

ATMOSPHERE- UNIT 3

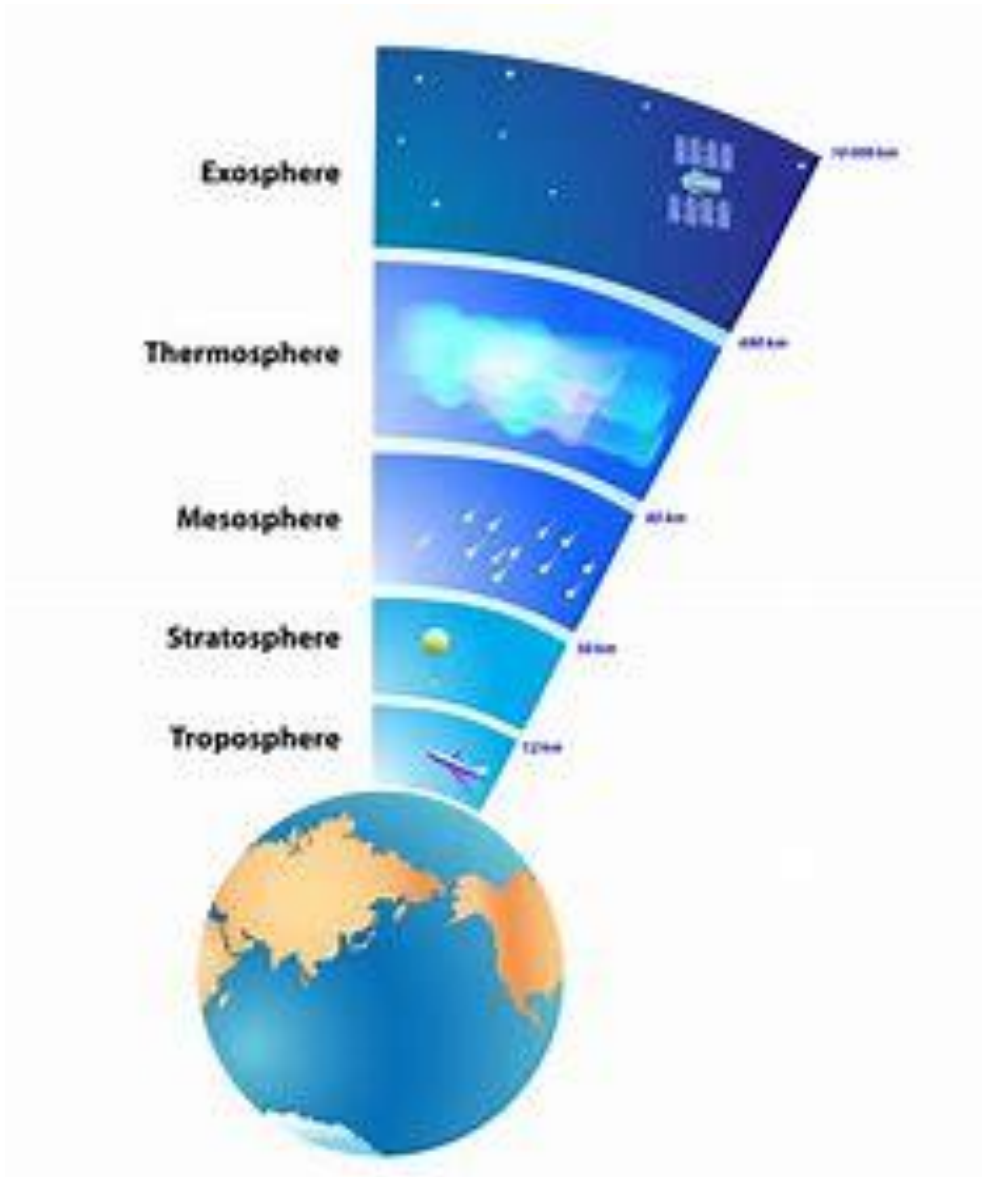
This unit will take us to a little past Thanksgiving Break

LAYERS OF THE ATMOSPHERE

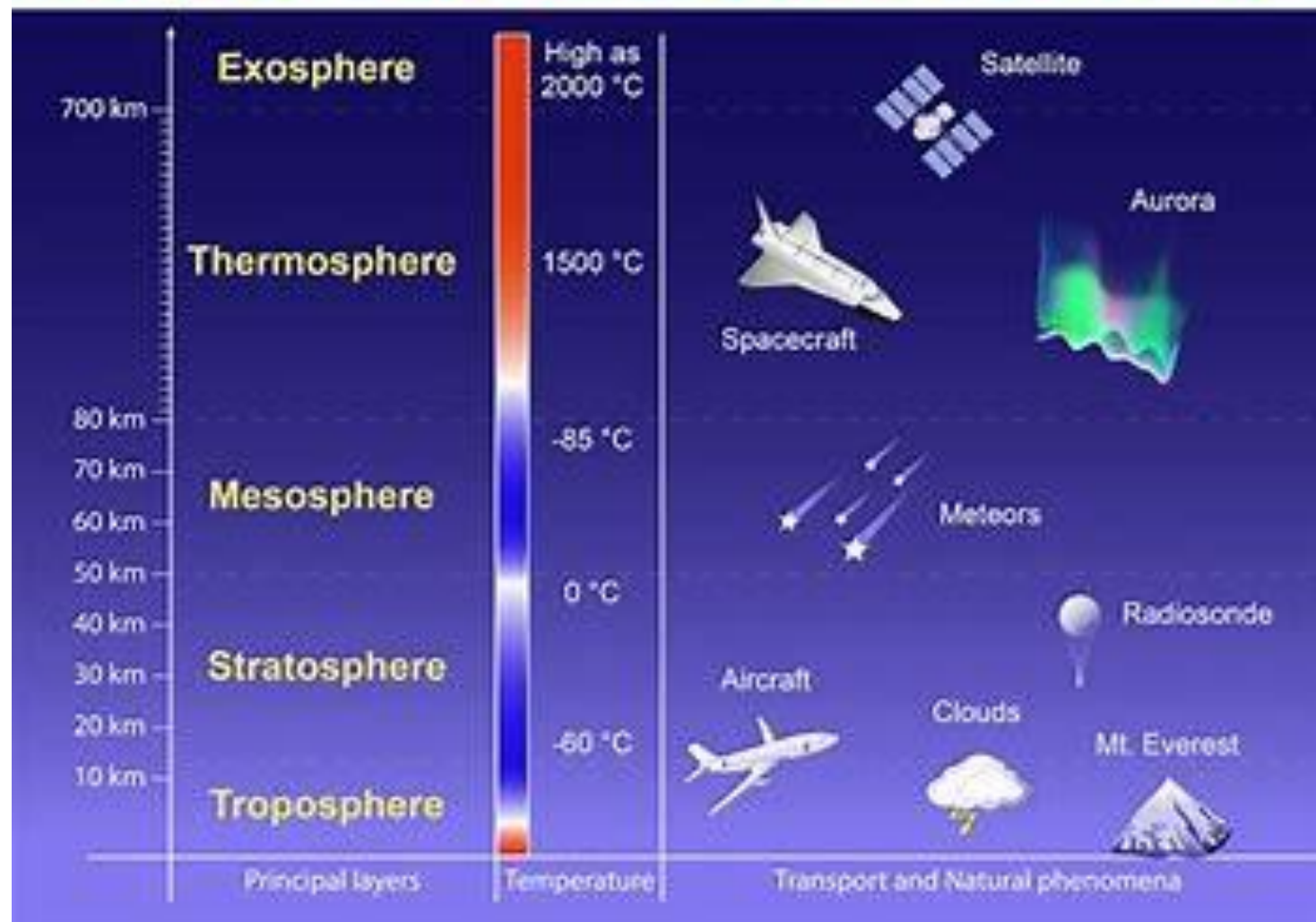
- Troposphere
- Stratosphere
- Mesosphere
- Thermosphere
- Exosphere

[Tour of the Atmosphere](https://www.dailymail.co.uk/sciencetech/article-2220683/Felix-Baumgartner-Now-cleanup-Balloon-lassoed-packed-supersonic-skydiver-Fearless-Felixs-128-000-foot-Red-Bull-jump.html)

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LAYERS OF THE ATMOSPHERE



TROPOSPHERE

75% of the mass of the atmosphere is located here

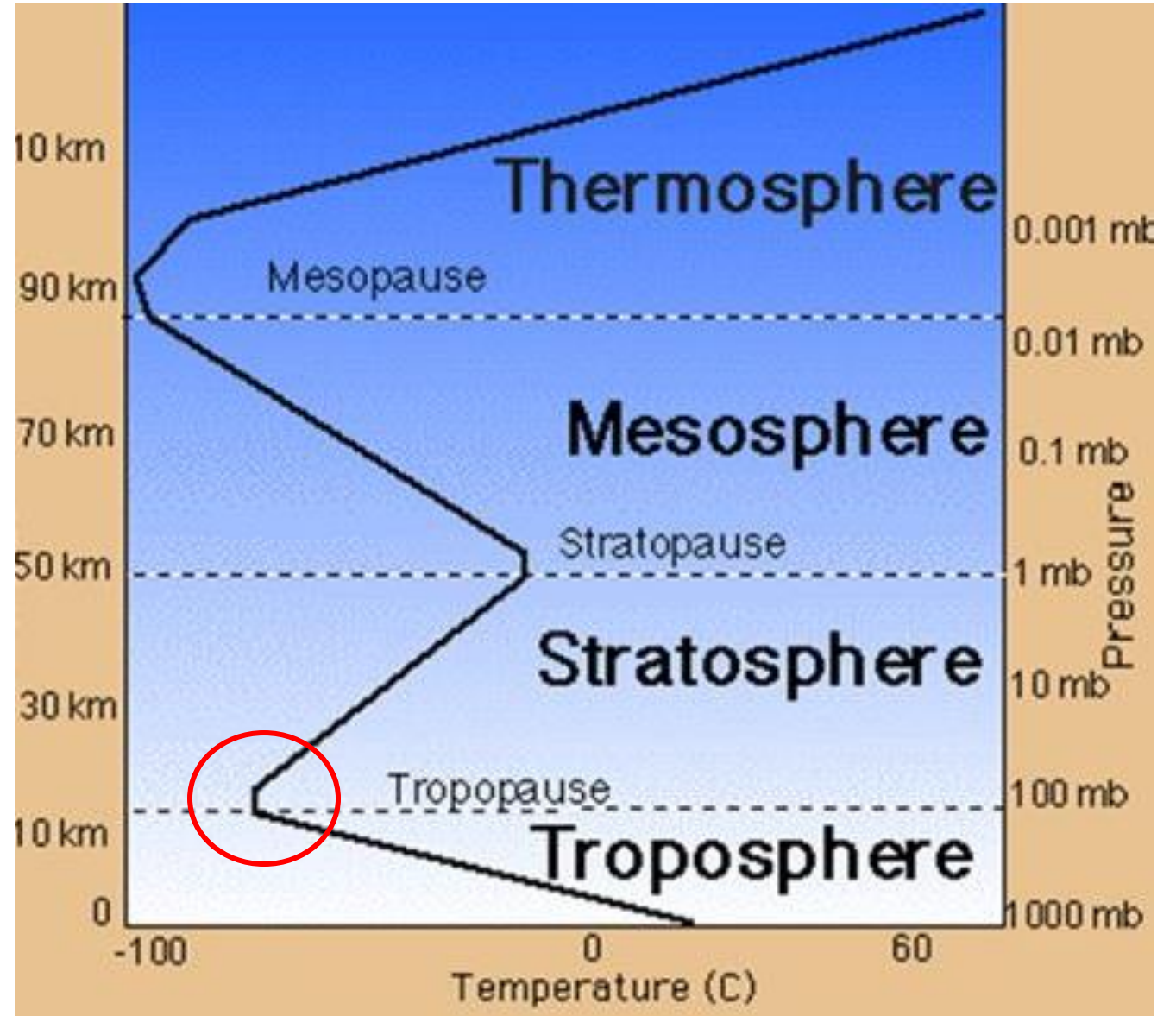
- What does this imply about its density?
- Location of nearly all weather
- Temperature drops the higher the altitude of the troposphere
 - Drops to -60°C !
- Varies in thickness with latitude and season
 - Temperature changes, change thickness
- On average the troposphere is 12 km thick (~7.5 miles)
- Pressure drops from 1000mb to 100mb (like carrying 15lbs to 3lbs)



TROPOPAUSE

- The area between the Troposphere and the Stratosphere.
- Temperature remains stable as you increase in height.
- The jet stream is just below the Tropopause.

**PAUSE = NO TEMP.
CHANGE**



STRATOSPHERE

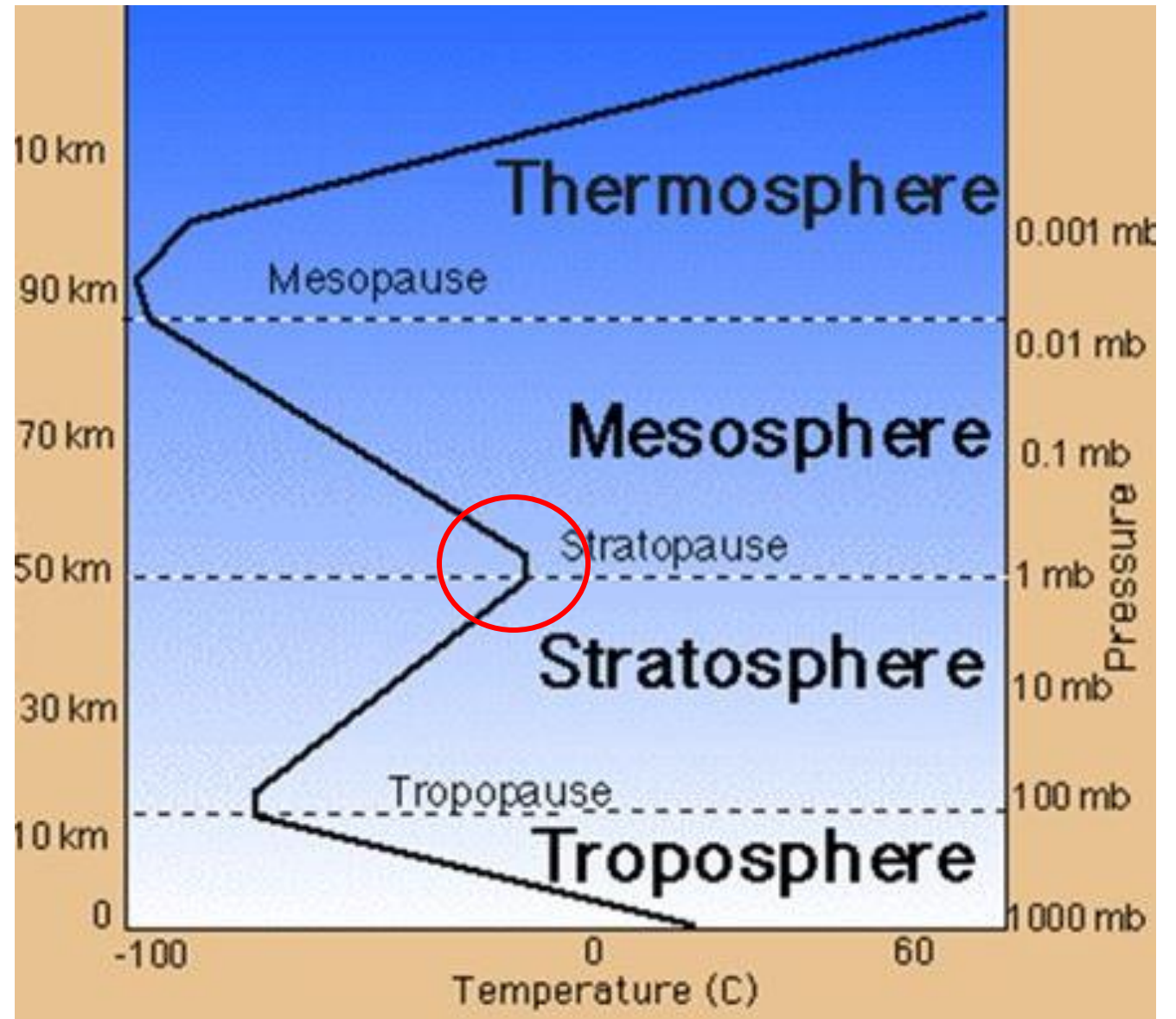


- Temperature increases with altitude
 - -60C to 0C, very dry here
- Ozone layer is located here
 - Absorbs UV rays which is what leads to the temp. change
- Pressure continues to decrease
 - 100mb – 1mb
- Located between 12-50km from Earth's surface
- Planes fly here, right at the bottom.

STRATOPAUSE

- The area between the Stratosphere and Mesosphere.
- Temperature remains stable as you increase in height.

**PAUSE = NO TEMP.
CHANGE**



MESOSPHERE

- Temperatures decrease with height again
 - Ranging from -130 to -90 at the lowest
- Where meteors burn up!
- 50-80 km from Earth's surface
- Air Pressure .1 mb to .01 mb

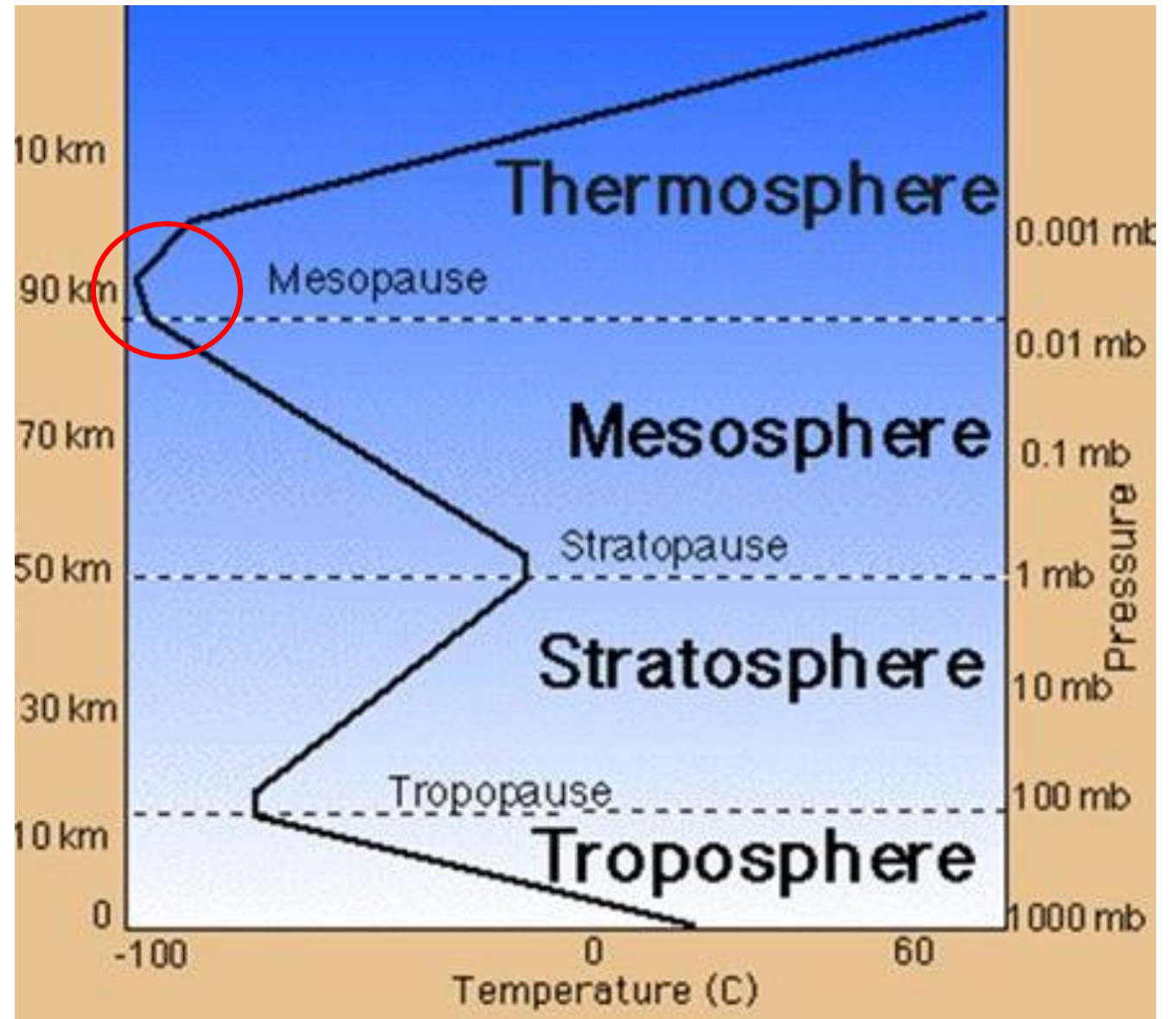
- [Why Don't Meteors Hurt Us?](#)
- [Location of Notilucent Clouds](#)



MESOPAUSE

- The area between the Mesosphere and Thermosphere
- Temperature remains stable as you increase in height.

**PAUSE = NO TEMP.
CHANGE**

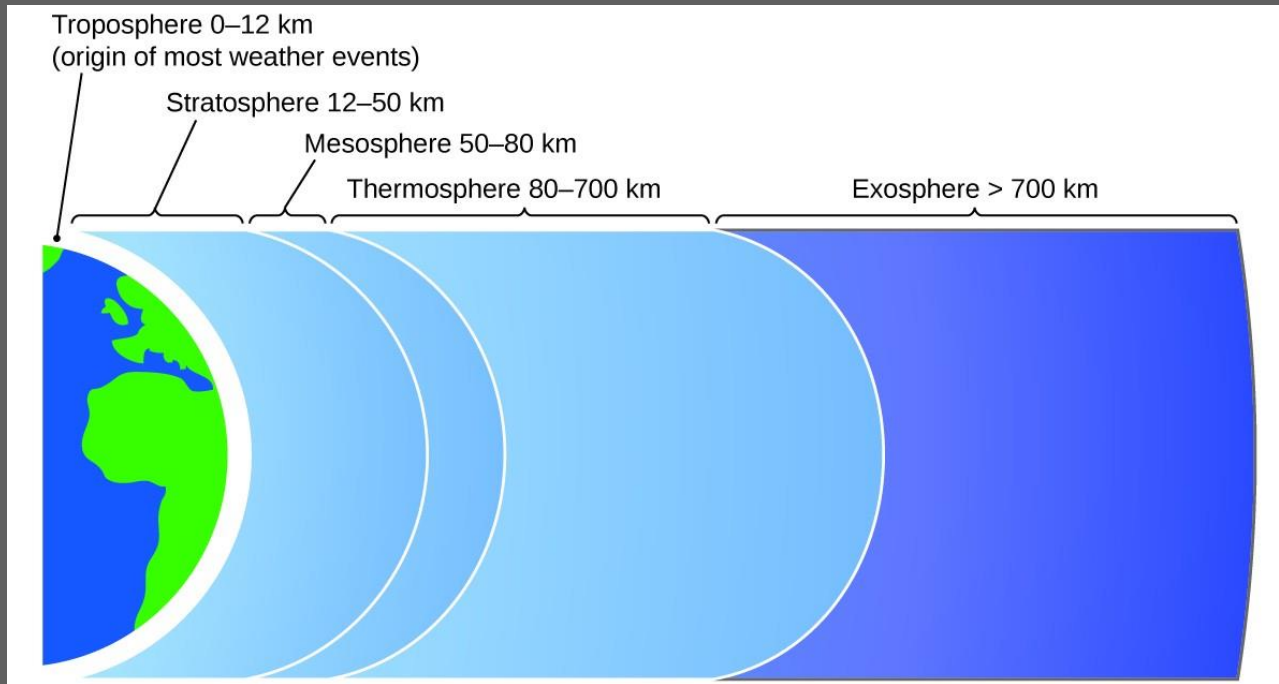


THERMOSPHERE



- Begins at about 80km above Earth's surface extends to ~700km
- Temperature increases with altitude because of absorption of solar radiation
- Pressure decreases from .01 mb to .001mb (virtually nothing)
- In the middle is where most of our satellites orbit
- Location of the aurora or northern lights
- [Aurora from Space Station](#)

EXOSPHERE



- Starts at about 700km ends.....
- Region where particles of the atmosphere are lost to space
- This is basically space, there are so few air molecules there really is no air pressure.