

INTERNATIONAL CHRONOSTRATIGRAPHIC CHART

www.stratigraphy.org

International Commission on Stratigraphy

v **2023**/04



	7/4/	TA TA	, <u>E</u>			
\$00°	A CTA	System Era	Series / Epoch	Stage / Age	GSSP	numerical age (Ma)
			Holocene M	Meghalayan Northgrippian	*	present 0.0042
		าลเ	L/E	Greenlandian Upper	~	0.0082 0.0117
		err	Pleistocene	Chibanian	<	0.129
		Quaternary		Calabrian	~	0.774
				Gelasian	5	1.80
			U/L	Piacenzian	3	2.58
			Pliocene L/E	Zanclean	<	3.600
		a)		Messinian	<	5.333
) Jue	Miocene M	Tortonian		7.246
		ge			1	11.63
	<u>ပ</u>	Neogene		Serravallian	1	13.82
	ZO	_	_	Langhian		15.97
	Cenozoic		L/E	Burdigalian		20.44
	Ce			Aquitanian	3	23.03
				Chattian	<	27.82
			Oligocene	Rupelian	<	
		4.		Priabonian	7	33.9
		ne	Eocene	Bartonian		37.71
<u>.</u>		Paleogene				41.2
20				Lutetian	<	47.8
Phanerozoic				Ypresian	<	56.0
व्				Thanetian	<	59.2
				Selandian	<	61.6
				Danian	<	
			_	Maastrichtian	1	66.0 72.1 ±0.2
				Campanian	<	
				Santonian	<	83.6 ±0.2 86.3 ±0.5
			Эрры	Coniacian	<u> </u>	
		W		Turonian	<u> </u>	89.8 ±0.3
	ojc	no		Cenomanian		93.9
)ZC	Cretaceous	ğ	Ochomanian	1	100.5
	Mesozoic			Albian	<	~ 113.0
			Lower	Aptian		
				Barremian	4	~ 121.4
				Hauterivian	<u> </u>	125.77
				Valanginian		~ 132.6
				Berriasian		~ 139.8
				Demasian		~ 145.0

	4/4	6 LE 13	, QO	8			
£000	Erat,	System Era	Se	ries / Epoch	Stage / Age	GSSP	numerical age (Ma)
					Tithonian		~ 145.0
				Upper	Kimmeridgian	4	149.2 ±0.7
			Оррог		Oxfordian		154.8 ±0.8
					Callovian		161.5 ±1.0
		Sic	Middle		Bathonian	5	165.3 ±1.1 168.2 ±1.2
		as		ivildule	Bajocian		170.9 ±0.8
		Jurassic			Aalenian - ·	31	174.7 ±0.8
			Lo		Toarcian	<	184.2 ±0.3
	O			Lower	Pliensbachian	<	192.9 ±0.3
	oj.				Sinemurian	<	100 5 . 0 0
	202				Hettangian	<	199.5 ±0.3 201.4 ±0.2
	Mesozoic				Rhaetian		
	M	Triassic	Upper		Norian		~ 208.5
					Carnian	<	~ 227 ~ 237
O		F		Ladinian	<		
Phanerozoic			Middle		Anisian		~ 242
roz			1.4	Lower	Olenekian		247.2 251.2
ne				LOWOI	Induan Changhsingian	3	251.902 ±0.024
ha		Permian	Lopingian		Wuchiapingian		254.14 ±0.07
Ф			Guadalupian		Capitanian	<u> </u>	259.51 ±0.21
					Wordian	<u> </u>	264.28 ±0.16
					Roadian	<	266.9 ±0.4
					Kungurian		273.01 ±0.14
		Δ.		Cisuralian	Artinskian	1	283.5 ±0.6
	ပ				Sakmarian	~	290.1 ±0.26
	Paleozoic				Asselian	~	293.52 ±0.17
	e0		an L		Gzhelian		298.9 ±0.15
	Pal		anie	Upper	Kasimovian		303.7 ±0.1 307.0 ±0.1
	ш.	Carboniferous	sylva	Middle	Moscovian		
			Pennsylvanian	Lower	Bashkirian	<	315.2 ±0.2 323.2 ±0.4
				Upper	Serpukhovian		
		Carbo	Wississippian	Middle	Visean	<	330.9 ±0.2
			Miss	Lower	Tournaisian	4	346.7 ±0.4 358.9 ±0.4

	hem/E	'm' (50)	Series / Epoch			
\$00°	\$ \frac{1}{2}		Series / Epoch	Stage / Age	GSSP	numerical age (Ma) 358.9 ±0.4
		Devonian	Upper	Famennian	<	
				Frasnian	4	372.2 ±1.6 382.7 ±1.6
			Middle	Givetian s	<	387.7 ±0.8
			Middle	Eifelian	<	393.3 ±1.2
				Emsian	<	407.6 ±2.6
			Lower	Pragian	1	410.8 ±2.8
				Lochkovian	<	419.2 ±3.2
			Pridoli		5	423.0 ±2.3
		⊑	Ludlow	Ludfordian Gorstian	1	425.6 ±0.9
		Silurian	Wenlock	Homerian Sheinwoodian	N	427.4 ±0.5 430.5 ±0.7
	Paleozoic	dovician	Telychian	7	433.4 ±0.8	
			Llandovery	Aeronian	3	438.5 ±1.1 440.8 ±1.2
ZOiC				Rhuddanian Hirnantian	S	443.8 ±1.5
Phanerozoic			Upper	Katian	4	445.2 ±1.4 453.0 ±0.7
ha				Sandbian	<	458.4 ±0.9
			Middle	Darriwilian	4	467.3 ±1.1
		Ö		Dapingian Floian		470.0 ±1.4
			Lower		1	477.7 ±1.4
				Tremadocian	<	485.4 ±1.9
		Cambrian	Furongian	Stage 10		~ 489.5
			i urongian	Jiangshanian Paibian	1	~ 494
				Guzhangian	<	~ 497
			Miaolingian	Drumian		~ 500.5
				Wuliuan	<<	~ 504.5
				Stage 4		~ 509
			Series 2	Stage 3		~ 514
				Stage 2		~ 521
			Terreneuvian	Fortunian	1	~ 529
					1	538.8 ±0.2

	9476	Eathen/Ea	Selen, Pari	. ∢			
	\$ CONTRACTOR	Te Ja	SSS SSS	GSSA	numeric age (Ma 538.8 ±0		
			Ediacaran	<	~ 635		
		Neo- proterozoic	Cryogenian		~ 720		
		protorozoro	Tonian		1000		
		Meso- proterozoic	Stenian		1200		
	<u>.0</u>		Ectasian				
	Proterozoic		Calymmian		1400 1600		
	oter		Statherian				
ian	Pro	Paleo-	Orosirian		1800		
mbr		proterozoic	Rhyacian	D	2050		
Precambrian			Siderian		2300		
		Neo-			2500		
		archean			2800		
	ean	Meso- archean					
	Archear	Paleo-			3200		
	<	archean Eo- archean			3600		
					3000		
		aronoan		2	4000		
	На	dean					
		lalalalalala	Lelalalalalalal		4567		
Units of all ranks are in the process of being defined by Global Boundary Stratotype Section and Points (GSSP) for their lower boundaries, including							

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, Jurassic, 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, Jurassic, 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, April 2023

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/ChronostratChart2023-04.pdf