

## LABORATORIES

### \* Inactive Laboratories

- <sup>1</sup> The <sup>3</sup>H-Laboratorium of this institute (directed by Klaus Fröhlich) should be addressed separately.
- <sup>1a</sup> Lists from this laboratory have not been submitted to RADIOCARBON. See Gdansk I, Acta Physica Polonica, vol 22, p 189, 1962 Gdansk II, *ibid*, vol 32, p 39, 1967.
- <sup>2</sup> This designation Gif supersedes both Sa (Saclay) and Gsy (Gif-sur-Yvette). The only Gsy date list to be published is Gsy I (Coursaget and Le Run, RADIOCARBON, v 8).
- <sup>3</sup> From January 1, 1961 the Gro numbers have been replaced by GrN numbers. "New" dates are referred to the NBS oxalic-acid standard.
- <sup>4</sup> Early dates from this laboratory were given a code designation that represents the name of the sponsoring institution, e g, I (AGS) for American Geographical Society (Heusser, RADIOCARBON SUPPLEMENT, v 1).
- <sup>5</sup> Formerly Hazelton Nuclear: code designation HNS has been dropped.
- <sup>6</sup> Some dates from this laboratory were published with the code designations S (Pringle *et al*, 1957, Science, v 125, p 69-70).
- <sup>7</sup> See SM.
- <sup>8</sup> See Gif.
- <sup>9</sup> Some dates from this laboratory have been published with the code designation RC (Flint and Gale, 1958, AM JOUR SCI, v 256, p 698-714). The code designation MP published in volume 1 of the RADIOCARBON SUPPLEMENT (1959, p 216) has been changed to SM in conformity with the wishes of the laboratory, and is explained by the change of the company's name from Magnolia Petroleum Company to Socony Mobil Oil Company, Inc.
- <sup>10</sup> Formerly Texas-Bio-Nuclear, then Kaman Instruments. The laboratory is no longer operating.
- <sup>11</sup> Moved to Ahmedabad. See PRL.

- A** ARIZONA  
Dr Austin Long  
Laboratory of Isotope Geochemistry  
Geosciences Department  
University of Arizona  
Tucson, Arizona 85721
- ALG** ALGIERS  
O Rahmouni  
Bd Frantz Fanon  
BP 1147  
Algiers, Algeria
- ANL** ARGONNE NATIONAL LABORATORY  
Mr James Gray, Jr  
Argonne National Laboratory  
9700 South Cass Avenue  
Argonne, Illinois 60439
- ANU** AUSTRALIAN NATIONAL UNIVERSITY  
Mr H A Polach  
ANU Radiocarbon Dating Laboratory  
c/-Research School of Earth Sciences  
The Australian National University  
Canberra ACT, Australia 2600
- B** BERN  
Prof H Oeschger  
Physikalisches Institut  
Universität Bern  
Sidlerstrasse 5  
Bern, Switzerland

- Ba** BRATISLAVA  
Prof S Usacev and Dr P Povinec  
Department of Nuclear Physics  
Comenius University  
Mlynská dolina F1  
816 31 Bratislava  
Czechoslovakia
- Birm** BIRMINGHAM  
R E G Williams  
Department of Geological Sciences, PO Box 363  
University of Birmingham  
Birmingham B15 2TT, England
- Bln** BERLIN  
Ing Günther Kohl  
Akademie der Wissenschaften der DDR  
Zentralinstitut für Alte Geschichte und Archäologie  
1199 Berlin, Rudower Chaussee 6  
Germany
- BM** BRITISH MUSEUM  
Mr Richard Burleigh  
Research Laboratory  
The British Museum  
London WC1B 3DG, England
- BONN** BONN  
Dr H W Scharpenseel and F Pietig  
Institut für Bodenkunde  
Universität Bonn  
Bonn, Germany
- \*C** CHICAGO  
Dr W F Libby  
Institute of Geophysics  
University of California  
Los Angeles, California 90024
- CRCA** CAIRO  
Dr Shawki M Nakhla  
Cairo Carbon-14 Dating Laboratory  
Center of Research and Conservation of Antiquities  
Organization of Egyptian Antiquities  
Midan El Tahrir  
Cairo, Egypt
- \*CT** CALTECH  
Dr Don M Yost  
Gates and Crellin Laboratories of Chemistry  
California Institute of Technology  
Pasadena, California 91109
- D** DUBLIN  
Prof G F Mitchell  
Department of Botany  
Trinity College  
Dublin, Ireland
- Dak** DAKAR  
Dr Cheikh Anta Diop  
Directeur du Laboratoire de  
Radiocarbone IFAN  
Université de Dakar  
République du Sénégal

- DAL** DALHOUSIE UNIVERSITY  
J Gordon Ogden, III  
Department of Biology  
Dalhousie University  
Halifax, Nova Scotia, Canada B3H 3J5
- DE** UNITED STATES GEOLOGICAL SURVEY  
L J Schroder  
U S Geological Survey  
Denver Federal Center, Bldg 82  
Lakewood, Colorado 80225
- DIC** DICAR CORPORATION  
I C Stehli  
Radioisotope Laboratory  
Dicar Corporation  
2040 Adelbert Rd  
Cleveland, Ohio 44106
- F** FLORENCE  
Dr C M Azzi, L Bigliocca, and E Piovan  
Radiocarbon Dating Laboratory  
Istituto di Antropologia  
Università di Firenze  
Via del Proconsolo 12  
50122, Florence, Italy
- Fr<sup>1</sup>** FREIBERG  
Dr Klaus Fröhlich  
Sektion Physik  
Bergakademie Freiberg  
DDR 92 Freiberg
- \*FSU** FLORIDA STATE  
James R Martin, H G Goodell, and D S Phelps  
Radiocarbon Dating Laboratory  
Department of Geology  
Florida State University  
Tallahassee, Florida 32306
- \*G** GÖTEBORG  
Dr E Ehn  
Laboratory of Nuclear Chemistry  
Chalmers Tekniska Högskola  
Göteborg, Sweden
- GaK** GAKUSHUIN UNIVERSITY  
Prof K Kigoshi  
Gakushuin University  
Mejiro, Toshima-ku  
Tokyo, Japan
- Gd<sup>1\*</sup>** GDANSK  
Prof W Mościcki, Gliwice  
Politechnika Slaska  
Katedra Fizyki  
Zaklad Fizyki Technicznej  
C-14 Laboratory  
Poland
- Gif<sup>2</sup>** GIF-SUR-YVETTE  
Dr J Labeyrie or Mme G Delibrias  
Centre des Faibles Radioactivités  
Laboratoire mixte CNRS-CEA  
91190-Gif-sur-Yvette, France

- \*GL**    **GEOCHRONOLOGICAL LABORATORY**  
 Institute of Archaeology  
 31-34 Gordon Square  
 London, WC1, England
- Gro\***    **GRONINGEN**  
**GrN**    Dr W G Mook  
 Natuurkundig Laboratorium der Rijks Universiteit  
 Westersingel 34  
 Groningen, Netherlands
- GSC**    **OTTAWA**  
 Mr J A Lowdon  
 Radiocarbon Dating Laboratory  
 Geological Survey of Canada  
 601 Booth Street  
 Ottawa, Ontario, Canada
- \*Gsy<sup>2</sup>**    **GIF-SUR-YVETTE**
- GU**    **GLASGOW UNIVERSITY**  
 Dr M S Baxter  
 Department of Chemistry  
 The University  
 Glasgow G12 8QQ, Scotland
- GX**    **GEOCHRON LABORATORIES INC**  
 Harold W Krueger  
 Geochron Laboratories Division  
 Krueger Enterprises, Inc  
 24 Blackstone Street  
 Cambridge, Mass 02139
- H**    **HEIDELBERG**  
 Prof K O Münnich, D Berdau, and M Münnich  
 Institut für Umweltphysik der Universität Heidelberg  
 D-69 Heidelberg, Im Neuenheimer  
 Feld 366, West Germany
- HAR**    **HARWELL**  
 R L Otlet  
 Carbon-14/Tritium Measurements Laboratory  
 Bldg 10.46 AERE, Harwell  
 Didcot, Berkshire  
 OX11 0RA, England
- HIG**    **HAWAII INSTITUTE OF GEOPHYSICS**  
 Robert W Buddemeier  
 Hawaii Institute of Geophysics  
 University of Hawaii  
 2525 Correa Road  
 Honolulu, Hawaii 96822
- Hv**    **HANNOVER**  
 Dr M A Geyh  
 Niedersächsisches Landesamt  
 für Bodenforschung  
 D-3000 Hannover-Buchholz, Postf 510153  
 West Germany
- I<sup>4</sup>**    **TELEDYNE ISOTOPES**  
 James Buckley  
 Teledyne Isotopes  
 50 Van Buren Avenue  
 Westwood, New Jersey 07675

- IGS** INSTITUTE OF GEOLOGICAL SCIENCES  
E Welin  
Laboratory for Isotope Geology  
S-104 05 Stockholm 50, Sweden
- IRPA** INSTITUT ROYAL DU PATRIMOINE ARTISTIQUE  
M Dauchot-Dehon and J Heylen  
Institut Royal du Patrimoine Artistique  
1 Parc du Cinquantenaire  
Brussels 4, Belgium
- ISGS** ILLINOIS STATE GEOLOGICAL SURVEY  
Dennis D Coleman  
Section of Analytical Chemistry  
Illinois State Geological Survey  
Natural Resources Building  
Urbana, Illinois 61801
- \*IVIC** CARACAS  
Dr Carlos Schubert  
Instituto Venezolano de Investigaciones Cientificas  
Departamento de Ecologia  
Apartado 1827  
Caracas 101, Venezuela
- K** COPENHAGEN  
Dr Henrik Tauber  
Geological Survey of Denmark and National Museum  
DK-1220 Copenhagen K, Denmark
- KAERI** KOREA ATOMIC ENERGY RESEARCH INSTITUTE  
Dr Kyung Rin Yang  
Radioanalytical Division  
Korea Atomic Energy Research Institute  
PO Box 7, Cheong Ryang  
Seoul, Korea
- KI** KIEL  
Dr H Willkomm and Dr H Erlenkeuser  
Institut für Reine und Angewandte Kernphysik  
Universität Kiel  
23 Kiel,  
Olshausenstrasse 40-60  
Germany
- KN** KÖLN  
Dr J C Freundlich  
Universität Köln, Institut für Ur-und Frühgeschichte  
C<sup>14</sup>-Laboratorium  
Köln-Lindenthal Weyertal 125, W Germany
- L** LAMONT  
Manik Talwani  
Lamont-Doherty Geological Observatory  
Columbia University  
Palisades, New York 10964
- LAR** LIEGE STATE UNIVERSITY  
Prof Dr Jean Govaerts  
Lab d'application des radioéléments  
9 Place du XX Aout  
Liège, Belgium
- LE** LENINGRAD  
Radiocarbon Laboratory  
Institute of Archaeology (Leningrad Section)  
Dvortsovaya Nab 18  
Leningrad 192041, USSR

- LJ UNIVERSITY OF CALIFORNIA, SAN DIEGO  
Dr H E Suess  
Scripps Institution of Oceanography  
University of California, San Diego  
La Jolla, California 92037
- LP LA PLATA  
Laboratorio de Radiocarbón  
Facultad de Ciencias Naturales y Museo  
Paseo del Bosque  
La Plata, Argentina
- Lu LUND  
Prof Björn Berglund and Mr Sören Håkansson  
Radiocarbon Dating Laboratory  
University of Lund  
Tunavägen 29  
S-22363 Lund, Sweden
- Lv LOUVAIN LA NEUVE  
Prof P C Capron and Mr E Gilot  
Laboratoire de Carbone 14  
Chemin du Cyclotron 2  
1348 Louvain la Neuve, Belgium
- Ly UNIVERSITY OF LYON  
Mr J Evin  
Laboratoire de Radiocarbone  
Institut de Physique Nucléaire  
43, Boulevard du 11 Novembre 1918  
69, Villeurbanne-Lyon France
- \*M MICHIGAN  
Dr James B Griffin  
University Museums Building  
The University of Michigan  
Ann Arbor, Michigan 48104
- \*Ma<sup>s</sup> MANITOBA
- MC MONACO  
Dr J Thommeret or Dr J L Rapaire  
Laboratoire de Radioactivité Appliquée  
Centre Scientifique de Monaco  
Avenue Saint Martin  
Monaco
- ML MIAMI  
Dr H G Östlund  
Rosenstiel School of Marine and Atmospheric Science  
University of Miami  
Miami, Florida 33149
- Mo VERNADSKI INSTITUTE OF GEOCHEMISTRY  
Vernadski Institute of Geochemistry  
Academy of Sciences of the USSR  
Moscow, USSR  
Address: Academician A P Vinogradov  
Vorobeyskoye shosse,d47-A  
Moscow, USSR
- MP<sup>7</sup> MAGNOLIA PETROLEUM
- N RIKEN (TOKYO)  
Dr F Yamasaki  
The Institute of Physical and Chemical Research  
Wako-shi, Saitama Pref  
Japan 351

- NPL** NATIONAL PHYSICAL LABORATORY  
Mr W J Callow and Miss G I Hassall  
Division of Radiation Science  
National Physical Laboratory  
Teddington, Middlesex, England
- NSW** NEW SOUTH WALES  
D J Carswell, Assoc Prof  
Department of Nuclear and Radiation Chemistry  
University of New South Wales  
PO Box 1  
Kensington, New South Wales, 2033, Australia
- NTU** NATIONAL TAIWAN UNIVERSITY  
Yuin-Chi Hsu  
Department of Physics  
National Taiwan University  
Taipei, Taiwan, China
- Ny** NANCY  
Pr René Coppens et Dr Pierre Richard  
Centre de Recherches Radiogéologiques  
ENS de Géologie Appliquée et de Prospection Minière  
Institut National Polytechnique de Lorraine  
BP 452  
54001 Nancy Cedex, France
- NZ** NEW ZEALAND  
Dr T A Rafter  
Institute of Nuclear Sciences  
DSIR, Private Bag  
Lower Hutt, New Zealand
- \*O** HUMBLE-ESSO PRODUCTION RESEARCH COMPANY  
General Manager, Geologic Research  
Esso Production Research Company  
Affiliate of Humble Oil & Refining Co  
PO Box 2189  
Houston, Texas 77001
- \*ORINS** OAK RIDGE ASSOCIATED UNIVERSITIES  
Dr John E Noakes, Director  
Radiocarbon Dating Laboratory  
Oak Ridge, Tennessee 37830
- \*OWU** OHIO WESLEYAN ASSOCIATED UNIVERSITIES  
Dr J Gordon Ogden, III  
Department of Botany and Bacteriology  
Ohio Wesleyan University  
Delaware, Ohio 43015
- \*OX** US DEPARTMENT OF AGRICULTURE  
L L McDowell  
Agricultural Research Service  
Soil and Water Conservation Research Division  
Sedimentation Laboratory  
PO Box 30  
Oxford, Mississippi 38655
- P** PENNSYLVANIA  
Dr Elizabeth K Ralph and Mrs Stuart Law  
Department of Physics  
University of Pennsylvania  
Philadelphia, Pennsylvania 19174

- Pi** PISA  
Prof E Tongiorgi  
Laboratorio di Geologia Nucleare dell'Università  
Via S Maria, 22  
Pisa, Italy
- \*PIC** PACKARD  
Dr Ariel G Schrodt  
Low Level Counting Laboratory  
Packard Instrument Co, Inc  
2200 Warrenville Road  
Downers Grove, Illinois 60515
- Pr** PRAGUE  
Alois Dubansky  
Laboratory for Isotopes  
Geochemistry and Geochronology  
Geological Institute  
Czechoslovak Academy of Sciences  
Prague-8  
Na Hrazi 26
- PRL** PHYSICAL RESEARCH LABORATORY  
D Lal and D P Agrawal  
Physical Research Laboratory  
Navrangpura  
Ahmedabad-380009, India
- Pta** PRETORIA  
Dr J C Vogel  
Natural Isotopes Division  
National Physical Research Laboratory  
CSIR  
PO Box 395  
Pretoria, South Africa
- Q** CAMBRIDGE  
Dr R G West or Dr V R Switsur  
University Sub-Department of Quaternary Research  
Botany School  
Downing Street  
Cambridge, England
- QL** QUATERNARY ISOTOPE LABORATORY  
Minze Stuiver  
Quaternary Research Center  
University of Washington Ak-60  
Seattle, Washington 98195
- R** ROME  
Dr F Bella, Istituto di Fisica  
and  
Dr C Cortesi, Istituto di Geochimica  
Radiocarbon Dating Laboratory  
University of Rome  
Città Universitaria  
00100-Rome, Italy
- RL** RADIOCARBON, LTD  
Charles S Tucek  
Radiocarbon, Ltd  
Route 2, Box 21E  
Lampasas, Texas 76550



- RT** REHOVOT GEOISOTOPE LABORATORY  
Dr A Kaufman and Mr I Carmi  
Geoisotope Laboratory  
Department of Isotope Research  
Weizmann Institute of Science  
Rehovot, Israel
- RU** RICE UNIVERSITY  
J A S Adams  
Department of Geology  
Rice University  
Houston, Texas 77001
- S** SASKATCHEWAN  
Mr A Rutherford  
Saskatchewan Research Council  
University of Saskatchewan  
Saskatoon, Saskatchewan, Canada
- \*Sa<sup>a</sup>** SACLAY
- SI** SMITHSONIAN INSTITUTION  
Dr W H Klein, Director  
Radiation Biology Laboratory  
Dr Robert Stuckenrath  
C<sup>14</sup> Laboratory  
12441 Parklawn Drive  
Rockville, Maryland 20852
- \*SL** SHARP LABORATORIES
- \*SM<sup>a</sup>** MOBIL OIL CORPORATION  
Dr H F Nelson  
Mobil Oil Research and Development Corp  
Field Research Laboratory  
PO Box 900  
Dallas, Texas 75221
- SMU** SOUTHERN METHODIST UNIVERSITY  
Dr Herbert Haas  
Institute for the Study of Earth and Man  
Southern Methodist University  
Dallas, Texas 75275
- SR** SALISBURY, RHODESIA  
Dr J G Sheppard  
Gulbenkian Radiocarbon Dating Laboratory  
Department of Chemistry  
University of Rhodesia  
PO Box MP 167  
Salisbury, Rhodesia
- SRR** SCOTTISH UNIVERSITIES RESEARCH AND REACTOR CENTRE  
Dr D D Harkness and Prof H W Wilson  
Scottish Universities Research and Reactor Centre  
East Kilbride  
Glasgow G75 0QU, Scotland
- St** STOCKHOLM  
Dr Eric Welin  
Laboratory for Isotope Geology  
Swedish Museum of Natural History  
S-104 05 Stockholm 50, Sweden
- Su** FINLAND  
Aulis Heikkinen, Lic Phil  
Geological Survey of Finland  
SF-02150 Espoo 15, Finland

- SUA SYDNEY UNIVERSITY, AUSTRALIA  
Assoc Prof R B Temple or Mr R Gillespie  
Dept of Physical Chemistry  
The University of Sydney  
Sydney NSW 2006, Australia
- T TRONDHEIM  
Dr Reidar Nydal, Mr Steinar Gulliksen, and Mr Knut Lövseth  
Radiological Dating Laboratory  
The Norwegian Institute of Technology  
Trondheim, Norway
- TA TARTU  
A Liiva and E Ilves  
Geo-biochemistry Laboratory  
Institute of Zoology and Botany Academy of Sciences of the Estonian SSR  
Vanemuise St 21  
Tartu, Estonia, USSR
- TAM TEXAS A & M UNIVERSITY  
Dr William M Sackett  
Dept of Oceanography  
Texas A & M University  
College Station, Texas 77843
- TB TBILISI  
A A Burchuladze  
Radiocarbon Laboratory  
Tbilisi University  
1 Chavchavadze Avenue  
Tbilisi, USSR 380028
- \*TBNC<sup>10</sup> KAMAN NUCLEAR  
Kaman Nuclear  
Garden of the Gods Road  
Colorado Springs, Colorado
- \*TF<sup>11</sup> TATA INSTITUTE OF FUNDAMENTAL RESEARCH  
Prof D Lal  
Tata Institute of Fundamental Research  
Homi Bhabha Road  
Bombay-5 BR, India
- TK UNIVERSITY OF TOKYO  
Dr Naotune Watanabe  
Carbon Dating Laboratory  
c/o Department of Anthropology  
Faculty of Science  
University of Tokyo  
Hongo, Bunkyo-ku, Tokyo, Japan
- Tln TALLIN  
J M Punning  
Institute of Geology  
Academy of Sciences  
Tallin, Estonia puistee 7 ESSR
- TUNC TEHRAN UNIVERSITY NUCLEAR CENTRE  
Dr A Mahdavi  
Tehran University Nuclear Centre  
PO Box 2989  
Tehran, Iran

- Tx**      **TEXAS**  
Mr S Valastro, Jr or Dr E Mott Davis  
Radiocarbon Laboratory  
Balcones Research Center, Rt 4, Box 189  
University of Texas at Austin  
Austin, Texas 78757
- U**        **UPPSALA**  
Dr Ingrid U Olsson  
Institute of Physics  
University of Uppsala  
Box 530  
S-751 21 Uppsala, Sweden
- UB**      **BELFAST**  
Mr G W Pearson or Dr J R Pilcher  
Palaeoecology Laboratory  
The Queen's University  
Belfast, BT7 INN  
Northern Ireland
- UCLA**   **UNIVERSITY OF CALIFORNIA, LOS ANGELES**  
Dr Rainer Berger and Dr W F Libby  
Institute of Geophysics  
University of California  
Los Angeles, California
- UCR**    **UNIVERSITY OF CALIFORNIA, RIVERSIDE**  
Dr R E Taylor  
Department of Anthropology  
Institute of Geophysics and Planetary Physics  
University of California  
Riverside, California 92502
- UGa**    **THE UNIVERSITY OF GEORGIA**  
John E Noakes, Betty Lee Brandau  
The University of Georgia  
4 GGS Bldg  
Geochronology Laboratory  
Athens, Georgia 30601
- UM**     **UNIVERSITY OF MIAMI**  
Dr J J Stipp and Mrs K L Eldridge  
Geochronology Laboratory  
Department of Geology  
University of Miami  
Coral Gables, Florida 33124
- UW**     **UNIVERSITY OF WASHINGTON**  
Dr A W Fairhall  
Department of Chemistry  
University of Washington  
Seattle, Washington 98195
- \*V**      **VICTORIA**  
Anne Bermingham  
Radiocarbon Dating Laboratory  
Science Museum of Victoria  
304-328 Swanston Street  
Melbourne, Victoria  
Australia 3000
- VRI**    **VIENNA RADIUM INSTITUTE**  
Dr H Felber  
Institut für Radiumforschung und Kernphysik  
Boltzmannngasse 3  
A-1090 Vienna, Austria

- W** US GEOLOGICAL SURVEY  
Dr Meyer Rubin  
US Geological Survey  
National Center, 971  
Reston, Virginia 22092
- WIS** WISCONSIN  
Dr Margaret Bender  
Radiocarbon Laboratory of the Center for Climatic Research  
Institute for Environmental Studies  
University of Wisconsin  
1225 W Dayton St  
Madison, Wisconsin 53706
- WRD** US GEOLOGICAL SURVEY, WATER RESOURCES DIVISION  
Dr F J Pearson, Jr  
US Geological Survey  
Isotope Hydrology Laboratory  
National Center, MS 432  
Reston, Virginia 22092
- WSU** WASHINGTON STATE UNIVERSITY  
Dr John C Sheppard  
Radioisotopes and Radiations Laboratory  
College of Engineering Research Division  
Pullman, Washington 99163
- X** WHITWORTH COLLEGE  
Dr Edwin A Olson  
Department of Earth Science  
Whitworth College  
Spokane, Washington 99218
- \*Y** YALE  
Dr Minze Stuiver  
Radiocarbon Laboratory  
Yale University  
New Haven, Connecticut 06520
- Z** ZAGREB  
Dr Adela Sliepcevic and Dr Dušan Srdoc  
Institute "Ruder Boškovic"  
41001 Zagreb, POB 1016, Yugoslavia