

Astronomy News

KW RASC FRIDAY APRIL 9TH
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First look at the 2024 total solar eclipse

- ▶ <https://astronomy.com/news/2021/04/first-look-at-the-2024-total-solar-eclipse>
- ▶ Exactly three years from now, on April 8, 2024, millions of Americans will witness the Moon entirely blot out the Sun, providing one of the most mesmerizing sights a person can witness.
- ▶ On August 21, 2017, millions who live in or traveled to the United States witnessed a spectacular event — the first total solar eclipse in the continental U.S. in 38 years. The narrow path of totality on American soil started in Oregon and ended in South Carolina, captivating all of those fortunate enough to witness it. But after the excitement of the Great American Eclipse died down, every viewer was left with just one question: “When is the next one?”
- ▶ The answer, happily, is April 8, 2024. That’s when the next total solar eclipse will cross the United States (and Canada) . And although six years and seven months (plus 19 days) sounds like a long time since August 21, 2017, it’s much shorter than the average time between two eclipses appearing at a given location on Earth (330 years in the Northern Hemisphere and 550 years south of the equator).



United States

Bermu



Snapshot: Chandra discovers X-rays from Uranus

- ▶ <https://astronomy.com/news/2021/04/chandra-discovers-x-rays-from-uranus>
- ▶ Located in the outer reaches of the solar system, Uranus is a strange planet. Only one spacecraft — Voyager 2 — has ever visited, so astronomers know relatively little about the distant world. Already the odd one out by spinning on its side, now Uranus has revealed another strange feature: It's emitting X-rays, and astronomers aren't sure why.
- ▶ Astronomers recently took a new look at observations of Uranus made by the Chandra X-ray Observatory in 2002 and 2017. Both showed X-rays coming from the seventh planet from the Sun. The image above shows X-rays detected in 2002 in pink on a visible-light image (blue and white) of the planet.
- ▶ Researchers believe what's happening at Uranus is something that happens at Jupiter and Saturn as well. Uranus' atmosphere may simply be scattering X-rays from the Sun, rather than producing the light itself. But another possibility is that the rings are producing the X-rays, much like the rings of Saturn. Still other scientists speculate the X-rays could come from aurorae on Uranus.



These giant mirrors will help astronomers see to the edges of the universe

- ▶ <https://astronomy.com/news/2021/03/these-giant-mirrors-will-help-astronomers-see-to-the-edges-of-the-universe>
- ▶ When completed, the Giant Magellan Telescope being built in Chile's Atacama Desert will gather images of the universe that are 10 times sharper than those produced by the Hubble Space Telescope. It will snap photos of distant planets and search them for signs of life, reveal the masses and compositions of infant galaxies and analyze how stars are born and die.
- ▶ At around 13 stories tall, and weighing around 14 million pounds, including the supporting structure, the GMT will be part of a new generation of "extremely large telescopes" that astronomers believe will bestow new insights into the unsolved mysteries of the universe. Constructing such a behemoth is a feat of engineering. This month, workers began casting the sixth of the seven enormous mirrors that will be arrayed in a flower shape to form the telescope's primary light-gathering surface.



SpaceX's latest Starship prototype, SN11, explodes in midair

- ▶ <https://astronomy.com/news/2021/03/watch-spacexs-latest-starship-prototype-sn11-explodes-in-midair>
- ▶ SpaceX fans following the story of the Starship spacecraft are used to seeing the company's prototypes explode. And lately, it's been happening at the very end of Starship's high-altitude tests. But today, the latest Starship prototype, SN11, didn't even get to attempt a landing. Instead, it exploded in midair after reaching peak altitude and carrying out its famed bellyflop maneuver.
- ▶ SN11 took off at around 8 A.M. local time on Tuesday, March 30, pushing through heavy fog as it ascended above Boca Chica, Texas. Between camera issues and the fog, it was nearly impossible to see what was happening as SN11 approached its intended peak altitude of 6 miles (10 kilometers).
- ▶ As the rocket approached the landing site and the engines attempted to reignite, the onboard feed once again froze. Seconds later, ground cameras at the landing site captured debris raining from the sky.



Mars Perseverance Sol 39: WATSON Camera

- ▶ This photo was selected by public vote and featured as "Image of the Week" for Week 7 (Mar. 28 - Apr. 03, 2021) of the Perseverance rover mission on Mars.
- ▶ NASA's Mars Perseverance rover acquired this image using its SHERLOC WATSON camera, located on the turret at the end of the rover's robotic arm.
- ▶ This image was acquired on Mar. 30, 2021 (Sol 39) at the local mean solar time of 14:16:49.



Mars Perseverance Sol 43: Rear Left Hazard Avoidance Camera (Hazcam)

- ▶ NASA's Mars Perseverance rover acquired this image of the area in back of it using its onboard Rear Left Hazard Avoidance Camera.
- ▶ This image was acquired on Apr. 4, 2021 (Sol 43) at the local mean solar time of 15:14:28.
- ▶ Image Credit: NASA/JPL-Caltech

NASA's Mars Helicopter Survives First Cold Martian Night on Its Own

- ▶ <https://mars.nasa.gov/news/8906/nasas-mars-helicopter-survives-first-cold-martian-night-on-its-own/>
- ▶ NASA's Ingenuity Mars Helicopter has emerged from its first night on the surface of Mars.
- ▶ Evening temperatures at Jezero Crater can plunge as low as minus 130 degrees Fahrenheit (minus 90 degrees Celsius), which can freeze and crack unprotected electrical components and damage the onboard batteries required for flight. Surviving that first night after being deployed from where it was attached to the belly of NASA's Perseverance rover on April 3 is a major milestone for the 4-pound (1.8 kilograms) rotorcraft. In the days to come, Ingenuity will be the first aircraft to attempt powered, controlled flight on another planet.
- ▶ https://www.youtube.com/watch?v=9C_lyUdKKXI

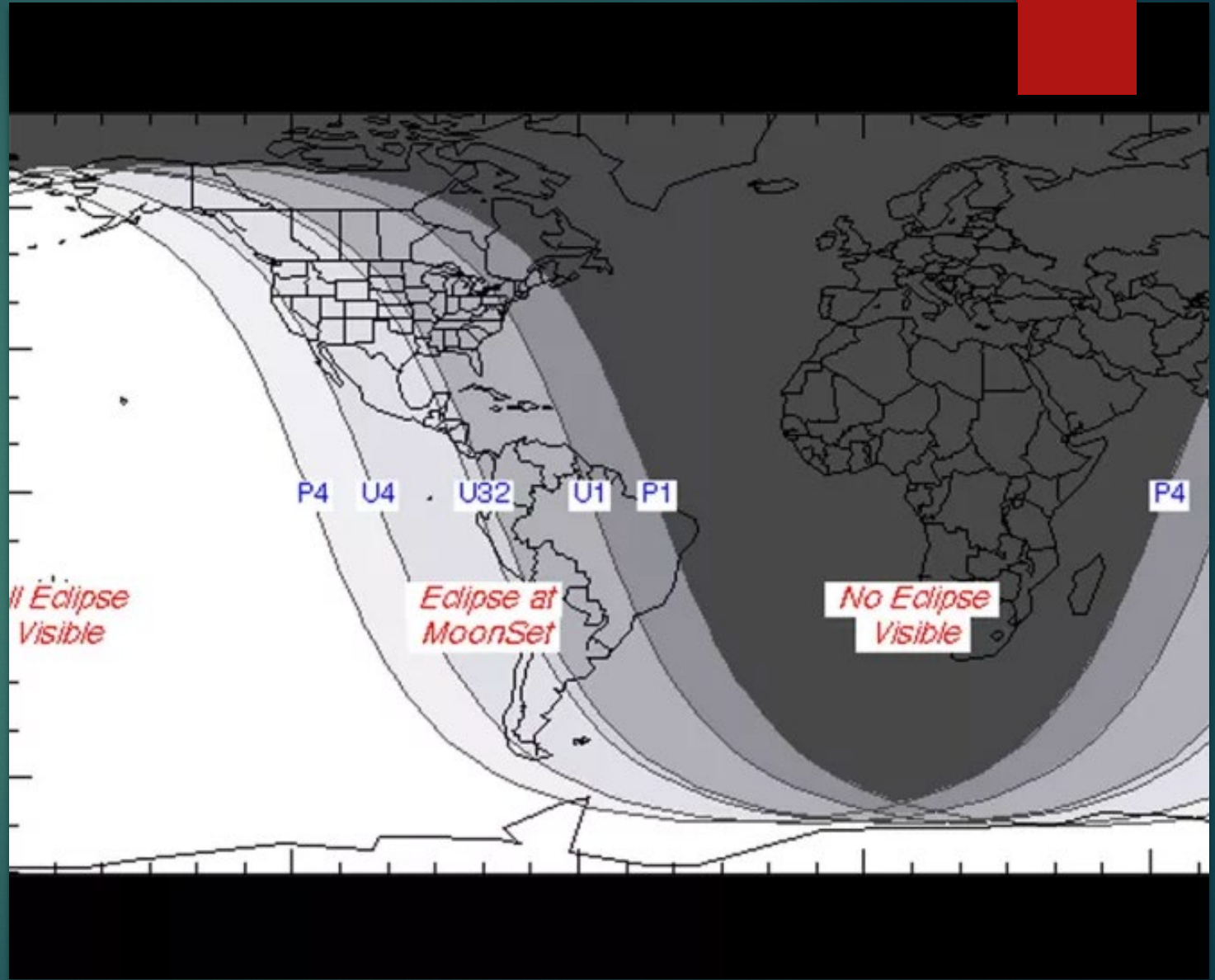
Discover the Night: International Dark Sky Week is Here!

- ▶ Light pollution is insidious in today's world. This International Dark Sky Week, become inspired to see what you can do to raise awareness.
- ▶ <https://skyandtelescope.org/get-involved/saving-dark-skies/discover-the-night-international-dark-sky-week-is-here/>



Total Lunar Eclipse

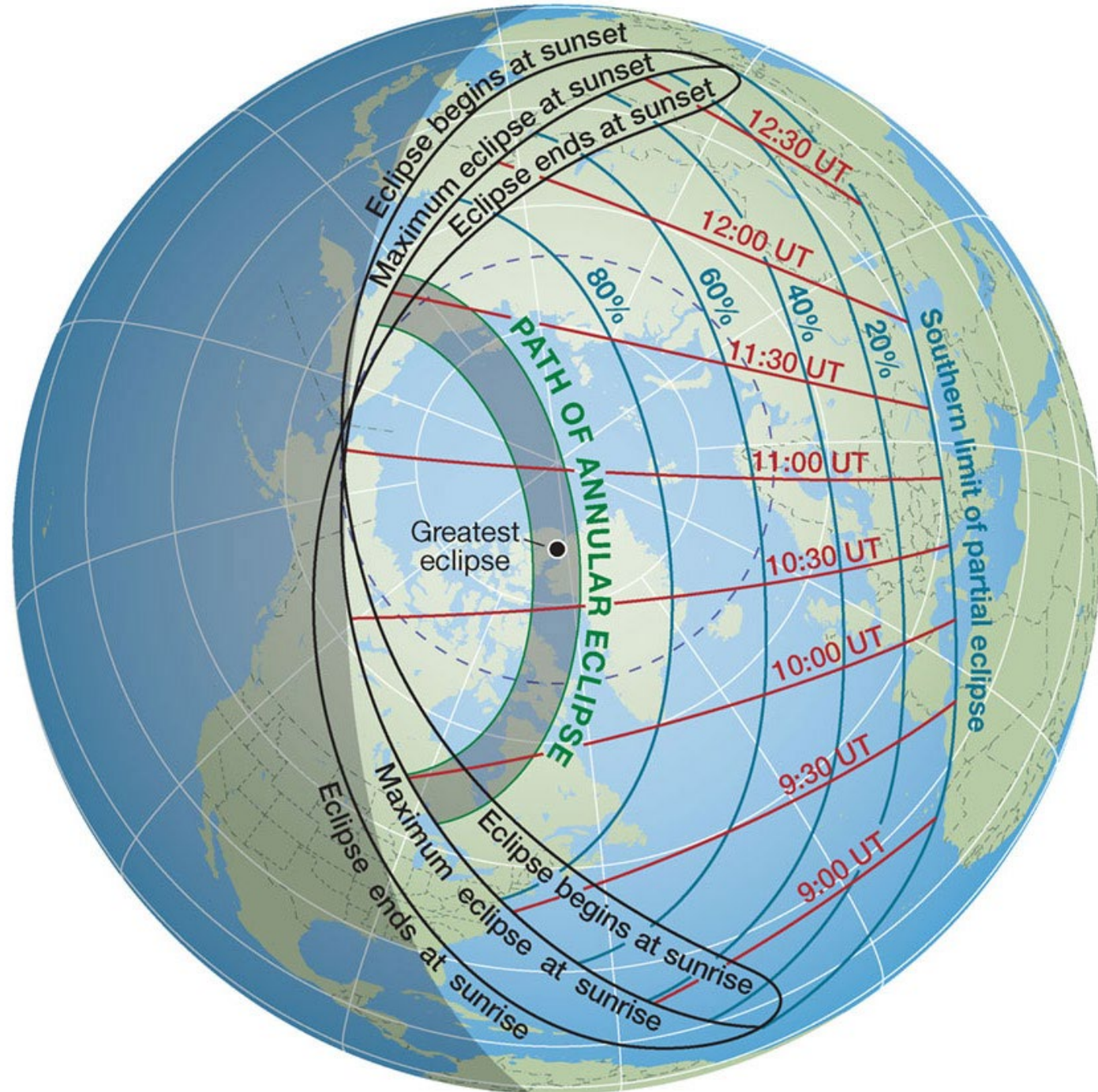
- ▶ The next total lunar eclipse, or "blood moon," will occur May 26, 2021, and it will be at least partially visible from eastern Asia, Australia, the Pacific Ocean and much of the Americas.
- ▶ <https://www.space.com/15689-lunar-eclipses.html>



Annular Solar Eclipse

- ▶ June 10th's annular eclipse of the Sun has a path that crosses southern Canada and the North Pole but will be a challenge to see.
- ▶ <https://skyandtelescope.org/astronomy-news/first-look-at-2021s-annular-eclipse/>






ONTARIO

49° 43' 30.51" N <-> 49.72514° 3m 14.1s (annular solar eclipse)
 86° 56' 58.26" W <-> -86.94952° 3m 10.3s (lunar limb corrected) [Help](#)

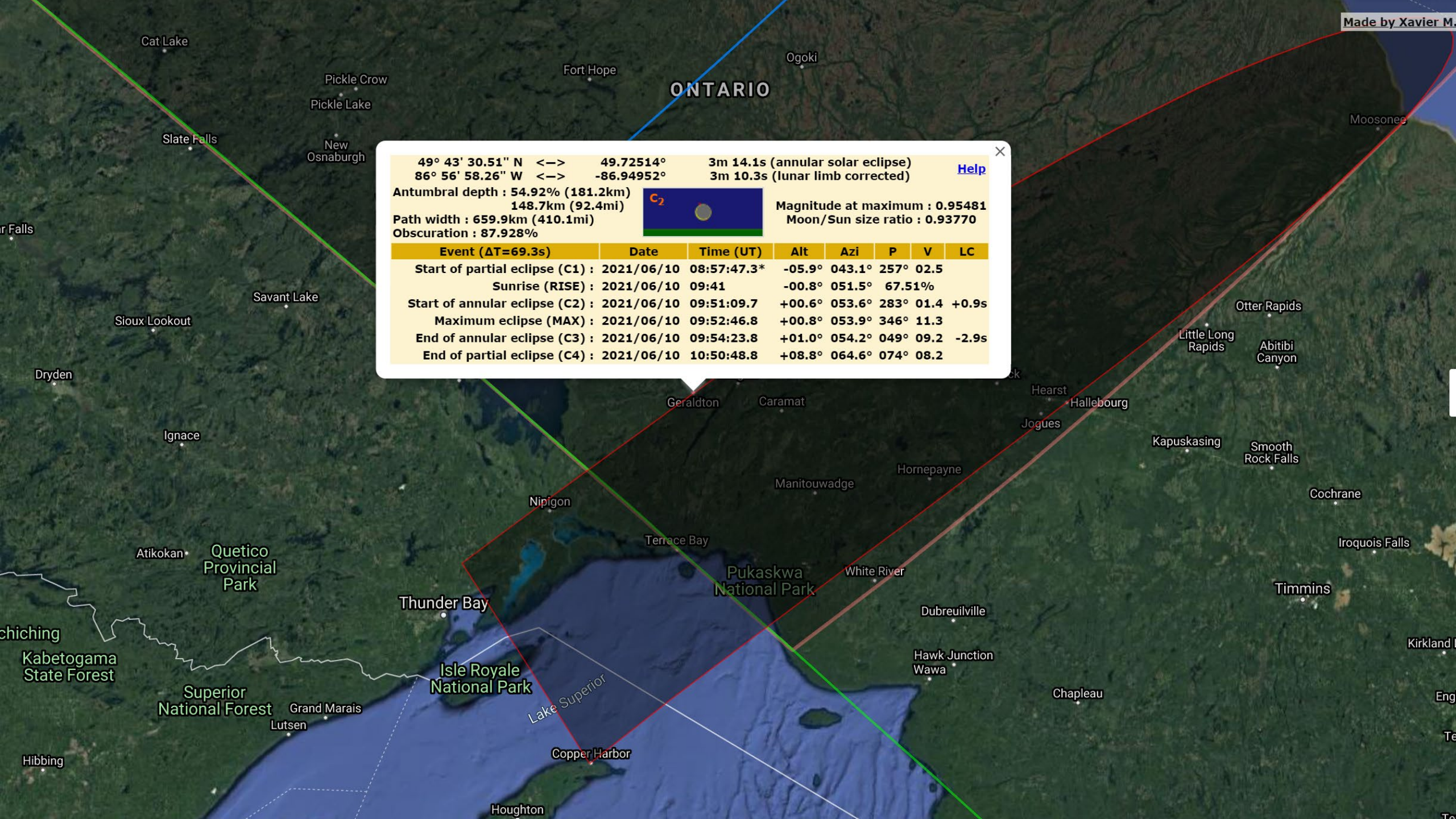
Antumbral depth : 54.92% (181.2km)
 148.7km (92.4mi)

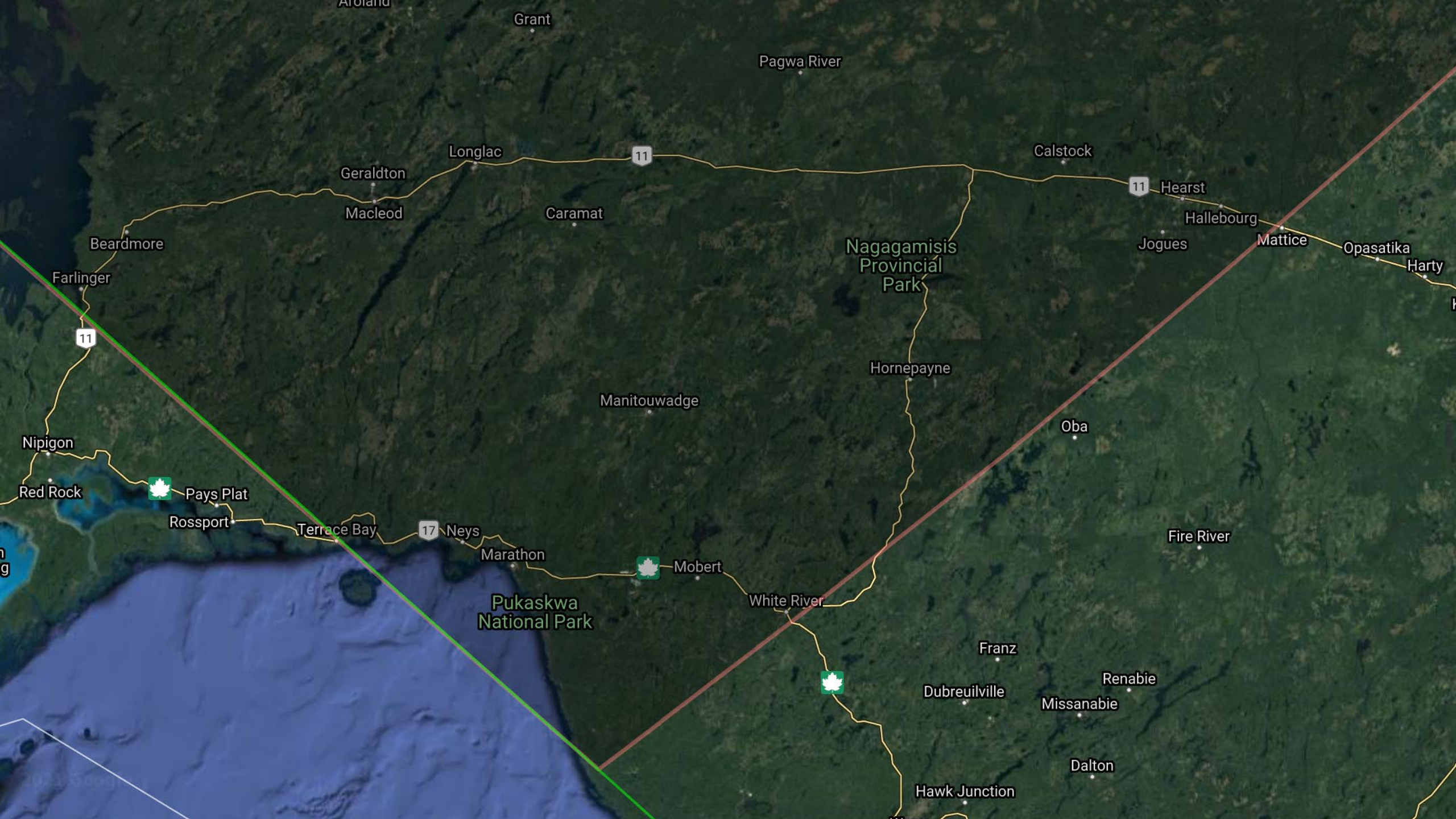
Path width : 659.9km (410.1mi)
 Obscuration : 87.928%



Magnitude at maximum : 0.95481
Moon/Sun size ratio : 0.93770

Event (ΔT=69.3s)	Date	Time (UT)	Alt	Azi	P	V	LC
Start of partial eclipse (C1) :	2021/06/10	08:57:47.3*	-05.9°	043.1°	257°	02.5	
Sunrise (RISE) :	2021/06/10	09:41	-00.8°	051.5°	67.51%		
Start of annular eclipse (C2) :	2021/06/10	09:51:09.7	+00.6°	053.6°	283°	01.4	+0.9s
Maximum eclipse (MAX) :	2021/06/10	09:52:46.8	+00.8°	053.9°	346°	11.3	
End of annular eclipse (C3) :	2021/06/10	09:54:23.8	+01.0°	054.2°	049°	09.2	-2.9s
End of partial eclipse (C4) :	2021/06/10	10:50:48.8	+08.8°	064.6°	074°	08.2	





Grant

Pagwa River

Longlac

11

Calstock

Geraldton

11

Hearst

Macleod

Caramat

Hallebourg

Beardmore

Jogues

Mattice

Opatatika

Harty

Farlinger

Nagagamisis
Provincial
Park

11

Hornepayne

Manitouwadge

Oba

Nipigon

Red Rock

Pays Plat

Rossport

Terrace Bay

17

Neys

Marathon

Mobert

White River

Pukaskwa
National
Park

Fire River

Franz

Renabie

Dubreuilville

Missanabie

Dalton

Hawk Junction



Questions?

