

INTERNATIONAL CHRONOSTRATIGRAPHIC CHART

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International Commission on Stratigraphy

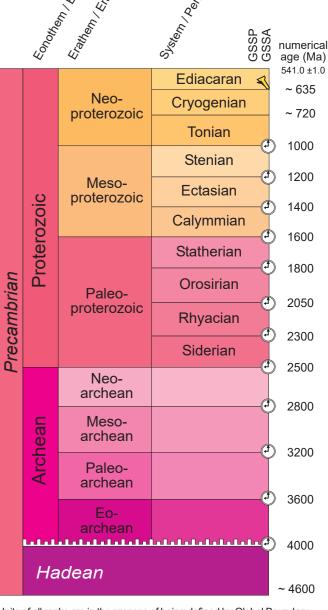
v **2021**/10



	in A	TA TA	4 is			
\$ 60°	Erath Company	System Era	Series / Epoch	Stage / Age	GSSP	numerical age (Ma)
			Holocene M	Meghalayan Northgrippian	3	present 0.0042 0.0082
		Quaternary	U/L	Greenlandian Upper	36	0.0117
			Pleistocene	Chibanian	<	0.129
				Calabrian	<	0.774 1.80
				Gelasian	<	2.58
		Neogene	Pliocene L/E	Piacenzian	3	3.600
				Zanclean	4	5.333
				Messinian	1	7.246
			Miocene M L/E	Tortonian	4	11.63
				Serravallian	<	13.82
	oic			Langhian		15.97
	Cenozoic			Burdigalian		
	en			Aquitanian	<	20.44
	O		Oligocene	Chattian	<	23.03
		Paleogene		Rupelian	4	27.82 33.9
			Eocene	Priabonian	4	
				Bartonian		37.71
Zoic				Lutetian	<<	41.2
Phanerozoic				Ypresian	4	47.8
a			Paleocene	Thanetian	3	56.0 59.2
문				Selandian	4	61.6
				Danian	4	66.0
			Upper	Maastrichtian	4	72.1 ±0.2
				Campanian		83.6 ±0.2
				Santonian	1	86.3 ±0.5
	Mesozoic	Cretaceous		Coniacian	1	89.8 ±0.3
				Turonian	<	93.9
				Cenomanian	4	100.5
				Albian	4	~ 113.0
			Lower	Aptian		~ 125.0
				Barremian		
				Hauterivian	<	~ 129.4
				Valanginian		~ 132.6
				Berriasian		~ 139.8 ~ 145.0

	4/4		200	000		
£000	Elatt	System From	Se	ries / Epoch	Stage / Age	O numerical O age (Ma)
					Tithonian	~ 145.0
		Jurassic	Upper		Kimmeridgian	152.1 ±0.9 157.3 ±1.0
					Oxfordian	
				Middle	Callovian	163.5 ±1.0 166.1 ±1.2
					Bathonian Bajocian	168.3 ±1.3 170.3 ±1.4
					Aalenian	174.1 ±1.0
					Toarcian	<u> </u>
				Lower	Pliensbachian	182.7 ±0.7
	Mesozoic					190.8 ±1.0
					Sinemurian	199.3 ±0.3
					Hettangian Rhaetian	201.3 ±0.2
	M				Riideliaii	~ 208.5
				Upper	Norian	
		sic		орро.		~ 227
		Friassic			Carnian	~ 237
O		Ë		NA: al all a	Ladinian	~ 242
ZOi				Middle	Anisian	247.2
0				Lower	Olenekian	251.2
ane					Induan Changhsingian	251.902 ±0.024 254.14 ±0.07
Phanerozoic	C		L	opingian	Wuchiapingian	259.51 ±0.21
т.		Permian			Capitanian	264.28 ±0.16
			Gu	adalupian	Wordian	266.9 ±0.4
					Roadian	273.01 ±0.14
					Kungurian	
				la malian	Artinskian	283.5 ±0.6
			Cisuralian		Sakmarian	290.1 ±0.26
	Zoi				Asselian	293.52 ±0.17
	60		an	Llonar	Gzhelian	298.9 ±0.15
	Paleozoic	Carboniferous	ani	Upper	Kasimovian	303.7 ±0.1 307.0 ±0.1
			Isylv	Middle	Moscovian	315.2 ±0.2
			Pennsylvanian	Lower	Bashkirian	
				Upper	Serpukhovian	323.2 ±0.4
			piar	Opper	Gerpukrioviari	330.9 ±0.2
			Mississippian	Middle	Visean	
			issi			346.7 ±0.4
			Σ	Lower	Tournaisian	358.9 ±0.4
						- 330.8 IU.4

	othen/E	Ster Fra	Series / Epoch		GSSP	numerical
4	4	જે	Series / Epoch	Stage / Age	8	age (Ma) 358.9 ±0.4
		Devonian	Upper	Famennian	4	372.2 ±1.6
				Frasnian	<	
			Middle	Givetian	4	382.7 ±1.6
				Eifelian	<	387.7 ±0.8
			Lower	Emsian	\ \{\	393.3 ±1.2
				Pragian	<	407.6 ±2.6 410.8 ±2.8
				Lochkovian	4	440.0 : 0.0
			Pridoli		<	419.2 ±3.2 423.0 ±2.3
		_	Ludlow	Ludfordian Gorstian	4	425.0 ±2.3 425.6 ±0.9
	Paleozoic	Silurian	Monlook	Homerian	3	427.4 ±0.5 430.5 ±0.7
			Wenlock	Sheinwoodian	1	430.5 ±0.7 433.4 ±0.8
			Llandovery	Telychian	<	438.5 ±1.1
ပ				Aeronian	<u> </u>	440.8 ±1.2
Z0 i				Rhuddanian Hirnantian	3	443.8 ±1.5
Phanerozoic		Ordovician	Upper	Katian	<	445.2 ±1.4 453.0 ±0.7
ha				Sandbian	<	458.4 ±0.9
<u>а</u>			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
			i dioligiali	Jiangshanian	1	~ 494
			Miaolingian	Paibian Guzhangian	1	~ 497
				Drumian	3	~ 500.5
				Wuliuan	1	~ 504.5
					~	~ 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)



Chart drafted by K.M. Cohen, D.A.T. Harper, P.L. Gibbard, N. Car (c) International Commission on Stratigraphy, October 2021

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URL: http://www.stratigraphy.org/ICSchart/ChronostratChart2021-10.pdf