

Woodloes Primary School

Space Walk to Sirius

This activity can be used on a phone or tablet or printed.

It is really hard to understand how small the Earth is in comparison to the vast distances of space. This walk involves two activities to help:

Both activities start at top of the footpath that runs alongside the staff carpark at school.

Activity 1: Our Solar System Shrunk to the Length of the Fence.

The instructions are attached to the fence; make sure you find Neptune before you start Activity 2!

Activity 2: A Journey to our 5 Nearest Stars.

For this activity we've had to shrink the whole solar system to about 15cm.

First find the information board beneath the one for the first activity and read it carefully. On the Board the sun might be visible as the tiniest speck of dust if you have good eyesight, the earth is invisible unless you have a magnifying glass!

Now you are going to walk right out of the solar system! Start walking down the path in the direction you walked before.

Soon you'll find the Kuiper Belt, where Pluto and lots of other Dwarf Planets are.

Then you'll find the Heliopause and leave the influence of our Sun's gravity (you can't fall back down towards the Sun and the Earth after this point, you just float about in space for ever)

Follow the red Route marked on the map, when you come to a red star on the route, look for a marker to tell you which star you have found.

Very soon you drift into the Ort Cloud where icy lumps of rock and comets float about for billions of years. We are really not sure what the Ort Cloud is like; it might just be occasional icy rocks all the way to the next star, but we do know it is very cold and very dark out there.

And then on we go to our nearest stars: keep to following the red Route marked on the map, when you come to a red star on the map, look for a marker to tell you which star you have found, then read the information below.

Obviously these stars are not all really in the same direction (they would cover each other up in the sky), but to make the walk more fun we are imagining that they are.

Alpha centuari (4.2 light-years away) is actually three stars orbiting each other, you can see it without a telescope, but only if you are in the Southern Hemisphere (Africa, Australia, South America etc.)

Barnard's Star (5.9 light-years away) is a Red Dwarf star. You need a telescope to see it. We think that there is a planet orbiting around it.

Wolf 359 (7.8 light-years away) is another Red dwarf Star that is too dim to see without a telescope; It is not a lot bigger than Jupiter. It is burning very slowly and will last another 8,000,000,000,000 years. We think it has two planets.

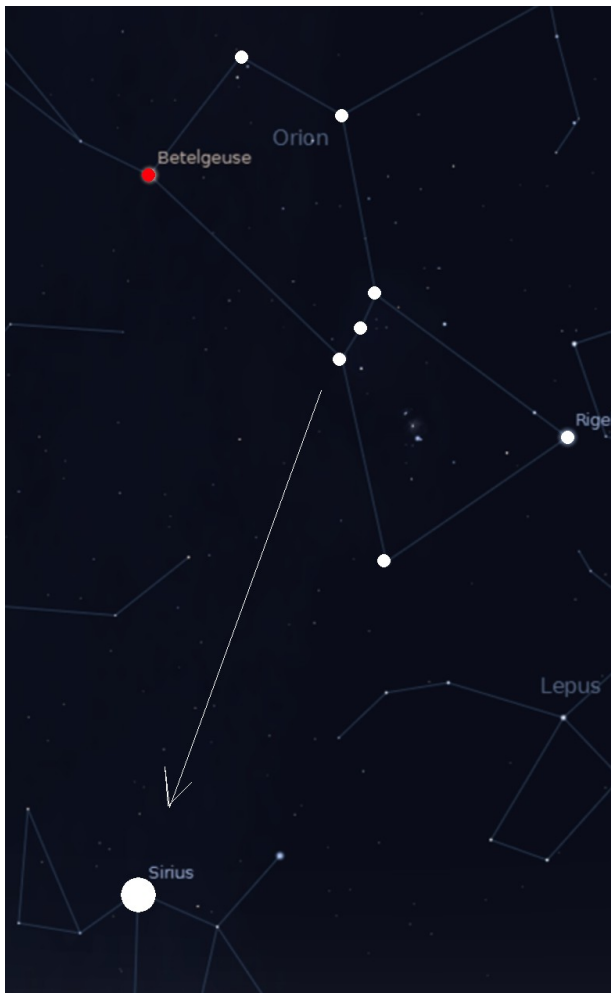
Lalande (8.3 light-years) is another Red dwarf Star that is too dim to see without a telescope; We think this star has one very hot planet.

Sirius, The Dog Star (8.6 light-years away)

Sirius is the brightest star in the sky, it is twice the size of the Sun and is actually a big star and a tiny star orbiting around each other. We don't think it has any big planets.

When you get to Sirius, look back and think how small and far away our Sun is; remember it is a speck of dust all the way back at school!

Finding the Real Sirius:



Tonight and for the rest of the Winter, from about 8 o'clock until dawn, if there are no clouds, you can see Sirius quite easily!

It is well worth putting your coat on just before bedtime on a clear night and stepping outside to look for the real Sirius because it's easy to find and will be the brightest star in the sky.

To find it you look for three bright stars in a very straight line (the belt of Orion the Hunter) and follow the line they point down the sky until you find a really bright star: That's Sirius. It is meant to be Orion's dog following him on the hunt.

Unless you are looking very late at night it will all be quite low in the sky to the South (if you are in Woodloes, that means looking towards Warwick).

While you are there have a good look at Betelgeuse (Orion's right shoulder) as well. It is a Red Giant Star that is nearing the end of it's life. It might go 'super nova' (explode) in your life time; if it does it won't hurt us but you will see a very bright from it for a few weeks, then nothing more; what remains will be a tiny dim white dwarf star.

