= HD 28185 b =

HD 28185 b is an extrasolar planet approximately 138 light @-@ years away from Earth in the constellation of Eridanus . The planet was discovered orbiting the Sun @-@ like star HD 28185 in April 2001 as a part of the CORALIE survey for southern extrasolar planets , and its existence was independently confirmed by the Magellan Planet Search Survey in 2008 . HD 28185 b orbits its sun in a circular orbit that is at the inner edge of its star 's habitable zone .

= = Discovery = =

HD 28185 b was discovered by detecting small periodic variations in the radial velocity of its parent star caused by the gravitational attraction of the planet . This was achieved by measuring the Doppler shift of the star 's spectrum . In 2001 it was announced that HD 28185 exhibited a wobble along the line @-@ of @-@ sight with a period of 383 days , with an amplitude indicating a minimum mass 5 @.@ 72 times that of Jupiter .

= = Orbit and mass = =

HD 28185 b takes 1 @.@ 04 years to orbit its parent star . Unlike most known long @-@ period planets , the orbit of HD 28185 b has a low eccentricity , comparable to that of Mars in the Solar System . The orbit lies entirely within its star 's habitable zone .

The amplitude of the radial velocity oscillations means that the planet has a mass at least 5 @.@ 7 times that of Jupiter in the Solar System . However , the radial velocity method only yields a minimum value on the planet 's mass , depending on the orbital inclination to our line @-@ of @-@ sight . Therefore , the true mass of the planet may be much greater than this lower limit .

= = Characteristics = =

Given the planet 's high mass , it is most likely to be a gas giant with no solid surface . Since the planet has only been detected indirectly through observations of the star , properties such as its radius , composition , and temperature are unknown .

Since HD 28185 b orbits in its star 's habitable zone , some have speculated on the possibility of life on worlds in the HD 28185 system . While it is unknown whether gas giants can support life , simulations of tidal interactions suggest that HD 28185 b could harbor Earth @-@ mass satellites in orbit around it for many billions of years . Such moons , if they exist , may be able to provide a habitable environment , though it is unclear whether such satellites would form in the first place . Additionally , a small planet in one of the gas giant 's Trojan points could survive in a habitable orbit for long periods . The high mass of HD 28185 b , of over six Jupiter masses , actually makes either of these scenarios more likely than if the planet was about Jupiter 's mass or less .