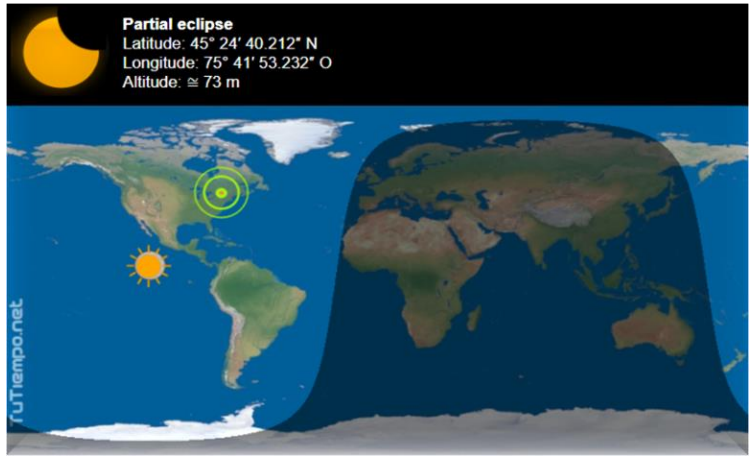
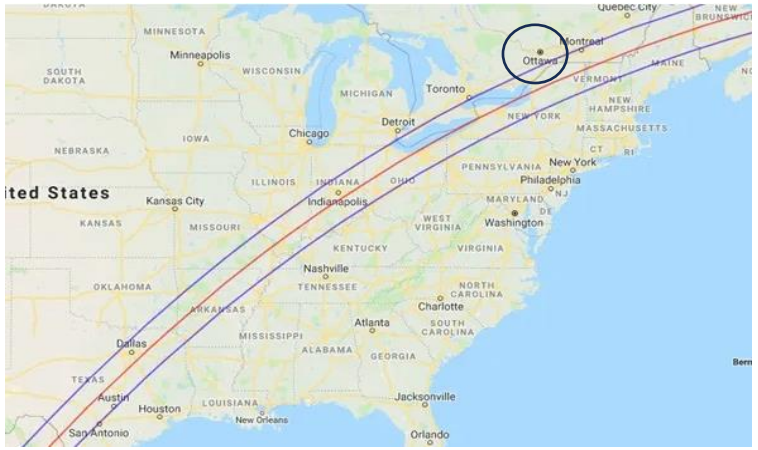
Solar Eclipse & Eye Safety

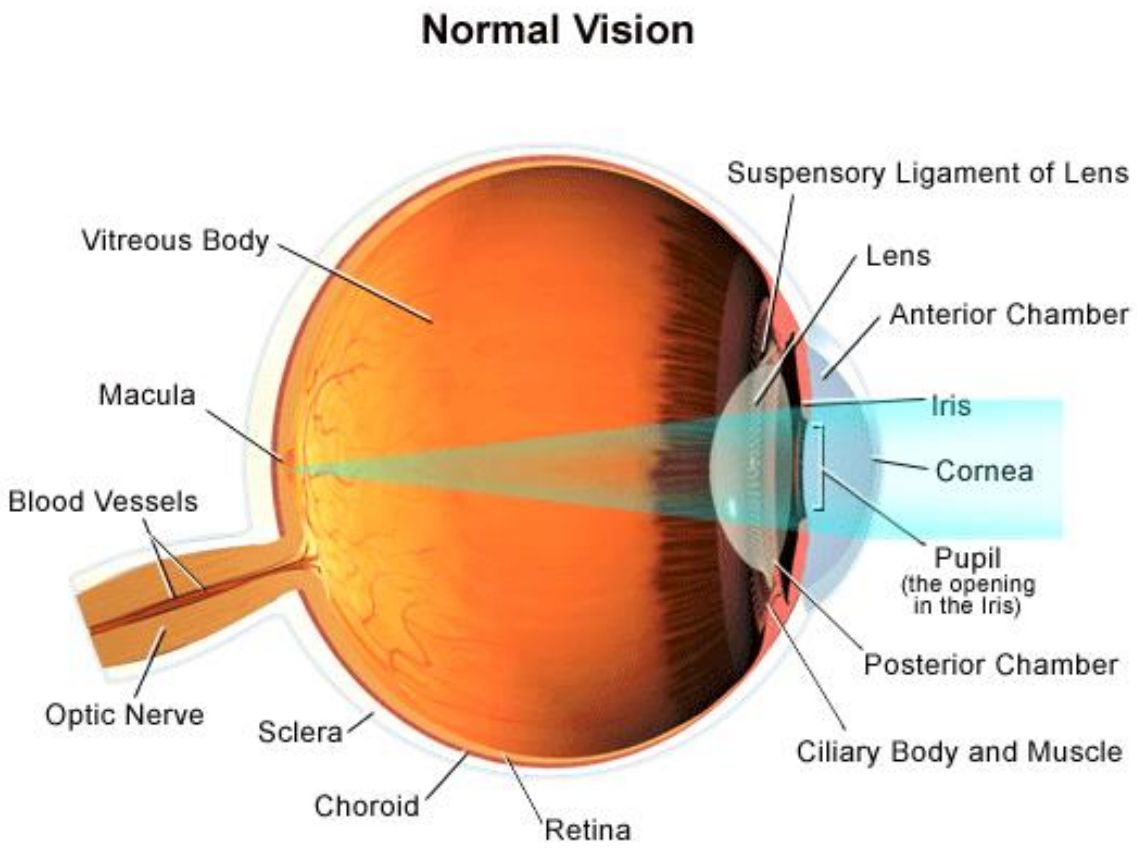
Local Type:	Partial Solar Eclipse in Ottawa, Ontario
Begins:	Mon, Apr 8, 2024 at 2:11 pm
Maximum:	Mon, Apr 8, 2024 at 3:25 pm 0.985 Magnitude
Ends:	Mon, Apr 8, 2024 at 4:35 pm
Duration:	2 hours, 23 minutes





A solar eclipse is expected in North America on April 8th, 2024, with a total and partial eclipse expected in parts of Eastern Canada. Ottawa lies very close to the path of totality and is expected to witness a deep darkening of the sky and edge effect. The total light intensity decreases during a solar eclipse, but ultraviolet (UV) and infrared (IR) radiation will still reach the earth's surface.

If the eclipse is viewed directly without appropriate eye protection, the resulting radiation exposure can damage the retina of the eye. This can lead to visual impairment.



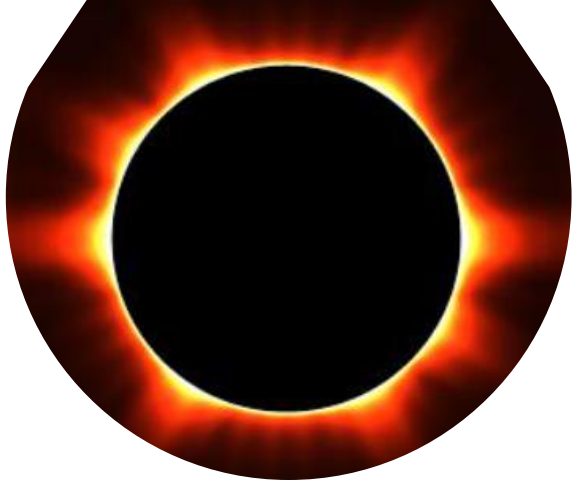
How does radiation damage the eye during a solar eclipse?

- The eye acts as a camera and the pupil of the eye acts as an aperture controlling the amount of light entering the eye.
- During daytime, the pupils constrict to limit the amount of light and hence, the amount of radiation entering the eyes and reaching the retina.
- During a partial solar eclipse, the sun is partially covered by the moon causing the light intensity to decrease but still emitting UV and IR radiation. The reduced light intensity causes the pupils to dilate allowing more UV and IR radiation to enter the eyes.
- This radiation exposure causes photochemical and thermal damage to the retina, potentially resulting in visual impairment. This can range from blind spots to a complete loss of vision, termed “eclipse blindness” from solar retinopathy. Further contributing to the risk is that the retina has no pain receptors, and an injury may go undetected for hours after exposure.

How to protect your eyes during a solar eclipse?

- DO NOT look at the sun directly. Regular sunglasses do not provide sufficient protection from UV and IR radiation while looking at the sun.
- If you will be outdoors during the eclipse, never look up and wear a hat with a visor to avoid unintentional viewing of the eclipse.
- To observe the eclipse safely, you must wear eye protection that meets ISO-12312-2 standard. This includes eclipse glasses and eclipse handheld viewers.
- Or observe the solar eclipse online **NASA/Exploratorium livestream**
- Sources to acquire appropriate eye protection:
  - Solar Eclipse Glasses 04.08.2024 - Made In Canada Gifts
  - Eclipse Glasses Canada - Ingenium Boutique (ingeniumcanada.org)
  - Celestron EclipSmart Solar Eclipse Glasses - 44400 (telescopescanada.ca)
  - The Canadian Aviation and Space Museum and The Canada Science and Technology Museum

How to use solar eclipse glasses safely?



While you should only wear ISO-12312-2 rated eclipse glasses, these are exceptionally dark!

Do's

- Stop and look for an area where you can safely stand or sit to observe the solar eclipse.
- Before looking up, don your solar eclipse glasses.
- When removing the solar eclipse glasses, flex your head down, close your eyes, take off the glasses and stay in place until your visual acuity is restored.

Don'ts

- Do not look up without the solar eclipse glasses.
- Do not walk or drive with the solar eclipse glasses on.

Other Points to Consider

- Sunglasses, smoked glass, filters, camera lenses, binoculars, telescopes or films do not protect your eyes from radiation.
- Do not look at the solar eclipse through a camera lens, binoculars, telescopes or any other optical device while wearing eclipse glasses or using a handheld solar viewer. The concentrated rays will burn through the filter and damage your eyes.
- Do not look up without solar eclipse glasses to take photos with your phone. This will damage your eyes and the infrared heat can damage your phone.
- The solar eclipse glasses remain useable as long as the lens is not damaged or scratched.