

Chapter 1 : History of the Universe and Earth (books)

This book is a gorgeous introduction to the field of geology and how geologists view the planet "as well as how humans fit into the larger fabric of Earth's long history.

Frodo is stabbed by Shelob and subsequently captured by the Orcs of Cirith Ungol. Aragorn arrives at Pelargir and captures the fleet. Beregond sees a strange light in the tower of Minas Tirith, being Denethor confronting Sauron. Eastern Rohan is invaded from the north. The Muster of Rohan takes place. The Rohirrim ride from Harrowdale. Faramir is rescued by Gandalf and Imrahil outside the gates of the City. He meets Pippin and reports to Denethor. Frodo, Sam and Gollum reach the Morgul Road at dusk. Darkness begins to flow out of Mordor. Aragorn sets out from Erech and comes to Calembel. Aragorn takes the Paths of the Dead at daybreak reaching the Stone of Erech at midnight. He learns about Frodo carrying the One Ring but does not try to take it. Aragorn uses the Orthanc-stone and reveals himself to the enemy. In response, Gandalf sets out with the Hobbit for Minas Tirith. Frodo hides in sight of the Morannon, and leaves at dusk. The River Isen is restored to its original course. The Ents, led by Treebeard, change the course of Isen and complete the destruction of Isengard. Second Battle of the Fords of Isen, Erkenbrand is defeated. Entmoot ends in afternoon. The Ents march on Isengard and reach it at night. They set out for Edoras. Pippin cuts his rope and drops his brooch. Boromir is slain trying to protect them and his horn is heard in Minas Tirith. Frodo and Samwise enter the eastern Eryn Muiil. The Three Hunters set out in pursuit of the Uruk-hai at evening. A frightened Gollum flees to the eastern bank and hides in the Eryn Muiil. A flying shadow approaches but Legolas shoots it with the bow of Galadriel. Gollum observes their departure and follows them as they travel south over the Anduin by boat. Frodo is shown The Mirror of Galadriel. Gandalf returns to life. Gandalf casts down the Balrog from the peak of Celebdil, and passes away afterwards. They come to Caras Galadon in the evening. The Fellowship leave Moria and enter Dimrill Dale. Gimli, Frodo and Sam gaze in Mirrormere. Gimli takes the Book of Mazarbul. The Fellowship reach the West-gate of Moria at nightfall where they are attacked by the Watcher. Gollum begins to trail the Ring-bearer. In the night they are attacked by a pack of Wargs. They try to cross the pass at night but are unsuccessful. Elladan and Elrohir return and talk to Aragorn. Frodo reaches the other riverside but the Riders are cast back by the water, their horses drown and their robes are destroyed. He meets two others who flee southward. He leaves a beryl on the Bridge. He starts looking for the travellers. Gandalf is attacked by the Black Riders at night. The Black Riders run away. Gandalf visits the Gaffer Hamfast Gamgee. Strider hides behind the hedge on the Road west of Bree and eavesdrops on "Mr. Tom Bombadil rescues them, gives them weapons and four ponies and suggests to visit the Prancing Pony at Bree. Gandalf reaches Sarn Ford. Gandalf crosses River Greyflood. The Hobbits meet Gildor and the High Elves and camp with them during the night. Gandalf leaves Rohan after taming Shadowfax. Birthday of Frodo Baggins. Theoden refuses to listen and sends Gandalf away. They convey the furniture and goods that Frodo has not sold by way of the Brandywine Bridge. Gandalf is rescued by Gwaihir from the top of Orthanc in the early hours. The Black Riders visit Saruman who lies that Gandalf has "confessed", and gives them directions to the Shire.

Chapter 2 : The Best Books on Earth History | Five Books Expert Recommendations

His most recent book is [The Story of Earth: The First Billion Years from Stardust to Living Planet](#) (Viking-Penguin,), which explores the intricate co-evolution of the geosphere and biosphere.

For me and many others this book forms the foundation for modern biology. And, considering how long ago it was written, it is surprisingly readable. Specifically, what Darwin has in mind is a biological analogue of uniformitarianism, which is a theory developed through a combination of James Hutton, John Playfair and Charles Lyell. Charles Lyell was really the one who popularised the idea, and did it in book form. But Hutton, who was a gentleman farmer, made a great observation – he saw that each year part of his farm would erode away. The dirt would be carried by rivers and rain water to the sea. We call it run-off today. Hutton realised that if he went down to the beach he would see sediments that had accumulated as layers and he could measure their thickness. And then he had this eureka moment and he realised that when you go to a mountain by the sea there are all these layered rocks that are probably analogous to the layers of sediment he saw forming today. He also realised that the layers probably accumulated at the same rate in the past that they do now, so that when you count these thousands of layers of rock you would realise that Earth is very very old. This idea, that the same processes occurring slowly and steadily today also have been active throughout Earth history, slowly but steadily shaping the landscape, is known as uniformitarianism. And Darwin used the same principles to describe evolution. So he deduced that slow and steady uniformitarian development throughout Earth history ie, evolution could explain the myriad animal and plant forms preserved in the fossil record. A school of thought developed in reaction to uniformitarianism called catastrophism, where people realised that there are occasionally very large events such as a meteorite hitting Earth. In the case of evolution, punctuated equilibrium describes rapid evolutionary development, sometimes in response to sudden environmental change. To me this uniformitarian-catastrophist debate was fascinating, and I sought to observe evidence for both in the geological record. But in my first read of Darwin, one quote in particular stunned me, and continues to inspire much of my work today: I cannot doubt that all the Silurian trilobites have descended from some one crustacean, which must have lived long before the Silurian age. Consequently, if my theory be true, it is indisputable that before the lowest Silurian strata was deposited, long periods elapsed, as long as, or probably longer than, the whole interval from Silurian to the present day. The case must at present remain inexplicable; and may be truly urged as a valid argument against the views here entertained. What is so interesting about this quotation is that he recognised that despite all of his work defining and documenting gradual animal evolution, the first animals themselves seem to have appeared very suddenly and with a remarkable degree of initial complexity. You have four billion years of our history without the slightest inkling of an animal and then suddenly nearly all the animal body plans that exist today appear, and gradually evolve. So Darwin asked why did they suddenly appear? Is the fossil record incomplete, or is there something very fundamental about evolution that we do not understand? How does this help you with what you do? Well his work really inspired me to study the Cambrian era which he referred to as Silurian.

Chapter 3 : Timeline of the history of Middle-Earth - LotrProject

The author devotes most of the book to describing how Earth history teaches us how the Earth works. He avoids a plodding presentation of geologic eons, eras, and periods; and also avoids an endless discussion of long extinct species.

It was composed of hydrogen and helium created shortly after the Big Bang. As the cloud began to accelerate, its angular momentum, gravity, and inertia flattened it into a protoplanetary disk perpendicular to its axis of rotation. Small perturbations due to collisions and the angular momentum of other large debris created the means by which kilometer-sized protoplanets began to form, orbiting the nebular center. After more contraction, a T Tauri star ignited and evolved into the Sun. Meanwhile, in the outer part of the nebula gravity caused matter to condense around density perturbations and dust particles, and the rest of the protoplanetary disk began separating into rings. In a process known as runaway accretion, successively larger fragments of dust and debris clumped together to form planets. The same process is expected to produce accretion disks around virtually all newly forming stars in the universe, some of which yield planets. Having higher densities than the silicates, these metals sank. Hadean and Archean Eons[edit] Main articles: Nevertheless, it is believed that primordial life began to evolve by the early Archean, with candidate fossils dated to around 3. Radiometric dating of these rocks shows that the Moon is 4. First, the Moon has a low density 3. Second, there is virtually no water or other volatiles on the moon. Third, the Earth and Moon have the same oxygen isotopic signature relative abundance of the oxygen isotopes. Of the theories proposed to account for these phenomena, one is widely accepted: The giant impact hypothesis proposes that the Moon originated after a body the size of Mars sometimes named Theia [47] struck the proto-Earth a glancing blow. The giant impact hypothesis predicts that the Moon was depleted of metallic material, [52] explaining its abnormal composition. Under the influence of its own gravity, the ejected material became a more spherical body: The reds and pinks indicate rock from the Archean. These plates are destroyed by subduction into the mantle at subduction zones. During the early Archean about 3. Although a process similar to present-day plate tectonics did occur, this would have gone faster too. It is likely that during the Hadean and Archean, subduction zones were more common, and therefore tectonic plates were smaller. What is left of these first small continents are called cratons. They are tonalites from about 4. They show traces of metamorphism by high temperature, but also sedimentary grains that have been rounded by erosion during transport by water, showing that rivers and seas existed then. The first are so-called greenstone belts, consisting of low-grade metamorphosed sedimentary rocks. These "greenstones" are similar to the sediments today found in oceanic trenches, above subduction zones. For this reason, greenstones are sometimes seen as evidence for subduction during the Archean. The second type is a complex of felsic magmatic rocks. These rocks are mostly tonalite, trondhjemite or granodiorite, types of rock similar in composition to granite hence such terranes are called TTG-terranes. TTG-complexes are seen as the relicts of the first continental crust, formed by partial melting in basalt. Chapter 5 Oceans and atmosphere[edit] See also: The first atmosphere, captured from the solar nebula, was composed of light atmophile elements from the solar nebula, mostly hydrogen and helium. Now it is considered likely that many of the volatiles were delivered during accretion by a process known as impact degassing in which incoming bodies vaporize on impact. The ocean and atmosphere would, therefore, have started to form even as the Earth formed. Though most comets are today in orbits farther away from the Sun than Neptune, computer simulations show that they were originally far more common in the inner parts of the solar system. Rain created the oceans. Recent evidence suggests the oceans may have begun forming as early as 4. This early formation has been difficult to explain because of a problem known as the faint young Sun paradox. The carbon dioxide would have been produced by volcanoes and the methane by early microbes. Another greenhouse gas, ammonia, would have been ejected by volcanoes but quickly destroyed by ultraviolet radiation.

Chapter 4 : A Summary of Earth's History

History of the Universe and Our Earth Origins Score A book's total score is based on multiple factors, including the number of people who have voted for it and how highly those voters ranked the book.

The vast unit of time known as the Precambrian started with the origin of the earth about 4. Largely thought to be a hot, steaming, and forbidding landscape, the primitive crust of the newly condensed planet continued to cool. The crust consisted largely of igneous intrusions and volcanic rocks, and sediments that were eroded from this irregular surface. Geologic remnants from this time are the highly deformed and metamorphosed cratons of the continents. Little is known about the Hadean because there are so few rocks of that age, and those that do exist are intensely deformed and metamorphosed. The Archean was dominated by crustal building and the development of extensive volcanic belts, arcs, and sedimentary basins that were probably related to plate tectonic activity. Marine rocks including chert contain the fossil remains of microscopic algae and bacteria. Extensive iron deposits formed in shallow Proterozoic seas, indicating there was enough free oxygen to precipitate iron oxide minerals for example, hematite [Fe 2O 3] from the iron in the water. The increase in the amount of free oxygen is thought to be a result of photosynthetic action by primitive life forms in the sea. The fossil record has preserved layered algal mounds called stromatolites, an abundance of microscopic species, and trails and burrows from wormlike organisms. These organisms included trilobites and shelled animals called cephalopods cephalopods were the ancestors of modern squids and octopi. Life was restricted to the sea and included graptolites, brachiopods, bryozoans, and mollusks. In the northern hemisphere, land masses that represent North America, Siberia, northern Europe, western Asia, and China had not yet joined the southern landmass. North America was essentially a lowland that was periodically flooded by the ocean, forming extensive deposits of sandstone, limestone, and barrier reefs. By the end of the Paleozoic, all of the continents had come together to form Pangaea. Large tropical swamps dominated much of the landscape. The Mesozoic era occurred from about million to 66 million years ago. Common sedimentary deposits are red sandstones and mudstones. Tropical conditions resulted in extensive swamps that later became coal beds. Igneous and volcanic activity formed the mountain ranges in western North America. In the Mesozoic era, new trees such as conifers and ginkgoes appeared. Reptiles laid eggs on land. Dinosaur species included meateaters, herbivores, winged reptiles, and marine reptiles. Mammals were just beginning to emerge during this time. The end of the Mesozoic is marked by more mass extinctions, especially of the dinosaurs. Surviving species included turtles, snakes, crocodiles, and various lizards. Life forms continued to become more complex. The Cenozoic has the most complete geologic record of any era because it is so recent. The continents were fully separated. Eastern North America was tectonically stable, and the Appalachians eroded to lower elevations. Valleys in the western part of the continent were filled with great thicknesses of sediments from the mountain ranges. The fossil record indicates a diverse array of mammals including marsupials and placentals , flowering plants, grasses, and microscopic foraminifera. New birds and mammals evolved that were adapted to the new vegetation species. Prehistoric humans also began to emerge. Waves of mass extinctions occurred toward the end of Pleistocene epoch, including those of mammoths, mastodons, sabertoothed cats, ground sloths, and camels. North America underwent multiple glaciations in the last 20, years, which helped mold the landscapes we see today.

Chapter 5 : History of Middle Earth: Books | eBay

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Chapter 6 : The Complete History of Middle-Earth : Christopher Tolkien :

*See also: * The Lord of the Rings* Unfinished Tales The Book of Lost Tales, Part One (The History of Middle-Earth, #1),*

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Chapter 8 : The History of Middle-earth - Wikipedia

The Idea for the first Earth Day The idea for a national day to focus on the environment came to Earth Day founder Gaylord Nelson, then a U.S. Senator from Wisconsin, after witnessing the ravages of the massive oil spill in Santa Barbara, California.

Chapter 9 : History of the Middle-Earth Books In Publication & Chronological Order - Book Series

The History of Middle-earth is a volume series of books published between and that collect and analyse material relating to the fiction of J. R. R. Tolkien, compiled and edited by his son, Christopher Tolkien.