

Chapter 6, Part 2

Clouds

Major Cloud Groups and Types

- High clouds
 - Cirrus (Ci)
 - Cirrostratus (Cs)
 - Cirrocumulus (Cc)
- Middle clouds
 - Altostratus (As)
 - Alto cumulus (Ac)
- Low clouds
 - Stratus (St)
 - Stratocumulus (Sc)
 - Nimbostratus
- Clouds with vertical development
 - Cumulus (Cu)
 - Cumulonimbus (Cb)

Height of Cloud Bases

	Tropics	Middle Lat.	Polar
High	20,000 to 60,000 ft	16,000 to 43,000 ft	10,000 to 26,000 ft
Middle	6,500 to 26,000 ft	6,500 to 23,000 ft	6,500 to 13,000 ft
Low	surface to 6,500 ft	surface to 6,500 ft	surface to 6,500 ft

Note how cloud heights lower at higher latitude.

Cirrus Clouds

- Wispy clouds blown by the wind into long streamers
- Generally point to fair weather
- Like other high clouds composed largely of ice crystals

See Figure 6.10

Cirrocummulus Clouds



- Small rounded white puffs which occur individually or in rows
- Seldom cover the entire sky

Cirrostratus Clouds



- Thin sheets of clouds
- Often cover entire sky
- Sun and moon visible through them

Alto cummulus Clouds



- Gray and puffy, sometimes in parallel bands
- May indicate later thunderstorms
- Composed mostly of water droplets and some ice, depending on temperature

Altostratus Clouds



- Gray or blue-gray cloud
- Often covers entire sky
- Composed of ice and water

Nimbostratus Clouds



- Dark gray cloudy layer
- Continuous light to moderate rain or snow

Stratocummulus Clouds



- Low lumpy clouds with blue sky visible between them

Stratus Clouds



- Uniform grey cloud that covers the entire horizon
- Usually no precipitation, but may be mist or drizzle

Cummulus Clouds



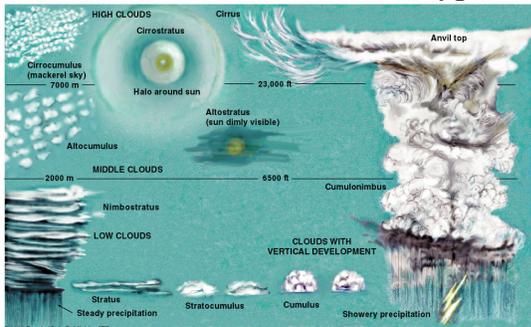
- Looks like floating cotton with a flat base
- Blue sky visible between them

Cummulonimbus Clouds

- Thunderstorm cloud
- Large vertical extent, e.g., 600m - 10,000m
- Isolated or part of a line of clouds

See Figure 6.20

Illustration of Basic Cloud Types



Determining Sky Conditions

Description	Fraction	Meaning
Clear	0	No clouds
Few	0 to 2/8	Few clouds visible
Scattered	3/8 to 4/8	Partly cloudy
Broken	5/8 to 7/8	Mostly cloudy
Overcast	8/8	Sky is covered by clouds
Sky obscured	--	Hidden by fog, smoke, ...

Satellite Observations

Visible light image



Infrared image



Infrared images can distinguish between low clouds (dark) & high clouds.

Summary

- Clouds are classified by height and vertical structure into four groups.
- There are ten basic cloud types, which you should know.
