

MARSBUGS:

The Electronic Exobiology Newsletter

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STUDENTS SELECTED FOR NASA SCIENCE TRAINING PROGRAM NASA press release

Forty college students have been chosen by NASA to participate in an intensive six-week life sciences summer residence training program at the Kennedy Space Center, FL. The program is for undergraduate college students majoring in life sciences, bioengineering and related science and engineering fields.

Now in its 10th year, the Space Life Sciences Training Program (SLSTP) is designed to attract college students to a career in space life sciences research. Participants will gain insight into how space life sciences flight experiments are conducted, as well as explore current and future research opportunities.

Selected students will work with NASA researchers in developing flight and ground-based space life sciences experiments. In addition to offering hands-on research experience, the curriculum provides a complete overview of the field of space life sciences through lectures by astronauts, as well as NASA and university scientists, and includes facility tours and special projects.

On occasion the students may have an opportunity to participate in the preparation and monitoring of actual Space Shuttle flight experiments. The SLSTP will be held from mid-June through the end of July.

After the successful completion of the program, five semester hours of college credit will be offered to each student through Florida A&M University, which also is responsible for program promotion, student recruitment, selection, travel, housing, program evaluation and academic consultation.

The 40 students were selected competitively from approximately 500 applicants. Students in the program must be undergraduates majoring in science or engineering and have a minimum cumulative grade point average of 3.0/4.0. More than 360 students have participated in the program since its inception in 1985.

SLSTP is sponsored by NASA's Office of Life and Microgravity Sciences and Applications and the Office of Human Resources and Education.

The students selected for the 1995 Space Life Sciences Training Program are:

Student
Hometown
College

Kineshia K. Abram
Columbia, MS
Jackson State U.

Lori A. Amason
Centralia, IL
Kaskaskia Jr. College

Robert W. Amerine
Colorado Springs, CO
Colorado State U.

Ellen Burts
Birmingham, AL
Stillman College

Matthew J. Carfrae
Cedar Rapids, IA
Marquette U.

Anita A. Chandrathil
Des Plaines, IL
U. of IL, Urbana-Champaign

Myron A. Chornuk
Seattle, WA
U. of Washington

Calvin N. Collins
Tampa, FL
Hills Borough Comm. College

Kathryn M. Davis
Longview, TX
Texas A&M U.

Alisha B. Diggs
New Orleans, LA
Xavier U.

Lynn M. Evans
Pewee Valley, KY
Wittenberg U.

Mark G. Fagan
Hanna, WY
Wesleyan U.

Jill A. Gogel
Dale, IN
Purdue U.

Brian E. Grace
Nortonville, KY
Western Kentucky U.

George R. Hamilton
Rochester, NY
SUNY at Buffalo

Shelly Harper
Omaha, NE
Embry-Riddle Aeronautical U.

Clay H. Holdsworth
Wilbraham, MA
U. of Massachusetts

Felix A. Irizarry
Aquadilla, PR
U. of Puerto Rico

Christopher D. Jackson
Decatur, GA
Florida A&M U.

Claudine L. Joyner
Cleveland, TN
Cleveland State Comm. College

Bryan D. Lambird
El Toro, CA
U. of Southern CA

Amy J. Litscher
Lake Mills, WI
Beloit College

Belise L. Livingston
Deltona, FL
Spelman College

Justin R. Lohmeier
Jackson, MS
U. of Virginia

Kennda L. Lynch
Rockford, IL
U. of IL, Urbana-Champaign

Gioia D. Massa
Big Arm, MT
Cornell U.

Suzanne K. Paris
Spring, TX
North Harris College

Eric E. Peterson
Napa, CA
Napa Valley College

Shawn W. Pyle
Finley, TN
Dyersburg State Comm. College

Demario L. Rollins
Tallahassee, FL
Florida A&M U.

Joy J. Serogum
Canton, IL
U. of IL, Urbana-Champaign

Kathleen H. Sienko
Endicott, NY
U. of Kentucky

Amy P. Synder
Upper St. Clair, PA
Cornell U.

Ee T. Tay
Palm Bay, FL
U. of Florida

Donna L. Todacheene
Lukachukai, AZ
Haskell Indian
Nations U.

Nirav N. Vakharia
Westlake, OH
Case Western Reserve U.

Brian H. Wayman
Hillsboro, MD
U. of Maryland Baltimore County

Valerie S. Weidner
University Park, MD
Duke U.

James B. Wohlwend
Derby, KS
Friends U.

Heidi A. Zeleznik
Myrtle Beach, SC
Coastal Carolina U.

SETIQUEST VOL. 1, NO. 3 CONTENTS
By Larry Klaes, *SETIQuest* Editor

The third issue of *SETIQuest* Magazine is now available.
SETIQuest is the new periodical of SETI and bioastronomy research.

The third issue contains the following articles:

- 1999: The International SETI Year - Larry Klaes
- META I and II Status Reports and Program Backgrounds - Guillermo A. Lemarchand
- A History of the Ohio SETI Program - Dr. Robert S. Dixon Project
- Phoenix Starts in the South - Seth Shostak
- SERENDIP Status Report and Program Background - Robert Quist
- Members of the SETI Community Meet in Atlanta - Lori Marino
- First Call for Papers: The Search for Extraterrestrial Intelligence (SETI) in the Optical Spectrum -- Second International Conference on Optical SETI - Dr. Stuart A. Kingsley
- Interstellar Probe Status - Larry Klaes

Publications Watch:

- Book Review - Carl Sagan's Pale Blue Dot by Nathan Cohen
- Books in Brief - Larry Klaes
- Periodicals - Larry Klaes

You may receive the first issue of *SETIQuest* FREE by sending your *full regular mail address* to the following E-Mail account:

sqinqnet@pixelacres.mv.com

Or contact:

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CALL FOR PAPERS: SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) IN THE OPTICAL SPECTRUM II

January 31 - February 1, 1996

Dr. Stuart A. Kingsley, Chair
The Columbus Optical SETI Observatory
skingsle@magnus.acs.ohio-state.edu.us

Dr. Guillermo A. Lemarchand, Co-Chair
Centro de Estudios Avanzados - Universidad de Buenos Aires
and Instituto Argentino de Radioastronomia
lemar@seti.edu.ar

SPIE (The International Society For Optical Engineering)

PHOTONICS WEST '96
(OE/LASE '96 Symposium)
Lasers and Integrated Optoelectronics
January 27 - February 2, 1996
San Jose Convention Center, San Jose, California, USA

Papers are requested on, but not limited to:
Optical (visible and infrared) and microwave SETI, optical and microwave antenna uplink gain limitations set by the technical capabilities of ETI civilizations, fundamental antenna uplink gain limitations set by thermal (kT) noise and gravitational effects in space, interstellar signal dispersion and scintillation effects at microwave and optical frequencies, the optical interstellar and atmospheric spectral windows, choice of "magic" frequencies for cw and pulsed beacons, choice of "magic" frequencies for the wideband data channel, identification of high-power lasers for interstellar communications, planetary lasers, suitable solar-type stars for the targeted optical and microwave search, detection of extrasolar planets, detecting pulsed and monochromatic laser beacons, free-space laser communications for deep space and interstellar links, diffraction-limited and light-bucket optical SETI receivers, optical SETI strategies, signal processing and data storage for cw and pulsed beacon optical SETI, real-time signal processing and statistical analysis of photon arrival times, detection and demodulation of wideband optical channels, generic demodulators for unknown ETI laser beacon and wideband channel modulation formats, the ultimate superhighway - the galactic internet?, interstellar video and video compression systems for effective interspecies communications, decoding the content of the message, serendipity and nanosecond astrophysics, impact of optical SETI on conventional optical astronomy, and the science educational aspects of SETI.

This conference's structure will include sessions on the following:

Wednesday Morning, January 31
Session 1 Introduction & Microwave SETI.

Wednesday Afternoon, January 31
Session 2 Optical SETI I.

Thursday Morning, February 1
Session 3 Interdisciplinary Science.

Thursday Afternoon, February 1
Session 4 Optical SETI II.

The emphasis will be on the optical approach to SETI - about two thirds of the 30 or more papers for this two-day conference will relate specifically to Optical SETI. Regular papers are allocated 20 minutes for presentation, invited

papers 30 minutes. The last session will conclude with a panel discussion. There is also the option for a short course on MSETI and OSETI conducted by Seth Shostak (SETI Institute), Guillermo Lemarchand and Stuart Kingsley.

The OSETI II sessions will be held on Wednesday, January 31 and Thursday, February 1, 1996, respectively, after the associated Free-Space Laser Communications Conference VIII (Monday, January 29 - Tuesday January 30). Scientists and engineers attending the free-space laser communications conference are encouraged to attend OSETI II. The registration fee covers attendance for all PHOTONICS WEST conferences. The keynote speaker will be announced later in the year.

Those wishing to submit a paper should contact SPIE. The Proceedings of the OSETI I Conference, Volume 1867 may be ordered from SPIE. If you wish to get on the mailing list for announcements relating to OSETI II or require more details about the OSETI I conference proceedings, contact SPIE.

Please note the following deadlines:

Abstracts are due by July 3, 1995.

Technical Program will be finalized by July 31, 1995.

Manuscripts are due by January 2, 1996.

The published proceedings should be available by May 1, 1996.

Send abstracts by email in ASCII to: abstracts@spie.org or fax one copy to SPIE or mail four copies to:

Lasers and Integrated Optoelectronics
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Bellingham, WA 98227-0010, United States.
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Fax: (360) 647-1445

NASA LIFE SCIENCES DATA ARCHIVE ON WWW!

The Life Sciences Data Archive (LSDA) is happy to announce the release of their home page on the WWW. The LSDA archives and distributes results of the NASA Life and Biomedical Sciences and Applications Division, space flight research program. This NASA Division studies the effect of space flight and microgravity (weightlessness) on living systems, and is developing a scientific and technical foundation for humans to explore space. The LSDA provides a central repository of space life sciences data and access to data and information for future experiment planning and retrospective data analysis.

The homepage is at
http://nssdc.gsfc.nasa.gov/life/nssdc/life_home.html

MARS PATHFINDER INSTRUMENTS STATUS

By John Wellman, Mars Pathfinder Science and Instruments Manager
June 1995

The Mars Pathfinder science instrument payload consists of an Imager for Mars Pathfinder (IMP), an Atmospheric Structure Instrument and Meteorology (ASI/MET) package, and an Alpha Proton X-ray Spectrometer (APXS), with its deployment mechanism. The IMP is a multispectral stereo imaging system that will acquire complete panoramas of the landing vicinity, will perform various atmospheric observations and will support the operations of the Pathfinder rover. The

ASI/MET will acquire profiles of the atmospheric temperature, pressure and entry vehicle acceleration during the entry phase and will continue as a surface meteorology station after landing. It also provides the electronic readout functions for the Aeroshell Instrumentation Package (AIP) that provides engineering information on the aerodynamic performance of the Pathfinder aeroshell during entry. The APXS is mounted on the rover via a deployment mechanism and will be placed in contact with rock and soil samples to acquire elemental composition information.

Deliveries of engineering models for each of the Mars Pathfinder instruments has been completed. A number of functional and environmental tests have been conducted. These will be followed by the testing of the flight instruments prior to delivery. The IMP and ASI/MET will be integrated with the Pathfinder Flight System Testbed (a computer simulation of the Pathfinder flight and ground systems) prior to integration with the flight lander. The flight APXS will be integrated with the flight rover prior to the rover/lander integration.

Imager For Mars Pathfinder (IMP)

The Imager for Mars Pathfinder is being developed by Peter Smith of the University of Arizona. The major hardware elements are designed and fabricated by Lockheed Martin Company.

The engineering model was delivered to JPL in June, 1994 and has supported numerous tests as part of the Flight System testbed and as a stand-alone system.

It has been used in the University of Arizona "Mars Garden" to conduct simulations of the landed mission science operations on two separate occasions.

The flight unit, now undergoing final assembly steps, will be tested and calibrated over the summer months. Its electronic boards will be sent to JPL for final processing and environmental testing in conjunction with the other elements of the Pathfinder flight electronics. The completed camera will be delivered to Assembly Test and Launch Operations (ATLO) on November 1, 1995.

Atmospheric Structure Instrument/Meteorology (ASI/MET) Package

This facility instrument is under development at JPL with Clayton LaBaw as Instrument Manager. A science advisory team, appointed by NASA is led by Dr. Al Seiff of San Jose State University. Test and analysis support is provided by NASA Ames Research Center.

The engineering model ASI/MET instrument has completed qualification testing for vibration and thermal vacuum. Representative sensors have been demonstrated in the lab and as part of the Mars Day activities at JPL in late January. The flight unit fabrication is 95% complete. Functional and environmental testing will commence within the next two weeks in support of an instrument delivery in June. A science test article wind sensor will be tested in the NASA Ames wind tunnel to provide a calibration for the flight unit.

Alpha Proton X-Ray Spectrometer (APXS) And Deployment Mechanism

The APXS is a joint effort by the Max Planck Institute for Chemistry, Mainz, Germany, and the University of Chicago. Dr. Rudi Rieder of Max Planck Institute is the Principle Investigator and provides the alpha and proton spectrometer

portions. Dr. Thanasis Economou of the University of Chicago is responsible for the x-ray spectrometer as well as integration and test of the assembled instrument. Richard Blomquist of JPL is responsible for the deployment mechanism.

A breadboard unit and an engineering model of the APXS have been delivered to JPL. The engineering model has been integrated with its JPL-developed deployment mechanism. This assembly will be mated with the SIM rover (a flight prototype unit used for mobility testing on earth) and tested to develop the rover and deployment mechanism behaviors necessary to place the instrument in contact with soil and rock samples.

The flight unit, scheduled for a June 1, 1995 delivery will be integrated with the flight unit rover and maintained in a clean environment prior to launch. A duplicate flight sensor head will be maintained at the University of Chicago for long-term calibration using the flight radioactive sources, then integrated with the Pathfinder flight hardware at the Cape, before launch.

End *Marsbugs* Vol. 2, No. 7