The Meteor
The Newsletter of the Astronomical Society of Greenbelt
July 2010

The Meteor is the official publication of the Astronomical Society of Greenbelt, Greenbelt, MD. Articles & other contributions are welcome. Membership in the Astronomical Society of Greenbelt is open to anyone interested in astronomy. The Astronomical Society of Greenbelt is a not-for-profit community-based organization with the goal of encouraging public interest in science & education in general, astronomy in particular. More detailed information on our club’s activities & organization can be found elsewhere at our website.
The editor of this newsletter, Craig Levin, can be contacted at clevin AT ripco.com. Unless specified otherwise, all items in this newsletter were written by the editor.

Editor's Notes

This will prove to be an interesting summer. On the 15th, consider spending some of your evening at the Washington Monument for a combined star party & concert starting at 5 PM.

Earlier this year, the society received a box from the Night Sky Network, a joint operation between the JPL & the Astronomical Society of the Pacific to provide outreach supplies to clubs across the nation. At our July meeting, Elizabeth Levin will provide a demonstration of the devices in this box!

Elected officers for 2009-2010

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<tr>
<th>Office</th>
<th>Name</th>
<th>Email Address</th>
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<tr>
<td>President</td>
<td>Ray Stevens</td>
<td>stvns.jacht AT yahoo.com</td>
</tr>
<tr>
<td>Vice-President</td>
<td>Martha Gay</td>
<td>marty_lou AT comcast.net</td>
</tr>
<tr>
<td>Secretary</td>
<td>Craig Levin</td>
<td>clevin AT ripco.com</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Sue Bassett</td>
<td>wb3enm AT amsat.org</td>
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## Astronomical Events Around Greenbelt in July 2010

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<th>Sunday</th>
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<td>1</td>
<td>2</td>
<td>3 Celestial Fireworks! A Star Party at Northway, 9 PM</td>
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<td>Independence Day!</td>
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<td>15 National Mall Star Party, 5-11 PM</td>
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<td>17 Star Party at Northway, 9 PM</td>
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<td>Sidewalk Astronomy at Roosevelt Sq., 9 PM</td>
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<td>28</td>
<td>29 Meeting at the Greenbelt CC, 7:30</td>
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## Star Party & Business Meeting Reports

**June 5:** Clouded out.

**June 7:** Notes of the officers’ meeting provided kindly by Martha, as I was at home with a cold:

Present: Ray Stevens, Martha Gay, Doug Love, Sue Bassett.

We need liability insurance for our activities in Roosevelt Center and maybe at the Observatory. Sue will investigate. She will check with Terri Hruby regarding our liability at the Observatory. She will also check with what our insurance covers. We assume that LDF is covered. Martha will check with Davina about insurance. *But first I’ll check the material she sent out.*

People are asking for classes. It might be possible to get paid.

Sue is investigating a memorial to Martha Warren - IDA or bench or something. Pads for telescopes would also be a good idea. Leveling might be an issue.
Ray has ordered a memorial bench for Tom Teutsch. He and Ray need to work out landscaping issues. Ray will talk to Bill Phelan. Martha will try to talk to Sharon Bradley.

We need to work out policy for memorials.

Food Vendor. We can sponsor a food vendor. We prefer to continue with Karina (Food Station) IF she is willing to correct problems with the electrical service and willing to do this. Martha will call Karina and check her attitude about the electric. We like her food. We want to check with the other vendor about his ingredients and tell him about electrical.

Summer ideas
Basic orientation to the observatory, with the idea of maybe recruiting docents.
Solar observing.
Picnic
We need rain dates for these.

**June 19:** A beautiful, if humid, night, with several couples & families coming to visit us. One couple even brought a lovely set of 20x100 binoculars! One of our number was able to pull in the Ring nebula, but I think most of us were content to view the Moon, Mars, & Venus.

**June 20:** Another nice night. Elizabeth & I spent about 30-40 minutes showing passers-by the Moon through binoculars & handing them ASG contact cards.

**June 24:** Harold Williams’ speech on astrolabes from last month-this time in the Greenbelt Community Center. Using laminated paper astrolabes which he handed out to us, Harold demonstrated some of the uses & the history of the astrolabe. Far from being a simple altitude-measuring device (although that was the main purpose of the mariner’s astrolabe, a special tool with fewer features than the full astrolabe), the astrolabe was a specialized calculator of use not only to scholars in their cloisters, but also to surveyors, master builders, & soothsayers. Astrolabes were developed over 2000 years ago out of a need to make a portable device that could perform some of the functions of an armillary sphere & a celestial globe by projecting the major circles (such as the tropic of Cancer, the equator, & the ecliptic) onto a disc. Ptolemy (100’s CE) discusses astrolabes in such a way that we can assume that they’d already been around for quite some time. The oldest ones that we can find are about 700 years younger than Ptolemy. Early astrolabe handbooks were written originally in Greek or Latin & then translated into Arabic after the rise of Islam. As Europe recovered, Arabic works were retranslated into Latin, & then into the vernacular-one spectacular example happens to be by Chaucer for “Little Lewis”. In closing, Harold suggested that we visit [Astrolabes.org](http://Astrolabes.org) for more information & photos.

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**ASG Loses Another Longtime Member**

by George Giba

Martha Warren, wife of longtime ASG member Wayne Warren, passed away on May 9th after her short battle with cancer. She was 67 years old & was married to Wayne for 43 years. She is survived by her son, two daughters, three grandchildren. & six nieces. She was a long-time employee of the Human Resources Specialist at the University System of Maryland. She didn’t attend many ASG meetings, but I remember seeing her at several Christmas parties. I also remember seeing her at the 1994 & 1998 Total Solar Eclipse Expeditions that Lynne & I traveled to, to Chile & Curaçao respectively. At a special star party held in the Atacama Desert during the 1994 trip, there was a mini-outburst of the Taurid Meteor Shower, which she noticed. On the way back to our hotel, she asked me what all the meteors that we
saw were. So, she independently confirmed my observations of the unexpected meteor activity seen on October 31, 1994 from Chile. She was also a longtime member of the National Capital Astronomers. She will be missed, but not forgotten.

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**Comet R1 McNaught, the ISS, & a Fireball**

by G.W. Gliba

Lynne and I went to our cabin for a couple days in June to observe. We were there on the night of June 13/14, and 14/15 and were able to see several meteors and comet R1 McNaught, although it was only partly clear on both nights. The fireflies, whippoorwills, & screech owls entertained us during the cloudy periods.

Early on the night of July 13th, Lynne and I both saw a nice first magnitude yellow-orange sporadic meteor while watching the Milky Way rise above the tree line. It seemed to have a pointed head, like a javelin, as it darted north below the Milky Way. Later that night I was able to do a two hours’ meteor count. I was hoping to see some June Lyrids & δ Draconids, as it was near their maxima. Some meteor experts think that they are the same minor meteor shower; so I wanted to see if I could help determine the radiants.

I observed meteors from 4:00 to 6:00 UT & was able to see 16 meteors: 2 Antihelions, 12 Sporadics, & 2 possible June Lyrids. No possible δ Draconids were noticed. The best meteor seen was a nice 0 magnitude yellow Sporadic seen at 5:57 UT. It was 15% cloudy the first hour & 20% cloudy the second hour, & I had to twist in my lounge chair several times to avoid more clouds. The limiting magnitude was a respectable 6.2 average during that time period.

Later, at 7:14 UT, while looking for comet R1 McNaught with the 12x63 binoculars, I saw the ISS briefly as it grew brighter coming out of Earth’s Shadow. It was about -2 magnitude. I soon lost it in a cloud, & that was the last I saw of her. Later, after Lynne and I got a good look at the comet with the 12x63 binoculars and the 3-inch F/13 Zhumell refractor, I saw a nice -5 magnitude Sporadic Fireball about 10 degrees below Jupiter in the ESE at 7:30 UT that had a lovely blue-yellow-green color. Unfortunately, Lynne just missed seeing it.

We both saw a nice tail on the comet, which I estimated to be about 2 degrees in length in 12x63 binoculars, and about 5th magnitude in brightness. With difficulty, I could just make the head of the comet out with the naked-eye. It was a beautiful sight in the binoculars near the α Persei Stellar Association. In the 3-inch refractor it had a diffuse central condensation, and a bright streamer was notice coming off the north end of the head of the comet. Nice comet.

The following night, June 14/15, it was mostly cloudy, but I managed to get in one hour of meteor observing. Before that, in the earlier part of the night, Lynne & I heard some screech owls as we watched the Milky Way rise, during one of the rare periods of clear skies that night. From 5:25 to 6:25 UT I was able to see one possible δ Draconid, but no possible June Lyrids were seen. It was 35% cloudy, and the limiting magnitude was only 5.2 average due to haze and clouds. However, a nice blue-green -1 magnitude swift Sporadic meteor with a 3 second train was seen at 6:09 UT that was the best meteor seen that night. It remained too cloudy to see the comet again that night.
Missing Mass Problem Solved?

In the last several weeks, news from Europe emerged that might cause a cosmological reformation. After careful examination, the scientists at CERN announced over our Memorial Day weekend that the neutrino, which was thought to be massless for decades, actually has an infinitesimal mass. Now, one neutrino won't exactly tip the scales in a measurable way-in fact, it's far more likely to just zip right through a scale's constituent molecules-but hordes of them would, & neutrinos are produced in every fusion reaction in every star of every galaxy.

Now, theoreticians have considered this as a possibility before, but have said that neutrinos with mass still would not account for the most of the missing or Dark Matter that subtle differences, called "ripples", observed in the 3K cosmic microwave background, seem to demand. However, Prof. Tom Shanks, of Durham University in the UK, along with one of his grad students, Utane Sawangwit, recently found that the sensors on board the Wilkinson Microwave Anisotropy Probe (WMAP), NASA’s satellite which was launched to measure the ripples, either are improperly calibrated, or the algorithms used to interpret their data are flawed, so the ripples aren't as big as everyone thought. According to Shanks & Sawangwit, Dark Matter & Dark Energy may not be necessary. Other astronomers, with whom Shanks & Sawangwit are working, have used other means to further decrease the probable amount of Dark Energy.

Subatomic particle specialists will probably end up having to rewrite the "Standard Model" of how different particles behave, as it currently leaves no room for neutrinos with masses. At least they'll be spared from having to concoct particles for Dark Matter & Dark Energy!