

Habitable Zones around Alien Stars



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What makes a planet habitable?

- Liquid water
- ‘Reasonable’ Temperature
- An atmosphere



This would make it habitable for us!

Human-Habitable Zones

Also called the ‘Goldilocks Zone’, the habitable zone around a star is the range of orbital distances where you might hope to find liquid water.

- What do you think these orbital distances depend on?
- ✓ The Star itself!

Specifically, we care about how big and how hot the star is. The size and temperature of a star together make the star’s LUMINOSITY.

The Solar System: Our home

- The average distance between the Earth and the Sun is called an ASTRONOMICAL UNIT.
- We abbreviate this by writing AU
- We compare all other stars to the Sun, so we can say our Sun has the Luminosity of 1sun.

This means that Pluto is 40 times further from the Sun than us!

Planet	Average distance from Sun in AU
Mercury	0.39
Venus	0.72
Earth	1.00
Mars	1.52
Jupiter	5.20
Saturn	9.58
Uranus	19.20
Neptune	30.05
Pluto (dwarf planet)	39.48

And elsewhere in the galaxy?

Now it's time to find out which other planets fall inside the habitable zones of their star. It's the very first thing we check for when we find a new planet!

You will have an instruction sheet, as well as many planetary systems to look at. Some are more challenging than others!

You should do the four systems named on your sheet as a minimum,

Good luck!