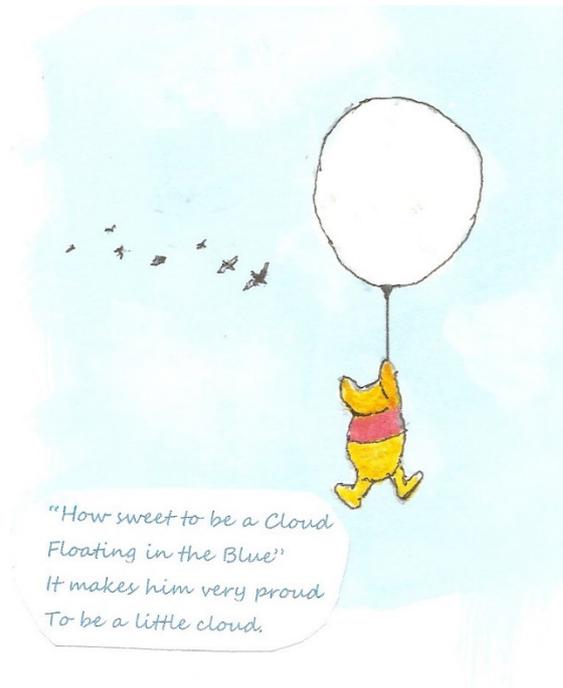


Memory Café Amusement Arcade 43.

How do Clouds stay Afloat?



You might recall Winnie the Pooh pretending to be a cloud and singing in order to reach some Hunny, but the bees were not to be fooled!

But it is a puzzle..Clouds are heavier than one thinks.

A typical cumulus cloud is roughly 1 km across and 1 km high – about 1 cubic km in volume. What looks like fluffy cotton wool holds water weighing approximately 500 tons.. Since water is much denser than air, how does it stay up there? The reason is that the water droplets are typically 0.01 mm in diameter. It takes many millions of them to clump together to make a raindrop. The density is about 1/200 th of pure water. The droplets are also jostled about by convection currents rising from below. A thunderstorm cloud, cumulonimbus, is typically about 10 km tall and contains 2 million tons of water at about double the density of a cumulus cloud. Hence the phrase, "it never rains but it pours". Fortunately, it doesn't usually arrive all at one point otherwise we would need SCUBA diving equipment.

Typical dreary, dull, grey cloud that covers the UK much of the time, may not be so thick but spreads over 500 km. There is then about 25 million tons of water up there. Oh, for the sunshine beaches of Spain, Greece, Caribbean and Florida. The Brits did not just go off around the world to create an Empire, it was to get away from the weather!



Up in space on the ISS they can look down on us and see what a pasting we are getting. This picture was taken in May 2020 when the ISS was over the South Atlantic. You can see some of the solar panels and the Japanese experimental module. Of particular interest is the afterglow in the atmosphere caused by the solar wind striking the upper atmosphere..