

Hubblecast Episode 48: Deep Observations of the Andromeda Galaxy		
<p>00:00            [Narrator]            You're looking at the night sky in another galaxy.</p> <p>Hubble's observations of Messier 31, the Andromeda Galaxy, show unprecedented detail. Most of the stars in this image are outside the Milky Way and lie over two million light-years away.</p> <p>Its one of the deepest, most detailed images ever made of a galaxy outside our own.</p>		
<p>00:25</p>		
<p>00:53            [Dr J]            Hello and welcome to another episode of the Hubblecast.</p> <p>Now, astronomers have observed millions and millions of galaxies across the night sky, but only a tiny fraction of them, only a few tens, are actually close enough to us that we can distinguish the individual stars that they are made of.</p> <p>And that's what makes this small group of galaxies kind of special for us astronomers.</p>		
<p>01:16            [Narrator]</p> <p>The Andromeda Galaxy is one of this group. It is nearer to Earth than any other spiral galaxy, which means that we have a particularly good view of it.</p> <p>In fact, the Andromeda Galaxy is the one of the largest objects in the night sky – several times bigger than the full Moon, although of course it's much fainter.</p> <p>The relative proximity of the galaxy and the unparalleled quality of Hubble's images, thanks to its position above the atmosphere, combine to give astronomers a unique view right into another galaxy.</p>		

<p>01:56 [Dr J] Far from being a dense, opaque object, Hubble's observations of the Andromeda Galaxy remind us that one of the dominant features of a galaxy is actually the huge distances <i>between</i> its stars.</p> <p>And in these huge gaps we can see right through the Andromeda Galaxy to the far more distant galaxies in the background.</p>		
<p>02:22 [Narrator] This observation was made in the Andromeda Galaxy's halo, the huge and sparse sphere of stars and invisible dark matter that surrounds the galaxy.</p> <p>Although Hubble is able to spot many thousands of stars here, this part of the galaxy is in fact very sparsely populated and so many background galaxies are visible.</p>		
<p>02:45 [Dr J] This giant stellar stream, is noticeably denser than the rest of the halo. This swathe of stars was left behind by a dwarf galaxy that was swallowed by Andromeda.</p>		
<p>03:14 [Dr J] But the most crowded of these observations is in the galaxy's disc — that's the part that includes the distinctive spiral arms, as well as the dimmer and less numerous stars in the gaps between them.</p>		
<p>03:30 [Narrator] Busy as these images look, we're only in the outskirts of the Andromeda galaxy here. That's because these observations were made in order to study a particular type of variable star that is common in the outer reaches of galaxies.</p>		
<p>03:47 [Dr J] To the naked eye, the Andromeda Galaxy just is just a huge, grey, faint patch in the sky.</p> <p>But the Hubble's observations reveal an entirely different perspective, where the ethereal shape of the galaxy is resolved into individual stars.</p> <p>This is Dr J signing off for the Hubblecast. Once again, nature has surprised us beyond our wildest imagination.</p>		
		<p>Hubblecast is produced by ESA/Hubble at the European Southern Observatory in Germany.</p> <p>The Hubble mission is a project of international cooperation between NASA and the European Space Agency.</p>

Ends 05:04