



INTERNATIONAL STRATIGRAPHIC CHART

International Commission on Stratigraphy



Eonothem Eon	Erathem Era	System Period	Series Epoch	Stage Age	Age Ma	GSSP	
Phanerozoic	Cenozoic	Quaternary*	Holocene		0.0118		
			Pleistocene	Upper		0.126	
				Middle		0.781	
				Lower		1.806	🔪
		Neogene	Pliocene	Gelasian		2.588	🔪
				Piacenzian		3.600	🔪
			Miocene	Zanclean		5.332	🔪
				Messinian		7.246	🔪
				Tortonian		11.608	🔪
				Serravallian		13.82	🔪
	Paleogene	Oligocene	Langhian		15.97	🔪	
			Burdigalian		20.43	🔪	
			Aquitanian		23.03	🔪	
		Eocene	Chattian		28.4 ± 0.1	🔪	
			Rupelian		33.9 ± 0.1	🔪	
			Priabonian		37.2 ± 0.1	🔪	
			Bartonian		40.4 ± 0.2	🔪	
			Lutetian		48.6 ± 0.2	🔪	
			Ypresian		55.8 ± 0.2	🔪	
		Paleocene	Thanetian		58.7 ± 0.2	🔪	
			Selandian		61.1	🔪	
			Danian		65.5 ± 0.3	🔪	
	Mesozoic	Cretaceous	Upper	Maastrichtian		70.6 ± 0.6	🔪
				Campanian		83.5 ± 0.7	🔪
				Santonian		85.8 ± 0.7	🔪
				Coniacian		88.6	🔪
				Turonian		93.5 ± 0.8	🔪
			Lower	Cenomanian		99.6 ± 0.9	🔪
				Albian		112.0 ± 1.0	🔪
				Aptian		125.0 ± 1.0	🔪
				Barremian		130.0 ± 1.5	🔪
				Hauterivian		133.9	🔪
	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		155.6
			Middle	Callovian		161.2 ± 4.0
				Bathonian		164.7 ± 4.0
				Bajocian		167.7 ± 3.5
		Lower	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	
		Triassic	Upper	Rhaetian		199.6 ± 0.6
				Norian		203.6 ± 1.5
				Carnian		216.5 ± 2.0
	Middle		Ladinian		228.7	
			Anisian		237.0 ± 2.0	
			Olenekian		245.9	
	Lower	Induan		249.7 ± 0.7		
		Changhsingian		251.0 ± 0.4		
	Paleozoic	Permian	Lopingian	Wuchiapingian		253.8 ± 0.7
				Changhsingian		253.8 ± 0.7
			Guadalupian	Wordian		260.4 ± 0.7
				Roadian		265.8 ± 0.7
			Cisuralian	Kungurian		268.0 ± 0.7
				Artinskian		270.6 ± 0.7
		Sakmarian			275.6 ± 0.7	
		Asselian			284.4 ± 0.7	
		Gzhelian			294.6 ± 0.8	
Kasimovian				299.0 ± 0.8		
Carboniferous		Pennsylvanian	Upper	Gzhelian		303.9 ± 0.9
			Middle	Moscovian		306.5 ± 1.0
			Lower	Bashkirian		311.7 ± 1.1
			Serpukhovian		318.1 ± 1.3	
	Mississippian	Upper	Serpukhovian		318.1 ± 1.3	
		Middle	Visean		326.4 ± 1.6	
		Lower	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
		Lower	Lochkovian		411.2 ± 2.8	
			Ludlow		416.0 ± 2.8	
			Ludfordian		416.0 ± 2.8	
			Gorstian		418.7 ± 2.7	
			Homerian		421.3 ± 2.6	
		Silurian	Wenlock	Sheinwoodian		422.9 ± 2.5
				Telychian		426.2 ± 2.4
			Llandovery	Aeronian		428.2 ± 2.3
	Rhuddanian				436.0 ± 1.9	
	Ordovician	Upper	Hirnantian		439.0 ± 1.8	
			Katian		443.7 ± 1.5	
			Sandbian		445.6 ± 1.5	
		Middle	Darriwilian		455.8 ± 1.6	
			Floian		460.9 ± 1.6	
			Tremadocian		468.1 ± 1.6	
	Cambrian	Lower	Stage 10		471.8 ± 1.6	
			Stage 9		478.6 ± 1.7	
			Stage 8		488.3 ± 1.7	
		Furongian	Stage 10		~ 492.0 *	
			Stage 9		~ 496.0 *	
			Paibian		501.0 ± 2.0	
	Guzhangian	Series 3	Drumian		~ 503.0 *	
Stage 5				~ 506.5 *		
Stage 4				~ 510.0 *		
Terreneuvian		Stage 3		~ 517.0 *		
		Stage 2		~ 521.0 *		
		Fortunian		~ 534.6 *		
			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	Stenian	1000	🔪
			Ectasian	1200	🔪
			Calymmian	1400	🔪
	Paleo-proterozoic	Statherian	1600	🔪	
			Orosirian	1800	🔪
			Rhyacian	2050	🔪
		Siderian	2300	🔪	
			2500	🔪	
	Archean	Neoarchean	2800	🔪	
			2800	🔪	
		Mesoarchean	3200	🔪	
3200			🔪		
Paleoarchean		3600	🔪		
		3600	🔪		
		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).

* The status of the Quaternary is not yet decided. Its base may be assigned as the base of the Gelasian and extend the base of the Pleistocene to 2.6 Ma.