Circumstellar Habitable zone (CHZ)

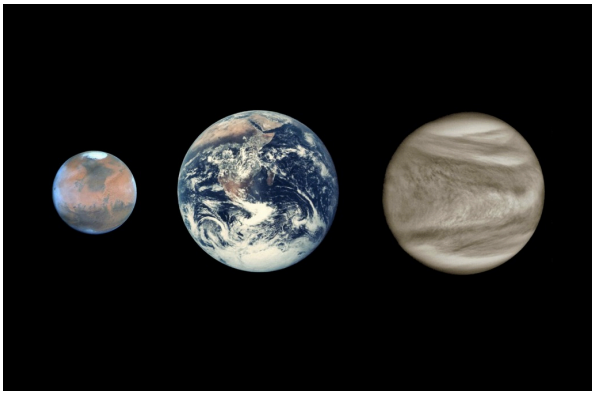
-Just like Goldilocks- not too hot and not too cold, just right to support life

-This zone is based mostly on where liquid water can be found; all life uses liquid water (at least all life and Earth)

-Not just temperature is important for life, but atmospheric pressure

-LUMINOSITY (star)- energy/sec (how much light, often described as how bright a star is)
-EMISSIVITY (planet)- energy radiated back to space (in infrared)
-ALBEDO (planet)- how much an object reflects
-Need a balance between these three features

-Venus has high albedo but low emissivity so it is very hot
-Mars has a low albedo but high emissivity so very cold -> No H2O
-Earth is on the edge, but because of the atmosphere and the greenhouse effect it is just right, warm enough for liquid water



-This is the Goldilocks zone- doesn't necessarily mean that there will be life

Rare Earth Hypothesis- our Earth's conditions are very unique and there is not many if any like our planet out there

*Principle of Mediocrity- There must be life everywhere, we live in an average solar system, have tons out there like it!

Galactic Habitable Zone

-Too close to the center of the galaxy there is lots of dangerous radiation

-Too close there are not many metals (like Carbon-remember that astronomers consider everything heavier than helium a metal!) which is necessary for life

-Too fast, flung out into space