22	Gary Walker	Tom Wolf
April 29	Paul Cicchetti	John Reed

FIRST, WE would like to send a grand and glorious thank you to ATMob member J. DOUGLAS BROWN, now living in Naples, Florida for his donation of a Celestron 8" catadioptric telescope. The optics are beautiful, and DAVE PROWTEN has begun work on the needed repairs. Thanks Douglas!

I would like to thank ART SWEDLOW, ED KNIGHT, and DAVID PROWTEN, whose names were left out of last month list of folks who helped out at the January 22 workparty.

Next, due to the snow storm on February 18/19 I had to cancel the last work party. The next work party is scheduled for March 18. This day will be different from previous workparties because due to the increased number of 'A' committee members, the clubhouse will be open for regular business that night. So if you cannot come out and help for the work party you can still come out that Saturday night for observing, mirror grinding, etc.

On Saturday, March 4 we will have a Messier Marathon at the clubhouse. All members are invited to come and meet the challenge of finding 110 objects. There will be a ban on white lights Friday, March 3 through Monday morning, March 6. No white lights will be allowed anywhere in the clubhouse or on the Milton observing field. Please set up your scope prior to sunset. If you leave any time after dark, please be courteous and coordinate your departure with the others. This marathon is reserved for ATMob members and family. I hope the weekend weather cooperates. By the way, the March 2000 issue of *Sky & Telescope* has a Messier Marathon Checklist on pg. 120: "Objects are listed in the order they are most efficiently observed. Based on a sequence devised by Don Machholz." -Paul Cicchetti-

## Treasurer's Report...

FOR THE month of January, we had \$7.30 in revenue and \$971.39 in expenses for a net loss of \$964.09 for the month.

As of January 31st, 2000 our assets were:

Checking Account	\$15,036.80
Investments	\$18,553.21
Total Assets	\$33,590.01

Of this \$33,590.01, \$1,804.81 is in the Land Fund and \$145.00 is for clubhouse key deposits. -Bernie Volz-

## Star Party Reminders for March...

WELL, MARCH Madness doesn't always refer to College Hoop! We have quite a few star parties scheduled for March. I know some were listed in the February *Star Fields* but here's the up-to-date list:

### Friday, March 10

The Devotion School, Brookline MA.

Contact Charlie McDonald (781) 944-6140

### Monday, March 13

The Ditson School, Billerica MA. (Rain Date March 14)

Contact Charlie McDonald

### The Day School, Westford MA

Contact John Small at jsmall@ma.ultranet.com

### The Lowell Mega Star Party

Contact Paul Giguere at pgiguere@earthlink.com

**Wednesday, March 15**

The Dunning School, Framingham MA

Contact Rich Nugent at rich\_nugent@nen.com

The Eliot School, Needham MA.

Contact Cathy Clemens at cclemens@head-cfa.harvard.edu

The Joshua Eaton School, Reading MA

Contact Charlie McDonald

**Tuesday, March 21**

The Birch Meadow School, Reading MA

Contact Charlie McDonald

There are also two other events shaping up for late March and several already set for April. As always, these events are not possible without the generous help of our membership. I can't say it enough...Thank You!!!! If you are interested in helping out, contact me or any of the contacts listed above for more info and directions!

(978) 671-8578 (w) nugentrp@nenlifesci.com

(508) 879-3498 (h) nugentrp@aol.com -Rich Nugent-

## Astronomy Day 2000...

WILL IT'S that time of year again! On Saturday, April 8, amateur and professional astronomers will gather at the Boston Museum of Science to celebrate Astronomy Day. We've been invited to participate with the daytime program and have been asked to help at the evening star party. Astronomy Day provides a fantastic opportunity to share our interest in astronomy with the general public. We are usually set up in the atrium near the Omni Theater and, in the past, members have conducted mirror-grinding demos, telescope-making demos, and have displayed projects associated with space science, astrophotography, astroimaging, and general observation. ATMoB members also give short presentations during the course of the day. We are able to provide the public with informational handouts about astronomy in general and of course, the Amateur Telescope Makers of Boston. Last year the weather cooperated during the day and several of our members brought their telescopes out in front of the Museum for some solar and planetary observing. After dining at Paparazzi's restaurant we return to the museum and set up for the evening star party. This year we should be able to provide some excellent views of Saturn, Jupiter, and the Moon. All told, it's an event that allows us to reach thousands of people! If you'd like to join us this year please give me a call or email me or talk with me at this month's meeting. Thanks in advance!

-Rich Nugent-

## Star Party Thanks...

ABOUT 150 sixth grade students attended the second annual Blanchard Middle School Star Party organized by John Small. Although the conditions looked pretty iffy the event went ahead anyway and everyone got lucky! TANIA RUIZ did a great talk to the kids on the Orion Nebula. Members DAVE AUCOIN, EILEEN MYERS, BILL DUANE, JOE HENRY, MIKE SCHEXNAYDRE, MIKE LARSON, MATT DOLAN, JOHN

REED and JOHN SMALL were on hand with their scopes. The skies were less than pristine but good views of Jupiter, Saturn, the Moon and the Orion Nebula were shown.

ANOTHER 150 students and their parents were in attendance at a star party held recently at the Barrows School in Reading. Charlie McDonald did an excellent job organizing this event. Early in the evening a few of us watched the Space Shuttle Endeavour make a very fine pass across the northern skies. As the scopes were set up people were arriving and began observing immediately. We were able to show Mercury, Mars, Jupiter, and Saturn as well as the Moon and a variety of deep sky objects. The PTO served hot cocoa and cookies (and later fed the astronomers an excellent meal!!!) while I gave slide presentations. ATMoBers present included ED LOS, TED CARLMAN, PETER BEALO, BOB COHEN, and DAVE AUCOIN. Charlie's neighbors also pitched in by dropping off handouts and bringing their telescopes also. Reading resident Kay Clark gave presentations outside on the night sky.

As always, I apologize if I've omitted anyone's name here. Please contact me if I have and I'll include it in a future newsletter. Thanks again!

-Rich Nugent-

WE HAD a crowd of about 110-120 people at the Higgins Middle School in Peabody. Thanks again for a wonderful evening! The feed-back was amazing and our school could use some good news at the moment. Here is the list of volunteers: MATT BENDANIEL, MARIO MOTTA, TAL MENTALL, DAVE AUCOIN, CHARLIE MCDONALD, HOWARD LEVAUX, PETER PSYHOS, ED LOS, and JOHN REED. Hope no one was skipped! It was dark out there. P.S. Some students still swear Saturn was a sticker.

-Submitted by Daryl Mazzaglia-

## Space Shuttle Information...

NOW THAT the *Endeavour* is safely back on terra firma, it's time to start thinking about the next mission. The Shuttle *Atlantis* is scheduled to liftoff from the Kennedy Space Center no earlier than April 13th at 8:41 p.m. EDT and will rendezvous with the International Space Station. This launch may be visible from New England. Several members have successfully observed shuttle ascents in the past and for this launch, and the sky should be dark enough for us to view this one. The orbit will be inclined 51.6 degrees to the equator, so the complex will pass over us every day.

For real time launch coverage WBZ (1030 AM) is a good station to listen to. A great reference for Shuttle facts is the book: "Do Your Ears Pop in Space and 500 Other Surprising Questions About Space Travel" by three-time shuttle astronaut R. Mike Mulane (John Wiley & Sons, Inc.1997). This little gem is filled with information about the Space Transportation System. Check out page 48 on sparklers!!

-Rich Nugent-

## Electronic Newsletter...

AS HISTORIAN, I have witnessed the club trying to reduce the amount of money spent on newsletter postage. The board explored all types of methods that didn't work out, such as going

back to postcards, and bulk mail. Nothing ever seemed to work except First Class mailing.

Now that the Internet electronic newsletter appears to be the same as the postal mailing, I would like to ask members to at least try to take your name off the postal mail list. I did not take my name off because as Historian all changes will become history in the future. I wanted to keep the changes. Now I am willing to take my name off the postal mail list. So give it a try, and if you don't like it you can always go back to the postal mail list. You can help the club save money this way. -Anna Hillier-

## Africa Eclipse Trip...

MARIO AND I have been working with travel agent Jill Sussmann at Vacations, Etc. to put together a trip for the June 21, 2001 Total Solar Eclipse to Zimbabwe, Africa. While the cost of the trip is still higher than we'd like, Jill has worked hard to keep the cost down. However everyone is charging a premium for the few days around the eclipse date. Jill has put together two options as follows:

Option 1, \$3900 per person double occupancy (\$300 single supplement) includes:

Boston - Harare - Boston airfare

2 nights in Harare

2 nights at a campsite (Eclipse viewing from site)

4 breakfasts, 2 lunches, and 3 dinners

Option 2, \$4450 per person double occupancy (\$450 single supplement) includes:

Boston - Harare - Boston airfare

3 nights in Harare

2 nights at a campsite (Eclipse viewing from site)

2 nights at Victoria Falls (w/airfare)

7 breakfasts, 2 lunches, and 4 dinners

As you can see, a roundtrip flight plus 3 additional nights adds less than \$600.00. The expensive days are the eclipse days. The airfare to/from Africa is the most expensive item. Final pricing should be available late summer when the airfare is finalized.

A deposit of \$200 per person is required to reserve space. Additional payments will be \$1000 due 8/15/2000, \$1000 due 12/15/2000, final balance due 2/15/2001.

Full details, such as travel dates and exact itinerary will be available shortly.

To reserve space please contact Jill Sussmann at Vacations, Etc. 508-877-3200 or vacaetc@ma.ultranet.com.

While many may feel this eclipse trip is expensive, do realize that there aren't any other good eclipses for many years to come. The total solar eclipses for the next 6 years are:

- June 21, 2001 - Atlantic Ocean, Africa. Max duration is 4 min 56.6 sec in the Atlantic Ocean. In Zimbabwe, we'll have about 3 min, 24 seconds of totality.

- December 4, 2002 - Africa, Indian Ocean, Australia. Max duration is 2 min, 3.7 sec in the middle of the Indian Ocean.

- November 23, 2003 - Antarctica. Max duration is 1 min, 57.2 sec.

- April 8, 2005 - Annular/Total Eclipse in the Pacific Ocean. Max duration is

42 sec.

- March 29, 2006 - Africa. Max duration is 4 min 6.7 seconds in Libya.

So, don't miss this one since the next reasonable one is in 2006!!  
-Bernie Volz

## Grinding Machine Working...

DUE TO a lot of hard work by one our most excellent club members (he prefers to remain anonymous) the clubhouse now has a new kind of grinding machine! The new machine differs from our little used Draper style machine which currently sits in the polishing room. The new machine has a vertical spindle that spins at 80 or 120 RPM via a pulley change. The mirror under fabrication sits on a carrier that attaches to the vertical spindle while the tool is hand worked by swinging it over the spinning mirror via a long lever. The total stroke length of the hand lever as well as the relationship between the centers of the tool and mirror passing over each other allows one to control the radius of curvature of the mirror. The mirror is generally on the bottom while the tool is on top. A long stroke on the tool will tend to cause the radius of curvature to increase while a shorter stroke will cause the opposite effect. It takes time to learn the combination of strokes and center offsets to efficiently control and maintain your desired radius of curvature.

Presently, BOB COHEN and DAVID SCHUH are attempting to make 12.5" f/6 parabolas.  
-Bob Collara-

## Northeast Astronomy Forum...

THE 9TH Northeast Astronomy Forum & Telescope Show will be held on Sunday, April 16 from 8:30AM until 6PM at the Rockland Community College, College Road, Suffern NY (Exit 14B (Airmont Rd) on the NY State Thruway (I-87).

Starting at 9AM the speakers will be: Tom Massey "Welcome", Matt Marulla - "The History of Telescope Design", Dr. Neil de Grasse Tyson, Director of the Hayden Planetarium - "The NEW Hayden Planetarium", Robert Naeye, Astronomy Magazine - "The Galileo Mission to Jupiter", Edward Ting - "Telescopes 101 - What to look for when purchasing a telescope", Sarah Kennedy - "Evidence for Terrestrial Impacts", Rick Fienberg, Publisher of *Sky & Telescope* - "Behind the Scenes at S&T", and Seth Shostak - "SETI Institute".

There will be 80+ tables with vendors and manufacturers offering new and used telescopes, binoculars, software, books, accessories, and dozens of door prizes!

No pre-registration - all tickets must be purchased at the show. Prices are \$15 for adults, \$5 for children ages 13-17, and children under 12 are free. See [www.rocklandastronomy.com](http://www.rocklandastronomy.com) for details and directions.  
-Eileen Myers-

## Caroline Herschel...

UPON THE 250th anniversary of the birth of Caroline Herschel, March 16 1750:

SHE LIVED the life of a servant because her mother opposed her daughters doing anything other than the household chores. She willingly assisted her brother William Herschel (discoverer of Uranus), and taught her nephew John Herschel. But on her own she discovered eight comets between 1786 and

1797, and she then embarked on a new project of cross-referencing and correcting the current star catalogue. She completed her catalogue of 2500 nebulae, and in 1828 the Royal Astronomical Society awarded her its gold medal for this work.

On her 97th birthday Caroline entertained the crown prince and princess with great animation for two hours, even singing to them a composition of her brother William. Yet in a letter to a fellow woman scientist, she wrote: "...As for my name, it will also be forgotten, ..."

Do not forget this brilliant scientist. Her letter below is poignant for evoking other scientists, ignored and forgotten.

Letter from Caroline Herschel (1750-1848):

William is away, and I am minding the heavens. I have discovered eight new comets and three nebulae never before seen by man, and I am preparing an Index to Flamsteed's observations, together with a catalogue of 560 stars omitted from the British Catalogue, plus a list of errata in that publication. William says I have a way with numbers, so I handle all the necessary reductions and calculations. I also plan every night's observation schedule, for he says my intuition helps me turn the telescope to discover star cluster after star cluster.

I have helped him polish the mirrors and lenses of our new telescope. It is the largest in existence. Can you imagine the thrill of turning it to some new corner of the heavens to see something never before seen from earth? I actually like that he is busy with the Royal Society and his club, for when I finish my other work I can spend all night sweeping the heavens.

Sometimes when I am alone in the dark, and the universe reveals yet another secret, I say the names of my long, lost sisters, forgotten in the books that record our science --Aganice of Thessaly, Hyptia, Hildegard, Catherina Hevelius, Maria Agnesi - as if the stars themselves could remember.

Did you know that Hildegard proposed a heliocentric universe 300 years before Copernicus? That she wrote of universal gravitation 500 years before Newton? But who would listen to her? She was just a nun, a woman. What is our age, if that age was dark? As for my name, it will also be forgotten, but I am not accused of being a sorceress, like Aganice, and the Christians do not threaten to drag me to church, to murder me, like they did Hyptia of Alexandria, the eloquent, young woman who devised the instruments used to accurately measure the position and motion of heavenly bodies.

However long we live, life is short, so I work. And however important man becomes, he is nothing compared to the stars. There are secrets, dear sister, and it is for us to reveal them. Your name, like mine, is a song. Write soon, Caroline

Submitted by Ted Poulos

Written by Alice S. Wessen

Lead-Technology Theme, JPL Office of Communications and Education <http://technology.jpl.nasa.gov/>

## Other News...

IN RESPONSE to a request for articles for *Star Fields*, EUGENE MC AULIFFE has written a wonderful personal account of his interest and love of our hobby. Because of its length it was not included in *Star Fields* itself, but can instead be

found at the club website [www.atmog.org](http://www.atmog.org). Copies will be available at the next meeting for those without Internet access. Thanks Gene!

I THINK I might have misplaced my 7X50 binos on the New Year's Eve get together at the club house. If anybody happens to notice it please let me know. It is Pentax make and I have the case. Thanks.  
-Sai Vallabha- (603) 890 5442

ASTRONOMY PICTURE OF THE DAY for February 3, 2000 <http://antwrp.gsfc.nasa.gov/apod/ap000203.html> has a link to MARIO MOTTA's article "Astronomy and the Human Eye". Mario's article is located at the club website [www.atmog.org](http://www.atmog.org).

## For Sale or Wanted...

Wanted: I WOULD like to collect pictures of members working at starparties, Astronomy Day events at the Boston Museum of Science, and at the clubhouse. I plan to create a picture web page for the club so we can look at what we have accomplished. "Graywwolf" <[graywwolf@mediaone.net](mailto:graywwolf@mediaone.net)> -Dave Aucoin-

For Sale: CELESTRON SUPER Polaris EQ Mount with dual drives, hand controller, 2 weights, wooden legs, and Polar Finder. \$600 OBO. if interested contact Sean Walker at 781-338-0952 or email at [vesta3@erols.com](mailto:vesta3@erols.com)

For Sale: SP EQUATORIAL mount, motor driven in both RA and Dec with hand controller, wooden tripod, works great -\$400. Meade 4" F/15 doublet refractor tube assembly with homemade carrying case - \$500. Call Paul Cicchetti at (978)433-9215 weekdays after 7 pm.

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### ATTENTION

April *Star Fields* deadline is SUNDAY, April 2nd  
email articles to club secretary Eileen Myers at  
[starleen@ma.ultranet.com](mailto:starleen@ma.ultranet.com)

Articles from members are always welcome.

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**POSTMASTER NOTE: First Class Postage Mailed March 3, 2000**

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

**FIRST CLASS**

**EXECUTIVE BOARD 1999-2000**

<b>PRESIDENT:</b>	Joseph Rothchild	(617) 964-6626
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<b>TREASURER:</b>	Bernie Volz	(508) 881-3614
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	Steve Clougherty	(781) 784-3024
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1996-98	Peter Bealo	(603) 382-7039
1994-96	Mario Motta	(781) 334-3648
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**COMMITTEES**

<b>CLUBHOUSE DIRS:</b>	Paul Cicchetti	(978) 433-9215
	John Reed	(781) 861-8031
	Steven Clougherty	(781) 784-3024
<b>HISTORIAN:</b>	Anna Hillier	(781) 861-8338
<b>OBSERVING:</b>	Richard Nugent	(508) 879-3498

**How to Find Us...**

**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.

**OUR WEB PAGE IS [www.atmob.org](http://www.atmob.org)**

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**Heads Up for March...**

March comes in like a lion and goes out like a lamb: Leo approaches the zenith in the evening sky while Aries is setting.

Jupiter, Saturn, Mars appear even closer in the night sky.

Observe the rapid changes that have been occurring in sunspot groups. Keep a lookout for auroras.

March 20 2:35am - Spring / vernal equinox.

## ASTRONOMY EVENTS CALENDER for 2000

### **Saturday April 8, 2000 - Astronomy Day, Boston Museum of Science**

Lectures and exhibits on astronomy all day, followed by an evening star party run by the Amateur Telescope Makers of Boston, Inc. Tables are set up by astronomy clubs, schools and universities displaying their programs and current research projects, *Sky & Telescope*, dark sky groups, and others. All day the ATMob runs a hands-on mirror grinding demonstration in which the public is invited to participate. The ATMob provides lecturers, has telescopes on display, and offers literature and advice on how to get started in astronomy. Call Rich Nugent at 508-879-3498 or email him at [nugentrp@nenlifesci.com](mailto:nugentrp@nenlifesci.com) to help in any way on that day.

### **Sunday April 16, 2000 - 9th Annual Northeast Astronomy Forum**

Excellent speakers and many vendors make this one of the best events of the spring. This year it will be held at Rockland Community College, Exit 14B on the NY State Thruway (I-87). For information see [www.rocklandastronomy.com](http://www.rocklandastronomy.com) or contact Don Urban at 201-768-6575 or [donurban@rocklandastronomy.com](mailto:donurban@rocklandastronomy.com).

### **Saturday May 6, 2000 - StarConn**

The Astronomical Society of Greater Hartford, Inc. will sponsor its 12th annual StarConn Convention at Wesleyan University in Middletown CT. This is a one-day event featuring an outstanding lineup of famous lecturers in various field's of astronomy. For information keep checking <http://www.cshore.com/royce/asgh/> or contact Scott Tracy at 76616.1027@compuserve.com

Friday - Sunday, July 28-30, 2000 -The 16th annual Connecticut River Valley Astronomers' Conjunction Lectures and dark-sky observing will be held on the weekend of a new moon at the Northfield Mountain Recreation and Environmental Center in Northfield, Mass. Contact Richard Sanderson, P.O. Box 2793, Springfield, MA 01101, e-mail [rsanderson@juno.com](mailto:rsanderson@juno.com)

### **Friday July 28 - Sunday August 6, 2000 - The Summer Star Party and Family Camping Vacation**

A week of camping and dark skies for observing at the Shady Pines Campground in Western Massachusetts (Savoy MA). This event precedes Stellafane and is sponsored by the Rockland Astronomy Club. See [www.rocklandastronomy.com](http://www.rocklandastronomy.com) or contact Don Urban at 201-768-6575 or [donurban@rocklandastronomy.com](mailto:donurban@rocklandastronomy.com).

### **Friday - Sunday, September 1-3, 2000 (Labor Day Weekend) -- Arunah Hill Days, Cummington MA**

Convention and dark sky star party "Free of charge". Sponsored by the Arunah Hill Natural Science Center. Dark sky observing at 2004 ft, camping, Guest speakers, door prizes, miles of nature walks and other family oriented events. Close to many Berkshire attractions. Contact: Steve Pielock 413-772-6715 or [pielock@acad.umass.edu](mailto:pielock@acad.umass.edu) or keep checking <http://www.reflector.org/Arunah.htm>.

### **Friday - Saturday, July 28 - 29, 2000 - Annual Stellafane Convention**

The premier telescope making convention, with a big enthusiastic crowd on Breezy Hill near Springfield VT. Contact Stellafane Convention, PO Box 50 Belmont MA 02178 or see [www.stellafane.com](http://www.stellafane.com)

### **Friday September 29 - Sunday October 1 - 10th Annual Connecticut Star Party**

Camping, observing, speakers, vendors, on a dark private campground in Colebrook CT, elevation 1400 feet. Sponsored by the Astronomical Society of New Haven. See <http://www.asnh.org/> or contact Linda Marks, 37 Gerard St. Milford CT 06460 203-874-4816 for information.

### **October - Date to be determined - Astro Assembly**

This annual meeting, with lectures, swap table and vendors, is sponsored by Skyscrapers, Inc., and is held at the Seagrave Memorial Observatory in North Scituate, RI. See <http://chandra.cis.brown.edu/astro/skyscrapers/> or contact Bob Napier 401-934-0980 for information.

### **October - date to be determined - Star Watch training course at Arunah Hill, Cummington MA**

Only offered once a year, this weekend training course will give you the confidence to run star parties and work with the public. Topics include showing the night sky to others at public observing sessions, using planetariums and educational toys, how to deal with emergencies, leadership training, and more. Limited enrollment, very small fee. Camping facility and meals included.