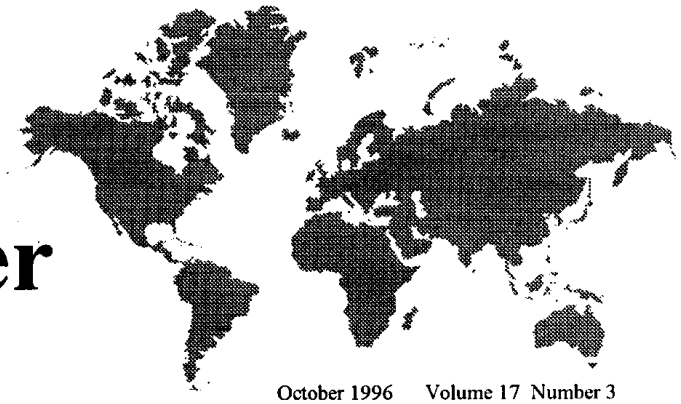
RSSG Newsletter

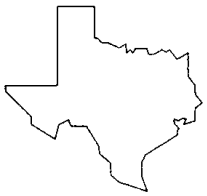


Remote Sensing Specialty Group
Association of American Geographers

October 1996 Volume 17 Number 3

From the Chair

The Remote Sensing Specialty Group is pleased to be sponsoring 10 sessions at our next Association of American Geographer's (AAG) annual meetings. My non-geographer colleagues are often surprised to learn that so many remote sensing papers are presented at AAG meetings. As you know, we are entering an era when many new remote sensing systems will be providing data for a variety of applications. With about 50 new sensors being deployed in the next 10 years, there will be an increased demand for basic and applied remote sensing research, education, and experts. I believe the RSSG needs to consider how to best prepare for the upcoming opportunities and challenges associated with this new era. What do you think we should be doing as an organizations to best prepared for the future? We have not yet set the agenda for the upcoming AAG meetings in Texas. Please let me know if you have a topic that you wish to have the group discuss at the annual meetings. My phone number is (913) 864-7723 and my e-mail address is k-price@ukans.edu. I hope to hear from you and meet you at AAG this spring.



Best wishes,

Kevin Price

AAG 93rd Annual Meeting
Ft. Worth, Texas
April 1-5, 1997

RSSG PRELIMINARY PROGRAM
See pages 2-4

Mark Jakubauskas, 1997 RSSG Program Chair
Department of Geography
100 E. Boyd Street, Rm. 634
University of Oklahoma
Norman, OK 73019
Phone: (405) 325-4319
FAX: (405) 325-3148
email: jakubaus@uoknor.edu

Opportunities for Students

Presenting a poster at the Fort Worth AAG meeting this spring? Know someone who is? Then let them know they are eligible to be in the first student poster competition that any specialty group has sponsored. Co-sponsoring this competition are the Remote Sensing Specialty Group and the GIS Specialty Group. To be eligible it is expected that the student is the sole or first author of the poster, has performed the bulk of the research involved and is the primary person responsible for construction and design of the poster. Any student in the competition is also

Continued on page 6...Students

AAG 93rd Annual Meeting
Ft. Worth, Texas
April 1-5, 1997

RSSG PRELIMINARY PROGRAM

Workshops:

Digital Image Processing: J. Olsenholler, CIESIN and M. Jakubauskas, University of Oklahoma

Microwave Remote Sensing: D. Lusch, Michigan State University

Field trips:

Natural Resources Conservation Service Remote Sensing/GIS Laboratory, Ft. Worth
D. Lusch, Michigan State University

Paper Sessions:

Session: Multitemporal Remote Sensing
Organizer: Mark Jakubauskas, University of Oklahoma
Chair: Randall Repic, University of Michigan-Flint

S. Egbert, University of Kansas
Mapping Conservation Reserve Program lands using multitemporal Thematic Mapper imagery

M. Micozzi, University of Oklahoma
The phenological variability between montane meadows and the natural environment: A case study: Gallatin National Forest, Montana

M. Jakubauskas, University of Oklahoma
Phenological dynamics of sagebrush communities in multitemporal IRS satellite imagery.

J. Dunham, University of Kansas
Seasonal multispectral responses of tallgrass prairie under different management practices

Session: Commercialization of Remote Sensing
Organizers: Kevin P. Price, University of Kansas and Mark Jakubauskas, University of Oklahoma
Chair: Kevin P. Price, University of Kansas

K. Price, University of Kansas
A model for developing and transferring remote sensing technologies and products to the commercial sector

B. Davis, NASA Stennis Space Center
The NASA Visiting Investigator-Affiliate Program

J. Jensen, University of South Carolina
The NASA Visiting Investigator Affiliate Program at South Carolina

J. Estes, University of California-Santa Barbara
Perspectives on Commercialization of Remote Sensing

Session: Environmental Remote Sensing I
Organizer: Mark Jakubauskas, University of Oklahoma
Chair: Barry Haack, George Mason University

D. Quattrochi, NASA-Marshall Space Center
Characterization of surface energy fluxes in a Great Basin desert valley using satellite remote sensing and in situ data

T. Warner, University of W. Virginia
Geobotanical remote sensing of hydrocarbon microseeps in West Virginia

L. Han, University of Alabama
Spectral reflectance with varying SSC in pure and algae-laden waters

Continued on page 3...AAG

AAG...Continued from page 2.

R. Repic, University of Michigan-Flint
Water quality investigation using video remote sensing

C. Chang, University of Oklahoma
Modeling of vegetation pattern changes using satellite data for the Wichita Mountains area

Session: Remote Sensing for Change Detection
Organizer: Mark Jakubauskas, University of Oklahoma
Chair: Phil Townshend, University of North Carolina

L. Harrington, Kansas State University
Vegetation change in the Mount St. Helens blast zone, 1980-1992

M. Dickens, University of Oklahoma
Assessing landscape composition and pattern dynamics in southeastern Oklahoma forests using Landsat MSS and TM data

J. Hipple, University of Utah
The impact of land cover change on urban residential bird communities assessed via multidate TM imagery

B. Gibson, University of Oklahoma
Integrating MSS and TM satellite imagery for post-fire burn assessment of the 1988 Yellowstone North Fork Fire

Session: Environmental Remote Sensing II
Organizer: Mark Jakubauskas, University of Oklahoma
Chair: Merrill Ridd, University of Utah

M. Bishop, University of Nebraska-Omaha
Remote sensing and GIS in the Himalayas: The Nanga Parbat Project

R. Stough, University of Oklahoma
Mapping dominant vegetation communities in Grand Teton National Park using multitemporal satellite data

H. Wee, Rutgers University
Changing with time: Land cover monitoring of Middlesex County, New Jersey

S. McFeeters, University of Nebraska-Lincoln
Investigating mixed pixel classifications of wetland vegetation using hyperspectral reflectance

Session: Multisensor Data Analysis
Organizer: Mark Jakubauskas, University of Oklahoma
Chair: David Lusch, Michigan State University

B. Haack, George Mason University
Multisensor mapping of land cover/use in East Africa

W. Tyler, ERIM
Improved land cover classification using multispectral data and height data derived from interferometric synthetic aperture radar

K. Gallo, NOAA-NESDIS
Assessment of urban heat islands: A multi-sensor approach

J. Robinson, University of Oklahoma
Effect of pixel resolution on the estimation of drought severity in Oklahoma

W. Tanksley, University of Oklahoma
Comparing digitized aerial photographs and panchromatic satellite imagery for multispectral data enhancement

Session: Instructional Applications of Higher Resolution Digital Image Data
Organizer: Ray Lougeay, SUNY-Geneseo
Chair: Ray Lougeay, SUNY-Geneseo

P. Baumann, SUNY Oneonta
The arrival of high resolution digital imagery

R. Lougeay, SUNY-Geneseo
Seeking practical answers from the everyday environment

N. Hultquist
Viewing Oakland CA with PEDAGeOG using high resolution digital imagery

M.D. Nellis, Kansas State University
High resolution imagery for environmental assessment: Yellowstone National Park.

Continued on page 4...AAG

Session: Environmental Remote Sensing III
Organizer: Mark Jakubauskas, University of Oklahoma
Chair: Steven Egbert, University of Kansas

D. Ramsey, Utah State University
Developing standardized multi-scene Landsat mosaics for change detection and
ecosystem mapping

T. Van Niel, Utah State University
Comparison of land condition trends from ground and remotely-sensed data

K. Patraw, Utah State University
Modelling cover types using mulitseasonal remote sensing to compare ecotones

J. Tagestad, Utah State University
Using solar and digital elevation model ancillary data to increase classification accuracy of desert vegetation

K. Macey, Utah State University
Development of the Mojave Desert Ecosystem Intiative (MDEI) Internet Distribution Interface

Session: International Space Station Earth Observations-Remote Sensing Opportunities from the Human Spaceflight Programs
Organizer: Kam Lulla, NASA Johnson Space Center
Chair Kam Lulla, NASA Johnson Space Center

Paper/Panel Discussion:
Participants: Jack Estes, Kam Lulla, M. Duane Nellis, (TBA).

Session: Remote Sensing Techniques for Tropical Ecosystems
Organizer: Philip L. Keating, University of Miami
Chair: Jeffrey Colby, East Carolina University

Jeffrey Colby, East Carolina University
Topographic normalization and land cover classification in Costa Rica

Philip L. Keating, University of Miami
Remote sensing in the Ecuadorian Andes: The influence of anisotropic reflectance

Jane Read, Louisiana State University
Methods of land-cover change detection for the tropics using Landsat TM

Fernando R. Echavarria, University of Nebraska
A qualitative comparison of temperate and tropical forest fragmentation patterns using remotely sensed data

Session: Quantitative Biogeography
Organizer and Chair: Stephen Yool, University of Arizona

S. Yool, University of Arizona
A simple statistical technique for extraction of potential land cover information from AVHRR NDVI data

C. Wallace
Geostatistical analysis of Mojave Desert vegetation

J. Rogan, J.
Remote sensing and GIS techniques for fire effects mapping in southwest borderlands

M. Patterson
Use of remote sensing for analysis of fire habitats in the Chiricahua Mountains, Arizona

A. Taylor
Analysis of fire frequency in Lassen National Park

Poster Session

J. Olsenholler, CIESIN
New Asian Perspectives: Integrated remotely sensed, socioeconomic, and geophysical data

J. Giandinoto, University of Nebraska-Lincoln
Remote sensing of ephemeral wetlands in Nebraska's Rainwater Basin

K-12 Remote Sensing Curriculum: A Call for Information

I have agreed to coordinate information on K-12 curriculum in remote sensing for the specialty group. I will compile infomation and write an article for each issue of the newsletter, provided I have gathered sufficient material for an article. For the first article, I would like to find out what the issues and needs are for those interested in K-12 teaching. Please Email your concerns to me, and I will compile a discussion for the first article. I will also start the ball rolling by compiling a bibliography of articles from various journals. From my discussion with interested parties, itS seems that the most pressing need is for communication on the status of K-12 teaching, including course content and its relationship to the Core Curriculum for remote sensing, lab materials, and lab exercises. I intend to use the newsletter articles to act as a clearinghouse for information. Please send any concerns or information to me, for use in the article being planned for the next issue of the RSSG newsletter.

Charles Roberts
C_Robert@ACC.FAU.EDU
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Florida Atlantic University
777 Glades Road
P.O. Box 3091
Boca Raton, Florida 33431-0991
Phone: (407)367-3254

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@tan.unl.edu

If possible, please submit contributions on a disk or via e-mail in Wordperfect or ASCII format.

RSSG WWW HomePage Becomes Operational

The RSSG WWW HomePage is now operational at **http://www.ksu.edu/rssg/rssg.htm**
The homepage includes, or will eventually include, information on RSSG officers, members, links to remote sensing and earth science-related sites, and a message and announcements bulletin board. Most of these are still under construction. Suggestions about page design or contents are welcome. Contact:

Douglas Goodin
Department of Geography
Kansas State University
Manhattan, KS 66506-0801
Tel.: (913) 532-6727
Fax: (913) 532-7310
email: dgoodin@ksu.ksu.edu

Students...Continued from page 1.

encouraged to become a member of the RS or GIS specialty groups if not already a member. The main theme of the poster must deal with some topic of remote sensing and/or GIS. Posters should meet the qualifications as specified in the AAG Annual Meeting registration guidelines (see the May issue of the AAG newsletter for details). Posters will be judged on content with respect to the research topic, relevance to the advancement of remote sensing and/or GIS research, and quality of presentation (layout/graphic design/cartography). While not required, you may also want to provide a short handout summarizing the work presented in your poster. The student directors of the two groups along with one other representative of each group will serve as judges. Award money of $200 dollars will be divided as follows: $125 for first place and $75 for second place with a certificate of honorable mention awarded for third place. Winners will be announced and checks disbursed at the Awards Banquet during the AAG Annual Meeting. Results of the competition will be sent to the AAG, RSSG and GIS-SG newsletters.

If you wish to enter your poster in the competition, contact Jerry Griffith by March 1, 1997 and also send him a copy of your poster abstract by that date.

Something else for RSSG students to think about for the 1998 AAG meeting is setting up a separate session for both the RSSG poster and paper competitions. For the paper competition, this would involve sending papers in before the meeting date, with the top 5 papers or so selected for the final session; this is currently the format for the GIS Specialty Group's student paper competition. Let me know what you think. And if you wish to become active in the RSSG by becoming student director, you should be at the Fort Worth meeting with another member of the RSSG willing to nominate you at the RSSG business meeting.

Jerry Griffith, student director
Department of Geography
Kansas Applied Remote Sensing
University of Kansas
Lawrence, KS 66044
913-864-5543
fax:913-864-5378 (specify Geog. Dept.)
jag@falcon.cc.ukans.edu

AAG Student Paper Competition

Spurred on by '95-'96 AAG President Judy Olson's call for an increased emphasis on visual/poster presentations at the Annual Meetings, the Remote Sensing and GIS Specialty groups are sponsoring a student poster session at the 1997 Annual Meeting in Fort Worth. If you are a student presenting a poster (as the sole or first author) covering a topic on remote sensing and/or GIS, you are eligible to enter. Cash prizes and an honorable mention will be awarded to the top posters. For details, refer to the home pages of the Remote Sensing Specialty Group (http://www.ksu.edu/rssg/rssg.htm) or the RSSG-President'sPage (http://arc.kars.ukans.edu/rssg/rssg.html), or contact the student directors for more information:

Jerry Griffith (Remote Sensing)
Department of Geography
University of Kansas
Lawrence, KS 66044
jag@falcon.cc.ukans.edu
913-832-9914

Aileen Buckley (GIS)
Department of Geosciences
Oregon State University
Corvallis, OR 97333
aileen@heart.cor.epa.gov

WHAT'S NEW

Thematic Guide on the Use of Satellite Remote Sensing to Study the Human Dimensions of Global Environmental Change

The Consortium for International Earth Science Information Network (CIESIN) is pleased to announce the availability of its thematic guide titled The Use of Satellite Remote Sensing to Study the Human Dimensions of Global Environmental Change. This is the latest in a collection of thematic guides to key issues in the area of human dimensions of global environmental change published by CIESIN. The guide can be reached at the following universal resource locator (URL):

http://www.ciesin.org/TG/RS/RS-home.html

The purpose of this guide is to help you find selected key documents and data sets vital to understanding the use of satellite remote sensing to study the human dimensions of global environmental change. Satellite remote-sensing technology and the science associated with evaluation of its data offer potentially valuable information for assisting human dimensions research studies. This guide contains an overview and five subsections that offer in-depth information and on-line references for the following topics:

- Satellite Remote Sensing and Its Role in Global Change Research
- Uses of Satellite Image Data for Assisting Human Dimensions Studies of Global Environmental Change
- Satellite Sensors Useful for Human Dimensions Research
- Systems for Archiving, Managing, and Distributing Satellite Image Data
- Collections of Satellite Image Data Developed for Global Change Research with Utility for Human Dimensions Studies

For additional information about this thematic guide, contact User Services at ciesin.info@ciesin.org or call (517)797-2727 between 8 a.m. and 5 p.m. Monday through Friday.

Intelligence Satellite Photos Released

More than 300,000 satellite photographs collected by the U.S. intelligence community between 1960 and 1972 are now available from the U.S. Geological Survey (USGS). The Internet allows a browse through the entire collection on the World Wide Web (URL: http://edcwww.cr.usgs.gov/dclass/dclass.html). This collection adds more than a decade worth of records to the Landsat collection that has been available for civilian use since July 1972. One can compare images from the 1960's with today's images to see how our built environment and our natural systems such as lakes, rivers and streams, forests, grasslands, and other land cover have changed. The images do not only cover the United States but also much of the world.

The entire collection of more than 800,000 declassified photos is slated to incrementally reach USGS archives by the end of the summer of 1996. An online catalogue and image browse capability for the photo collection is accessible, at no charge, on the Internet through the U.S. Geological Survey's Global Land Information System (GLIS). For more information about Declassified Intelligence Satellite Photographs (DISP) and how to use the online GLIS catalogue for data searching refer to the World Wide Web DISP user guide at: URL: http://edcwww.cr.usgs.gov/glis/hyper/guide/disp

For technical information on Declassified Intelligence Satellite Photographs: contact: U.S. Geological Survey, EROS Data Center, Customer Services, Sioux Falls, SD 57198 Fax: Tel.: (605)594-5489
E-mail: custserv@edcmail.cr.usgs.gov

Conference on Satellite Applications

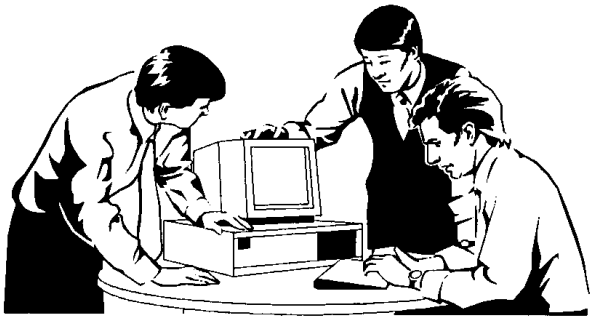
The National Oceanic and Atmospheric Administration (NOAA) has announced a **Conference on Satellite Applications** to be held March 4-6, 1997 in Asheville, NC. For more information contact:

Kay Metcalf
NOAA/NCDC
151 Patton Avenue
Asheville, NC 28801
fax: 704-271-4876
e-mail: kmetcalf@ncdc,noaa,gov

or check **http://www.ncdc.noaa.gov/**

Johns Hopkins Image Gallery

The Johns Hopkins University Applied Physics Laboratory has placed online a variety of NOAA satellite images of the United States. Scenes cover landforms, coastal views, clouds, snow and ice and other topics. Check the following URL: **http://fermi.jhuapl.edu/avhrr/**



Wild Blue and Yonder Improve Access to Space Shuttle Earth Observations Photography

by
John Cloud, Geography Department, University of California Santa Barbara, CA

Space Shuttle Earth Observations Photography (SSEOP), the Earth-looking photography shot from the space shuttles, is a diverse data set that rivals any other within the history of Earth systems science. Among non-classified data, SSEOP is uniquely phenomena-centered and captured by human decision, from which an interesting duality results; astronauts work hard to frame the photographs' composition, yet the visual patterning of the earthly phenomena that are captured within the photographs are relatively unfiltered. These photographs offer a uniquely oblique perspective among space-borne sensors, and examination of the photographs reveal significant clues to a vast array of meso-scaled Earth processes. As noted by Justin Wilkinson, Lockheed Engineering Sciences Corporation geomorphologist and astronaut instructor, the principal function of SSEOP is to stimulate new ideas.

Wild Blue and Yonder began as a project to access the first of the series of NASA SSEOP videodiscs (see SSEOP resources section for information about the videodiscs and related access tools). The videodiscs were a break-through in SSEOP history; for the first time, you could examine the full range of SSEOP imagery without being physically present at the SSEOP archives at Johnson Space Center (JSC) -- if you had access to the videodiscs. Of course, full SSEOP use still requires access to SSEOP film products, or high-resolution digital versions of the film. The videodisc frames, and their digital counterparts on the Imaging Services World Wide Web (WWW) page should be considered as aids to identifying appropriate photographs.

Major improvements in SSEOP access are underway. This article concentrates on two related SSEOP access software applications designed at the University of California at Santa Barbara (UCSB) by George Michaels, UCSB Office of Instructional Consultation (OIC), and the author. The OIC emphasizes "idiot-proof" customizations of robust commercial software, and the project proceeded along that direction. Wild Blue and Yonder were designed specifically to enhance access to SSEOP, but also represent a prototypical image access and management system that could be applied to other imagery archives.

Design philosophy

The experience of the SSEOP community at JSC demonstrated that it was important to look at many photographs, then concentrate more carefully on examination of rich subsets of the images. The process was envisioned as many iterations of a triad; querying the dataset, browsing the imagery set, and managing the images. Querying was performed using tools that afforded a variety of search strategies to better accommodate the great diversity of SSEOP images, and to help researchers evolve search routines that worked for them. Browsing was performed by technologies at least as fast as the image-scanning abilities of SSEOP users, to minimize or eliminate waiting for images to appear -- the bane of life on the Internet. managing was performed using tools that assist SSEOP users to cull images that don't fit their needs and flag those that do, to describe and recall images, to sort them and rank them, and in general manage them appropriately to the users' needs.

Continued on page 10...Wild Blue

Wild Blue...Continued from page 9.

Wild Blue

The query engine and digital image browsing application Wild Blue (Figure 1) is a customized version of ACI US' Fourth Dimension relational database management system. The Wild Blue dataset is based on the SSEOP mission catalogs. In anticipation of Wild Blue's use as an archival tool, the dataset contains all pre-shuttle NASA manned missions, beginning with the Mercury Program, and includes the catalog of the Skylab missions (1973-74) that may eventually be recognized as the "King Tut's tomb" of NASA's global change datasets.

SSEOP photographs have an associated attribute dataset that is simple but functional if approached correctly. Since the most common SSEOP search query is a search based on geographic location of the photographs, the query screen was designed to allow you to establish a latitude/longitude search box by mouse clicks on a world map (Figure 2). Wild Blue users can also use the 4D search editor for queries using robust boolean operations on all the SSEOP attribute fields (Figure 3). To speed the system throughout, commonly used fields of the dataset have been indexed to allow rapid response.

Information about photographs corresponding to query results is displayed by a special data template (Figure 4) that includes thumbnail and full-size versions of SSEOP scanned photographs when they are available. Virtually all SSEOP film is now being scanned at moderate resolution (756 by 486 pixels, 24 bit color), and subsets of the growing catalog are accessible on the Imaging Services server at JSC. Because the project began as a way to "drive" the new NASA videodiscs, the image management tools were placed on the multimedia driver Yonder.

Yonder

Wild Blue query results are outputted to Yonder, which is a customized Hypercard application. The Yonder cards control the videodisc player, and also contain an array of simple but effective image management tools. These include buttons to easily and quickly flag better and best images, and four user-defined fields that allow Yonder users to characterize SSEOP images by their own keywords or descriptors, and easily export enriched subsets of Yonder cards corresponding to SSEOP images tailored to user desires. The Wild Blue data set presently contains about 115 Megs of attribute data. An incidental byproduct of splitting the system between Wild Blue and Yonder is that even very large query results translate into easily transportable kilobytes on Yonder Hypercard stacks so that, armed with the NASA videodiscs and a few diskettes, you can access very rich subsets of SSEOP browsing images at a speed equivalent to viewing a 35-mm slide show.

The next iteration

Wild Blue and Yonder are presently stand alone applications. This project will continue to be developed for specific sites and local area networks as long as image data transmission speeds remain the rte-limiting steps of Internet access. The query mechanisms are relatively sophisticated compared to most WAIS servers, and you can flash through browsing images rapidly, and at your own control.

The next expansion of Wild Blue and Yonder is planned to coincide with an expansion of SSEOP's role at the premier NASA dataset. The original Apollo program and Skylab program film rolls are presently being transferred to archival film, and scanned as browsing images. It is anticipated that those images, once again accessible, may open a new chapter in global change research and education.

Continued on page 11...Wild Blue

Wild Blue...Continued from page 10.

SSEOP resources

Wild Blue and Yonder are in the process of being licensed by the Regents of the University of California. For information about obtaining them contact:

Dr. Stan Nicolson
Office of Instructional Consultation
1130 Kerr Hall, University of California
Santa Barbara, CA 93106-3200
Phone: 805-893-2378
Fax: 805-893-8373
stan@id.ucsb.edu

The SSEOP office at JSC Earth Sciences Branch maintains a WWW site with information about SSEOP and its activities, and thousands of down-loadable image files. You may access this information at:

http://ersaf.jsc.nasa.gov/sn5.html

To access an updated schedule of current space shuttle flights, their planned dates, orbital inclinations, and major payloads, use finger at:

news@sseop.jsc.nasa.gov

To access SSEOP mission catalogs from the SSEOP server, use telnet at:

sseop.jsc.nasa.gov,username: PHOTOS

Imaging Services branch
The Imaging Services branch has published two archival videodiscs containing, together, over 150,000 browsing versions of SSEOP photographs from the first 57 space shuttle missions, 1981 to 1993.

The first videodisc, *Earth Observations Images: STS-1 through STS-44*, covers shuttle missions from 1981 through December 1991. This disc contains approximately 91,000 video frames of Earth observations photography. It is accompanied by the *Guide to Images JSC-26056* (October 1992) that contains useful summary descriptions of the shuttle missions and brief descriptors for the most outstanding photographs from each mission. The first videodisc may be ordered (at a charge) by contacting:

Bunny Dean
Mail Code AP2
NASA/JSC
2101 NASA Road 1
Houston, TX 77058-3696
713-483-2462

The second videodisc, *Earth Observations Images: STS Missions from January 1992 through September 1993* and *Press Release Imagery Mercury through STS-51,* contains approximately 55,000 video frames of Earth observations photography. It is accompanied by *Guide to Image JSC-26643* (April 1994). The second videodisc may be ordered (at a charge) by contacting:

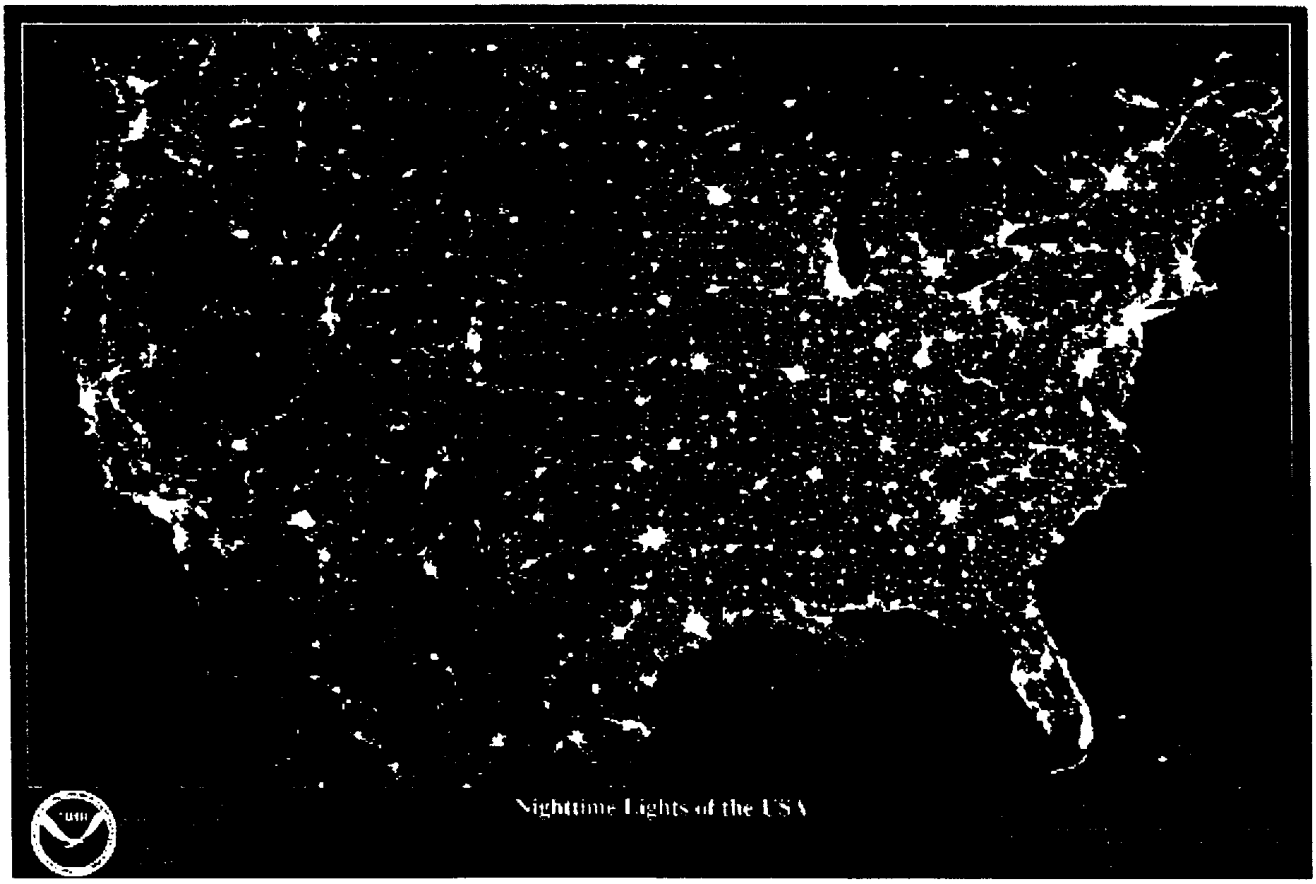
NASA CORE
Loraine County JVS-NASA
15181 Route 58 South
Oberlin, OH 44074
Cathy Kaiser
216-774-1051, ext. 249/293/294

The Imagery Services WWW site contains digitized image files fro press release photographs and selected subsets of Earth observations photography for all NASA manned spaceflight missions, as well as full mission image catalogs for the most recently cataloged

Nighttime Lights of the USA from DMSP Satellites

STP-96-6
June 1996

Maps have long been used to imagine events occurring on the ground from an airborne perspective. Satellites now record a similar view of actual events for scientists to study. The Defense Meteorological Satellite Program (DMSP) currently operates two satellites carrying the Operational Linescan System (OLS) in low-altitude polar orbits. The DMSP-OLS has a unique capability to detect low levels of visible-near infrared (VNIR) radiance at night. With the OLS "VIS" band data it is possible to detect clouds illuminated by moonlight, plus lights from cities, towns, industrial sites, gas flares, and ephemeral events such as fires and lightning illuminated clouds.



The image of the "Nighttime Lights of the USA" poster was derived from cloud free portions of 231 orbits of DMSP OLS data. The majority of the detected features are lights from cities and towns. A set of oil platforms can be observed in the Gulf of Mexico south of Louisiana. These data are being used by NOAA, NASA, and university scientists to analyze the spatial distribution of population, energy consumption, economic activity, and greenhouse gas emissions.

Additional information available at the DMSP Program at NGDC homepage:
http://www.ngdc.noaa.gov/dmsp/dmsp.html

National Geophysical Data Center

Also available from STP

1995 Atlantic Hurricanes Poster: A 24"x36" color poster of the eleven 1995 hurricanes as seen by DMSP-OLS in near-infrared wavelengths ..... $ 20

1995 Hurricanes (DMSP) Slideset: A set of twenty-two 35-mm color slides of the eleven 1995 Atlantic hurricanes in visible and infrared wavelengths ..... $ 30

1995 Typhoons (DMSP) Slideset: A set of twenty-three 35-mm color slides of the twelve 1995 Northwest Pacific typhoons in visible and infrared wavelengths ..... $ 30

Auroras and Other Lights Viewed from Space: A set of fifty-two 35-mm slides of auroral variability and other lights viewed from space ..... $ 65

Aurora Australis: A set of twenty 35-mm slides of the southern lights ..... $ 29

Zurich Sunspot: A set of seven 35-mm slides with captions of sunspot related phenomena ..... $ 17

ORDER FORM

Solar-Terrestrial Physics

The U.S. Dept. of Commerce requires that payment for data be made prior to shipment. Payment can be made by check or money order made payable to "COMMERCE/NOAA/NGDC" in U.S. dollars drawn on a U.S. bank or by *VISA, MasterCard, or American Express.* ***DO NOT SEND CASH!*** Payment cannot be made by bank transfer.

Mailing Address

Name:		
Organization:		
Department:		
Address:		
City:	State:	ZIP:
Country:		Phone:
E-mail:		Fax:

Data Order

ITEM	PRICE	QUAN	TOTAL
Nighttime Lights of the USA Poster (DMSP)	*$ 20*		$
1995 Atlantic Hurricanes Poster (DMSP)	*$ 20*		$
1995 Hurricanes (DMSP)	*$ 30*		$
1995 Typhoons (DMSP)	*$ 30*		$
Auroras and Other Lights Viewed from Space	*$ 65*		$
Aurora Australis	*$ 29*		$
Zurich Sunspot	*$ 17*		$
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