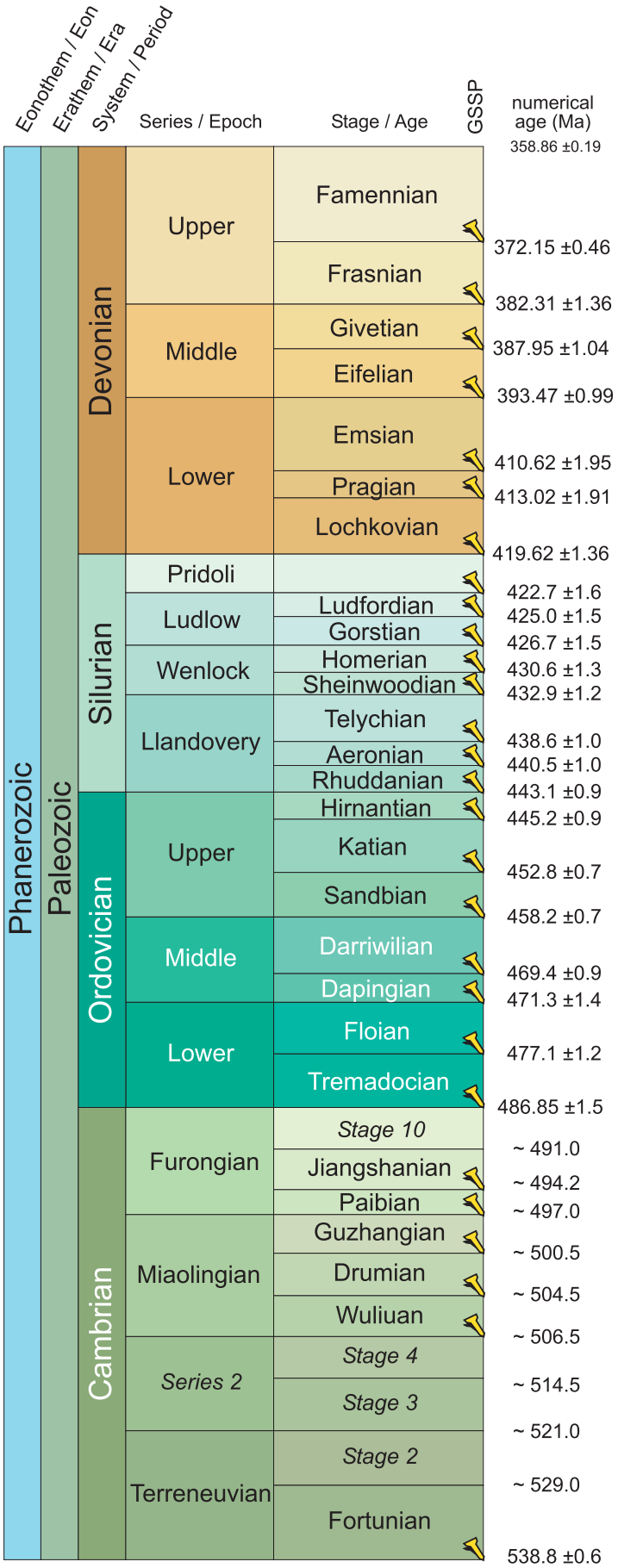
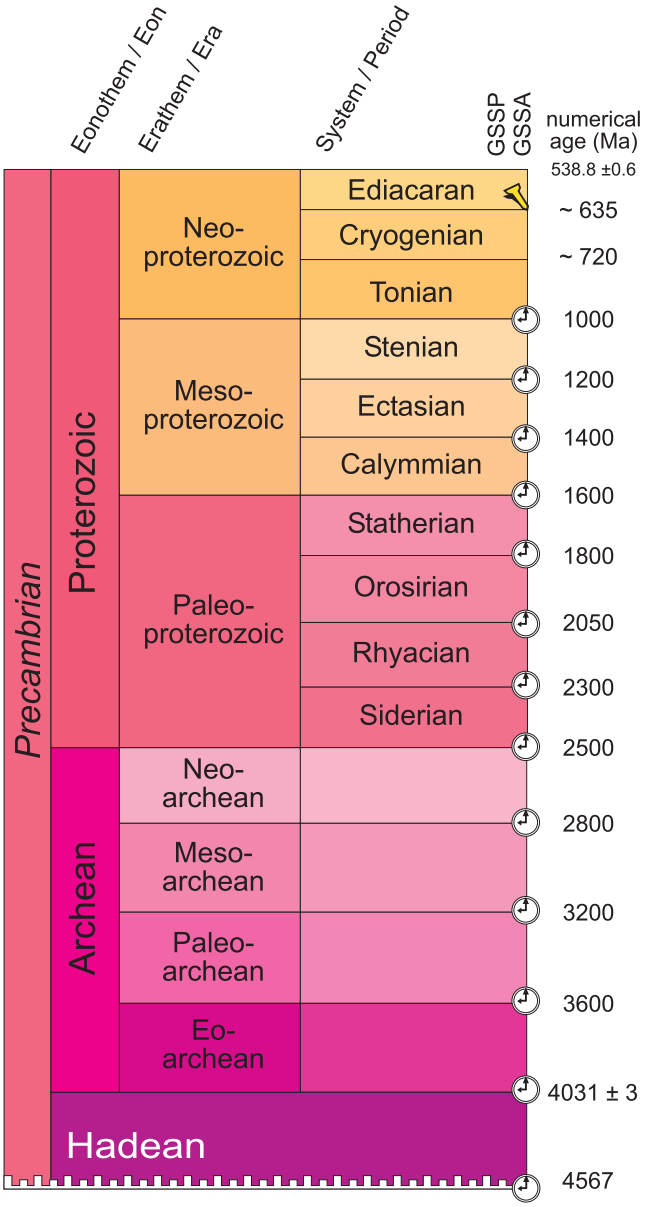
OSTRATIGRAPHIC CHART

l Commission on Stratigraphy

v 2024/12





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). Ratified Subseries/Subepochs are abbreviated as U/L (Upper/Late), M (Middle) and L/E (Lower/Early). Italic fonts indicate informal units and placeholders for unnamed units. Previous versions and detailed information on ratified GSSPs are available at the website http://www.stratigraphy.org. The URL to this chart is provided below.

Numerical ages are subject to ongoing 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.

Most numerical ages are taken from 'A Geologic Time Scale 2020' by Gradstein et al. (2020), but some ages differ as provided by the relevant ICS subcommissions, with advice from the Timescale Calibration subcommission. These are approved by the ICS executive as the current consensus.

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

Chart drafted and maintained online by officers K.M. Cohen and N. Car.

The chart is a product of collective work by all ICS members past and present.

(c) International Commission on Stratigraphy, December 2024

URL: http://www.stratigraphy.org/ICSchart/ChronostratChart2024-12.pdf

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INTERNATIONAL CHRONO

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International

Eonothem / Eon	Erathem / Era	System / Period	Series / Epoch		Stage / Age	GSSP	numerical age (Ma)
Phanerozoic	Cenozoic	Quaternary	Holocene	U/L	Meghalayan		present
				M	Northgrippian		0.0042
				L/E	Greenlandian		0.0082
							0.0117
			Pleistocene	U/L	*Upper*		0.129
				M	Chibanian		0.774
					Calabrian		1.80
				L/E	Gelasian		2.58
		Neogene	Pliocene	U/L	Piacenzian		3.600
				L/E	Zanclean		5.333
			Miocene	U/L	Messinian		7.246
					Tortonian		11.63
				M	Serravallian		13.82
					Langhian		15.98
				L/E	Burdigalian		20.45
					Aquitanian		23.04
		Paleogene	Oligocene		Chattian		27.30
					Rupelian		33.9
			Eocene		Priabonian		37.71
					Bartonian		41.03
					Lutetian		48.07
					Ypresian		56.00
			Paleocene		Thanetian		59.24
					Selandian		61.66
					Danian		66.00
	Mesozoic	Cretaceous	Upper		Maastrichtian		72.2 ±0.2
					Campanian		83.6 ±0.2
					Santonian		85.7 ±0.2
					Coniacian		89.8 ±0.3
					Turonian		93.9 ±0.2
					Cenomanian		100.5 ±0.1
			Lower		Albian		113.2 ±0.3
					Aptian		121.4 ±0.6
					Barremian		125.77
					Hauterivian		132.6 ±0.6
					Valanginian		137.05 ±0.2
					Berriasian		143.1 ±0.6

Eonothem / Eon	Erathem / Era	System / Period	Series / Epoch		Stage / Age	GSSP	numerical age (Ma)
Phanerozoic	Mesozoic	Jurassic	Upper		Tithonian		143.1 ±0.6
					Kimmeridgian		149.2 ±0.7
					Oxfordian		154.8 ±0.8
			Middle		Callovian		161.5 ±1.0
					Bathonian		165.3 ±1.1
					Bajocian		168.2 ±1.2
					Aalenian		170.9 ±0.8
			Lower		Toarcian		174.7 ±0.8
					Pliensbachian		184.2 ±0.3
					Sinemurian		192.9 ±0.3
					Hettangian		199.5 ±0.3
		Triassic	Upper		Rhaetian		201.4 ±0.2
					Norian		~ 205.7
					Carnian		~ 227.3
			Middle		Ladinian		~ 237
					Anisian		241.464 ±0.28
			Lower		Olenekian		246.7
					Induan		249.9
Phanerozoic	Paleozoic	Permian	Lopingian		Changhsingian		251.902 ±0.024
					Wuchiapingian		254.14 ±0.07
			Guadalupian		Capitanian		259.51 ±0.21
					Wordian		264.28 ±0.16
					Roadian		266.9 ±0.4
			Cisuralian		Kungurian		274.4 ±0.4
					Artinskian		283.3 ±0.4
					Sakmarian		290.1 ±0.26
					Asselian		293.52 ±0.17
		Carboniferous	Pennsylvanian	Upper	Gzhelian		298.9 ±0.15
					Kasimovian		303.7 ±0.1
				Middle	Moscovian		307.0 ±0.1
				Lower	Bashkirian		315.2 ±0.2
			Mississippian	Upper	Serpukhovian		323.4 ±0.4
				Middle	Visean		330.3 ±0.4
				Lower	Tournaisian		346.7 ±0.4
							358.86 ±0.19