Rainbow clouds (Iridescent clouds): Formation

By IASToppers | 2023-12-26 15:10:00

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Weather watchers have captured images of rare iridescent clouds over Scotland.

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[Ref: The Guardian]

About Rainbow clouds (Iridescent clouds):

- Rainbow clouds, or iridescent clouds, are a visual phenomenon caused by the **diffraction of sunlight in the sky.**
- This occurrence is most common in **altocumulus, cirrocumulus, lenticular,** and **cirrus clouds.**

How do Rainbow Clouds Form?

- The phenomenon occurs through a process known as **cloud iridescence**.
- Small water droplets or ice crystals within the clouds scatter sunlight, leading to the appearance of various colours.
- Diffraction is the key mechanism, happening when these **small particles in the clouds** bend the sun's light.

Conditions for Formation:

- Iridescent clouds are relatively rare **due to the specific conditions required**.
- Clouds need to be thin with **uniform water droplets or ice crystals**.
- The phenomenon is more likely in **semi-transparent clouds or those just forming.**

Visual Characteristics:

- Similar to a **rainbow**, this scattering of light results in a **spectrum of colours** appearing within the cloud formations.
- Observers may notice the **clouds filled or edged with various hues**, typically in pastel colours.

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Comparison with Traditional Rainbows:

- Traditional rainbows form when **sunlight passes through raindrops**, splitting light into various colours.
- In contrast, rainbow clouds **may not require precipitation** and are formed within the clouds themselves.

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