



STAR FIELDS

NEWSLETTER OF THE AMATEUR TELESCOPE MAKERS OF BOSTON, INC.

Vol. 3, No. 4

April 1992

OUR APRIL MEETING...

Thursday, April 9, 1992, 8 p.m.
Phillips Auditorium, Harvard-Smithsonian
Center for Astrophysics

CECILIA PAYNE-GAPOSCHKIN, one of the most famous women astronomers, is the subject of this month's talk by her daughter, Katherine Haramundanis. Cecilia Payne-Gaposchkin was born in Wendover, England in 1900. She came to the United States in 1923 where she joined the staff of the Harvard Observatory and became a naturalized citizen in 1931. Her work primarily involved the study of variable stars, and she is credited with devising a new technique of determining stellar magnitudes from photographic plates. A prolific author, her books *Variable Stars*, 1938; *Stars in the Making*, 1952; *Variable Stars and Galactic Structure*, 1954; and *Galactic Novae*, 1957 are classics.

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Join us for a 5:45 p.m. pre-meeting dinner with our speaker at Joyce Chen's restaurant, Rindge Avenue at Route 16 near the Route 2 rotary in Cambridge.

MARCH MEETING HIGHLIGHTS...

Our March meeting showed an increase in attendance over the past couple months with some 62 members and guests present. The Secretary and Treasurer's reports were given, but both the Observing and Workshop Chairmen were absent. Marion Hochull asked for help on the 14th to move the vacuum evaporator to the clubhouse barn. Bernie Volz outlined the Astronomy Day activities and asked that those who wanted to take part sign up. The president asked for a brief discussion of to what use the proposed observatory for the 20-inch would be put. Members responded with the following: observing, as a focal point for public star parties, maybe serious work such as photometry and spectroscopy. Someone suggested that for public nights, the scope could be equipped with a video system. Marion Hochull indicated that there were a couple of typos in the by-laws and that a proposal for correcting them will be presented at the April meeting and voted on in May. John Reed announced that John Strong was in the Amherst Nursing Home. Our speaker, Dr. Robert Kirshner, described how the value of the Hubble constant and therefore the age of the universe is constantly being revised as better distance measuring techniques are developed. He described a new technique his group is using based on the temperature of supernovae. The method was validated

using supernovae 1987A since the distance to the small Magellanic Cloud is known. Using this new yardstick, Dr. Kirshner estimates the age of the universe to be about 16 billion years old.

THE 13-INCH SCHUPMANN UPDATE...

by Scott Milligan

What is a Schupmann? Simply stated, it is a refracting telescope design featuring near perfect image quality over a small field of view. It is extremely well suited for high magnification viewing of planetary and lunar detail. Although the design uses only one type of inexpensive, readily available glass, it achieves a degree of color correction which is theoretically exceeded only by pure reflecting systems, without the drawbacks that accompany most, if not all, reflecting designs. The Schupmann preserves the inherent high contrast of an unobstructed refractor, without using exotic glass types to control secondary spectrum, which is the main residual aberration present in most well built conventional refractors. All of the lens surfaces in a Schupmann can be made spherical, thus making it easier for the optician to avoid a major shortcoming of many reflective telescopes, which is the presence of surfaces that are optically "rough", due to improper figuring of the aspheric surface profile. The presence of surface roughness, combined with the inherently higher scatter properties of front surface mirror coatings, and the practical difficulty of keeping these coatings clean, means that the highest contrast images will most frequently be observed through refracting, and not reflecting telescopes.

The club's Schupmann project, which I conceived in 1987, will be the largest aperture Schupmann anywhere in the world, that is currently in operating condition. The decision to involve the Springfield Telescope Makers in the project was made early on, in the hope that a relatively dark sky site could be found for the telescope that was within a reasonable driving distance for our membership. The involvement of the Springfield group has resulted in a better, more sophisticated instrument, built in less time, and at less cost to our own club. The amount committed by the ATM of B to finish the tube assembly currently stands at \$3,000.00. Before the instrument is complete, the Springfield group estimates that a total of \$25,000 to \$30,000 will be required, which they plan to finance from money taken in at the annual Stellafane convention.

Although progress had been temporarily slowed, there is now a burst of activity which is pushing the project

forward on all fronts. Working closely with professional optician and ATMoB member, Philip Rounseville, I have succeeded in bringing the optics for the Schupmann to the point where one or two final figuring spells should result in diffraction limited or better performance. Another club member, Hal Robinson, has been responsible for machining the precision cells which will mount the optics. Activity at Stellafane has included the pouring of a concrete pier ten feet tall, atop an octagonal footing ten feet across, and about two feet thick. An observatory building, featuring two large rooms, a roll off roof, and concrete walls 8 feet tall and 1 foot thick, is well underway, with the roll off roof currently under construction. STM members living in New Jersey have constructed a prototype wooden tube assembly, which when complete, will weigh in at 270 pounds. The prototype tube will be used to debug the final tube design, which will probably be executed in fiberglass. A team of electrical and computer engineers is currently designing and building a computer controlled user interface for the telescope mounting.

ATMoB members are encouraged to contact me if they are interested in helping with construction of the observatory, or with any questions on the Schupmann project in general.

ASTRONOMY CAMP FOR TEENS...

by Richard Burrier Jr.

Last June I attended the University of Arizona Beginner Astronomy Camp with 20 people from all over the U.S. During the one week camp, I spent three days on the U of A campus doing classroom type activities, including orientation to the sky, making model rockets, and touring the U of A's mirror laboratory. There I saw the telescope that is being made for the Pope. I particularly enjoyed a lecture that was presented by David Levy about comet hunting.

Mid-week we drove about an hour north of Tucson where we spent 4 days on Mt. Lemmon in small dorms. Every night we observed through their six telescopes taking pictures of the planets and other objects. Observing conditions included very dark and transparent skies. The staff, including the astronomers and students from the university were friendly, knowledgeable and enthusiastic. I would recommend the Astronomy Camp to anyone who would like to both observe and expand their knowledge of astronomy.

This year, a beginning and advanced camp will be held on June 5-12 and June 19-26 respectively. For more info, contact Lisa Roubal, Arizona Alumni Association, 1111 N. Cherry Ave., Tucson, AZ 85721 or call 602-821-5233.

THINGS YOU MAY WANT TO KNOW...

DR. JOHN STRONG, an eminent experimental physicist whose career and work is known to many ATM'er's, died on March 21 at the age of 87. He spoke to our club in November of 1982 on the history of mirror aluminizing. His pioneering research in this field led

him to aluminize the 100 and 200 inch mirrors, and for the first time replacing the then conventional silvering process that required frequent recoatings. Dr. Strong has worked with Russell Porter, among others, and has become well known for his research in other branches of physics. According to ATM'er, Dave Emerson, Dr. Strong's book, "Procedures in Experimental Physics," which has gone through some 30 printings is a treasured, classical work. Dave and John Reed attended a memorial service for Dr. Strong in Amherst on March 26.

THE SPACE, FANTASY & ADVENTURE NETWORK (SFAN) is planning to broadcast on cable within the next six months. If you like science fiction and want to support such a cable channel, write as soon as possible requesting a science fiction channel for your area. Send the letter to Amos B. Hofsteher, Jr., Chairman, Continental CableVision, Pilot House, Lewis Wharf, Boston, MA 02110. Do not send letters to your local cable company because it will not act unless the large cable multi-system operators picks up the channel first.
--Anna Hillier

THE 44TH ANNUAL NERAL '92 CONVENTION will be held on May 29-31 at Mercyhurst College in North East, PA. It will be hosted by The Marshal Martz Memorial Astronomical Association (MMAA). For info on presenting a paper, camping, lodging, and reservations write: Tom Bemus, MMAA, RD #3 Box 161A, Bemus Point, NY 14712, 716-386-4566.

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, meteorologist from WBZ-TV.

FIVE 20-INCH TEST BLANKS were pored from the same melt as the 200-inch according to an editor's note in the *NORTHEASTERNER*, newsletter of the Northeast Region of the Astronomical League. "These blanks were used to test the quality of the glass and were subsequently sold to various interested clubs or individuals in the 1930's. One blank belongs to a Kansas City Club, one is the primary of the 20-inch Schmitt-Cassigrain at the Springfield (MA) Science Museum, and one was destroyed in the Corning flood of 1972. This blank was a centerpiece of a display window in a local restaurant. The reemergence of the Boston (ATMoB) blank makes the whereabouts of four of the blanks known. Do any readers know what happened to the fifth blank? It is rumored that an amateur astronomer in Pittsfield, MA owned it."

ATMoB ACTIVITIES...

Our first Monthly Observing Night this Spring (Sat. March 21) was well attended by ATM'er's and their guests. Over a couple of dozen individuals attended and set up some seven scopes. The main object of observation was, of course, Jupiter and its satellites. Io's shadow was seen crossing the disk and Europa emerging from behind the planet. Saturday, April 18 is

the next scheduled Monthly Observing Night at the clubhouse.

THANKS TO THE EFFORTS OF ED KNIGHT, PETER BEALO, PAUL CICHETTI and others on March 21, the vacuum aluminizer is now off the porch and in the front room of the clubhouse.

THE MAKUTOV'S CAT accessory had to be returned to the manufacturer for replacement because it was not the right model. Ed Dougherty thinks he has corrected the astigmatism in the scope.

OUR ANNUAL ELECTION OF OFFICERS will take place at our June meeting. At this month's meeting, the president will select six members from which a nominating committee of three will be elected by the membership. At the May meeting, the nominating committee will announce their selection of candidates for club officers and other members of the Executive Board. If you are interested in running for one of the offices, make wishes known to the president or the nominating committee.

THE ATMOb WELCOME the following new members:

Kevin Patch	Woburn, MA
Laura Schenk	W. Newton, MA
Paul Sontag	Hillsboro, NH
Richard J. Rynne	Lowell, MA

ASTRONOMY DAY PROGRAM...

The ATMOb and other groups are cooperating with the Hayden Planetarium in celebrating Astronomy Day at the Boston Museum of Science on May 9. According to Bernie Volz, our coordinator for this event, your participation is essential to make this the best Astronomy Day celebration ever! You can help by:

- o Taking part by exhibiting your scope or other astronomical items and demonstrating what's involved in mirror making.
- o Providing solar observing with your scope and H-alpha filter.
- o Talking to the public and answering their questions.
- o Taking part in the evening Star Party on the roof of the museum garage.

The schedule of events are:

8:30 - 9:00 a.m.	Set up of the displays in the Atrium area.
11:00 a.m.	Marlo Motta, "Amateur Astron."
Noon & 2 p.m.	Dennis Christopher, Goddard Space Center, "The Past, Present, and Future of the Space Program"
1:00 p.m.	Bernie Volz, "Phenomena of the Night Sky"
2:00 p.m.	Ted Poulos, "Astronomy From Your Backyard"
3:30 p.m.	Dr. Thomas Vania, BU, "Limits to Growth--Colonization of the

4:45 p.m.
7:45-8:30 p.m.
8:30 p.m.-

Milky Way Galaxy*
Display tear down
Set up for Star Party
Star Party on garage roof

Please plan to participate! Your help is needed. Any questions, call Bernie at 508-881-3814. Museum parking is free; just get your parking ticket stamped by museum personnel.

ATMOb MEMBER PROFILE...

Our Vice President, Bernie Volz, has had a casual interest in astronomy since his Junior High days in Lexington, MA. In the late 80's the Halley's Comet craze solidified his interest and he bought a 3.1-inch Meade Refractor. He went to Key West in April, 1986 with ATM'er, George Roberts, to observe the comet and was hooked. Quickly he became interested in astrophotography and has done a lot of it ever since. While living and working in Amherst in 1986, he joined the Amherst Area Amateur Astronomical Association and eventually became its Vice President and then its President. During this time the AAAA doubled in size, became more active with public observing nights and planetarium shows, and co-hosted NERAL 1990. When Bernie's company, a software firm of which he is a founder and part owner, moved to Framingham, he joined the ATMOb. As Vice President and energetic ALCON '91 co-chairman he immediately became well known to ATM'ers.

MARKETPLACE...

FOR FREE Sky & Telescope back issues from 1977 thru 1989 with only Nov. '83 missing. Contact: Bob Ribokas, 617-335-0881.

FOR SALE 4-inch, f/12 B&L SCT with tripod, wedge, & case, \$295. 3.1-inch, f/11.4 refractor tube assembly, \$195. 4-inch, f/15.5 refractor tube assembly, \$350. 8-inch, f/20 Dall-Kirkham tube assembly, \$450. Edmund German equatorial mount with 1-inch shafts and two pedestals, \$75. Ronald C. Tanguay, home 617-231-1558, work 508-250-8648.

FOR SALE Celestron Comet Catcher 5.5", f/3.6 OTA. Includes custom designed wooden case with brass fittings, felt lined cradle, and shoulder strap; 18 mm ortho eyepiece, 2 camera adapters (needs T-ring); Tuthill dew shield in wooden case. \$350. Celestron C85, 65 X 815 mm, 22 mm eyepiece and vinyl case. Excellent condition. \$100. Lumicon H-Beta filter 1-1/4". \$50. Ken Fye, 617-353-4120 (days) 527-9181 (evenings).

FOR SALE Craftsman 6-inch metal working lathe, \$400. 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, 617-881-8031.

FOR SALE Radio Telescope components: 144-148 MHz preamp, 148 MHz receiver, and Cushcraft 11-element YAGI Beam antenna. Price \$100. Heath 11-inch chart

recorder with variable span and chart speeds. Price \$150. Ted Poulos, 617-588-5127.

FOR SALE Criterion 8-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, 508-263-5533.

COMING EVENTS...

- Apr. 15 LOWELL LECTURE, "Surprises From the Space Telescope" by E. Chaisson, 7:30 P.M., Boston Museum of Science.
- Apr. 16 CfA MONTHLY OBSERVATORY NIGHTS, "The X-Ray Sun " by Leon Golub, CfA, 8 P.M., Phillips Auditorium, CfA, Cambridge, MA. For more info call 617-495-7481.

EXECUTIVE BOARD 1991-92...

- PRESIDENT: Marion Hochull, 603-888-0141
- VICE PRESIDENT: Bernard Volz, 508-881-3614
- SECRETARY: Ted J. Poulos, 617-588-5127
- MEMBERSHIP SEC: Edward J. Los, 603-880-6219
- TREASURER: Anthony Costanzo, 508-521-4209
- MEMBERS AT LARGE: Mario Motta, 617-334-3648
 Anna Hillier, 617-861-8338
- PAST PRESIDENTS: 1989-90 David Aucoin
 1987-89 Gary Walker
 1985-87 E. Talmadge Mental

COMMITTEES...

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

- Apr. 18 ATMoS MONTHLY OBSERVING NIGHT at the clubhouse with Maksutov training beginning at 7 p.m. For more info call Ed Dougherty, 508-458-8857.
- Apr. 22 LOWELL LECTURE, "Magellan's Circumnavigation of Venus" by John Wood.
- Apr. 29 LOWELL LECTURE, "The X-Ray Sky: Einstein to AXAF" by Harvey Tananbaum.

MAY STAR FIELDS DEADLINE...

April 30th is the deadline for items to be included in the May issue of *STAR FIELDS*. Mail or phone your contribution to Ted Poulos, 18 Cushing Rd., Brookline, MA 02146 (617-588-5127).

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

AMATEUR TELESCOPE MAKERS OF BOSTON
c/o Edward J. Los
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