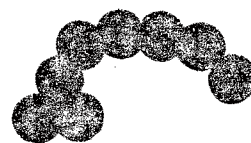


Update



Vol. 32 Laboratory for Applications of Remote Sensing May 20, 1971

Happenings and Items of Interest

On Monday, May 17, a team will begin analyzing last year's corn blight data using the analysis procedures to be employed this summer during the Corn Blight Watch Experiment. We hope to thereby evaluate these procedures and shake out bugs therein.

Dave Landgrebe spoke on LARS at the annual meeting of the Purdue Research Foundation, May 12. Within the last few weeks he has also spoken at the International Workshop, May 5, in Ann Arbor and addressed the Space Science Board of the National Academy of Sciences on April 29 in Washington, D. C.

On May 5, Don Levandowski spoke at the Science Writers Seminar, Indiana University. His topic: Remote Sensing and Its Applications to Environmental Studies. Visiting professor in charge of the seminar was Mrs. Jean Pearson, science writer for the Detroit News and Past President of the Science Writers Association of America. Don has also had an article in the April, 1971, volume of Science Line of the Los Angeles Quake.

A remote sensing seminar on "Photo Interpretation Techniques" was given on May 12 by Mike Coggeshall. A second session, billed as an example and workshop session on stereo techniques, will be held May 19, 4:30 p.m., in the LARS Conference Room.

Moving day again for the crew in Flex II. The Data Library is being moved to Unit B of Flexible Lab II starting May 14. For the present, the slide file will be maintained in Flex I.

Geologists can be interested in youth as well as in prehistoric rocks. Terry West spent the week of May 10 in Kansas City with the two winners of the Lafayette Regional Science and Engineering Fair, who were there competing for national awards. Simultaneously, he was elected president of Cumberland Elementary School's PTA.

Halsema's Believe-it-or-Not: Last week the darkroom artist turned out a staggering 1116 original and duplicate slides for the Seventh Symposium. Currently the darkroom is torn up in preparation for the Corn Blight Watch; until June 10, all photographic work will have to be done on campus at Photographic Services. See Tom Builta for this. Jack is devoting June 2-10 to photographic experimentation on the new color infrared.

Visitors

Despite the inclement weather, the response to the LARS Open House was extremely good. A total of 91 people signed the guest register, but there were probably several hundred visitors. There were known representatives from: Agronomy, Ag. Econ., Ag. Engineering, Ag. Administration, Ag. Information, E. E., Bio-sciences, Biology, Soil Mechanics, Ecology, Landscape Architecture, Geosciences, Botany and Plant Pathology, Horticulture, Forestry and Chemistry as well as several non-Purdue people. Roger Hoffer's class of 18 students in Forestry 558 (Remote Sensing of Natural Resources) also attended.

On May 9 and 10, the 30-member group of international scientists, engineers and administrators from the U. N. Panel on Remote Sensing Systems for Earth Resources Surveys visited Lafayette and LARS as planned. (See Vol. 31 of "Update" for the list of names). Their schedule included two sessions Monday at Flex Lab II for a description of the work at LARS and a taste of Hoosier Hospitality at the Baumgardners' home Sunday evening.

Travel

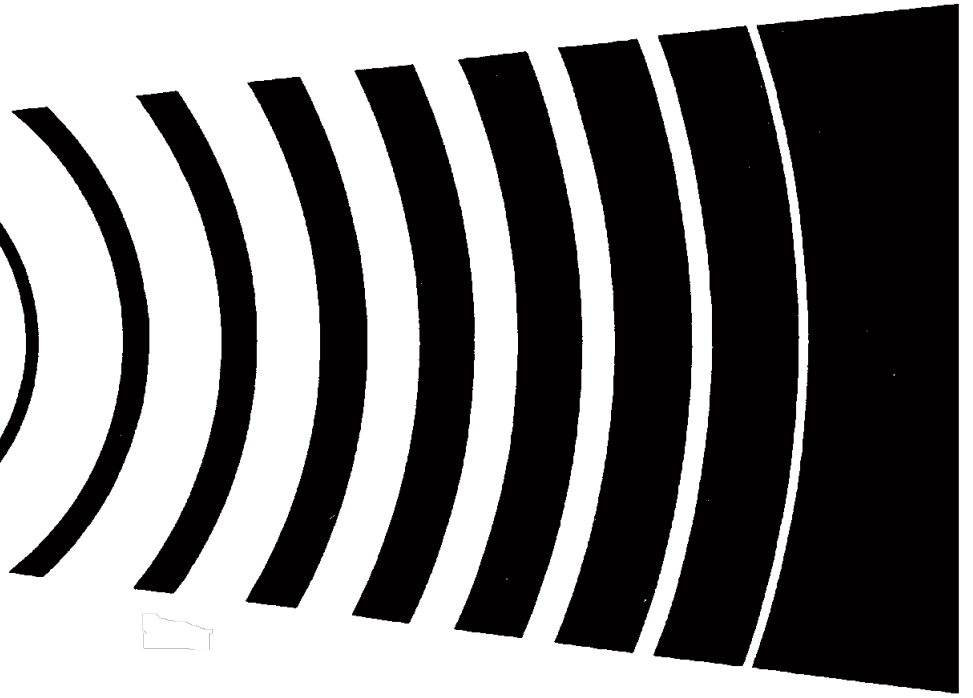
- May 5 - 11 - Marvin Bauer: Columbus, Missouri; Springfield, Illinois; and Indianapolis, Indiana. Jan Cipra: Springfield, Missouri; Council Bluffs and Waterloo, Iowa; Columbus, Ohio; and East Lansing, Michigan. They assisted with training ASCS personnel who will be collecting initial field information for the Corn Blight Watch Experiment.
- May 17 - 21 - A. H. Al-Abbas, Paul Anuta, Jan Cipra, Ray Frederking, Roger Hoffer, Chris Johannsen, Stevan Kristof, Pat Ready, Chuck Roth, LeRoy Silva, Eric Stoner, and Phil Swain: Seventh International Symposium on Remote Sensing of Environment, Ann Arbor, Michigan.
- May 18 - R. B. MacDonald to Atlantic City to present a paper entitled "Machine Processors, Man and Earth Resources" at the 1971 Spring Joint Computer Conference.
- May 19 - 20 - R. B. MacDonald, Tom Martin, Marv Bauer, J. B. Peterson and Terry Phillips to Asheville, North Carolina to attend the Corn Blight Watch Executive Committee Meeting.

Births, Birthdays

Son to Mr. and Mrs. Michael (Mary) Boehlje, April 28. Mary was Bob MacDonald's former secretary; she sends her greetings to her friends at LARS.

Miscellaneous

Congratulations and all our best wishes to Leo Benjamin who is leaving LARS to become part owner and pilot for Wholesale Grocery and Produce, Lafayette.



Update

Vol. 33

Laboratory for Applications of Remote Sensing June 3, 1971

Happenings and Items of Interest

*Beginning with Volume 5, LARS Annual Reports will be prepared in a new way. Previously, reports of the year's work have been presented as a continuous manuscript, prepared especially for the occasion, with no credit given to specific individuals for their contributions, and equal coverage for completed operations and those in progress. As a result, many carefully prepared papers and Information Notes had to be rewritten for the annual report and much material from past reports was later duplicated.

The new format will contain: an initial chapter summarizing the whole report, introductions to each chapter explaining the structure of that chapter, perfunctory descriptions of work in progress, and full, self-contained reports of completed work, crediting the authors by name. The efficiency of this proposal should spare the efforts of all concerned and improve the impact of our annual reports on the remote sensing community as well.

*Dave Landgrebe and Paul Wintz are participating in a 3EE short course, "Image Processing, Coding, and Transmission", June 1-4. Members of the course visited LARS Tuesday, June 1, 4:00-5:00. It is understood that several NASA people who have registered for the course have a special interest in LARS.

*Mr. James Gerhold, Entomology Dept. held a remote sensing seminar, "Physical and Physiological Properties of Plants", on Wednesday, May 26, at 4:30.

*LARS people carried the responsibility for eight papers delivered at the 7th Symposium on Remote Sensing of Environment held on May 17-21, Ann Arbor, Michigan:

-Effects of Compression and Random Noise on Multispectral Data :
P. J. Ready; P. A. Wintz; S. J. Whitsitt; and D. A. Landgrebe

-Detection of Southern Corn Leaf Blight by Remote Sensing Techniques:
M. E. Bauer; P. H. Swain; R. P. Mroczynski; P. E. Anuta; and
R. B. MacDonald.

-Crop, Soil, and Geological Mapping from Digitized Multispectral Satellite Photography: P. M. Anuta; S. J. Kristof, T. L. Phillips; D. W. Levandowski, R. B. MacDonald.

-Correlation Studies with Ground Truth and Multispectral Data:
I. Effect of Size of Training Field: C. E. Roth and M. F. Baumgardner.

-The Effects of Cultural Practices on Multispectral Response from Surface Soil: E. Stoner and E. Horvath.

-Variables in Automatic Classification over Extended Remote Sensing Test Sites: R. M. Hoffer and P. E. Goodrich.

-Extended Wavelength Field Spectroradiometry: L. Silva, R. Hoffer, and J. Cipra.

-Mapping Soil Types from Multispectral Scanner Data: S. J. Kristof, A. L. Zachary, and J. E. Cipra.

*The following was printed in the April Newsletter of the Remote Sensing Center at Texas A & M:

ERTS & SKYLAB: The crush of proposal preparation for ERTS -- A and SKYLAB has passed and the remote sensing community is beginning to reemerge just in time for the annual Michigan Symposium. A staggering number of man-hours have been invested by hundreds of scientists and engineers across the country in preparing submissions for these satellite programs. Approximately 400 proposals were submitted for ERTS - A alone! The total funds requested is believed to exceed the funds available by 4-5 times. It is unfortunate that many of these proposals must go unfunded, however the intense concentration of hundreds of researchers on satellite remote sensing, as represented by the numerous proposals, may well prove, in itself, to be a step-function excitation to the earth resources effort. Many eminent researchers, previously unexposed to remote sensing, were motivated to address their talents to the problems associated with orbital observations of the earth. The proposals are scheduled for evaluation in June by several disciplinary committees. For those men who have lived with the NASA Earth Resources Program since its inception, the advent of the long awaited ERTS-year is especially exciting.

*An even hundred LARS Staff members and their families enjoyed softball, volleyball, horseshoes, ping pong, and frisbee-ing at the May 15 picnic at the Hills. But perhaps the chief delight of all was consuming the 30 pounds of hamburgers and 5 pounds of hot dogs prepared by Master-Chef Phil Swain. The bulk of the planning and buying fell to Carole Scheiber and Kay Hunt, who were aided by Gail Santner, Vern Vanderbilt, Phil LaBlanc, and Mr. Hughes. Thank you all for taking the initiative and planning such a delightful event!

*May 28 was "farewell day" for Carole Scheiber. She left LARS to take a position on campus in psychological testing, her major field. We will miss her energy and efficiency and wish her much stimulation and satisfaction in her new work.

*The LARS staff was guests of Ann and Dave Landgrebe for a June 2 open house in honor of Gerry and Bob MacDonald. Nancy Skinkle took care of RSVP's.

*It's that melancholy time of year when LARS friends leave to go on to new jobs. We wish them all well.

- Stan Yao, a member of Paul Anuta's group, left May 28.
- Paul Scheffer and Helen Blake, both LARSYS Programmers, will leave June 11.
- Computer operators Alan Miller, Randy Cole, Mike Born, and Greg Aaron will all graduate this month and left LARS on May 28. Greg is going to O. C. S., courtesy of the US Air Force.

Visitors

*Prof. Tom Crowe, a visiting professor from England currently at Miami University of Ohio, visited LARS on Monday, May 17. His chief interests are in Computer Graphics.

*International visitors at LARS on May 24 included Drs. Seige and Krauth (Germany), Dr. Krishananum (India), and Drs. J. M. DeVilliers and O. G. Malan, (South Africa.)

*Six visitors from the Geological Survey of the State of Indiana visited LARS Tuesday, May 25:

Robert F. Blakely, Geophysicist
Donald D. Carr, Head, Industrial Minerals Section
Edwin J. Hartke, Environmental Geologist
Richard K. Leininger, Head, Geochemistry Section
Richard L. Powell, Geologist
Charles E. Wier, Head, Coal Section

Travel

June 3-10 Marv Bauer, Urbana, Illinois, and Ames, Iowa; Jan Cipra, Columbia, Missouri; Chris Johannsen, Columbus, Ohio, and Columbus, Nebraska.

They will assist with training state personnel who will be collecting initial field information for the Corn Blight Watch Experiment.

New Faces

*Ronni Pelsy began work on the secretarial staff of LARS on May 20. She has been assigned to the Measurements Section and will also be in charge of the Resource Library and the Publications Cabinet.

*Two new LARSYS programmers will begin on June 21: Susan Schwingendorf and Don Schricker. They will replace Helen Blake and Paul Scheffer, respectively.

*Computer Operators Mark Davis and Phil Wilcox will join the LARS Staff June 7. They are both graduating seniors at West Lafayette High School, Phil ranking second in the class.

*Welcome back to Paige Cofield, our receptionist from July through December, 1970. Paige will be under Elaine for the summer to provide extra clerical help for the corn blight watch.

Births, Birthdays

May 7	Bill Simmons
May 16	Nancy Skinkle
May 29	Shirley Davis

Coming Attractions

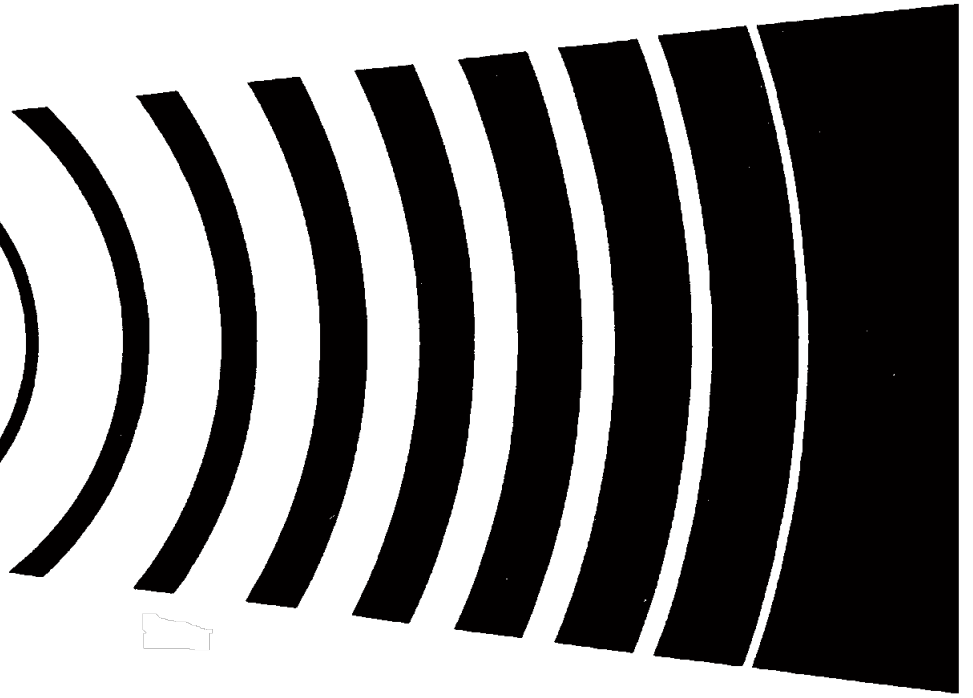
*Training for Corn Blight MSS data analysers will be held in Flex II as follows:

Wed., June 2, 9-11 am
Thurs., June 3, 10-12 am
Fri., June 4, 1-3 pm

*June 3: Staff meeting at 1:30 in Flex Lab II. Program leaders meet at 1:15 prior to meeting.

*Beginning June 7, each of the Seventh Symposium papers prepared by LARS staff will be presented at noon on subsequent Mondays, Wednesdays, and Fridays in the light table area in Flex I. Roger Hoffer is making the arrangements.

*Ann Arbor Engineering Summer Conferences: "Fundamentals of Infrared Technology" July 12-16; "Advanced Infrared Technology: July 19-23.



Update

Vol. 34 Laboratory for Applications of Remote Sensing June 17, 1971

Happenings and Items of Interest

*NBC-TV News reporters and photographers were at LARS on June 15 to prepare a short documentary on the Corn Blight Watch Experiment. They shot some cornfield scenes and some of the photo-interpreters at work. If NBC decides to use the footage, it might appear on a Huntly-Brinkley report sometime this week.

*Dr. Terry West is at LARS full time this summer working on the Dept. of Transportation Contract. His principal research deals with soils and rock data in relation to highway construction in Pennsylvania and Kansas.

Special Notices

*The LARS van will be stationed at Flex Lab II this summer. If you wish to check the van out, see Carol Dieslin.

*Mail runs between Flex Labs I and II will be made four times a day; they will leave Flex II at approximately 9:30, 11:30, 1:30, and 3:30. Karen Miller and Diana Docktor will channel the out-going mail.

Coming Attractions

*Four more "Brown-Bag Seminars" remain:

Fri., June 18-Eric Stoner-"The Effect of Cultural Practices on
Multispectral Response from Surface Soil"

Mon., June 21-Jan Cigna-"Mapping Soil Types from Multispectral
Scanner Data"

Wed., June 23-Roger Hoffer-"Variables in Automatic Classification
over Extended Remote Sensing Test Sites"

Fri., June 25-Chuck Roth-"Correlation Studies with Ground Truth and
Multispectral Data: I. Effect of Size of Training
Field"

Travel

R. B. MacDonald and Marv Bauer to Houston MSC to attend the executive committee meeting of the Corn Blight Watch Experiment, June 16-18.

HELP STAP OUT

"ILLUSTRITIS"

A crippling, contagious disease, sometimes fatal, known to attack large illustrations. Symptoms: crumpled corners, dirty and torn acetate, and bent over spine.

The larger, more expensive illustrations are especially susceptible. LARS 400 + illustrations, averaging \$25 a piece, are possible targets of the disease.

BE A PART OF THE CURE, NOT A PART OF THE CAUSE.

Put illustrations back after you've used them - - and even go the second mile - -return ailing illustrations that someone else has failed to return. This is the only way this dread disease can be eradicated!

Visitors

*Marion Baumgardner was the host on June 1 to six visitors from NIWARS of Holland: Prof. D. Eckhart; Dr. G. P. deLoor; Ir. Man H. Knoch; Ir. Theo A. deBoer; R. H. J. Morra; B. Reganboog, M. O. D.

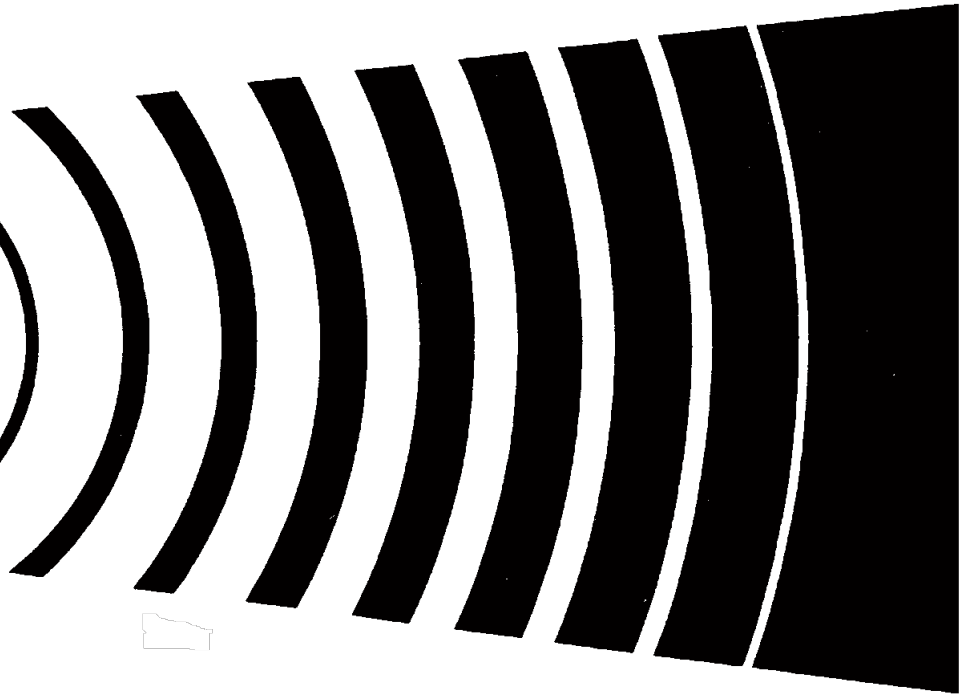
*On June 2, Dr. B. K. "Pete" Barton of Indiana State University, Terre Haute, visited Chris Johannsen. He was accompanied by Asst. Dean of the School of Science, I. S. U., Dr. John Corrigan and Drs. John R. McGregor and Ben Maulton.

New Faces

*Eleven newcomers, photo-analysts for the Corn Blight Watch Experiment, will be frequenting Unit B of Flex Lab II:

Harrison R. Hicks, ASCS
Don Whaley, ASCS
Tom Preper, ASCS
Ken Anderson, ASCS
Bill Knowles, ASCS
Allen Troxel, Ohio State
Norm Roller, Univ. of Michigan
John Dillon, Univ. of Illinois
Jeri Ooka, Univ. of Minnesota
Larry Schulze, Univ. of Nebraska
Al Gerbermann, ARS

*Margaret (Marge) Callahan began work in Flex II on June 17. She will be replacing Karen Miller who is leaving around the end of the month.



Update

Vol. 35 Laboratory for Applications of Remote Sensing July 2, 1971

Happenings and Items of Interest

- *Dr. J. B. Peterson's first "official" day at LARS was July 1, 1971. He has been very visible at LARS for the past two months, involved in the Corn Blight Watch Experiment. We would like to take this opportunity to say "Welcome Aboard, Pete!"
- *D. A. Landgrebe and L. F. Silva recently participated in NASA's evaluation of the ERTS/SKYLAB satellite experiment proposals. The evaluation panels met at New Carrollton, Md., near the Goddard Space Flight Center, to rate the more than 600 proposals on their technical merit. Landgrebe served on the Interpretation Techniques Panel from June 14-25; Silva served on the Ground Truth Team June 14-18.
- *You've heard that Clancey lowered the boom. . .now look out for LeRoy! LARS has recently acquired a Hi-Ranger which will be ready for use in about two weeks. This summer it will be used primarily in conjunction with the Model 20 spectroradiometer. LeRoy Silva is handling the schedule for its use.

Travel

- *Globe-trotting Marion Baumgardner left June 24 for a six-week consulting appointment with the Food and Agriculture Organization of the United Nations. After a briefing at FAO headquarters in Rome, he travels to Sofia, Bulgaria, where he will be a project consultant until his return August 8.
- *Terry West is in Atlantic City, New Jersey, attending the June 29-July 2 convention of the American Society for Testing and Materials. He is a member of the sub-committee on petrography.
- *Roger Hoffer represented LARS and Purdue at the National Land Use Conference in Washington, DC on June 28-30. A portion of the program was on remote sensing.

Visitors

- *Fifteen agronomists from ten midwestern states and Canada visited LARS on July 24, 1971. They were attending a North Central Regional meeting on Soil Organic Matter.

New Faces

- *Dr. Howard Grams began on July 1 as the systems programmer at LARS. He received his Ph. D. from Purdue in Physical Chemistry in January, 1969, and prior to joining the LARS staff, he was employed by DuPont in Wilmington, Delaware. A LARS-Welcome to Howard, his wife, and year-old child!
- *A new Computer Operations Supervisor, Mr. William Hockema, began his job July 1. He is replacing Mr. Robert Osborne, who left LARS June 18. The addition of Bill and Howard Grams should provide better computer service in the months ahead.
- *Carol Dieslin is working in Flex II as a temporary summer employee. Among other jobs, she is helping Terry Phillips keep track of Corn Blight Watch data.
- *Susan Schwingendorf and Don Schricker are new graduate students in the data processing section. They are working on the Corn Blight Watch this summer and in the fall, will help Kay Hunt on LARSYS programming.
- *Dave Anuta, Paul's brother, started at LARS June 22 as a darkroom technician for the summer. He will be processing color and infrared film for the Corn Blight Watch.

Birthdays

July 1	A. H. Al-Abbas
July 3	Kay Hunt
July 12	Elaine Schebo

Coming Attractions

- *Those of you who haven't been in Unit C of Flex II may be surprised at how much useful office space can be carved out of one large, hollow room. The work will be finished sometime in July, to the delight of the data-handling personnel, who have been waiting patiently while working under a handicap without these facilities.

Miscellaneous

*Karen Miller's last day at LARS was June 30. She is moving to Ann Arbor, Michigan, where her husband will be working on his Master's Degree. Best wishes, Karen!

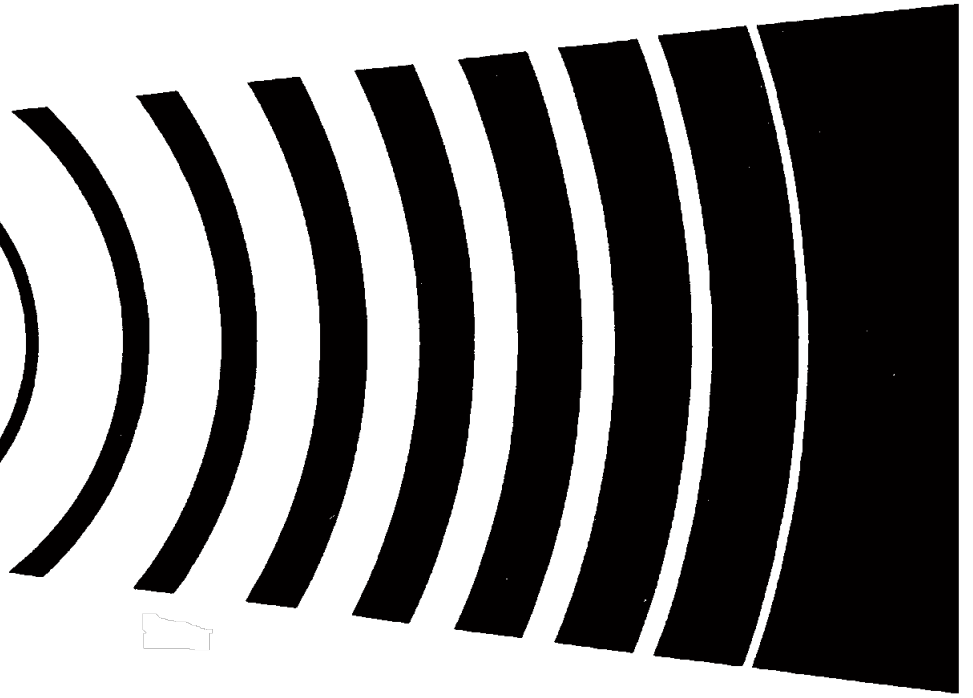
*Tips from the Darkroom: Protect Your Film from X-rays:

Making vacation plans? If you're planning to travel by commercial airline, be-ware of film damage that can be caused by x-ray and fluoroscopic devices used at some air terminals.

Passenger luggage has been x-rayed at international airports in both the ~~United~~ States and abroad to protect passengers from concealed bombs and weapons. However, the same x-rays that are used to protect you can harm your unprocessed film, both exposed and unexposed, if it's x-rayed along with your luggage.

You can minimize the danger to your unprocessed film. Carrying all your vacation film in hand luggage helps. In places where your hand luggage may be screened, there may be a sign indicating such measures. Your safest bet is to explain to airport authorities that some of your luggage contains film and offer it for visual inspection before checking in for your flight.

(excerpted from Kodak Photonews, 1971)



Update

Vol. 36 Laboratory for Applications of Remote Sensing July 16, 1971

Special Notices

*On Tuesday, July 27, LARS will be honored with a presidential visit by Dr. Hansen. He is scheduled to arrive at 3:00 pm.

Happenings and Items of Interest

*Barrett Robinson is the man to see if you wish to schedule use of the Hi-Ranger or the digital thermometers. The Hi-Ranger is available for photographic work when it is not being used with the spectroradiometer or is not involved in modification or maintenance procedures. The specifications and directions for operation of the two digital thermometers are described in LARS Information Note 072470; Barrett will be glad to describe the operation if you are unfamiliar with the instrument.

*The following letter was received recently by Dr. Landgrebe, relative to the visit of the UN Panel in early May. It is quoted in its entirety:

Dear Dr. Landgrebe:

On behalf of NASA and the other organizers of the International Workshop on Earth Resources Survey Systems, I want to express our deep appreciation for the excellent program arranged for the United Nations Panel on Remote Sensing Systems for Earth Resources Surveys during their visit to Purdue University and the Laboratory for Applications of Remote Sensing (LARS) on May 9-10.

The LARS Briefings, which emphasized an interdisciplinary and multi-disciplinary approach, and addressed specific projects in the application of earth resources as well as individual scientist-to-scientist discussions, provided much valuable information to the panel members. This was very much appreciated by the members who must now address the question of initiating remote sensing programs within their own countries.

Equally appreciated was the warm reception at the Sunday evening dinner hosted by the LARS staff and their wives, as well as the luncheon on Monday.

You may be interested to know we have received the recommendation that, if there are tours of this nature in the future, the visit to LARS be extended to two days to allow more time to discuss the work being done on the application of remote sensing techniques.

(Dr. Landgrebe's letter con't.)

Please pass on to the LARS staff, particularly Dr. Baumgardner, our sincere thanks for their contribution to a most valuable and informative UN Panel tour.

Sincerely,

Leonard Jaffe
Deputy Ass't. Administrator
for Space Science and Applications

New Faces

- *Harold Mathews, a Ph. D. student in Agronomy at Penn State University, is working at LARS with Terry West this summer on the Pennsylvania data for the Department of Transportation research.
- *Nick Smith, a Purdue undergraduate, is working at LARS part-time this summer to help in the research for the Department of Transportation with Terry West. Welcome to both Harold and Nick!

Visitors

- *7 13 71 H. E. Maurer, NASA, Wallops Island, Va.
- *7 9 71 Drs. R. Wilson and Porter: USDA Matching Funds, Washington

Coming Attractions

- *September 1, 1971 -- deadline for submitting abstracts of papers for the Fifth Hawaii International Conference on Systems Sciences, January 11-13, 1972.

Birthdays

*July 24 Chris Johansen
*July 24 Marv Bauer
*July 25 Dick Mroczynski
*July 27 Terry Phillips

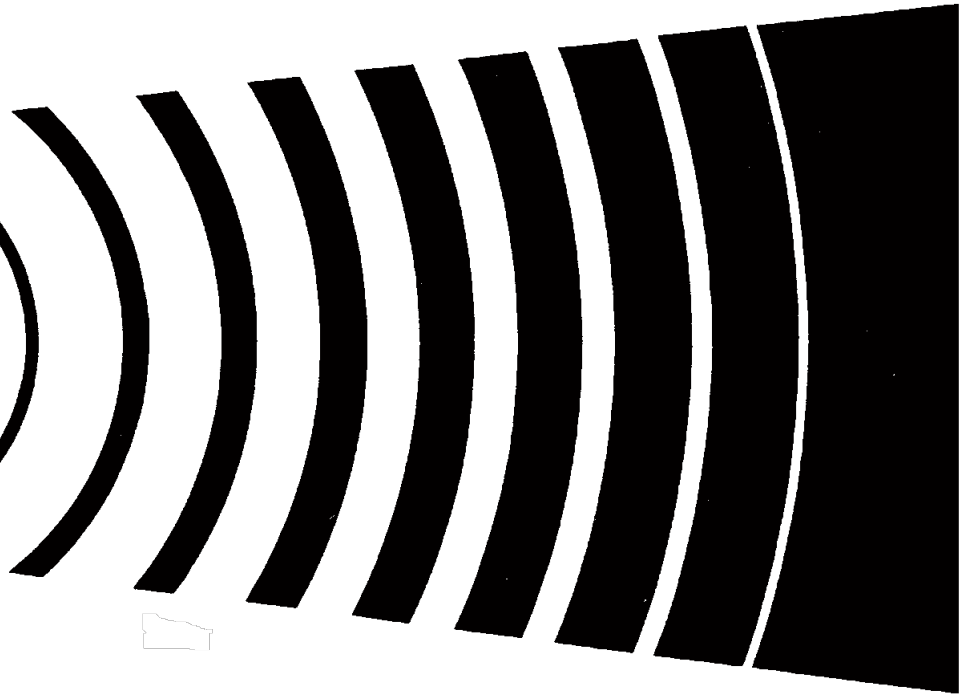
Miscellaneous

*Tom Builtz has been spending much of his free time in Noblesville lately, making plans for his August 28 marriage to Jan Young. Congratulations, Tom!!

*Tips from the Darkroom:

Take care in storing your exposed and unexposed film during the summer. Heat and humidity can greatly harm their quality.

Film cameras should never be left in a closed automobile parked in the sun or left locked in the glove compartment. The temperature could easily rise to 140°F, and a few hours under these conditions would have serious effect on color quality and balance.



Update

Vol. 37 Laboratory for Applications of Remote Sensing July 29, 1971

Happenings and Items of Interest

*On July 27, Dr. Arthur G. Hansen, University President, visited LARS to review the remote sensing work that was being done in agriculture, geography, geology, and hydrology. He was accompanied by Dr. Harold Robinson, Provost; Dean C. D. McGillem, Dean of the Engineering Experiment Station; and Director H. H. Kramer, Director of the Agriculture Experiment Station. After Drs. Hansen and Robinson were briefed on the organization of the lab and the applications of the research carried on here, they visited the Measurements Group and saw the Hi-Ranger and some of the cameras used. LARS personnel were impressed with the technical knowledge which Dr. Hansen possesses and the penetrating and searching questions he asked.

*An inquiry has been received from the Dept. of the Army regarding persons experienced in fields of interpretation of natural resources with remote sensors (especially air photography). The Natural Resources Division of the Headquarters Inter-American Geodetic Survey, Dept. of the Army, wishes to know of people who have education (preferably Masters Degrees) and who would be interested in employment in the Panama Canal Zone. They should be US Citizens and it is highly desirable that they have a good command of the Spanish language. Their specializations may be in either forestry, soils, hydrology, geology, land use, or cadastre. They should be available for employment within the next six months and must be willing to accept employment for a minimum of two years. If you are interested or know of someone who is, please give the name to Nancy Skinkle.

Special Notices

*A second attempt is currently being made to get up-to-date vita information from every professional member of the LARS staff for Dr. Landgrebe's file. The vita forms have been distributed and should be returned by August 30 to Nancy Skinkle.

Visitors

*Lt. Gov. Folz visited LARS July 28 to get an overview of the applications of remote sensing techniques, particularly in regard to land use. He was also briefed on the Corn Blight Watch Experiment.

*Eighty participants at the Third International Seminar for Hydrology Professors visited LARS on July 23. The two-week seminar, sponsored in part by NSF and held at Purdue, brought together hydrology professors from all over

the world. Prior to their visit to LARS, Roger Hoffer gave them a survey of remote sensing by presenting his paper, "Remote Sensing: A Tool for Resource Managers." While at the lab, they were told more about the results and applications of remote sensing and data processing techniques. They also toured the data handling facilities and were given a demonstration of field instrumentation.

Coming Attractions

- *August 3 -Fifty participants of the Midwest Educational Conference will visit at 3:30.
- *August 3 -Robert Bell from NASA headquarters will visit to discuss matters related to remote terminal tie-in.
- *August 3-4 -Corn Blight Watch Experiment Executive Committee will meet at LARS
- *August 5 -Participants in Purdue's Summer Seminar on Engineering will visit LARS. Dr. Wintz is making the arrangements for the visit of this group of outstanding high school students.
- *August 12 -A half-hour TV Documentary produced by Ag Information and Audio Visual Production will be aired at 8:00 pm on Channel 13, Indianapolis. The film describes the cooperative efforts of NASA, USDA, and LARS in the Corn Blight Watch Experiment.

Library Acquisitions and Publications

*Three publications from the Remote Sensing Laboratory, University of California, Berkeley, under the journal title Remote Sensing Applications in Forestry:

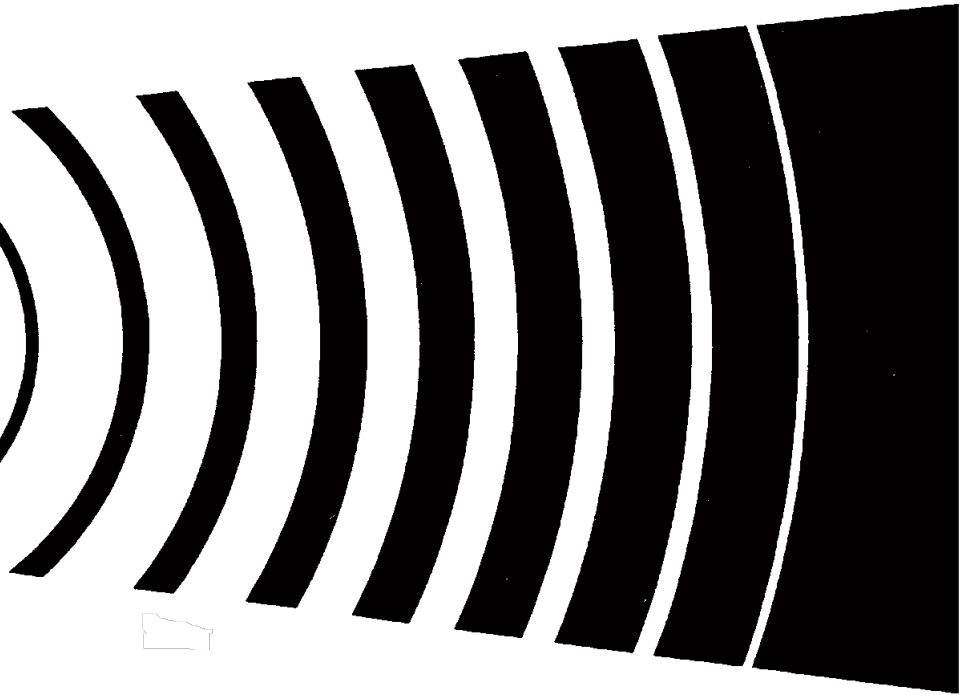
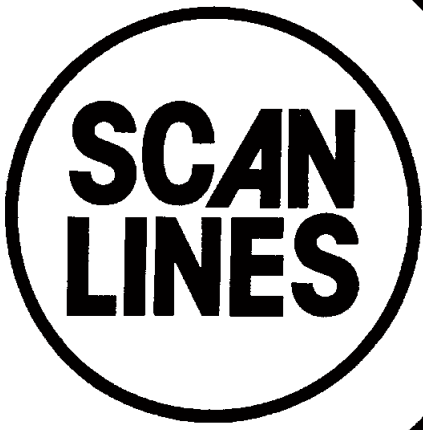
-Weber, F. P. and J. F. Wear, "The Development of Spectro-Signature Indicators of Root Disease Impacts on Forest Standards." September 30, 1970.

-Dana, Robert W., "Calibration of Color Aerial Photography." June 30, 1971.

-Langley, Philip G., Jan Van Roessel, David a. Sharpnack, and Robert Russell, "The Development of an Earth Resources Information System Using Aerial Photographs and Digital Computers." September 30, 1971.

Miscellaneous

*Mike Coggeshall, a coordinator of the Photo Interpreters, will marry Kay Bietry on July 30. She is an X-ray technician at St. Elizabeth Hospital.



Update

Vol. 39 The Laboratory for Applications of Remote Sensing September 10, 1971

Special Notices

*All requests for photographic work should be directed through Tom Martin. This includes slide mounting and commercially done film processing.

*To date, only eight people have cooperated with the current effort to bring the slide file up to date. Everyone else who has slides in their possession should take them to Deb as soon as possible to be checked.

*Please help take care of our illustrations!! In the past few months, 19 of them have been picked up to be properly stored since they had been left lying on the floor, leaning against the walls, etc. These illustrations represent considerable effort and expense and need proper care if they are to have a reasonable life span.

Travel

*Marion F. Baumgardner has been invited by the Food and Agriculture Organization of the United Nations to participate in a Technical Consultation on the Application of Remote Sensing to the Management of Food and Agricultural Resources in Rome, Italy, September 13-17, 1971. He will present a paper entitled "Agricultural Applications of Remote Sensing". Following that meeting, Dr. Baumgardner will consult with scientists at the International Institute for Aerial Survey and Earth Resources (Enschede, The Netherlands) on September 20, and at the Experimental Cartography Unit of the Royal College of Art (London) on September 21 and 22.

*Roger Hoffer is in San Francisco attending the convention of the American Society of Photogrammetry-American Congress of Surveyors and Mappers. He is delivering a paper there September 10 entitled "Applications of ADP Techniques to Multiband and Multiemulsion Digitized Photography", which he authored with Paul Anuta and Terry Phillips.

Visitors

- *September 8 - John Frere, E. Lineberry, R. Linney, J. Nemeč, G. Kimball, Q. Holmes, Jim Raney: NASA/MSC, Houston.
- *September 8 - Bob Marshall and John Erickson, University of Michigan
- *September 10 - Six exchange farmers from India associated with the Farmers and World Affairs Program

Call for Papers

*American Water Resources Association: Symposium on Watersheds in Transition, June 19-21, 1972, Colorado State University. Deadline for a short version of papers is December 1, 1971.

New Faces

*Sue Taylor and Maryanne Plant are new members of the secretarial staff at LARS. Sue will take Lee Erber's place and Maryanne starts September 13 as a special secretary for the Corn Blight Watch Experiment.

*Four new graduate students are starting at LARS this semester:

- Stan Woodring and Chris Stoher are working with Terry West on the Department of Transportation data.
- Chris Flanagan is working with Roger Hoffer.
- David Nelson has been hired as a technical writer for a document on the results of the Southern Corn Leaf Blight experiment.

Coming Attractions

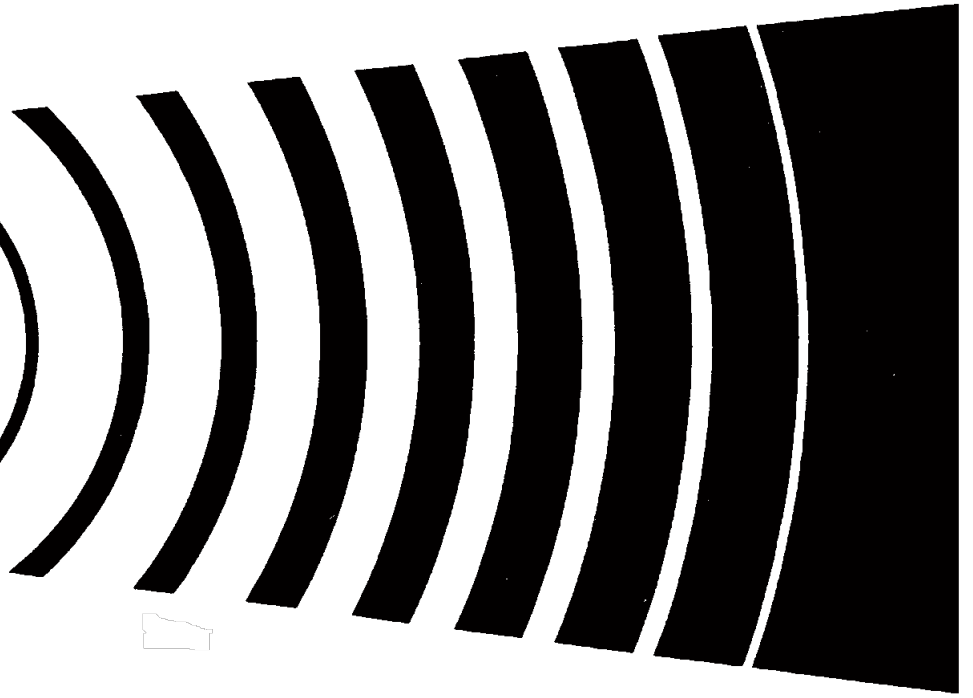
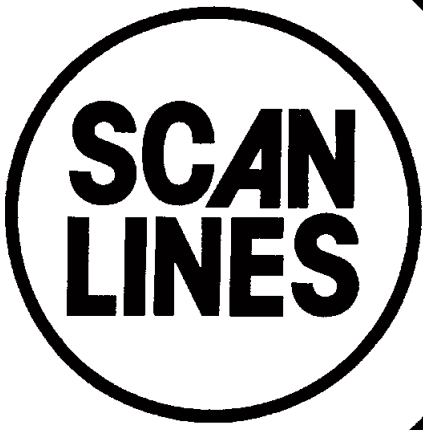
*Twelfth International Congress for Photogrammetry, Ottawa, Canada, July 23 - August 4. Registration forms have been received.

Birthdays

*September 24 - Jerry Jurica

Miscellaneous

*Congratulations to Ronni Pelsy on her recent engagement to Craig Brown of Champaign, Illinois. They will be married December 26.



Update

Vol. 40 The Laboratory for Applications of Remote Sensing September 27, 1971

Happenings and Items of Interest

- *The importance of remote sensing at Purdue was emphasized in the forestry and conservation section of the School of Agriculture's recent report to the President. Developments in courses in remote sensing were emphasized. This semester, a new course is being offered: Forestry 579, an interdisciplinary remote sensing seminar intended for students in Forestry, Agronomy, Geosciences, Electrical Engineering, and other disciplines. The courses, which meet on Tuesdays at 3:30 in Room 225 of the Horticulture Building, will consist of student and staff presentations concerning remote sensing instrumentation and techniques, the interpretation of remote sensor data, and the spectral measurements of natural resources materials. Roger Hoffer is in charge of the seminar.
- *On September 21-22, the executive committee of the Corn Blight Watch Experiment met at IST, University of Michigan. Attending from LARS were Dave Landgrebe, Marv Bauer, Chris Johannsen, John Peterson, Phil Swain, Terry Phillips, Jan Cipra, and Tom Martin. Prior to that meeting, an ASCS planning meeting was held. Those attending were LeRoy Silva, Dave Landgrebe, Terry Phillips, John Peterson, and Chris Johannsen.
- *Jan Cipra, Hassan Al-Abbas, Marion Baumgardner, and Chuck Roth presented papers at the national meetings of the American Society of Agronomy, New York, on August 15-20.

Special Notices

- *Be sure to get your new key for Flex I, otherwise you may find yourself locked out some day!
- *Who knows the whereabouts of the two dictaphones missing from Flex I? If you have any clues, contact Roger Hoffer or Phil Swain.

Visitors

- *September 23 - Messrs. Solina, Javier, and Advincula, participants in AID sponsored training program in computer systems and applications.
- *September 23 - Dr. Michael Duggin, senior research scientist at Division of Mineral Chemistry in Australia.
- *September 23 - Dr. Pace, archeologist from Indiana State University.

Library Acquisitions and Publications

- *Remote Sensing Applications in Forestry, Quarterly Progress Report for NASA Contract No. R-09-038-002 for the period of January 1, 1971, to March 31, 1971. Forestry Remote Sensing Laboratory, School of Forestry and Conservation, University of California, Berkeley, California.
- *IBM Systems Journal, Vol. 10, No. 3, 1971.
- *Selected Water Resources Abstracts, Vol. 4, No. 16, August 15, 1971.
- *The W. A. T. E. R. System: Computer Programs for Stream Network Analysis, June, 1971, Purdue University.
- *Digital Photometric and Polarimetric Surveys of Water and Land Areas, August, 1971, Report No. ADR-03-02-71.1

NOTE: All forestry reports such as the one listed at the top of the above list are indexed and filed under the University of California, as are the others originating from the Berkeley lab.

Call for Papers

- *1972 Spring Joint Computer Conference, Atlantic City, May 16-19. Deadline is October 1, 1971, for draft manuscripts of new, unpublished survey and technical papers, up to 6,000 words, which review technical progress of the computer field during the last five years and anticipate the developments of the next decade.

Coming Attractions

- *September 28 - Rod Jenson and Earl Rodd of IBM, Houston Scientific Center, will be here at LARS to report on progress in the development of boundary-drawing algorithms.
- *September 30 - Dr. Verhagen, President of the Technical Institute of Delft, will visit LARS and the Speech Lab.
- *October 13, 14- Corn Blight Executive Committee meeting at LARS
- *October 18, 19- ASCS planning meeting at LARS

New Faces

- *Larry Goldstein, from the Interamerican Geodetic Survey, is on campus this year to work with Prof. R. D. Miles of the Civil Engineering Department. He has had nine years experience in geodetic mapping in Central and South America and was most recently in Peru. He will be at LARS on a cooperative basis.
- *Bill Murray, a graduate student in Geosciences, will be working with Dr. Jurica on a M. S. thesis project concerned with atmospheric transmission and its effect on remote sensing data.

(New Faces con't.)

*Dave Taylor, an undergraduate in Computer Sciences, will be assisting Dr. Jurica with computer programs for atmospheric modeling.

*Welcome back to Luis Bartolucci, a graduate student in Geosciences, who left LARS in February, 1971, and has recently returned here from his home in Santa Cruz, Bolivia. He is working with Roger Hoffer and Terry West.

Birthdays

*September 26 Diana Docktor

*September 30 Rex James

Miscellaneous

*Congratulations to Steve Kristof on successfully completing the requirements for becoming a naturalized US citizen! The citizenship ceremony will take place October 27.

*Tips from the Darkroom: Put your unexpected film in the freezer to retard deterioration. Stored that way, it will keep even a year beyond the expiration date.

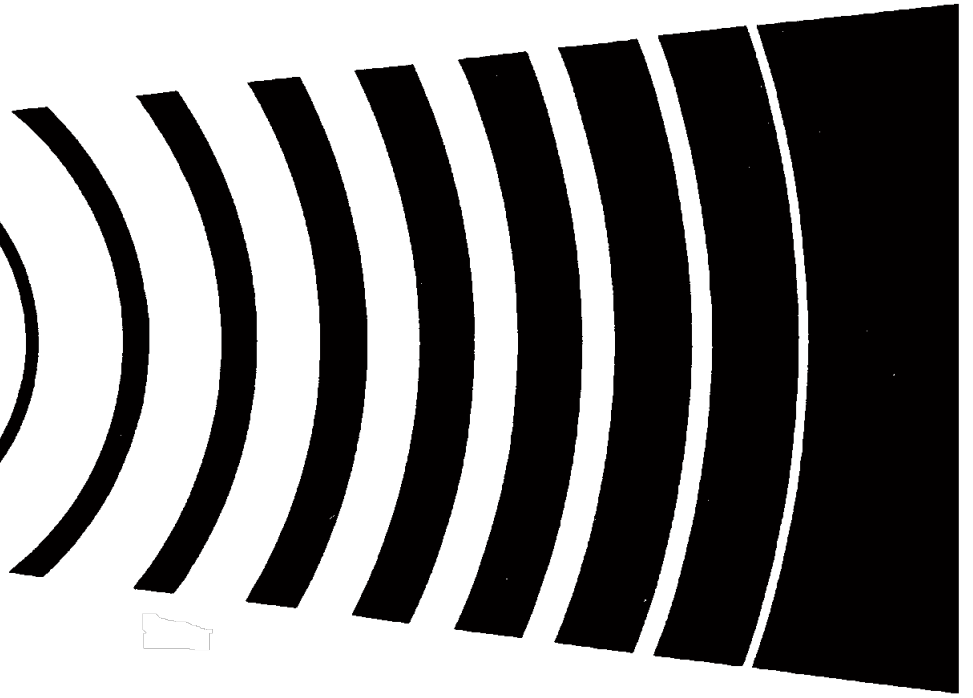
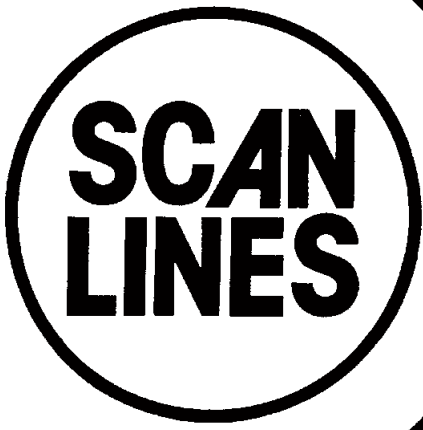
*Best wishes from LARS to two departing LARTIANS -

- Lee Erber, whose husband was transferred to Detroit, and

- Art Wacker, who finished his doctoral work at Purdue and is teaching now at the University of Saskatchewan at Saskatoon, Canada.

Seminars

*September 28 - "Automatic Data Processing of Multiband and Multi-Emulsion Photography", by Paul Anuta. The lecture will be in room 225 of the Horticulture Building at 3:30 p.m.



Update

Vol. 41-Laboratory for Applications of Remote Sensing-October 12, 1971

Happenings and Items of Interest

*The Interim Report of the Corn Blight Watch Experiment is complete and is being distributed this week to the executive committee of the experiment.

*LeRoy Silva gave seminars on remote sensing to EE graduate students, September 23, and to EE seniors on September 30.

*J. B. Peterson and Gail Santner gave an agronomy seminar on October 4 entitled "Mechanics of Computer Analysis of Multispectral Scanner Data from Selected Areas on the Earth's Surface."

Coming Attractions

*October 12-13: John M. DeNoyer, Director of Earth Observational Programs, A. B. Park, Chief of Earth Resources Survey, and representatives of several NASA centers will visit LARS to discuss our participation in ERTS/SKYLAB and other programs.

*October 12-13: Harold Jamison, ASCS, and Dick Nalepka, Willow Run Laboratories, will be here to work on site selections for the ASCS-NASA program.

*October 13: the Agronomy Senior Seminar will be held at LARS at 3:30 pm.

*October 18: all Indiana Extension Service personnel who helped with the Corn Blight Watch Experiment will visit LARS from 10:30 am until noon. A special program is being arranged.

*October 18-19: ASCS Programming Planning Group of NASA, USDA, and the U of Michigan will meet at LARS.

*October 20: Corn Blight Watch Executive Committee will meet at LARS.

Travel

*Chris Johannsen will be in New Orleans October 18-19 to present a paper at the Agricultural Engineering Society meetings.

*Roger Hoffer will be leaving for Brazil on October 19 on an AID-Purdue assignment to the Federal University of Vicosa to help the Vicosa staff develop their program in remote sensing and aerial photo interpretation. He also hopes to promote cooperative research programs between Vicosa, the Institute for Space Research (formerly the Brazilian Space Agency), and LARS/Purdue. Before his return on December 22, he will visit the Inter-American Geodetic Survey in Lima and Panama and the Interamerican Center for

Photointerpretation (CIAF) in Bogota, an organization with which LARS has had close contact for several years, primarily through Dr. Baumgardner's efforts.

*Barrett Robinson and Fred Phillips were in Gaithersburg, MD, October 6-8, to visit Exotech, Inc., and brought back the field calibrator and the short wavelength head of the field spectroradiometer.

Visitors

*September 28: A. Venkata Rao, Agricultural University, Tamilnadu, India.

*September 28: Earl Rodd and Rod Jenson, IBM, Houston.

*September 30: C. Verhagen, Technical University of Delft.

*October 1: Dr. David E. Pitts, Chief of the Physics Section in the Earth Observation Division, NASA/MSC, visited LeRoy Silva in regard to EREP ground truth.

*October 5: S. A. Gomide, Federal University of Vicosa, Brazil.

Library Acquisitions and Publications

*Water Resources Abstracts, Department of the Interior, Vol. 4, No. 17, September, 1971.

*NASA Earth Resources Spectral Information System: A Data Compilation, May, 1971.

Seminars

*"Graduate Level Training," by John Peterson, for the Animal Science Department, Monday, October 11.

*Remote Sensing Seminar, Department of Forestry and Conservation, Room 225, Horticulture Building:

- Tuesday, October 12, 3:30 pm, "Thermal Mapping of Streams and Scanner Calibration Techniques," by Luis Bartolucci.

- Tuesday, October 19, 3:30 pm, "Topographic Mapping by Photogrammetric Methods," by Ed Stevens, graduate student in horticulture.

*November 11-12, "Remote Sensing of Earth Resources and the Environment," Rickey's Hyatt House, Palo Alto, California, sponsored by the American Meteorological Society.

New Faces

*Welcome to Mrs. Kathleen S. Himmelberger who has a LARSYS programming position in the Data Handling Group. Kathy started at LARS September 20 and is now working on corn blight problems; later, she will be doing programming for LARSYS. She is working with Kay Hunt.

*Six new computer operators started work during September: Henry Barth, Michael Kerdig, Ernestine Klotz, Robert Mason, Colin Searle, and Thomas Smith. We also welcome back a former computer operator, Leslie Bauman. The work schedules for the operators can be obtained from Bill Hockema.

Miscellaneous

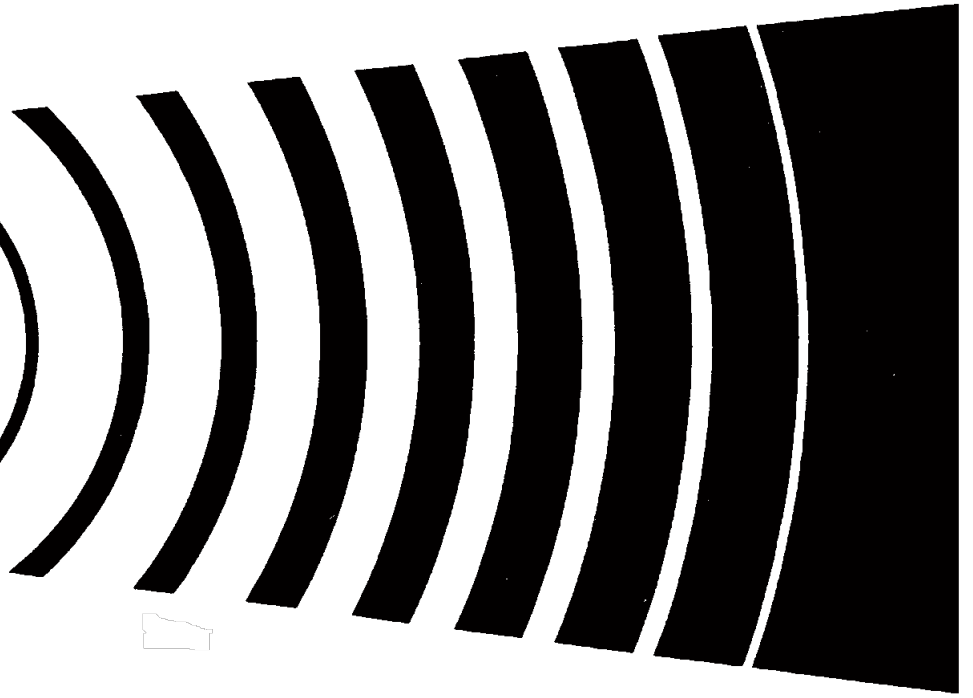
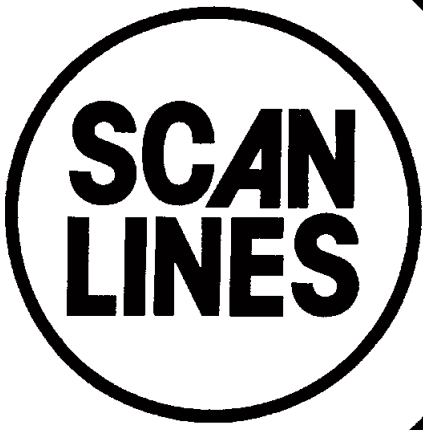
*Bill Strahorn, previously employed as a computer operator, is now working with Paul Anuta on calibration problems.

*Results of the color-preference survey show that the majority of the 90 staff members who responded are in the "corporate-blue syndrome." The percentages go as follows:

52% - blue
23% - red
15% - green
6% - yellow
2% - orange

Birthdays

(Ed. note: We are unwilling to believe that no one on the LARS staff can claim the bountiful month of October as his birthday month. Perhaps this merely indicates that our records need updating. Will everyone who started at LARS after June 1 (and wants to see his name in print at least once a year) please drop a note to Elaine Schebo **giving** your birthday. No **years** necessary! Thanks).



Update

Laboratory for Applications of Remote Sensing

Volume 42

October 25, 1971

Happenings and Items of Interest

- *In order to increase the opportunities at LARS to learn more about remote terminal operation, the 2780 (card reader, punch, and printer) and a 2741 (typewriter terminal) will be moved to Flex Lab I around November 1. This should aid in testing our programs for remote terminal use and in making the specification changes required.
- *Copies of the Proceedings of the 7th International Symposium on Remote Sensing of Environment, sponsored by IST, University of Michigan, have been received by the people who attended the meetings.

Travel

- *LARS will be well-represented at the Indiana Academy of Science meetings, October 28-30, at Earlham College. The following papers will be delivered in their respective division meetings on Friday, October 29.
 - Ecology Division: "Remote Sensing Techniques for Measurement of Water Temperatures," Roger M. Hoffer and Luis Bartolucci.
 - Geography and Geology Division: "Engineering Soils Mapping in Indiana by Computer from Remote Sensing Data," T. R. West.
 - Soil Science Division: "Evaluation of Weather on Southern Corn Leaf Blight by Computer Simulation Model," Walter Stirm, Marv Bauer, and Otto Loewer, Jr.
- *Marion Baumgardner will attend the meeting of NE-69 Technical Committee on Remote Sensing on November 9-10 in New York City.
- *Dave Landgrebe and Terry Phillips were at MSC in Houston on October 14-15 to prepare the NASA-ASCS proposal.

Coming Attractions

- *Mr. H. R. H. Cleghorn-Brown, project director, Industrial Market Research Division of the Economist Intelligence Unit, Ltd., London, England, will visit LARS on November 10 or 11.

Visitors

- *Dr. John deNoyer and Dr. A. B. Park (NASA Headquarters), Dr. A. Calio (NASA/MSC), and Dr. Tom Raglund (NASA/Goddard) were at LARS on October 18 with other NASA representatives to negotiate the ERTS and Skylab proposals.

*On October 18-19, a large group of visitors from ASCS (Washington), MSC (Houston), and IST (University of Michigan) were at LARS to finalize plans for the NASA/ASCS program.

*A meeting of the Corn Blight Watch Experiment Executive Committee was held at LARS on October 20. Representatives from NASA/MSC, ASCS (Washington), and IST (University of Michigan) were present.

*Representatives from two corporations visited the Measurements section to give demonstrations last week:

- AGA Corporation demonstrated a thermal-imaging scanner on October 20.

- Texas Instruments demonstrated a thermiscope on October 22.

*October 21: T. C. Tweedie, Bellcomm, Inc.

Library Acquisitions and Publications

*Sensor Data, Vol. II (July, 1971), Earth Resources Research Data Facility, NASA/MSC, R & D File.

*Documentary Data, Vol. I (July, 1971), Earth Resources Research Data Facility, NASA/MSC, R & D File.

*Investigations Related to Multispectral Imaging Systems for Earth-Resources Surveys, NASA, July, 1969-September, 1970.

*Nimbus 4 Data Catalog, Vol. IV (September 1-October 13, 1970), Goddard Spaceflight Center.

*Cashill, Jack. Holographic Imaging through a Randomly Inhomogeneous Medium. Ph. D. thesis, 1968, University Microfilms, Inc. Ann Arbor, Michigan.

*McCormick, Michael P. Backscatter Measurements of the Lower Atmosphere. Ph. D. thesis, University Microfilms, Inc. Ann Arbor, Michigan.

Seminars

*Forestry and Conservation Department seminars in remote sensing, held Tuesdays, 3:30 pm, in Room 225, Horticulture Building.

- October 26: "Engineering and Environmental Applications of Remote Sensing," Christopher J. Stohr, graduate student in geosciences.

- November 2: "A Method of Determining Minimum Field Plot Size for Multispectral Scanner Data," John G. Stockton, graduate student in agronomy.

*"1971 Corn Blight Watch," by C. J. Johannsen, Botany and Plant Pathology Seminar, Wednesday, October 27, 1971, 3:30 pm. Room 1-410, Life Science Building.

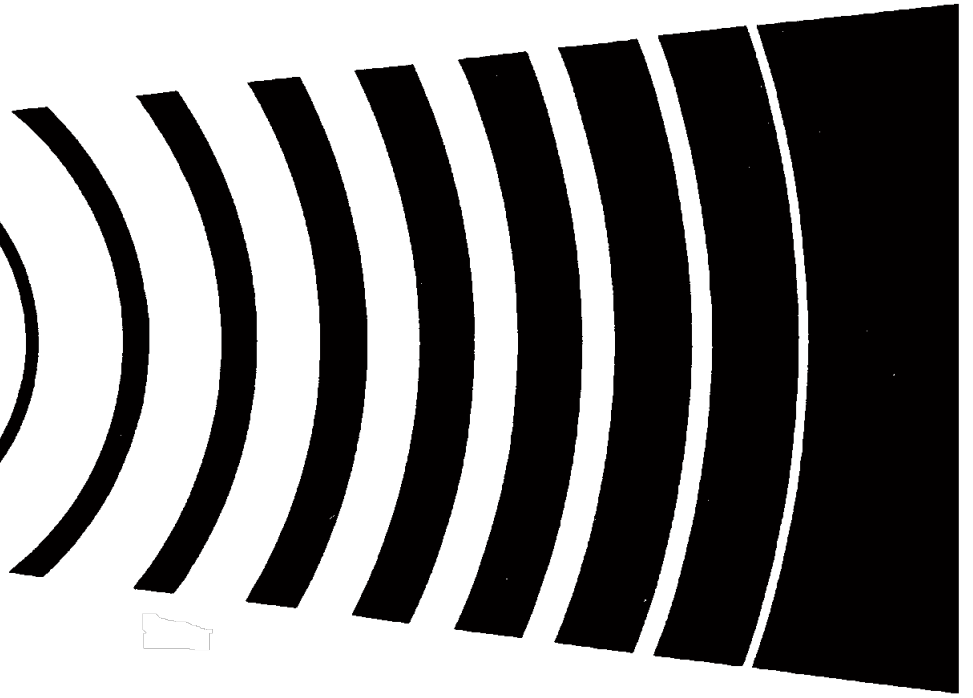
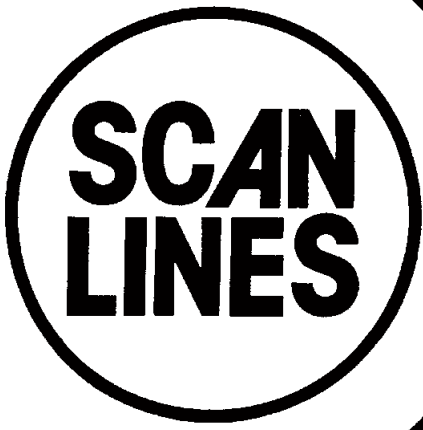
*"Applications of Remote Sensing," by C. J. Johannsen, Agricultural Economics Seminar, Friday, October 29, 3:30 pm. Room 141, Krannert Auditorium.

Miscellaneous

*A reminder from our illustrator: there are still several illustrations missing. Please check your closets, your book cases, and your conscience.

Birthdays

*Belated birthday greetings to Mike Coggeshall and Kathy Himmelburger (October 13) and to Verle Hughes and Chris Flanagan (October 14). (If anyone thinks he might not yet be included in the Master Birthday List, please check with Elaine.)



Update

Laboratory for Applications of Remote Sensing

Volume 43

November 5, 1971

Happenings and Items of Interest

*The 1971 Corn Blight Watch Final Report is progressing in many corners of LARS. (At least that is where people have escaped to write.) Most sections of Volume I, "The Experimental Plan," are nearly complete. We hope we can say the same within a week for Volume II, "Experiment Implementation." Now most people are concentrating their efforts on writing up material to include in Volume III, "Experiment Results." The deadline for this volume is November 20. All writers are urged to get their illustration needs to Debbie Remsburg as soon as possible.

*The Flex Lab I remote terminal is up and running. A series of educational demonstrations on its use was presented Wednesday, November 3. It is hoped that many computer users at Flex Lab I will avail themselves of this facility, thereby saving themselves gas and helping the Data Processing group learn what is needed to support a user-oriented remote terminal. Phil Swain will handle questions and suggestions related to the remote terminal.

*The familiar acronym IBM (I've Been Moved - what else?) can be aptly used by many of the LARS staff members and by no small part of the LARS equipment. The major impetus for the moves was provided by the arrival of the remote terminal in Flex Lab 1 and by the necessity to clear out Unit B of Flex Lab 2. Along with the return of Dick Mroczynski, Ray Frederking and Mike Coggeshall to Flex Lab 1, came the Data Library (under Tom Martin's care) and the large light table. A second terminal is scheduled to arrive in Flex Lab 1 near the end of November.

All of this, of course, meant new office assignments and desk locations for a number of people. Marion Baumgardner has joined Steve Kristoff and Chuck Roth in their office, and John Lindenlaub will share an office with Roger Hoffer. Susie Taylor has moved in with Elaine Schebo and Karen Cantwell, and Ted Sheets volunteered to move his desk into the mimeograph room. Nine new single-pedestal desks arrived to ease the work space shortage: Clara Woodall is now located out-

side the darkroom door and Chris Flanagan and Luis Bartolucci have their desks opposite Jan Cipra and Marv Bauer's office. Unfortunately, since all the regular office space is needed to house the full-time professional and professorial staff, several graduate students have had to relinquish the privacy of an office.

Ten desks for graduate students are now located along the windows in the measurements area.

The display area for entertaining visitors will be between the computer room and the secretaries' area.

And what has happened to the seven variscans? Three of them are being sent to campus, one each to the civil engineering, agronomy, and forestry and conservation departments. Three will be stored, and one will be kept for use at LARS. We understand, however, that it is still looking for a home.

*Revised procedures for employing personnel for LARS have been prepared and will be distributed soon. The eight hiring procedures apply to the four major employment categories: 1) hourly positions, i.e. service, clerical, and student; 2) professional staff and technical assistants; 3) graduate assistants; and 4) professorial staff. J. B. Peterson will share the responsibilities with D. A. Landgrebe for a number of the hiring steps.

Coming Attractions

*Chris Johannsen will speak at the Rotary Club meeting in Crawfordsville, Indiana, at noon on November 10. His topic will be "Applications of Remote Sensing."

Seminars

*Chris Johannsen presented a paper on November 3 entitled "Application of Remote Sensing to Hydrology, Geology, Geography and Agriculture" to the School of Civil Engineering Geometrics Seminar.

*"Engineering Aspects of Remote Sensing," EE 595A, will be offered as a three-credit course during the spring semester, 1972. Topics to be covered are: Overview of Remote Sensing; Data Handling and Analysis; Physical Measurements in Remote Sensing; Measurement Limitations and Data Calibrations; and Applications. For further information contact the instructor, Professor John Lindenlaub, EE 268, Ext. 32131.

*The Remote Sensing Seminar, sponsored by the department of forestry and conservation, will be held Tuesday, November 9 and 16, at 3:30 p.m. in Room 225 of the Horticulture Building. Scheduled topics are:

November 9-"Comparison of Remote Sensing Techniques for Orbital Altitudes," Stanley M. Woodring, graduate student, in geosciences.

November 16-"Remote Sensing Aid to Crop Environmental Problems," Walter L. Stirm, graduate student in Agronomy.

Visitors

*Members of the Indiana-Illinois Chapter of the American Society of Photogrammetry and of the Tecumseh Chapter of the Indiana Society of Professional Land Surveyors toured LARS on November 4. The tour was conducted by Chris Johannsen.

*Curly Myers and Bill Deckard of Culligan Soft Water visited LeRoy Silva and Tom Martin to discuss the condition of the water for darkroom use.

*Mr. Gordon Prescott, Chief Geologist for the U. S. Army Corps of Engineers, Washington, D. C., visited LARS on October 5, 1971.

Travel

*Terry West attended the meetings of the Geological Society of America, November 1-3, in Washington, D. C. He was there

also to oversee the Geosciences-LARS display in the exhibition center adjacent to the meeting halls.

Library Acquisitions and Publications

*Brown, Kenneth. Infrared Detection of Subdermal Infestations of Cattle Grubs in Beef Steers. August, 1971 (Thesis)

*Wind Predictability and Remote Sensing Techniques. Department of the Navy, September, 1971

*Apollo IX Multispectral Photography:Geologic Analysis. Goddard Space Flight Center, September, 1969

*Space Sciences Laboratory, Annual Progress Report. University of California, May, 1971.

*LARS Image Editing Display System. IBM Federal Systems Division, July, 1967.

*Infrared Thermography of Subjects in Diverse Environments. U. S. Department of Commerce, December, 1965.

*1969 Wheat Objective Yield Survey. USDA.

*ORL Experiment Program. Volume B, Part 1: Agriculture-Forestry. NASA, February, 1966.

*Investigations of Spectrum-Matching Sensing in Agriculture, December 1965-September 1966. NASA, 1967.

*Citizens Advisory Committee on Environmental Quality. April, 1971. (Pamphlet)

*Community Action for Environmental Quality. (Pamphlet)

Miscellaneous

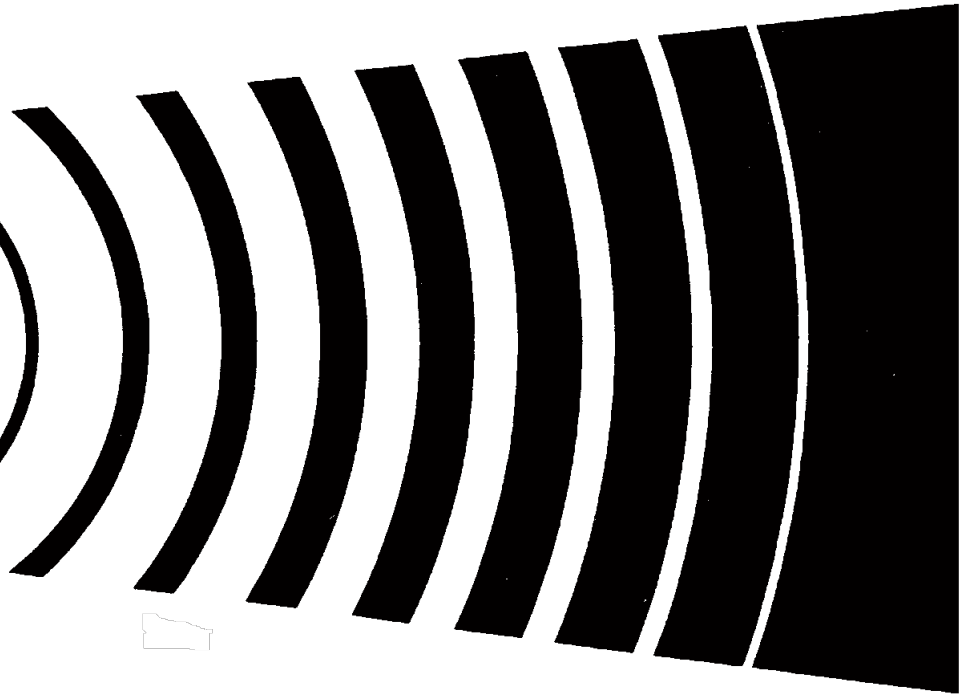
*An interesting "Believe-it-or-Not" from Debbie Remsburg. Did you realize that the number of individual slides made from original art work has grown at a staggering rate over the last eight years. And these figures don't include the art work done for articles, information notes, etc., which were never made into slides.

1964	37 slides
1965	52 slides
1966	84 slides
1967	100 slides
1968	140 slides
1969	104 slides
1970	234 slides
1971	300 slides (as of November 1)

*Our very best wishes to Ronni Pelsey who is leaving LARS on November 19 to become a December bride and move to Champaign, Illinois. Her fiance, Craig Brown, is a student at the University of Illinois.

*Happy Birthday to:

Floyd Schultz - November 7
LeRoy Silva - November 17



Update

Laboratory for Applications of Remote Sensing

Volume 44

November 22, 1971

Happenings and Items of Interest

*H. H. Kramer, Director of Purdue's Agriculture Experiment Station, asked that the following letter sent to him from Clifford Hardin and dated October 22, 1971, be brought to the attention of all who were involved in the Corn Blight Watch Experiment:

Dear Dr. Kramer:

We are greatly indebted to you and your staff who participated this year in the Corn Blight Information Center effort. Their thorough and timely appraisals of this disease throughout the corn blight threat kept rumors to a minimum and brought a needed stability to the situation. This was an example of Federal and State cooperation at its best.

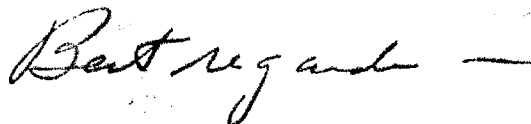
Although we have now discontinued the weekly corn blight releases, we plan to prepare a summary statement of the year's experience. We will appreciate your continued help in this effort.

I wish to add my praise to that of many others for the information and the work that your staff provided. Please convey my thanks to all concerned.

Sincerely,



CLIFFORD M. HARDIN
Secretary



*Our sympathy to Dr. Peterson upon the death of his brother in Los Angeles. Pete is now taking care of the affairs of the estate and will return about November 23.

*A notable paper on remote sensing: "Remote Sensing in the Isles of Langerhan," by M. Cook in Proceedings of Seventh Symposium on Remote Sensing (1971 Michigan Symposium), Volume II, page 905. Borrow a copy from any of the LARS attendees and read this remarkable piece of work. Phil Swain would appreciate your comments.

*LARS has received a projector for lantern slides for use of the LARS staff. See Jack Halsema or Tom Martin if you wish to use it.

*After a prolonged stay in Unit B, Ken Martin trudged over to Flex Lab I to work on corn blight and other pressing research. Mike, Ray, and Dick were all happy to see Ken return; they had feared he had been lost inside a Variscan.

*Bill Hockema reports that the LARS computer will be up all day November 25, Thanksgiving Day. It will be down from midnight November 25 until 8:00am Friday November 26. (See Update, page 4, for weekend scheduling information.)

*Jack Halsema received last week a certification of his acceptance for membership in the Professional Photographers of America. The monthly publication The Professional Photographer will be available for LARS staff use.

Coming Attractions

*On November 23, Mr. Charles LeBoeuf of Honeywell Sales, Dayton, Ohio, will demonstrate a gray scale strip chart picture printer, hardware LARS is considering purchasing. The printer would be used with the A-to-D system for displaying and editing analog aircraft scanner data. The demonstration will be held at 3:00 pm in the A-to-D area of Flex Lab 2.

*Six visitors from NASA Manned Spacecraft Center, Houston, will be at LARS on November 22 and 23 to discuss the implementation of the LARS computer programs on the MSC computers. It is expected that there will be a presentation by the group shortly after their arrival on the intentions of the Houston Data Processing System.

*Happy Thanksgiving! LARS office will be closed November 25.

Visitors

*James F. Shore, Technical Administrator of Dow Chemical, and Arthur Young, manager of the Apparatus and Distribution Division of VIFCO, a wholly-owned subsidiary of Dow, visited Colonel Jones and LARS on November 16, 1971.

*Rich Allen, SRS, Washington, visited LARS on November 16-19, 1971, to work with Jan Cipra, Marv Bauer, and Gail Santner.

*Dr. Iwao Nakajima, Chief of the Photogrammetry Lab of the Japanese Department of Forestry, was at LARS on November 17, 1971, to visit Marv Bauer.

*Robert M. Ray, Professor Ahmed Sameh, Dr. Clark Bullard and Jim Madden of the University of Illinois Center for Advanced Computation visited LARS on November 16, 1971.

*William E. Kreisle, Chief of Survey Branch, U. S. Army Corps of Engineers, Louisville, Kentucky, on November 9, 1971.

Seminars

*Chris Johannsen spoke on Agricultural Applications of Remote Sensing to the Rush County Purdue Ag. Alumni at Rushville, Indiana, on November 11, 1971. He was substituting for Dr. Earl L. Butz, newly nominated Secretary of Agriculture.

*Remote Sensing Seminars sponsored by the Department of Forestry and Conservation, are held Tuesday afternoons at 3:30 in Room 225 of the Horticulture Building. Papers scheduled for this week and next:

November 23 - "Model of a Leaf and Plant Canopy," by Ravindra Kumar, graduate student in Aeronautics.

November 30 - "Disaster Analysis," by Lawrence Goldstein, graduate student in civil engineering.

Library Acquisitions and Publications

*Water Resources Abstracts, Vol. 4, No. 19, October 1971.

*Water Resources Research, Vol. 7, No. 5, October 1971.

*Water Resources Abstracts, Vol. 7, No. 5, October 1971.

*Ecological Surveys from Space, NASA, 1970.

*IBM Systems Journal, Vol. 9, No. 3, 1970.

*Heller, R., F. Weber and K. Zealear. "The Use of Multi-spectral Sensing Techniques to Detect Ponderosa Pine Trees under Stress from Insects or Diseases." University of California at Berkeley, 1970.

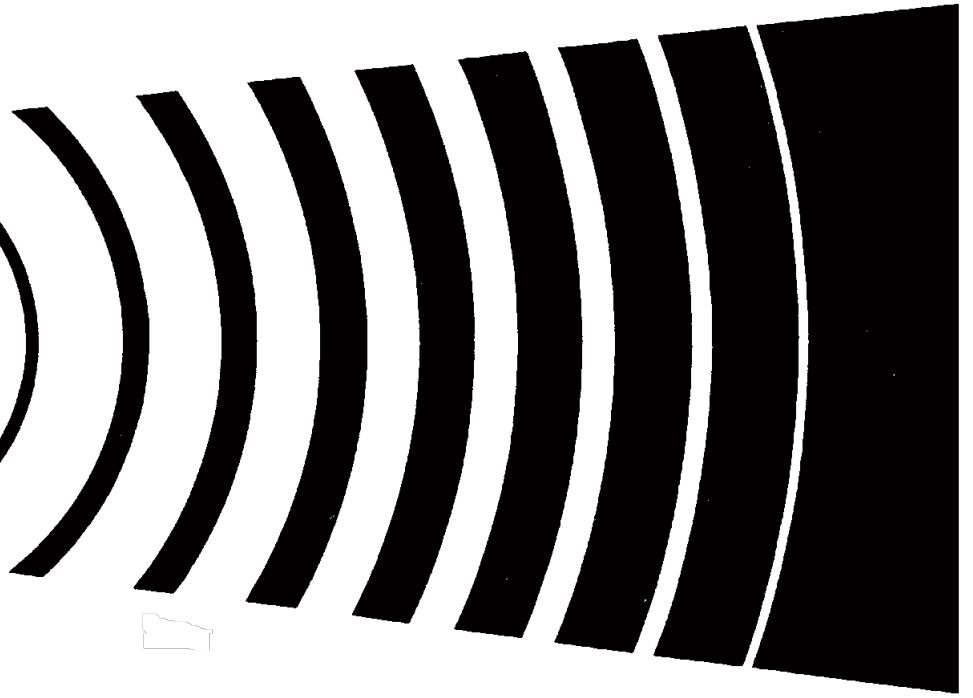
*Olson, C., W. Rohde, J. Ward. "Remote Sensing of Changes in Morphology and Physiology of Trees under Stress." University of California at Berkeley, 1970.

*IEEE Standard and American National Standard Graphic Symbols for Electrical and Electronics Diagrams. March 1971.

*IEEE Standard Definitions of Terms for Solar Cells. No. 307, November 1969.

*IEEE Recommended Practice: Rules for the Use of the International System of Units. 1971.

LATE NEWS - Bill Hockema announced Friday that current system upgrading necessitates a change in the weekend operation schedule for the next two weekends, November 27-28 and December 4-5. The system will be down both weekends from Saturday at 8:00 am until Sunday afternoon.



Update

Laboratory for Applications of Remote Sensing

Volume 45

December 6, 1971

Special Notices

*There has been a change in the previously announced computer operation schedule for the weekends of December 4-5 and December 11-12; the system upgrading scheduled for December 4-5 will be done the following weekend instead. The system will be up December 4-5 according to the normal schedule; it will be down from 4:00 a.m. Saturday, December 11, until 6:00 p.m. Sunday, December 12. There is a possibility that the work may be completed early; users wishing to use the computer Sunday afternoon should call the operators to check on the current status.

*The Soils Research Group will meet in the conference room, Flex Lab I, at 9:00 a.m., Tuesday, December 14.

*Remote Terminal Users are reminded to watch the bulletin board near the terminal.

Travel

*December 2, 1971: D. A. Landgrebe, T. L. Phillips, C. J. Johannsen, and Phil LeBlanc were at Urbana, Illinois, to discuss the application of ILLIAC IV in remote sensing.

*December 6-8, 1971: D. A. Landgrebe, T. L. Phillips, M. E. Bauer, M. F. Baumgardner, and P. H. Swain will be at Goddard Space Flight Center. Phil Swain will also make a tutorial presentation at the Electronics Industries Association Symposium on Automatic Photointerpretation and Recognition. He will discuss the application of pattern recognition techniques to multispectral scanner data.

Visitors

*Week of November 22, 1971:
Dr. Archie K. McQuillan and Bimal K. Bhattacharyya from the Canadian Centre for Remote Sensing

*Week of November 29, 1971:
Dr. James R. Karr, Smithsonian Tropical Research Institute, Balboa, Canal Zone

Happenings and Items of Interest

*During the past week, Flex Lab I acquired a second remote terminal. It is now operational.

Seminars

*Remote Sensing Seminar sponsored by the Department of Forestry and Conservation:

- Tuesday, December 7: "Requirements and Results in Tracking Wildlife with Remote Sensing Techniques," by Don Kretz, graduate student in biology. 3:30 p.m., Room 225, Horticulture Building.
- Tuesday, December 14: "Introduction to the Model 20C Spectroradiometer," by Frederick L. Phillips, graduate student in electrical engineering. 3:30 p.m., Room 225, Horticulture Building.

Library Acquisitions and Publications

*The Fastest Computer. Scientific American, Feb. 1971.

*Roberts, L. G., and B. D. Wessler. Computer network development to achieve resource sharing. Advanced Research Projects Agency, Washington, D. C., Spring Joint Computer Conference, 1970.

*ILLIAC IV. University of Illinois.

*Denenberg, Stewart. ILLIAC IV and the ARDA Network. University of Illinois.

*Dowell, T. P. L., Jr. NARIS. Center for Advanced Computation, University of Illinois.

*Hoffer, Roger M. and Forrest E. Goodrick. Variables in Automatic Classification Over Extended Remote Sensing Test Sites. Reprinted from Proceedings of the 7th International Symposium on Remote Sensing of Environment, May, 1971.

*Anuta, Paul E. and Robert B. MacDonald. Crop Surveys from Multiband Satellite Photography Using Digital Techniques. Remote Sensing of Environment, 2:53-67, 1971.

*Tanguay, M. G., R. M. Hoffer, and R. D. Miles. Multispectral Imagery and Automatic Classification of Spectral Response for Detailed Engineering Soils Mapping. Joint Highway Research Project, Purdue. February, 1970.

*Lyon, R. J. P. Emittance Spectra of Selected Targets from Mission 108 Airborne Data: Final Report (C) - Phase IV. Infrared Spectrometry Studies. Stanford, California. October, 1971.

- *Water Resources Bulletin, Journal of American Water Resources Assoc. Vol. 7, No. 5, October, 1971.
- *Marshall, A. A. Software (Computer Programming): Final Report (A) - Phase IV. 1970-71 Stanford Spectral Data Management Programs, Stanford Remote Sensing Lab.
- *Lu, Lee. Stanford Spectral Digital Data Acquisition System, 1971 Version: Final Report (B) - Phase IV. Infrared Spectrometry Studies. Stanford University. October, 1971.
- *Selected Water Resources Abstracts, Vol. 4, No. 20. October 15, 1971. U. S. Department of Interior.
- *U. S. Space Science Program Report to COSPAR, Fourteenth Meeting Seattle, Washington, June 1971. National Academy of Sciences - National Research Council.

Birthdays

- *December 5 - Roger Hoffer
- *December 10 - Maryanne Plant
- *December 12 - Phil LeBlanc
- *December 17 - Tom Builta

Miscellaneous

- *Elaine Schebo reports that plans are progressing well for the LARS Family Christmas Party on December 22. There will be Christmas carol singing, cartoons for the children, and, of course, the exciting visit of Santa Claus. The party will be held in Flex Lab II, Unit B. The deadline for RSVP's was Friday, December 3, so if you plan to come, let Elaine know immediately.
- *The following "composition" example was compiled by David Nelson, the graduate student in English who is writing the Corn Blight Watch Final Report. Although the samples that follow were written for the serious purpose of defining the tenses to be used in the three volumes of the report, we thought you might enjoy it for other reasons.

Vol. I - Sample

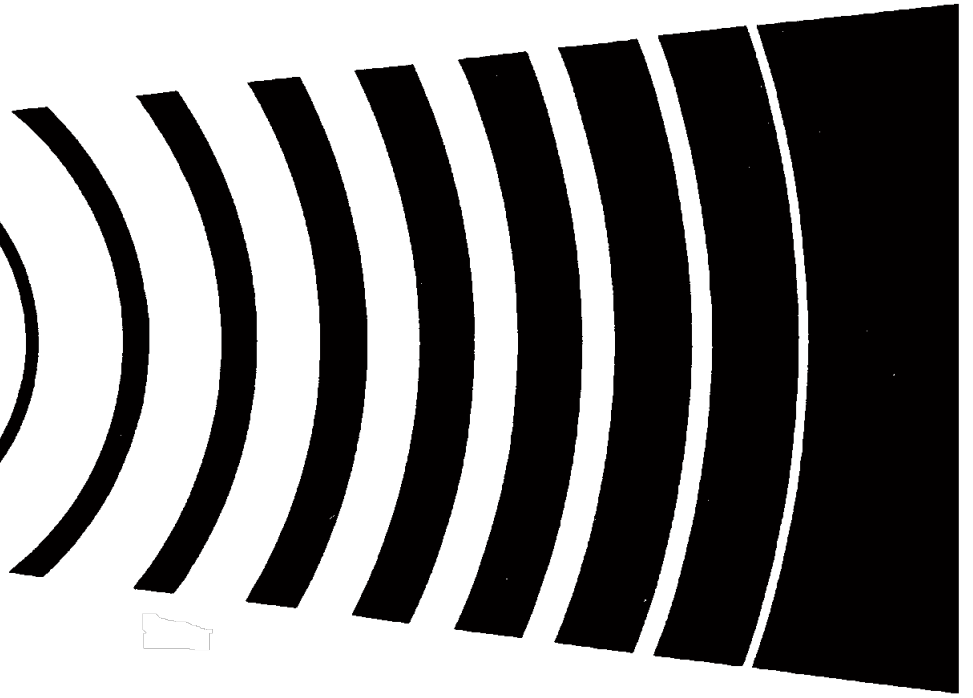
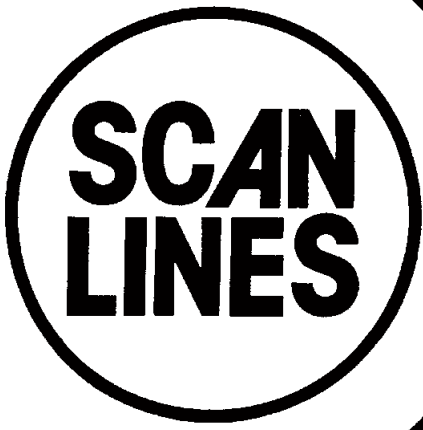
Each segment of the test strip was to be overflown twice weekly. The results would then be delivered to the University of Southern Nevada's Laboratory for the Sensing of Remote Applications.

Vol. II - Sample

In practice it was found that the biweekly overflights of the test strips were impractical since sand worms caused maintenance problems on the Curtiss-Wright B Pusher leased from NASA. It was therefore decided to worm-proof the engines, decrease the flights to weekly and switch data analysis to Utah State Agricultural College's Remote Laboratory for the Sensing of Applications with subsidiary analysis handled by an independent group - Research in the Applications of Technological Sensing (RATS).

Vol. III - Sample

Data from the overflights of the Azerbaijan Desert section of the USSR show that there are definitely no corn fields in any area which receives less than one inch of rain per year. Our recommendation is that in future projects, overflights be restricted to areas of the world known to be capable of supporting agriculture.





Update

Vol. 46

Dec. 20, 1971

Happenings and Items of Interest

*MERRY CHRISTMAS! Lest you forget - LARS' Family Christmas party will be held from 2:30-4:00pm, Wednesday, December 22. Thursday and Friday, December 23 and 24, are official university holidays as is Friday, December 31. The LARS office will be closed those three days.

*And while we are on the subject of Christmas, our thanks to Dr. Ralph Shay for the box of holly he sent to the lab. Dr. Shay is head of the department of botany and plant pathology at Oregon State University and spent some time at LARS this summer in conjunction with the Corn Blight Watch Experiment.

*The next issue of *Update* will be out January 10; save your news until the week of January 3.

*The 360/67 will also get a Christmas vacation, albeit a short one. After working all day Thursday, December 23, it will be down from midnight until 1:00pm Sunday, December 26. It will follow the regular schedule until 3:30pm, Friday, December 31, when it will take a holiday until Saturday, January 1, at 8:00 am and then resume its normal schedule. That doesn't give it much time to recover from welcoming in the new year, but Bill Hockema assures us it will be ready to start chewing data if anyone has anything to feed it.

*Preparatory plans were made for investigations associated with projected ERTS data when D.A. Landgrebe, T.L. Phillips, M.E. Bauer, M.F. Baumgardner, and P.H. Swain were at Goddard Space Flight Center, December 6-8, 1971. The launch of the Earth Resources Technology Satellite, previously scheduled for March, 1972, has been delayed until late May, 1972, at the earliest.

*A briefing for LARS staff on the results of the Corn Blight Watch Experiment is to be held Friday, December 17, 1971, at 3:00pm.

*The Fall, 1971, issue of *Bee-Hive*, a quarterly publication of United Aircraft, contains an article by Robert J. Morrissey entitled "Air Eye on the Corn Belt." The article, which contains several NASA photos, focuses on the RB-57 flights and the work of the photointerpreters; it also contains several quotes by R. B. MacDonald and John M. Barnes of the Corn Blight Information Center. A xeroxed copy of the article is being circulated by Tom Builta.

*Noted in December 8, 1971, *Wall Street Journal*: Hughes Aircraft Company's Ground Systems group has been awarded a \$30.1 million subcontract by Litton Industries, Inc., to produce digital display systems for 30 Navy Spruance-class destroyers.

*The following is quoted from *Washington Science Trends*, Vol. XXVII, No. 8 (Nov. 29, 1971).

SATELLITE PLANT DETECTION

The use of satellites to detect poppy fields from space was reported to be possible this past week, but it will take some time to detect marihuana plants, and cocaine-yielding coca cannot be spotted at all.

This forecast was made for the House of Representatives by Rep. Louis Frey (R) Fla., who said that NASA hopes to make poppy detection possible with the Earth Resources Technology Satellite (ERTS-A) to be launched in the Spring of 1972.

Frey said he had been informed that poppies cannot be concealed from above since they are varicolored when in bloom and must grow in direct sunlight. Fields of 10 acres and more could reportedly be spotted.

Marihuana plants could reportedly be detected, although they are usually found mixed with other growth. However, the detection of the plant may be possible because the male plant becomes senescent before the female, and some means of remote-sensing may be developed.

Cocaine-yielding coca plants cannot be detected by aircraft or satellite, since they grow close to the ground, beneath a rain forest canopy.

Frey said NASA Earth resources survey program officials have already had a discussion with the U.S. Department of Justice on the remote-sensing of drug-producing plants. He expressed hope that the program could be coordinated with the International Narcotic Control Board.

Coming Attractions

*R. B. MacDonald, NASA-Houston, Joe Clifton, ASCS, Phil Hasell, University of Michigan, and Richard Allen, SRS-Washington, will be at LARS December 20-21 to review results of the Corn Blight Watch Experiment and to work on the final report.

*A visiting scientist program will be inaugurated at LARS in January. The program provides for professional people to visit LARS for one-to-three-month periods to receive special training in remote sensing and data processing. To date, definite plans have been made for extended visits by 16 scientists from nine countries and the United States, with the first participants arriving January 3. It is anticipated that this new program will be come a significant part of LARS work.

Travel

*Marv Bauer presented a paper in Chicago on December 15, entitled "Remote Sensing as a Means of Detecting Crop Disease" to the 26th Annual Corn and Sorghum Research Conference, sponsored by the American Seed Trade Association.

Visitors

*December 3, 1971-Messrs. Faine, Davis, and Jacoby from Exotech, Washington, D.C., to visit Dr. Silva.

*December 7, 1971-Glenn H. Robinson, FAO, Thailand, to visit Chris Johannsen.

*December 9, 1971-Dr. Donald J. Watson, Mr. Harry Gough, and Mr. J.M. Brown from General Electric took a brief tour of LARS while they were on campus to visit Dean McGillem.

*December 15, 1971-Dr. Robert Porter, University of Alaska, to explore the possibilities of a long term visit to LARS by University of Alaska staff members.

*December 16, 1971-Dr. Peter Barton and six other geographers and physisists from Indiana State University visited LARS to discuss areas of potential cooperative research between ISU and LARS.

*December 16, 1971-Dr. Jonathan Roughgarden, research biologist,
University of Massachusetts, Boston.

Library Acquisitions and Publications

*U.S. Space Science Program Report to COSPAR, 14th Meeting, Seattle,
Washington, June, 1971.

*NASA Publications:

-Earth Resources Research Data Facility. Index Volume I:
Documentary Data. MSC-02576, Vol. 1, July, 1971.

-Earth Resources Research Data Facility. Index Volume II:
Sensor Data. MSC-02576, Vol. 1, July, 1971.

-Sababini, Rabchevsky, Sissala, Nimbus Earth Resources
Observation: Technical Report Number 2, November, 1971.

*Wiebe, M.L. Laboratory Measurement of the Complex Dielectric
Constant of Soils. Texas A & M University Remote Sensing
Center, October, 1971.

*Water Resource Abstract. Volume 4, Number 21, November 1, 1971.

*Water Resource Bulletin, Volume 7, Number 5, October, 1971.

*Kisisel, I.T., and J.W. Delleur. On Analysis of Hydrologic Time
Series and Generation Models of Synthetic flows for Some
Indiana Watersheds. Water Resource Research, Technical Report
Number 19, July, 1971.

Miscellaneous

*Chris Johannsen and family have a new address and phone number:
810 North Grant Street, West Lafayette, Telephone: 743-
5350. Best Wishes in your new home, Chris!

Birthdays

*Dec. 20 - Dr. Levandowski

*Dec. 27 - Paul Anuta