

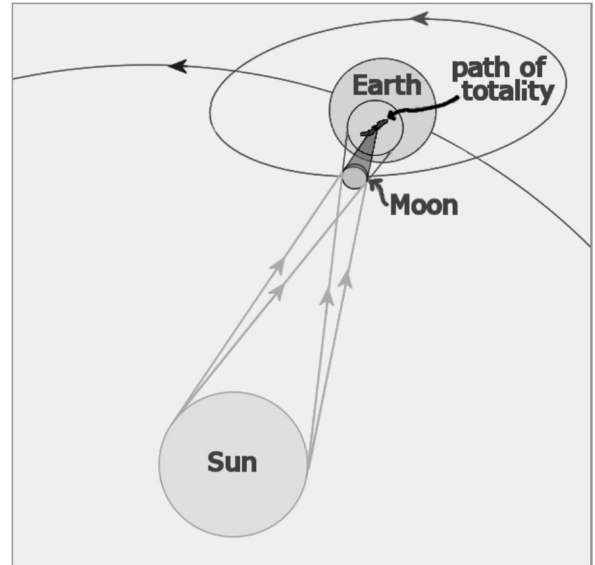
## ☼ Total Solar Eclipse of April 2024 ☼

●● As Earth moves around the Sun, and the Moon moves around Earth, sometimes the moon passes in front of the sun. This event is called a “SOLAR ECLIPSE”.

●● If the moon completely covers the sun, as it is passing in front of it, this event is called a “TOTAL SOLAR ECLIPSE”. The time during which the sun is completely covered is called “TOTALITY”.

●● When a Total Solar Eclipse occurs, only a small area on Earth, in the shape of a narrow strip (see diagram on the right), gets to experience it. This narrow strip is called the “PATH OF TOTALITY”.

●● On the day of a Total Solar Eclipse, as the moon starts to cover the sun, observers first experience a “partial solar eclipse”. Then, when the moon covers the entire sun, the eclipse becomes total.



●● **TOTALITY duration:** In the middle of the Path of Totality (see MAP below on the left), totality lasts  $\approx 3.5$  minutes. Montreal is near the edge of the Path of Totality, so totality in Montreal lasts less.

●● **TOTALITY direction:** During totality, the sun will be in the South West direction (closer to West), at  $\approx 40^\circ$  above the horizon. Look also for bright planet Venus which will be visible below and to the right of the sun during totality.

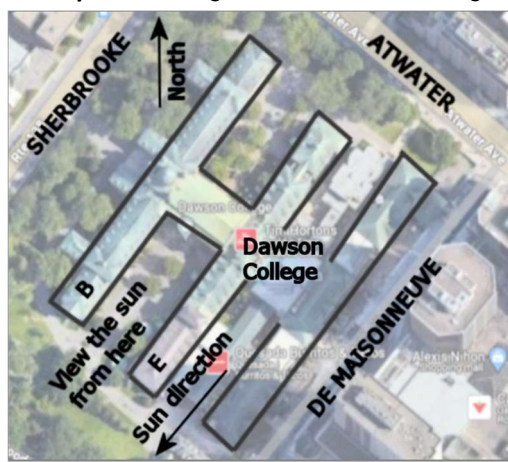
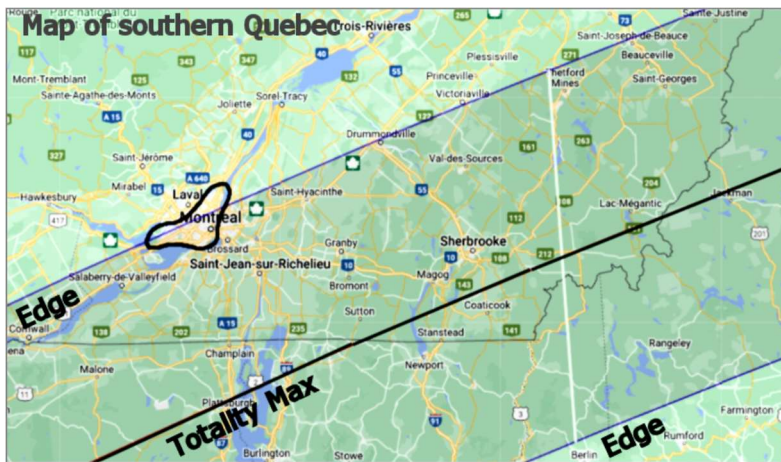
At the intersection of Atwater and de Maisonneuve:  
The partial eclipse starts at  $\approx$  at 2:14 PM (EDT)  
Totality starts at  $\approx$  3:26:50 PM (EDT)  
Totality ends at  $\approx$  3:28:10 PM (EDT)  
The partial eclipse ends at  $\approx$  at 4:38 PM (EDT)

●● **!! EYE SAFETY !!** : Except during the brief totality, it is NOT safe for the eyes to look directly at the Sun without specialized eye protection for solar viewing. Normal sunglasses are NOT safe to use, no matter how dark they are. You must either use specialized “eclipse glasses” (ISO 12312-2), obtained from a reliable vendor, or look through a Shade-14 welding glass. You’ll know it’s safe to remove the eclipse glasses when you can no longer see any part of the Sun through the glasses. As soon as you see even a little bit of the bright Sun reappear, put the glasses back on.

●● **!! EYE SAFETY !!** : Do not use eclipse glasses with telescopes, binoculars, and DSLR cameras (DSLR cameras allow you to see what the lens sees). Those optical instruments concentrate sunlight, and require different types of specialized solar filters. Eclipse glasses do NOT provide enough protection when looking through these instruments. More info about eye safety here: [https:// science.nasa.gov/eclipses/safety/](https://science.nasa.gov/eclipses/safety/)

●● **Eclipse Photography (with solar filter)** : The best camera settings are: maximum aperture, long exposure, long focal length. You can also lookup online instructions for how to build a simple pinhole camera.

●● **MAPS:** Map on the left: Southern Quebec. Map on the right: Eclipse viewing from Dawson College.



Eclipse info compiled by R.D. (Physics, Dawson College)

●● On Earth, on average, one Total Solar Eclipse occurs each year. But since the Path of Totality is very narrow, each total eclipse is experienced by a very small fraction of Earth’s inhabitants.

●● On Earth, each individual city-sized location experiences a Total Solar Eclipse only once every several centuries. Enjoy the rare cosmic!