



## When it Rains, it Pours...on the Sun



Just like on Earth, the Sun has spells of bad weather, with high winds and showers of rain. But unlike the all-too-frequent storms on Earth, rain on the Sun is not made of water but electrically charged, superheated gas, called plasma. And it falls at around 200,000 kilometres per hour from the Sun's upper atmosphere called the corona, in thousands of gigantic droplets – each one as big as a country!

This astonishing phenomenon was first discovered almost 40 years ago. Solar physicists (people who study the Sun) can now study it in fantastic detail thanks to state-of-the-art satellites and they're starting to really understand how these incredible storms happen.

It turns out the rain on the Sun is made in a very similar way to how rain forms on Earth. If the conditions in the Sun's atmosphere are just right, then plasma evaporates from the surface and clouds of hot plasma form. The clouds then cool down and eventually fall back to the solar surface as droplets of extremely hot, plasma rain.

However, the catalyst that begins the formation of rain clouds on the Sun is very different to that on Earth. Solar flares are the most powerful explosions in the Solar System, they help to heat the Sun's atmosphere and trigger the evaporation of plasma into clouds.

### COOL FACT

The Sun's corona is a scorching 2 million °C, much hotter than the star's surface which is cool in comparison at "just" 6000 °C. The problem is, no-one is really sure why the Sun's atmosphere gets so hot!



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