

GEOLOGIC TIME CHART

2017

EON	ERA	PERIOD — SUB PERIOD	EPOCH		AGE (Ma)	
Phanerozoic	Cenozoic (Cz)	Quaternary (Q)	Holocene	<i>Human agriculture, rise of human civilization</i>	Present	
			Pleistocene	<i>Modern humans appear Ice ages Genus Homo (humans) appear</i>	0.0117	
		Tertiary (T)*	Neogene (N)	Pliocene	<i>Earliest bipedal hominins appear Vast grasslands with many grazing mammals</i>	2.58
				Miocene	<i>Earliest hominins (human ancestors) appear Earliest hominids (great apes) appear Grass becomes widespread</i>	5.333
			Paleogene (P̄)	Oligocene	<i>Mammals become dominant Earliest apes</i>	23.03
		Eocene		<i>All modern flowering plant types have appeared All the major groups of mammals have now appeared</i>	33.9	
		Paleocene		<i>Mammals and birds diversify First large mammals appear Earliest primate fossils</i>	56.0	
		Mesozoic (Mz)	Cretaceous (K)	Late Cretaceous	<i>All dinosaurs and large reptiles become extinct Earliest primate mammals appear</i>	66.0
				Early Cretaceous	<i>First flowering plants appear</i>	100.5
			Jurassic (J)	Late Jurassic	<i>First birds appear from dinosaur ancestors</i>	145.0
				Middle Jurassic	<i>Dinosaurs diversify and become dominant</i>	163.5
				Early Jurassic	<i>Triassic-Jurassic extinction</i>	174.1
			Triassic (R̄)	Late Triassic	<i>Pangaea begins to break apart</i>	201.3
				Middle Triassic	<i>First mammals appear</i>	237
				Early Triassic	<i>Reptiles become dominant, first dinosaurs P-Tr mass extinction "The Great Dying"</i>	247.2
	Permian (P)		Lopingian	<i>Reptiles diversify</i>	251.90	
			Guadalupian	<i>Pangaea forms</i>	259.1	
			Cisuralian	<i>Pangaea forms</i>	273.0	
	Carboniferous (C)		Pennsylvanian (P̄)	Late Pennsylvanian	<i>First reptiles appear</i>	298.9
				Middle Pennsylvanian	<i>Large moss-like scale trees are widespread</i>	307.0
				Early Pennsylvanian	<i>Insects grow and diversify</i>	315.2
			Mississippian (M)	Late Mississippian	<i>Seed ferns are common</i>	323.2
		Middle Mississippian		<i>First large cartilaginous fishes</i>	330.9	
		Early Mississippian		<i>First large cartilaginous fishes</i>	346.7	
	Devonian (D)	Late Devonian	<i>Late Devonian extinction period First land animals appear</i>	358.9		
		Middle Devonian	<i>First amphibians appear</i>	382.7		
		Early Devonian	<i>Fish diversify and dominate the oceans</i>	393.3		
	Silurian (S)	Pridoli	<i>First jawed fish appear</i>	419.2		
		Ludlow	<i>First insects appear</i>	423.0		
		Wenlock	<i>First insects appear</i>	427.4		
		Llandovery	<i>First insects appear</i>	433.4		
	Ordovician (O)	Late Ordovician	<i>Ordovician-Silurian mass extinction</i>	443.8		
		Middle Ordovician	<i>First animals with backbones (vertebrates) The rise of corals in the oceans</i>	458.4		
		Early Ordovician	<i>Trilobite numbers reach their maximum</i>	470.0		
	Cambrian (C)	Furongian	<i>First (jawless) fish appear</i>	485.4		
		Series 3	<i>First fungi appear</i>	497		
		Series 2	<i>First hard shelled sea life, trilobites dominate</i>	509		
		Terreneuvian	<i>Cambrian explosion</i>	521		
						541.0

*The Tertiary period still appears on U.S. geologic maps, but it has been replaced by Paleogene and Neogene in other uses.

Precambrian Time Periods

2017

EON	ERA	PERIOD	AGE (Ma)	
Proterozoic	Neo – proterozoic	Ediacaran	End-Ediacaran extinction Complex multicellular life appears Pannotia Supercontinent	541.0
		Cryogenian	Snowball Earth Marinoan glaciation Sturtian glaciation	635
		Tonian	Rodinia Supercontinent divides First primitive land plants appear Algae-like plants and primitive sponges appear	720
		Stenian	Rodinia Supercontinent forms	1000
	Meso – proterozoic	Ectasian	Earliest sexual reproduction Photosynthetic organisms appear	1200
		Calymmian	Columbia Supercontinent divides	1400
		Satherian		1600
	Paleo – proterozoic	Orosirian	Columbia Supercontinent forms	1800
		Rhyacian	First creatures with a cell nucleus appear Huronian global glaciation	2050
		Siderian	Arctica Supercontinent The Great Oxygenation Event Earliest atmospheric oxygen	2300
				2500
	Archean	Neoarchean	Kenorland Supercontinent Ur Supercontinent	2800
		Mesoarchean		3200
Paleoarchean		Vaalbara Supercontinent Earliest clear evidence for life Earliest oxygen	3600	
Eoarchean		Late Heavy Bombardment of meteorites	4000	
Hadean		Earliest possible life Earliest water Formation of the Earth Formation of the solar system	4600	