# UNIVARSE GUIDE UNIVERSE GUIDE 

## AR Scorpii / - Facts about the Star

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## AR Scorpii Facts

- AR Scorpii is a Star.
- AR Scorpii is not part of the Scorpius constellation outline but is within the borders of the constellation.
- Based on the spectral type (M5+D? D) of the star, the AR Scorpii colour is red .
- AR Scorpii distance from Earth is 378.38 light years.


## Information on AR Scorpii

To call it a red star is too simplestic. AR Scorpii is a binary white dwarf-pulsar system to be discovered. The pulsar emits a beat of radiation at the red dwarf star as it orbits ever 3.5 hours. The pulsar is no bigger than our planet, Earth but has a mass that is 300,000 times higher. Register

## AR Scorpii Location

The location of the star in the night sky is determined by the Right Ascension (R.A.) and Declination (Dec.), these are equivalent to the Longitude and Latitude on the Earth. The Right Ascension is how far expressed in time (hh:mm:ss) the star is along the celestial equator. If the R.A. is positive then its eastwards. The Declination is how far north or south the object is compared to the celestial equator and is expressed in degrees. For AR Scorpii, the location is $16 \mathrm{~h} 21 \mathrm{~m} ~ 47.288$ and $-22^{\circ} 53^{`} 10.40$.

## AR Scorpii Proper Motion

All stars like planets orbit round a central spot, in the case of planets, its the central star such as the Sun. In the case of a star, its the galactic centre. The constellations that we see today will be different than they were 50,000 years ago or 50,000 years from now. Proper Motion details the movements of these stars and are measured in milliarcseconds. The star is moving - 50.50 milliarcseconds/year towards the north and 12.40 milliarcseconds/year east if we saw them in the horizon. When the value is negative then the star and the Sun are getting closer to one another, likewise, a positive number means that two stars are moving away. Its nothing to fear as the stars are so far apart, they won't collide in our life-time, if ever.

## AR Scorpii Physical Properties

## AR Scorpil Colour

Based on the star's spectral type of M5+D? D , AR Scorpii's colour and type is red star. Based on the spectral type, we can deduce that the surface temperature of the star is in the order of between below $3,500 \mathrm{~K}$ based on the notes from Harvard University. To put this in context, the temperature of our Sun is about 5,778 Kelvin as said by Google.

## AR Scorpii Distance from Earth

The Parallax of the star is given as 8.62000 which gives a calculated distance to AR Scorpii of 378.38 light years from the Earth or 116.01 parsecs. It is about $2,224,354,268,705,214$ miles from Earth.

The star is roughly $23,928,613.44$ Astronomical Units from the Earth/Sun give or take a few. An Astronomical Unit is the distance between Earth and the Sun. The number of A.U. is the number of times that the star is from the Earth compared to the Sun.

## Alternative Names and Meanings

- The two letters at the start identify that the star is a variable star. The letters are allocated as the next in the list up e.g. GH follow GG, all the way up to ZZ then a V and a number is the next in the order.


## AR Scorpii Travel Time

The time it will take to travel to this star is dependent on how fast you are going. U.G. has done some calculations as to how long it will take going at differing speeds. A note about the calculations, when I'm talking about years, I'm talking non-leap years only (365 days).

The New Horizons space probe is the fastest probe that we've sent into space at the time of writing. Its primary mission was to visit Pluto which at the time of launch (2006), Pluto was still a planet.

Mach 1 is the speed of sound, Mach 2 is twice the speed of sound. Corncorde before it was retired was the fastest commercial airline across the Atlantic and only one that could do Mach 2.

| Description | Speed (m.p.h.) | Time (years) |
| :---: | :---: | :---: |
| Walking | 4 | $63,436,980,020.26$ |
| Car | 120 | $2,114,566,000.68$ |
| Airbus A380 | 736 | $344,766,195.76$ |
| Mach 1 | 767.269 | $330,715,720.41$ |
| Mach 2 | $1,534.54$ | $165,357,644.69$ |
| New Horizons | 33,000 | $7,689,330.91$ |
| Speed of Light | $670,616,629.00$ | 378.38 |

## Comparison Between AR Scorpii and The Sun

If you want to see the comparison between AR Scorpii and our star, the Sun, you will need a screen of at least 800px across. Rotating your screen maybe sufficient to see the Stellar values for comparison.

Visual Facts

Primary Name
Alternative Names
Spectral Type
Star Type Colour

AR Sco
M5 + D? D
Star
Red

# Gaiany <br> Constellation <br> Constellation's Main Star <br> Right Ascension (R.A.) <br> Declination (Dec.) <br> Distance from Earth 

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No
$16 \mathrm{~h} 21 \mathrm{~m}^{`} 47.288$
$-22^{\circ} 53^{`} 10.40$
8.62000 Parallax (milliarcseconds)
$378.38 \underline{\text { Light Years }}$
116.01 Parsecs

-50.50000 milliarcseconds/year
12.40000 milliarcseconds/year

| Proper Motion Dec. | -50.50000 milliarcseconds/year |
| :--- | :--- |
| Proper Motion RA. | 12.40000 milliarcseconds/year |

Companions (Multi-Star and Exoplanets) Facts

## Exoplanet Count <br> None/Unaware

Sources and Links
Source http://simbad.u-strasbg.fr/simbad/sim-id? Ident=AR+Scorpii
Sun Facts Source

## Scorpius's 5 Brightest Stars

- Antares (Alpha Scorpii)
- Dschubba (Delta Scorpii)
- Larawag (Epsilon Scorpii)
- Sargas (Theta Scorpii)
- Shaula (Lambda Scorpii)


## Selected Scorpius's Stars

- Scorpius X-1
- KSI Scorpii A
- Pismis 24-1 A (NE)
- HD 143535
- HD 161280

