

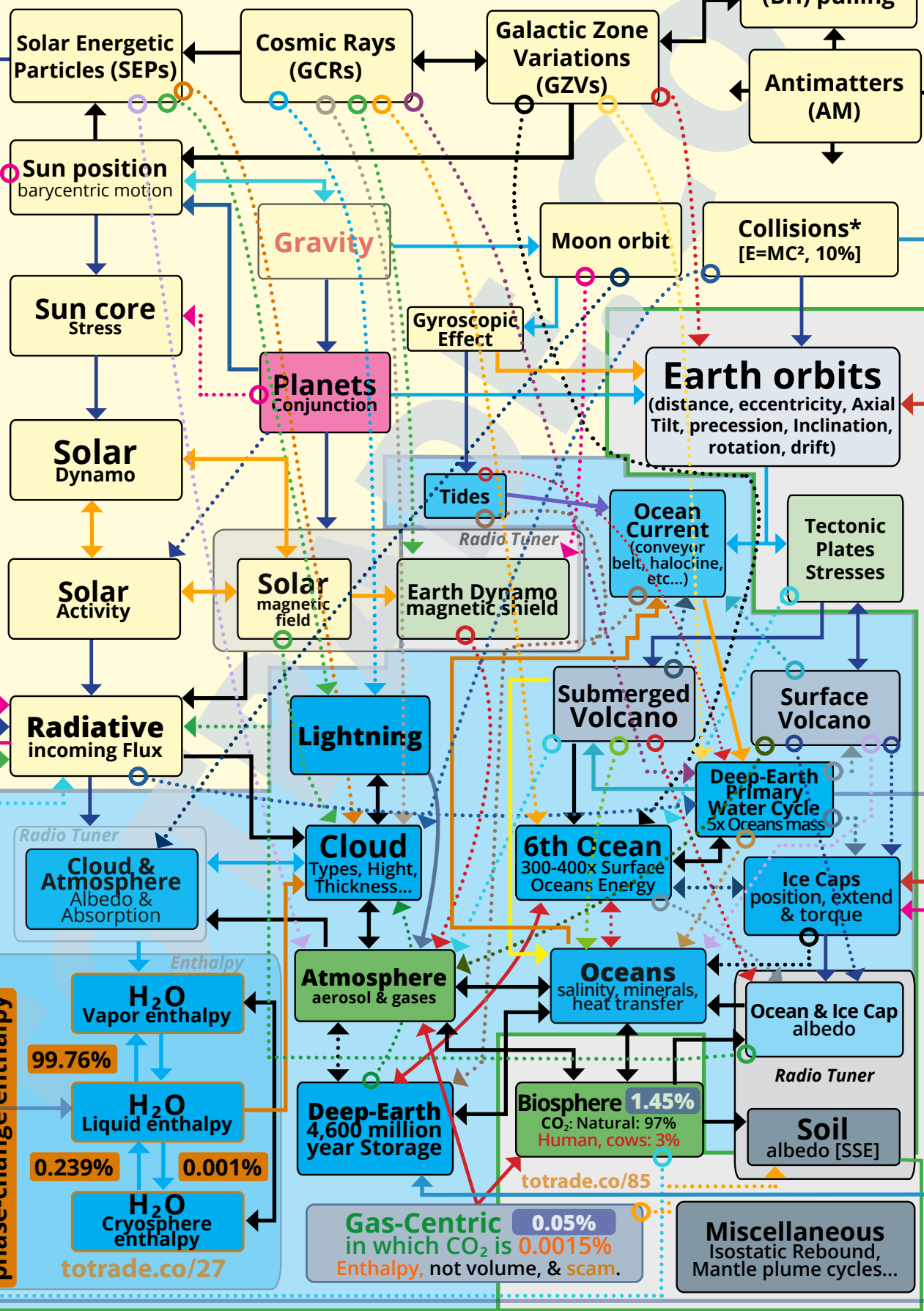
Full Earth's System Interactions

PRIMARY COSMIC DRIVERS (ENERGY INPUT 100%)

≈95.5%

H₂O ENTHALPY MEDIATOR

ARTIFICIAL
VENUS
MARS
MOON DYNAMICS
≈3.00%
SOLID STATE ENTHALPY (SSE)



* Include impacts from asteroids, meteoroids, cometary fragments, and any macroscopic and subatomic mass.

Legend: —> Solid = Direct, ○...> Dotted = Indirect



~100 km Kármán line: ~0.000 000 1 atm

Weather is Driven By **Clausius-Clapeyron** Relation

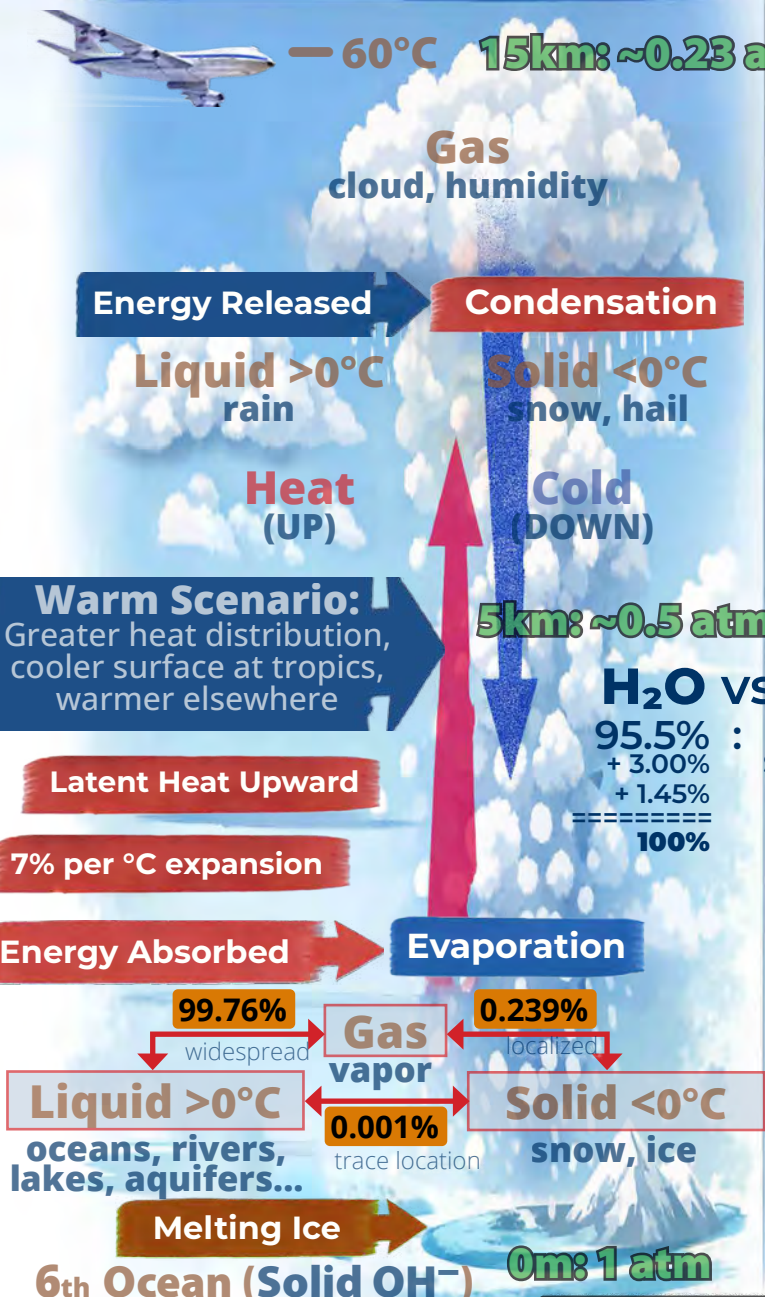


$$H = U + pV$$

Enthalpy = Internal Energy + Expansion Work

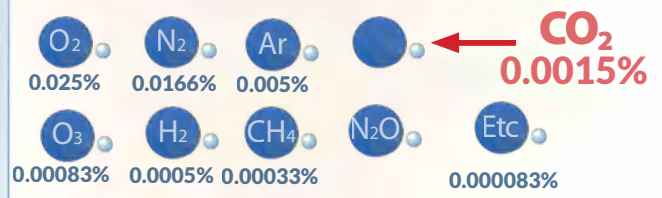
Water's Behavior in the Atmosphere

Other Gases' Behavior in the Atmosphere



No Phase Change

% = Thermal Influence, not volume.



Small Expansion Work



Sensible Heat Only

Limited Energy Transfer (sensible 20/80 latent)

Warm Scenario:
Greater heat distribution, cooler surface at tropics, warmer elsewhere

H₂O vs Other Gases

95.5% : 0.05%
+ 3.00%
+ 1.45%
=====
100%
Solid State Enthalpy (SSE)
Biosphere Mix

Outcome

TOTRADE™
FEWS SYSTEM
Food•Energy•Water•Space

Thermal Buffer Only

Limited Enthalpy Transfer (other gases: 0.05%)

H₂O: Thermal Elevator



6th Ocean (Solid OH⁻)
230,000 atm, 1600-1900°C
~300-400 times Surface Enthalpy
Phase change on standby, totrade.co/6

ATMOSPHERE VOLUME

N ₂	~ 78%
O ₂	~ 21%
Ar	~ 0.93%
H ₂ O (Variable)	up to 4%
CO ₂	~ 0.04%

H₂O vs CO₂
600,000 : 1

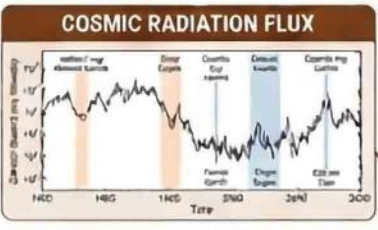
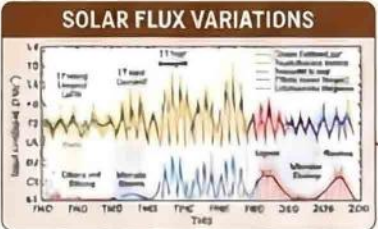
OCEAN MASS
Water (H₂O) > 96.5%
CO₂ < 0.002%

Below sea avg Pressure
-11km: 1,100 atm, Mantle: 230,000 atm

EARTH SYSTEMS

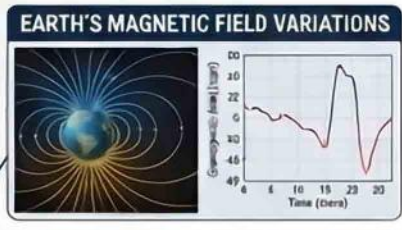
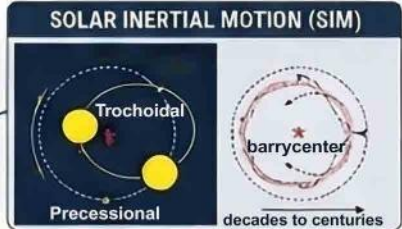
DRIVERS • MEDIATORS • RESISTORS • INTERACTIONS • FEEDBACKS

MAJOR DRIVERS



PLANETARY RESISTORS & CAPACITORS

- Deep Ocean Heat Storage
- Rock Weathering & Chemical Buffering
- Hydrocarbons Soil Organic Matters Accumulation & removal
- Long-Term Forest Biomass Storage or desertification



CLIMATE OUTCOMES

Temperature, Precipitation, Sea level, Volcanism, Extreme Events, Ecosystem

OCEANIC MEDIATORS

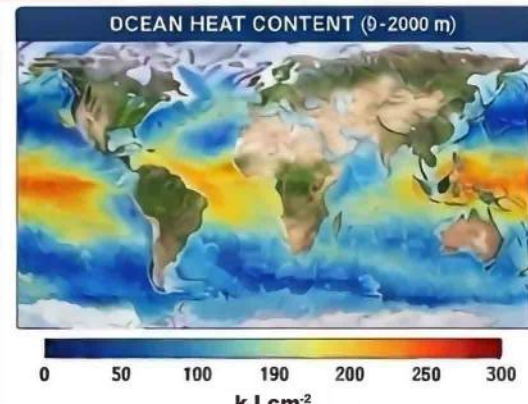
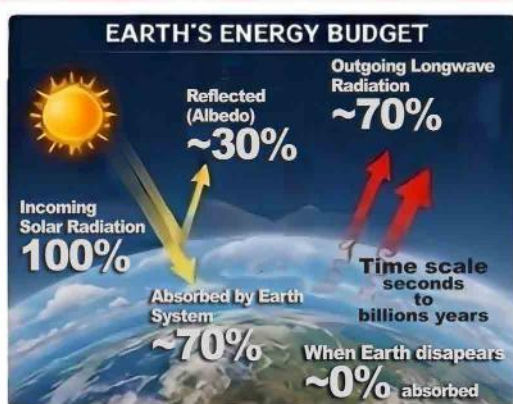
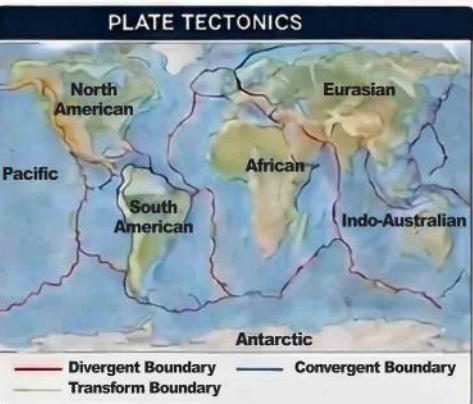
- Ocean Circulation (e.g., Thermohaline)
- Ocean Heat Storage & Transport
- Sea Ice Cover
- Ocean Acidification & Carbon Cycle
- Ocean Biogeochemistry
- Marine Ecosystems

DEEP-EARTH INFLUENCES

Mantle Convection, Hydrothermal Activity, Seafloor Spreading, Volcanism, Tectonic Upwelling

Ocean, Oceanic Crust, Lithosphere, Asthenosphere (Mantle), Continental Crust

31,800,000,000 TW
Deep-Earth 4.6 billion years Heat Storage



TIME SCALES OF INFLUENCE

