

ANNOUNCEMENT

Travel Grant Program to the XIII INQUA Congress, Beijing, August 1991

The U.S. National Committee for the International Union for Quaternary Research (USNC/INQUA), sponsored by the American Geophysical Union, is expecting to obtain funding for its travel grant program for the XIII INQUA Congress in Beijing, China, August 2-9, 1991 and related pre- and post-Congress field excursions. The USNC/INQUA, with the cooperation of AMQUA, seeks to ensure appropriate U.S. representation by providing 20 to 30 travel grants to enable Quaternary scientists residing in the United States (regardless of citizenship) to participate in the activities of the Congress. Travel grants, which will cover only a portion of a participant's expenses (equivalent to airfare), are to be awarded competitively, in part on the evaluation of papers submitted for presentation at the Congress, especially as they relate to the Congress theme,

Global Environmental Changes and their Relation with Anthropogenic Activities.

The Awards Subcommittee will give special consideration to those judged to benefit most by participation at this important international event.

Travel grant applications and detailed instructions are available from:

Pembroke J. Hart
USNC/INQUA - HA-460
National Academy of Sciences
2101 Constitution Avenue NW
Washington, DC 20418
(for applications by phone, call (202)334-3368 or 3306)

Deadlines:

1st: Note that abstracts for inclusion in the Congress must be received in Beijing not later than 1 December 1990. Abstract forms will be included with the travel grant application materials, as well as information on registration for the Congress.

2nd: The completed application for a travel grant, including an extended abstract of your paper and a one-page curriculum vitae, must be received in Washington by 15 January 1991.

Stipulated requirements:

Grantees will be required to use U.S. flag carriers in accordance with government regulations and to file a meaningful trip report (emphasizing the benefits of attendance) within 60 days of the end of the Congress.

Grant announcements:

The committee aims to announce the travel awards by 15 February 1991. However, some awards may be made later because of cancellations or delays in availability of funding.



RADIOCARBON

Announces the Forthcoming Publication of the Following Special Issues:

Proceedings of the 13th International Radiocarbon Conference

Dubrovnik, Yugoslavia, 20-25 June 1988

Volume 31, No. 3, 1989 @ \$60.00

This special issue contains papers on the latest developments in Sample Preparation and Measurement Techniques, Intercomparison Study, Carbon Cycle in the Environment, Global ^{14}C Variations, Applications and much more. Almost 1000 pages. The Proceedings issue is part of the 1989 subscription.

**Proceedings of the International Workshop
On Intercomparison of Radiocarbon Laboratories**

Glasgow, Scotland, 12-15 September 1989

Volume 32, No. 3, 1990 @ \$40.00

A workshop in Glasgow on the Intercomparison of Radiocarbon Laboratories was hosted by the University of Glasgow, Scottish Universities Research and Reactor Centre and the NERC ^{14}C laboratory at East Kilbride. The scientific program of the workshop covered previous and current intercomparison studies among radiocarbon laboratories, as well as plans for accuracy improvement in this field. This issue contains papers and discussions and is part of the 1990 subscription.

**Four Decades of Radiocarbon Studies:
An Interdisciplinary Perspective**

Lake Arrowhead, California, 4-8 June 1990

Special Hardcover Edition Published by Radiocarbon and The University of Arizona Press

This conference commemorates the dawn of radiocarbon as a dating, biological and environmental tracer isotope. This volume will document the major contributions of ^{14}C dating to archaeology, biochemistry, environmental studies, geochemistry, geology, geophysics, hydrology and oceanography over the last 40 years. This monograph will be offered outside of our three regular issues, at a discount to subscribers.

For more information on ordering or subscriptions, please write to:

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RADIOCARBON

An International Journal
of Cosmogenic Isotope
Research

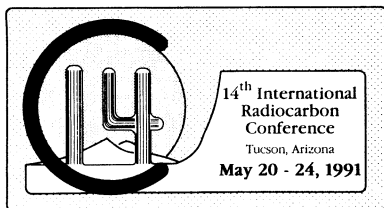
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PRICE LIST

Proceedings of the International Workshop on Intercomparison of ¹⁴ C Laboratories (Vol 32, No. 3, 1990)	\$40.00
Proceedings of the 13th International Radiocarbon Conference (Vol 31, No. 3, 1989)	\$60.00
Proceedings of the 12th International Radiocarbon Conference (Vol 28, Nos. 2A & 2B, 1986 - available separately at \$30.00 ea)	\$60.00
Proceedings of the 11th International Radiocarbon Conference (Vol 25, No. 2, 1983)	\$50.00
Proceedings of the 10th International Radiocarbon Conference (Vol 22, Nos. 2 & 3, 1980)	\$60.00
Vol 33, Nos. 1-3, 1991	\$94.50/vol Inst* \$63.00/vol Ind*
Vol 32, Nos. 1-3, 1990 (includes Glasgow Proceedings)	\$94.50/vol Inst* \$63.00/vol Ind*
Vol 31, Nos. 1-3, 1989 (includes Proceedings)	\$90.00/vol Inst \$60.00/vol Ind
Vol 30, Nos. 1-3, 1988	\$85.00/vol Inst \$55.00/vol Ind
Vol 29, Nos. 1-3, 1987	\$75.00/vol Inst \$50.00/vol Ind
Vol 28, Nos. 1, 2A & 2B, 1986 (includes Proceedings)	\$80.00/vol Inst \$60.00/vol Ind
Vol 27, Nos. 1, 2A & 2B, 1985	\$75.00/vol Inst \$50.00/vol Ind
Vol 26, Nos. 1-3, 1984	\$75.00/vol Inst \$50.00/vol Ind
Vol 25, Nos. 1-3, 1983 (includes Proceedings)	\$75.00/vol Inst \$50.00/vol Ind
Vol 24, Nos. 1-3, 1982	\$60.00/vol Inst \$40.00/vol Ind
Vol 23, Nos. 1-3, 1981	\$60.00/vol Inst \$40.00/vol Ind
Vol 22, Nos. 1-4, 1980 (includes Proceedings)	\$80.00/vol Inst \$60.00/vol Ind
Vols 11-21, 1969-1979	\$60.00/vol Inst \$40.00/vol Ind
Vols 1-9, 1959-1967	\$20.00/vol
Comprehensive Index (1950-1965)	\$20.00
Single Issue	\$25.00
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Vol 11, No. 2, 1969	(1959-1990) + free subscription for 1991!
Vol 12, No. 2, 1970	Postage & handling
Vol 13, No. 1, 1971	USA \$25.00
Vol 14, No. 1, 1972	Foreign \$35.00

*Price includes 5% state sales tax
Postage & handling will be added to back orders

Foreign postage on
current volumes **\$10.00**



14C14

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Tucson, Arizona 85721
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SECOND ANNOUNCEMENT

THE 14TH INTERNATIONAL RADIOCARBON CONFERENCE will take place May 20th through May 24th 1991. We have accepted more than 150 abstracts and assigned them to 14 oral and 2 poster sessions. In addition, the conference features three **pre-conference workshops** (Liquid Scintillation Counting, Extension of Radiocarbon Calibration and Paleoenvironments of the Eastern Mediterranean), and two post-conference field trips.

Registration information and forms are being mailed in October. The revised registration fee is \$180.00 before December 15th 1990, and \$225.00 after this date. The student registration fee is \$100.00. The banquet fee will be \$30.00. Payment in US Dollars should accompany the registration form, and should be payable to: The University of Arizona - 14C14, and sent to Radiocarbon Conference, Extended University - Conference Services, The University of Arizona, 1955 East Sixth Street, Tucson AZ 85719. Visa and Mastercard are accepted. All fees listed are in US currency.

The conference and workshops will be at the **Westward Look Resort**, 245 East Ina Road, Tucson, AZ 85704. The conference rate for the rooms is \$60.00, plus tax, per room for 1 to 3 persons in the room. Rooms are equipped with refrigerators and other amenities. Attendees should make their reservation with the hotel (reservation card included in mailing), or by calling (602) 297-1151 (Voice), or (602) 297-9023 (FAX). The toll-free number from outside Arizona is (800) 722-2500.

Evening and social activities will include a traditional **Mexican reception** on Monday and a trip to the Arizona-Sonora Desert Museum and Old Tucson on Wednesday afternoon. The conference banquet (**southwestern barbecue**) on Thursday evening will feature regional fare.

We invite conference participants to **tour our laboratories** on the University campus on Tuesday evening. Transportation will be provided to local restaurants following the tours.

The Westward Look Resort will organize **daytime tours** for accompanying guests to local attractions such as San Xavier Mission, Tubac and University Museums.

The Westward Look Resort is located approximately 10 miles north of central Tucson in the foothills of the Santa Catalina Mountains. Participants who arrive at Tucson International Airport can travel by Arizona Stagecoach limousine service at a cost of \$15.50 per person. Arizona Stagecoach has a desk in the lower concourse baggage-claim area of the airport. Conference representatives will be at the Tucson airport during peak arrival times to assist with transportation. Many air fares to Phoenix are less expensive than fares to Tucson. Participants who arrive at Phoenix Sky Harbor International Airport may travel by Arizona Shuttle Service to the Ina Road drop-off point, where transportation to Westward Look will be provided. The cost is approximately \$18.00. The trip from Sky Harbor is about two hours. Car rental is available at both airports. Trains run three times a week to Tucson from Los Angeles and three times from New Orleans.

Arrangements are underway for two **POST-CONFERENCE TOURS**. The longer trip, to northern Arizona including Sedona and the Grand Canyon, will encompass four days/three nights. The cost will be \$300.00. The second trip will visit Murray Springs and Lehner Clovis/Mammoth sites with an overnight stay in Bisbee in southeastern Arizona. The cost is \$150.00.

A trip to **Kitt Peak** Astronomical Observatory is available from 4:00 - 10:30 P.M. Friday evening at a cost of \$25.00.

DEADLINE FOR REVISED ABSTRACTS IS DECEMBER 15, 1990

(over)

FAX: (602) 621-2672

Telex: 650-3839821

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TENTATIVE CONFERENCE SESSIONS*

	MORNING	AFTERNOON
Monday	1. Isotopic Indicators of Global Change	1. Isotopic Indicators of Global Change 2. Geologic & Atmospheric Studies 3. Groundwater
Tuesday	4. Beta-Counting Techniques 5. Accelerator Mass Spectrometry	4. Beta-Counting Techniques 5. Accelerator Mass Spectrometry 6. Cosmogenic Radioisotopes & <i>In Situ</i> Production
Wednesday	7. Environmental Sciences 8. Archaeometry & Archaeology	FIELD TRIP
Thursday	9. Calibrations & Comparisons Among Dating Techniques 10. Geochemical Methods & Applications	10. Geochemical Methods & Applications 11. Oceans
Friday	12. Natural Variations: Measurement & Causes 13. ¹⁴ C Intercomparison Study 14. General Topics, Posters	BUSINESS MEETING

*There will be no more than two parallel sessions at one time

PRE-CONFERENCE WORKSHOPS

– Liquid Scintillation Counting, May 18-19

Contact: Robert M Kalin
Geosciences Department
The University of Arizona
Phone: (602) 621-6014 or (602) 881-5746
Fax: (602) 881-0554; Bitnet: BKALIN@ARIZRVAX

– Extension of Radiocarbon Calibration, May 19

Contact: Malcolm Hughes
Laboratory for Tree-Ring Research
The University of Arizona
Phone: (602) 621-6470; Fax: (602) 621-8229
Bitnet: MHUGHES@ARIZRVAX

– Paleoenvironments of the Eastern Mediterranean, May 18-19

Contact: Ofer Bar-Yosef or Renee Kra
Department of Anthropology Department of Geosciences
Peabody Museum The University of Arizona
Harvard University Phone: (602) 881-0857
Phone: (617) 495-2252 Fax: (602) 881-0554
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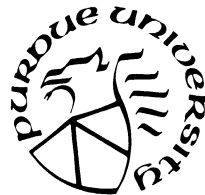
The School of Science at Purdue University has established a dedicated research facility for accelerator mass spectrometry (AMS) with the capability to analyze the following cosmogenic radionuclides: ^{10}Be , ^{14}C , ^{26}Al , ^{36}Cl , ^{41}Ca , and ^{129}I . Funding is in place to support the operation of this facility and to initiate research programs.

Purdue University's Department of Earth and Atmospheric Sciences seeks a distinguished faculty member at the associate or full professor level with a particular interest in research using cosmogenic radioisotopes to study terrestrial processes and events. In addition, we encourage applications for visiting professorships of 1- to 2-year duration. A successful applicant will have a Ph.D. in the geosciences and an established record of excellence in basic scientific investigation of geoscience problems.

Please send vita to:

Professor Steven J. Fritz
Department of Earth and Atmospheric Sciences
Purdue University
West Lafayette, Indiana 47907 USA

Screening will continue until the position is filled.



Purdue University is an affirmative action/equal opportunity employer.

NOTICE TO READERS AND CONTRIBUTORS

Since its inception, the basic purpose of *RADIOCARBON* has been the publication of compilations of ^{14}C dates produced by various laboratories. These lists are extremely useful for the dissemination of basic ^{14}C information.

In recent years, *RADIOCARBON* has also been publishing technical and interpretative articles on all aspects of ^{14}C . We would like to encourage this type of publication on a regular basis. In addition, we will be publishing compilations of published and unpublished dates along with interpretative text for these dates on a regional basis. Authors who would like to compose such an article for his/her area of interest should contact the Managing Editor for information.

Other sections recently added to our regular issues include NOTES AND COMMENTS, LETTERS TO THE EDITOR, RADIOCARBON UPDATES and ANNOUNCEMENTS. Authors are invited to extend discussions or raise pertinent questions to the results of scientific investigations that have appeared on our pages. These sections include short, technical notes to relay information concerning innovative sample preparation procedures. Laboratories may also seek assistance in technical aspects of radiocarbon dating. Book reviews are also encouraged as are advertisements.

Manuscripts. Papers may now be submitted on both floppy diskettes and hard copy. When submitting a manuscript on a diskette, always include two hard copies, double-spaced, or wait until the final copy is prepared, after review, before sending the edited diskette. We will accept, in order of preference, WordPerfect, 5.1 or 5.0, Microsoft Word, WordStar or any major Macintosh or IBM word-processing software program. ASCII files, MS DOS and CPM formatted diskettes are also acceptable. The diskettes should be either 3½" (720K or 1.44 megabytes) or 5¼" (360K or 1.2 megabytes). Radiocarbon papers should follow the recommendations in INSTRUCTIONS TO AUTHORS (R, 1990, v 32, no. 1, p 115–118). Offprints are available upon request. Our deadline schedule for submitting manuscripts is:

<i>For</i>	<i>Date</i>
Vol 33, No. 2, 1991	Jan 1, 1991
Vol 33, No. 3, 1991	May 1, 1991
Vol 34, No. 1, 1992	Sept 1, 1991

Half life of ^{14}C . In accordance with the decision of the Fifth Radiocarbon Dating Conference, Cambridge, 1962, all dates published in this volume (as in previous volumes) are based on the Libby value, 5568 yr, for the half-life. This decision was reaffirmed at the 11th International Radiocarbon Conference in Seattle, Washington, 1982. Because of various uncertainties, when ^{14}C measurements are expressed as dates in years BP the accuracy of the dates is limited, and refinements that take some but not all uncertainties into account may be misleading. The mean of three recent determinations of the half life, 5730 ± 40 yr, (*Nature*, 1962, v 195, no. 4845, p 984), is regarded as the best value presently available. Published dates in years BP can be converted to this basis by multiplying them by 1.03.

AD/BC Dates. In accordance with the decision of the Ninth International Radiocarbon Conference, Los Angeles and San Diego, 1976, the designation of AD/BC, obtained by subtracting AD 1950 from conventional BP determinations is discontinued in *RADIOCARBON*. Authors or submitters may include calendar estimates as a comment, and report these estimates as cal AD/BC, citing the specific calibration curve used to obtain the estimate. Calibrated dates will now be reported as "cal BP" or "cal AD/BC" according to the consensus of the Twelfth International Radiocarbon Conference, Trondheim, Norway, 1985.

Meaning of $\delta^{14}\text{C}$. In Volume 3, 1961, we endorsed the notation Δ (Lamont VIII, 1961) for geochemical measurements of ^{14}C activity, corrected for isotopic fractionation in samples and in the NBS oxalic-acid standard. The value of $\delta^{14}\text{C}$ that entered the calculation of Δ was defined by reference to Lamont VI, 1959, and was corrected for age. This fact has been lost sight of, by editors as well as by authors, and recent papers have used $\delta^{14}\text{C}$ as the observed deviation from the standard. At the New Zealand Radiocarbon Dating Conference it was recommended to use $\delta^{14}\text{C}$ only for age-corrected samples. Without an age correction, the value should then be reported as percent of modern relative to 0.95 NBS oxalic acid (Proceedings 8th Conference on Radiocarbon Dating, Wellington, New Zealand, 1972). The Ninth International Radiocarbon Conference, Los Angeles and San Diego, 1976, recommended that the reference standard, 0.95 times NBS oxalic acid activity, be normalized to $\delta^{13}\text{C} = -19\text{‰}$.

In several fields, however, age corrections are not possible. $\delta^{14}\text{C}$ and Δ , uncorrected for age, have been used extensively in oceanography, and are an integral part of models and theories. For the present, therefore, we continue the editorial policy of using Δ notations for samples not corrected for age.