



# STAR FIELDS

NEWSLETTER OF THE AMATEUR TELESCOPE MAKERS OF BOSTON, INC.

Vol. 2, No. 1

January 1991

## THIS MONTH'S MEETING...

Thursday, January 10, 1991, 8 p.m.  
Phillips Auditorium, Harvard-Smithsonian  
Center for Astrophysics

**ATOMIC CLOCKS AND RELATIVISTIC GRAVITY** is this month's talk by Dr. Robert Vessot. Dr. Vessot is an astrophysicist at the Smithsonian Astrophysical Observatory. In a cluttered basement laboratory of the observatory, he and his associates have been turning out hydrogen-maser timekeeping devices for more than 20 years. These so-called atomic clocks, used for a host of applications, are so stable that they gain or lose only a second in 40 million years.

Six of Dr. Vessot's hydrogen masers are installed at the U.S. Naval Observatory as part of the master clock system which provides the US' time reference and a link with the International Time Bureau's cesium clock that became the world standard in 1967. To keep all these atomic clocks ticking to within nine-tenths of a second of the Earth's rotation, leap seconds are added periodically. On December 31, 1990 at UTC 23:59:60 (the 16th time since 1972) a leap second was added to compensate for the slight slowing down of our planet's rotation.

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PLEASE JOIN US FOR DINNER before the meeting at the Changsho Restaurant at 5:45 p.m. The restaurant is located at 1712 Mass Ave. in Cambridge, near Linnean St.

## LAST MONTH'S HIGHLIGHTS...

Our December meeting was attended by some 70 individuals. A premeeting event included the showing of video tapes by Ed Dougherty and Vladimir Vudler. Ed's tape showed photos of Mars taken with his 'cheap' video camera that were 'hardware' processed to give remarkable results. Vladimir showed a clip from CNN that presented HST views of Saturn both before and after the white spot appearance. Greg Chase reported that ATMob member Dr. Badri Aghassi of Bentley College has donated more astronomical items that are now available for perusing and sale at the clubhouse thanks to the hauling efforts of John Samolyk, Steve Mock and John Reed. Jupiter has two belts again reports Ed Dougherty. Tal Mentall's knife edge tester has been returned, and members wished him a happy 63rd birthday. He rewarded us with his annual recitation of "Twas the Night Before Christmas" at the close of the meeting. The

town of Lexington plans to install high pressure sodium lamps says John Reed and he asked for help from Dark Skies activists. Bernie Volz and John Reed gave a slide presentation on the UMass campus site for ALCON 91. Our speaker at the December meeting, Dr. Margaret Geller, traced the mapping of the universe from the mapping of the earth by the Babylonians through her 15 years of research to map 1/100,000th of the universe out to 450 million light years.

## ANNOUNCEMENTS...

**SHARE YOUR EXCITEMENT FOR SCIENCE** by becoming a volunteer Exhibit Interpreter for the Museum of Science. Interpreters choose from a selection of educational media to provide hands-on experiences for adult and children museum visitors. Interpret things like astronomy, light and optics, plate tectonics, the pendulum, or many other scientific topics. If you can commit at least 12 hours a month for 6 months, the BMOS welcomes you to their program. The 1991 winter volunteer training schedule is as follows:

Sunday, Jan. 27, 10 a.m. - 4 p.m.  
Wednesday, Jan 30, 6 p.m. - 9 p.m.  
Sunday, Feb. 3, 10 a.m. - 4 p.m.

For information or an application call Carolyn Cinami at 617-589-0312 before Monday, Jan. 16.

**THE ASTRONOMERS**, a new four program series on PBS which was reported this past summer to be scheduled for a January 1991 airing, will not now be shown until sometime in April.

**CCD NEWS** is a quarterly newsletter devoted to disseminating information on CCD imaging for amateur astronomers. A one year subscription (4 issues) is \$4.00. Make checks payable to K.L. and S.E. Gardner and send to CCD News, 31651 Avon Rd., Avon, OH 44011 (Tel. 216-937-6168).

**A LA PAZ ECLIPSE TRIP** update will be provided by Mario Motta and an ITA Tours representative just before the beginning of the January meeting. Those interested should be present by 7:30 p.m.  
-- Marion Hochuli

**WATCH THE ASTRONOMY MAGAZINES** for magnificent photos of the earth and the far side of the moon taken by Galileo's recent flyby. Some of you may have seen these photos on TV.

NASA SPACELINK is a 24-hr. computer bulletin board with daily updates on HST, Magellan, and other current space projects. 205-895-0028. 300, 1200, or 2400 bps and the parameters are B, n, and l.

\$500.00 will be paid by Feb. 1, 1991.

## ATM ACTIVITIES ROUNDUP...

MARGARITA DROZDOFF and JOHN REED put together a barn door camera mount from stuff around the clubhouse. It will be used on Margarita's photographic seminar trip to Costa Rica this month. The club's 20-inch telescope's split ring mount made by GARY WALKER is now available for inspection at the clubhouse. STEVE MOCK reported tremendous solar flare activity on the morning of Dec. 26 using his hydrogen alpha filter and 90 mm Vernon scope. The flare was first spotted on Christmas Day by Steve and JOHN REED using John's new T-Scan hydrogen-alpha filter.

- Registration information will appear in the Feb. issue of the AL newsletter, REFLECTOR.
- 140 plus suppliers of astronomical wares have been asked to exhibit or donate raffle prizes. Responses should arrive by Feb. 1.
- Carl Sagan declined and invitation to speak. Philip Morrison will reply in Feb. Richard Berry has confirmed. Your suggested speaker list from the Dec. meeting is being acted upon. We need ideas for activities (will someone do a mirror grinding overview and demonstration?).

## ATMoB/ALCON 91...

by Bernie Volz

Although progress is being made on ALCON 91, we still need YOUR HELP. A few members have already volunteered, but we need many more! It won't take a lot of your time, but will help guarantee the success of our ALCON. Come-on!! Let's show the country what the ATMoB can do! Here are the areas in which we need help:

**PUBLICITY**--To prepare and send out news releases, registration info, and more.

**EXHIBITS**--To contact and work with potential exhibitors, and to obtain donated raffle prizes.

**PROGRAM**--To select and contact speakers, and to organize convention activities.

**REGISTRATION**--To process registration requests, assign housing, etc.

**ON-SITE STAFF**--To run a smooth convention at UMass/Amherst.

Please call John Reed (617-861-8031) or Bernie Volz (508-366-0768) evenings and say "I'll help." Meanwhile, here is the progress made thus far:

- An agreement with the UMASS Convention Services has been completed. A deposit of

A BIG THANKS YOU TO THOSE ALREADY HELPING--BUT HOW ABOUT YOU? The next ATMoB/ALCON 91 committee meeting is Saturday Jan. 12 at 7 p.m. at the clubhouse. Will you join us?

## FROM THE PRESS...

"AMATEUR ASTRONOMERS are amateur in the original sense of the word: the am- derives from the Latin word for love. What unites them is love of the night. It has been suggested that the root of the Latin word for love, am-, had its origin in baby talk, like yum-yum or mmmm! an expression of delight. And that's what propels amateur astronomers into the night when everyone else is settled down indoors. They seek the mmmm!, that special moment of delight when the night reveals itself in an intimate way, knowledge and beauty coming together in seamless experience. One dictionary of English usage says that the word amateur has acquired 'a faint flavor of bungling and a strong flavor of enthusiasm.' That faint flavor of bungling devalues an otherwise honorable word. There are few bunglers among...amateur astronomers; there is certainly a wealth of enthusiasm".

--Chet Raymo's column (Boston Globe 12-17-90) entitled 'For all lovers of the night'.

THE KECK TELESCOPE on Mauna Kea, Hawaii saw 'first light' on Nov. 24 by photographing the face-on spiral galaxy NGC 1232 in Eridanus. With only 9 of its 36 mirrors currently in place, it is the world's largest telescope, but will not reach its full 10-meter aperture until late 1991.

**B.C.** by Johnny Hart

Courtesy of Tal Mental



## NEW MEMBERS...

A cordial welcome is extended to the following amateur astronomers newly joining the ATMOB:

George Crawford	Cambridge, MA
Nigel Croxon	South Lawrence, MA
Robert Kosakowski	Nashua, NH
James Peck	Andover, MA

## A MEMBER'S REPORT...

A VISIT TO THE CHRISTA McAULIFFE PLANETARIUM was fun and worthwhile but also somewhat disappointing. It certainly is an easy drive from the Boston area and not hard to find if you use the map printed in the September issue of STAR FIELDS. I hoped that it would be the one planetarium in this area that would have some good astronomy exhibits, but the best it had to offer were a few small, framed astronomical paintings. Oh well, I really wanted to see the how Digistar projection system performed. The show was entitled 'Planet Quest' and was a space ship journey through the Solar System. What planets we visited or explored during the journey was determined by a series of audience votes via a hand held responder with three color-coded buttons. The vote percentages for each of the three choices presented were displayed on the dome as three, colored bar graphs that changed as the votes came in. When the vote settled down, the live lecturer, who walks the floor, would 'freeze' the vote and initiate the activity. This voting technique was also used for an initial astronomy pop quiz and really got the audience involved.

Images on the dome were created by computer graphics, video disc and slide projection. Only the slide projected images had real brilliance and sharpness. The stars were larger, fewer in number, and softer looking than those produced by the Hayden Planetarium's Zeiss projector. I guess its a lot to expect to project a computer screen and TV images to fill a large 40 ft. dome and still have intensity and sharpness. Admittedly, I'm looking too critically at the mechanics of the presentation, not the program itself. Most visitors and especially young ones will love it!

-- Ted Poulos

FIRST LIGHT by Richard Preston is a book you should seek out (Atlantic Monthly Press, 1987) if you haven't read it already. Its a fascinating account of the nightly workings of the people and equipment of a great observatory. The author spent a year on Mt. Palomar where he chronicled the activities of a team of astronomers. You'll be introduced to a former Texas, TX barber who now operates the Hale Telescope. You'll learn of 4-shooter and Pfooey, CCD imaging systems; Cassandra, a computer program that searches CCD spectral images for quasars; and the significance of Mobile Flying Horse oil.

-- Ted Poulos

## THE MARKETPLACE...

FOR SALE 7-inch f/15 apochromat by Roland Christen. Will sell with tube assembly or with just lens assembly, \$3950.00. Call Jeff Blazey, Lebanon, OH, 513-932-9780.

WANTED inexpensive 1-1/4" eyepieces for a bunch of copy scopes I have made for gifts. Old binocular eyepieces okay. Call Bob at 603-891-2355.

FOR SALE Super C8 plus, Byers drive, special coatings, 8x50 finder, diagonal, tripod, and eyepieces. \$1750 or best offer. Also a Canon A1 camera with four lenses and filters, \$850 or best offer. Call Steven Paris, 617-254-2951.

FOR SALE Sky & Telescope from 1970 to 1988 in good condition, \$50. Call John Kyrka, 508-655-3667.

HARD TIMES MUST SELL Odyssey 13.1" w aperture stop cover \$430. 50mm Finder \$32. Tele Vue 32mm Plossl \$72. 24mm wide field \$112. 13mm Nagler \$60. Lumicon Deep Sky Filter \$56. Meade Var. Polarizing Filter \$32. Spectra Flexi-Glow lamp \$10. Whole lot w Variair lens cleaner and S&T Feb. 86-Oct. 90, \$930. Jim Baker, home 508-692-7940 or work 508-264-4099.

## THROUGH THE 'SCOPE...

by David Aucoin

Some of the most overlooked deep sky objects are those in the winter sky when its just too cold to fidget with the scope in hopes of seeing that galaxy or nebula your anxious to see! With a little preparedness before hand you'll capture those celestial wonders and relish yourself in an effort well done! On Nov. 20th I had the chance to view, on a crystal clear night in Deery, NH seven faint not well known planetary nebulae, the billowing wisps of the Orion nebula, the elusive NGC 891, HII regions in M33, and possibly the remnants of a nova or supernova near gamma Gemini. The skies were 10X better than at Westford, and 5X better going from lighted apartment to a dark, semi-lighted parking lot with little or no dark adaptation. There is a spot north of where I live, under power lines, with no light pollution that rivals Baxter in transparency and darkness. Come up and see it some time. The planetary nebula observed where J320 in Orion, J900 in Gemini, NGC 1545 in Eridanus, IC4917 in Lepus, NGC 2022 in Orion, IC417 in Canis Major, and finally 2392 in Gemini. All observed within a span of 45 minutes using a nebula filter, star hopping, tons of patience, and a lot of luck and skill (mostly luck!).

As Jupiter approaches opposition, prepare yourself for great opportunities to see the grandest of all planets (except Saturn) with its belts and festoons, eddy currents, rippling cloud patterns, and satellite shadow transits

across the face of Jupiter. Prepare for all night observing when clear nights present themselves!

## ASTRO-TRIVIA...

THE 200-INCH MIRROR is removed from the telescope every 6 months and is washed with natural sponges using Procter & Gamble Orvus soap, which is Ivory soap without the fragrance. Once a year the mirror is re-aluminized.

ASTRONOMICAL FOSSILS--yes we have them. A high-redshifted quasar is a fossil image. Its light exists as a trace of an extinct object. While the quasar's light was traveling on its way to the earth, the quasar died out.

HAVE YOU EVER THOUGHT OF YOUR TELESCOPE MIRROR as a magic memory mirror for making images from time gone by?

## EXECUTIVE BOARD 1990-91

### PRESIDENT

Marion Hochuli, 28 Taschereau Blvd., Nashua, NH 03062, 603-888-0141

### VICE PRESIDENT

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Mario Motta, 806 Lowell St., Lynnfield, MA 01940, 617-334-3648

Bernard Volz, 1108 Windsor Ridge Dr., Westboro, MA 01581,

508-366-0768

### PAST PRESIDENTS

1989-90 David Aucoin, Derry, NH 03038

1987-89 Gary Walker, Dover, MA 02030

1985-87 E. Talmadge Mental, Lynn, MA 01902

## FIRST CLASS

## COMING EVENTS...

- Jan. 5 ATMob EXECUTIVE BOARD MEETING, 7:30 p.m. at the clubhouse. Snowdate is Jan. 7.
- Jan. 12 ATMob/ALCON 91 COMMITTEE MEETING, 7 p.m. at the clubhouse.
- Jan. 17 CfA MONTHLY OBSERVATORY NIGHTS. "Planetary Astronomy" by John Wood, CfA, 8 p.m Phillips Auditorium, CfA, Cambridge, MA. For more info call 617-495-7461.
- Thru May BLUE PLANET, Omni Theater film, BMOS. More info call 617-523-6664.

## COMMITTEES

### OBSERVING

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

### WORKSHOP

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

### NEWSLETTER DEADLINE...

The 27th of this month is the deadline for items to be included in next month's STAR FIELDS. Mail or telephone your contribution to Ted Poulos, 18 Cushing Rd., Brookline, MA 02146, 617-566-5127.

### HOW TO FIND US...

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

CLUBHOUSE: Open every Saturday from mid-afternoon to late evening. It is the white farmhouse on the grounds of MIT's Haystack Observatory in Westford, MA. Take Rt. 3 north from Rt. 128 or 495 to exit 33 and proceed west on Rt. 40 for 5 miles. Turn right at the MIT Lincoln Lab NEROC sign at the Groton town line. Proceed to the farmhouse on the left side of the road. Clubhouse telephone 508-692-8708.

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

AMATEUR TELESCOPE MAKERS OF BOSTON