



<p>ESOCast Episode 14: Orion in a New Light</p>	
<p>ESOCast intro</p> <p>This is the ESOcast! Cutting-edge science and life behind the scenes of ESO, the European Southern Observatory. Exploring the Universe's ultimate frontier with our host Dr J, a.k.a. Dr Joe Liske.</p>	<p>Intro</p>
<p>00:00 [Visual starts]</p> <p>[Narrator] 00:24</p> <p>1. Orion the Hunter is one of the most striking constellations in the sky and is a familiar sight to amateur and professional astronomers alike. The Orion Nebula is faintly visible to the naked eye as a dim glow in the hunter's sword. This swirling cloud of gas and dust is 1500 light-years from Earth, and has fascinated astronomers since the earliest days of the telescope.</p> <p>Appearing to the eye as a small cluster of blue-white stars surrounded by a mysterious mist, the nebula's vast dusty regions have long hidden from human eyes an enormous stellar nursery full of young, hot stars.</p>	<p>Naked eye view of Orion</p> <p>...zooming into the nebula in the optical.</p> <p>Optical view of M42</p>
<p>00:58</p> <p>2. The Visible and Infrared Survey Telescope for Astronomy, or VISTA, has taken a spectacular new image that reveals some of the nebula's buried secrets. VISTA is the latest addition to ESO's Paranal Observatory in Chile and it's the largest survey telescope in the world, with a mirror measuring 4.1 metres in diameter. It's dedicated to mapping the sky in the infrared part of the spectrum.</p>	<p>VISTA telescope footage</p>

<p>01:24</p> <p>3. By looking in the infrared instead of visible light, VISTA is able to peer straight through the obscuring gas and dust in the Orion Nebula. That's because in the infrared, at about twice the wavelength of visible light, the dust in the nebula turns largely transparent, giving us a clear view of the young stars that lie within.</p> <p>No other telescope has ever been able to not only see through the dust to reveal the hidden features buried within the Orion Nebula, but also to show its huge extent in amazing detail in a single image.</p> <p>At the very heart of the nebula lie the four brilliant stars forming the Trapezium, a group of very hot young stars pumping out fierce ultraviolet radiation that is clearing the surrounding region and making the gas glow. Observing in the infrared also allows VISTA to reveal many other young stars in this central region that cannot be seen in visible light.</p> <p>In this dusty region of the nebula, gas jets shot out by young stars at around 700000 kilometres an hour, have collided with the surrounding gas and dust, exciting it and sculpting strange red shapes. Normally invisible, these curious wisps provide important clues for astronomers as they try to understand how stars are born and what happens in their early years.</p>	<p>Visible/IR cross fade</p> <p>VISTA's full view of M42</p> <p>Close up of the centre of the nebula</p> <p>Pan up to the region above the centre.</p>
<p>02:50</p> <p>4. As impressive as this image is, it is just the beginning of what VISTA will reveal with its unparalleled ability to survey the sky both quickly and deeply in the infrared part of the spectrum. Astronomers eagerly await the next images from VISTA and the secrets that this unique ESO facility will reveal.</p> <p>This is Dr J signing off for the ESOcast. Join me again next time for another cosmic adventure.</p>	<p>More VISTA footage.</p>
<p>03:08 Outro</p>	