PROGRAM

PECORA Thirteen

Human Interactions With The Environment: Perspectives From Space

August 20-22, 1996

Ramkota Inn • Sioux Falls, South Dakota

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
MORNING		Registration Keynote Address *Lincoln/Jefferson Rooms* Plenary Session 1 *Lincoln/Jefferson Rooms* (page 3)	Plenary Session 2 *Lincoln/Jefferson Rooms* (page 10)	Plenary Session 3 *Lincoln/Jefferson Rooms* (page 17)
NOON		Pecora Luncheon *Washington Room*	Lunch on your own	Adjourn
AFTERNOON		Concurrent Session A (page 4) Concurrent Session B (page 7)	Concurrent Session C (page 11) Concurrent Session D (page 14)	**Landsat 7: A User Perspective** *Amphitheater II*
EVENING	**Reception/ Registration**	Poster Session and Social *Grand Rushmore Lobby Area*	**Pecora Banquet and Awards Program**	

The Thirteenth William T. Pecora Memorial Remote Sensing Symposium

The Pecora 13 Symposium honors the memory of Dr. William T. Pecora, former Director of the U.S. Geological Survey, Under-Secretary of the Department of the Interior, and a pioneer in space-based remote sensing.

The Pecora 13 Symposium will provide an opportunity for the international remote sensing community to exchange information on the ways in which remote sensing is being used to understand and evaluate human impacts on the Earth and human adjustments to environmental change. An important goal of the conference will be to identify priorities for addressing research needs, accelerating database development, improving data archive and access, dealing with policy and implementation issues and related areas.

Presented under the sponsorship of:

In cooperation with:

- The Consortium for International Earth Science Information Network
- The American Society for Photogrammetry and Remote Sensing
- The University of Nebraska - Lincoln, Conservation and Survey Division
- The United Nations Environment Programme, Global Resource Information Database.

Symposium Committee:

Dr. Roberta Balstad Miller, CIESIN	Honorary Co-chairperson
Dr. Dallas Peck, USGS	Honorary Co-chairperson
James W. Merchant	Technical Chairperson
Ronald E. Beck	Conference Manager
Raymond A. Byrnes	Publicity/Sponsors
Dennis Hood	Exhibits
Michael Madigan	Poster Session
Michael Mignogno	NOAA
William Belton	U.S. Forest Service
Donald Garofalo	EPA
Denise Shaw	EPA
Charlotte Griner	NASA
Chris Johannsen	LARS, Purdue University
Gary Johnson	CIESIN
Bruce Quirk	USGS
Arlys Johnson	USGS
Janice Nelson	EROS Data Center

Conference Objectives:

The principal objectives of the Pecora 13 Symposium are:

1. To better identify information requirements, and determine current information deficiencies, for addressing issues related to human interaction with the environment;

2. To report progress in mapping, monitoring and characterizing the biosphere and the extent and nature of human activity via remote sensing technology;

3. To define opportunities for enhancing progress in using remote sensing to enhance the quality of human life and for protecting the global environment.

Monday, August 19, 1996

7:00 - 9:00 pm Reception and registration
Grand Rushmore Lobby Area

Tuesday, August 20, 1996

7:30 am – 11:30 am sessions held in the Lincoln/Jefferson Rooms

7:30 am - 5:00 pm Registration

8:30 - 8:40 am Introductory remarks - Ronald E. Beck, USGS/EROS Data Center, Sioux Falls, SD

8:40 - 8:45 am Welcome to Sioux Falls and to the Pecora 13 Symposium - Donald T. Lauer, Chief, USGS/EROS Data Center, Sioux Falls, SD

8:45 - 9:35 am **Keynote Address**
B. L. Turner II, Director
George Perkins Marsh Institute,
Clark University, Worcester, MA
Frontiers of Exploration: Remote Sensing and Social Science Research

9:35 - 9:45 am Discussion

9:45 - 10:00 am Break

PLENARY SESSION 1

Chair: Jack Estes
University of California - Santa Barbara, Santa Barbara, CA

10:00 - 10:30 am Richard A. Houghton, The Woods Hole Research Center, Woods Hole, MA
Data Requirements for Estimating Emissions of Carbon from Terrestrial Ecosystems

10:30 - 11:00 am Sandra Brown, U.S. Environmental Protection Agency, Corvallis, OR and University of Illinois, Urbana-Champaign, IL
Human Effects on Tropical Forests: What Must Be Remotely-Sensed

11:00 - 11:30 am Susan L. Cutter, University of South Carolina, Columbia, SC
Emergency Response and Hazards Mitigation: Data Needs and Research Opportunities

Tuesday, August 20, 1996

11:30 - 12:00 pm R.C. Izaurrald, University ofAlberta, Edmonton, Alberta
Sensitivity of Agriculture and Water Resources in North America to Interannual Climatic Variability: Where and What To Be Looking For

12:00 - 1:30 pm **Luncheon will be held in the Washington Room**
Panel discussion featuring speakers from morning sessions and audience interaction

Moderator: Jack Estes, University of California-Santa Barbara, Santa Barbara, CA

1:30 - 3:00 pm – CONCURRENT SESSIONS

Session A-1
Using AVHRR Data for Land Characterization

• Harvest Room •

Chair: Thomas R. Loveland, USGS/EROS Data Center, Sioux Falls, SD

Thomas R. Loveland, D. Ohlen., J. Brown, B. Reed and Z. Zhu, EROS Data Center, Sioux Falls, SD, and J. Merchant and L. Yang, University of Nebraska-Lincoln, Lincoln, NE
Western Hemisphere Land Cover: Progress Toward A Global Land Cover Characteristics Data Base

Joseph Scepan, John Estes and William Starmer, University of California-Santa Barbara, Santa Barbara, CA
Accuracy analysis of Global 1-km Land Cover Data Sets - Curent North American and Africa Data Set Cross Validation

Louis T. Steyaert, USGS/Goddard Space Flight Center, Greenbelt, MD and Thomas R. Loveland, USGS/EROS Data Center, Sioux Falls, SD
Applications of the USGS 1-km AVHRR Land Cover Characteristics Data Base in Land Process Research

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Session A-2
Remote Sensing Applications in Forest Assessment

• Viking Room •

Chair: Stephen J. Walsh, University of North Carolina, Chapel Hill, NC

Roberto Bonifaz-Alfonzo, Universidad Nacional Autonoma de Mexico, Ciudad Universitaria, Mexico
The NALC - Mexico Pilot Project

Kass Green, Pacific Meridian Resources, Emeryville, CA and Brian Cosentino, Washington Department of Fish and Wildlife, Olympia, WA
Using Satellite Imagery to Detect and Monitor Forest Change

William M. Baugh, Lee F. Klinger and Alex B. Guenther, National Center for Atmospheric Research, Boulder, CO
Identification of Oak Trees with Landsat TM and Spot Data for Biogenic Isoprene Emission Modeling in Tennessee, USA

Session A-3
Land Degradation and Conservation

• Amphitheater I •

Chair: Marion F. Baumgardner, Purdue University, West Lafayette, IN

Bernard Lacaze, CNRS/Centre d'Ecologia Fonctionnelle et Evolutive, Montpellier, France
The DeMon Project: An Integrated Approach to Monitor Vegetation Abundance and Degradation Processes in the Mediterranean Basin

Kevin P. Price and Edward A. Martinko, University of Kansas, Lawrence, KS and Donald C. Rundquist, University of Nebraska-Lincoln, Lincoln, NE
Relationships Between Multitemporal Spectroradiometer Measurements and Biophysical Characteristics of a Prairie Under Different Land Management Practices

C. Ahn, M.F. Baumgardner and L.L. Biehl. Purdue University, West Lafayette, IN
Performance of Simulated TM, AVIRIS, and Adjusted AVIRIS Data for Classifying Crop Residue

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Session A-4
The African Environment

• Jefferson Room •

Chair:Ashbindu Singh, United Nations Environment Programme, New York, NY

William J. Gribb, University of Wyoming, Laramie, WY
The Use of AVHRR and GIS Techniques for Identifying Agroecology Potential In Zimbabwe

Gray Tappan and Eric Wood, EROS Data Center, Sioux Falls, SD
Long-Term Monitoring of Changes in Senegal's Natural Resources

Eric C. Wood, John Lewis, and Gray Tappan, Hughes STX Corporation, EROS Data Center, Sioux Falls, SD
The Development of a Spatial Markov Chain Land Use Change Model for Southern Senegal

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Session A-5
Image Analysis Methods I

• Lincoln Room •

Chair: Bruce K. Quirk, USGS/EROS Data Center, Sioux Falls, SD

Gary M. Pereira, Lockheed Martin Corporation, Fort Washington, PA
Structural Edge Density Land Use Classification in Thematic Mapper Images

Matthew R. Bobo, University of Wisconsin-Madison, Madison, WI
Incorporation of Ancillary Data into Multispectral Image Classifications using a Modified Bayesian Decision Rule

J. E. Vogelmann, P.M. Seevers and M. Oimoen, Hughes STX Corporation, EROS Data Center, Sioux Falls , SD
Effects of Selected Variables for Discriminating Land Cover: Multiseasonal Data, Different Clustering Algorithms, and Varying Numbers of Clusters

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Session A-6
Urban Land Use Mapping

• Amphitheater II •

Chair: Leonard Gaydos, USGS/Ames Research Center, Moffett Field, CA

Marvin E. Bauer, Carol A. Sersland and Steven J. Steinberg, University of Minnesota, St. Paul, MN
Land Cover Classification of the Twin Cities Metropolitan Area with Landsat TM Data

Clyde H. Spencer, City of Scottsdale, Scottsdale, AZ and Douglas A. Howard, Arizona State University, Tempe, AZ
Integration of Remote Sensing and GIS for Urban Storm Water Management

Keith C. Clarke and Stacy Hoppen, Hunter College/CUNY, New York, NY
Cellular Automaton Modeling for Predicting Human Induced Land Transformations

3:00 - 3:30 pm **Break**

Tuesday, August 20, 1996

3:30 - 5:00 pm – CONCURRENT SESSIONS

Session B-1
Landsat-7

• Amphitheater I •

Chair: Michael Mignono, National Oceanic and Atmospheric Administration, Washington, D.C.

A. Obenschain and D. Williams, K. Dolan and J. Andary, NASA/Goddard Space Flight Center, Greenbelt, MD
Landsat 7: Today and Tomorrow

Darrel L. Williams, James R. Irons and Stephen G. Ungar, NASA/Goddard Space Flight Center, Greenbelt, MD
Landsat 7 Follow-on Mission Concepts and the New Millenium Program Earth Observer 1 Mission

Samuel N. Goward, Ralph Dubayah and Jonathan Haskett, University of Maryland, College Park, MD
Terrestrial Vegetation Seasonality in the Landsat-7 Long-Term Acquisition Plan

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Session B-2
Human Conflict - Impacts and Resolution

• Lincoln Room •

Chair: Kevin Dalsted, South Dakota State University, Brookings, SD

T.W. Crawford, Jr., K.J. Dalsted, R.W. Lietzow, F.C. Westin, and J.P. Verdin, Hughes STX Corporation and U.S. Geological Survey, Sioux Falls, SD
Effects of War and Peace on Cropland Use in Mozambique

D. Brian Gordon, Direct Information Access Corporation, Montclair, VA
The Moderating Effects of Higher Resolution Civil Satellite Imaging on International Relations

Ray A. Williamson, George Washington University, Washington, D.C.
Earth Science Research and the Challenges of Environmental Security

Session B-3
Remote Sensing of the Atmosphere

• Harvest Room •

Chair: David Meyer, EROS Data Center, Sioux Falls, SD

Chip Trepte, Science Applications International Corporation, Hampton, VA , M.P. McCormick and K. Severance, NASA Langley Research Center, Hampton, VA
An Overview of LITE

S.L. Jain and B. Arya, and S. Sharma, National Physical Laboratory, New Delhi, India
Monitoring of Ethylene Over Delhi Using CO2 DIAL

Fred M. Vukovich, Science Applications International Corporation,,Raleigh, NC and David Toll NASA/Goddard Space Flight Center, Greenbelt, MD
The Surface Heat and Ground Cover Relationships Useful for Climate Models

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Session B-4
Multisensor Integration and Synergism

• Viking Room •

Chair: Limin Yang, University of Nebraska-Lincoln, Lincoln, NE and EROS Data Center, Sioux Falls, SD

Alan J. Stern, Science Systems and Applications, Inc., Lanham, MD, Paul Doraiswamy USDA/RSML, Beltsville, MD, and Paul W. Cook USDA/NASS, Fairfax, VA
Categorization of Spring Wheat in an AVHRR Image by Signature Extension of a TM Categorized Image

Franz Mora and James W. Merchant, University of Nebraska-Lincoln, Lincoln, NE
Calibration of an AVHRR Seasonal Land Cover Classification with Landsat TM Data

Nathan P. Jennings, University of Wisconsin, Madison, WI
An Investigation of Data Integration and Texture Analysis Using ERS and Landsat TM Data for Land Cover Assessment

Tuesday, August 20, 1996

Session B-5
Coping with Risks and Hazards

• Jefferson Room •

Chair: Donald Garafalo, U.S. Environmental Protection Agency, Washington, D.C.

Byron Wood, Louisa Beck, Sheri Dister, Brad Lobitz, Johnson Controls World Services, Inc., NASA/Ames Research Center, Moffett Field, CA
Remote Sensing of Emerging and Re-Emerging Infectious Disease

Tsutomu Yamanokuchi, Asako Inanaga, Sotaro Tanaka, and Makoto Ono, Remote Sensing Technology Center of Japan, Tokyo, Japan
Examination of JERS-1/SAR Interferograms Concerning the Great Hanshin Earthquake

William G. Kepner, U.S. Environmental Protection Agency, Las Vegas, NV and Kurt H. Ritters, Tennessee Valley Authority, Norris, TN
A Landscape Approach For Assessing Ecological Risk in a Southwestern Watershed - San Pedro River Case Study

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Session B-6
Remote Sensing of Urban Land Use

• Amphitheater II •

Chair: Terry Sohl, EROS Data Center, Sioux Falls, SD

Yeqiao Wang, The University of Illinois at Chicago, Chicago, IL
Urban-Suburban Land Cover Characterization and Change Detection Modeling

Charles C. Watson, Jr., Watson Technical Consulting, Rincon, GA
Using GIS and Historical Satellite Imagery to Analyze Urban Ecosystems and Policy

Virginia Brown, Rowan College, Glassboro, NJ, John Hasse, Rutgers University, New Brunswick, NJ and Andrei Mudrievsky, Rowan College, Glassboro, NJ
Mapping Attitudes Toward Suburban Sprawl Over Prime Farmland

5:15 - 7:30 pm **POSTER SESSION and SOCIAL (Cash bar)**
Grand Rushmore Lobby Area
Chair: Michael E. Madigan, Hughes STX, EROS Data Center, Sioux Falls, SD

Wednesday, August 21, 1996

8:30 am – 11:30 am sessions held in the Lincoln/Jefferson Rooms

8:30 - 8:40 am Introductory remarks - Ronald E. Beck, USGS\EROS Data Center, Sioux Falls, SD

PLENARY SESSION 2

Chair: Gary E. Johnson
Consortium for International Earth Science Information Network (CIESIN), University Center, MI

8:40 - 9:20 am Thomas J. Baerwald, National Science Foundation, Washington, D.C.
Observational, Monitoring and Other Needs for Research on the Human Contributions and Responses to Global Change

9:20 - 10:00 am Ghassem R. Asrar, National Aeronautics and Space Administration, Washington, D.C.
Mission to Planet Earth: Past Progress and Future Prospects

10:00 - 10:20 am **Break**

10:20 - 11:00 am William E. Stoney, Mitretek Systems Corporation, Greenbelt, MD
Watching the Globe in the Year 2000 - The World Under a Microscope

11:00 - 11:40 am Chris J. Johanssen, Purdue University, West Lafayette, IN
Precision Farming - A New Application for Remote Sensing

11:40 am - 12:00 pm Discussion with audience.

12:00 - 1:30 pm Lunch - on your own

Wednesday, August 21, 1996

1:30 - 3:00 pm – CONCURRENT SESSIONS

Session C-1
Data Archive and Access I

• Lincoln Room •

Chair: Saud A. Amer, Applied Research Corporation, EROS Data Center, Sioux Falls, SD

Alexander D. Mirzaoff, Eastman Kodak Company, Rochester, NY
Large Scale Distributed Archive Systems for Remote Sensing Imagery

Timothy Gubbels and Jeff Masek, HITS, Upper Marlboro, MD
An Overview of ECS Collaborative Prototyping

Siri Jodha Singh Khalsa, Applied Research Corporation, Upper Marlboro, MD
Search and Access of Earth Science Data in a Heterogeneous Environment: Data Systems Architecture for Interoperability

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Session C-2
Environmental Perspectives and Famine Early Warning Systems (FEWS) I
A session honoring Donald Moore

• Jefferson Room •

Chair: John Lewis, Hughes STX Corporation, EROS Data Center, Sioux Falls, SD

C. Andrew Nadeau, FAO, Rome, Italy
GEWS and Early Warning Systems at FAO

Alan Herman and Jamie Kousky, NOAA/Climate Prediction Center, Camp Springs, MD
African Climate Data and Graphics Available for USAID/FEWS

Phil Arkin, NOAA/Climate Prediction Center, Camp Springs, MD
Rainfall Estimation from Satellites

Compton J. Tucker and S. Los, NASA/Goddard Space Flight Center, Greenbelt, MD
African Famine Early Warning Using NOAA Advanced Very High Resolution Radiometer Satellite Data

Session C-3
Large Area Land Characterization - New Approaches

• Amphitheater II •

Chair: Louis T. Steyaert, USGS/Goddard Space Flight Center, Greenbelt, MD

Jean-Michel Dufils, Tropical Forest Management Trust, Gainesville, FL and James D. Rowland, Hughes STX Corporation, EROS Data Center, Sioux Falls, SD
GIS and Remote Sensing for Monitoring the Impact of Conservation-Development Activities on Forest Cover in Madagascar

Richard C. Cicone, Jeffrey A. Olsenholler, Consortium for International Earth Science Information Network, University Center, MI and Norman Roller, Environmental Research Institute of Michigan, Ann Arbor, MI
Development of Orthogonal Annual Biomass Indicators in Eastern Asia

Josef M. Kellndorfer, M. Craig Dobson, Fawwaz T. Ulaby, The University of MichiganAnn Arbor, MI
A Multi-Ecoregion Classifier Based on Existing Orbital Imaging Radar

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Session C-4
Future of Remote Sensing from Space I

• Amphitheater I •

Chair: Thomas M. Holm, USGS/EROS Data Center, Sioux Falls, SD

Dr. Robert Price, associate Director of Goddard for Mission to Planet Earth
NASA's Future Earth Observing Strategy

Mr. Gary Kuchel, Federal Sales, SPOT Image Corporation
Spot Image Corporation – An Overview

Ms. Brenda Burroughs, Director, U.S. Sales, EOSAT
Earth Observation Satellite (EOSAT) Company "Solutions for Our Changing World"

Ms. Janet E. Bare-Broen, Manager, Program Development, Lockheed Martin Astronautics
RadarSat 1 – An Overview

Session C-5
Image Analysis Methods II

• Viking Room •

Chair: Jesslyn F. Brown, Hughes STX Corporation, EROS Data Center, Sioux Falls, SD

Maria P. Canton, Julio Sanchez, William Perrizo, Ronald Vetter, Zhili Zhang, and Shariful Islam, North Dakota State University, Fargo, ND
A C++ Graphics Programming Toolkit for Developing Remote Sensing Applications

Larry Biehl and David Landgrebe, School of Electrical & Computer Engineering Purdue University
MultiSpec - A Tool for Multispectral-Hyperspectral Image Data Analysis.

Jesslyn F. Brown, Bradley C. Reed and Laura L. Huewe, Hughes STX Corporation, EROS Data Center, Sioux Falls, SD
An Advanced Strategy for Multi-Source Analysis and Visualization in Land Cover Characterization

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Session C-6
Land Use Change and Human Settlement

• Harvest Room •

Chair: Kevin P. Gallo, National Oceanic and Atmospheric Administration, Asheville, NC

Gerald C. Nelson, University of Illinois, Urbana-Champaign, IL and Daniel Hellerstein, USDA/Economic Research Service, Washington, D.C.
Deforestation in Central Mexico: Satellite Images as Data in Economic Models of Land Use

Stephen J. Walsh, Ronald R. Rindfuss, Barbara Entwisle, Tom P. Evans, and William F. Welsh, University of North Carolina, Chapel Hill, NC
Population and Environmental Characteristics Associated with Village Boundaries and Landuse/Landcover Patterns in Nang Rong District, Thailand

Gary Kuchel, SPOT Image Corporation, Reston, VA
Urban Land Classification Derived from SPOT Satellite Imagery

3:00 - 3:30 pm **Break**

3:30 - 5:00 pm – CONCURRENT SESSIONS

Session D-1
Data Archive and Access II

• Lincoln Room •

Chair: Saud A. Amer, Applied Research Corporation, EROS Data Center, Sioux Falls, SD

Jay W. Feuquay, Hughes STX Corporation, EROS Data Center, Sioux Falls, SD
Experiences with Wide Area ATM Networks at EROS Data Center

Robert H. Bourdeau, S. Kumar, S.A. Lauer, C.D. Linville, and P. Patnaik, Consortium for International Earth Science Information Network, University Center, MI
Hypertext Data and Information Services for Integrated Assessment Models of Global Climate Change

Edwin Sheffner, Johnson Controls World Services, NASA/Ames Research Center, Moffett Field, CA and He Changchui, United Nations Economic and Social Commission for Asia and the Pacific, Bangkok, Thailand
An Earth Space Information Network for the Asia Pacific Region

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Session D-2
Environmental Perspectives and Famine Early Warning Systems (FEWS) II
A session honoring Donald Moore

• Jefferson Room •

Chair: John Lewis, Hughes STX Corporation, EROS Data Center, Sioux Falls, SD

Kevin Dalsted and Fred Westin, South Dakota State University, Brookings, SD
Crop Use Intensity (CUI) Mapping in Africa Using Satellite Imagery

J. Lewis and B. Reed, Hughes STX Corporation, EROS Data Center, Sioux Falls, SD
Calculation of Seasonal Indicators for Africa Using NDVI

V. French, FEWS, Arlington, VA
Using Remote Sensing for Famine Early Warning

J. Ronald Eastman and A. Anyamba, IDRISI Project, Clark University, Worcester, MA
Prototypical Patterns of ENSO-Related Drought and Drought Precursors in Southern Africa

Session D-3
Assessing Vegetation Condition

• Viking Room •

Chair: Marlen D. Eve, University of Nebraska-Lincoln, Lincoln, NE

Larry L. Tieszen, Augustana College, Sioux Falls, SD and David Schimel, National Center for Atmospheric Research, Boulder, CO
Great Plains Grassland Land Cover Performance: The Role of C3 and C4 Grasses and Redistributions based on GCM Simulations of 2xCO2 Climate

Mark E. Jakubauskas, University of Oklahoma, Norman, OK, Diane M. Debinski, Iowa State University, Ames, IA, Kelly Kindscher, University of Kansas, Lawrence, KS andMarco Micozzi, University of Oklahoma, Norman, OK
Assessing Phenological Variability in Montane Meadows from Satellite Imagery

Robert E. Burgan and Roberta A. Hartford, U.S. Forest Service, Missoula, MT and Jeffery C. Eidenshink, USGS/EROS Data Center, Sioux Falls, SD
Using NDVI to Assess Departure from Average Greenness and its Relation to Fire Risk

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Session D-4
Future of Remote Sensing from Space II

• Amphitheater I •

Chair: Thomas Holm, USGS/EROS Data Center, Sioux Falls, SD

Dr. Lynwood Givens, Vice President, Research and Product Applications, Space Imaging, Incorporated
Space Imaging, Inc., – An Overview

Mr. James Frelk, President and CEO, EarthWatch, Incorporated
EarthWatch, Inc. – An Overview

Mr. William Hohwiesner, Program Manager, ORBIMAGE
ORBIMAGE – An Overview

Mr. Victor H. Leonard, Manager, System Development, Resource 21
Resource 21 – An Overview

Session D-5
Legal, Policy and Education Issues

• Harvest Room •

Chair: Denice M. Shaw, U.S. Environmental Protection Agency, Research Triangle Park, NC

E. Terrence Slonecker, U.S. Environmental Protection Agency, Warrenton, VA and Denice M. Shaw, U.S. Environmental Protection Agency, Research Triangle Park, NC
Emerging Legal Issues in Advanced Remote Sensing Technology

Joann Irene Gabrynowicz, University of North Dakota, Grand Forks, ND
The Science of Federalism: Past and Future

Rajeev Gowda and Robin Magelky, University of Oklahoma, Norman, OK
Remote Sensing, Public Education and Climate Change: Challenges and Recommendations

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Session D-6
Monitoring Urbanization and Urban Climate by Satellite

• Amphitheater II •

Chair: Toby Carlson , Pennsylvania State University, University Park, PA

Dale A. Quattrochi, NASA/Global Hydrology and Climate Center, Marshall Space Flight Center, AL
Cities as Urban Ecosystems: A Remote Sensing Perspective

Toby N. Carlson, Pennsylvania State University, University Park, PA and Timothy W. Owen, NOAA/National Climate Data Center, Asheville, NC
Monitoring Urbanization by Satellite Using Governing Surface Parameters

Samuel N. Goward, University of Maryland, College Park, MD
The Contribution of Remote Sensing to Urban Heat Island Studies

Kevin P. Gallo and Timothy W. Owen, NOAA/NESDIS, National Climate Data Center, Asheville, NC
Assessment of Urban Heat Islands: A Satellite Perspective

6:00 pm **Mixer** (cash bar)

7:00 - 9:00 pm **Pecora Banquet and Awards Program**
Washington Room
Host: Dallas Peck, U.S. Geological Survey, Reston, VA

Thursday, August 22, 1996

8:30 am – 11:30 am sessions held in the Lincoln/Jefferson Rooms

8:30 - 8:40 am Introductory remarks

PLENARY SESSION 3

Promoting Progress in Development of Information

Chair: Donald T. Lauer,
Chief, USGS/EROS Data Center, Sioux Falls, SD

8:40 - 9:30 am **PECORA MEMORIAL ADDRESS**
Francis Bretherton, University of Wisconsin, Madison, WI
Earth System Science - Where Are We?

9:30 - 10:00 am George J. Komar, National Aeronautics and Space Administration, Washington, D.C., Michael Mignono, NOAA/National Environmental Satellite, Data and Information Service, Washington, D.C., Edwin Sheffner, Johnson Controls World Services, NASA/Ames Research Center, Moffett Field, CA, and R.J. Thompson, USGS/EROS Data Center, Sioux Falls, SD
The Landsat Program: Toward Landsat-7 and Beyond

10:00 - 10:30 am P. Krishna Rao, Office of Research and Applications, NOAA/National Environmental Satellite, Data and Information Service, Washington, D.C.
NOAA's Environmental Satellites – Present and Future

10:30 - 11:00 am **CONCLUDING ADDRESS**
Roberta Balstad Miller, Consortium for International Earth Science Information Network (CIESIN), University Center, MI
Human Interactions in the Environment: Future Directions, Future Needs

11:00 - 11:30 am **Panel - An Agenda for Progress**

11:30 am **ADJOURN**

1:30 - 5:30 pm **Landsat 7: A User Perspective**
See page 22

Poster Papers

A Functional Analysis of Ecosystem Performance in Select Kuchler Types of the Northern Great Plains: NDVI and Metrics of Land Cover Classes
Jonathan C. Outland, Larry L. Tieszen, and Donovan D. Dejong - Augustana College; Bradley C. Reed - USGS EROS Data Center

A New Design For Environmental Earth Science Modules Utilizing Remote-Sensing Data Bases
Steven K. Croft, Robert J. Myers, and James A. Botti, NASA Classroom of the Future, Wheeling Jesuit College

Aerial Photography and Satellite Imagery Provided By the EROS Data Center for Environmental Monitoring
J. Schmidtbauer, K. K. Kringen, W. A. Kennedy, USGS EROS Data Center

Alaska Ecoregions Mapping
E.F. Binnian, J.E. Haga, and M.B. Shasby, USGS EROS Alaska Field Office
A. L. Gallant - Colorado State University; J.M. Omernik - U.S. Environmental Protection Agency

An Illustration of the Use of Declassified Corona, Lanyard, and Argon Photography in Environmental Studies
Dennis Hetrick, Danielle Ehlen, Paul Seevers, USGS EROS Data Center

Characterization of the Urban Landscape using Landsat-derived Land Cover, Census Data, GIRAS and DLG Data
Curtis V. Price, U.S. Geological Survey

Characterizing the Earth's Environment of Foreign Areas through Image Mapping
Jean-Claude M. Thomas, U.S. Geological Survey

Creation and Development of Remotely Sensed Database and Software Development for Deriving User Specific Data Products using GIS and other Computer Based Packages under MARSIS Project at NRSA (India)
A. Raghunadha Rao, J.D. Murthi, A.N. Nath, and A.V.V. Satya Srinivas, National Remote Sensing Agency - India

Delineation of Drainage Basins from 1 KM African Digital Elevation Data
Jeffrey J. Danielson, UNEP GRID/USGS EROS Data Center

Development of 30-Arc-Second Digital Elevation Model of South America
Norman B. Bliss and Lisa M. Olsen, USGS EROS Data Center

Effects of Spatial Integration on Normalized Difference Vegetation Index
Wenli Yang and James W. Merchant, University of Nebraska-Lincoln

Efficiency of Combined in Space and in Time Microwave Radar-Radiometer Systems of Remote Sensing in Environmental Monitoring
Artashes K. Arakelian, Armenian National Academy of Sciences

EROS Data Center Supports the Globe (Global Learning and Observations to Benefit the Environment) Program
Carolyn Gacke, Barb Hubbling, Paul Severson, USGS EROS Data Center

Global Compositing of 1-km Avhrr Data at the EROS Data Center
Rick Vandersnick, Sue Mattson, Susan Embrock, USGS EROS Data Center

Hyperspectral Classification of Rangeland Soils Using Field Spectroscopy
Calli B. Jenkerson, R. W. Marrs, Department of Geology and Geophysics, and L. C. Munn, Department of Plant, Soil, and Insect Sciences, University of Wyoming, Laramie, WY

Integrated Land Cover and Multi-Resolution Spectral Data Sets (AVIRIS and Landsat TM), Southern Black Hills, SD
Todd C. Gagne and Edward F. Duke, South Dakota School of Mines and Technology

Landsat MSS Remote Sensing and GIS Analysis of Glacier Change and Dynamics for Myrdalsjokull, Iceland
James S. Aber, Michael P. Webster, and Bradley B. Garmon, Emporia State University-Emporia, Kansas; and Johannes Kruger, Geografisk Centralinstitut, Kobenhavns Universitet-Denmark

Landsat Pathfinder Processing Support at the EROS Data Center
Gayla Evans, Kelly Feistner, Charles Larson, USGS EROS Data Center

Landscape Change Analysis Using Moderate Resolution Satellite Data
K. L. Sayler, G. J. Zylstra and J. L. Dwyer , USGS EROS Data Center

Landscape Visualization as Animated Browsing
Brian Tolk, Jim Lacy, Don Rundquist, and Rolland Fraser, CALMIT, University of Nebraska-Lincoln; Steven Adams and Art Zygielbaum, Jet Propulsion Laboratory

Long-term Monitoring of Changes in Senegal's National Resources
G. Gray Tappan, S. Jean Paulson, Eric C. Wood, USGS EROS Data Center

Mapping Desert Vegetation in the Makhtesh Ramon, Israel
Janet Gritzner, South Dakota State University

National Satellite Land Remote Sensing Data Archive (NSLRSDA) Landsat Multispectral Scanner Data CD-ROM
Dana M. Larsen, Michael E. Madigan, John L. Faundeen, and Judy K. Austad, USGS EROS Data Center

Neural Network Technique For Merging Radar And Visible Band Images
George Lemeshewsky, U.S. Geological Survey

North American Landscape Characterization Project
The Production of a Continental Scale Three-Decade Landsat Data Set
Terry Sohl, USGS EROS Data Center

Numerical Simulation of Limited-area Weather Modification for Precipitation Enhancement
Dayin LI, and Hiroshi KOMIYAMA, University of Tokyo, Kazuo KURIHARA and Yasuo SATO, Meteorology Research Institute

Producing High-Quality Science Software for the Earth Observing System (EOS)
Dr. Fred J. Gunther, Computer Sciences Corporation

Providing Earth Systems Science Applications Access to EOS Data Over Wide Area High Speed Networks
William J. Yurcik , University of Pittsburgh

Putting People on the Map: Integrating Population and Environmental Data
Deirdre M. Mageean and John G. Bartlett, University of Maine

Regional Land Cover Characterization: A Prototype Case Study in the Eastern United States
James E. Vogelmann, Terry Sohl, Steven M. Howard, and Jesslyn F. Brown, USGS EROS Data Center

Somalia Food Security Information System
LuAnn K. Pfeifle, Donald G. Moore, Robert W. Klaver, John R. Prouty, Jon Walkes, and Ronald A. Smith, USGS EROS Data Center

Techniques for Development of Global 1-Kilometer Digital Elevation Models
Dean B. Gesch, USGS EROS Data Center; Kevin S. Larson, Berger & Co.

The EOSDIS Information Management System: Access to Data for Global Change Researchers
K.C. Wehde, P.A. Park, S.L. Fick, and K.L. Goodale, USGS EROS Data Center

The HALOE World Wide Web Correlative Data Center
Patrick N. Purcell - SAIC; James M. Russell III - NASA Langley Research Center; Larry L. Gordley and Kenneth A. Stone - GATS, Inc.

The NASA Landsat Pathfinder Global Landcover Test Sites Project
K. McGwire, DRI, G. R. Mah, USGS EROS Data Center

The Untapped Potential of Space Shuttle Earth Observations Photography for Exploring Human Interactions with the Earth
John Cloud, University of California-Santa Barbara

TM-LAB - An Experimental Program for Viewing and Investigating Thematic Mapper Imagery on the PC
Julio Sanchez, William Perrizo, and Maria P. Canton, North Dakota State University

Translation Strategy to Aid Forest Resource Assessment of FAO Using the Global Seasonal Land Cover Regions Data Base
Jerry S. Olson , Global Patterns Company; Zhi-Liang Zhu, USGS EROS Data Center

United Nations Environment Programme Global Resources Information Database Sioux Falls
Eugene A. Fosnight and Ashbindu Singh, UNEP GRID/USGS EROS Data Center

Using Remote Sensing to Monitor Deviations from Potential Production on Sand Hills Range Sites
Bruce K. Wylie and Larry L. Tieszen, Augustana College; David J. Meyer, USGS EROS Data Center; Mario E. Biondini, North Dakota State University

Utilization of Hyperspectral Remote Sensing to compare the Spectral Reflectance of Undisturbed and Disturbed Soil Samples
Richard Hobbs, University of Wyoming

Wetland Identification: A Ground-Based L-Band Radiometric Remote Sensing Application
Richard A. Howard and Karen M. St. Germain, University of Nebraska-Lincoln

Where will it grow? How well will it grow?
Dr. Trevor H. Booth, Division of Forestry-Australia

Pecora 13 Symposium Information

Symposium Proceedings

The proceedings for the Pecora 13 Symposium will be published by the American Society for Photogrammetry and Remote Sensing. All paid symposium participants will receive a copy of the proceedings in late 1996.

Speakers' Aid Room

A Speakers' Aid Room will be available throughout the symposium. Technicians will be prepared to assist speakers and arrange projectors.

Registration Information

Registration and check-in for the symposium will be available at the Grand Rushmore lobby. A message board and information on city events will be available at the registration table. Registration includes admittance to all symposium sessions, the Tuesday luncheon and panel discussion, the poster session and social, the Wednesday banquet and award presentation (including vouchers for two complementary beverages at the pre-banquet mixer).

EROS Data Center Demonstrations and Tours

Special tours and technical briefings will be offered during the Pecora 13 Symposium. Free shuttle transportation will be provided to the EROS Data Center.

Student Registration

Student registration includes admittance to all symposium sessions. Students are also welcome on the tours of the EROS Data Center. Tickets for the luncheon and banquet are not included but may be purchased at the registration desk.

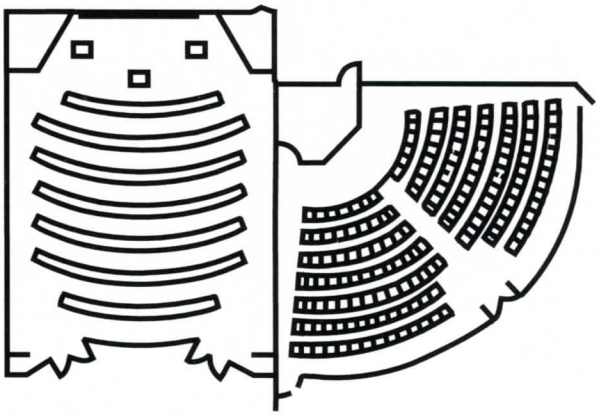
Landsat 7: A User Perspective

Immediately following the Pecora conference will be a special, supplementary seminar devoted to information on Landsat 7 data distribution issues. The free seminar will be held at the conference site in Amphitheater II from 1:30 to 5:00 p.m., Thursday, August 22, 1996.

Notes

Notes

Amphitheaters I and II



Meeting/Banquet Rooms