

INTERNATIONAL CHRONOSTRATIGRAPHIC CHART

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International Commission on Stratigraphy

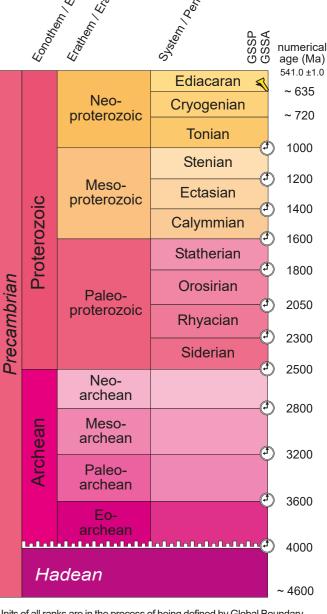
v **2020**/01



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4004	Erathe	System Fra	Series / Epoch	Stage / Age	GSSP	numerical age (Ma)
			Holocene M	Meghalayan Northgrippian	3	present 0.0042 0.0082
		Quaternary	Pleistocene	Greenlandian Upper		0.0117 0.129
				Chibanian	1	0.729
				Calabrian	3	1.80
				Gelasian	<	2.58
		Neogene	Pliocene	Piacenzian	1	3.600
				Zanclean	1	5.333
			Miocene	Messinian	1	7.246
				Tortonian	1	11.63
				Serravallian	1	13.82
	ပ			Langhian		15.97
	Cenozoic			Burdigalian		20.44
				Aquitanian	<	
	Ce		Oligocene	Chattian	<	23.03 27.82
		Paleogene		Rupelian	<	
			Eocene	Priabonian		33.9 37.8
				Bartonian		41.2
Phanerozoic				Lutetian	4	47.8
ero				Ypresian	4	
a				Thanetian	<	56.0 59.2
L L			Paleocene	Selandian	4	61.6
				Danian	<	
	Mesozoic	Cretaceous	Upper	Maastrichtian	4	66.0
				Campanian		72.1 ±0.2
				Santonian	<	83.6 ±0.2
				Coniacian		86.3 ±0.5
				Turonian	4	89.8 ±0.3
				Cenomanian	<	93.9 100.5
				Albian	4	~ 113.0
			Lower	Aptian		
				Barremian		~ 125.0
				Hauterivian	<	~ 129.4
				Valanginian		~ 132.6
				Berriasian		~ 139.8 ~ 145.0
						1-0.0

Series / Epoch Stage / Age Some age (March 145.0)	
Tithonian	
152.1 ±0	
Upper Kimmeridgian 157.3 ±	
Oxfordian	
Callovian 163.5 ± 166.1 ± 166.1 ± 166.1	
Middle Bathonian 168.3 ± 170.3 ±	
Middle Bathonian Bajocian Aalenian Toggian Toggian Toggian	
Toarcian	1.0
Pliensbachian	
Cin a manusia m	1.0
199.3 ±0	
Rhaetian 201.3 ±0	0.2
Hettangian 199.3 ±0 201.3 ±0 Rhaetian ~ 208.	5
Upper Norian	
Carnian ~ 237	
Anisian 247.2	
Lower Olenekian 251.2 Induan 251.902 +	
0 10 10 10 10 10 10 10	
Middle Anisian 247.2 251.22 251.902 ± Changhsingian Lopingian Wuchiapingian 259.1 ±0	
Capitanian	
Guadalupian Wordian 4 265.1 ±0	
Roadian < 272.95 ±	
Roadian 272.95 ± Kungurian 283.5 ±0	
Cisuralian Artinskian 290.1 ±0	
Sakmarian Sakmarian 293.52 ±	0.17
Asselian < 298.9 ±0	
Sakmarian 293.52 ± Asselian 298.9 ±0 Gzhelian Kasimovian Sakmarian 303.7 ±0 307.0 ±0	0.1
<u> </u>	
Middle Moscovian 315.2 ±0	0.2
Upper Gzhelian Kasimovian Middle Moscovian 303.7 ±0 307.0 ±0 30	0.4
Upper Serpukhovian 330.9 ±0	0.2
Middle Moscovian 315.2 ±0 Lower Bashkirian 323.2 ±0 330.9 ±0 Wisean Wisean 346.7 ±0	
Lower Tournaisian 358.9 ±0	

,	then / E	len Era	Series / Epoch		ب	
4	£/3/		Series / Epoch	Stage / Age	GSSP	numerical age (Ma) 358.9 ±0.4
	Paleozoic	Devonian	Upper	Famennian	<<	372.2 ±1.6
				Frasnian	<	
			Middle	Givetian	<	382.7 ±1.6 387.7 ±0.8
				Eifelian	<	393.3 ±1.2
			Lower	Emsian	<	407.6 ±2.6
				Pragian	<	410.8 ±2.8
				Lochkovian	<	419.2 ±3.2
			Pridoli	:	<	419.2 ±3.2 423.0 ±2.3
		_	Ludlow	Ludfordian Gorstian	\	425.6 ±0.9
		Silurian	Wenlock	Homerian	1	427.4 ±0.5 430.5 ±0.7
		Silu	VVCIIIOCK	Sheinwoodian	1	433.4 ±0.8
		0)	Llandovery	Telychian	1	438.5 ±1.1
<u>S</u> .				Aeronian Rhuddanian	<	440.8 ±1.2 443.8 ±1.5
OZC		Ordovician		Hirnantian	<	445.0 ±1.5 445.2 ±1.4
Phanerozoic			Upper	Katian	<	453.0 ±0.7
ha				Sandbian	<	458.4 ±0.9
ф.			Middle	Darriwilian	<	467.3 ±1.1
				Dapingian	<	470.0 ±1.4
			Lower	Floian	<	477.7 ±1.4
				Tremadocian	<	485.4 ±1.9
		Cambrian	Furongian	Stage 10		~ 489.5
				Jiangshanian	<	~ 494
				Paibian	\leq	~ 497
			Miaolingian	Guzhangian	\triangleleft	~ 500.5
					<	~ 504.5
				Wuliuan	<	~ 509
			Series 2	Stage 4		~ 514
				Stage 3		~ 521
			Terreneuvian	Stage 2		
				Fortunian	<<	~ 529
						541.0 ±1.0



Units of all ranks are in the process of being defined by Global Boundary Stratotype Section and Points (GSSP) for their lower boundaries, including those of the Archean and Proterozoic, long defined by Global Standard Stratigraphic Ages (GSSA). Italic fonts indicate informal units and placeholders for unnamed units. Versioned charts and detailed information on ratified GSSPs are available at the website http://www.stratigraphy.org. The URL to this chart is found below.

Numerical ages are subject to revision and do not define units in the Phanerozoic and the Ediacaran; only GSSPs do. For boundaries in the Phanerozoic without ratified GSSPs or without constrained numerical ages, an approximate numerical age (~) is provided.

Ratified Subseries/Subepochs are abbreviated as U/L (Upper/Late), M (Middle) and L/E (Lower/Early). Numerical ages for all systems except Quaternary, upper Paleogene, Cretaceous, Triassic, Permian and Precambrian are taken from 'A Geologic Time Scale 2012' by Gradstein et al. (2012), those for the Quaternary, upper Paleogene, Cretaceous, Triassic, Permian and Precambrian were provided by the relevant ICS subcommissions.

Colouring follows the Commission for the Geological Map of the World (www.ccgm.org)

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Chart drafted by K.M. Cohen, D.A.T. Harper, P.L. Gibbard, J.-X. Fan (c) International Commission on Stratigraphy, January 2020

To cite: Cohen, K.M., Finney, S.C., Gibbard, P.L. & Fan, J.-X. (2013; updated) The ICS International Chronostratigraphic Chart. Episodes 36: 199-204.

URL: http://www.stratigraphy.org/ICSchart/ChronostratChart2020-01.pdf