

BLUE SUPERGIANT
ALNITAK A



Alnitak (bright star lower left), right next to the Flame Nebula

Luminosity <i>in Solar Luminosity</i>	250 000 L _☉
Surface Temperature <i>in Kelvin</i>	29 500 K
Spectral Class	O
Mass <i>in Solar Mass</i>	33 M _☉
Radius <i>in Solar Radius</i>	20 R _☉
Distance <i>in Lightyears</i>	1 260 Ly

Alnitak is a triple star system and the eastern star of the Orion belt. The main star Alnitak A is a luminous supergiant with 10 000 times the luminosity of the Sun in the visible range. Seen from Earth it is the brightest star of its spectral class.

BLUE SUPERGIANT
ZETA PUPPIS

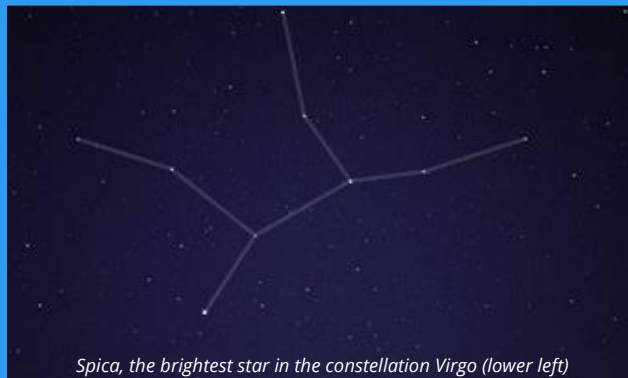


Close up of Zeta Puppis

Luminosity <i>in Solar Luminosity</i>	800 000 L _☉
Surface Temperature <i>in Kelvin</i>	42 500 K
Spectral Class	O
Mass <i>in Solar Mass</i>	56 M _☉
Radius <i>in Solar Radius</i>	20 R _☉
Distance <i>in Lightyears</i>	1090 Ly

Zeta Puppis is a blue supergiant and thus one of the hottest and brightest stars in the Milky Way. It is a runaway star, meaning it has a very large pace velocity compared to its surrounding stellar medium. This is probably because Zeta Puppis was ejected from a close binary system when its companion exploded as a supernova.

BLUE GIANT SPICA



Spica, the brightest star in the constellation Virgo (lower left)

Luminosity <i>in Solar Luminosity</i>	20 500 L _☉
Surface Temperature <i>in Kelvin</i>	25 300 K
Spectral Class	B
Mass <i>in Solar Mass</i>	11,4 M _☉
Radius <i>in Solar Radius</i>	7,5 R _☉
Distance <i>in Lightyears</i>	250 Ly

Spica is a rotating ellipsoidal variable, i.e. a close binary system in which the stars are distorted by their gravitational interaction. The effect provides a periodically fluctuating apparent magnitude. The primary star is at the end of its stable lifetime and will eventually end as a supernova.

BLUE GIANT
BELLATRIX



Bellatrix (lower right) in front of an emission nebula

Luminosity <i>in Solar Luminosity</i>	4 000 L _☉
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Surface Temperature <i>in Kelvin</i>	22 000 K
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Spectral Class	B
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Mass <i>in Solar Mass</i>	8 M _☉
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Radius <i>in Solar Radius</i>	5,4 R _☉
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Distance <i>in Lightyears</i>	252 Ly
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Bellatrix is the right shoulder of Orion and the third brightest star of the constellation. It is a giant star which will blow up in about 100 million years and end up as a White Dwarf. Bellatrix has been used as a spectral standard star until it was found to have a variable magnitude.

MAIN-SEQUENCE STAR

ACHERNAR



An illustration of Achernar, flattened by its extreme rotation speed

Luminosity <i>in Solar Luminosity</i>	3 000 L_{\odot}
Surface Temperature <i>in Kelvin</i>	18 700 K
Spectral Class	B
Mass <i>in Solar Mass</i>	7 M_{\odot}
Radius <i>in Solar Radius</i>	7,5 R_{\odot}
Distance <i>in Lightyears</i>	139 Ly

Achernar is the ninth brightest star in the sky. Since it is far south, it is not visible from the northern hemisphere. Achernar has a very high rotation speed of at least 230 km/s, which is why it is strongly oblate (the equatorial diameter is twice the distance of the poles).

MAIN-SEQUENCE STAR

ALKAID



Alkaid is the drawbar star of the Big Dipper (top left)

Luminosity <i>in Solar Luminosity</i>	463 L_{\odot}
Surface Temperature <i>in Kelvin</i>	15 700 K
Spectral Class	B
Mass <i>in Solar Mass</i>	6,1 M_{\odot}
Radius <i>in Solar Radius</i>	3.9 R_{\odot}
Distance <i>in Lightyears</i>	104 Ly

Alkaid is a star in the constellation of Ursa Major and the most eastern of the big dipper. It rotates unusually fast, so it is slightly flattened. It also shows minor brightness variations in a period of about 3 days.

BLUE GIANT
RIGEL

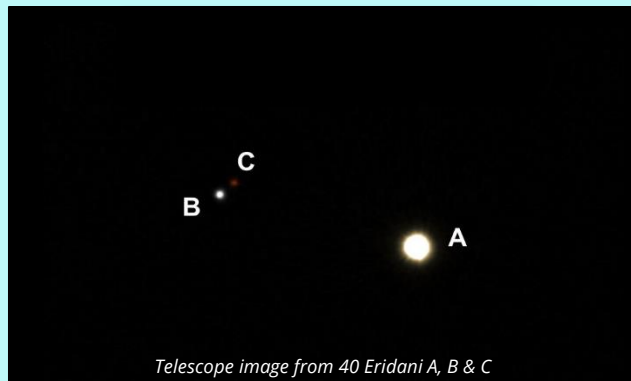


Rigel (brightest star) in front of the reflection nebula IC 2118

Luminosity <i>in Solar Luminosity</i>	40 600 L _☉
Surface Temperature <i>in Kelvin</i>	12 300 K
Spectral Class	B
Mass <i>in Solar Mass</i>	17 M _☉
Radius <i>in Solar Radius</i>	62 R _☉
Distance <i>in Lightyears</i>	770 Ly

Rigel is the brightest star of Orion and shines strikingly white. It played an important role in ancient Egyptian mythology. There it was the main star of the constellation Sah, which was composed of parts of Orion and Taurus.

WHITE DWARF 40 ERIDANI B



Telescope image from 40 Eridani A, B & C

Luminosity <i>in Solar Luminosity</i>	0,01 L _☉
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Surface Temperature <i>in Kelvin</i>	167 00 K
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Spectral Class	A
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Mass <i>in Solar Mass</i>	0,6 M _☉
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Radius <i>in Solar Radius</i>	0,01 R _☉
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Distance <i>in Lightyears</i>	16,3 Ly
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Eridani is a triple star system 16 light years away. The main star Eridani A is very similar to the Sun in size and age. The second star Eridani B is the first dwarf star discovered (already in 1783). Eridani C is a tiny but highly active star with fluctuating brightness.

MAIN-SEQUENCE STAR

SIRIUS A



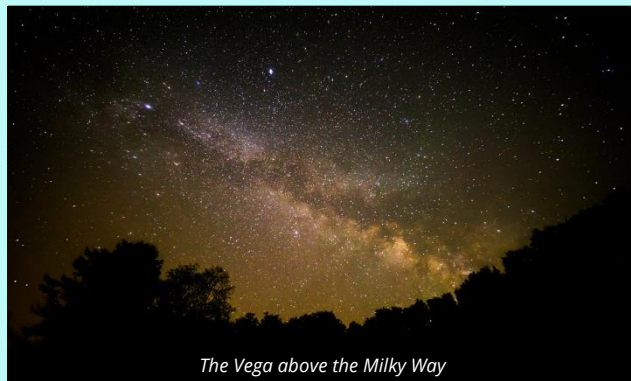
Sirius A with its dim companion

Luminosity <i>in Solar Luminosity</i>	25,4 L_{\odot}
Surface Temperature <i>in Kelvin</i>	9 900 K
Spectral Class	A
Mass <i>in Solar Mass</i>	2,1 M_{\odot}
Radius <i>in Solar Radius</i>	1,7 R_{\odot}
Distance <i>in Lightyears</i>	8,6 Ly

Sirius is a binary star system with a very faint companion. It is also called Dog Star. Sirius A is the brightest star in the night sky, being one of the nearest stars at only 8.6 Ly.

MAIN-SEQUENCE STAR

VEGA



The Vega above the Milky Way

Luminosity <i>in Solar Luminosity</i>	37 L_{\odot}
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Surface Temperature <i>in Kelvin</i>	9 600 K
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Spectral Class	A
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Mass <i>in Solar Mass</i>	2,2 M_{\odot}
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Radius <i>in Solar Radius</i>	2,7 R_{\odot}
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Distance <i>in Lightyears</i>	25 Ly
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With its white light Vega is the second brightest star of the northern sky. This is not due to its absolute magnitude, but rather to its very short distance of only 25 Ly. In former times Vega served as a reference star for brightness measurements.

BLUE SUPERGIANT

DENEK



Stellarium image of the Summer Triangle

Luminosity <i>in Solar Luminosity</i>	196 000 L _☉
Surface Temperature <i>in Kelvin</i>	8 700 K
Spectral Class	A
Mass <i>in Solar Mass</i>	22,5 M _☉
Radius <i>in Solar Radius</i>	150 R _☉
Distance <i>in Lightyears</i>	1 411 Ly

Deneb is the brightest known star of the Milky Way (absolute magnitude). Due to its enormous luminosity, it is easily visible in the night sky even with the naked eye, despite its very high distance.

WHITE DWARF PROCYRON B



Luminosity <i>in Solar Luminosity</i>	0,0005 L _☉
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Surface Temperature <i>in Kelvin</i>	7 740 K
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Spectral Class	A
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Mass <i>in Solar Mass</i>	0,6 M _☉
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Radius <i>in Solar Radius</i>	0,01 R _☉
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Distance <i>in Lightyears</i>	11,4 Ly
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Procyon is a binary star system in the constellation Canis Minor and with only 11.4 Ly distance one of the closest star systems. Procyon A is a whitish-yellowish, sun-like star, easily visible to the naked eye. It is accompanied by a faint white dwarf, Procyon B.

MAIN-SEQUENCE STAR

ALTAIR



Stellarium image of the Summer Triangle

Luminosity <i>in Solar Luminosity</i>	10,6 L_{\odot}
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Surface Temperature <i>in Kelvin</i>	7 550 K
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Spectral Class	A
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Mass <i>in Solar Mass</i>	1,7 M_{\odot}
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Radius <i>in Solar Radius</i>	1,8 R_{\odot}
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Distance <i>in Lightyears</i>	16,7 Ly
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Altair is one of the brightest stars visible from the northern hemisphere. Altair rotates very fast around its axis and is therefore strongly flattened. It needs only 10 hours for one rotation (sun needs 25 days). Altair is a very young star but will become a red giant in about 1 billion years.

MAIN-SEQUENCE STAR PROCYRON A



Luminosity <i>in Solar Luminosity</i>	6,9 L_{\odot}
Surface Temperature <i>in Kelvin</i>	6 530 K
Spectral Class	F
Mass <i>in Solar Mass</i>	1,5 M_{\odot}
Radius <i>in Solar Radius</i>	2,1 R_{\odot}
Distance <i>in Lightyears</i>	11,4 Ly

Procyron is a binary star system in the constellation Canis Minor and with "only" 11.4 Ly distance one of the closest star systems. Procyron A is a whitish-yellowish, sun-like star, easily visible to the naked eye. It is accompanied by a faint white dwarf, Procyron B.

WHITE DWARF
VAN MAANEN 2



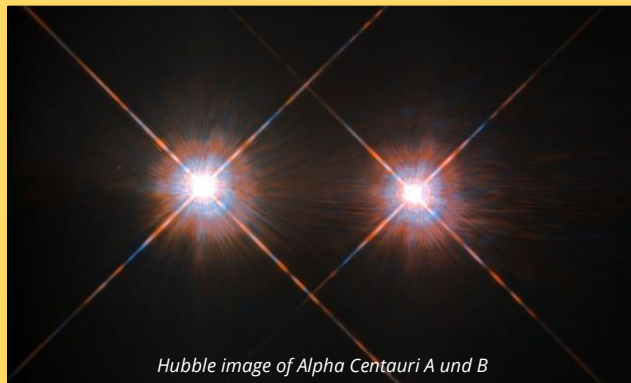
Van Maanen's star illustration

Luminosity <i>in Solar Luminosity</i>	0,0002 L _☉
Surface Temperature <i>in Kelvin</i>	6 200 K
Spectral Class	F
Mass <i>in Solar Mass</i>	0,7 M _☉
Radius <i>in Solar Radius</i>	0,01 R _☉
Distance <i>in Lightyears</i>	14,1 Ly

Van Maanen 2 is the nearest known white dwarf and was discovered in 1917. It is a compact burned out star, which has about 70% of the solar mass but only 1% of its expansion.

MAIN-SEQUENCE STAR

ALPHA CENTAURI A



Hubble image of Alpha Centauri A und B

Luminosity <i>in Solar Luminosity</i>	1,5 L_{\odot}
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Surface Temperature <i>in Kelvin</i>	5 810 K
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Spectral Class	G
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Mass <i>in Solar Mass</i>	1,1 M_{\odot}
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Radius <i>in Solar Radius</i>	1,2 R_{\odot}
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Distance <i>in Lightyears</i>	4,3 Ly
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Alpha Centauri is a binary star system orbited by a small companion, Proxima Centauri. It is the closest star system to us. The two stars are indistinguishable to the naked eye.

MAIN-SEQUENCE STAR

TAU CETI

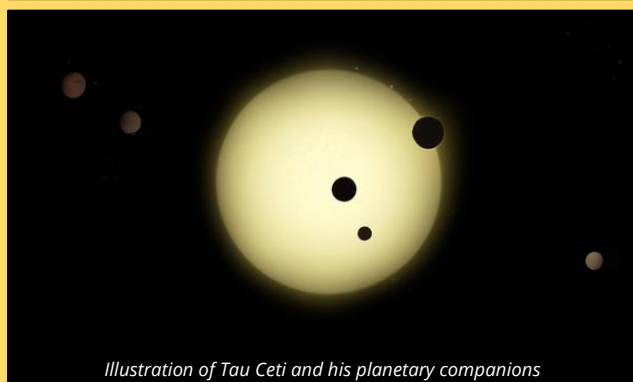


Illustration of Tau Ceti and his planetary companions

Luminosity <i>in Solar Luminosity</i>	0,5 L _☉
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Surface Temperature <i>in Kelvin</i>	5 340 K
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Spectral Class	G
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Mass <i>in Solar Mass</i>	0,8 M _☉
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Radius <i>in Solar Radius</i>	0,8 R _☉
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Distance <i>in Lightyears</i>	11,9 Ly
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Tau Ceti is a comparatively nearby star system, which is very similar to ours. Accordingly, it is repeatedly studied for the search of extraterrestrial intelligence. There are four known Earth-like planets around Tau Ceti, two of which are in the habitable zone.

RED GIANT

KAPPA PERSEI



An image of Kappa Persei with Digital Sky Survey

Luminosity <i>in Solar Luminosity</i>	40 L _☉
Surface Temperature <i>in Kelvin</i>	4 850 K
Spectral Class	K
Mass <i>in Solar Mass</i>	1,5 M _☉
Radius <i>in Solar Radius</i>	9 R _☉
Distance <i>in Lightyears</i>	112,7 Ly

Kappa Persei is a triple star system in the constellation Perseus. The main star is a metal-rich star with helium fusion in its core. Based on measurements of proper motion it can be assumed that Kappa Persei is part of the Hyades star cluster.

MAIN-SEQUENCE STAR

40 ERIDANI A



Telescope image from 40 Eridani A, B & C

Luminosity <i>in Solar Luminosity</i>	0,4 L _☉
Surface Temperature <i>in Kelvin</i>	5 100 K
Spectral Class	K
Mass <i>in Solar Mass</i>	0,9 M _☉
Radius <i>in Solar Radius</i>	0,8 R _☉
Distance <i>in Lightyears</i>	16,3 Ly

Eridani is a triple star system 16 light years away. The main star Eridani A is very similar to the Sun in size and age. The second star Eridani B is the first dwarf star discovered (already in 1783). Eridani C is a tiny but highly active star with fluctuating brightness.

MAIN-SEQUENCE STAR

61 CYGNI A

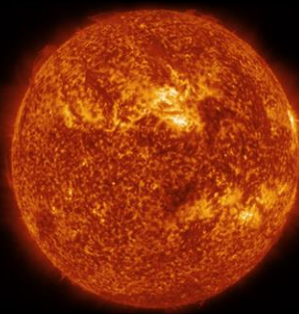


Telescope image of the binary star 61 Cygni

Luminosity <i>in Solar Luminosity</i>	0,08 L _☉
Surface Temperature <i>in Kelvin</i>	4 350 K
Spectral Class	K
Mass <i>in Solar Mass</i>	0,7 M _☉
Radius <i>in Solar Radius</i>	0,7 R _☉
Distance <i>in Lightyears</i>	11,4 Ly

61 Cygni is a binary star system with two very sunlike stars. The system is relatively close, so that already with an amateur telescope the two single stars can be seen separately.

RED GIANT
ARCTURUS



Artistic illustration of the Arcturus

Luminosity <i>in Solar Luminosity</i>	210 L _☉
Surface Temperature <i>in Kelvin</i>	4 300 K
Spectral Class	K
Mass <i>in Solar Mass</i>	1,5 M _☉
Radius <i>in Solar Radius</i>	25,7 R _☉
Distance <i>in Lightyears</i>	36,7 Ly

Arcturus is the main star of the constellation Boötes, the brightest star in the northern sky and a Red Giant. Arcturus can be seen from all continents and was the first star observed with a telescope.

RED SUPERGIANT

BETELGEUSE



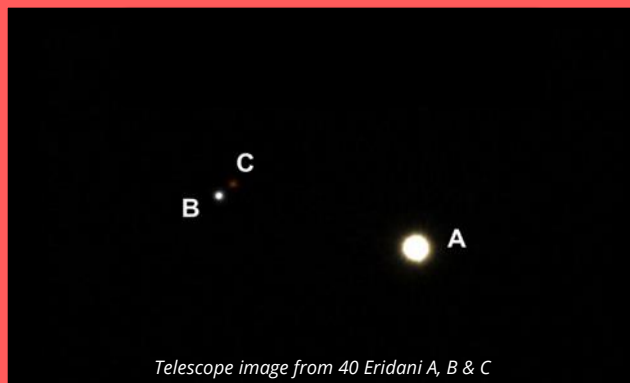
Betelgeuse (left) in front of an emission nebula

Luminosity <i>in Solar Luminosity</i>	55 000 L_{\odot}
Surface Temperature <i>in Kelvin</i>	3 600 K
Spectral Class	M
Mass <i>in Solar Mass</i>	17 M_{\odot}
Radius <i>in Solar Radius</i>	760 R_{\odot}
Distance <i>in Lightyears</i>	550 Ly

Betelgeuse is a Red Supergiant, into which the Sun would fit about 0.5 billion times. Due to its dimensions, it is one of the few stars visible from Earth as an extended surface with the appropriate telescope technology.

MAIN-SEQUENCE STAR

40 ERIDANI C



Telescope image from 40 Eridani A, B & C

Luminosity <i>in Solar Luminosity</i>	0,022 L_{\odot}
Surface Temperature <i>in Kelvin</i>	3 500 K
Spectral Class	M
Mass <i>in Solar Mass</i>	0,2 M_{\odot}
Radius <i>in Solar Radius</i>	0,24 R_{\odot}
Distance <i>in Lightyears</i>	16,3 Ly

Eridani is a triple star system 16 light years away. The main star Eridani A is very similar to the Sun in size and age. The second star Eridani B is the first dwarf star discovered (already in 1783). Eridani C is a tiny but highly active star with fluctuating brightness.

RED GIANT
GACRUX



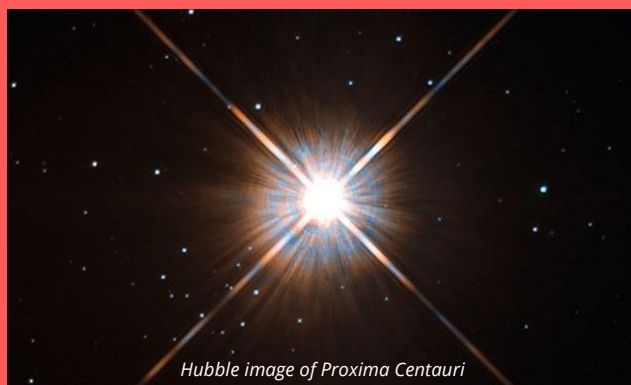
The Southern Cross, with Gacrux at the top

Luminosity <i>in Solar Luminosity</i>	1 500 L _☉
Surface Temperature <i>in Kelvin</i>	3 400 K
Spectral Class	K
Mass <i>in Solar Mass</i>	3 M _☉
Radius <i>in Solar Radius</i>	110 R _☉
Distance <i>in Lightyears</i>	88,6 Ly

Gacrux is visible only from the southern hemisphere, but there it is part of one of the most important constellations for orientation in the sky, the Southern Cross. It is a Red Giant with 110 times the radius of the Sun and has a striking irregular fluctuating brightness.

RED DWARF

PROXIMA CENTAURI



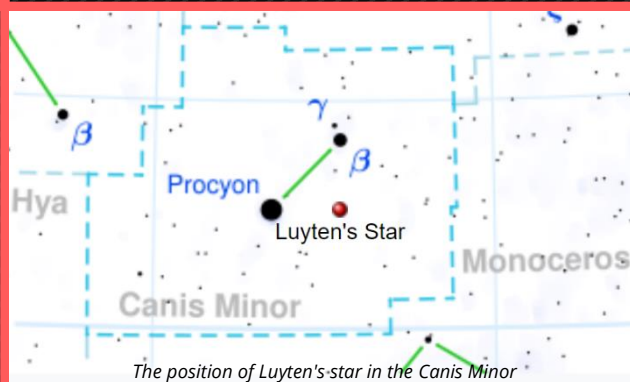
Hubble image of Proxima Centauri

Luminosity <i>in Solar Luminosity</i>	0,0001 L_{\odot}
Surface Temperature <i>in Kelvin</i>	3 050 K
Spectral Class	M
Mass <i>in Solar Mass</i>	0,12 M_{\odot}
Radius <i>in Solar Radius</i>	0,15 R_{\odot}
Distance <i>in Lightyears</i>	4,2 Ly

Proxima Centauri is a red dwarf orbiting the binary star system Alpha Centauri. For one orbit it needs about 600 000 years. It has only a quarter of the Earth's mass but is still the central star of a planetary system. In 2022 the third planet orbiting Proxima Centauri was discovered.

RED DWARF

LUYTEN'S STAR



The position of Luyten's star in the Canis Minor

Luminosity <i>in Solar Luminosity</i>	0,003 L _☉
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Surface Temperature <i>in Kelvin</i>	3 200 K
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Spectral Class	M
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Mass <i>in Solar Mass</i>	0,3 M _☉
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Radius <i>in Solar Radius</i>	0,3 R _☉
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Distance <i>in Lightyears</i>	12,3 Ly
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Luyten's star is a red dwarf in the Canis Minor constellation. It was discovered in 1935 by astronomer Willem Luyten, who noticed the strikingly high speed of its proper motion. The star system has an Earth-like exoplanet in the habitable zone and could become a target for the search for extraterrestrial life in the future.

RED SUPERGIANT

119 TAURI

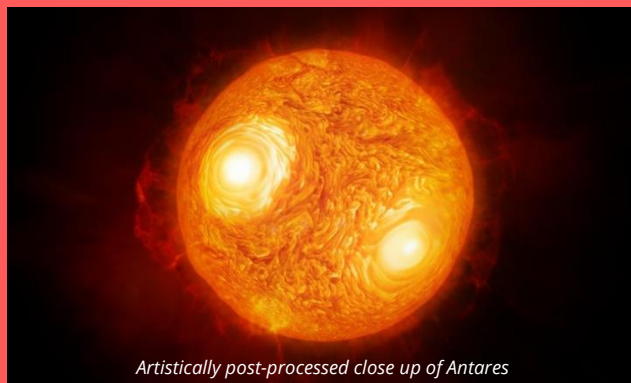


119 Tauri stands out clearly against the starry sky in terms of color

Luminosity <i>in Solar Luminosity</i>	42 000 L _☉
Surface Temperature <i>in Kelvin</i>	3 400 K
Spectral Class	M
Mass <i>in Solar Mass</i>	12 – 15 M _☉
Radius <i>in Solar Radius</i>	600 R _☉
Distance <i>in Lightyears</i>	600 Ly

119 Tauri or CE Tauri is just visible with the naked eye under good conditions. Due to its very low surface temperature, it has a striking red color and is therefore also called ruby star.

RED SUPERGIANT
ANTARES



Artistically post-processed close up of Antares

Luminosity <i>in Solar Luminosity</i>	65 000 L_{\odot}
Surface Temperature <i>in Kelvin</i>	3 500 K
Spectral Class	M
Mass <i>in Solar Mass</i>	12 M_{\odot}
Radius <i>in Solar Radius</i>	700 R_{\odot}
Distance <i>in Lightyears</i>	600 Ly

The name Antares comes from the Greek god of war Ares (in Roman Mars) and means something like rival to-Ares. This comes from the fact that Antares seems confusingly similar to Mars in the night sky. It has the same color and brightness (despite its enormous distance) and is also visible near the ecliptic.