= Kepler @-@ 5 =

Kepler @-@ 5 is a star located in the constellation Cygnus in the field of view of the Kepler Mission , a NASA project aimed at detecting planets in transit of , or passing in front of , their host stars as seen from Earth . One closely orbiting , Jupiter @-@ like planet , named Kepler @-@ 5b , has been detected around Kepler @-@ 5 . Kepler @-@ 5 's planet was one of the first five planets to be discovered by the Kepler spacecraft ; its discovery was announced on January 4 , 2010 at the 215th meeting of the American Astronomical Society after being verified by a variety of observatories . Kepler @-@ 5 is larger and more massive than the Sun , but has a similar metallicity , a major factor in planet formation .

= = Nomenclature and history = =

Kepler @-@ 5 is named so because it was the fifth planet @-@ bearing star discovered during the course of the Kepler Mission , a NASA operation that seeks to discover Earth @-@ like planets that transit , or cross in front of , their host stars with respect to Earth . The star 's planet , Kepler @-@ 5b , was the second of the first five planets to be discovered by the Kepler spacecraft ; the first three planets found by Kepler were used as tests , and had already been discovered . Kepler @-@ 5b was presented to the public on January 4 , 2010 at the 215th meeting of the American Astronomical Society in Washington , D.C. , along with planets around Kepler @-@ 4 , Kepler @-@ 6 , Kepler @-@ 7 , and Kepler @-@ 8 .

Kepler @-@ 5b 's initial discovery by Kepler was re @-@ examined by scientists at the W.M. Keck Observatory at Mauna Kea , Hawaii ; the McDonald Observatory in west Texas ; the Palomar and Lick Observatories in California ; the MMT , WIYN , and Whipple Observatories in Arizona ; and the Roque de los Muchachos Observatory in the Canary Islands .

= = Characteristics = =

Kepler @-@ 5 is a sunlike star that is 1 @.@ 374 (± 0 @.@ 056) Msun and 1 @.@ 793 (± 0 @.@ 053) Rsun , and is 137 % the mass of and 179 % the radius of the Sun . The star has a metallicity of [Fe / H] 0 @.@ 04 (± 0 @.@ 06) , making it approximately as metal @-@ rich as the Sun , therefore increasing the star 's likelihood to have planets in orbit . Kepler @-@ 5 has an effective temperature of 6297 (± 60) K , which is hotter than the Sun 's effective temperature of 5778 K. Kepler @-@ 5 has an apparent magnitude of 13 @.@ 4 , and cannot be seen with the naked eye .

= = Planetary system = =

Kepler @-@ 5b is 2 @.@ 114 MJ and 1 @.@ 431 RJ . It is , thus , more than twice the mass of Jupiter , and slightly less than three halves of Jupiter 's radius . Kepler @-@ 5b orbits its star every 3 @.@ 5485 days , lying at approximately .05064 AU from Kepler @-@ 5 . It is , thus , a Hot Jupiter , or a gas giant that orbits near to its host star . To compare , Mercury orbits the sun at .3871 AU every 87 @.@ 97 days . The planet 's eccentricity is assumed to be 0 , which is the eccentricity for a circular orbit .