METEOR


METEOR is the official publication of the Greenbelt Astronomy Club and is distributed monthly as a privilege of membership. Articles and other contributions are welcome. Membership in the Greenbelt Astronomy Club is open to anyone interested in astronomy. The club meets on the last non-holiday Thursday of the month at 7:30 pm EDT at the H. B. Owens Science Center. Address of the Editor is: G.W. Gliba, 58-D Crescent Road, Greenbelt, Maryland 20770.

Greenbelt Astronomy Club

The monthly meeting was held on August 29th at the H. B. Owens Science Center. The club table at the Greenbelt Labor Day Festival on Saturday August 31st was mentioned. We will be there from 12:00 Noon to 5:00 pm EDT. Displays on light pollution and astronomy will be set-up for public viewing. After the next meeting, a Harvest Moon lunar eclipse public star party will happen on Sept. 26th.

Northway Fields Public Star Party

The August Northway Fields public star party was sparsely attended due to the poor weather conditions, but about a dozen people still attended. Four club members brought their telescopes. Lynne Gilliland had the 5.5-inch SNT, I had the 4-inch f9 refractor, Tom Bridgman had one of the 2.4-inch refractors from his science teachers grant that he received recently, and Nelson Wallace had a excellent 6-inch f8 reflector with a homemade mirror that he made. We saw the Moon, Jupiter, and several double stars. The space station Mir was also seen! The next Northway Fields public star party is scheduled September 26th, during an eclipse of the Harvest Moon.

Supernova 1996an in NGC 1084

According to IAUC 6442 a 14th magnitude supernova was found in the galaxy NGC 1084 on a CCD taken July 27.77 UT by Japanese astronomer S. Nakano, Sumoto, Japan. He used a 0.43-m f/5 reflector to make his discovery. The SN is located 15" east and 22" north of the center of NGC 1084. S. Benetti, M. Turatto, and G. van de Steene, European Southern Observatory (ESO), report: "Inspection of a fully-reduced CCD spectrogram (range 400-980 nm, resolution 0.7 nm) obtained on July 30.41 UT with the ESO 1.5-m telescope (+ Boller & Chivens spectrograph) at La Silla confirms this object as a type-II supernova, approximately 2 months after the explosion. The spectrum consists of a multitude of lines with the canonical P-Cyg profiles, superimposed on a relatively red continuum". Being a type-II SN, it will probably stay near maximum longer than the type-Ia SN that was reported in NGC 5005 two months ago that faded very quickly. As of August 19 it was still 14th magnitude, according to the Variable Star Network WWW site.
Comet C/1996 Q1 (TABUR)

A new comet was found by Australian amateur astronomer Vello Tabur visually with an 8-inch reflector on August 19th. It was 10th magnitude when discovered, but looks like it may become 6th magnitude by early October. It will be going through Orion in September, and will be only two degrees NW of Betelgeuse on the night of September 16th. Below are positions taken from IAUC 6460:

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Regular Perseids and Xi Perseids (1925 XI) - by G.W. Glica

Well, we were clouded out for the maximum for the Perseids, but were able to see several nice early Perseids at Mountain Meadows, West Virginia (with a 6.4 limiting magnitude) on the night of August 10/11, 1996. In all, 114 meteors were seen in three hours, 67 of which were regular Perseids. However, 8 meteors from a possible new radiant near Xi Persei were also spotted from 6:15 to 8:15 UT. Of the regular Perseids seen, there were few bright ones, and no fireballs. The next night, which was the peak of the Perseids, was clouded out.

However, an outburst was seen in Europe by the Hungarian Astronomical Association/Meteor Section, on August 11/12 at 12.04 UT, when over 100 ZHR was seen. Other groups from Europe also reported enhanced rate on August 11/12. Oh well, we had a good night August 10/11, at Mountain Meadow the night before; so can't complain too much about missing the peak this year.

As for the Xi Perseids, this may be a new shower, or an old one that has now become active. I first saw them when a short outburst was seen two years ago, while attending the Stellaflane convention in Springfield Vermont. On August 5/6, 1994 between 7:11 to 7:55 UT (44 minutes), six Xi Perseids were spotted, in addition to the regular Perseid meteors seen, which they resembled in speed, and brightness. In all eight Xi Perseids were seen.

With this year's total of nine more Xi Perseids meteors, one on the morning of August 5/6, from Greenbelt, Maryland from 6:41 to 7:42 UT, and eight more on August 10/11, from 6:15 to 8:15 UT, observing from the clear skies at Mountain Meadows, West Virginia, a total of seventeen meteors have been seen from this possible new (or active old) radiant.

There has been only one other report of meteors from this radiant this year. California meteor observer, Bob Lunsford, reported that he saw a few coming from an area 70 +50, which is near the 65 +40 reported by me. However, he only saw a few to determine his radiant, and although I didn't plot most of mine, I saw 17 meteors from the area of Xi Persei (Aug. 5/6) and Epsilon Persei (Aug.10/11). Epsilon Persei is near where the radiant is Aug. 10/11. Of the nine that I saw this year, the average one had a brightness of 3.3 magnitude, and was white in color. Last year (1995) was rained out on August 5/6, and had a Full Moon near the Perseid maximum. The estimated radiant locations could be in error by a few
degrees, as only four of the Xi Perseids were actually plotted, but I feel that
the general areas estimated are correct.

<table>
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<th>Date</th>
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<td>Springfield, VT</td>
<td>60 +36</td>
<td>based on eight meteors</td>
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<tr>
<td>*Aug. 5/6, 1996</td>
<td>Greenbelt, MD</td>
<td>60 +36</td>
<td>based on one plotted meteor</td>
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<td>Aug. 10/11, 1996</td>
<td>Mathias, WVa</td>
<td>65 +40</td>
<td>based on eight meteors, three plotted from memory</td>
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* weak association # epoch 2000

When looking for possible published radiants near Xi Persei near the Perseid
maximum I found one. In a list of Meteor Showers compiled by Dirk Artoos, of
Belgium, dated October 10, 1989, a radiant listed as 1925 XI with a maximum on
August 12th is listed. The position is given as: RA 061 DEC +40, which is very
close to the drift position of the Xi Perseid radiant seen August 10/11, 1996.
So, it appears that this radiant was seen in 1925.

Research done by Gary W. Kronk has shown that this radiant was active before.
American Meteor Society radiant #1308, seen in 1924 (56 +31), two photographs
from the Harvard Photographic Meteor catalog seen in 1913, 1920, 1929, 1932, and
1935 very close to the same area, and 20 Harvard Radio Meteor Project sub-radiants seen in surveys done in 1962,
1964, and 1969. It looks like this is an old radiant that is again active!

As for the regular Perseids, 69 were seen in four hours on two nights. Only
two on August 5/6, from 6:41 UT to 7:42 UT, but 67 in three hours on the morning
of August 10/11, from Mountain Meadows, West Virginia. The best hour was from
7:15 UT to 8:15 UT, when 34 Perseids were spotted. That same hour, there was a
mini-outburst, when between 8:10 UT to 8:12 UT (two minutes) six Perseids were
seen, four in only 30 seconds! There was a lack of very bright Perseids, with
the best one being a beautiful blue-green -1st magn. seen at about 8:08 UT. Besidest Perseids, seven Aquarids, four Northern Delta Aquarids, two Southern Delta
Aquarids, one Upsilon Pegasid, one Pisces Austranid, and twenty four sporadics
was seen. One additional Upsilon Pegasid was seen casually shortly after I stopped
logging meteors.

Sources - meteorobs network
email from Gary W. Kronk

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Another Possible New Radiant

Another possible meteor radiant was seen by ace meteor observer Bob Lunsford
in California. On the morning of August 20/21, 1996 from 8:00 to 12:00 UT he
plotted 7 meteors from a radiant centered near RA 30 (02:00) DEC 00. They were
of medium-fast speed. The average magnitude was 2.7, with individual magnitudes
ranging from 0 to 5. That same night, Bob saw an unusual meteor, not related to
this possible new radiant, that shot upward from Orion through Taurus, Aries,
Pegasus, and back down again through Delphinus and Aquila. The estimated total
length was 140 degrees with it peaking at zero magnitude. The duration was 4
full seconds. He said it was difficult not to shout out loud as the meteor darted
through the heavens! Anyway, three more meteors from this radiant, which is
near the variable star Mira, was seen in three hours the next night, Aug. 21/22.

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Another Light Pollution Victory

Forrest Hamilton, noted amateur astronomer and science operations specialist
on the HST project, reports yet another light pollution victory! He was able to convince his local McDonalds (Randallstown, MD) to re-aim their newly installed shoe box style exterior lighting so that all of the direct glare goes below the horizontal. This will certainly darken a large open space that he frequents for meteor observing. Next he may try to get the local car dealerships to follow... Good job Forrest!

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Greenbelt Astronomy Club Meetings - by Russ Waugh

To avoid confusion about meeting dates for the Greenbelt Astronomy Club, I have gone ahead and set up dates for the next year (I had to inform the school system of our meeting dates anyway for legal reasons). I have tried to avoid conflicts with holidays, and I hope I haven't missed anything. The meetings are still the last Thursday of each month at 7:30 p.m., except when such a date would conflict with a holiday.
Meetings: 9/26/96; 10/31/96; 11/21/96; 12/19/96; 1/30/97; 2/27/97; 3/27/97; 4/24/97; 5/29/97; 6/26/97; 7/31/97.

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Comets Hale-Bopp, Brewington, and Kopff

Comet Hale-Bopp was finally spotted with the naked-eye on the morning of August 11th, from Mathias, West Virginia. At that time it was about 5.5 magnitude and had a fan tail that was 1 1/2 degrees long on SW side in binoculars. In a 24-inch f5 reflecting telescope, a stellar central condensation was seen, but it was also seen with an 8-inch f5 reflecting telescope, and was probably visible in a smaller aperture. This comet looks like it will be the winner we had all hoped for as it continues to brighten.

Comet Brewington was seen among the stars of Canis Venatici at about 8th magnitude. It was easy to spot in binoculars, and was brighter than predicted. It was elongated and somewhat condensed in the center, but no obvious tail was seen on August 10th. While looking at it with the 4-inch f9 refractor, a telescopic Perseid meteor was seen zipping through the field. That was the night that over 80 Perseids were seen with the unaided eye from Mountain Meadows, but it was the only telescopic Perseid reported as being seen, and in the same field as the comet, it was a beautiful sight.

Comet Kopff was tough to find. We tried binoculars and several telescopes before we finally found it among the rich star fields of Sagittarius. It was a diffuse 9.5 magnitude object. It couldn't be seen in 12x63 binoculars, or a 80mm finder, but was finally seen easily in a 24-inch dobsonian up at Mountain Meadows, near Mathias, West Virginia. All three comets were seen that night. It was a three comet night. Nebulosity in the Pleiades was also seen with 12x63 binoculars.

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Aries-Triangulid Meteor Shower

This is an excellent year to observe the Aries-Triangulid Meteor Shower as there is a New Moon on the projected peak night of September 11/12. You may recall that this minor stream was discovered active three years when it was discovered independently by two amateur astronomers. Research by comet and meteor expert Gary W. Kronk, who is one of the co-discoverers, shows that this radiant was seen before, but was not recognized as a probable annual stream until 1994. However, more confirmation observations are needed this year.
The location of the radiant(s) have not been determined very exactly yet, as there isn't enough data. Therefore, it is important for meteor observers to go out and observe the Aries-Triangulids to help confirm this meteor shower, and help to determine a more accurate location of the principle radiant(s). Kronk estimated the main radiant as being at RA 30 DEC +29, but I have seen some activity from RA 28 DEC +25, and RA 28 +19 (meteor shower RA is given in degrees; so you divide by 15 to get hours).

Under a clear sky from 3 to 6 meteors per/hour may be seen. Last year the Moon was nearly full; so few were seen, but two years ago several were seen from this newly discovered meteor shower. One of the problems with confirmation is that the most sporadic meteors are seen this time of the year. This is why it probably was not recognized before. Also, yearly activity may be variable. So, go out and look to help confirm this minor shower, and send your reports in to both Sky and Telescope and Astronomy magazines.

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Some Dates to Remember

September 6th-8th - Blackwater Falls Astronomy Weekend
September 12th - New Moon
September 11/12 - Maximum of Aries-Triangulid Meteor Shower
September 26th - Greenbelt Astronomy Club Meeting
September 26th - Northway Fields Lunar Eclipse Public Star Party
October 12th - New Moon
October 20-24 - Maximum of Orionid Meteor Shower
October 31st - Greenbelt Astronomy Club Meeting

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Region around NGC 1084. Magnitudes from Guide Star Catalog, using The Sky software.