



# STAR FIELDS

NEWSLETTER OF THE AMATEUR TELESCOPE MAKERS OF BOSTON, INC.

Vol. 3, No. 3

March 1992

## **OUR MARCH MEETING...**

Thursday, March 12, 1992, 8 p.m.  
Phillips Auditorium, Harvard-Smithsonian  
Center for Astrophysics

### **USING SUPERNOVAE TO MEASURE THE**

**UNIVERSE** is the topic of this month's talk by CfA astrophysicist and educator, Dr. Robert Kirshner. Dr. Kirshner received his BA from Harvard and his PhD from the California Institute of Technology. He has served as a research assistant at Kitt Peak and Director of the McGraw Hill Observatory. Currently, he is chairman of the Department of Astronomy at Harvard and serves on the Space Telescope Users Committee.

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Join us for a 5:45 p.m. pre-meeting dinner with our speaker at Changsho Restaurant, 1712 Mass. Ave., Cambridge.

## **FEBRUARY MEETING HIGHLIGHTS...**

Our February meeting was attended by about 45 members and guests. After the usual executive reports which included a report on the February 9 Executive Board meeting, the business meeting continued with the following: Ed Dougherty announced that through the efforts of Peter Bealo the club has obtained a vacuum evaporator capable of aluminizing mirrors up to 18 inches. Ed then showed slides of three 'Objects of the Month' for observing. He also showed slides depicting details of the club's 20-inch telescope. Paul Comba announced that he had observed a new 12-13 mag. Asteroid (1992AC) which is only 0.5 astronomical unit away. Dick Koolish's amendment was voted on and passed with an affirmative vote of more than two-thirds of the members present. Bernie Volz invited anyone interested in observing with the 18-inch refractor to accompany him to Amherst on the weekend. Mario Motta indicated that he is exploring places from which to observe the solar eclipse of 1994. Finally, our speaker for the evening, Dr. Rick Harnden, showed us photos of supernovae remnants and the moon obtained with 1 arcsec resolution scans from the X-Ray satellites, EINSTEIN and ROSAT.

## **MOUNTAINTOP COMES TO OBSERVERS...**

The first large (138-inch) telescope that was designed and built from the ground up specifically for remote-controlled operation will be completed this year atop

8000 ft. Apache Point, N.M. It is the only major telescope where all operations including instrument changes (such as from photometer to spectrograph) can be directed from a distance. The \$10 million dollar scope is a joint venture of five universities: U of Washington and U of Chicago, Princeton, Washington State, and New Mexico State. Personnel from each of which will be able to control the telescope from any ordinary Macintosh computer that's on the Internet network either on campus or anywhere in the world. In fact during a initial testing this past summer, U of Chicago's Robert Loewenstein, designer of the computer control system, was travelling in New Zealand and decided to give the telescope a try. He connected up and accessed the scope in 30 seconds. The telescope's remote operation capability offers some unique advantages for both science and education. For example, a project that requires perfect 'good seeing' cannot be planned for. With the Apache Point scope, anytime good seeing develops, astronomers working on the project can be alerted immediately and begin observing in minutes--even from home. Similarly, astronomers can begin observing a new comet or supernova almost as soon as discovered. Also think of the time and cost of travelling that can be saved particularly when any observing session could be clouded out.

A few other telescopes have been modified to allow some remote operations. A British-built scope in Hawaii is sometimes run, via special satellite link, from a campus in Edinburgh. And a European telescope in Chile can be operated, also by satellite link, from a control center in Germany. --Adapted from a Boston Globe story, 6-3-91.

## **PLANNING THE 20-INCH OBSERVATORY...**

A meeting was held at the clubhouse on Feb. 22 to begin this process. Ed Dougherty, our Observing Committee Chairman, called the meeting to order with 15 members present (thank you all for attending), four of which had experience building a domed observatory of their own. The discussion primarily centered on what kind of an observatory should be built, how big it should be, and where it should be located on the clubhouse grounds. After a good discussion of all the possibilities suggested by both those present and other members who made their ideas known through Ed, the following recommendations were made: (1) the observatory should be located in the southwest corner

of our present observing area, (2) it should basically be a round wooden structure with a dome, and (3) its size should probably no larger than 16 ft. in diameter with 4 to 5 ft. sides. Although many members favored building the observatory on the filled-in hole area, it was decided from a cost and expediency point of view not to pursue this idea. It was generally felt, however, that filling in of the hole should be pursued as soon as a source of inexpensive fill becomes available.

What's next? Marion Hochull will ask permission from MIT to build on the sight. A final design with plans must be completed, a building permit obtained, and then lots of hard work. Five members, Mario Motta, Peter Bealo, Paul Cicchetti, George Kavanagh, and Gary Walker have already volunteered to cut out dome parts at home for final assembly at the sight. Other volunteers who own a router are welcome to contribute to this task. We will need labor to dig and pour the telescope pier and several observatory support pads as well as to build the walls and assemble the dome. If we are to begin and complete this project in some reasonable time frame, we will need the hard work of many and the dedication and support of all our members. Are the Amateur Telescope Makers of Boston up to the task?

**MY RECENT VISIT TO INDIA** by Ed Wallner

In January, I travelled in India from the very southern tip, where the Bay of Bengal, the Indian Ocean, and the Arabian Sea meet to Delhi in the north. I tried several times to see the sun rise or set from the ocean at the tip, but it was never quite visible because of haze or low clouds.

I visited the Jantar Mantars or observatories built by Jai Singh in the early 1700's. The most famous and most elaborate is that at Jaipur ("Jai's city") with the huge sundial and multiple instruments. This observatory is still in use after a fashion for astrological observations(?) and predictions of the coming monsoon. The earlier one at Delhi is not as well maintained or restore and has fewer instruments, though it has a least one unique instrument that combines several sundials, a transit instrument, and a surface for indicating when the sun enters Cancer.

There is still a smaller observatory at Ujjain, with sundial, transit, vertical gnomon and a calibrated building for observing altitude and azimuth. This is definitely still in use and publishes an ephemeris that includes all the aspects between the planets for horoscopic use. There is another Jantar Mantar at Varanasi (Benares) but I have found no information on it yet. There was actually a fifth observatory at Muttra, but there is nothing left of it.

I'll try to get my slides organized before the next show and tell, though they are not all I hoped they would be.

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

OUR MAY MEETING will not be held on the usual 3rd Thursday of the month, but instead on FRIDAY evening May 15. Our speaker will be Bruce Schwoegler, weatherman from WCVB-TV.

THE NEWS OF NOVA 1992A that was discovered in Cygnus on Feb. 18 was flashed to many ATMob members by Observing Chairman, Ed Dougherty, as he phoned to remind them of the 20-inch observatory planning meeting. The nova was discovered by amateur Peter Collins of Boulder, CO when it was about 6.8 magnitude. By the 21st it brightened to 4.3 mag. and by 28th had seem to stabilize at 4.9 mag. Its coordinates are RA 20 hr. 30.5 min, Dec. +52° 38'. Check SKYLINE 617-497-4168 for additional info.

JERSEY STARQUEST, an annual weekend convention of the Amateur Astronomers Association of Princeton, will be held on May 29-31 at the Misery Retreat Center, a dark sky area in Brown's Mills, NJ. Registration fee \$25. For more info, contact Greg Mauro, P.O. Box 2017, Princeton, NJ 08543, 609-490-3560.

THE ANNUAL LOWELL LECTURES at the Boston Museum of Science will be held this year at 7:30 p.m. on five successive Wednesday nights beginning April 1. Their theme is: Once Invisible--Astronomical Discoveries of the Space Age. Tickets for each lecture are free, but must be requested in advance by sending a S.A.S.E. to 1992 Lowell Astronomy Lectures, Hayden Planetarium, Science Park, Boston, MA 02114-1099. There is a limit of four (4) tickets per lecture. Requests for more than eight tickets, require additional postage. For titles of the

**MOTHER GOOSE & GRIMM** by Mike Peters

Courtesy of Dick Koolish



lectures see the Feb. issue of STAR FIELDS.

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

OUR MONTHLY OBSERVING NIGHTS at the clubhouse begin again every third Saturday of the month starting on March 21. If you want training to qualify to use the 6-inch Maksutov and its observatory on your own, sign up at our March meeting and/or be at the clubhouse on the 21st by 7 p.m. Our new CAT for the Maksutov has arrived and will be operational on the scope at that time. Let's welcome Spring and more comfortable observing by bringing your scope to the clubhouse on the 21st and enjoy an observing session with your fellow ATM'ers. — Ed Dougherty

WE WELCOME NEW MEMBER Frank Colombo of Lynnfield. This brings our current membership to 269.

THE CASE OF THE SPECTROSCOPE CAPER. One cold, dark night in January, Ted Kochanski decided to checkout his newly completed Star Project spectroscope so he donned a heavy, hooded coat and proceeded outside to view the spectral lines of a mercury street light. A neighbor observed this suspicious looking figure staring at a street lamp with his spectroscope exposed and called the police. When Ted returned to his home, the phone was ringing. It was his neighbor calling to inquire if Ted had observed this strange man outside. Ted explained that he was the man. The neighbor called off the police before an arrest was made.

AN EXECUTIVE BOARD MEETING was held on February 9th at the clubhouse. All board members except one were present. Non-voting members, Scott Milligan and Ed Dougherty also attended. The chief business conducted concerned budgets for the remainder of the year. The board approved purchase of \$703 for clubhouse optical supplies and up to \$900 for the purchase of a Meade CAT for the club's 6-inch Maksutov. It also decided not to sell back the club's interest in the 13-inch Shupmann at Stellafane.

—Ted Poulos

THE STAR PARTY for the Killam School in Reading organized by Ed Wallner was held on Feb. 14. Four scopes were set up by JOHN SAMOLYK, PHIL ROUNSEVILLE, ED WALLNER and HENRY HOPKINSON. Some 50 young people and adults attended and viewed the Moon and Jupiter.

THE CLUB NOW OWNS a vacuum aluminizer for mirrors up to about 16 inches. The unit was obtained by PETER BEALO from his employer, Varian Corp. of Gloucester. Somehow he and Ed Dougherty managed to get it to the clubhouse, but they must still figure out how to get it through too small doorways.

MEMBER NEEDS HELP in locating a source for a 5.5" O.D. by at least 35" long tube of fiber, metal or plastic construction. Call John Willard, 617-674-2664.

MEMBER SUGGESTS that we seek equipment like the CAT via donations from companies. Dan Lapp says that

the Boston Computer Society has over \$100,000 of donated equipment. The BSC gives credit to the company donating the material, but does not endorse any company or product. Dan also feels that we should invite more vendors to speak at our meetings. "Far from being sales pitches," he says, "these talks allow members to preview new ideas and products and ask questions".

### **ASTRO-TRIVIA...**

THE EARTH'S ROTATION on its axis is gradually being slowed by the pull of the moon's gravity. Our day becomes a second longer every 50,000 years. In Devonian times, 350 million years ago, when large-scale plant life was just emerging on the Earth's surface, a day was only 22 hours long and there were 400 days in a year. In another 3 million years, our descendants will be able to dispense with leap years.

RADIO ASTRONOMY deals in such small packages of energy that all the radio signals falling on the 20-acre Arecibo dish over a whole year would suffice to light a 100-watt bulb for about one-millionth of a second. In turning a page of this newsletter, you have spent more energy than the total amount collected by all radio telescopes on Earth in their observations of quasars.

IF ATOMS ARE THE BUILDING BLOCKS of matter, stars are the place where the building blocks are made. Stars are atom factories. The heat and light radiated are the by-products--as incidental as the heat and smoke ventilated out the smokestack of any factory.

THE SUNSHINE falling on you today is about a million years old and was generated at about the time that Homo Sapiens appeared on Earth. The scattering by the plasma atmosphere of the sun is so severe that it actually takes a photon of light this long to reach the surface. In a vacuum, light created in the sun's core would reach the surface (about 500,000 miles) in less than a millisecond.

### **MARKETPLACE...**

FOR SALE Astroscan 4.25-inch telescope, excellent condition. Price \$210. Criterion equatorial mount for 6-8" scope, with motor drive, 12VDC/115VAC power supply and RD-6 hand control. Price \$180. Celestron Super Polaris Sky Sensor Computer & Drive #93797, never been used. Price \$170. 13VDC EP370 115VAC power adapter for Sky Sensor. Price \$40. John Reed, 617-861-8031.

FOR SALE Radio Telescope components: 144-148 MHz preamp, 146 MHz receiver, and Cushcraft 11-element

#### **ATMoB OBSERVER GUIDES**

Members who have volunteered to provide one-on-one observing assistance to anyone requesting it are: DICK KOOLISH, Arlington, MA, 617-646-6086 and STEVE MOCK, Somerville, MA, 617-625-5870.

YAGI Beam antenna. Price \$100. Heath 11-inch chart recorder with variable span and chart speeds. Price \$150. Ted Poulos, 617-566-5127.

FOR SALE Criterion 6-inch f/8 Newtonian telescope, sturdy equatorial mount with clock drive. White fiberglass tube that rotates and adjusts for balance, etc. 2 eyepieces. Little used Near mint condition in original box. Price \$375. Jack Flanagan, 508-283-5533.

FOR SALE 10-inch, f/5.6 Newtonian with Dobsonian mount, E&W diagonal, Novak hardware. Mirror made by owner. Price \$500. Scott Milligan, 508-448-2596.

### COMING EVENTS...

Thru June MYSTERY OF THE DARK MATTER and NIGHTSCAPES: A TOUR OF THE NEW ENGLAND SKY at the Hayden Planetarium. For more info, call 617-723-2500.

### EXECUTIVE BOARD 1991-92...

PRESIDENT: Marion Hochull, 603-888-0141  
VICE PRESIDENT: Bernard Volz, 508-881-3614  
SECRETARY: Ted J. Poulos, 617-566-5127  
MEMBERSHIP SEC: Edward J. Los, 603-880-6219  
TREASURER: Anthony Costanzo, 508-521-4209  
MEMBERS AT LARGE: Mario Motta, 617-334-3848  
Anna Hillier, 617-861-8338  
PAST PRESIDENTS: 1989-90 David Aucoin  
1987-89 Gary Walker  
1985-87 E. Talmadge Mentall

### COMMITTEES...

OBSERVING: Edward Dougherty, 508-458-8857  
WORKSHOP: Greg Chase, 617-272-9394

Mar. 19 CfA MONTHLY OBSERVATORY NIGHTS, "Target Earth? The Threat of Near-Earth Asteroids" by Brian Marsden, CfA, 8 P.M., Phillips Auditorium, CfA, Cambridge, MA. For more info call 617-495-7461.

Mar. 21 ATMob MONTHLY OBSERVING NIGHT at the clubhouse with Maksutov training beginning at 7 p.m. For more info call Ed Dougherty, 508-458-8857.

### APRIL STAR FIELDS DEADLINE...

March 26th is the deadline for items to be included in the April 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: 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



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