The Earth is very old—4.5 billion years or more according to scientific estimates. Most of the evidence for an ancient Earth is contained in the rocks that form the Earth's crust. The rock layers themselves—like pages in a long and complicated history—record the events of the past, and buried within them are the remains of life—the plants and animals that evolved from organic structures that existed 3 billion years ago.

Also contained in rocks once molten are radioactive elements whose isotopes provide Earth with an atomic clock. Within these rocks, "parent" isotopes decay at a predictable rate to form "daughter" isotopes. By determining the relative amounts of parent and daughter isotopes, the age of these rocks can be calculated.

Thus, the scientific evidence from rock layers, from fossils, and from the ages of rocks as measured by atomic clocks attests to a very old Earth.

See USGS Fact Sheet 2007-3015 at http://pubs.usgs.gov/fs/2007/3015/ for ages of geologic time periods. Ages in the spiral have been rounded from the age estimates in the Fact Sheet. B.Y., billion years; M.Y., million years. For more information, see the booklet on Geologic Time at http://pubs.usgs.gov/gip/geotime/.