

## History of Deep Carbon Science

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Deep carbon is terrestrial carbon that is not in the atmosphere or oceans or on the surface. We have a great deal of knowledge about the properties of near-surface carbon, but relatively little is known about the deep carbon cycle. The Deep Carbon Observatory, was founded in 2009, to address major questions about deep carbon. Where are the reservoirs of carbon? Is there significant carbon flux between the deep interior and the surface? What is deep microbial life? Did deep organic chemistry have a role in the origin of life?

This project is directed toward documenting and describing of the history of deep carbon science. The narrative begins in 1601, when William Gilbert suggested that Earth's interior behaves like a giant bar magnet. We trace across three centuries the slow evolution of thought that led to the establishment of the interdisciplinary field of Earth System Science. The concept and then development of the deep carbon cycle of burial and exhumation dates back at least two hundred years. We identify and document the key discoveries of deep carbon science, and assess the impact of this new knowledge on geochemistry, geodynamics, and geobiology. *A History of Deep Carbon Science* is in preparation for publication by Cambridge University Press in 2019. Its illuminating narrative highlights the engaging human stories of many remarkable researchers who have discovered the complexity and dynamics of Earth's interior.