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## JOIN US AT AN EVENT

RASC volunteers will be out in cities across the country with solar-filtered telescopes and binoculars! Join us at one of our many events to get a safe glimpse of this planetary transit.

All events are weather-dependent. Please check our website for more details.

[rasc.ca/mercury-transit-2019](http://rasc.ca/mercury-transit-2019)



**DO NOT LOOK DIRECTLY AT THE  
SUN. YOU MUST USE A FILTER.**

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**LITTLE BLACK SPOT** Front cover photo:  
Mercury will be marching across the disc  
of the Sun much like it last did on May 9  
2016, as captured in this photo.  
Photo Copyright 2016 Alan Dyer/AmazingSky.com

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NOVEMBER 11, 2019  
MERCURY TRANSITS  
THE SUN

On the morning of November 11, Mercury will pass directly between the Earth and the Sun. The celestial highlight of the year, this transit is the final time Mercury will cross the face of the Sun until 2032. Catch it through a solar-filtered telescope!

DATE: <b>NOVEMBER 11, 2019</b>	TYPE: <b>TRANSIT</b>
TIME: <b>MORNING</b>	VIEW: <b>FILTERED TELESCOPE</b>

## TRANSIT OF MERCURY

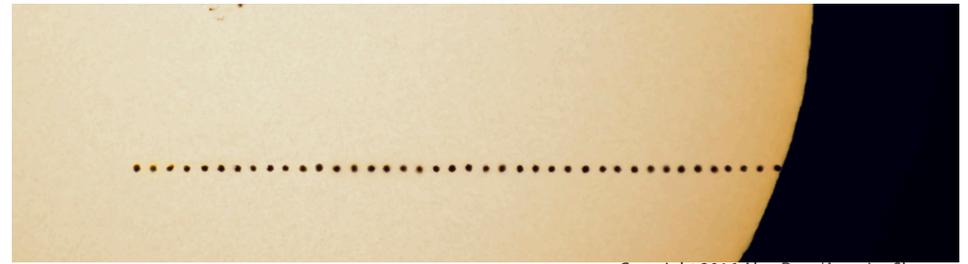
Few celestial sights are as rare and historically noteworthy as transits of the inner planets. Only Mercury and Venus can cross the solar disc – and Venus won't perform such a feat again until December 11, 2117. Mercury, on the other hand, passes between Earth and the Sun much more frequently, up to 13 times per century.

The two most recent Mercury transits took place on November 8, 2006, and on May 9, 2016. Transits always occur in May or November, when Mercury's tilted orbit carries the planet across the plane of the

ecliptic. While Mercury slips between Earth and the Sun three or four times a year (an occurrence known as "inferior conjunction"), its inclined orbit ensures that from our perspective, it usually passes well above or below the solar disc.

On the morning of November 11, the Sun, Mercury and Earth align perfectly and we get to see Mercury slowly traverse the Sun. It's one of the few occasions in which the motion of a planet can be appreciated in real time. And you don't want to miss it – the next Mercury transit won't occur until November 13, 2032.

**You will need a telescope with a solar filter to view this transit! Mercury is too small to see just with eclipse glasses.**



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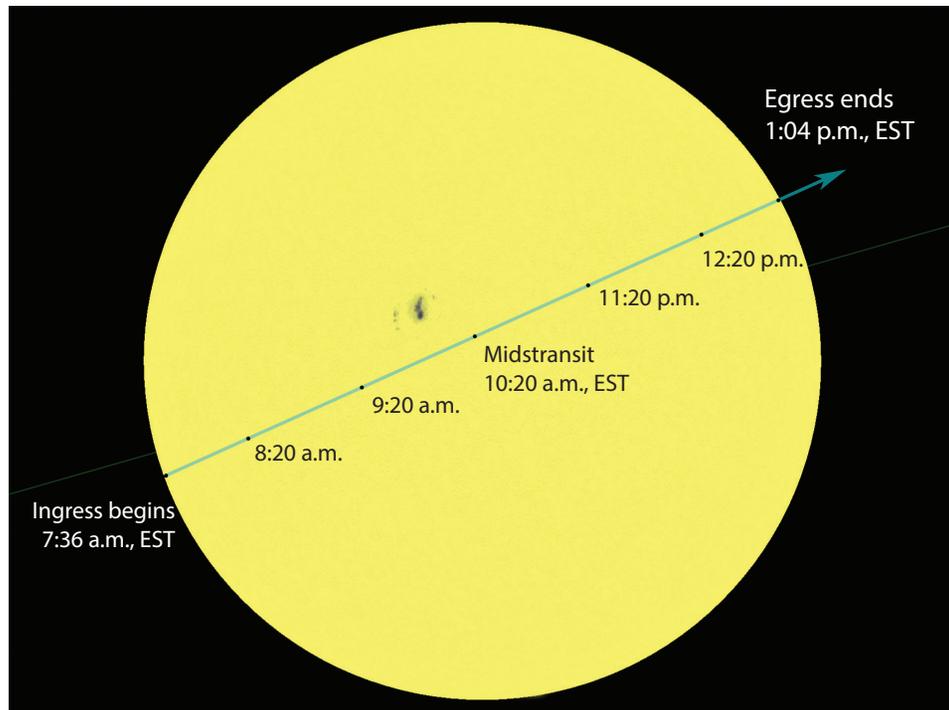
## VIEWING LOCATIONS

The transit plays out over more than 5 ½ hours and anyone east of central Ontario can see the transit in its entirety. From those regions, Mercury starts its journey across the Sun shortly after sunrise. From northwestern Ontario and westward, the Sun rises with the transit in progress.

From Alberta, the Sun is barely three degrees above the horizon when Mercury is halfway across the solar disc. For those on the West Coast, the Sun will be rising at mid-transit. Even so, all westerners will qualify for the last half of the transit –

nearly three hours' worth.

If you're determined to witness this rare event, it's a good idea to come up with a Plan B, in case the weather doesn't cooperate. On the eve of the 2016 transit, I drove from my home in Alberta to Kamloops, British Columbia, in search of clear skies. It was worth it! If I'd stayed home, I wouldn't have been able to capture the photos you see here. However, remember that you will need a solar filtered telescope to see the transit!



## TRANSIT TIMES

Location	Contact I	Contact II	Greatest transit	Contact III	Contact IV	Sun's altitude at egress
St. John's	9:05:56	9:07:38	11:50:03	2:32:33	2:34:14	15°
Halifax	8:36:00	8:37:42	11:20:08	2:02:36	2:04:17	22°
Montreal	7:36:02	7:37:44	10:20:13	1:02:41	1:04:22	24°
Toronto	7:36:04	7:37:45	10:20:15	1:02:43	1:04:24	27°
Winnipeg	-	-	9:20:20	12:02:52	12:04:33	23°
Edmonton	-	-	8:20:23	11:02:58	11:04:39	17°
Victoria	-	-	7:20:26	10:03:02	10:04:43	19°

- Contact I:** Mercury first touches the Sun
- Contact II:** Mercury tangent to the inside edge of the Sun's limb at ingress
- Greatest transit:** Mercury halfway across the solar disc
- Contact III:** Mercury tangent to the inside edge of the Sun's limb at egress
- Contact IV:** Mercury last touches the Sun