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## NASA SELECTS SCIENCE EXPERIMENTS FOR SPACE STATION FREEDOM

NASA's Office of Space Science and Applications today announced the selection of 27 flight experiments, or concept studies leading to experiments, that will fly aboard the Space Station Freedom.

The selections fall into two categories. The flight category is for attached scientific experiments that can be mounted aboard elements of Freedom's structure during its assembly and outfitting phase. The 14 investigations selected in this category will be the first performed aboard Freedom. Flight proposals were solicited that would be limited in weight and make only modest demands on station resources, such as power, cooling and crew availability, during the busy assembly phase.

The concept study category is for studies that may lead to flight experiments after the assembly phase. These proposals were solicited for more advanced ideas that could be implemented after station assembly when additional resources, such as higher power and data-handling capabilities, will be available.

Some of the 14 flight experiments and 13 concept studies call upon two facilities the Office of Space Science and Applications has indicated would be built for Freedom. These are Astromag, a cryogenically-cooled superconducting electromagnet to measure cosmic rays, and the Cosmic Dust Collection Facility, which will capture and record the direction and velocity of cosmic dust particles for further analysis.

The 27 selections were made from responses to two NASA announcements of opportunity issued in 1988. The first, issued in January, was for the Earth Observing System (EOS) and solicited proposals for both the unmanned NASA Polar Orbiting Platform and the permanently manned Space Station Freedom. The second was issued in July and was specifically for scientific and technological payloads in other scientific disciplines to be attached to Freedom. Eight of the nine Earth science investigations selected as attached payloads involve copies of EOS Polar Platform instruments.

The investigations include participants from about 50 organizations representing NASA and other government and private research centers, U.S. universities and five foreign countries. The selected experiments and concepts represent a wide range of scientific disciplines including space physics, solar and planetary physics, exobiology, astrophysics, Earth and environmental science and communications technology. They involve nearly 130 scientists.

Selection of the flight experiments was predicated on their ability to meet a timetable for the design, development and assembly of Freedom elements. The earliest expected flight date for any of the experiments is 1996. The Freedom Station will provide physical attachment points, power, cooling, data communications and pointing for certain instruments.

The Attached Payload Program is managed by the Office of Space Science and Applications, Flight Systems Division. Program manager is Dr. Philip J. Cressy, and program scientist is Dr. Stanley C. Freden, both at NASA Headquarters.

The following individuals have been selected for funding for experiments and concept studies in response to the January 1988 announcement:

Dr. Robert M. Walker, McDonnell Center for the Space Sciences, Washington University, St. Louis, Cosmic Dust Experiment, flight experiment.

Dr. Michael Fitzmaurice, Goddard Space Flight Center, Greenbelt, Md., Laser Communications Transceiver, flight experiment.

Dr. Paul Gorenstein, Smithsonian Astrophysical Observatory, Cambridge, Mass., Large Area Modular Array of Reflectors/High Throughput X-Ray Astronomy Instrument, flight experiment.

Dr. Thomas A. Parnell, Marshall Space Flight Center, Huntsville, Ala., Spectra, Composition and Interactions of Nuclei above 10 TeV, Astromag experiment, flight experiment.

Dr. Jonathan F. Ormes, Goddard Space Flight Center, Greenbelt, Md., Large Isotope Spectrometer for Astromag, flight experiment.

Dr. Glenn C. Carle, Ames Research Center, Moffett Field, Calif. Exobiology Intact Capture Experiment, flight experiment.

Dr. Siegfried Auer, Applied Research Corporation, Landover, Md., Cosmic Dust Orbit and Capture Experiment, flight experiment.

Dr. Robert L. Golden, Particle Astrophysics Laboratory, New Mexico State University, Las Cruces, Measurement of Cosmic Rays including Anti-protons, Positrons, Anti-nuclei and a Search for Primordial Antimatter, Astromag experiment, flight experiment.

Dr. Arthur B. Walker, Jr., Center for Space Science and Astrophysics, Stanford University, Calif., Ultra-High Resolution XUV Spectroheliograph, flight experiment.

Dr. W. T. Sanders, Space Science and Engineering Center, University of Wisconsin at Madison, X-ray Background Survey Spectrometer, flight experiment.

Dr. Peter B. Price, Space Science Laboratory, University of California at Berkeley, Heavy Nucleus Collector, flight experiment.

Dr. Peter M. Banks, STAR Laboratory, Department of Electrical Engineering, Stanford University, Calif., Plasma Interactions Experiment, concept study.

Dr. Michael Shao, Optical Sciences and Applications Section, Jet Propulsion Laboratory, Pasadena, Calif., Orbiting Stellar Interferometer, concept study.

Dr. Robert D. Reasenberg, Smithsonian Astrophysical Observatory, Cambridge, Mass., Precision Optical Interferometry in Space Study, concept study.

Dr. Jonathan E. Grindlay, Harvard College Observatory, Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass., Energetic X-ray Observatory for Space Station, concept study.

Dr. Robert L. Brown, National Radio Astronomy Observatory, Charlottesville, Va., High-Resolution Imaging Spectroscopy at Tera Hertz Frequencies, concept study.

Dr. Hugh S. Hudson, Center for Astrophysics and Space Sciences, University of California, San Diego, Pinhole/Occulter Facility, concept study.

Dr. Guy Fogleman, SETI Institute, Ames Research Center, Moffett Field, Calif., Study to Develop an Active Collector of Cosmic Dust, concept study.

The following investigators were selected from responses to the July 1988 announcement:

Dr. M. Patrick McCormick, Langley Research Center, Hampton, Va., Stratospheric Aerosol and Gas Experiment III, flight experiment.

Dr. Hugh Christian, Marshall Space Flight Center, Huntsville, Ala., Lightning Imaging Sensor, flight experiment.

Dr. Bruce Barkstrom, Langley Research Center, Hampton, Va., Clouds and the Earth's Radiant Energy System, flight experiment.

Dr. William L. Barnes, Goddard Space Flight Center, Greenbelt, Md., Tropical Region Imaging Spectrometer, concept study.

Dr. Michael H. Freilach, Jet Propulsion Laboratory, Pasadena, Calif., Advanced Scatterometer for Studies in Meteorology and Oceanography, concept study.

Dr. Tiruvalam Krishnamurti, Florida State University, Tallahassee, an experiment similar to the Laser Atmospheric Wind Sounder, one of six facility instruments included in the Polar Platform proposal, concept study.

Dr. William G. Melbourne, Jet Propulsion Laboratory, Pasadena, Calif., Global Positioning System Geoscience Instrument, concept study.

Dr. Gerald R. North, Texas A&M University, College Station, Tropical Rain Mapping Radar, concept study.

Dr. Roy Spencer, Marshall Space Flight Center, Huntsville, Ala., Tropical Geophysical Information Retrieval with a High Resolution Microwave Spectrometer Sounder, concept study.

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NOTE: A complete list of payload co-investigators is available from the NASA Newsroom, Room 6043, 400 Maryland Ave., S.W., Washington, D.C. 20546, phone 202/453-8400.