

GEOPHYSICAL MONOGRAPH SERIES

# Large Igneous Provinces

## A Driver of Global Environmental and Biotic Changes

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An emerging consensus suggests that Large Igneous Provinces (LIPs) and Silicic LIPs (SLIPs) are a significant driver of dramatic global environmental and biological changes, including mass extinctions. Environmental changes caused by LIPs and SLIPs include rapid global warming, global cooling ("Snowball Earth"), oceanic anoxia events, mercury poisoning, atmospheric and oceanic acidification, and sea level changes, and have implications for modern climate change.

*Large Igneous Provinces: A Driver of Global Environmental and Biotic Changes* describes the interactions between the effects of LIPs and other drivers of climatic change, the limits of the LIP effect, and the atmospheric and oceanic consequences of LIPs in significant environmental events.

### Volume highlights include:

- Temporal record of large igneous provinces (LIPs)
- Environmental impacts of LIP emplacement
- Precambrian, Proterozoic, and Phanerozoic case histories
- Links between geochemical proxies and the LIP record
- Alternative causes for environmental change
- Key parameters related to LIPs and SLIPs for use in environmental change modelling
- Role of LIPs in Permo-Triassic, Triassic-Jurassic, and other mass extinction events

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**Editors**  
**Richard E. Ernst**  
**Alexander J. Dickson**  
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**Large Igneous Provinces**  
*A Driver of Global Environmental and  
Biotic Changes*

*Edited by*  
**Richard E. Ernst**  
**Alexander J. Dickson**  
**Andrey Bekker**

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# CONTENTS

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List of Contributors .....vii

Preface .....xi

## Part I: The Temporal Record of Large Igneous Provinces (LIPs)

**1. Large Igneous Province Record Through Time and Implications for Secular Environmental Changes and Geological Time-Scale Boundaries**

*Richard E. Ernst, David P. G. Bond, Shuan-Hong Zhang, Kenneth L. Buchan, Stephen E. Grasby, Nasrddine Youbi, Hafida El Bilali, Andrey Bekker, and Luc S. Doucet* .....3

**2. Radiometric Constraints on the Timing, Tempo, and Effects of Large Igneous Province Emplacement**

*Jennifer Kasbohm, Blair Schoene, and Seth Burgess* .....27

## Part II: Environmental Impacts of LIP Emplacement

**3. Global Warming and Mass Extinctions Associated With Large Igneous Province Volcanism**

*David P. G. Bond and Yadong Sun* .....85

**4. Environmental Effects of Volcanic Volatile Fluxes From Subaerial Large Igneous Provinces**

*Tamsin A. Mather and Anja Schmidt* .....103

**5. Assessing the Environmental Consequences of the Generation and Alteration of Mafic Volcaniclastic Deposits During Large Igneous Province Emplacement**

*Benjamin Black, Tushar Mittal, Francesca Lingo, Kristina Walowski, and Andres Hernandez* .....117

**6. Environmental Impact of Silicic Magmatism in Large Igneous Province Events**

*Scott E. Bryan* .....133

**7. Evaluating the Relationship Between the Area and Latitude of Large Igneous Provinces and Earth's Long-Term Climate State**

*Yuem Park, Nicholas L. Swanson-Hysell, Lorraine E. Lisiecki, and Francis A. Macdonald* .....153

**8. Preliminary Appraisal of a Correlation Between Glaciations and Large Igneous Provinces Over the Past 720 Million Years**

*Nasrddine Youbi, Richard E. Ernst, Ross N. Mitchell, Moulay A. Boumehdi, Warda El Moume, Abdelhak Ait Lahna, Mohamed K. Bensalah, Ulf Söderlund, Miguel Doblás, and Colombo C. G. Tassinari* .....169

**9. Phanerozoic Large Igneous Province, Petroleum System, and Source Rock Links**

*Steven C. Bergman, James S. Eldrett, and Daniel Minisini* .....191

**Part III: Geochemical Proxies for the Environmental Effects of LIPs**

- 10. The Osmium Isotope Signature of Phanerozoic Large Igneous Provinces**  
*Alexander J. Dickson, Anthony S. Cohen, and Marc Davies* .....231
- 11. Sedimentary Mercury Enrichments as a Tracer of Large Igneous Province Volcanism**  
*Lawrence M. E. Percival, Bridget A. Bergquist, Tamsin A. Mather, and Hamed Sanei* .....247
- 12. Platinum Group Element Traces of CAMP Volcanism Associated With Low-Latitude Environmental and Biological Disruptions**  
*Jessica H. Whiteside, Paul E. Olsen, Sean T. Kinney, and Mohammed Et-Touhami*.....263
- 13. Assessing the Effect of Large Igneous Provinces on Global Oceanic Redox Conditions Using Non-traditional Metal Isotopes (Molybdenum, Uranium, Thallium)**  
*Brian Kendall, Morten B. Andersen, and Jeremy D. Owens*.....305
- 14. Marine Anoxia and Ocean Acidification During the End-Permian Extinction: An Integrated View From  $\delta^{238}\text{U}$  and  $\delta^{44/40}\text{Ca}$  Proxies and Earth System Modeling**  
*Ying Cui, Feifei Zhang, Jiuyuan Wang, Shijun Jiang, and Shuzhong Shen*.....325
- 15. Trends in Ocean S-Isotopes May Be Influenced by Major LIP Events**  
*Ross. R. Large, Jeffrey A. Steadman, Indrani Mukherjee, Ross Corkrey, Patrick Sack, and Trevor R. Ireland* .....341
- 16. Marcasite at the Permian-Triassic Transition: A Potential Indicator of Hydrosphere Acidification**  
*Elena Lounejeva, Jeffrey A. Steadman, Thomas Rodemann, Ross R. Large, Leonid Danyushevsky, Daniel Mantle, Kliti Grice, and Thomas J. Algeo*.....377

**Part IV: Phanerozoic and Proterozoic Case Histories**

- 17. The Monterey Event and the Paleocene-Eocene Thermal Maximum: Two Contrasting Oceanic Carbonate System Responses to LIP Emplacement and Eruption**  
*Tali L. Babila and Gavin L. Foster* .....403
- 18. Permian Large Igneous Provinces and Their Paleoenvironmental Effects**  
*Jun Chen and Yi-Gang Xu* .....417
- 19. Was the Kalkarindji Continental Flood Basalt Province a Driver of Environmental Change at the Dawn of the Phanerozoic?**  
*Peter E. Marshall, Luke E. Faggetter, and Mike Widdowson* .....435
- 20. Large Igneous Provinces (LIPs) and Anoxia Events in “The Boring Billion”**  
*Shuan-Hong Zhang, Richard E. Ernst, Jun-Ling Pei, Yue Zhao, and Guo-Hui Hu* .....449
- 21. Breaking the Boring Billion: A Case for Solid-Earth Processes as Drivers of System-Scale Environmental Variability During the Mid-Proterozoic**  
*Charles W. Diamond, Richard E. Ernst, Shuan-Hong Zhang, and Timothy W. Lyons* .....487
- Index**.....503