



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. 24, No. 2 March 2012

This Month's Meeting...

Thursday, March 8th, 2011 at 8:00 PM
Phillips Auditorium
Harvard-Smithsonian Center for Astrophysics
Parking at the CfA is allowed for the duration of
the meeting.

Please join us for a pre-meeting dinner discussion at
Changsho, 1712 Mass Ave, Cambridge, MA at
6:00pm before the meeting.

Seeing Stars and More

Professor Alyssa Goodman

This presentation will combine a summary of our current
understanding of how stars form with a demonstration of
visualization techniques used in studying how stars form, as well
as how hearts pump blood.

Alyssa Goodman is Professor of Astronomy at Harvard
University, and a Research Associate of the Smithsonian
Institution. Goodman and her research group at the Harvard-
Smithsonian Center for Astrophysics in Cambridge, MA study
the dense gas between the stars. They are particularly interested
in how this interstellar gas arranges itself into new stars. Their
investigations use a variety of observational techniques covering
the spectral range from X- ray to radio.

Goodman also has a strong interest in scientific computing. She
co-founded The Initiative in Innovative Computing (IIC) at
Harvard, and she served as its Director from 2005-8. The IIC is a
multi-disciplinary center that fosters new work at the boundary
between computing and science. Goodman's own research in this
area focuses on new ways to visualize and analyze the
tremendous data volumes created by surveys. Presently, she is
working closely with colleagues at Microsoft Research, helping

to expand the use of the WorldWide Telescope program.

Goodman received her undergraduate degree in Physics from
MIT in 1984 and a Ph.D. in Physics from Harvard in 1989. She
held a President's Fellowship at the University of California at
Berkeley from 1989-92, after which she took up a post as
Assistant Professor of Astronomy at Harvard. In 1997, she
received the Newton Lacy Pierce Prize from the American
Astronomical Society for her work on interstellar matter and
became full professor at Harvard in 1999. In 2008, she served as
Chair of the Astronomy Section of the American Association for
the Advancement of Science.

President's Message

The Sun getting active again! For a few years, people were
thinking that the current solar cycle was going to be a bust. There
were predictions that we may be in for a period of low activity,
like the Maunder Minimum, that 70- year period in the last half
of the seventeenth century during which sunspots were observed
to be few and far between. The Maunder Minimum also took
place during the Little Ice Age in which the winters in Europe
and North America were especially bitter, and some suggested a
connection between the two events. Maybe an inactive Sun
would be just what is called for to balance the effects of global
warming?

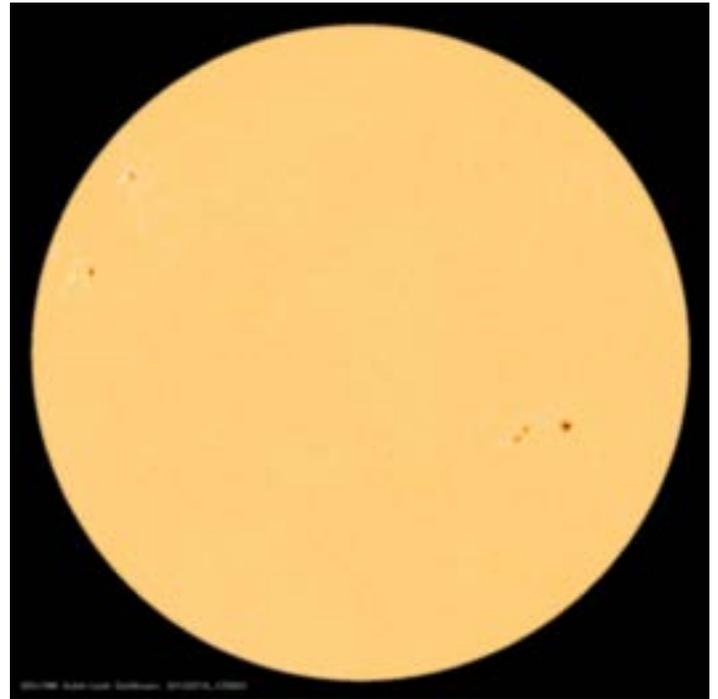


Image by NASA/SOHO

Clusters of sunspots as seen on February 15, 2012

But the Sun has been much more active recently. It's a big
turnaround from a few years ago, when some pundits were
starting to get worried about the Sun's inactivity. The coronal
mass ejection event reported in early January now has folks
concerned about the risks of solar storms on human activity- this
was the cover story of the Institute of Electrical and Electronics
Engineers *Spectrum* magazine this month. Solar storms cause

enormous changes in the Earth's magnetic field, which in turn induce huge surges of current in electrical, telecommunications, and other networks across a large amount of our planet's surface. Electricity grids are stressed and transformers burn out, which has led to broad areas of blackouts in the past.

The last time the Earth had a truly powerful solar storm was in 1921—this was long before developed countries became so dependent on the constant availability of electricity. That storm of 80 years ago was estimated to be ten times more powerful than the 1989 event that some of us remember! What would happen if such a powerful storm happened now? A number of government panels and industry studies have studied the problem that extreme space weather poses to power grids. They have concluded that an extreme solar event, which certainly will happen in the future, will have severe impact, especially for developed countries.

But to those of us interested in astronomy, views of the corona and solar flares through an H-alpha-filtered telescope are simply spectacular. Seeing these flares are all the more awesome because they are happening so close to us, and have a real possibility to affect our lives and activities. Another reason the flares are so spell-binding is that they are very changeable over short human time periods, just like a solar eclipse. We can see a violent and changeable astronomical event unfolding before our eyes.

So it's time to take out and dust off the solar telescopes and aim them at the Sun. Members can probably find instruments like this at the clubhouse on a sunny weekend day now. Drop by then for a great look at our closest star. If you have a good solar scope, please let the rest of the members know when and where you'll be setting it up and share your spectacular views!

~ *Bernie Kosicki, President* ~

February Meeting Minutes

Minutes of ATMOB meeting held February 9, 2012.

Bernie Kosicki, President: called the meeting to order at 8:00 PM.

This meeting was member's night, where members present a report of projects which they have been working on.

A short business meeting was held.

Dick Koolish announced the New England Model Engineering Society Show to be held on February 18, 2012, at the Charles River Museum of Industry and Innovation, in Waltham, MA.



Photo by Al Takeda

Virginia Renehan discussing the Starlab planetarium equipment

Bob Naeye presented a report with slides of a trip to Chile held on September 21-29, 2011 where he visited a number of astronomical observatories located in Chile.

Virginia Renehan presented a report on the Starlab Observatory which was given to the ATMOB by the MIT Kavli Institute. Information is posted on the ATMOB web page, and further information is available at <http://www.starlab.com> with additional technical resources and curriculum at http://www.starlab.com/sl_manual.html

Gerry Sussman reported on work done by Eric Johansson, John Blomquist, Phil Rounseville, and himself on the Schupmann telescope. The telescope was simulated on a computer program, was dis-assembled and rebuilt correctly, and adjusted to reduce astigmatism with the help of Paul Valleli, Phil Rounseville, and Mike Mattei. John Blomquist machined a new focuser. The Schupmann is now mounted on the mount in the Knight Observatory, and John Blomquist took a good image of Jupiter using a digital camera. The Schupmann needs some additional work, including installation of a dew shield.

Mike Hill demonstrated with slides how to make a mirror in a small apartment kitchen.

Ken Launie showed sides of the Steward Mirror Lab of The University of Arizona, including the spin casting of an 8.4 meter (27.6 foot) diameter mirror. The mirror is going in the Giant Magellan Telescope (GMT). This is the second of seven giant mirrors going into the GMT.

Alan Sliski described his upgrade to a private observatory in Dover Massachusetts. The telescope is mounted on the roof of a building, the support structure was improved, and the observatory re-wired and improved.



Photo by Al Takeda

Mario Motta exhibiting his CO2 mirror cleaning device

Mario Motta demonstrated with slides and his apparatus the technique of cleaning a mirror with compressed carbon dioxide, CO₂. The CO₂ is purchased in a cylinder under sufficient pressure to be liquid. Gas CO₂ pressurizes the liquid, and the liquid is directed by a nozzle at the mirror. Dust is removed by the liquid and gas with no harm to the mirror. This is a method used in professional observatories for cleaning a mirror and Mario used it to remove dust accumulation from his 32 inch mirror.

A short business meeting was held after the member presentations.

The Secretary's Report of the January 2012 meeting was given by Sidney Johnston.

Tom McDonagh gave the Membership Committee Report. Tom mentioned that quite a few musicians are members.

Bruce Berger gave the Observing Committee Report. Bruce mentioned that a program of "stewards for telescopes" will be started.

Steve Clougherty gave the Clubhouse Report. The next work party is scheduled for March 10. John Maher and Al Takeda worked on one of the Meade 14s, and the other Meade 14 mirror is being coated.

Bernie Kosicki mentioned that several events are coming up on the calendar.

Virginia Renehan mentioned the Harvard University Friends of Scouting Merit Badge University is coming up on March 23.

Bernie Kosicki announced that Eileen Myers was appointed by the Board to fill the position vacated by Steve Beckwith when he resigned.

Paul Valleli discussed a school star party for grades four and five that was clouded out, and so pictures of stars were taped to the end of a hall. Observations of the pictures through the telescopes delighted the kids.

The meeting adjourned at 10:05 PM.

~ *Sidney Johnston, Secretary* ~

Clubhouse Report

What whacky winter weather we're having this year. As this report is being typed, emails are flying around that tonight may be a clear, cool observable evening to try again for the Messier Marathon first session. Friday last was tempting; but partly cloudy skies early followed by the 8pm clearing still didn't allow for M32 to be found and M33 was only barely detectable. But the February 4th work session went off as advertised. Seventeen members donated their day to tackle clubhouse work projects. A big thanks go to Sai Vallabha, Al Takeda, Art Swedlow, Sergio Simunovic, John Reed, Dave Prowten, Tom McDonagh, John Maher, Dick Koolish, Eric Johansson, Mike Hill, Harry Drake, Nina Craven, Paul Cicchetti, Steve Clougherty, John Blomquist, and Bruce Berger. Highlights follow:

* A mesh screen of plastic growth inhibitor was placed under the edges of the home dome deck by Tom Mc. and Mike H. This was secured by many wheelbarrows of stone dust spread on top. This should keep unwanted weeds and mosquitos away from the observatory.

* The library inventory effort proceeded with Harry D. inventorying and boxing more donated Astronomy books; those items outside this category are also boxed for the monthly meeting where members may look over available gadgets and monographs. This inventory will then be categorized by professional assistance for further retention or sale.

* All telescope mirrors in use were inspected by Steve C. and John M.; two were selected and boxed for immediate re-coating. Transport for this effort was provided by John R. over to Research Services. It was a pleasure to view, with Don Jaynes, the recoated surfaces of the recently donated 10" Newtonian primary and the 3" curved secondary of the 8" Dall-Kirkham reflector. It is reassuring to see Don and Steve in their new location on Bay State Road in Wilmington, MA; they have weathered the economic times and still take care of our amateur coating needs as they have for many decades. Their address, new phone number, and a google map is posted on the clubhouse grinding room wall.

* The far barn cleanup was started but the main effort was accomplished later by club friend Fred Taylor and John R. with chain and circular saw. Most of the remnants of sheet lumber were cut up and hauled away with large storm debris pieces from behind the barn. This provided a test of the rebuilt trailer's suspension upgrade before transporting Brian Maerz's refrigerator donation to the clubhouse. Another test run will take place shortly to ensure load stability. Walking in the far barn and retrieving the wheelbarrows is much easier now. More to do there.

* Dick K. donated an 18" pipe wrench to the club; it is housed with the floor jacks in the basement to allow periodic leveling. Paul C.'s solar scope showed current solar activity in H-alpha; changes in edge prominences were observed. Sergio S. continued work on rebuilding the home dome rotation and opening motors

in the machine shop. Al T., John R., and Mike H. selected unused monitors for disposal. The work session was cut short to accomodate the observing committee meeting.

Sai V., Eric J., Art S., Nina C., Dick K. and John R. prepared a tasty lunch of Bailey Hill spaghetti sauce over low carb pasta, Sai's Super salad, baked/broiled chicken thighs and Eric's beer can grill roasted whole chicken, with toasted garlic bread, and cookies for dessert. If the weather continues to be so mild, the next work party may be the last cold weather spaghetti lunch. That next work party is on full moon Saturday March 10th at 10am. If the weather provides frozen ground, outside cleanup can continue; if mud season starts we'll modify the schedule to leave the mud outside! In any case come on out and join us. Thursday mirror grinding continues; Friday night member Astronomy class does likewise; and we always hope for a clear sky for Saturday nights. WE'LL SEE YOU ON MARCH 10th. Coffee at 10am.

~ *Clubhouse Committee Chairs* ~
 ~ *John Reed, Steve Clougherty and Dave Prowten* ~

Clubhouse Saturday Schedule

February 18	Leacu & Rounseville Messier Marathon #1
February 25	Myers & Nugent
March 3	Clougherty & Fleming
March 10	Budreau & Burrier Work Party #3
March 17	Swedlow & Vallabha
March 24	Hopkinson & Wolf Messier Marathon #2
March 31	Paquin & Prowten
April 7	Siegrist & Sonowane
April 14	Takeda & Toomey
April 21	Maher & McDonagh
April 28	CLUBHOUSE CLOSED NEAF and Clay Center Astronomy Day

Thoreau on Astronomy

The earth is still mostly covered with ice and snow. As usual, I notice large pools of greenish water in the fields, on an icy bottom, which cannot owe their greenness to the reflected blue mingled with the yellowish light at sundown, as I supposed in the case of the green ice and water in clear winter days, for I see the former now at midday and in a rain-storm, when no sky is visible.

I think that these green pools over an icy bottom must be produced by the yellow or common earth-stain in the water mingling with the blue which is reflected from the ice. Many pools have so large a proportion of this yellow tinge as not to look green but yellow. The stain, the tea, of withered vegetation - grass and leaves - and of the soil supplies the yellow tint. But perhaps those patches of emerald sky, sky just tinged with green, which we sometimes see, far in the horizon or near it, are produced in the same way as I thought green ice was, some

yellow glow reflected from a cloud mingled with the blue of the atmosphere.

Journal, 8 March 1859

~ *Submitted by Tom Calderwood* ~

Membership Report

Membership count as of 2/19/2012- 282
 End of February last year – 284

Membership enrollment changes are coming in that we are planning to offer a discounted family membership in the near future in response to popular demand. Details will follow shortly.

Do you have questions about your membership status, Astronomy Magazine or Sky & Telescope subscriptions? Drop me a line at Membership@ATMoB.org and I will be happy to provide answers.

Donations to the Club help to defray the cost of special projects such as the building of a new dome to house our robotized 14-inch Schmidt-Cassegrain Telescope. Progress on this project is coming along nicely. Walls are up; dome is in place, door is being fabricated!

The Amateur Telescope Makers of Boston, Inc. is a 501(c)3 organization. Donations are gladly accepted and are tax deductible to the fullest extent allowed by law. Consider making a tax-deductible contribution to the club today.

Please seek out and welcome our new and returning members:

Ed Barden
Eugene McAuliffe
Barbara Klain
Victoria Saucier
Michael Dalterio
Mark Olson

~ *Tom McDonagh, Membership Secretary* ~

Alcon 2012 Call for materials: Celebrating 150 years of Organized Astronomy

There is a call for materials for a commemorative "Starlight Book," a booklet of the history of astronomy organizations. Any group that wishes to, may add one or two pages to the booklet, which will be published at Alcon 2012.

I was going to contribute some history for this booklet about The Amateur Telescope Makers of Boston including the Bond Astronomical Society. Does anyone object to this project?

For more information go to: <http://alcon2012.astroleague.org> or

the December 2011 issue of *Reflector*, a publication of the Astronomical League.

~ Anna Hillier, Working Group for the Preservation of Archives ~



Photo by Fran Edwards, Aldrich Astronomical Society Member Larry Moss recently completed an 8" mirror. The new objective was only about 24 years in the making, which he attributes to "lack of consistent work with long spans between sessions."

Sky Object of the Month

Variable Star R Leonis

On the evening of March 1, 1918, a young Ohio farm boy trained a small refracting telescope towards the variable star R Leonis. He estimated its brightness, later forwarding the information to the American Association of Variable Star Observers. It was the first of over 132,000 variable star observations the legendary Leslie Peltier would submit to the AAVSO.

Since Peltier's time, R Leo has introduced dozens of amateur astronomers to the rewarding pastime of variable star observing. R Leo is tailor-made for the novice for two reasons – it's easy to find and easy to observe. You'll find R Leo by directing your telescope slightly north of a spot one-third of the way from omicron (o) Leonis to Regulus (the circled area on the accompanying map of Leo). An expanded view of that circle shows R Leonis and the magnitudes of nearby comparison stars, decimals omitted. R Leonis is bright enough (its average magnitude range is 5.8 to 10.0) to be seen in binoculars when near maximum and with a small-aperture telescope throughout its 312-day cycle.

The magnitude range and period attributed to R Leonis are typical of a class of variable stars known as Mira-type, or Long-Period Variables (LPVs). Like its kindred LPVs, R Leonis is a cool red giant – a dying star whose brightness changes result from internal pulsations.

Based on recent observations, R Leonis has a magnitude in the mid-8 area and is rising to a predicted maximum later this month. The time is ripe for you to jump in and become acquainted with the variable star that launched Leslie Peltier's stellar career.

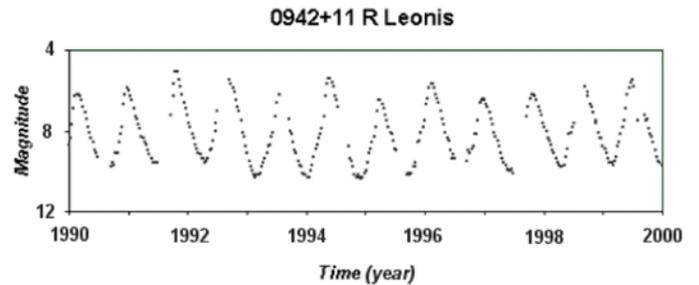
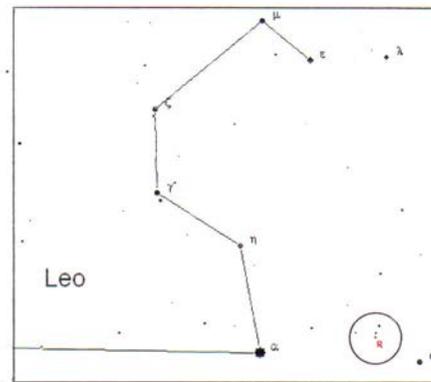
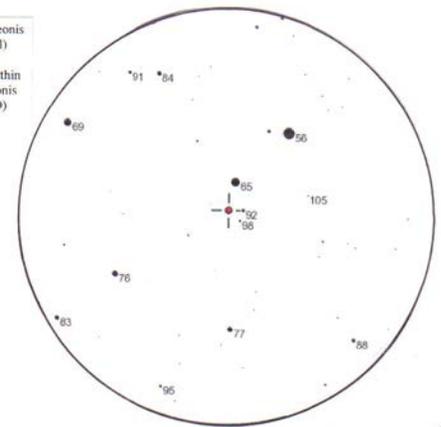


Figure courtesy AAVSO
Light curve of R Leonis over a ten-year period



Above Finder chart for R Leonis (From Cartes du Ciel)

Right Comparison stars within one degree of R Leonis (courtesy of AAVSO)



April Star Fields DEADLINE
Noon, Sunday, March 18th
Email articles to the newsletter editor at
newsletter@atmob.org

POSTMASTER NOTE: First Class Postage

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STAR PARTY COORDINATOR:
Virginia Renehan starparty@atmob.org

How to Find Us...

Web Page: <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.
