

# Hubble watches cosmic light bend

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Credit: ESA/Hubble & NASA, D. Coe

This extraordinary image from the NASA/ESA Hubble Space Telescope of the galaxy cluster Abell 2813 (also known as ACO 2813) has an almost delicate beauty, which also illustrates the remarkable physics at work within it. The image spectacularly demonstrates the concept of gravitational lensing.

Among the tiny dots, spirals, and ovals that are the galaxies belonging to the cluster, there are several distinct crescent shapes. These curved arcs of light aren't curved galaxies. They are strong examples of a phenomenon known as gravitational lensing.

Gravitational lensing occurs when an object's mass causes light to bend. The curved crescents and "S" shapes are light from galaxies that lie beyond Abell 2813. The galaxy cluster has so much mass that it acts as a gravitational lens, bending light from more distant galaxies around it. These distortions can appear as many [different shapes](#), such as long lines or arcs.

This visual evidence, that mass causes light to bend, is famously used as proof of Einstein's [theory of general relativity](#).

The image is a compilation of observations taken with the Hubble Space Telescope's Advanced Camera for Surveys and Wide Field Camera 3.

Provided by NASA's Goddard Space Flight Center

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