

= WASP @-@ 13 =

WASP @-@ 13 is a star in the Lynx constellation . The star is similar , in terms of metallicity and mass , to the Sun , although it is hotter and most likely older . The star was first observed in 1997 , according to the SIMBAD database , and was targeted by SuperWASP after the star was observed by one of the SuperWASP telescopes beginning in 2006 . Follow @-@ up observations on the star led to the discovery of planet WASP @-@ 13b in 2008 ; the discovery paper was published in 2009 .

= = Observational history = =

According to SIMBAD , WASP @-@ 13 was first observed in 1997 , when it was catalogued by astronomers measuring the proper motion of stars in regions of the sky where galaxies are detected . Between November 27 , 2006 , and April 1 , 2007 , the SuperWASP @-@ North telescope in the Canary Islands observed WASP @-@ 13 ; analysis of the data suggested that a planet could be in the orbit of the star .

Follow @-@ up observations were conducted by a team of British , Spanish , French , Swiss and American astronomers using the photometer on the James Gregory Telescope in Scotland ; using visual comparisons to the nearby bright star HD 80408 , the star 's light curve was better defined . In combination with measurements of WASP @-@ 13 's spectrum measured using the SOPHIE échelle spectrograph at the Haute @-@ Provence Observatory in France , the star 's radial velocity was also discovered . The Fibre @-@ Fed Echelle Spectrograph on the Nordic Optical Telescope gathered additional measurements of WASP @-@ 13 's spectrum , allowing astronomers to determine WASP @-@ 13 's characteristics . Use of SOPHIE 's data led to the discovery of the planet WASP @-@ 13b in 2008 ; the planet was reported in 2009 .

Based on SIMBAD 's archive , WASP @-@ 13 was included in ten more papers between its discovery and 2010 .

= = Characteristics = =

WASP @-@ 13 is a sunlike , G @-@ type star that is situated approximately 156 parsecs (509 light years) in the Lynx constellation . With an apparent magnitude of 10 @. @ 42 , the star cannot be seen with the unaided eye from the perspective of someone on Earth . The star 's effective temperature , at 5826 K , is hotter than that of the Sun . However , its metallicity is similar ; this can be seen in how the concentration of iron , or [Fe / H] , is approximately 0 . WASP @-@ 13 's surface gravity is measured at 4 @. @ 04 km / s² , while the rate at which it rotates is at most 4 @. @ 9 km / s .

WASP @-@ 13 has a mass that is 1 @. @ 03 times the mass of the Sun and a radius that is 1 @. @ 34 times the Sun 's radius . Measurements of its lithium content suggest that the star has used up all of its helium and is now fusing lithium in the shell around its core . With this , its estimated age is 8 @. @ 5 billion years , over twice the age of the Sun , but this age may vary to any point between 4 @. @ 4 and 14 billion years in age because of the high uncertainty surrounding this aspect of the star 's age .

= = Planetary system = =

WASP @-@ 13b is a planet that orbits its host star at a distance of 0 @. @ 0527 AU , or approximately 5 @. @ 27 % of the mean distance between the Earth and Sun . The planet completes an orbit every 4 @. @ 35298 days , or approximately 4 days and 8 @. @ 5 hours . WASP @-@ 13b 's estimated mass is 0 @. @ 46 times the mass of Jupiter , while its radius is about 1 @. @ 21 times that of the planet .