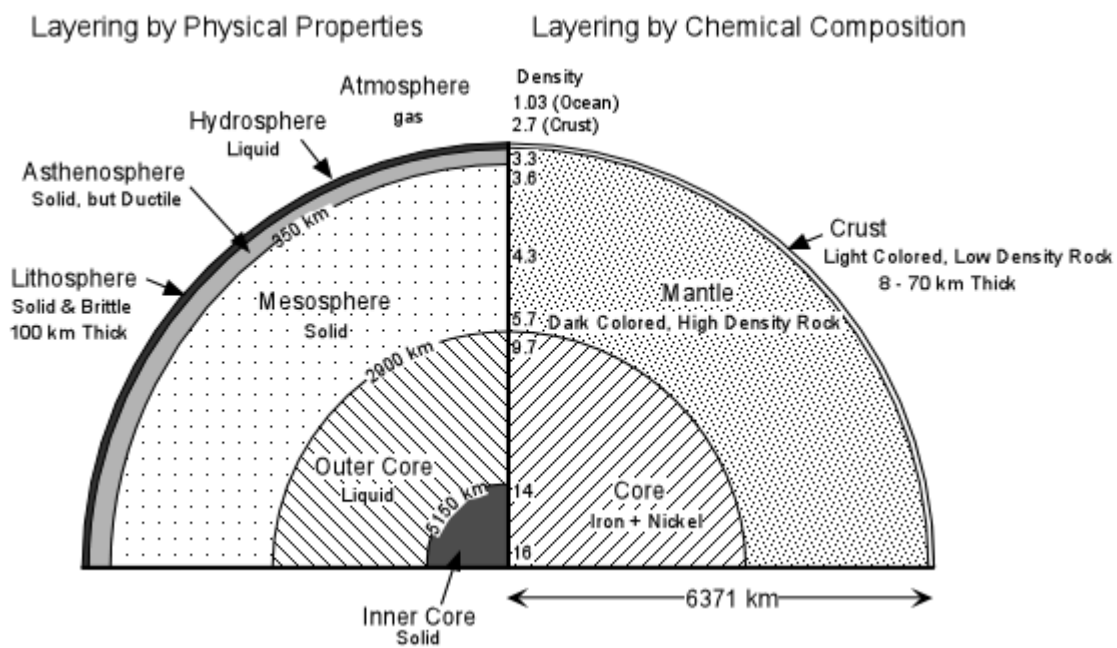


Structure of the Earth (Earth Interior)

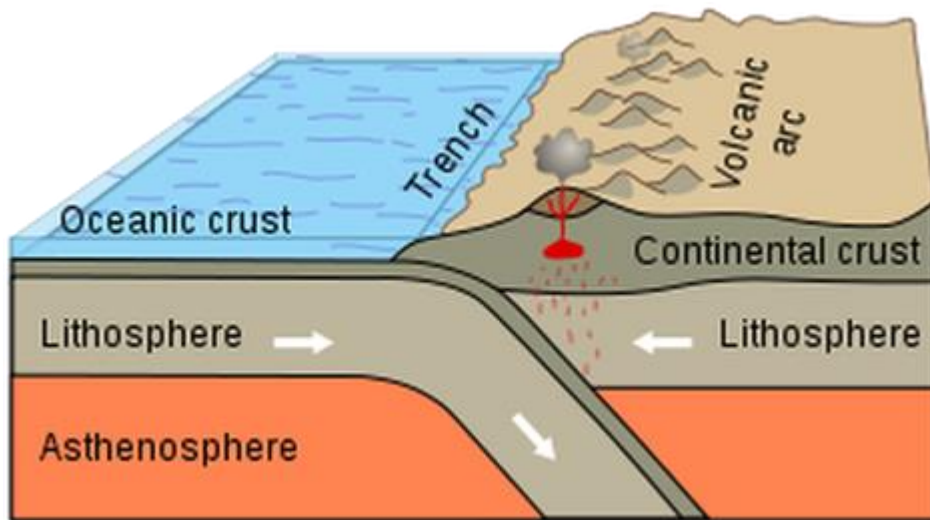
The interior structure of the Earth is layered in spherical shells, like an onion. These layers can be defined by their chemical and their rheological properties. Earth has an outer silicate solid crust, a highly viscous mantle, a liquid outer core that is much less viscous than the mantle, and a solid inner core.

The structure of Earth can be defined in two ways: by physical properties such as rheology, or chemically. Physically, it can be divided into lithosphere, asthenosphere, mesospheric mantle, outer core, and the inner core. Chemically, Earth can be divided into the crust, upper mantle, lower mantle, outer core, and inner core.



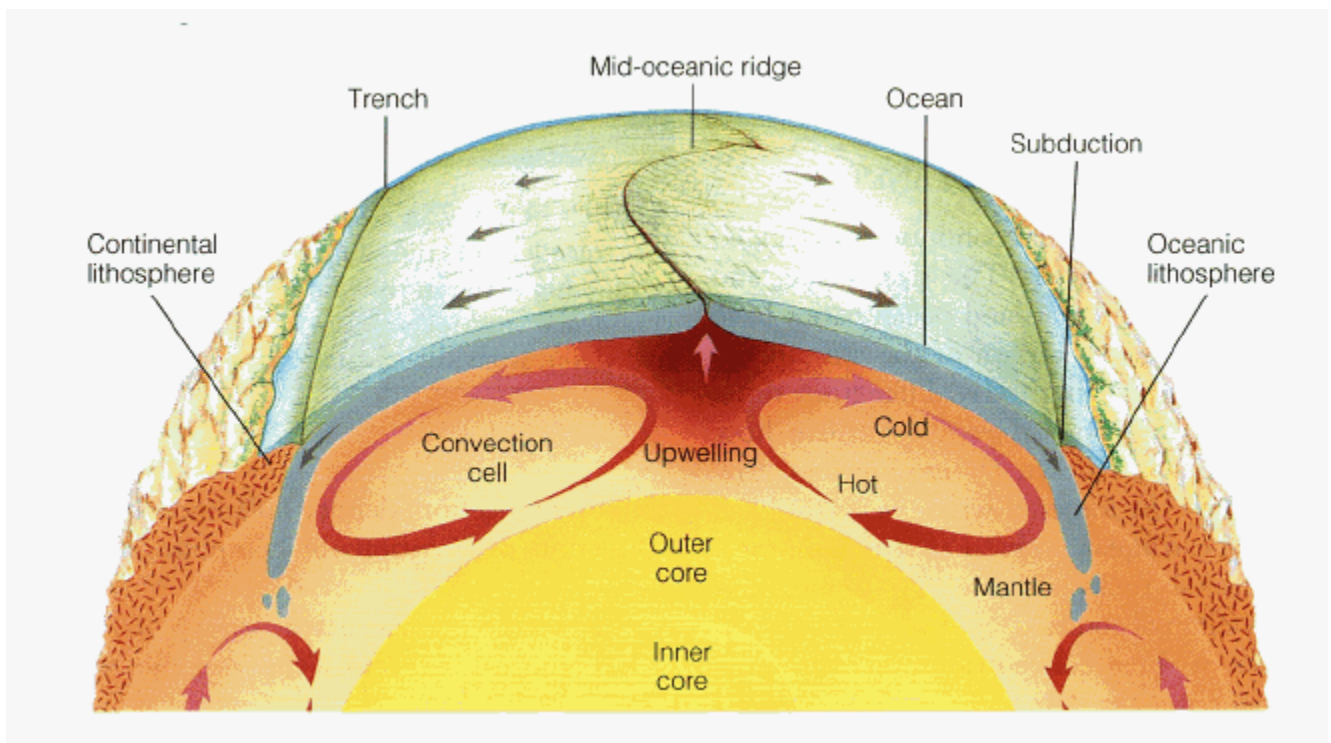
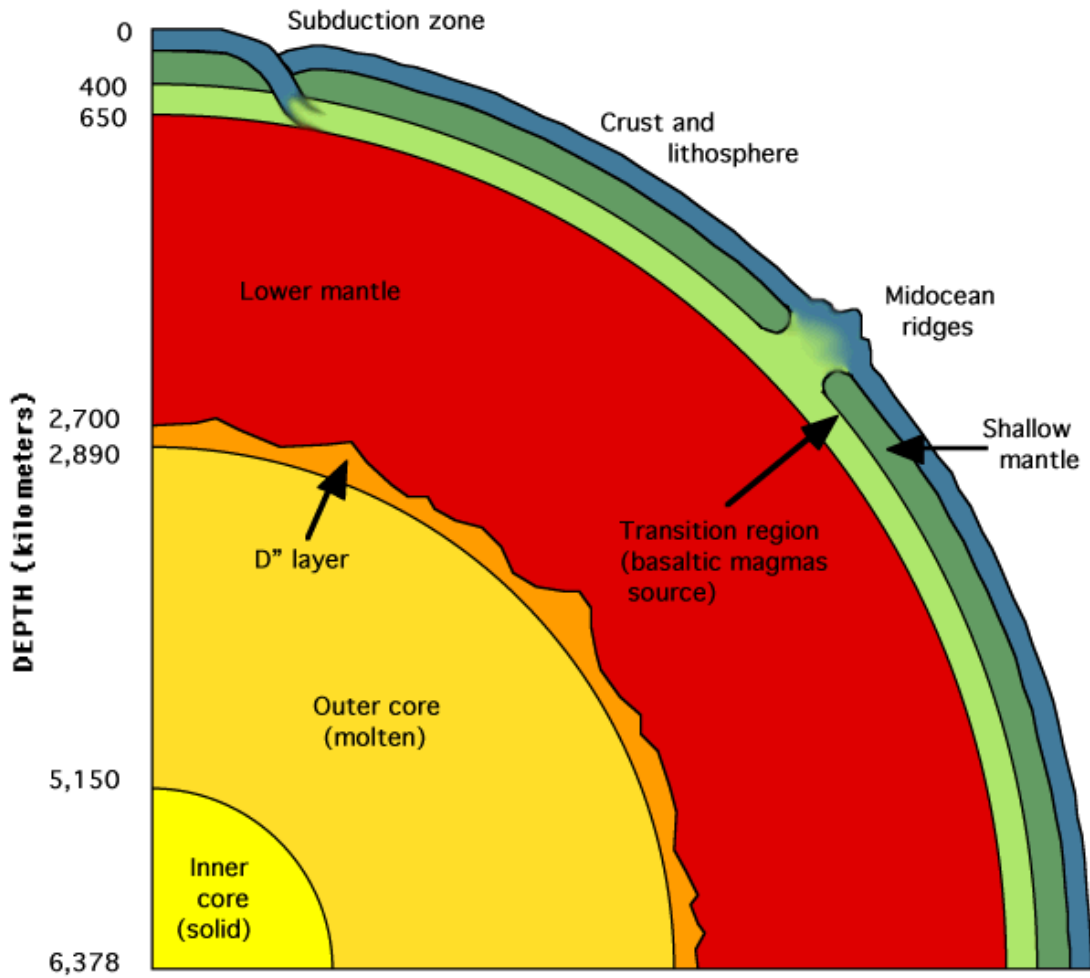
- **Crust**

The crust ranges from 5–70 kilometers in depth and is the outermost layer. The thin parts are the oceanic crust, which underlie the ocean basins (5–10 km) and are composed of dense (mafic) iron magnesium silicate igneous rocks, like basalt. The thicker crust is continental crust, which is less dense and composed of (felsic) sodium potassium aluminum silicate rocks, like granite. The uppermost mantle together with the crust constitutes the lithosphere.



- **Mantle**

Earth's mantle extends to a depth of 2,890 km, making it the thickest layer of Earth. The mantle is divided into upper and lower mantle. The upper and lower mantle are separated by the transition zone. The lowest part of the mantle next to the core-mantle boundary is known as the D'' layer. Convection of the mantle is expressed at the surface through the motions of tectonic plates. The source of heat that drives plate tectonics is the primordial heat left over from the planet's formation as well as the radioactive decay of uranium, thorium, and potassium in Earth's crust and mantle.

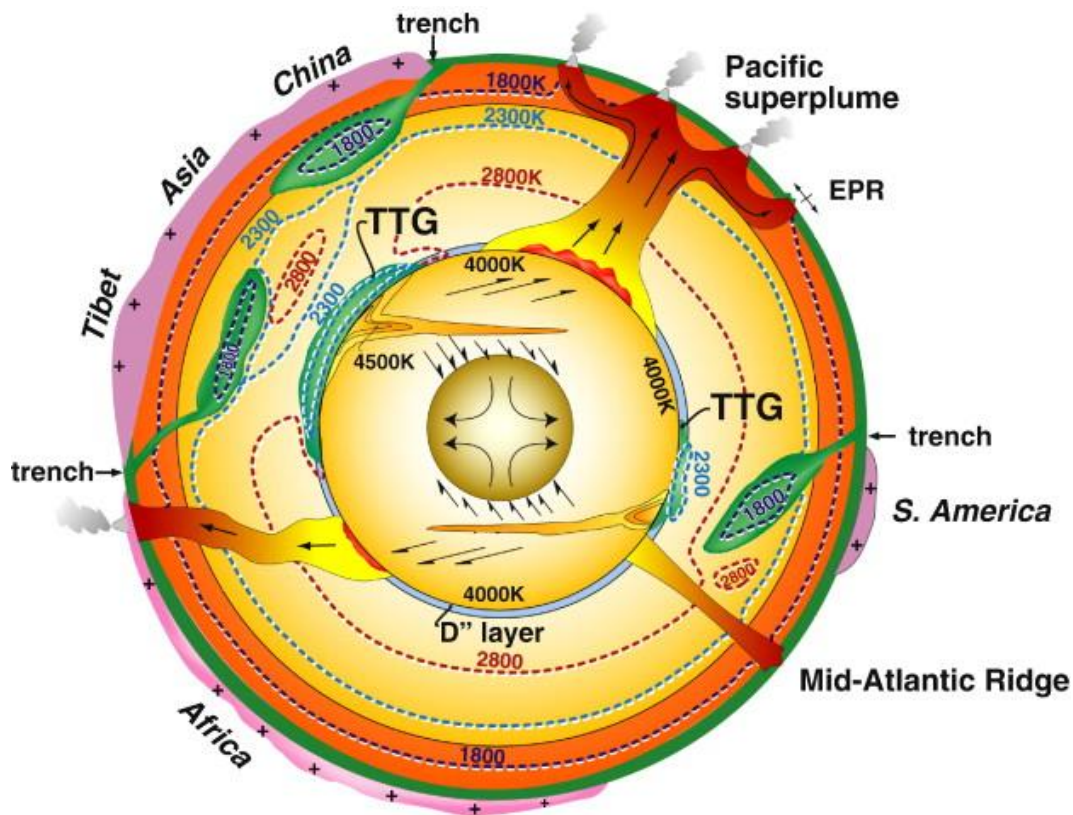


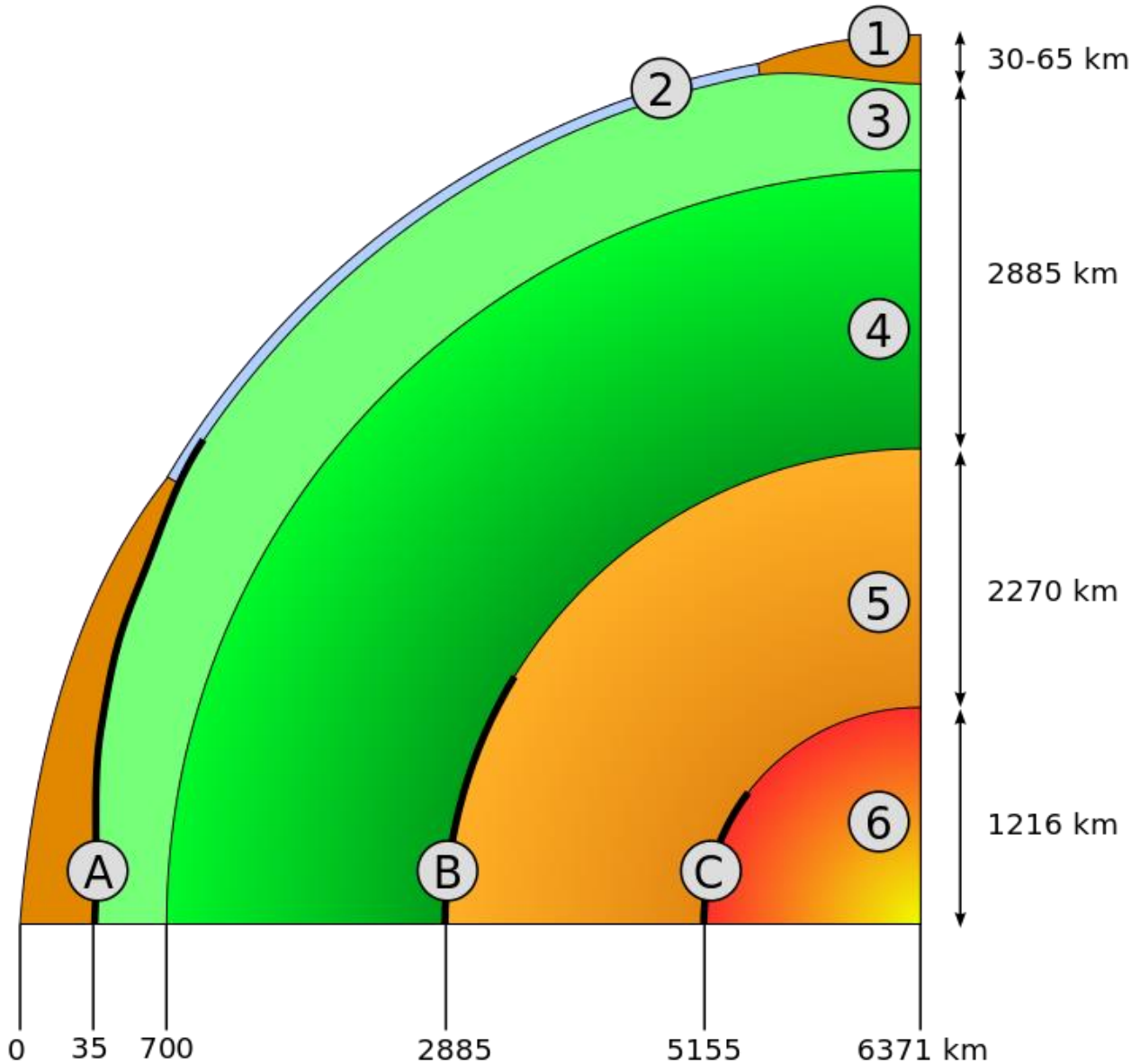
- Earth's core

The Earth's core is the part of Earth in the middle of our planet. It has a solid inner core and a liquid outer core.

The outer core of the Earth is a liquid layer about 2,260 kilometers thick. It is made of iron and nickel. This is above the Earth's solid inner core and below the mantle.

The inner core of the Earth, as detected by seismology, is a solid sphere about 1,216 km in radius, or about 70% that of the Moon. It is believed to be an iron-nickel alloy, and may have a temperature similar to the Sun's surface, approximately 5778 K (5505 °C).





Schematic view of the interior of Earth.

1. continental crust 2. oceanic crust 3. upper mantle 4. lower mantle
5. outer core 6. inner core

A: Mohorovičić discontinuity (Moho) is a boundary between the earth's crust and the mantle.

B: Gutenberg discontinuity is a core-mantle boundary

C: Lehmann-Bullen discontinuity is a outer core-inner core boundary