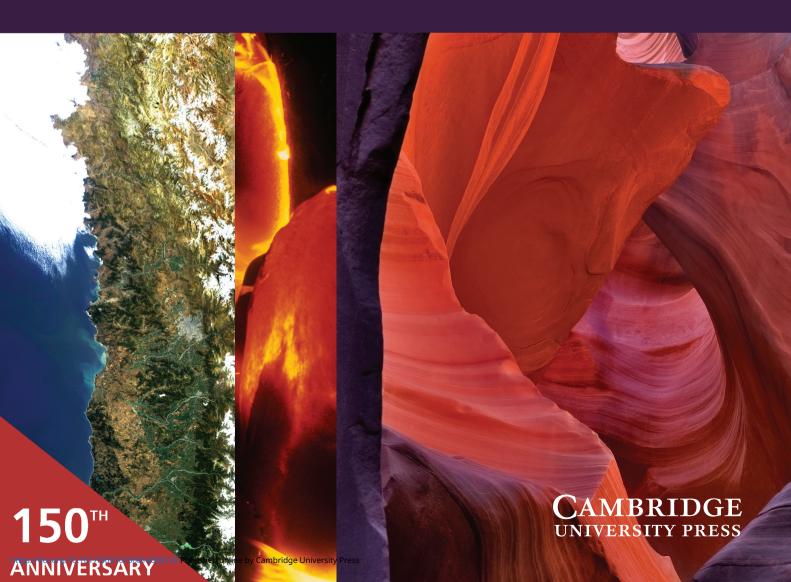
ISSN: 0016-7568

GEOLOGICAL MAGAZINE

journals.cambridge.org/gec

Submit your paper online

http://mc.manuscriptcentral.com/geo



Geological Magazine

EDITOR-IN-CHIEF

Dr Mark B. Allen Department of Earth Sciences, University of Durham, Science Labs, Durham DH1 3LE, UK m.b.allen@durham.ac.uk

EXECUTIVE EDITORS

Dr Graham E. Budd Department of Earth Sciences, Palaeobiology, University of Uppsala, SE-752 36 Uppsala, Sweden graham.budd@pal.uu.se

Dr Philip T. Leat British Antarctic Survey, Madingley Road, High Cross, Cambridge, Cambridgeshire, CB3 0ET, UK p.leat@bas.ac.uk

Dr Andrew G. Whitham *CASP, 181a Huntingdon Road, Cambridge, CB3 ODH, UK*

andrew.whitham@casp.cam.ac.uk

BOOK REVIEW EDITOR

 ${\it Please \ contact \ the \ Editorial \ Office \ at \ geolmag@cambridge.org}$

EDITORIAL BOARD

Professor Nicholas Arndt Joseph Fourier University, France Dr Paul M. Barrett Natural History Museum, London, UK Professor Roger Gibson University of Witwatersrand, Republic of South Africa

Professor John Grotzinger Caltech, USA Dr Jon Imber Durham University, UK Dr Hugh Jenkyns University of Oxford, UK

Professor Olivier Lacombe University Pierre et Marie Curie, France Professor Xian-Hua Li Institute of Geology and Geophysics CAS. China

Professor David I. M. Macdonald University of Aberdeen, UK Dr K. J. McNamara University of Cambridge, UK Dr Guido Meinhold University of Göttingen, Germany Professor M. P. Smith University of Oxford, UK
Dr Holly Stein Colorado State University, USA
Dr Hans-Dieter Sues Smithsonian National Museum of Natural
History, USA
Dr Bas van de Schootbrugge Utrecht University, Netherlands
Professor Ben A. van der Pluijm University of Michigan, USA
Dr Paul B. Wignall University of Leeds, UK
Dr Robert S. Yeats Oregon State University, USA
Dr Zhaochong Zhang China University of Geosciences, China

Professor R. J. Norris University of Otago, New Zealand

Professor Mark Patzkowsky Penn State University, USA

Professor Victoria Pease Stockholm University, Sweden Professor Francisco Sierro University of Salamanca, Spain

The Geological Magazine was originally established in 1864 and has been published continuously ever since. It covers the whole field of earth sciences, has a worldwide readership and has a particular strength in providing a niche for interdisciplinary papers and papers that would be of interest to geologists from many different specialities. Papers of any length are considered, provided that the length is justifiable.

The *Magazine* publishes both original and review articles, rapid communications, discussions of papers which have already appeared in the *Magazine*, book reviews and a list of new publications.

There are no page charges for papers published in the *Magazine*. © Cambridge University Press 2014

Internet Access

This journal is included in the Cambridge Journals Online service which can be found at http://journals.cambridge.org. For further information on other Press titles access http://www.cambridge.org. *Geological Magazine* (ISSN 0016-7568) is published in six parts in 2014, January, March, May, July, September and November. Six parts form a volume in 2014.

The subscription price (excluding VAT) of volume 151, 2014, which includes print and electronic access, is £716 (US \$1217 in USA, Canada and Mexico). The electronic-only price available to institutional subscribers is £556 (US \$1013 in USA, Canada and Mexico). Single parts are £129.25 net (US \$219.81 in USA, Canada and Mexico) plus postage. Prices include delivery by air where appropriate. Orders, which must be accompanied by payment should be sent to any bookseller or subscription agent, or direct to the publisher: Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 8RU. Subscriptions in the USA, Canada and Mexico should be sent to Cambridge University Press, Journals Fulfillment Department, 100 Brook Hill

Drive, West Nyack, New York 10994–2133. EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Japanese prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo 156, Japan. Periodicals postage paid at New York, NY, and at additional mailing offices. *POSTMASTER*: send address changes in USA, Canada and Mexico to *Geological Magazine*, Cambridge University Press, 32 Avenue of the Americas, New York, NY 10013–2473, USA

Copying: This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, Mass. 01923, USA. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to C.C.C. of the per-copy fee of \$12.50. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0016-7568/2014 \$12.50.

Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions.

For all other use, permission should be sought from Cambridge or the American Branch of Cambridge University Press.

Claims for missing issues can only be considered if made immediately after receipt of the subsequent issue.

Advertising: Details of advertising in *Geological Magazine* may be obtained from the publisher.

This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests. Please see www.fsc.org for information.