



## STAR FIELDS

Newsletter of the  
Amateur Telescope Makers of Boston  
Including the Bond Astronomical Club  
Established in 1934  
In the Interest of Telescope Making & Using

Vol. 13, No. 8 September 2002

### This Month's Meeting...

Thursday, September 12<sup>th</sup>, 2002 at 8:00 PM

Phillips Auditorium  
Harvard-Smithsonian Center for Astrophysics

OUR SPEAKER this month is Dr. George R. Ricker from MIT. The title of his talk will be "Gamma-ray Bursts and the High Energy Transient Explorer". Dr. Ricker (M.S., Astronomy, Yale; Ph.D., Physics, MIT) currently directs the CCD Laboratory at the MIT Center for Space Research. He has been a lead investigator (PI or Deputy PI) for X-ray imagers and spectrometers on the following spaceflight missions: ASCA (SIS), Astro-E (XIS), Chandra (ACIS), and HETE (overall mission). He has published more than 200 papers in astronomy, high energy astrophysics, and detector physics.

Please join our most excellent speaker and his wife for dinner at 5:45 PM at the Changsho Restaurant, located at 1712 Mass Ave. in our fair city, Cambridge. -Eileen Myers-

### President's Message...

WHAT A time we all had at Stellafane this year! The sky stayed clear long enough Friday night so that optical judging could finally take place for the first time in four years. I am proud to announce that two of our members who worked on their mirrors at the clubhouse were winners! ATMob Vice-President BRUCE BERGER won *Third Place Optical - 12 1/2" and Under* for his 8" Newtonian, f/5.3 on a German equatorial mounting. Bruce was also a winner in the *Innovative Component Competition* for his fabric tube cover and folding equatorial head. This is the same tube that was once described by a club member as a "hippie tube" since it is covered with a dark blue fabric on which there are orange and beige abstract

astronomical designs (sounds like a fashion show description). It was certainly a crowd pleaser on the hill since no one could pass by without stopping to admire it and ask Bruce how he made it. Bruce wrote an inspiring account of his adventure into mirror making, which is not only included in this newsletter but is also available at the Stellafane website. This guy was as nervous as can be before and after the optical and mechanical judging, but we all knew that he would be a winner: we've been taking peeks through Bruce's scope on the club's observing field for several weeks.

Now our other winner was as calm as can be. ROBERT COHEN won *Second Place Optical - 12 1/2" and Over* for his 12 1/2" f/6 Newtonian (open-truss Dob) on an equatorial mounting. Bob is a machinist, so his focuser, spider, secondary holder, and mirror cell are all homemade. One of Bob's homemade focusers was mounted on Bruce's scope as well!

For those who plan on entering a scope for optical judging next year, the requirements were that the eyepiece focal length (in mm) should about equal the f/ratio of the scope to give an appropriate power. Scopes needed to be collimated and pointed at Altair, high in the south. -Eileen Myers, President-

### The Winners!



### July's Minutes...

EILEEN MYERS opened the 750<sup>th</sup> meeting of the Amateur Telescope Makers of Boston in the Pratt Conference Room of the SAO. This was her first full meeting as our new President. The business section of the meeting was held first, beginning with the reports being read by the club officers. PAUL CICHETTI let us know that the coffee fund has been coming up short lately. Persons consuming snacks up at the clubhouse must remember to pay for them please, or the snacks will no longer be made available. JOHN REED indicated that the Mosquito Magnet was working better but may be moved to another location away from the 17" telescope. BRUCE BERGER would like to thank those of you who have helped out with the tank changes. He only asks that you log any changes to the propane and/or octanol in the clubhouse log so we may track the usage. CHARLIE MCDONALD has volunteered to act as the Star Party Organizer and would like to get 2-3 people to volunteer as regional area coordinators. LOU COHEN reiterated the problems he has had getting volunteers for star parties in the Boston area and has had to resort to direct telemarketing techniques. BERNIE VOLZ announced the

availability of the 2003 Astronomy Calendars. Eileen announced coming Arunah Hill Days and the October 19<sup>th</sup> New York trip. At this time there were 15 people interested in going on this trip. Bruce suggested that we set up some sort of canopy tent up at Stellafane with our club banner to have a more visible presence. This was not decided upon. What was decided was that we need T-Shirts and hats made up with the ATM logo. Bruce is going to take this on. TAL MENTALL donated a new set of books to add to the clubhouse library.

The business section was followed by the annual swap meet where many members bought, sold and/or swapped their astronomical goodies. In addition there were a number of member presentations. BRUCE GERHARD demonstrated the GlareBuster, available at [www.glarebuster.com](http://www.glarebuster.com) MIKE HILL demonstrated a spot light shield based on an article in the April edition of Sky and Telescope. GARY WALKER and LOU COHEN showed us some wonderful pictures of their trip to Hawaii for the AAVSO 2002 Spring Meeting. DAN FELDKHUN showed us some pictures of the Baxter State Park Camping trip as well as pictures of the Westford Observatory in its current state of construction. He also showed us a device he has built using LEDs that can act as an artificial star for telescope testing during the day. Finally MICHAEL CARNES showed us his travel scope and modified tripod for mounting it with a very ingenious and simple way to balance it without an actual counter weight. Solid counter weights tend to be a problem when going through airport security checkpoints these days. -*Michael Hill, Secretary*-

## Membership Report...

We have several new members who have joined us over the summer. Join me in welcoming DAVID SNAY of West Boylston, MA, PAUL BOSCO, JR. of Concord, MA, JOHN P. DUNLEAVY of Wakefield, MA and JOHN C. DUNLEAVY of Amesbury, MA, GARY WESTON of Gardner, MA, CHARLES CALVIN of Lexington, MA, CHRISTOPHER WEISZ of Bedford, MA, and AMRIT HANSPAL of Nashua, NH.

All membership renewals are due by the end of the September meeting. If you have not received your renewal form, or if you have misplaced it, please contact me and I can send you a new one. I will be at the September meeting so you can see me then. -*Peter Psyhos, Membership Secretary* -

## Clubhouse Report

The clubhouse is nearing completion. The fiberglass roof has been installed and stained (white) along with the ridge vent. More stain was applied to the roll off outrigger structure, and the new "dutch doors" that were installed to the entry way were painted. This makes the observatory about 99% complete, structurally. We hope to have this ready for the Sept 14 club picnic so we can have the dedication to Ed at that time. Next wok party is on Sept 21. - *Paul Cicchetti* -

## Clubhouse Saturday Schedule

Sep 7	Lew Gramer	Jim Suslowicz
<b>Sep 14</b>	<b>Steve Herzberg Club</b>	<b>John Reed Picnic</b>
Sep 21	Rick Burrier	Phil Rounseville
Sep 28	Steve Mock	Tom Wolf
Oct 5	Steve Clouherty	Dave Prowten
Oct 12	Phil Rounseville	Art Swedlow

## Treasurer's Report...

For the month of June, we had \$2,501.73 in revenue and \$1,489.06 in expenses for a net income of \$1,012.67 for the month. For the month of July, we had \$3,096.64 in revenue and \$1,050.56 in expenses for a net income of \$2,046.38 for the month. As of July 31st, 2002 our assets were:

Checking Account - Regular	\$ 14,707.38
Investments	\$ 26,704.36
Total Current Assets	\$ 41,411.74

Of the total, \$2,747.21 is in the Land Fund and \$155.00 is for clubhouse key deposits. -*Bernie Volz, Treasurer*-

## July 15<sup>th</sup> Board Meeting

We held our last board meeting on July 15<sup>th</sup>. The 2002-2003 budget was approved. Some changes were made. The most notable being the addition of \$500 to the observatory fund to allow its completion. The issue of the mosquito magnet and whether or not to add a second one was discussed. Money has been tentatively set aside for a second one but the issue needs to be discussed by the membership at the next meeting before the issue is pursued further. Eileen expressed a wish to hold a series of coordinated "Field Work Observing Sessions" to foster better observing techniques especially for those of us that are new to this. Stay tuned for the first one! It will probably be announced on the discuss list.

## Club Picnic

The second Annual Club Picnic will be held on Saturday September 14<sup>th</sup> at the Tom Britton Clubhouse up in Westford. We will having a dedication ceremony for the observatory which will be dedicated to Ed Knight for all his hard work in supporting the club over many years. The picnic date does coincide with a number of other astronomical events but do try to be there for the dedication if you can. The picnic starts at 3:00 PM and the dedication will be at 4:30.

## Trip to NYC...

THE CLUB'S third trip to the Hayden Planetarium and the Rose Center for Earth and Space is scheduled for Saturday, October 19<sup>th</sup>. There is a new planetarium show, and a tour of some part of the museum complex is being set up. Pick-up/drop-off points are as in past years: town of Harvard 5:30am, Billerica 6:00am, and Riverside 6:30am. The cost will be around \$100, which covers admission, show, tour, and dinner. Please contact Eileen Myers or Marsha Bowman if you are interested. We still need 15 more people. Eileen Myers [starleen@charter.net](mailto:starleen@charter.net) or 978-456-3937 Marsha Bowman at [rmbc2114@msn.com](mailto:rmbc2114@msn.com) A flyer containing trip details and directions to the pick up points will be available at the meeting..  
-Eileen Myers-

## Stow Astronomy Day

The Skylight Astronomical Society is holding its 3<sup>rd</sup> annual 'Stow Astronomy Day' on Saturday, September 14 starting at 3PM at Shelburne Farm, in Stow, MA. They are looking for volunteers with scopes to assist in the observing. Unfortunately this is the same day as our Club Picnic but if you would like to help out or just go up there later on they would be happy to have our presence there. Eileen Myers has helped out in the past and they have also worked with members of the Aldrich Astronomical Society. Maybe next year we can coordinate more with them and our picnic.

For more info visit <http://www.leepappas.com/stowstars.html> or call Lee Pappas at 978-897-6982.

## Other News . . .

ASNNE (Astronomical Society of Northern New England) is hosting its second annual Starfest this month Sep 6-8. Most of us will have missed this due to the timing of the newsletter but it might be one to check up on for next year if you like it up in Maine. The event is held in Kennebunk and is FREE. If you might be interested check them out at [www.asnne.org](http://www.asnne.org).

SKYSCRAPERS Inc is holding its Astro Assembly on the weekend of October 4-5, 2002. For more information visit their website at [www.theskyscrapers.org](http://www.theskyscrapers.org)

AAVSO/IDA (International Dark Sky Association)  
If you plan on going to the AAVSO/IDA meetings in October, be sure to register this month as there is limited seating. The dates for the AAVSO meeting are October 24-27. The IDA meeting is on October 25, 26.

### ASTROPHOTOGRAPHY SEMINAR

Matt BenDaniel and the Museum of Science are offering a one-day seminar on beginning Astrophotography. It will be held at the Museum in Boston on November 17 from 10AM-3PM.

### Course Description:

*You've seen spectacular astronomical photographs in books, magazines, and on the web, the vast majority of which are created by dedicated amateur artists. Now you can learn to take them, too. In this one-day workshop you'll understand the variety of types of astrophotography and the basic equipment you need to get started. You'll learn about field techniques and image processing. While this class is indoors, you'll leave with enough solid information to start taking astrophotographs on the next clear night. You may bring your own equipment to learn about its specific capabilities.*

The course fee is \$65.. To register, please call the Museum at 617-589 or visit them at

[www.mos.org/learn\\_more/courses/course\\_dtl.cfm?course\\_id=125](http://www.mos.org/learn_more/courses/course_dtl.cfm?course_id=125).

For more information email Matt at: [matt@starmatt.com](mailto:matt@starmatt.com)

## Stellafane 2002 - Clear Blue Skies!!



# The Story of Bruce's Mirror

In January 1999, I started an 8" f/5.3 mirror with the intent of finishing up by Stellafane of that year. Little did I know that I was starting a 3-1/2 year adventure. Things went well in the beginning. StarBob Collara had me polish the back flat — a task I thought was a waste at the time, but which later proved itself quite useful. Bob Cohen had made an aluminum tool with a cutting face made up of stainless steel washers embedded in epoxy, and I was eager to try it because it was said to make the rough grind go faster. And faster it was, as I graduated to the polishing room after just 12 hours.

I never did get the strokes right in the beginning. I was too fast. Fast because I wanted to finish, but the tortoise was right, not the hare. Slow and steady, 1/3 strokes, completely random. I went through all of the usual beginner's problems—hole in the middle, turned down edge, turned up edge, hole in the middle, hole in the middle, hole in the middle! I went back to a sphere so many times during the process that I lost count.

I thought that if the pros can do it with machinery then so can I. A couple of Sundays at Dave Schuh's polishing machine, then several sessions on the club's polisher got me mostly spherical, but always with some type of zoning. Again I proved the tortoise right. Slow and steady, 1/3 strokes, completely random.

During the Thursday mirror sessions I had many advisors. Mike Mattei, StarBob, Ed Los, Phil Rounseville. In the end I found out that they were all right, and I applaud their efforts to get me over the various hurdles I encountered. But what I also learned is that every one of them has their own technique, and they all probably work, but they don't all work at the same time. To solve a particular problem, Advisor #1 would tell me mirror on top, tangential strokes, lean on the edge. After a while of this and a trip to the Foucault tester, Advisor #2 would tell me tool on top, center over center, long strokes. While I was doing this, Advisor #3 might happen by with a different method. So I wound up combining methods — maybe not consciously, but in a way that would appease my quest to get it done and make my advisors happy.

This was wrong, way wrong! Pick a method, pick an advisor, whether it be in print or person, and stick with it. There is no fast way. Slow and steady, 1/3 stroke, completely random.

Several times I had a 1/4 wave, or even a 1/7 wave mirror. StarBob even announced that my mirror was 'finished' in the President's Message of one of our newsletters. But I was determined to make it better than average, especially after 3 years of working this same piece of glass. I wanted something to last a lifetime, not something I'd want to replace as soon as it was finished. So I kept going, and going, and going. Back to a sphere, slow and steady, 1/3 stroke, completely random.

I was getting the hang of it; I was starting to understand how the glass would react to my massaging strokes, but I was still facing hurdles.

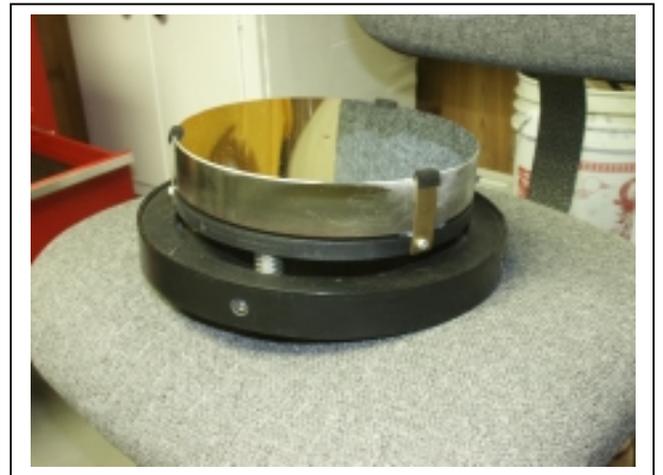
It was Mike Hill that "showed me the way" in the end. Mike's technique was to heat the lap and mirror in a bucket of water, then press for 20-30 minutes before polishing. Now this was contrary to what at least one of my 'advisors' had said, but there was Mike, working his 10" F/5 mirror side by side with me every week, and he was making progress without many of the misshapen figures that I was creating. It was this technique that brought me to the finish line. A beautiful mirror, almost 1/18 wave on the Foucault. A nearly flat line on the wave front error graph, and something I could be proud of for the rest of my life. I called it finished.

Thank you ATMoB, for being there when I needed you. Thanks for all of the Thursday nights of camaraderie, frustration and education. Thanks for the stressless evenings when family and job pressures were left at the clubhouse door. Thanks to the many advisors, whose methods work; they just don't work when you mix them together. Thanks for teaching me about physics, about the stars, about patience and perseverance.

And thanks Stellafane and the Springfield Telescope Makers, for giving me an additional, tangible target, and for recognizing the hard work and the learning that went into my telescope.

My telescope—doesn't it sound special? My Telescope! I didn't just go to the store and buy it. I made it, with my own hands, slow and steady, 1/3 stroke, completely random.

- Bruce Berger, August 19, 2002 -



**Bruce's 8" F/5.3 1/17 wave! Parabola**

## Cosmic Questions: Our Place in Space and Time

A new astronomy exhibit at the Museum of Science opening on September 19 and running through January 3. The exhibit was designed by the Science Education Department of the CFA. It will encourage visitors to think about and have conversations about the very nature of our universe. It will deal with such issues as understanding the size and scale of the universe, and how technology and modeling are used to investigate some of the unsolved mysteries. Exhibit highlights include:

### For Sale

I have an 8-inch Meade LX90 Go-To, but I've decided that I cannot continue as a rational being unless I upgrade to an 8-inch LX200 GPS. The LX90 is just over a year old, and has only been used 3 times. Two weeks after I got it, I got my NexStar 5 at the Natural Wonders going-out-of-business pre-fire sale, and have been using it because of its extreme portability. The LX90 is the one which was tested by S&T in the July, 2001 issue, and is in excellent condition. (Check out those straight Ronchi lines!) The tripod and User's Manual are included, and I still have the original boxes for everything. I'm asking \$1195 firm.

Also for sale: My 1976 vintage Celestron C5 with trunk, equatorial wedge, and Meade tripod. I replaced the original 5x24 finder with a 6x30, and adapted the visual back for 1 1/4-inch eyepieces. Manual and eyepiece included. Excellent condition. \$475 firm.

Tal Mentall  
tmentall@SkyandTelescope.com  
617-864-7360, x105

DIGITAL ATOMIC CLOCK Vladimir Vudler, who previously provided us with an option to purchase GPS devices and a CASIO Astronomical watch has another great offer. He has about 12 Digital Atomic Lunar Clocks. They are the last of the lot purchased especially for ATMOb members. 2 inch digital time display. Also shows: seconds, day of the week, has alarm functions, shows indoor temperature and the Moon phases. Clock automatically sets itself by receiving time signals from atomic clock in Fort Collins, Colorado. Batteries included. LIMITED QUANTITIES. Will be available at the next meeting. Price: \$ 40.00 each.

### 2003 ASTRONOMY CALENDARS

I will be selling 2003 Astronomy Calendars at the September meeting (first come, first serve). These arrived a bit early this year. They are from Kalmbach Publishing and are being sold for \$8.00 (regular price is \$12.95). Start your holiday shopping early and help the club earn a little bit as well!

**Bernie Volz**

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## October *Star Fields* deadline is SATURDAY, September 28<sup>th</sup>

Please !! This is a deadline. Earlier entries are greatly appreciated.

**Email articles to Mike Hill  
at [noatak@aol.com](mailto:noatak@aol.com)**

Star Fields Editor / ATMOb Secretary

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### September Board Meeting

Date to be announced at the meeting

### Astronomy Events Calendar

September 6-8	Conjunction	Northfield MA
September 6-8	ASNNE Starfest	Kennebunk ME
<b>September 14</b>	<b>Club Picnic</b>	<b>Clubhouse</b>
September 14	Stow Astronomy Day	Stow, MA - Skylight Astronomical Society
September 19	Cfa Monthly Observatory Night	<i>Galileo: Hero or Heretic - Owen Gingerich</i>
September 26	Cfa Monthly Author Night	<i>Timothy Ferris</i>
October 4-5	Astro Assembly	North Scituate RI
October 8	Cfa Monthly Author Night	<i>Robert Kirshner</i>
October 24-27	AAVSO Fall Meeting	Somerville MA
October 25, 26	IDA Fall meeting	Boston MoS

**POSTMASTER NOTE:** First Class Postage Mailed September 6, 2002

Amateur Telescope Makers of Boston, Inc.  
c/o Peter Psyhos, Membership Secretary  
85 Swanton st  
Winchester, MA 01890-2039

## FIRST CLASS

### EXECUTIVE BOARD 2002-2003

PRESIDENT:	Eileen Myers	(978) 456-3937
VICE PRES:	Bruce Berger	(978) 256-9208
SECRETARY:	Michael Hill	(508) 485-0230
MEMBERSHIP:	Peter Psyhos	(781) 721-9609
TREASURER:	Bernie Volz	(508) 881-3614
MEMBERS AT LARGE:	Lew Gramer	(781) 396-7822
	Dan Feldkhun	(617) 721-4992
PAST PRESIDENTS:		
2001-02	Bob Collara	(781) 275 9482
1998-00	Joseph Rothchild	(617) 964-6626
1996-98	Peter Bealo	(603) 382-7039

### COMMITTEES

CLUBHOUSE DIRS:	Paul Cicchetti	(978) 433-9215
	John Reed	(781) 861-8031
	Steven Clougherty	(781) 784-3024
HISTORIAN:	Anna Hillier	(781) 861-8338
OBSERVING:	Steven Clougherty	(781) 784-3024
STAR PARTIES:	We are looking for volunteers to act as a star party coordinator.	

## How to Find Us...

### Web Page [www.atmob.org](http://www.atmob.org)

**MEETINGS:** Held the second Thursday of each month (September to July) at 8:00PM in the Phillips Auditorium, Harvard-Smithsonian Center for Astrophysics, 60 Garden St., Cambridge MA. For INCLEMENT WEATHER CANCELLATION listen to WBZ (1030 AM)

**CLUBHOUSE:** Latitude 42° 36.5' N Longitude 71° 29.8' W

The Tom Britton Clubhouse is open every Saturday from 7 p.m. 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 Rt. 495 to Exit 33 and proceed West on Rt. 40 for five miles. Turn right at the MIT Lincoln Lab, Haystack Observatory at the Groton town line. Proceed to the farmhouse on left side of the road. Clubhouse attendance varies with the weather. It is wise to call in advance: (978) 692-8708.

## Heads Up For Month...

*To calculate Eastern Daylight Time (EDT) from Universal Time (UT) subtract 4 from UT.*

Sep 15 Uranus passes 6' south of  $\mu$  Capricornus (mag 5.1) at 20 h UT

Sep 23 Fall begins – Clear Skies !!

Sep 25 Venus at greatest illuminated extent and brilliancy. (low on horizon)

Also: For those of you who like to get up early, Jupiter and Saturn are now visible in the morning sky.