VOLUME 34 / NUMBER 1 / 1992

Radiocarbon

An International Journal of Cosmogenic Isotope Research



Editor **AUSTIN LONG**

Managing Editor RENEE S. KRA

Assistant Editor FRANCES D. MOSKOVITZ

QC 798 D3irtment of Geosciences A48 SCI-CPMR University of Arizona East Ft. Lowell Road on, Arizona 85712 USA

LSSN: 0033-8222

RADIOCARBON

An International Journal of Cosmogenic Isotope Research

Editor: AUSTIN LONG
Managing Editor: RENEE S. KRA
Assistant Editor: FRANCES D. MOSKOVITZ
Published by
Department of Geosciences
The University of Arizona

Published three times a year at The University of Arizona, Tucson, AZ 85712, USA. © 1992 by the Department of Geosciences, The University of Arizona.

Subscription rate \$105.00 (for institutions), \$73.50 (for individuals), \$36.75 (for students with proper identification). Foreign postage is extra. A complete price list, including Proceedings of International Conferences, appears in the back of this issue.

Back issues and price lists may be obtained from the office of RADIOCARBON.

All correspondence and manuscripts should be addressed to the Managing Editor, RADIOCARBON, Department of Geosciences, The University of Arizona, 4717 East Ft. Lowell Road, Tucson, AZ 85712 USA. Tel: (602) 881-0857; Please note our new BITNET address: C14@ARIZVMS; Fax: (602) 881-0554.

Offprints. The minimum offprint order for each article will be 100 copies without covers. No offprints will be furnished free of charge unless page charges are paid. The cost of additional copies will; of course, be greater if the article is accompanied by plates involving unusual expense. Copies will be furnished with a printed cover giving the title, author, volume, page and year, when specially ordered.

Page charges. Each institution sponsoring research reported in a technical paper or a date list, will be asked to pay a charge of \$80.00 per printed page. Institutions or authors paying such charges will be entitled to 100 free offprints without covers. No charges will be made if the author indicates that the author's institution is unable to pay, and payment of page charges on an article will not in any case be a condition for its acceptance. Reduced rates will be in effect for some special issues.

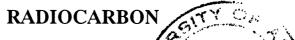
Missing issues will be replaced without charge only if claim is made within three months (six months for India and Australia) after the publication date. Claims for missing issues will not be honored if absence results from failure by the subscriber to notify the Journal of an address change.

Illustrations should include explanation of symbols used. Copy that cannot be reproduced cannot be accepted. Whenever possible, reduce figures for direct publication. Line drawings should be in black India ink on white drawing board, tracing cloth, or coordinate paper printed in blue and should be accompanied by clear ozalids or reduced photographs for use by the reviewers. Photographs should be positive prints. Figures (photographs and line drawings) should be numbered consecutively through each article, using Arabic numerals. All measurements should be given in SI (metric units). Tables may be accepted as camera-ready copy.

Citations. A number of radiocarbon dates appear in publications without laboratory citation or reference to published date lists. We ask that laboratories remind submitters and users of radiocarbon dates to include proper citation (laboratory number and date-list citation) in all publications in which radiocarbon dates appear.

Radiocarbon Measurements: Comprehensive Index, 1950-1965. This index covers all published ¹⁴C measurements through Volume 7 of RADIOCARBON, and incorporates revisions made by all laboratories. It is available at \$25.00 per copy.

List of laboratories. Our comprehensive list of laboratories appears annually. We are expanding the list to include additional laboratories and scientific agencies with whom we have established contacts. The editors welcome more information on these or other scientific organizations. We ask all laboratory directors to provide their telephone, telex and fax numbers as well as their E-mail addresses. Changes in names or addresses, additions or deletions should also be reported to the Managing Editor.



1992

CONTENTS Z APR 20 1992			
FROM TH	HE EDITO	RS	
	ACL - Ea		
		Austin Long	iii
	A View fi	rom the West Renee Kra	iv
ARTICLE	S		
	Isotope D	ating of Pleistocene Dung Deposits From the Colorado Plateau, Arizona and Utah Jim I. Mead and Larry D. Agenbroad	1
	AMS Dat	ing of a Late Quaternary Tephra at Graham's Terrace, New Zealand Richard Gillespie, A. P. Hammond, K. M. Goh, P. J. Tonkin, D. C. Lowe R. J. Sparks and Gavin Wallace	21
	AMS Date	ing of Alluvial Sediments on the Southern Tablelands of New South Wales, Australia Richard Gillespie, I. P. Prosser, Edward Dlugokencky, R. J. Sparks Gavin Wallace and J. M. A. Chappell	29
	Benzene I	Purity Correction in High-Precision Radiocarbon Dating F. G. McCormac	37
DATE LIS	STS		
	HAR	Harwell Radiocarbon Measurements XI M. A. Hardiman, J. E. Fairchild and G. Longworth	47
	IRPA	Institut Royal du Patrimoine Artistique Radiocarbon Dates XIV Michèle Dauchot-Dehon and Mark Van Strydonck	71
	ISGS	Illinois State Geological Survey Radiocarbon Dates X Chao-Li Liu, D. L. Asch, B. W. Fisher and D. D. Coleman	83
	ROME	Department of Earth Sciences at the University of Rome Radiocarbon Dates I Gilberto Calderoni and Vincenzo Petrone	105
	RT	Rehovot Radiocarbon Measurements IV Israel Carmi and Dror Segal	115
	UGRA	University of Granada Radiocarbon Dates VI Cecilio González-Gómez	133
	WIS	University of Wisconsin Radiocarbon Dates XXVII Christine A. Prior and Lori F. Phelps	141
	Z	Rudjer Bošković Institute Radiocarbon Measurements XII Dušan Srdoč, Nada Horvatinčić, Ines Krajcar Bronić, Bogomil Obelić and Adela Sliepčević	155
INSTRUCTIONS TO AUTHORS			
RADIOCA	RADIOCARBON UPDATES		
		x ~~ x x x x ~~~	187

ASSOCIATE EDITORS

For Accelerator Physics

DAVID ELMORE ROBERT E. M. HEDGES

D. ERLE NELSON

West Lafayette, Indiana, USA

Oxford, England

Burnaby, British Columbia, Canada

For Archaeology

ANDREW M. T. MOORE

MICHAEL B. SCHIFFER

New Haven, Connecticut, USA

Tucson, Arizona, USA

For Atmospheric Sciences

GEORGE A. DAWSON

Auckland, New Zealand Tucson, Arizona, USA

KUNIHIKO KIGOSHI

DAVID C. LOWE

Tokyo, Japan Lower Hutt, New Zealand

For Geochemistry

PAVEL POVINEC MINZE STUIVER

Bratislava, Czechoslovakia Seattle, Washington, USA

For Geophysics

G. E. KOCHAROV WILLEM G. MOOK St. Petersburg, USSR Groningen, The Netherlands

For Hydrology

JEAN-CHARLES FONTES

Orsay, France

For Ice Studies

HAROLD W. BORNS, JR. **ULRICH SIEGENTHALER**

Orono, Maine, USA Berne, Switzerland

For Oceanography

EDOUARD BARD

Gif-sur-Yvette, France Palisades, New York, USA

Marseille, France

ELLEN R. M. DRUFFEL

Woods Hole, Massachusetts, USA

For Paleobotany

CALVIN J. HEUSSER

Tuxedo, New York, USA