Goldilocks

Johannes Kepler (1571-1630), astronomer and a contemporary and collaborator with Galileo, was an important figure in the 17th century scientific revolution, best known for his laws on planetary motion.

In 2009 a satellite was launched bearing his name, joining others in orbit round our earth which likewise are named after other distinguished astronomers, - Chandra, Herschel, Copernicus and of course Hubble. (The Hubble space telescope and the cracking of the human genome code perhaps the two most significant scientific developments of the past fifty years.)

The Kepler mission, as it is called, is to try to detect in our Milky Way galaxy planets orbiting distant stars which most resemble our own earth. There are billions of stars in the galaxy and orbiting these stars billions of planets. So far Kepler has detected several hundred possible candidates, the most significant one being announced by NASA in July 2015. This has been designated Kepler 452b and is orbiting a star in the constellation Cygnus every 385 days. Its orbit and relationship to its sun suggests that it will be enjoying congenial temperatures, - not too hot, not too cold, but just right for life as we know it to develop. It inhabits what astronomers now call the Goldilocks zone.

Unfortunately Kepler cannot provide any detailed information about conditions on the planet, so perhaps we ought to send a Voyager space probe to take a closer look and send back some pictures. There is one major snag with this suggestion. You will need to be very patient. It would take Voyager some 26 million years to reach Kepler 452b, such is its distance from our earth. It is in fact some 1400 light years away. Not so very far in terms of the overall size of the universe, (our galaxy is some 100 000 light years across and Hubble can detect galaxies which are 13 billion light years away). But it is far enough to thwart even the most avid space explorer. We can perhaps best understand the scale of the problem of time and distance by relating it directly to human experience.

If there were intelligent life on 452b capable of sending out radio signals, any such signal that we might pick up today would have actually been transmitted at the time the Romans were abandoning Britain. And if we wished to reply, perhaps attaching a copy of the Christmas edition of Downton Abbey to show what lovely people we are, then it would be Christmas 3416 before they would get the chance to view it over their mince pies.

And building a spaceship which could travel at the speed of light (unlikely!) would not make much difference. If such a spaceship set off, say, when King Alfred was burning the cakes, it would be only now, when Mary Berry was taking her latest sponge out of the oven that it would at last be approaching 452b. Some 30 generations over 14 centuries would have lived and died on the spaceship, never having seen either our earth or the one they are travelling to. The spaceship itself would have to be a kind of mini-earth capable of sustaining life over such a timescale.

So whoever or whatever created the universe did so with the intention of ensuring that any pockets of intelligence that might be dotted throughout space would never be able to meet up or interact. A wise decision given the way intelligent people treat each other on this planet. And is it not significant that Science Fiction and Hollywood always regard aliens as a hostile and dangerous threat who should be destroyed?
Human space travel is not going to happen, except perhaps to Mars, which in space travel terms is little more than catching the bus from Linthwaite to Slaithwaite. And some say: why bother? Robots could bring all the information we might find useful from that inhospitable planet. That same time and distance also explains why alien craft have never landed here, in spite of claims by ufologists and that lady from the trailer park in Arizona who said that friendly aliens had taken her to the planet Zog for the weekend, and how nice it was.

Look up in awe at the night sky and ponder what it can all possibly mean and speculate if there is anyone else out there. But don’t let your porridge get cold!

David Cockman for HDAS January 2016

An artist’s impression of Kepler 452b orbiting its sun.