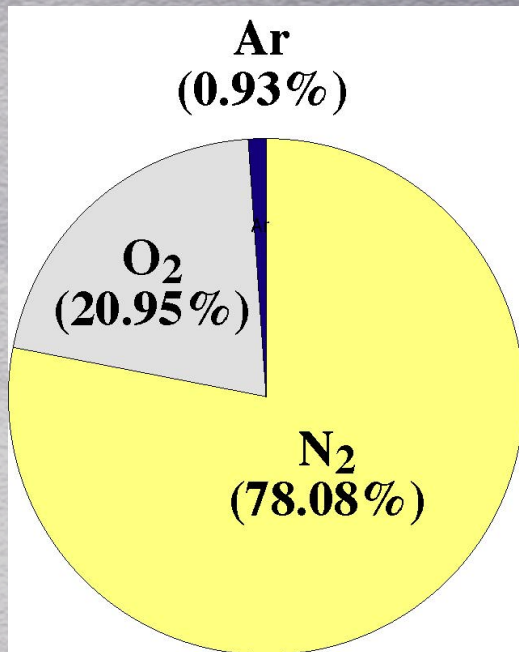


Composition of Earth's Atmosphere



mainly N₂ and O₂

+ 1% other stuff

- 0.93% Ar

- CO₂ 400ppm (0.04%)

- Ne 18ppm

- He 5ppm

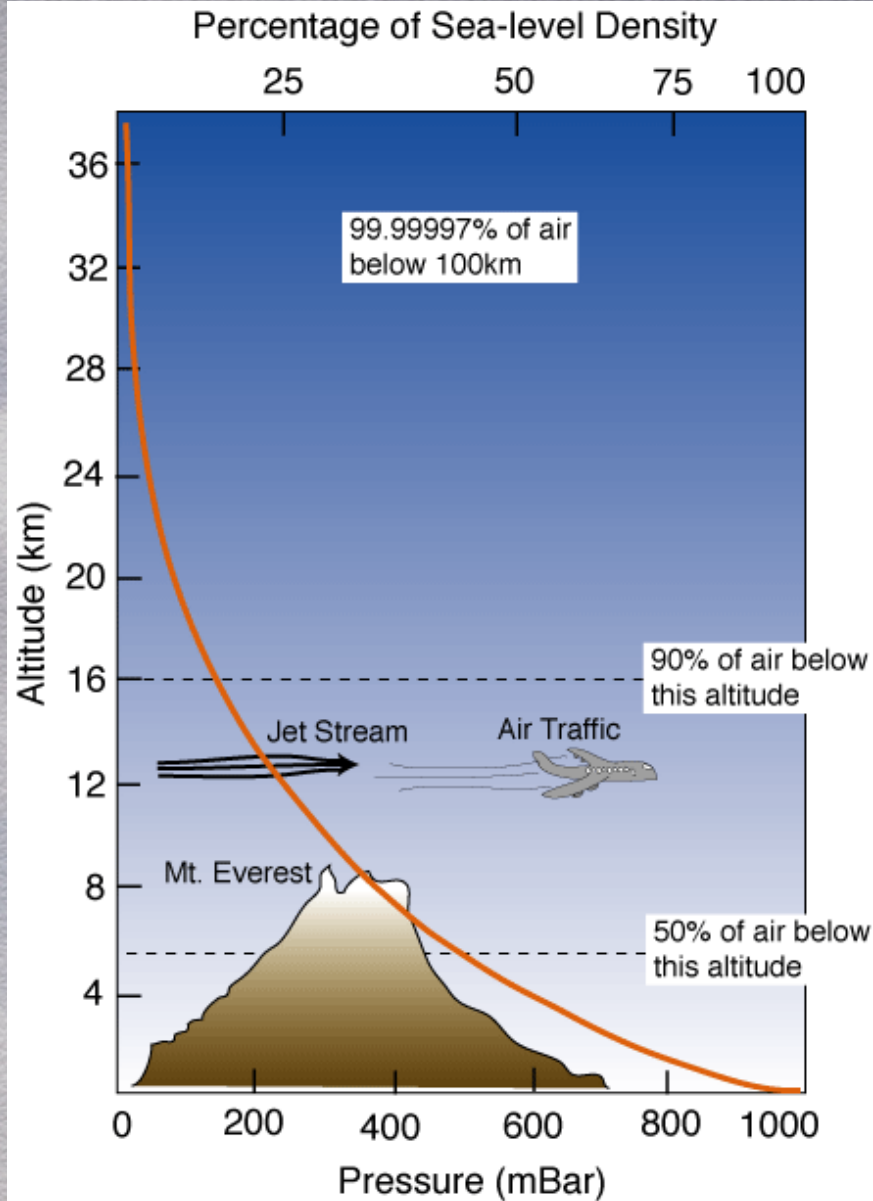
- CH₄ 2ppm

- Kr 1ppm

+ 0-4% water vapor (H₂O)
(variable)

Greenhouse Gases: H₂O, CO₂, CH₄

Pressure and Density as Function of Altitude

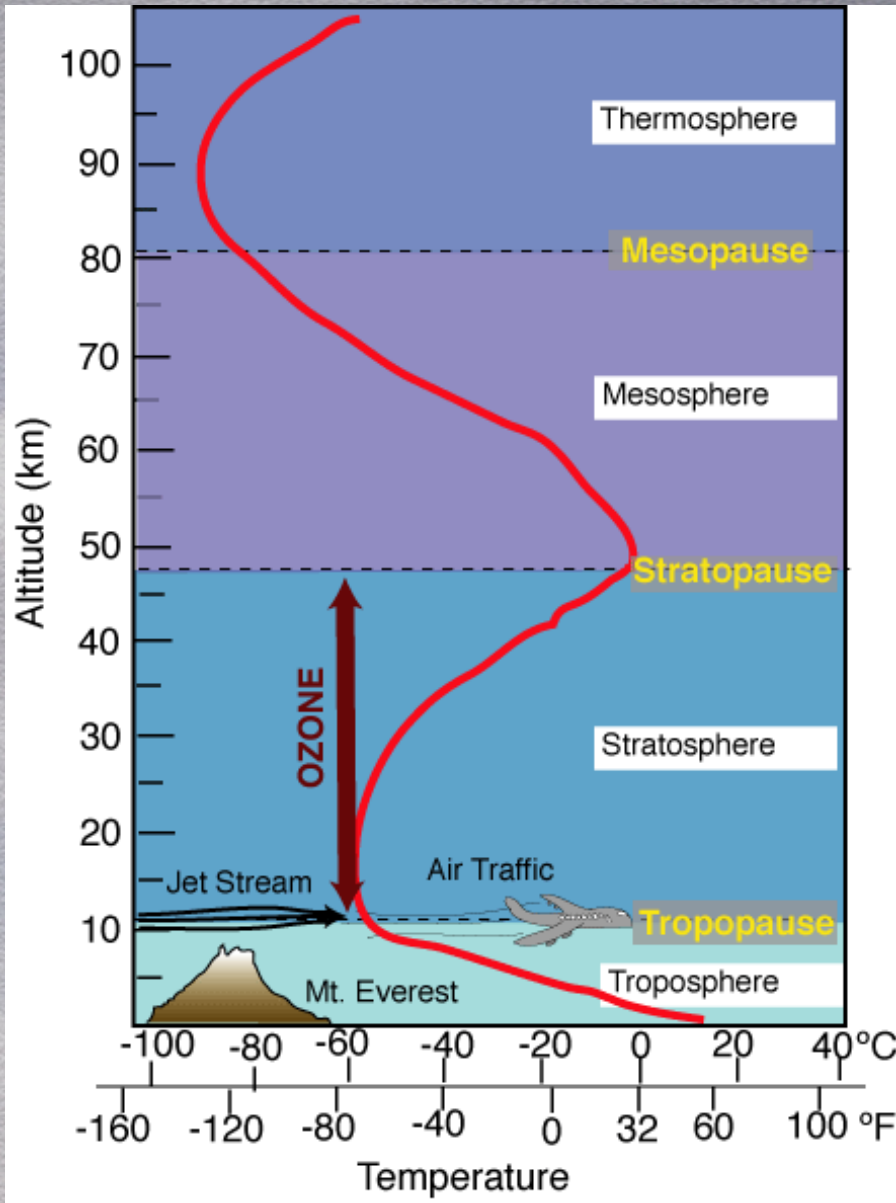


simple

- air pressure: push due to weight of atmosphere above
- greatest at sea level:
1 atmosphere,
14.7 PSI,
1035 mbar (g/cm^2)
- pressure and density decrease exponentially with altitude

50% air below 5.6 km
90% air below 16 km
99.99997% below 100km

Temperature as Function of Altitude



complicated

- T-function changes with altitude

- decreases from 18°C to -55°C in troposphere
- increases in stratosphere
- decreases in mesosphere
- increases in thermosphere

Atmospheric Layers

Layers follow T-function

troposphere:

lower 10km; weather layer, mixing

stratosphere:

next 35km; very dry, no vertical mixing,

O₃ layer

mesosphere:

less O₃; meteorites burn up

thermosphere:

< 1% air; (ISS at ~350 km)

