

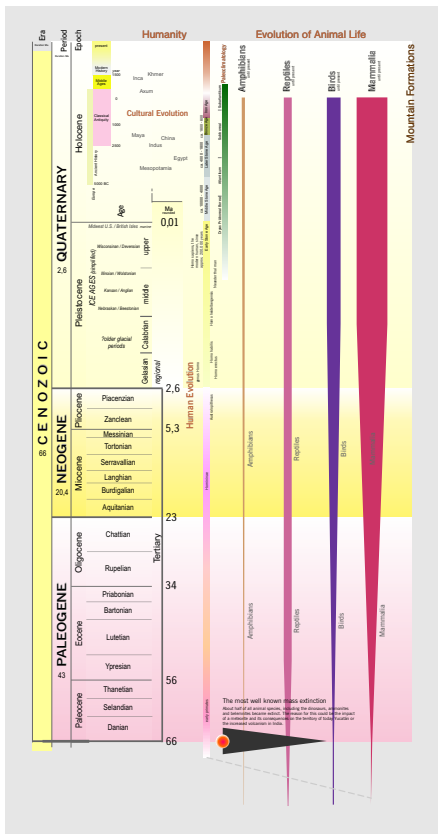
# HADEAN - QUARTERNARY

From the beginning of Earth history until today



# Earth Times

Era, period, epoch, age, duration and numerical ages

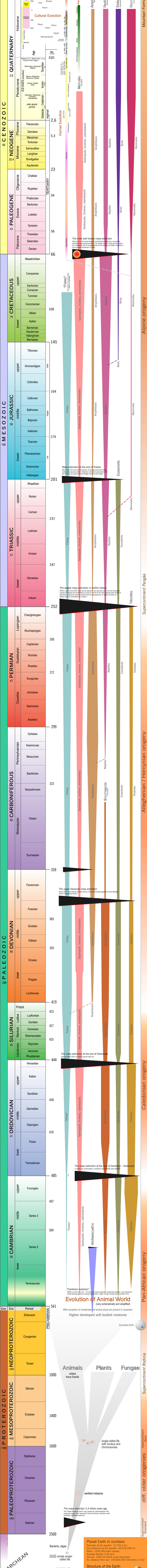


- **Humanity**  
Cultural Evolution
- **Evolution of Animal Life**  
Mass Extinctions
- **Mountain Formations**  
Supercontinents
- **Planet Earth**  
Structure of the Earth



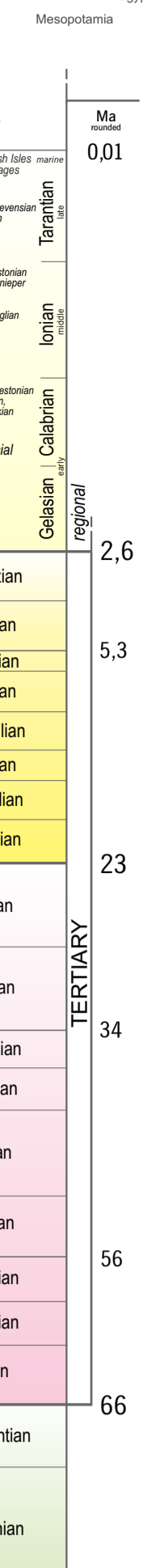
# Earth Times

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## Humanity

## Evolution of Animal Life



**The most well known mass extinction**  
About half of all animal species, including the dinosaurs, ammonites and bivalves became extinct. The reason for this could be the impact of a meteorite and its consequences on the territory of today's Yucatán or the increased volcanism in India.

**Mass extinction at the end of Triassic**  
More than 2/3 of all animal species, including most land-living vertebrates became extinct. Extensive volcanism associated with the breakup of supercontinent Pangaea could be the reason.

**The largest mass extinction in Earth's history**  
Within a short time 90% of all animal species in the sea and over 2/3 of all terrestrial species of reptiles and amphibians as well as a third of all insect species were driven to extinction. Extensive volcanic activity and its consequences on today's territory of Siberia may be considered as a reason.

**The upper Devonian mass extinction**  
About 50% of all species became extinct. Also reef-building organisms were affected, which disappeared forever.

**The mass extinction at the end of Ordovician**  
Approximately 60% of marine species died out.

**The mass extinction at the turn of Cambrian - Ordovician**  
In particular, brachiopods, conodonts and trilobites were affected.

**"Cambrian explosion"**  
Within a short time of 5 - 10 Ma a rich fauna expanded. Especially delicate and calcareous shells-bearing organisms spread worldwide in large numbers during lower Cambrian time, which disappeared forever.

**Evolution of Animal World**  
(very schematically and simplified)  
With exception of vertebrates all animal phyla are present in seawater.  
Higher developed soft-bodied creatures

## Planet Earth in numbers

Diameter at the equator: 12,756.2 km  
Circumference at the equator: 40,076.592 km  
Mass: 1/330,000 solar masses  
Average density: 5.52 g/cc  
Volume: 1.083.23 billion cubic kilometers  
Av. distance from sun: 149,600,000 kilometers (1 AU)

## Structure of the Earth



Numerical ages (rounded) are taken from:  
Deutsche Stratigraphische Kommission (Hrsg.) (2012):  
Stratigraphische Tabelle von Deutschland Kompakt 2012  
(STDK 2012); Potsdam (Deutsches GeoForschungsZentrum).  
International Commission on Stratigraphy:  
INTERNATIONAL CHRONOSTRATIGRAPHIC CHART v2015/01.  
www.stratigraphy.org