

INTERNATIONAL CHRONOSTRATIGRAPHIC CHART

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International Commission on Stratigraphy

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v **2022**/02



	m/A	0, 11				
£002	A Tela	System Fra	Series / Epoch	Stage / Age	GSSP	numerical age (Ma)
		_	Holocene M_L/E	Meghalayan Northgrippian Greenlandian	The state of the s	present 0.0042 0.0082 0.0117
		ərn	Pleistocene Calabrian Chibanian Calabrian Calabrian Calasian		<u> </u>	0.129
		Quaternary			7	0.774
				~	1.80	
			W Piacenzian	1	2.58	
		4)	Pliocene	Zanclean	<	3.600
				Messinian	4	5.333
		Neogene	Miocene M	Tortonian	4	7.246 11.63
		go		Serravallian	4	13.82
	oic	Se		Langhian		15.62
	Cenozoic	_		Burdigalian		
			L/E	Aquitanian	<	20.44
	Ö			Chattian	<u> </u>	23.03
			Oligocene	Rupelian	4	27.82
		Paleogene		Priabonian	~	33.9
			Eocene	Bartonian		37.71
Phanerozoic				Lutetian	4	41.2
eroz				Ypresian	<u> </u>	47.8
a				Thanetian	56.0 59.2	
5			Paleocene	Selandian	4	
				Danian	<	61.6
				Maastrichtian	$\overline{}$	66.0
				Campanian		72.1 ±0.2
			Upper	Santonian	<	83.6 ±0.2
		Cretaceous		Coniacian	<	86.3 ±0.5 89.8 ±0.3
				Turonian	4	93.9
	Zoic			Cenomanian	1	100.5
	Mesozoic			Albian	<	~ 113.0
			Lower	Aptian		
				Barremian		~ 121.4
				Hauterivian	<	~ 129.4
				Valanginian		~ 132.6
				Berriasian		~ 139.8 ~ 145.0

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Fonos	Erath Office	System Fra	Se	ries / Epoch	Stage / Age	GSSP	numerical age (Ma)
					Tithonian		~ 145.0
				Upper	Kimmeridgian	<u> </u>	152.1 ±0.9
					Oxfordian		157.3 ±1.0
		O			Callovian		163.5 ±1.0 166.1 ±1.2
		Jurassic		Middle	Bathonian Bajocian	3	168.3 ±1.3 170.3 ±1.4
					Aalenian	<	170.3 ±1.4 174.1 ±1.0
		7			Toarcian	~	174.1 11.0
					Dlienshachian		182.7 ±0.7
	O			Lower	ower Pliensbachian	1	190.8 ±1.0
	Mesozoic				Sinemurian	1	199.3 ±0.3
	SO.				Hettangian	-	201.3 ±0.2
	Me				Rhaetian		~ 208.5
		Triassic	Upper	Upper	Norian		
					Carnian	<	~ 227 ~ 237
O		Н		Middle Ladinian	<	~ 242	
Zoi			Iviluale		Anisian		247.2
SFO				Lower	Olenekian Induan	<u> </u>	251.2 251.902 ±0.024
ane		Permian		ningian	Changhsingian	1	254.14 ±0.07
Phanerozoic			L	opingian	Wuchiapingian		259.51 ±0.21
			Guadalupian		Capitanian	<	264.28 ±0.16
						1	266.9 ±0.4
				Roa	Roadian	<	273.01 ±0.14
		er			Kungurian		283.5 ±0.6
		ш	С	isuralian	Artinskian	<	290.1 ±0.26
	oic				Sakmarian	<	293.52 ±0.17
	OZ				Asselian	<	298.9 ±0.15
	Paleozoic		niar	Upper	Gzhelian		303.7 ±0.1
		Carboniferous	Ilva	Middle	Kasimovian Moscovian		307.0 ±0.1
			Pennsylvanian	wildule	IVIUSCOVIAII		315.2 ±0.2
				Lower	Bashkirian	1	323.2 ±0.4
		oni	an	Upper	Serpukhovian		330.9 ±0.2
		Carb	Mississippian	Middle	Visean	<	346.7 ±0.4
			Miss	Lower	Tournaisian	4	358.9 ±0.4

0,00	Tath on LE	System Fra	Series / Epoch	Stage / Age	GSSP	numerical
	*	9)	Cenes / Epodi	Famennian	0	age (Ma) 358.9 ±0.4
		Devonian	Upper		<	372.2 ±1.6
				Frasnian	<	382.7 ±1.6
			Middle	Givetian Eifelian	1	387.7 ±0.8
				Emsian	<u> </u>	393.3 ±1.2
			Lower	Pragian	X	407.6 ±2.6 410.8 ±2.8
				Lochkovian	<	410.6 ±2.6 419.2 ±3.2
			Pridoli		<	419.2 ±3.2 423.0 ±2.3
		_	Ludlow	Ludfordian	1	425.0 ±2.3 425.6 ±0.9
		Silurian		Gorstian Homerian	₹ 3	427.4 ±0.5
		lur	Wenlock	Sheinwoodian	3	430.5 ±0.7 433.4 ±0.8
		Si	Llandovery _	Telychian	<	
				Aeronian	3	438.5 ±1.1 440.8 ±1.2
Si	Paleozoic			Rhuddanian	1	443.8 ±1.5
Z0.		Ordovician		Hirnantian	1	445.2 ±1.4
ıner			Upper Katian	<	453.0 ±0.7	
Phanerozoic				Sandbian	<	458.4 ±0.9
			Middle	Darriwilian	<	467.3 ±1.1
				Dapingian	1	470.0 ±1.4
			Lower Floian	<	477.7 ±1.4	
				Tremadocian	<	485.4 ±1.9
		Cambrian	-	Stage 10		~ 489.5
			Furongian	Jiangshanian Paibian	1	~ 494
				Guzhangian	1	~ 497
				Drumian	1	~ 500.5
			Miaolingian	Wuliuan	1	~ 504.5
					1	~ 509
			Series 2	Stage 4		~ 514
				Stage 3 Stage 2		~ 521
			Terreneuvian	Fortunian		~ 529
					<	538.8 ±0.2

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	400	Te La	Š	GSSP	numerica age (Ma 538.8 ±0.		
			Ediacaran	<	~ 635		
		Neo- proterozoic	Cryogeniar	า	~ 720		
			Tonian		1000		
			Stenian		1200		
	<u>.</u>	Meso- proterozoic	Ectasian		1400		
	Proterozoic		Calymmiar	1	1600		
	oter	Paleo- proterozoic	Statherian		1800		
rian	٩		Orosirian				
amb			Rhyacian		2050		
Precambrian			Siderian		2300		
	ı	Neo- archean		_	2500		
		Meso-archean Paleo-archean Eo-		-	2800		
	ar						
	che			—	3200		
	Ā						
				-	3600		
	Lalak	archean			4000		
					+000		
	Hé	ndean			~ 4600		
Units of all ranks are in the process of being defined by Global Boundary							

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, Cambrian and Precambrian are taken from 'A Geologic Time Scale 2012' by Gradstein et al. (2012), those for the Quaternary, upper Paleogene, Cretaceous, Triassic, Permian, Cambrian 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, February 2022

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URL: http://www.stratigraphy.org/ICSchart/ChronostratChart2022-02.pdf