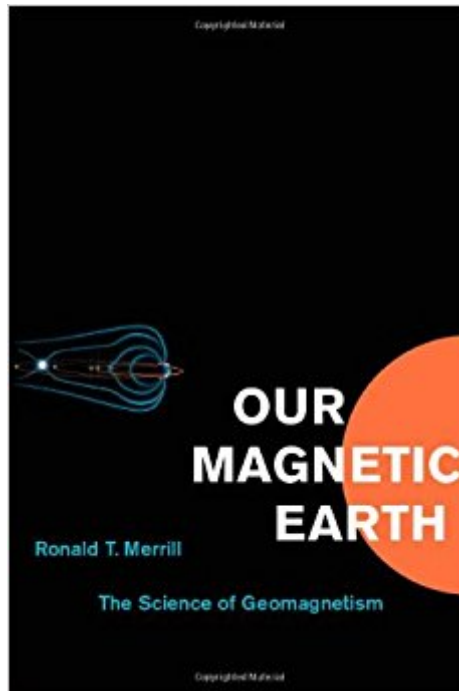


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# Our Magnetic Earth: The Science Of Geomagnetism



## Synopsis

For the general public, magnetism often seems more the province of new age quacks, movie mad scientists, and grade-school teachers than an area of actual, ongoing scientific inquiry. But as Ronald T. Merrill reveals in *Our Magnetic Earth*, geomagnetism really is an enduring, vibrant area of science, one that offers answers to some of the biggest questions about our planet's past—and maybe even its future.

## Book Information

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## Customer Reviews

“Ronald Merrill skillfully weaves his professional expertise in geomagnetism with related scientific issues and personal anecdotes to create a broad intellectual tapestry that, in its many fascinating diversions and anecdotes, gives insight into how the mind actually works while exploring a question of abiding interest. Reading this book will be a learning experience for almost everyone—and an unfailingly pleasant one at that!” • (Robert Coe, University of California, Santa Cruz) “Part science, part history of science, and part personal experience, *Our Magnetic Earth* seamlessly draws together a variety of seemingly unrelated topics—from climate to space weather to geologic time to the Sun—under the grand heading of magnetism. [Readers will be amazed to learn] just how much the field of magnetism has contributed to earth sciences and to our current understanding of our planet's past, while they also enjoy the many wonderful anecdotes from working scientists with which Merrill sprinkles the book. Ultimately, we come away from this book understanding both much, much more about magnetism and about the importance of scientific literacy in today's society.” • (Bruce Moskowitz, University of Minnesota) “If [you're looking for

a gift for] a self-described geek drawn to science books like an iron filing to a magnet, then consider *Our Magnetic Earth*, a fascinating explanation of that mysterious force. • (Julia Keller Chicago Tribune) "Highly readable. . . . Merrill laces his narrative with discourses on the philosophy of science, and with ripostes to creationist attacks on evolution and the antiquity of Earth. I will recommend this book to students eager to know how science is done, and anyone wondering what makes a compass needle point north." • (Natural History) "There really is no other 'popular' book in recent years that covers the broad reach of geomagnetism as competently and as entertainingly as does this one." • (Metascience)

Ronald T. Merrill is professor emeritus of earth and space sciences at the University of Washington. In 2002 he was awarded the John Adam Fleming Medal of the American Geophysical Union.

Good book.

Interesting and easy to read book, i enjoy to read it. The author keeps the reader's attention all the time, a valuable thing. As a divulgation or reference book it is very enjoyable.

ASIN:022600659X *Our Magnetic Earth: The Science of Geomagnetism*]] DILLON says: "For a clear, non-mathematical, yet authoritative introduction to geomagnetism, this book seems hard to beat." have to agree; but Dillon is not so good when he gets into the Velikovsky fairy tales. ALGO41 is a good summary. RANDY says: "I am an engineer and very interested in science I find this book close to unreadable." I'm also an engineer interested in science, and I found the book quite readable. CHARLIE says: "I enjoyed .... a good job of covering the details and history of the current knowledge of the subject." but PETER BUTCHKO says: "frustrating and disappointing .... not well written .... a high-school science teacher .... better-than-average science and mathematical background in the subject." I have to agree with Charlie. Butchko's background seems wasted. ARTIST says: "[C]laimed to describe the science with the vernacular .... not the same spoken here. This book could have used many more illustrations" I thought the book was as "vernacular" as subject allows. The book has all the illustrations it needs -- it is not intended to be a "picture book." However, the author of the book doesn't seem to realize that you can prove whatever you set out to prove with a computer, since: At page 103, he says the dynamo computer models of geomagnetism are often "dramatically different", but this somehow proves the "dynamo

theory" of geomagnetism. If dramatically different models get the same answer, the parameters must have been twiddled with. And, at page 178, he says that "most" global climate warming models for this century predict a "range between 1 C and 6 C." Seems like this range of six to one -- working from the same data even with parameter twiddling -- could just as well prove there is no basis for global warming.

I enjoyed this book. The author does a good job of covering the details and history of the current knowledge of the subject.

The Author starts by being close to incomprehensible in the first chapter. It gets interesting in some of his explanations of how the earth's magnetism arises in the flow of iron in the core but he often descends into discussing academic disputes leading up to current thinking. The section on migration of fish birds and animals is quite interesting but again sinks into academic discussion. All in all, even though I am an engineer and very interested in science I find this book close to unreadable.

As with many of these scientific journals this one claimed to describe the science with the vernacular. I'm not sure which vernacular is spoken by Mr. Merrill's family but it's certainly not the same spoken here. This book could have used many more illustrations. JVK

This book is an interesting, wide-ranging account of topics that can be linked in some way to planetary and/or solar magnetic fields. Thus there is a discussion of plate tectonics because much of what we know is inferred from the magnetic properties of rocks, which are an indication of their position on earth when they were formed. At the same time, both plate movements and the earth's magnetic fields are dependent on the composition and temperatures of the layers of our earth. Merrill employs an informal style, laced with personal anecdotes and just enough material on personalities. He is really good in tracing how theories have evolved. He tries to be careful in distinguishing the degree of conviction science has about various theories; however, there is much more to be learned about plate tectonics than this book implies (see the discussion of ridge-push vs. slab pull, and the problems with both theories, in the Wikipedia article on Mid ocean ridge, formation processes). There were times I felt my understanding was too superficial, but this may be because I suffer from lack of a good background in physics, and perhaps also because there are many holes in what even the scientific community understands. The easiest chapter was on the use of magnetic sensors by animals. Most birds use such sensors as ONE aid to their navigation. Even some single

celled animals employ sensors, and there is more than one kind of sensor. In some cases the magnetic sensors piggy back on the neural pathways used to see light, so the magnetic information is seen visually.

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