



INTERNATIONAL STRATIGRAPHIC CHART

International Commission on Stratigraphy



Eonothem Eon	Erathem Era	Sub-Era	System Period	Series Epoch	Stage Age	Age Ma	GSSP
Phanerozoic	Cenozoic	Quaternary *	Neogene	Holocene		0.0118	
				Pleistocene	Upper	0.126	
					Middle	0.781	
					Lower	1.806	
		Tertiary *	Pliocene	Gelasian		2.588	
				Piacenzian		3.600	
				Zanclean		5.332	
			Miocene	Messinian		7.246	
				Tortonian		11.608	
				Serravallian		13.82	
				Langhian		15.97	
				Burdigalian		20.43	
				Aquitanian		23.03	
			Oligocene	Chattian		28.4 ±0.1	
				Rupelian		33.9 ±0.1	
	Paleogene	Eocene		Priabonian		37.2 ±0.1	
				Bartonian		40.4 ±0.2	
				Lutetian		48.6 ±0.2	
				Ypresian		55.8 ±0.2	
				Thanetian		58.7 ±0.2	
		Paleocene		Selandian		61.7 ±0.2	
				Danian		65.5 ±0.3	
						70.6 ±0.6	
	Cretaceous	Upper		Maastrichtian		70.6 ±0.6	
				Campanian		83.5 ±0.7	
				Santonian		85.8 ±0.7	
				Coniacian		89.3 ±1.0	
				Turonian		93.5 ±0.8	
				Cenomanian		99.6 ±0.9	
		Lower		Albian		112.0 ±1.0	
				Aptian		125.0 ±1.0	
				Barremian		130.0 ±1.5	
				Hauterivian		136.4 ±2.0	
				Valanginian		140.2 ±3.0	
				Berriasian		145.5 ±4.0	

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Phanerozoic	Mesozoic	Jurassic	Upper	Tithonian	145.5 ±4.0	
				Kimmeridgian	150.8 ±4.0	
				Oxfordian	155.7 ±4.0	
			Middle	Callovian	161.2 ±4.0	
				Bathonian	164.7 ±4.0	
				Bajocian	167.7 ±3.5	
		Triassic		Aalenian	171.6 ±3.0	
				Toarcian	175.6 ±2.0	
				Pliensbachian	183.0 ±1.5	
				Sinemurian	189.6 ±1.5	
				Hettangian	196.5 ±1.0	
				Rhaetian	199.6 ±0.6	
	Paleozoic	Permian	Upper	Norian	203.6 ±1.5	
				Carnian	216.5 ±2.0	
				Ladinian	228.0 ±2.0	
			Middle	Anisian	237.0 ±2.0	
				Olenekian	245.0 ±1.5	
				Induan	249.7 ±0.7	
		Carboniferous	Lopingian	Changhsingian	251.0 ±0.4	
				Wuchiapingian	253.8 ±0.7	
				Capitanian	260.4 ±0.7	
		Guadalupian		Wordian	265.8 ±0.7	
				Roadian	268.0 ±0.7	
				Kungurian	270.6 ±0.7	
	Paleozoic	Permian		Artinskian	275.6 ±0.7	
				Sakmarian	284.4 ±0.7	
				Asselian	294.6 ±0.8	
				Gzhelian	299.0 ±0.8	
		Carboniferous	Pennsylvanian	Kasimovian	303.9 ±0.9	
				Moscovian	306.5 ±1.0	
				Bashkirian	311.7 ±1.1	
				Serpukhovian	318.1 ±1.3	
				Viséan	326.4 ±1.6	
		Mississippian		Tournaisian	345.3 ±2.1	
					359.2 ±2.5	

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Phanerozoic	Paleozoic	Devonian	Upper	Famennian	359.2 ±2.5	
				Frasnian	374.5 ±2.6	
				Givetian	385.3 ±2.6	
			Middle	Eifelian	391.8 ±2.7	
				Emsian	397.5 ±2.7	
				Pragian	407.0 ±2.8	
		Silurian	Lower	Lochkovian	411.2 ±2.8	
					416.0 ±2.8	
				Pridoli	418.7 ±2.7	
			Ludlow	Ludfordian	421.3 ±2.6	
				Gorstian	422.9 ±2.5	
			Wenlock	Homerian	426.2 ±2.4	
				Sheinwoodian	428.2 ±2.3	
	Paleozoic	Ordovician	Upper	Telychian	436.0 ±1.9	
				Aeronian	439.0 ±1.8	
				Rhuddanian	443.7 ±1.5	
			Middle	Hirnantian	445.6 ±1.5	
				Katian	455.8 ±1.6	
				Sandbian	460.9 ±1.6	
		Cambrian	Lower	Darriwilian	468.1 ±1.6	
				Stage 3	471.8 ±1.6	
				Floian	478.6 ±1.7	
			Upper	Tremadocian	488.3 ±1.7	
				Stage 10	~ 492.0 *	
		Cambrian	Furongian	Stage 9	~ 496.0 *	
				Paibian	501.0 ±2.0	
			Series 3	Stage 7	~ 503.0 *	
				Drumian	~ 506.5 *	
		Cambrian	Series 2	Stage 5	~ 510.0 *	
				Stage 4	~ 517.0 *	
				Stage 3	~ 521.0 *	
	Paleozoic	Cambrian	Series 1	Stage 2	~ 534.6 *	
				Stage 1	542.0 ±1.0	

This chart was drafted by Gabi Ogg. Intra Cambrian unit ages with * are informal, and awaiting ratified definitions.

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Eonothem Eon	Erathem Era	System Period	Age Ma	GSSP GSSA
Precambrian	Proterozoic	Ediacaran	542	
			~630	
			850	
		Meso-proterozoic	1000	
			1200	
			1400	
	Archean	Paleo-proterozoic	1600	
			1800	
			2050	
			2300	
		Neoproterozoic	2500	
			2800	
			3200	
			3600	
	Archean	Mesoarchean		
		Paleoarchean		
	Archean	Eoarchean		
		Lower limit is not defined		

Subdivisions of the global geologic record are formally defined by their lower boundary. Each unit of the Phanerozoic (~542 Ma to Present) and the base of Ediacaran are defined by a basal Global Standard Section and Point (GSSP), whereas Precambrian units are formally subdivided by absolute age (Global Standard Stratigraphic Age, GSSA). Details of each GSSP are posted on the ICS website (www.stratigraphy.org).

International chronostratigraphic units, rank, names and formal status are approved by the International Commission on Stratigraphy (ICS) and ratified by the International Union of Geological Sciences (IUGS).

Numerical ages of the unit boundaries in the Phanerozoic are subject to revision. Some stages within the Ordovician and Cambrian will be formally named upon international agreement on their GSSP limits. Most sub-Series boundaries (e.g., Middle and Upper Aptian) are not formally defined.

Colors are according to the Commission for the Geological Map of the World (www.cgmw.org).

The listed numerical ages are from 'A Geologic Time Scale 2004', by F.M. Gradstein, J.G. Ogg, A.G. Smith, et al. (2004; Cambridge University Press).

Quaternary*: Formal chronostratigraphic unit sensu joint ICS-INQUA taskforce (2005) and ICS.

Tertiary*: Informal chronostratigraphic unit sensu Aubry et al. (2005, Episodes 28/2).