The Planet Earth

Life and Civilization

Dennis Silverman
UCI OLLI

Galactic Planet Survey
Planet G.C. 92,375,441,307c

- Of the 8 planets a,b,c,d,e,f,g,h around the above numbered star, the only one on which life has been detected is planet c.

- Not only that, but humans, as they call themselves, have evolved large brains and a starting civilization.

- But they are currently in the nascent stage, where they have to overcome several self-destruction challenges.

Life on Earth

- The planet called Earth is only 4.5 billion earth years old, as is their star which the call the sun.

- Life started 3.5 billion years ago by the standard origin.

- Due to a massive meteor 65 million years ago , our standard dinosaurs were wiped out, and mini creatures called humans and mammals took over the planet.

- This smallness gave them an advantage in numbers, since they have now rapidly grown to 7.5 billion of them.

- Earth Scientists

- Real Science only started a few hundred years ago on earth.

- They now only have about 8 million scientists. In leading countries, there are only 60 per 10,000 workers.

- They are studying the very smallest scales to the universal scale, but they still know very little.

- They have just discovered a few thousand of the planets around stars in their neighborhood.

- They have not yet learned where the galactic communication frequencies are, and how they are coded.

- Instead of having to survey the people of the planet with nano-drones, we found that they have stored all of their social data on massive memories called Facebook, which we have now tapped into

- While the leading economic country has 3 million experienced government employees, it is all run by a stable genius giving out orders by “tweeting” on Twitter.

- The standard self-destructive challenges that come with primitive science and governing structures are:

- Nuclear weapons, of which they keep thousands;

- ChloroFluoroCarbons, which they call hair spray, but which have now been banned;

- Global warming, formed from CO2, by burning our fossil dinosaurs and their plant foods.

- All of the world’s countries are united to halt the greenhouse gases, except one, which claims to be its most scientific one.

Oxygen, the fuel of life

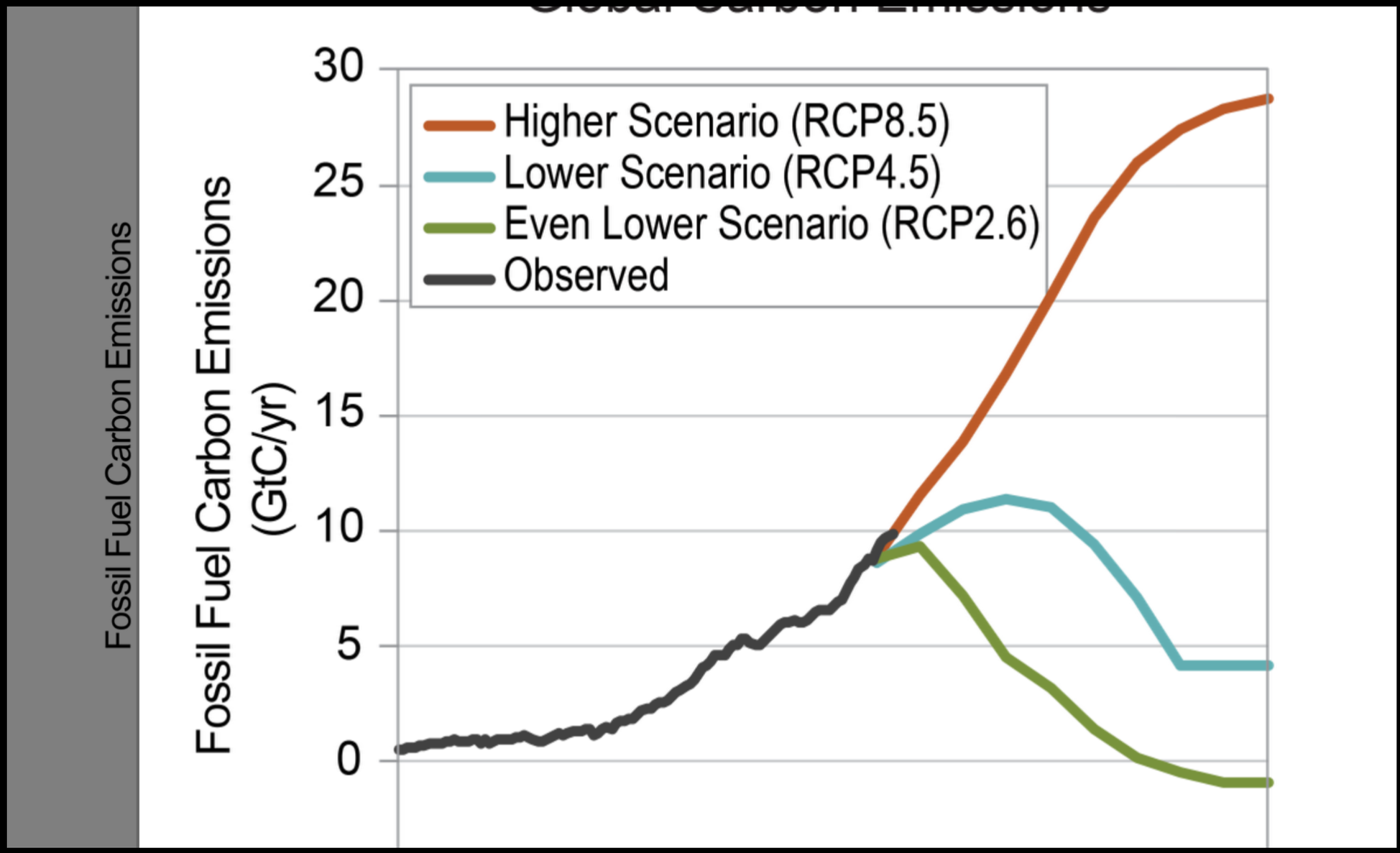
- Life itself developed a 20% oxygen atmosphere by using all of the CO2 with photosynthesis, to produce oxygen.

- There is almost no CO2 left in the atmosphere, although mankind has managed to almost increase that by 50% so far.

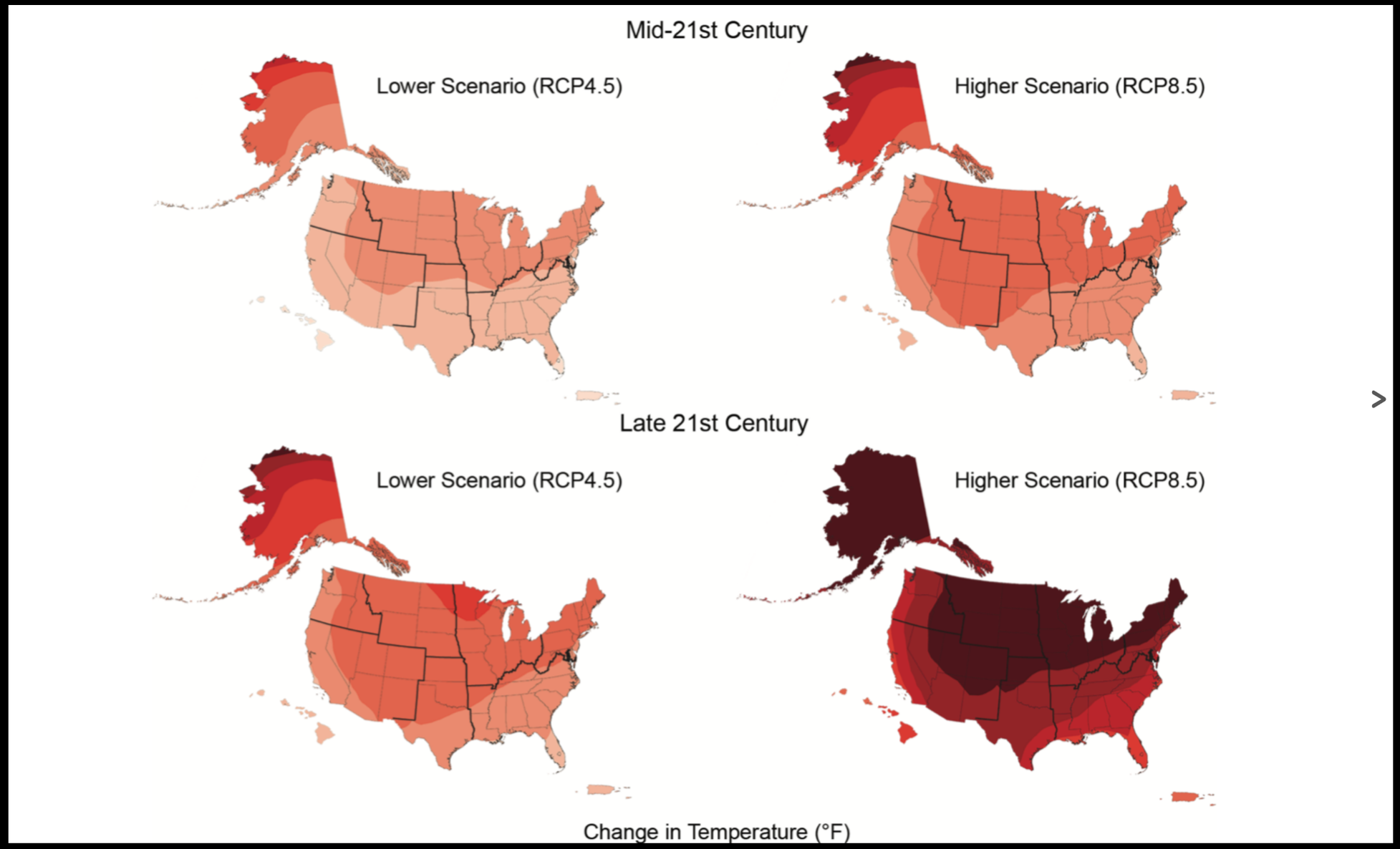
- The CO2 and water vapor have raised the mean temperature from below freezing at 0º F, to 60º F.

- By another 80 years, they may increase the mean temperature by 8º F.

- The planet c, er, I mean earth, is on the edge of the ring of habitability around the sun, and could easily get pushed too hot for habitability, especially for their large population.



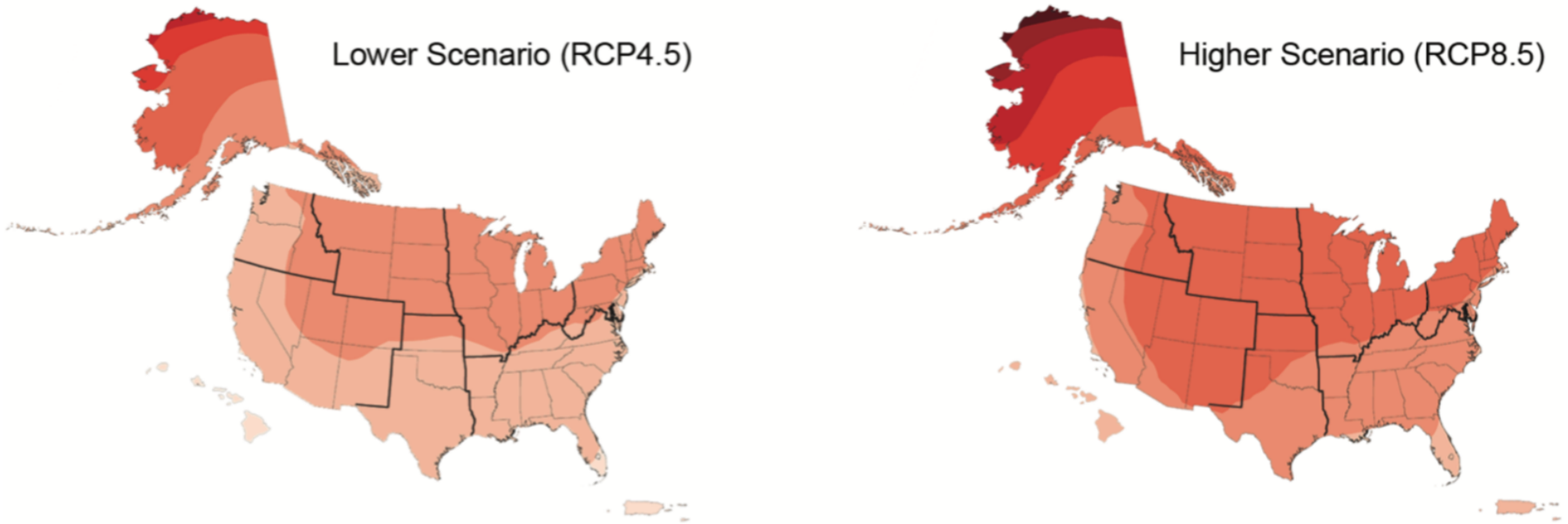
Emission paths
Highest is Business as Usual



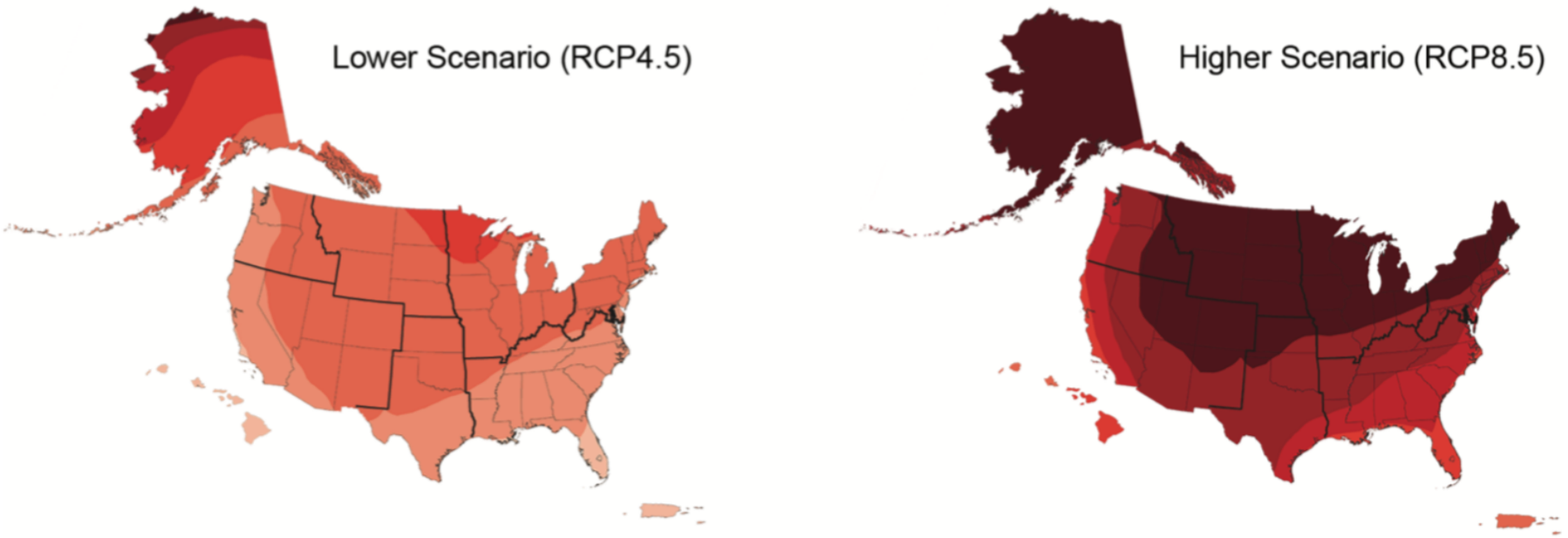
Mid century top, late century at bottom
Land Temperature much higher than global

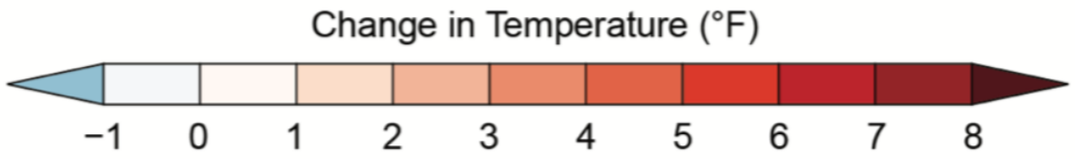
Low emissions left, business as usual at right

Mid-21st Century



Late 21st Century





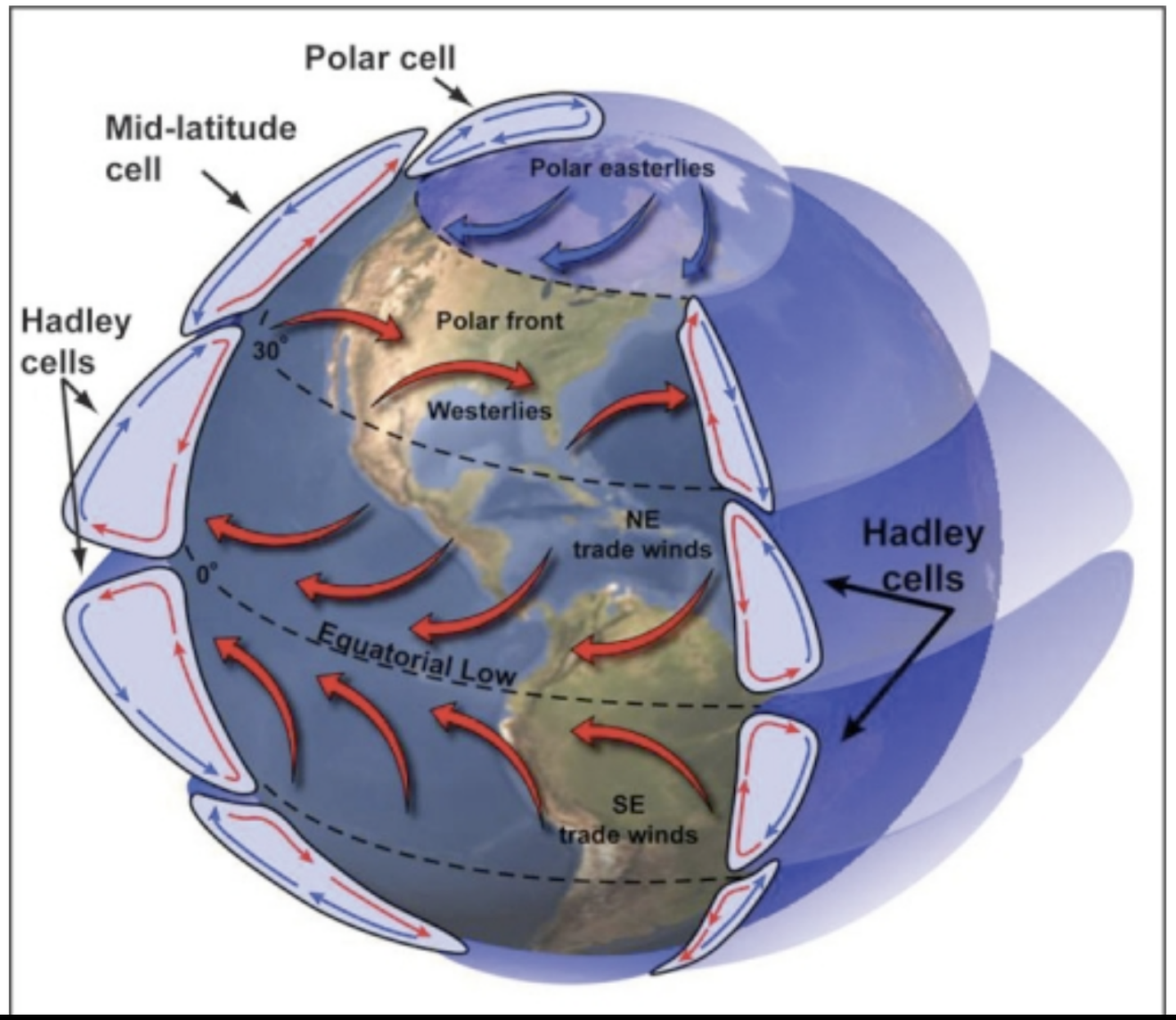
Atmosphere and water cycle

- The earth has a thin layer of water or ocean, on average a mile thick, which covers 70% of the planet.

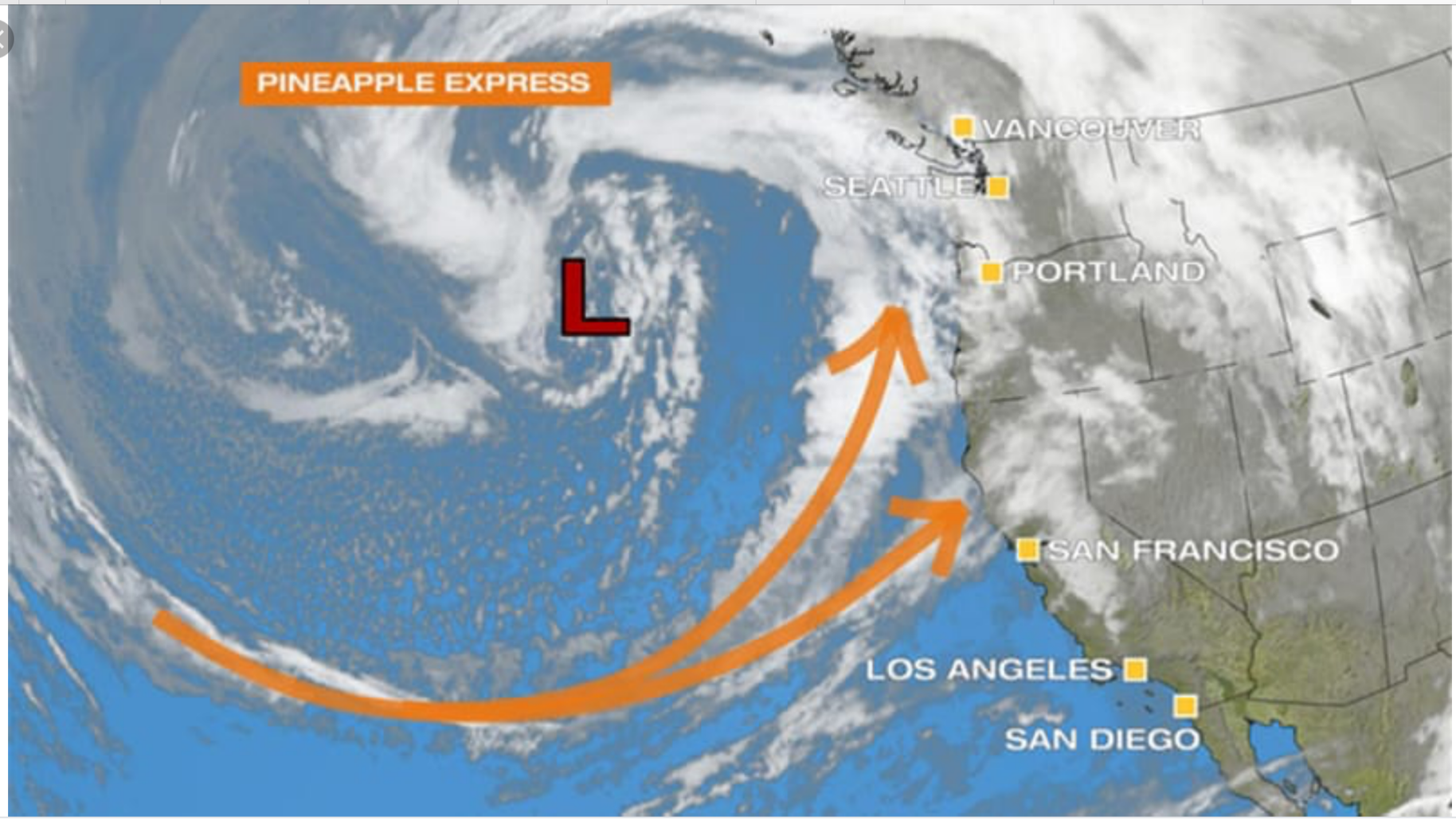
- It evaporates near the hot equator, and gets pushed by equatorial winds and equator to subtropics or 30º latitudes circulation, to moisturize the planet, and support plant growth and other life forms.

- Many inhabitants are still drinking polluted water or breathing polluted air, which makes them sick.

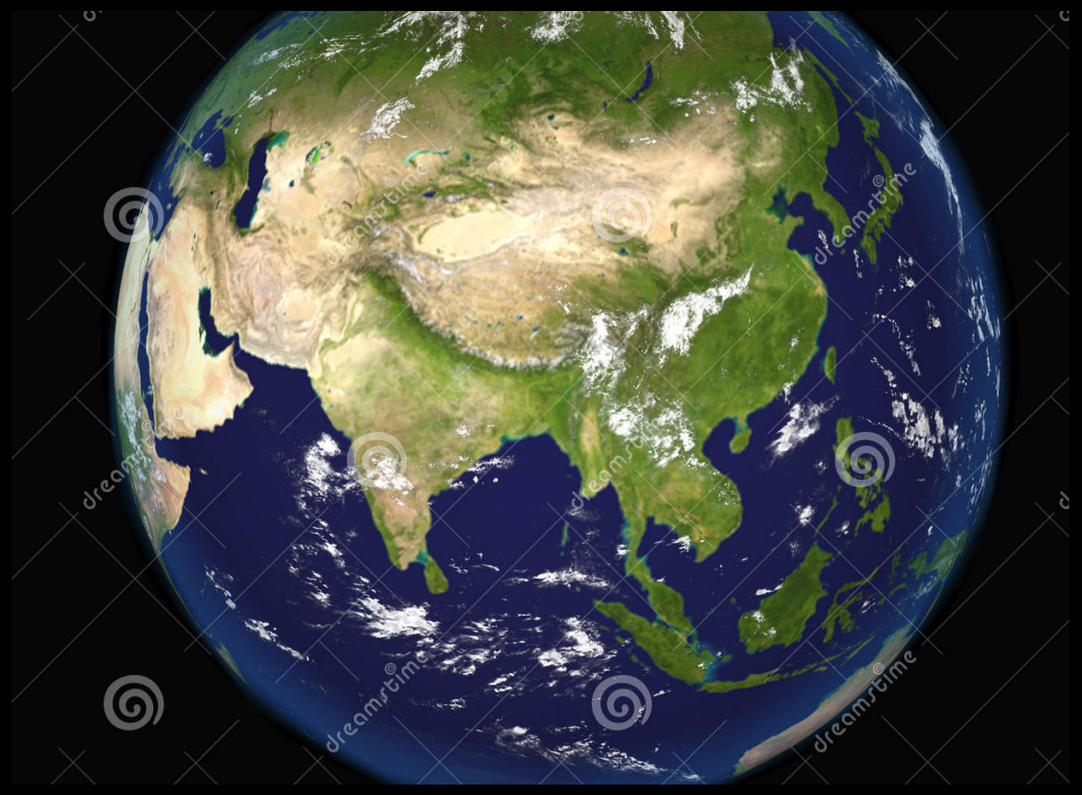
- Very surprisingly, their countries are not run by scientists and doctors, but people called “politicians”, who we don’t understand.



Hadley cells take warm moist air from the equator to Subtropical latitudes



Pineapple Express, 500 miles in width
Atmospheric river of rain



- The Ozone Layer

- The life forms need an ozone layer to absorb the ultraviolet, or higher energy radiation from the sun, so that they do not sunburn.

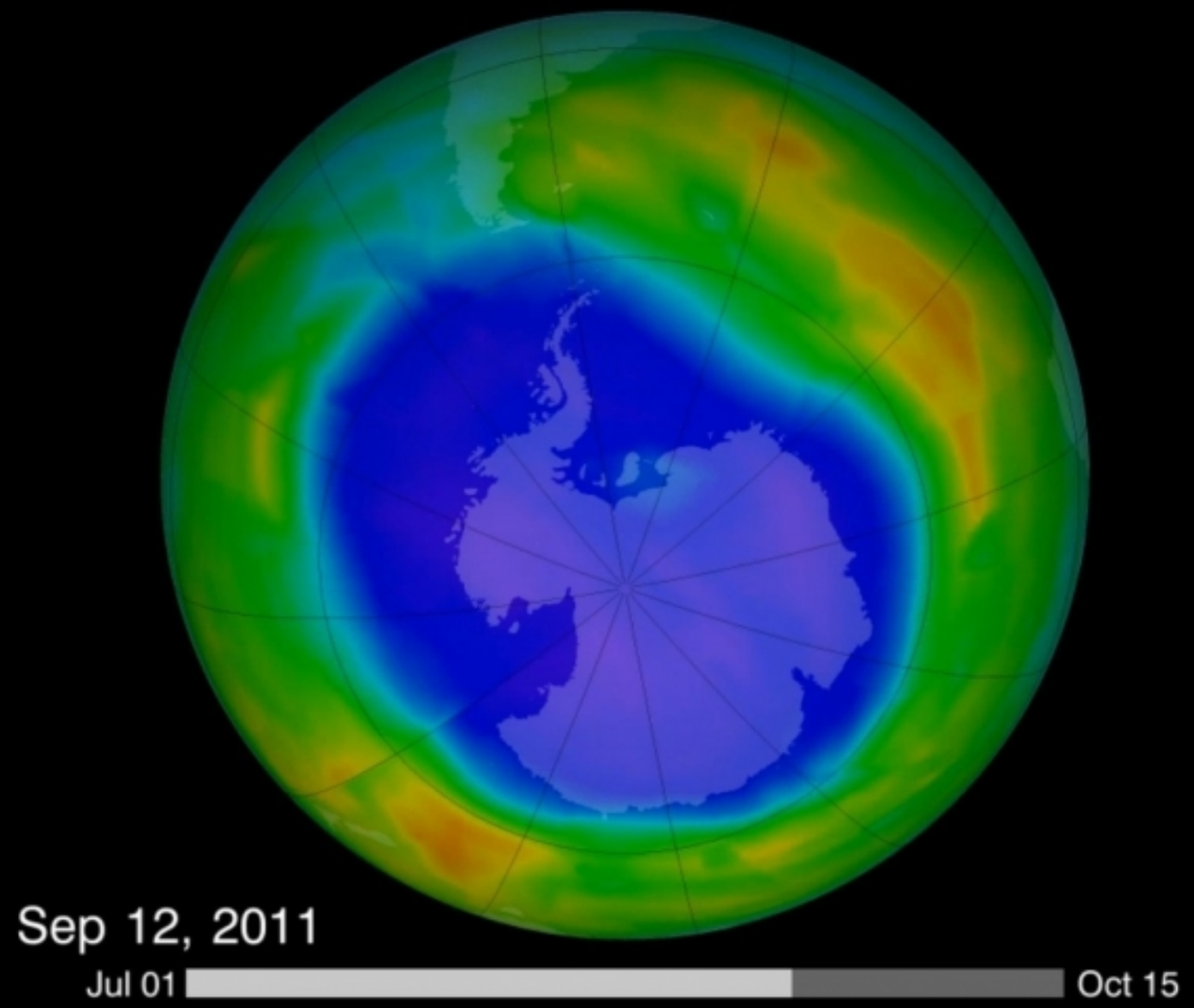
- Scientists at UC Irvine F. S. Rowland and Mario Molina discovered that CFCs, Carbon surrounded not by four hydrogens, but some Chlorine and Flourine atoms with one missing electron, like hydrogen.

- The Chlorine is a catalyst that eats up ozone.

- They had this in hair spray and refrigerators and air conditioners as coolants.

- The late President George H. W. Bush signed the Montreal protocol to ban the production of these dangerous chemicals, saving the planet from its first Industrial Age challenge.

- There still is an ozone hole over the South Pole, showing people can alter the planet.



Ozone Hole

Over Antarctica

- Geologically, the planet has a crust, seafloors, an outer mantle, and inner mantle, an outer molten core, and an inner solid core.

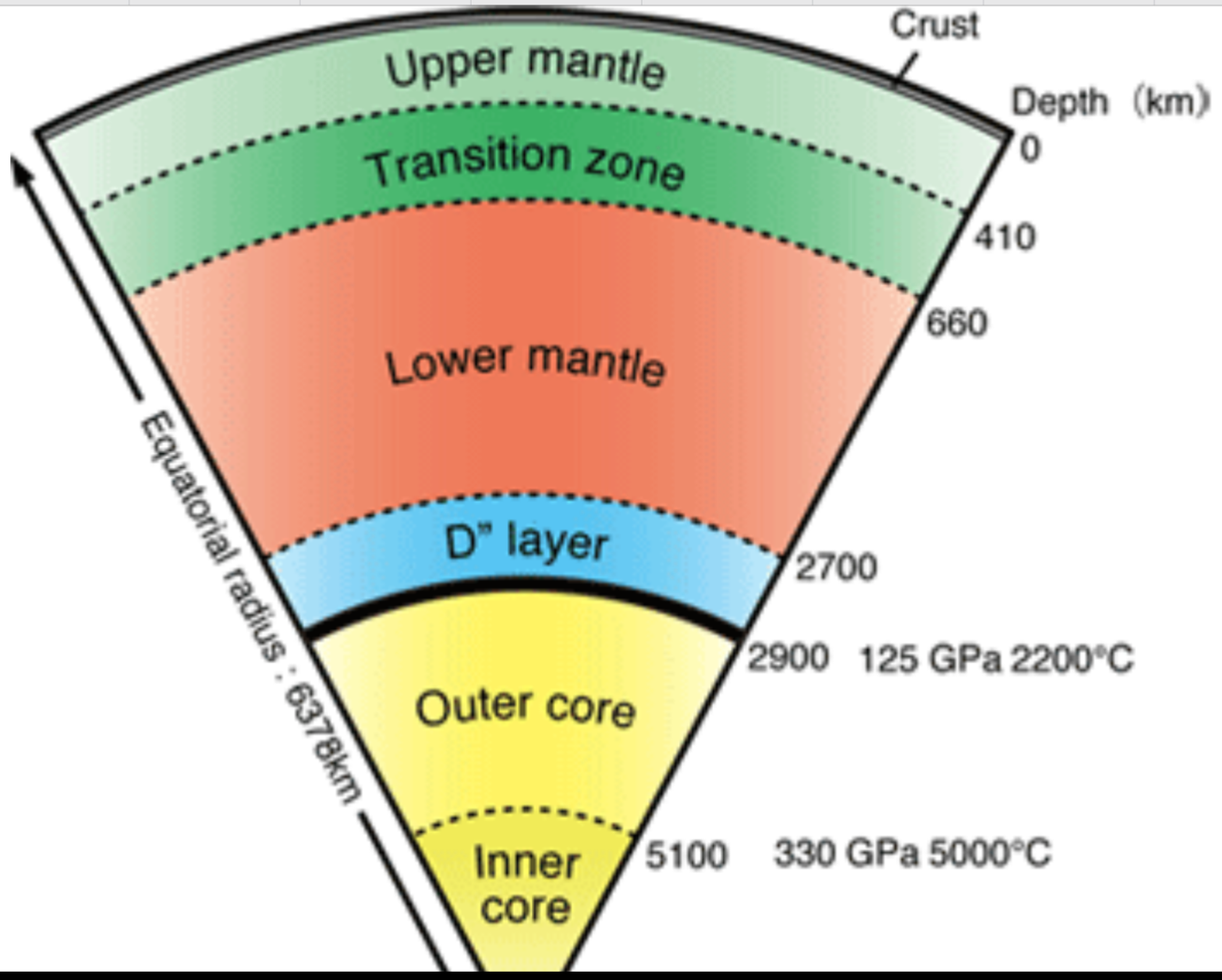
- The cores are made of iron and nickel.

- The heated inner material connects, and slides the continents around in plate tectonics.

- New crust is emitted on ridges, and old crust buried in subduction faults.

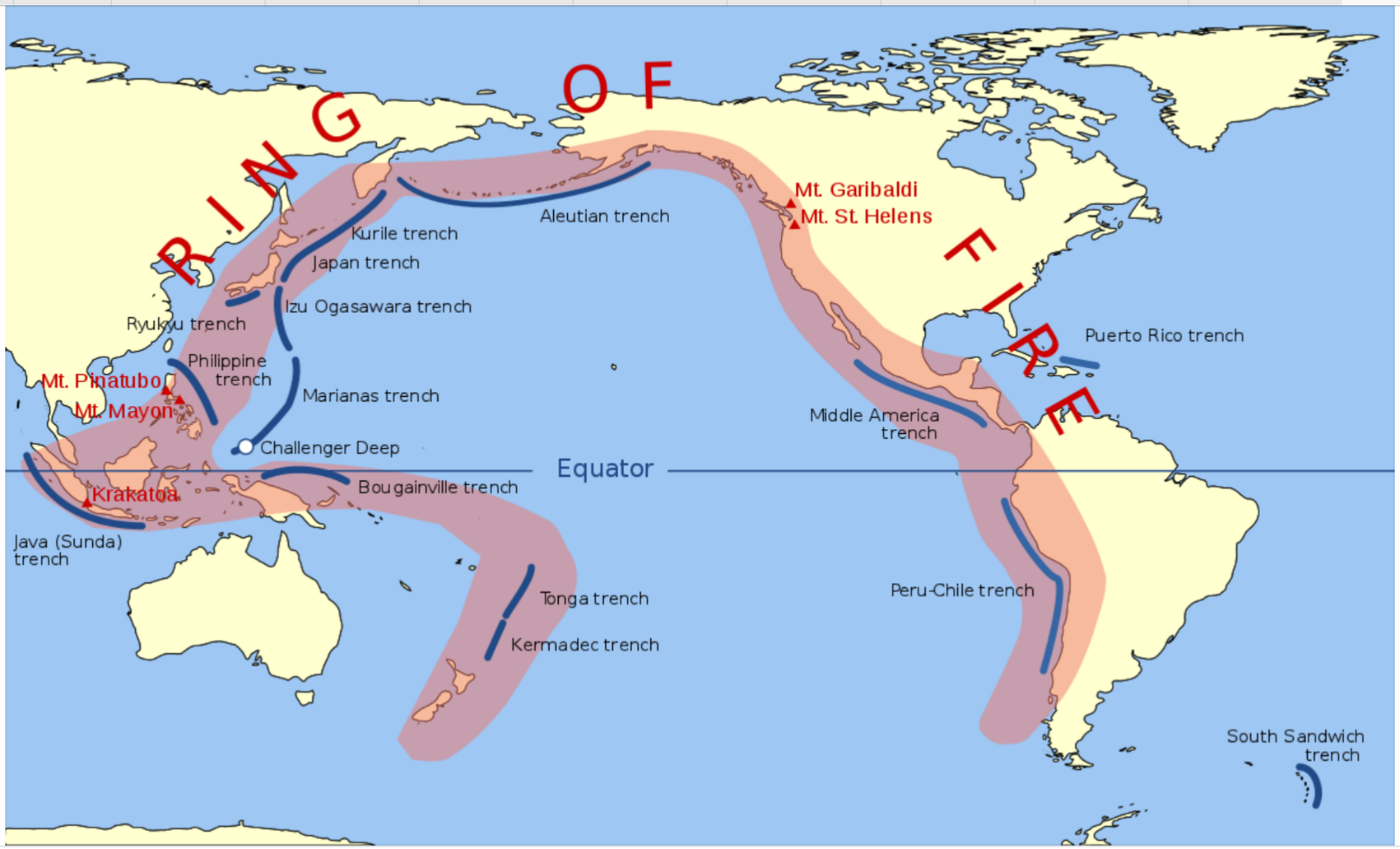
- The mantle movement causes earthquakes, and the subducted crust causes volcanoes.

- The iron core rotation generates a magnetic field, which protects the planet from high energy solar particles and solar storms.



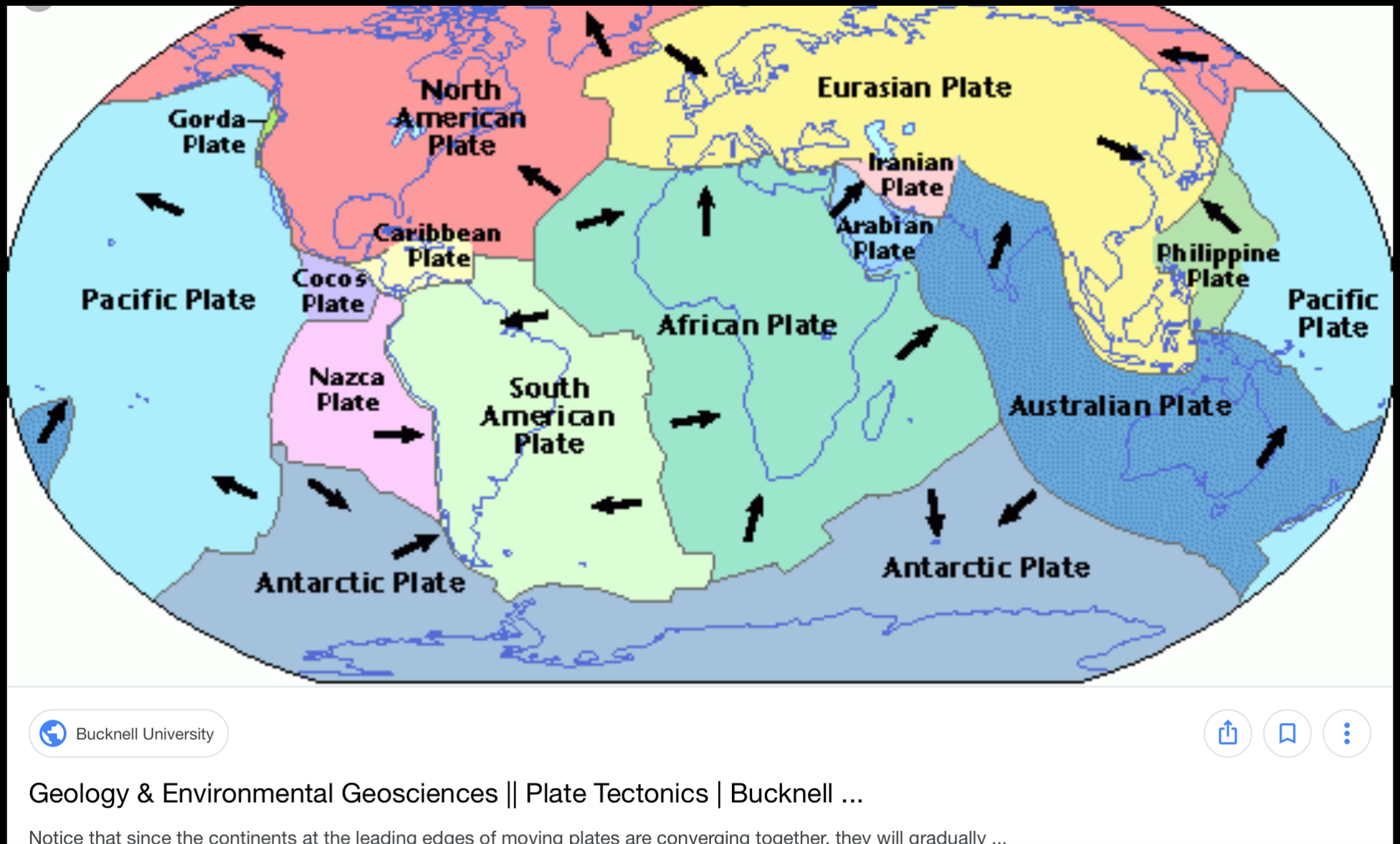
Core solid Fe, Ni

Outer Core liquid



Earthquake Ring of Fire

Also volcanic where subduction of ocean floor



Bucknell University

Geology & Environmental Geosciences || Plate Tectonics | Bucknell ...

Notice that since the continents at the leading edges of moving plates are converging together, they will gradually ...

Plate Tectonics

Directions of motions. Mid Atlantic Ridge.
Sierra Nevada. Himalayas. Andes Mountains. Alps

- There is a tidally locked moon, which keeps the planetary pole from wandering, and leads to climate stability.

- The planet's rotation axis is tilted at 22.5º, and leads to seasons.

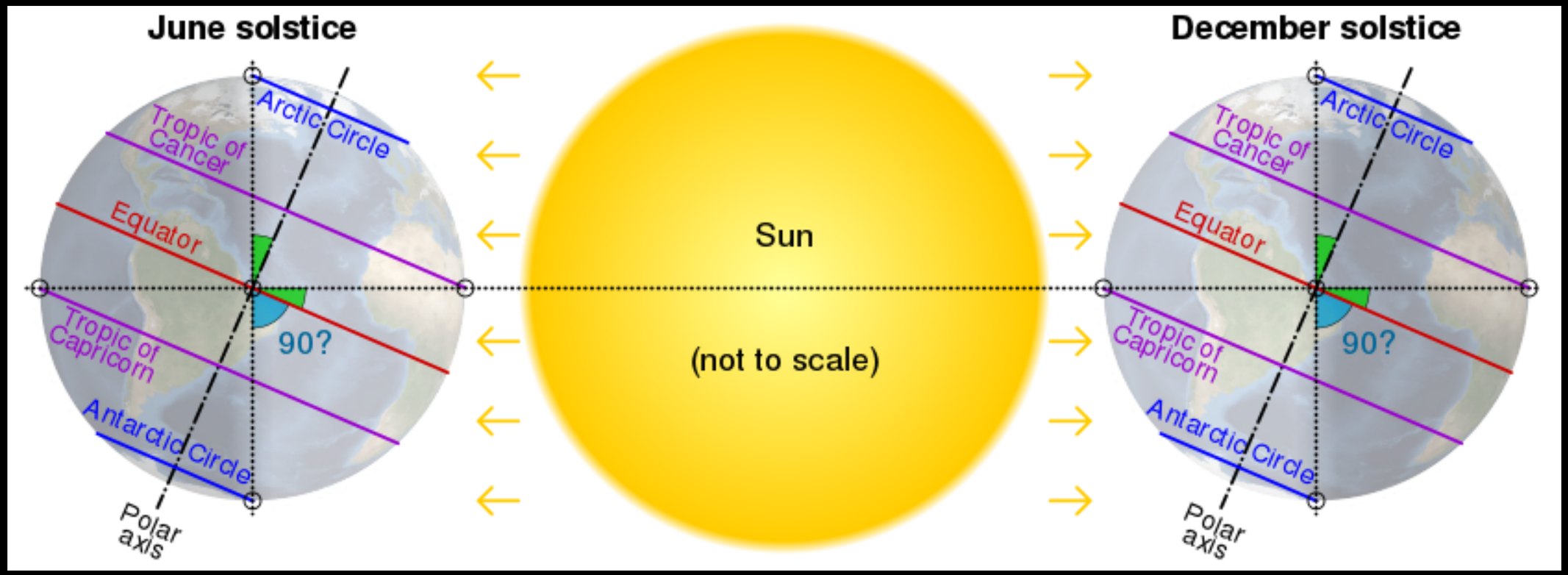
- People, plants, and all life are geared to the seasons.

- So the global warming, sea level rise, enhanced rain and storms, enhanced droughts, heat waves, increased fires, insect infections in people and in trees, increased ocean acidity, etc. are going to present unexpected challenges.

- Fortunately, the human scientists and engineers have found how to make renewable solar, wind, and water power

- They have also learned how to increase the efficiency of energy use.

We are North of Tropic of Cancer. Summer, sun above. Winter, sun low in sky.



Polar Ice

- The North Pole or Arctic is covered with only a few feet of floating ice.
- It is getting thinner and covers less area every fall.
- It is a great solar reflector to cool the planet, but that effect is receding.
- The South Pole has sea ice and land ice.
- As it melts in centuries, it will raise sea levels.
- Glaciers all over the planet are in retreat, as is a glacier northern land mass called Greenland.

Earth Satellites

- Wikipedia has long lists of:
    - Earth monitoring satellites;
    - Weather satellites;
    - Climate research satellites;
    - Launched by many different countries.
- There are also GPS satellites, and communication satellites.
- Astronomy satellites.
- Space stations.
- Space probes.
- Moon landings.
- Many of the satellites are commercial, and funded by interests who benefit from the information.

Do Not Notify or Visit

- Because of their irrational and poorly understood balance, maintenance, and even enlarging of their nuclear arsenals, all galactic planets are forbidden from any contact whatsoever with any earthlings.

- You may not even give them any evidence that we exist!

- They know the solutions to their global warming problem, and it is their sole responsibility to institute them.