



Key words: Solar eclipse 2019, La Silla Observatory

<p>ESOCast Episode 170: All you need to know about total solar eclipse 2019</p>	
<p>00:00 [Visual starts] 1. The clear sky and high altitude of the Atacama Desert in Chile make it the perfect place to carry out astronomical observations. The ESO observatories lie in this remote mountain desert, making spectacular observations during the night.</p> <p>But on 2 July 2019, one of these observatories, the La Silla Observatory, will be enveloped in darkness during the day.</p> <p>A total solar eclipse will occur!</p>	<p>00:00 Visuals</p>
<p>00:44 ESOCast intro</p>	<p>00:00 ESOCast introduction</p>
<p>01:00 [Narrator] 2. A total solar eclipse is one of the most beautiful spectacles of nature. The impact of these rare events is so dramatic that many earlier societies believed that they were bad omens. Today, solar eclipses are accurately predicted long in advance — they are exciting to watch, and they provide us with a way to observe dim parts of the Sun.</p>	

01:26

[Narrator]

3. During a solar eclipse, the Moon moves between the Earth and the Sun, covering part of the solar disc in the sky. This cannot happen every month because of a tilt in the Moon's orbit.

In case of a total solar eclipse, which occurs on Earth on average once per 14 months, the entire solar disc is covered and the Moon casts a shadow on a narrow part of the Earth — the path of totality.

In 2019 the path of totality is only about 200 kilometres wide but about 11 000 kilometres long.

02:08

[Narrator]

4. It is vital to use appropriate and effective eye protection when watching an eclipse!

As the eclipse progresses, when over 95 percent of the Sun is blocked by the Moon, the landscape starts to darken and grow silent. In the sky, bright planets and even stars, otherwise swamped by sunshine, pop out from the dark background.

Just a few seconds before the Sun is totally eclipsed, its upper atmosphere, the solar corona, finally appears. In the same moment it looks like a diamond ring in the sky. Then the last pearls of sunlight — the Baily's beads — disappear. And the total eclipse begins.

The corona's spectacular tendrils of plasma visibly stream from the Sun during the eclipse. These strands are about 10 million times dimmer than sunlight, so only when the Sun is completely hidden by the Moon do they become visible.

<p>03:17 [Narrator] 5. At La Silla, totality will last 1 minute and 48 seconds, and the Sun will be low over the horizon.</p> <p>When the Sun is fully covered, the sky becomes dark blue except for dusky colours lacing the horizon. Planets and stars pop out for the minutes of darkness. During the La Silla eclipse, planets Venus and Mercury and bright stars including Sirius, Procyon, Rigel and Betelgeuse will be visible.</p>	
<p>03:51 [Narrator] 6. ESO will open the La Silla Observatory to the public on the day of the solar eclipse. Visitors will, weather permitting, be able to view the solar eclipse while standing among ESO's unique fleet of telescopes, 2400 metres above sea level.</p> <p>And not just that – during all the day of the eclipse, public visitors and school groups will be able to tour the La Silla telescopes, and attend talks and workshops.</p> <p>One could wait for another total solar eclipse over the La Silla Observatory, but the next one won't take place until 28 August 2231. For the lucky few, it will be a once-in-a-lifetime opportunity.</p> <p>Will you be there?</p>	<p>#LaSillaTSE</p>
<p>06:04 [Outro]</p>	<p><i>Produced by ESO, the European Southern Observatory. Reaching new heights in Astronomy.</i></p>