**Supplementary Information for**

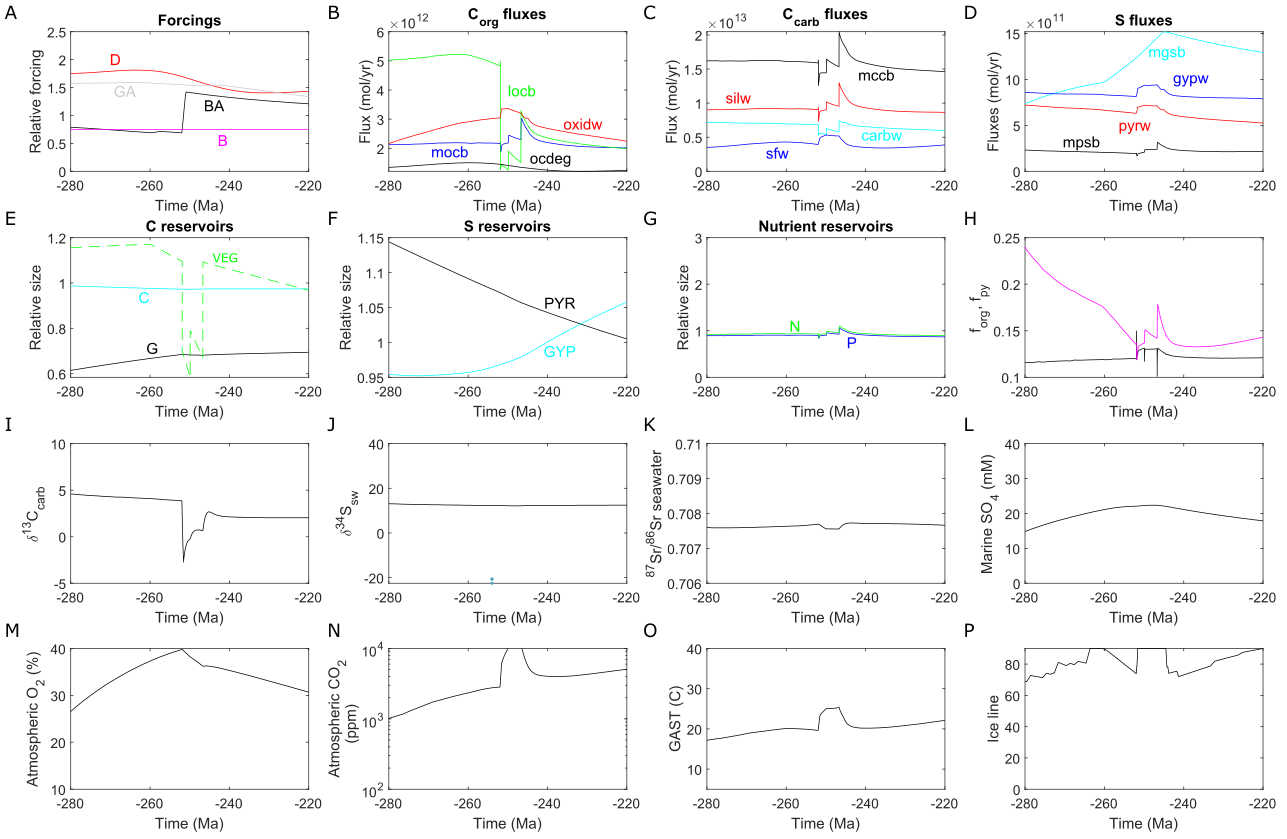
**Early Triassic super-greenhouse climate driven by vegetation collapse**

**by Xu et al.**

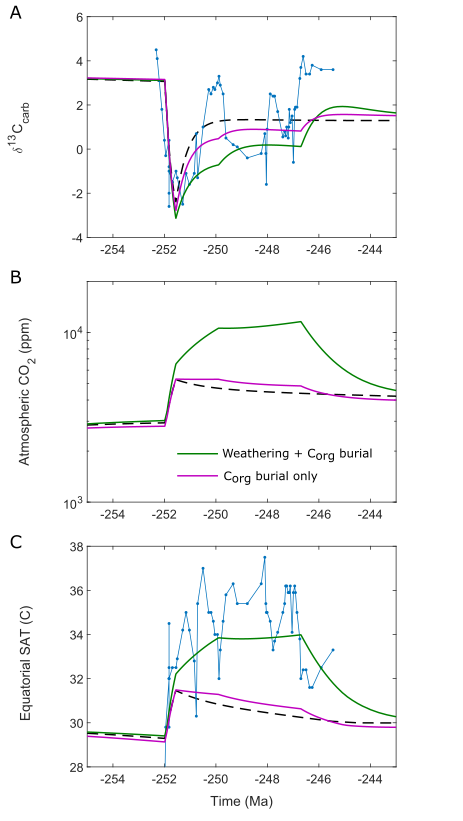
This file contains Figures S1 and S2, and Tables S1-S6. See Methods and main text for references to this material.

**Table S1. Number of macro plant fossil extinct taxa and species level extinction magnitude.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Changhsingian | | | Induan | | | Olenekian | | | Anisian | | |
|  | Total | High | Low | Total | High | Low | Total | High | Low | Total | High | Low |
| Taxa no. | 352 | 151 | 245 | 166 | 112 | 72 | 241 | 104 | 158 | 289 | 132 | 181 |
| No. extinct | 288 | 100 | 217 | 109 | 74 | 43 | 166 | 79 | 92 |  |  |  |
| Extinction rate | 82% | 66% | 86% | 66% | 66% | 60% | 69% | 76% | 58% |  |  |  |

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**Figure S1. SCION model fluxes and variables.** Single run shown using averages of forcing ensemble. D = degassing, GA = granite area, BA = basalt area, B = carbonate burial depth, W = weathering enhancement factor due to evolution, locb = land-derived organic carbon burial, mocb = marine organic carbon burial, oxidw = oxidative weathering, ocdeg = organic carbon degassing, mccb = marine carbonate carbon burial, silw = silicate weathering, carbw = carbonate weathering, sfw = seafloor weathering, mgsb = marine gypsum sulfur burial, mpsb = marine pyrite sulfur burial, gypw = gypsum weathering, pyrw = pyrite weathering, C = crustal carbonate reservoir, G = crustal organic carbon reservoir, VEG = vegetation carbon reservoir, PYR = crustal pyrite reservoir, GYP = crustal gypsum reservoir, N = marine nitrate, P = marine phosphate.



**Figure S2. SCION model outputs with and without weathering enhancement.** Green line shows single run at ensemble medians as in ms Figure 3, where both continental weathering and terrestrially-derived organic carbon burial are affected by the maps of plant biomass. Purple line shows the same model run where weathering is not affected by plants, but the effects on Corg burial remain. See main text for discussion.

**Table S2. Flora classification and Net Primary Productivity.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Equatorial  A | | | Arid  B | | | | Temperate  C | | | | Boreal  D | | | | | Tundra  E |  |
| NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| Abbrev. |  | **Af** | **Am** | **Aw** | **Bwh** | **Bwk** | **Bsh** | **Bsk** | **Cfa** | **Cfb** | **Csa** | **Csb** | **Dfa** | **Dfb** | **Dsb** | **Dsc** | **Dsd** | **E** |  |
| Feature | No plant record | Tropical | Tropical | Tropical | Arid | Arid | Arid | Arid | Temperate | Temperate | Temperate | Temperate | Continental | Continental | Continental | Continental | Continental | Tundra |  |
| Rainforest | Monsoon | Savanna | Desert | Desert | Steppe | Steppe | No dry season | No dry season | Dry summer | Dry summer | No dry season | No dry season | Dry summer | Dry summer | Dry summer |  |  |
|  |  |  | Hot | Cold | Hot | Cold | Hot summer | Warm summer | Hot summer | Warm summer | Hot summer | Warm summer | Warm summer | Cold summer | Very cold summer |  |  |
| NPP |  | (1) |  | (2) | (3) | (4) |  |  | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |  |  |
| Changhsingian |  | S-CN |  | US |  |  |  |  | CN-XZ | TR | N-CN | CN-XJ | RU-S | AU | AR | AN | ZA |  | Changhsingian |
|  |  |  | IT |  |  |  |  | LA | TH | RU-O |  |  | ID |  | IN |  |  |
|  |  |  | AT |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | DE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | GB |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NPP |  |  |  |  |  |  | (14) |  |  | (7) | (15) | (16) |  |  |  |  |  |  |  |
| Induan |  |  |  |  |  |  | AU |  |  | RU-O | AR | ZA |  |  |  |  |  |  | Induan |
|  |  |  |  |  |  | ES |  |  | NO | GRL | DE |  |  |  |  |  |  |
|  |  |  |  |  |  | MN |  |  | (17) | IE | FR |  |  |  |  |  |  |
|  |  |  |  |  |  | KZ |  |  | N-CN | PL | RS |  |  |  |  |  |  |
|  |  |  |  |  |  | RU-O |  |  | S-CN | CA |  |  |  |  |  |  |  |
|  |  |  |  |  |  | CN-XJ |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | IN |  |  |  |  |  |  |  |  |  |  |  |  |
| NPP |  |  |  | (2) |  |  | (14) |  | (18) | (19) | (7) | (16) |  |  |  | (12) | (13) |  |  |
| Olenekian |  |  |  | AT |  |  | GRL |  | RU-S | AU | S-CN | ES |  |  |  | AN-A | IN |  | Olenekian |
|  |  |  | NO |  |  | TN |  | DE | ZA |  | GB |  |  |  |  |  |  |
|  |  |  | IL |  |  | KZ |  | N-CN | HU |  | IT |  |  |  |  |  |  |
|  |  |  | RU-O |  |  | JP |  |  | MG |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | FR |  |  |  |  |  |  |  |  |
| NPP |  |  | (20) | (2) |  |  | (14) |  | (6) | (19) | (7) | (8) |  |  |  |  |  |  |  |
| Anisian |  |  | FR | PL |  |  | TJ |  | CN-XJ | MN | GB | IN |  |  |  |  |  |  | Anisian |
|  |  | S-CN | US |  |  | CH |  | N-CN | ZA | ES | AN-A |  |  |  |  |  |  |
|  |  | DE | TR |  |  |  |  | AU | RU-S | RU-O |  |  |  |  |  |  |  |
|  |  | IT | IL |  |  |  |  | AN | SY |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | AR | BR |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | NZ |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | CA |  |  |  |  |  |  |  |  |

\* See area abbreviation in Figure S1

\* (1)-(20) represents the corresponding nearest living flora, see details in Table 3 below

**Table S3. Simplified information of nearest living flora (from Olson et al., 2013).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NO. | Location | NPP | Longitude | Latitude | Character |
| (1)+ | Thailand | 1680 | 99.8 | 7.58 | Tropical (evergreen) |
| (1)- | Malaysia | 1495 | 102.31 | 2.98 | Tropical (evergreen) |
| (2)+ | Kenya | 162 | 36.83 | -1.33 | Savanna (grassland) |
| (2)- | Australia | 111 | 146.27 | -26.4 | Savanna (C3 grassland) |
| (3)+ | Algeria | 80 | 3 | 33 | Dessert |
| (3)- | Australia | 40 | 146.22 | -26.42 | Dessert (shrub) |
| (4)+ | Kazakhstan | 170 | 71 | 51.6 | Cold desert steppe (C3 grassland) |
| (4)- | Russia | 137 | 94.42 | 51.83 | Cold desert steppe (C3 grassland) |
| (5)+ | China | 1310 | 95.1 | 30.15 | Subtropical (deciduous) |
| (5)- | Papua New Guine | 1042 | 145.18 | -6 | Tropical (evergreen) |
| (6)+ | Germany | 1240 | 9.5 | 49 | Temperate |
| (6)- | New Zealand | 1120 | 176 | -39 | Temperate-Subtropical |
| (7)+ | India | 740 | 85.1 | 26.42 | Temperate (dry deciduous) |
| (7)- | Argentina | 719 | -59.75 | -26.75 | Xeric |
| (8)+ | Belgium | 710 | 5 | 49.75 | Temperate (deciduous) |
| (8)- | China | 688 | 123 | 49 | Temperate (deciduous) |
| (9)+ | Siberia | 931 | 83 | 58 | Boreal (evergreen) |
| (9)- | Siberia | 911 | 103 | 53 | Boreal (evergreen) |
| (10)+ | Russia | 590 | 34 | 62 | Boreal (evergreen) |
| (10)- | Canada | 565 | -115.5 | 50.2 | Boreal (evergreen) |
| (11)+ | USA | 612 | -148.25 | 64.75 | Boreal (deciduous) |
| (11)- | Russia | 585 | 34 | 62 | Boreal (evergreen) |
| (12)+ | Canada | 370 | -98.7 | 55.9 | Boreal (deciduous) |
| (12)- | Finland | 368 | 29.32 | 66.37 | Boreal (evergreen) |
| (13)+ | Sweden | 410 | 16.5 | 60.82 | Boreal (coniferous) |
| (13)- | Canada | 394 | -106.2 | 53.63 | Boreal (deciduous) |
| (14)+ | Syria | 110 | 38 | 35 | Steppe (C3 grassland) |
| (14)- | USA | 93 | -106.85 | 32.6 | Sub-tropical semi-desert |
| (15)+ | Argentina | 320 | -64.25 | -25.75 | Xeric |
| (15)- | Venezuela | 310 | -67.42 | 8.93 | Tropical island Savanna |
| (16)+ | France | 260 | 2.7 | 48.4 | Temperate (deciduous) |
| (16)- | Ivory Coast | 250 | -5.03 | 6.22 | Humid savanna |
| (17)+ | Australia | 380 | 119.25 | -21.25 | Shrub land |
| (17)- | China | 358 | 101.25 | 23.75 | Subtropical forest |
| (18)+ | USA | 1069 | -122.61 | 44.68 | Temperate (coniferous) |
| (18)- | Jamaica | 981 | -76.65 | 18.08 | Tropical (evergreen) |
| (19)+ | USA | 827 | -84.29 | 35.96 | Temperate (deciduous) |
| (19)- | China | 820 | 111.57 | 34.9 | Temperate (deciduous) |
| (20)+ | Colombia | 1636 | -73.56 | 6.39 | Tropical (evergreen) |
| (20)- | Brazil | 1152 | -69.75 | -5.75 | Tropical (evergreen) |

\*\* ‘+’ is the upper limit of the NPP range; ‘-’ is the lower limit of the NPP range.

**Table S4. Normalized macro plant fossil species name of each substage.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Changhsingian-species** | **Induan-species** | **Olenekian-species** | **Anisian-species** |
| *Abrotopteris guizhouensis* | *Abrotopteris* (*Gigantonoclea*) *guizhouensis* | *Aethophyllum speciosum* | *Acrostichides rhombifolius* |
| *Acrostichites concinnus* | *Acitheca* (=*Polymorphopteris*) | *Aipteris wuziwanensis* | *Aethophyllum foetterlianum* |
| *Acrostichites fragilis* | *Acrostichites tunguskanum* | *Albertia elliptica* | *Aethophyllum speciosum* |
| *Acrostichites kirjamkensis* | *Aethophyllum* sp. | *Albertia latifolia* | *Aethophyllum stipulare* |
| *Acrostichites linnaeaefolius* | *Annalepis zeilleri* | *Albertia speciosa* | *Aipteris* sp. |
| *Acrostichites remotus* | *Annularia shirakii* | *Ammatopsis mira* | *Albertia brauni* |
| *Acrostichites schvedovii* | *Anomopteris mougeotii* | *Annularia* sp. | *Albertia elliptica* |
| *Acrostichites shensiensis* | *Anomopteris* sp. | *Anomopteris minima* | *Albertia latifolia* |
| *Acrostichites tchunicus* | *Antholithes cylindricus* | *Anomopteris mougeotii* | *Albertia ovata* |
| *Acrostichites tunguskanus* | *Araucarites* sp. | *Araucarites* sp. | *Albertia speciosa* |
| *Alethopteris ascendens* | *Arthropitys prynadae* | *Arthropitys* sp. | *Anomopteris mougeotii* |
| *Alethopteris norinii* | *Arthropitys tunguscana* | *Asterotheca szeiana* | *Anotopteris* (*Cladophlebis*) *remota* |
| *Alethopteris sinensis* | *Asterotheca radczenkoi* | *Baiera gracilis* | *Antarctipteris sclericaulis* |
| *Amphorispermum* | *Baiera* sp. | *Benxiopteris acuta* | *Anthrophyopsis* sp. |
| *Annularia epeclissensis* | *Boreopteris* sp. | *Benxiopteris densinervis* | *Araucarites agordicus* |
| *Annularia hunanensis* | *Botrychiopsis validus* | *Benxiopteris partita* | *Araucarites massalongi* |
| *Annularia pingloensis* | *Boweria* sp. | *Benxiopteris polymorpha* | *Araucarites pachyphyllus* |
| *Annularia shirakii* | *Calamites shanxiensis* | *Bernoullia zeilleri* | *Araucarites recubariensis* |
| *Anshuncladus aduncatus* | *Chiropteris* sp. | *Brachyphyllum* sp. | *Arberophyllum* sp. |
| *Anshuncladus contiguus* | *Cladophlebis borealis* | *Calamites arenaceus* | *Ashicaulis beardmorensis* |
| *Anshuncladus xinminensis* | *Cladophlebis concinna* | *Calamites shanxiensis* | *Ashicaulis woolfei* |
| *Antholithes* sp. | *Cladophlebis parvulus* | *Caulopteris parvisigillata* | *Asterotheca rigbyana* |
| *Araucarites* sp. | *Cladophlebis tajmyrensis* | *Chiropteris taizihoensis* | *Asterotheca szeiana* |
| *Arberia* sp. | *Cordaites insignis* | *Cidarophyton rewanense* | *Baiera cuyana* |
| *Arberophyllum* | *Cordaites principalis* | *Cladophlebis carnei* | *Bernoullia* sp. |
| *Arthropitys medullatus* | *Crassinervia* (=*Dolerophyllum*) *acuminata* | *Cladophlebis gaillardotii* | *Bjuvia dolomitica* |
| *Arthropitys prynadae* | *Crematopteris* sp. | *Cladophlebis gracilis* | *Brachyphyllum* sp. |
| *Arthropitys tunguskanum* | *Ctenis* sp. | *Cladophlebis ichunensis* | *Bromsgrovia willsii* |
| *Asterophyllites* sp. | *Ctenopteris angustiloba* | *Cladophlebis mendozaensis* | *Calamites aliwalensis* |
| *Asterotheca* (Pecopteris) guizhouensis | *Cylomeia* sp. | *Cladophlebis platyphylla* | *Calamites arenaceus* |
| *Baiera* sp. | *Cylostrobusclavatus* | *Cladophlebis raciborskii* | *Calamites mougeotii* |
| *Bardella* sp. | *Dicotyophyllum* sp. | *Cladophlebis roessertii* | *Calamites remotus* |
| *Bernoullia* sp. | *Dicroidium odontopteroides* | *Cladophlebis tenerus* | *Calamites shanxiensis* |
| *Bicoemplectopteris hallei* | *Discopteris* sp. | *Clathrophyllum merianii* | *Caulopteris lesangeana* |
| *Boreopteris evenkensis* | *Dzergalanella merianii* | *Coniopteris burejensis* | *Caulopteris micropeltis* |
| *Boreopteris triangularis* | *Elatides* sp. | *Coniopteris ramosa* | *Caulopteris tessellata* |
| *Bothrodendron* sp. | *Elatoclatus linearis* | *Cordaites inhofii* | *Caulopteris voltzii* |
| *Botrychiopsis* sp. | *Eleganopteris* sp. | *Cordaites mairii* | *Chiropteris barrealensis* |
| *Boweria taimurica* | *Equisetites mougeotii* | *Crematopteris typica* | *Chiropteris digitata* |
| *Boweriar angiferina* | *Equisetites sixtelae* | *Ctenozamites cycadea* | *Chiropteris zeilleri* |
| *Calamites Schiitzeiformis* | *Equisetum arenaceum* | *Ctenozamites sarranii* | *Cladophlebis densifolia* |
| *Calamoderma* sp. | *Equisetum* cf. *brongniartii* | *Cyclostrobus clavatus* | *Cladophlebis leuthardtii* |
| *Callipteris* sp. | *Equisetum mougeotii* | *Cyclostrobus sydneyensis* | *Cladophlebis linnaefolia* |
| *Caulopteris sichuanensis* | *Equisites acanthodon* | *Czekanowskia* sp. | *Cladophlebis mendozaensis* |
| *Chansitheca kidstonii* | *Euryphyllum* sp. | *Danaeopsis hughesii* | *Cladophlebis mesozoica* |
| *Chiropteris* sp. | *Fascipteris stena* | *Danaeopsis marantacea* | *Cladophlebis remota* |
| *Cladophlebis (Pecopteris) tenuicostata* | *Feildenia* sp. | *Desmiophyllum* sp. | *Cladophlebis retallackii* |
| *Cladophlebis argutula* | *Gangamopteris qinshuensis* | *Dicroidium allophyllum* | *Cladophlebis rhoifolia* |
| *Cladophlebis augusta* | *Geinitzia* sp. | *Dicroidium dubium* | *Cladophlebis sinuata* |
| *Cladophlebis chantaica* | *Germaropteris (Peltaspermum) martinsii* | *Dicroidium gopadensis* | *Compsopteris hughesii* |
| *Cladophlebis crenulata* | *Gigantonoclea guizhouensis* | *Dicroidium lancifolium* | *Coniferomyelon* sp. |
| *Cladophlebis fuyuanensis* | *Gigantopteris dentata* | *Dicroidium nidpurensis* | *Coniopteris harringtoni* |
| *Cladophlebis grabauiana* | *Gigantopteris dictyophylloides* | *Dicroidium papillosum* | *Coniopteris walkomi* |
| *Cladophlebis haiburnensis* | *Gigantopteris dictyophyllum* | *Dicroidium voiseyi* | *Cordaites inhofii* |
| *Cladophlebis honnamakensis* | *Ginkgo* sp. | *Dicroidium zuberi* | *Crematopteris typica* |
| *Cladophlebis ichiinensis* | *Ginkgoites* sp. | *Dictyophyllidites mortonii* | *Czekanowskia* sp. |
| *Cladophlebis jeniseica* | *Glossophyllum claviforme* | *Dioonitocarpidium* | *Danaeopsis fecunda* |
| *Cladophlebis kaoiana* | *Glossopteris* sp. | *Duckworthia isoeteformis* | *Darneya dentata* |
| *Cladophlebis kirjamkensis* | *Glossotheca* sp. | *Eboracia* sp. | *Darneya mougeotii* |
| *Cladophlebis lobifera* | *Glossozamites* sp. | *Edyndella* sp. | *Darneya peltata* |
| *Cladophlebis manchurica* | *Gontriglossa* sp. | *Elatocladus* sp. | *Delemaya spinulosa* |
| *Cladophlebis nystroemii* | *Heidiphyllum* sp. | *Eleganopteris* sp. | *Desmiophyllum* sp. |
| *Cladophlebis ozakii* | *Katasiopteris* sp. | *Equisetites brongniartii* | *Dicroidiopsis* sp. |
| *Cladophlebis parapermica* | *Khonomakidium tunguscanum* | *Equisetites keuperina* | *Dicroidium coriaceum* |
| *Cladophlebis permica* | *Kirjamkenia lobata* | *Equisetites mougeotii* | *Dicroidium crassinervis* |
| *Cladophlebis permiensis* | *Lepidodendron* sp. | *Equisetites mougeotii* | *Dicroidium crassum* |
| *Cladophlebis prynadae* | *Lepidopteris arctica* | *Equisetites qionghaiensis* | *Dicroidium dubium* |
| *Cladophlebis pygmaea* | *Leuthardtia crassa* | *Equisetites singularis* | *Dicroidium dutoitii* |
| *Cladophlebis rarinervis* | *Lobatannularia linearis* | *Esterella delicatula* | *Dicroidium elongatum* |
| *Cladophlebis subfalcata* | *Lobatannularia multifolia* | *Euryphyllum* sp. | *Dicroidium eskense* |
| *Cladophlebis tenuicostata* | *Lobatopteris multinervis* | *Gangamopteris qinshuiensis* | *Dicroidium fremouwensis* |
| *Cladophlebis uralica* | *Lobatopteris polymorpha* | *Gangamopteris tuncunensis* | *Dicroidium hughesii* |
| *Cladophlebis whitbiensis* | *Lutuginia* sp. | *Ginkgo marginatus* | *Dicroidium lancifolium* |
| *Cladophlebis williamsonii* | *Lycoderma* sp. | *Ginkgoites* sp. | *Dicroidium natalense* |
| *Cladophlebis yunnanica* | *Lycomeia rossica* | *Gleichenites benxiensis* | *Dicroidium odontopteroides* |
| *Cladophlebis zwetkoviensis* | *Marchajella angusta* | *Glossophyllum shensiense* | *Dicroidium pinnis-distantibus* |
| *Comia* sp. | *Marchajella kaschirzewii* | *Glossopteris browniana* | *Dicroidium prolungatum* |
| *Compsopteris contracta* | *Mertensides* sp. | *Glossopteris communis* | *Dicroidium shirleyi* |
| *Compsopteris imparis* | *Mesenteriophyllum* | *Glossopteris damudica* | *Dicroidium spinifolium* |
| *Compsopteris multinervis* | *Neokoretrophyllites linearis* | *Glossopteris gopadensis* | *Dicroidium stelznerianum* |
| *Compsopteris wongii* | *Neomariopteris* (*Sphenopteris*) *lobifolia* | *Glossopteris linearis* | *Dicroidium superbum* |
| *Cordaites principalis* | *Neuropteridium* ? *intermedium* | *Glossopteris nidpurensis* | *Dicroidium voiseyi* |
| *Crassinervia* (=Dolerophyllum) sp. | *Neuropteridium elegans* | *Glossopteris nilssonioides* | *Dicroidium zuberi* |
| *Ctenis* | *Neuropteridium grandifolium* | *Glossopteris papillosa* | *Dictyophyllum barrealensis* |
| *Darneya* sp. | *Neuropteridium tunguscanum* | *Glossopteris senii* | *Dictyophyllum castellanosii* |
| *Dictyopteridium flabellatum* | *Nilssonia* | *Glossopteris shanxiensis* | *Doratophyllum* sp. |
| *Dictyopteridium sporiferum* | *Noeggerathiopsis pseudominutifolia* | *Glossopteris taeniopteroides* | *Dordrechtites* sp. |
| *Discopteris dakatensis* | *Osmundopsis angusta* | *Glossotheca cochlearis* | *Equisetites arenaceus* |
| *Discopteris rotundiloba* | *Pachypteris* sp. | *Glossotheca cuneiformis* | *Equisetites conicus* |
| *Dizeugotheca* sp. | *Pagiophyllum* (*Araucarites*) *vandijkii* | *Glossotheca petiolata* | *Equisetites gracilis* |
| *Elatides* sp. | *Palaeovittaria* sp. | *Glossozamites* sp. | *Equisetites mougeotii* |
| *Elatocladus linearis* | *Paracalamites doliaris* | *Glottolepis glabrosa* | *Equisetum brongniartii* |
| *Eleganopteris tripinnata* | *Paracalamites stenocostatus* | *Glottolepis ovata* | *Fuechselia schimperi* |
| *Equisetites* sp. | *Parajacutiella* sp. | *Glottolepis rugosa* | *Ginkgo* sp. |
| *Fascipteris hallei* | *Pecopteris sulziana* | *Glottolepis sidhiensis* | *Ginkgoites dutoitii* |
| *Fascipteris sinensis* | *Pecopteris* (*Asterotheca*) *orientalis* | *Glottolepis tuberculata* | *Ginkgoites semirotunda* |
| *Fascipteris stena* | *Pelourdea* (=*Yuccites*) *jacutensis* | *Gopadia coriacea* | *Gleichenites antarcticus* |
| *Gigantonoclea acuminatiloba* | *Pelourdea* (=*Yuccites*) *vogesiacus* | *Gopadia papillata* | *Glossophyllum* sp. |
| *Gigantonoclea dictyophylloides* | *Peltaspermum calycinum* | *Helicorhiza duckworthensis* | *Gordonopteris lorigae* |
| *Gigantonoclea guizhouensis* | *Peltaspermum lobatum* | *Hymenophyllites tenellus* | *Haidingera schaurothiana* |
| *Gigantonoclea hallei* | *Peltaspermum lobutalum* | *Isoetites sagittatus* | *Hausmannia dentata* |
| *Gigantonoclea largrelii* | *Phyllotheca kryshtofovichii* | *Katasiopteris* sp. | *Hausmannia faltisiana* |
| *Gigantonoclea lobata* | *Phyllotheca yushenensis* | *Kchonomakidium* sp. | *Heidiphyllum elongatum* |
| *Gigantonoclea longifolia* | *Pityophyllum* sp. | *Kirjamkenia* sp. | *Hoegia* sp. |
| *Gigantonoclea longmendongensis* | *Pleurocaulis rewanense* | *Legnophora girardi* | *Indotheca sakesarensis* |
| *Gigantonoclea meridionalis* | *Pleuromeia altinis* | *Lepacyclotes* (=*Annalepis*) *zeilleri* | *Isoetites brandneri* |
| *Gigantonoclea nicotianaefolia* | *Pleuromeia jiaochengensis* | *Lepidopteris indica* | *Johnstonia coriacea* |
| *Gigantonoclea plumosa* | *Pleuromeia patriformis* | *Lepidopteris madagascariensis* | *Johnstonia stelzneriana* |
| *Gigantonoclea rosulata* | *Pleuromeia reniformis* | *Leuthardtia ovalis* | *Kantia* sp. |
| *Gigantopteris cordata* | *Pleuromeia sternbergii* | *Lobatannularia heianensis* | *Knorriopteris mariana* |
| *Gigantopteris dictyophylloides* | *Pleuromeia taymirica* | *Lutuginia* sp. | *Lepacyclotes* (=*Annalepis*) *angusta* |
| *Gigantopteris dictyophyllum* | *Protoblechnum* (*Compsopteris*) *contracta* | *Meristophyllum* (=*Praephylladoderma*)sp. | *Lepacyclotes* (=*Annalepis*) *bechstaedtii* |
| *Gigantopteris meganetes* | *Prynadaeopteris* | *Mertensides* sp. | *Lepacyclotes* (=*Annalepis*) *brevicystis* |
| *Gigantopteris nicotianaefolia* | *Prynadaia* sp. | *Mesenteriophyllum* sp. | *Lepacyclotes* (=*Annalepis*) *furongqiaoensis* |
| *Gigantopteris paradoxa* | *Pseudoaraucarites* | *Microphyllopteris* (=*Korallipteris*) sp. | *Lepacyclotes* (=*Annalepis*) *latiloba* |
| *Gigantopteris ricotianaefolia* | *Pseudoctenis* sp. | *Neocalamites asperrimus* | *Lepacyclotes* (=*Annalepis*) *zeilleri* |
| *Ginkgoites* sp. | *Pseudotorellia* sp. | *Neocalamites merianii* | *Lepidodendrites tessellata* |
| *Glossophyllum* sp. | *Pterophyllum* sp. | *Neocalamites shanxiensis* | *Lepidopteris africana* |
| *Glossopteris anatolica* | *Pursongia* sp. | *Neokoretrophyllites* sp. | *Lepidopteris brownii* |
| *Glossopteris symmetrifolia* | *Quadrocladus pachyphyllum* | *Neuropteridium bergense* | *Lepidopteris madagascariensis* |
| *Glottophyllum* sp. | *Quadrocladus sibiricus* | *Neuropteridium curvinerve* | *Lepidopteris murtonii* |
| *Gontriglossa* sp. | *Rhipidopsis* sp. | *Neuropteridium grandifolia* | *Lepidopteris stormbergensis* |
| *Heidiphyllum* sp. | *Schizoneura gondwanensis* | *Neuropteridium grandifolium* | *Lesangeana hasseloti* |
| *Iniopteris* sp. | *Schizoneura megaphylla* | *Neuropteridium marginatum* | *Lesangeana voltzii* |
| *Katasiopteris lebedevii* | *Schizoneura paradoxa* | *Neuropteridium voltzii* | *Lobatannularia sp.* |
| *Katasiopteris polymorpha* | *Schvedopteris lobata* | *Nidia ovalis* | *Lycopia dezanchei* |
| *Kirjamkenia* sp. | *Spehnopteris* sp. | *Nilssonia grandifolia* | *Macrotaeniopteris* sp. |
| *Korvuntchania* sp. | *Sphenobaiera porrecta* | *Noeggerathiopsis obovata* | *Marantoidea* sp. |
| *Lebachia* sp. | *Sphenobaiera tajmyrensis* | *Nymboidiantum multilobatum* | *Marattiopsis* sp. |
| *Lelstotheca sp.* | *Sphenobaiera tunguscana* | *Osmundopsis* sp. | *Microcachrydites doubingeri* |
| *Lepidodendron* (Cathaysiodendron) acutangulum | *Sphenobaiera vittaefolia* | *Otozamites vogesiacus* | *Microcachrydites sittleri* |
| *Lepidodendron acutisquamus* | *Sphenophyllum speciosum* | *Pachypteris* sp. | *Neocalamites carrerei* |
| *Lepidodendron emeishamensis* | *Sphenopteris polymorpha* | *Pagiophyllum* sp. | *Neocalamites merianii* |
| *Lepidodendron lepidophlodes* | *Sphenopteris tenuis* | *Palaeovittaria shanxiensis* | *Neocalamites shanxiensis* |
| *Lepidodendron lepidophloides* | *Sphenopteris trisecta* | *Palissya* ? sp. | *Neuropteridium bergense* |
| *Lepidodendron lepidophylloides* | *Taeniopteris ensis* | *Paracalamites* sp. | *Neuropteridium elegans* |
| *Lepidodendron oculusfelis* | *Taeniopteris prynadae* | *Pecopteris sulziana* | *Neuropteridium grandifolia* |
| *Lepidodendron xuanweiensis* | *Taeniopteris tajmyrica* | *Pecopteris whitbiensis* | *Neuropteridium grandifolium* |
| *Lepidopteris martinsii* | *Takhtajanodoxa mirabis* | *Pelourdea* (=*Yuccites*) *anastomosis* | *Neuropteridium imbricatum* |
| *Lidgettonia africana* | *Tatarina* sp. | *Pelourdea* (=*Yuccites*) *ensiformis* | *Neuropteridium intermedium* |
| *Lidgettonia inhluzanensis* | *Tersiella* sp. | *Pelourdea* (=*Yuccites*) *vogesiaca* | *Neuropteridium marginatum* |
| *Lidgettonia lidgettonioides* | *Todites korvunchanica* | *Pelourdea* (=*Yuccites*) *vogesiacus* | *Neuropteridium voltzii* |
| *Lidgettonia mooiriverensis* | *Todites orulanganensis* | *Peltaspermum calycinum* | *Neuropteris elegans* |
| *Linophyllum xuanweiense* | *Todites shensiensis* | *Peltaspermum lobulatum* | *Neuropteris grandifolia* |
| *Linopteris brongniartii* | *Tomia* | *Phyllotheca bella* | *Neuropteris imbricata* |
| *Lixotheca permica* | *Tomiostrobus* (=*Annalepis*) *augusta* | *Phyllotheca bicruris* | *Neuropteris intermedia* |
| *Lobatannularia cathaysiana* | *Tomiostrobus* (=*Annalepis*) *brevicystis* | *Phyllotheca marginans* | *Neuropteris voltzii* |
| *Lobatannularia ensifolia* | *Tomiostrobus* (=*Annalepis*) *latiloba* | *Phyllotheca yusheensis* | *Nilssonia costanervis* |
| *Lobatannularia fusiformis* | *Tomiostrobus* (=*Annalepis*) *zeilleri* | *Pinites ramosus* sp. | *Nilssonia hogardi* |
| *Lobatannularia heianensis* | *Tomiostrobus beloserovii* | *Pityophyllum* sp. | *Nilssonia reservoirensis* |
| *Lobatannularia lingulata* | *Tomiostrobus bulbosus* | *Platysaccus leschikii* | *Noeggerathiopsis* sp. |
| *Lobatannularia multifolia* | *Tomiostrobus fusiformis* | *Platysaccus queenslandi* | *Notophytum krauselii* |
| *Lobatannularia nampoensis* | *Tomiostrobus gorskyi* | *Pleurocaulis rewanense* | *Nymboidiantum glossophyllum* |
| *Lobatannularia sichuanensis* | *Tomiostrobus migayi* | *Pleuromeia epicharis* | *Oleandridium* sp. |
| *Lobatopteris multinervis* | *Tomiostrobus radiatus* | *Pleuromeia germari* | *Otozamites vogesiacus* |
| *Lobatopteris tchalibiramica* | *Tundrodendron* sp. | *Pleuromeia longicaulis* | *Pachydermophyllum dubium* |
| *Marattiopsis*? sp. | *Tungussopteris cladophleboides* | *Pleuromeia obrutschewii* | *Pachydermophyllum praecordillerae* |
| *Mertensides bullatus* | *Vetlugospermum rombicum* | *Pleuromeia oculina* | *Pachypteris* sp. |
| *Mertensides concinnus* | *Voltzia heterophylla* | *Pleuromeia olenekiensis* | *Pagiophyllum weissmanni* |
| *Mertensides lingulatus* | *Walchia* sp. | *Pleuromeia reniformis* | *Palaeoxyris regularis* |
| *Mesenteriophyllum* sp. | *Yavorskia* sp. | *Pleuromeia rossica* | *Palissya massalongi* |
| *Neocalamites mansfeldicus* | *Zuberia* sp. | *Pleuromeia sternbergii* | *Paraschizoneura jonesii* |
| *Neokoretrophyllites annularioides* |  | *Pleuromeia wuziwanensis* | *Parasciadopitys aequata* |
| *Neokoretrophyllites linearis* |  | *Podozamites lanceolatus* | *Parsorophyllum indicum=Dicroidium zuberi* |
| *Neomariopteris* sp. |  | *Protoblechnum* (*Compsopteris*) *wongii* | *Pecopteris gracilis* |
| *Neuropteridium coreanicum* |  | *Prynadaeopteris sp.* | *Pecopteris sulziana* |
| *Neuropteridium guizhouensis* |  | *Prynadaia sp.* | *Pelourdea (=Yuccites) anastomosis* |
| *Neuropteridium nervosum* |  | *Psymnophyllum multipartitum* | *Pelourdea (=Yuccites) vogesiaca* |
| *Neuropteridium ovata* |  | *Pterophyllum hogardii* | *Pelourdea (=Yuccites) vogesiacus* |
| *Neuropteridium polymorphum* |  | *Pterozamites sinensis* | *Peltaspermum bornemannii* |
| *Neuropteris permica* |  | *Ptilonymba* | *Peltaspermum miracarinatum* |
| *Nillsonia* sp. |  | *Qionghaia carnosa* | *Peltaspermum multicostaum* |
| *Noeggerathiopsis spathulata* |  | *Quadrocladus sp.* | *Petriellaea triangulata* |
| *Odontopteris* sp. |  | *Rhabdotaenia sp.* | *Phlebopteris sp.* |
| *Oligocarpia* sp. |  | *Rhacophyllum* | *Phoenicopsis elongatus* |
| *Osmundopsis uralica* |  | *Rhipidopsis narrabeenensis* | *Phyllotheca sp.* |
| *Otofolium ovatum* |  | *Schizoneura megaphylla* | *Pinites goeppertianus* |
| *Pachydermophyllum* sp. |  | *Schizoneura merianii* | *Pinites ramosus* |
| *Pagiophyllum vandijkii* |  | *Schizoneura ornata* | *Pityophyllum sp.* |
| *Palaeosmunda plenasioides* |  | *Schizoneura paradoxa* | *Platysaccus leschikii* |
| *Palaeosmunda primitiva* |  | *Scutum* sp. | *Platysaccus papilionis* |
| *Paracalamites australis* |  | *Scytophyllum bergeri* | *Platysaccus queenslandi* |
| *Paracalamites stenocostatus* |  | *Selaginellites polaris* | *Platysaccus reticulatus* |
| *Paracalmites triassica* |  | *Sigillaria sternbergii* | *Platysaccus triassicus* |
| *Paracalmites triassicum* |  | *Sinozamites magnus* | *Pleuromeia germari* |
| *Parajacutiella angusta* |  | *Sinozamites myrionervus* | *Pleuromeia hunanensis* |
| *Parajacutiella parva* |  | *Skilliostrobus australis* | *Pleuromeia marginulata* |
| *Pecopteris affinis* |  | *Sphenobaiera crassinervis* | *Pleuromeia oculina* |
| *Pecopteris anderssonii* |  | *Sphenobaiera qiandianziensis* | *Pleuromeia sanxiaensis* |
| *Pecopteris arborescens* |  | *Sphenophyllum* | *Pleuromeia sternbergii* |
| *Pecopteris arcuata* |  | *Sphenopteris delabensis* | *Podozamites* sp. |
| *Pecopteris calcarata* |  | *Sphenopteris digitata* | *Protoblechnum* (=*Compsopteris*) sp. |
| *Pecopteris chihliensis* |  | *Sphenopteris lobifolia* | *Psaronius triasicus* |
| *Pecopteris crenata* |  | *Sphenopteris orientalis* | *Pseudoctenis barrealensis* |
| *Pecopteris densifolia* |  | *Sphenopteris yusheensis* | *Pseudoctenis brownii* |
| *Pecopteris echinata* |  | *Symopteris* (*Bernoullia*) *densinervis* | *Pseudoctenis fissa* |
| *Pecopteris elegantula* |  | *Symopteris* (*Bernoullia*) *zeilleri* | *Pseudoctenis groeberiana* |
| *Pecopteris fuyuanensis* |  | *Symopteris helvetica* | *Pseudoctenis grossa* |
| *Pecopteris gracilenta* |  | *Taeniopteris abnormis* | *Pseudoctenis harringtoniana* |
| *Pecopteris hemiteloides* |  | *Taeniopteris ambiqua* | *Pseudoctenis propinquum* |
| *Pecopteris lativenosa* |  | *Taeniopteris costiformis* | *Pseudovoltzia* sp. |
| *Pecopteris lingulata* |  | *Taeniopteris glandulata* | *Psygmophyllum* sp. |
| *Pecopteris longifoloides* |  | *Taeniopteris hainanensis* | *Pterophyllum angustum* |
| *Pecopteris marginata* |  | *Taeniopteris lentriculiforme* | *Pterophyllum hogardii* |
| *Pecopteris nitida* |  | *Taeniopteris micronervis* | *Pterophyllum robustum* |
| *Pecopteris norinii* |  | *Taxites spathulatus* | *Ptilozamites sandbergeri* |
| *Pecopteris orientalis* |  | *Tersiella* sp. | *Qionghaia carnosa* |
| *Pecopteris pirae* |  | *Thinnfeldia feistmantelii* | *Rienitsia spathulata* |
| *Pecopteris pseudotchichatchevii* |  | *Thinnfeldia major* | *Rissikia media* |
| *Pecopteris qingyunensis* |  | *Todites shensiensis* | *Sagenopteris* sp. |
| *Pecopteris sahnii* |  | *Tomia* sp. | *Saportaea dichotoma* |
| *Pecopteris schoenleiniana* |  | *Tomiostrobus* (=*Annalepis*)sp. | *Saportaea flabellata* |
| *Pecopteris shuanghuensis* |  | *Tonchuanophyllum concinnum* | *Saportaea intermedia* |
| *Pecopteris taiyuanensis* |  | *Tonchuanophyllum minimum* | *Schizoneura merianii* |
| *Pecopteris tunguskana* |  | *Tonchuanophyllum shensiense* | *Schizoneura paradoxa* |
| *Pecopteris unita* |  | *Tungussopteris* sp. | *Schleporia incarcerata* |
| *Pecopteris zauronica* |  | *Umkomasia* sp. | *Scolecopteris antarctica* |
| *Pectiangium lanceolatum* |  | *Vittaephyllum* sp. | *Scolopendrites grauvogelii* |
| *Pelourdea* (=Yuccites) hallei |  | *Voltzia acutifolia* | *Scolopendrites scolopendrioides* |
| *Peltaspermum martinsii* |  | *Voltzia brevifolia* | *Scytophyllum bergeri* |
| *Permotheca* sp. |  | *Voltzia heterophylla* | *Scytophyllum hunanense* |
| *Petrophyllum eratum* |  | *Voltzia heterophylla elegans* | *Scytophyllum neuburgianum* |
| *Phylladoderma* sp. |  | *Voltzia koenenii* | *Selaginellites leonardii* |
| *Phyllotheca australis* |  | *Voltzia quinquepetala* | *Sewardia* sp. |
| *Pityospermum* sp. |  | *Voltzia recubariensis* | *Sigillaria oculina* |
| *Plagiozamites oblongifolius* |  | *Voltzia walchiaeformis* | *Sigillaria sternbergii* |
| *Pleuromeia* sp. |  | *Voltzia weissmannii* | *Spaciinodum collinsonii* |
| *Plumstedia gibbosa* |  | *Voltziopsis townrowii* | *Sphallopteris* (=*Sphalmopteris*) *mougeotii* |
| *Prionophyllopteris spiniformis* |  | *Voltziopsis wolganensis* | *Sphenobaiera browniana* |
| *Protoblechnum* (Compsopteris) contractum |  | *Williamsonia lanceolobata* | *Sphenobaiera schenkii* |
| *Protoblechnum* (Compsopteris) punctinervis |  | *Yabeiella multinervis* | *Sphenobaiera stormbergensis* |
| *Prynadaeopteris* sp. |  | *Yabeilella mareyesiaca* | *Sphenobaiera tenuifolia* |
| *Psaronius hexagonus* |  | *Zamiopteris minima* | *Sphenobaiera ugotheriensis* |
| *Psaronius housuoensis* |  | *Zamites vogesiacus* | *Sphenopteris elegans* |
| *Pseudoaraucarites* sp. |  |  | *Sphenopteris myriophyllum* |
| *Pseudoctenis* sp. |  |  | *Sphenopteris palmetta* |
| *Pseudomariopteris hallei* |  |  | *Sphenopteris schoenleiniana* |
| *Pseudorhipidopsis* sp. |  |  | *Sphenopteris voltzii* |
| *Pseudoullmannia frumentarioides* |  |  | *Sphenozamites* |
| *Pseudovoltzia liebeana* |  |  | *Strombergia* |
| *Pterophyllum eratum* |  |  | *Strzeleckia gangamopteroides* |
| *Pursongia beloussovae* |  |  | *Taeniopteris ambigua* |
| *Quadrocladus pachyphyllum* |  |  | *Taeniopteris hainanensis* |
| *Quadrocladus sibiricum* |  |  | *Taeniopteris kelberi* |
| *Quadrocladus sibiricus* |  |  | *Taeniopteris lentriculiformis* |
| *Quadrocladus solmsii* |  |  | *Taxites massalongi* |
| *Rajahia* (Danaeites) mirabilis |  |  | *Taxites vicentinus* |
| *Rajahia* (Danaeites) rigida |  |  | *Taxodites* (=*Glyptostrobus*) *saxolympiae* |
| *Rajahia calceiformis* |  |  | *Telemachus elongatus* |
| *Rajahia guizhouensis* |  |  | *Tersiella* sp. |
| *Rajahia major* |  |  | *Thamnopteris vogesiaca* |
| *Rajahia mirabilis* |  |  | *Thinnfeldia nordenskioldii* |
| *Rajahia rigida* |  |  | *Todites pattinsoniorum* |
| *Raniganjia kilburnensis* |  |  | *Todites shensiensis* |
| *Raniganjia* sp. |  |  | *Tomaniopteris katonii* |
| *Rhaphidopteris* sp. |  |  | *Tongchuanophyllum* sp. |
| *Rhipidopsis ginkgoides* |  |  | *Townrovia petasata* |
| *Rhipidopsis lobata* |  |  | *Townroviamites brookvalensis* |
| *Rhipidopsis lobulata* |  |  | *Ullmannia brandtii* |
| *Rhipidopsis multifurcata* |  |  | *Umkomasia distans* |
| *Rhipidopsis panii* |  |  | *Umkomasia polycarpa* |
| *Saportaea* sp. |  |  | *Umkomasia resinosa* |
| *Schizoneura brevifolia* |  |  | *Umkomasia sessilis* |
| *Schizoneura keboense* |  |  | *Voltzia acutifolia* |
| *Schizoneura manchuriensis* |  |  | *Voltzia brevifolia* |
| *Schizoneura sino-coreanum* |  |  | *Voltzia curtifolia* |
| *Schvedopteris lobata* |  |  | *Voltzia elegans* |
| *Scolecopteris guizhouensis* |  |  | *Voltzia heterophylla* |
| *Scopus confertus* |  |  | *Voltzia krappitzensis* |
| *Scopus didiscus* |  |  | *Voltzia recubariensis* |
| *Scopus gibbosus* |  |  | *Voltzia walchiaeformis* |
| *Scopus obscurus* |  |  | *Williamsonia* sp. |
| *Scutum* sp. |  |  | *Xylopteris elongata* |
| *Scytophyllum tenuinerve* |  |  | *Yabeiella* sp. |
| *Selaginellites tibeticus* |  |  | *Yelchophyllum omegapetiolaris* |
| *Shuichengella* (Cryptonoclea) primitiva |  |  | *Zamites vogesiacus* |
| *Sigillaria guizhouensis* |  |  | *Zuberia barrealensis* |
| *Spehnopteris* sp. |  |  | *Zuberia feistmanteli* |
| *Spenophyllum thonii* |  |  | *Zuberia sahnii* |
| *Sphenarion* sp. |  |  | *Zuberia zuberi* |
| *Sphenobaiera* sp. |  |  |  |
| *Sphenophyllum koboense* |  |  |  |
| *Sphenophyllum sino-coreanum* |  |  |  |
| *Sphenophyllum speciosum* |  |  |  |
| *Sphenopteris lobifolia* |  |  |  |
| *Sphenopteris matgitecta* |  |  |  |
| *Sphenopteris mircophylla* |  |  |  |
| *Sphenopteris rotunda* |  |  |  |
| *Sphenopteris simplicinervis* |  |  |  |
| *Sphenopteris tembentchiensis* |  |  |  |
| *Sphenopteris tenuis* |  |  |  |
| *Sphenopteris trisecta* |  |  |  |
| *Stiphorus* sp. |  |  |  |
| *Szea* (Cladophlebis) sinensis |  |  |  |
| *Szecladia multinervia* |  |  |  |
| *Taeniopteris crassinervis* |  |  |  |
| *Taeniopteris densisstma* |  |  |  |
| *Taeniopteris dongluoensis* |  |  |  |
| *Taeniopteris fusuiensis* |  |  |  |
| *Taeniopteris guangxiensis* |  |  |  |
| *Taeniopteris multinervis* |  |  |  |
| *Taeniopteris nystroemii* |  |  |  |
| *Taeniopteris rarinervis* |  |  |  |
| *Taeniopteris sichuanensis* |  |  |  |
| *Taeniopteris szei* |  |  |  |
| *Taeniopteris tajluganensis* |  |  |  |
| *Takhtajanodoxa mirabilis* |  |  |  |
| *Tatarina* sp. |  |  |  |
| *Thinnfeldia* sp. |  |  |  |
| *Tingia guadii* |  |  |  |
| *Tingia hamaguchi* |  |  |  |
| *Todites augusta* |  |  |  |
| *Todites borealis* |  |  |  |
| *Todites crenata* |  |  |  |
| *Todites ichiinensis* |  |  |  |
| *Todites korvunchanica* |  |  |  |
| *Todites lobifera* |  |  |  |
| *Todites polkini* |  |  |  |
| *Todites wongii* |  |  |  |
| *Tomia malzevskiana* |  |  |  |
| *Tomia radczenkovii* |  |  |  |
| *Tungussopteris sphenopteroides* |  |  |  |
| *Ullmannia bronnii* |  |  |  |
| *Ullmannia frumentaria* |  |  |  |
| *Voltzia avamica* |  |  |  |
| *Voltzia chachlovii* |  |  |  |
| *Walchia* sp. |  |  |  |
| *Wumengopteris crassirachis* |  |  |  |
| *Yavorskyia arctica* |  |  |  |
| *Yavorskyia radczenkovii* |  |  |  |
| *Yavorskyia serrata* |  |  |  |
| *Yuania magnifolia* |  |  |  |
| *Zamiopteris glossopteroides* |  |  |  |
| *Zhutheca* (Fascipteris) densata |  |  |  |
| *Zuberia* sp. |  |  |  |

**Table S5. Plant fossil location of each substage.**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **End Permian Changhsingian** | | | **Early Triassic Induan** | | | **Early Triassic Olenekian** | | | **Middle Triassic Anisian** | | |
| Country | Longitude | Latitude | Country | Longitude | Latitude | Country | Longitude | Latitude | Country | Longitude | Latitude |
| Antarctica | 67.07 | -72.00 | Australia | 148.00 | -24.83 | America | -110.8 | 35.0 | Antarctica | 159.2 | -78.1 |
| Argentina | -68.10 | -28.80 | Australia | 148.90 | -23.64 | Aruba | 159.7 | -75.7 | Antarctica | 159.7 | -76.7 |
| Argentina | -66.40 | -38.10 | North China | 109.19 | 35.39 | Australia | 114.6 | -28.8 | Antarctica | 160.5 | -77.3 |
| Argentina | -67.40 | -40.70 | CN-Xinjiang | 88.80 | 43.95 | Australia | 115.9 | -32.0 | Antarctica | 164.0 | -84.4 |
| Argentina | -66.70 | -48.20 | North China | 111.20 | 36.40 | Australia | 145.5 | -17.4 | Antarctica | 166.4 | -84.3 |
| Austria | 13.65 | 47.53 | North China | 111.86 | 37.24 | Australia | 146.9 | -31.3 | Antarctica | 171.0 | -83.8 |
| Australia | 147.30 | -24.70 | North China | 111.89 | 37.29 | Australia | 149.2 | -23.5 | Argentina | -69.5 | -31.6 |
| Australia | 148.00 | -25.00 | North China | 112.16 | 37.56 | Australia | 151.0 | -34.2 | Argentina | -67.8 | -30.2 |
| Australia | 148.80 | -23.30 | North China | 112.20 | 32.50 | Australia | 151.3 | -33.6 | Argentina | -69.5 | -35.6 |
| Australia | 142.70 | -20.92 | North China | 112.30 | 37.30 | Australia | 152.8 | -31.6 | Argentina | -69.2 | -33.0 |
| South China | 101.34 | 24.48 | North China | 112.85 | 35.49 | Austria | 12.8 | 46.8 | Aruba | 173.0 | -80.0 |
| South China | 102.81 | 30.26 | North China | 112.90 | 37.10 | Austria | 10.7 | 46.6 | Australia | 146.9 | -31.3 |
| South China | 103.04 | 28.51 | North China | 120.80 | 41.00 | France | 0.2 | 45.0 | Australia | 148.7 | -32.4 |
| South China | 104.00 | 26.82 | North China | 122.53 | 41.94 | France | 3.3 | 43.7 | Australia | 150.3 | -33.4 |
| South China | 104.26 | 25.68 | North China | 125.80 | 44.10 | France | 6.5 | 48.6 | Australia | 151.3 | -33.8 |
| South China | 104.47 | 25.71 | South China | 101.34 | 24.48 | France | 6.6 | 48.0 | Australia | 146.8 | -42.5 |
| South China | 104.51 | 28.16 | South China | 103.04 | 28.51 | France | 7.4 | 48.6 | Australia | 148.6 | -32.3 |
| South China | 104.69 | 25.80 | South China | 104.00 | 26.82 | France | 7.5 | 48.4 | Australia | 151.2 | -33.9 |
| South China | 104.80 | 26.70 | South China | 104.09 | 26.21 | France | 7.8 | 49.0 | Australia | 152.4 | -27.1 |
| South China | 104.93 | 32.24 | South China | 104.44 | 26.73 | Germany | 6.3 | 50.6 | Australia | 152.7 | -29.9 |
| South China | 104.96 | 26.54 | South China | 104.47 | 25.71 | Germany | 6.4 | 48.2 | Brazil | -53.7 | -29.6 |
| South China | 105.10 | 26.03 | South China | 104.69 | 25.80 | Germany | 6.5 | 50.3 | Canada | -117.3 | 56.2 |
| South China | 105.23 | 25.87 | South China | 105.34 | 27.62 | Germany | 6.6 | 49.8 | Egypt | 34.4 | 30.4 |
| South China | 105.34 | 27.62 | South China | 105.38 | 27.17 | Germany | 6.7 | 49.4 | France | 4.7 | 46.3 |
| South China | 105.38 | 27.17 | South China | 105.46 | 32.31 | Germany | 7.0 | 49.2 | France | 6.0 | 47.0 |
| South China | 105.46 | 32.31 | South China | 107.29 | 26.84 | Germany | 7.1 | 49.2 | France | 6.0 | 48.1 |
| South China | 105.84 | 26.42 | South China | 107.31 | 26.93 | Germany | 7.3 | 48.9 | France | 6.3 | 48.1 |
| South China | 105.90 | 26.30 | South China | 112.29 | 30.27 | Germany | 7.4 | 49.2 | France | 6.5 | 48.6 |
| South China | 105.90 | 32.40 | South China | 117.92 | 26.48 | Germany | 7.7 | 52.3 | France | 6.6 | 48.0 |
| South China | 105.93 | 26.33 | Germany | 9.40 | 51.50 | Germany | 8.2 | 48.3 | France | 6.7 | 48.2 |
| South China | 105.95 | 26.25 | Germany | 9.40 | 51.60 | Germany | 8.4 | 48.9 | France | 6.9 | 49.1 |
| South China | 106.08 | 25.83 | Germany | 9.40 | 51.80 | Germany | 8.5 | 48.5 | France | 7.2 | 48.7 |
| South China | 106.40 | 29.50 | Germany | 9.60 | 51.70 | Germany | 8.7 | 49.3 | France | 7.2 | 47.9 |
| South China | 106.40 | 29.50 | Germany | 9.60 | 51.90 | Germany | 9.2 | 48.8 | France | 7.3 | 48.8 |
| South China | 106.43 | 29.92 | Germany | 10.00 | 51.50 | Germany | 9.4 | 51.7 | France | 7.4 | 48.7 |
| South China | 106.60 | 26.20 | Germany | 10.10 | 50.20 | Germany | 9.5 | 52.0 | France | 7.5 | 48.4 |
| South China | 107.31 | 26.93 | Germany | 11.10 | 50.70 | Germany | 9.7 | 50.0 | Germany | 2.8 | 42.6 |
| South China | 107.90 | 22.64 | Germany | 11.20 | 50.80 | Germany | 9.9 | 51.5 | Germany | 6.5 | 50.7 |
| South China | 108.45 | 31.75 | Germany | 11.80 | 51.50 | Germany | 10.0 | 51.4 | Germany | 6.6 | 50.6 |
| South China | 108.64 | 24.49 | Germany | 11.80 | 51.80 | Germany | 10.1 | 52.1 | Germany | 6.6 | 49.4 |
| South China | 108.81 | 23.72 | Spain | -1.20 | 41.50 | Germany | 10.4 | 49.5 | Germany | 6.7 | 50.3 |
| South China | 108.86 | 23.77 | Greenland | -23.00 | 73.00 | Germany | 11.1 | 50.7 | Germany | 6.7 | 49.4 |
| South China | 108.96 | 23.61 | Hungary | 17.61 | 46.88 | Germany | 11.1 | 50.3 | Germany | 6.8 | 49.3 |
| South China | 109.07 | 30.45 | Ireland | -6.79 | 53.90 | Germany | 11.4 | 50.7 | Germany | 7.0 | 49.2 |
| South China | 109.32 | 23.70 | Italy | 11.63 | 46.57 | Germany | 11.5 | 51.6 | Germany | 7.3 | 48.8 |
| South China | 109.40 | 24.30 | Norway | 29.28 | 71.16 | Germany | 11.6 | 50.7 | Germany | 7.6 | 47.6 |
| South China | 110.88 | 29.42 | Norway | 28.84 | 71.24 | Germany | 11.7 | 51.8 | Germany | 7.8 | 49.0 |
| South China | 112.29 | 30.27 | Norway | 26.84 | 71.24 | Germany | 11.7 | 52.0 | Germany | 7.9 | 49.5 |
| South China | 112.30 | 22.20 | Norway | 22.00 | 78.00 | Germany | 11.8 | 51.8 | Germany | 8.0 | 50.3 |
| South China | 112.40 | 25.00 | Poland | 20.67 | 50.83 | Germany | 11.8 | 51.6 | Germany | 8.2 | 48.3 |
| South China | 113.76 | 23.38 | Serbia | 23.00 | 43.50 | Germany | 12.2 | 46.7 | Germany | 8.4 | 50.0 |
| South China | 116.10 | 24.30 | RU-other | 36.37 | 56.73 | Greenland | -21.0 | 73.5 | Germany | 8.5 | 48.1 |
| South China | 119.93 | 30.90 | RU-other | 40.50 | 44.00 | Greenland | -23.0 | 72.5 | Germany | 8.5 | 49.0 |
| South China | 119.99 | 30.92 | RU-other | 45.00 | 45.00 | Greenland | -23.6 | 72.6 | Germany | 8.6 | 49.0 |
| North China | 98.40 | 39.50 | RU-other | 46.84 | 48.14 | Greenland | -42.6 | 71.7 | Germany | 8.7 | 48.7 |
| North China | 99.60 | 38.80 | RU-other | 46.58 | 53.12 | Hungary | 18.1 | 46.1 | Germany | 8.8 | 49.4 |
| North China | 100.92 | 40.71 | RU-other | 45.91 | 57.88 | Hungary | 17.6 | 46.9 | Germany | 9.2 | 48.8 |
| North China | 102.20 | 38.50 | RU-other | 60.00 | 67.00 | Hungary | 17.7 | 47.3 | Germany | 9.4 | 51.7 |
| North China | 106.91 | 33.08 | Russia-Siberia | 82.22 | 72.97 | India | 81.9 | 23.8 | Germany | 9.5 | 52.0 |
| North China | 111.10 | 39.00 | Russia-Siberia | 86.50 | 54.50 | India | 81.2 | 23.0 | Germany | 9.6 | 51.7 |
| North China | 111.89 | 37.29 | Russia-Siberia | 99.29 | 61.06 | India | 77.8 | 23.2 | Germany | 9.7 | 50.0 |
| North China | 112.20 | 34.50 | Russia-Siberia | 92.18 | 62.64 | India | 81.8 | 24.2 | Germany | 9.9 | 51.5 |
| North China | 113.39 | 34.30 | Russia-Siberia | 152.41 | 62.94 | Israel | 34.8 | 31.7 | Germany | 10.1 | 50.1 |
| North China | 119.60 | 39.90 | Russia-Siberia | 98.27 | 63.68 | Israel | 34.7 | 31.6 | Germany | 10.2 | 48.3 |
| North China | 120.80 | 40.70 | Russia-Siberia | 107.78 | 63.93 | Israel | 34.6 | 31.7 | Germany | 10.3 | 49.6 |
| North China | 122.53 | 41.94 | Russia-Siberia | 98.00 | 64.00 | Italy | 12.0 | 46.5 | Germany | 11.1 | 50.7 |
| North China | 125.90 | 41.70 | Russia-Siberia | 90.84 | 64.71 | Japan | 141.8 | 38.8 | Germany | 11.4 | 50.9 |
| North China | 128.90 | 47.70 | Russia-Siberia | 109.00 | 65.50 | Kazakhstan | 118.9 | 63.4 | Germany | 11.5 | 51.6 |
| CN-Xinjiang | 81.80 | 41.80 | Russia-Siberia | 101.50 | 66.00 | Madagascar | 48.2 | -14.6 | Germany | 11.7 | 52.0 |
| CN-Xinjiang | 85.70 | 43.90 | Russia-Siberia | 110.34 | 66.55 | North China | 96.5 | 42.0 | Germany | 12.2 | 46.7 |
| CN-Xinjiang | 89.40 | 42.30 | Russia-Siberia | 125.84 | 67.16 | North China | 99.6 | 38.8 | Germany | 12.4 | 48.8 |
| CN-Xinjiang | 89.00 | 43.30 | Russia-Siberia | 128.14 | 67.58 | North China | 102.7 | 25.0 | India | 72.4 | 32.6 |
| CN-Xinjiang | 90.40 | 44.70 | Russia-Siberia | 90.37 | 67.78 | North China | 111.2 | 38.5 | India | 77.8 | 23.2 |
| CN-Xinjiang | 88.80 | 43.95 | Russia-Siberia | 127.43 | 67.96 | North China | 111.9 | 37.3 | India | 81.3 | 24.5 |
| CN-Xizang | 86.80 | 33.60 | Russia-Siberia | 90.00 | 68.00 | North China | 112.0 | 36.4 | India | 87.4 | 22.4 |
| Germany | 9.11 | 50.29 | Russia-Siberia | 127.00 | 68.00 | North China | 112.2 | 37.2 | Israel | 34.6 | 31.7 |
| Germany | 9.12 | 50.30 | Russia-Siberia | 126.50 | 69.10 | North China | 112.3 | 35.2 | Italy | 10.5 | 45.8 |
| Germany | 9.12 | 50.32 | Russia-Siberia | 128.52 | 71.00 | North China | 112.9 | 35.5 | Italy | 11.0 | 46.5 |
| Germany | 9.15 | 50.37 | Russia-Siberia | 94.96 | 74.19 | North China | 112.9 | 37.1 | Italy | 11.2 | 45.7 |
| Germany | 10.00 | 51.15 | Russia-Siberia | 97.86 | 74.35 | North China | 116.1 | 36.1 | Italy | 11.2 | 46.4 |
| Germany | 10.02 | 51.67 | Russia-Siberia | 107.76 | 74.85 | North China | 117.9 | 41.0 | Italy | 11.4 | 45.9 |
| Germany | 10.22 | 51.95 | Russia-Siberia | 112.57 | 75.29 | North China | 122.5 | 41.9 | Italy | 11.6 | 46.4 |
| Germany | 10.67 | 52.12 | Russia-Siberia | 99.33 | 75.69 | North China | 123.7 | 41.5 | Italy | 12.0 | 46.3 |
| Greenland | 24.50 | 38.85 | Russia-Siberia | 126.63 | 75.96 | Norway | 23.0 | 78.0 | Italy | 12.1 | 46.7 |
| Hungary | 18.62 | 47.42 | Russia-Siberia | 98.00 | 79.52 | Russia-other | 46.8 | 48.2 | Italy | 13.3 | 46.5 |
| India | 87.10 | 24.00 | Kazakstan | 118.94 | 63.36 | Russia-other | 61.9 | 56.7 | Mongolia | 102.6 | 47.9 |
| Indonesia | 136.80 | -4.20 | Mongolia | 104.29 | 43.50 | Russia-Siberia | 83.1 | 73.2 | Mongolia | 104.0 | 48.1 |
| Italy | 11.63 | 46.57 | South Africa | 29.17 | -28.50 | Russia-Siberia | 89.7 | 67.1 | New Zealand | 169.8 | -46.4 |
| Italy | 11.65 | 46.37 | South Africa | 29.33 | -28.67 | Russia-Siberia | 90.0 | 68.0 | New Zealand | 170.2 | -44.7 |
| Italy | 11.73 | 46.56 | South Africa | 29.67 | -28.83 | Russia-Siberia | 93.0 | 65.6 | North China | 109.2 | 35.4 |
| Japan | 141.40 | 38.79 | South Africa | 29.83 | -29.00 | Russia-Siberia | 93.5 | 68.0 | North China | 122.5 | 41.9 |
| Laos | 102.00 | 20.00 | South Africa | 30.00 | -29.17 | Russia-Siberia | 93.9 | 73.5 | North China | 110.7 | 37.0 |
| Pakistan | 72.20 | 32.48 | South Africa | 30.00 | -29.50 | Russia-Siberia | 95.6 | 64.1 | North China | 111.0 | 39.7 |
| RU-other | 40.70 | 43.96 | South Africa | 30.17 | -29.17 | Russia-Siberia | 98.0 | 64.0 | North China | 113.6 | 37.4 |
| RU-other | 42.10 | 56.24 | Russia-Siberia | 87.41 | 54.76 | Russia-Siberia | 99.3 | 61.1 | North China | 123.7 | 41.3 |
| RU-other | 42.11 | 56.26 | Argentina | -69.00 | -29.70 | Russia-Siberia | 101.5 | 66.0 | Poland | 20.1 | 50.2 |
| RU-other | 44.80 | 58.90 | Argentina | -70.80 | -31.50 | Russia-Siberia | 103.5 | 62.2 | Poland | 18.0 | 50.5 |
| RU-other | 44.80 | 59.80 | Argentina | -69.70 | -33.20 | Russia-Siberia | 112.7 | 74.9 | Poland | 20.9 | 51.0 |
| RU-other | 46.58 | 53.12 | Argentina | -69.20 | -35.70 | Russia-Siberia | 115.9 | 60.9 | Russia-others | 55.1 | 51.8 |
| RU-other | 46.70 | 58.50 | Argentina | -67.40 | -40.70 | Russia-Siberia | 131.9 | 42.9 | Russia-others | 44.9 | 44.7 |
| RU-other | 46.90 | 60.80 | France | 4.00 | 44 | Russia-Siberia | 132.0 | 43.5 | Russia-others | 58.6 | 65.8 |
| RU-other | 46.90 | 60.80 |  |  |  | Russia-Siberia | 144.9 | 61.9 | Russia-Siberia | 126.5 | 69.1 |
| RU-other | 48.30 | 61.20 |  |  |  | South Africa | 22.5 | -32.4 | South Africa | 22.5 | -32.4 |
| RU-other | 48.90 | 58.60 |  |  |  | South China | 110.4 | 19.3 | South Africa | 27.1 | -31.7 |
| RU-other | 52.48 | 54.12 |  |  |  | South China | 110.0 | 19.6 | South Africa | 26.0 | -31.0 |
| RU-other | 57.40 | 65.00 |  |  |  | South China | 110.5 | 19.2 | South Africa | 26.5 | -30.8 |
| Russia-Siberia | 90.84 | 64.71 |  |  |  | Spain | -0.4 | 39.9 | South Africa | 26.7 | -30.7 |
| Russia-Siberia | 99.29 | 61.06 |  |  |  | Spain | 2.3 | 41.8 | South Africa | 27.0 | -31.0 |
| Russia-Siberia | 99.33 | 75.69 |  |  |  | Tunisia | 11.0 | 33.0 | South Africa | 27.3 | -31.7 |
| Slovenia | 13.92 | 46.02 |  |  |  | UK | -3.0 | 53.4 | South China | 102.8 | 30.3 |
| Thailand | 101.00 | 16.00 |  |  |  | Russia-Siberia | 87.4 | 54.8 | South China | 108.9 | 30.3 |
| Turkey | 40.78 | 38.25 |  |  |  |  |  |  | South China | 109.1 | 29.7 |
| UK | -2.48 | 54.57 |  |  |  |  |  |  | South China | 109.5 | 31.0 |
| UK | -2.48 | 54.58 |  |  |  |  |  |  | South China | 110.0 | 19.6 |
| UK | -1.27 | 52.98 |  |  |  |  |  |  | South China | 110.2 | 29.5 |
| USA | -104.23 | 31.60 |  |  |  |  |  |  | South China | 110.3 | 31.0 |
| USA | -104.23 | 31.61 |  |  |  |  |  |  | South China | 111.9 | 27.6 |
| USA | -104.23 | 31.62 |  |  |  |  |  |  | South China | 112.2 | 30.7 |
| USA | -104.22 | 31.63 |  |  |  |  |  |  | South China | 113.9 | 29.7 |
| USA | -104.21 | 31.65 |  |  |  |  |  |  | South China | 116.8 | 30.7 |
| USA | -104.19 | 31.66 |  |  |  |  |  |  | South China | 119.8 | 33.1 |
| USA | -104.18 | 31.65 |  |  |  |  |  |  | South China | 106.7 | 26.3 |
| South Africa | 22.54 | -32.36 |  |  |  |  |  |  | South China | 106.9 | 23.8 |
| South Africa | 24.87 | -31.92 |  |  |  |  |  |  | South China | 108.7 | 28.8 |
| South Africa | 26.03 | -32.08 |  |  |  |  |  |  | South China | 112.6 | 24.7 |
| South Africa | 27.84 | -26.41 |  |  |  |  |  |  | Spain | -5.4 | 43.3 |
| South Africa | 29.46 | -25.77 |  |  |  |  |  |  | Spain | -4.5 | 36.8 |
| South Africa | 29.67 | -28.83 |  |  |  |  |  |  | Spain | -4.4 | 41.8 |
| South Africa | 29.78 | -29.83 |  |  |  |  |  |  | Spain | -1.8 | 41.7 |
| South Africa | 29.79 | -29.80 |  |  |  |  |  |  | Spain | -1.5 | 43.2 |
| South Africa | 29.83 | -29.00 |  |  |  |  |  |  | Spain | -1.0 | 40.7 |
| South Africa | 29.86 | -29.01 |  |  |  |  |  |  | Spain | -0.9 | 41.6 |
| South Africa | 30.00 | -29.33 |  |  |  |  |  |  | Spain | -0.6 | 40.0 |
| South Africa | 30.00 | -29.17 |  |  |  |  |  |  | Spain | -0.5 | 39.8 |
| South Africa | 30.17 | -29.50 |  |  |  |  |  |  | Spain | 1.0 | 42.7 |
| South Africa | 32.00 | -28.50 |  |  |  |  |  |  | Spain | 1.8 | 41.6 |
|  |  |  |  |  |  |  |  |  | Spain | 2.6 | 42.2 |
|  |  |  |  |  |  |  |  |  | Spain | 3.0 | 39.7 |
|  |  |  |  |  |  |  |  |  | Spain | -1.6 | 41.7 |
|  |  |  |  |  |  |  |  |  | Switzerland | 7.6 | 47.6 |
|  |  |  |  |  |  |  |  |  | Syria | 41.6 | 37.1 |
|  |  |  |  |  |  |  |  |  | Tajikstan | 70.4 | 38.3 |
|  |  |  |  |  |  |  |  |  | Turkey | 26.6 | 38.4 |
|  |  |  |  |  |  |  |  |  | Turkey | 33.7 | 41.9 |
|  |  |  |  |  |  |  |  |  | UK | -2.1 | 52.3 |
|  |  |  |  |  |  |  |  |  | UK | -1.7 | 52.3 |
|  |  |  |  |  |  |  |  |  | UK | -1.6 | 54.8 |
|  |  |  |  |  |  |  |  |  | UK | -2.1 | 52.3 |
|  |  |  |  |  |  |  |  |  | USA | -71.4 | 42.4 |
|  |  |  |  |  |  |  |  |  | USA | -110.3 | 34.9 |
|  |  |  |  |  |  |  |  |  | USA | -105.1 | 35.2 |
|  |  |  |  |  |  |  |  |  | CN-Xinjiang | 88.8 | 44.0 |
|  |  |  |  |  |  |  |  |  | CN-Xinjiang | 81.8 | 41.8 |
|  |  |  |  |  |  |  |  |  | CN-Xinjiang | 84.8 | 45.7 |
|  |  |  |  |  |  |  |  |  | CN-Xinjiang | 88.2 | 44.2 |

**Table S6. Land tetrapod fossil occurrence of each substage**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Substage** | **Country-area** | **Longitude** | **Latitude** | **Taxa** |
| Changhsingian | China-Xinjiang | 87.83 | 43.82 | Diictodon feliceps |
| Changhsingian | China-Xinjiang | 87.84 | 43.83 | Jimusaria sinkianensis |
| Changhsingian | China-Xinjiang | 88.83 | 44.00 | Dalongkoua fuae |
| Changhsingian | China-Xinjiang | 88.88 | 43.32 | Turfanodon bogdaensis |
| Changhsingian | China-Xinjiang | 88.88 | 44.08 | Turfanodon bogdaensis |
| Changhsingian | China-Xinjiang | 89.17 | 42.92 | Jimusaria sinkianensis |
| Changhsingian | China-Xinjiang | 89.17 | 42.92 | Lystrosaurus robustus |
| Changhsingian | Niger | 7.20 | 18.78 | Bunostegos akokanensis |
| Changhsingian | Niger | 7.22 | 18.79 | Dromopus |
| Changhsingian | Niger | 7.22 | 18.79 | Hyloidichnus |
| Changhsingian | Niger | 7.20 | 18.78 | Moradisaurus grandis |
| Changhsingian | Niger | 7.53 | 18.51 | Moradisaurus grandis |
| Changhsingian | Niger | 7.22 | 18.79 | Pachypes |
| Changhsingian | Niger | 7.20 | 18.78 | Rubidginae |
| Changhsingian | Niger | 7.53 | 18.51 | Rubidginae |
| Changhsingian | North China | 110.82 | 37.41 | Pareiasauria |
| Changhsingian | North China | 111.11 | 39.03 | Pareiasauria |
| Changhsingian | North China | 110.82 | 37.41 | Pareiasauridae |
| Changhsingian | North China | 110.82 | 37.41 | Sanchuansaurus pygmaeus |
| Changhsingian | North China | 110.82 | 37.41 | Shihtienfenia permica |
| Changhsingian | North China | 110.88 | 37.43 | Shihtienfenia permica |
| Changhsingian | North China | 111.11 | 39.03 | Shihtienfenia permica |
| Changhsingian | North China | 110.82 | 37.41 | Therapsida |
| Changhsingian | Russia | 54.91 | 51.30 | Brontopus giganteus |
| Changhsingian | South Africa | 23.89 | -31.91 | Cyonosaurus kitchingi |
| Changhsingian | South Africa | 23.89 | -31.91 | Daptocephalus leoniceps |
| Changhsingian | South Africa | 25.97 | -30.50 | Lystrosaurus maccaigi |
| Changhsingian | South Africa | 26.27 | -30.42 | Lystrosaurus maccaigi |
| Changhsingian | South Africa | 23.89 | -31.91 | Milleretta rubidgei |
| Changhsingian | South Africa | 23.89 | -31.91 | Oudenodon bainii |
| Changhsingian | South Africa | 23.89 | -31.91 | Procynosuchus delaharpeae |
| Changhsingian | South Africa | 23.89 | -31.91 | Theriognathus microps |
| Changhsingian | Tanzania | 39.01 | -5.05 | Tangasaurus mennelli |
| Changhsingian | UK | -3.37 | 57.66 | Gordonia traquairi |
| Changhsingian | UK | -3.37 | 57.66 | Elginia mirabilis |
| Changhsingian | UK | -3.37 | 57.66 | Geikia elginensis |
| Induan | Australia | 148.00 | -24.83 | Dicynodontia |
| Induan | Australia | 150.91 | -34.36 | Dicynodontipus bellambiensis |
| Induan | Australia | 148.00 | -24.83 | Eomurruna yurrgensis |
| Induan | Australia | 148.90 | -23.64 | Eomurruna yurrgensis |
| Induan | Australia | 148.00 | -24.83 | Kadimakara australiensis |
| Induan | Australia | 148.00 | -24.83 | Kalisuchus rewanensis |
| Induan | Australia | 148.00 | -24.83 | Kudnu mackinlayi |
| Induan | Australia | 147.30 | -42.88 | Tasmaniosaurus triassicus |
| Induan | Australia | 148.90 | -23.64 | Tasmaniosaurus triassicus |
| Induan | China-Xinjiang | 88.83 | 44.00 | Chasmatosaurus yuani |
| Induan | China-Xinjiang | 88.88 | 44.08 | Chasmatosaurus yuani |
| Induan | China-Xinjiang | 88.83 | 44.00 | Lystrosaurus broomi |
| Induan | China-Xinjiang | 88.83 | 44.00 | Lystrosaurus hedini |
| Induan | China-Xinjiang | 89.17 | 42.92 | Lystrosaurus hedini |
| Induan | China-Xinjiang | 89.70 | 43.98 | Lystrosaurus shichanggouensis |
| Induan | China-Xinjiang | 88.83 | 44.00 | Lystrosaurus youngi |
| Induan | China-Xinjiang | 89.70 | 43.98 | Lystrosaurus youngi |
| Induan | China-Xinjiang | 88.88 | 44.08 | Prolacertoides jimusarensis |
| Induan | China-Xinjiang | 88.88 | 44.08 | Santaisaurus yuani |
| Induan | China-Xinjiang | 88.83 | 44.00 | Sungeodon kimkraemerae |
| Induan | China-Xinjiang | 87.57 | 43.80 | Urumchia lii |
| Induan | Poland | 16.41 | 50.42 | Microcnemus |
| Induan | Russia | 45.08 | 57.42 | Blomosaurus ivachnenkoi |
| Induan | Russia | 52.69 | 52.37 | Chasmatosuchus |
| Induan | Russia | 55.72 | 51.34 | Chasmatosuchus |
| Induan | Russia | 45.91 | 57.88 | Crocopoda |
| Induan | Russia | 45.26 | 56.94 | Lystrosaurus georgi |
| Induan | Russia | 45.08 | 57.42 | Microcnemus |
| Induan | Russia | 45.91 | 57.88 | Microcnemus |
| Induan | Russia | 55.72 | 51.34 | Microcnemus |
| Induan | Russia | 50.43 | 52.85 | Phaanthosaurus |
| Induan | Russia | 45.91 | 57.88 | Phaanthosaurus ignatjevi |
| Induan | Russia | 45.15 | 57.13 | Phaanthosaurus simus |
| Induan | Russia | 45.91 | 57.88 | Phaanthosaurus simus |
| Induan | Russia | 47.96 | 59.14 | Phaanthosaurus simus |
| Induan | Russia | 52.44 | 52.79 | Procolophonidae |
| Induan | Russia | 52.96 | 52.32 | Reptilia |
| Induan | Russia | 55.91 | 52.16 | Reptilia |
| Induan | Russia | 57.54 | 65.99 | Scalopognathus multituberculatus |
| Induan | Russia | 45.91 | 57.88 | Vonhuenia friedrichi |
| Induan | South Africa | 26.27 | -30.42 | Dicynodontipus |
| Induan | South Africa | 26.27 | -30.42 | Dolomitipes |
| Induan | South Africa | 26.27 | -30.42 | Dolomitipes accordii |
| Induan | South Africa | 24.55 | -31.87 | Galesaurus planiceps |
| Induan | South Africa | 26.06 | -30.47 | Galesaurus planiceps |
| Induan | South Africa | 24.87 | -31.37 | Lystrosaurus |
| Induan | South Africa | 26.27 | -30.42 | Lystrosaurus |
| Induan | South Africa | 24.55 | -31.87 | Lystrosaurus curvatus |
| Induan | South Africa | 25.70 | -32.12 | Lystrosaurus curvatus |
| Induan | South Africa | 25.97 | -30.50 | Lystrosaurus curvatus |
| Induan | South Africa | 26.06 | -30.47 | Lystrosaurus curvatus |
| Induan | South Africa | 24.55 | -31.87 | Lystrosaurus declivis |
| Induan | South Africa | 24.86 | -31.84 | Lystrosaurus declivis |
| Induan | South Africa | 24.95 | -31.18 | Lystrosaurus declivis |
| Induan | South Africa | 25.70 | -32.12 | Lystrosaurus declivis |
| Induan | South Africa | 25.97 | -30.50 | Lystrosaurus declivis |
| Induan | South Africa | 26.06 | -30.47 | Lystrosaurus declivis |
| Induan | South Africa | 26.27 | -30.42 | Lystrosaurus declivis |
| Induan | South Africa | 25.70 | -32.12 | Lystrosaurus maccaigi |
| Induan | South Africa | 24.55 | -31.87 | Lystrosaurus murrayi |
| Induan | South Africa | 24.95 | -31.18 | Lystrosaurus murrayi |
| Induan | South Africa | 25.07 | -30.70 | Lystrosaurus murrayi |
| Induan | South Africa | 25.70 | -32.12 | Lystrosaurus murrayi |
| Induan | South Africa | 25.97 | -30.50 | Lystrosaurus murrayi |
| Induan | South Africa | 26.06 | -30.47 | Lystrosaurus murrayi |
| Induan | South Africa | 26.27 | -30.42 | Lystrosaurus murrayi |
| Induan | South Africa | 24.86 | -31.84 | Moschorhinus kitchingi |
| Induan | South Africa | 26.27 | -30.42 | Moschorhinus kitchingi |
| Induan | South Africa | 25.38 | -31.76 | Noteosuchus colletti |
| Induan | South Africa | 24.95 | -31.18 | Phonodus dutoitorum |
| Induan | South Africa | 24.86 | -31.84 | Progalesaurus lootbergensis |
| Induan | South Africa | 29.13 | -28.28 | Prolacerta broomi |
| Induan | South Africa | 25.04 | -30.92 | Rhynchosauroides |
| Induan | South Africa | 26.27 | -30.42 | Rhynchosauroides |
| Induan | South Africa | 25.00 | -31.73 | Saurodektes rogersorum |
| Induan | South Africa | 26.06 | -30.47 | Saurodektes rogersorum |
| Induan | South Africa | 24.95 | -31.18 | Tetracynodon darti |
| Induan | South Africa | 29.13 | -28.28 | Tetracynodon darti |
| Induan | South China | 107.58 | 28.83 | Chirotherium |
| Olenekian | Argentina | -68.05 | -29.57 | Chirotheriidae |
| Olenekian | Canada | -121.67 | 54.53 | Wapitisaurus problematicus |
| Olenekian | Germany | 9.17 | 51.33 | Protochirotherium wolfhagense |
| Olenekian | Germany | 10.01 | 51.47 | Ctenosauriscus koeneni |
| Olenekian | Germany | 10.12 | 51.59 | Proterosuchia |
| Olenekian | Germany | 11.71 | 51.79 | Parasuchus |
| Olenekian | Morocco | -9.09 | 30.83 | Synaptichnium pseudosuchoides |
| Olenekian | Morocco | -9.09 | 30.83 | Synaptichnium |
| Olenekian | Morocco | -9.09 | 30.83 | Brachychirotherium |
| Olenekian | Morocco | -9.09 | 30.83 | Isochirotherium gierlinskii |
| Olenekian | Morocco | -9.09 | 30.83 | Chirotherium barthii |
| Olenekian | Morocco | -9.09 | 30.83 | Rhynchosauroides |
| Olenekian | North China | 96.53 | 41.95 | Beishanodon youngi |
| Olenekian | Norway | 17.59 | 78.26 | Reptilia |
| Olenekian | Poland | 19.63 | 50.13 | Archosauriformes |
| Olenekian | Poland | 21.20 | 50.96 | Brachychirotherium hauboldi |
| Olenekian | Poland | 21.20 | 50.96 | Brachychirotherium kalkowensis |
| Olenekian | Poland | 21.20 | 50.96 | Brachychirotherium wiorense |
| Olenekian | Poland | 19.63 | 50.13 | Collilongus rarus |
| Olenekian | Poland | 19.63 | 50.13 | Czatkowiella harae |
| Olenekian | Poland | 21.20 | 50.96 | Diapsida |
| Olenekian | Poland | 19.04 | 50.39 | Hemilopas mentzeli |
| Olenekian | Poland | 21.20 | 50.96 | Isochirotherium gierlinskii |
| Olenekian | Poland | 21.20 | 50.96 | Isochirotherium sanctacrucense |
| Olenekian | Poland | 19.63 | 50.13 | Osmolskina czatkowicensis |
| Olenekian | Poland | 19.63 | 50.13 | Pamelina polonica |
| Olenekian | Poland | 19.63 | 50.13 | Procolina teresae |
| Olenekian | Poland | 21.20 | 50.96 | Procolophonichnium polonicum |
| Olenekian | Poland | 19.63 | 50.13 | Procolophonidae |
| Olenekian | Poland | 21.32 | 50.87 | Prorotodactylus |
| Olenekian | Poland | 21.20 | 50.96 | Prorotodactylus mirus |
| Olenekian | Poland | 21.20 | 50.96 | Rhynchosauroides brevidigitatus |
| Olenekian | Poland | 21.20 | 50.96 | Rhynchosauroides rdzaneki |
| Olenekian | Poland | 19.63 | 50.13 | Sophineta cracoviensis |
| Olenekian | Poland | 21.20 | 50.96 | Synapsida |
| Olenekian | Poland | 21.20 | 50.96 | Synaptichnium chirotherioides |
| Olenekian | Poland | 21.20 | 50.96 | Synaptichnium kotanskii |
| Olenekian | Poland | 21.20 | 50.96 | Synaptichnium senkowiczowae |
| Olenekian | Russia | 52.66 | 52.35 | Archosauria |
| Olenekian | Russia | 53.90 | 51.61 | Archosauria |
| Olenekian | Russia | 53.09 | 52.29 | Archosauromorpha |
| Olenekian | Russia | 55.89 | 51.28 | Archosauromorpha |
| Olenekian | Russia | 55.24 | 50.81 | Archosauromorpha |
| Olenekian | Russia | 62.72 | 68.62 | Augustaburiania vatagini |
| Olenekian | Russia | 43.67 | 49.26 | Augustaburiania vatagini |
| Olenekian | Russia | 49.93 | 69.28 | Boreopricea |
| Olenekian | Russia | 49.93 | 69.28 | Boreopricea funerea |
| Olenekian | Russia | 43.67 | 49.26 | Bystrowisuchus flerovi |
| Olenekian | Russia | 48.58 | 60.42 | Chasmatosuchus |
| Olenekian | Russia | 51.07 | 52.50 | Chasmatosuchus |
| Olenekian | Russia | 51.70 | 52.81 | Chasmatosuchus |
| Olenekian | Russia | 51.73 | 52.81 | Chasmatosuchus |
| Olenekian | Russia | 51.78 | 52.80 | Chasmatosuchus |
| Olenekian | Russia | 51.17 | 52.42 | Chasmatosuchus |
| Olenekian | Russia | 52.01 | 52.62 | Chasmatosuchus |
| Olenekian | Russia | 51.93 | 52.50 | Chasmatosuchus |
| Olenekian | Russia | 52.35 | 52.83 | Chasmatosuchus |
| Olenekian | Russia | 52.36 | 52.54 | Chasmatosuchus |
| Olenekian | Russia | 52.66 | 52.35 | Chasmatosuchus |
| Olenekian | Russia | 52.69 | 52.37 | Chasmatosuchus |
| Olenekian | Russia | 53.08 | 52.30 | Chasmatosuchus |
| Olenekian | Russia | 53.05 | 52.21 | Chasmatosuchus |
| Olenekian | Russia | 53.08 | 52.21 | Chasmatosuchus |
| Olenekian | Russia | 53.33 | 52.22 | Chasmatosuchus |
| Olenekian | Russia | 53.64 | 51.89 | Chasmatosuchus |
| Olenekian | Russia | 55.20 | 51.45 | Chasmatosuchus |
| Olenekian | Russia | 49.56 | 62.06 | Chasmatosuchus magnus |
| Olenekian | Russia | 55.08 | 51.75 | Chasmatosuchus magnus |
| Olenekian | Russia | 45.17 | 59.78 | Chasmatosuchus rossicus |
| Olenekian | Russia | 45.50 | 59.72 | Chasmatosuchus rossicus |
| Olenekian | Russia | 51.77 | 52.81 | Chasmatosuchus rossicus |
| Olenekian | Russia | 43.67 | 49.26 | Coelodontognathus donensis |
| Olenekian | Russia | 43.67 | 49.26 | Coelodontognathus ricovi |
| Olenekian | Russia | 52.11 | 65.45 | Crocopoda |
| Olenekian | Russia | 52.17 | 65.42 | Crocopoda |
| Olenekian | Russia | 57.37 | 65.02 | Crocopoda |
| Olenekian | Russia | 45.17 | 59.78 | Crocopoda |
| Olenekian | Russia | 50.18 | 59.50 | Crocopoda |
| Olenekian | Russia | 43.67 | 49.26 | Crocopoda |
| Olenekian | Russia | 51.17 | 52.42 | Crocopoda |
| Olenekian | Russia | 52.30 | 52.38 | Crocopoda |
| Olenekian | Russia | 53.09 | 52.29 | Crocopoda |
| Olenekian | Russia | 55.24 | 50.81 | Galesauridae |
| Olenekian | Russia | 55.53 | 52.40 | Garjainia |
| Olenekian | Russia | 55.76 | 52.43 | Garjainia |
| Olenekian | Russia | 55.84 | 52.15 | Garjainia |
| Olenekian | Russia | 55.85 | 52.16 | Garjainia |
| Olenekian | Russia | 55.65 | 52.03 | Garjainia |
| Olenekian | Russia | 55.89 | 51.28 | Garjainia |
| Olenekian | Russia | 55.72 | 52.03 | Garjainia |
| Olenekian | Russia | 55.20 | 51.45 | Garjainia |
| Olenekian | Russia | 55.08 | 51.75 | Garjainia prima |
| Olenekian | Russia | 55.24 | 50.81 | Garjainia prima |
| Olenekian | Russia | 43.67 | 49.26 | Kapes |
| Olenekian | Russia | 49.56 | 62.06 | Kapes amaenus |
| Olenekian | Russia | 49.56 | 62.06 | Kapes komiensis |
| Olenekian | Russia | 55.64 | 52.03 | Kapes majmesculae |
| Olenekian | Russia | 51.70 | 52.81 | Microcnemus |
| Olenekian | Russia | 45.17 | 59.78 | Microcnemus efremovi |
| Olenekian | Russia | 45.50 | 59.72 | Microcnemus efremovi |
| Olenekian | Russia | 49.93 | 69.28 | Orenburgia |
| Olenekian | Russia | 56.01 | 75.18 | Orenburgia bruma |
| Olenekian | Russia | 62.72 | 68.62 | Orenburgia bruma |
| Olenekian | Russia | 49.93 | 69.28 | Orenburgia concinna |
| Olenekian | Russia | 62.72 | 68.62 | Orenburgia concinna |
| Olenekian | Russia | 52.66 | 52.35 | Orenburgia concinna |
| Olenekian | Russia | 43.67 | 49.26 | Orenburgia enigmaticus |
| Olenekian | Russia | 49.93 | 69.28 | Procolophonoidea |
| Olenekian | Russia | 45.17 | 59.78 | Procolophonoidea |
| Olenekian | Russia | 49.93 | 69.28 | Prolacertidae |
| Olenekian | Russia | 43.67 | 49.26 | Putillosaurus sennikovi |
| Olenekian | Russia | 50.87 | 52.51 | Reptilia |
| Olenekian | Russia | 51.33 | 52.72 | Reptilia |
| Olenekian | Russia | 52.08 | 52.86 | Reptilia |
| Olenekian | Russia | 52.22 | 52.49 | Reptilia |
| Olenekian | Russia | 53.11 | 52.31 | Reptilia |
| Olenekian | Russia | 53.80 | 51.61 | Reptilia |
| Olenekian | Russia | 53.86 | 51.59 | Reptilia |
| Olenekian | Russia | 54.31 | 51.30 | Reptilia |
| Olenekian | Russia | 51.73 | 52.86 | Rhynchocephalia |
| Olenekian | Russia | 51.78 | 52.80 | Scharschengia |
| Olenekian | Russia | 43.67 | 49.26 | Scythosuchus basileus |
| Olenekian | Russia | 55.08 | 51.75 | Silphedosuchus orenburgensis |
| Olenekian | Russia | 55.89 | 52.15 | Thecodontia |
| Olenekian | Russia | 51.73 | 52.81 | Tichvinskia |
| Olenekian | Russia | 53.34 | 52.22 | Tichvinskia |
| Olenekian | Russia | 55.28 | 51.39 | Tichvinskia burtensis |
| Olenekian | Russia | 55.24 | 50.81 | Tichvinskia burtensis |
| Olenekian | Russia | 50.18 | 59.50 | Tichvinskia vjatkensis |
| Olenekian | Russia | 48.05 | 64.56 | Timanophon raridentatus |
| Olenekian | Russia | 48.78 | 64.56 | Timanophon raridentatus |
| Olenekian | Russia | 52.11 | 65.45 | Timanophon raridentatus |
| Olenekian | Russia | 43.67 | 49.26 | Vitalia grata |
| Olenekian | Russia | 55.08 | 51.75 | Vritramimosaurus dzerzhinskii |
| Olenekian | Russia | 49.56 | 62.06 | Vytshegdosuchus zheshartensis |
| Olenekian | South Africa | 27.96 | -28.18 | Archosauriformes |
| Olenekian | South Africa | 26.12 | -32.20 | Coletta seca |
| Olenekian | South Africa | 27.96 | -28.18 | Eucynodontia |
| Olenekian | South Africa | 27.81 | -28.46 | Garjainia |
| Olenekian | South Africa | 27.62 | -28.32 | Garjainia madiba |
| Olenekian | South Africa | 27.70 | -28.30 | Garjainia madiba |
| Olenekian | South Africa | 27.82 | -28.46 | Garjainia madiba |
| Olenekian | South Africa | 27.82 | -28.46 | Garjainia madiba |
| Olenekian | South Africa | 27.96 | -28.18 | Garjainia madiba |
| Olenekian | South Africa | 27.97 | -28.23 | Garjainia madiba |
| Olenekian | South Africa | 28.70 | -28.32 | Garjainia madiba |
| Olenekian | South Africa | 27.10 | -32.29 | Kitchingnathus untabeni |
| Olenekian | South Africa | 26.25 | -32.01 | Langbergia modisei |
| Olenekian | South Africa | 26.84 | -30.42 | Langbergia modisei |
| Olenekian | South Africa | 26.84 | -30.42 | Langbergia modisei |
| Olenekian | South Africa | 27.43 | -28.67 | Langbergia modisei |
| Olenekian | South Africa | 27.62 | -28.32 | Langbergia modisei |
| Olenekian | South Africa | 27.95 | -28.30 | Langbergia modisei |
| Olenekian | South Africa | 27.96 | -28.18 | Langbergia modisei |
| Olenekian | South Africa | 27.97 | -28.23 | Langbergia modisei |
| Olenekian | South Africa | 28.30 | -28.20 | Langbergia modisei |
| Olenekian | South Africa | 28.70 | -28.32 | Langbergia modisei |
| Olenekian | South Africa | 27.10 | -32.29 | Lystrosaurus |
| Olenekian | South Africa | 26.84 | -30.42 | Microgomphodon oligocynus |
| Olenekian | South Africa | 28.70 | -28.32 | Microgomphodon oligocynus |
| Olenekian | South Africa | 27.96 | -28.18 | Palacrodon browni |
| Olenekian | South Africa | 26.37 | -30.59 | Procolophon |
| Olenekian | South Africa | 27.10 | -32.29 | Procolophon trigoniceps |
| Olenekian | South Africa | 27.96 | -28.18 | Procolophonidae |
| Olenekian | South China | 117.82 | 31.62 | Cartorhynchus lenticarpus |
| Olenekian | South China | 111.56 | 31.22 | Eohupehsuchus brevicollis |
| Olenekian | South China | 111.57 | 31.16 | Hupehsuchus nanchangensis |
| Olenekian | South China | 111.64 | 31.06 | Nanchangosaurus suni |
| Olenekian | South China | 111.64 | 31.06 | Parahupehsuchus longus |
| Olenekian | South China | 117.82 | 31.62 | Sclerocormus parviceps |
| Olenekian | UK | -2.18 | 52.39 | Aetosauripus |
| Olenekian | UK | -2.18 | 52.39 | Reptilia |
| Olenekian | UK | -2.18 | 52.39 | Coelurosaurichnus ziegelangernensis |
| Olenekian | UK | -2.18 | 52.39 | Coelurosaurichnus |
| Olenekian | USA | -111.00 | 35.29 | Archosauromorpha |
| Olenekian | USA | -108.03 | 43.67 | Chelonipus |
| Olenekian | USA | -107.18 | 43.28 | Chelonipus |
| Olenekian | USA | -107.12 | 43.33 | Chelonipus |
| Olenekian | USA | -113.13 | 37.43 | Chirotherium |
| Olenekian | USA | -108.03 | 43.67 | Chirotherium barthii |
| Olenekian | USA | -107.18 | 43.28 | Chirotherium barthii |
| Olenekian | USA | -107.12 | 43.33 | Chirotherium barthii |
| Olenekian | USA | -106.93 | 43.42 | Chirotherium barthii |
| Olenekian | USA | -111.03 | 35.04 | Chirotherium rex |
| Olenekian | USA | -110.87 | 35.07 | Chirotherium rex |
| Olenekian | USA | -111.03 | 35.04 | Chirotherium sickleri |
| Olenekian | USA | -113.07 | 37.17 | Eubrontes |
| Olenekian | USA | -113.07 | 37.17 | Grallator |
| Olenekian | USA | -111.03 | 35.04 | Isochirotherium coltoni |
| Olenekian | USA | -111.03 | 35.04 | Procolophonichnium |
| Olenekian | USA | -113.07 | 37.17 | Reptilia |
| Olenekian | USA | -111.03 | 35.04 | Reptilia |
| Olenekian | USA | -113.13 | 37.43 | Rhynchosauroides |
| Olenekian | USA | -111.03 | 35.04 | Rhynchosauroides |
| Olenekian | USA | -110.43 | 37.81 | Rhynchosauroides |
| Olenekian | USA | -108.03 | 43.67 | Rhynchosauroides |
| Olenekian | USA | -107.18 | 43.28 | Rhynchosauroides |
| Olenekian | USA | -107.12 | 43.33 | Rhynchosauroides |
| Olenekian | USA | -106.93 | 43.42 | Rhynchosauroides |
| Olenekian | USA | -107.80 | 43.47 | Rhynchosauroides pallinii |
| Olenekian | USA | -107.18 | 43.28 | Rotodactylus |
| Olenekian | USA | -111.03 | 35.04 | Rotodactylus cursorius |
| Olenekian | USA | -111.03 | 35.04 | Synaptichnium diabloensis |
| Olenekian | USA | -113.07 | 37.17 | Therapsida |
| Anisian | Algeria | 4.17 | 36.46 | Rotodactylus bessieri |
| Anisian | Antarctica | 164.35 | -84.28 | Angonisaurus |
| Anisian | Antarctica | 164.35 | -84.28 | Archosauria |
| Anisian | Antarctica | 164.05 | -84.35 | Cynognathidae |
| Anisian | Antarctica | 164.05 | -84.35 | Cynognathus |
| Anisian | Antarctica | 164.05 | -84.35 | Diademodon |
| Anisian | Antarctica | 164.05 | -84.35 | Kannemeyeriiformes |
| Anisian | Antarctica | 164.35 | -84.28 | Therocephalia |
| Anisian | Argentina | -69.25 | -32.95 | Andescynodon mendozensis |
| Anisian | Argentina | -69.25 | -32.95 | Vinceria andina |
| Anisian | Argentina | -69.20 | -32.95 | Cromptodon mamiferoides |
| Anisian | China-Xinjiang | 89.17 | 42.92 | Turfanosuchus dabanensis |
| Anisian | China-Xinjiang | 89.17 | 42.92 | Youngosuchus sinensis |
| Anisian | China-Xinjiang | 89.17 | 42.92 | Xiyukannemeyeria brevirostris |
| Anisian | France | 3.36 | 43.75 | Brachychirotherium circaparvum |
| Anisian | France | 7.24 | 48.81 | Chirotheriidae |
| Anisian | France | 7.24 | 48.86 | Chirotheriidae |
| Anisian | France | 7.28 | 48.88 | Chirotheriidae |
| Anisian | France | 7.18 | 48.72 | Chirotherium |
| Anisian | France | 3.36 | 43.75 | Chirotherium barthii |
| Anisian | France | 3.36 | 43.75 | Chirotherium ferox |
| Anisian | France | 3.36 | 43.75 | Prorotodactylus lutevensis |
| Anisian | France | 6.86 | 49.15 | Reptilia |
| Anisian | France | 3.36 | 43.75 | Rhynchosauroides |
| Anisian | France | 7.25 | 48.82 | Rhynchosauroides petri |
| Anisian | France | 3.36 | 43.75 | Rotodactylus bessieri |
| Anisian | Germany | 8.59 | 48.54 | Amotosaurus rotfeldensis |
| Anisian | Germany | 8.70 | 48.61 | Amotosaurus rotfeldensis |
| Anisian | Germany | 8.16 | 47.68 | Amotosaurus rotfeldensis |
| Anisian | Germany | 8.59 | 48.54 | Anomoiodon krejcii |
| Anisian | Germany | 10.65 | 50.45 | Anomoiodon liliensterni |
| Anisian | Germany | 8.16 | 47.68 | Ctenosauriscidae |
| Anisian | Germany | 6.63 | 50.29 | Eifelosaurus triadicus |
| Anisian | Germany | 11.03 | 50.33 | Koiloskiosaurus coburgiensis |
| Anisian | Germany | 8.34 | 47.82 | Protanystropheus antiquus |
| Anisian | Germany | 7.77 | 47.56 | Sclerosaurus armatus |
| Anisian | Germany | 8.42 | 48.45 | Thecodontia |
| Anisian | Germany | 8.59 | 48.54 | Thecodontia |
| Anisian | Germany | 11.64 | 49.96 | Thecodontosaurus |
| Anisian | Germany | 11.77 | 51.22 | Theropoda |
| Anisian | Germany | 11.73 | 51.80 | Trachelosaurus fischeri |
| Anisian | India | 78.57 | 22.60 | Dicynodontia |
| Anisian | India | 79.25 | 19.38 | Mesodapedon kuttyi |
| Anisian | India | 79.68 | 18.86 | Pamelaria dolichotrachela |
| Anisian | India | 79.70 | 18.83 | Rechnisaurus cristarhynchus |
| Anisian | India | 78.57 | 22.60 | Rhynchosauria |
| Anisian | India | 78.57 | 22.63 | Rhynchosauria |
| Anisian | India | 78.48 | 22.62 | Shringasaurus indicus |
| Anisian | India | 79.70 | 18.83 | Wadiasaurus indicus |
| Anisian | India | 79.68 | 18.86 | Yarasuchus deccanensis |
| Anisian | Israel | 34.79 | 30.35 | Tanystropheus haasi |
| Anisian | Israel | 34.88 | 30.57 | Tanystropheus |
| Anisian | Israel | 34.88 | 30.57 | Reptilia |
| Anisian | Italy | 11.11 | 46.53 | Brachychirotherium |
| Anisian | Italy | 12.00 | 46.66 | Brachychirotherium |
| Anisian | Italy | 12.00 | 46.66 | Chirotherium |
| Anisian | Italy | 11.11 | 46.53 | Chirotherium barthii |
| Anisian | Italy | 12.00 | 46.66 | Chirotherium ladinicus |
| Anisian | Italy | 11.97 | 46.70 | Chirotherium parvum |
| Anisian | Italy | 11.97 | 46.70 | Chirotherium rex |
| Anisian | Italy | 11.11 | 46.53 | Dinosauromorpha |
| Anisian | Italy | 8.81 | 45.87 | Helveticosaurus zollingeri |
| Anisian | Italy | 13.20 | 46.49 | Heteropelta boboi |
| Anisian | Italy | 12.00 | 46.66 | Isochirotherium |
| Anisian | Italy | 11.11 | 46.53 | Isochirotherium delicatum |
| Anisian | Italy | 11.97 | 46.70 | Isochirotherium delicatum |
| Anisian | Italy | 12.12 | 46.74 | Megachirella wachtleri |
| Anisian | Italy | 11.11 | 46.53 | Parasynaptichnium |
| Anisian | Italy | 12.00 | 46.66 | Procolophonichnium |
| Anisian | Italy | 11.11 | 46.53 | Rhynchosauroides |
| Anisian | Italy | 12.00 | 46.66 | Rhynchosauroides |
| Anisian | Italy | 11.97 | 46.70 | Rhynchosauroides tirolicus |
| Anisian | Italy | 11.11 | 46.53 | Rotodactylus |
| Anisian | Italy | 12.00 | 46.66 | Rotodactylus |
| Anisian | Italy | 11.11 | 46.53 | Synaptichnium |
| Anisian | Italy | 8.81 | 45.86 | Ticinosuchus |
| Anisian | Italy | 8.91 | 45.89 | Tribelesodon longobardicus |
| Anisian | Malawi | 34.57 | -10.52 | Archosauriformes |
| Anisian | Malawi | 34.57 | -10.52 | Anomodontia |
| Anisian | Morocco | -9.09 | 30.82 | Atreipus |
| Anisian | Morocco | -9.09 | 30.81 | Chirotheriidae |
| Anisian | Morocco | -9.09 | 30.82 | Chirotherium barthii |
| Anisian | Morocco | -9.09 | 30.82 | Chirotherium barthii |
| Anisian | Morocco | -9.09 | 30.83 | Isochirotherium coureli |
| Anisian | Morocco | -9.09 | 30.82 | Isochirotherium coureli |
| Anisian | Morocco | -9.09 | 30.82 | Procolophonichnium |
| Anisian | Morocco | -9.09 | 30.82 | Rhynchosauroides |
| Anisian | Morocco | -9.09 | 30.83 | Rotodactylus |
| Anisian | Morocco | -9.09 | 30.83 | Synaptichnium |
| Anisian | Morocco | -9.09 | 30.82 | Synaptichnium |
| Anisian | Namibia | 16.48 | -21.10 | Cynodontia |
| Anisian | Namibia | 16.47 | -21.10 | Cynognathus |
| Anisian | Namibia | 16.48 | -21.10 | Cynognathus |
| Anisian | Namibia | 16.39 | -21.06 | Diademodon |
| Anisian | Namibia | 16.47 | -21.10 | Diademodon tetragonus |
| Anisian | Namibia | 16.45 | -21.10 | Dolichuranus primaevus |
| Anisian | Namibia | 16.47 | -21.10 | Dolichuranus primaevus |
| Anisian | Namibia | 16.43 | -21.09 | Etjoia dentitransitus |
| Anisian | Namibia | 16.45 | -21.10 | Kannemeyeria lophorhinus |
| Anisian | Namibia | 16.39 | -21.06 | Kannemeyeriidae |
| Anisian | Netherlands | 6.73 | 51.97 | Amotosaurus rotfeldensis |
| Anisian | Netherlands | 6.73 | 51.97 | Brachychirotherium paraparvum |
| Anisian | Netherlands | 6.73 | 51.97 | Chirotherium peabodyi |
| Anisian | Netherlands | 6.73 | 51.97 | Coelurosaurichnus ratumensis |
| Anisian | Netherlands | 6.73 | 51.97 | Eusaurosphargis |
| Anisian | Netherlands | 6.78 | 51.97 | Eusaurosphargis |
| Anisian | Netherlands | 6.73 | 51.97 | Procolophonichnium |
| Anisian | Netherlands | 6.73 | 51.97 | Procolophonichnium winterswijkense |
| Anisian | Netherlands | 6.73 | 51.97 | Rhynchosauroides |
| Anisian | Netherlands | 6.73 | 51.97 | Sustenodactylus hollandicus |
| Anisian | North China | 112.85 | 36.97 | Archosauriformes |
| Anisian | North China | 112.90 | 36.92 | Archosauriformes |
| Anisian | North China | 110.70 | 37.29 | Archosauromorpha |
| Anisian | North China | 110.97 | 39.68 | Eumetabolodon bathycephalus |
| Anisian | North China | 110.97 | 39.68 | Euparkeriidae |
| Anisian | North China | 111.00 | 39.10 | Guchengosuchus shiguaiensis |
| Anisian | North China | 111.00 | 39.10 | Halazhaisuchus qiaoensis |
| Anisian | North China | 110.70 | 37.29 | Kannemeyeriidae |
| Anisian | North China | 112.30 | 39.00 | Kannemeyeriidae |
| Anisian | North China | 112.30 | 39.00 | Kannemeyeriidae |
| Anisian | North China | 112.85 | 36.97 | Kannemeyeriidae |
| Anisian | North China | 112.88 | 36.98 | Kannemeyeriidae |
| Anisian | North China | 112.90 | 36.92 | Kannemeyeriidae |
| Anisian | North China | 113.00 | 37.08 | Neoprocolophon asiaticus |
| Anisian | North China | 110.70 | 37.29 | Nothogomphodon sanjiaoensis |
| Anisian | North China | 110.99 | 38.82 | Ordosiodon lincheyuensis |
| Anisian | North China | 110.97 | 39.68 | Ordosiodon youngi |
| Anisian | North China | 112.30 | 39.00 | Parakannemeyeria |
| Anisian | North China | 112.85 | 36.97 | Parakannemeyeria |
| Anisian | North China | 112.88 | 36.93 | Parakannemeyeria |
| Anisian | North China | 112.30 | 39.00 | Parakannemeyeria dolichocephala |
| Anisian | North China | 111.13 | 38.47 | Parakannemeyeria ningwuensis |
| Anisian | North China | 112.30 | 39.00 | Parakannemeyeria ningwuensis |
| Anisian | North China | 110.75 | 38.48 | Parakannemeyeria shenmuensis |
| Anisian | North China | 112.85 | 36.97 | Parakannemeyeria youngi |
| Anisian | North China | 112.87 | 36.98 | Parakannemeyeria youngi |
| Anisian | North China | 110.99 | 38.82 | Procolophonidae |
| Anisian | North China | 112.87 | 36.98 | Pseudosuchia |
| Anisian | North China | 110.97 | 39.68 | Shaanbeikannemeyeria buerdongia |
| Anisian | North China | 110.85 | 39.43 | Shaanbeikannemeyeria xilougouensis |
| Anisian | North China | 112.85 | 36.97 | Shansiodon |
| Anisian | North China | 112.87 | 36.92 | Shansiodon |
| Anisian | North China | 113.00 | 37.08 | Shansiodon |
| Anisian | North China | 113.02 | 37.07 | Shansiodon wangi |
| Anisian | North China | 110.80 | 38.47 | Shansiodon wuhsiangensis |
| Anisian | North China | 112.87 | 36.98 | Shansiodon wuhsiangensis |
| Anisian | North China | 112.90 | 36.92 | Shansiodon wuhsiangensis |
| Anisian | North China | 110.80 | 38.47 | Shansisuchus kuyeheensis |
| Anisian | North China | 110.44 | 36.15 | Shansisuchus shansisuchus |
| Anisian | North China | 112.30 | 39.00 | Shansisuchus shansisuchus |
| Anisian | North China | 112.85 | 36.97 | Shansisuchus shansisuchus |
| Anisian | North China | 112.88 | 36.98 | Shansisuchus shansisuchus |
| Anisian | North China | 112.88 | 36.93 | Shansisuchus shansisuchus |
| Anisian | North China | 112.90 | 36.92 | Shansisuchus shansisuchus |
| Anisian | North China | 112.92 | 36.92 | Shansisuchus shansisuchus |
| Anisian | North China | 112.93 | 36.97 | Shansisuchus shansisuchus |
| Anisian | North China | 113.02 | 37.07 | Shansisuchus shansisuchus |
| Anisian | North China | 112.90 | 36.92 | Sinognathus gracilis |
| Anisian | North China | 112.87 | 36.98 | Sinokannemeyeria |
| Anisian | North China | 112.92 | 36.90 | Sinokannemeyeria pearsoni |
| Anisian | North China | 112.93 | 36.97 | Sinokannemeyeria pearsoni |
| Anisian | North China | 111.15 | 37.50 | Sinokannemeyeria sanchuanheensis |
| Anisian | North China | 113.00 | 37.08 | Sinokannemeyeria yingchiaoensis |
| Anisian | North China | 112.30 | 39.00 | Thecodontia |
| Anisian | North China | 112.85 | 36.97 | Thecodontia |
| Anisian | North China | 112.87 | 36.98 | Thecodontia |
| Anisian | North China | 112.90 | 36.92 | Thecodontia |
| Anisian | North China | 112.92 | 36.92 | Thecodontia |
| Anisian | North China | 113.02 | 37.07 | Thecodontia |
| Anisian | North China | 112.17 | 35.20 | Traversodontoides wangwuensis |
| Anisian | North China | 110.97 | 39.68 | Yikezhaogia megafenestrala |
| Anisian | Poland | 20.87 | 51.03 | Brachychirotherium |
| Anisian | Poland | 20.87 | 51.03 | Chirotheriidae |
| Anisian | Poland | 20.87 | 51.03 | Chirotherium |
| Anisian | Poland | 20.87 | 51.03 | Chirotherium barthii |
| Anisian | Poland | 18.97 | 50.30 | Cladeiodon |
| Anisian | Poland | 17.63 | 50.58 | Hemilopas mentzeli |
| Anisian | Poland | 18.08 | 50.48 | Hemilopas mentzeli |
| Anisian | Poland | 18.95 | 50.49 | Hemilopas mentzeli |
| Anisian | Poland | 18.97 | 50.30 | Hemilopas mentzeli |
| Anisian | Poland | 20.87 | 51.03 | Isochirotherium herculis |
| Anisian | Poland | 20.87 | 51.03 | Isochirotherium soergeli |
| Anisian | Poland | 17.63 | 50.58 | Protanystropheus antiquus |
| Anisian | Poland | 17.97 | 50.47 | Protanystropheus antiquus |
| Anisian | Poland | 17.63 | 50.58 | Protorosauridae |
| Anisian | Poland | 20.87 | 51.03 | Rhynchosauroides bornemanni |
| Anisian | Poland | 20.87 | 51.03 | Rhynchosauroides pallinii |
| Anisian | Poland | 20.87 | 51.03 | Rotodactylus |
| Anisian | Poland | 20.87 | 51.03 | Synaptichnium |
| Anisian | Poland | 17.63 | 50.58 | Theropoda |
| Anisian | Romania | 22.35 | 47.10 | Tanystropheus biharicus |
| Anisian | Russia | 55.49 | 51.36 | Antecosuchus boreus |
| Anisian | Russia | 55.36 | 51.55 | Antecosuchus ochevi |
| Anisian | Russia | 55.43 | 51.42 | Antecosuchus ochevi |
| Anisian | Russia | 55.65 | 52.41 | Archosauria |
| Anisian | Russia | 55.31 | 51.36 | Bauriidae |
| Anisian | Russia | 55.65 | 52.41 | Dicynodontia |
| Anisian | Russia | 53.50 | 52.53 | Dongusuchus efremovi |
| Anisian | Russia | 55.18 | 51.46 | Dongusuchus efremovi |
| Anisian | Russia | 55.31 | 51.36 | Dongusuchus efremovi |
| Anisian | Russia | 55.31 | 51.36 | Dorosuchus neoetus |
| Anisian | Russia | 55.43 | 51.42 | Dorosuchus neoetus |
| Anisian | Russia | 53.50 | 52.53 | Jushatyria vjushkovi |
| Anisian | Russia | 53.50 | 52.53 | Kannemeyeriiformes |
| Anisian | Russia | 55.65 | 52.41 | Kannemeyeriiformes |
| Anisian | Russia | 55.43 | 51.42 | Kapes majmesculae |
| Anisian | Russia | 55.36 | 51.55 | Nothogomphodon danilovi |
| Anisian | Russia | 55.31 | 51.36 | Pseudosuchia |
| Anisian | Russia | 53.50 | 52.53 | Rabidosaurus cristatus |
| Anisian | Russia | 55.31 | 51.36 | Rabidosaurus cristatus |
| Anisian | Russia | 53.50 | 52.53 | Rhadiodromus klimovi |
| Anisian | Russia | 55.31 | 51.36 | Rhadiodromus klimovi |
| Anisian | Russia | 55.43 | 51.42 | Rhadiodromus mariae |
| Anisian | Russia | 55.43 | 51.42 | Rhinodicynodon gracile |
| Anisian | Russia | 55.36 | 51.55 | Sarmatosuchus otschevi |
| Anisian | Russia | 55.31 | 51.36 | Thecodontia |
| Anisian | Russia | 55.49 | 51.36 | Uralokannemeyeria vjuschkovi |
| Anisian | Russia | 53.50 | 52.53 | Uralosaurus magnus |
| Anisian | Russia | 55.31 | 51.36 | Uralosaurus magnus |
| Anisian | Russia | 55.49 | 51.36 | Uralosaurus magnus |
| Anisian | Russia | 53.50 | 52.53 | Vjushkovisaurus berdjanensis |
| Anisian | Russia | 55.36 | 51.55 | Vjushkovisaurus berdjanensis |
| Anisian | South Africa | 26.70 | -30.68 | Aelurosuchus browni |
| Anisian | South Africa | 27.23 | -31.70 | Bauria cynops |
| Anisian | South Africa | 27.23 | -31.70 | Bauria cynops |
| Anisian | South Africa | 27.23 | -31.70 | Bauria cynops |
| Anisian | South Africa | 27.24 | -31.71 | Bauria cynops |
| Anisian | South Africa | 26.33 | -31.07 | Bauria cynops |
| Anisian | South Africa | 26.33 | -31.00 | Bauria cynops |
| Anisian | South Africa | 26.33 | -30.99 | Bauria cynops |
| Anisian | South Africa | 26.11 | -30.91 | Bauria cynops |
| Anisian | South Africa | 26.27 | -30.42 | Bauria cynops |
| Anisian | South Africa | 26.33 | -31.00 | Bauria robusta |
| Anisian | South Africa | 27.23 | -31.70 | Bolotridon frerensis |
| Anisian | South Africa | 26.28 | -30.77 | Cistecynodon parvus |
| Anisian | South Africa | 26.33 | -31.00 | Cricodon kannemeyeri |
| Anisian | South Africa | 26.38 | -31.60 | Cricodon metabolus |
| Anisian | South Africa | 26.38 | -31.61 | Cricodon metabolus |
| Anisian | South Africa | 26.38 | -31.60 | Cynodontia |
| Anisian | South Africa | 26.38 | -31.60 | Cynognathus |
| Anisian | South Africa | 26.32 | -30.99 | Cynognathus |
| Anisian | South Africa | 27.23 | -31.70 | Cynognathus crateronotus |
| Anisian | South Africa | 27.23 | -31.70 | Cynognathus crateronotus |
| Anisian | South Africa | 27.23 | -31.70 | Cynognathus crateronotus |
| Anisian | South Africa | 27.24 | -31.71 | Cynognathus crateronotus |
| Anisian | South Africa | 26.33 | -31.00 | Cynognathus crateronotus |
| Anisian | South Africa | 26.11 | -30.91 | Cynognathus crateronotus |
| Anisian | South Africa | 26.70 | -30.68 | Cynognathus crateronotus |
| Anisian | South Africa | 26.38 | -31.60 | Diademodon |
| Anisian | South Africa | 26.38 | -31.61 | Diademodon |
| Anisian | South Africa | 27.23 | -31.70 | Diademodon |
| Anisian | South Africa | 26.33 | -31.07 | Diademodon |
| Anisian | South Africa | 26.33 | -31.00 | Diademodon |
| Anisian | South Africa | 26.32 | -30.99 | Diademodon |
| Anisian | South Africa | 27.90 | -31.73 | Diademodon |
| Anisian | South Africa | 27.24 | -31.71 | Diademodon browni |
| Anisian | South Africa | 26.94 | -31.78 | Diademodon tetragonus |
| Anisian | South Africa | 27.23 | -31.70 | Diademodon tetragonus |
| Anisian | South Africa | 26.33 | -31.00 | Diademodon tetragonus |
| Anisian | South Africa | 26.11 | -30.91 | Diademodon tetragonus |
| Anisian | South Africa | 26.62 | -30.61 | Eohyosaurus wolvaardti |
| Anisian | South Africa | 27.23 | -31.70 | Erythrosuchus africanus |
| Anisian | South Africa | 27.24 | -31.71 | Erythrosuchus africanus |
| Anisian | South Africa | 26.11 | -30.91 | Erythrosuchus africanus |
| Anisian | South Africa | 26.62 | -30.61 | Erythrosuchus africanus |
| Anisian | South Africa | 26.97 | -30.83 | Erythrosuchus africanus |
| Anisian | South Africa | 26.79 | -30.70 | Erythrosuchus africanus |
| Anisian | South Africa | 26.71 | -30.69 | Euparkeria capensis |
| Anisian | South Africa | 26.70 | -30.68 | Howesia browni |
| Anisian | South Africa | 26.32 | -30.99 | Kannemeyeria |
| Anisian | South Africa | 26.22 | -30.88 | Kannemeyeria |
| Anisian | South Africa | 26.49 | -30.66 | Kannemeyeria |
| Anisian | South Africa | 26.62 | -30.61 | Kannemeyeria |
| Anisian | South Africa | 24.98 | -31.65 | Kannemeyeria simocephala |
| Anisian | South Africa | 26.94 | -31.78 | Kannemeyeria simocephala |
| Anisian | South Africa | 27.23 | -31.70 | Kannemeyeria simocephala |
| Anisian | South Africa | 27.23 | -31.70 | Kannemeyeria simocephala |
| Anisian | South Africa | 27.23 | -31.70 | Kannemeyeria simocephala |
| Anisian | South Africa | 26.33 | -31.00 | Kannemeyeria simocephala |
| Anisian | South Africa | 26.11 | -30.91 | Kannemeyeria simocephala |
| Anisian | South Africa | 27.90 | -31.73 | Kannemeyeriidae |
| Anisian | South Africa | 26.37 | -31.61 | Kannemeyeriiformes |
| Anisian | South Africa | 26.37 | -31.60 | Kannemeyeriiformes |
| Anisian | South Africa | 26.39 | -31.54 | Kannemeyeriiformes |
| Anisian | South Africa | 26.40 | -31.58 | Kannemeyeriiformes |
| Anisian | South Africa | 27.23 | -31.70 | Kombuisia frerensis |
| Anisian | South Africa | 27.24 | -31.71 | Lumkuia fuzzi |
| Anisian | South Africa | 26.71 | -30.69 | Mesosuchus browni |
| Anisian | South Africa | 27.23 | -31.70 | Microgomphodon oligocynus |
| Anisian | South Africa | 26.70 | -30.68 | Microgomphodon oligocynus |
| Anisian | South Africa | 26.62 | -30.61 | Microgomphodon oligocynus |
| Anisian | South Africa | 26.83 | -30.42 | Microgomphodon oligocynus |
| Anisian | South Africa | 26.33 | -31.00 | Microhelodon eumerus |
| Anisian | South Africa | 26.70 | -30.68 | Nythosaurus browni |
| Anisian | South Africa | 26.70 | -30.68 | Palacrodon browni |
| Anisian | South Africa | 26.70 | -30.68 | Procolophonidae |
| Anisian | South Africa | 26.62 | -30.61 | Procolophonidae |
| Anisian | South Africa | 26.70 | -30.68 | Procolophoninae |
| Anisian | South Africa | 27.24 | -31.71 | Protacmon reubsameni |
| Anisian | South Africa | 27.24 | -31.71 | Sesamondontoides pauli |
| Anisian | South Africa | 26.38 | -31.61 | Shansiodon |
| Anisian | South Africa | 27.24 | -31.71 | Sysphinctostoma gracilis |
| Anisian | South Africa | 27.23 | -31.70 | Sysphinctostoma smithi |
| Anisian | South Africa | 26.61 | -30.62 | Teratophon spinigenis |
| Anisian | South Africa | 26.83 | -30.42 | Theledectes perforatus |
| Anisian | South Africa | 26.11 | -30.91 | Thelephon contritus |
| Anisian | South Africa | 26.83 | -30.42 | Thelerpeton oppressus |
| Anisian | South Africa | 26.62 | -30.61 | Trirachodon |
| Anisian | South Africa | 27.23 | -31.70 | Trirachodon berryi |
| Anisian | South Africa | 26.33 | -31.00 | Trirachodon berryi |
| Anisian | South Africa | 26.11 | -30.91 | Trirachodon berryi |
| Anisian | South Africa | 26.70 | -30.68 | Trirachodon minor |
| Anisian | South Africa | 26.39 | -31.61 | Ufudocyclops mukanelai |
| Anisian | South Africa | 26.40 | -31.53 | Ufudocyclops mukanelai |
| Anisian | South Africa | 26.50 | -31.55 | Ufudocyclops mukanelai |
| Anisian | South China | 104.31 | 24.88 | Largocephalosaurus polycarpon |
| Anisian | South China | 104.47 | 25.70 | Largocephalosaurus qianensis |
| Anisian | South China | 111.69 | 31.16 | Lotosaurus |
| Anisian | South China | 110.30 | 29.50 | Lotosaurus adentus |
| Anisian | South China | 104.33 | 24.78 | Pectodens zhenyuensis |
| Anisian | South China | 104.47 | 25.70 | Qianosuchus mixtus |
| Anisian | South China | 104.33 | 24.73 | Sinosaurosphargis yunguiensis |
| Anisian | South China | 104.85 | 25.48 | Sinosaurosphargis yunguiensis |
| Anisian | Spain | 2.33 | 41.78 | Archosauromorpha |
| Anisian | Spain | -1.63 | 39.98 | Chirotherium |
| Anisian | Spain | -1.04 | 40.15 | Chirotherium barthii |
| Anisian | Spain | -0.99 | 40.40 | Chirotherium barthii |
| Anisian | Spain | -1.63 | 39.98 | Coelurosaurichnus perriauxi |
| Anisian | Spain | -0.99 | 40.40 | Isochirotherium coureli |
| Anisian | Spain | -1.63 | 39.98 | Paratrisauropus latus |
| Anisian | Spain | 2.30 | 41.77 | Procolophonidae |
| Anisian | Spain | 2.33 | 41.78 | Procolophonoidea |
| Anisian | Spain | -0.99 | 40.40 | Rhynchosauroides |
| Anisian | Spain | 0.03 | 40.07 | Rhynchosauroides |
| Anisian | Switzerland | 7.65 | 47.58 | Basileosaurus freyi |
| Anisian | Switzerland | 8.94 | 45.91 | Macrocnemus bassanii |
| Anisian | Switzerland | 7.65 | 47.58 | Sclerosaurus armatus |
| Anisian | Switzerland | 8.94 | 45.91 | Ticinosuchus ferox |
| Anisian | Switzerland | 8.94 | 45.91 | Ticinosuchus ferox |
| Anisian | Tanzania | 34.78 | -10.47 | Aleodon brachyrhamphus |
| Anisian | Tanzania | 35.22 | -10.33 | Angonisaurus cruickshanki |
| Anisian | Tanzania | 35.13 | -10.30 | Archosauriformes |
| Anisian | Tanzania | 35.27 | -10.38 | Archosauriformes |
| Anisian | Tanzania | 35.50 | -10.47 | Archosauriformes |
| Anisian | Tanzania | 35.31 | -10.30 | Archosauromorpha |
| Anisian | Tanzania | 35.13 | -10.30 | Asilisaurus kongwe |
| Anisian | Tanzania | 35.13 | -10.30 | Asilisaurus kongwe |
| Anisian | Tanzania | 35.13 | -10.30 | Asilisaurus kongwe |
| Anisian | Tanzania | 35.34 | -10.13 | Asilisaurus kongwe |
| Anisian | Tanzania | 35.24 | -10.36 | Asperoris mnyama |
| Anisian | Tanzania | 35.13 | -10.30 | Cricodon metabolus |
| Anisian | Tanzania | 35.16 | -10.49 | Cricodon metabolus |
| Anisian | Tanzania | 35.27 | -10.38 | Cricodon metabolus |
| Anisian | Tanzania | 35.13 | -10.30 | Cynodontia |
| Anisian | Tanzania | 35.16 | -10.38 | Cynodontia |
| Anisian | Tanzania | 35.25 | -10.30 | Cynognathus crateronotus |
| Anisian | Tanzania | 34.78 | -10.47 | Diademodontidae |
| Anisian | Tanzania | 35.23 | -10.28 | Dicynodontia |
| Anisian | Tanzania | 35.24 | -10.36 | Dicynodontia |
| Anisian | Tanzania | 35.22 | -10.34 | Hypselorhachis mirabilis |
| Anisian | Tanzania | 34.84 | -10.35 | Kannemeyeria simocephala |
| Anisian | Tanzania | 35.50 | -10.47 | Mambawakale ruhuhu |
| Anisian | Tanzania | 35.22 | -10.33 | Mandagomphodon hirschsoni |
| Anisian | Tanzania | 34.75 | -10.51 | Mandaphon nadra |
| Anisian | Tanzania | 34.84 | -10.35 | Mandasuchus tanyauchen |
| Anisian | Tanzania | 35.27 | -10.38 | Mandasuchus tanyauchen |
| Anisian | Tanzania | 35.31 | -10.30 | Mandasuchus tanyauchen |
| Anisian | Tanzania | 35.22 | -10.34 | Nundasuchus songeaensis |
| Anisian | Tanzania | 34.75 | -10.53 | Nyasasaurus parringtoni |
| Anisian | Tanzania | 35.23 | -10.28 | Nyasasaurus parringtoni |
| Anisian | Tanzania | 35.23 | -10.28 | Parringtonia gracilis |
| Anisian | Tanzania | 35.22 | -10.34 | Rechnisaurus cristarhynchus |
| Anisian | Tanzania | 34.78 | -10.47 | Ruhuhuaria reiszi |
| Anisian | Tanzania | 35.16 | -10.38 | Sangusaurus parringtonii |
| Anisian | Tanzania | 35.22 | -10.34 | Sangusaurus parringtonii |
| Anisian | Tanzania | 35.23 | -10.28 | Scalenodon |
| Anisian | Tanzania | 34.78 | -10.47 | Scalenodon angustifrons |
| Anisian | Tanzania | 35.16 | -10.38 | Scalenodon angustifrons |
| Anisian | Tanzania | 35.00 | -10.44 | Scalenodon attridgei |
| Anisian | Tanzania | 34.75 | -10.53 | Scalenodon charigi |
| Anisian | Tanzania | 35.50 | -10.47 | Silesauridae |
| Anisian | Tanzania | 34.78 | -10.47 | Stagonosuchus major |
| Anisian | Tanzania | 35.27 | -10.38 | Stagonosuchus major |
| Anisian | Tanzania | 35.25 | -10.33 | Stagonosuchus nyassicus |
| Anisian | Tanzania | 35.27 | -10.38 | Stagonosuchus tanganyikaensis |
| Anisian | Tanzania | 35.23 | -10.28 | Stenaulorhynchus |
| Anisian | Tanzania | 35.31 | -10.30 | Stenaulorhynchus |
| Anisian | Tanzania | 35.27 | -10.38 | Stenaulorhynchus stockleyi |
| Anisian | Tanzania | 34.91 | -10.36 | Teleocrater rhadinus |
| Anisian | Tanzania | 34.91 | -10.36 | Teleocrater rhadinus |
| Anisian | Tanzania | 35.25 | -10.30 | Teleocrater rhadinus |
| Anisian | Tanzania | 35.25 | -10.33 | Tetragonias njalilus |
| Anisian | Tanzania | 35.31 | -10.30 | Tetragonias njalilus |
| Anisian | Tanzania | 34.84 | -10.35 | Theriognathus microps |
| Anisian | Tanzania | 35.25 | -10.33 | Traversodontidae |
| Anisian | UK | -3.27 | 50.67 | Amniota |
| Anisian | UK | -3.27 | 50.66 | Archosauria |
| Anisian | UK | -3.25 | 50.68 | Archosauria |
| Anisian | UK | -3.23 | 50.68 | Archosauria |
| Anisian | UK | -3.29 | 50.56 | Archosauria |
| Anisian | UK | -1.58 | 52.29 | Archosauria |
| Anisian | UK | -3.27 | 50.68 | Bentonyx sidensis |
| Anisian | UK | -1.58 | 52.29 | Bromsgroveia |
| Anisian | UK | -2.08 | 52.33 | Bromsgroveia walkeri |
| Anisian | UK | -1.58 | 52.29 | Bromsgroveia walkeri |
| Anisian | UK | -1.15 | 52.97 | Chirotheriidae |
| Anisian | UK | -1.08 | 52.96 | Chirotherioidea |
| Anisian | UK | -3.23 | 53.38 | Chirotherium |
| Anisian | UK | -2.63 | 53.34 | Chirotherium |
| Anisian | UK | -2.70 | 52.81 | Chirotherium |
| Anisian | UK | -2.31 | 52.73 | Chirotherium |
| Anisian | UK | -2.17 | 52.67 | Chirotherium |
| Anisian | UK | -1.29 | 52.76 | Chirotherium |
| Anisian | UK | -2.63 | 53.34 | Chirotherium barthii |
| Anisian | UK | -2.43 | 53.38 | Chirotherium barthii |
| Anisian | UK | -2.31 | 52.73 | Chirotherium barthii |
| Anisian | UK | -2.31 | 52.73 | Chirotherium sickleri |
| Anisian | UK | -2.43 | 53.38 | Chirotherium storetonense |
| Anisian | UK | -2.17 | 52.67 | Chirotherium storetonense |
| Anisian | UK | -1.15 | 52.97 | Chirotherium swinnertoni |
| Anisian | UK | -2.43 | 53.38 | Chirotherium vorbachi |
| Anisian | UK | -1.62 | 52.81 | Chirotherium vorbachi |
| Anisian | UK | -3.23 | 50.68 | Coartaredens isaaci |
| Anisian | UK | -1.35 | 52.95 | Deuterotetrapous plancus |
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| Anisian | UK | -3.31 | 50.63 | Fodonyx spenceri |
| Anisian | UK | -3.28 | 50.66 | Fodonyx spenceri |
| Anisian | UK | -3.23 | 50.68 | Fodonyx spenceri |
| Anisian | UK | -2.64 | 53.17 | Isochirotherium |
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| Anisian | UK | -3.23 | 50.68 | Kapes bentoni |
| Anisian | UK | -2.08 | 52.33 | Langeronyx brodiei |
| Anisian | UK | -1.58 | 52.29 | Langeronyx brodiei |
| Anisian | UK | -3.27 | 50.67 | Parareptilia |
| Anisian | UK | -1.58 | 52.29 | Phytosauria |
| Anisian | UK | -3.27 | 50.67 | Procolophonidae |
| Anisian | UK | -2.08 | 52.33 | Rhombopholis scutulata |
| Anisian | UK | -1.58 | 52.29 | Rhombopholis scutulata |
| Anisian | UK | -3.28 | 50.66 | Rhynchosauria |
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| Anisian | UK | -2.70 | 52.81 | Rhynchosauroides |
| Anisian | UK | -2.17 | 52.67 | Rhynchosauroides |
| Anisian | UK | -2.70 | 52.81 | Rhynchosauroides articeps |
| Anisian | UK | -3.23 | 53.38 | Rhynchosauroides rectipes |
| Anisian | UK | -2.63 | 53.34 | Rhynchosauroides rectipes |
| Anisian | UK | -1.58 | 52.29 | Sauria |
| Anisian | UK | -1.58 | 52.29 | Suchia |
| Anisian | UK | -2.17 | 52.67 | Synaptichnium pseudosuchoides |
| Anisian | UK | -3.27 | 50.67 | Tanystropheus |
| Anisian | UK | -1.15 | 52.97 | Varanopus curvidactylus |
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| Anisian | USA | -110.70 | 35.02 | Ammorhynchus navajoi |
| Anisian | USA | -110.04 | 34.78 | Ammorhynchus navajoi |
| Anisian | USA | -110.08 | 35.02 | Ammorhynchus navajoi |
| Anisian | USA | -110.84 | 35.08 | Anisodontosaurus greeri |
| Anisian | USA | -110.26 | 34.92 | Anisodontosaurus greeri |
| Anisian | USA | -110.26 | 34.92 | Archosauria |
| Anisian | USA | -105.14 | 35.20 | Archosauriformes |
| Anisian | USA | -105.08 | 35.20 | Archosauriformes |
| Anisian | USA | -110.84 | 35.08 | Archosauromorpha |
| Anisian | USA | -105.08 | 35.20 | Archosauromorpha |
| Anisian | USA | -111.40 | 35.87 | Arizonasaurus babbitti |
| Anisian | USA | -110.84 | 35.08 | Arizonasaurus babbitti |
| Anisian | USA | -110.50 | 35.00 | Arizonasaurus babbitti |
| Anisian | USA | -110.30 | 34.94 | Arizonasaurus babbitti |
| Anisian | USA | -110.26 | 34.92 | Arizonasaurus babbitti |
| Anisian | USA | -105.08 | 35.20 | Arizonasaurus babbitti |
| Anisian | USA | -110.26 | 34.92 | Chirotherium |
| Anisian | USA | -111.47 | 35.84 | Chirotherium barthii |
| Anisian | USA | -111.44 | 35.80 | Chirotherium barthii |
| Anisian | USA | -110.07 | 34.50 | Chirotherium barthii |
| Anisian | USA | -110.30 | 34.94 | Chirotherium barthii |
| Anisian | USA | -113.04 | 37.17 | Chirotherium rex |
| Anisian | USA | -111.44 | 35.80 | Chirotherium rex |
| Anisian | USA | -110.30 | 34.94 | Chirotherium rex |
| Anisian | USA | -110.84 | 35.08 | Cynodontia |
| Anisian | USA | -105.08 | 35.20 | Diapsida |
| Anisian | USA | -110.70 | 35.02 | Dicynodontia |
| Anisian | USA | -110.15 | 34.90 | Dicynodontia |
| Anisian | USA | -105.14 | 35.20 | Dicynodontia |
| Anisian | USA | -110.25 | 34.92 | Isochirotherium marshalli |
| Anisian | USA | -111.40 | 35.87 | Poposauroidea |
| Anisian | USA | -110.84 | 35.08 | Poposauroidea |
| Anisian | USA | -110.30 | 34.94 | Poposauroidea |
| Anisian | USA | -110.26 | 34.92 | Poposauroidea |
| Anisian | USA | -105.08 | 35.20 | Poposauroidea |
| Anisian | USA | -105.08 | 35.20 | Procolophonidae |
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| Anisian | USA | -110.15 | 34.90 | Reptilia |
| Anisian | USA | -110.30 | 34.94 | Rhynchosauroides |
| Anisian | USA | -111.48 | 35.91 | Rhynchosauroides pallinii |
| Anisian | USA | -112.00 | 37.17 | Rhynchosauroides pallinii |
| Anisian | USA | -111.40 | 35.87 | Rotodactylus bradyi |
| Anisian | USA | -113.41 | 37.19 | Rotodactylus cursorius |
| Anisian | USA | -111.47 | 35.84 | Synaptichnium cameronensis |
| Anisian | USA | -110.15 | 34.90 | Therapsipus cumminsi |
| Anisian | Zambia | 32.99 | -10.86 | Cynognathus crateronotus |
| Anisian | Zambia | 33.08 | -10.75 | Diademodon tetragonus |
| Anisian | Zambia | 33.08 | -10.75 | Dolichuranus latirostris |
| Anisian | Zambia | 33.08 | -10.75 | Kannemeyeria lophorhinus |
| Anisian | Zambia | 33.08 | -10.75 | Kannemeyeriiformes |
| Anisian | Zambia | 33.08 | -10.75 | Luangwa drysdalli |
| Anisian | Zambia | 33.08 | -10.75 | Sangusaurus edentatus |
| Anisian | Zambia | 33.08 | -10.75 | Trirachodon |
| Anisian | Zambia | 33.08 | -10.75 | Zambiasaurus submersus |

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