

Key words: Pale Red Dot, Exoplanets, Proxima Centauri, HARPS, La Silla



<p>ESOCast Episode 80: Follow a Live Planet Hunt</p>	
<p>00:00 [Visuals start] 1. The quest to find alien worlds beyond our Solar System is one of the most exciting and captivating fields of modern astronomy.</p> <p>And a unique new project will now allow members of the public to go behind the scenes and follow a planet hunt as it happens!</p>	<p>00:00 [Visuals start] Computer animations: exoplanets</p>
<p>00:21 ESOCast intro 2. This is the ESOcast! Cutting-edge science and life behind the scenes at ESO, the European Southern Observatory.</p>	<p>ESOCast introduction</p>
<p>00:42 [Narrator] 3. 4.2 light-years away, in the constellation of Centaurus, lies Proxima Centauri.</p> <p>This small, faint star is one of about 160 billion red dwarfs in the Milky Way.</p> <p>But this red dwarf is special. It's the closest known star to the Sun!</p>	<p>Computer animations: Centaurus and Proxima Centauri</p>

<p>01:10 [Narrator] 4. As our closest stellar neighbour, Proxima Centauri has been extensively studied by space and ground-based observatories. Tantalising — but inconclusive — hints that an alien world may orbit the star have been found.</p> <p>Now, a new and exciting scientific and outreach project known as the <i>Pale Red Dot</i> campaign will conduct a more sensitive search than ever before for an orbiting Earth-like planet.</p>	<p>Image of Proxima Centauri</p> <p>Logo of the Pale Red Dot campaign</p>
<p>01:47 [Narrator] 5. The campaign’s key observations will be carried out by ESO’s High Accuracy Radial velocity Planet Searcher, or HARPS, which is attached to ESO’s 3.6-metre telescope at the La Silla Observatory.</p> <p>This extremely precise spectrograph will monitor Proxima Centauri’s motion, looking for the minute effects of the gravitational pull of an exoplanet, which causes the parent star to wobble back and forth.</p>	<p>Timelapse of the 3.6-metre telescope</p> <p>Image of HARPS</p> <p>Computer animation: Radial velocity tracking</p>
<p>02:20 [Narrator] 6. This tiny motion can be detected by HARPS through tracking its radial velocity over time.</p> <p>But stellar activity could mimic the presence of a planet. To address this, HARPS’ measurements will be complemented by data from other telescopes around the world, including the Las Cumbres Observatory Global Telescope Network and BOOTES, the Burst Optical Observer and Transient Exploring System.</p>	<p>Computer animation: Radial velocity tracking</p> <p>Timelase of La Silla</p>
<p>02:50 [Narrator] 7. The observations will be conducted between January and April 2016.</p>	<p>Timelapse of La Silla</p>

<p>Blog posts and social media updates throughout this period will reveal the latest progress with the observations and provide a rare opportunity to see how science is done in modern observatories.</p> <p>But don't expect astronomers to tell you right away if Proxima Centauri has an exoplanet. The answer will likely come after some more months of work and once the result is reviewed by other astronomers. That's how science works!</p> <p>To follow the live observing campaign, visit the Pale Red Dot website, twitter account and follow the hashtag #PaleRedDot.</p>	<p>Image of Pale Red Dot blog</p> <p>Computer animation: Proxima Centauri</p> <p>Nighttime timelapse, overlaid with the text: palereddot.org twitter.com/palereddot #PaleRedDot</p>
<p>03:46 [Narrator] 8. No one can yet know what the observations will discover. But the journey can often be as exciting as the destination!</p> <p>So join us as we attempt to take another historic step towards answering the biggest question of all: Are we alone?</p>	<p>Image of La Silla</p> <p>Computer animations: exoplanets</p>
<p>04:11 [Outro]</p>	<p>ESOcast is produced by ESO, the European Southern Observatory.</p> <p><i>ESO builds and operates a suite of the world's most advanced ground-based astronomical telescopes.</i></p>