

INTERNATIONAL CHRONOSTRATIGRAPHIC CHART

www.stratigraphy.org

International Commission on Stratigraphy

v **2020**/03



	7/4	(LE	, No.			
\$00°	A TELY	System Fra	Series / Epoch	Stage / Age	GSSP	numerical age (Ma)
		_	Holocene M	Meghalayan Northgrippian	1	present 0.0042
		Jar	L/E	Greenlandian Upper	~	0.0082 0.0117
		Quaternary	Pleistocene	Chibanian	<	0.129
				Calabrian	<	0.774
				Gelasian	<	1.80 2.58
			Pliocene	Piacenzian	<	3.600
				Zanclean	1	5.333
		Φ		Messinian	1	7.246
		Neogene		Tortonian	<	11.63
		60	Miocene	Serravallian	1	13.82
	<u>ပ</u>	Ž	Wildowild	Langhian		15.97
	Z0			Burdigalian		20.44
	no			Aquitanian	<	
	Cenozoic		Oligocene	Chattian	<	23.03 27.82
				Rupelian	4	
		Paleogene	Eocene	Priabonian	<	33.9 37.71
				Bartonian		41.2
Phanerozoic				Lutetian	<	47.8
ero				Ypresian	<	56.0
<u>a</u>			Paleocene	Thanetian	1	59.2
				Selandian	<	61.6
				Danian	<	66.0
	Mesozoic		Upper	Maastrichtian	<	72.1 ±0.2
				Campanian		
				Santonian	<	83.6 ±0.2
		Cretaceous		Coniacian		86.3 ±0.5
				Turonian	\$	89.8 ±0.3
				Cenomanian	4	93.9
				Albian	<	100.5
			Lower	Aptian		~ 113.0
				Barremian		~ 125.0
				Hauterivian	1	~ 129.4
				Valanginian	~	~ 132.6
						~ 139.8
				Berriasian		~ 145.0

	4/4		ν. Ο	0		
\$00°	Erathen	System From	Se	ries / Epoch	Stage / Age	numerical og (Ma)
					Tithonian	~ 145.0
			Upper		Kimmeridgian	152.1 ±0.9
					Oxfordian	157.3 ±1.0
		Jurassic		Middle	Callovian	163.5 ±1.0 166.1 ±1.2
					Bathonian Bajocian	168.3 ±1.3 170.3 ±1.4
		Ira			Aalenian	170.3 ±1.4 174.1 ±1.0
		٦			Toarcian	<u> </u>
					Pliensbachian	182.7 ±0.7
	oic			Lower		190.8 ±1.0
					Sinemurian	199.3 ±0.3
)ZC				Hettangian	201.3 ±0.2
	Mesozoic				Rhaetian	~ 208.5
	Me	Triassic		Upper	Norian	
					Carnian	~ 227
O		F		Middle	Ladinian	~ 242
ZOi			Middle		Anisian	247.2
0				Lower	Olenekian Induan	251.2
ane		Permian			Changhsingian	251.902 ±0.024 254.14 ±0.07
Phanerozoic			L	opingian	Wuchiapingian	
_			Guadalupian		Capitanian	265.1 ±0.4
					Wordian	268.8 ±0.5
					Roadian	272.95 ±0.11
	coic				Kungurian	
					Artinskian	283.5 ±0.6
			Cisuralian			290.1 ±0.26
					Sakmarian	293.52 ±0.17
	302				Asselian Gzhelian	298.9 ±0.15
	Paleozoic		Pennsylvanian	Upper	Kasimovian	303.7 ±0.1 307.0 ±0.1
		Carboniferous		Middle	Moscovian	
				Lower	Bashkirian	315.2 ±0.2
			ď			323.2 ±0.4
			jan	Upper	Serpukhovian	330.9 ±0.2
		Cark	Mississippian	Middle	Visean	346.7 ±0.4
			Mis	Lower	Tournaisian	358.9 ±0.4

	em/E	7/ (5/3)	Series / Epoch			
\$	Erat.	196.	Series / Epoch	Stage / Age	GSSP	numerical age (Ma) 358.9 ±0.4
		Devonian	Upper	Famennian	~	272.2 . 4.6
				Frasnian	<	372.2 ±1.6 382.7 ±1.6
			Middle	Givetian	<	387.7 ±0.8
				Eifelian	<	393.3 ±1.2
				Emsian	4	407.6 ±2.6
			Lower	Pragian	<	410.8 ±2.8
	Paleozoic			Lochkovian	<	419.2 ±3.2
			Pridoli	l codforali co	S	423.0 ±2.3
		⊑	Ludlow	Ludfordian Gorstian	1	425.6 ±0.9 427.4 ±0.5
		Ordovician Silurian	Wenlock	Homerian Sheinwoodian	3	430.5 ±0.7
			Llandovery	Telychian	7	433.4 ±0.8
				Aeronian	3	438.5 ±1.1 440.8 ±1.2
ZOiC				Rhuddanian Hirnantian	<u> </u>	443.8 ±1.5
Phanerozoic			Upper	Katian	1	445.2 ±1.4 453.0 ±0.7
ha				Sandbian	<	458.4 ±0.9
ш			Middle	Darriwilian	~	467.3 ±1.1
			Lower	Dapingian	7	470.0 ±1.4
				Floian Tremadocian	<u> </u>	477.7 ±1.4
		Cambrian	Furongian	Stage 10		485.4 ±1.9
				Jiangshanian	<u> </u>	~ 489.5
				Paibian	3	~ 494 ~ 497
			Miaolingian	Guzhangian	1	~ 500.5
				Drumian	<	~ 504.5
				Wuliuan	<	~ 509
			Series 2	Stage 4		~ 514
				Stage 3		~ 521
			Terreneuvian	Stage 2 Fortunian		~ 529
				Tortunian	<	541.0 ±1.0

		74 F. S.	Q			
	£0000	Elamon / Ela	Solom Paris	O O age (Ma)		
			Ediacaran	541.0 ±1.0 ~ 635		
		Neo- proterozoic	Cryogeniar			
			Tonian			
		Meso- proterozoic	Stenian	1000		
			Ectasian	1200		
	Proterozoic			1400		
			Calymmian	1 1600		
	ote	Paleo- proterozoic	Statherian	1800		
Precambrian	Pr		Orosirian			
			Rhyacian	2050		
			Siderian	2300		
	Archean	Neo-	Oldonan	2500		
		archean				
		Meso-		2800		
		archean		3200		
		Paleo- archean		3200		
				3600		
		Eo- archean				
		4000				
	Ha	dean				
				~ 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 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)

CGMW

CCGM

Chart drafted by K.M. Cohen, D.A.T. Harper, P.L. Gibbard, J.-X. Fan (c) International Commission on Stratigraphy, March 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/ChronostratChart2020-03.pdf