



# STAR FIELDS

NEWSLETTER OF THE AMATEUR TELESCOPE MAKERS OF BOSTON, INC.

Vol. 2, No. 9

November 1991

## **OUR NOVEMBER MEETING...**

Thursday, November 14, 1991, 8 p.m.  
Phillips Auditorium, Harvard-Smithsonian  
Center for Astrophysics

THE MAGELLAN MISSION TO VENUS is this month's talk by Dr. Gordon H. Pettengill, Professor of Planetary Physics in the Dept. of Earth, Atmospheric, and Planetary Science, and Physics at MIT. Dr. Pettengill received his BS from MIT in 1948, and his PhD from Berkley in 1955. He was director of the Arecibo Observatory from 1968 to 1971, and director of the Center for Space Research from 1984 to 1990. One of his many accomplishments in planetary astronomy was the discovery of the 59 day rotation period of the planet Mercury.

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

## **OCTOBER MEETING HIGHLIGHTS...**

About 55 members and guests turned out to hear Jack Megas' talk at our October meeting. His resonant, quite delivery, beautiful slides, and fascinating sky lore stories captivated the audience. Many of us now have a greater appreciation of how important the stars were in the practical lives of all peoples in the past and how much of current language derives from their views of the night skies.

Unlike our usual meeting routine, the business session in October followed the evening's talk. Brief Secretary, Treasurer, and Observing Committee reports were given. Ed Dougherty announced the establishment of a general monthly observing night at the clubhouse for new and old members, guests, and visitors. Ken Launie announce that the "folks from The Starry Messenger" gave the club a tape of the solar eclipse they shot at LaPaz. Mario Motta indicated that we would also receive a another tape professionally shot. Dick Koolish proudly announced that he had won Astro-Assembly's first prize (an Orion Sky Glow Filter) in photography for his stereo view of the eclipse, and Ed Dougherty added that he also got a photo award for a photo of Mars obtained with a CCD camera. Mario Motta told us that he took photos inside the Mt. Palomar Observatory as well as photographing it from 1500 ft in a hot air balloon. Phil Rounseville expressed his need for a pick-up truck for the Oct. 19 clubhouse work session. A

formal thank you letter from the Alcon 91 co-chairmen, John Reed and Bernie Volz, was read by president, Marion Hochuli. The need for a CAT for the club's 6-inch Maksutov was presented by Ed Dougherty and Mario Motta suggested we try to get a company to donate one. George Tucker announced a weekly observing night he will conduct at UMass Boston. A space exploration US postage stamp series was displayed by David Aucoin.

## **NEW ATMoB MONTHLY OBSERVING NIGHT...**

Starting Saturday, November 16 we will begin a regular Monthly Observing Night at the clubhouse. We hope that both neophyte and experienced observers participate. The event is scheduled for the third Saturday of each month (rain date: the following Saturday) with observing to start at dusk. Please come and bring your favorite scope, binoculars, red flashlight, list of objects to observe, and your enthusiasm! Several of our experienced observers including Steve Mock, Ed Los, Marion Hochuli, Dave Aucoin, John Samolyk, John Reed, Tim Solinski, and Bernie Volz and others have offered to help newer observers find their way around the night sky to find interesting objects and to use their scopes more effectively. Just look for someone who looks or sounds like they know what they are doing and ask for assistance. They will be glad to help.

Starting about one hour before dark on the star party nights, Ed Dougherty will hold training on the operation of the club's scopes in the club's observatories. The first session will be held on Nov. 16 at 6:30 p.m. In the future, access to the club's scopes will be limited to those so trained.

We will also schedule solar observing with H-alpha and white light filters, with both visual and video observing if sufficient interest is indicated. Please contact me or Cindy at 508-458-8857 and make your interests known.

--Ed Dougherty, Observing Chairman

## **ANNOUNCEMENTS...**

OBSERVING EVERY CLEAR MONDAY NIGHT from 8 p.m. at UMass, Boston Harbor Campus is conducted by the Dept. of Physics and ATMoB member George Tucker. The observatory is on the roof of the Library and houses a 16-inch Cassegrain scope. Call 617-287-8099 after 6 p.m. to check on observing conditions.

**MORE LIGHT POLLUTION IN WAYLAND?** Ed Wallner is fighting a Boston Edison proposal to increase the amount of street lighting in Wayland. He has gathered a lot of information on street lighting and the Boston Edison Co. He has also made contacts with other Massachusetts groups concerned with light quality and light pollution. If you have useful information or a similar problem in your town, Ed would be glad to exchange notes. Call him at 508-358-7938.

**ALTHOUGH ITA TOURS** has declared bankruptcy, I am still following up on the remote chance that some of the money owed is recoverable. The Federal Bankruptcy Court in Boston had no record of a filing as of Oct. 16 so no claims have been filed yet. --Ed Wallner

**1992 BAXTER DARK SKIES TRIP.** The 1991 trip had a conflict between the new moon and first day of school. Next year this will not be the case! The new moon is on Aug. 27th and Labor Day is on Sept. 7th. I'm planning on over two weeks at Baxter, from Saturday, Aug. 22 to Labor Day. Sign up at our next meeting or call me at 617-391-9290 if you're interested.

--John Samolyk

**READING MIDDLE SCHOOL STAR PARTY.** No date has yet been set for this event. Possibly it will be in early December or maybe not until spring. Any volunteers should call Ed Wallner (508-358-7938) to be kept informed. --Ed Wallner

**THE THOMPSON ISLAND EDUCATION CENTER** is interested in purchasing a used telescope for use in an after school program on the island. If you have a scope of any size or description that you want to sell or donate, call Dennis White during the day at 617-368-3900 or in the evenings at 617-562-0982.

**MIRRORING THE COSMOS** is the title of an article by C.S. Powell in the November issue of Scientific American. It's a great review of the trends toward the use of semented, meniscus, and honeycomb mirrors for big telescopes. Also the progress in adaptive optics and optical interferometry is explored. Would you believe we may see someday soon a resolution of 0.002 arc sec. over a field of view of 8 arc sec. from a ground based telescope. --Ted Poulos

**A FUN SPECTROSCOPE KIT** that can be calibrated to a accuracy of 1 nm and shows the mercury lines in street lights, absorption lines in scattered sunlight, what your nebular filter absorbs, etc. has been created by Project Star and made available through Learning Technologies, Inc., Cambridge, MA. The unit consists of a cardboard body, a scale graduated in eV and nm units, a slit, and a holographic diffraction grating. Since the kit is only available in minimum quantities of 10, I'll have a sign-up sheet at our the November for those interested in purchasing a kit for \$5 each. All proceeds over cost will go to the ATMoB. --Ted Poulos

**TEN US POSTAL STAMPS** tracing American exploration of the planets were issued Oct. 10 at Pasadena to launch the Postal Service's National Stamp Collecting

Month. The stamps picture the unmanned spacecraft that have been launched to the moon and each of the nine planets that orbit the sun except Pluto, which has not yet been explored. The \$5.80 booklet contains two panes of ten 29-cent stamps. The names of the planet and visiting spacecraft are below the stamp's artwork with "29 USA" in the lower right corner.

--Boston Globe, 10-13-91.

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

**A STAR PARTY** for more than a dozen of his fellow Exhibitor Interpreter volunteers from the Museum of Science was held on Oct. 12 by BARRY DeCRISTOFANO at his home in Franklin, MA. Three scopes were available and treated those attending to views of the crescent moon, Saturn, M57, M31, M11, M13, Albireo and Epsilon Lyrae. In addition to Barry, two other ATMoB members, TED POULOS and TED KOCHANSKI, are EI volunteers at the museum.

**AMATEUR ASTRONOMY IS BIG IN JAPAN** according to a talk given at Astro-Assembly '91 by S&T Editor and ATMoB member, Roger Sinnott. Roger reported on his attendance at the Tai Nai Star Party, undoubtedly the largest star party ever with some 4000 people attending. Unlike our conventions such as Stellafane, this event included commercial telescope makers from all over of Japan displaying their wares, a band, and yes fireworks! To further show astronomy's popularity in Japan, Roger mentioned that a Japanese astronomy magazine has a circulation of 200,000, about twice that of S&T.

In addition to Roger, about a dozen other ATM'ers attended Astro-Assembly to enjoy friendly conversations, browsing through the swap tables, listening to talks, and eating AstroBake-Off goodies. PHIL ROUNSEVILLE displayed his 6-inch Gregorian, ED DOUGHERTY showed off his CCD video camera system, and TONY COSTANZO demonstrated mirror silvering. DICK KOOLISH won 1st prize in the photo contest for a stereo photograph of the total eclipsed sun. --Ted Poulos

**SEVERAL ATMoB MEMBERS** provided solar observing for the CfA's Science Day for Kids on Saturday, Oct. 26. According to STEVE MOCK, they were treated to a very active sun. Steve observed three spectacular solar flares that day. DICK KOOLISH and PHIL ROUNSVILLE provided white light views of a large sunspot group using solar filters on their scopes, while hydrogen alpha views were provided by PAUL CICCHETTI, JOHN REED, and STEVE. The solar activity was also imaged with ED DOUGHERTY'S CCD camera and displayed on a monitor.

The following Monday night, all this solar activity, reports Steve, paid off in a brilliant and colorful aurora display that he and DAVE AUCOIN observed from Bentley College.

**A GIRL SCOUT ASTRONOMY MERIT** badge star party was conducted on Oct. 14 by ATM'ers JOHN

STANSFIELD and MIKE MROZ. Some 17 4th and 5th grade girls from the New Searles Elementary School in Nashua, NH. gathered in John's yard to observe through John's 2.4-inch refractor and Mike's 8-inch SCT. When not involved in girl or boy scout activities, John works as a Meteorologist for the Nashua Air Control Center and Mike works as a computer programmer.

WORKSHOP COMMITTEE CHAIRMAN, GREG CHASE reports that mirror grinding activities at the clubhouse involve BRUNO NARDELLI working on polishing out an unusual turned up edge, young MAREK KOZUBAL beginning his first mirror, and DANIEL FELDKHUN continuing to work on his 8-inch mirror. Four members attended Greg's Oct. 12 training session on how to open and lock up the clubhouse.

A MILLING MACHINE from John Samolyk's former home in Connecticut was moved to Ed Dougherty's work shop in Dracut with the help of JOHN REED and GREG CHASE. The machine is fully operational and along with the other shop machine tools are available for use by any club member in good standing who knows how to use them. Or if you are not proficient with machine shop tools, several other club members are available to help you. Call Ed Dougherty for scheduling.

--Ed Dougherty

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

We are happy to welcome the following new members and we hope you and all other new members will take an active part in the ATMOb. Let us hear of your interests, activities, ideas, and needs.

Frances Antonelli	Brighton, MA
Maggie Daly	Watertown, MA
Paul Leavitt	Somerville, MA
Benjamin Lembree	Nashua, NH
Paul Reddick	Waltham, MA
Pam Reynolds	Lexington, MA
Ira Sabran	Groton, MA
David Valade	Melrose, MA
Roy Westerberg	Concord, MA

### **GOING, GOING, GONE...**

The December issue of *STAR FIELDS* will be your last if you haven't renewed your ATMOb membership. Please send your check now for \$35 (\$20 for students under 21) and your S&T renewal card, if you have one, to Ed Los, 7 Cheyenne Dr., Nashua, NH 03063.

### **A HOMEMADE DEW BUSTER...**

by John Samolyk

As reported last month in the Baxter '91 report, my new Dew Busting system did a great job at keeping my TELRAD finder and secondary free of dew and allowed my observing to continue amidst some of the heaviest dew I've seen. If you've ever been shut down by dew, you may want to consider installing such a system on the dew-prone components of your own 'scope. The main component of the system is "Heating Rope" that

is available in 27" lengths with 4" wire pigtail leads from AMERICAN SCIENCE & SURPLUS, 801 Linden Place, Evanston, Illinois 60202; Tel: 708-475-8440. The Stock Number of the rope is 1490 and the cost is \$1.95 per length. The minimum order is \$10 plus S&H (Up to \$20, S&H = \$4.50). This means a six piece minimum order, so unless you have a couple 'scopes you'll want to find a partner. For safety, the rope should never be connected to 115 VAC but only a 12 volt battery or a 12 to 24 volt stepdown transformer. The heating rope has a resistance of 140 ohms.

### **A DIFFERENT APPROACH TO PLANETARY CCD IMAGING, PART 1**

by Ed Dougherty

Deep Sky Imagery. Lately we have seen pretty good ground based electronic images of the planets taken with an assortment of cooled, integrating CCD systems designed for deep sky objects. In addition there are also a number of machine vision and surveillance cameras being sold for imaging solar system objects. These systems and cameras, although excellent for their intended use, are not well suited for planetary work. In the following paragraphs I will propose a more suitable alternative that provides easier operation, superior performance, full portability, no computer requirement, and considerably lower cost.

Deep sky objects are normally quite faint. In order to image them at all requires gathering photons over a period of many minutes to hours. Therefore, we need highly efficient, wide dynamic range detectors that are able to catch and hold every photo electron produced without adding noise or detector character to the image. In addition to being faint, deep sky objects are relatively large in angular size ranging from several arc minutes to degrees. To image these objects requires large CCD dimensions with lots of pixels in order to cover the field with acceptable resolution.

So for deep sky imaging, large CCD array cameras are used with as many pixels as practical, they are cooled to low temperatures, and they are exposed and read out slowly under computer control. As long as we have no requirements for short exposures, quick read-out, or rapidly repeated images, there is no penalty in performance for using a large, cooled, computer controlled detector. But portability is gone, and the size cost, and complexity of the system increase dramatically.

Atmospheric turbulence is the great equalizer. Constantly changing in unpredictable ways, it limits our best efforts to see what lies beyond. Even with the shortest exposure times possible with a deep sky integrating system, visual observations, for photographic film, air turbulence will limit our seeing to something in the area of 2.5 to 15 arc sec. depending on the scope, location, time, and weather. Therefore, the ground based observer can not achieve the sub arc sec. resolution we would like for planetary work. We need something totally different to successfully image the planets with optimum results! Enter the CCD imager specifically designed for planetary work.

--Continued next month.

### **MARKETPLACE...**

FOR SALE 20 mm University Optics widescan eyepiece. Needs more "in travel" than my focuser can give. \$95 or best offer. John Samolyk, 817-391-9290.

FOR SALE CCD Camera (162 x 120 pixels) and 5-inch monitor system for viewing and VCR recording Sun, Moon, and planet images with your scope. Operates from auto cig. lighter receptacle, battery, or 117 VAC. Includes variable mag. optics, auto gain control, and VCR I/O jacks. Camera equipped with 1-1/4" adapter and can accept std. "C" mount lens weighs only 7 oz. Price \$270 to \$295 depending upon model. Only 8

units available. Call Cindy 508-458-8857.

FOR SALE 10-Inch, f/6 Galaxy mirror with enhanced coating and Novak cell, 2-1/4" cervit glass diagonal, curved spider diagonal holder, 2" special short Novak R&P focuser. Lot price \$600. Steve Mock, 617-625-5870.

FOR SALE 1-1/4 R&P focuser. \$20. Steve Mock, 617-625-5870.

FOR SALE JMI Motofocus for Newtonian focuser. \$75. Steve Mock, 617-625-5870.

### COMING EVENTS...

Nov. 16 ATMob MONTHLY OBSERVING NIGHT at the clubhouse.

Nov. 21 CfA MONTHLY OBSERVATORY NIGHTS, "Mapping the Galaxy From a Cambridge

### 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, 617-334-3648  
John Reed, 617-861-8031

PAST PRESIDENTS: 1989-90 David Aucoin  
1987-89 Gary Walker  
1985-87 E. Talmadge Mental

### COMMITTEES...

OBSERVING: Ed Dougherty, 508-458-8857

WORKSHOP: Greg Chase, 617-272-9394

Rooftop" by Samuel Palmer, CfA, 8 P.M., Phillips Auditorium, CfA, Cambridge, MA. For more info call 617-495-7461.

Thru Dec.2 MYSTERY OF THE DARK MATTER, Hayden Planetarium, call 617-723-2500 for times.

Dec. 11 BU's OPEN NIGHT AT THE OBSERVATORY, "Limits to Growth: The Colonization of the Milky Way" by Dr. Thomas Banja. 8 p.m., Rm CLA 522, 7th floor, College of Liberal Arts, 725 Commonwealth Ave., Boston. For more info call 617-353-2630.

### DECEMBER STAR FIELDS DEADLINE...

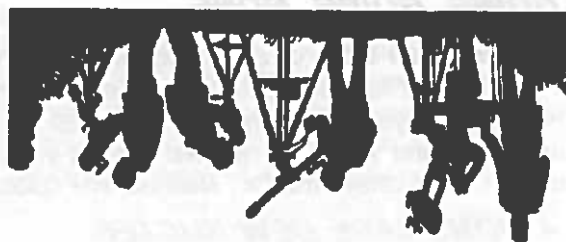
November 27th is the deadline for the December issue of *STAR FIELDS*. Mail or phone your contribution to Ted Poulos, 18 Cushing Rd., Brookline, MA 02146. 617-566-5127

### 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, 80 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



Saturday November 16

ATMOB MONTHLY OBSERVING NIGHT

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

AMATEUR TELESCOPE MAKERS OF BOSTON, INC.