Geologija gorskega sveta

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Dojemanje geološkega časa

The History of the Earth

5 billion years
4 billion years - first in oceans
3 billion years

2 billion years - first multicelled organisms

- 1 billion years ago

- age of dinosaurs begins

- dinosaurs extinct 65 million years ago

All of human recorded history 10,000 years 0.1 mm

Table 1. The development of life through time.

<table>
<thead>
<tr>
<th>Million years before present</th>
<th>Era, System, or Event</th>
<th>Relative to a calendar year (date time)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.600</td>
<td>Earth formed from planetary nebula</td>
<td>1/1 0:00</td>
</tr>
<tr>
<td>3.600</td>
<td>Inferred origin of life (first cells)</td>
<td>2/25 13:02</td>
</tr>
<tr>
<td>3.800</td>
<td>Oldest age-dated rocks on Earth</td>
<td>3/5 11:28</td>
</tr>
<tr>
<td>3.600</td>
<td>Fossil algae and stromatolites (prokaryots)</td>
<td>3/21 8:20</td>
</tr>
<tr>
<td>3.250</td>
<td>Fossil evidence of bacteria</td>
<td>4/18 2:52</td>
</tr>
<tr>
<td>2.100</td>
<td>Fossil evidence of cells with a nucleus (eukaryots)</td>
<td>7/18 8:52</td>
</tr>
<tr>
<td>1.500</td>
<td>First multi-celled organisms (seaweed and algae)</td>
<td>9/3 23:28</td>
</tr>
<tr>
<td>0.670</td>
<td>Oldest marine worms and jellyfish</td>
<td>11/8 20:19</td>
</tr>
<tr>
<td>0.600</td>
<td>Vendian period begins; Ediacarian</td>
<td>11/4</td>
</tr>
</tbody>
</table>

Paleozoic:

544 Cambrian system begins | 11/18 20:02 |
515 Burgess Shale animals, animals with a notochord | 11/21 3:15 |
505 Ordovician system begins | 11/21 22:18 |
505 First fish | 11/21 22:18 |
470 First fossil evidence of land plants | 11/24 16:57 |
438 Silurian system begins | 11/27 5:53 |
430 First vascular land plants | 11/27 21:07 |
414 Oldest lung fish fossils | 11/29 3:36 |
408 Devonian system begins | 11/29 15:01 |
408 Oldest fossil evidence of mosses | 11/29 15:01 |
385 First insects (beetles, scorpions, and centipedes) | 12/1 11:23 |
380 First lobe-finned fish | 12/1 20:20 |
375 First land animals (amphibians) | 12/2 5:52 |
370 First sharks | 12/2 12:23 |
365 First seed plants (fems) | 12/3 0:54 |
360 Mississippian system begins | 12/3 10:26 |
330 First possible reptiles | 12/5 19:33 |
320 Pennsylvanian system (Kentucky coal) | 12/6 14:36 |
286 Permian system begins | 12/6 7:21 |
260 Sali-backed reptiles (Dimetodon) | 12/11 8:52 |
245 End of Paleozoic, 96% of all life on Earth perishes | 12/12 13:26 |

Mesozoic, the "Age of Reptiles":

245 Triassic system begins | 12/12 13:26 |
240 First crocodiles | 12/12 22:57 |
228 First dinosaurs (Eoraptor and Saltoparsaur) | 12/13 21:48 |
221 First mammals (shrew-like) | 12/14 11:08 |
210 First turtles | 12/15 6:05 |
208 Jurassic system begins | 12/15 11:53 |
195 Dilophosaurus, an early Jurassic dinosaur | 12/16 12:39 |
155 First bird, Archeopteryx | 12/19 16:49 |
150 Allosaurus, (meat-eating dinosaur) | 12/20 2:20 |
149 Stegosaurus, (plate-backed dinosaur) | 12/20 6:09 |
144 Cretaceous system begins | 12/20 13:46 |
115 First flowering plants | 12/22 21:00 |
62 Duck-billed dinosaurs (MaiaSaurus) | 12/25 11:50 |
50 Protoceratops (first dinosaur eggs discovered) | 12/25 15:39 |
75 Triceratops | 12/26 1:10 |
70 Tyrannosaurus rex and Velociraptor | 12/26 10:41 |
65 End of Mesozoic, probably meteor or comet impact | 12/26 20:13 |

Cenozoic, the "Age of Mammals":

65 Tertiary system begins | 12/26 20:13 |
64 First ancestors of dogs and cats | 12/26 22:07 |
60 Grasses become widespread | 12/27 5:44 |
57 First ancestors of pigs and deer | 12/27 11:27 |
55 First horses (Eohippus) | 12/27 15:15 |
45 First ancestors of rabbits | 12/28 10:18 |
39 First monkeys | 12/28 21:43 |
14 Oldest human like ancestors (hominids) | 12/31 17:20 |
2 Quaternary system begins | 12/31 20:57 |
1 First of four ice ages | 12/31 22:05 |
1 Oldest direct human-ancestor fossil, Homo habilis | 12/31 3:36 |
0.1 First modern man, Homo sapiens | 12/31 23:43 |

0.05 Mammoth and mastodon bones, Big Bone Lick, KY | 12/31 23:59 |

235 years Revolutionary War | 12/31 23:59 |
70 years World War II | 1/1 0:00

Dojemanje geološkega časa

Prva riba

Prvi dinozavri

Prva ptica

november
december

Povyživljenje

Prvni riba

Prvni dinozavri

Prva ptica
Kamninski krog

Animacija
TEORIJA O TEKTONIKI PLOŠČ
The life cycle of a plate is similar to the movement of a huge conveyor belt. At the rift zone where the plate is created out of rising magma, the plate splits and moves outward. Where it collides with another plate, one sinks and descends into the mantle, where it is melted and the material is "recycled." The less dense plate remains on the surface.

Volcanic activity at rift zones and hot spots is different from subduction zone eruptions. Volcanoes at rift zones and hot spots generally erupt large amounts of low-silica basalt that form hugeshield volcanoes. These eruptions involve extensive lava flows and are usually "quiescent" than eruptions of strato-volcanoes.

In some places, hot local plumes of rising magma don't rise between the plates, but instead "punch through" them to form a hot spot. As the plate inches along over the hot spot, the rising magma creates a line of volcanoes in the middle of the plate. Hawaii is the best-known example of such a hot spot.
PERMIAN
225 million years ago

TRIASSIC
200 million years ago

JURASSIC
135 million years ago

CRETACEOUS
65 million years ago

PRESENT DAY
izvorno področje sedimentnih magmatskih in/ali metamorfnih kamnin

FLIŠ

sedimenti odloženi iz starejših turbiditnih tokov