



INTERNATIONAL STRATIGRAPHIC CHART

International Commission on Stratigraphy



Eonothem Eon	Erathem Era	System Period	Series Epoch	Stage Age	Age Ma	GSSP
Phanerozoic	Cenozoic	Quaternary	Holocene			↗
			Pleistocene	Upper	0.0117	↗
				"Ionian"	0.126	↗
				Calabrian	0.781	↗
			Pliocene	Gelasian	1.806	↗
				Piacenzian	2.588	↗
		Neogene	Miocene	Zanclean	3.600	↗
				Messinian	5.332	↗
			Oligocene	Tortonian	7.246	↗
				Serravallian	11.608	↗
				Langhian	13.82	↗
				Burdigalian	15.97	↗
				Aquitanian	20.43	↗
				Chattian	23.03	↗
	Rupelian			28.4 ± 0.1	↗	
	Priabonian			33.9 ± 0.1	↗	
	Paleogene	Eocene	Bartonian	37.2 ± 0.1	↗	
			Lutetian	40.4 ± 0.2	↗	
			Ypresian	48.6 ± 0.2	↗	
		Paleocene	Thanetian	55.8 ± 0.2	↗	
			Selandian	58.7 ± 0.2	↗	
			Danian	~ 61.1	↗	
	Mesozoic	Cretaceous	Upper	Maastrichtian	65.5 ± 0.3	↗
				Campanian	70.6 ± 0.6	↗
				Santonian	83.5 ± 0.7	↗
				Coniacian	85.8 ± 0.7	↗
				Turonian	~ 88.6	↗
			Lower	Cenomanian	93.6 ± 0.8	↗
				Albian	99.6 ± 0.9	↗
				Aptian	112.0 ± 1.0	↗
				Barremian	125.0 ± 1.0	↗
				Berriasian	130.0 ± 1.5	↗

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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	↗	
	Lower		Olenekian	~ 245.9	↗	
	Paleozoic	Permian	Induan	Induan	~ 249.5	↗
				Lopingian	251.0 ± 0.4	↗
			Guadalupian	Changhsingian	253.8 ± 0.7	↗
				Wuchiapingian	253.8 ± 0.7	↗
			Cisuralian	Capitanian	260.4 ± 0.7	↗
				Wordian	265.8 ± 0.7	↗
		Carboniferous	Pennsylvanian	Roadian	268.0 ± 0.7	↗
				Kungurian	270.6 ± 0.7	↗
			Mississippian	Artinskian	275.6 ± 0.7	↗
				Sakmarian	284.4 ± 0.7	↗
	Phanerozoic	Paleozoic	Silurian	Asselian	284.4 ± 0.7	↗
				Guzhangian	294.6 ± 0.8	↗
				Drumian	299.0 ± 0.8	↗
				Stage 5	~ 506.5	↗
				Stage 4	~ 510 *	↗
				Stage 3	~ 515 *	↗
			Devonian	Fortunian	~ 521 *	↗
Stage 2				~ 528 *	↗	
Ordovician			Terreneuvian	~ 528 *	↗	
			Fortunian	542.0 ± 1.0	↗	

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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	↗	
			Pridoli	416.0 ± 2.8	↗	
			Ludlow	418.7 ± 2.7	↗	
			Ludfordian	421.3 ± 2.6	↗	
			Gorstian	422.9 ± 2.5	↗	
		Silurian	Wenlock	Homerian	426.2 ± 2.4	↗
				Sheinwoodian	428.2 ± 2.3	↗
			Llandovery	Telychian	436.0 ± 1.9	↗
	Aeronian			439.0 ± 1.8	↗	
	Upper		Rhuddanian	443.7 ± 1.5	↗	
			Hirnantian	445.6 ± 1.5	↗	
	Cambrian	Middle	Katian	455.8 ± 1.6	↗	
			Sandbian	460.9 ± 1.6	↗	
			Darriwilian	468.1 ± 1.6	↗	
		Lower	Dapingian	471.8 ± 1.6	↗	
			Floian	478.6 ± 1.7	↗	
			Tremadocian	488.3 ± 1.7	↗	
	Phanerozoic	Paleozoic	Cambrian	Stage 10	~ 492 *	↗
				Stage 9	~ 496 *	↗
				Paibian	~ 499	↗
				Stage 8	~ 503	↗
				Stage 7	~ 506.5	↗
				Stage 6	~ 510 *	↗
			Furongian	Stage 5	~ 515 *	↗
				Stage 4	~ 521 *	↗
			Ordovician	Stage 3	~ 528 *	↗
				Stage 2	~ 528 *	↗

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Precambrian	Proterozoic	Eoarchean	Ediacaran	542	↗
			Neo-proterozoic	~ 635	↗
			Cryogenian	850	↗
		Meso-proterozoic	Tonian	1000	↗
			Stenian	1200	↗
			Ectasian	1400	↗
	Archean	Paleo-proterozoic	Calymmian	1600	↗
			Satherian	1800	↗
			Orosirian	2050	↗
			Rhyacian	2300	↗
			Siderian	2500	↗
	Hadean (informal)	Neoarchean	2800	↗	
		Mesoarchean	3200	↗	
		Paleoarchean	3600	↗	
Hadean (informal)	Eoarchean	4000	↗		
Hadean (informal)			~ 4600	↗	

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 Boundary Stratotype 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).

Numerical ages of the unit boundaries in the Phanerozoic are subject to revision. Some stages within the 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) and 'The Concise Geologic Time Scale' by J.G. Ogg, G. Ogg and F.M. Gradstein (2008).

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

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