New Zealand Cloud Types

Cirrus Ci

White, fibrous-looking cloud made of ice crystals. This cloud is often the first sign of an approaching front. Cirrus streaks are sometimes known as *mares' tails.*

Photo: Unknown. Location: Unknown

Cirrostratus Cs

Whitish veil-like high cloud made of ice crystals. It is usually translucent and has a smooth appearance. The sun, when viewed through Cs, is often seen to be surrounded by a rainbow-like ring called a *solar halo*. This cloud often invades the sky well ahead of a frontal system and may thicken to As as the front approaches.

Photo: Peter Kreft. Location: Wellington

Cirrocumulus Cc

Whitish high cloud made of ice crystals and composed of small billow-like cloud elements. This cloud type is not often observed.

Photo: John Crouch. Location: Hutt Valley

HIGH CLOUDS

Base usually above 6,000m (20,000ft) over New Zealand

Cirrus (Ci)
hair-like or streaky ice cloud
Cirrostratus (Cs)
layer of ice cloud
Cirrocumulus (Cc)
billowy ice cloud

MIDDLE CLOUDS

Base usually between 2,000m (6,500ft) and 6,000m (20,000ft) over New Zealand, but Ns may lower to near the Earth's surface

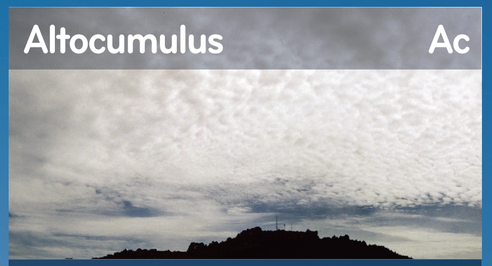
Altocumulus (Ac)
billowy cloud at middle levels
Altostratus (As)
layer cloud at middle levels
Nimbostratus (Ns)
rainy layer cloud

LOW CLOUDS

Base usually below 2,000m (6,500ft) over New Zealand

Stratus (St)
layer cloud
Cumulus (Cu)
heaped cloud
Cumulonimbus (Cb)
tall and rainy heaped cloud
Stratocumulus (Sc)
flattened heaped cloud

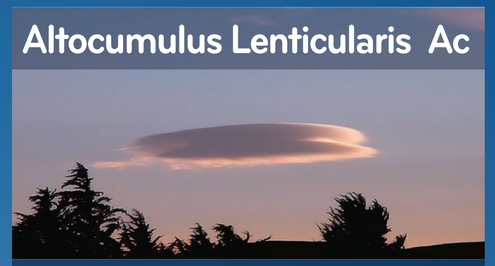
Altocumulus Ac



A grey or whitish middle-level cloud that generally has some shading and texture. Ac may follow Cs during the approach of a front.

Photo: Peter Kreft. Location: Wellington

Altocumulus Lenticularis Ac



This middle-level wave cloud often forms when a layer of air is lifted over hills or mountains in stable conditions. Ac *lentic* can occur as single lens-shaped clouds or as many lens-shaped clouds 'stacked like pancakes'.

Photo: Peter Fisher. Location: Near Lumsden

Northwest Arch Ac/As/Cs

This middle and high cloud often forms east of New Zealand's main mountain ranges as a result of an increasing northwest flow ahead of a frontal system. At first single Ac lentics form, but as the front approaches, upper-level moisture increases and an *arch cloud* develops of Ac, As and Cs. This arch cloud displays a very sharp western edge.

Photo: Sarah Garlick. Location: North of Christchurch

Altostratus As

A greyish or blueish middle-level cloud sheet. It usually develops from gradually thickening Cs, and it may thicken further and lower to Ns. Unlike Cs, solar halos are not observed with this cloud. The low cloud in this photo is Sc.

Photo: Peter Kreft. Location: Wellington

Nimbostratus Ns

Dark grey middle-level cloud usually associated with a frontal system. The cloud base can be hard to see because of more or less continuously falling rain or snow beneath it. The base may merge with St and lower to near ground level as precipitation increases the low-level moisture.

Photo: Peter Kreft. Location: Wellington

Stratus St

A low-level cloud which can occur in layers or patches. St often forms when low-level air is moistened by frontal rain, and when warm moist air moves over a cool sea. If under other clouds St appears grey; it looks white if in direct sunlight as in the photo. Fog is a type of St that forms on the ground, often under slow-moving anticyclones.

Photo: John Crouch. Location: Wellington

Stratocumulus Sc

Grey or whitish layer cloud, often with a lumpy looking base. Sc can be formed by low-level turbulence and also by Cu spreading out when reaching a stable layer. Sc layers are usually only about 300m (1,000ft) to 600m (2,000ft) thick. Sc is common in anticyclonic conditions, particularly over the sea.

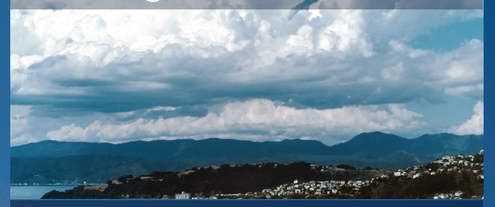
Photo: Paul Mallinson. Location: Hutt Valley

Cumulus Humilis Cu

A low-level heaped cloud that is also called *fair weather cumulus*. It has little vertical development and individual clouds are short lived. These clouds form in weak thermals rising from the the Earth's surface during fair weather.

Photo: Peter Knudsen Location: Near Greytown

Towering Cumulus TCu



This heaped cloud usually has a sharp horizontal base and a cauliflower-shaped top. TCu may grow from Cu into Cb if the conditions are suitable. The vertical extent of TCu (and Cb) is much greater than Ac and Cc, the higher altitude types of cumulus.

Photo: Peter Kreft. Location: Wellington

Cumulonimbus Cb

Tall heaped cloud, usually with an anvil-shaped top. In New Zealand, Cb tops may reach 10,000m (35,000ft). Cb clouds can occur individually, in organised groups, as *squall lines* or embedded in fronts. They often produce thunderstorms with strong wind gusts, hail, heavy showers and even tornadoes.

Photo: Allister Gorman. Location: Wellington