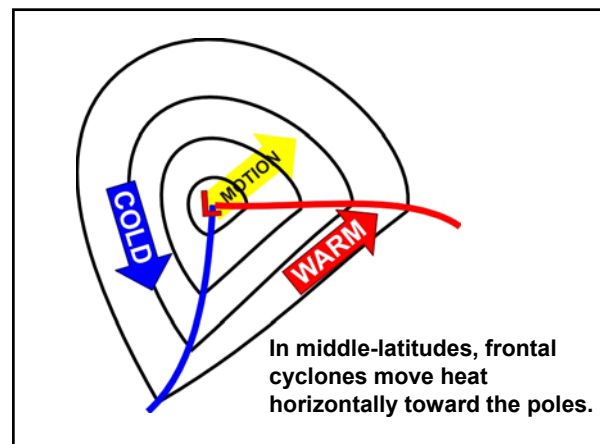
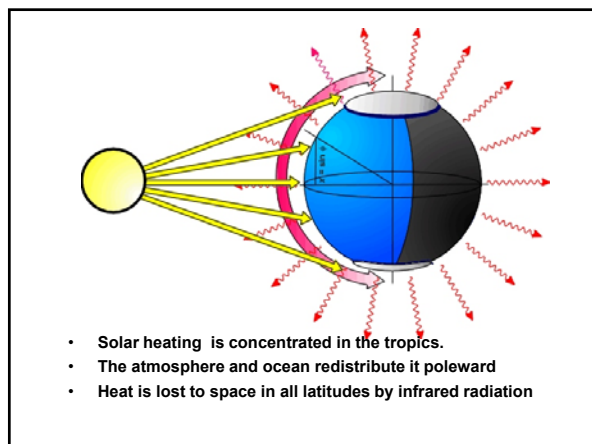
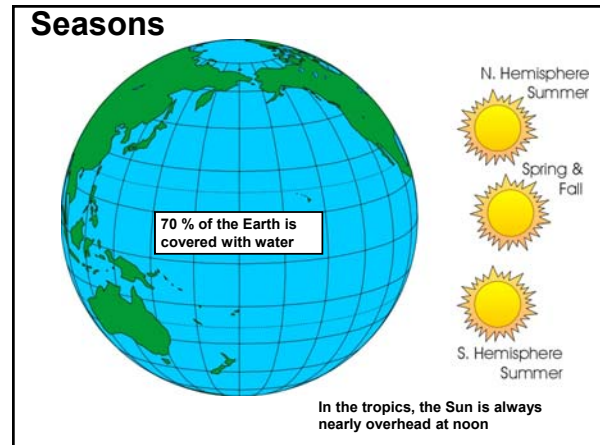
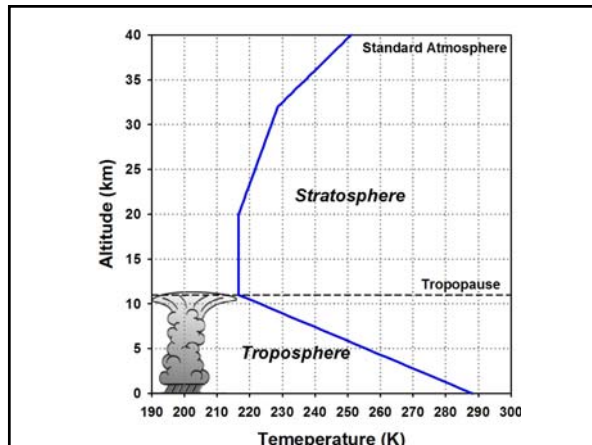
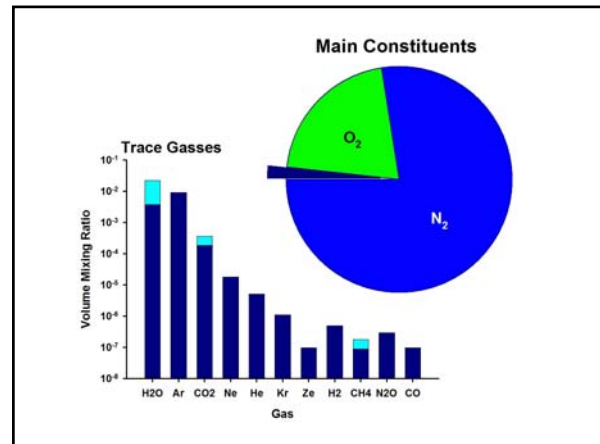
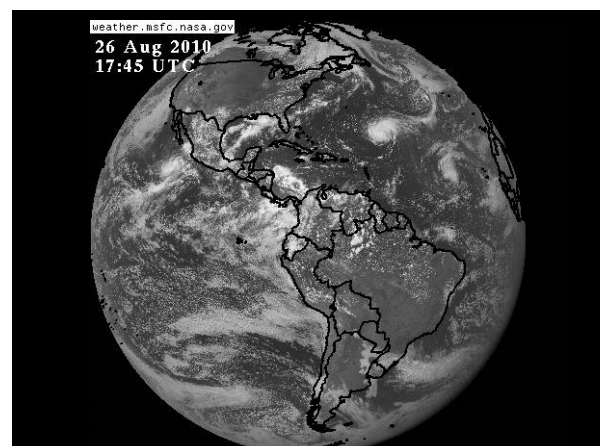
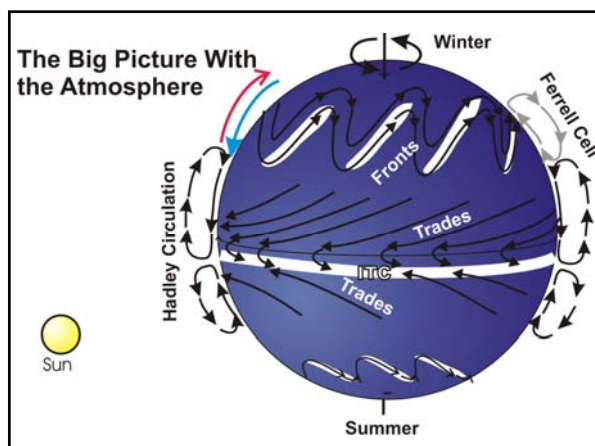
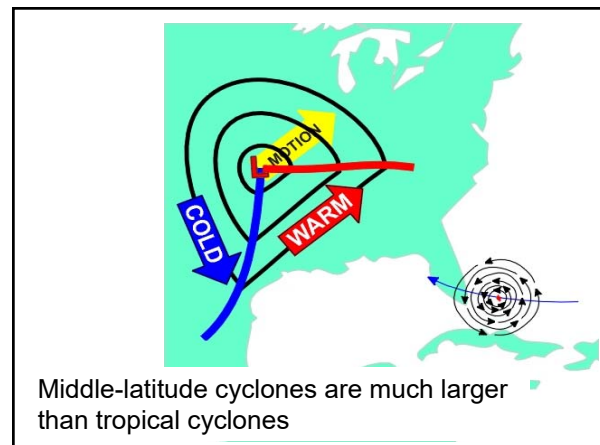
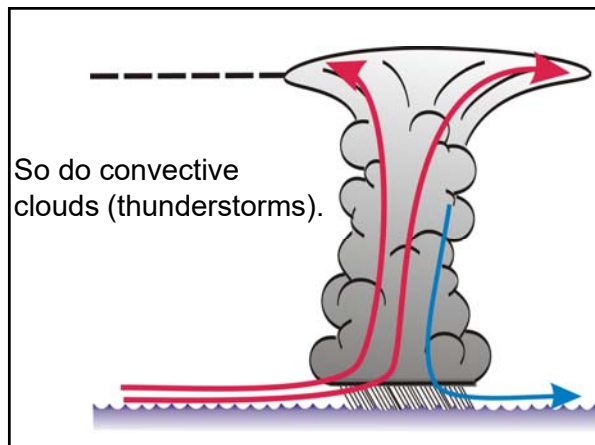
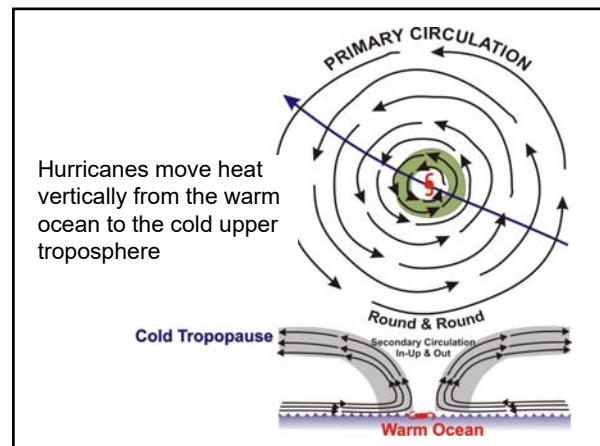
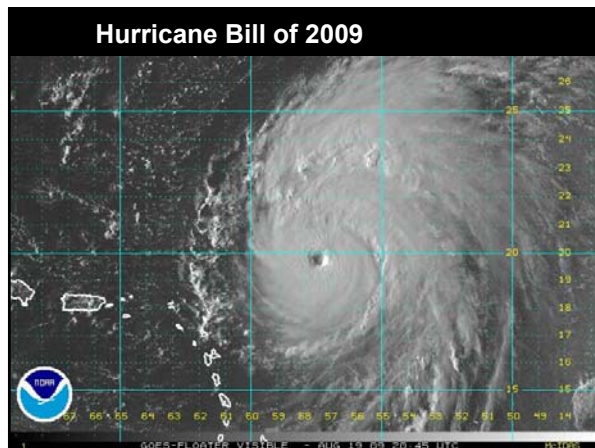


MET 4532 Hurricanes





Bermuda & Sea Venture

- 1511 : Bermuda charted by Juan Bermudez, claimed for Spain
- Named "Island of Devils"
- 1609: Fleet of seven ships with cargo & emigrants for the Virginia Colony
- Admiral Sir George Summers & Governor Sir Thomas Gates aboard *Sea Venture*
- Scattered by a hurricane near the Azores on July 24th
- All but *Sea Venture* arrived in Virginia
- *Sea Venture* made a distressed landfall in Bermuda on July 28th
- Survivors eventually rebuilt the ship and sailed on to Jamestown
- Some survivors stayed in Bermuda
- Bermuda Co. formed in 1611
- William Strachey's account was apparently the inspiration for "The Tempest (1610 or 1611)"
- At the turn of the 21st Century many offshore reinsurance companies are headquartered in Bermuda.
- Hurricanes Fay and Gonzalo (CAT 3) made Bermuda landfalls in 2014, causing US\$ 24M in total damage.

The Tempest

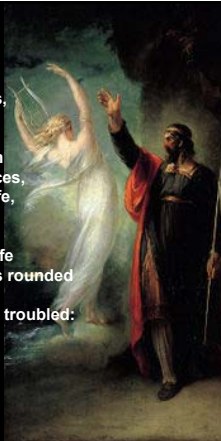
If by your art, my dearest father, you have
Put the wild waters in this roar, allay them.
The sky, it seems, would pour down stinking pitch
But that the sea, mounting to th' welkin's cheek,
Dashes the fire out. O, I have suffered
With those that I saw suffer! a brave vessel
(Who had no doubt some noble creature in her)
Dashed all to pieces! O, the cry did knock
Against my very heart! Poor souls, they perished!
Had I been any god of power, I would
Have sunk the sea within the earth or ere
It should the good ship so have swallowed and
The fraughting souls within her.

—Miranda, to her father Prospero, in Shakespeare (1564–1616),
The Tempest, Act I, Scene ii



Prospero's speech, Act 4, Scene 1

Our Revels now are ended: These our actors,
(As I foretold you) were all Spirits, and
Are melted into Ayre, into thin Ayre,
And like the baselesse fabrick of this vision
The Clowd-capt Towres, the gorgeous Pallaces,
The solemne Temples, the great Globe it selfe,
Yea, all which it inherit, shall dissolve,
And like this insubstantial Pageant faded
Leaue not a racke behinde: we are such stuffe
As dreames are made on; and our little life is rounded
with a sleepe: Sir, I am vext,
Beare with my weaknesse, my old braine is troubled:
Be not disturb'd with my infirmitie,
If you be pleas'd, retire into my Cell,
And there repose, a turne or two,
Ile walke to still my beating minde



- Earth's atmosphere is mostly N₂ & O₂, with some H₂O, CO₂, and noble gasses.
- Atmosphere is very shallow (100 km) compared to its horizontal extent
- Troposphere:
 - Temperature decreases with height
 - Where nearly all weather happens
- Above the Tropopause (15 km in topics):
 - Stratosphere
 - Temperature nearly constant with height
- Sun heats the Earth mainly in the tropics.
- Atmosphere & Ocean move heat poleward
- Infrared radiation to space in all latitudes cools the Earth
- Frontal (Middle latitude, poleward of 30°) Cyclones
 - Cold wind from pole on the W side; warm wind from tropics on the east side
 - Move heat poleward almost horizontally
 - Larger than tropical cyclones
- Tropical cyclone move heat vertically from the warm ocean to the cold tropopause, as do convective clouds generally
- Big Picture With the Atmosphere
 - Middle latitudes: Wind from the W, horizontal heat transport
 - Tropics: Wind from the east, vertical heat transport
- Bermuda, the *Sea Venture* and Shakespeare's *Tempest*

Summary

Assignments:

- All Read:
 - Emanuel pp. 7-16
- Watch the weather...

SEE YOU ON MONDAY