

Vol. 15, No. 7 July 2004

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

July 2004 Newsletter

[Note: meeting notices will now be included with the newsletter page, as well as on the [separate summary list](#)]

THIS MONTH'S SPEAKER will be Science journalist Dan Falk – Dan's talk is titled "Can the universe be understood in terms of a single theory -- a theory so concise it could fit on a T-shirt?" Dan discusses the 2,500-year-old search for the Theory of Everything, from the ancient Greeks to the Scientific Revolution, from relativity and quantum theory to string theory. Dan's illustrated talk is based on his award-winning book, "Universe on a T-Shirt: The Quest for the Theory of Everything" (Arcade Publishing).

Dan will have a limited number of copies of the book available for sale. Dan Falk is a freelance science writer, broadcaster, and author based in Toronto, Canada. He's written about science, especially astronomy and physics, for dozens of newspapers and magazines including The Boston Globe, Nature, New Scientist, Astronomy, and Sky & Telescope. His first book, Universe on a T-Shirt: The Quest for the Theory of Everything has already won several awards in Canada, including the Science in Society Journalism Award from the Canadian Science Writers' Association.

President's Message...

Thank you ATMob members, for electing me as your leader for the next year. It is such an honor to know that you consider me worthy of such a post, and it will be such a challenge to live up to your expectations as we move further into the 21st century. One of my first official duties was calling a board meeting on the Sunday following the election. This was not a voting session, but one where we all talked about ideas we had for the club's future. During the next year many exciting projects will be accomplished, and your board members stepped up to lead.

We are planning many enhancements to the website, starting with a new design spearheaded by Brewster LaMacchia. He is currently recruiting members with website experience, especially database integration, and if you have these skills please drop him a note and offer some of your time. As part of the website remake, Membership Secretary Shilpa Lawanda is leading an effort to get our membership application process online and automated. This will tie in with some other website enhancements,

including the ability to pay for your dues and magazine subscriptions online.

Shilpa and Vice President Virginia Renehan are organizing a new member orientation and picnic, the first we've had in several years. I encourage all people who joined recently or haven't been to the observatory to participate, learn how to use the club equipment, see about borrowing one of the many loaner scopes, and meet other members on an informal basis to explore what you have in common.

Secretary Mike Hill has already started making improvements to the electronics room and has secured the donation of an oscilloscope, and Eric Johansson is leading the effort to network the clubhouse and observatory. I am leading some discussion with area clubs about collaborating on a dark sky site. More news on this as ideas and contacts develop. Dave Prowten is going to be installing a new 7-1/4" Schupman in the observatory in place of the 6" now in use. This scope is on a long term loan to ATMoB. Stay tuned for news on this and training opportunities so that you can take it for your own test drive.

Eric Johansson is also studying the feasibility and costs associated with implementing high speed internet access at the clubhouse. Doing so would enable better access to online weather, space and astronomy news and security monitoring. There are many more projects in the planning stages that I'd like to share with you and to seek your help with. You may be surprised to know that the club has a 10 year plan for improvements to the facilities and equipment. A copy of this plan is attached with this month's electronic version of the newsletter. (If you don't get the e-Letter drop me a line and I'll get you one or pick one up at the next meeting.) I urge each and every one of you to read about the exciting and even the not so exciting things we have in store for ATMoB, and figure out how you can get involved.

- Bruce Berger, President -

June's Minutes...

Eileen Myers opened the 770th meeting of the Amateur Telescope Makers of Boston to a round of applause in her honor as the outgoing club President. Eileen then introduced the evening speaker, Larry Candell from MIT Lincoln Laboratory. Larry spoke to us about what is called the Mars Lasercom Demonstration (MLCD) on which he is currently working. The purpose of this project is to develop an optical communications link with a spacecraft orbiting Mars in order to facilitate much higher data rates. At present the RF communications link uses the S, X and Ka band with a maximum data rate of around 700 kbps.

The goal, using a modulated optical laser communications link is to get this up to 1-30 mbps in the near term and 10-100 mbps later on. This demonstration project will serve to develop the technology to be applied, not only for Mars missions, but also other more distant planetary missions planned for the future. The hardware of the MLCD consists of standard orbiters and rovers at Mars communicating with

a master satellite, the Mars Telesat Orbiter (MTO) via X band frequencies. The laser communications link will then be between that orbiter and earth. Standard communications with the satellite will still be via Ka band antenna. Remember – this is a demonstration project only. This orbiter is due to launch in 2009 and arrive at Mars in 2010. Down here on earth there will be telescopes to receive communications from Mars. A large aperture is required to collect the weak signal (the laser is only a 5W laser).

Two options are being pursued. Initially the receiver will be attached to the 200” Palomar telescope. Work is being pursued, however, to use many smaller telescopes in the 14” range collectively. This would be cheaper to do in the long run since there may have to be up to 9 collecting stations positioned around the world. This is where the work up at the clubhouse comes in. The folks from Lincoln have been using a 14” Meade telescope in our observatory for a number of months now. One of the purposes of their work is to characterize the commercial mount that this telescope comes with for issues such as wind loading, pointing inaccuracies and pointing repeatability. Secondly they have also added a custom radiometer attached to the telescope to characterize the background flux of the sky so this can be removed from the incoming signal in real time.

Although they have appreciated the generous donation of our observatory space so far, a dedicated facility to do this work is under construction at Lincoln Labs, thus bringing the testing closer to home where the development of this project is taking place.

As a club we should be proud, however, of having been a small part of this exiting new venture in the latest chapter of space exploration.

The business meeting followed the speaker with the standard committee member reports and the annual elections. New members of the board were elected which included Bruce Berger – President, Virginia Rehehan – Vice President and Dave Prowten – Member at Large. All other board members remained the same.

Bruce Berger then presented an engraved plaque to Eileen Myers for her service to the club as President for the past two years. Paul Valleli presented a plea for all to donate what they could for the new Flanders Pavillion to be constructed up at the Stellafane convention site. Jason Cerundolo, one of our youner members, presented a brief summary of the new astronomy club he has formed at BC High. This was followed by a round of picture presentations of the Venus transit event we had all just had the privilege of witnessing. Presentations were made by Peter Bealo, Marion Hochuli, Bruce Berger, Mario Motta, Bruce Tinkler, Ken Laurie, Glenn Meurer, Paul Valleli and Michael Aramini.

- *Michael Hill, Secretary* -

New Executive Board

At the last Annual June Meeting, a new executive board was voted in by the membership present. Some of the past members have stayed on and a couple new members of the board have joined us in leading

the club forward for the next term.

- President Bruce Berger
- Vice President Virginia Renehan
- Secretary Michael Hill
- Treasurer Gary Jacobson
- Membership Secretary Shilpa Lawande
- Member at Large Lew Gramer Member at Large Dave Prowten
- Past President Eileen Myers
- Past President Bob Collara

After the election, Bruce presented Eileen with a very nice plaque and gavel inscribed with words of thanks from all of us on the previous board for all she has done as a leader of the club for the past two years.



Bruce Presenting Eileen a Token of Appreciation



New President - Hard at work at our new outdoor conference table

Project Updates

On occasion I will post the status of major club projects to keep you all up to date, and present to you opportunities to get involved if you feel you can help out on a particular projects needs.

-Bruce Berger-

Website Updates are in the planning stages. We hope to make the home page a better navigational link into the entire site including member photographs and articles, weather information, observing and scope making resources. Your membership secretary is planning on implementing online membership applications and a way to verify membership status. We need a couple of volunteers to work on improving the club's website. If you are well versed in website development and have a few hours to spare over the coming months, please contact webmaster Brewster LaMacchia via email: website_at_atmob.org (replace _at_ with @)

20" Harlow Shapley Telescope was dedicated on Memorial Day. Lincoln Labs will complete their observatory in Bedford shortly, freeing up the pad for the 20" in the Ed Knight Observatory. Design and fabrication work on a new adjustable focuser plate should get underway now so that we can start using this scope. Please contact Gary Walker if you would like to see how you might be able to help, especially if you have mechanical design and/or fabrication experience.

New EQ Mount available for use in the Denis Milon Observing Field. Mike Hill has completely rebuilt an unmarked German Equatorial Mount that was rusting away in an MIT storage trailer before he rescued it. Mike has also built a weatherproof enclosure to store the mount, and this is attached to the Doghouse Observatory. Instructions for using the mount and adapting the cradle to fit your scope are found inside the storage shed. Thanks to Mike for a great restoration and for placing yet another piece of equipment at the club's disposal.



New Equatorial Mount Stowed Away After Use

Membership Report...

This month we have 3 new members:

- CHRISTINE MOULEN, Waltham, MA
- NEIL FULLAN De Pere, WI
- ALEXANDRA MOJICA, Cambridge, MA

Membership renewals are due by the September meeting. If none of your information has changed in the past year, you could simply send me a check for your dues (\$25) and help the club in cutting the costs of mailing out renewal forms. You can also renew your S&T (\$32.95) and Astronomy (\$29) magazine subscriptions along with the membership dues. For questions please email membership _at_ atmob.org.

- Shilpa Lawande, Membership Secretary -

Clubhouse Report...

The clubhouse schedule is [here](#).

-John Reed, Clubhouse Director-

Upcoming Star Parties

Club Star Party Coordinator - Charlie McDonald

Star Party News Editor - Virginia Renahan starparty _at_ atmob.org

July Date: Tues, July 20th (cloud date, Wed, July 21)

- Location: Church Street Sports Field, Carlisle, MA.
- Telescopes: 5-7 needed Observing: 8:30pm
- Attendance: 50-100 expected, members of a summer reading program for kids

Coordinator: Bruce Berger bruce_at_scopemaker.com

- Carlisle/Gleason Library Contact: Ms Marty Seneta mseneta_at_mailserv.mvlc.org

New Member Orientation

New club members are cordially invited to the Tom Britton Clubhouse on Saturday night, August 7th for an early evening tour of the clubhouse, and an introduction to the Dennis Milon Observing Field and observatories. Observing will follow, weather permitting. Please contact Shilpa Lawande or Virginia Renehan if you plan to attend or if you just have any questions. Hope to see you there!

- *Virginia Renehan, Vice President* -

Club History Project

June 8, 2004 marked an historic event for amateur and professional astronomers alike. Many of us here in New England were fortunate enough to observe the transit of Venus - a once in a lifetime event. In the interest of club history, amateur astronomy, and more generally, the history of science, we thought it would be fun and interesting to compile member information on the event. Share your experiences in a paragraph or with a photo. Where did you observe, weather conditions, filter systems, equipment used, who else was there, etc?? We will use those photos already posted on the website and the emails that came in the "day of", but we would like to gather more stories and photos. No grand expectations to publish, beyond perhaps making it available to interested ATMob'ers - but who knows. Contact Virginia Renehan or Club Historian Anna Hillier.

- *Virginia Renehan* -

Upcoming Events

Below is a list of the major astronomical conventions coming up in the next four months. A more comprehensive list is included as an attachment to the electronic edition of the newsletter.

Conjunction

July 16th through July 18th, 2004 - Connecticut River Valley Astronomers Conjunction.held at the Northfield Mountain Recreation and Environmental Center, Northfield, MA.

Stellafane Convention

August and 13th through 15th Don't miss New England's premiere gathering of amateur telescope makers hosted by the Springfield Telescope Makers at Breezy Hill, Springfield, Vermont.

ASNH Star Party

September 10th through 12th, 2004. The Astronomical Society of New Haven's 14th annual Connecticut star party. Held in Hartford 4-H club Recreation Area of Marlborough, CT.

Black Forest Star Party

September 10th through Sunday, September 12, 2004, The Central Pennsylvania Observers (CPO) will host the Black Forest Star Party at Cherry Springs State Park, Potter County, PA.

Arunah Hill Days

September 17th through 19th, 2004 dark sky star party. Arunah Hill Natural Science Center.

Astro-Assembly Convention

Friday night, October 1st and all day Saturday, October 2, 2004. Astro-Assembly will be held at Seagrave Memorial Observatory, in North Scituate, RI.

An Observing Log

See the [June](#) issue for an introduction to this column.

LOG #1

Observer: Lew Gramer

Your skills: Intermediate (some years)

Date/time of observation: 22:00 Local, 16/17 Aug 2001

Location of site: Pigeon Key FL USA (Lat 25N, Elev 1m)

Site classification: Exurban

Sky darkness: 6.8 <Limiting magnitude>

Seeing: 7 <1-10 Seeing Scale (10 best)>

Moon presence: None - moon not in sky

Instrument: 70mm f/6.8 Pronto altaz refractor

Magnification: 15x

Filter(s): None.

Object(s): 61 Cyg (Struve2759, Piazzzi's Flying Star)

Category: Multiple star. Variable star..

Class: K5, K7

Constellation: Cyg

Data: mag 5.22 6.03; sep 29.7"; pa 148o

Position: 210654.572 +384444.83

Description:

I rarely observe objects for their historical significance, not because I'm uninterested but only due to a lack of detailed knowledge about astronomical history! But tonight I had the benefit of a fellow observer's extensive reading and memorizing, to be able to view the first star ever to have a proper motion measured; also a star whose proper motion is among the largest known, at a breathtaking 5.2" per year; and what's yet more, a binary whose wobble indicates the probable presence of a planetary system around the pair! This most "abstractly" fascinating binary stars was none other than 61 Cygni (61 Cygni may also be the DOUBLE with the largest known proper motion - but don't quote me on that one. :>) Add to all of that the fact that 61 Cyg is actually quite a stunning little pair of REDDISH orange stars (almost like a "doubled garnet star") in the Pronto, and it makes for a very intriguing small-telescope star party target indeed! -- Jim found 61 very quickly in the W "wingflap" of Cyg, just over a degree NE of mag 3.5 multiple Tau Cygni. -- My thanks to Jim Cooper and his magisterial observing lists (and his encyclopedic memory), for giving me my first glimpse of this most historical of nearby stars.