KELT-3b

esa

KELT-3b CASE FILE

Known as **KELT-3b**, the third exoplanet found by the KELT survey, this exoplanet is unlike anything we have seen in our Solar System.

Cheops observed this mysterious exoplanet on the **22 January 2023** at **23:20 CET**. By analysing the data, we have discovered that KELT-3b is...

a gas giant. This exoplanet orbits an F type star. KELT-3 b is an exoplanet that orbits the star KELT-3, which is located approximately 686.6 light-years (210.5 pc) from our Solar System. Its discovery was made public in 2012.KELT-3 has an apparent magnitude of 9.8 and an absolute magnitude of 3.2.It is 1.3 times more massive and 1.5 times larger than the Sun. The surface temperature is 6304 degrees Fahrenheit, with F spectral types. The extrasolar planet KELT-3 b orbits the star KELT-3 every 2.7 days and has an orbital distance of 0.04 AU (6158944.3 km).

Fast Facts:

TYPE
Hot Jupiter

RADIUS OF THE PLANET
1.333 Rj

MASS OF THE PLANET
$617 \pm 105\ M_{EARTH}$

ORBITAL PERIOD
0.0074 years

DISTANCE TO HOST STAR
686.6 light years

DENSITY
0.75+0.12 −0.10 g cm−3

DISCOVERED
2012 by the KELT survey

CHARACTERISTICS
puffy and gaseous

COMPOSITION
Puffy

TEMPERATURE
1643^{+97}_{-89} °C

In comparison to the planets in the Solar System, KELT-3b...

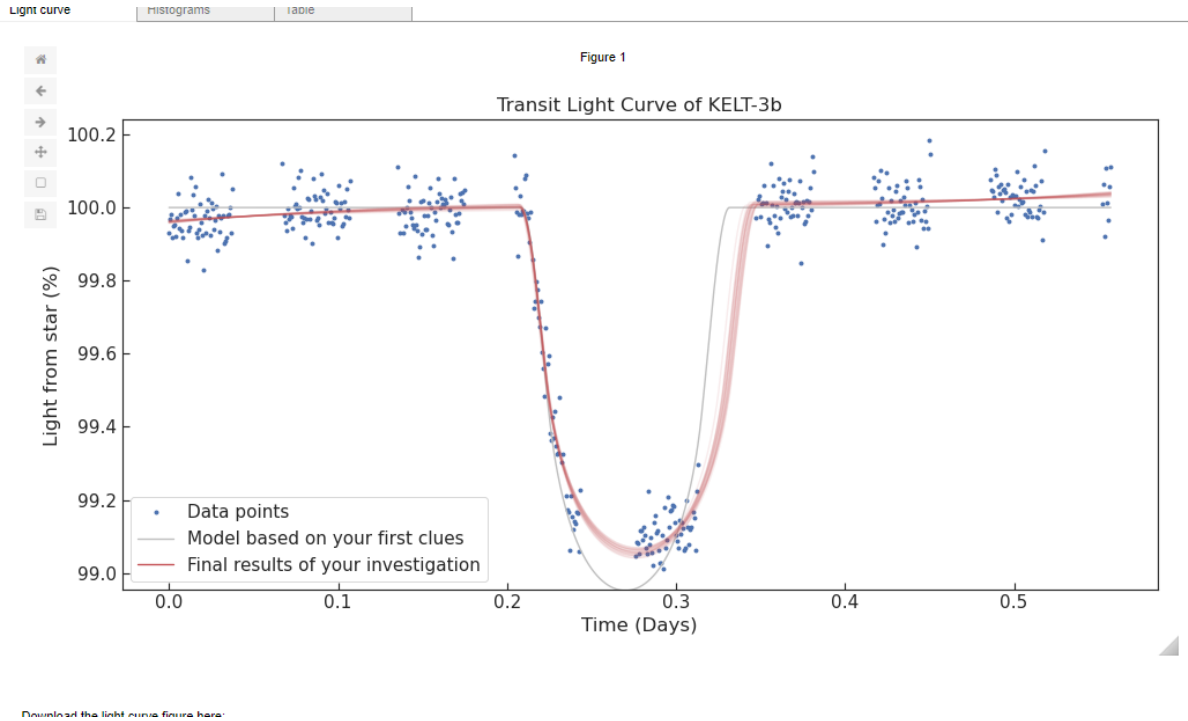
is massive. It's mass is about 1.94 Jupiters. The entire exoplanet is larger than the sun by 1.3x the size. It has a temperature of 1,811 K, which gives it a Hot Jupiter class. KELT-3b has a lower density than Jupiter, and completes a revolution in less in 3 days. Since Jupiter is the largest planet in our solar system and is considered a gas giant, KELT-3b is described as a hot Jupiter, therefore a conclusion can be made that KELT-3b is a puffy gas giant which is noted as a hot Jupiter.

KELT-3 is a sun like star 690 light years away from Earth in the Leo constellation. KELT-3 is slightly bigger than our Sun.

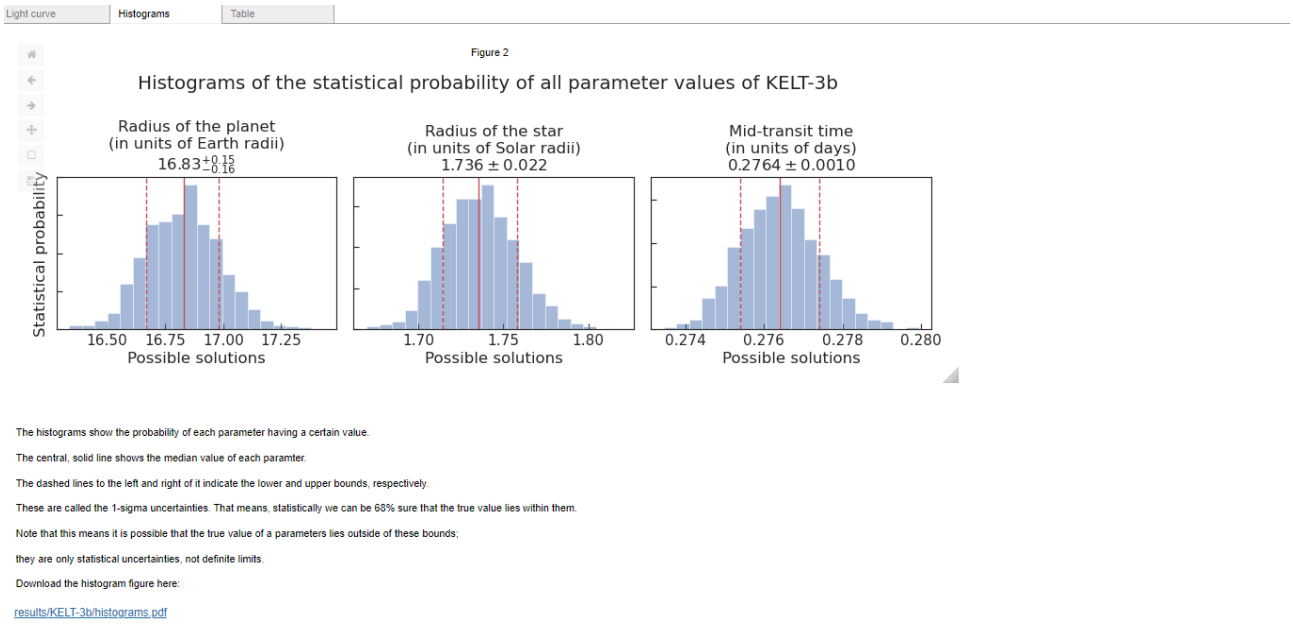
Mass of the star = **$1.96 \pm 0.50\ M_{Sun}$**

Radius of the star = **$1.70 \pm 0.12\ R_{Sun}$**

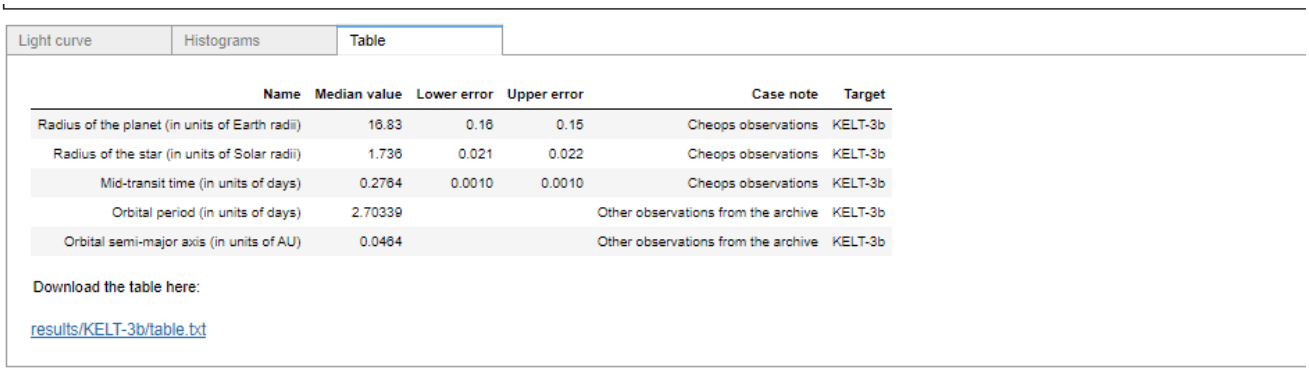
KELT-3b: Data and Light Curve



Transit Light Curve of KELT-3b



Histograms of KELT-3b



Light curve | Histograms | Table

Name	Median value	Lower error	Upper error	Case note	Target
Radius of the planet (in units of Earth radii)	16.83	0.16	0.15	Cheops observations	KELT-3b
Radius of the star (in units of Solar radii)	1.736	0.021	0.022	Cheops observations	KELT-3b
Mid-transit time (in units of days)	0.2764	0.0010	0.0010	Cheops observations	KELT-3b
Orbital period (in units of days)	2.70339			Other observations from the archive	KELT-3b
Orbital semi-major axis (in units of AU)	0.0464			Other observations from the archive	KELT-3b

Download the table here:

results/KELT-3b/table.txt

Table of KELT-3b