= 47 Ursae Majoris b =

47 Ursae Majoris b (abbreviated 47 UMa b) , also named Taphao Thong (Thai : ???????? , rtgs : Taphaothong , pronounced [t?.p??w.t?? ? ??]) , is an extrasolar planet approximately 46 light @-@ years from Earth in the constellation of Ursa Major . The planet was discovered located in a long @-@ period orbit around the star 47 Ursae Majoris in January 1996 and as of 2011 it is the innermost of three known planets in its planetary system . It has a mass at least 2 @.@ 53 times that of Jupiter .

In July 2014 the International Astronomical Union launched a process for giving proper names to certain exoplanets and their host stars . The process involved public nomination and voting for the new names . In December 2015 , the IAU announced the winning name was Taphao Thong for this planet . The winning name was submitted by the Thai Astronomical Society of Thailand . Taphaothong was one of two sisters associated with a Thai folk tale .

= = Discovery = =

Like the majority of known extrasolar planets , Taphao Thong was discovered by detecting the changes in its star 's radial velocity as the planet 's gravity pulls the star around . This was achieved by observing the Doppler shift of the spectrum of Chalawan . After the discovery of the first extrasolar planet around a Sun @-@ like star , Dimidium , astronomers Geoffrey Marcy and R. Paul Butler searched through their observational data for signs of extrasolar planets and soon discovered two : Taphao Thong and 70 Virginis b . The discovery of Taphao Thong was announced in 1996 .

= = Orbit and mass = =

47 Ursae Majoris b orbits at a distance of 2 @.@ 10 AU from its star , taking 1 @,@ 078 days or 2 @.@ 95 years to complete a revolution . It was the first long @-@ period planet around a main sequence star to be discovered . Unlike the majority of known long @-@ period extrasolar planets , the eccentricity of the orbit of 47 Ursae Majoris b is low .

A limitation of the radial velocity method used to detect 47 Ursae Majoris b is that only a lower limit on the planet 's mass can be obtained . Preliminary astrometric measurements made by the Hipparcos satellite suggest the planet 's orbit is inclined at an angle of 63 @.@ 1 ° to the plane of the sky , which would imply a true mass 12 % greater than the lower limit determined by radial velocity measurements . However , subsequent investigation of the data reduction techniques used suggests that the Hipparcos measurements are not precise enough to adequately characterise the orbits of substellar companions , and the true inclination of the orbit (and hence the true mass) are regarded as unknown .

= = Physical characteristics = =

Given the planet 's high mass , it is likely that 47 Ursae Majoris b is a gas giant with no solid surface . Because the planet has only been detected indirectly , properties such as its radius , composition , and temperature are unknown . Due to its mass it is likely to have a surface gravity 6 ? 8 times that of Earth . Assuming a composition similar to that of Jupiter and an environment close to chemical equilibrium , the upper atmosphere of the planet is expected to contain water clouds , as opposed to the ammonia clouds typical of Jupiter .

Although 47 Ursae Majoris b is outside its star 's habitable zone , its gravitational influence would disrupt the orbit of planets in the outer part of the habitable zone . In addition , it may have disrupted the formation of terrestrial planets and reduced the delivery of water to any inner planets in the system . Therefore , planets located in the habitable zone of 47 Ursae Majoris are likely to be small and dry .

It has been theorized that light reflections and infrared emissions from 47 UMa b , along with tidal influence , could warm any moons in orbit around it to be habitable , despite the planet being outside

the normally accepted habitable zone .