

How can you do astronomy in Swaledale in mid-summer? It's not easy. You can stay up really late and do some observing in the wee small hours. Or you can buy a very expensive solar telescope to study the sun safely during the day (you must never look at the sun through a normal telescope). But if neither of these options seem attractive there are a couple of alternatives.

The first is to use a stick and a wall. At our latitude the difference in the sun's height in the sky between summer and winter is very large. So it is interesting to mark the top of the shadow the stick casts when the sun is at its zenith on the summer solstice, and then mark the equivalent position three months later at the Autumn Equinox and six months later at the winter solstice.

Place the stick in the ground so it casts its shadow on the wall at about 1.00 pm on the 21st of June (Not 12.00 noon – because our clocks are currently one hour forward). Ideally you should measure the height of the stick above the ground as well as its exact position (so you can make sure you do the experiment the same in the winter). You also need to make sure the stick is vertical. The mark needs to be semi-permanent – a good strong chalk mark on a wall will do provided you refresh it from time to time.

The other thing you can do at this time of year is to look out for the strange “noctilucent” clouds which sometimes appear in the night sky around mid-summer. They are usually white or electric blue, lit up by the sun which at this point is well below the horizon. Scientists know very little about them for certain, other than that they form incredibly high (about 50 miles up) and are made up of very tiny ice crystals. They were first recorded after the explosion of Krakatoa, and seem to have become more frequent in modern times, possibly because of human activity.

Noctilucent clouds are visible about 90 minutes after sunset or before sunrise. (Clouds lit up by the sun much closer to sunset or sunrise may well be ordinary cirrus clouds). I have included a picture below of a particularly bright display of Noctilucent clouds over Uppsala in Sweden, taken by a photographer known as Goforbit. They are usually more subtle than this – but do look out for them, as they can be outstandingly beautiful.

Anyway, this is Starboy's last outing – Starman is back next month after three months improving his starship. And if he gets tied up again, whether by DIY or a super-villain, we have Galaxian waiting in the wings.....

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