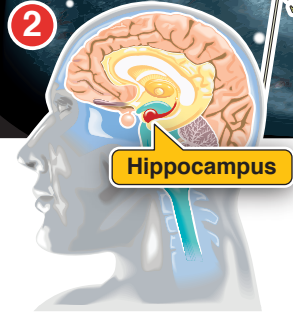
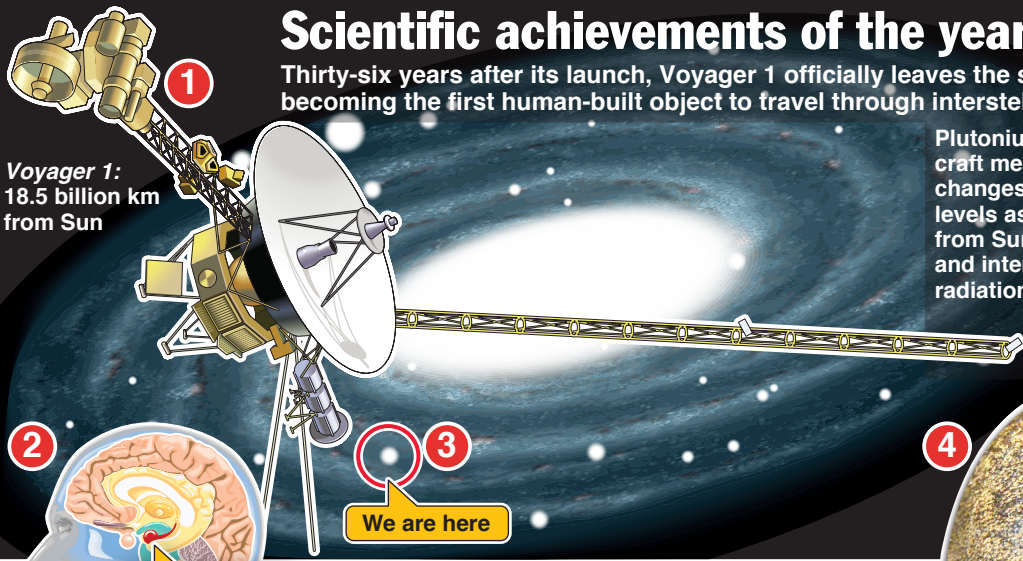


Scientific achievements of the year

Thirty-six years after its launch, Voyager 1 officially leaves the solar system becoming the first human-built object to travel through interstellar space

Plutonium-powered craft measures drastic changes in radiation levels as solar wind from Sun fades away and interstellar radiation increases

Voyager 1:
18.5 billion km
from Sun



Hippocampus

2 Brain implants: Neuroscientists show that silicon chips externally connected to rat and monkey brains can serve as artificial components to neuronal networks of **hippocampus** – part of brain that forms memory

5 Canadian camel: Remains of an extinct giant camel are discovered on Canada's Ellesmere Island. Fossil fragments represent most northerly record for early camels, whose ancestors originated in North America some 45 million years ago

6 Black hole: Brightest ever gamma-ray burst is detected. Event, labelled **GRB 130427A**, captures collapse of massive star to form black hole, producing supernova and jet of matter with energy levels higher than thought theoretically possible

7 Sense of touch: Using bundles of zinc oxide nanowires, researchers fabricate arrays of piezotronic transistors capable of sensing pressure in same range as human fingertip. Touch-sensitive transistors could give robots sense of touch

3 Twenty billion Earths: Based on data from Kepler space telescope, astronomers at University of California, Berkeley estimate 22% of stars like our sun have planets like Earth – with surface temperature conducive to life. **With about 100 billion stars in our Milky Way galaxy, that's about 20 billion such planets**

4 Jurassic eggs: The world's oldest collection of fossilised dinosaur eggs is discovered in what is now southern China. Embryonic skeletons of 190 to 197-million-year-old **Lufengosaurus** – Jurassic predecessor of long-necked sauropods **Diplodocus** and **Brachiosaurus** – reveal traces of organic molecules and degraded remains of proteins like collagen. **This is oldest organic material ever found from a terrestrial vertebrate**



8 Gene patents: U.S. Supreme Court rules that sequences of human DNA are not eligible for patent protection. Decision ends monopoly held by Myriad Genetics on diagnostic tests for breast cancer based on **BRCA1** and **BRCA2** genes



9 Stem cell burger: World's first lab-grown burger is eaten in London. Scientists at Maastricht University use cow stem cells to grow artificial strips of muscle which, when combined, make a patty. **Sergey Brin**, co-founder of Google, funds \$330,000 research