



## WMO classification of clouds

<i>Genera</i>	<i>Species</i>	<i>Varieties</i>	<i>Supplementary features &amp; accessory clouds</i>	<i>Mother-clouds Genitus</i>	<i>Mother-clouds Mutatus</i>
<b>Cirrus</b>	<b>fibratus</b> <a href="#">P</a> <b>uncinus</b> <a href="#">P</a> <b>spissatus</b> <a href="#">P</a> <b>castellanus</b> <b>floccus</b> <a href="#">P</a>	<b>intortus</b> <a href="#">P</a> <b>radiatus</b> <a href="#">P</a> <b>vertebratus</b> <b>duplicatus</b> <a href="#">P</a>	<b>mamma</b> <a href="#">P</a>	<b>Cirrocumulus</b> <b>Alto cumulus</b> <b>Cumulonimbus</b>	<b>Cirrostratus</b>
<b>Cirrocumulus</b>	<b>stratiformis</b> <b>lenticularis</b> <b>castellanus</b> <b>floccus</b>	<b>undulatus</b> <a href="#">P</a> <b>lacunosus</b>	<b>virga</b> <b>mamma</b>	/	<b>Cirrus</b> <b>Cirrostratus</b> <b>Alto cumulus</b>
<b>Cirrostratus</b>	<b>fibratus</b> <a href="#">P</a> <b>nebulosus</b>	<b>duplicatus</b> <a href="#">P</a> <b>undulatus</b> <a href="#">P</a>	/	<b>Cirrocumulus</b> <b>Cumulonimbus</b>	<b>Cirrus</b> <b>Cirrocumulus</b> <b>Altostratus</b>

<b>Alto cumulus</b>	<b>stratiformis</b> <u>P</u> <b>lenticularis</b> <u>P</u> <b>castellanus</b> <u>P</u> <b>floccus</b> <u>P</u>	<b>translucidus</b> <b>perlucidus</b> <u>P</u> <b>opacus</b> <b>duplicatus</b> <u>P</u> <b>undulatus</b> <u>P</u> <b>radiatus</b> <u>P</u> <b>lacunosus</b> <u>P</u>	<b>virga</b> <u>P</u> <b>mamma</b>	<b>Cumulus</b> <b>Cumulonimbus</b>	<b>Cirrocumulus</b> <b>Altostratus</b> <b>Nimbostratus</b> <b>Stratocumulus</b>
<b>Altostratus</b>	/	<b>translucidus</b> <u>P</u> <b>opacus</b> <b>duplicatus</b> <b>undulatus</b> <b>radiatus</b> <u>P</u>	<b>virga</b> <b>praecipitatio</b> <u>P</u> <b>pannus</b> <b>mamma</b> <u>P</u>	<b>Alto cumulus</b> <b>Cumulonimbus</b>	<b>Cirrostratus</b> <b>Nimbostratus</b>
<b>Nimbostratus</b>	/	/	<b>praecipitatio</b> <b>virga</b> <b>pannus</b>	<b>Cumulus</b> <b>Cumulonimbus</b>	<b>Alto cumulus</b> <b>Altostratus</b> <b>Stratocumulus</b>
<b>Stratocumulus</b>	<b>stratiformis</b> <u>P</u> <b>lenticularis</b> <b>castellanus</b>	<b>translucidus</b> <u>P</u> <b>perlucidus</b> <u>P</u> <b>opacus</b> <u>P</u> <b>duplicatus</b> <b>undulatus</b> <b>radiatus</b> <b>lacunosus</b>	<b>mamma</b> <u>P</u> <b>virga</b> <b>praecipitatio</b>	<b>Altostratus</b> <b>Nimbostratus</b> <b>Cumulus</b> <b>Cumulonimbus</b>	<b>Alto cumulus</b> <b>Nimbostratus</b> <b>Stratus</b>
<b>Stratus</b>	<b>nebulosus</b> <b>fractus</b> <u>P</u>	<b>opacus</b> <b>translucidus</b> <u>P</u> <b>undulatus</b>	<b>praecipitatio</b>	<b>Nimbostratus</b> <b>Cumulus</b> <b>Cumulonimbus</b>	<b>Stratocumulus</b>
<b>Cumulus</b>	<b>humilis</b> <u>P</u> <b>mediocris</b> <u>P</u> <b>congestus</b> <u>P</u> <b>fractus</b> <u>P</u>	<b>radiatus</b> <u>P</u>	<b>pileus</b> <b>velum</b> <b>virga</b> <u>P</u> <b>praecipitatio</b> <u>P</u> <b>arcus</b> <b>pannus</b> <b>tuba</b>	<b>Alto cumulus</b> <b>Stratocumulus</b>	<b>Stratocumulus</b> <b>Stratus</b>

<b>Cumulonimbus</b>	<b>calvus</b> <u>P</u> <b>capillatus</b> <u>P</u>	/	<b>praecipitatio</b> <u>P</u> <b>virga</b> <u>P</u> <b>pannus</b> <u>P</u> <b>incus</b> <u>P</u> <b>mamma</b> <u>P</u> <b>pileus</b> <b>velum</b> <b>arcus</b> <u>P</u> <b>tuba</b> <u>P</u>	<b>Alto</b> cumulus <b>Alto</b> stratus <b>Nimbo</b> stratus <b>Strato</b> cumulus <b>Cum</b> ulus	<b>Cum</b> ulus
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### Notes

- 1) Principle of classification, etymology and meaning of the Latin names are given in: [Glossary of weather terms for clouds.](#)
- 2) Mother-clouds other than those mentioned in the above table, may be observed, though seldom.
- 3) Genera are sorted in decreasing order of altitudes at which they are usually observed.
- 4) Species, varieties, supplementary features and accessory clouds are listed approximately in descending order of frequency of their occurrence; mother-clouds are listed in the same order as the genera.
- 5) Bold characters = abbreviations of genera, species, varieties, supplementary features & accessory clouds and mother-clouds. The names and abbreviations of the genera are always written with an initial capital.
- 6) Colors scale: yellow = high level, orange = middle level, blue = low level.

[Classification of clouds with their base height](#)

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## Weather picture of the month



Enter

SkyStef © 2005





File size 94577  
Original date nov 08, 2181 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards NW. Cirrus fibratus (Ci fib).



File size 46878  
Original date apr 26, 2004 - 07:11 PM  
Resolution 1632 x 1224  
Flash 0  
Focal length 6.9mm  
Exposure time 1/800s  
Aperture 6.3  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards N. Cirrus uncinus (Ci unc).



File size 52184  
Original date mei 01, 2004 - 08:18 PM  
Resolution 1632 x 1224  
Flash 0  
Focal length 6.9mm  
Exposure time 1/200s  
Aperture 6.3  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards SSW. Cirrus spissatus (Ci spi). .





File size 71553  
Original date nov 08, 2173 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards WNW. Cirrus floccus (Ci flo) + Cirrus fibratus (Ci fib).



File size	67655
Original date	nov 11, 2171 - 12:00 AM
Resolution	2048 x 1536
Flash	0
Focal length	7.4545455mm
Exposure time	1/18s
Aperture	2.0
Focus Distance	
Metering Mode	Center-weighted averaging
Camera make	3MegaCam
Camera model	3MegaCam
Sensor type	

Towards ESE. Cirrus spissatus intortus (Ci spi in).



File size 48182  
Original date nov 20, 2004 - 03:30 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.9mm  
Exposure time 1/500s  
Aperture 6.3  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards SSE. Cirrus fibratus radiatus (Ci fib ra) with a dissipating trail or "distrail" + some Cumulus humilis.



File size 47867  
Original date jan 08, 2005 - 05:52 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.9mm  
Exposure time 1/80s  
Aperture 6.3  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards SW. Cirrus fibratus duplicatus (Ci fib du).



File size 38151  
Original date jan 12, 2005 - 03:00 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.9mm  
Exposure time 1/400s  
Aperture 6.3  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards NW. Cirrus fibratus mamma (Ci fib mam) + Stratocumulus stratiformis (Sc str).



File size 42791  
Original date dec 20, 2004 - 01:27 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 18.0mm  
Exposure time 1/400s  
Aperture 10.0  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards S. Cirrus fibratus (Ci fib) and Cirrocumulus stratiformis undulatus (Cc str un) + 3 contrails.



File size	49560
Original date	aug 26, 2004 - 07:44 PM
Resolution	1280 x 960
Flash	0
Focal length	6.0mm
Exposure time	1/800s
Aperture	5.6
Focus Distance	
Metering Mode	Evaluative
Camera make	SONY
Camera model	DSC-P72
Sensor type	



Towards WNW: Parry arc + 22° Halo + Sun dog on left + upper tangent arc



File size 59407  
Original date dec 24, 2004 - 04:53 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 6.9mm  
Exposure time 1/400s  
Aperture 6.3  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards SW. Cirrostratus fibratus duplicates undulatus (Cs fib du un).





File size 55412  
Original date nov 21, 2004 - 02:51 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 6.0mm  
Exposure time 1/800s  
Aperture 5.6  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards NNE. Altocumulus stratiformis perucidus translucidus undulatus (Ac str pe tr un) + Cu fra.



File size 61599  
Original date jan 06, 2005 - 02:25 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 6.0mm  
Exposure time 1/2000s  
Aperture 5.6  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards S. Altostratus lenticularis translucidus undulatus (Ac len tr un) + contrails and Ci fib.



File size 72015  
Original date nov 08, 2180 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards N. *Altostratus castellanus radiatus* (*Ac cas ra*).



File size	110284
Original date	nov 09, 2187 - 12:00 AM
Resolution	2048 x 1536
Flash	0
Focal length	7.4545455mm
Exposure time	1/18s
Aperture	2.0
Focus Distance	
Metering Mode	Center-weighted averaging
Camera make	3MegaCam
Camera model	3MegaCam
Sensor type	

Towards W. Altocumulus floccus translucidus (Ac flo tr).



File size	93077
Original date	nov 06, 2167 - 12:00 AM
Resolution	2048 x 1536
Flash	0
Focal length	7.4545455mm
Exposure time	1/18s
Aperture	2.0
Focus Distance	
Metering Mode	Center-weighted averaging
Camera make	3MegaCam
Camera model	3MegaCam
Sensor type	

Towards NW. Altocumulus stratiformis radiatus perucidus (Ac str du pe).



File size 107896  
Original date nov 06, 2187 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards NW.



File size	82684
Original date	nov 08, 2180 - 12:00 AM
Resolution	2048 x 1536
Flash	0
Focal length	7.4545455mm
Exposure time	1/18s
Aperture	2.0
Focus Distance	
Metering Mode	Center-weighted averaging
Camera make	3MegaCam
Camera model	3MegaCam
Sensor type	

Towards N. *Altostratus floccus radiatus* (Ac flo ra).



File size 86891  
Original date dec 29, 2004 - 04:14 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 6.0mm  
Exposure time 1/1250s  
Aperture 5.6  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards S. Altocumulus stratiformis translucidus perlucidus lacunosus (Ac str tr pe la).





File size 75868  
Original date nov 08, 2172 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards SE. Altocumulus castellanus virga (Ac cas vir).



File size 50597  
Original date nov 08, 2182 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards NW. Altostratus translucidus radiatus (As tr ra).



File size 45478  
Original date sep 13, 2004 - 07:57 PM  
Resolution 1280 x 960  
Flash 0  
Focal length 6.0mm  
Exposure time 1/80s  
Aperture 2.8  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards NW.





File size 55271  
Original date nov 08, 2189 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards ENE. Stratocumulus stratiformis opacus (Sc str op) layer beneath inversion around 6.000 feet .



File size 73750  
Original date dec 04, 2004 - 02:49 PM  
Resolution 2048 x 1536  
Flash 13  
Focal length 6.0mm  
Exposure time 1/2000s  
Aperture 5.6  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards S. Stratocumulus stratiformis perlucidus translucidus (Sc str pe tr).



File size 45433  
Original date jan 11, 2005 - 02:25 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 6.0mm  
Exposure time 1/640s  
Aperture 5.6  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards N. *Stracumulus stratiformis opacus perlucidus* (Sc str op pe).



File size 46928  
Original date dec 01, 2188 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards NW. Stratocumulus stratiformis opacus with mammatus alike stucture (Sc str op mam).







File size 40275  
Original date dec 27, 2004 - 01:52 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 6.9mm  
Exposure time 1/1000s  
Aperture 6.3  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards S. Stratus nebulosus translucidus (St neb tr).





File size	78505
Original date	nov 07, 2097 - 12:00 AM
Resolution	2048 x 1536
Flash	0
Focal length	7.4545455mm
Exposure time	1/18s
Aperture	2.0
Focus Distance	
Metering Mode	Center-weighted averaging
Camera make	3MegaCam
Camera model	3MegaCam
Sensor type	

Towards NNE. Cumulus mediocris radiatus (Cu med ra).



File size 68741  
Original date nov 08, 2096 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards NW. Promising day for showers: "towering Cumulus" (Cu con).







File size 54889  
Original date sep 15, 2004 - 04:46 PM  
Resolution 1280 x 960  
Flash 0  
Focal length 15.4mm  
Exposure time 1/640s  
Aperture 9.0  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards E (Zaventem). Towering Cumulus (Cu con pra) with tops up to 12.000ft (4km) giving light showers.





File size 65889  
Original date nov 08, 2096 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards NNE. Cb calvus praecipitatio (Cb cal pra) with even a rumble of thunder.



File size 94130  
Original date nov 11, 2169 - 12:00 AM  
Resolution 2048 x 1536  
Flash 0  
Focal length 7.4545455mm  
Exposure time 1/18s  
Aperture 2.0  
Focus Distance  
Metering Mode Center-weighted averaging  
Camera make 3MegaCam  
Camera model 3MegaCam  
Sensor type

Towards W. Cb capillatus incus (Cb cap inc) + Cb calvus (Cb cal) + Cu hum on a very showery day.





File size 63433  
Original date aug 20, 2004 - 07:30 PM  
Resolution 1280 x 960  
Flash 0  
Focal length 10.3mm  
Exposure time 1/500s  
Aperture 7.1  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards NNE. Cb calvus virga (Cb cal vir).



File size 48152  
Original date aug 13, 2004 - 05:08 PM  
Resolution 1280 x 960  
Flash 0  
Focal length 6.0mm  
Exposure time 1/160s  
Aperture 5.6  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards SE.



File size 61593  
Original date apr 19, 2004 - 04:55 PM  
Resolution 1280 x 960  
Flash 0  
Focal length 10.3mm  
Exposure time 1/500s  
Aperture 7.1  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards SW. Windshear in upper levels blowing away the anvil of a Cb (Cb cap inc + Cu hum).





File size 46856  
Original date nov 13, 2004 - 03:12 PM  
Resolution 2048 x 1536  
Flash 0  
Focal length 6.0mm  
Exposure time 1/1250s  
Aperture 5.6  
Focus Distance  
Metering Mode Evaluative  
Camera make SONY  
Camera model DSC-P72  
Sensor type

Towards NNE.







# Glossary of terms for clouds

Definition of a cloud: a hydrometeor consisting of minute particles of liquid water or ice, or of both, suspended in the free air and usually not touching the ground. It may also include larger particles of liquid water or ice as well as non-aqueous or solid particles such as those present in fumes, smoke or dust.

Principles of cloud classification: clouds are continuously in a process of evolution and appear, therefore, in an infinite variety of forms. It is possible, however, to define a limited number of *characteristic forms*, frequently observed all over the world, into which clouds can be broadly grouped. A classification of the characteristic forms of clouds, in terms of "genera", "species", and "varieties" has been established. Definitions and descriptions of each of the characteristic forms corresponding to this classification are given in the list below. Intermediate or transitional forms, although observed fairly frequently, are not described; they are of little interest, as they are less stable and as their appearance is not very different from that indicated in the definitions of the characteristic forms. Finally, there exists a group of clouds, rarely or occasionally observed, not included in this classification. Some of these so-called "special clouds" consists for the greater part or in their entirety of non-aqueous liquid or solid particles. The above mentioned definition of a cloud is therefore not applicable to all special clouds.

Special clouds are: nacreous clouds, noctilucent clouds, condensation trails, clouds from waterfalls, clouds from fires, clouds from volcanic eruptions, clouds resulting from industry and clouds resulting from explosions.

## ***Genera of clouds***

Main characteristics mutually exclusive forms of clouds, constituting the basis of the cloud classification included in the WMO International Cloud Atlas Volume I & II of 1956, and Volume I of 1975 & Volume II of 1987. The cloud genera are ten in number:

**Cirrus (Ci):** Detached clouds in the form of white, delicate filaments or white or mostly white patches or narrow bands. These clouds have fibrous (hair-like) appearance, or a silky sheen, or both.

**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 less than one degree.

**Cirrostratus (Cs):** Transparent, whitish cloud veil of fibrous (hair-like) or smooth appearance, totally or partly covering the sky, and generally producing halo phenomena.

**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 cloud does not show halo phenomena.

**Alto cumulus (Ac):** White or 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 or may not be merged; most of the regularly arranged small elements usually have an apparent width of between one and five degrees.

**Nimbostratus (Ns):** Grey cloud layer, often dark, 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.

**Stratocumulus (Sc):** Grey or whitish, or both grey and whitish, patch, sheet or layer of cloud which almost always has dark parts, composed of tessellations, rounded masses, rolls, etc., which are non-fibrous (except for virga) and which may or may not be merged; most of the regularly arranged small elements have an apparent width of more than five degrees.

**Stratus (St):** Generally grey cloud layer with a fairly uniform base, which may give drizzle, ice prisms or snow grains. When the sun is visible through the cloud, its outline is clearly discernible. Stratus does not produce halo phenomena except, possibly, at

very low temperatures.

**Cumulus (Cu):** Detached clouds, generally dense and with sharp outlines, developing vertically in the form of rising mounds, domes or towers, of which the bulging upper parts often resembles a cauliflower. The sunlit parts of these clouds are mostly brilliant white; their base is relatively dark and nearly horizontal.

**Cumulonimbus (Cb):** Heavy and dense cloud, 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. Under the base of this cloud which is often very dark, there are frequently low ragged clouds either merged with it or not, and precipitation sometimes in the form of virga.

Alto: Means height, upper air.

Cirro, from which cirrus is obtained means "wisp of hair."

Cumulo, from which cumulus is obtained means "heap." Clouds with this designator appear to be piled up. These type clouds form in unstable layers of air. The initial lifting may be due to convective lifting or forced (mechanical) lifting, such as; orographic, frontal or convergence lifting. If the layer is unstable, the air parcel will continue to rise producing a cumulo-form cloud.

Nimbo: This designation means "rain." Thus, nimbostratus and cumulonimbus are clouds from which precipitation occurs.

Strato, from which stratus is obtained means "layer" or "layered." Clouds with this designator form in stable layers of air; except the stratocumulus type which forms in a thin, unstable layer of air.

## ***Species of clouds***

Subdivision of the cloud genera taking into account one or more of the following features:

- Their form (cloud in banks, veils, sheets, layers, etc.);
- Their dimensions (areas of their constituent elements, vertical extension, etc.);

- Their internal structure (clouds made up of ice crystals, water droplets, etc.);
- Known or assumed physical processes which may enter into cloud formation (clouds due to orographic phenomena, etc.).

Species of a given type are 14 in number and are self-excluding.

**Calvus (cal)** (bald): Cumulonimbus in which at least some protuberances of the upper part are beginning to lose their cumuliform outlines but in which no cirriform parts can be distinguished. Protuberances and sproutings tend to form a whitish mass, with more or less vertical striations.

**Capillatus (cap)** (having hair): Cumulonimbus characterized by the presence, mostly in its upper portion, of distinct cirriform parts of clearly fibrous or striated structure, frequently having the form of an anvil, a plume or a vast, more or less disorderly mass of hair. Cumulonimbus capillatus is usually accompanied by a shower or by a thunderstorm, often with squalls and sometimes with hail; it frequently produces very well-defined virga.

**Castellanus (cas)** (castle): Clouds which present, in at least some portion of their upper part, cumuliform protuberances in the form of turrets which generally give the clouds a crenelated appearance. The turrets, some of which are taller than they are wide, are connected by a common base and seem to be arranged in lines. The castellan character is especially evident when the clouds are seen from the side.

**Congestus (con)** (to pile up): Cumulus clouds which are markedly sprouting and are often of great vertical extent. Their bulging upper part frequently resembles a cauliflower.

**Fibratus (fib)** (fibrous): Detached clouds or a thin cloud veil, consisting of nearly straight or more or less irregularly curved filaments which do not terminate in hooks or tufts.

**Floccus (flo)** (tuft of wool): A species in which each cloud unit is a small tuft with a cumuliform appearance, the lower part of which is more or less ragged and often accompanied by virga.

**Fractus (fra)** (to fracture) : Clouds in the form of irregular shreds, which have a clearly ragged appearance.

**Humilis (hum)** (small size-low): Cumulus clouds of only a slight vertical extent. They generally appear flattened.

**Lenticularis (len)** (lentil): Clouds having the shape of lenses or almonds, often very elongated and usually with well-defined outlines; they occasionally show irisation. Such clouds appear most often in cloud formations of orographic origin, but may also occur in regions without marked orography.

**Mediocris (med)** (medium size): Cumulus clouds of moderate vertical extent, the tops of which show fairly small protuberances.

**Nebulosus (neb)** (full of mist): A cloud like a nebulous veil or layer, showing no distinct details.

**Spissatus (spi)** (to make thick): Cirrus of sufficient optical thickness to appear grey when viewed towards the sun.

**Stratiformis (str)** (to spread out): Clouds spread out in an extensive horizontal sheet or layer.

**Uncinus (unc)** (hooked): Cirrus often shaped like a comma, terminating at the top in a hook, or in a tuft the upper part of which is not in the form of a rounded protuberance.

## ***Varieties of clouds***

Subdivision of cloud genera and their species, determined by taking into account one or other of the two following characteristics:

- Their transparency (clouds allowing the Sun or Moon to appear or masking them altogether);
- The arrangement of their macroscopic elements (clouds whose constituent elements are associated in a particular way).

The varieties of a given genus or species are 9 in number and are not self-exclusive except for opacus and translucidus. In the list below the first six describes the arrangement, the last three the degree of transparency.

**Duplicatus (du)** (doubled): Superposed cloud patches, sheets or layers, at slightly different levels, sometimes partly merged.

**Intortus (in)** (to twist): Cirrus, the filaments of which are very irregularly curved and often seemingly entangled in a capricious manner.

**Lacunosus (la)** (having holes): Cloud patches, sheets or layers, usually rather thin, marked by more or less regularly distributed round holes, many of them with fringed edges. Cloud elements and clear spaces are often arranged in a manner suggesting a net or a honeycomb.

**Undulatus (un)** (wave): Clouds in patches, sheets or layers, showing undulations. These undulations may be observed in fairly uniform cloud layers or in clouds composed of elements, separate or merged. Sometimes a double system of undulations is in evidence.

**Vertebratus (ve)** (having vertebrae): Clouds, the elements of which are arranged in a manner suggestive of vertebrae, ribs, or a fish skeleton.

**Radiatus (ra)** (having rays): Clouds showing broad parallel bands or arranged in parallel bands, which, owing to the effect of perspective, seem to converge towards a point on the horizon or, when the bands cross the whole sky, towards two opposite points on the horizon, called "radiation point(s)."

**Opacus (op)** (thick-shady): An extensive cloud patch, sheet or layer, the greater part of which is sufficiently opaque to mask completely the sun or moon.

**Perlucidus (pe)** (allowing light to pass through it): An extensive cloud patch, sheet or layer, with distinct but sometimes very small spaces between the elements. The spaces allow the sun, the moon, the blue of the sky or over-lying clouds to be seen. Can be observed together with opacus and translucidus.

**Translucidus (tr)** (transparent): Clouds in an extensive patch, sheet or layer, the greater part of which is sufficiently translucent to reveal the position of the sun or moon.

## ***Supplementary features and accessory clouds***

Clouds attached to the main part of a cloud, generally smaller than the latter. A given cloud may present simultaneously one or more supplementary features and are 9 in number. The first six listed below are supplementary features, the last three accessory clouds

**Arcus (arc)** (bow) *Often called roll or shelf cloud:* a dense, horizontal roll with more or less tattered edges, situated on the lower front part of certain clouds and having, when extensive, the appearance of a dark, menacing arc.

**Incus (inc)** (anvil): The upper portion of a Cumulonimbus spread out in the shape of an anvil with smooth, fibrous or striated appearance.

**Mamma (mam)** (udder-breast) *also called mammatus*: Hanging protuberances, like pouches, on the undersurface of a cloud.

**Praecipitatio (pra)** (fall down): Precipitation (rain, drizzle, snow, ice pellets, hail, etc.) falling from a cloud and reaching the earth's surface.

**Tuba (tub)** (trumpet) *commonly called funnel cloud; also called pendant cloud, tornado cloud*: Cloud column or inverted cloud cone, protruding from a cloud base; it constitutes the cloudy manifestation of more or less intense vortex, namely, a tornado or waterspout.

**Virga (vir)** (stick-branch) *also called fallstreaks, precipitation trails*: Vertical or inclined trails of precipitation attached to the under surface of a cloud, which do not reach the earth's surface.

**Pannus (pan)** (rag): Ragged shreds, sometimes constituting a continuous layer, situated below another cloud and sometimes attached to it.

**Pileus (pil)** (cap) *also called cap cloud, scarf cloud*: An accessory cloud of small horizontal extent, in the form of a cap or hood above or attached to the top of a cumuliform cloud which often penetrates it. Several pileus clouds may fairly often be observed in superposition.

**Velum (vel)** (sail of a ship): An accessory cloud veil of great horizontal extent, close above or attached to the upper part of one or several cumuliform clouds which often pierce it.

## ***Mother-clouds***

Clouds may form in clear air. They may also form or grow from other clouds, called "mother-clouds"; two cases can be distinguished.

1) A part of a cloud may develop and more or less pronounced extensions may form. These extensions, whether attached to the mother-cloud or not, may become clouds of a genus different from that of the mother-cloud. They are given the name of the appropriate genus, followed by the name of the genus of the mother-cloud with the addition of the suffix "**genitus**" (e.g. Cirrus altocumulogenitus, Stratocumulus



cumulogenitus)

2) The whole or large part of a cloud may undergo complete internal transformations, thus changing from one genus into another. The new cloud is then given the name of the appropriate genus, followed by the name of the genus of the mother-cloud with the addition of the suffix "**mutatus**" (e.g. Cirrus cirrostratomutatus, Stratus stratocumulomutatus). The internal transformation of clouds should not be confused with changes in the appearance of the sky resulting from the relative movement of clouds and observer.

( ) = abbreviations of the genera, species, varieties & supplementary features and accessory clouds

( ) = meaning of Latin names of species, varieties & supplementary features and accessory clouds

Source: WMO publication No. 266. TP.150 & WMO publication No. 407

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# Type of clouds with their base height

By convention, the part of the atmosphere in which clouds are usually present has been vertically divided into three "étages": high, middle and low. Each étage is defined by the range of levels at which clouds of certain genera occur most frequently. In the table below the high clouds are in yellow, the middle in orange and the low in blue. The étages overlap and their limits vary with altitude.

A tabular form is given below for the mid latitudes.

Remarks:

- 1) Altostratus is usually found in the middle étage, but often extends higher.
- 2) Nimbostratus is almost invariably found in the middle étage, but it usually extends into the other étages.
- 3) Cumulus and Cumulonimbus usually have their bases in the low étage, but their vertical extent is often so great that their tops may reach into the middle and high étages.

When the height of a particular cloud is known, the concept of étages may be of some help in identifying this cloud. Its genus can be determined by making a choice from among the genera normally encountered in the étage corresponding to its height.

**High clouds,  $C_H$  base usually 20,000 ft (6km) or above**

Type	Precipitation (ppn) etc.	Range of cloud base	C code
<b>Cirrus (Ci)</b>	No ppn. Halo may occur. Dense patches may veil or hide the sun	Usually 20,000-40,000 ft (6-12km)	0
<b>Cirrocumulus (Cc)</b>	No ppn. Position of sun/moon can usually be seen	Similar	1
<b>Cirrostratus (Cs)</b>	No ppn. Halo often occurs. Outline of sun normally visible	Cs can progressive lower of base and become As	2

**Medium clouds,  $C_M$  base usually between 6,500 ft (2km)**

Type	Precipitation (ppn) etc.	Range of cloud base	C code
<b>Alto cumulus (Ac)</b>	Ac Castellanus occasionally produces ppn. Can be thick enough to hide sun/moon	Usually 6,500-20,000 ft (2-6km).	3
<b>Altostratus (As)</b>	Often continuous ppn reaching the ground with sun/moon hidden. Thinner As shows sun/moon as ground glass appearance	Altostratus may thicken with progressive lowering of the base to become Ns	4
<b>Nimbostratus (Ns)</b>	Normally continuous ppn (sometimes moderate/heavy) with sun/moon hidden	Usually between the surface and 10,000 ft (3km)	5

**Low clouds,  $C_L$  base usually below 6,500 ft (2km)**

Type	Precipitation (ppn) etc.	Range of cloud base	C code
<b>Stratocumulus (Sc)</b>	Normally no ppn, but slight ppn possible over coasts/hills. Can be thick enough to hide sun/moon	Usually between 1,000 ft* (300m) and 4,500 ft (1,350m) but may often be observed to 6,500 ft (2km)	6
<b>Stratus (St)</b>	Near coasts/hills, ppn can be considerable, but it may be falling from higher cloud such as Ns. Can be thick enough to hide sun/moon. However when thin, sun/moon can be clearly visible	Usually between the surface and 2,000 ft (600m) but may sometimes be observed to 4,000 ft (1,200m)	7
<b>Cumulus (Cu)</b>	Light showers are possible	Usually between 1,000 ft* (300m) and 5,000 ft (1,500m), but may sometimes be observed to 6,500 ft (2km). After initial formation, a rise in temperature often leads to a rise in cloud base	8
<b>Cumulonimbus (Cb)</b>	Always reported when showers/thunderstorms/hail occurs. Squally winds are also common	Usually between 2,000 ft* (600m) and 5,000 ft (1,500m), but may sometimes lower to near surface, or be as high as 6,500 ft (2km)	9

\*At stations substantially over 500 ft (150m) above sea level the base will often be less.

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## Pictures of clouds

Listed below are most photographs of clouds to be found on the pages of weather pictures & reports. They were analyzed, described and sorted according the WMO International Cloud Atlas (Volume I, 1956 & Volume II, 1987).

### High level clouds

[Cirrus fibratus](#)

[Cirrus fibratus](#)

[Cirrus fibratus mamma & Stratocumulus stratiformis opacus](#)

[Cirrus uncinus](#)

[Cirrus fibratus radiatus & Cumulus humilis](#)

[Cirrus spissatus](#)

[Cirrus spissatus duplicatus](#)

[Cirrus spissatus intortus](#)

[Cirrus floccus & Cirrus fibratus](#)

[Cirrocumulus stratiformis undudatus & Cirrus fibratus](#)

[Cirrostratus fibratus](#)

Cirrostratus fibratus

Cirrostratus fibratus duplicatus undulatus

Cirrostratus fibratus & Altocumulus stratiformis perlucidus

Cirrostratus fibratus & Altocumulus stratiformis translucidus undulatus

### Medium level clouds

Altocumulus stratiformis translucidus perlucidus undulatus & Cumulus fractus

Altocumulus stratiformis translucidus perlucidus lacunosus

Altocumulus stratiformis translucidus perlucidus lacunosus undulatus & Cirrus fibratus

Altocumulus lenticularis translucidus undulatus

Altocumulus castellanus virga & Cirrus floccus

Altocumulus castellanus radiatus

Altocumulus floccus radiatus

Altocumulus floccus translucidus

Altostratus translucidus radiatus

Altostratus opacus mamma

Altostratus opacus praecipitatio

### Low level clouds

Stratocumulus stratiformis opacus

Stratocumulus stratiformis opacus perlucidus undulatus & Cirrus fibratus

Stratocumulus stratiformis opacus mamma

Stratocumulus stratiformis translucidus perlucidus

Stratocumulus stratiformis perlucidus undulatus

Stratus nebulosus translucidus

Stratus fractus translucidus

Cumulus humilis

Cumulus mediocris

Cumulus mediocris radiatus



[Cumulus congestus](#)

[Cumulus congestus & Altostratus opacus](#)

[Cumulus congestus praecipitatio](#)

[Cumulus congestus virga](#)

[Cumulus fractus](#)

[Cumulus fractus](#)

[Cumulonimbus calvus praecipitatio](#)

[Cumulonimbus calvus praecipitatio & Cumulus fractus](#)

[Cumulonimbus calvus & Cumulus congestus](#)

[Cumulonimbus calvus & Cumulus congestus & Cirrus spissatus cumulonibogenitus](#)

[Cumulonimbus calvus capillatus praecipitatio arcus](#)

[Cumulonimbus calvus praecipitatio](#)

[Cumulonimbus capillatus incus](#)

[Cumulonimbus capillatus incus & Cumulonimbus calvus & Cumulus humilis](#)

[Cumulonimbus capillatus incus & Cumulus humilis](#)

[Cumulonimbus capillatus incus & Cumulus humilis & Cumulus congestus & Stratocumulus cumulonimbogentus](#)

[Cumulonimbus capillatus incus & Cirrus spissatus cumulonimbogentus](#)

[Cumulonimbus capillatus incus praecipitatio & Stratocumulus cumulonimbogentus](#)

[Cumulonimbus capillatus incus praecipitatio & Cumulus congestus & Cirrus fibratus](#)

[Cumulonimbus capillatus incus virga & Cumulus humilis & Cumulus congestus](#)

[Cumulonimbus praecipitatio & Cumulus fractus](#)

[Cumulonimbus praecipitatio arcus](#)

[Cumulonimbus praecipitatio arcus](#)

[Cumulonimbus praecipitatio arcus](#)

[Cumulonimbus praecipitatio arcus](#)

[Cumulonimbus praecipitatio arcus](#)

[Cumulonimbus praecipitatio mamma](#)

[Cumulonimbus praecipitatio mamma](#)

[Cumulonimbus praecipitatio mamma pannus](#)

[Cumulonimbus arcus & Cumulus fractus](#)

[Cumulonimbus arcus](#)

[Cumulonimbus virga & Cumulus congestus](#)

[Cumulonimbus virga](#)

[Cumulonimbus tuba](#)

[Cumulonimbus mamma](#)

[Cumulonimbus mamma & Stratocumulus castellanus](#)

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## ***Weather pictures***

### **Clouds**



**High level clouds**



**Medium level clouds**

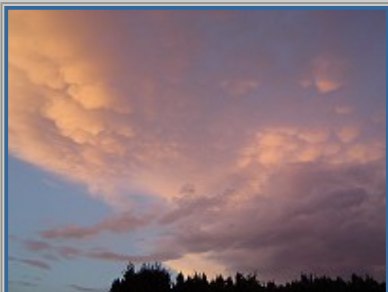


**Low level clouds**



**Low level clouds with large vertical extent**

### **Storm clouds**



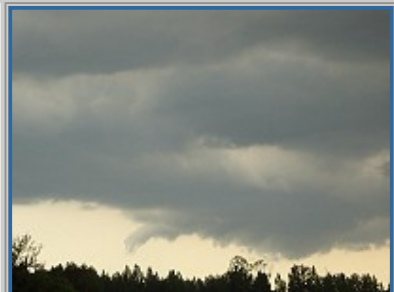
**Mammatus clouds**



**Shelf clouds**



**Whale's mouth**



**Funnel clouds**

# Other phenomena



**Lightning**



**Optics**



**Sunrises & sunsets**



**Various phenomena**

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