

INTERNATIONAL CHRONOSTRATIGRAPHIC CHART www.stratigraphv.org International Commission on Stratigraphy v 2017/02



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\$00°	Erath College	(9) (8) (8) (8) (8) (8) (8) (8) (8) (8) (8	Series / Epoch	Stage / Age	GSSP	numerical age (Ma)
		>	Holocene		<	present
		Jai	Pleistocene	Upper		0.0117
		Quaternary		Middle		0.126
				Calabrian	<	0.781
				Gelasian	_	1.80
				Piacenzian	X X	2.58
			Pliocene	Zanclean		3.600
				Messinian	1	5.333
		Je			1	7.246
		Neogene		Tortonian	1	11.63
		õ	N 4:	Serravallian	1	13.82
	<u>ပ</u>	Š	Miocene	Langhian		15.97
	Cenozoic			Burdigalian		15.97
	0				_	20.44
	je j			Aquitanian	1	23.03
	0			Chattian	<	27.82
		Paleogene	Oligocene	Rupelian	<	33.9
				Priabonian		27.0
				Bartonian		37.8 41.2
Phanerozoic			Paleocene	Lutetian	<	47.8
Jero				Ypresian	<	56.0
<u>a</u>				Thanetian	4	59.2
百				Selandian	1	61.6
				Danian	<	
	Mesozoic	Cretaceous		Maastrichtian		66.0 72.1 ±0.2
			Upper	Campanian		83.6 ±0.2
				Santonian	<	86.3 ±0.5
				Coniacian		
				Turonian	<	89.8 ±0.3 93.9
				Cenomanian	<	100.5
				Albian	<	~ 113.0
			Lower	Aptian		~ 125.0
				Barremian		120.0
				Hauterivian		~ 129.4
						~ 132.9
				Valanginian		~ 139.8
				Berriasian		~ 145.0

	Series / Epoch Stage / Age On numerical age (Ma)						
¢onos.	Erath Cher	System	Se	ries / Epoch	Stage / Age	GSSP	numerical age (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	3	168.3 ±1.3	
					Aalenian	<	170.3 ±1.4 174.1 ±1.0
		7			Toarcian	<	
	Mesozoic			Lower	Pliensbachian		182.7 ±0.7 190.8 ±1.0
	302				Sinemurian	4	130.0 ±1.0
	les				Hettangian	3	199.3 ±0.3 201.3 ±0.2
	_				Rhaetian		
		Friassic	Upper		Norian		~ 208.5
					Carnian	<	~ 227 ~ 237
ပ		F		Middle	Ladinian	<	~ 242
Phanerozoic			ivildale		Anisian		247.2
016				Lower	Olenekian Induan	<u> </u>	251.2 251.902 ±0.024
ane	oic	Permian	L	oningian	Changhsingiar		254.14 ±0.07
Ph			L'	opingian	Wuchiapingian	1<	259.1 ±0.5
			Guadalupian		Capitanian	<	265.1 ±0.4
					Wordian	1	268.8 ±0.5
					Roadian	1	272.95 ±0.11
		₂ er			Kungurian		283.5 ±0.6
				isuralian	Artinskian		290.1 ±0.26
					Sakmarian		295.0 ±0.18
	ZO				Asselian	<	298.9 ±0.15
	Paleozoic		niar	Upper	Gzhelian Kasimovian		303.7 ±0.1
		Carboniferous	Pennsylvanian	Middle	Moscovian		307.0 ±0.1
							315.2 ±0.2
				Lower	Bashkirian	<	323.2 ±0.4
		noc	ian	Upper	Serpukhovian		330.9 ±0.2
		Carb	Mississippian	Middle Middle	Visean	<	346.7 ±0.4
			Miss	Lower	Tournaisian	<	358.9 ±0.4

	othen/E	ster Fra	Series / Epoch		GSSP	numerical		
49	450	એ	Series / Epoch	Stage / Age	99	age (Ma) 358.9 ± 0.4		
		Devonian	Upper	Famennian	4	372.2 ±1.6		
				Frasnian	<	382.7 ±1.6		
			Middle	Givetian	<			
				Eifelian	<	387.7 ±0.8		
				Emsian	4	393.3 ±1.2 407.6 ±2.6		
			Lower	Pragian	<	407.6 ±2.6 410.8 ±2.8		
				Lochkovian	<	440.0 : 0.5		
			Pridoli		<u> </u>	419.2 ±3.2		
			Ludlow	Ludfordian	3	423.0 ±2.3 425.6 ±0.9		
		띪	Ludiow	Gorstian	1	427.4 ±0.5		
		Ξi	Wenlock	Homerian	3	430.5 ±0.7		
		Silurian	Llandovery	Sheinwoodian		433.4 ±0.8		
				Telychian	S	438.5 ±1.1		
ပ				Aeronian	<u> </u>	440.8 ±1.2		
Phanerozoic	<u>Ö</u>			Rhuddanian	~	443.8 ±1.5		
	Paleozoic	Ordovician	Upper	Hirnantian		445.2 ±1.4		
				Katian	<	453.0 ±0.7		
				Sandbian	<	458.4 ±0.9		
щ				Darriwilian	<			
				Dapingian	<	467.3 ±1.1 470.0 ±1.4		
			Lauran	Floian	<u> </u>			
				Lower	Tremadocian	<u> </u>	477.7 ±1.4	
		Cambrian			Stage 10		485.4 ±1.9	
			Furongian	Jiangshanian	<	~ 489.5		
				Paibian	3	~ 494 ~ 497		
			Series 3	Guzhangian	1			
				Drumian	<	~ 500.5		
				Stage 5		~ 504.5		
			Series 2	Stage 4		~ 509		
				Stage 3		~ 514		
			Terreneuvian	Stage 2		~ 521		
						~ 529		
				Fortunian	<	541.0 ±1.0		

		them Eon	Erathem / Era	System / Period &	0 ()			
				Ediacaran 🔇	541.0 ±1.0			
		Proterozoic	Neo- proterozoic	Cryogenian	~ 635			
				Cryogernan	~ 720			
				Tonian	1000			
			Meso- proterozoic	Stenian				
				Ectasian	1200			
			,	Calymmian	1400			
		erc		Statherian	1600			
	_	g		Otatrieriari (*)	1800			
	Precambrian	Ы	Paleo- proterozoic	Orosirian				
	nbr			Rhyacian	2050			
	ğ			- Inyaoian	2300			
	ē			Siderian				
	Ф				Neo-		2500	
				archean		0000		
		⊏	Meso-	Y	2800			
		Archean	archean					
		.ch	Paleo-		3200			
		Ā	archean					
				 _	3600			
			Eo- archean					
			archican	<u> </u>	4000			
	Hadean ~ 4600							
U	Units of all ranks are in the process of being defined by Global							

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). 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.

Numerical ages for all systems except Lower Pleistocene, Upper Paleogene, Cretaceous, Triassic, Permian and Precambrian are taken from 'A Geologic Time Scale 2012' by Gradstein et al. (2012); those for the Lower Pleistocene, Upper Paleogene, Cretaceous, Triassic, Permian and Precambrian were provided by the relevant ICS subcommissions.

> CCCM CGMW

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

Chart drafted by K.M. Cohen, D.A.T. Harper, P.L. Gibbard (c) International Commission on Stratigraphy, February 2017

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.