

## **Nebulas**

### **Contents:**

- Nebulas
- Life cycle
- Different Nebulas
- Colour me in
- Word search
- Interesting facts
- Stella Nebula
- Planetary Nebula

## **Nebulas**

### **About space4alleducation**

We are a small dedicated team who love space and wishes to share their love with anyone who wants to learn about space/astrometry and rockets and more.

I am Andy the owner and lead tutor for space4education.com a small company dedicated to improving the education for all learners who want to be involved in the developed of space.

Over the last 7 years we have been developing a program aimed helping and supporting leaners from 10 years and younger.

The Booklet that you are holding is the beginning of that journey, as it the beginning of your journey as you begin to explore the various regions of space.

This booklets is part of series booklets that will give you various information about space.

This booklet was created by

Andy (Content creator) and Steve (I.T Management).

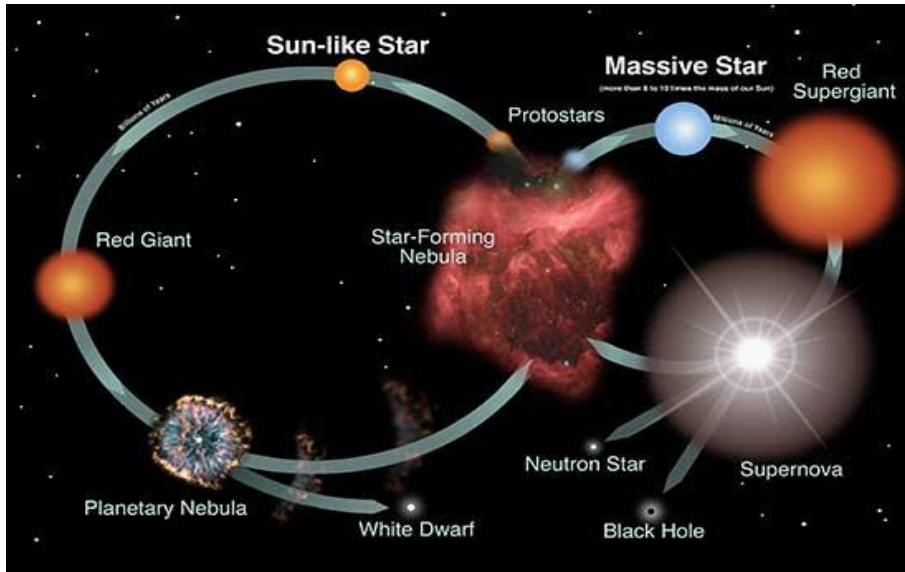
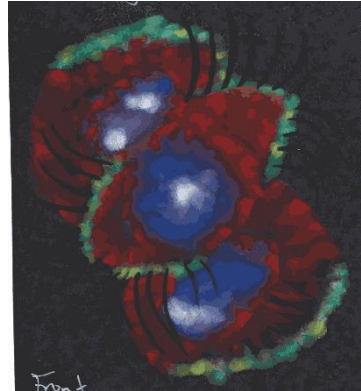
Please check out our website

[www.space4alleducation.com](http://www.space4alleducation.com)

# Nebulas

Hi I'm a Nebula,

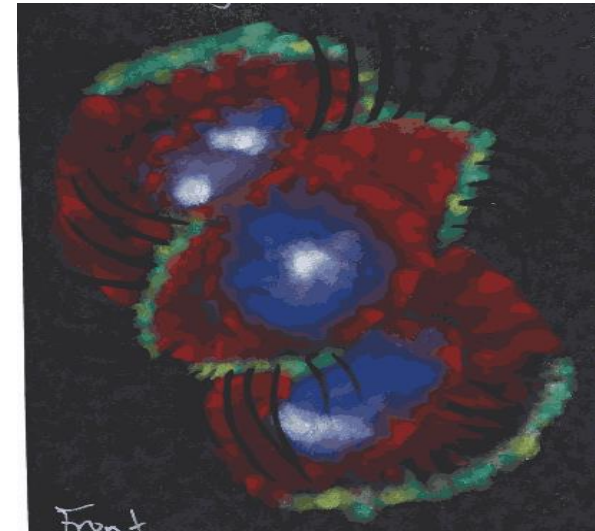
as you see from the image below, I can be one of two types of nebulas, a planetary Nebula or a star forming nebula, we are giant areas of space that holds lots of dust and gases spread over light years, we are super colourful due to how light reflects of different gases and dust making us one of the many wonderful things to see in the night sky.



# Nebulas

Planetary Nebula

This is a ring-shaped nebula formed by an expanding shell of gas around an aging star. It is created when a star blows off its outer layers after it has run out of fuel to burn. These outer layers of gas expand into space, forming a nebula which is often the shape of a ring or bubble.



After all of this the stars continues to cool down and shrinks in size. It's now just thousands of miles in diameter.



# Nebulas

## What is a Nebula?

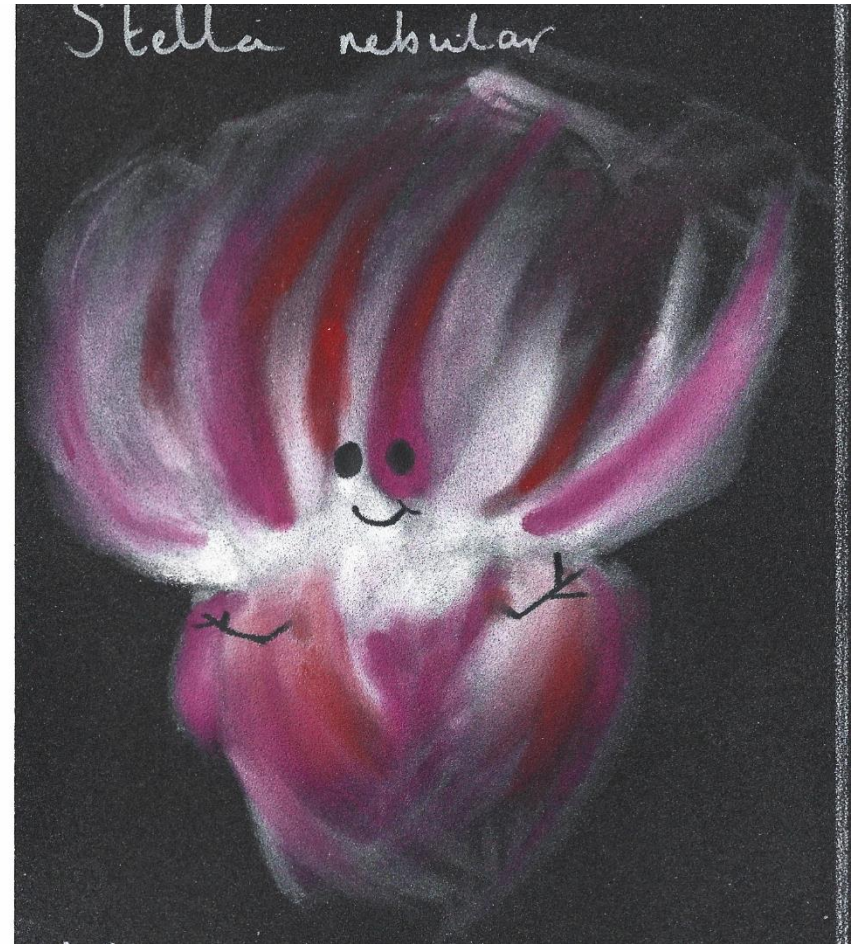
A nebula is an enormous cloud of dust and gas occupying the space between stars and acting as a nursery for new stars. Image of the Carina Nebula. The roots of the word come from Latin nebula, which means a “mist, vapour, fog, smoke, exhalation.” Nebulae are made up of dust, basic elements such as hydrogen and other ionized gases. They either form through clouds of cold interstellar gas and dust or through the aftermath of a supernova.

For example, in the Carina Nebula, hot, young stars erode and sculpt the clouds into this fantasy landscape by sending out thick stellar winds and scorching ultraviolet radiation. The low-density regions of the nebula are shredded while the denser parts resist erosion and remain as thick pillars.

In the dark, cold interiors of these columns new stars continue to form. In the process of star formation, a disk around the proto-star slowly accretes onto the star’s surface. Part of the material is ejected along jets perpendicular to the accretion disk. The jets have speeds of several hundreds of miles per second. As these jets plow into the surrounding nebula, they create small, glowing patches of nebulosity, called Herbig-Haro (HH) objects.

# Nebulas

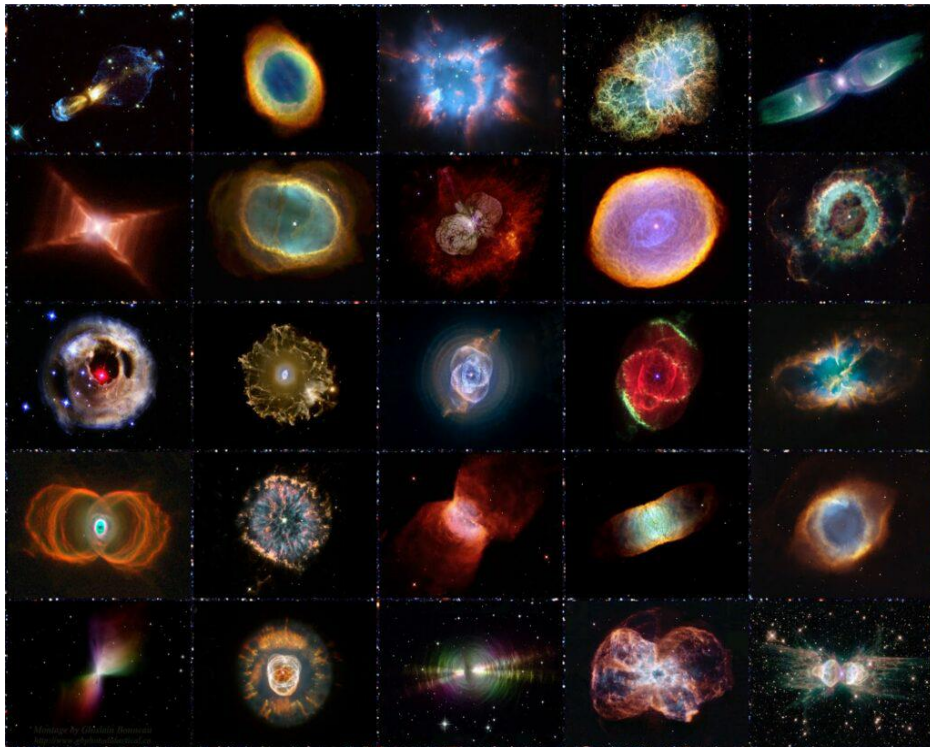
This is a cloud of super-heated gases and other elements formed by the explosive death of a massive star.



# Nebulas

## Stellar Nebula

Nebulas come in all sorts of clouds, below you can see some of the different Planetary Nebulas in our Galaxy, and more been discovered more so with the help of the James Web telescope, we are able to see more and get better more detailed pictures of Nebulas.



# Nebulas

## Fun Facts about Nebulas

- The almighty Sun was created in a nebula, the solar nebula, and it is believed that in 5 billion years from now, the Sun itself will become a nebula.
- The Orion Nebula is the closest one to the Earth  
Nebulae are also known as "Stellar Nurseries" because stars are born in them.
- The nebulae outside the Milky Way are referred to as extra-galactic nebulae.
- Diffuse Nebulae are very well outspread and don't have any limits, or so we believe.
- A dark nebula is very dense. Its items seem to be obscured. An example of a dark nebula is the Horsehead Nebula.

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