

Cavum Cloud

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Context

Recently, NASA's Terra satellite captured a cluster of cavum clouds over the Gulf of Mexico off Florida's west coast.

About

- These clouds look like a large circle or ellipse has been smartly cut from the clouds, leaving feathery wisps in the center of the hole.
- They are also known as **hollow-punch clouds or fallstreak holes**.
- These are a testament to the difficult and dynamic processes that occur in our atmosphere.

Formation

- Cavum clouds are formed whilst aeroplanes fly through banks of altocumulus clouds, mid-level clouds that contain supercooled water droplets.
- As air moves around the plane, a process known as adiabatic growth can make the droplets freeze into ice crystals.
- The ice crystals finally grow heavy and fall out of the sky, leaving a hollow within the cloud layer.
- The falling ice crystals are seen in the centre of the holes as wispy trails of precipitation that never reach the ground – functions referred to as **virga**.

Clouds

- They are seen accumulations of tiny water droplets or ice crystals within the Earth's ecosystem. They vary significantly in shape, feature, and coloration.

Types

- **Cirrus Clouds:** These are wispy, curly, or stringy clouds found excessive within the environment, commonly better than 6,000 metres (20,000 feet).
 - They are typically manufactured from ice crystals and commonly signal clear, fair weather.
- **Stratus Clouds:** These are horizontal and stratified, or layered. They can blanket the entire sky in a single pattern and typically occur close to the Earth.
 - They regularly shape on the boundary of a warm front, where warm, moist air is forced up over bloodless air.
- **Cumulus Clouds:** These are massive and lumpy clouds. They can stretch vertically into the atmosphere as much as 12,000 metres (39,000 feet) high.
 - They are created by means of robust updrafts of heat, wet air.
- **Nimbostratus Clouds:** These are low and center darkish gray clouds with precipitation falling from them.
- **Stratocumulus Clouds:** These are low clouds with irregular loads of clouds, rolling or puffy in look, sometimes with area between the clouds.
- **Cumulonimbus Clouds:** These are huge clouds with dark bases and tall billowing towers.
 - They can have sharp well-defined edges or an anvil shape at the top. Precipitation can obscure the base of the clouds.

Source: The Indian Express

UPSC Prelims Practice Question

Q. Consider the following statements:

1. High clouds primarily reflect solar radiation and cool the surface of the Earth.
2. Low clouds have a high absorption of infrared radiation emanating from the Earth's surface and thus cause warming effect.

Which of the statements given above is/are correct?

- | | |
|-----------------|--------------------|
| a. 1 only | b. 2 only |
| c. Both 1 and 2 | c. Neither 1 nor 2 |

Ans - "d"