

RSSG Newsletter

Remote Sensing Specialty Group
Association of American Geographers

July 1990

From the Chair

Summer brings reflections of recent RSSG successes and the need to begin planning for the Miami AAG meeting. Efforts by many resulted in the RSSG sponsoring five special paper sessions, a poster session and one workshop at the Toronto AAG. A special thanks to Kevin Price (University of Kansas) for serving as paper session coordinator, and to Tina Cary (EOSAT) for serving as workshop coordinator. Participation as presenters or attendees to RSSG sessions was very good, but could be even better given our size as one of the larger specialty groups in AAG.

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RSSG OUTSTANDING CONTRIBUTIONS AWARD APPROVED

In early June, subsequent to discussions at the RSSG Business meeting in Toronto, Duane Nellis (RSSG Chair) submitted a proposal to AAG headquarters for a new award for Outstanding Contributions in Geographic Remote Sensing. The proposal read as follows:

Objectives: In an effort to recognize the outstanding scholarly and service contributions by geographers in the area of remote sensing, the Remote Sensing Specialty Group Awards Committee has recommended that an annual award be instituted. The members of RSSG accepted this recommendation unanimously at the 1990 Toronto business meeting of the group.

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RSSG PLANNING FOR 1991 MIAMI AAG

Persons interested in participating in RSSG-sponsored sessions at the 1991 Miami AAG meetings are urged to contact Vince Ambrosia (NASA-Ames Research Center) as soon as possible. RSSG members wishing to make oral presentations, prepare poster papers, organize special sessions, field trips or workshops or participate in other ways must send all materials to Vince by September 1, 1990. Details on program participation are provided in the AAG Newsletter. Contact:

Vincent G. Ambrosia
Aircraft Data Facility
NASA-Ames Research Center
MS 240-6
Moffett Field, CA 94035-1000

Telephone: (415) 604-6252
FAX: (415) 604-4987

Prospective participants should note that the AAG executive Committee has decided to try 15 minute papers in Miami. Session organizers should plan to schedule 6 papers for each 100 minute module, allowing 15 minutes for presentation and discussion of each paper, and the remaining 10 minutes for a session introduction and summary.

AAG has announced that the theme for the Miami meetings will be "Local Lives and Global Systems - Scale in Human and Physical Geography." The AAG Miami Program Committee invites papers, posters and sessions that focus on linkages and tensions between local conditions and global processes. Such matters as resource exploitation, environmental degradation, deforestation, climate change, poverty and wealth, changing concepts of the nation state, or transitional economic units are especially appropriate to address.

From the Chair (Continued from page 1)

RSSG members owe a special thanks to Kamlesh Lulla (NASA), immediate past Chair, and to Shamim Naim (University of Wisconsin-Waukesha), immediate past secretary-treasurer for their contributions to AAG. These two people played an important role in the continued success of the RSSG.

I hope you will join me by agreeing to participate in the Miami AAG. Vince Ambrosia (NASA-Ames) assisted by Kevin Price (University of Kansas) are program chairs for the 1991 meeting. Preliminary plans are underway for some sessions, but we are always interested in each of you playing a more active role. I would like to organize a session, for example, around the theme of "Applications of Remote Sensing in Africa," that will be co-sponsored by the African Specialty Group. Kam Lulla has expressed interest in a joint session with the Applied Geography Specialty Group. Greg Plumb (University of Oklahoma) is interested in organizing a session focussed on "Advanced Image Classification Procedures." Please contact Vince Ambrosia or Kevin Price, or me if you have ideas. Appropriate materials must be received by the AAG Central Office by September 21, 1990, so don't delay contacting us.

I look forward to my term as Chair of the Remote Sensing Specialty Group. Help me make the next two years a time of continuing growth and refinement of ideas related to remote sensing.

M. Duane Nellis
Kansas State University

USE YOUR NEWSLETTER

The RSSG Newsletter is your vehicle for communicating with colleagues interested in remote sensing. You are invited to send news regarding publications, awards, honors, new programs, commercial ventures, student activities, jobs and other announcements to:

James W. Merchant
Conservation & Survey Division
University of Nebraska-Lincoln
113 Nebraska Hall
Lincoln, NE 68588-0517
Telephone: (402) 472-7531
FAX: (402) 472-2410

HONORS



RSSG member Kamlesh Lulla (NASA-Johnson Space Center) was appointed Associate Chief Editor of Geocarto International. Other RSSG members serving on the Geocarto Editorial Board include John E. Estes (Chief Editor 1989-1990), Vincent G. Ambrosia, Michael R. Helfert, Stanley A. Morain, and M. Duane Nellis.

NASA Group Achievement Awards were presented to Kam and RSSG member Michael Helfert (NASA-Johnson Space Center) for their work in providing training, mission support and postflight analysis of earth observations to NASA astronauts conducting Shuttle hand-held photographic experiments.

AWARD (Continued from page 1)

Award: The award shall be in the form of a medal with a citation. The design, inscription and the size were approved by RSSG members at the 1990 business meeting.

Selection criteria: A selection committee appointed by the RSSG Chair will invite nominations from the AAG/RSSG members and will be responsible for gathering, evaluating and finalizing the list of recommended nominees. This list will be submitted to the RSSG Chair who will, in consultation with the officers of the group, select the award winner. The Awards Committee and Selection Committee may have overlapping membership.

The AAG/RSSG Award for Outstanding Contributions in Geographic Remote Sensing was approved at the June 29, 1990 meeting of the AAG Executive Committee. If time permits it may be instituted for the Miami AAG meetings. For additional details contact:

Dr. M. Duane Nellis
Department of Geography
Kansas State University
Manhattan, KS 66506
Telephone: (913) 532-6727

AVHRR NEWS

USGS Publishes AVHRR Mosaic of U.S.

The U.S. Geological Survey (USGS), as part of its National Atlas series, has published an AVHRR mosaic of the conterminous U.S. The full-color product has a scale of 1:7,500,000. It was prepared by mosaicking sixteen AVHRR scenes taken between May 1984 and May 1986. One side of the two-sided map depicts the mosaic without annotation overlaid on the image. The reverse portrays and describes selected features of interest. This inexpensive product (about \$5.00) would be excellent for classroom use.

Persons interested in this map should also obtain details on the other National Atlas sheets available as many of them would complement the AVHRR product. (In addition, many RSSG members will recall the excellent Landsat mosaic prepared by National Geographic some years ago, another excellent complement to this package). To order the AVHRR mosaic or obtain details on other USGS map products contact the USGS Earth Science Information Center, Denver Federal Center, Denver, CO 80225 or any ESIC affiliate office.

ERIM Offers Mosaic of North America

The first digital mosaic of the North American continent has been completed by the Environmental Research Institute of Michigan (ERIM), working in conjunction with the EROS Data Center, the Canada Centre for Remote Sensing and the National Oceanic and Atmospheric Administration. AVHRR Local Area Coverage (LAC) data collected between December 1985 and July 1989

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NEW OFFICERS ELECTED

Remote Sensing Specialty Group Officers for 1990-91 are as follows:

Chair:

M. Duane Nellis
Department of Geography
Kansas State University
Manhattan, KS 66506
Telephone: (913) 532-6727

Vice Chair:

Tina Cary
EOSAT
4300 Forbes Boulevard
Lanham, MD 20706
Telephone: (301) 552-0537

Secretary-Treasurer:

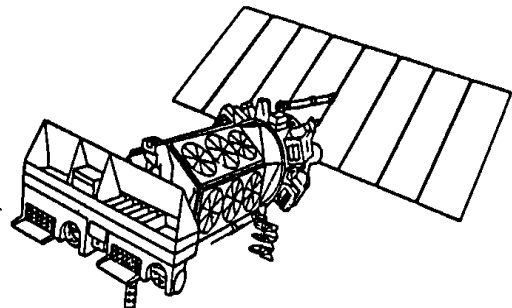
Gregory Plumb
Department of Geography
University of Oklahoma
Norman, OK 73019-0535
Telephone: (405) 325-5325

Director:

Anthony J. Lewis
Department of Geography
and Anthropology
Louisiana State University
Baton Rouge, LA 70803
Telephone: (504) 388-6199

Student Director:

Mark Jakubauskas
Department of Geography
213 Lindley Hall
University of Kansas
Lawrence, KS 66045
Telephone: (913) 864-5143





LANDSAT NEWS

Landsat 6 Development Update

EOSAT has announced that Landsat-6 is to be launched in late 1991. The satellite will orbit at the same altitude, inclination and with the same equatorial crossing time as Landsats 4 and 5, both of which are still operational.

New TM Product Introduced

EOSAT has introduced a 1:50,000 scale print to its line of Tm color products. The 1:50,000 print covers one-quarter of a quad, or one-sixteenth of a full TM scene. A single quarter-quad print is available for \$2400; a four-print quad set sells for \$4700. For additional details contact EOSAT Customer Services, 4300 Forbes Blvd., Lanham, MD 20706; telephone (301) 552-0547 or (800) 344-9933.

Chesapeake Bay Poster

A natural color poster of the Chesapeake Bay has sold nearly 10,000 copies to date. The 25" by 31" poster covers the entire Bay area including Baltimore, Washington, D.C. and the Potomac River. The product is available for \$19.95 plus \$2.50 postage and handling from: The Chesapeake Bay Foundation, Poster Offer, 162 Prince George Street, Annapolis, MD 21401.

Satellite Images of Canada

A new book, Satellite Images: Photographs of Canada from Space, features more than 40 Landsat TM images. The book can be purchased for \$29.95 (U.S.) from Firefly Books Ltd., 250 Sparks Avenue, Willowdale, Ontario CANADA M2H 2S4; telephone: (800) 387-5085.

SPOT NEWS

SPOT 2 Launched

The SPOT 2 satellite was launched into its 830 km high sun synchronous orbit on January 21, 1990. SPOT 2 carries the same three-band instrumentation as SPOT 1. Both satellites are currently operational. SPOT Image Corporation currently is building SPOT 3 and has funding approved for SPOT 4.

New Products Announced

Four new products have been announced by SPOT Image Corporation. SPOT QuadMaps cover any USGS 7.5 minute quadrangle at a scale of 1:24,000. SPOT CountyViews cover any U.S. county at a scale of 1:24,000. SPOT MetroViews cover areas of approximately 1400 square miles surrounding major U.S. cities, and SPOT BasinViews cover any geologic basin in the world with a minimum size of 2500 square miles. All products are prepared from 10 meter resolution panchromatic data. For prices and additional information contact: SPOT Image Corporation, 1897 Preston White Drive, Reston, VA 22091-4368; telephone (404) 620-2200.

SPOT Digital Terrain Models

Digital Terrain Models derived from SPOT data are now available. The DTMs are comprised of 16 bit elevation data posted every 10 meters. A standard "full scene" DTM costs \$15,000, a quarter scene sells for \$10,000.

REMOTE SENSING IN THE DEPARTMENT OF GEOGRAPHY *
AT BOSTON UNIVERSITY

Contributed by Curtis E. Woodcock and Alan H. Strahler

Remote sensing in Geography includes active programs in both teaching and research. Emphasis is placed on the use of remote sensing to study physical processes and phenomena. The approach to remote sensing that is advocated is to understand the properties of the objects being sensed and their influence on the resulting remotely sensed signal. Primary topical emphasis is on remote sensing of vegetation, both terrestrial and aquatic. Additionally areas of research and teaching involve remote sensing of arid lands and factors pertinent to surface energy balance. Areas of particular expertise are modeling and digital image processing. An active geographic information system program complements the work in remote sensing.

Faculty and their Research Interests

Louis A. Scuderi, Assistant Professor. Dendrochronology, glaciation, volcanism, and paleoclimates; solar radiation and surface energy balance; geographic information systems and digital terrain analysis.

Alan H. Strahler, Professor. Geometrical optical modeling of forest canopy reflectance, particularly directional reflectance effects; radiative transfer; digital image processing.

Curtis E. Woodcock, Associate Professor. Remote sensing of natural vegetation, particularly forests; spatial analysis in remote sensing, including texture analysis; reflectance modeling and topographic effects.

Charles S. Yentsch, Professor. Remote sensing of ocean color and productivity; optical properties of algae; geographic patterns of primary production in the oceans.

Current Funded Research Projects
Involving Remote Sensing

"Development, Application, and Operational Implementation of a Forest Inventory System Using Satellite Remote Sensing," Region 5, U.S. Forest Service, C.E. Woodcock, Principal Investigator, A.H. Strahler, Co-Investigator.

"GIS Technology on the Cape Cod National Seashore," C.H. Sham, Principal Investigator, C.E. Woodcock, Co-Investigator.

"Evaluation of the Use of Canopy Models for Mapping Old Growth," U.S. Forest Service, C.E. Woodcock, Principal Investigator, A.H. Strahler, Co-Investigator.

"Analysis of the Spatial and Temporal Variability of Primary Production in the Boston Harbor and Massachusetts Bay," Massachusetts Water Resources Authority, C. Yentsch, Principal Investigator, C.E. Woodcock, Co-Investigator.

"Mapping Spectral Directional Radiance, Spectral Directional Surface Radiance, and Spectral Bidirectional Reflectance Distribution Functions for Land Surface Covers Using MODIS-T," NASA, A.H. Strahler, Principal Investigator.

"Geometric Optical Discrete-Element Scene Modeling II," NASA, A.H. Strahler, Principal Investigator.

Academic Programs in Remote Sensing

Remote sensing is an important component of the curriculum in Geography at both the undergraduate and graduate level. There are currently twelve graduate students, including six PhD students, actively involved in the remote sensing program. Many of the graduate students in remote sensing are employed as research assistants (RAs) on the research projects listed above. RAs receive a stipend for the academic year of at least \$8200 and a full tuition waiver. The topics of many of the graduate students MA or PhD theses are directly related to these projects.

Remote Sensing Facilities

Image processing facilities are housed in the Department of Geography and Center for Remote Sensing and based on a networked Sun cluster of workstations. There are two Sun 4/280 file servers supporting 24 diskless workstations. The clients include four Sun 3/60G grey scale workstations, and 14 monochrome Sun 3/50 workstations. The Center also supports a Sun 3/160 workstation equipped with the International Imaging Systems Model 75 Image Processing System. Image processing software includes PCI EASI/PACE, Image Processor's

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*This article is the first in a series on remote sensing activities in academic departments. In each issue of the RSSG Newsletter we will focus on the faculty, instructional and research activities, and facilities of one institution. Persons wishing to contribute articles are asked to contact James Merchant (University of Nebraska-Lincoln), RSSG Newsletter Editor.

Boston University (Continued from page 5)

Workbench, and IIS System 600. Geographical Information Systems software includes ARC/INFO, GRASS 3.1, ROOTS, and ODYSSEY. This equipment is located in offices or one of three labs: the Image Analysis Lab, the GIS Lab, and the Remote Sensing Research Lab.

The Center's other computing facilities include a Sun 386i Workstation and Matrix QCR camera housed in the Computer Graphics Lab at Information Technology. Also available at the Computer Graphics Lab is a twenty-four bit color Tektronics printer for hardcopy outputs. Peripherals housed within the Center includes two digitizing tables, a Shinko thermal printer, and a 512 by 512 Matrix camera.

The Center for Remote Sensing owns and maintains sensors and other equipment for use in field surveys. A Spectron SE 590 Spectral Radiometer is a silicon CCD sensor with 256 bands in the spectral range .4 μ to 1.1 μ . Also available are a multispectral camera, ground penetrating radar, proton magnetometer, and an electromagnetic conductivity meter.

<u>Geography Courses in Remote Sensing</u>	<u>Level</u>
CLA GG301 Air Photo Interpretation	undergraduate
CLA GG302 Introduction to Remote Sensing	undergraduate
GRS GG502 Advanced Remote Sensing	both
GRS GG640 Digital Image Processing	graduate
GRS GG645 Physical Models in Remote Sensing	graduate
GRS GG648 Remote Sensing of Vegetation	graduate
GRS GG840 Remote Sensing of Oceans	graduate
GRS GG841 Seminar in Remote Sensing: EOS	graduate

Related Geography Courses

CLA GG513 Computer Applications in Cartography	both
CLA GG504 Physical Climatology	both
GRS GG740 Geographic Information Systems	graduate
GRS GG845 Seminar in Geographic Information Systems	graduate

For more information write to:

Caroline de Bourbon
Graduate Secretary
Department of Geography
675 Commonwealth Ave.
Boston, MA 02215



AAG/CAG ASSOCIATE MEMBERSHIPS

An agreement for offering associate membership in the AAG to members of the Canadian Association of Geographers living in Canada, and associate membership in CAG to AAG members living in the U.S. has just been ratified. Anthony Lea, Chair of the AAG/CAG Liaison Committee, has asked specialty groups for ideas on ways in which AAG could be made especially attractive to Canadian geographers. Special sessions having a Canadian theme, invited papers by Canadian geographers, or joint presentations are possible ventures of interest. For additional details contact:

Dr. Anthony C. Lea
Department of Geography
Ryerson Polytechnical Institute
350 Victoria Street
Toronto, Ontario
CANADA M5B 2K3

Telephone: (416) 979-5038

AVHRR (Continued from page 3)

have been geocoded, resampled to one kilometer, and mosaicked to produce a stereographic projection of the entire continent. The AVHRR mosaic will be reproduced in National Geographic's new world atlas scheduled for publication this Fall.

ERIM can provide limited quantities of the full North America mosaic and individual data subsets of states and regions in either digital or photographic form. Discounts are available on multiple copies.

Available products include color prints (1:80,000,000 - \$100; 1:10,000,000 - \$500); digital file (bands 1 and 2 - \$1000); individual states (1: 10,000,000 - \$800; 1:2,500,000 - \$1000). A complete list of products and prices and additional information can be obtained from Larry Reed, ERIM, P.O. Box 8618, Ann Arbor, MI 48107-8618; telephone (313) 994-1200/ext. 3606).

GEOCARTO SOLICITS PROJECT IGC IDEAS

To mark the 27th International Geographical Congress being held in Washington, D.C. during August 1992, Geocarto International is planning to publish a selection of monographs and books on topics of international interest. RSSG members are encouraged to submit project proposals. For additional details contact:

K.N. Au
Geocarto International Centre
G.P.O. Box 4122
Hong Kong

Telephone (852) 546-4262
FAX: (852) 559-3419

For information on the 27th International Geographical Congress, contact:

Anthony R. de Souza
1145 17th Street, NW
Washington, D.C. 20036

Telephone: (202) 828-6688

ISPRS PROGRAM PARTICIPATION

The International Society for Photogrammetry and Remote Sensing (ISPRS) will convene its XVII Congress in Washington, D.C. August 2-14, 1992. Papers and poster proposals are now being accepted. Abstracts are due on November 30, 1991 and manuscripts must be submitted by May 15, 1992. For additional information on the technical program contact:

Lawrence W. Fritz
GE Aerospace
P.O. Box 8048-10A26
Philadelphia, PA 19101

Telephone: (215) 531-3205
FAX: (215) 962-3698

For information on registration, commercial or non-commercial exhibits and other matters contact:

XVII ISPRS Secretariat
P.O. Box 7147
Reston, VA 22091

NEW PUBLICATIONS

America's Earth Observing Industry

RSSG member Stanley A. Morain (University of New Mexico) and Pitt G. Thome (Center for Space and Advanced Technology) have recently authored America's Earth Observing Industry: Perspectives on Commercial Remote Sensing. The authors trace the history of the U.S. earth observing satellite program from ERTS to EOSAT, assess U.S. government involvements in remote sensing, analyze the current international remote sensing situation, and evaluate prospects for commercial ventures. The book is available for \$15.00 from the Geocarto International Centre, G.P.O. 4122, Hong Kong.

Remote Sensing Textbooks Reviewed

The Education Committee of the American Society for Photogrammetry

and Remote Sensing (ASPRS) has sponsored the preparation of an Annotated Bibliography of Textbooks for Remote Sensing Educators authored by Daniel Civco (University of Connecticut). The publication is available from ASPRS, 5410 Grosvenor Lane, Suite 210, Bethesda, MD 20814-2160; telephone (301) 493-0208. The report sells for \$15.00 for ASPRS members and \$25.00 for others.

Other activities of the ASPRS Education Committee include projects to survey remote sensing curricula, inventory audiovisual materials, and review image processing software suitable for educational use. Additional details can be obtained from:

Dr. Daniel Civco
Department of Natural Resources
College of Agriculture
University of Connecticut
1376 Storrs Road
Storrs, CT 06269-4087

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