

Event Horizon

September 2002

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SPECTACULAR SILENT NIGHTS! *By Glenn Muller*

We hadn't expected a fire drill Saturday night; so when Grant yelled "Glenn. Gail. There's an *aurora* happening!" I was only half-way into my long johns. Seven of us had made the trip to Silent Lake Provincial Park, the weekend of Sept. 6/7/8, and the dark skies were proving to be all that Stewart Attlesy had promised. The first night, Friday, we were actually able to detect the large but faint galaxy M33 with naked eye averted vision.

Twenty kilometres south of Bancroft, the park's wooded campsites provide enough shade throughout the day for sleeping, and comfort stations with washers, dryers, showers and ice provided for those other necessities. The parking lot we used for observing overlooked the lake, and although most of the immediate horizon is blocked by trees there was such a plethora of stars overhead, the difficulty was in deciding where to start. For Gail and I, this was settled by the appearance of Ann Milovsoroff. Not having viewed the Cosmos through a telescope before, once our 6" dob was ready to go, she got a newbies tour of Albireo, M13, M31, M57, M29, Herschel's Garnet Star and NGC's 869 & 884 - the Perseus Double Cluster. We expounded as best we could but I was happy when Grant Dixon arrived to really flesh out what she'd seen through the Pentax 21mm eyepiece.

Ann had been urged to join us by her friend and co-worker, Margaret Walton, and while waiting for us to show up had already seen eight or nine meteors. We saw several more that night and, later, Gail found an article in the September issue of S&T (page 86) that listed a few minor showers for this period.

Using *The Night Sky Observer's Guide* and *Cartes Du Ciel* software, my observing plan covered several patches of sky. This was just as well since Sagittarius was obscured by trees and Ursa Major was partially washed-out by what could have been a precursor to the

next night's display. Still, before Stewart arrived with his 20" Obsession, I managed to add to our log small globular M56, open cluster NGC 752 and galaxy NGC 5907.

By midnight, Capella was up and the Pleiades appeared for an inventory count. Without magnification I was able to spot seven stars but others got as high as eleven. When we saw Aldebaran, however, we knew Saturn wouldn't be far behind. Sure enough, by two o'clock, the ringed wonder cleared the tree line and I could make out Cassini's division and the planet's shadow on the rings with a 7mm eyepiece (171x).

Cindy Bingham had called to say she was on Hwy 115, so we continued observing. When she finally arrived, about three a.m., the site was so dark that she circled us without spotting our location. We caught her before she made the exit, a good move since she'd brought REALLY fresh doughnuts! Sugar-charged, we trekked over to the lake where Orion could now be seen reclining. With Castor and Pollux popping up we might have waited for Jupiter only, by four-fifteen, our equipment was dripping with dew and since we were tired we made the decision to head back to camp.

The park was fully-booked but our neighbours were no more annoying in the morning than we probably had been earlier (slamming car doors in the wee hours), so we got enough sleep. Grant and Doreen had brought their canoe so went off to explore the lake - which turned out to be three lakes; Cindy and Stewart had to go into Bancroft for food; and we would have visited Ann but were unable to remember which site she was on so contented ourselves with a couple of books in the shade. Glad we did as a red-shouldered hawk landed on a branch not ten feet from our chairs.

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Chair's Report

The summer of 2002 now belongs to the ages. While there were stretches of unbelievably hot and muggy weather, there were also choice observing sessions. Two examples: StarFest and the Great HAA Silent Lake Observing Weekend! The folks who arrived early enough at StarFest in August were treated to SIX clear nights in a row!!!! Surely this is a record for this area! I spent only two clear nights at StarFest but they were very memorable. Not only did I get to do lots of observing, but I also caught up with many old friends. A special treat was looking through some scopes with H-alpha filters - the sun has been very active this summer and seeing prominences "live" is always a treat!

I was not able to get to the Silent Lake weekend, but it sounds like it was spectacular - two beautifully clear, moonless nights. Not only that, the Saturday night had active aurora most of the time!! I managed to see the aurora from Dundas with many members of my family, so that was a treat in itself. Clearly we need to do Silent Lake every year!

Our membership year begins in November which means several

things. First, time to renew! Second, everyone needs to start thinking about the make-up of Council for the coming year. A new member, Cindy Bingham, has graciously agreed to being nominated for Treasurer. Barb Wight, who has served as long as any HAA Council member in the very demanding Treasurer position indicated that she would welcome a break! We all owe a huge vote of thanks to Barb for her tireless efforts on our behalf and for helping us to maintain our non-profit status!!

Suggestions for future speakers are always welcome. One member who continues to send in good suggestions is Tom Steckner - thanks, Tom!

Also, with the winter holidays not too many months away, feel free to submit your recommendations for books to Anthony Tekatch to be included under our "Books" link on www.amateurastronomy.org. If people purchase through these pages, the HAA gets a percentage of the sale.

I look forward to an active and interesting 2002/03 astronomy season!

Doug Welch

HAMILTON AMATEUR ASTRONOMERS

Event Horizon is a publication of the Hamilton Amateur Astronomers (HAA).

The HAA is an amateur astronomy club dedicated to the promotion and enjoyment of astronomy for people of all ages and experience levels.

The cost of the subscription is included in the \$25 individual or \$30 family membership fee for the year. Event Horizon is published a minimum of 10 times a year.

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Web: amateurastronomy.org

Mailing Address:

PO Box 65578
Dundas, ON
L9H 6Y6

Doug Welch is the current chair of the HAA and also a founding member. You can find out more about Doug at: http://www.physics.mcmaster.ca/people/faculty/Welch_DL_h.html



WebWatch

- Many interesting science stories updated daily at <http://slashdot.org/science/>
- A device which can send out e-mail when a visible aurora is taking place <http://angwin.ece.uiuc.edu/~haunma/aurora/index.html>

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Apart from a doe and a couple of chipmunks, this was the tally of our wildlife spotting. I didn't mind at all; having been invaded by raccoons and squirrels so often, that particular *novelty* has worn off. AND thanks to the drought the camp was virtually bug-free!

Anyway, you probably want to know about the aurora.

We were sitting around Stewart's camp while he made clam chowder - not drooling only because we'd already eaten. Through a hole in the forest canopy I could see Vega, and thinking that Ann might be waiting at the parking lot, Gail and I decided to get our warm clothes on and head over. We were changing in our tent when Stewart looked up and wondered why the sky was getting lighter instead of darker. The sound of revving engines and Grant's call to arms told us all we needed to know, and within minutes we had seats in the orchestra pit for the most concerted display of Northern Lights I've ever seen. Obviously, descriptions fail to do justice; suffice it to say that from a bright blue northern horizon rose great cathedrals of light, shimmering with white, red, and green bars, and giant "angels" material-

ized near the zenith. There were two shows that night, each lasting about forty five minutes yet, in between, I still managed to bag clusters M30, M72, M73, NGC 7009 - The Saturn Nebula, small, blue, planetary NGC 7662 and a small, nearly edge-on, spiral galaxy in Pegasus - NGC 7331.

Overall, I would rate the skies as better than Starfest - even without the Teapot - though we felt it unfortunate that so few people were able to make the trip. The drive through Toronto was thankfully unimpeded, but Grant and I discussed a road trip up Hwy #6 in search of a comparable park. Any input towards this would be appreciated. Despite that, Gail and I could easily spend several more days enjoying all that Silent Lake has to offer.

When not bending nails into tent pegs, Glenn likes looking for asterisms in open clusters.

After a thirty year hiatus, Glenn Muller is rediscovering astronomy. He and his wife, Gail, observe from their backyard in Grimsby. They invite you to view their webpage at: <http://home.interlynx.net/~mullers/>



Pluto Facts:

During two recent occultations of Pluto (when Pluto crosses the path of starlight) measurements were made of Pluto's atmosphere.

It was deduced that Pluto's atmosphere may freeze during its winter which lasts more than a century.

A probe will be sent on a 10 year mission to Pluto starting in 2006 to study more curious Pluto tidbits.

Read more at: The Toronto Star <http://www.thestar.com/>

Title: "Pluto's atmosphere may freeze solid in 2040"

Date: "Sep. 8, 2002. 01:00 AM"

Aurora Nights

Heard from the driver of our van when I was birding at Point Barrow, Alaska.

He alleged that he drove a group of Japanese tourists one fall and learned that they believed a child would enjoy especially good luck if it were conceived while the Aurora Borealis were going on. The group was fortunate. The aurora appeared, spectacularly. "Don't you want to get out and see it?" the driver asked the leader of the group. "No! To the hotel!" was the leader's response.

A story seen on the birding mailing listserv by Robert Fisher. Submitted by Marg Walton

Cartes du Ceil *by Grant Dixon*

I stumbled across this web site <http://www.stargazing.net/astropc/> It is called "Cartes du Ceil" or Sky Charts. The great thing is it is all free.

I have downloaded the Virtual Moon and all the photos that go with it. This is absolutely one stunning program. There is a basic component that is required and then you can download "Lunar Orbiter Photographic Atlas of the Moon" well it is an abbreviated version that selects over 1000 of the best photos that cover the whole surface of the moon - whole that is with the exception of what the LOPAM did not cover. Once you have located an object on the moon and have read all about it you can then click on "Picture" and it will bring up the LOPAM of that area and will mosaic it if necessary. This is one kick-ass atlas. You can download only the parts that you are interested in and not the whole program ...in fact you have to download it in pieces. http://www.astrosurf.com/avl/UK_index.html

I am now working on the star charts that allow you to access down to 12th magnitude. With gazillions of add-ons, again you can or have to download it in units so you only have to take what you need or want. The first thing that blew me away about this one is that it actually charts Bernard's Loup.

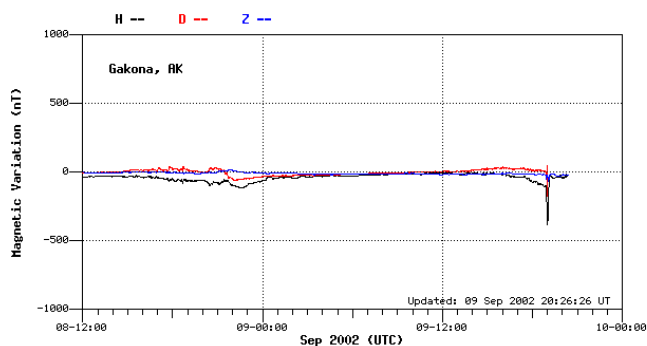
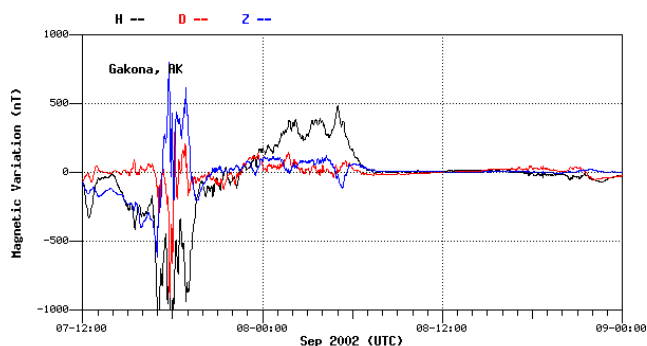
by Grant Dixon

Grant Dixon is a founding member of the HAA. You can find out more about his life and hobbies at: <http://home.cogeco.ca/~grant.dixon/index.htm>



HAARP Fluxgate

These plots are from the "HAARP Fluxgate Magnetometer" page at: <http://www.haarp.alaska.edu/haarp/mg.fcgi> Notice how easily one can discriminate between active periods and non-active!! The "Silent Lake" aurora was active for a few hours after Sep 8 at 0h UT.



Submitted by Doug Welch

SIDs *by Doug Welch*

An explanation of the SID plot for August 2002 (on the next page)

As you may know, I have been recording disturbances of the ionosphere due to solar flares since late spring of 2002. I use a loop antenna in my basement tuned to a VLF station with call letters NAA which broadcasts at 24.0 kHz. At night, there are large fluctuations in signal level due to all sorts of causes. However, once the sun starts illuminating the ionosphere, the signal strength changes smoothly - unless a solar flare occurs!

August got off to a spectacular start with an X-class flare on August 3rd at about 15:00 EDT. X-class flares are the strongest and rarest category. Many days had one or more C- or M-class flares. August 28th was very active with several C- and M-class flares - the ionosphere didn't have a chance to settle back down before the next one came along! On August 30th, another X-class flare occurred. The observant among you may note that these X-class flares took place about one solar rotation apart.

Other noticeable features on the plot are: large empty regions and square-bottomed drop-outs. The empty regions are when the voltage on my batteries dropped below that required to power the opamps OR when Windows decided to stop working for no good reason. The drop-outs typically occur during work hours on Mondays and are scheduled maintenance of the transmitters! Occasionally there are unusual dropouts due to unscheduled transmitter changes, such as the one on August 6th. Short vertical spikes can be due to lightning, but in the case of August 27th, it was due to the operation of a vacuum cleaner!

One of these days, everything will work for a whole month and I will be able to show you continuous traces!

by Doug Welch

