Secondary Mirror on the Side

At this Friday’s meeting, the telescope of interest will be an off-axis Newtonian from DGM Optics. It's a 6.5-inch mirror, one of four cut from the “sides” of a much larger standard parabolic mirror. The parent mirror was about f/4; the child mirrors (and thus my telescope) are f/10.4. As a result of this design, the secondary mirror is not in the optical path nor is there a spider – the secondary is on the side of the tube. The tube is mounted in a yoke on a standard Dobsonian alt-azimuth base.

I've written a review which has been posted in "Cloudy Nights." See http://www.cloudynights.com/reviews4/OTA6.htm.

**President’s Message**

Hello Fellow NHAS Members,

My, my, how this year is flying by. We are already half-way through the year! I want to thank **Herb Bubert** for bringing in that finely crafted telescope and motorized equatorial base to our last meeting. This whole system is impressive in that with a Dobsonian mount, one can track the stars and use higher magnification. I understand he has taken some photographs with this set up as well. Thanks again, Herb.

We were also privileged to have **Bob Veilleux** bring to the second half of our meeting a genuine Clark Refractor. How exciting it was to hear about its past, see photographs of the people responsible for building this instrument, and to have a piece of history in our mist. Thank you for that great presentation. It was well received.

At our next meeting, **John Bishop** will be bringing in his telescope with a unique design. You won’t want to miss this.

Another special event, scheduled for August 1st and 2nd, is when amateur astronomers and telescope makers converge on Springfield, Vermont for an event known as **Stellafane**. This is one of the oldest, if not the oldest, gathering of amateur astronomers in the world and it takes place virtually in our back yard! Plans our being made for this event and many from our group will be attending. More Stellafane details will be discussed at our July 11 meeting.

**Noteworthy News**

Mars Dust in a Small Scope...
Skywatch (from p. 1)

We discussed how to find north, arcing to Arcturus, spiking to Spica, and "doobie-ing" to Polaris (go from Merak to Dubhe, then "Doobie-Doobie-Doobie-Doobie-Doo" to Polaris, since the distance from the pointers to the North Star is about five times the distance between the pointers).

We provided each participant with a CD of Web based astronomical material including two books on African Mythology. (Copies are available to anyone interested.) Feedback was good and folks went out afterwards to find a clear patch of sky and put their skills to work.

Mars Dust

Chase McNiss sent e-mail about a story he thought we would be of interest from Science@NASA: “Something is happening on Mars and it's so big you can see it through an ordinary backyard telescope. Go to http://science.nasa.gov/headlines/y2003/09jul_marsdust.htm?friend.

The article reported that on July 1st a bright dust cloud was observed moving out of Hellas Basin. Photos taken with a 16-inch scope by Donald Parker, executive director of the Association of Lunar and Planetary Observers (ALPO) [I thought ALPO was a brand of dog food?], revealed the dust cloud at over 1100 miles wide by the 4th of July. Parker stated that scopes as small as 6 inches should be able to see the dust cloud.

As soon as this much needed rain moves out of New Hampshire, we may have a good chance to observe Mars through some clean air. Let’s hope this dust cloud doesn’t spread over the whole planet just as it’s nearing the closest approach in years.

Web Uploads

The web committee is getting back to work on the new web design after some job-related delays. We are working on design details and working out the logistics of rewriting content and transferring archives. We should have an update at the next meeting.

ATM True Grit

On June 29, Ernie Lopez, Don Ware, Larry Lopez were at the ATM meeting at the New Boston Library. Don helped Larry plan the baffles for his 8-inch f/15 refractor. Ernie presented his work on his mount. We also talked for a short time about the pier for YFOS.

The Bottom Line

Club Balance: $6,000
Accounts Payable: $3,600
Net Balance: $2,400

2003 Membership: 167
Donations: $50.00 from the Girl Scouts of Swift Water Council as a thank you to the NHAS members who volunteered their time at the May 30th "Camporee-2003". A special "thank you" went to Ed Ting, our distinguished Public Observing chair.

Welcome to these recent new members:
Dan Chase of Pembroke, NH
Lisa Fitzgerald of Campton, NH
David Weaver of Nashua, NH

Looking Back at Last Month

Opening. Joe Derek welcomed everyone to the meeting.

Committees. ATMs: Larry Lopez postponed the ATM meeting at the New Boston Library until June 29 at 2 p.m. Membership Comm.: Bob Sletten said the last Astronomy 101 course was awaiting the completion of the 16-inch observatory scope. Photo Comm.: Chase McNiss said they met the prior Saturday at YFOS but it rained. They discussed "deconvolution." A new Yahoo group for NHAS astrophotography now has 13 members. Next meeting TBA. Web Comm.: no updates.

Scope of the Month. Herb Bubert displayed his 11-inch Starmaster ELT truss tube Dob. scope on a custom-made, motorized, equatorial platform that provides star tracking for about an hour. He was able to assemble the truss mount in just a few minutes.

Public Observing. Ed Ting noted two upcoming skywatches: July 3 at Eastman, NH near Claremont, and late July at Geneva Point on Lake Winnipesaukee.
YFOS. A select group of mowers trimmed the field recently. Another mowing session was slated for Saturday, June 21. Larry's C14 scope was still being restored by John Blackwell. We were still waiting for the Titan mount and the truss mount to be shipped.

Treasurer's Report. Our bank balance was $6000, with $2400 in payments due. Membership is 165.

Scope Sale. Chase McNiss mentioned that Dan Smith of Rivers Camera had an overstock of scopes taken in trade and would give NHAS members an additional discount to take them off his hands.

Evening Program. The featured presentation was The Mystery Clark Refractor.

Bob Veilleux presented a talk about the history of the 1875 4-inch Clark refractor that had been at Manchester Central High School for over a century. The full story of these famous telescope makers was available in a book entitled Alvan Clark and Sons, Artists in Optics published by Willmann-Bell.

Alvan Clark was born in Ashfield, Mass. in 1804, a New England Yankee, and made a livelihood painting portraits until 1860. He became a telescope maker by accident in 1844 when his son George made one out of the melted-down brass of his school's broken dinner bell. With his sons, George Bassett and Alvan Graham, Alvan, Sr. started making refractor lenses in 1846. By 1897, the company completed its magnum opus, the 40-inch refractor lens for Yerkes Observatory – still the largest refractor ever made.

Alvan was know to use his thumb for final polishing and he eventually developed severe swelling from the constant stress of lens polishing. His company manufactured over 575 telescopes and Alan eventually died in 1887 followed by his sons George in 1891 and Alvan Graham in 1897.

The Mystery Clark Refractor

On the scope is this engraving: "Alvan Clark & Sons, Cambridgeport, Mass. 1875." Bob recounted that the refractor had been stored for many years at Manchester Central High School. He showed a photo from 1907 of the Classical Building with a copper-domed observatory on the roof, surmising that the scope was housed there.

After much searching through microfiche (accompanied by much eyestrain), Bob eventually found an article in the "Mirror and American" newspaper noting the purchase of a 4-inch Alvan Clark telescope for the Manchester High School, a scope that was delivered on Feb. 8, 1876.

The primary lens was an achromatic doublet – typical of Clark refractors. The scope sat on a tripod made of black walnut. The end cap was a hefty piece of solid brass as was the tube and finder.

Since Bob was to retire from teaching this year, he felt the best thing to do to preserve this historic telescope was to donate it to the Manchester Historical Association. He scornfully avoided suggestions to sell it on eBay.

After the talk, members went for a closer look at this historic instrument.

Note: The latest issue of the Orion catalog offers a beautiful 60 mm refractor made of brass and mahogany. It has that retro look reminiscent of the Clark scopes of 150 years ago.

★ Michael Frascinella

NASA Space Place

Monster Trucks on Mars

by Patrick L. Barry and Dr. Tony Phillips

We all know what Mars rovers look like now: Robotic platforms, bristling with scientific instruments, trundling along on small metallic wheels. Planetary rovers of the future, however, might look a little different – like miniature monster trucks!

Enormous, inflatable tires can easily roll right over the rocks and rugged terrain of alien planets, just as they bound over old cars like as many speed bumps.

That's the idea behind a novel concept for robotic planetary rovers known as the "big wheels inflatable rover." Unlike rovers similar to the Sojourner robot that explored the surface of Mars in 1997 and depended on instructions sent from Earth or complex programmed intelligence to steer through rough terrain, this rover has

(See Space Place on p.4)

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Space Place (from p. 3)

three beach ball-like tires roughly five
feet across that make it a true off-road
vehicle.

"We sent this rover out to Death Valley,
to a place called Mars Hill that has a
general geological formation like Mars,
and nothing could stop it," says Jack
Jones, the mastermind of the inflatable
rover concept at JPL. "It just kept going
and going and going." [Sounds like the
Eveready bunny, huh?]

Lots of current research is devoted to
developing advanced robotic
intelligence that allows rovers to detect
rocks in their path and maneuver
around them. The alternative to such
on-the-spot intelligence is tedium:
Ground controllers on Earth working
out the maneuvers by hand and waiting
and down over all of these rocks aboard
the rovers doesn't make much sense,"
Jones says. "I suspect it might be better
to leave it in a central location."

At the moment it's all very speculative;
NASA currently has no definite plans
to send inflatable rovers to Mars. But
who knows, one day monster truck-like
vehicles could be zipping over Mars' rough, red surface.

Kids can baffle their friends with a
robot puzzle (including a "Big Wheels"
rover) they make themselves at
http://spaceplace.nasa.gov/robots/robot_puzzle.htm . Adults can find out more
about NASA's inflatable rover program

This article was provided by the Jet
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Administration.
DEADLINE August Issue: 5 PM August 4
E-mail your articles to the Editor. Phone if you have a late submission.

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NHAS Upcoming Events

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<thead>
<tr>
<th>Event</th>
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<th>Location</th>
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<tbody>
<tr>
<td>July meeting</td>
<td>July 11</td>
<td>7:30 p.m.</td>
<td>St. Anselm's College, Goffstown, NH</td>
</tr>
<tr>
<td>Coffee House</td>
<td>July 25</td>
<td>8:00 p.m.</td>
<td>YFOS</td>
</tr>
<tr>
<td>Stellafane Convention</td>
<td>Aug. 1-2</td>
<td></td>
<td>Breezy Hill, Springfield, VT</td>
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<tr>
<td>CMP Skywatch</td>
<td>Aug. 1</td>
<td>8:00 p.m.</td>
<td>Planetarium, Concord, NH</td>
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<tr>
<td>Aug meeting</td>
<td>Aug. 15</td>
<td>7:30 p.m.</td>
<td>Planetarium, Concord, NH</td>
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Off-Axis Newt, July 11, St. Anselm