Geological Time Scale Encyclopedia Article

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Era	Period	Epoch	Significant Events	Million Years Before Present
Cenozoic	Quartenary	Holocene	recorded human history, rise and fall of civilizations, global warming, habitat destruction, pollution mass extinction	0.01
		Pleistocene	Homo sapiens, ice ages	1.6
	Tertiary	Pliocene	global cooling, savannahs, grazing mammals	5.3
		Miocene	global warming, grasslands, Chalicotherium	24
		Oligocene		37
		Eocene	modern mammals flourish, ungulates	58
		Paleocene		66
Mesozoic	Cretaceous		last of age of dinosaurs, modern mammals appear, flowering plants, insects	144

	Jurassic	huge plant-eating dinosaurs, carnivorous dinosaurs, first birds, breakup of Pangea	208
	Triassic	lycophytes, glossopterids, and dicynodonts, and the dinosaurs	245
Paleozoic	Permian	Permian ends with largest mass extinction in history of Earth, most marine inverterbrates extinct	286
	Pennsylvanian	vast coal swamps, evolution of amniote egg allowing exploitation of land	320
	Missipian	shallow seas cover most of Earth	360
	Devonian	vascular plants, the first tetrapods, wingless insects, arachnids, brachiopods, corals, and ammonite were also common, many new	408

		kinds of fish appeared	
	Silurian	Coral reefs, rapid spread of jawless fish, first freshwater fish, first fish with jaws, first good evidence of life on land, including relatives of spiders and centipedes	438
	Ordovician	most dry land collected into Gondwana, many marine invertebrates, including graptolites, trilobites, brachiopods, and the conodonts (early vertebrates), red and green algae, primitive fish, cephalopods, corals, crinoids, and gastropods, possibly first land plants	505
	Cambrian	most major groups of animals first appear, Cambrian explosion	570
Proterozoic		stable continents	2500

Archean	first appear, first abundant fossils of living organisms, mostly bacteria and archeobacteria, first eukaryotes, first evidence of oxygen build-up atmosphere of methane, ammonia, rocks and continental plates began to form, oldest fossils consist of bacteria microfossils stromatolites, colonies of photosynthetic bacteria	3800
Hadean	pre-geologic time, Earth in formation	4500

Bibliography

Foster, Robert. Geology. 3rd ed. Columbus, OH: Charles E. Merrill, 1976.

Stanley, Stephen. Earth and Life Through Time. New York: W. H. Freeman, 1989.

Toulmin, Stephen and June Goodfield. The Discovery of Time. New York: Harper & Row, 1965.

Internet Resources

United States Geological Survey. <http://pubs.usgs.gov/gip/fossils/contents.html>.