Esoteric Geochronology

Accompanying the “Rise and Demise of Atlantis” study book

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THE TABLE ON PAGE 3 and explanatory notes are based on a Wikipedia article (2006).[1] The figures on the right hand side column, headed "Secret Doctrine," are excerpted from David Pratt's paper on "Geochronology: Theosophy and Science" (1999). Time is expressed as "million years" (Ma) ago.

The background notes below were edited from Wikipedia's encyclopaedic article:

> The table of geologic periods presented here is in accordance with the dates and nomenclature proposed by the International Commission on Stratigraphy, and uses the standard color codes of the United States Geologic Survey.
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> Current geologic evidence holds that the age of the Earth is about 4570 million years old. The geologic or *deep time* of Earth's past has been organized into various units according to events which took place in each period. Different spans of time on the time scale are usually delimited by major geologic or paleontologic events, such as mass extinctions. For example, the boundary between the Cretaceous period and the Palaeogene period is defined by the extinction event that marked the demise of the dinosaurs and of many marine species.
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> Geologists tend to talk in terms of Upper/Late, Lower/Early and Middle parts of periods and other units — *e.g.*, "Upper Jurassic," "Middle Cambrian." Because geologic units occurring at the same time but from different parts of the world can often look different and contain different fossils, there are many examples where the same period was historically given different names in different locales. For example, in North America the Early Cambrian is referred to as the Waucoban series that is then subdivided into zones based on trilobites. The same time span is split into Tommotian, Atdabanian and Botomian stages in East Asia and Siberia.
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> In 1977, the Global Commission on Stratigraphy (now the International Commission) started an effort to define global references (Global Boundary Stratotype Sections and Points) for geologic periods and faunal stages. Their most recent work is described in the 2004 geologic time scale of Gradstein et al. (ISBN 0521786738), and used as the foundation of this page.

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[1] *Cf.* http://en.wikipedia.org/wiki/Geologic_time_scale
The colours of the original Wikipedia Table were revised by Philaletheians DE in 2018, according to the esoteric colours presented in "The True Colours of Man" (2015), our fifth Major Work. — *Nini Artolini.*

The following notes were edited from David Pratt's theosophical article:

> Modern geological nomenclature differs in some respects from that used by Blavatsky. For instance, the Eocene is now divided into Paleocene, Eocene, and Oligocene, and the Ordovician period has been inserted between the Cambrian and Silurian, and comprises part of both. The Cambrian is now taken as the beginning of the Paleozoic era. The Laurentian would fall into the Precambrian era; in Blavatsky's time "Laurentian" denoted the 30,000 ft of rocks underlying the Cambrian strata, but the term is no longer used in this sense.
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> The theosophical figures are those given by Dick & Scott,[1] with a few alterations and additions. The duration of the Paleocene, Eocene, and Oligocene has been determined by dividing up Dick & Scott's Eocene according to the maximum thickness of the Paleocene, Eocene, and Oliogocene strata according to science.[2] The duration of the Cambrian, Ordovician, and Silurian were determined using the same method.
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> Gwernymynydd
> Winter 2006

[1] F.J. Dick & W. Scott: "The Age of the Earth," in: *The Theosophical Path*, April 1919, *pp.* 369-79

[2] R. Milton: *The Facts of Life*, 1992, plate 1

Aeon	Era	Period	Series/Epoch (million years)		Secret Doctrine
Phanerozoic	Cenozoic	Neogene	Holocene[1]	0.011430	
			Pleistocene[2]	1.806	0.870
			Pliocene[3]	5.332	1.870
			Miocene[4]	23.030	3.670
		Paleogene	Oligocene[5]	33.900	5.280
			Eocene[6]	55.800	7.140
			Paleocene[7]	65.500	7.870
	Mesozoic	Cretaceous[8]	Upper/Late	99.600	16.000
			Lower/Early	145.500	
		Jurassic[9]	Upper/Late	161.200	28.000
			Middle	175.600	
			Lower/Early	199.600	
		Triassic[10]	Upper/Late	228.000	44.000
			Middle	245.000	
			Lower/Early	251.000	
	Paleozoic	Permian[11]	Lopingian	260.400	74.000
			Guadalupian	270.600	
			Cisuralian	299.000	
		Carboniferous Pennsylvanian[12]	Upper/Late	306.500	110.000
			Middle	311.700	
			Lower/Early	318.100	
		Carboniferous Mississippian[13]	Upper/Late	326.400	
			Middle	345.300	
			Lower/Early	359.200	
		Devonian[14]	Upper/Late	385.300	148.000
			Middle	397.500	
			Lower/Early	416.000	
		Silurian[15]	Pridoli	418.700	179.000
			Ludlow	422.900	
			Wenlock	428.200	
			Llandovery	443.700	
		Ordovician[16]	Upper/Late	460.900	214.000
			Middle	471.800	
			Lower/Early	488.300	
		Cambrian[17]	Furongian	501.000	250.000
			Middle	513.000	
			Lower/Early	542.000	
		(Laurentian)			Start of 4th Round 320.000
Proterozoic	Neo-proterozoic	Ediacaran[18]		630.000	
		Cryogenian[19]		850.000	
		Tonian[20]		1.000.000	
	Meso-proterozoic	Stenian[21]		1.200.000	Start of 3rd Round 720.000
		Ectasian[22]		1.400.000	
		Calymmian[23]		1.600.000	
	Paleo-proterozoic	Statherian[24]		1.800.000	
		Orosirian[25]		2.050.000	
		Rhyacian[26]		2.300.000	
		Siderian[27]		2.500.000	
Archean	Neoarchean[28]			2.800.000	Start of 2nd Round 1.300.000
	Mesoarchean[29]			3.200.000	
	Paleoarchean[30]			3.600.000	
	Eoarchean[31]			3.800.000	
Hadean	Lower Imbrian			c. 3.850.000	Start of 1st Round 1.973.000
	Nectarian			c. 3.920.000	
	Basin groups[32]			c. 4.150.000	
	Cryptic[33]			c. 4.570.000	

Endnotes

[1] End of recent glaciation and a rise of modern civilization.

[2] Flourishing and then extinction of many large mammals (Pleistocene mega fauna); Evolution of fully modern humans.

[3] Intensification of present ice age. Cool and dry climate; Australopithecines appear, many of the existing genera of mammals, and recent molluscs appear.

[4] Moderate climate; Mountain building in northern hemisphere; Modern mammal and bird families became recognizable. Horses and mastodonts diverse. Grasses become ubiquitous. First hominoids appear.

[5] Warm climate; Rapid evolution and diversification of fauna, especially mammals. Major evolution and dispersal of modern types of angiosperms.

[6] Archaic mammals (*e.g.*, Creodonts, Condylarths, Uintatheres, *etc.*) flourish and continue to develop during the epoch. Appearance of several "modern" mammal families. Primitive whales diversify. First grasses. Reglaciation of Antarctica; start of current ice age.

[7] Climate tropical. Modern plants; Mammals diversify into a number of primitive lineages following the extinction of the dinosaurs. First large mammals (up to bear or small hippo size).

[8] Flowering plants appear, along with new types of insects. More modern teleost fish begin to appear. Ammonites, belemnites, rudists, echinoids and sponges all common. Many new types of dinosaurs (*e.g.*, Tyrannosaurs, Titanosaurs, duck bills, and horned dinosaurs) evolve on land, as do modern crocodilians; and mosasaurs and modern sharks appear in the sea. Primitive birds gradually replace pterosaurs. Monotremes, marsupials and placental mammals appear. Break up of Gondwana.

[9] Gymnosperms (especially conifers, Bennettitales and cycads) and ferns common. Many types of dinosaurs, such as sauropods, carnosaurs, and stegosaurs. Mammals common but small. First birds and lizards. Ichthyosaurs and plesiosaurs diverse. Bivalves, Ammonites and belemnites abundant. Echinoids very common, also crinoids, starfish, sponges, and terebratulid and rhynchonellid brachiopods. Break-up of Pangea into Gondwana and Laurasia.

[10] Archosaurs dominant and diverse on land, include many large forms; cynodonts become smaller and more mammal-like. First dinosaurs, mammals, pterosaurs, and crocodilia. *Dicrodium* flora common on land. Many large aquatic temnospondyl amphibians. Ichthyosaurs and nothosaurs common in the seas. Ceratite ammonoids extremely common. Modern corals and teleost fish appear, as do many modern insect clades.

[11] Landmass unites in the supercontinent of Pangea. Synapsid reptiles become common (Pelycosaurs and Therapsids), parareptiles and temnospondyl amphibians also remain common. Carboniferous flora replaced by gymnosperms in the middle of the period. Beetles and flies evolve. Marine life flourishes in the warm shallow reefs.

Productid and spiriferid brachiopods, bivalves, foraminifera, and ammonoids all abundant. End of Permo-carboniferous ice age. At the end of the period the Permian extinction event 95% of life on Earth becomes extinct.

[12] Winged insects appear and are abundant, some (esp. Protodonata and Palaeodictyoptera) growing to large size. Amphibians common and diverse. First reptiles, coal forests (*Lepidodendron*, *Sigillaria*, *Calamites*, *Cordaites*, *etc.*), very high atmospheric oxygen content. In the seas, Goniatites, brachiopods, bryozoa, bivalves, corals, *etc.* all common.

[13] Large primitive trees, first land vertebratess, brackish water and amphibious eurypterids; rhizodonts dominant fresh-water predators. In the seas primitive sharks common and very diverse, echinoderms (especially crinoids and blastoids) abundant, Corals, bryozoa, and brachiopods (Productida, Spriferida, *etc.*) very common; Goniatites common, trilobites and nautiloids in decline. Glaciation in East Gondwana.

[14] First clubmosses and horsetails appear, progymnosperms (first seed bearing plants) appear, first trees (Archaeopteris). First (wingless) insects. In the sea strophomenid and atrypid brachiopods, rugose and tabulate corals, and crinoids are abundant. Goniatite ammonoids are common, and coleoids appear. Trilobites reduced in numbers. Armoured agnaths decline; Jawed fish (Placoderms, lobe-finned and ray-finned fish, and early sharks) important life in the sea. First amphibians (but still aquatic). “Old Red Continent” (Euramerica).

[15] First vascular land plants, millipedes and arthropleurids, first jawed fish, as well as many types of armoured jawless forms. Sea scorpions reach large size. tabulate and rugose corals, brachiopods (Pentamerida, Rhynchonellida, *etc.*), and crinoids all abundant; trilobites and molluscs diverse. Graptolites not as varied.

[16] Invertebrates very diverse and include many new types. Early corals, Brachiopods (Orthida, Strophomenida, *etc.*), bivalves, nautiloids, trilobites, ostracods, bryozoa, many types of echinoderms (cystoids, crinoids, starfish, *etc.*), branched graptolites, and other taxa all common. Conodonts were planktonic primitive vertebrates that appear at the start of the Ordovician. Ice age at the end of the period. First very primitive land plants.

[17] Major diversification of life in the Cambrian Explosion; more than half of modern animal phyla appear, along with a number of extinct and problematic forms. Archeocyatha abundant in the early Cambrian. Trilobites, Priapulida, sponges, inarticulate brachiopods, and many other forms all common. First chordates appear. Anomalocarids are top predators. Edicarian animals rare, then die out.

[18] First multi-celled animals. Edicarian fauna (vendobionta) flourish worldwide. Simple trace fossils from worm-like animals. First sponges.

[19] Possible snowball Earth period, Rodinia begins to break up.

[20] First acritarch radiation.

[21] Narrow highly metamorphic belts due to orogeny as Rodinia formed.

[22] Platform covers continue to expand.

[23] Platform covers expand.

[24] First complex single-celled life. Columbia (supercontinent).

[25] The atmosphere became oxygenic. Vredefort and Sudbury Basin asteroid impacts. Much orogeny.

[26] Bushveld Formation formed. Huronian glaciation.

[27] Banded iron formations formed.

[28] Stabilization of most modern cratons, possible mantle overturn event.

[29] First stromatolites.

[30] First known oxygen producing bacteria.

[31] Simple single-celled life.

[32] 4100 Ma — Oldest known rock.

[33] 4400 Ma — Oldest known mineral; 4570 Ma (Formation of Earth).