Kurdistan Region – Iraq Ministry of Higher Education & Scientific Research Salahaddin University – Erbil College of Science

Historical Geology

Geological Time scale

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Geological Time Scale

The geologic time scale is considered as the calendar of earth history. On the geologic time scale, the oldest events are found at the bottom and the youngest events are found at the top.

Geologists divided the Earth history into the following units: *eons*, *eras*, *periods*, and *epoch*. Compare the different life forms during each period as well as the evolution of life until the present day.

The most recent 13% of geologic time, from 538 million years ago to the present, is called the Phanerozoic Eon (phaneros is Greek for "evident").



Eon	Era		Period	Epoch	Map Symbol			
		01		Holocene	н			
		C	aternary	Pleistocene	Ple			
	Si		Neogene	Pliocene	Pli			
	Cenozoic	N/	Neogene	Miocene	Mio			
	ŏ	Tertiary		Oligocene	Oli			
		Це Пе	Paleogene	Eocene	Eo			
	66 my			Paleocene	Pal			
	oo my	С	Cretaceous	к				
lon	Mesozoic	J	urassic	J				
Phanerozoic Eon	245 my	т	riassic	Tr				
Pha		P	Permian	Р				
		iferous		Pennsylvanian subperiod				
	Paleozoic	Carboniferous		С				
		D	evonian	D				
		S	Silurian	S				
		C	Ordovician	0				
	538 my	C	Cambrian	E				
Prot	₽€							



GSA GEOLOGIC TIME SCALE v.40

		CE	NO	ZOIC			ME	SO	ZOIC			PA	LE	OZOIC		F	PR	ECAN	/IBRIA	N
	OBIO	PERIOD	EPOCH	AGE	PICKS (Ma)		PERIOD	EPOCH	AGE	PICKS (Ma)	AGE (Ma)	PERIOD	ЕРОСН	AGE	PICKS (Ma)	AGE (Ma)	EON	ERA	PERIOD	BDY. AGES (Ma)
-	1 C1 2 C2 2A C2A 3 C3 3A C8A	okater-	PLEISTOCENE	CALABRIAN GELASIAN PIACENZIAN ZANCLEAN MESSINIAN	0.01 1.8 2.6 3.6 5.3	70	EOUS	LATE	MAASTRICHTIAN	- 66.0	260	US Isrt PERMIAN	Lopin- gian Guada- lupian	CHANGHSINGIAN 252 WUCHIAPINGIAN 254 WOCHIAPINGIAN 265 WOCHIAN 265 ROADIAN 269 ROADIAN 272 KUNGURIAN 279 ARTINSKIAN 290	750-		NEOPRO- TEROZOIC	EDIACARAN CRYOGENIAN		
	4 04 44 04 5 05	ENE	MIOCENE	TORTONIAN	7.2	90-			SANTONIAN CONIACIAN TURONIAN	-83.6 -86.3 -89.8 -93.9	290-		Cisura- lían			1000-	0		TONIAN	1000
	5A CSA	U		SERRAVALLIAN	- 11.6 - 13.8				CENOMANIAN	-100			LATE	SAKMARIAN ASSELIAN GZHELIAN KASIMOVIAN		1250	0	MESOPRO-	STENIAN	1200
15	58 CS8 50 CS0 50 CS0 50 CS0 50 CS6 6 CS	NEO	MIO	BURDIGALIAN	- 16.0	110	TA		ALBIAN	-113	320-	PENNS	MIDDLE	MOSCOVIAN BASHKIRIAN	- 315	-	PO-	TEROZOIC	ECTASIAN	1400
	6 05 6 05 6 05 6 05 6 05 6 05 6 05 6 05			AQUITANIAN	- 20.4	120 -	HE	EARLY	APTIAN	- 126	340-	RBONIF MISSE SPPMN		SERPUKHOVIAN VISEAN	- 331	1500	Ë		CALYMMIAN	1600
25	6C 080 7 07 7A 07A 8 08		OLIGOCENE	CHATTIAN	- 23.0	1400-400 400 400 400 400 400 400 400 400	JURASSIC C		BARREMIAN HAUTERIVIAN VALANGINIAN	- 131 - 134	-	CAR	EARLY	TOURNAISIAN	347 SIAN 359	1750	OH BOH		STATHERIAN	1900
30-	9 C9 10 C10 11 C11	1			- 28.1			LATE	BERRIASIAN	— 139 — 145	360	AN	LATE	FAMENNIAN	- 372	- 383 - 388 2250-	a	PALEOPRO- TEROZOIC	OROSIRIAN	2050
1	12 012 13 019			RUPELIAN	- 33.9				TITHONIAN	152 157	390	SILURI	MIDDLE	FRASNIAN GIVETIAN EIFELIAN					RHYACIAN	2300
35-	15 012 15 013 18 015 17 017			PRIABONIAN	- 33.9				OXFORDIAN CALLOVIAN BATHONIAN BAJOCIAN		400-		EARLY	EMSIAN PRÁGIAN	408	2500-	-		SIDERIAN	2500
	18 19 C18	ENE		BARTONIAN	41.2			EARLY	AALENIAN TOARCIAN	-174	420 -		PRIDOLI	LOCHKOVIAN LUDFORDIAN SCHSIDAN HOMERIAN		2750-		NEOARCHEAN		
45-	20 020	EOGI	EOCENE	LUTETIAN					PLIENSBACHIAN	183 191	440		LLANDO- VERY	SHEINWCODIAN TELYCHIAN AEHONIAN HHIDDANIAN HIRNANTIAN KATIAN		3000-	AN	MESO-		2900
50-	21 CR1 22 CZ2	PALE	Ш		- 47.8			LATE	HETTANGIAN RHAETIAN	- 199 201	460	ORDOVICIAN	LATE	SANDBIAN DARRIWILIAN DAPINGIAN	453 458 467 470	3250-	HE	ARCHEAN		3200
55	23 C09 24 C04			YPRESIAN	IAN		SIC		NORIAN	-209		ORD	EARLY FURON-	FLOIAN TREMADOCIAN AGE 10	- 478 - 495 - 490		BC	PALEO- ARCHEAN		
	25 C25 26		ENE	THANETIAN	- 56.0	220	AS			-228		AN	GIAN Epoch 3	JIANGSHANIAN PAJBIAN GUZHANGIAN DRUMAN AGE 5	494 497 501 506 509	3500-	A			9600
60	27 037		PALEOCEN	SELANDIAN	- 59.2 - 61.6	240	TRI	MCCLE	CARNIAN LADINIAN	-237	520-	CAMBRIAN	Epoch 2	AGE 4 AGE 3		3750		EGARCHEAN		
	28 C24 29 C29 30 C30		PAL	DANIAN	66.0	250-			ANISIAN OLENEKIAN NEUWI	-241 -247 -250 -252	540-	S	TERRE- NEUVIAN	AGE 2 FORTUNIAN	529 541	4000 -	HABEAN			4000

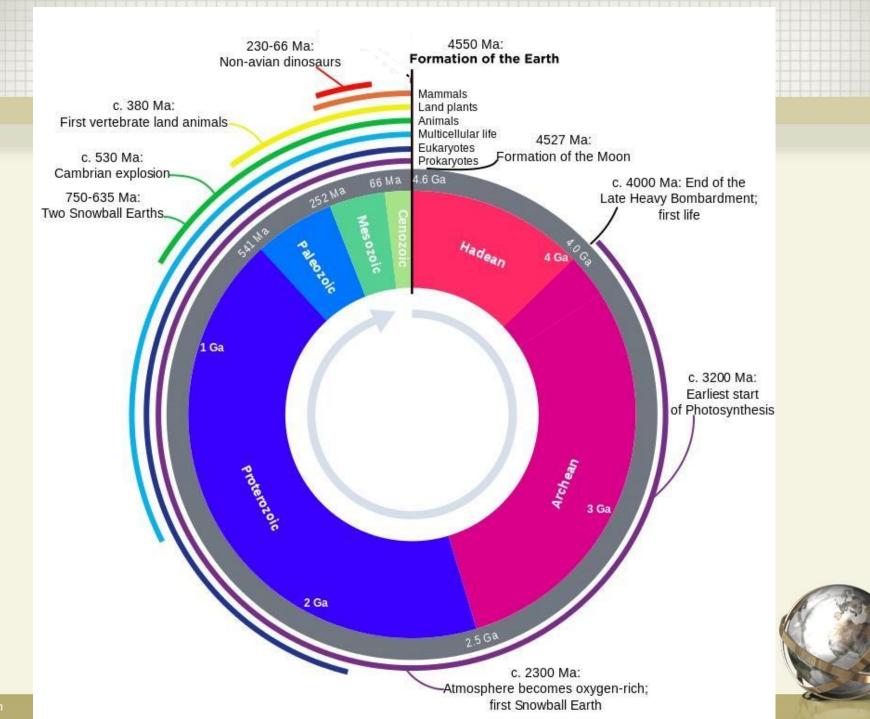
*The Pleistocane is divided into four ages, but only two are shown here. What is shown as Calabrian is actually three ages—Calabrian from 1.8 to 0.78 Ma, Middle from 0.78 to 0.13 Ma, and Late from 0.13 to 0.01 Ma. Walker, J.D., Geisennan, J.W., Bowring, S.A., and Babcock, L.E., compilere, 2012, Geologic Time Scale v. 4.0. (Geological Society of America, doi: 10.1130/2012.CTS004R3C. C2012 The Geological Society of America, The Cenozoic, Mescozic, and Pabcocia est the Eras of the Phanercocic Eon. Names of units and age boundaries follow the Gradshire val. (2012) and Cohen et al. (2012) compliations. Age estimates and picks of boundaries are rounded to the nearest whole number (1 Ma) for the pre-Cenomanian, and rounded to one decimal place (100 ka) for the Cenomanian to Pleistocae interval. The numbered epoche and ages of the Cambrian are provisional. REFERENCES CITED Cohen, K.M., Hiner, S., and Gibbard, P.L., 2012, International Chronostratigraphic Charl: International Commission on Stratigraphy.org (last accessed May 2012). (Chart reproduced for the 34th International Geological Congress, Brisbane, Australia, 5-10 August 2012.)

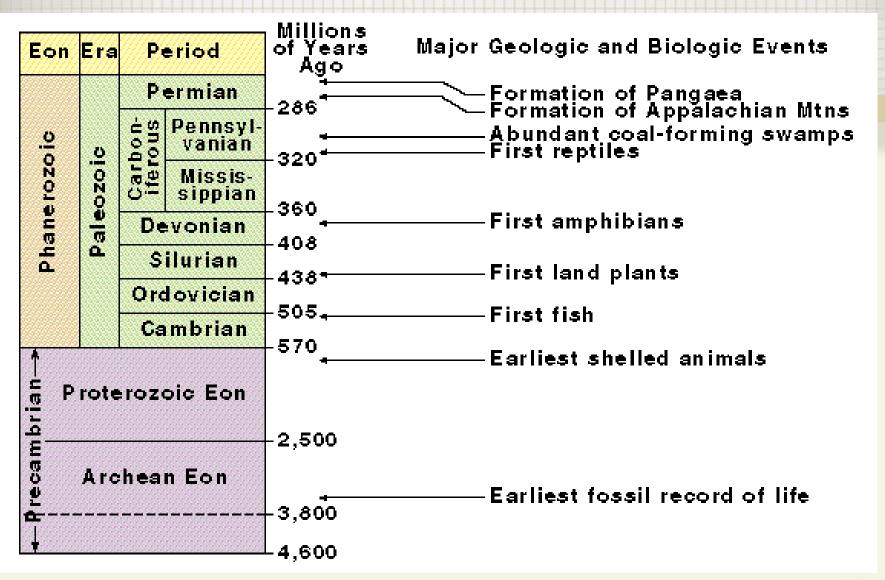
Gradstein, F.M., Ogg, J.G., Schmitz, M.D., et al., 2012, The Geologic Time Scale 2012: Boston, USA, Elsevier, DOI: 10.1016/B978-0-444-59425-9.00004-4.



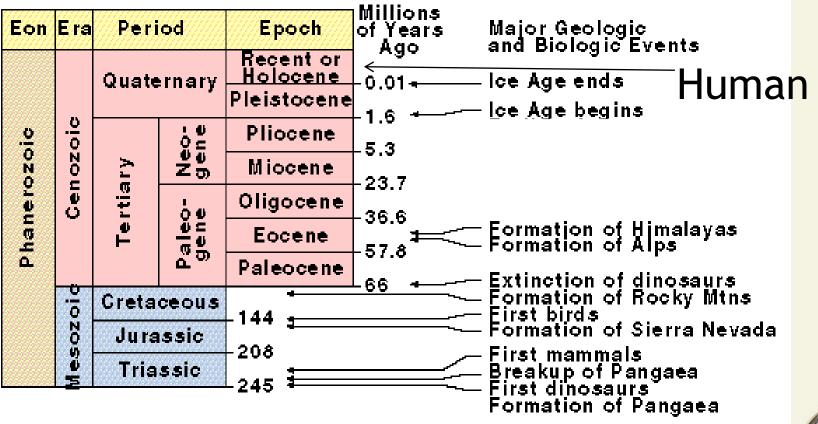
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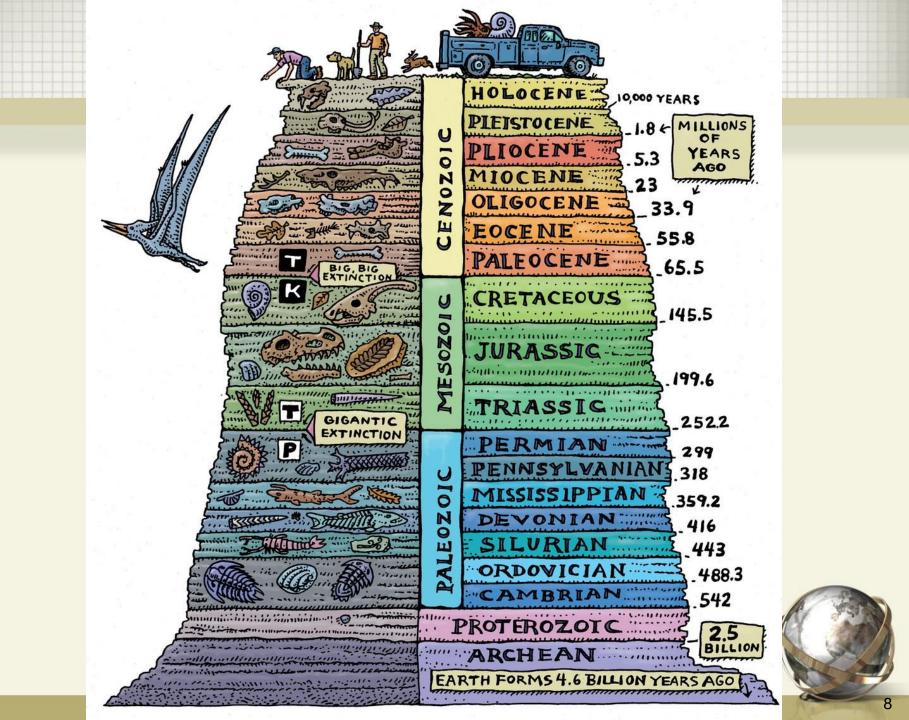












THANKS

