

Weather



photogenic tornado roping
near Springer, Oklahoma, M



2-1 I

What is Weather?

Objectives:

Explain the role of water in the atmosphere and how it affects the weather.

Describe how clouds form and how they are classified.

Compare the development of rain, hail, sleet, and snow.

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WHAT IS WEATHER?

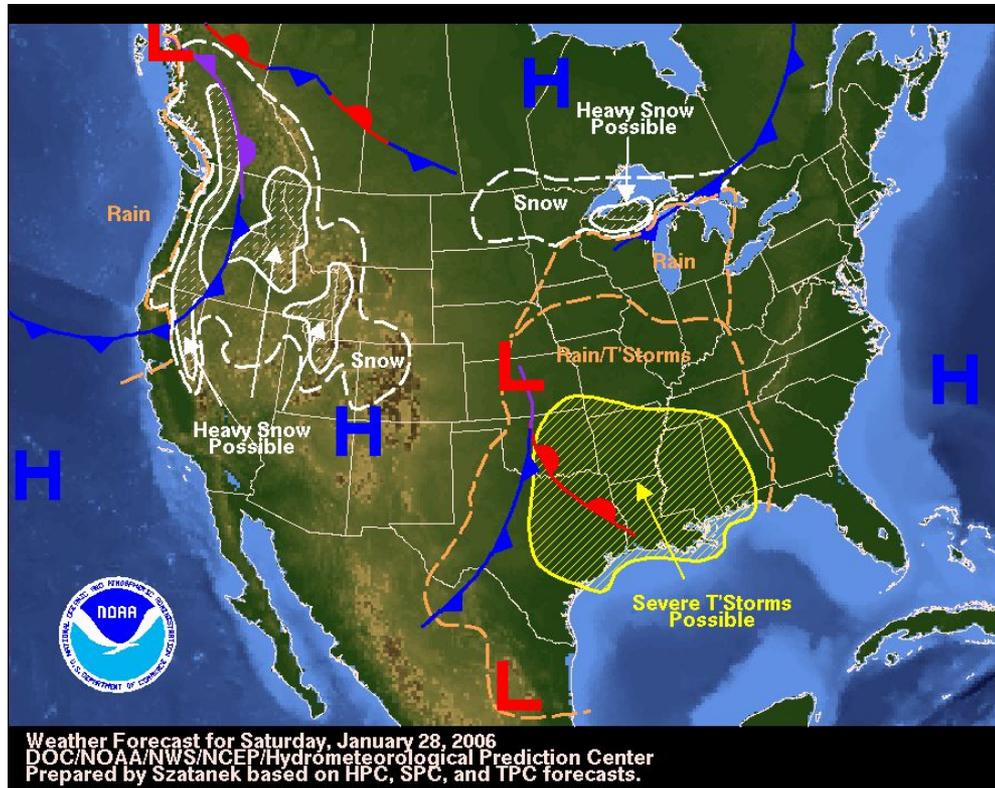
- **Weather is:** What is happening right now.
- Sunshine, clouds, wind, temperature, humidity & more
- We can't control the weather. It controls us!

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Weather

Weather is the present state of the atmosphere.



What Causes Weather?

The interaction of air, water and the sun causes weather.



Air pressure, wind, temperature and the amount of moisture in the air all effect what the weather is going to be like.

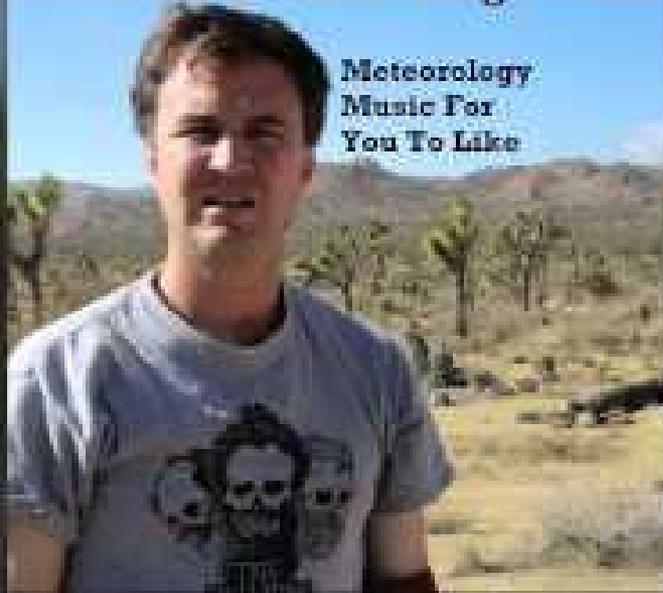
Humidity is the amount of water vapor in the air.

Relative humidity refers to the amount of water vapor the air is holding compared to the amount it can hold at a temperature.

The warmer the temperature, the more water the air can hold.

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Humidity Song

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HUMIDITY

101

Condensation

The air can only hold a certain amount of water vapor, so when the air is fully saturated condensation will occur. This is called the **dew point**. The dew point will change with the amount of moisture in the air.



Dew



Frost

Clouds

Clouds form when water vapor in the air condenses around a particle of dust, salt or smoke. These particles are known as nuclei. When millions of these droplets collect, a cloud forms.

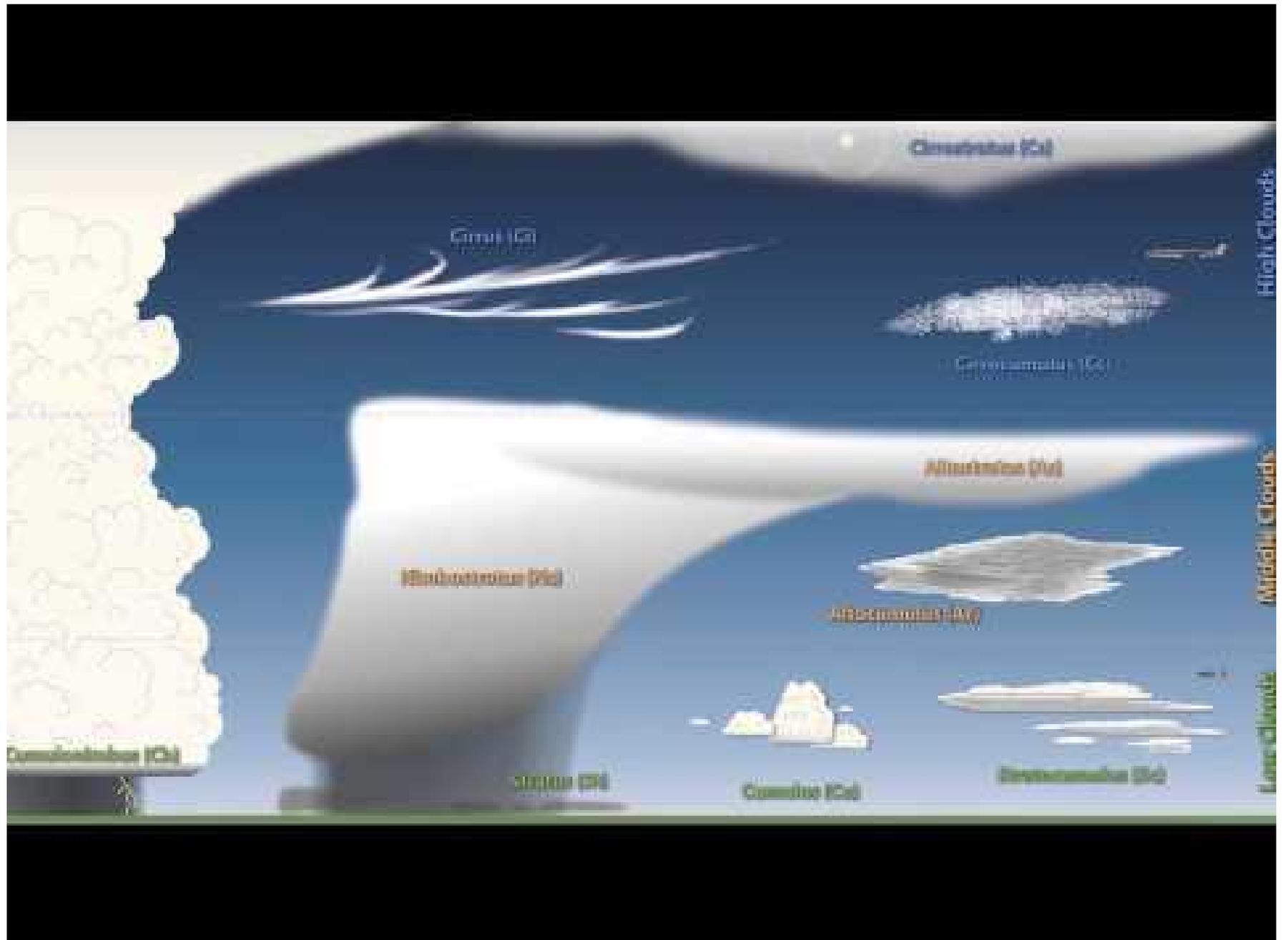
Cloud Classification

Clouds are classified into three main types based on their shape.

Cirrus

Cumulus

Stratus



Stratus

Stratus clouds form in flat layers. They look like smooth even sheets at low altitudes. They can be seen in fair weather, but they can also thicken and bring drizzle.



fog.

Cumulus



Cumulus clouds look like fluffy, rounded piles of cotton. They are usually associated with fair weather when they are small. Larger ones are called **nimbus** or **cumulonimbus** are associated with thunderstorms.



Cirrus Cirrus Cirrus

Cirrus clouds are found at high altitudes and because of their height, are made of ice crystals. They are thin and feathery. They usually indicate that the weather is changing.



Cloud Classification

Clouds can also be classified by their height. We add prefixes to describe clouds.

Cirro – high elevation

Alto – middle elevation

Strato – low elevation

Clouds

Cirrostratus



Altostratus



Stratus clouds are sheets of gray,
sheets of gray, sheets of gray.
Stratus clouds are sheets of gray,
they hang low in the sky.



Precipitation

Water falling from clouds is called **precipitation**. The air temperature determines what type of precipitation will occur.

Rain – if the temperature is above freezing.

Snow –if the temperature is below freezing.

Sleet- if snow passes through a layer of warm air and then refreezes.

Hail- forms high in the atmosphere and gathers layers as it falls.



MILONIA