# ’It is a complete sensory experience’: Professor and astronomer sheds light on total solar eclipse

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Image: Total solar eclipse from Egypt, photographed by Paul Mortfield, 2006.

All eyes turn skyward in anticipation of the upcoming solar eclipse on Monday.

“It is a complete sensory experience,” says Seneca professor, astronomer and occasional eclipse-chaser, Paul Mortfield, who will experience a total eclipse for the fifth time, but the first from right here at home. “This is going to be a major astronomical event. You want to look at the sun, and you want to do so safely.”

Solar eclipses happen when the moon moves directly between the Earth and the sun, creating a shadow that briefly transforms day into night. While captivating to witness, looking directly at the sun without proper eye protection can cause severe eye damage or loss of eyesight — the reason behind why many school boards across Ontario are closing or opting for early dismissal.

While Seneca campuses will remain open on Monday, give yourself a bit more time for commuting and note that during the eclipse, campus shuttles might be delayed due to increased traffic.

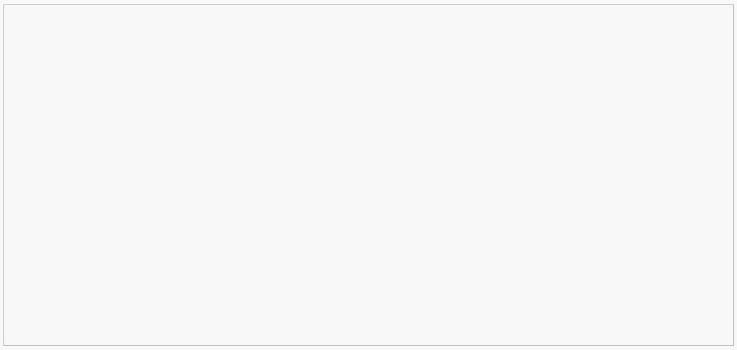

Image: Partial solar eclipse from Toronto, photographed by Paul Mortfield, 2017.

According to Mr. Mortfield, the GTA will experience a 99 per cent eclipse. Direct observation of any solar eclipse is considered unsafe unless the sun is 100 per cent covered.

Here, Mr. Mortfield sheds light on what you'll experience during the eclipse, the best ways to

take it in and how to do so safely.

- The entire eclipse will span from approximately 2:05 to 4:30 p.m. At the peak of the eclipse in Toronto and other areas outside the path of totality, only a tiny sliver of the sun will remain visible as the moon slowly passes over it.
- This interactive map determines the total eclipse time based on your location. The closer you are to the centre line of the eclipse path, the longer you'll experience this rare cosmic event.
- If you have eclipse glasses, check to ensure they have the ISO 12312-2 label and that they are on the list of safe eclipse glasses vendors.
- Venturing into the path of totality — where the moon completely obscures the sun — offers a unique experience. Around 3:18 p.m., regardless of weather conditions, you'll encounter several moments of darkness.
- During the partial eclipse phases before and after totality, avoid looking directly at the sun. Instead, use a pinhole viewer or special filters to protect your eyes. Only during totality, when the sun is entirely covered by the moon, is it safe to gaze upward.
- As totality approaches, the temperature will drop nearly five degrees, birds often become silent and the wind typically calms down. If the sky is clear, you'll witness the coronal streamers stretching more than 500,000 km on either side. You'll also be able to spot bright Venus to the right and Jupiter to the left.
- If you plan on capturing still photographs, you'll gain best results by disabling your flash. Otherwise, consider shooting video. For those capturing imagery with long lenses, set your lens aperture to its widest, manually focus on the sun and experiment with exposures from 1/250 to two seconds to capture a wide variety of images. Remember: Just as your eyes need to be protected, camera lenses must also have an appropriate filter.

Those who are unable to witness the eclipse in person can watch a livestream as an immersive alternative.

In Toronto, this eclipse is an extremely rare occurrence. In 2017, the partial eclipse reached a maximum of 70 per cent coverage. Ontario last witnessed a total eclipse in 1979, while Toronto experienced one almost a century ago, in 1925. Looking ahead, an eclipse in 2099 will once again reach 99 per cent coverage, but the next total eclipse in Toronto won't happen until 2144.

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