RSSG Newsletter Association of American Geographers Remote Sensing Specialty Group February 1994 Volume 15 Number 1

From the Chair

Now is a good time to make your plans for the Annual Meeting in San Francisco if you haven't already done so. We will be honoring colleagues with awards, installing new officers, renewing acquaintances, and enjoying a beautiful city.

In order to install new officers, we need your vote! Look for the *ballot on page 9* in this issue. I also need your input regarding agenda items for the business meeting to be held Friday, April 1 at 7:00 pm. A preliminary agenda is provided here. To add other topics, call me.

- 1. Welcome and introductions
- 2. Secretary/Treasurer's Reports
- 3. Report on RSSG Program
- 4. RSSG Newsletter Editor's Report
- 5. Committee Reports
- 6. Regional Councilors Reports
- 7. Identification of Program Chair for 1994 meeting
- 8. Other business

I look forward to seeing you in San Francisco. Tina Cary, RSSG Chair Earth Observation Satellite Company 4300 Forbes Boulevard Lanham, MD 20706 Telephone: (301) 552-0542

Telephone: (301) 552-0542 FAX: (301) 552-5476

Son Francisco

1994 RSSG MEDAL RECIPIENTS ANNOUNCED

The Remote Sensing Medal is the highest honor conferred by the AAG Remote Sensing Specialty Group. The medal recognizes outstanding achievement in remote sensing by geographers. Past winners of this medal are the late Professors David Simonett and Ben Richason, Jr., and Professor Alan Strahler.

The RSSG Awards Committee is pleased to announce that the 1994 RSSG Remote Sensing Medal will be awarded to both Professor John E. Estes (University of California-Santa Barbara) and Professor John R. Jensen (University of South Carolina). Professors Estes and Jensen have made significant contributions to remote sensing science

Continued on page 2...Awards

1994 STUDENT PAPER AND POSTER COMPETITION

The Remote Sensing Specialty Group (RSSG) of the AAG announces a competition for students presenting remote sensing papers or posters at the AAG Annual Meeting in San Francisco, CA. Book awards for the three best papers or posters, valued at up to \$150 for each book, are being provided by John Wiley & Sons, Inc. Cash prizes from RSSG funds are also a strong possibility. The Student Awards Committee of the Remote Sensing Specialty Group will oversee the competition. Evaluation will be based on the significance of the research and the

Continued on page 2...Students

Awards...Continued from page 1.

and have provided important leadership in geographic remote sensing over the past twenty-five years. Respectfully submitted by the RSSG Awards Committee:

Kamlesh Lulla, Chair NASA/Johnson Space Center Mail Code SN5 Houston, TX 77058

Tel: 713/483-5159; Fax: 713/483-2911

Michael Hodgson
Department of Geography
University of Colorado
Boulder, CO 80309

Tel: 303/492-8312; Fax: 303/492-7501

Ray Lougeay
Department of Geography
State University of New York at Geneseo
Geneseo, NY 14454

Tel: 716/245-5571; Fax: 716/245-5005

Students...Continued from page 1.

quality of the presentation. To be eligible for the 1994 RSSG student paper/poster competition, students must be on the program for the 1994 AAG Annual Meeting, present their work in San Francisco, and enter the competition by March 21st, 1994. The student must be either the sole author or first author for the paper or poster. To enter the 1994 RSSG competition, send a copy of your abstract and a note indicating the day and time for your session to John Harrington (Indiana State University).

Information concerning the specific criteria used in paper/poster evaluation will be sent to students who enter the competition. For additional information or to enter the competition contact:

John Harrington, Jr.
RSSG Student Awards Committee, Chair
Department of Geography & Geology
Indiana State University
Terre Haute, IN 47809
E-mail to GEJAHJR @SCIFAC.INDST.EDU

nu i garni i famu i garni barkitanik i fi karisan afarasa sakarak

FAX: (812) 237-8029 Telephone: (812) 237-2252

SAN FRANCISCO SESSIONS TO FOCUS ON NSF EQUIPMENT GRANTS

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The National Science Foundation provides matching grants of up to \$100,000 for laboratory and field equipment (including computers) through the Instrumentation and Laboratory Improvement (ILI) Program of the Division of Undergraduate Education. Many projects have been funded in geography for curriculum initiatives in geographic techniques for GIS, cartography, remote sensing, spatial statistics, field courses, and laboratories in physical geography. In the interest of increasing the quantity and quality of proposals submitted by geographers, two special sessions on the ILI program have been scheduled in San Francisco. They are scheduled for Thursday, March 31st, at 1:30 PM and 3:25 PM respectively.

The first session will include papers by Susan Macey

(Southwest Texas State University), John Wilson (Montana State University), William Gribb (University of Wyoming), and Kenneth Foote (University of Texas at Austin) on their recently funded ILI projects. The session at 3:25 PM will be a panel discussion on grant writing for the ILI. Panelists will include recipients of ILI grants and geographers who have served as reviewers for the program, including Kenneth Foote, William Gribb, Michael Hodgson (University of Colorado at Boulder), Piotr Jankowski (University of Idaho), Susan Macey, Ruth Shirey (Indiana University of Pennsylvania), and John Wilson. After short presentations by the panelists on key elements of the ILI proposal, sample proposals will be distributed, reviewed, and discussed by the panelists and attendees.

For further information about the sessions, please contact Kenneth Foote at the University of Texas: Office: (512) 471-5116; FAX: (512) 471-5049; Internet: geail53@utxvm.cc.utexas.edu

HONORS AND AWARDS

M. Duane Nellis (Kansas State University) was recently named a Distinguished Lecturer by the Kansas Academy of Science. Three Kansas scientists are recognized by the Academy each year. In January 1994 Duane was appointed Associate Dean of the College of Arts and Sciences at Kansas State University (KSU). He had previously served as Head of the KSU Department of Geography for seven years.

Thomas R. Loveland (USGS/EROS Data Center) has been named the 1994 Mendenhall Lecturer by the U.S. Geological Survey (USGS). This award, presented annually to a single individual, is the most prestigious research honor given by the USGS. The tribute recognizes Tom's leadership and research contributions in the use of satellite remote sensing for land cover characterization. As the 1994 Mendenhall Lecturer, Tom will present a series of seminars on his work at USGS facilities throughout the U.S.



■From the Editor's Desk:



This issue of the RSSG Newsletter bears the designation Volume 15, Number 1. I am initiating assignment of annual volume numbers in order to put the newsletter on a bit more formal schedule. According to my records, Volume 1 of the RSSG Newsletter was issued in 1980. Thus, I arrived at Volume 15 for 1994. We have traditionally published three issues per year, a practice I plan to continue unless demand warrants reconsideration. This number of issues allows us to stay within our budget, but also makes sense in terms of the annual calendar of RSSG business. The major emphases of each issue are outlined below. Other contributions, are, of course, always welcome and encouraged. Dates in parentheses represent deadlines. Issue #1 - February (January 15)

Annual RSSG business meeting agenda; elections; announcements regarding the annual AAG meeting Issue # 2 - June (May 15)

Call for participation in the annual meeting of AAG; RSSG business meeting report; awards Issue # 3 - October (September 30)

Preliminary program for AAG annual meeting; call for nominations for RSSG offices

If it is necessary to make future changes in this schedule, an announcement will be published in the newsletter.

Jim Merchant, Editor

NASA GRADUATE STUDENT FELLOWSHIPS IN GLOBAL CHANGE RESEARCH

NASA has announced graduate student training fellowships for persons pursuing a Ph.D. degree in aspects of global change research. These fellowships will be available for the 1994/1995 academic year. The purpose is to ensure a continued supply of high-quality scientists to support rapid growth in the study of Earth as a system. Over 200 fellowships have been awarded since the inception of the program in 1990. Up to 50 new fellowships will be awarded each year, subject to availability of funds.

Applications will be considered for research on climate and hydrologic systems, ecological systems and dynamics, biogeochemical dynamics, solid Earth processes, human interactions, solar influences, and data and information systems. Atmospheric chemistry and physics, ocean biology and physics, ecosystem dynamics, hydrology, cryospheric processes, geology, and geophysics are all acceptable areas of research, provided that the specific research topic is relevant to NASA's global change research efforts including the Earth Observing System, the Tropical Rainfall Measurement Mission, and Mission to Planet Earth.

Awards are made initially for one year and may be renewed annually, usually no more than two times, based on satisfactory progress as reflected in academic performance and evaluations by the faculty advisor. The amount of award is \$20,000/annum, which may be used to defray living and educational expenses, tuition, and fees. A further amount of \$2,000 is available by request for the faculty advisor's use in support of the student's research.

Students admitted to or already enrolled in a full-time Ph.D. program at accredited U.S. universities are eligible to apply. Students may enter the program at any time during their graduate work. Students may also apply in their senior year prior to receiving their baccalaureate degree, but must be admitted and enrolled in a Ph.D. program at a U.S. university at the time of the award. An individual accepting this award may not concurrently receive other Federal funds, including funds from other Federal



GEO-POSITIONING SELECTION GUIDE

The U.S. Bureau of Land Management has recently published an excellent 64-page booklet entitled The Geo-Positioning Selection Guide for Resource Management (BLM Technical Note 389) by John B. Keating, Jr. (September 1993). The booklet includes an accompanying poster that summarizes critical characteristics of remote sensing and GIS-related systems. The report is an up-to-date, non-technical volume geared towards users of GIS and remote sensing data. Major sections cover terrestrial positioning systems, cartographic reference systems, aerial photography and orthophotography, satellite remote sensing (e.g., Landsat, SPOT) and other satellite positioning systems (e.g., ARGOS, GPS). A glossary and list of acronyms complete the volume. To request a copy of this outstanding report contact:

U.S. Bureau of Land Management BLM/PMDS SC 657B, Building 41 Denver Federal Center Denver, CO 80225-0045 Phone: (303) 236-1975

FAX: (303) 236-0845

MODIS POSTER

A poster sumarizing the major characteristics and mission of the Moderate Resolution Imaging Spectrometer (MODIS) has recently been published by the Hughes Santa Barbara Research Center. MODIS is an instrument to be carried onboard the NASA/Earth Observing System (EOS). To obtain a free copy contact:

Hughes Santa Barbara Research Center 75 Coromar Drive Goleta, CA 93117 Telephone: (805) 968-3511

ERIM 1994 CALENDAR

The Environmental Research Institute of Michigan (ERIM) has, once again, prepared a wonderful full-color calendar presenting satellite images from around the globe. One of the best to date, the 1994 calendar focusses on the theme of "CHANGE." Each image is fully described, and scene dates and image processing methods are provided. The calendar is a great educational resource. While supplies last, free copies can be obtained from:

Environmental Research Institute of Michigan P.O. Box 134001

Ann Arbor, MI 48113-4001

Telephone: (313) 994-1200, ext. 3320

FAX: (313) 994-1575

EOSAT PUBLISHES 1994 CALENDAR/DATEBOOK

The Earth Observation Satellite Company has published its 1994 calendar/datebook containing full-color Landsat images. The cover presents a Landsat-radar comparison of the 1993 flooding near St. Louis, MO. Inside, readers will find a dozen other images in various band combinations. Each image is fully described. To obtain a copy contact:

Earth Observation Satellite Company 4300 Forbes Boulevard Lanham, MD 20706-9954 Telephone: (800) 344-9933

FAX: (301) 552-3762

SATELLITE IMAGE MAPS

The U.S. Geological Survey (USGS) has a variety of Landsat image maps and other inexpensive remotely-sensed images, most costing \$2.50 - \$6.00. Request a list of available image maps from:

U.S. Geological Survey Map Distribution P.O. Box 25286

Denver, CO 80225

Telephone: 1-800-USA-MAPS

THE GLOBAL CHANGE MASTER DIRECTORY

The Global Change Master Directory (GCMD) is a multidisciplinary on-line information system containing descriptions of Earth and space science data holdings available to the science community. These include data from NASA, NOAA, NCAR, USGS, DOE (CDIAC), EPA, NSF and other U.S. agencies, universities, research centers as well as international agencies. The database contains over 2,200 entries with a majority being Earth science related. The GCMD has been adopted by the Interagency Working Group on Data Management for Global Change (IWGDMGC) as a centralized directory to facilitate global change research. The GCMD is also an international directory developed under the guidance of the Committee on Earth Observing Satellites (CEOS) with nodes in the U.S. (NASA/Goddard Space Flight Center), Italy (Earthnet Program Office), Japan (National Space Development Agency), and in Canada (Canadian Centre for Remote Sensing).

The GCMD contains high level descriptions of data sets and provides mechanisms for retrieving the information by way of geographic and temporal coverage, parameters, spacecraft, sensor, investigator, and archive information. In some cases, descriptions will offer more detailed information. including the data itself, at a remote site external to the system. Through the LINK command, an automatic connection will be created, connecting one directly to external systems for browsing and data ordering such as the National Space Science Data Center (NSSDC), NOAA National Climatic Data Center (NCDC), USGS/EROS Data Center, Earth Observation Center (Japan), and the European Space Information System (Italy). Future LINKS include the Earth Observing System Data and Information System (EOSDIS) and the Consortium for International Earth Science Information Network (CIESIN). The GCMD also contains supplemental information on data centers, campaign/projects, spacecraft, and sensors.

The GCMD has been operational for over four years and serves as an ideal tool for browsing and advertising data sets available to the science community. The GCMD staff consists of science



coordinators and system developers working together to describe data, develop the interface, and create LINKS with other directories and inventories. Information is exchanged every two weeks between the nodes so that the GCMD databases are up to date. The locations of the four nodes has made it possible for the GCMD to be viewed throughout the world, while allowing the user to access high-level data descriptions down to the data granule level. Essentially, the GCMD has evolved as hub of data management activities nationally and internationally. The science coordinators are continually interacting with scientists, data managers, and data system personnel to survey, identify, and describe public domain data. They are also active in attending interagency and scientific meetings, conferences, and seminars to stay abreast of current and future data activities. Data system developers are continually making upgrades to the interface while also assisting developers worldwide in generating and upgrading their directory and inventory systems. The NEW and improved GCMD Version II featuring JAM, a window interface offering a reduced number of screens and menus and faster response, is now available to users.

GCMD documentation is available via FTP at NSSDCA.GSFC.NASA.GOV by accessing the MD_DOC directory. The GCMD also resides on a VAX 9410 computer at the National Space Science Data Center (NSSDC), NASA Goddard Space Flight Center in Greenbelt, Maryland. It can be accessed via Direct Dial, NSI/DECnet (old SPAN system),

Continued on psge 8...Directory

INDIANA STATE UNIVERSITY REMOTE SENSING LABORATORY (ISURSL)

Department of Geography and Geology, Indiana State University

The Indiana State University Remote Sensing Laboratory (ISURSL) was formally established within the Department of Geography & Geology in 1974. Guided by Dr. Paul Mausel, the initial focus was on computer analysis of remotely sensed data acquired from sensors on-board satellites and airplanes. Throughout the past two decades, remote sensing and related technologies have flourished at

Indiana State University. In contributing to the University's teaching mission, ISURSL has expanded to become a program which includes approximately 20 courses in remote sensing, GIS, and computer cartography taught by over 10 faculty. About 25-30 graduate students pursuing degrees utilizing remote sensing and related technologies are in residence each year; a vast majority are funded.

The remote sensing, GIS, and computer cartography facilities at ISURSL are among the best in the nation. Funds provided by a maintenance and operations budget (ISURSL is a standard line item in the University budget) help maintain state-of-the-art facilities. Current hardware includes: IBM and DEC mainframe computers, a DEC minicomputer, DEC 3100 and SUN workstations, and numerous PC/AT and MAC II/QUADRA

microcomputers interfaced with several large digitizers, plotters, and color printers. ISURSL has sophisticated software for all types of applied and basic research projects. Remote sensing (digital image interpretation) software include: ERDAS (4 systems), MULTISPEC, LARSFRIS, MICROMSI, and MATROX programs used in video remote sensing. In the GIS, AM/FM, and CAD areas, a variety of PC and mainframe-based software is available for research projects, technology transfer, or contract activities (e.g., ARC/INFO, pcARC/INFO, SPANS, IDRISI, EPPL7, ERDAS, Electronic Data Systems GDS, ATLAS*GIS, TRANSCAD, AUTOCAD, VERSACAD, and the GEOGRAPHIX EXPLORATION SYSTEM).

Research and graduate education are major concerns that have guided ISURSL activities. ISURSL faculty and students have been awarded and successfully completed numerous grants and contracts from federal and state agencies. Among the granting agencies are EPA, NSF, DOE NIGEC, USAID, USDA, National Park Service, Forest Service, NASA, Stennis Space Center, DOE Oak Ridge National Lab, Indiana State Planning Service Agency, Indiana Dept. of Transportation, Indiana University, and several regional planning agencies. Collectively, the faculty and graduate students of ISURSL have published more than 150 articles, books, and chapters in books dealing with remote sensing and GIS during the past decade. Among the major journals which have published ISURSL research are Photogrammetric Engineering and Remote Sensing, International Journal of Remote Sensing, Remote Sensing of Environment, and Geocarto International.

Recent projects which involved remote sensing and/or GIS include:

1) an inventory and analysis of vegetation changes in central Africa (1973-1987) to provide data for modelling the global carbon budget;

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- 2) an inventory and analysis of coastal zone land cover and topography for 92 US sites -- these data are used in EPA models which predict the impact of rising sea level on coastal environments;
- 3) creating digital data bases for the Indiana Dunes National Lakeshore;
- 4) evaluation of lawn quality and GIS approaches to facilitate identification of land owners with lawn quality problems;
- 5) examining land cover changes in the Amazon Basin of South America using combined remote sensing and GIS methods;
- 6) assessment of remote sensing data for identification of wetlands in Delaware County, IN;
- 7) mapping the geographic variations in suspended sediment levels in water bodies using both GIS and remote sensing methods;
- 8) GIS modeling of the exponential expansion of smooth cordgrass in the intertidal zone of Willapa Bay, Washington;
- 9) use of remote sensing and GIS for inputs to hydrological and limnological modeling of Oklahoma watersheds and reservoirs;
- 10) evaluation of video remote sensing for soils assessment in Indiana.

Dr. John Harrington, Jr., a geographer with interests in both remote sensing and GIS, serves as the current director of ISURSL. Other faculty affiliated with ISURSL are:

Dr. Susan Berta (Geography/Remote Sensing-GIS)

Dr. William Brooks (Geography/Computer Cartography)

Dr. Walter Carnahan (Physics/Remote Sensing)

Dr. Mark Cowell (Geography/GIS-Computer Cartography)

Dr. William Dando (Geography/Remote Sensing)

Dr. Shan de Silva (Geology/Remote Sensing)

Dr. Robert Howe (Geology/Remote Sensing-GIS)

Dr. David Leboutillier (Geography/GIS)

Dr. Robert Larson (Urban-Regional/GIS)

Dr. Paul Mausel (Geography/Remote Sensing-GIS)

Dr. Nancy Obermeyer (Geography/GIS)

For more information about ISURSL, our research activities, or our graduate educational offerings, please contact Dr. John Harrington, Director or Dr. Paul Mausel at (812) 237-2444.

Address mail to: John Harrington, ISURSL Director

Department of Geography Indiana State University Terre Haute, IN 47809

E-mail address: GEJAHJR @ SCIFAC.INDST.EDU

FAX: (812) 237-8029

Editor's Note: This article is one of a series on firms, agencies and educational institutions in which geographers are engaged in remote sensing and related activities. <u>RSSG Newsletter</u> readers are invited to send articles for this series to the editor, James Merchant (University of Nebraska-Lincoln).

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fellowships, trainee-ships, or employment. United States citizens and resident aliens will be given preference, although the program is not restricted to them. Proposals will be judged by NASA Headquarters on a competitive basis. Criteria for selection include: (a) academic excellence as based on transcripts and a letter of reference by student's academic advisor; (b) the quality of the proposed research for students already in graduate school; and (c) the relevance of the proposed research to NASA's role in the U.S. Global Change Research Program (Mission to Planet Earth). Selection panels will include representation from the academic community. NASA's Office of Mission to Planet Earth and Education Division, and professional societies in the Earth sciences.

Applicants are required to make available: (a) a completed application form; (b) a titled five-page research proposal for those already enrolled in a program of study or a statement of research interest for those entering graduate school; (c) a short abstract (one-half page) summary describing the proposed research (if you one is already enrolled in graduate school) or proposed research interests (if one is not yet enrolled); (d) copies of undergraduate and graduate transcripts; (3) a letter of reference from the academic advisor; and (f) a schedule stating your proposed start date and completion date of your plan of study and/or research program. One original and seven (7) copies of the application form, proposal, transcript, and letter of reference should be forwarded as a package to the following address. It is the student's responsibility to ensure that these documents are received at NASA Headquarters by the April 1, 1994 deadline. Applications not submitted and complete by April 1 will not be considered in the selection process. Results of the competition will be announced June 30 of each year. with anticipated starting date of awarded fellowships to be September 1. Materials should be sent to:

NASA Global Change Fellowship Program Code YSP-44 NASA Headquarters Washington, DC 20546 INTERNET, and PINET.

For assistance, you may contact the GCMD User Support Office at (301) 441-4299, or by email: NSI/DECnet > NCF::MDUSO or on INTERNET > MDUSO@NSSDCA.GSFC.NASA.GOV.

To access to the U.S. node:

NSI/DECnet > \$Set Host NSSDCA USERNAME: NSSDC

INTERNET > \$TELNET 128.183.36.23 USERNAME: NSSDC

If you are interested in listing data sets in the GCMD, please contact:

John Scialdone
Atmospheric Science Coordinator
Hughes-STX Corporation
7701 Greenbelt Road
Suite 400
Greenbelt, MD 20770
Telephone: (301) 441-4214

Telephone: (301) 441-4214 FAX: (301) 441-9486

INTERNET:SCIALDONE@NSSDCA.GSFC.NASA.

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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, academic programs, research activities, commercial ventures, students, jobs and other announcements to:

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

FAX: (402) 472-2410

Internet: jm1000@burn.unl.edu

If possible, please submit contributions on a disk in Wordperfect or ASCII format.

GRADUATE RESEARCH ASSISTANTSHIPS AT THE UNIVERSITY OF NEBRASKA-LINCOLN

Graduate Research Assistantships (M.S. and Ph.D.). Two assistantships available (subject to funding). Projects include: (1) study of landscape pattern and biodiversity in the central Platte River region of Nebraska. Experience in a combination of wildlife surveys, GIS and remote sensing desirable. Start date 1 May 1994. (2) Study of white-tailed deer movements in relation to landscape structure. Skills in modeling, GIS and remote sensing. Start date negotiable. Assistantships include stipends (ca. \$9,500 MS and \$11,000 Ph.D.), tuition and field costs. Review begins 15 March 1994. Send letter, resume, transcripts and addresses and phone number of at least 3 references

Research Technician. One year full-time position (renewable subject to funding) to work in natural resources management using GIS and remote sensing. One to two years experience in GIS/Remote Sensing, or M.S. in geography or related field, background in ARC/INFO, GRASS, and ERDAS in UNIX workstation environment. Programming experience also desirable. Must be able to work independently and as part of a team. Send letter, resume, transcripts and addresses and phone numbers of three references.

For additional details or to apply contact:

Dr. Dennis E. Jelinski (jelinski@unl.edu), Department of Forestry, Fisheries and Wildlife, University of Nebraska-Lincoln, Lincoln, NE 68583. Phone: (402)472-9684. Fax: (402)472-2964.

AAG/Remote Sensing Specialty Group

BALLOT

Instructions: Please mark your choice of candidates for the offices listed below. Only current members of the AAG and RSSG are eligible to vote. If a write-in vote is cast, the person whose name is entered must be an AAG/RSSG member and must be willing to serve. The deadline for voting is March 22, 1994. Vice-Chair (1994-96) Kevin Price, University of Kansas ---Secretary/Treasurer (1994-96) Doug Ramsey, Utah State University Director (1994-96) Douglas Goodin, Kansas State University Mike Hodgson, University of Colorado Student Director (1994-95) Rolland Fraser, University of Nebraska-Lincoln Brad Rundquist, Kansas State University

Voting member's signature:

Mail by March 22, 1994 to:

Tina Cary, RSSG Chair
Earth Observation Satellite Company
4300 Forbes Boulevard
Lanham, MD 20706
Telephone (201) 552 0542

Telephone: (301) 552-0542 FAX: (301) 552-5476



RSSG Newsletter

c/o James W. Merchant Conservation and Survey Division University of Nebraska-Lincoln 113 Nebraska Hall Lincoln, NE 68588-0517