

ANNOUNCEMENT

INTENSIVE INTERNATIONAL REMOTE SENSING WORKSHOPS

EROS DATA CENTER, SIOUX FALLS, SOUTH DAKOTA

MAY AND SEPTEMBER 1982

In response to continuing interest in the use of remote sensing technology for earth resources inventory and assessment, the U.S. Geological Survey offers a program of remote sensing workshops for non-U.S. scientists, engineers, and resource managers. These workshops are held at the EROS Data Center (EDC), Sioux Falls, South Dakota, during May and September each year, demand and schedule permitting. Since 1973, more than 500 scientists representing over 75 countries have participated in the workshops. In 1982, the emphasis will be on in-depth discipline-specific analysis techniques.

The dates for the 1982 Workshops are:

Eighteenth International Workshop: Applications in geologic and hydrologic exploration and planning, April 26 - May 28, 1982

Nineteenth International Workshop: Applications in vegetation assessment and land-use planning, August 30 - October 1, 1982

WORKSHOP OBJECTIVES AND PROGRAM

The workshops are designed to familiarize the participant with the characteristics of a variety of remote sensing systems, i.e., data characteristics, advantages and limitations, and applications to the subject disciplines, as well as experience in analyzing and interpreting remotely sensed data to produce products useful in resource management and planning. Emphasis is placed on the analysis of Landsat data, although attention is also given to other image types such as aerial photographs, thermal infrared imagery, and radar. Each workshop will concentrate on a particular discipline application (the May workshop on geologic and hydrologic applications, and the September workshop on vegetation assessment and land-use planning), and will include both manual and digital data analysis.

It will be assumed that participants have a knowledge of the basic fundamentals of remote sensing, although each workshop will be preceded by an optional introduction to fundamentals. This first week is recommended for all participants, as it serves as a good review for those with previous experience, and is mandatory for those with little experience in remote sensing techniques.

For those who have previously attended an introductory workshop at the EROS Data Center, these intensive workshops will provide in-depth and detailed training in a specific discipline. For those with little previous experience in remote sensing, the intensive workshop, including the first-week introduction, should provide valuable discipline-specific training.

The intent of the workshops is not to make the participant an expert practitioner of remote sensing, but rather to equip him to more readily acquire additional experience and practice upon his return to his home country. The workshop is viewed as providing a foundation upon which he can build, and hopefully will allow him to proceed in the use of remote sensing with a thorough understanding of techniques, uses, and possible difficulties that he may encounter.

The workshop program consists of a combination of classroom lectures, workshop exercises, homework, and field work in the analysis of Landsat data and other remotely sensed data.

The first week consists of a general introduction to the fundamentals of remote sensing and is intended to provide all participants, regardless of previous experience, a solid general background. Although optional, the first week is strongly recommended for all participants. The second week is devoted to in-depth discussions of the fundamentals as they refer specifically to the application discipline (May: geology/hydrology; September: vegetation/land-use), instruction in manual analysis and interpretation techniques, integration of various data sources, and a review of the various uses of remote sensing as applied to the discipline of interest. The third week is spent on an introduction to the uses of digital analysis, practice in data analysis and interpretation and the use of data from various sources in the preparation of useful interpretation products. During the fourth week, a field trip to many of the places studied in the third week incorporates the concept of ground verification and field familiarization in the interpretation process. The bulk of the fifth week is spent on the interpretation of Landsat imagery of an area selected by the attendee, usually in his own country in a region with which he is familiar and in which he has a particular interest. The attendee is asked to define a resource interpretation problem, analyze and interpret the imagery, and report results.

This schedule shows the general content and structure of the workshops. The actual arrangement or emphasis may vary as a function of the choice of fieldwork sites, image examples, or participant interests.

First Week: optional--highly recommended for all, mandatory for those with little previous experience.

Fundamentals of Remote Sensing

- The electromagnetic spectrum, energy-matter interactions.
- Image formation.
- The Landsat system.
- Principles of image analysis and interpretation.

Second Week: (second through fifth weeks are discipline-specific; the May Workshop will emphasize geologic and hydrologic applications, the September Workshop will emphasize vegetation and land-use assessment).

Image formation and sensor systems.
Manual analysis and interpretation of remotely-sensed data.
Integration of remotely-sensed data with other data types.
Applications of remotely-sensed data.

Third Week

Digital analysis techniques.
Workshop exercises--practical experience in data analysis and interpretation.
Environmental Data Base preparation.

Fourth Week

Field trip--verification of interpretation exercise results.
Incorporation of field observations in interpretation.

Fifth Week

Guided individual study of Landsat imagery of participants' countries.
Discussion of international aspects of satellite programs.
Summary seminar.
Closing ceremony.

PROCEDURE FOR APPLICATION

Applicants are required to use the enclosed Application Form (facsimiles or machine copies are acceptable). Candidates sponsored by a university, private company, or a non-national government entity must submit their applications through their national governmental agency. All applications should be sent to:

Training Section, Office of International Geology
U.S. Geological Survey
National Center (917)
Reston, Virginia 22092
U.S.A.

Schedule pertinent to the Eighteenth (May) International Workshop:

- | | |
|------------------|---|
| January 8, 1982 | Deadline for receipt of application (applications must be received by this date in order to be eligible for consideration). |
| January 22, 1982 | Notification by USGS to those selected for the workshop. |
| March 5, 1982 | The advance deposit of \$400 is due. |
| April 26, 1982 | Eighteenth International Workshop begins. \$1,400 balance due. |

Schedule pertinent to the Nineteenth (September) International Workshop:

- | | |
|-----------------|---|
| May 21, 1982 | Deadline for receipt of application (applications must be received by this date in order to be eligible for consideration). |
| June 4, 1982 | Notification by USGS to those selected for the workshop. |
| July 16, 1982 | The advance deposit of \$400 is due. |
| August 30, 1982 | Nineteenth International Workshop begins. \$1,400 balance due. |

Because the workshops are intensive, and to ensure adequate instructor-attendee interaction, enrollments will be limited to approximately 25 persons. Application deadlines must be met to allow time for ordering needed imagery and materials and for planning workshop details. As all lectures and discussions will be in English, attendees must be able to understand, speak, and read this language. If possible, applicants should provide English language facility test scores. Interpreters cannot be provided.

Candidates who cannot be accommodated in a particular workshop will be given priority in a succeeding workshop.

Additional information about the workshop program, the EROS Data Center, and the city of Sioux Falls will be forwarded approximately one month prior to the beginning of the workshop to candidates who are accepted for attendance.

Many participants augment their trip for attendance at the International Remote Sensing Workshop in Sioux Falls with visits to other U.S. Government agencies and university research centers related to their fields of interest. Some assistance in planning these activities can be provided if specific agencies, personal contacts, or types of activities are designated by the applicant.

COST

Payment of the workshop fee must be made prior to the start of the workshop. This fee includes the cost of instruction, training materials, and workshop bus travel.

An advance deposit of \$400, which is not refundable, is part of the total fee and is required within six weeks after receipt by the candidate of notification of acceptance (refer to time schedule in the previous section).

Bank checks or drafts made payable to the U.S. Geological Survey in U.S. dollars should be forwarded to:

Training Section, Office of International Geology
U.S. Geological Survey
National Center (917)
Reston, Virginia 22092
U.S.A.

Please do not send cash or traveler's checks.

Approximately 40% of the total fee covers items which the attendee will retain upon completion of the workshop. The \$400 advance includes the cost of the Landsat imagery of the attendee's study area which must be prepared by EDC prior to the start of the workshop. If the accepted candidate does not attend the workshop, the imagery will be forwarded to the address cited on the application.

The cost of international travel to and from Sioux Falls and living expenses for attendees during the workshop are to be met by the sponsoring entities. At this time a per diem rate of \$50 (U.S.) is sufficient to cover living expenses at Sioux Falls. However, this might change by the time the course commences. The USGS will provide pertinent information at least one month before the course is scheduled to begin. It is recommended that sponsors provide attendees with one-third or more of the funds required for living expenses at the time of their departure for the United States, and the remainder in the form of a letter of credit with the Northwestern National Bank in Sioux Falls.

A statement is required for each attendee that all hospital and health costs not covered by any insurance will be paid by the sponsor. A form for providing this statement is included with the application.

LANDSAT IMAGERY OF AREA TO BE SELECTED BY CANDIDATE

An important part of the workshop is the interpretation of Landsat imagery of an area selected by the attendee, preferably an area in which the attendee is working or has worked. Because this imagery must be ordered in advance of the workshop, each applicant must specify the desired geographic study area and state the objective(s) of the proposed analysis on the application form. One may choose to study a static condition, for example, the geologic character, the status of land use, the distribution of surface water, or of vegetation at a single, specific time; or, one may want to study the applicability of repeated Landsat coverage to the analysis of changing conditions or their usefulness in refining the analysis of environmental conditions on the basis of clues that are inherent in seasonal conditions. Therefore, the applicant should specify either (1) repetitive (seasonal) coverage--for temporal analysis of an area which is contained on one Landsat scene, or (2) scenes obtained at a single observation time over a larger area. In either case, the imagery ordered will not exceed a total of three scenes.

As image availability, quality, and cloud cover may limit the extent to which a request can be filled, the applicant should identify alternate areas to be used if adequate imagery does not exist for the primary area. The geographic location of the areas for which imagery is requested should be specified in the appropriate space on the application; the specific Landsat image identification numbers (if known) should be listed. Attendees should bring with them any reference material needed for their individual projects. This would include thematic maps and supporting documentary material (geology, land use, soils, vegetation, etc.) of their study areas.

APPLICATION FORM

Eighteenth and Nineteenth International Remote Sensing Workshops

Indicate Workshop applying for by check mark // in appropriate box.

Eighteenth International Remote Sensing Workshop: Applications
in geologic and hydrologic exploration and planning, April 26 - / /
May 28, 1982

Nineteenth International Remote Sensing Workshop: Applications
in vegetation assessment and land-use planning, August 30 - / /
October 1, 1982

Will you attend the optional first week (introduction to fundamentals)?
yes _____ no _____

1. Name (Mr., Mrs., Miss; please underline name of family):

2. Birth date: _____ (month, day, year)

2a. Country of Citizenship: _____

3. Official address (Organization, Street, City, State or Province, Country):

4. Present position (give title and brief description of duties and responsibilities):

5. Discipline(s) of active interest:

6. Education (please summarize your educational background in the spaces below):

Institution and Location Dates of Attendance Degrees Earned Fields of Study

7. Experience (please include specific experience in remote sensing, including photo interpretation and other forms):

8. English language facility (please indicate good, fair, poor, or type of test and test scores):

Speaking: _____ Reading: _____ Writing: _____ Type of Test: _____
Test Scores: _____

9. Please describe any association with the Landsat program (as a principal investigator, a co-investigator, or in any other capacity):

10. What are your objectives in attending this Workshop? Please be as specific as possible:

11. A limited amount of Landsat imagery of a portion of your country will be ordered for study during the Workshop. For this purpose, please list the geographic coordinates (using latitude and longitude) of your primary study area (maximum size, 6,000 km²) and include a location map. Also, provide coordinates and maps for second and third priority areas and list any specific Landsat imagery identification numbers and/or specific dates or month(s) of the year which are preferred. These requests will be accommodated, if possible. Finally, please specify whether you wish sequential coverage of one area or one-time coverage of several areas:

<u>Area</u>	<u>Coordinates</u> (Degrees and Minutes)	<u>Specify Desired Month(s),</u> <u>Image Identification</u> <u>Numbers (if known), etc.</u>
First priority		
Second priority		
Third priority		

11. Continued--

I prefer: (check one)

_____ Sequential coverage for the area covered by one Landsat scene.
Please check whether images should be from a single year / /
or successive years / /.

_____ One-time coverage of several areas.

Please summarize briefly the objective(s) of your study of this imagery:

12. How will your attendance be financed?

MEDICAL EXPENSES

To Whom it May Concern:

The person named below is a candidate for the U.S. Geological Survey International Remote Sensing Workshop program at Sioux Falls, South Dakota. This statement certifies that any medical expense incurred by the candidate during his stay in the United States, and not covered by insurance, will be paid for by his sponsor.

Candidate

Sponsor

Signature of Sponsor's Authorized
Representative

Date: _____

ITINERARY

Please complete this page if you wish assistance in scheduling other activities in connection with your attendance at the International Remote Sensing Workshop.

ARRIVAL IN U.S.

Date:

Place:

ARRIVAL IN SIOUX FALLS

Date:

OTHER INSTITUTIONS TO BE VISITED IN U.S.

Name and Location

Desired Dates

DEPART FROM U.S.

Date:

Place:

OFFICIAL REQUEST FOR TRAINING

In order for the U.S. Geological Survey to provide training to a foreign national, an official request for training from either an international organization or an element of the candidate's national government is required. The official sponsor does not necessarily have to be the financial sponsor.

Please complete this form (or facsimile thereof) and return it along with completed application and \$1,800 tuition fee for each applicant to: U.S. Geological Survey, National Center, Mail Stop #917, Reston, Virginia, 22092, U.S.A.

"We hereby request the U.S. Geological Survey to provide a training program to _____ in the field of
(Candidate's Name)
"remote sensing."

OFFICIAL SPONSOR

Signature of Sponsor's
Authorized Representative

Government Department
and Address

Date