

INTERNATIONAL CHRONOSTRATIGRAPHIC CHART International Commission on Stratigraphy v 2018/07



	3/4	System Fra	Poriod				
\$000 E	Eray,	19/5/S	Series / Epoch	Stage / Age	GSSP	numerical age (Ma)	
		ary	Holocene U/L M L/E	Meghalayan Northgrippian Greenlandian	*	present 0.0042 0.0082	
		Ľ		Upper		0.0117 0.126	
		Quaternal	Pleistocene	Middle Calabrian	_	0.781	
		Zui		Gelasian	1	1.80	
				Piacenzian	1	2.58	
			Pliocene	Zanclean	5	3.600	
		(1)		Messinian	4	5.333 7.246	
		Neogene		Tortonian	<		
		ogo	Miocene	Serravallian	3	11.63	
	ပ	Ze		Langhian		13.82	
	ZOİ	_		Burdigalian		15.97	
	Cenozoic			Aquitanian	4	20.44	
	Ce			Chattian	1	23.03	
			Oligocene		-	27.82	
			Oligodene	Rupelian	<	33.9	
		Paleogene	Eocene	Priabonian			
				Bartonian		37.8 41.2	
oic				Lutetian	1	71.2	
Phanerozoic				V		47.8	
Je.		<u> </u>		Ypresian	<	56.0	
عقر				Thanetian	1	59.2	
百			Paleocene	Selandian	1	61.6	
				Danian	<	66.0	
		S		Maastrichtian	<	72.1 ±0.2	
					Campanian		83.6 ±0.2
			Upper	Santonian	1	86.3 ±0.5	
				Coniacian		89.8 ±0.3	
				Turonian	<	93.9	
	zoic	eor		Cenomanian	<	100.5	
	Mesozoic	Niesozolic Cretaceous		Albian	4	~ 113.0	
	_	O	Lower	Aptian			
				Barremian		~ 125.0	
				Hauterivian		~ 129.4	
				Valanginian		~ 132.9	
						~ 139.8	
				Berriasian		~ 145.0	

Value Valu								
Upper Kimmeridgian 152.1 ±0.9 157.3 ±1.0 Oxfordian 163.5 ±1.0 166.1 ±1.2 168.3 ±1.3 170.3 ±1.4 Aalenian 174.1 ±1.0 Toarcian 182.7 ±0.7 Pliensbachian 190.8 ±1.0 Sinemurian 199.3 ±0.3 201.3 ±0.2 Rhaetian ~ 208.5 Carnian ~ 227 Carnian ~ 237 Carnia	Enother Erather	System	Sei	ries / Epoch	Stage / Age	GSSP	age (Ma)	
Upper Kimmeridgian 157.3 ±1.0					Tithonian			
Oxfordian				Upper	Kimmeridgian	1		
Middle Callovian 166.1 ±1.2 168.3 ±1.3 170.3 ±1.4 174.1 ±1.0					Oxfordian			
Lower Pliensbachian 182.7 ±0.7		C				1		
Lower Pliensbachian 182.7 ±0.7		SS		Middle		3		
Lower Pliensbachian 182.7 ±0.7		ura			Aalenian	4		
Lower Pliensbachian 190.8 ± 1.0		٦		Lower	Toarcian	<		
Rhaetian ~ 208.5 Upper Norian ~ 227 Carnian ~ 237	zoic				Pliensbachian			
Rhaetian ~ 208.5 Upper Norian ~ 227 Carnian ~ 237	SOZ				Sinemurian	4		
Rhaetian ~ 208.5 Upper Norian ~ 227 Carnian ~ 237	Š				Hettangian	3		
Upper Norian ~ 227 Carnian ~ 237					Rhaetian			
L adinian		iassic		Upper	Norian			
L adinian					Carnian	4		
Anisian 247.2	O	F	Н.	Middle	Ladinian	<		
Olenekian 251.2	ZOi				Anisian			
Lower Induan 351,002 ±0,026	0.0			Lower	Olenekian Induan	<u> </u>	251.2 251.902 ±0.024	
Changhsingian 254.14 ±0.07	ane		1.	oningian				
Wuchiapingian 259.1 ±0.5	Hand Hand	an	L'	-opingian	Wuchiapingiar	1	259.1 ±0.5	
Capitanian 265.1 ±0.4			Guadalupian			<	265.1 ±0.4	
Guadalupian Wordian 4 268.8 ±0.5						3	268.8 ±0.5	
Roadian < 272.95 ±0.11		ij				4	272.95 ±0.11	
Kungurian 283.5 ±0.6		Permian			Kungurian		283.5 ±0.6	
Cisuralian Artinskian 290.1 ±0.26			С	isuralian			290.1 ±0.26	
Sakmarian 295.0 ±0.18	oio							295.0 ±0.18
Asselian < 298.9 ±0.15	ZO		_			<	298.9 ±0.15	
Sakmarian 295.0 ±0.18 Asselian 298.9 ±0.15 Gzhelian 303.7 ±0.1 Kasimovian 307.0 ±0.1	ale		ania	Upper				
	ш	SI	sylva	Middle				
Lower Bashkirian 323.2 ±0.4		ero	Penr	Lower	Bashkirian	<		
Upper Serpukhovian 330.9 ±0.2		onii	Carboniferous Mississippian Pennsy	Upper	Serpukhovian	1		
Ograpies Middle Visean 346.7 ±0.4		Carb		Middle	Visean	<		
Lower Tournaisian 358.9 ± 0.4				Lower	Tournaisian			

	hen/E	9n/50n	Series / Epoch		0						
\$00°	Erat.		Series / Epoch	Stage / Age	GSSP	numerical age (Ma) 358.9 ± 0.4					
			Upper	Famennian	4	372.2 ±1.6					
		u		Frasnian	4	382.7 ±1.6					
		nia		Givetian	<						
		Devonian	Middle	Eifelian	<u> </u>	387.7 ±0.8					
		Ď		Emsian	<<	393.3 ±1.2 407.6 ±2.6					
			Lower	Pragian	<	407.0 ±2.0 410.8 ±2.8					
				Lochkovian	<	419.2 ±3.2					
			Pridoli		<	423.0 ±2.3					
			Ludlow	Ludfordian	1	425.0 ±2.3 425.6 ±0.9					
		Silurian	Ludiow	Gorstian	S	427.4 ±0.5					
		Ξ	Wenlock	Homerian Sheinwoodian	3	430.5 ±0.7					
		iii				433.4 ±0.8					
			Llandovery	Telychian	1	438.5 ±1.1					
O			Liandovery	Aeronian	~	440.8 ±1.2					
Ö	<u>S</u> .			Rhuddanian Hirnantian	~	443.8 ±1.5					
Phanerozoic	Paleozoic		Upper	Katian	1	445.2 ±1.4					
han	Pale	an		Sandbian	<<	453.0 ±0.7					
۵		lovician	Middle	Darriwilian	<u> </u>	458.4 ±0.9					
		\sim		Dapingian	<	467.3 ±1.1 470.0 ±1.4					
			0	0	Or	0	Lower	Floian	4	477.7 ±1.4	
										Lower	Tremadocian
				Stage 10							
			Furongian	Jiangshanian	<	~ 489.5					
				Paibian	3	~ 494					
		Cambrian	Miaolingian	Guzhangian	<	~ 497					
				Drumian	~	~ 500.5					
				Wuliuan	1	~ 504.5					
				Stage 4		~ 509					
		Ca	Series 2	Stage 3		~ 514					
				Stage 2		~ 521					
			Terreneuvian	Fortunian		~ 529					
				- I Ortuman	<	541.0 ±1.0					

		them Eon	Erathem / Era	System / Period 🖰 🖰	numerica age (Ma) 541.0 ±1.0			
				Ediacaran ≼	~ 635			
			Neo- proterozoic	Cryogenian	~ 720			
			protorozolo	Tonian				
			Stenian	1000				
	Proterozoic	Meso- proterozoic	Ectasian	1200				
			Calymmian	1400				
		terc		Statherian	1600			
	an	Pro	Paleo- proterozoic	Orosirian	1800			
	Orie			2	2050			
Precambrian		proterozoic	Rhyacian	2200				
			Siderian	2300				
	Archean	Neo-	3	2500				
		archean	2	2800				
		Meso- archean						
		Paleo-		3200				
		archean		2000				
		Eo-		3600				
		archean	2	4000				
Hadean								
~ 4600								
l Jr	nits of a	all ranks	are in the process of h	peing defined by Global Boun	darv			

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.

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 (http://www.ccgm.org)

Chart drafted by K.M. Cohen, D.A.T. Harper, P.L. Gibbard, J.-X. Fan (c) International Commission on Stratigraphy, July 2018

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URL: http://www.stratigraphy.org/ICSchart/ChronostratChart2018-07.pdf