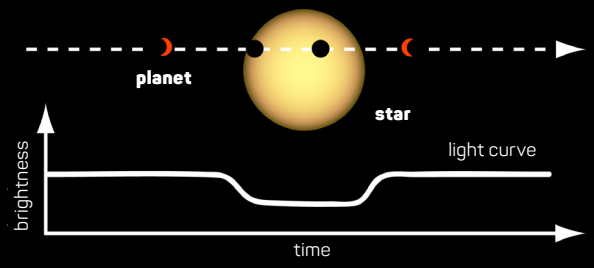
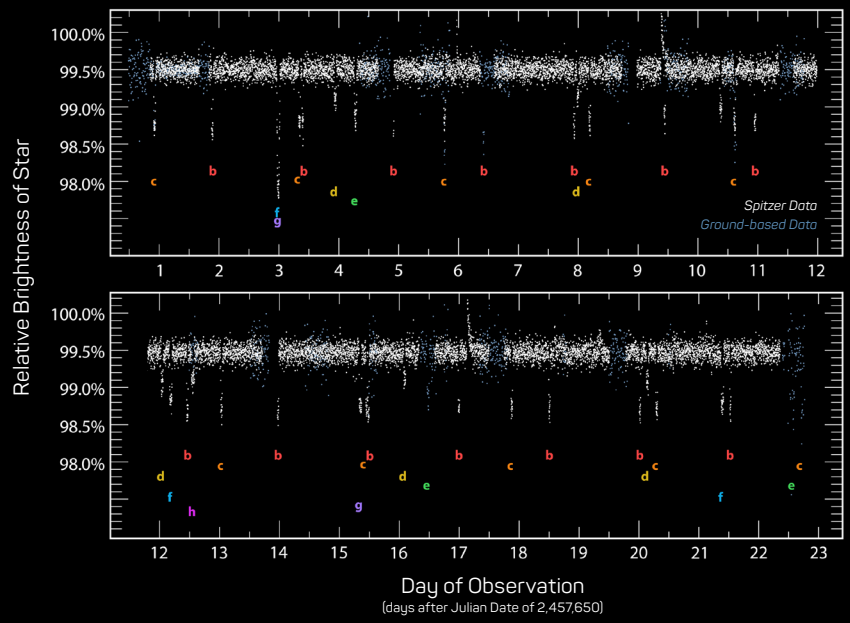
Light Curves from TRAPPIST-1

Astronomers used measurements of star brightness to discover Earth-sized planets orbiting the star TRAPPIST-1.



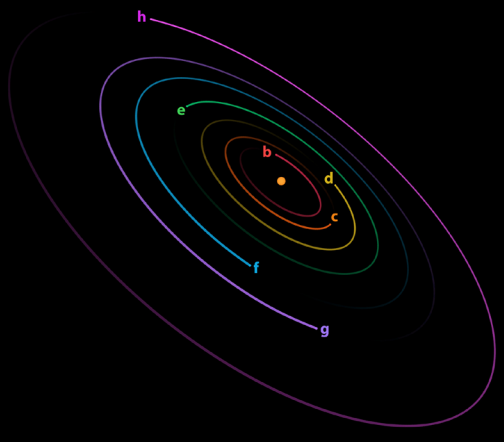
Astronomers look for planets by searching for the periodic dimming of a star's light as a planet passes in front of it.

A *light curve* is a way of graphing a star's brightness over time. Astronomers use light curves to infer that planets are orbiting distant stars. Sensitive instruments aboard spacecraft like NASA's Spitzer Space Telescope and Kepler allow scientists to make detailed measurements of a star's brightness and reveal periodic decreases. These dips in brightness occur when a planet orbits the star and blocks starlight. The size of the dip corresponds directly to the size of the planet. Spitzer verified the first three TRAPPIST-1 planets and discovered the other four using this method. All of the planets in the TRAPPIST-1 system are about the size of Earth!



These observed dips in brightness measured by NASA's Spitzer Space Telescope confirm seven exoplanets (labeled b-h) in the TRAPPIST-1 system.

Orbits of the TRAPPIST-1 planets



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