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Eclipse 2017

H O R I Z O N

LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
New Brunswick Centre du Nouveau-Brunswick
THE ROYAL ASTRONOMICAL SOCIETY OF CANADA



EXTRA! EXTRA! MOON ATTACKS SUN — LOSES AGAIN!



2017 Partial Eclipse

Paul Owen

This special edition of HORIZON is brought to you by the many RASC NB members, their families and associates who shared views of the partial solar eclipse at home or who travelled to witness totality in the USA.

We submitted eight outreach events, with a total of 1670 public participants, to the RASC website pertaining to the August 21 eclipse in the province, including events in Fredericton, Saint John, Moncton, Riverview, Keswick and Hanwell. Other non-RASC events were held at Science East in Fredericton and at Mount Allison University in Sackville.

The image at left was taken by Paul Owen at Rockwood Park in Saint John. Notice the stretch of sunspots. The leading active region appeared one week before eclipse day, and the second one rotated into view just two days before.

Rockwood Park, Saint John
Photos by Paul Owen



Capital City Eclipse Events **by Chris Weadick**

Fredericton area hosted four eclipse events. Leading up to the event we had only committed to assisting the University of New Brunswick Physics Department. Science East and the rural community of Hanwell had not shown any interest in the event as it was not a total eclipse. Because of the lack of news coverage and lack of hype there did not seem to be much interest until 2-3 weeks before the event. Then interest started to grow... exponentially.

We were challenged to find volunteers to assist in Fredericton but not from lack of interest; just that the eclipse timing was in prime vacation week and many of our usual volunteers were away eclipse hunting in the States. James Ayles offered to host a group from the downtown core, Science East was requesting assistance but we did not have enough volunteers, and I had committed my time to UNB since March.

We did not know how many people would travel to the university as the location was not finalized until the last

few days leading in to the weekend . It ended up being at the baseball field above the Aitken Centre - far away from residential areas and away from local businesses. James was at the parking garage downtown, and Detlef helped me out in Hanwell while I was at UNB with Chris LeMesurier.

In an attempt to estimate the number of participants, UNB chose to use a free ticket tracking site (EventBrite.ca - which we have used in the past to help estimate the number of volunteers needed and handouts required). UNB estimated that out of the 150 EventBrite tickets dispensed (online for free), approximately 75% of the people would show up.

Chris LeMesurier contacted me to ask if any assistance was needed for Monday. I had thought that it may be quiet at UNB and he could host that event and then I would relocate to Science East to assist. Around the same time Science East emailed and asked for more glasses and for assistance as they expected 400+ people to show up for the event, as well as CTV and CBC news services. This added more substance to the plan to help Chris LeM get started at UNB and then head to Science East; which never happened.



Photo by Chris Weadick

Being my first day back from 2 weeks vacation it was a busy day at work. I ended up getting a text from Alex Adair (UNB Physics) as I was late and rushing to the event with road construction in the way as well as slow drivers... and of course I had the telescopes and solar glasses. I could see a look of relief from the Physics Department as I pulled up at the event location, dropping off Tasha with the glasses to bring to the welcome desk while we

(Brooklynne and I) parked. Chris LeM sent one of his friends down to the parking lot, and Alex was pacing - waiting for my arrival. Thankful for the help as I have had significant issues with my back and was not certain about carrying the gear for two telescope set-ups and supplies across the field. Many thanks Chris LeM and friend for all the assistance!

The field was 1/4 full and people were arriving from all directions - they kept arriving even during and after the event. We had around 400 participants but it was challenging to get an accurate number as there were many stations available and many people were in the lines multiple times. UNB had crafted about a dozen versions of pin-hole cameras for the public to try out as well as their 6"scope with Baader filter. Hanwell Club (i.e. Brooklynne Weadick) donated her scope; a 90 mm refractor with Baader filter. I brought the RASC NB solar scope as no one in Fredericton has an H α solar scope. I should have bought one for the Venus transit as per my original plans!

We ran out of solar glasses, handing them out to groups of 4-6 people and even utilized the solar glasses from

the Sky News magazines we had for the Fredericton area. My daughters and two representatives from the Physics Department kept circling the field sharing our glasses with those in the line-ups for the telescope. Chris LeM helped by managing Brooklynne's telescope and one of the Physics staff assisted with the solar scope, after some initial training with Chris LeM in close proximity for any questions or issues.



Photo by Chris LeMesurier

I am grateful for the assistance of my daughters; not only for helping everyone out with the event but also for a reminder to keep looking up at the Sun. I was distracted trying to ensure everyone else was having a positive experience and I would have missed

the event without my daughters reminding me to have a look at the Moon's progress across the Sun. I never took the opportunity to look in the solar scope as I wanted others to see the difference of the filtered telescope and the glasses vs a H α telescope. Through the Baader filter I could see various sunspots while Chris LeM was doing a great job at trivia information about the eclipse for those waiting in line. I did make sure to observe the initial max and exit points of the event and various instances during the event. One of the benefits of a manual telescope is that you "have to" keep adjusting the view so it gives you an opportunity to have a look.

Last year Paul Owen was showing how well you can observe using a camera's "live view" feature of a DSLR before taking your picture. It is a neat way to offer public observing; they do not need to look in the eyepiece, they could look at the camera screen. I saw the CBC cameraman using his full size camera focussed on the Sun and it also had a "live view" screen on the body. They would film about 10 seconds of the Sun every couple of minutes and while the cover was off

the lens you could see a nice view of the eclipse on the view screen. I always wonder if the public cares about looking through the eyepiece vs looking at a live view screen, and just looking at a picture on a monitor. When does observing and searching out images online cross the line? It would certainly be easier to show the public the event on an LCD screen, either from a camera feed or streamed online, rather than explaining how to look in an eyepiece as well as what to look for. Perhaps both a live view and an eyepiece provide the best opportunity. Use the LCD to show what they will see in the eyepiece and point out features of interest, then let them observe through the eyepiece. This would also provide something to entertain those waiting in line for the eyepiece perspective.

The event at PNB was planned for 10-12 individuals and it too ended up being 4-5x the estimated number of participants as there were over 50 people in attendance. Science East has not provided their estimate at this time but they were likely overrun as per their anticipation as they are in the downtown core with various businesses.

The day before the eclipse Detlef Rudolf contacted me as there were individuals in Hanwell also wanting to participate, which is unexpected as there are limited businesses in the area and the eclipse was mid-afternoon of a workday so many parents would be at work.

Overall it was an overwhelming success with 4-5 times the number of expected participants. Based on the response in the States and the overwhelming response here with poor advertising, limited planning, and limited resources, I would anticipate 2024 will require more effort on the planning and preparation both from National as well as Centre / local considerations. An informal poll of the public confirmed everyone was blown away and pleased with the event. They did not realize what 50-60% coverage really means until they saw it. Many people asked for some sort of souvenir, especially for the kids who attended the events. Additionally, I know some of the Fredericton area folks hosted private events with family and friends, so many thanks to everyone who helped share the word and thanks to everyone at the events for all their efforts and support.

ORBIT

Around the Centre

What was your favourite part of the eclipse event?

Paul Owen: My favorite part of the eclipse was seeing all the people gathered together in harmony to witness one of our most amazing astronomical events...everyone excited like kids on Christmas morning....way better than CNN.

Curt Nason: Seeing a two-year old cutie sitting on the ground looking up at the Sun though my wrap-around eclipse glasses.

Mandy Bregg: My granddaughter (4 years old) says, "It looks like the mouse took a bite out of the cheese." The second memorable comment from where Emma and I were volunteering was "It looks like Pokémon." This was made by a four year old boy. I cannot wait for 2024 when the new crop will be around.

Also heard: "These astronomy events on warm, sunny afternoons are great. We should apply to have more eclipses in NB."

Resurgo Place, Moncton



***Above:** James Mosher snaps a souvenir for public viewers*

***Left:** A well-made indirect eclipse viewer made and photographed by Justin Misener*

***Right:** Resurgo Place staff, with Ted Gull at the end of the table*

***Upper Right:** Partial eclipse*

*Photos by **Emile Cormier** unless stated otherwise*



Resurgo Place, Moncton (continued)



Above Right and Left: Steven McCullough displays his set-up for indirect eclipse viewing through binoculars



Left: Yvon Hachey shows people where to look

Right: Ted projects the Sun's image through his 2-metre carpet tube pinhole camera on a single-arm Gull mount



***Meanwhile, at the Riverview Community Centre
Photos courtesy of Emma MacPhee***



Partial Eclipse Progression by van't Veld



*Emma and Mandy
The third blind mouse is on the previous page*



**Irving Nature Park
Saint John
by Jim Stewart**

The Solar Eclipse Day at Irving Nature Park was my first experience EVER using a solar filtered telescope in public. I was terrified. Terrified of frying my eyes, terrified of frying a young child's eyes, terrified of maiming or blinding an honest working man or woman for the rest of their life, depriving them of any livelihood. The only reason I had any confidence to go into it at all was observing the confidence of other dedicated backyard astronomers, people like me, who seemed to treat it as routine, albeit with some precautions.

My angst was totally unnecessary. Not only did I find it easier than I thought, but I was able to share 120 to 150 views through the my scope. At any given time there were at least 30 to 40 people lined up for a view, many of them passing through four times as the eclipse moved through its different stages. it was a wonderful thing to share with people.

Equipment wise, the I have to thank the Saint John Astronomy Club for

providing me with some Baader Solar Film, which I used to make a "Flowerpot Filter," which worked out very well. I cut the bottom off a rather stiff flowerpot that I had, secured and sealed the film with black electrical tape, inserted it into the dew shield of my 4" refractor, and sealed it again. This meant the solar film was protected from scratching and fingerprints, and best of all, the cover fit on the end making it great for handling and transport. I used another small piece to fit out a right angle finder scope.



The enthusiasm of the crowd was almost intoxicating. When I arrived at the event 40 minutes early there were already people waiting. By the time I got the equipment out of the van and began setting up there were at least

75 people gathered around, all wanting eclipse glasses. By the time Chris Curwin arrived (who had the glasses), he was mobbed. I looked over at one point and realized he couldn't even get set up, but couldn't help him because by this time there were already at least 30 people lined up at my rig, all wanting a view and the eclipse hadn't even started yet! Yes, we ran out of glasses.



*That's Jim and his shadow at left
Photo courtesy of Rosanna Armstrong*

The only real problem I encountered was there were so many people wanting to take pictures with their cell phones (most didn't even bother looking through the eyepiece) that it prevented others just wanting to have a peek, some of them their first look ever at the Sun. A lot of people had phones AND their kids had phones as well. It got so bad that as we were nearing the maximum eclipse point I had to step back from the line and announce "No more pics till we get everybody through. Everyone deserves a look."

Groans went out, most people complied, a couple pretended they didn't hear me. One woman in particular was trying to manipulate her phone when her other phone rang, so she was on the phone talking in one ear while trying to pic with her other phone. The look of exasperation on the guy behind her, who had been patiently waiting in line in the hot sunshine, was shared by myself and others.

But overall, a great experience. I was glad to have the opportunity to experience it.

Irving Nature Park, Saint John



Photos left and right courtesy of Rosanna Armstrong



Photos left and below by Jim Stewart



Irving Nature Park Recap

*Excerpt from a radio interview with Chris Curwin on
CHSJ Country 94.1 FM Radio*

'The most magical thing in nature you can see' is how a Saint John amateur astronomer describes the much-anticipated partial solar eclipse that we here in New Brunswick witnessed on Monday.

Chris Curwin runs the Facebook page *Astronomy By the Bay* and does what is called 'sidewalk astronomy' which involves taking your telescope and setting it up in public, urban locations to give people a chance to view the cosmos for free.

"To say we were overwhelmed, I would say that would be an understatement. It was a great day to be able to share everything," says Curwin. "We're living in a time when we have a very beautiful coincidence going on in our sky. The Moon is 400 times closer to us than the Sun, it's also 400 times smaller in diameter which means that the Sun and the Moon look the same size in our sky. So, the Moon has the ability every once in a while to totally cover the disc of the Sun and there's no more amazing display in nature as far as I'm concerned."

He says that even if it's a partial eclipse it's very special to see the Moon crossing the disc of the Sun. A live feed of the eclipse was done by Curwin which, when we spoke with him, had just over 30,000 views.

Through the Eyepiece in Salisbury Photos by Don Williams



*Left: Don prepares to image
the eclipse through the eyepiece*

*Clockwise from upper left:
First contact
40 minutes later
One hour later—sunspots gone
Mid-eclipse*



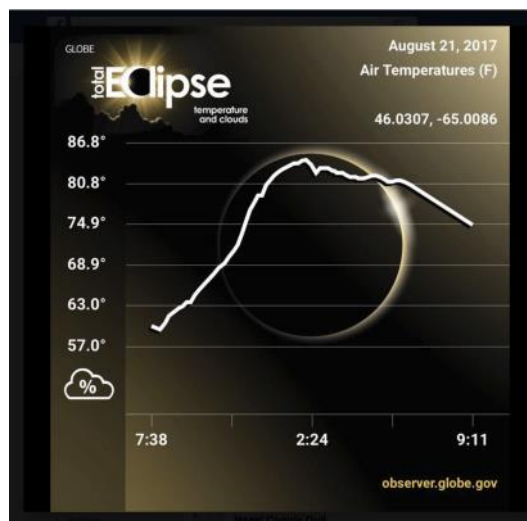
Elsewhere



I had a group of 8 people at my place to view the eclipse through various modes: telescopes, binocular and glasses. All age groups were represented including my 3.5 year old grandson. It was a good day with some light cloud cover but at no time were we unable to see the sun. Very awe inspiring. - **Greg Gilmore, Keswick**



Hook them early on astronomy. My grandkids watching the eclipse from the beach. - **Colette Fortier**



My wife, Hazel (Connie) Gull monitored the air temperature in Upper Coverdale across the eclipse in response to a crowd-sourcing request from observer.globe.gov. Attached is her plot (in Fahrenheit). There was some haze at the time. - **Ted Gull**

and elsewhen

This is not from our recent eclipse, but it is the earliest one I remember – March 7, 1970 – and the shot was taken (probably with an Instamatic, hence the poor focus) with the help of my grandfather's ancient 1800's-something telescope which you see the shadow of. - **Don MacPhail**



Chasing Totality



Don Kelly (in orange) and his daughter Rebecca (Calgary) took in 2 minutes, 14 seconds of totality at the edge of the Craters of the Moon National Park near Rexburg, Idaho. They were armed with 15x70 binoculars with Baader film filters. Above, Rebecca views totality without the filters, and captured the Sun's corona at upper right. They camped at Yellowstone after totality but it took five hours to drive the 50 km to get there (below left). Photos submitted by Don Kelly.



Right: Coincidentally, Mary King with her brother Greg (Calgary Centre), his son Patrick and their nephew Mark Trevor (front) took in the total eclipse at Rexburg,



Chasing Totality (continued)



Eight Frame Totality Sequence by Richard Haché

ISO 100, F2.8, 1/40 s exposure for all, except the first one the last one which were at 1/800 s. Taken from Georgetown South Carolina between 14:46 and 14:48 local time. No processing. Camera: Olympus Stylus 1S 510 mm F2.8. no filter. Some may be a little overexposed, I had to fight the clouds.

Reflection and a Look Ahead - Curt Nason, Editor

This was the most successful outreach event in the 17-year existence of our Centre. The local media were very much involved with promoting the event, including interviews with Centre members for newspapers, radio and television. Also, television crews were on-site at some locations during the eclipse. Our social media savvies also played a big role in publicising our events. Thank you all.

We are all aware of the total eclipse running through central New Brunswick on April 8, 2024; from McAdam to north of Moncton, and north of Grand Falls to south of Bathurst. The 2020s is Eclipse Decade for NBers, as we also get partial eclipses on 10 June 2021 (80%), 14 October 2023 (20%), 12 August 2026 (40%), 26 January 2028 (10%) and 14 January 2029 (50%). The shadow knows.



*The Diamond Ring and a prominence captured by **George Gull** in Wyoming. Submitted by Ted Gull.*