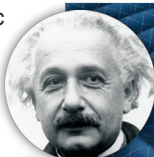


Gravity waves finally discovered

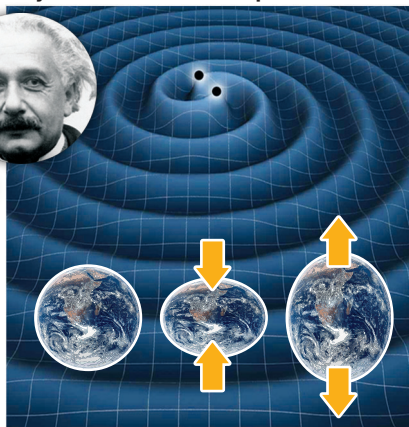
Astronomers say they have finally found elusive gravitational waves, the mysterious ripples in the fabric of space. As these ripples pass the Earth, local space is alternately stretched and compressed

Gravitational waves: Concentric ripples that squeeze and stretch fabric of space-time, caused by movement of mass. Predicted by **Albert Einstein** in his 1916 General Theory of Relativity



LIGO sites

Two detectors help sift out terrestrial rumblings, such as traffic and earthquakes, from other faint vibrations within space



Effect of gravitational ripples, hugely exaggerated

LIGO – LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

1 Laser beam fed into machine

2 Laser's light split in two and sent down identical, perpendicular 4km tunnels

3 Beams bounce back and forth between mirrors

4 Two light paths recombined and sent to detector

By analysing light reflected off mirrors it is possible to detect tiny changes – fractions of width of an atom – in distance between mirrors

