

LARS Newsletter

January/February 1997

SOME SATELLITE NEWS OF INTEREST:

1. **SPOT 3 STARTS TO TUMBLE:** Word has reached us from CNES French Space Agency that SPOT 3 failed to maintain proper orbit on Nov 14, 1996. The satellite launched in September 1993 recently reached the end of its planned three-year lifespan. SPOT 2, launched in early 1990 is still performing but without a tape recorder. SPOT 1 was reactivated in January, 1997 with its original 2 sensors fully operational. SPOT 5 is planned for a launch in 2002 and is expected to have an expanded capability with 5 meter resolution sensor.
2. **INDIA SATELLITE:** India's Earth remote sensing program launched the IRS-1C further demonstrating its commitment to remote sensing for managing its natural resources. The IRS-1C has four multispectral bands in the visible, near infrared, and shortwave infrared bands (0.52-0.59, 0.62-0.68, 0.77-0.86 and 1.55-1.70 microns). The resolutions are 23.5 m with the first three bands and 70.5 m at the MIR. Additionally there is a panchromatic band (0.5-0.75 microns) with 5.8 m resolution. Data from the IRS-1C are now available from Space Imaging/EOSAT.
3. Space Imaging EOSAT is the world's largest commercial supplier of high-resolution, high-accuracy Earth information and derived geographic products and services. Today, Space Imaging EOSAT sells five-meter resolution space imagery, derived from the Indian Remote Sensing satellite, and one-meter resolution digital imagery, derived using aerial mapping methods. The company will launch its first one-meter resolution satellite in December 1997. The Space Imaging EOSAT CARTERRA(tm) archive, a globally distributed digital archive of Earth information, is available to commercial, government and consumer organizations users worldwide.
4. EarthWatch Incorporated was formed in March 1995 by the merger of the commercial remote sensing efforts of Ball Aerospace & Technologies Corp. and WorldView Imaging Corp. EarthWatch's partners include Hitachi Ltd., Datron Systems Inc., Nuova Telespazio s.p.a., CTA Inc., and MacDonald, Dettwiler and Associates Ltd. EarthWatch has proposed a launch of the first three-meter resolution commercial imaging satellite during 1997; a submeter resolution satellite is due to be launched in 1998.
5. ORBIMAGE's OrbView-3 spacecraft will provide one- and two-meter resolution panchromatic and four meter resolution multispectral imagery on a real-time basis worldwide. The swath width is 8 kilometers. The satellite will be controlled by ORBIMAGE's existing Spacecraft Control Center located in Dulles, Virginia. Development of the OrbView-3 spacecraft has begun by Orbital's Space Systems Group, which has been awarded the contract to develop, construct, and launch the satellite.

LARSians UPDATE

- **JIM AANSTOOS** (PHD, Earth and Atmospheric Sciences, Dr. Ernest Agee advisor). Jim has been chipping away at his PhD since the Fall of 1987. He graduated this December having completed his dissertation entitled "Spectral Estimation of Type I Cloud-Topped Boundary Layers". He did it the hard way while working fulltime at Research Triangle Institute, NC. Jim has been working at RTI since 1979, currently with the Virtual Environments group of the Center for Digital Systems Engineering. He specializes in terrain analysis and modeling. He has also been involved in such projects as computer visualizations of data sets from NASA

wind shear models, an EPA project to utilize satellite imagery to classify land cover for use in estimates of biogenic hydrocarbon emissions, studies of techniques for on-board satellite signal processing for imaging sensors, development of computer graphics tools for the creation of aircraft cockpit displays among other things. He can be reached at jva@rti.org

- **PAM SCHREINER** (MSE, 12/96, Civil/Surveying Engineering). Pam just finished her degree, non-thesis option, with Dr. Steven Johnson as her advisor. Her new job at the Maine Maritime Academy, a small college of 650 currently participating in a NOAA-funded grant studying the Penobscot Bay region, is to develop a set of spatial and remote sensing data to support research on the dying cod fisheries, clam beds, and the potential kelp-farming industry. Her job is to develop an in-house GIS and Remote Sensing capability (Arc/INFO, ArcView, and ERDAS on both UNIX and NT platforms), to teach the use of the systems once they are out of development mode, and to collaborate on the NOAA project with other participating institutions in Maine. When the new UNIX workstation and 2 NT PCs arrive, she will be solely responsible for the systems and will serve as system administrator as well as GIS coordinator. For a landlubber she is getting some major exposure to a whole new realm of knowledge; her office is right on the waterfront where MMA has a sizable fleet of vessels including a huge 800' ship, a barge, tugboats, and schooner. It's a very rural area, 40 miles to a sizable grocery store and affordable gas station but only a few hundred yards from the shore and from a forested area with a labyrinth of XC ski, snowmobile, and hiking trails. She has plans to learn to sail and sea kayak this summer. She can be reached at: pschrein@bell.mma.edu
- **TRACEY HENDERSON** (MS, 1990, Agronomy). Tracey Henderson is back in the U.S. from Mozambique and her stint with Food for the Hungry. Besides too many bouts with malaria and conducting her own research, she was able to secure funding for the continued research, extension and community health/nutrition for another five years for her successor before heading back to the States last November. Her work got a very positive review from USAID visitors to the research station and she was able to start some formal collaboration with CIMMYT in the re-activation of the QPM maize program in Mozambique. She was pleased to leave on a "high note" and will most likely be requested to return as a consultant next summer. She and her husband Jim are currently in Waukegon, IL where he has a teaching position in a local college.

MULTISPEC IN THE NEWS AGAIN

The Lafayette Leader (Jan 17) caught up with David Landgrebe and Larry Biehl, who began developing a personal computer application program called MultiSpec about eight years ago. The program makes possible the analysis of multispectral image data such as that from Landsat and AVIRIS. Now that MultiSpec is on the Web, more than 1500 copies were downloaded in 1996 as compared to 529 in 1995. Developed initially to make new data analysis algorithms from their research available to users of multispectral image data, MultiSpec has now become an exciting educational tool for many high school and even elementary level students who were introduced to it through the international program Global Learning and Observations to Benefit the Environment (GLOBE) funded by NSF, NOAA, and NASA. With an outreach of about 3,000 schools in 47 countries, GLOBE is taking their environmental observations seriously and in the process introducing MultiSpec to thousands of potential young scientists worldwide. MultiSpec is available to anyone at no cost at <http://dynamo.ecn.purdue.edu/~biehl/MultiSpec/>. Information on the GLOBE program is available at <http://www.globe.gov>

CONFERENCES/WORKSHOP DATES

(* = New listing)

Please note that we are not repeating conferences/workshops mentioned in previous newsletters except those of Professional Societies/organizations that appear to be of special interest to our faculty/students.

1997:

+Mar 17-19. Fourth International Conference on Remote Sensing for Marine & Coastal Environments: Technology and Applications. ERIM, Orlando, FL. Contact: raeder@erim.org, Web: <http://www.erim.org/CONF/conf.html>

+Mar 21-27. AM/FM International Annual Conference, AM/FM International, San Antonio, Texas. Contact: Paula Delie 303-337-0513

+Apr 1-5. Association of American Geographers Annual Mtg., AAG, Fort Worth, TX. Contact 202-234-1450, Fax: 234-2744, gaia@aag.org. Web:<http://www.aag.org>

+Apr 4-6. ASPRS/ACSM Annual Convention. ASPRS, ACSM, Seattle, Washington. Contact: 301-493-0200

+Apr 7-10. Geospatial Information Age--1997 ACSM/ASPRS Annual Convention and Exhibition, Resource Technology Institute Annual Conference, Auto Carto 13, Seattle, WA. 301-493-0200; lhachero@aol.com; or autoc13@u.washington.edu; <http://weber.u.washington.edu/~autoc13/>

*+Apr 16-18 Joint European Conference & Exhibition on Geographical Information, AM/FM, EGIS, UDMS, JEC, Vienna, Austria. Contact: 41-61-691-51-11; Fax 41-61-691-81-89

*+Apr 21-23, Integrating Photogrammetric Techniques With Scene Analysis and Machine Vision III, Part of SPIE Aerospace '97, Orlando, FL. Contact: (412) 268-2626 or dmm@cs.cmu.edu

+Apr 29-1 May, ASPRS 16th Biennial Workshop on Color Photography and Videography in Resource Assessment, Weslaco, TX. Gerald Anderson, 210-969-4834, gl-anderson@tamu.edu; <http://rsru2.tamu.edu/rsru/workshop/workshop.htm>

*+May 13-16, GPS/GIS '97, Geo-Research Inc, Annapolis, MD. Contact: (310) 320-0911, Fax: 0922.

*+May 24-30. Geomatics in the Era of RADARSAT, CSA, Geomatics Canada, Ottawa, CA. (613) 996-2817, ger97@ccrs.nrcab.gc.ca; www.ccrs.nrcan.gc.ca/ger97/

+May 26-29. GIS AM/FM '97 and Geo-informations '97, Chinese Geographic Information Society, Taipei, Taiwan. Contact: Web:<http://www.jglay@ccms.ntu.edu.tw>

*+May 28-29. TSUGIS '97, Towson State University, Towson, MD. Contact: (410) 830-2964, Fax: 3888, e7g4mor@toe.towson.edu

*+June 4-7. Surveying Without Borders-6th Austrian Geodetic Day, Austrian Society for Surveying and Geoinformation. Contact: 04242-37466-63; Fax: 04242-37466-73.

+June 23-27. 18th ICA/ACI intn'l Cartographic Conference, Stockholm, Sweden. Fax: 46 26 65 31 60 bengtr@lmv.lm.se Web: <http://www.lm.se/icc97.html>

+July 7-10. Third International Airborne Remote Sensing Conference and Exhibition, ERIM, Copenhagen, Denmark. Contact: 313-994-1200, ext. 3234, Fax: 994-51123. wallman@erim.org. Deadline for Call for Papers: December 13, 1996.

+July 7-11. Seventeenth Annual ESRI User Conference. San Diego, CA. Contact: www.esri.com; uc97@esri.com; 909-793-2853 ext. 1-1363

*+July 8-10. The Role of Earth Observation Data in Forecasting, Managing & Recovering from Natural Disasters, EARSEL, Queen Elizabeth II Conference Centre, London. Contact: 1483-740014; Fax: 1483-740231

+Aug 3-8. IGARSS '97, Singapore. contact: (713) 291-9222; Fax: 9224., tstein@phoenix.net

*+Sep 3-9. IAG-97-Scientific Assembly & XVIII Brazilian congress of Cartography, Intl. Assoc. of Geodesy, Rio de Janeiro, Brazil. Contact: 55-11-818-5501; Fax: 5716; iag97@org.usp.br

+Sep 8-10. First European Conference on Precision Agriculture, Coventry, United Kingdom. Contact: SCI Conference Department, 14/15 Belgrave Square, London SW1 8PS, United Kingdom, 144 171 235 3681, fax 144 171 235 7743, e-mail conferences@chemind.demon.co.uk, Internet <http://www.sri.bbsrc.ac.uk/>.

+Sept 22-26, 46th Photogrammetric Week, Zeiss, Stuttgart, Germany. Contact: 49-711-121-3201; fax 49-711-121-3297.

*+Oct 15-17 "Exploiting New Image Sources and Sensors", AIPR-97-APPLIED IMAGERY PATTERN RECOGNITION WORKSHOP, SPIE & AIPR, Cosmos Club, Washington, DC. Contact: J. Michael Selander, (703)883-7294 jms@mnsinc.com . Abstracts for papers due: May 1, 1997

*+Oct 24-31. GIS/LIS '97, AAG, ACSM, AAM/FM International, ASPRS, URISA, Cincinnati, OH, Contact: (301) 493-0200; Fax: 8245.

*+Nov 4-8. 17th Asian Conference on Remote Sensing, Asian Assoc. of Remote Sensing, Colombo, Sri Lanka. Contact: 81-33402-6231; Fax: 81-3-3479-2762; chiwa@shunji.iis.u-tokyo.ac.jp

*+Nov 17-19. Applied Geologic Remote Sensing: Practical Solutions for Real-World Problems, ERIM, Denver, CO. Contact: 313-994-1200, ext. 3234, Fax: 994-5123; wallman@erim.org Call for papers due: 21 Mar 97

--Bernard Engel, Acting Director & Chris J. Johannsen*, Director
Laboratory for Applications of Remote Sensing (LARS)
W. Lafayette, IN 47907-1158, USA
engelb@purdue.edu johannsn@purdue.edu

Homepage: <http://www.lars.purdue.edu>

*Currently Visiting Chief Scientist, Space Imaging Inc., Thornton, CO

LARS Newsletter

June 1997

KRISTOF AWARD WINNER

Chang-Woo Ahn was named the 1997 Stevan J. Kristof Outstanding Graduate Student in Remote Sensing. Dr. Ahn recently received his Ph.D. in Agronomy with Dr. M. F. Baumgardner as Major Professor. His thesis was "hyperspectral remote sensing data analysis for characterizing land surface conditions." He recently accepted a position as Research Associate with Goddard Space Flight Center. Congratulations to Dr. Chang-Woo Ahn as our 1997 Kristof Award winner!

DIRECTOR'S COMMENTS

If you haven't received a LARS Newsletter for the past few months, don't worry. It is difficult to send out something that didn't get written! My "re-entry" into academia after spending 6 months with Space Imaging EOSAT has been at a very fast pace. I had forgotten what it is like to complete the end of a semester, prepare proposals for funding, prepare year-end reports (at Purdue, year-end means June 30th!) and get ready for the summer workshops.

I have had a chance to reflect on the many changes taking place in our world of remote sensing during my sabbatical. The changes are staggering! Most of the changes take place around the word, "resolution". Remember the favorite prelim question, "Describe 3 types of resolution and discuss how they affect your discipline."? You will recall that spatial, spectral and temporal are the usual answers sought to that question.

Relating to spatial resolution, we are finding that 1, 2, 4, and 5 meter spatial resolution will become common within this year. There are aircraft simulations of this type of data already available and it has us asking for more. Space Imaging EOSAT has a CD titled "CARTERRA Agriculture Sampler" which is being sent to people who submitted proposals relating to agriculture. (If you know of other companies with similar opportunities, please let us know so we can get it in the next Newsletter). The opportunity to see the equivalent of digital ortho images in a multispectral mode has many of us thinking that we hit a time warp.

The spectral resolution affects us in the same manner. We have grown comfortable with 4-7 bands of multispectral data but the AVIRIS flights have started to get us familiar with seeing over 200 wavelengths. Now as we wait for the launch of the Lewis satellite, we anticipate receiving 384 wavelengths of energy at 5 nanometer bandwidth covering 400 to 2,600 nanometers. The impact of distinguishing different pigmentation in plant leaves will open many new understandings of reflective measurements and their applications.

The prospect of getting coverage over an area every day, every other day or every third day really sets my mind racing at the opportunities like noting the change of plant stress due to drought, or determining how much of the corn crop was planted on a specific day, or determining what the land cover was on the day prior to the big rain or (you fill in your application). Add to this scenario the opportunity to receive the data within 24-36 hours after it has been collected. Now we are talking about the implications of commercial remote sensing! It's great to be a part of this.

In the future, I want to explore some of the opportunities of the Commercial Remote Sensing Initiative soon to be announced by the Stennis Space Center. --CJJ

LARSian NEWS:

Two LARSians recently received awards. ERIC GUSTAFSON received the (Forest Service) Chief's Award for Early Career Scientists. This award provides \$150K toward his research over the next 5 years. JON BENEDIKTSSON received the Icelandic 1997 Young Researcher Award. Both awards are great recognitions to them and to Purdue University where they received their Ph.Ds. Congratulations to Eric and Jon!

PHIL SWAIN has been appointed as Director of the Office of Distance Learning, Purdue University. This means that he has overall responsibility for extending educational opportunities from Purdue that go beyond the classroom. Congrats Phil on your venture!

Another LARSian has really made the news! MARWAN JAMIL MUASHER was recently appointed as the Jordanian Ambassador to the United States. Ambassador Muasher completed his Ph.D with David Landgrebe, E&CE in 1981. Prior to this appointment, he held the posts of Minister of Information and Jordanian Ambassador to Israel. Congratulations to Dr. Muasher!

GODDARD AND WASHINGTON ACTIVITIES

Professor David Landgrebe is spending a "mini-sabbatical" at Goddard Space Center from June 23 to July 3. He will present a seminar (or two) on "On Information Extraction Principles for Hyperspectral Data" He was invited by Dr. Jacqueline Le Moigne of CESDIS (Center for Excellence in Space Data and Information Sciences)

Landgrebe is a regular traveler the Washington DC area. He is just completing a term on the National Research Council Committee on Advanced Space Technology. This committee assesses what technologies should be of special interest to NASA in the post-2000 era and suggests ways that NASA can work more effectively with industry & universities to develop these technologies.

Your LARS Director participates as a member of the NRC's Committee on Earth Studies. The CES provides advice to NASA and NOAA on new program initiatives as well as recommending directions to pursue relating to the use of new technologies in these program initiatives.

GRANTS/CONTRACTS

Jon M. Harbor and D. Elmore, E&AS "Reconstructing Spatial Patterns of Glacial Erosion", National Science Foundation, \$82,044. July, 97-June 98.

CONFERENCES/WORKSHOP DATES

(* = New listing)

Please note that we are not repeating conferences/workshops mentioned in previous newsletters except those of Professional Societies/organizations that appear to be of special interest to our faculty/students.

1997:

+July 7-10. Third International Airborne Remote Sensing Conference and Exhibition, ERIM, Copenhagen, Denmark. Contact: 313-994-1200, ext. 3234, Fax: 994-51123.
wallman@erim.org.

+July 7-11. Seventeenth Annual ESRI User Conference. San Diego, CA.
Contact: www.esri.com; uc97@esri.com; 909-793-2853 ext. 1-1363

+July 8-10. The Role of Earth Observation Data in Forecasting, Managing & Recovering from Natural Disasters, EARSEL, Queen Elizabeth II Conference Centre, London. Contact: 1483-740014; Fax: 1483-740231

+Aug 3-8. IGARSS '97, Singapore. contact: (713) 291-9222; Fax: 9224., tstein@phoenix.net

*+Aug 18-22. Tri-Service CADD/GIS/FM Symposium '97 & US Army Corps of Engineers/NOAA Surveying, Mapping and Remote Sensing Conference, St. Louis, MO.
Contact: 314-331-8385, Fax: 8346, conference@smtp.lms.usace.army.mil

+Sep 3-9. IAG-97-Scientific Assembly & XVIII Brazilian congress of Cartography, Intl. Assoc. of Geodesy, Rio de Janeiro, Brazil. Contact: 55-11-818-5501; Fax: 5716; iag97@org.usp.br

+Sep 8-10. First European Conference on Precision Agriculture, Coventry, United Kingdom.
Contact: SCI Conference Department, 14/15 Belgrave Square, London SW1 8PS, United Kingdom, 144 171 235 3681, fax 144 171 235 7743, e-mail conferences@chemind.demon.co.uk, Internet <http://www.sri.bbsrc.ac.uk/>.

+Sept 22-26, 46th Photogrammetric Week, Zeiss, Stuttgart, Germany. Contact: 49-711-121-3201; fax 49-711-121-3297.

*+Oct 1-3. CIPA Intl. Symp. '97: Photogrammetry in Architecture, Archaeology & Urban Conservation, ISPRS, CIPA, Goteborg, Sweden. Contact: hakanw@gematices.kth.se

*+Oct 1-4, GIS/GPS '97: Global Innovative Solutions, Alberta Land Surveyors' Assoc., Calgary, Canada. Contact: 800-661-4278, Fax 403-452-2890
rosecom@supernet.ab.ca; <http://www.rosecom.com>

+Oct 15-17 "Exploiting New Image Sources and Sensors", AIPR-97-APPLIED IMAGERY PATTERN RECOGNITION WORKSHOP, SPIE & AIPR, Cosmos Club, Washington, DC. Contact: J. Michael Selander, (703)883-7294 jms@mnsinc.com . Abstracts for papers due: May 1, 1997

+Oct 24-31. GIS/LIS '97, AAG, ACSM, AAM/FM International, ASPRS, URISA, Cincinnati, OH, Contact: (301) 493-0200; Fax: 8245.

*+Oct 30-Nov 2. 3rd Int'l Symp. on GIS in Higher Education, Towson State Univ. & NCGIA, Chatilly, VA, Contact: 410-830-2964, Fax 3888; morgan@towson.edu

+Nov 4-8. 17th Asian Conference on Remote Sensing, Asian Assoc. of Remote Sensing, Colombo, Sri Lanka. Contact: 81-33402-6231; Fax: 81-3-3479-2762; chiwa@shunji.iis.u-tokyo.ac.jp

+Nov 17-19. Applied Geologic Remote Sensing: Practical Solutions for Real-World Problems, ERIM, Denver, CO. Contact: 313-994-1200, ext. 3234, Fax: 994-5123; wallman@erim.org Call for papers due: 21 Mar 97

1998

*Mar 30-Apr 4. ASPRS-RTI Annual Conference, Tampa, FL. Contact: 301-493-0290, Fax: 0208. Call for papers due July 15, 1997 at abstract@asprs.org

--Chris J. Johannsen, Director
Laboratory for Applications of Remote Sensing (LARS)
1158 ENTM 220, Purdue University,
W. Lafayette, IN 47907-1158, USA
(765) 494-6305, Fax: (765) 494-7753
johannsn@purdue.edu

LARS Newsletter

July/August 1997

LEWIS IS LAUNCHED BUT THERE ARE PROBLEMS!

Lewis was successfully launched into a sun-synchronous orbit aboard an LMLV 1 Saturday morning at 11:51 p.m. PDT 8/23 from space launch complex 6 at Vandenberg AFB in California. Initial operations and check-out of Lewis were proceeding satisfactorily until telemetry received on 8/27 at the mission's Chantilly, VA, control center indicated that the spacecraft was spinning at approximately two revolutions per minute. NASA and TRW officials say that they have approximately three weeks to regain control of the satellite and are cautiously optimistic. Chris Johannsen, Purdue LARS Director is one of a dozen Lewis researchers who have been anxiously waiting for the launch and to receive data from the hyperspectral sensors built by TRW on Lewis which will provide measurements in 384 wavelength bands.

GRADUATES:

Chang-Woo Ahn, Ph.D., Agronomy, "Hyperspectral remote sensing data analysis for characterizing land surface conditions," Marion Baumgardner, Major Professor, Dec, 1996. Chang-Woo is a Research Scientist at Goddard Space Flight Center.

James A. Davenport, MSE Civil Engineering, "FFT Remove/Restore Deflection of Vertical Production with Variable Input Processes," Boudewijn H.W. van Gelder, Major Professor, May, 1997. Jim works with the Geodesy and Geophysics Section of National Imagery and Mapping Agency (NIMA) formerly the Defense Mapping Agency in St. Louis.

Karen Koskey, M.S. Agriculture and Biological Engineering, Bernard Engel, Major Professor, May, 1997. Karen will be the Watershed Program Manager, Macatawa Area Coordinating Council at Holland, Michigan. R. Anthony Valvo, M.S., AGRY, non-thesis option, Chris J. Johannsen, Major Professor, May, 1997. Tony is employed by Conrad Aviation Inc.

FACULTY PROMOTIONS:

John G. Graveel to Full Professor, Agronomy. Boudewijn H.W. van Gelder to Associate Professor, Civil Engineering. Mark Morgan to Associate Professor, Agricultural Engineering. Even though we are a few months late, Congratulations!

FACULTY HONORS:

Professor Phil Swain recently was named Fellow in the American Society of Engineering Education.

Professor David Landgrebe and Larry Biehl featured in an article about their work with their software, MultiSpec titled "Global Learning", Purdue Engineering Extrapolations, Summer, 1997 issue.

USGS URL FOR MAP PRODUCTS:

<http://edcwww.cr.usgs.gov/webglis>

The Global Land Information System (GLIS) has added the USGS inventory of topographic maps, Digital Raster Graphics (DRG's) and Digital Orthophoto Quadrangles (DOQ's) to their web site above. Topos are searchable by geographic coverage or US place name, DRG's by geographic coverage, US place name, map name or State, and DOQ's by county name or State. Most DOQ's are available on CD-ROM and some when completed will be on recordable Compact Disc (CD-R) as are the DRG's.

CONFERENCE NEWS:

As posted in the next section, AIPR-97-APPLIED IMAGERY PATTERN RECOGNITION WORKSHOP sponsored by SPIE & AIPR will be held at the Cosmos Club in Washington, DC on October 15-17, 1997. We have learned that Prof. David Landgrebe will be the Keynoter at this workshop. If you want to learn more about the workshop, visit the website at <http://www.mnsinc.com/jms/aipr97/> - Jim Aanstoos, (E&AS, Dec '96), provided us with this update.

The InfoAg Conference held last month in Champaign, IL was attended by about 800 participants. It was interesting to see the strong interest in remote sensing. Chris J. Johannsen & Paul Carter presented a paper on "Who's Who in Commercial Satellite Remote Sensing: A Status Check" Noteworthy is that there are over 20 satellites (9 of them commercial) scheduled to be launched in 1997 and 98 that will provide data of the Earth's surface.

CONFERENCES/WORKSHOP DATES

(* = New listing)

Please note that we are not repeating conferences/workshops mentioned in previous newsletters except those of Professional Societies/organizations that appear to be of special interest to our faculty/students.

1997:

+Sep 3-9. IAG-97-Scientific Assembly & XVIII Brazilian congress of Cartography, Intl. Assoc. of Geodesy, Rio de Janeiro, Brazil. Contact: 55-11-818-5501; Fax: 5716; iag97@org.usp.br

+Sep 8-10. First European Conference on Precision Agriculture, Coventry, United Kingdom. Contact: SCI Conference Department, 14/15 Belgrave Square, London SW1 8PS, United Kingdom, 144 171 235 3681, fax 144 171 235 7743, e-mail conferences@chemind.demon.co.uk, Internet <http://www.sri.bbsrc.ac.uk/>.

*+Sep 12-16. National States Geographic Information Council 7th Annual Meeting, NSGIC, Welches, Oregon, USA. Contact: 603-643-1600

*+Sep 15-17, GIS in the Rockies, Denver, Colorado, USA. Contact: Amanda Hargis, 303-441-3930, e-mail: aemlu@boco.co.gov

+Sept 22-26, 46th Photogrammetric Week, Zeiss, Stuttgart, Germany. Contact: 49-711-121-3201; fax 49-711-121-3297.

+Oct 1-3. CIPA Intl. Symp. '97: Photogrammetry in Architecture, Archaeology & Urban Conservation, ISPRS, CIPA, Goteborg, Sweden. Contact: hakanw@gemates.kth.se

+Oct 1-4, GIS/GPS '97: Global Innovative Solutions, Alberta Land Surveyors' Assoc., Calgary, Canada. Contact: 800-661-4278, Fax 403-452-28901
roseccom@supernet.ab.ca; <http://www.rosecc.com>

+Oct 15-17 "Exploiting New Image Sources and Sensors", AIPR-97-APPLIED IMAGERY PATTERN RECOGNITION WORKSHOP, SPIE & AIPR, Cosmos Club, Washington, DC. Contact: J. Michael Selander, (703)883-7294 jms@mnsinc.com . Abstracts for papers due: May 1, 1997

+Oct 24-31. GIS/LIS '97, AAG, ACSM, AAM/FM International, ASPRS, URISA, Cincinnati, OH, Contact: (301) 493-0200; Fax: 8245.

+Oct 30-Nov 2. 3rd Int'l Symp. on GIS in Higher Education, Towson State Univ. & NCGIA, Chatilly, VA, Contact: 410-830-2964, Fax 3888; morgan@towson.edu

+Nov 4-8. 17th Asian Conference on Remote Sensing, Asian Assoc. of Remote Sensing, Colombo, Sri Lanka. Contact: 81-33402-6231; Fax: 81-3-3479-2762; chiwa@shunji.iis.u-tokyo.ac.jp

+Nov 17-19. Applied Geologic Remote Sensing: Practical Solutions for Real-World Problems, ERIM, Denver, CO. Contact: 313-994-1200, ext. 3234, Fax: 994-5123; wallman@erim.org Call for papers due: 21 Mar 97

*+Dec 3-5. Land Satellite Information in the Next Decade, ASPRS, NASA, NOAA, USGS, NARSIA, Washington, DC. Contact: Ph 301-493-0290, fax 301-493-0208, email:asprs@asprs.org

*+Dec 14-19. The International Symposium on Spectral Sensing Research 1997 (ISSSR)'97, US Army Topographic Engineering Center, San Diego, California, Contact: (202)393-1648, fax:(202)628-8498, register@issr.org

1998

*+Jan 26-31. Fusion of Earth Data, EARSel, SEE, and Ecole des Mines de Paris, Cote d'Azur, France Contact: fax 33-4-9395-7535 Email: fusion@cenerg.cma.fr

Mar 30-Apr 4. ASPRS-RTI Annual Conference, Tampa, FL. Contact: 301-493-0290, Fax: 0208. Call for papers due July 15, 1997 at abstract@asprs.org

*+June 1-3 1st Int'l Conf. on Geospatial Info. In Agriculture & Forestry, ERIM, Lake Buena Vista, FL. Contact: 313-994-1200, ext. 3234, Fax: 994-5123; wallman@erim.org, <http://www.erim.org/CONF/ag.html>

--Chris J. Johannsen, Director

Laboratory for Applications of Remote Sensing (LARS)

1158 ENTM 220, Purdue University,

W. Lafayette, IN 47907-1158, USA

(765) 494-6305, Fax: (765) 494-7753

johan@purdue.edu Note: login change! johannsn@ecn.purdue.edu also valid login.

LARS Newsletter

July/August 1997

LEWIS IS LAUNCHED BUT THERE ARE PROBLEMS!

Lewis was successfully launched into a sun-synchronous orbit aboard an LMLV 1 Saturday morning at 11:51 p.m. PDT 8/23 from space launch complex 6 at Vandenberg AFB in California. Initial operations and check-out of Lewis were proceeding satisfactorily until telemetry received on 8/27 at the mission's Chantilly, VA, control center indicated that the spacecraft was spinning at approximately two revolutions per minute. NASA and TRW officials say that they have approximately three weeks to regain control of the satellite and are cautiously optimistic. Chris Johannsen, Purdue LARS Director is one of a dozen Lewis researchers who have been anxiously waiting for the launch and to receive data from the hyperspectral sensors built by TRW on Lewis which will provide measurements in 384 wavelength bands.

GRADUATES:

Chang-Woo Ahn, Ph.D., Agronomy, "Hyperspectral remote sensing data analysis for characterizing land surface conditions," Marion Baumgardner, Major Professor, Dec, 1996. Chang-Woo is a Research Scientist at Goddard Space Flight Center.

James A. Davenport, MSE Civil Engineering, "FFT Remove/Restore Deflection of Vertical Production with Variable Input Processes," Boudewijn H.W. van Gelder, Major Professor, May, 1997. Jim works with the Geodesy and Geophysics Section of National Imagery and Mapping Agency (NIMA) formerly the Defense Mapping Agency in St. Louis.

Karen Koskey, M.S. Agriculture and Biological Engineering, Bernard Engel, Major Professor, May, 1997. Karen will be the Watershed Program Manager, Macatawa Area Coordinating Council at Holland, Michigan. R. Anthony Valvo, M.S., AGRY, non-thesis option, Chris J. Johannsen, Major Professor, May, 1997. Tony is employed by Conrad Aviation Inc.

FACULTY PROMOTIONS:

John G. Graveel to Full Professor, Agronomy. Boudewijn H.W. van Gelder to Associate Professor, Civil Engineering. Mark Morgan to Associate Professor, Agricultural Engineering. Even though we are a few months late, Congratulations!

FACULTY HONORS:

Professor Phil Swain recently was named Fellow in the American Society of Engineering Education.

Professor David Landgrebe and Larry Biehl featured in an article about their work with their software, MultiSpec titled "Global Learning", Purdue Engineering Extrapolations, Summer, 1997 issue.

USGS URL FOR MAP PRODUCTS:

<http://edcwww.cr.usgs.gov/webglis>

The Global Land Information System (GLIS) has added the USGS inventory of topographic maps, Digital Raster Graphics (DRG's) and Digital Orthophoto Quadrangles (DOQ's) to their web site above. Topos are searchable by geographic coverage or US place name, DRG's by geographic coverage, US place name, map name or State, and DOQ's by county name or State. Most DOQ's are available on CD-ROM and some when completed will be on recordable Compact Disc (CD-R) as are the DRG's.

CONFERENCE NEWS:

As posted in the next section, AIPR-97-APPLIED IMAGERY PATTERN RECOGNITION WORKSHOP sponsored by SPIE & AIPR will be held at the Cosmos Club in Washington, DC on October 15-17, 1997. We have learned that Prof. David Landgrebe will be the Keynoter at this workshop. If you want to learn more about the workshop, visit the website at <http://www.mnsinc.com/jms/aipr97/> - Jim Aanstoos, (E&AS, Dec '96), provided us with this update.

The InfoAg Conference held last month in Champaign, IL was attended by about 800 participants. It was interesting to see the strong interest in remote sensing. Chris J. Johannsen & Paul Carter presented a paper on "Who's Who in Commercial Satellite Remote Sensing: A Status Check" Noteworthy is that there are over 20 satellites (9 of them commercial) scheduled to be launched in 1997 and 98 that will provide data of the Earth's surface.

CONFERENCES/WORKSHOP DATES

(* = New listing)

Please note that we are not repeating conferences/workshops mentioned in previous newsletters except those of Professional Societies/organizations that appear to be of special interest to our faculty/students.

1997:

+Sep 3-9. IAG-97-Scientific Assembly & XVIII Brazilian congress of Cartography, Intl. Assoc. of Geodesy, Rio de Janeiro, Brazil. Contact: 55-11-818-5501; Fax: 5716; iag97@org.usp.br

+Sep 8-10. First European Conference on Precision Agriculture, Coventry, United Kingdom. Contact: SCI Conference Department, 14/15 Belgrave Square, London SW1 8PS, United Kingdom, 144 171 235 3681, fax 144 171 235 7743, e-mail conferences@chemind.demon.co.uk, Internet <http://www.sri.bbsrc.ac.uk/>.

*+Sep 12-16. National States Geographic Information Council 7th Annual Meeting, NSGIC, Welches, Oregon, USA. Contact: 603-643-1600

*+Sep 15-17, GIS in the Rockies, Denver, Colorado, USA. Contact: Amanda Hargis, 303-441-3930, e-mail: aemlu@boco.co.gov

+Sept 22-26, 46th Photogrammetric Week, Zeiss, Stuttgart, Germany. Contact: 49-711-121-3201; fax 49-711-121-3297.

+Oct 1-3. CIPA Intl. Symp. '97: Photogrammetry in Architecture, Archaeology & Urban Conservation, ISPRS, CIPA, Goteborg, Sweden. Contact: hakanw@gemates.kth.se

+Oct 1-4, GIS/GPS '97: Global Innovative Solutions, Alberta Land Surveyors' Assoc., Calgary, Canada. Contact: 800-661-4278, Fax 403-452-2890
rosecom@supernet.ab.ca; <http://www.rosecom.com>

+Oct 15-17 "Exploiting New Image Sources and Sensors", AIPR-97-APPLIED IMAGERY PATTERN RECOGNITION WORKSHOP, SPIE & AIPR, Cosmos Club, Washington, DC. Contact: J. Michael Selander, (703)883-7294 jms@mnsinc.com . Abstracts for papers due: May 1, 1997

+Oct 24-31. GIS/LIS '97, AAG, ACSM, AAM/FM International, ASPRS, URISA, Cincinnati, OH, Contact: (301) 493-0200; Fax: 8245.

+Oct 30-Nov 2. 3rd Int'l Symp. on GIS in Higher Education, Towson State Univ. & NCGIA, Chatilly, VA, Contact: 410-830-2964, Fax 3888; morgan@towson.edu

+Nov 4-8. 17th Asian Conference on Remote Sensing, Asian Assoc. of Remote Sensing, Colombo, Sri Lanka. Contact: 81-33402-6231; Fax: 81-3-3479-2762; chiwa@shunji.iis.u-tokyo.ac.jp

+Nov 17-19. Applied Geologic Remote Sensing: Practical Solutions for Real-World Problems, ERIM, Denver, CO. Contact: 313-994-1200, ext. 3234, Fax: 994-5123; wallman@erim.org Call for papers due: 21 Mar 97

*+Dec 3-5. Land Satellite Information in the Next Decade, ASPRS, NASA, NOAA, USGS, NARSIA, Washington, DC. Contact: Ph 301-493-0290, fax 301-493-0208, email:asprs@asprs.org

*+Dec 14-19. The International Symposium on Spectral Sensing Research 1997 (ISSSR)'97, US Army Topographic Engineering Center, San Diego, California, Contact: (202)393-1648, fax:(202)628-8498, register@issr.org

1998

*+Jan 26-31. Fusion of Earth Data, EARSel, SEE, and Ecole des Mines de Paris, Cote d'Azur, France Contact: fax 33-4-9395-7535 Email: fusion@cenerg.cma.fr

Mar 30-Apr 4. ASPRS-RTI Annual Conference, Tampa, FL. Contact: 301-493-0290, Fax: 0208. Call for papers due July 15, 1997 at abstract@asprs.org

*+June 1-3 1st Int'l Conf. on Geospatial Info. In Agriculture & Forestry, ERIM, Lake Buena Vista, FL. Contact: 313-994-1200, ext. 3234, Fax: 994-5123; wallman@erim.org, <http://www.erim.org/CONF/ag.html>

--Chris J. Johannsen, Director

Laboratory for Applications of Remote Sensing (LARS)

1158 ENTM 220, Purdue University,

W. Lafayette, IN 47907-1158, USA

(765) 494-6305, Fax: (765) 494-7753

johan@purdue.edu Note: login change! johannsn@ecn.purdue.edu also valid login.

LARS Newsletter

September/October 1997

LEWIS SATELLITE LOST:

The Lewis Satellite launched on 11:51 p.m. PDT, August 22, 1997 but a few days later the booster rockets used to launch the satellite in its proper orbit, only fired on one side sending the satellite into a tumbling motion from which it never recovered. NASA and TRW engineers worked at contacting the satellite but because the solar panel could not be extended, the satellite did not have any power. Without power, it was a "catch 22" and the satellite soon reached a decay until it reached the Earth's atmosphere on September 28 burning up the satellite. The Lewis Satellite was built by TRW under a NASA contract and named for explorer Merriwether Lewis. The satellite carried two hyperspectral imagers - one that would scan a narrow swathe in 384 spectral bands and a second that would use 256 spectral bands to examine a wider field of view. A third instrument, an extreme ultraviolet spectrometer, would have collected images of the night sky.

We are currently waiting for final word on when an attempt will be made by NASA to fund the building of the next "Lewis" satellite so that researchers will be able to obtain hyperspectral data from a spacecraft. We have heard that a copy of the Lewis hyperspectral sensor is being added to the payload of EO-1. EO-1 is scheduled for launch in May 1999. Since I was one of the Investigators of the Lewis mission, I feel the loss rather sharply. Let's hope it will be a short wait and that all deadlines are made. --CJJ

SOCIAL SCIENCES AND SATELLITES:

This was the title of a workshop that I attended in Washington, DC on September 17-18. The workshop was sponsored by the Consortium for International Earth Science Information Network (CIESIN) and brought together social scientists, economists, rural sociologists and geographers to discuss how remotely sensed data can be used in the social sciences. This was really the time that I experienced the "socializing of the pixel" and it gave a new perspective even for the remote sensors in attendance. --CJJ

LAND SATELLITE CONFERENCE:

The Land Satellite Information in the Next Decade II: Sources and Applications will be held on December 2-5, 1997 at the Omni Shoreham Hotel, Washington, DC (See contact info in CONFERENCES/WORKSHOP DATES section.) This conference will explore the capabilities of the new satellites with sensors of high resolution (less than 30 meters) and see how well the data suppliers will meet the expectations from applications users. The conference brochures indicated that the conference is designed to determine the answers to the following questions:

- What applications are targeted?
- What data products will be provided?
- How will these data be distributed and/or sold?
- What is the long term vision for the enterprise?
- What are the obstacles to success?

The conference is organized by the American Society for Photogrammetry and Remote Sensing with cooperating organizations: Association of American Geographers, CIESIN, Federal Data Committee and the National State Geographic Information Council.

GEOSPATIAL INFORMATION IN AGRICULTURE AND FORESTRY.

The 1st International Conference on Geospatial Information in Agriculture and Forestry is scheduled for June 1-3, 1998 at Disney's Coronado Springs Hotel in Lake Buena Vista, Florida, USA. If you were thinking about submitting an Abstract and didn't get it done, you have until October 23, 1997 to do it! You can submit a summary via (<http://www.irim.org/CONF/ag.html>), email (agriculture@irim.org) or Fax (1-313-994-5123). There will also be Workshops prior to the Conference taught on May 31, 1998.

NEW APPOINTMENT:

Dean Richard J. Schwartz announced the appointment of Professor Jeff Wright of the School of Civil Engineering as the Assistant Dean of Engineering, effective August 25, 1997. Congratulations, Jeff, we look forward to your administrative contributions to the Purdue engineering program.

ANOTHER RECOGNITION:

Professor David Landgrebe gave the keynote address for the 26th annual Applied Imagery Pattern Recognition workshop. The meeting was held at the Cosmos Club in Washington DC on Oct. 15-17, 1997.

LARSian NEWS:

We received a recent email from Mario Gomasca (mario@irrs.mi.cnr.it) who reports that he is trying to reorganize the Italian Remote Sensing Society in his official capacity as Deputy Chairman and Scientific Secretary. He has also completed a book entitled: Introduction to Remote Sensing and GIS for Agricultural and Environmental Resources Management. He says LARS and Purdue even made the Acknowledgments! Mario was here as NATO Scholar in June, 1988 through June, 1989 and assisted in our NASA Applications project at the time.

CONTRACT/GRANTS AWARDED:

C. Huang (AGRY), B. A. Engel, K. Haghighi, R.H. Mohtar, (ABE), \$191,261, "Soil Erosion Processes and Prediction Technology Processes," USDA.

C.J. Johannsen, AGRY, \$5,001, "Remote Sensing Training," Prairie View University.

C.J. Johannsen, AGRY, \$17,148, "Evaluating Remotely Sensed Data for Agricultural and Natural Resource Applications," NASA Stennis Space Center.

Jan P. Allebach, E&CE, \$10,000, "Improving Bilevel Image Quality", Hewlett Packard.

David A. Landgrebe and L.L. Biehl E&CE, \$75,000. "Hyperspectral Feature Analysis for Performance Forecasting", Desert Research Institute.

CONFERENCES/WORKSHOP DATES:

(* = New listing)

Please note that we are not repeating conferences/ workshops mentioned in previous newsletters except those of Professional Societies/organizations that appear to be of special interest to our faculty/students.

1997:

+Oct 26-31. GIS/LIS '97, AAG, ACSM, AAM/FM International, ASPRS, URISA, Cincinnati, OH, Contact: (301) 493-0200; Fax: 8245.

+Oct 30-Nov 2. 3rd Int'l Symp. on GIS in Higher Education, Towson State Univ. & NCGIA, Chatilly, VA, Contact: 410-830-2964, Fax 3888; morgan@towson.edu

+Nov 4-8. 17th Asian Conference on Remote Sensing, Asian Assoc. of Remote Sensing, Colombo, Sri Lanka. Contact: 81-33402-6231; Fax: 81-3-3479-2762; chiwa@shunji.iis.u-tokyo.ac.jp

+Nov 17-19. Applied Geologic Remote Sensing: Practical Solutions for Real-World Problems, ERIM, Denver, CO. Contact: 313-994-1200, ext. 3234, Fax: 994-5123; wallman@erim.org Call for papers due: 21 Mar 97

+Dec 2-5. Land Satellite Information in the Next Decade, ASPRS, NASA, NOAA, USGS, NARSIA, Washington, DC. Contact: Ph 301-493-0290, fax 301-493-0208, email:asprs@asprs.org

*+Dec 4-5, 1997 GIS in Illinois Conference, Illinois GIS Association, Oak Brook, Ill. Contact: 815-753-1906.

+Dec 14-19. The International Symposium on Spectral Sensing Research 1997 (ISSSR)'97, US Army Topographic Engineering Center, San Diego, California, Contact: (202)393-1648, fax:(202)628-8498, register@issr.org

*+Dec 15-17, Conference on Scientific and Technical Data Exchange and Integration, US National Committee for CODATA, Bethesda, Md. Contact: 202-334-2421; fax 202-334-1684; or e-mail codataco@nas.edu.

1998:

+Jan 26-31. Fusion of Earth Data, EARSel, SEE, and Ecole des Mines de Paris, Cote d'Azur, France Contact: fax 33-4-9395-7535 Email: fusion@cenerg.cma.fr

*+Feb 22-26, National Alliance of NASA University Research Centers URC-TC NASA URC Technical Conference on Aeronautics, Space Science and Technology, Earth System Sciences,

Global Hydrology, and Education. Contact: 205-851-5075 fax: 205-851-5076 Email:
pcampbell@asnaam.aamu.edu

+Mar 30-Apr 4. ASPRS-RTI Annual Conference, Tampa, FL. Contact: 301-493-0290, Fax:
0208. Call for papers due July 15, 1997 at abstract@asprs.org

*+May 27-29 2nd Mobile Mapping Symposium, OSU Center for Mapping, Columbus, OH.
Contact: Fax: 614-292-8062, Email: mms@cfm.ohio-state.edu Call for Abstracts Due: October
3, 1997

*+May 27-30. International conference on Ground-Penetrating Radar, University of Kansas,
Lawrence, KS. Contact: 913-864-7735

+June 1-3 1st Int'l Conf. on Geospatial Info. In Agriculture & Forestry, ERIM, Lake Buena
Vista, FL. Contact: 313-994-1200, ext. 3234, Fax: 994-5123;
wallman@erim.org, <http://www.erim.org/CONF/ag.html>

*+July 6-10 1998 IEEE International Geoscience & Remote Sensing Symposium, IGARSS,
Seattle, Washington. Contact: 281-291-9222, Fax: 281-291-9224 or tstein@phoenix.net Call
for papers: Due Jan 7, 1998

*+July 19-22. 4th Int'l Conference on Precision Farming, University of Minnesota, St. Paul,
MN. Contact: (612) 625-3125, Fax: (621) 624-4223, or probert@soils.umn.edu Abstracts
due: December 1, 1997.

*+Oct 8-12. 27th Int'l Symp. on Remote Sensing of the Environment, Tromso, Norway.
Contact: isrse@spacecentre.no; URL: <http://www.spacecentre.no/> Abstracts due: Oct. 15, 97

--Chris J. Johannsen, Director

Laboratory for Applications of Remote Sensing (LARS)

1158 ENTM 220, Purdue University,

W. Lafayette, IN 47907-1158, USA

(765) 494-6305, Fax: (765) 494-7753

johan@purdue.edu Note: login change! johannsn@ecn.purdue.edu also valid login.

LARS Newsletter

November/December 1997

WE ARE MOVING!

The Laboratory for Applications of Remote Sensing is moving (one more time) to Potter Engineering Building. We will be "co-existing" with the Center for Advanced Applications of Geographic Information Systems within the Environmental Sciences and Engineering Institute. The Water Resources Research Center will also be moving to Potter. Our new address will be: LARS, 1202 Potter Hall, Purdue University, W. Lafayette, IN 47907-1202. The phone will continue to be 765-494-6305 but our new fax number will be: 765-496-3216. I will be maintaining an academic office within the Agronomy Department (AGRY, 1150 Lilly Hall, Purdue University, W. Lafayette, IN 47907-1150). You can reach me at either address. I recall previous moves from Flex Lab 1 (now called "Hentschel") to Flex Lab 2 (now called "Business and Technology Center") and for a while during the 70s we occupied both buildings. We moved from Flex 2 to Entomology in 1985 while storing the library of tapes and materials in the basement of the library. Most of those materials have now been permanently loaned to others. Glenda has significantly reduced our files and historical items to the minimum. I have learned what every LARS Director has learned...that the really important "Space" is space on campus and not space where the satellites roam!--CJJ

LARSIAN NEWS:

A voice from the past comes from ERIC STONER (Ph.D. 1979, Agronomy, Major Professor: M. Baumgardner) who may be attending the Intl. Conf. on Geospatial Information in Agriculture and Forestry. To quote Eric says, "It is still gratifying to know that some of the evolving precision farming techniques may be making use of our (now ancient) work on reflectance properties and soil organic matter content." He is still in Brasilia as Environmental Advisor with USAID/Brazil at least until the year 2002. They have a program in the order of \$5 million per year directed mainly to conservation and sustainable use of forest resources in the Amazon. Most of their projects have strong remote sensing/GIS components. He was involved in preparations for the Clintons' visit in mid-October. He hopes to negotiate a Partner Parks agreement between the Everglades National Park and the Pantanal National Park in Brazil. The Pantanal is where he worked in the Peace Corps 25 years ago. His email: estoner@usaid.gov

ERIC GUSTAFSON, (Ph.D. 1994, Forestry and Natural Resources, Major Professor: George Parker) currently with the U.S. Forest Service at Rhinelander, Wisconsin, has been chosen to receive a Presidential Early Career Award for Scientists and Engineers, the highest honor bestowed by the U.S. Government on outstanding scientists and engineers at the outset of their independent research careers. He attended an award ceremony and reception the Old Executive Building in Washington, DC, on November 3.

VINCENT (XIN) ZHUANG, (Ph.D. 1993, Agricultural & Biological Engineering, Major Professor: Bernie Engel) is currently working at SAIC and has a paper published in the October issue of GIS World, "Spatial Engines Drive Web-based GIS," p. 54-56. He contributes updates to EPA's Envirofact Warehouse (<http://www.epa.gov/enviro>), especially for its Maps On Demand. And he's keeping up on Boilermaker football, "I don't remember anything like what they have achieved so far when I was at Purdue."

FACULTY NEWS:

VAN GELDER LIAISON TO NATIONAL GEODETIC SURVEY. Purdue University engineers are helping coordinate a statewide effort to establish a network of highly accurate reference points for use in surveying and navigation. New measurements taken with global positioning equipment should improve the existing reference points made many years ago. Boudewijn van Gelder, professor of civil engineering in the area of surveying engineering, is the Indiana liaison to the National Geodetic Survey, which is responsible for measuring some 20 sites in Indiana one of which is at the Purdue Airport. Pilots use GPS surveys for navigation, which is why many of the GPS reference points being measured in Indiana are at airports. About another 100 Indiana sites are scheduled for measurements. The information will be processed and made available on CD-ROM in about a year, according to Thomas Mahon, a Purdue engineering graduate student involved with the survey. These reference points are used in construction projects, property boundary surveys and locating underground utilities and the geographic information gathered can be incorporated into graphical computer displays used by city and county planners.

ENGEL BOOSTS INDIANA'S PESTICIDE PLANNING FOR SITE-SPECIFIC FARMING. Professor Bernie Engel, Agricultural & Biological Engineering, is developing environmental programs that could provide the basis for "smart laws". Using computers to examine the many variables and prescribe solutions, he is working with the Office of the Indiana State Chemist in assisting them to monitor groundwater contamination by agricultural runoff. With an on-line computer database and program he hopes to tell pesticide users how much chemical usage is needed for specific soil type areas within a field. He has already created an Indiana groundwater vulnerability map which identifies problem areas. The maps are educational tools that will hopefully avoid reaching the point where actual regulations are needed. He will be working on future mapping efforts related to pesticide types, application rates, methods of tillage and other farming practices and weather models.

AWARDS:

John W. Moser, Jr., Prof. of Forest Biometry received the John A Beale Memorial Award from the Society of American Foresters. The Beale Award recognizes outstanding efforts over a sustained period of time by a society member in the promotion of forestry through voluntary service to the SAF. Congratulations John!

Patrick R. Willis, Graduate Student in Agronomy, was a recipient of the 1997 George D. Scarseth Scholarship. Scarseth was a former Head of Agronomy at Purdue who promoted new ideas and new approaches to crop production. The scholarship provides travel funds for graduate students to present papers at American Society of Agronomy Meetings. Chris Johannsen is his major professor. Patrick presented a poster paper at the 1997 ASA meetings in Anahiem on "High spatial resolution data for precision agriculture." Congratulations Patrick!

CONFERENCES/WORKSHOP DATES:

(* = New listing)

Please note that we are not repeating conferences/ workshops mentioned in previous newsletters except those of Professional Societies/organizations that appear to be of special interest to our faculty/students.

1997:

+Dec 2-5. Land Satellite Information in the Next Decade, ASPRS, NASA, NOAA, USGS, NARSIA, Washington, DC. Contact: Ph 301-493-0290, fax 301-493-0208, email:asprs@asprs.org

+Dec 4-5, 1997 GIS in Illinois Conference, Illinois GIS Association, Oak Brook, Ill. Contact: 815-753-1906.

+Dec 14-19. The International Symposium on Spectral Sensing Research 1997 (ISSSR)'97, US Army Topographic Engineering Center, San Diego, California, Contact: (202)393-1648, fax:(202)628-8498, register@issr.org

+Dec 15-17, Conference on Scientific and Technical Data Exchange and Integration, US National Committee for CODATA, Bethesda, Md. Contact: 202-334-2421; fax 202-334-1684; or e-mail codataco@nas.edu.

1998:

*+Jan 19. The Photogrammetric Society, Picadilly, London. OS International, Contact: +44-171-477-8000 x3628; fax +44-171-477-8570; s.robson@city.ac.uk

*+Jan 25-29, Space Technology and Applications International Forum (STAIF-98), Albuquerque, NM. Contact: 505-277-0446, fax 277-2814, e-mail: alaburda@unm.edu or <http://www-chne.unm.edu/isnps/isnps.htm>.

+Jan 26-31. Fusion of Earth Data, EARSEL, SEE, and Ecole des Mines de Paris, Cote d'Azur, France Contact: fax 33-4-9395-7535 Email: fusion@cenerg.cma.fr

*+Feb 10-12, International Forum on Automated Interpretation of High Resolution Digital Imagery for Forestry, Canadian Forest Service, Victoria, BC, Canada. Contact: 250-363-0624; fax 250-363-0775; dleckie@pfc.forestry.ca.

+Feb 22-26, National Alliance of NASA University Research Centers URC-TC NASA URC Technical Conference on Aeronautics, Space Science and Technology, Earth System Sciences, Global Hydrology, and Education. Contact: 205-851-5075 fax: 205-851-5076 Email: pcampbell@asnaam.aamu.edu

*+Mar 23, Airborne Digital Photogrammetric Image Acquisition: Experience and Visions, The Photogrammetric Society, London, England. Contact: +44-171-477-8000 x3628; fax +44-171-477-8570; s.robson@city.ac.uk

+Mar 30-Apr 4. ASPRS-RTI Annual Conference, Tampa, FL. Contact: 301-493-0290, Fax: 0208. Call for papers due July 15, 1997 at abstract@asprs.org

*+April 26-29, AM/FM International's Conference XXI, AM/FM International, San Jose, CA. Contact: 303-337-0513; fax: 303-337-1001; <http://www.amfmintl.org>

*+May 4-7, International IGUG Spring Meeting, US Intergraph Graphics User Group, Huntsville, AL. Contact: 800-642-9420.

+May 27-29 2nd Mobile Mapping Symposium, OSU Center for Mapping, Columbus, OH.
Contact: Fax: 614-292-8062, Email: mms@cfm.ohio-state.edu Call for Abstracts Due: October 3, 1997

+May 27-30. International conference on Ground-Penetrating Radar, University of Kansas, Lawrence, KS. Contact: 913-864-7735

+June 1-3 1st Int'l Conf. on Geospatial Info. In Agriculture & Forestry, ERIM, Lake Buena Vista, FL. Contact: 313-994-1200, ext. 3234, Fax: 994-5123;
wallman@erim.org, <http://www.erim.org/CONF/ag.html>

*+June 17-19, Geoinformatics 98 International Conference, CPGIS and CAGIS, Beijing, China.
Contact: fax +86-1-6491-5035;
proj@irsa.irsa.ac.cn; <http://cpgis.geg.miami.edu/cpgis/geoim98/>

+July 6-10 1998 IEEE International Geoscience & Remote Sensing Symposium, IGARSS, Seattle, Washington. Contact: 281-291-9222, Fax: 281-291-9224 or tstein@phoenix.net Call for papers: Due Jan 7, 1998

+July 19-22. 4th Int'l Conference on Precision Farming, University of Minnesota, St. Paul, MN.
Contact: (612) 625-3125, Fax: (621) 624-4223, or probert@soils.umn.edu Abstracts due: December 1, 1997.

*+Sep 1-4. ECO BP 98: International Symposium on Resource and Environmental Monitoring, ISPRS, Budapest, Hungary. Contact: +36-1-212-0056; fax +36-1-156-6581; <http://www.hegyi.com/isprsc7>

*+Oct 5-7, 5th International conference on Remote Sensing for Marine and Coastal Environments, ERIM, San Diego, CA. Contact: 313-994-1200 x3234; fax 313-994-5123;
wallman@erim.org

+Oct 8-12. 27th Int'l Symp. on Remote Sensing of the Environment, Tromso, Norway.
Contact: isrse@spacecentre.no; URL: <http://www.spacecentre.no/> Abstracts due: Oct. 15, 97

1999

*+Mar 1-3, 13th International Conference and Workshops on Applied Geologic Remote Sensing, ERIM, Vancouver, BC, Canada. Contact: 313-994-1200 x3234; fax 313-994-5123;
wallman@erim.org

*+June 4th International Airborne Remote Sensing Conference and Exhibition, ERIM, Ottawa, ON, Canada. Contact: 313-994-1200 x3234; fax 313-994-5123; wallman@erim.org

--Chris J. Johannsen, Director NOTE: New address for LARS
Laboratory for Applications of Remote Sensing (LARS)
1202 Potter Hall, Purdue University,
W. Lafayette, IN 47907-1202, USA
(765) 494-6305, Fax: (765) 496-3216
johan@purdue.edu Note: login change! johannsn@ecn.purdue.edu also valid login.