

GSSP Table - All Periods

Global Boundary Stratotype Section and Point (GSSP) of the International Commission on Stratigraphy

Stage	Numerical Age (Ma)	GSSP Location	Latitude, Longitude	Boundary Level	Correlation Events	Status	Reference
Phanerozoic Eon							
Cenozoic Era							
Quaternary System							
Holocene Series							
Holocene Stage	0.011784	NorthGRIP ice core, central Greenland	75.1000 °N 42.3200 °W	1492.45m depth in Borehole NGRIP2	Climatic -- End of the Younger Dryas cold spell, which is reflected in a shift in deuterium excess values	Ratified 2008	Episodes 31/2, 2008; J. Quaternary Sci., Vol. 24 pp. 3-17, 2009
Pleistocene Series							
Upper Stage							
Middle Stage							
Calabrian Stage	1.80	Vrica, Italy	39.0385 °N 17.1348 °E	base of the marine claystone overlying the sapropelic marker Bed 'e' (Mediterranean Precession Related Sapropel, MPRS 176)	Magnetic -- ~15 kyr after end of Olduvai (C2n) normal polarity chron	Ratified 1985 as base of Pleistocene; Ratified 2011 as base of Calabrian	Episodes 8/2, p. 116 – 120, 1985; Episodes 35/3, p. 388-397, 2012
Gelasian Stage	2.58	Monte San Nicola, Sicily, Italy	37.1469 °N 14.2035 °E	base of marly layer overlying sapropel MPRS 250	Magnetic -- Matuyama/Gauss boundary (C2r/C2An) is 1m below GSSP. GSSP level is within Marine Isotope Stage 103.	Ratified 1996 as base of Gelasian; Ratified 2009 as base of Pleistocene and Quaternary	Episodes 21/2, p. 82–87, 1998; Episodes 33/3, p. 152-158, 2010
Neogene System							
Pliocene Series							

Piacenzian Stage	3.6	Punta Piccola, Sicily, Italy	37.2889 °N 13.4933 °E	base of the beige marl bed of small-scale carbonate cycle 77 (MPRS 347)	Magnetic -- Gauss/Gilbert (C2An/C2Ar) magnetic reversal is recorded immediately above the GSSP	Ratified 1997	Episodes 21/2, p. 88–93, 1998
Zanclean Stage	5.333	Eraclea Minoa, Sicily, Italy	37.3917 °N 13.2806 °E	base of the Trubi Formation which corresponds to Insolation cycle 510	Magnetic -- base of the Thvera magnetic event (C3n.4n) is only 96 kyr (5 precession cycles) younger than the GSSP.	Ratified 2000	Episodes 23/3, p. 179 – 187, 2000
Miocene Series							
Messinian Stage	7.246	Oued Akrech, Morocco	33.9369 °N 6.8125 °W	reddish layer of sedimentary cycle number 15	Planktonic foraminifer first regular occurrence of <i>Globorotalia miotumida</i> , and calcareous nannofossil FAD <i>Amaurolithus delicatus</i>	Ratified 2000	Episodes 23/3, p. 172 – 178, 2000
Tortonian Stage	11.63	Monte dei Corvi Beach, near Ancona, Italy	43.5867 °N 13.5694 °E	mid-point of sapropel layer of basic cycle number 76.	Calcareous nannofossil last common occurrence of <i>Discoaster kugleri</i>	Ratified 2003	Episodes 28/1, p. 6 - 17, 2005
Serravallian Stage	13.82	Ras il Pellegrin section, Fomm Ir- Rih Bay, west coast of Malta	35.9139 °N 14.3361 °E	formation boundary between the Globigerina Limestone and Blue Clay	Oxygen-isotopic event (global cooling episode) Mi3b; near calcareous nannofossil LAD of <i>Sphenolithus heteromorphus</i>	Ratified 2007	Episodes, 32/3, 152 - 166, 2009;
Langhian Stage	15.97	Potentially in astronomicallytune d ODP core (Leg 154) or in Italy (Moria or La Vedova)			Near planktonic foraminifer FAD of <i>Praeorbulina glomerosa</i> and top of magnetic polarity chronozone C5Cn.1n		
Burdigalian Stage	20.44	Potentially in astronomicallytune d ODP core			Near planktonic foraminifer FAD of <i>Globigerinoides altiaperturus</i> or near top of magnetic polarity chronozone C6An		
Aquitanian Stage	23.03	Lemme-Carrioso Section, Alessandria Province, Italy	44.6589 °N 8.8364 °E	35m from the top of the section	Magnetic -- base of Chron C6Cn.2n; planktonic foraminifer FAD of <i>Paragloborotalia kugleri</i> ; calcareous nannofossil near LAD <i>Reticulofenestra bisecta</i> (base Zone NN1);	Ratified 1996	Episodes 20/1, p. 23 – 28, 1997

					Oxygen isotopic event Mi-1.		
Paleogene System							
Oligocene Series							
Chattian Stage	28.1	Possibly Monte Cagnero, Umbria-Marche region, Italy			Potentially extinction of planktonic foraminifer <i>Chiloguembelina</i> (base Foram Zone P21b); or an isotopic/climatic event		
Rupelian Stage	33.9	Massignano, near Ancona, Italy	43.5328 °N 13.6011 °E	base of a 0.5m thick greenishgrey marl bed 19m above base of section	Foraminifer LAD <i>Hantkenina</i> and <i>Cribrohantkenina</i>	Ratified 1992	Episodes 16/3, p.379 - 382, 2001
Eocene Series							
Priabonian Stage	37.8	Alano section, Piave River; Veneto Prealps, Belluno province, N. Italy		Tiziano Bed	Calcareous nannofossil near FAD <i>Chiasmolithus oamaruensis</i> (base Zone NP18)		
Bartonian Stage	41.2	Contessa highway section near Gubio, Central Apennines, Italy			Calcareous nannofossil near LAD <i>Reticulofenestra reticulata</i>		
Lutetian Stage	47.8	Gorrondatxe section, Basque Country, Spain	43 °22'46.47"N, 3 °00'51.61"W	dark marl at 167.85 m in Gorrondatxe sea-cliff section	LO of calcareous nannofossil <i>Blackites inflatus</i> (CP12a/b boundary); middle of polarity Chron C21r	Ratified 2011	Episodes 34/2, p.86 - 108, 2011
Ypresian Stage	56.0	Dababiya, near Luxor, Egypt	25.5000 °N 32.5311 °E	Base of Bed 1 in DBH subsection	Carbon Isotope Excursion base, initiation of basal Eocene Thermal maximum ("PETM")	Ratified 2003	Micropaleontology 49/1, p.41 – 59, 2003; Episodes 30/4, p. 271 - 286, 2007
Paleocene Series							
Thanetian Stage	59.2	Zumaia section, northern Spain	43.3006 °N 2.2594 °W	30.5m above the base of Itzurun Formation	Magnetic -- Base of Chron C26n	Ratified 2008	Episodes 34/4, p.220 - 243, 2011
Selandian Stage	61.6	Zumaia section, northern Spain	43.3006 °N 2.2594 °W	base of the red marls of Itzurun Formation	2nd radiation of the calcareous nannofossil group <i>Fasciculithus</i> and sea-level fall	Ratified 2008	Episodes 34/4, p.220 - 243, 2011

Danian Stage	66.0	Oued Djerfane, west of El Kef, Tunisia	36.1537 °N 8.6486 °E	reddish layer at the base of the 50cm thick, dark boundary clay	Iridium geochemical anomaly. Associated with a major extinction horizon (dinosaurs, ammonites, foraminifers, etc.)	Ratified 1991	Episodes 29/4, p. 263 – 278, 2006
Mesozoic Era							
Cretaceous System							
Upper Cretaceous Series							
Maastrichtian Stage	72.1 ±0.2	Tercis les Bains, Landes, France	43.6795 °N 1.1133 °W	level 115.2 on platform IV of the geological site at Tercis les Bains	Mean of 12 biostratigraphic criteria of equal importance. Closely above is FAD of ammonite <i>Pachydiscus neubergicus</i> . Boreal proxy is FAD of belemnite <i>Belemnella lanceolata</i> .	Ratified 2001	Episodes 24/4, p. 229 –238, 2001
Campanian Stage	83.6 ±0.2	candidates are in southern England and in Texas			Crinoid LAD <i>Marsupites testudinarius</i>		
Santonian Stage	86.3 ±0.5	Olazagutia, Navarra, Spain	42.8668 °N 2.1968 °W	94.4 m in the Cantera de Margas quarry section	the FO of the inoceramid bivalve <i>Platyceramus undulatoplicatus</i>	Ratified 2013	Episodes 37/1, p. 2 –13, 2014
Coniacian Stage	89.8 ±0.3	candidates are in Poland (Slupia Nadbrzena), USA (Pueblo, Colorado), and Germany (Salzgitter-Salder Quarry)			Inoceramid bivalve FAD <i>Cremonceramus rotundatus</i> (sensu Tröger non Fiege)		
Turonian Stage	93.9	Pueblo, Colorado, USA	38.2822 °N 104.7275 °W	base of Bed 86 of the Bridge Creek Limestone Member	Ammonite FAD <i>Watinoceras devonense</i>	Ratified 2003	Episodes 28/2,p. 93 – 104, 2005
Cenomanian Stage	100.5	Mount Risou, Hautes-Alpes, France	44.3925 °N 5.5119 °E	36 meters below the top of the Marnes Bleues Formation on the south side of Mont Risou	Planktonic foraminifer FAD <i>Rotalipora globotruncanoides</i>	Ratified 2002	Episodes 27/1, p. 21–32, 2004
Lower Cretaceous Series							

Albian Stage	~113.0	Southeastern France			Candidates include: (1) calcareous nannofossil FAD of <i>Praediscosphaera columnata</i> (= <i>P. cretacea</i> of some earlier studies), (2) carbon-isotope excursion (black-shale episode), (3) ammonite		
Aptian Stage	~125.0	candidate is Gorgo a Cerbara, Piobbico, Umbria-Marche, central Italy			Magnetic -- base of Chron M0r; near FAD of <i>Paradeshayesites oglanlensis</i> ammonite zone		
Barremian Stage	~129.4	candidate is R ó Argos near Caravaca, Murcia Province, Spain			Ammonite FAD <i>Spitidiscus hugii</i> – <i>Spitidiscus vandeckii</i> group		
Hauterivian Stage	~132.9	candidate is La Charce village, Drôme Province, southeast France			Ammonite FAD of genus <i>Acanthodiscus</i> (especially <i>A. radiatus</i>)		
Valanginian Stage	~139.8	candidates are near Montbrunles-Bains (Drôme province, SE France) and Cañada Luenga (Betic Cordillera, S. Spain)			Calpionellid FAD <i>Calpionellites darderi</i> (base of Calpionellid Zone E); followed by ammonite FAD “ <i>Thurmanniceras</i> ” <i>pertransiens</i>		
Berriasian Stage	~145.0				Candidates include: (1) Magnetic -- base of Chron M18r, (2) Base of Calpionellid zone B, (3) ammonite FAD of <i>Berriasella jacobi</i>		
Jurassic System							
Upper Jurassic Series							
Tithonian Stage	152.1 ±0.9	candidates are Mt. Crussol or Canjuers (SE France) and Fornazzo (Sicily, S. Italy)			Near base of <i>Hybonotoceras hybonotum</i> ammonite zone and lowest occurrence of <i>Gravesia</i> genus, and the base of magnetic polarity Chron M22An		

Kimmeridgian Stage	157.3 ± 1.0	candidate is Flodigarry (Isle of Skye, NW Scotland)	57.6000 °N 6.2000 °W		Ammonite near base of <i>Pictonia baylei</i> ammonite zone of Boreal realm	Anticipated 2009	
Oxfordian Stage	163.5 ± 1.0	candidates are Redcliff Point (Dorset, SW England) and Savouron (Provence, SE France)			Ammonite <i>Cardioceras redcliffense</i> Horizon at base of the <i>Cardioceras scarburgense</i> Subzone (<i>Quenstedtoceras mariae</i> Zone)		
Middle Jurassic Series							
Callovian Stage	166.1 ± 1.2	candidates are Pfeffingen (Swabian Alb, SW Germany) and in Russia			Ammonite FAD of the genus <i>Kepplerites</i> (<i>Kosmoceratidae</i>) (defines base of <i>Macrocephalites herveyi</i> Zone in sub-Boreal province of Great Britain to southwest Germany)		
Bathonian Stage	168.3 ± 1.3	Ravin du Bès, Bas-Auran area, Alpes de Haute Provence, France	43.9606 °N 6.3153 °E	base of limestone bed RB07	Ammonite FAD <i>Gonolkite convergens</i> (defines base of <i>Zigzagiceras zigzag</i> Zone)	Ratified 2008	Episodes 32/4, p. 222 - 248, 2009
Bajocian Stage	170.3 ± 1.4	Murtinheira Section, Cabo Mondego, Portugal	40.1992 °N 8.9042 °W	base of Bed AB 11	Ammonite FAD <i>Hyperlioceras mundum</i> , <i>Hyperlioceras furcatum</i> , <i>Braunsina aspera</i> , and <i>Braunsina elegantula</i>	Ratified 1996	Episodes 20/1, p.16 – 22, 1997
Aalenian Stage	174.1 ± 1.0	Fuentelsaz, Spain	41.1708 °N 1.8333 °W	base of Bed FZ 107	Ammonite FAD <i>Leioceras opalinum</i> and <i>Leioceras lineatum</i>	Ratified 2000	Episodes 24/3, p.166 –175, 2001
Lower Jurassic Series							
Toarcian Stage	182.7 ± 0.7	Peniche (Portugal)	39.3708 °N 9.3853 °W	base of bed 15e (Couches de passage), uppermost Lemede Formation	FO of the ammonite <i>D. (E.) simplex</i> co-occurring with <i>D. (E.) pseudocommune</i> and <i>D. (E.) polymorphum</i> .	Ratified 2014	
Pliensbachian Stage	190.8 ± 1.0	Wine Haven, Robin Hood's Bay, Yorkshire Coast, England	54.4069 °N 0.4975 °W	base of Bed 73b	Ammonite association of <i>Bifericeras donovani</i> and <i>Apoderoceras</i> sp.	Ratified 2005	Episodes 29/2, p. 93 –106, 2006

Sinemurian Stage	199.3 ±0.3	East Quantoxhead, SW England	51.1909 °N 3.2364 °W	0.90 m above the base of Bed 145	Ammonite FAD <i>Vermiceras quantoxense</i> , <i>Vermiceras palmeri</i>	Ratified 2000	Episodes 25/1, p. 22-28, 2002
Hettangian Stage	201.3 ±0.2	Kuhjoch section, Tyrol, Austria	47.4839 °N 11.5306 °E	5.80 m above top of Koessen Formation	FO of ammonite <i>Psiloceras spelae tirolicum</i> , FO of aragonitic foraminifer <i>Praegubkinella turgescens</i>	Ratified 2010	Episodes 36/3, p. 162-198, 2013
Triassic System							
Upper Triassic Series							
Rhaetian Stage	~208.5	Key sections in Austria, British Columbia (Canada), and Turkey			Near FAD of ammonite <i>Cochloceras</i> , conodonts <i>Misikella</i> spp. and <i>Epigondolella mosheri</i> , and radiolarian <i>Proparvicingula moniliformis</i>		
Norian Stage	~227	Candidates are Black Bear Ridge in British Columbia (Canada) and Pizzo Mondello, Sicily (Italy)			Base of <i>Stikinoceras kerri</i> ammonoid zone and near FAD of <i>Metapolygnathus echinatus</i> within the <i>M. communisti</i> conodont zones		
Carnian Stage	~237	Prati di Stuares, Dolomites, Italy	46.5269 °N 11.9303 °E	base of marly limestone bed SW4, 45m from base of San Cassiano Formation	FAD of the ammonoid <i>Daxatina canadensis</i> ; just below FO of conodont <i>Paragondolella polygnathiformis</i> and base of normal-polarity magnetic zone S2n	Ratified 2008	Episodes 35/3, p. 414–430, 2012
Middle Triassic Series							
Ladinian Stage	~242	Bagolino, Province of Brescia, Northern Italy	45.8193 °N 10.4710 °E	base of a 15 – 20cm thick limestone bed overlying a distinctive groove (“Chiesense groove”) of limestone nodules in a shaly matrix, located about 5m above the base of the Buchenstein	Ammonite FAD <i>Eoprotrachyceras curionii</i> (base of the <i>E. curionii</i> zone). Conodont FAD <i>Budurovignathus praehungaricus</i> is in the uppermost Anisian.	Ratified 2005	Episodes 28/4, p. 233–244, 2005

				Beds			
Anisian Stage	247.2	Candidate section at Desli Caira (Dobrogea, Romania); significant sections in Guizhou Province (China) and South Primorye (Russia)	45.0742 °N 28.8022 °E	In Section B, the GSSP level will be either the FAD of conodont <i>Chiosella timorensis</i> at the base of Bed GR7 at ca. 7 m; OR the base of magnetozone MT1n at the 5.7 m level.	Conodont FAD <i>Chiosella timorensis</i> or Magnetic -- base of magnetic polarity MT1n	Anticipated 2009	Albertiana 36, 2007.
Lower Triassic Series							
Olenekian Stage	251.2	Candidate GSSP Mud (Muth) village, Spiti valley, northwest India	31.9654 °N 78.0246 °E	base of Bed 13A-2, about 4.8m up in Mikin Formation., Section M04 (~4000 m elevation	Conodont FAD <i>Neospathodus waageni</i> , just above base of <i>Rohillites rohilla</i> ammonite zone, and below lowest occurrence of <i>Flemingites</i> and <i>Euflemingites</i> ammonite genera. Within a prominent positive Carbon-13 peak, and just above widely recognizable sequence boundary.	Anticipated 2009	Albertiana 36, 2007
Induan Stage	252.17 ±0.06	Meishan, Zhejiang Province, China	31.0798 °N 119.7058 °E	base of Bed 27c in the Meishan D Section	Conodont FAD <i>Hindeodus parvus</i>	Ratified 2001	Episodes 24/2, p. 102 - 114, 2001
Paleozoic Era							
Permian System							
Lopingian Series							
Changhsingian Stage	254.14 ±0.07	Meishan, Zhejiang Province, China	31.0819 °N 119.7064 °E	base of Bed 4a-2, 88 cm above the base of the Changxing Limestone at the Meishan D Section	Conodont FAD <i>Clarkina wangi</i>	Ratified 2005	Episodes 29/3, p. 175-182, 2006

Wuchiapingian Stage	259.8 ±0.4	Penglaitan, Guanxi Province, South China	23.6953 °N 109.3211 °E	base of Bed 6k in the Penglaitan Section	Conodont FAD <i>Clarkina postbitteri postbitteri</i>	Ratified 2004	Episodes 29/4, p. 253-262, 2006
Guadalupian Series							
Capitanian Stage	265.1 ±0.4	Nipple Hill, SE Guadalupe Mountains, Texas, U.S.A	31.9091 °N 104.7892 °W	4.5m above the base of the outcrop section of the Pinery Limestone Member of the Bell Canyon Formation	Conodont FAD <i>Jinogondolella postserrata</i>	Ratified 2001	
Wordian Stage	268.8 ±0.5	Guadalupe Pass, Texas, U.S.A	31.8658 °N 104.8328 °W	7.6m above the base of the Getaway Ledge outcrop Section of the Getaway Limestone Member of the Cherry Canyon Formation	Conodont FAD <i>Jinogondolella aserrata</i>	Ratified 2001	
Roadian Stage	272.3 ±0.5	Stratotype Canyon, Texas, U.S.A	31.8767 °N 104.8768 °W	42.7m above the base of the Cutoff Formation	Conodont FAD <i>Jinogondolella nankingensis</i>	Ratified 2001	
Cisuralian Series							
Kungurian Stage	283.5 ±0.6	candidates are in southern Ural Mtns.			Near conodont FAD <i>Neostreptognathus pnevi - N. exculptus</i>	Anticipated 2009	
Artinskian Stage	290.1 ±0.26	candidates are in southern Ural Mtns.			Conodont FAD <i>Sweetognathus whitei</i>	Anticipated 2009	
Sakmarian Stage	295.0 ±0.18	candidate is at Kondurovsky, Orenburg Province, Russia.			Near conodont FAD <i>Sweetognathus merrelli</i>	Anticipated 2009	
Asselian Stage	298.9 ±0.15	Aidaralash Creek, Kazakhstan	50.2458 °N 57.8914 °E	27m above the base of Bed 19, Aidaralash Creek	Conodont FAD of isolated-nodular morphotype of <i>Streptognathodus "wabaunsensis"</i>	Ratified 1996	Episodes 21/1, p. 11-18, 1998
Carboniferous System							
Pennsylvanian Subsystem (series Classification Approved In 2004)							

Upper Pennsylvanian Series							
Gzhelian Stage	303.7 ±0.1	candidates are in southern Urals or Nashui (south China).			Conodont FAD <i>Idiognathodus simulator</i> (s.str.). Close to FAD of ammonoid <i>Shumardites</i> .		
Kasimovian Stage	307.0 ±0.1	candidates are in southern Urals, southwest USA and Nashui (south China).			Fusulinid FAD <i>Protriticites</i> , which is near ammonoid FAD <i>Eothallossoceras</i> . Alternative (higher) base is fusulinid FAD <i>Montiparus montiparus</i> , which is near conodont FAD <i>Idiognathodus sagittalis</i> . Age given here is the higher version; the lower one is about 1 myr older.		
Middle Pennsylvanian Series							
Moscovian Stage	315.2 ±0.2	candidates are in southern Urals or Nashui (south China).			Either conodont FAD <i>Idiognathoides postsulcatus</i> or <i>Declinognathodus donetzianus</i> .		
Lower Pennsylvanian Series							
Bashkirian Stage	323.2 ±0.4	Arrow Canyon, Nevada	36.7333 °N 114.7778 °W	82.9m above the top of the Battleship Formation in the lower Bird Spring Formation	Conodont FAD <i>Declinognathodus noduliferus</i>	Ratified 1996	Episodes 22/4, p. 272-283, 1999
Mississippian Subsystem							
Upper Mississippian Series (series Classification Approved In 2004)							
Serpukhovian Stage	330.9 ±0.2	candidates are Verkhnyaya Kardailovka (Urals) or Nashui (China)			Conodont FAD <i>Lochriea zieglerei</i>		
Middle Mississippian Series							
Visean Stage	346.7 ±0.4	Pengchong, south China	24.4333 °N 109.4500 °E	base of bed 83 in the Pengchong Section	Benthic Foraminifer FAD <i>Eoparastaffella simplex</i>	Ratified 2008	Episodes 26/2, p. 105-115, 2003
Lower Mississippian Series							

Tournaisian Stage	358.9 ±0.4	La Serre, France	43.5555 °N 3.3573 °E	base of Bed 89 in Trench E' at La Serre, (but FAD now known to be at base of Bed 85)	Conodont FAD <i>Siphonodella sulcata</i> IMPRECISE (GSSP discovered in 2006 to have biostratigraphic problems, and can not be correlated with precision.)	Ratified 1990	Episodes 14/4, p. 331-336, 1991 ; Newsletters on Stratigraphy, 43/2, p. 195 - 205, 2009
Devonian System							
Upper Devonian Series							
Famennian Stage	372.2 ±1.6	Coumiac Quarry, near Cessenon, Montagne Noire, France	43.4613 °N 3.0403 °E	Base of Bed 32a	Conodont FAD <i>Palmatolepis triangularis</i> , just above a major extinction horizon (Kellwasser Event) with conodont LADs <i>Ancyrodella</i> and <i>Ozarkodina</i> , and Goniatite LADs of <i>Gephuroceratidae</i> and <i>Beloceratidae</i>	Ratified 1993	Episodes 16/4, p. 433-441, 1993
Frasnian Stage	382.7 ±1.6	Col du Puech de la Suque, Montagne Noire, France	43.5032 °N 3.0868 °E	base of Bed 42' at Col du Puech de la Suque section E	Conodont FAD <i>Ancyrodella rotundiloba</i>	Ratified 1986	Episodes 10/2, p. 97-101, 1987
Middle Devonian Series							
Givetian Stage	387.7 ±0.8	Jebel Mech Irdane, Morocco	31.2374 °N 4.3541 °W	base of Bed 123	Conodont FAD <i>Polygnathus hemiansatus</i>	Ratified 1994	Episodes 18/3, p. 107-115, 1995
Eifelian Stage	393.3 ±1.2	Wetteldorf, Eifel Hills, Germany	50.1496 °N 6.4716 °E	21.25m above the base of the exposed section, base of sample station WP30	Conodont FAD <i>Polygnathus costatus partitus</i>	Ratified 1985	Episodes 8/2, p. 104-109, 1985
Lower Devonian Series							
Emsian Stage	407.6 ±2.6	Zinzil'ban Gorge in the Kitab State Geological Reserve, Uzbekistan	39.2000 °N 67.3056 °E	base of Bed 9/5	Conodont FAD <i>Polygnathus kitabicus</i>	Ratified 1995	Episodes 20/4, p. 235-240, 1997
Pragian Stage	410.8 ±2.8	Velk áChuchle, Prague, Czech Republic	50.0147 °N 14.3726 °E	base of Bed 12 in Velk áChuchle Quarry	Conodont FAD <i>Eognathodus sulcatus sulcatus</i> and <i>Latericriodus steinachensis</i> <i>Morph beta</i>	Ratified 1989	Episodes 12/2, p. 109-113, 1989
Lochkovian Stage	419.2 ±3.2	Klonk, near Prague, Czech Republic	49.8550 °N 13.7920 °E	within Bed 20	Graptolite FAD <i>Monograptus uniformis</i>	Ratified 1972	IUGS Series A, 5, p. 96-109, 1977

Silurian System							
Přídolí Series	423.0 ±2.3	Požárky Section, Reporyje, Prague, Czech Republic	50.0277 °N 14.3249 °E	within Bed 96	Graptolite FAD <i>Monograptus parultimus</i>	Ratified 1984	Episodes 8/2, p. 101-103, 1985 ; Geol. Series, Nat. Mus. Wales, 9, p. 90 - 100, 1989
Ludlow Series							
Ludfordian Stage	425.6 ±0.9	near Ludlow, UK	52.3592 °N 2.7772 °W	coincident with the base of the Leintwardine Formation	Imprecise. May be near base of Saetograptus <i>leintwardinensis</i> Graptolite zone.	Ratified 1980	Lethaia 14; Episodes 5/3, p. 21-23, 1982 ; Geol. Series, Nat. Mus. Wales, 9, p. 73 - 90, 1989
Gorstian Stage	427.4 ±0.5	near Ludlow, UK	52.3592 °N 2.7772 °W	coincident with the base of the Lower Elton Formation	Graptolite FAD <i>Saetograptus (Colonograptus) varians</i>	Ratified 1980	Lethaia 14; Episodes 5/3, p. 21-23, 1982 ; Geol. Series, Nat. Mus. Wales, 9, p. 73 - 90, 1989
Wenlock Series							
Homerian Stage	430.5 ±0.7	Sheinton Brook, Homer, UK	52.6156 °N 2.5647 °W	within upper part of the Apedale Member of the Coalbrookdale Formation	Graptolite FAD <i>Cyrtograptus lundgreni</i>	Ratified 1980	Lethaia 14; Episodes 5/3, p. 21-23, 1982 ; Geol. Series, Nat. Mus. Wales, 9, p. 51-73, 1989
Sheinwoodian Stage	433.4 ±0.8	Hughley Brook, UK	52.5811 °N 2.6389 °W	base of the Buildwas Formation	Imprecise. Between the base of acritarch biozone 5 and LAD of conodont <i>Pterospiriferus amorphognathoides</i> . The current GSSP does not coincide with the base of the <i>Cyrtograptus centrifugus</i> Biozone, as was supposed when the GSSP was defined. Restudy recommends a slightly higher and correlatable level on conodonts -- the Ireviken datum 2, which coincides approximately with the base of the <i>murchisoni</i> Graptolite Biozone	Ratified 1980	Lethaia 14; Episodes 5/3, p. 21-23, 1982 ; Geol. Series, Nat. Mus. Wales, 9, p. 51-73, 1989

Llandovery Series							
Telychian Stage	438.5 ± 1.1	Cefn-cerig Road Section, Wales, UK	51.9700 °N 3.7900 °W	within the Wormwood Formation	Just above Brachiopod LAD <i>Eocoelia intermedia</i> and below FAD of <i>Eocoelia curtisi</i>	Ratified 1984	Episodes 8/2, p. 101-103, 1985 ; Geol. Series, Nat. Mus. Wales, 9, p. 36-50, 1989
Aeronian Stage	440.8 ± 1.2	Trefawr Track Section, Wales, UK	52.0300 °N 3.7000 °W	within Trefawar Formation	Graptolite FAD <i>Monograptus austerus sequens</i>	Ratified 1984	Episodes 8/2, p. 101-103, 1985 ; Geol. Series, Nat. Mus. Wales, 9, p. 36-50, 1989
Rhuddanian Stage	443.8 ± 1.5	Dob's Linn, Scotland	55.4400 °N 3.2700 °W	1.6m above the base of the Birkhill Shale Formation	Graptolite FAD <i>Akidograptus ascensus</i>	Ratified 1984	Episodes 8/2, p. 101-103, 1985 ; Silurian Times No. 14 (2006)
Ordovician System							
Upper Ordovician Series							
Hirnantian Stage	445.2 ± 1.4	Wangjiawan North section, N of Yichang city, Western Hubei Province, China	30.9841 °N 111.4197 °E	0.39m below the base of the Kuanyinchiao Bed	Graptolite FAD <i>Normalograptus extraordinarius</i>	Ratified 2006	Episodes 29/3, p. 183-196, 2006
Katian Stage	453.0 ± 0.7	Black Knob Ridge Section, Atoka, Oklahoma (USA)	34.4305 °N 96.0746 °W	4.0m above the base of the Bigfork Chert	Graptolite FAD <i>Diplacanthograptus caudatus</i>	Ratified 2006	Episodes 30/4, p. 258-270, 2007
Sandbian Stage	458.4 ± 0.9	Sularp Brook, Fågels ång, Sweden	55.7137 °N 13.3255 °E	1.4m below a phosphorite marker bed in the E14b outcrop	Graptolite FAD <i>Nemagraptus gracilis</i>	Ratified 2002	Episodes 23/2, p. 102-109, 2000
Middle Ordovician Series							
Darriwilian Stage	467.3 ± 1.1	Huangnitang section, Changshan, Zhejiang Province, SE China	28.8539 °N 118.4897 °E	base of Bed AEP 184	Graptolite FAD <i>Undulograptus austrodentatus</i>	Ratified 1987	Episodes 20/3, p. 158-166, 1997
Dapingian Stage	470.0 ± 1.4	Huanghuachang Section, NE of Yichang city, Hubei Province, S. China	30.8605 °N 110.3740 °E	10.57 m above base of the Dawan Formation	Conodont FAD of <i>Baltoniodus triangularis</i>	Ratified 2007	Episodes 28/2, p. 105 - 117, 2005 ; Episodes 32/2, p. 96-113, 2009
Lower Ordovician Series							

Floian Stage	477.7 ± 1.4	Diabasbrottet, Hunneberg, Sweden	58.3589 °N 12.5024 °E	in the lower Tøyen Shale, 2.1m above the top of the Cambrian	Graptolite FAD <i>Tetragraptus approximatus</i>	Ratified 2002	Episodes 27/4, p. 265-272, 2004
Tremadocian Stage	485.4 ± 1.9	Green Point Section, western Newfoundland	49.6829 °N 57.9653 °W	at the 101.8m level, within Bed 23, in the measured section	Conodont FAD <i>Iapetognathus fluctivagus</i>	Ratified 2000	Episodes 24/1, p. 19 - 28, 2001
Cambrian System							
Furongian Series							
Stage 10	~489.5	candidate section is Duibian (Zhejiang province, China)			Trilobite FAD of <i>Lotagnostus americanus</i> . An internal substage division might be FAD of <i>Codylodus adesei</i> conodont		
Jiangshanian Stage	~494	Duibian B section, Zhejiang province, China	28 °48.958'N 118 °36.896'E	28.2 m in Duibian B section	FAD of agnostid trilobite <i>Agnostotes orientalis</i> and the FO of polymerid trilobite <i>Irvingella angustilimbata</i>	Ratified 2011	Episodes 35/4, p.462-477, 2012
Paibian Stage	~497	Wuling Mountains, Huayuan County, NW Hunan Province, Chin	28.3895 °N 109.5257 °E	at 396 m in the Huaqiao Formation	Trilobite FAD <i>Glyptagnostus reticulatus</i>	Ratified 2003	Lethaia 37, p. 365-379, 2004
Series 3							
Guzhangian Stage	~500.5	Louyixi, Guzhang County, NW Hunan Province, S. China	28.7200 °N 109.9647 °E	121.3 m above the base of the Huaqiao Formation	Trilobite FAD <i>Lejopyge laevigata</i>	Ratified 2008	Episodes 32/1, p.41-55, 2009
Drumian Stage	~504.5	Drum Mountains, Millard County, Utah, USA	39.5117 °N 112.9915 °W	at the base of a dark-gray thinly laminated calcisiltite layer, 62 m above the base of the Wheeler Formation	Trilobite FAD <i>Ptychagnostus atavus</i>	Ratified 2006	Episodes 30/2,p. 85-95, 2007
Stage 5	~509	candidate sections are Wuliu-Zengjiayan (east Guizhou, China) and Split Mountain			Trilobite, potentially FAD of <i>Oryctocephalus indicus</i>		

		(Nevada, USA)					
Series 2							
Stage 4	~514				Trilobite FAD <i>Olenellus</i> or <i>Redlichia</i>		
Stage 3	~521				Trilobites -- their FAD		
Terreneuvian Series							
Stage 2	~529				Small Shelly Fossils, or Archaeocyathid species		
Fortunian Stage	541.0 ± 1.0	Fortune Head, SE Newfoundland, Canada	47.0762 °N 55.8310 °W	2.4m above the base of Member 2 in the Chapel Island Formation	Trace fossil FAD <i>Trichophycus pedum</i>	Ratified 1992	Episodes 17/1&2, p. 95-100, 1994
Precambrian							
Proterozoic Eon							
Neoproterozoic Era							
Ediacaran System	~635	Enorama Creek, Flinders Ranges, South Australia	31.3314 °S 138.6334 °E	base of the Marinoan cap carbonate	(1) rapid decay of Marinoan ice sheets and onset of distinct cap carbonates throughout the world, and (2) the beginning of a distinctive pattern of secular changes in carbon isotopes.	Ratified 1990	Lethaia 39, p.13-30, 2006
Cryogenian System	720	Defined chronometrically; but will be replaced by GSSP. First glacial episode occurred after 750 Ma				Ratified 1990	Episodes 14/2, 1991
Tonian System	1000	Defined chronometrically				Ratified 1990	Episodes 14/2, 1991
Mesoproterozoic Era							

Stenian System	1200	Defined chronometrically				Ratified 1990	Episodes 14/2,1991
Ectasian System	1400	Defined chronometrically				Ratified 1990	Episodes 14/2,1991
Calymmian System	1600	Defined chronometrically				Ratified 1990	Episodes 14/2,1991
Paleoproterozoic Era							
Statherian System	1800	Defined chronometrically				Ratified 1990	Episodes 14/2,1991
Orosirian System	2050	Defined chronometrically				Ratified 1990	Episodes 14/2,1991
Rhyacian System	2300	Defined chronometrically				Ratified 1990	Episodes 14/2,1991
Siderian System	2500	Defined chronometrically, but it will be replaced by GSSP				Ratified 1990	Episodes 14/2,1991
Archean Eon							
Neoproterozoic Era	2800	Defined chronometrically				Subcomm. decision 1996, but not submitted to ICS	Informally in Episodes 15/2, 1992
Mesoarchean Era	3200	Defined chronometrically				Subcomm. decision 1996, but not submitted to ICS	Informally in Episodes 15/2, 1992
Paleoarchean Era	3600	Defined chronometrically				Subcomm. decision 1996, but not submitted to ICS	Informally in Episodes 15/2, 1992
Eoarchean Era	4000	Base is not defined				Subcomm. decision 1996, but not submitted to ICS	Informally in Episodes 15/2, 1992

Hadean Eon	~4600				Formation of planet Earth. Informal term		
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