Bye, bye Pluto

Transcript: Clip from *Stargazing Live*, BBC Two.

PROF BRIAN COX:
And in 1930 Pluto was found. The set of nine planets was complete, or so we thought.
Two researchers in America suspected that Pluto wasn't alone.

In 1992, after a five year search they discovered Pluto was merely one of thousands of huge icy rocks orbiting in a band around the solar system.

They discovered the Kuiper belt. And our ninth planet was suddenly in jeopardy.

PROF DAVID JEWITT:
We knew that that was the end of Pluto. In fact, we discussed that at the telescope. We said: "Well Pluto's finished because, you know, now it's just another object out there".

PROF BRIAN COX:
When a tenth so-called planet Eris was also found in the Kuiper belt, it made scientists question what a planet really was.

This is what they came up with. Firstly, a planet has to be spherical, which is essentially a requirement that it has to be massive. See any sufficiently massive ball of matter will form itself into a sphere.

Secondly, it has to be in orbit around the Sun. That means moons for example, which orbit around another planet, are not counted.

Thirdly, and this is perhaps the most subtle but very importantly they must be gravitationally dominant. That means that they must clear everything else out in their orbit around the Sun. So Earth, Mars, Jupiter, Saturn all satisfy that requirement. But Pluto and Eris don't.

Pluto and Eris are just part of the crowded Kuiper belt, which means we're back to eight planets.

GFX and stills in video courtesy of: Gemini Observatory /AURA, NASA, NASA/JPL, ESA/Hubble (M Kornmesser & L L Christensen), NASA/JPL-Caltech and NASA/JHUAPL.