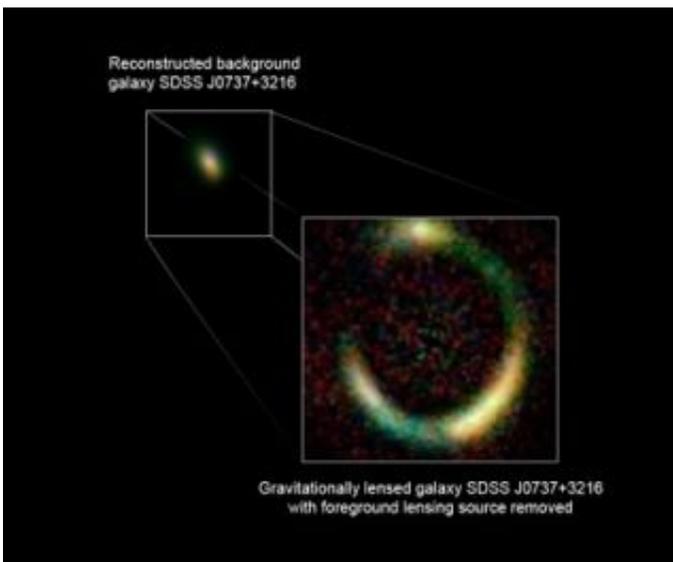


Trick of Nature Allows Hubble and Keck to Find Tiny Galaxy

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This photo illustration shows a tiny galaxy 6 billion light-years away that is smaller than any galaxy ever seen at that distance. Credit: NASA, ESA, and P. Marshall and T. Treu (University of California, Santa Barbara)

A team of astronomers at the University of California at Santa Barbara report that they have resolved a dwarf galaxy 6 billion light-years away. Weighing only 1/100 as much as our Milky Way Galaxy, the dwarf is much smaller than anything studied before in any detail at this distance.

They report in the Dec. 20 issue of the *Astrophysical Journal* that the galaxy looks very similar to one of the dwarf galaxies in the Virgo

cluster, which is located only 60 million light-years away.

"We believe we may have identified the progenitors of local dwarf galaxies," says Tommaso Treu. "We see them as clearly as we would see dwarfs in the Virgo cluster using ground-based telescopes. The sharp view of NASA's Hubble Space Telescope, and the laser guide stars adaptive optics system on the W.M. Keck Telescope, were aimed at a natural lens in space, called a gravitational lens, to study the dwarf.

The researchers took advantage of the fact that the distant dwarf galaxy lies behind a massive foreground galaxy that bends light rays much as a glass lens does. This gravitational lensing amplifies the image of the much farther dwarf galaxy, making it appear 10 times brighter and 10 times larger than it would normally be seen by either Hubble or Keck.

Source: STScI

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