

= HD 154672 =

HD 154672 is a yellow subgiant ( spectral type G3 IV ) . It is about 65 parsecs away from the Sun that is larger than , but of a similar mass to , the Sun . However , HD 154672 is much older . The star is very metal @-@ rich , which is one of the reasons why it was targeted for a planet search by the N2K Consortium , which discovered the gas giant planet HD 154672 b using Doppler Spectroscopy ; the discovery was reported in October 2008 . The N2K collaboration chose HD 154672 primarily because it aimed to discover the correlation between a star 's metallicity and the mass of orbiting planets .

HD 154672 was targeted by the Magellan Telescopes . It is the host of the first planet discovered from the telescopes by N2K .

= = Observational history = =

HD 154672 was first targeted for a planet search in 2004 by the N2K Consortium , a collaboration of astronomers hoping to take radial velocity measurements of previously untargeted stars using Doppler spectroscopy ; however , HD 154672 had been previously targeted by a series of surveys , and was previously included in the Henry Draper catalog and the catalog of the European Space Agency 's Hipparcos satellite .

N2K deliberately biased its search towards closely orbiting Jupiter @-@ size planets ( Hot Jupiters ) in the orbit of metal @-@ rich stars , as the consortium hoped to discover how the mass of a planet relates to its host star 's metal content . Initially , HD 154672 was noted as a host to a short @-@ orbit Hot Jupiter , although additional observations revealed that the prospective planetary body had a longer orbit than previously expected , as revealed by the Magellan Telescopes at Chile 's Las Campanas Observatory .

Use of the Magellan Clay telescope 's Magellan Inamori Kyocera Echelle spectrograph ( MIKE ) helped collect sixteen radial velocity measurements for HD 154672 ; a team of American astronomers and one from the Vatican City used these measurements to confirm the existence of planet HD 154672 b and to determine its mass .

The discovery of HD 154672 's planet was reported in the Astronomical Journal on October 7 , 2008 along with a planet in the orbit of HD 205739 .

= = Host star = =

HD 154672 is a sunlike G @-@ type star that has a mass of 1 @. @ 06 times that of the Sun and a radius that is 1 @. @ 27 times that of the Sun . Thus , it is slightly larger than the Sun , although it has a similar mass . The star has an effective temperature of 5714 K , slightly cooler than the Sun ; however , it is far richer in iron , with a measured metallicity of [ Fe / H ] = 0 @. @ 26 . This means that the star has 1 @. @ 82 times more iron than the Sun does . HD 154672 is far older than the Sun , as its estimated gyrochronological age is estimated at 9 @. @ 28 billion years . HD 154672 's spectrum suggests that the star 's chromosphere ( its outer layer ) is not active .

HD 154672 is located 65 @. @ 8 parsecs ( 214 @. @ 6 light years ) away from Earth . It has an apparent magnitude ( V ) of 8 @. @ 22 , making the star too dim to see from Earth with the naked eye . The star is slightly dimmer than planet Neptune as perceived with the naked eye , which has an apparent magnitude of 7 @. @ 78 at its brightest . The star 's actual brightness is measured with an absolute magnitude of 4 @. @ 12 , similar to that of the Sun .

= = Planetary system = =

HD 154672 b is a Hot Jupiter , as it is a closely orbiting planet with a high mass . Specifically , HD 154672 has a mass that is 5 @. @ 02 times greater than Jupiter 's mass . It also orbits at a distance of 0 @. @ 6 AU , or about 60 % of the mean distance between the Earth and Sun . This orbit is completed every 163 @. @ 91 days .

HD 154672 b has an orbital eccentricity of 0.61, denoting a very elliptical orbit. The planet's discoverers noted that if water existed in the planet's atmosphere, it might change from a liquid state to a gaseous state as the planet swings closer to its host star, increasing its temperature.