



Atmosphere and Its Layers



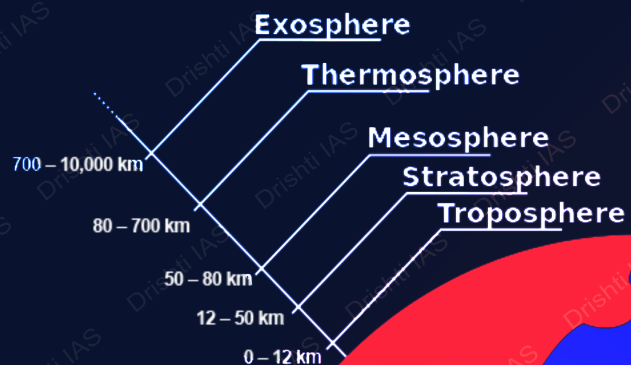
ATMOSPHERE AND ITS LAYERS

ATMOSPHERE

- One of the main components of Earth's interdependent physical system
- It is composed of about 78% nitrogen, 21% oxygen, and 1% other gases

LAYERS

- **Troposphere:**
 - Extends from Earth's surface upto 12 kilometers
 - The **lowest part of the atmosphere**-the part we live in
 - Temperature in the troposphere decreases with height
 - The top of the troposphere is called **tropopause**
 - Densest atmospheric layer
 - Contains about **75% of all of the air in the atmosphere**, and 99% of water vapour (which forms clouds and rain)
- **Stratosphere:**
 - Located between 12 and 50 kilometers above Earth's surface
 - Contains much of the **ozone** in the atmosphere
 - Ozone molecules in this layer **absorb ultraviolet (UV) radiation** from the Sun, resulting in an increase in temperature
 - It is **nearly cloud- and weather-free**
 - It's the highest part of the atmosphere that jet planes can reach
- **Mesosphere:**
 - Located between about 50 and 80 kilometers above Earth's surface
 - The top of this layer is the **coldest place found within the Earth system**
 - It forms **noctilucent clouds**, the highest clouds in Earth's atmosphere
 - Most **meteors burn up** in this atmospheric layer
 - **Sounding rockets and rocket-powered aircraft** can reach the mesosphere
- **Thermosphere:**
 - Located between about 80 and 700 kilometers above Earth's surface
 - Its **lowest part contains the ionosphere**
 - The **temperature of the thermosphere varies between night and day and between the seasons**
 - The **aurora borealis (northern) and aurora australis (southern)** are sometimes seen here
- **Exosphere:**
 - Located between 700 and 10,000 kilometers above Earth's surface.
 - The **highest layer of Earth's atmosphere**.
 - There's **no weather at all** in this layer.
 - Most Earth **satellites orbit in this layer**.
 - At the bottom of the exosphere is a transition layer called the **thermopause**.



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