Hello, Starboy here, taking over from Starman for the next few months while he is busy rebuilding his starship. He has of course timed his break to coincide with the lighter evenings when it is difficult to do much astronomy. But anyway, here goes.

April is the last month in which the sky gets fully dark, and is a good time to observe the phases of twilight. The sun sets in Reeth at around 7.45 BST (British Summer Time) on the 1st of April, and then sets about 2 minutes later each day. But it doesn't get fully dark until the end of the evening and, as the sky darkens, you can do some interesting experiments.

The first of these requires a reasonable view low to the East, for example down Swaledale towards Richmond. If you have such a view, go out shortly after sunset on a clear night and look East. If conditions are favourable, you should be able to see the grey shadow of the Earth rising, surrounded by a semi-circle of pink. This pink area is known as the belt of Venus, and is caused by sunlight skimming through the atmosphere just above our heads. As it travels through the sky much of the blue light is scattered, leaving red light to illuminate any dust or clouds above the Eastern horizon.

The second experiment involves estimating the end of civil twilight. This starts when the sun goes below the horizon, and ends when it becomes too dark to undertake normal activities. The fact that it stays light enough for most purposes after the sun sets is reflected in the law on "lighting up time", which used to be a full hour after sunset but now (because of the speed of modern vehicles) is just half an hour after the sun goes down.

In terms of astronomy, the end of civil twilight is marked by the appearance of the first true stars. You have to discount the planets Mars and Jupiter, which will appear low in the West and East respectively as the sky darkens. But it is fun, especially if it isn't too cold, to sit outside and see who can spot the first stars and how long after sunset they appear.

The next phase of twilight is called "Nautical Twilight" because ships at sea can still see the horizon. When that can no longer be seen, we enter astronomical twilight, when only astronomers moan that it isn't fully dark yet. You can observe these changes with the Cyanometer printed next to this article. (That's a big word for a blue colour-chart.) Go outside on a clear night as the sun sets and hold the chart below up towards the sky every 20 minutes or so to compare colours (a sun-lounger helps avoid falling over backwards). The colour high in the sky is best. Oh, and avoid any neighbours who might be puzzled, to say the least, as to why you are trying to read the gazette in the dark.

Next month we have Jupiter high in the sky, but more of that in due course.

Starboy,
Reeth Informal Astronomy group
www.reethastro.org