

# Geological Timescale

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| EON                                                 | ERA                                  | PERIOD                                         |                                                | EPOCH                                     | STAGE        | M<br>a |
|-----------------------------------------------------|--------------------------------------|------------------------------------------------|------------------------------------------------|-------------------------------------------|--------------|--------|
| P<br>H<br>A<br>N<br>E<br>R<br>O<br>Z<br>O<br>I<br>C | C<br>E<br>N<br>O<br>Z<br>O<br>I<br>C | QUATERNARY                                     |                                                | PLEISTOCENE                               | Calabrian    | 1.78   |
|                                                     |                                      | T<br>E<br>R<br>T<br>I<br>A<br>R<br>Y           | N<br>E<br>O<br>G<br>E<br>N<br>E                | PLIOCENE                                  | Piacenzian   | 3.56   |
|                                                     |                                      |                                                |                                                |                                           | Zanclean     | 5.32   |
|                                                     |                                      |                                                |                                                |                                           | Messinian    | 7.12   |
|                                                     |                                      |                                                |                                                | MIOCENE                                   | Tortonian    | 11.2   |
|                                                     |                                      |                                                |                                                |                                           | Serravallian | 14.8   |
|                                                     |                                      |                                                |                                                |                                           | Langhian     | 16.4   |
|                                                     |                                      |                                                |                                                |                                           | Burdigalian  | 20.52  |
|                                                     |                                      |                                                |                                                |                                           | Aqitanian    | 23.8   |
|                                                     |                                      |                                                |                                                |                                           | Chattian     | 28.5   |
|                                                     |                                      |                                                |                                                |                                           | Rupelian     | 33.7   |
|                                                     |                                      | P<br>A<br>L<br>E<br>O<br>G<br>E<br>N<br>E      | P<br>A<br>L<br>E<br>O<br>G<br>E<br>N<br>E      | OLIGOCENE                                 | Priabonian   | 37     |
|                                                     |                                      |                                                |                                                |                                           | Bartonian    | 41.3   |
|                                                     |                                      |                                                |                                                | EOCENE                                    | Lutetian     | 49     |
|                                                     |                                      |                                                |                                                |                                           | Ypresian     | 54.8   |
|                                                     |                                      |                                                |                                                |                                           | Thanetian    | 57.9   |
|                                                     |                                      |                                                |                                                |                                           | Selandian    | 60.9   |
|                                                     |                                      |                                                |                                                |                                           | Danian       | 65     |
|                                                     |                                      |                                                |                                                | P<br>A<br>L<br>E<br>O<br>C<br>E<br>N<br>E |              | 73     |
|                                                     |                                      |                                                |                                                |                                           |              | 83     |
|                                                     |                                      |                                                |                                                |                                           |              | 87     |
|                                                     |                                      |                                                |                                                |                                           |              | 89     |
|                                                     |                                      |                                                |                                                |                                           |              | 91     |
|                                                     |                                      |                                                |                                                |                                           |              | 97.5   |
|                                                     |                                      |                                                |                                                |                                           |              | 108    |
|                                                     |                                      |                                                |                                                |                                           |              | 115    |
|                                                     | M<br>E<br>S<br>O<br>Z<br>O<br>I<br>C | C<br>R<br>E<br>T<br>A<br>C<br>E<br>O<br>U<br>S | C<br>R<br>E<br>T<br>A<br>C<br>E<br>O<br>U<br>S | L<br>A<br>T<br>E                          | Albian       | 123    |
|                                                     |                                      |                                                |                                                |                                           | Aptian       | 130    |
|                                                     |                                      |                                                |                                                |                                           | Barremian    | 135    |
|                                                     |                                      |                                                |                                                |                                           | Hauterivian  | 141    |
|                                                     |                                      |                                                |                                                |                                           | Valanginian  | 146    |
|                                                     |                                      |                                                |                                                |                                           | Berriasian   | 151    |
|                                                     |                                      |                                                |                                                |                                           |              | 159    |
|                                                     |                                      |                                                |                                                | E<br>A<br>R<br>L<br>Y                     |              | 165    |
|                                                     |                                      |                                                |                                                |                                           |              | 173    |
|                                                     |                                      |                                                |                                                |                                           |              | 180    |
|                                                     |                                      |                                                |                                                | L<br>A<br>T<br>E                          | Tithonian    | 184    |
|                                                     |                                      |                                                |                                                |                                           | Kimmeridgian |        |
|                                                     |                                      |                                                |                                                |                                           | Oxfordian    |        |
|                                                     |                                      |                                                |                                                |                                           |              |        |
|                                                     |                                      |                                                |                                                | J<br>U<br>R<br>A<br>S<br>S<br>I<br>C      | Callovian    |        |
|                                                     |                                      |                                                |                                                |                                           | Bathonian    |        |
|                                                     |                                      |                                                |                                                |                                           | Bajocian     |        |
|                                                     |                                      |                                                |                                                |                                           | Berriasian   |        |

| EON                                                 | ERA                                       | PERIOD             | EPOCH       | STAGE         | M<br>a |
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| P<br>H<br>A<br>N<br>E<br>R<br>O<br>Z<br>O<br>I<br>C | M<br>E<br>S<br>O<br>Z<br>O<br>I<br>C      | JURASSIC           | EARLY       | Toarcian      | 190    |
|                                                     |                                           |                    |             | Pliensbachian | 195    |
|                                                     |                                           |                    |             | Sinemurian    | 202    |
|                                                     |                                           |                    |             | Hettangian    | 205    |
|                                                     |                                           | TRIASSIC           | LATE        | Rhaetian      | 207    |
|                                                     |                                           |                    |             | Norian        | 220    |
|                                                     |                                           |                    |             | Carnian       | 230    |
|                                                     |                                           |                    | MIDDLE      | Ladinian      | 235    |
|                                                     |                                           |                    |             | Anisian       | 241    |
|                                                     |                                           |                    | EARLY       | Spathian      | 244    |
|                                                     |                                           |                    |             | Nammalian     | 247    |
|                                                     |                                           |                    |             | Griesbachian  | 251    |
|                                                     |                                           | PERMIAN            | LATE        | Tatarian      | 255    |
|                                                     |                                           |                    |             | Kazanian      | 267    |
|                                                     |                                           |                    |             | Ufimian       | 274    |
|                                                     |                                           |                    | EARLY       | Kungurian     | 274    |
|                                                     |                                           |                    |             | Artinskian    | 285    |
|                                                     |                                           |                    |             | Sakmarian     | 293    |
|                                                     |                                           |                    |             | Asselian      | 298    |
|                                                     | P<br>A<br>L<br>E<br>O<br>Z<br>O<br>I<br>C | CARBO-<br>NIFEROUS | STEPHANIAN  | Gzelian       | 300    |
|                                                     |                                           |                    |             | Kasimovian    | 305    |
|                                                     |                                           |                    | WESTPHALIAN | Moscovian     | 311.5  |
|                                                     |                                           |                    |             | Bashkerian    | 314    |
|                                                     |                                           |                    | NAMURIAN    | Serpukhovian  | 325    |
|                                                     |                                           |                    |             | Brigantian    | 328.5  |
|                                                     |                                           |                    | VISEAN      | Asbian        | 330.5  |
|                                                     |                                           |                    |             | Holkerian     | 335    |

| EON                                                 | ERA                                       | PERIOD             | EPOCH      | STAGE        | M<br>a |
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| P<br>H<br>A<br>N<br>E<br>R<br>O<br>Z<br>O<br>I<br>C | P<br>A<br>L<br>E<br>O<br>Z<br>O<br>I<br>C | CARBON-<br>IFEROUS | VISEAN     | Arundian     | 341.5  |
|                                                     |                                           |                    |            | Chadian      | 344    |
|                                                     |                                           |                    | TOURNASIAN | Ivorian      | 348    |
|                                                     |                                           |                    |            | Hastarian    | 354    |
|                                                     |                                           |                    |            |              |        |
|                                                     |                                           | DEVONIAN           | LATE       | Famennian    | 364.5  |
|                                                     |                                           |                    |            | Frasnian     | 369    |
|                                                     |                                           |                    | MIDDLE     | Givetian     | 378    |
|                                                     |                                           |                    |            | Eifelian     | 384    |
|                                                     |                                           |                    | EARLY      | Emsian       | 399.5  |
|                                                     |                                           |                    |            | Pragian      | 404.5  |
|                                                     |                                           |                    |            | Lochkovian   | 410    |
|                                                     |                                           |                    |            |              | 414    |
|                                                     |                                           | SILURIAN           | PRIDOLI    |              | 417    |
|                                                     |                                           |                    | LUDLOW     | Ludfordian   | 420    |
|                                                     |                                           |                    |            | Gorstian     | 422.5  |
|                                                     |                                           |                    | WENLOCK    | Homerian     | 425    |
|                                                     |                                           |                    |            | Sheinwoodian | 428    |
|                                                     |                                           |                    | LLANDOVERY | Telychian    | 431    |
|                                                     |                                           |                    |            | Aeronian     | 434    |
|                                                     |                                           |                    |            | Rhuddanian   |        |
|                                                     |                                           | ORDOVICIAN         | ASHGILL    | Bolindian    | 443    |
|                                                     |                                           |                    | CARADOC    | Eastonian    | 454.5  |
|                                                     |                                           |                    |            | Gisbornian   | 459    |
|                                                     |                                           |                    | LLANVIRN   | Darriwelian  | 467    |
|                                                     |                                           |                    |            |              |        |

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| P<br>H<br>A<br>N<br>E<br>R<br>O<br>Z<br>O<br>I<br>C | P<br>A<br>L<br>E<br>O<br>Z<br>O<br>I<br>C | ORDOVICIAN | ARENIG           | Yapeenian                 | 471    |
|                                                     |                                           |            |                  | Castlemainian             |        |
|                                                     |                                           |            |                  | Chewtonian                | 477    |
|                                                     |                                           |            |                  | Bendigonian               | 481    |
|                                                     |                                           |            |                  |                           | 484.5  |
|                                                     |                                           |            | TREMADOC         | Lancefieldian             | 486    |
|                                                     |                                           |            |                  | Warendan                  | 490    |
|                                                     |                                           | CAMBRIAN   | LATE             | Pantonian-Datsonian       | 492.5  |
|                                                     |                                           |            |                  | Iverian                   | 496    |
|                                                     |                                           |            |                  | Idamean-Mindyalian        | 498.5  |
|                                                     |                                           |            | MIDDLE           | Boomerangain              | 500    |
|                                                     |                                           |            |                  | Undilian                  | 503    |
|                                                     |                                           |            |                  | Late Templetonian-Floran  | 506    |
|                                                     |                                           |            |                  | Ordian-Early Templetonian | 509    |
|                                                     |                                           |            | EARLY            | Atdabanian-Toyonian       | 528    |
|                                                     |                                           |            |                  | Tommotian                 |        |
|                                                     |                                           |            |                  | Nemakit-Daldynian         | 534    |
|                                                     |                                           |            |                  |                           | 545    |
| P<br>R<br>O<br>T<br>E<br>R<br>O<br>Z<br>O<br>I<br>C | SIN-<br>EAN                               | VENDIAN    | EDIACARAN        |                           | 590    |
|                                                     |                                           |            | VARANGIAN        |                           | 610    |
|                                                     | RIP-<br>HEAN                              | STURTIAN   |                  |                           | 800    |
|                                                     |                                           | KARATAU    |                  |                           | 1050   |
|                                                     |                                           | YURMATIN   |                  |                           | 1350   |
|                                                     |                                           | BURZYN     |                  |                           | 1650   |
|                                                     | ANIMIKEAN                                 |            |                  |                           | 2200   |
|                                                     | HURONIAN                                  |            |                  |                           | 2450   |
|                                                     | A<br>R<br>C<br>H<br>E<br>A<br>N           | RANDIAN    |                  |                           | 2800   |
|                                                     |                                           | SWAZIAN    |                  |                           | 3500   |
|                                                     |                                           | ISUAN      |                  |                           | 3800   |
|                                                     |                                           | HADEAN     | EARLY IMBRIAN    |                           | 3850   |
|                                                     |                                           |            | NECTARIAN        |                           | 3950   |
|                                                     |                                           |            | BASIN GROUPS 1-9 |                           | 4150   |
|                                                     |                                           |            | CRYPTIC          |                           | 4560   |

2500

4000