



## OUR JUNE MEETING...

Thursday, June 10, 1993, 8 p.m.  
Phillips Auditorium, Harvard-Smithsonian  
Center for Astrophysics

**PAINTING THE MOON** is the title of this month's talk by Elizabeth Cavicchi, artist, moon observer, and physics instructor. While working as a researcher for the PBS series 'Ring of Truth' Ms. Cavicchi became interested in the historical facts surrounding Galileo's astronomical drawings. Were the famous moon drawings made as he observed at the telescope or were they made at some later date? Fascinated by this dilemma, she set out to discover the answer. Her talk will describe how she pursued this quest. Elizabeth Cavicchi has taught physics at Wentworth Institute and the University of Massachusetts, Lowell. In the fall she plans to pursue a doctorate in education at Harvard.

Please join us at 5:45 p.m. for a pre-meeting dinner with our speaker at the Changsho Restaurant, 1712 Mass Avenue, Cambridge.

## MAY MEETING HIGHLIGHTS...

Some 50 members and guests attended the May meeting. Ed Dougherty reported on work at the clubhouse including the fact that the 'hole' has had one load of dirt put into it. He also showed his video of the Venus occultation in April. Marion Hochuli, representing the nominating committee, announced the candidates for the June election. The only change in the current executive board is the nomination of Steve Beckwith for secretary. The president read, for information purposes, the section of the bylaws pertaining to nominations from the floor. He also described the Astronomy Day activities and thanked all who participated. Mario Motta described the 'Partnership in Astronomy' program and asked for Lynnfield school star party volunteers for May 24. He also showed us the start of a mirror cell with an 18-point support made from a huge 32-inch gear. Ted Poulos took orders for ATMoB T-Shirts. Bernie Volz made copies of the 'dark skies bill' available to those who wanted them. Marion Hochuli mentioned that she took part in the recent CfA conference on women in

space. Gary Walker reported that he had CCD imaged the 5 billion light year distant QSO that Dr. Schild talked about last month. Finally, Scott Milligan and David Kelly gave an excellent talk on mirror testing and illustrated it with video images obtained from a camera mounted on Dave's uniquely designed test bed.

## SPACE MYTHS...

Generally held myths about space is the subject of an article in the May '93 issue of OMNI magazine. First among these myths is that satellites remain in orbit because they have "escaped Earth's gravity". This idea is further perpetuated by the commonly used but physically nonsensical phrase "zero gravity" to describe the free-falling conditions aboard an orbiting spacecraft. These ideas are incorrect because gravity still exists in every part of space. It keeps satellites from flying off into interstellar emptiness. Satellites stay in space because of their tremendous horizontal speed, which allows them--while being unavoidably pulled toward the Earth by gravity--to fall "around the Earth." The ground's curved withdrawal along the Earth's round surface offsets the satellite's fall toward the ground. Speed, not position or lack of gravity, keeps satellites in orbit. Furthermore, the sense of weightlessness in a orbiting spacecraft, is not due to the lack of gravity, but to the fact that the vehicle is in free fall and does not exert a force on the feet of individuals on board.

Another myth that demonstrates an inadequate understanding of space physics is embodied in the phrase "falling into the sun." Some people believe that if our nuclear wastes can be thrown across the nonexistent "gravity boundary" between earth and outer space, it will fall harmlessly into the sun. Unfortunately, all probes launched away from Earth enter an orbit around the sun at a speed equal to that of the earth's forward velocity--a speed which is more than adequate to prevent them from falling into the sun. It's far easier to send the junk far out into interstellar space than to push it into our nearby sun.

Movie makers love space vacuum scenes and take the standard gory approach of painfully puffing torsos and grape-like bursting eyeballs to show what happens to a human thrown out into open space. The truth is that the physical toughness of the human body allows it to resist deformation even in a complete vacuum. A human will suffocate and double over in pain from the bends--and lapse into unconsciousness in just seven seconds--but at least the eyes won't pop out. In 1971, three Soviet cosmonauts underwent an accidental decompression to a vacuum during their return to Earth. Recently released Soviet space films showed them receiving emergency resuscitation after landing, but to no avail. Their bodies, however, were not physically deformed by the exposure to a vacuum.

Being trapped in space is another science-fiction nightmare particularly when contemplating the impending death of the crew members when "their oxygen runs

out." But in reality, nobody trapped in space will die from lack of oxygen. They may die, but there will be plenty of oxygen left in their cabins or spacesuits when they do. What kills a person in a spacecraft (or air tight room on Earth) is not the oxygen running out, but the exhaled carbon dioxide building up. After a while, the body can't expel any more of the waste gas into the air through the lungs because the surrounding air contains too much carbon dioxide already. Ultimately, the CO<sub>2</sub> saturated blood becomes poisonous and kills the body. But while this occurs, there is plenty of breathable oxygen left in the air, although it is poisoned by high levels of carbon dioxide.

### **THINGS YOU MAY WANT TO KNOW...**

**IT'S MEMBERSHIP RENEWAL TIME!** Enclosed with this issue of *STAR FIELDS* is a ATMoB membership renewal form. Fill it out and send it along with a check for your dues to our Membership Secretary, John Samolyk. If are continuing your subscription to Sky & Telescope, include their renewal card. Deadline is July 31, 1993.

**AN ATMoB OPINION SURVEY** is printed on the back of the membership renewal form. Give the executive board your opinions on our meetings and clubhouse affairs as well as info on your interests. Your responses to this survey are vital for planning future club activities. If you want your comments to remain anonymous, Xerox the survey form or obtain another at our meeting and send it to me (18 Cushing Rd., Brookline, MA 02146).

-- Ted Poulos

**ASTROPHOTOS** taken by amateurs are wanted by Jeffrey K. Wagner for the 2nd edition of his textbook, 'Introduction to the Solar System'. The 1990 edition had photos by ATM'ers George East, Kerry Hurd, and myself. To submit photos, contact me at 508-897-7532.

--Dennis Milon

**ANOTHER VARIABLE STAR EVENING** will be held at the clubhouse from 10 - 11 p.m. on Friday, June 18. Beginners are specially welcome. The May 14 session went well under clear skies with four members participating. For additional information, call me at 603-880-6219.

--Edward Los

**AN ATMoB AURORA HOTLINE** is being started by Steve Mock. If you are interested in taking part in it, contact Steve at 617-625-5870.

**THE PLEIADIAN SUITE**, composed by James Hardman and inspired by his view of the Pleiades on a cold, clear, moonless night, is a beautiful seven piece composition that will provide inspiring accompaniment to any observing session. A free 24-hour listening line provided by Alternate Records of Silver Spring, MD allows anyone to preview a portion of the suite by calling 301-419-8040.

**SPACE DAY**, a celebration of astronomy and aeronautics sponsored by the Hayden Planetarium, will held at the BMOS on Saturday, July 24. The ATMoB has been invited to set up a display table from 9 a.m.

to 4:30 p.m. in the Museum's Atrium and assist in a evening star party from 8:30 - 10 p.m. If you want to participate in this event, sign-up at the June meeting.

**THE NOMINATING COMMITTEE** consisting of John Reed (Chairman), Marion Hochull, and Gary Walker have presented a slate of ATMoB Executive Board candidates for our election in June. The only change from our current executive board (see back page) is the nomination of Steve Beckwith to replace Ted Poulos as secretary.

**DAVID A. HUESTIS** of Skyscrapers, Inc., sent a thank you note to the ATMoB and particularly John Reed, Phil Rounseville, Ed Dougherty and others who provided observing for his BMOS "Telescopic Astronomy" class at the clubhouse on April 17.

**YOUNG ASTRONOMERS** have been popping up all over this Spring. ATM'er Rich Nugent and his wife Noreen had a 9 lb. 10 oz. baby boy on April 30th. Conor is the Nugent's third son.

**CLUBHOUSE ASTROPHOTOGRAPHY** classes conducted by Dennis Milon and Ed Dougherty are scheduled to begin on Saturday, June 12 at 7 p.m. If you're interested in learning how to capture starlight, mark your calendar so you won't forget to attend.

### **SUMMER EVENTS...**

**CONJUNCTION '93.** July 16-18, Northfield Mountain Recreation & Environmental Center. This annual event has become one of the most unique and intimate amateur conventions, featuring great speakers, lively conversation, good camping, and fairly dark skies. This year's keynote speaker is Dennis di Cicco. Contact Rich Sanderson, Box 54, Monson, MA 01057, 413-267-5283.

**ALCON '93.** July 29-31, hosted by the Madison Astronomical Society, Madison, WI. For further info, contact: MAS/ALCON '93, P.O. Box 14747, Madison, WI 53714-0747.

**STELLAFANE.** August 13 & 14, Breezy Hill, Springfield, VT. This granddaddy of all amateur conventions attracts thousands. It features speakers, swap tables, telescope judging, and observing in a historic and beautiful setting. For registration info contact: Stellafane, P.O. Box 50, Belmont, MA 02178.

**STARCONN '93.** Sept. 11, Wesleyan University, Middletown, CT. This annual one day event is conducted by The Astronomical Society of Greater Hartford and will feature this year Donald Parker, amateur planetary observer, as keynote speaker and will

### **ATMoB T-SHIRTS...**

A few Light blue, 100% cotton, T-Shirts with the ATMoB logo are still available in medium, large, and extra large sizes. Buy them for \$12 at our June meeting or if you want mail delivery send a check for \$12 plus \$2 postage, payable to the Amateur Telescope Makers of Boston, Inc., to me at 18 Cushing Rd., Brookline, MA 02146 --Ted Poulos

Include exhibitors, vendors, swap tables, and a star party. For more info write: Starconn '93, P.O. Box 2271, Hartford, CT 06145.

### **CLUBHOUSE ASSIGNMENTS...**

The following members are responsible for clubhouse activities on the dates shown:

Jun. 12 - Richard Burrier, Mike Mattei, Mario Motta  
Jun. 19 - Steve Mock, Phil Day, Ed Budreau  
Jun 26 - Ed Los, Henry Hopkinson, Tony Costanzo  
July 3 - Ed Budreau, Bob Heller, Fritz Ledford

### **ATMoB ACTIVITIES...**

THE 20TH ANNIVERSARY of Astronomy Day, first started among California clubs and then spread nationwide, was celebrated by ATM'ers in the Atrium of the Boston Museum of Science. Outside on the patio stood as a symbol of our hobby an immaculately white 12-inch refractor set up by Paul Calantropo. Later it was joined by BERNIE VOLZ's a smaller refractor fitted with JOHN REED's T-Scanner that provided solar observing to museum visitors and passers-by. Inside, ED DOUGHERTY displayed an 8-inch SGT and his video astronomy systems...KEN FYE his computer processed astrophotos and a video he made on how to do astrophotography...CHARLIE McDONALD prepared and handed out a packet of info on how to select your first pair of binoculars or telescope...STEVE FEINSTEIN demonstrated astronomical software on two computers he set up...PHIL ROUNSEVILLE, DAVE KELLY, and ISHAN ANAND demo'd mirror grinding and testing; Phil also displayed his Gregorian scope...DENNIS MILON showed off his classic brass refractor. TED POULOS, MARIO MOTTA, and BERNIE VOLZ gave talks in Wright Theater introducing museum visitors to various aspects of amateur astronomy. ATM'ers DENNIS MILON, PHIL ROUNSEVILLE, PETER BRUCHNER, JOHN REED and AL PISANO helped make the evening star party a success. Thanks also for the help and support of ANNA HILLIER, ART SWEDLOW, TAL MENTAL, CARL HEIM, and PAUL CIGCHETTI. A very special thanks to JOHN REED for organizing this event. NOREEN GRICE, the Hayden Planetarium's Education Coordinator, sent us a thank you letter and invited us to attend next year.

THE WHDH-TV URBAN UPDATE segment on amateur astronomy with TAL MENTALL was aired on May 8. As a result, Ted Poulos received many calls from persons interested in learning about the ATMoB. One call was from Karen Slack, a teacher at Madison Park High School in Boston. She asked if we could provide someone to talk to her 9th grade class. Tal agreed to do so and visited the class on May 19. He showed a video of the program and then answered questions from the students.

THE MEMBERSHIP VOTED to hold a July meeting. It will be a Show & Tell meeting. Any member wishing to present something should contact me ASAP. We are

also considering having an auction at the July meeting (with one or two Show & Tells). If your interested in an auction, let Dick Koolish or Ken Launie know at the June meeting.  
--Bernie Volz

THE MAY CLUBHOUSE work session was poorly attended, but we were able to accomplish a lot. KEN LAUNIE worked on the test tunnel and it is now functional. PAUL CIGCHETTI and FRITZ LEDFORD dug the holes for the footings. MIKE MATTEI, MARIO MOTTA and I painted the north side of the clubhouse and the east side of the barn. ED DOUGHERTY and others mounted our 30-inch mirror for display. Others scraped paint above the porch to prepare the area for primer. On May 22, the clubhouse was rearranged. The meeting room is now in what was the grinding room. Many of the smaller scopes were moved into the hallway. The grinding/polishing equipment was temporarily moved to the old meeting room until the new polishing room (the old kitchen) is ready.

--Bernie Volz

A CLUBHOUSE WORKDAY is scheduled for Saturday, June 12th starting at 11 a.m. Please help make this workday more successful than the last! We'd like to finish painting the clubhouse that day. We need folks to scrape the old paint in a few areas and to paint, paint, paint... Help with other ongoing projects is also needed.  
-- Bernie Volz

MEETING REFRESHMENTS were provided in May thanks to MARION HOCHULI. ANNA HILLIER is on deck for June. We need a volunteer to provide for sustenance at our July meeting.

### **NEW MEMBERS...**

The ATMoB extends a warm welcome to the following new members:

Armen & Cynthia Aghamianz	Waltham, MA
Lincoln Anderson	Sudbury, MA
Robert Gormley	Cambridge, MA
Kevin Hines	Franklin, MA
Fritz Ledford	Ashby, MA
Wilfred McDonald	Revere, MA

### **CLUBHOUSE DONATIONS...**

Bernie Volz donated and installed smoke detectors in the kitchen, grinding room, and at the top of the stairs. Our OSTI donated light table now has a stand thanks to Bob Heller. Ed Dougherty has donated an electrically operated projection screen that is now mounted in the meeting area. He has also arranged for the donation of some kitchen cabinets. Now, all we need is that microwave oven. Oh yes, and a new lawn mower (the two we had have bit the dust).

### **MARKETPLACE...**

FOR SALE 10", 1/10 Galaxy mirror with enhanced coating and Novak cell, 2-1/4" cervit diagonal, curved spider diagonal holder, 2" short Novak R&P focuser. Lot price \$500. Steve Mock, 617-625-5870.

FOR SALE 4.5", 1/4.5 Chicago Optical Newtonian reflector, with motorized equatorial mount, Tetrad, and 25 mm eyepiece. \$300. Ted Poulos, 617-566-5127.

WANTED Roommate to share large new house with panoramic view of the sky and no street lights. Estate with many extras: deck, jacuzzi, etc. Large telescopes welcome. 508-663-9585.

FOR SALE 36 Model Rockets, half of them assembled, with 2 launch pads and controls, and enough materials to launch 20 times. No license required. Tackle box included. \$200 or best offer. Dave Aucoin, 617-891-9650.

### COMING EVENTS...

- June 12 CLUBHOUSE WORKDAY, 11 a.m.
- June 12 ASTROPHOTOGRAPHY CLASS, clubhouse, 7 p.m.
- June 17 CfA MONTHLY OBSERVATORY NIGHTS, 8 p.m., Phillips Auditorium, CfA, Cambridge, MA. For more info call 617-495-7461.

### EXECUTIVE BOARD 1992-93...

- PRESIDENT: Bernard Volz, 508-881-3614
- VICE PRESIDENT: Mario Motta, 617-334-3648
- SECRETARY: Ted J. Poulos, 617-566-5127
- MEMBERSHIP SEC: John Samolyk, 617-391-9290
- TREASURER: Anthony Costanzo, 508-521-5382
- MEMBERS AT LARGE: Peter Bealo, 603-382-7039  
Anna Hillier, 617-861-8338
- PAST PRESIDENTS: 1990-92 Marion Hochull  
1989-90 David Aucoin  
1987-89 Gary Walker

### COMMITTEES...

- OBSERVING: Edward Dougherty, 508-458-8857
- CLUBHOUSE: -- Open --

- June 18 VARIABLE STAR EVENING at the clubhouse (see page 2).
- June 19 MONTHLY OBSERVING NIGHT at the ATMoB clubhouse.
- Thru '93 ORION RENDEZVOUS: A STAR TREK VOYAGE OF DISCOVERY, Hayden Planetarium, For more info call 617-723-2500.

### JULY STAR FIELDS DEADLINE...

June 24th is the deadline for items to be included in the July issue of *STAR FIELDS*. Mail or phone your contribution to Ted Poulos, 18 Cushing Rd., Brookline, MA 02146 (617-566-5127).

### HOW TO FIND US...

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

CLUBHOUSE: 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 495 to exit 33 and proceed west on Rt. 40 for 5 miles. Turn right at the MIT Lincoln Lab, Haystack Observatory sign at the Groton town line. Proceed to the farmhouse on the left side of the road. Since clubhouse attendance varies with the weather and other activities, it is wise to call ahead: 508-692-8708.

### FIRST CLASS

AMATEUR TELESCOPE MAKERS OF BOSTON  
c/o John Samolyk  
65 Court Street  
Medford, MA 02155

Dear ATMoB Member:

It is once again time to renew your membership. Below is the membership renewal form. **Please complete and mail this sheet promptly** as it will help to reduce our costs in not having to send you a reminder. *Also, don't forget the questionnaire on the back of this form.*

I would like to call to your attention that the Executive Board raised dues from \$17.00 to \$20.00 per year. This increase has been long overdue. And, even with this increase, the club is just able to pay its operating expenses. To give you a very rough idea as to how the club spends your dues (based on this past year's expenses):

Star Fields (11 issues @ \$200/issue)	\$2,200
Meeting expenses (refreshments, etc.)	\$800
Insurance	\$720
Astronomical League membership	\$475
Clubhouse (telephone, oil, supplies, ...)	\$1,000
<u>Miscellaneous</u>	<u>\$300</u>
Total	\$5,495

Our income is expected to be approximately \$5,500 (275 members @ \$20/member). We presently don't have any other significant sources of income.

As you can see, this means that **the club will just be breaking even** (assuming we have no unexpected expenses). **However, this doesn't include amounts that we spend on projects and equipment** – such as the clubhouse work that has been going on over the past year and is expected to continue through the summer and perhaps beyond.

**Therefore, what I'm asking each member to do is to contribute a bit more than just the dues.** If everyone were to include a tax-deductible contribution of \$5 for the clubhouse, for example, we'd raise about \$1,375 (which just about covers what was spent on improving it this past year). Please give more if you can.

There are three areas for which you can designate your contribution: the clubhouse, a land fund (proceeds from the 50/50 raffle we've held at meetings goes to this fund), and the general operating fund. Please give generously.

Sincerely,

Bernie Volz

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## ATMoB MEMBERSHIP RENEWAL

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

Make checks payable to Amateur Telescope Makers of Boston, Inc. and send to John Samolyk, 65 Court Street, Medford, MA 02155. Please include the *Sky & Telescope* renewal card if available.

Deadlines: July 31 for *S&T* Nov. issue; Sept. 15 for *Astronomy* for '94; Dec. 1 is the end of the ATMoB renewal grace period.

Club dues (9/1/93 to 8/31/94)	*\$20.00	\$20.00
<i>Sky &amp; Telescope</i> (optional)	\$20.00	_____
<i>Astronomy</i> (optional)	\$16.00	_____
Contribution (tax deductible, optional):		
Clubhouse	(\$5 suggested)	_____
Land Fund		_____
General	(\$5 suggested)	_____
	Total:	_____
	Check Number:	_____
	Date:	_____
	S&T Card Enclosed (Y/N):	_____

**THANK YOU!**

\* Student membership dues are \$10.

ATMoB MEMBERSHIP OPINION SURVEY

1. What is your occupation? \_\_\_\_\_
2. Do you own a telescope? \_\_\_\_\_ Size & Type: \_\_\_\_\_
3. How many meetings have you attended over the past year? \_\_\_\_\_
4. What would you like to see added to or changed about our meetings? \_\_\_\_\_
5. How often have you visited our clubhouse over the past year? \_\_\_\_\_
6. What would you like to see changed concerning clubhouse operations, facilities, etc.? \_\_\_\_\_  
\_\_\_\_\_
7. How often have you read STAR FIELDS over the past year? \_\_\_\_\_
8. What would you like to see added to or changed concerning the newsletter? \_\_\_\_\_
9. Are you interested in becoming a member of the ATMoB Executive Board? \_\_\_\_\_ If so, what office \_\_\_\_\_
10. Would you like to give a talk at one of our meetings or other events like Astronomy Day? \_\_\_\_\_
11. Circle the three astronomical activities that interest you the most.
  - a. Reading about astronomy
  - b. Astrophotography
  - c. Mirror and telescope making
  - d. Video camera imaging
  - e. CCD imaging & processing
  - f. Telescopic or binocular observing
  - g. Visually observing the stars & constellations
  - h. Using astronomical software
  - i. Drawing telescopic images
  - j. Introducing others to astronomy
  - k. Other \_\_\_\_\_
12. Circle the three astronomical objects you enjoy observing the most.
  - a. Planets
  - b. Moon
  - c. Sun
  - d. Asteroids
  - e. Comets
  - f. Meteors
  - g. Eclipses
  - h. Aurorae
  - i. Nebulae
  - j. Galaxies
  - k. Variable stars
  - l. Double stars
  - m. Star clusters
  - n. Other \_\_\_\_\_
13. Circle the category that best describes your astronomical expertise:
  - a. Beginner
  - b. Fairly experienced
  - c. Experienced
  - d. Very experienced

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_