



Solar Eclipse Watch MTL

August 21, 2017 • McGill University

On August 21, 2017 a solar eclipse was visible from all of North America. The path of the total eclipse traveled across the United States, from Oregon to South Carolina. Observers in Canada were able to see a partial eclipse (from about 90 percent covered in Vancouver to about 20 percent in the Arctic). In Montreal, we saw a 58% eclipse.

What is a Solar eclipse?

A solar eclipse occurs when the Moon casts its shadow on the Earth, blocking the Sun. This happens because of a remarkable coincidence — while the diameter of the Sun is about 400 times that of the Moon, the Moon is about 400 times closer to the Earth. This means that, to people on Earth, the Sun and the Moon appear to be approximately the same size (about 0.5 degrees or half the width of your pinky finger held at arm's length).

The Moon casts two shadows on the Earth — a smaller, darker shadow, known as the umbra and the larger shadow known as the penumbra. Observers in the umbra see a total eclipse. Observers in the penumbra see a partial eclipse. For the August 2017 Eclipse, Canada fell into the Moon's penumbra.

Eclipse Glasses

AstroMcGill had 11,050 custom eclipse glasses custom printed by Rainbow Symphony, a leading US-manufacturer of eclipse glasses.

In addition to distributing the glasses to attendees of summer AstroMcGill events, we worked with the McGill Social Equity and Diversity Education (SEDE) Office to distribute eclipse glasses to community organizations in the Montreal area.



Of those eclipse glasses we ordered:

- Over 7,600 pairs were distributed at the Eclipse Watch MTL event.
- About 1,850 pairs of glasses were given to attendees of AstroMcGill events, including AstroNight lectures, Astronomy on Tap pub nights and sidewalk observing sessions on the McGill campus.
- About 100 pairs were mailed to Members of Parliament from the Montreal Island and surrounding areas.
- About 1,500 pairs were given to various groups involved in education and community outreach, including:

◇ **Summer Camps:**

- NDG YMCA Day Camp
- Brila
- FSSTT's Camp Venture
- Centre Communid e
- Cirque du Soliel

◇ **Education Groups:**

- Nook Homeschoolers' Centre
- Several small homeschooling groups
- Earth Song, nature programmes for children

◇ **Community Organizations:**

- Baobab familial
- Centre St-antoine 50+
- Tyndale St-Georges Community Centre
- Head & Hands, a youth outreach group
- DESTA Black Youth Network
- Aids Community Care Montreal

◇ **Groups Involved in Science Promotion:**

- Dorval Astronomy Club
- NSERC
- McGill Bioengineering Undergraduate Student Society
- McGill Science Undergraduate Society
- Universit  de Montr al



AstroNight Lecture

On 17 August, 2017, Dr. Kelly Lepo gave an AstroNight public lecture titled “Everything you Need to Know about the Great North American Solar Eclipse.” The event attracted over 350 people to the McIntyre Medical building. Another 900 people watched online via a live stream (and archive) of the event on Facebook Live. Dr. Lepo discussed the science and history of solar eclipses and reviewed ways to safely observe the eclipse. Volunteers were also on hand to distribute eclipse glasses before and after the lecture.

Eclipse watching event at McGill

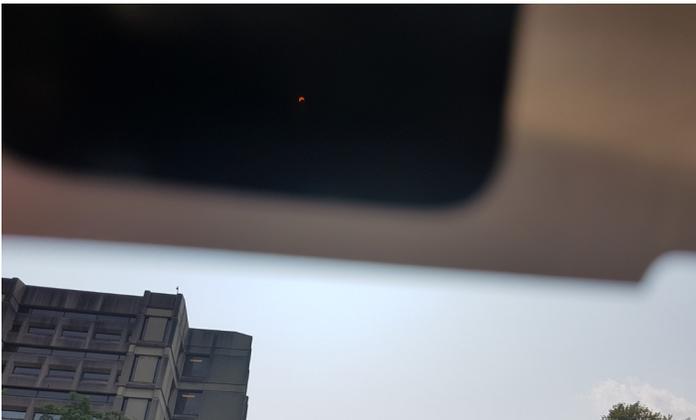
AstroMcGill began planning Solar Eclipse Watch MTL — an eclipse-watching party on the Lower Field of the McGill Campus -- in September, 2016.

Before the event, about 19,500 people expressed interest in the event on Facebook. We had 2,100 people reserve eclipse glasses before the eclipse with another 900 people filling the waitlist to capacity. We also had an additional 5500 eclipse glasses available on a first-come, first-served basis for people without reservations.

In addition to the free eclipse glasses, we also had solar telescopes (three Sunspotters and two H-alpha telescopes) available to observe the sun, hands on activities (including pinhole viewers, demonstrations of eclipse geometry and a scale model of the Earth/Moon/Sun system) as well as a live stream of the total eclipse.

The weather that afternoon was ideal for observing the Sun — 28 degrees and sunny. No clouds covered the Sun during the entire two and a half hours of the eclipse. The lower field began filling up as our first shift of volunteers arrived at 11:00 am.





The crowd was large and diverse: families with young children, the elderly, people from nearby offices in full business suits, McGill students in T-shirts and sandals, tourists visiting Montreal for the first time, as well as McGill researchers and staff members. We estimate somewhere between 8,000 - 9,000 people stayed for at least part of the eclipse that afternoon.

Shortly after 1:30 pm, when the eclipse had just begun, the line for eclipse glasses snaked down the lower field to the Roddick gates and into Sherbrook street. At this point we ran out of eclipse glasses. We decided to release the remaining 1,200 eclipse glasses that were reserved, but not picked up, at 2:30pm (just before the maximum partial eclipse).

To maximize the number of people who were able to view the eclipse, we gave out one pair of eclipse glasses per group -- encouraging people to share them with as many people as possible. Although there were not quite enough eclipse glasses to go around, the relaxed positive mood of the attendees created a sense of community. Strangers shared glasses and took photos of each other. At 2:38, the point of maximum eclipse, spontaneous applause broke out in the gathered crowd.

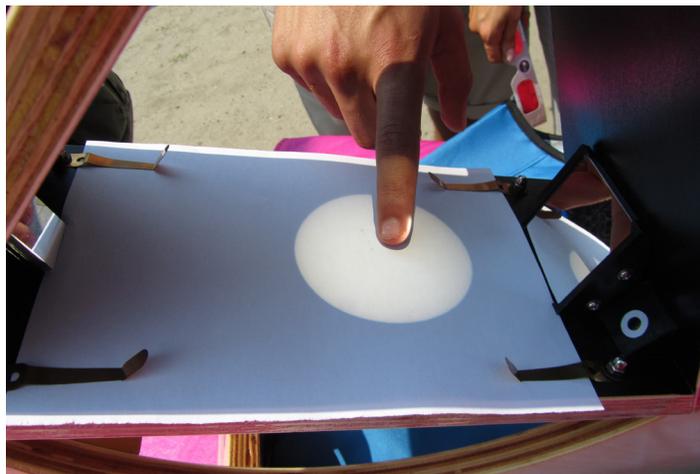
After the maximum point, the crowd, hot from sitting in the full sun, began to slowly disperse, with a much smaller number staying until 3:50pm to see the last sliver of the Moon leave the Sun's disk.

Almost 50 volunteers helped us share the eclipse with the McGill and Montreal community. While our volunteers

came primarily from the McGill Space Institute and the McGill Department of physics, we also drew volunteers from other STEM fields at McGill as well as a few enthusiastic students from Concordia.

Eclipse Glasses for Astronomers without Borders

After the event, AstroMcGill began an initiative to collect gently used eclipse glasses to send to the non-profit organization Astronomers without Borders. These glasses will be collected from many locations across North America, and then redistributed to children in developing countries in Asia and South America for eclipses in 2019.



Media Coverage

Outlet	Format	Interviewee	Date	
Montreal Gazette	Print (local)	Kelly Lepo	10 Aug 2017	http://montrealgazette.com/news/local-news/solar-eclipse-where-to-watch-in-montreal-and-how-to-stay-safe
Global News	TV (national)	Kelly Lepo	15 Aug 2017	http://globalnews.ca/news/3672485/how-you-and-your-kids-can-enjoy-the-solar-eclipse-safely/
CTV News	TV (local)	Kelly Lepo	17 Aug 2017	
CJAD 800	Radio (local)	Kelly Lepo	18 Aug 2017	http://www.iheartradio.ca/cjad/kelly-lepo-discusses-the-upcoming-eclipse-with-andrew-carter-august-18-1.3127799
CBC Radio Noon	Radio (local)	Kelly Lepo	18 Aug 2017	
Global News Morning	TV (local)	Emilie Parent	18 Aug 2017	
CTV News	TV (local)	Kelly Lepo	20 Aug 2017	http://montreal.ctvnews.ca/respecting-your-retinas-how-to-safely-view-a-solar-eclipse-1.3554082
CBC Daybreak	Radio (local)	Kelly Lepo, Emilie Parent	21 Aug 2017	
CBC News	TV (local)	Kelly Lepo	21 Aug 2017	http://www.cbc.ca/news/canada/montreal/solar-eclipse-viewing-in-montreal-1.4255160
CTV News	TV (local)	Kelly Lepo, Vicky Kaspi	21 Aug 2017	http://montreal.ctvnews.ca/montrealers-gaze-upon-solar-eclipse-1.3555248
McGill Reporter	Print (internal)		21 Aug 2017	http://publications.mcgill.ca/reporter/2017/08/thousands-gather-on-lower-campus-for-solar-eclipse/

Support for Solar Eclipse Watch MTL

AstroMcGill received support from McGill's Communications and External Relations units, as well as the McGill Canada 150 and Montreal 375 anniversary committee to create "an event to celebrate the power of science, and astronomy in particular, to bring the people of Montréal and the McGill University community together during the anniversary celebrations of Montréal and Canada."

Solar Eclipse Watch MTL was also supported by generous donations from Senator Leo and Mrs. Roni Kolber and the Lorne Trottier Chair in Astrophysics and Cosmology.

