

Beauty of Clouds



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(BE-Mechanical 2020-21)

Have you ever had fun just looking up at the clouds and seeing what forms they take? Have you ever wondered how they form and how many different types they have? Well, let's find out! What is the cloud? "Cloud" is a visible group of water droplets floating in the atmosphere above the surface of the earth. When billions of water droplets are grouped, they become visible clouds! Clouds form when warm air containing water vapor rises. Warm air rises because it is lighter than the surrounding air. When it moves upwards, it gets lower and lower pressure and expands, and that makes it colder.



As it cools, water vapor condenses out of the air as tiny water droplets. (To condense means to change from a gas or a vapor to a liquid). These tiny droplets of water are packed together so tightly that the sunlight cannot penetrate far into the cloud before it is reflected out. This gives a cloud its characteristic white color. Under certain conditions, droplets may combine to produce larger droplets. These large droplets may then combine to form very large droplets, large enough to fall as rain. Clouds can be divided into two general categories, viz. Layered clouds and Convective clouds. Layered clouds are called Stratus clouds whereas convective clouds are known as Cumulus clouds. Stratus means layer and cumulus means piled up. These two cloud types are further divided into three more groups by their altitude or how high the cloud is. The classification is as follows: Low clouds, mid-level clouds, and high clouds. Low clouds have bases below 2 km. Mid-level clouds have bases between 2 to 6 km. High clouds have bases above 6 km. Within these different altitude ranges, several different types of clouds can exist. To remember their names easily, you can think of them as players on a team and each team member has a different name.

Low cloud team	Mid-level cloud team	High cloud team
Stratus, Nimbostratus, Cumulus, Strato-cumulus, Cumulonimbus, Fog	Altostratus Altostratus	Cirrus, Cirrocumulus, Cirrostratus Contrails



1) Stratus Cloud



2) Nimbostratus Cloud



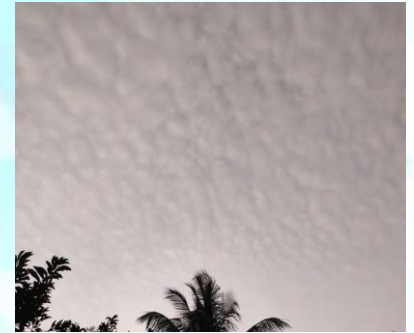
3) Cumulus Cloud



4) Stratocumulus Cloud



5) Cumulonimbus Cloud



6) Altocumulus Cloud



7) Altostratus Cloud



8) Cirrus Cloud and Contrail



9) Cirrocumulus Clouds



10) Cirrostratus Cloud with Halo

*All images are photographed by the author.

1. Stratus: Grey, flat, and boring! Drizzle may fall. Called hill fog on high ground.
2. Nimbostratus: Thick, dark stratus. Giving rain, which is often heavy and prolonged. Difficult to photograph.
3. Cumulus: Small cumulus have a cotton wool shape. Often grow to bunch together. No rain.
4. Stratocumulus: Common, sometimes covering the whole sky. Sometimes more like flattened cumulus.
5. Cumulonimbus: Cumulus grown tall and dark. Thunderstorm. The top can be very high. Sometimes feathery or flat.

6. Altocumulus: Broken into small flat clouds, often regularly arranged. No rain or snow.

7. Altostratus: Thicker than cirrostratus. Sun visible as a disc. No shadows or halo.

8. Cirrus: Sometimes delicate, hair-like strands. Sometimes thicker blobs.

9. Cirrocumulus: Not a common type. Sometimes dappled or rippled. Sun visible.

10. Cirrostratus: A veil of thin white clouds. Sun visible with shadows. Often with a halo.

Clouds not only have all those amazing shapes, but they also have a variety of different colors. The color of a cloud tells us what is going on inside the cloud. Here is something for you to think about! Consider how much easier it is to see through heavy rain than a heavy fog. It has to do with how much light can transmit between water droplets. The interaction of light with cloud particles of different sizes causes the array of shades, from white to gray and even black. Other colors can occur naturally in clouds. A blue bright color is the result of light scattering within the cloud. A greenish color occurs when sunlight is scattered by ice. A cumulonimbus cloud showing a greenish tint is a pretty good predictor of heavy rain. Now you are a cloud expert! So the next time when you are looking at the clouds, identify them by their real names!