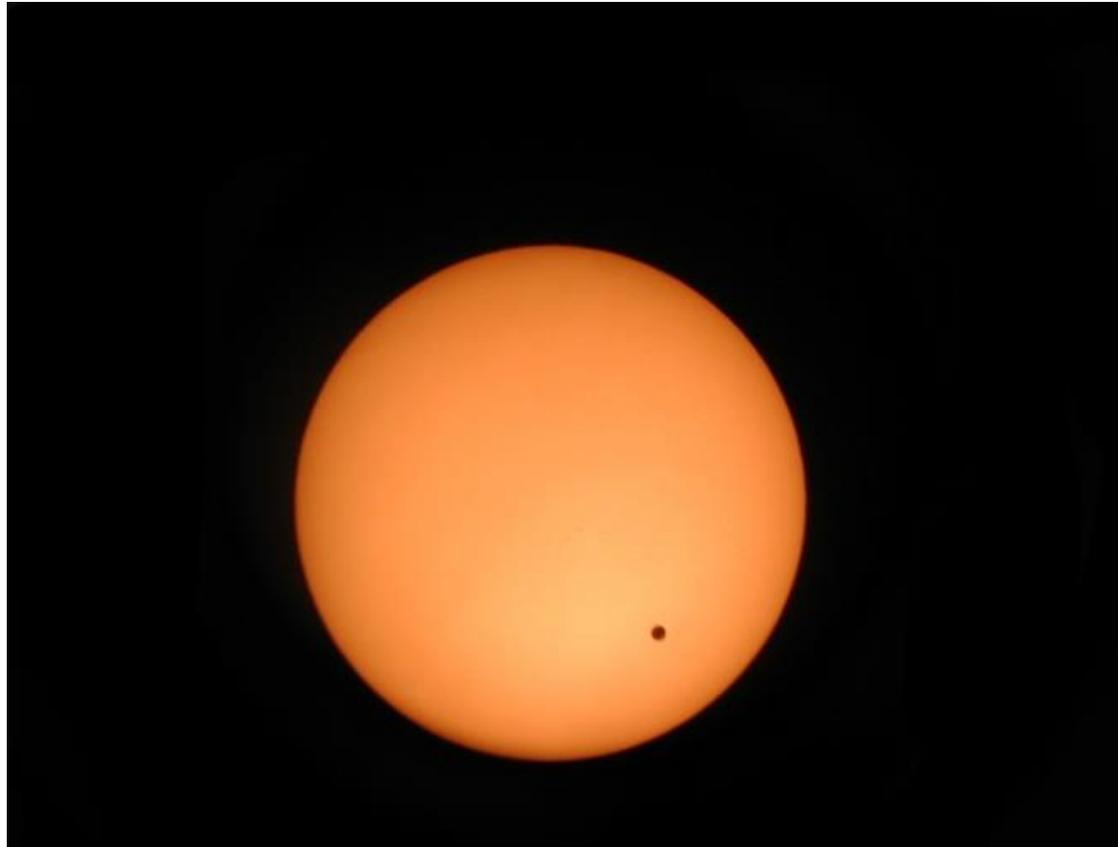


Jeremiah Horrocks and the Transits of Venus



The black dot on this photograph of the Sun is the planet Venus during a Transit

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The Queen's Platinum Jubilee weekend and more precisely

5th June 2022

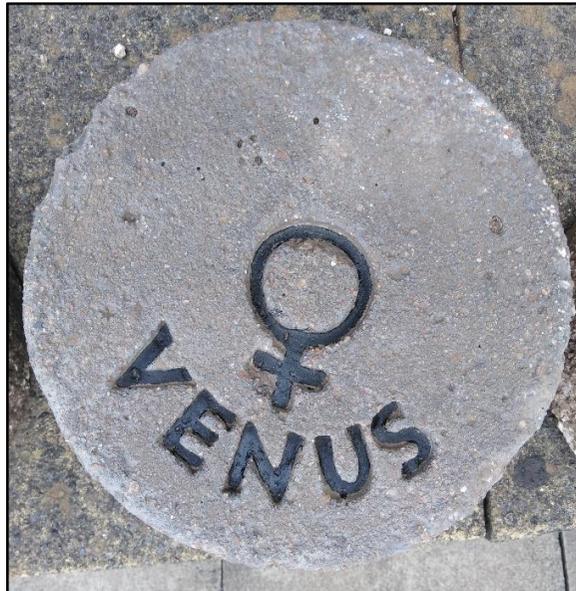
was 10 years to the day that the 2012 Transit of Venus happened.

Transits of Venus

A Transit is when the planet Venus lines up with the Sun and the Earth, appearing as a small dark dot passing slowly across the face of the Sun.

You might think that the Sun, Venus and the Earth all being in a line would happen quite often. It does sort of but the orbits of the two planets around the Sun are not perfectly flat, they are slightly tipped. So, what happens in most cases of alignment is that Venus passes either above or below the Sun when seen from the Earth, meaning a Transit does not happen. Transits typically last several hours.

Although Transits tend to happen in pairs of years close together, they are otherwise very rare and do not occur again for over 100 years. The most recent Transits were in 2004 and 2012, the next will be in 2117.



The Venus planet stone

Why Chorley and Astley Park?

The 2004 and 2012 Transits were observed in many places around the world including Astley Park in Chorley with the help of local astronomers. The very first Transit was seen in Much Hoole near Bretherton in 1639.

To mark the locally seen Transits and in recognition of the proximity of Much Hoole to the town, Chorley Council arranged for planet marker stones to be placed in Astley Park. They were positioned at locations along the main path in the park to show the relative distances between the planets from one another and from the Sun. For the sake of convenience, the planets are all shown in a single alignment along the path starting near the Drinking Fountain and spread out towards Park Road. An alignment of all eight planets happens very rarely in reality, about once every 396 billion years!

Over the last 10 years since the last Transit the planet stones had become covered in mud and grass. Volunteers of the **Friends of Astley Park** have recently cleaned up the stones and painted their inscriptions, so they stand out more. Each planet stone and the one for the Sun have different symbols on them. The symbol designs date back 1000's of years.

Jeremiah Horrocks

Jeremiah was an astronomer who lived 400 years ago. He was the person who predicted and observed the 1639 Transit of Venus.

He was not the first astronomer to realise the two planets' orbits are tipped but other astronomers had not correctly calculated a Transit would happen in that year. Since then, Transits have occurred in 1761 and 1769, in 1874 and 1882, as well as in 2004 and 2012.

Jeremiah was born in 1618 near Liverpool and began observing and calculating the movements of the Sun, the planets, and our Moon from an early age. With the help of some financial assistance, he went to Cambridge University at the age of 14 to study astronomy. For reasons not clear, he left the University three years later without graduating. However, he made several outstanding astronomical discoveries in his short life in addition to the Transit prediction.



A stained glass window in St. Michael's Church, Much Hoole depicting Jeremiah observing the 1639 Transit of Venus

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<https://commons.wikimedia.org/w/index.php?curid=19529833>



Carr House, Near Bretherton
from where Jeremiah saw the Transit

Life in the 1600s

At that time there would have been very few people earning a living from being an astronomer.

A common source of employment at this time was working at a church and Jeremiah moved to Much Hoole to become an assistant priest. It was here at Carr House, on 24 November 1639, when he saw the Transit. It was just after 3 o'clock in the afternoon. He was using a special telescope he had made himself to safely project an image of the Sun on to a small screen. He watched the slow movement of Venus for only about half an hour before the early wintertime sunset.

By the following year he had returned to Liverpool but sadly soon afterwards Jeremiah died suddenly less than two years after his great discovery. He was just 22 years old. His book on how he predicted the Transit was nearly lost to science due to his early death and the English Civil War that occurred at this time. His book was finally published over 20 years after he died thanks to another eminent, Polish, astronomer who did so at his own expense. As a result of his book and his other scientific work, Jeremiah was recognised as a leading astronomer of his time.

Recognition for Jeremiah

He is remembered on a plaque in Westminster Abbey and a crater on the Moon is named after him.

In 1859 a marble tablet and stained-glass windows commemorating him were installed in the Parish Church of St Michael, Much Hoole. In 1927, the Jeremiah Horrocks Observatory was built at Moor Park, Preston. The 2012 transit of Venus was marked by a celebration held in the church at Much Hoole, which was streamed live worldwide on the NASA website. Jeremiah and the transit of Venus featured in an episode ("Dark Matter") of the British television series *Lewis*, a spin-off from Inspector Morse. The Jeremiah Horrocks Institute for Astrophysics and Supercomputing was established in 1993 at the University of Central Lancashire. In 2012 it was renamed the Jeremiah Horrocks Institute for Mathematics, Physics, and Astronomy.