

Warm Up 7: Atmosphere
10-3-18

LT I can describe the different levels of the atmosphere.

Q1. What is the hydrosphere?

Q2. Why doesn't the water on earth float away into space?

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LT I can describe the different levels of the atmosphere.

Q1. What is the hydrosphere?

Ⓐ1. All the water on, in, or near the Earth's surface.

Q2. Why doesn't the water on earth float away into space?

Ⓐ2. As the water vapor (gas) gets higher in altitude, the temp decreases and the water gas loses energy and condenses into liquid and falls back to the surface as precipitation.

5 layers of Atmosphere

Composition: 78% Nitrogen, 21% Oxygen
~1% Other (80% in Troposphere)

Troposphere

Stratosphere

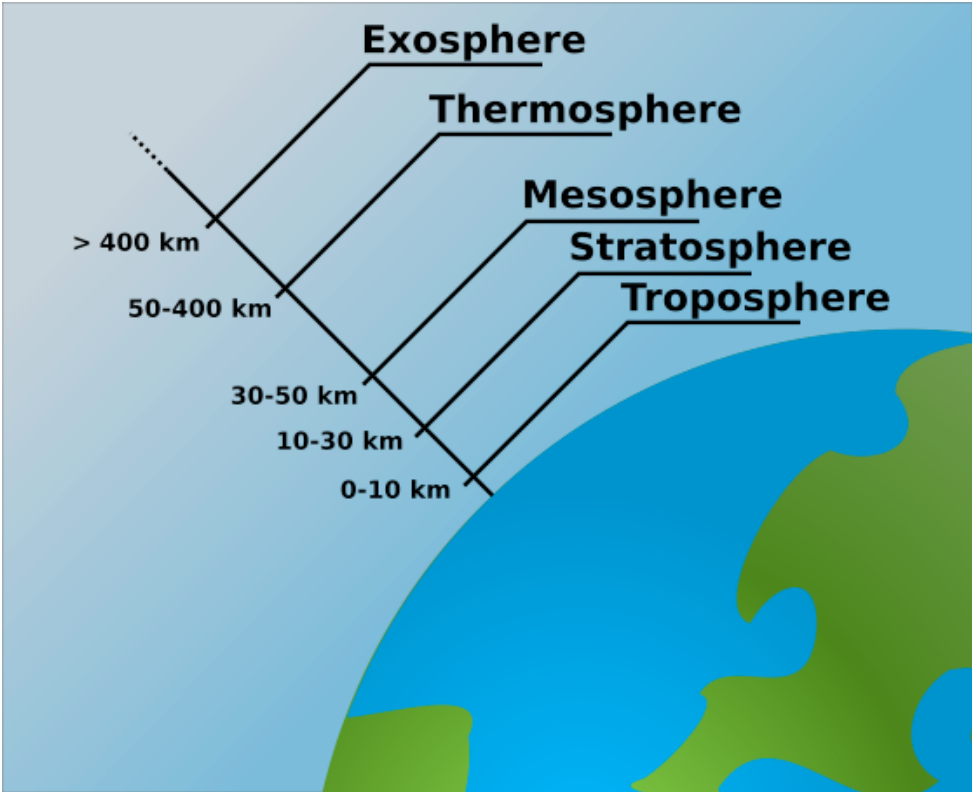
Mesosphere

Thermosphere

Exosphere

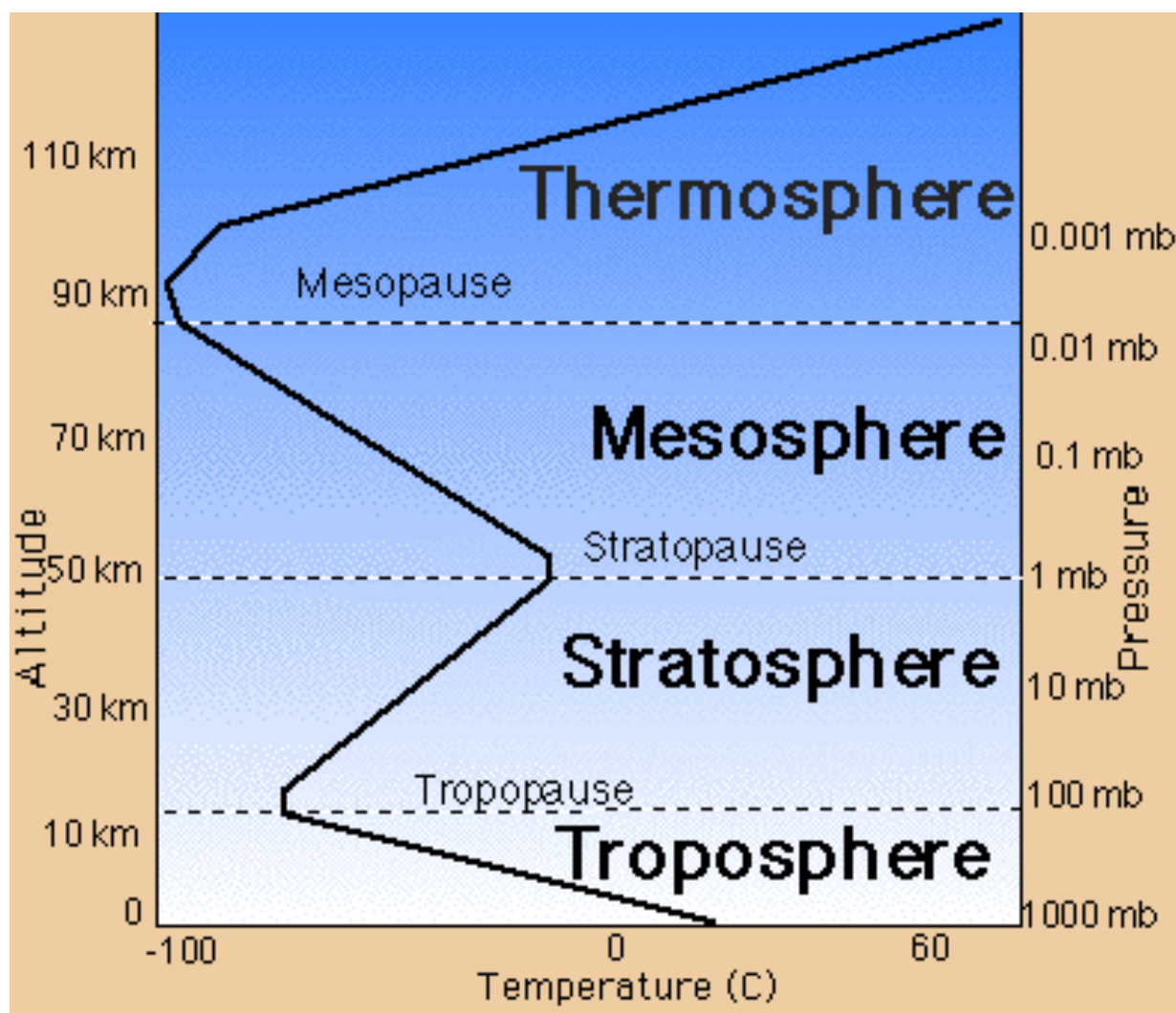
We want to know

1. What is the altitude?
2. What is the Temperature doing, why?
3. What is occurring?





Earth's Surface (Lithosphere)



Troposphere

1. 0 to 10 Km

Temp ↓ Alt. ↑

2. 40 to -60 Celsius

Radiation - Transfer of energy through space by visible light, ultraviolet radiations, and electromagnetic waves

Conduction - transfer of energy through physical contact

Convection - higher temp. air is less dense and rises, while cooler air is more dense and falls, creating convection currents.

3. Convection currents create the weather we know.



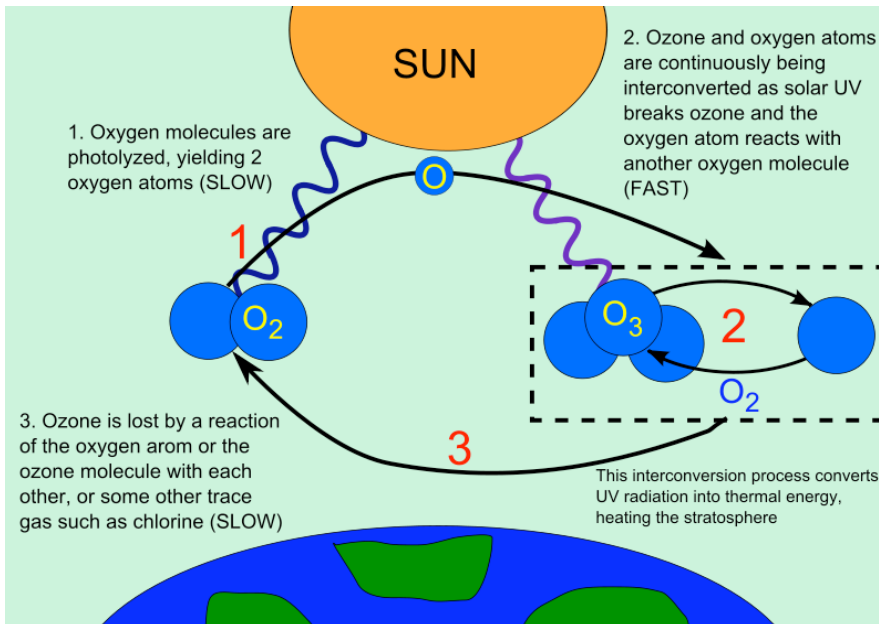
Stratosphere

1. 10 to 50 Km

2. Temp  as altitude 

More Ozone, which absorbs more ultraviolet radiation than air in troposphere.

3. Contains the Ozone Layer.



Mesosphere

1. 50 to 100 Km

2. Temp ↓ as Altitude ↑

No Ozone, so no absorption of UV rays
resulting in lower temperature at higher altitudes

3. No Ozone

Meteorites burn up

Thermosphere

1. 100 to 400/500 Km

2. Temp ↑ as altitude ↑

Absorbs energy from electromagnetic properties

3. Ionization zone, resulting in aurora

<http://www.youtube.com/watch?v=YJBrMXSn-hU>



<http://www.youtube.com/watch?v=7GThxWmmvbk>

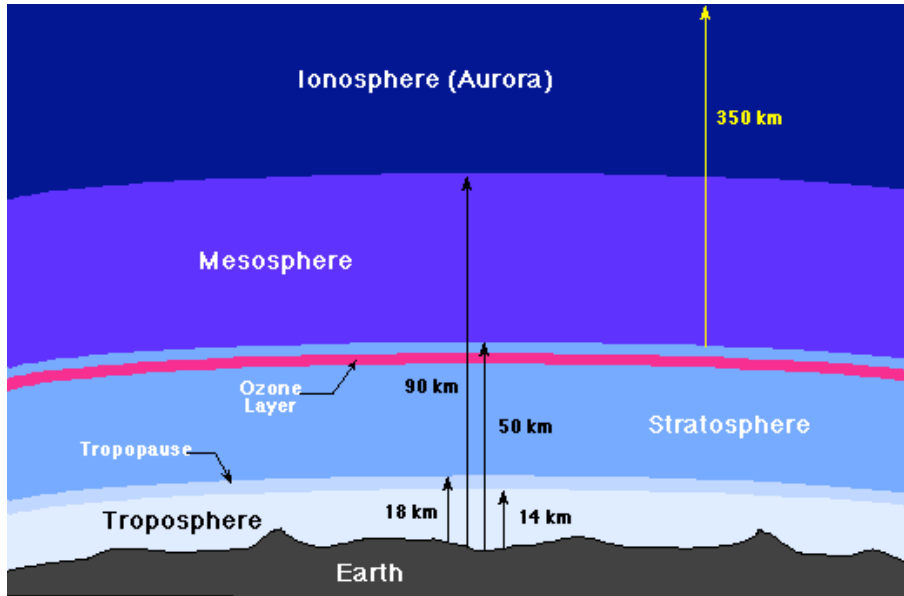
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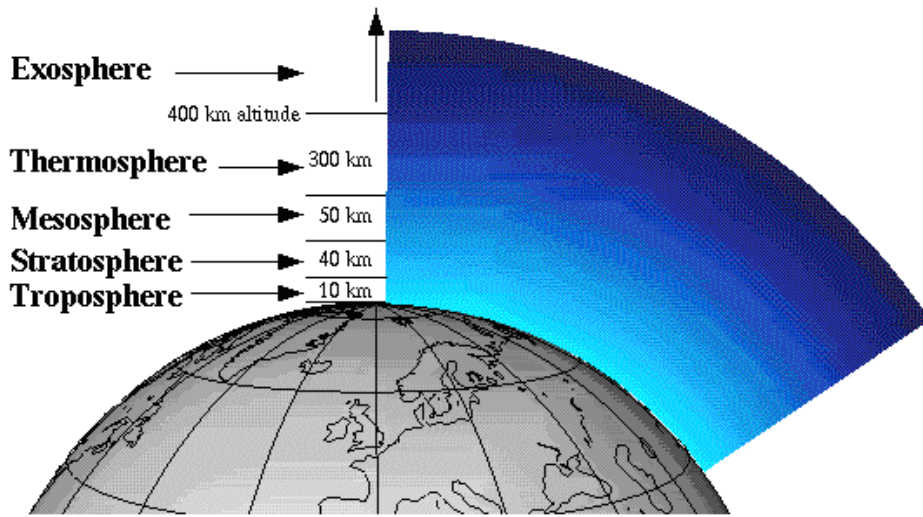


Exosphere

1. 400/500 Km and Greater(800 Km)
2. Close to Absolute Zero to 1,000s of degrees C
Would feel cold though.
3. Satellites orbit Earth in this layer

Contains lighter gasses such as helium and hydrogen. No clear boundary from exosphere and outer space.





↑ Exosphere ↑ Satelites orbit here. Not much of anything in this layer 400/500 Km

Thermosphere Absorbs energy from electromagnetic properties resulting in aurora and higher temperatures in higher altitudes.

100 Km

Mesosphere No Ozone and nothing to absorb UV light and energy is low resulting in lower temperatures

50 km

Stratosphere More Ozone, which absorbs more ultraviolet radiation than air in troposphere. Which causes increase in temperature with increased altitude.

Ozone Layer

10 km

Troposphere Convectoin curenets create the weather we know.

0 km

Earth's Surface (Lithosphere)

Homework: Ch 11 Atmosphere

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Q1. What is the hydrosphere?

Q2. Why doesn't the water on earth float away into space?

Q3. What is the composition of Earth's atmosphere, where is most of this located?

Q4. Please list the atmospheric layers of Earth with one fact about each one.

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Q3. What is the composition of Earth's atmosphere, where is most of this located?

A3. 78% Nitrogen, 21% Oxygen, 1% other
80% of all are found in Troposphere

Q4. Please list the atmospheric layers of Earth with one fact about each one.

A4. Troposphere - Weather occurs
Stratosphere - Ozone layer located here
Mesosphere - No ozone, temp ↓ as alt. ↑
Thermosphere - Temp reaching 1000 C
Exosphere - Satellites orbit here