



Meteorological Service, Jamaica

CLOUDS



- 4 *Altostratus (As)*: Greyish or bluish cloud sheet or layer of striated, fibrous or uniform appearance, totally or partly covering the sky, and having parts thin enough to reveal the sun at least vaguely, as through ground glass. Altostratus does not show halo phenomenon.
- 5 *Altostratus (Ac)*: White, grey or both white and grey patch, sheet or layer of cloud, generally with shading, composed of laminae, rounded masses, rolls, etc., which are sometimes partly fibrous or diffuse and which may not be merged; most of the regularly arranged small elements usually have an apparent width of between one and five degrees.
- 6 *Stratus (St)*: Generally grey cloud layer with a fairly uniform base, which may give drizzle, ice prism or snow grains. Then the sun is visible through the cloud, its outline is clearly discernible. Stratus does not produce halo phenomena except, possibly, at very low temperatures. Sometimes Stratus appears in the form of ragged patches.
- 7 *Nimbostratus (Ns)*: Grey cloud layer, often the appearance of which is rendered diffuse by more or less continuously falling rain or snow, which in most cases reaches the ground. It is thick enough throughout to blot out the sun. Low ragged clouds frequently occur below the layer, with which they may or may not merge.
- 8 *Stratocumulus (Sc)*: Grey or whitish, or both grey and whitish patch, sheet or layer of cloud. It almost always has dark parts, composed of tessellations, rounded masses, rolls, etc., which are generally non-fibrous and which may or may not be merged; most of the regularly arranged small elements have an apparent width of more than five degrees.

9. *Cumulus (Cu)*: Detached clouds, generally dense and with sharp outlines. They develop vertically in the form of rising mounds, domes or towers, of which the bulging upper part often resembles a cauliflower. The sunlit parts of these are mostly brilliant white; their base is relatively dark and nearly horizontal.
10. *Cumulonimbus (Cb)*: Heavy and dense clouds, with a considerable vertical extent, in the form of a mountain or huge towers. At least part of its upper portion is usually smooth, or fibrous or striated, and nearly always flattened; this part often spreads out in the shape of an anvil or vast plume. The underside of this cloud is often very dark, there are frequently low ragged clouds either merged with it or not, and precipitation.

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Reference: Marine Meteorology – Cpt. H. Subramaniam (1981)
: Meteorology Today – C. Donald Ahrens (1994)
: International Cloud Atlas – W.M.O. (1969)

Formation and Classification

What are clouds?

When air is cooled below its dew-point temperature, the excess water vapour condenses into very small particles of water droplets and/or ice crystals, which remain suspended in the air. Millions of these particles close together become visible as a cloud.

Classification of Clouds

Clouds can be classified either according to their *height* or their *appearance*.

Classification according to Height

Clouds can form at any height from sea level up to the tropopause, and are thus grouped or classified according to their height above sea level. These are

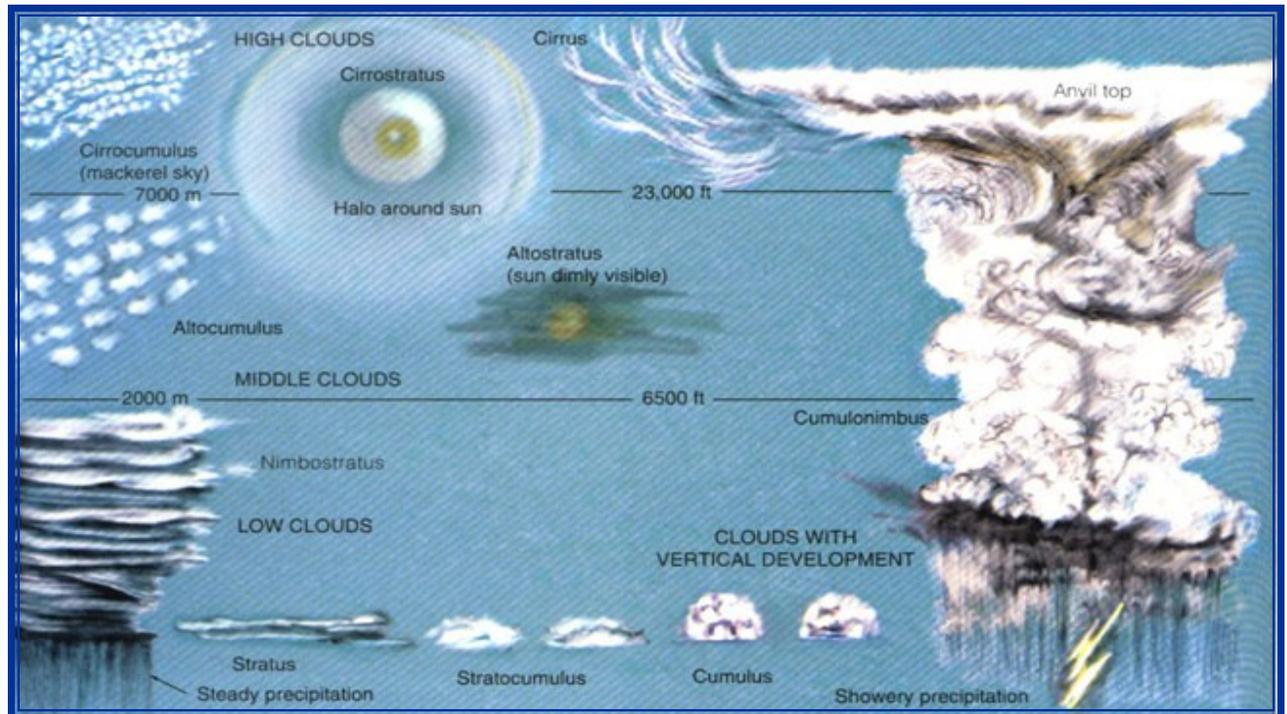
- High
- Medium
- Low

- I. The Low cloud group consists entirely of water droplets that have their bases between sea level and two (2) kilometres above sea level.
- II. The Medium cloud group includes those that have the prefix "ALTO" to their names and consist of water droplets and ice particles, but mainly water droplets. Their bases are between two (2) kilometres and seven kilometres above sea level.
- III. In the High cloud group, the prefix, "CIRRO" forms part of the names given to these clouds, and these consist entirely of ice crystals. Their bases are between six (6) kilometres above sea level and the tropopause

Classification according to Appearance

The appearance of a cloud is another factor that can be used to distinguish between the different cloud types. There are four (4) main classifications. These are Cirrus, Cumulus, Stratus and Nimbostratus. Cirrus clouds are silvery clouds in the form of feathers or fibers seen high up in a blue sky. Cumulus clouds are white clouds, shaped like a cauliflower, which can have great vertical extent. Stratus clouds are even layers of grey clouds, not giving torrential rain. Nimbostratus clouds are even layers of grey clouds giving rain. Various combinations of the above mentioned four types of clouds exist and are as follows:

- 1 *Cirrus* (Ci): Detached clouds in the form of white, delicate filaments or white or mostly white patches or narrow bands. These clouds have a fibrous (hair-like) appearance, or a silky sheen, or both.
- 2 *Cirrostratus* (Cs): Transparent whitish cloud veil of fibrous (hair-like) or smooth appearance, totally or partly covering the sky, and generally producing halo phenomenon.
- 3 *Cirrocumulus* (Cc): Thin, white patch, sheet or layer of cloud without shading, composed of very small elements in the form of grains, ripples etc., merged or separate, and more or less regularly arranged; most of the elements have an apparent width of one degree .



A generalized illustration of basic cloud types based on height above the surface and vertical development