







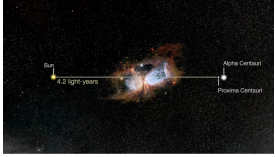


Hubblecast Episode 51: Star-forming Region S106		
<p>00:00 [Narrator]</p> <p>Hubble's Wide Field Camera 3 has captured this image of a giant cloud of hydrogen gas illuminated by a bright young star.</p> <p>The image shows how violent the end stages of the star formation process can be, with the young object shaking up its stellar nursery.</p>		
		
<p>00:45 [Narrator]</p> <p>A few thousand light-years away, in the constellation of Cygnus, lies the compact star-forming region Sh 2-106, or S106 for short.</p>		
<p>01:03 [Narrator]</p> <p>Despite the celestial colours of this picture, there is nothing peaceful about this scene.</p> <p>A young star, named S106 IR, is being born at the heart of the nebula. In the violent final stages of its formation, the star is ejecting material at high speed, violently disrupting the gas and dust.</p> <p>3D visualisations show the extent to which the star has carved its surroundings into a complex shape.</p> <p>In particular, the hourglass-like structure of the nebula is a result of jets from the star slamming into the cloud of hydrogen it is forming from.</p> <p>At the outer edges of these cavities, the gas has been compressed into shock fronts by the pressure.</p>		
<p>01:52 [Narrator]</p> <p>The star has a mass about 15 times that of the Sun and is in the final stages of its formation.</p>		

<p>It will soon quieten down by entering the adult stage of stellar life, known to astronomers as the main sequence.</p>		
<p>02:08 [Narrator] For now, though, S106 IR remains embedded in its parent cloud, but it is rebelling against it.</p> <p>The material spewing off the star not only gives the cloud its hourglass shape but also makes the hydrogen gas turbulent. The resulting intricate patterns are clearly visible here.</p>		
<p>02:34 [Narrator] As well as churning up the gas cloud, the young star is also heating it up to temperatures of 10 000 degrees Celsius.</p> <p>The star's radiation excites the gas, making it glow like a fluorescent bulb. The light from this glowing gas is coloured blue in this image, which combines Hubble observations taken in visible and infrared light.</p>		
<p>03:01 [Narrator] Separating these regions of glowing gas is a cooler, thick stream of dust, shown here in red.</p> <p>This dark material almost completely hides the star from view, but the young object can still be seen faintly peeking through the widest part of the dust lane.</p>		
<p>03:21 [Narrator] The cloud itself is relatively small by the standards of star-forming regions, around two light-years in size along its longest axis.</p> <p>This is about half the distance between the Sun and Proxima Centauri, our nearest stellar neighbour, making it far smaller than familiar star-forming regions like the Orion Nebula and Carina Nebula.</p>		
<p>04:43 [ENDS]</p>		