Nebulae

Nebulae are giant clouds of gas and dust spread throughout the galaxies. Some of them we see through telescopes because they shine faintly as they reflect starlight.

With others, called dark nebulae, we see only inky black patches hiding the stars behind. This is where stars are born.

A few called glowing nebulae glow faintly of their own accord as the gas within them is heated by nearby stars.

Nebula is a Latin word meaning mist. The plural is nebulae. Nebulae are extremely insubstantial. Even the densest of them is far thinner than the gas of our atmosphere.

Astronomers estimate that the Orion Nebula contains enough gas to produce thousands more stars. Our own Sun and planets were born from such a cloud of gas 4 600 million years ago. A star forms when a small knot of gas, denser than the surrounding nebula, begins to shrink under the inward pull of its own gravity. As the knot of gas gets smaller and denser it heats up. Finally, at the centre of the gas ball, the conditions of temperature and density become so great that nuclear reactions start, releasing energy that turns the gas blob into a self-luminous star.

The photographs on this page shows some of the most beautiful nebulae. Can you find the Triffid Nebula, the Horsehead Nebula and the Pillar Nebula?