HABITABLE ZONES OF ALIEN STARS - INSTRUCTIONS

Follow these instructions to calculate the habitable zone boundaries for each system you look at.

As a minimum, you should do the following systems:

- **55-Cancri**
- **Kepler-444**
- **Trappist -1**
- **Gliese-876**

1) Start by looking at all the distances to the planets. These are given in Astronomical Units.
2) To calculate the orbital distances of your habitable zone, you will need the Luminosity of the star in the system. Find this value on the system sheet.
3) Use the following formula to calculate the inner boundary of the habitable zone:

$$Inner\ Boundary = \sqrt{\frac{Luminosity}{1.1}}$$

4) Use the following formula to calculate the outer boundary of the habitable zone:

$$Outer\ Boundary = \sqrt{\frac{Luminosity}{0.53}}$$

5) Questions:

a) Did any planets fall inside the Habitable Zone? If not, were there any which were close?
b) Look at the information given on the system sheet. What other factors do you think might affect whether or not we could live on these planets?
c) Conclude: do you think we could live anywhere in this system? Why?

Make sure you have these answers with you for the plenary, as we will test you with a Kahoot!