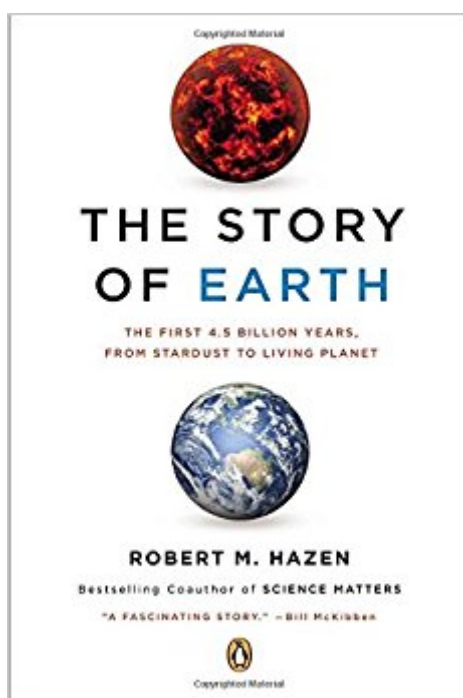


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# The Story Of Earth: The First 4.5 Billion Years, From Stardust To Living Planet



## Synopsis

Hailed by The New York Times for writing "with wonderful clarity about science . . . that effortlessly teaches as it zips along," nationally bestselling author Robert M. Hazen offers a radical new approach to Earth history in this intertwined tale of the planet's living and nonliving spheres. With an astrobiologist's imagination, a historian's perspective, and a naturalist's eye, Hazen calls upon twenty-first-century discoveries that have revolutionized geology and enabled scientists to envision Earth's many iterations in vivid detail "from the mile-high lava tides of its infancy to the early organisms responsible for more than two-thirds of the mineral varieties beneath our feet. Lucid, controversial, and on the cutting edge of its field, *The Story of Earth* is popular science of the highest order." "A sweeping rip-roaring yarn of immense scope, from the birth of the elements in the stars to meditations on the future habitability of our world." -*Science* "A fascinating story." -Bill McKibben

## Book Information

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## Customer Reviews

"I'm not competent to assess the accuracy of Robert Hazen's thesis about geological and biological history, but I am competent to judge it a fascinating story, far more alive than you might guess if all you knew was the subject was old dead (?) rocks." "Bill McKibben, bestselling author of *Eaarth: Making a Life on a Tough New Planet* "With infectious enthusiasm for his subject, Hazen introduces readers to Earth's defining moments . . . [and] argues that understanding the interplay between Earth's geological and biological pasts can help us predict and prepare for the future of life on our planet." "Saron Yitbarek, *Discover* "Hazen takes us on one of the grandest

tours of them all—the 4.5 billion year history of our planet. From the atoms of the crust of the Earth come our bodies, the entire living world, and this exciting book. Read Hazen and you will not see Earth and life in the same way again. • Neil Shubin, paleontologist and bestselling author of *Your Inner Fish* • Concise and colourful . . . Drawing on the latest research and influenced by advances in astrobiology, Hazen takes a radical standpoint . . . to tell the amazing tale of our planet's intertwined living and non-living spheres. • Birger Schmitz, *Nature* • A fascinating new theory on the Earth's origins written in a sparkling style with many personal touches . . . Hazen offers startling evidence that Earth's living and nonliving spheres have co-evolved over the past four billion years. • Kirkus Reviews (starred) • Exceptionally readable [and] user-friendly . . . Science junkies and readers interested in the environment will find Hazen's arguments compelling and his overview of Earth's tumultuous history captivating. • Carl Hays, *Booklist* • Hazen has a gift for explaining science in lay terms, and even readers with a minimal understanding of geology, chemistry, and physics will find this book riveting. • Nancy R. Curtis, *Library Journal* • Hazen illuminates the origins of Earth and the origins of life [in] a thoroughly accessible book, mixing a variety of scientific disciplines to tell an unforgettable story. • Publishers Weekly • The Story of Earth is that rare book that can transform the way you see the world. By synthesizing a vast span of time and knowledge into crisp, delightful prose, Hazen really does make our planet into a story, and a compelling one. I was left with a new sense of context for our place in this galactic home. • Charles Wohlforth, author of *The Fate of Nature and The Whale and the Supercomputer*

Robert M. Hazen is the Clarence Robinson professor of earth science at George Mason University and a senior scientist at the Carnegie Institution's Geophysical Laboratory. The author of numerous books—including the bestselling *Science Matters*—he lives in Glen Echo, Maryland.

I bought this book to prepare to teach a class on historical geology, and ended up making it a required textbook for the class. For people interested in learning about Earth processes, their cycles and how they can be applied to our lives today, it is a great resource. 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. The book includes discussions of recent research and space exploration programs. It is up to date, relevant and interesting.

A good basic information source for Earth's history. It is comprehensive as a book of its size can be, but hits many of the really important topics. It has given me many insights that I haven't been able to glean from my reading of various science--for layperson--magazines (cf Science News, Astronomy Scientific American) over the years. I finally decided I was tired of not knowing enough about shields and cratons, and how the first landmasses appeared. But the book is much richer than that. This wonderful book deals in part with the development of the planet from the accretion of solar rocks, and even before. It's all a wonderful wild ride. From the Big Bang's production of hydrogen to the development of life here. And a final consideration of the future. I came away with an appreciation of just how recent multicellular creatures are, how recent the oxygen in the atmosphere. Indeed, when people suggest that life was delivered to Earth via comets, I know just how abysmally ignorant they are. But the book also needs to be updated. Since its appearance there have been many new developments. But those do not detract from the relevance of the book as it stands. And to consider that Earth formed within and is only going to be within the habitable zone of its orbiting the sun for perhaps less than the same span that eukaryotes have been here. 500,000,000 years is only a fraction of Earth's history! Cheers!

A very good trip from planet Earth's start as a mass of gas and dust to a solid sphere with an active surface biosphere and dynamic interior geo-sphere which interact in many ways. It's quite interesting how the elements of the early earth developed from a hot liquid into the simple mineral rocks from which the earth's surface formed and how these changed over time as well. These minerals evolved into other minerals which shaped the early earth. Then when simple life formed it interacted or even evolved from this matrix and went on from there to more interactions. and so on and so on...til the present overall a good science read if you're into geology and biology.

Of particular interest is the evolution of minerals. The thought had never occurred to me that many minerals are a function of life on Earth. Some chemical compositions among elements are only produced biologically from an interesting juxtaposition of living and non-living worlds. The relation of biology and geology is fascinating.

There is one insight after another in this story of our amazing planet and its cycles from inhospitable to hospitable to life. The author shows how minerals evolved from elementary atoms from the formation of the solar system into hundreds of thousands of unique minerals due to the metabolism of life forms. This was a great ride into the minds of earth scientists, and history of their recent

collaboration across disciplines: mineralogy, paleontology, geology, chemistry, volcanology and so forth. For a geek like me, it deserves a second read.

This book takes you on a journey that effectively dispels the notion that the Earth was created recently and just for us. Earth has gone through many long-term evolutions to produce the environment that has proved to be hospitable for life as we know it. Our popular ken and reckoning of important events fall far short of seeing the big picture. The author points out by clever anecdote that the Earth and our solar system are about 4.5 billion years old and that the longest lived human being, according to the Guinness Book of World Records, was a lady in France who lived to be 122 years old, a life-span of less than 4.5 billion SECONDS. Professor Hazen is a very good story teller and capably leads the reader to a better understanding of how our home in the universe was built. What arguably could be very dry subject matter becomes a real page-turner as you follow along and learn the intricacies of the chemical bonding of elements created by super nova explosions that comprise the basic atomic structure of our world. Mineralogy explained by Hazen reveals how rocks were formed and re-formed over and over again for billions of years, how water the, super solvent molecule, dissolves and re-combines minerals to create sediments that lead to life-supporting clays. He explains how life itself has fundamentally changed the planet by creating new organic substances that can diversify and reproduce by copying themselves even in the most extreme environments. This book puts the power of understanding our natural world in the hands of the average person and that is, I believe, as good a service as anyone can provide. Thank you Robert M. Hazen.

The big strength of this book is it's coverage of the first two eons of earth history. There are lots of books that describe the earth's current (Phanerozoic) eon but fewer that explain the really early aspects of earth. Where did the atoms and molecules of earth come from? How did the continents and oceans and atmosphere form from a mass of molten rock? What happened in the billions of years before macroscopic life came about? The author answers these questions and provides a wealth of other fascinating information. And the author's writing is excellent. This is a superb popular science book.

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