over recent years. There is increasing evidence to support the plume concept, such as improved seismic imaging of the mantle showing plume-like structures beneath several hotspots. This book combines reviews of existing evidence for mantle plumes with the results from recent studies and uses them to understand the upper mantle structure beneath several of the world's volcanic regions.

The book comprises 16 individual papers, each focusing on a particular volcanic region or geological discipline. Firstly, there is a review on the fluid dynamics of mantle plumes that summarizes what is known from laboratory experiments and numerical modelling about their structure and evolution. Next come four case studies from well-studied volcanic regions including the major hotspots Hawaii and Iceland. The final 11 papers concentrate on the volcanic Eifel region in Germany. From 1997–2003 this region was the target of a concerted scientific effort meaning that the Eifel plume is now one of the best-characterized in the world. Studies make use of data from geophysics, geology, petrology, geochemistry and geodesy to build a detailed picture of the upper mantle beneath the Eifel region.

As a whole, this book provides a comprehensive summary of recent and established research on mantle plumes and the techniques used to study them. Given that two-thirds of the book contains papers on the volcanic Eifel region in Germany, it is not ideal if you seek specific information on an alternative hotspot location. However, the strength of this section is that it provides an excellent example of how results from a large number of disciplines can (and should) be combined to develop the maximum level of understanding of the study area.

In general, the authors provide more details than one usually finds in a scientific paper about the techniques involved and how each method can be used to understand the nature and evolution of the volcanism. This means that the papers will be useful to a wider range of people than just those interested in the results. As well as appealing to experts due to the inclusion of research at the forefront of the field, this book is accessible to non-experts thanks to the comprehensive background summaries and method explanations. Each paper is written as a self-contained unit making it easy for readers to dip in and extract the desired information.

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SULLIVAN III, W. T. & BAROSS, J. A. (eds) 2007. *Planets and Life. The Emerging Science of Astrobiology*. xxi + 604 pp. Cambridge, New York, Melbourne: Cambridge University Press. Price £80.00, US $150.00 (hard covers), £40.00, US $75.00 (paperback). ISBN 9780 521 82421 7; 9780 521 53102 3 (pb).
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How do we fit into the Universe? Are we alone? By taking these questions seriously, astrobiology is attracting public attention and students. Two new astrobiology journals have sprung up and NASA funding is flowing again. With the publication of *Planets and Life*, a textbook for graduate students and upper level undergraduates, astrobiology is taking another large step towards formalizing itself as an established multidisciplinary field. If you're becoming an astrobiologist, this thick authoritative text contains the stuff you need to know. Job-conscious Ph.D. students studying astrobiology and worried about some of its flakier adherents can now sleep easier.

It's not easy to unify a multidisciplinary field whose main focus (extraterrestrial life) may not exist, but this new astrobiology textbook pulls it off. *Planets and Life* is a well-organized compilation of 28 chapters by 50 contributing authors. Coming from such a disparate group of authors, the quality of the writing is surprisingly uniform and high. The subjects span the astrobiological gamut: formation of Earth-like habitable planets, planetary atmospheres, the earliest records of life on Earth, evolution of metabolism, extremophiles in hydrothermal vents and in ice, possible biochemistries of alien life, and the search for extraterrestrial intelligence. With so many authors and so many topics, the book could have suffered the fate of being a mixed miscellaneous collage, like so many proceedings volumes, but it doesn't. No two authors, or even a small committee of experts, could have presented so many topics at such a high level. The editors, Woodruff Sullivan and John Baross, are at the University of Washington, which has taken the lead in providing a Certificate in Astrobiology at the graduate level (see http://depts.washington.edu/astrobio/).

So much information is crammed into this 604-page text that the margins are almost too small to write in – and no glossy colour images are included to attract bored undergraduates. The numerous references at the end of each chapter are up-to-date (∼mid 2007) and particularly welcome in this new multidisciplinary field where most of us are struggling to integrate information from half a dozen disciplines. I'll use *Planets and Life* to make sure some of my half-baked research ideas die honorably in private, or come to life confidently with the knowledge of what has and what has not already been done. If the Australian National University (where I work) ever sets up a course in astrobiology, I'd recommend Jonathan Lunine's *Astrobiology: A Multidisciplinary Approach* for undergraduates and *Planets and Life* for graduate students. Even if extraterrestrials don't exist . . . even if we are alone . . . the combination of details and big picture thinking embodied in this new text will go far to describe our current understanding of how we came to be and how we fit into the universe.

Charles H. Lineweaver

Reference

LUNINE, J. 2005. *Astrobiology: A Multidisciplinary Approach*. San Francisco: Addison Wesley, 450 pp.