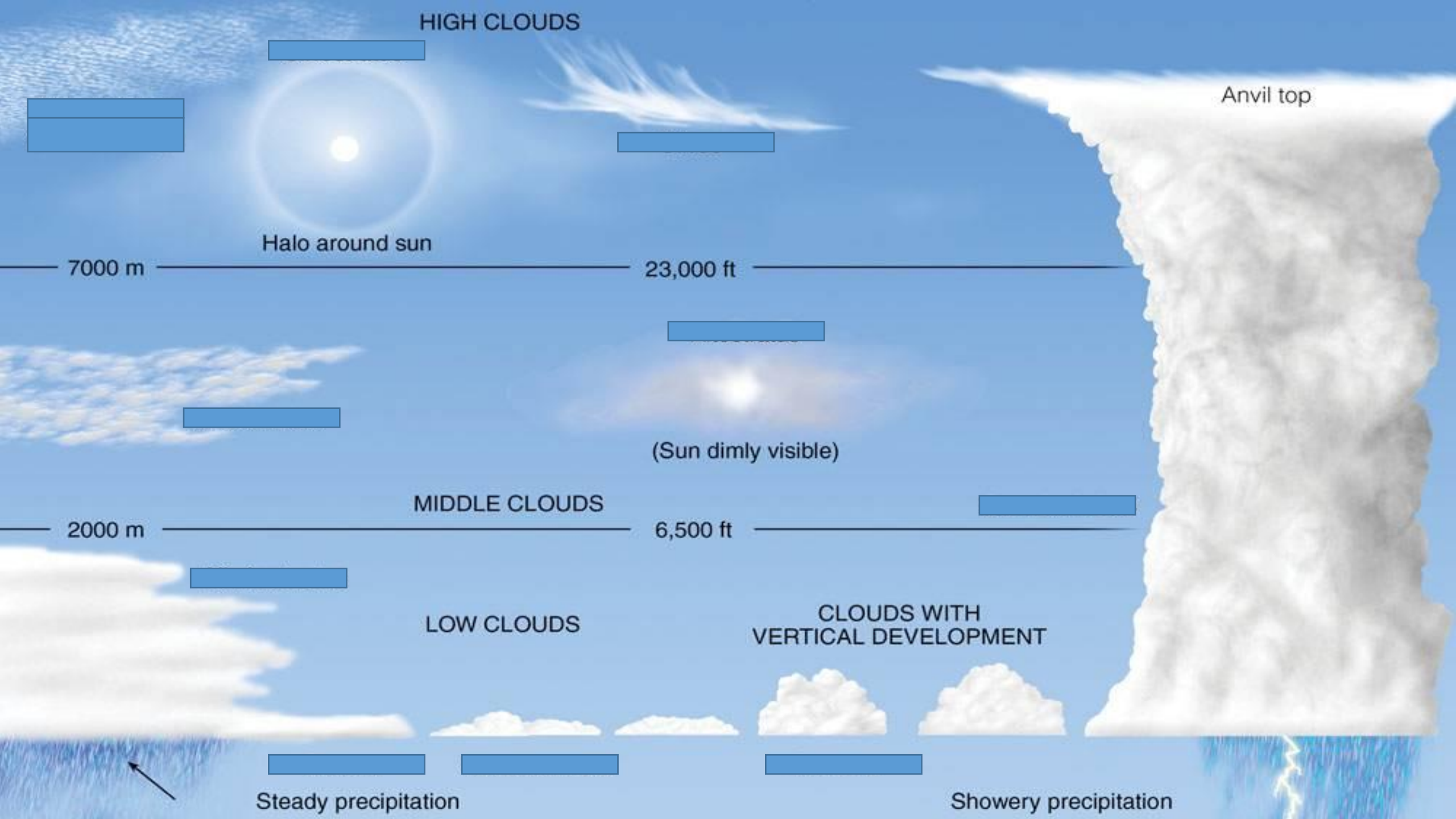


Nature Quiz

TMN-COT Meeting Oct., 2014
by Marty Cornell

Clouds



Cloud Quiz # 1

Cloud Name?



- ✓ Have flat base and puffy domed tops, like floating pieces of cotton.
- ✓ Latin name. Means “heap” or “pile”.
- ✓ Lower level cloud type; base ~300 to 1000 m (1000 to 3300 ft).
- ✓ Have a net cooling effect.
- ✓ Fair weather cloud producing little rain (unless strong convection sets in).
- ✓ May appear by themselves, in lines, or in clusters.

Cloud Quiz # 1, Another View



Cloud Quiz # 2

Cloud Name?



- ✓ Flat, hazy, featureless clouds of low altitude varying in color from dark gray to nearly white.
- ✓ Resembles fog that does not touch the ground.
- ✓ Sometimes produces drizzle.
- ✓ Latin name; “layer”.
- ✓ Have a net cooling effect.

Cloud Quiz # 2, Another View



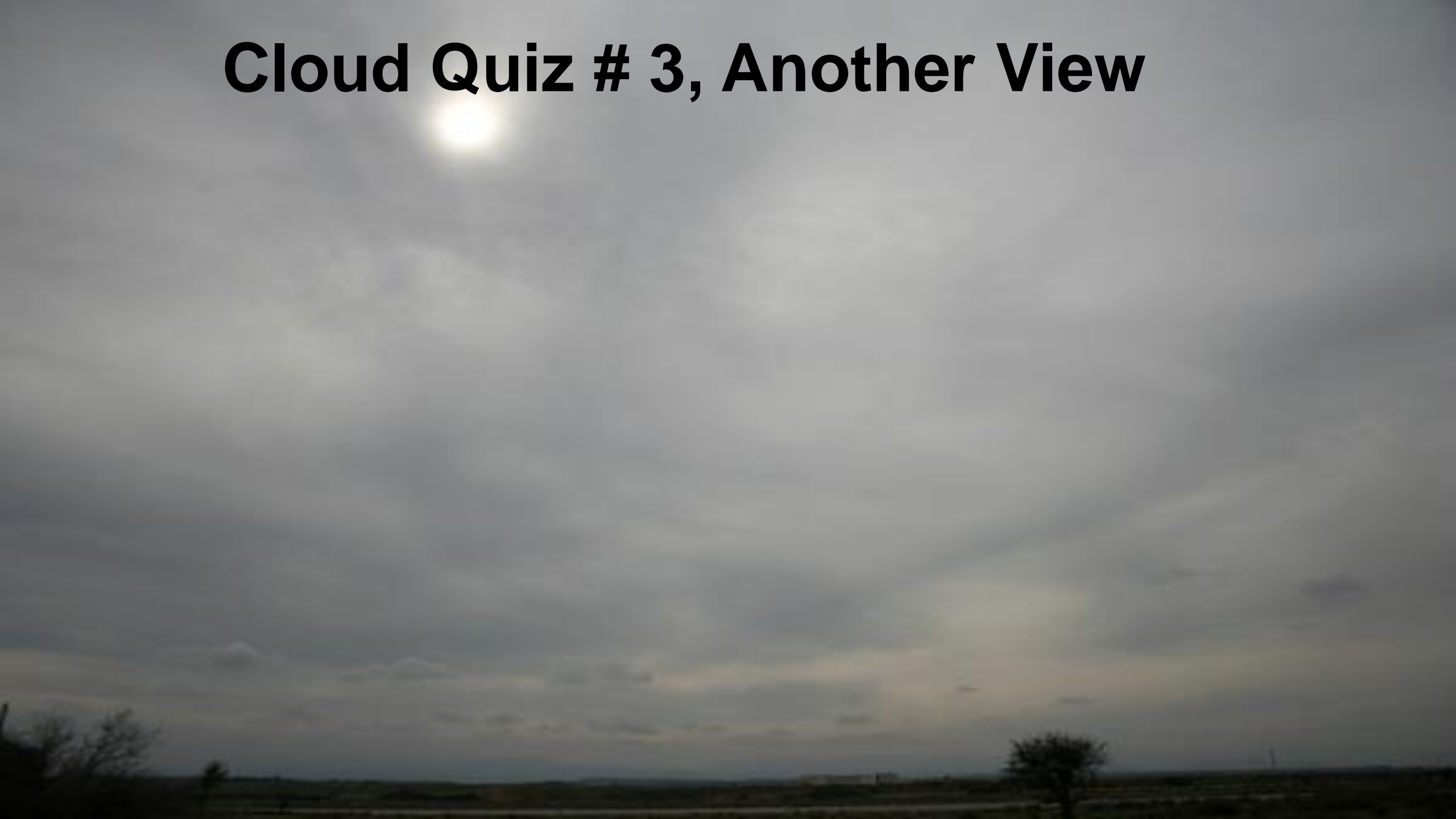
Cloud Quiz # 3

Cloud Name?



- ✓ Flat, hazy, featureless clouds of varying in color from dark gray to nearly white.
- ✓ Forms about 2,000 to 6,100 meters (6,600 to 20,000 ft.) above ground level,
- ✓ Formed by the lifting of a large mostly stable air mass that causes invisible water vapor to condense into cloud.
- ✓ Latin name; “medium” + “layer”.
- ✓ Can be wavy as a result of wind shear through the cloud.
- ✓ Often thin, can see sun or moon behind.

Cloud Quiz # 3, Another View



Cloud Quiz # 4

Cloud Name?



- ✓ Middle altitude cloud of globular masses or rolls in layers or patches.
- ✓ Forms about 2,000 to 6,100 meters (6,600 to 20,000 ft.) above ground level.
- ✓ Latin name; “medium” + “heaped”.
- ✓ Often precedes cold fronts.
- ✓ Presence of on a warm and humid summer morning is commonly followed by thunderstorms later in the day.

Cloud Quiz # 4, Another View

Photo by Dr. Roy Winkelman, Kirby Storter Park, Big Cypress National Preserve, Ochopee, FL, 10Feb12

Cloud Quiz # 5

Cloud Name?



- ✓ Caused by fast-moving, moist air over mountains oriented perpendicular to air flow.
- ✓ Cloud dissipates once over mountain crest, but replacement air continually reforms crest clouds.
- ✓ The cloud thus appears stationary (hence their name).
- ✓ Most often seen in the winter or spring when winds aloft are typically the strongest.



Jean-Michel Priaux

4Dec10, Alsace, France

Cloud Quiz # 5, Another View



Photo by Mark J. Madigan - Walsenburg, Colorado - May 20, 2003

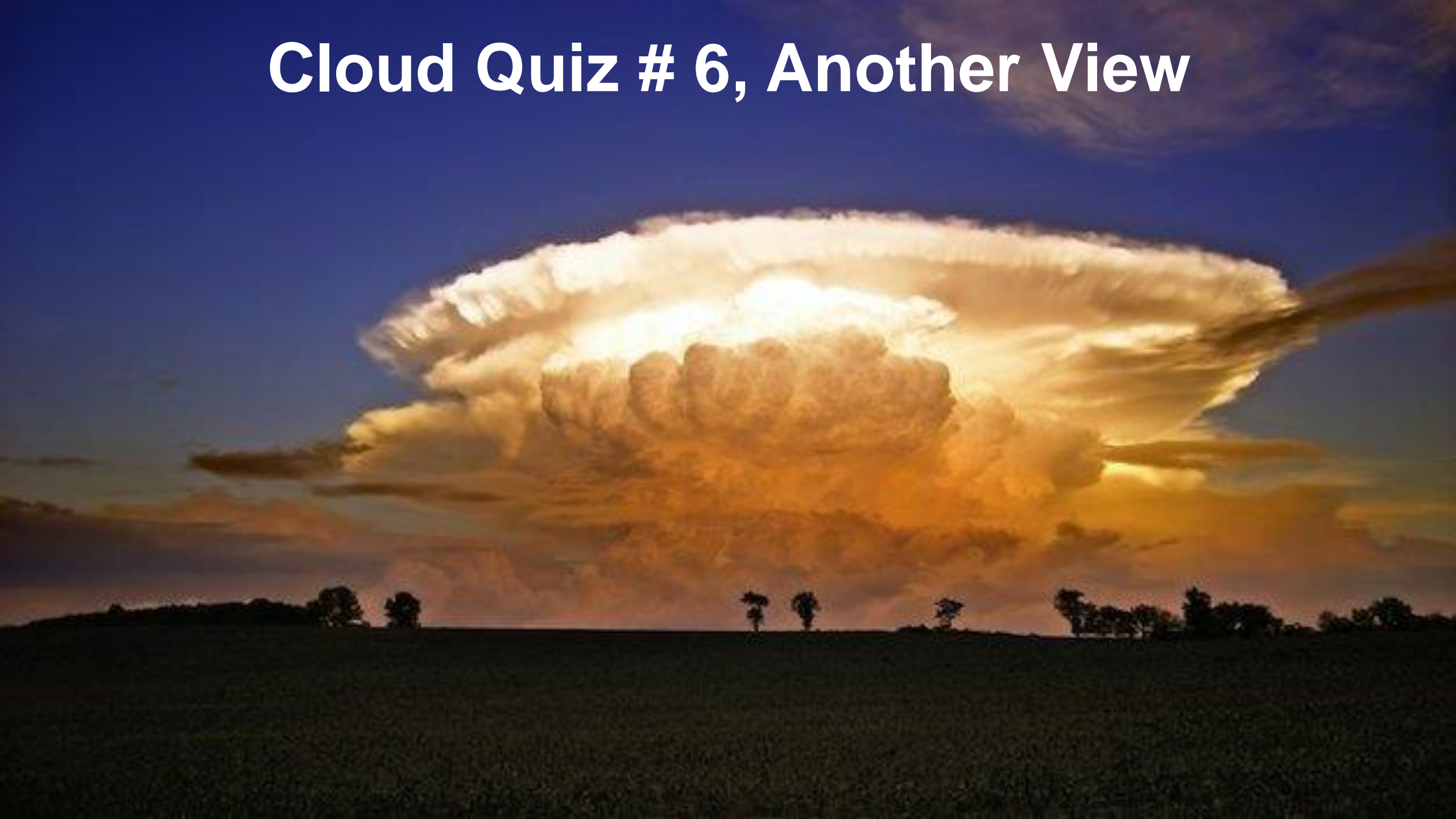
Cloud Quiz # 6

Cloud Name?



- ✓ Associated with thunderstorms and atmospheric instability.
- ✓ Cirriform or anvil top.
- ✓ Latin name; “heap” + “rain”
- ✓ Grow vertically; 200 to 4,000 m (500 to 13,000 ft.), often over 6,000 m (20,000 ft.).
- ✓ Can produce lightning, strong gusts, and hail.
- ✓ May appear by themselves, in lines, or in clusters.

Cloud Quiz # 6, Another View



Cloud Quiz # 7

Cloud Name?



- ✓ Drooping underside (pouch-like appearance) of previous cloud in its latter stage of development.
- ✓ Derived from Latin name. “udder”
- ✓ Can accompany non-severe storms as well.

Cloud Quiz # 8

Cloud Name?



- ✓ A low, horizontal, sometimes wedge-shaped cloud.
- ✓ Associated with the leading edge of a thunderstorm's outflow or gust front and potentially strong winds.
- ✓ Cool, sinking air outflow cuts under warm air being drawn into the storm's updraft, condensing the warmer air.
- ✓ Although often appearing ominous, clouds normally do not produce tornadoes.

Cloud Quiz # 8, Another View

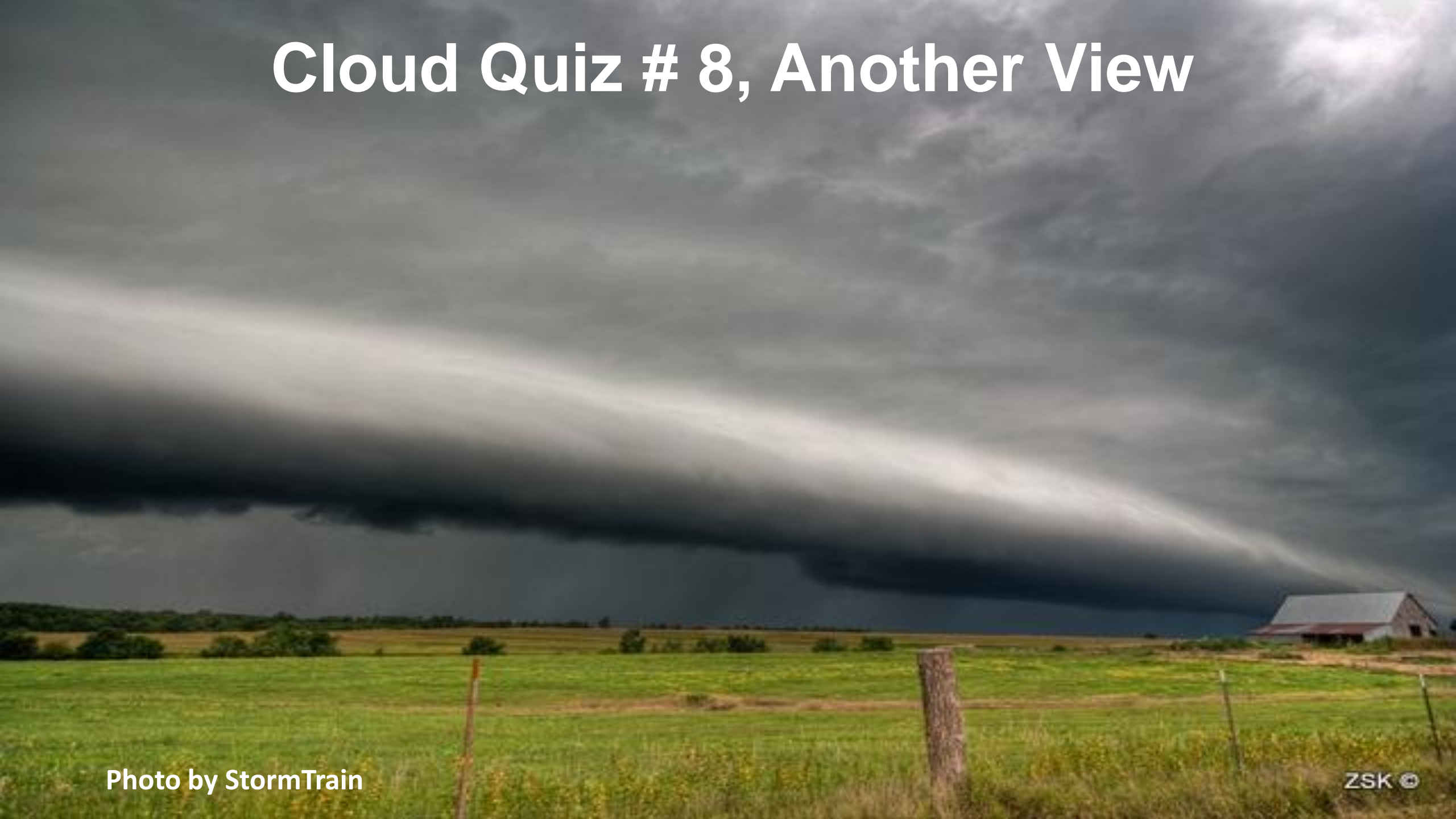


Photo by StormTrain

ZSK ©

Cloud Quiz # 9

Cloud Name?



- ✓ High-altitude tropospheric cloud.
- ✓ Form above 5 kilometers (16,000 ft) to 12 kilometers (39,000 ft).
- ✓ Typically appears as a large, white, and patchy or tuft without a gray shadow.
- ✓ If these clouds cover a lot of the sky, the sky often looks like the scales of a fish.
- ✓ Tend to reflect the red and yellow colors during a sunset and sunrise, and thus they have been referred to as "one of the most beautiful clouds".

Cloud Quiz # 9, Another View

<https://witness.theguardian.com/user/GillyS>

Cloud Quiz # 10

Cloud Name?



- ✓ Thin, wispy clouds blown by high winds into long streamers.
- ✓ Form above 6000 m (20,000 ft.).
- ✓ Latin meaning “ringlet” or “curling lock of hair”.
- ✓ Cover up to 25% of the Earth and have a net heating effect.

Cloud Quiz # 10, Another View,
Hooked shape called .



Cloud Quiz # 11

Cloud Name?



© Anna McKenzie, <http://cloudappreciationsociety.org/find-a-cloud/#p=1&t=cloud78&i=17>

- ✓ An ice halo formed by hexagonal, plate-shaped ice crystals in high level clouds of the previous type.
- ✓ The halo is so large that the arc appears parallel to the horizon, hence its technical name.
- ✓ Common name based on their brilliant pastel colors and flame like appearance.
- ✓ Very precise conditions to form – the sun elevation of 58° or greater, and sunlight has to enter the ice crystals at a specific angle.
- ✓ Cannot be seen in locations north of 55°N or south of 55°S .
- ✓ A rare phenomenon.

Cloud Quiz # 11, Another View



Cloud Answer # 1

Cumulus



- ✓ Have flat base and puffy domed tops, like floating pieces of cotton.
- ✓ Latin name. Means “heap” or “pile”.
- ✓ Lower level cloud type; base ~300 to 1000 m (1000 to 3300 ft).
- ✓ Have a net cooling effect.
- ✓ Fair weather cloud producing little rain (unless strong convection sets in).
- ✓ May appear by themselves, in lines, or in clusters.

Cloud Answer # 2

Stratus



- ✓ Flat, hazy, featureless clouds of low altitude varying in color from dark gray to nearly white.
- ✓ Resembles fog that does not touch the ground.
- ✓ Sometimes produces drizzle.
- ✓ Latin name; “layer”.
- ✓ Have a net cooling effect.

Cloud Answer # 3

Altostratus



- ✓ Flat, hazy, featureless clouds of varying in color from dark gray to nearly white.
- ✓ Forms about 2,000 to 6,100 meters (6,600 to 20,000 ft.) above ground level,
- ✓ Formed by the lifting of a large mostly stable air mass that causes invisible water vapor to condense into cloud.
- ✓ Latin name; “medium” + “layer”.
- ✓ Can be wavy as a result of wind shear through the cloud.
- ✓ May be composed of ice crystals.

Cloud Answer # 4

Altostratus



- ✓ Middle altitude cloud of globular masses or rolls in layers or patches
- ✓ Forms about 2,000 to 6,100 meters (6,600 to 20,000 ft.) above ground level.
- ✓ Latin name; “medium” + “heaped”.
- ✓ Often precedes cold fronts.
- ✓ Presence of on a warm and humid summer morning is commonly followed by thunderstorms later in the day.

Cloud Answer # 5

Alto cumulus Standing Lenticularis



- ✓ Caused by fast-moving, moist air over mountains oriented perpendicular to air flow.
- ✓ Cloud dissipates once over mountain crest, but replacement air continually reforms crest clouds.
- ✓ The cloud thus appears stationary (hence their name). **Lens-shaped**
- ✓ Most often seen in the winter or spring when winds aloft are typically the strongest.



Jean-Michel Priaux

4Dec10, Alsace, France

Cloud Answer # 6

Cumulonimbus



- ✓ Associated with thunderstorms and atmospheric instability.
- ✓ Cirriform or anvil top.
- ✓ Latin name; “heap” + “rain”
- ✓ Grow vertically; 200 to 4,000 m (500 to 13,000 ft.), often over 6,000 m (20,000 ft.).
- ✓ Can produce lightning, strong gusts, and hail.
- ✓ May appear by themselves, in lines, or in clusters.

Cloud Answer # 7

Mammatus or Mammatocumulus



- ✓ Drooping underside (pouch-like appearance) of previous cloud in its latter stage of development.
- ✓ Derived from Latin name. “udder”
- ✓ Can accompany non-severe storms as well.

Cloud Answer # 8

Arcus Shelf Cloud



- ✓ A low, horizontal, sometimes wedge-shaped cloud.
- ✓ Associated with the leading edge of a thunderstorm's outflow or gust front and potentially strong winds.
- ✓ Cool, sinking air outflow cuts under warm air being drawn into the storm's updraft, condensing the warmer air.
- ✓ Although often appearing ominous, clouds normally do not produce tornadoes.

Cloud Answer # 9

Cirrocumulus Mackerel Sky



- ✓ High-altitude tropospheric cloud.
- ✓ Form above 5 kilometers (16,000 ft) to 12 kilometers (39,000 ft).
- ✓ Typically appears as a large, white, and patchy or tuft without a gray shadow.
- ✓ If these clouds cover a lot of the sky, the sky often looks like the scales of a fish
- ✓ Tend to reflect the red and yellow colors during a sunset and sunrise, and thus they have been referred to as "one of the most beautiful clouds".

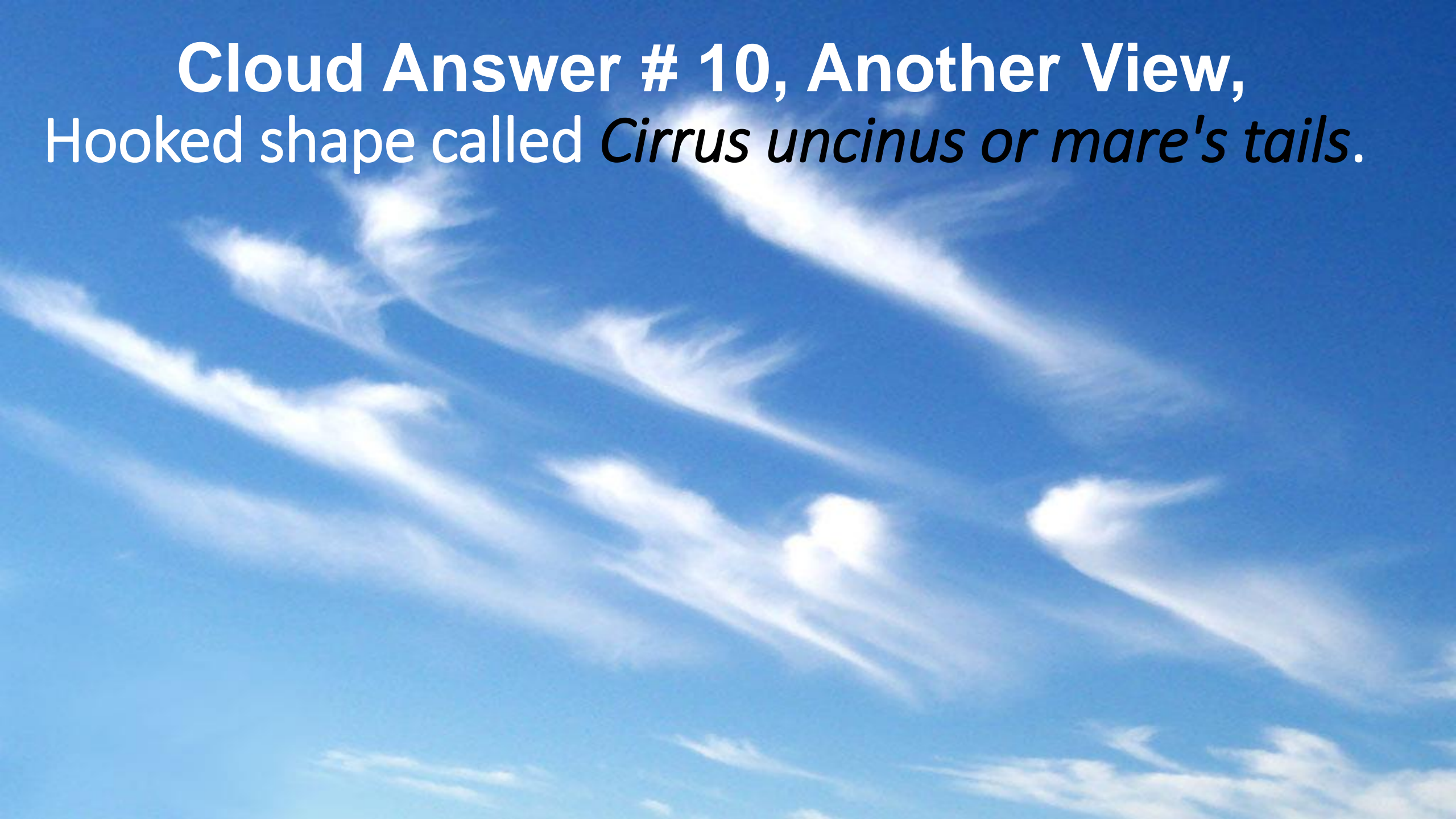
Cloud Answer # 10

Cirrus



- ✓ Thin, wispy clouds blown by high winds into long streamers.
- ✓ Form above 6000 m (20,000 ft.).
- ✓ Latin meaning “ringlet” or “curling lock of hair”.
- ✓ Cover up to 25% of the Earth and have a net heating effect.

Cloud Answer # 10, Another View,
Hooked shape called *Cirrus uncinus* or *mare's tails*.



Cloud Answer # 11

Circumhorizontal Arc Fire Rainbow



© Anna McKenzie, <http://cloudappreciationsociety.org/find-a-cloud/#p=1&t=cloud78&i=17>

- ✓ An ice halo formed by hexagonal, plate-shaped ice crystals in high level cirrus clouds.
- ✓ The halo is so large that the arc appears parallel to the horizon, hence its technical name.
- ✓ Common name based on their brilliant pastel colors and flame like appearance.
- ✓ Very precise conditions to form – the sun elevation of 58° or greater, and sunlight has to enter the ice crystals at a specific angle. Cannot be seen in locations north of 55°N or south of 55°S .
- ✓ A rare phenomenon.

Stratospheric Nacreous Clouds over Antarctica

They are wave clouds, and their undulating, sheet-like form reveal the winds and waves of the stratosphere.

Alan R Light, over the NASA Radome, McMurdo Station, Antarctica

