

Edited by Emma Sanders

Astronomers celebrate sight of two million year old 'baby'

A very small, faint galaxy more than 13.4 billion light-years from Earth is creating a great deal of excitement among astronomers. This protogalaxy, which is just 500 light-years across (a two-hundredth of the size of the Milky Way), is thought to be one of the building blocks of today's galaxies. It may prove to be an important missing piece in the puzzle of how and when the first stars and galaxies formed in the universe.

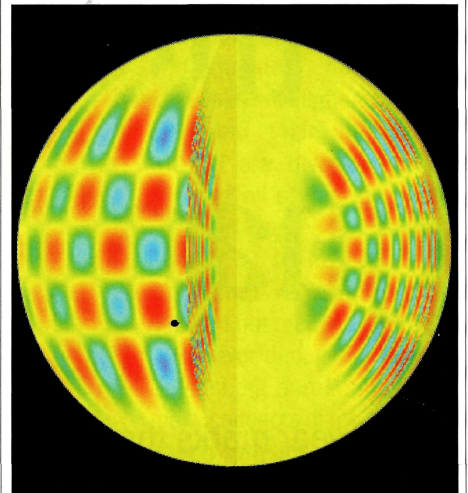
The discovery was made thanks to the gravitational lensing of light from the distant protogalaxy by a huge cluster of galaxies along the line of sight. The cluster effectively

magnified the light from the protogalaxy.

The protogalaxy was first identified from images taken from the Hubble Space Telescope archive, and further observations of its spectrum were made using the two 10 m Keck telescopes in Hawaii. The observations reveal a 2 million year old, 1 million solar mass, galaxy-like object consisting of young hot stars.

Previous galaxies discovered at high red-shifts are extremely bright. This is the first time that a faint protogalaxy has been analysed, owing to the amplification of its signal by the gravitational lens.

Noisy stars give good vibrations

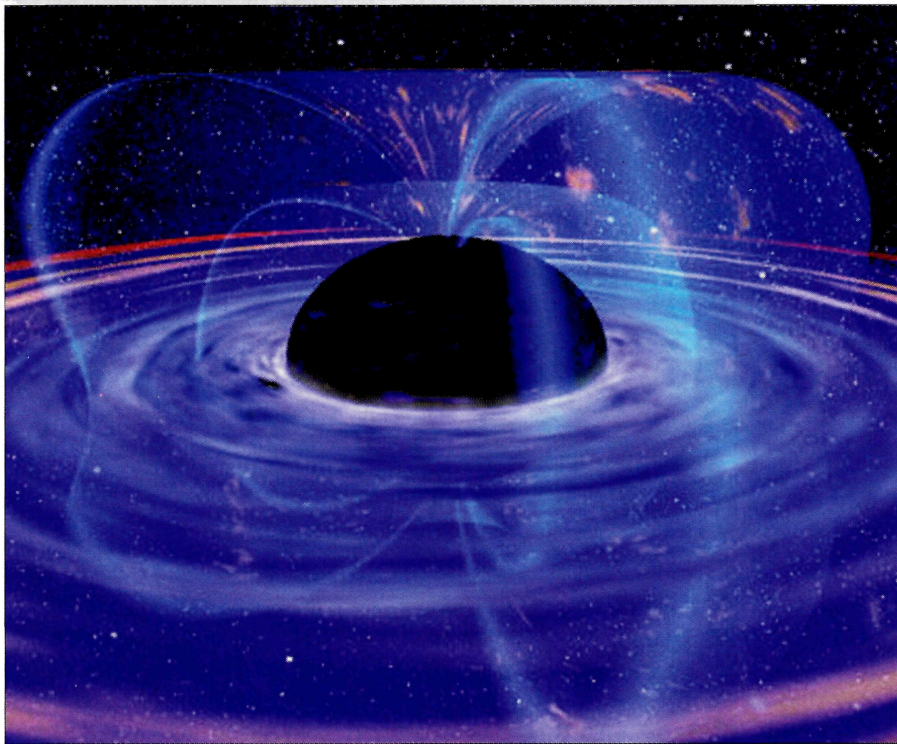


Acoustic waves in a sun-like star. (European Southern Observatory.)

Sound waves running through a star can help astronomers to reveal its inner properties.

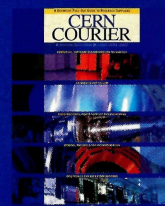
Alpha Centauri A is the nearest star visible to the naked eye, at a distance of a little more than four light-years. New observations show that its pulsation follows a 7 min cycle, very similar to that observed in the Sun. Astroseismology for sun-like stars is becoming an increasingly important probe of stellar theory. The observations were carried out by astronomers from Geneva Observatory using the CORALIE spectrometer on the Swiss 1.2 m Leonard Euler telescope at the European Southern Observatory's La Silla site.

Picture of the month



An artist's impression of the black hole in spiral galaxy MCG-6-30-15, 100 million light-years away. Observations were made of X-ray emission corresponding to the presence of iron in the accretion disc around the black hole using the XMM-Newton telescope. The number of photons and their energies measured by XMM-Newton far exceeded what was expected from the established models for accretion discs of supermassive black holes. This led the researchers to suggest that energy may escape from a black hole when it is in a strong magnetic field, which exerts a braking effect. This, like most other things to do with black holes, is a matter for intense debate. (ESA.)

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