



Joseph M. Jones, 205/453-0034  
Residence, 205/852-8847

**NATIONAL AERONAUTICS AND  
SPACE ADMINISTRATION**  
Marshall Space Flight Center,  
Ala. 35812

**FOR RELEASE:**  
AM's, July 20, 1972  
Release No. 72-88

(Also released in  
Washington, D. C.)

### STUDENT EXPERIMENTS SELECTED FOR SKYLAB

MARSHALL SPACE FLIGHT CENTER, Ala. -- Experiments proposed by 19 high school students from 16 states have been approved for the Earth-orbiting manned Skylab space station in 1973.

Selection of the young experimenters was announced today by the National Science Teachers Association (NSTA) and NASA as part of the Skylab Student Project. The nationwide project directly involves secondary school students in space research.

The 19 experimenters are from the 25 national winners selected by NSTA and announced in April. The 25 proposals had been selected for detailed review from 3,409 submitted by U. S. secondary school students.

The NASA review determined that because of Skylab performance requirements and schedule constraints the six other proposals could not be accommodated.

-more-

July 19, 1972

Skylab is an experimental space laboratory that will be orbited next year to conduct scientific, technological, and biomedical investigations from the vantage point of space. The first manned mission, with three astronauts, will last up to 28 days, the second and third 3-man missions are planned to last up to 56 days.

The Skylab space station will test equipment and techniques for gathering information on Earth's ecology, oceanography, water management, agriculture, forestry, geology, and geography. Astronomy experiments will substantially increase knowledge of the Sun which sustains life on Earth. Habitability, biomedical, behavioral, and work effectiveness experiments will further evaluate man's capabilities in space flight.

The 25 finalists and their teacher-sponsors have been invited by NSTA and NASA to attend the Skylab Educational Conference at the Kennedy Space Center, Florida, at the time the Skylab is launched. The finalists, sponsors and schools received special medallions.

The experiment evaluation and flight selection process involved NASA Skylab Program personnel from the Marshall Space Flight Center, Huntsville, Ala. ; the Manned Spacecraft Center, Houston; and the Kennedy Space Center, Florida.

Preliminary designs were developed for experiments requiring flight hardware, which is being prepared by the Marshall Center.



Other experiment proposals can be satisfied by using data from existing experiments of Skylab principal investigators.

The student finalists participated in a week of preliminary design reviews at the Marshall center where they and their teacher sponsors and parents were joined by Skylab scientists, engineers, technicians and project officials.

The 19 students will remain closely involved in the development of experiment equipment (where hardware is required) and in the planning of how their investigations (including data retrieval and processing, flight planning and crew training) will be conducted.

The student experiments are being handled in a manner very similar to the mainline Skylab experiments. Some students will work very closely with teams of Skylab investigators.

The students and experiments selected for participation in Skylab are:

DANIEL C. BOCHSLER, Route 2, Box 75, Silverton, Oregon, 97381.  
"Possible Confirmation of Objects within Mercury's Orbit."  
Silverton Union High School, Mr. John P. Daily, Teacher/Sponsor.

This experiment will attempt to identify a planetary body which may orbit the Sun at a distance approximately 0.1 the distance from Earth to the Sun (Mercury's orbit is 0.3 to 0.4 the distance to Earth's orbit). The experiment is to be performed by examining about 30,000 Skylab solar telescope photographs.

VINCENT W. CONVERSE, 1704 Roosevelt Road, Rockford, Illinois, 61111.  
"Zero Gravity Mass Measurement." Harlem High School, Miss Mary J. Trumbauer, Teacher/Sponsor.

This experiment complements the existing Skylab specimen mass and body mass measurement devices. The equipment consists of

a simple leaf spring anchored at one end with a container at the other end into which is placed the mass to be measured. The experiment operates on the same principle as the baseline Skylab mass measurement devices and can therefore be used as an excellent demonstration of these.

TROY A. CRITES, 736 Wynwood Drive, Kent, Washington, 98031.  
"Space Observation and Prediction of Volcanic Eruptions." Kent Junior High, Mr. Richard C. Putnam, Teacher/Sponsor.

The aim of this experiment is to analyze infrared surveys of known volcanoes obtained by baseline Skylab Earth resources experiment equipment. The data will be compared to ground-based data to determine whether remote sensing can detect increased thermal radiation which may precede an imminent eruption.

W. BRIAN DUNLAP, 6695 Abbot Avenue, Youngstown, Ohio, 44515.  
"Wave Motion Thru a Liquid in Zero Gravity." Austintown Fitch High School, Mr. Paul J. Pallante, Teacher/Sponsor.

The aim of this experiment is to observe the motion of a gas bubble surrounded by a fluid when excited by a calibrated oscillation. Two liquids of different viscosity will be used. Provisions will be made for varying the size of the bubble.

JOHN C. HAMILTON, 12 Honu Street, Aiea, Hawaii, 96701.  
"Spectrography of Selected Quasars." Aiea High School, Mr. James A. Fuchigami, Teacher/Sponsor.

In this experiment, selected photographs obtained by the ultra-violet stellar astronomy equipment will be analyzed. Photographs of target areas in which quasars have been identified will be studied to obtain spectral data in the ultraviolet region to augment existing data in the radio and visible ranges.

ALISON HOPFIELD, 183 Hartley Avenue, Princeton, New Jersey, 08540.  
"Photography of Libration Clouds." Princeton Day School, Mr. Norman Sperling, Director, Duncan Planetarium.

This experiment will use the Skylab solar telescope cameras to obtain information on two regions in the Moon's orbit. At two points in the orbit of the Moon, ahead of and following the Moon in its path, a condition of gravitational equilibrium is conducive to the collection of space particles. When each of these regions comes within sight of the Skylab solar telescopes the brightness polarization of the reflected light will be measured.



KATHY L. JACKSON, 18718 Capetown Drive, Houston, Texas, 77058.  
"A Quantitative Measure of Motor Sensory Performance During  
Prolonged Inflight Zero "g". Clear Creek High School, Mrs.  
Mary K. Kimzey, Teacher/Sponsor.

This experiment uses a standard eye-hand coordination test  
apparatus to measure changes in motor sensory skill of crew  
members.

ROGER G. JOHNSTON, 1833 Draper Drive, St. Paul, Minnesota, 55113.  
"Cabillary Action Studies in a State of Free Fall." Alexander  
Ramsey High School, Mr. Theodore E. Molitor, Teacher/Sponsor.

The aim of this experiment is to determine if the zero gravity  
environment induces changes in the characteristics of capillary  
and wicking action from the familiar Earth-Gravity characteristics.

\* JEANNE L. LEVENTHAL, 1511 Arch Street, Berkeley, California, 94708.  
"X-Ray Emission from the Planet Jupiter." Berkeley High School,  
Mr. Harry E. Choulett, Teacher/Sponsor.

The aim of this experiment is to detect X-rays emitting from  
Jupiter. The X-ray emission detected by Skylab will be compared  
with solar activity and Jupiter's radio emission to derive more  
information on the mechanisms of that great planet.

TODD A. MEISTER, 33-04 93 Street, Jackson Heights, New York, 11372.  
"An In Vitro Study of Selected Isolated Immune Phenomena." Bronx  
High School of Science, Mr. Vincent G. Galasso, Teacher/Sponsor.

This experiment aims to determine if the absence of gravity affects  
representative life processes.

Part A (Chemotaxis) utilizes guinea pig macrophage under the  
influence of casein and incorporates a filter to trap migrating cells.

Part B (Antigenicity) measures concentrations of antigen/antibody.

Part C (Mobility) demonstrates the mobility of a ciliated cell by  
microscopic observation and by photomicroscopy.

JUDITH S. MILES, 3 Dewey Road, Lexington, Massachusetts, 02173.  
"Web Formation in Zero Gravity." Lexington High School,  
Mr. J. Michael Conley, Teacher/Sponsor.

This experiment will observe the web building process and the detailed structure of the web of the common cross spider (*arenus diadematus*) in a normal environment and in a Skylab environment. Analysis of experiment results will be similar to analysis of similar experiments, without the Skylab environment, performed by the Research Division of the North Carolina Department of Mental Health, Raleigh, N. C.

CHERYL A. PELTZ, 7117 S. Windermere, Littleton, Colorado, 80120.  
"Cytoplasmic Streaming in Zero Gravity." Arapahoe High School,  
Mr. Gordon B. Scheels, Teacher/Sponsor.

The aim of this experiment is to perform microscopic observation of leaf cells of elodea plants in zero gravity to determine if there is any difference between the intracellular cytoplasm compared with cytoplasmic motion of similar leaf cells on Earth.

TERRY C. QUIST, 3818 Longridge Drive, San Antonio, Texas, 78228.  
"Earth Orbital Neutron Analysis." Thomas Jefferson High School,  
Mr. Michael Stewart, Teacher/Sponsor.

In this experiment, detectors inside Skylab record impacts of high energy neutrons. The detectors mounted on the inboard faces of water tanks, will be able to discriminate between neutrons in four energy spectra. The neutrons, which have been moderated by their passage through the water in the tanks, impact the detectors and produce fission particles which in turn interact with a plastic material. Chemical treatment of the interaction reveals readily identifiable tracks.

\*JOE W. REIHS, 12824 Wallis Street, Baton Rouge, Louisiana, 70815.  
"X-Ray Content in Association with Stellar Spectral Classes."  
Tara High School, Mr. Helen W. Boyd, Teacher/Sponsor.

The primary aim of this experiment is to make observations of celestial regions in X-ray wavelengths in an attempt to relate X-ray emissions to other spectral characteristics of stars observed. In addition, observations of the Sun in X-ray and other spectral regions will be studied to reevaluate the Sun and its relation to other stellar classes.

DONALD W. SCHLACK, 9217 Appleby Street, Downey, California, 90240.  
"Phototropic Orientation of an Embryo Plant in Zero Gravity."  
Downey High School, Miss Jean C. Beaton, Teacher/Sponsor.



JOEL G. WORDEKEMPER, 810 East Sherman Street, West Point, Nebraska, 68788. "Plant Growth in Zero Gravity." Central Catholic High School, Mrs. Lois M. Schaaf, Teacher/Sponsor.

These two experiments have been combined into a single joint experiment whose objectives are:

1. To determine the differences in root and stem growth and orientation of radish seeds in specimens grown in zero gravity and on Earth under similar environmental conditions.
2. To determine whether light can be used as a substitute for gravity in causing the roots and stems of radish seeds to grow in the appropriate direction in zero gravity, and to determine the minimum light level required.

NEAL W. SHANNON, 2849 Foster Ridge Road, Atlanta, Georgia, 30345. "A Search for Pulsars in Ultraviolet Wavelengths." Fernbank Science Center, Dr. Paul H. Knappenberger, Teacher/Sponsor.

Objective of this experiment is to make ultraviolet observations of selected celestial regions in an attempt to relate ultraviolet emissions with known radio-emitting pulsars and with the pulsar in the Crab Nebula which is known to emit in visible light and radio spectra.

ROBERT L. STAEHLE, Huntington Hills-North, Rochester, New York, 14622. "Behavior of Bacteria and Bacterial Spores in the Skylab Space Environments." Harley School, Mr. Alan H. Soanes, Teacher/Sponsor.

In this experiment colonies of various species of bacteria will be studied in the Skylab zero gravity environment to determine if this environment induces variations in survival, growth and mutations of the spores which are different from those observed in identical colonies on Earth.

JOE B. ZMOLEK, 1914 Hazel Street, Oshkosh, Wisconsin, 54901. "Earth's Absorption of Radiant Heat." Lourdes High School, Mr. William L. Behring, Teacher/Sponsor.

Objective of this experiment is to derive information on the attenuation of heat energy in Earth's atmosphere. Measurements are to be made simultaneously at the Earth's surface and at Skylab altitude to determine differences in radiant heat levels.

- \* The approved experiment relies on the use and availability of the Apollo Telescope Mount equipment. Actual conduct of the experiment is contingent upon the resolution of operational and technical uncertainties that influence whether or not this type of observation can be made.

##