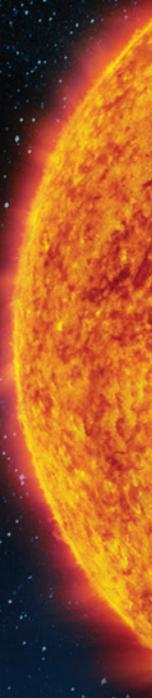


PARC NATIONAL DU MONT-MÉGANTIC

MONT MEGANTIC DARK SKY RESERVE GREAT SOLAR SYSTEM

ON THE SUMMIT DRIVE



astrolab.qc.ca

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Photos : NASA, PNMM

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ASTROLab du Parc national du Mont-Mégantic / Sépaq, Société de développement économique du Granit,
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Réserve internationale de
CIEL ÉTOILE
du Mont-Mégantic

If the sun was the size of the Observatory,
where would the planets be?

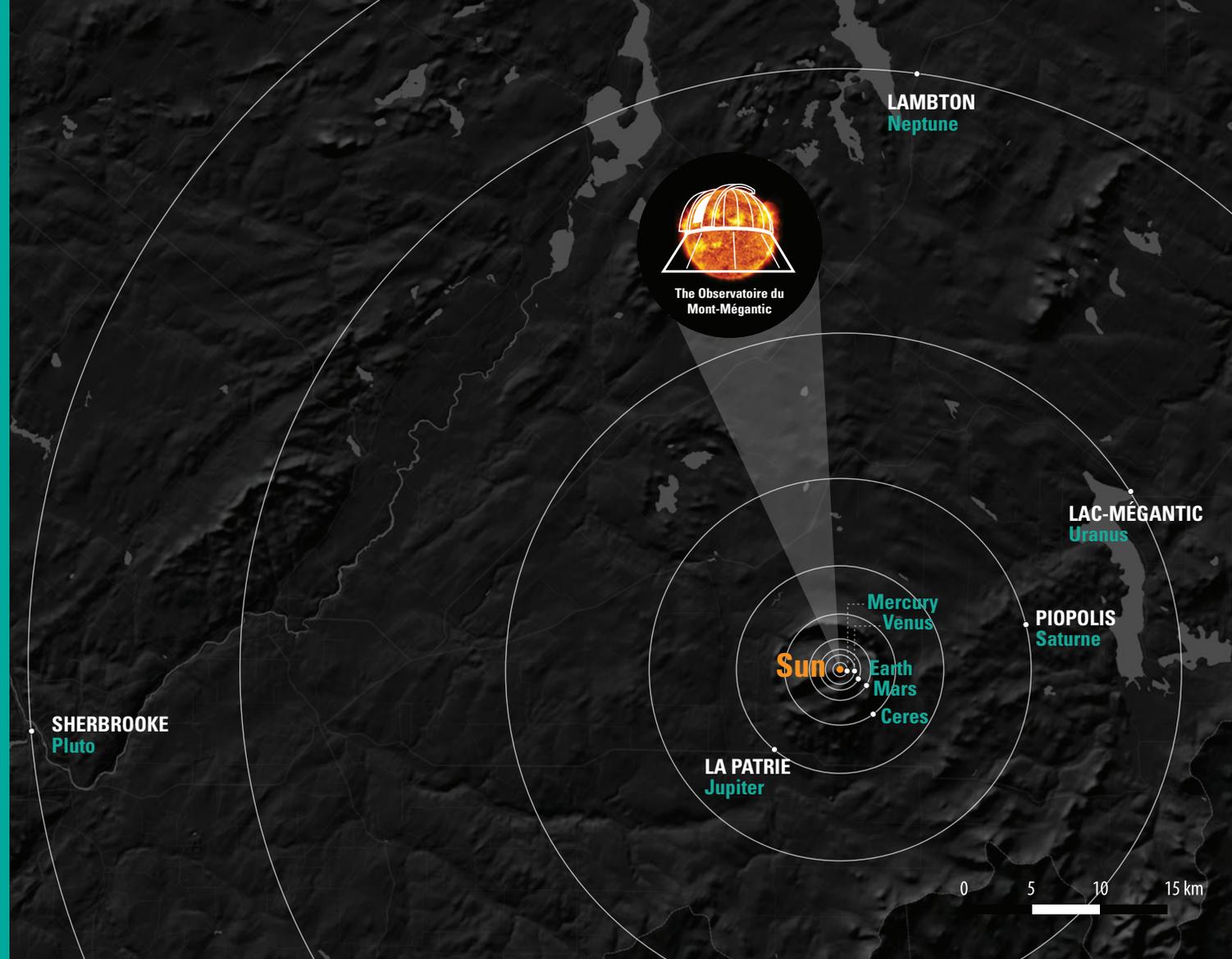
 Sépaq

SOLAR SYSTEM IN A MODEL SCALE

Welcome to the Solar System of Mont Megantic International Dark Sky Reserve. Designed to scale by size and distance, spread out along Summit Drive, this is one of the largest representations of this type in the world!

Measuring hundreds of millions of km, our Solar System is so wide that it is difficult to imagine it well.

What would be its proportions if we could reduce the Sun to the size of the Observatoire du Mont-Mégantic (1.4 million km to 14 m)? Compressed 100 million times, our planetary neighbourhood would spread out across the whole region!



While exploring the Dark Sky Reserve and the Summit Drive, you can discover 8 planets and 2 dwarf planets. Five of these celestial bodies are on the Parc national du Mont-Mégantic territory, in Notre-Dame-des-Bois, and the other five are distributed among the municipalities of the region: La Patrie, Piopolis, Lac-Mégantic, Lambton and Sherbrooke!

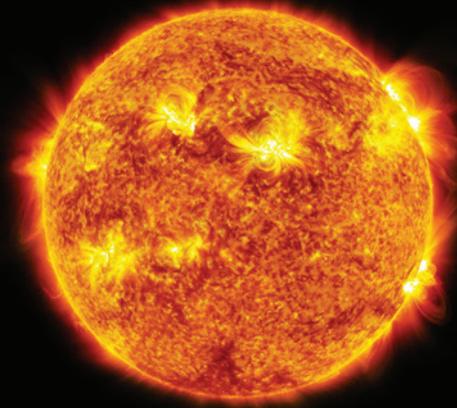
**The closest star?
At this scale, would be
farther than the Moon!**

**ENJOY THE
DISCOVERIES!**

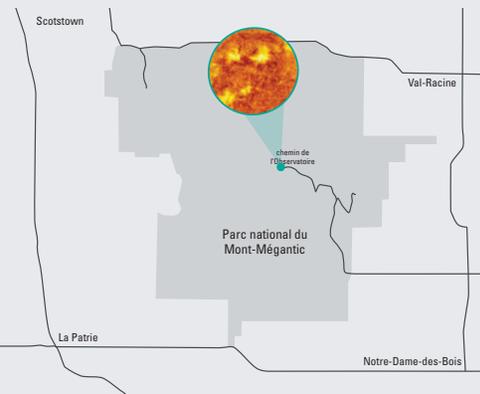
The creation of Observatoire du Mont-Mégantic in 1978 has led to the development of an astrophysical community in Quebec.

During the last decades, Quebec astrophysicists have built a solid reputation nationally and internationally. Over 300 research scientists have received and completed their training in one of the 3 universities linked with the Observatory (UMontréal, ULaval, UMcGill). Together, they have published over 1000 scientific articles in specialised journals. Today, their expertise is sought out not only in the scientific world but in private enterprises as well both in Canada and elsewhere in the world. Observatoire du Mont-Mégantic constitutes a scientific research jewel in Quebec.

SUN



The marker for the Sun is located right beside Observatoire du Mont-Mégantic, at the top of the mountain.

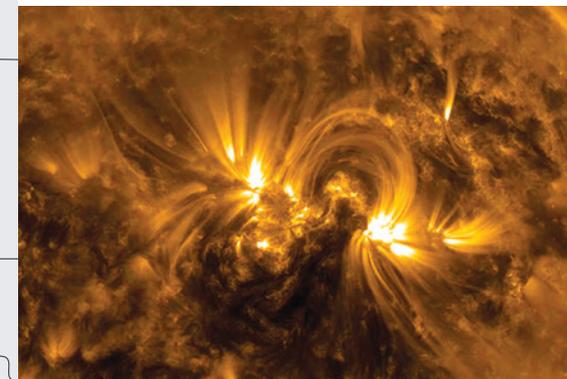


If the Sun was the size and in the same position as the Observatory, Pluto would be in Sherbrooke, Uranus in Lac-Mégantic, and inner planets would be located within the park. Real markers are installed for each planet, and you are invited to visit them!

Born 4.6 billion years ago, our star alone accounts for 99.9% of our Solar Systems mass. A true thermonuclear heater, its core is heated to over 15 million degrees Celsius.

The Sun is the source of light and heat that makes life on Earth possible. Through nuclear force, each second the Sun transforms 632 million tons of hydrogen into 628 million tons of helium! The difference in mass, about 4 million tons, is converted into pure energy!

	True	Scaled
Diameter	1 400 000 km	1 400 cm



M E R



C U R Y

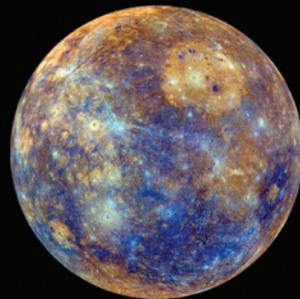
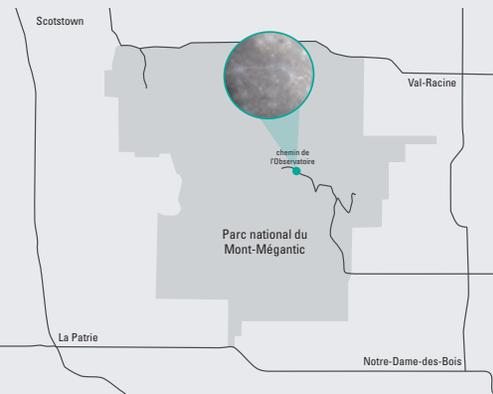
If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the planet Mercury would be 560 metres from it, and its diameter would be the same as the sphere on the panel, a 5 cm ball.

Mercury is the smallest planet in our Solar System as well as the nearest to the Sun. With practically no atmosphere, temperatures are extreme and vary from 425°C during the day and -200°C at night!

It is also the second densest planet in the Solar System, after the Earth. Moving rapidly as the day passes when observed with the naked eye, Mercury is named after the Roman deity Mercury, the messenger of the gods.

	True	Scaled
Diameter	4 879 km	4,8 cm
Distance	58 millions km	0,56 km

The Mercury marker is located in Parc national du Mont-Mégantic, on the road leading to the Observatory.



V E N



U S

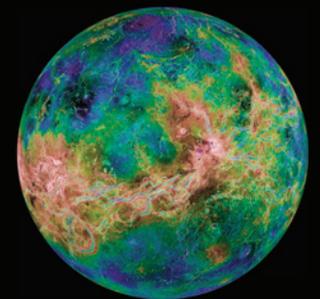
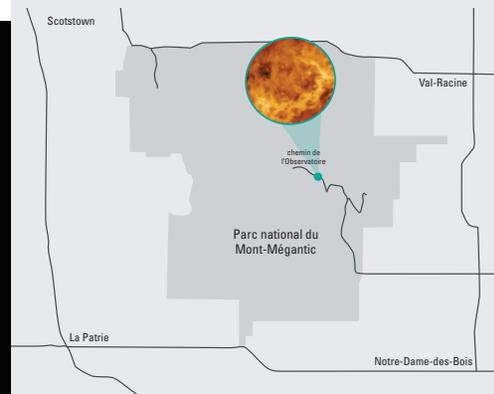
If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the planet Venus would be 1 km from it, and its diameter would be the same as the sphere on the panel, 11.7 cm.

Seen from the Earth, Venus is the most luminous heavenly body after the Sun and the Moon. It is the warmest planet in the Solar System: because of an intense greenhouse effect, temperature ranges around 470°C! Also, the planet's rotation is very slow, and one day lasts longer than one year.

For its unmatched brightness among all the planets, it was named Venus, the Roman goddess of love and beauty.

	True	Scaled
Diameter	12 104 km	11,7 cm
Distance	108 millions km	1,05 km

The Venus marker is located on the road leading to the Observatory.



E A R



The Earth marker is located on the road leading to the Observatory, right at the hairpin reststop.



T H

If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the planet Earth would be 1.5 km from it, and its diameter would be the same as the sphere on the panel, 12.4 cm.

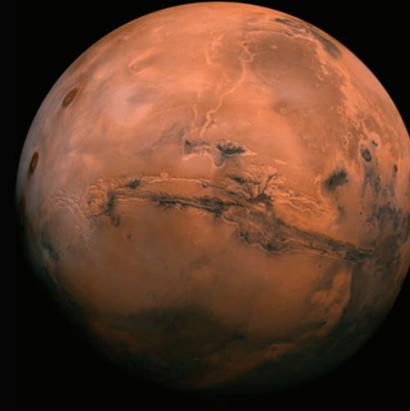
The Earth is the only known place in the Universe on which life exists. Favoured by the presence of liquid water and a number of other factors, this little blue planet is home of over 10 million of living species.

Global warming and massive erosion of biodiversity are a continuing phenomenon.

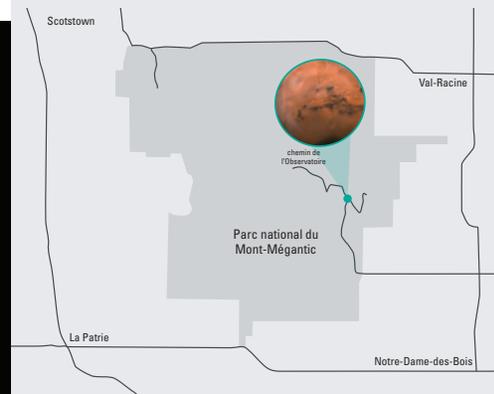
	True	Scaled
Diameter	12 742 km	12,4 cm
Distance	150 millions km	1,45 km



M A



The Mars marker is located on the road leading to the Observatory, at the junction of Mount St-Joseph.



R S

If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the planet Mars would be 2 km from it, and its diameter would be the same as the sphere on the panel, a 6.6 cm ball.

Although it's size is only half the size of the Earth, Mars is home to the Valles Marineris, the largest canyon in the Solar System, extending over 4000 km long. There is also Olympus Mons, the largest volcano in the Solar System, at about 24 km altitude! Even if it is today desert, liquid water once existed in a distant past, and it is not impossible that primitive life also existed at one time. In the Roman mythology, Mars is the god of war. The imagery associated with this planet comes from its red tint, seen with the naked eye, calls to mind blood on the battlefield.

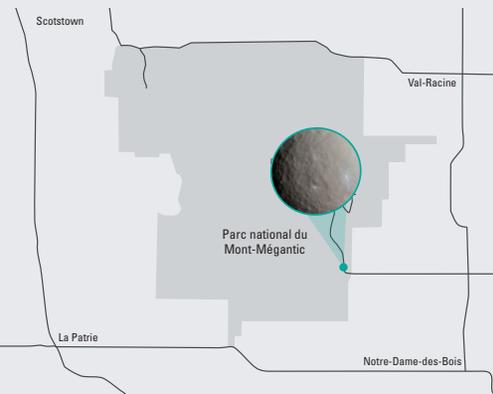
	True	Scaled
Diameter	6 779 km	6,6 cm
Distance	228 millions km	2,21 km



CERES



The Ceres marker is located beside the welcome center of Parc national du Mont-Mégantic, in the Observatory Sector.

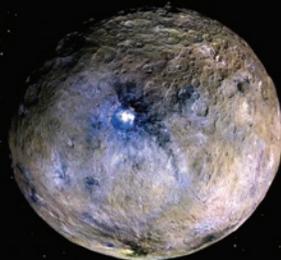


ES

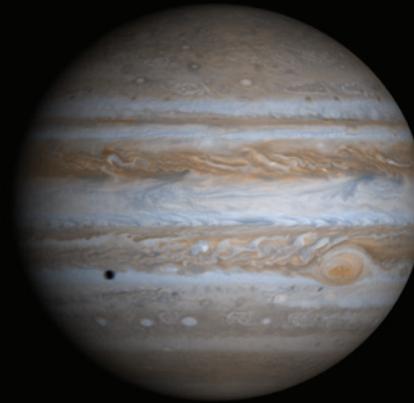
If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the dwarf planet Ceres would be 4 km from it, and its diameter would be the same as the sphere on the panel, a 1 cm ball.

First considered as a planet, then as an asteroid, and recently as a dwarf planet, Ceres has often changed categories as other solar system bodies were discovered. Largest and most massive body in the asteroid belt, it has a mantle rich in ice. Ceres was visited by a space probe in 2015. Ceres is the Roman goddess of agriculture and fertility. It was specially venerated in Sicily (Italy), the place where it was discovered, at the Astronomical Observatory of Palermo in 1801.

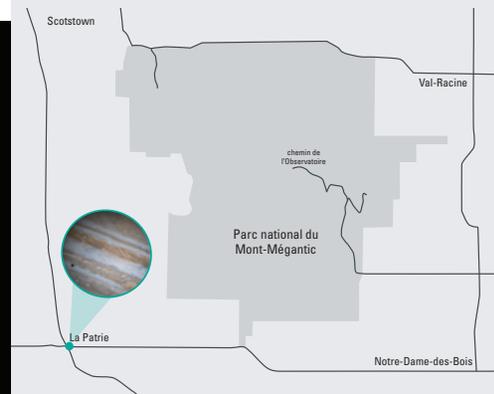
	True	Scaled
Diameter	938 km	0,9 cm
Distance	414 millions km	4,01 km



JUPITER



The Jupiter marker is located in La Patrie, at the rest area close to the heart of the village.



JUPITER

If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the planet Jupiter would be 7.6 km from it, in La Patrie, and its diameter would be the same as the ring on the panel, 135 cm.

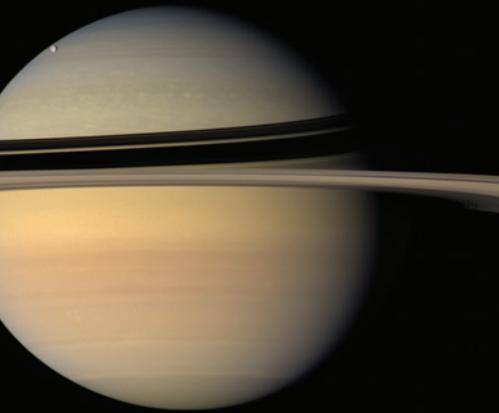
Gas giant, Jupiter is the largest planet in our Solar System. Jupiter is most massive than all other planets put together! You can see on this gas giant a complex network of cloud bands and cyclones, some of which have persisted for many centuries.

With a rotation on itself of 9 h 55 min, it also has the shortest day. Jupiter is the ruler of all gods. He is the leader of humans, Earth and Heaven. In the sky, Jupiter is the 4th brightest celestial body, after the Sun, the Moon and Venus. Its four moons can be seen with a pair of binoculars.

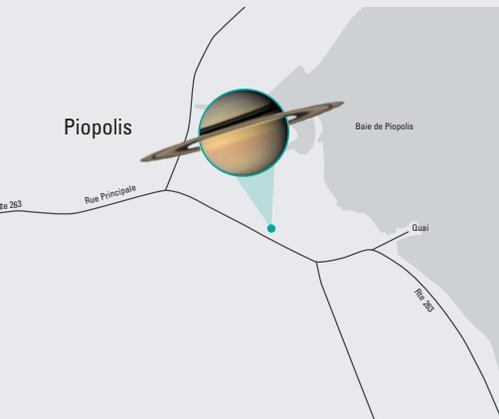
	True	Scaled
Diameter	139 822 km	135,5 cm
Distance	779 millions km	7,55 km



S A T



The Saturn marker is located in Piopolis.

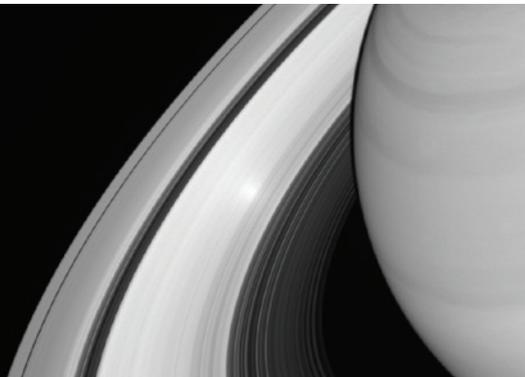


U R N

If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the planet Saturn would be 14 km from it, in Piopolis, and its diameter would be the same as the ring on the panel, 113 cm.

This gas giant is mostly known for its magnificent rings, consisting mostly of small particles of rocks and ice that spread over tens of thousands of kilometers, but are only a few meters thick! The Rings of Saturn are easily seen through a small telescope. With density lower than water, Saturn would be floating like a beach ball if one could put it down on a big enough ocean! Named after a primitive sky deity, Saturn is the farthest and slowest wandering celestial body that the Elders could see with the naked eye.

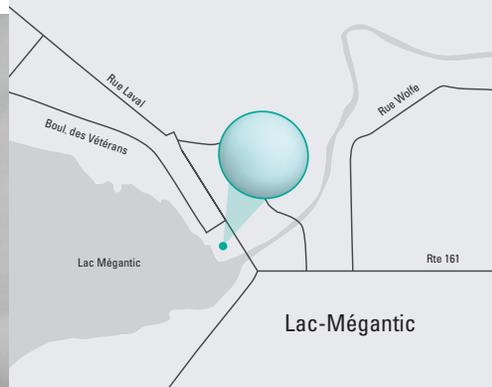
	True	Scaled
Diameter	116 646 km	113,1 cm
Distance	1 443 millions km	13,9 km



U R A



The Uranus marker is located in Lac-Mégantic, in the Parc des Vétérans area.



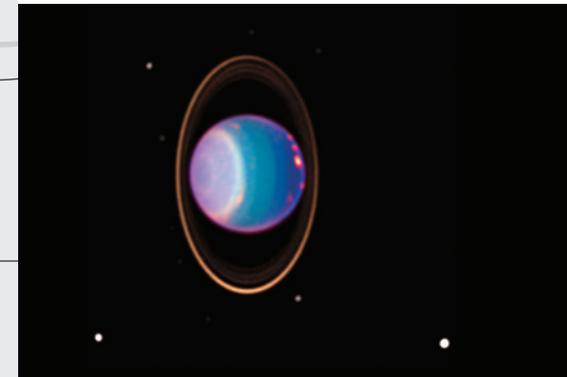
N U S

If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the planet Uranus would be the 28 km from it, and its diameter would be the same as the sphere on the panel, 49 cm.

Uranus is often represented as the 'tilted' planet, because its rotational axis is parallel to the plane of the Solar System. With this unusual tilt, the poles are hidden from the Sun alternately for about 42 years! It is also believed that its intense atmospheric pressure produces diamond rain in its atmosphere.

Uranus being at the limit of visibility, it was never observed by the Elders. William Herschel, astronomer and British composer discovered it through a telescope in 1781.

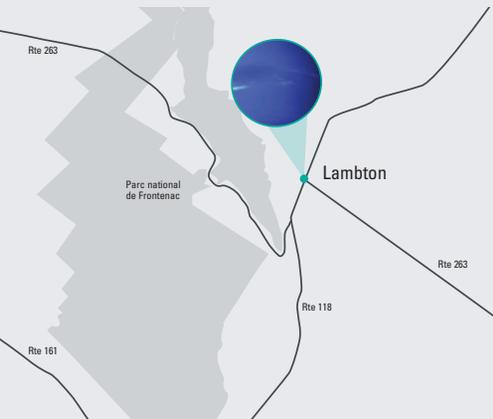
	True	Scaled
Diameter	50 724 km	49,2 cm
Distance	2 871 millions km	27,8 km



NEPTUNE



The Neptune marker is located in Lambton, at the rest area.



NEPTUNE

If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the planet Neptune would be 44 km from it, and its diameter would be the same as the sphere on the panel, 48 cm.

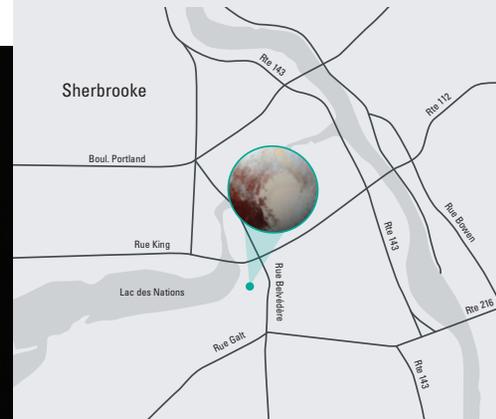
The farthest known planet from the Sun, Neptune holds the record for the strongest sustained winds in the Solar System, with speeds as high as 2000 km/h. Its blue hue is partially due to the presence of methane in the atmosphere. Neptune's discovery is exceptional, because it was made mathematically, from unexplained disturbances in the Uranus orbit. Predicted by Urbain Le Verrier, its existence was confirmed by a telescope in 1846. The Voyager 2 space probe in 1989 is the only one that passed in the Neptune vicinity and was able to take close photographs.

	True	Scaled
Diameter	49 244 km	47,7 cm
Distance	4 499 millions km	43,6 km

PLUTO



The Pluto marker is located in Sherbrooke, at the Marché de la Gare.



PLUTO

If the Sun was the size and in the same position as the Observatoire du Mont-Mégantic, the dwarf planet Pluto would be 57 km from it, and its diameter would be the same as the sphere on the panel, a 2.3 cm ball.

From its discovery in 1930 until 2006, Pluto was considered as the 9th planet of our Solar system. Today classified as a dwarf planet, Pluto was visited for the first time by a space probe in 2015, revealing a surprisingly complex and varied geology. Smaller than our Moon, Pluto is the principal member of a new category of celestial bodies called 'dwarf planets'. Today, five celestial bodies are recognized as dwarf planets: Ceres, Pluto, Haumea, Makemake and Eris.

	True	Scaled
Diameter	2 368 km	2,3 cm
Distance	5 874 millions km	56,9 km

