

Complete Skylab Results To Be Given

More than 20 JSC employees are part of a team of aerospace engineers, scientists, flight controllers and astronauts who will make the first comprehensive

report on the results of Skylab. The presentations are to be made at the 20th annual meeting of the American Astronautical Society (AAS) in Los

Angeles, California, August 20-22, 1974.

The meeting to be held at the University of Southern California (USC), will feature presentations by representatives of NASA, the scientific community, and aerospace industry on the significance of Skylab and its impact on future programs. The conference is co-sponsored by AAS and USC's Institute of Safety and System's Management (ISSM).

General Director William C. Schneider heads up the group of top NASA participants which include Skylab-4 science pilot Dr. Edward Gibson, who spent 84-days in America's first scientific space station, and scientist astronaut Dr. Robert Parker, Skylab mission scientist. Skylab people from Marshall Space

Flight Center, Kennedy Space Center, and Langley Research Center are among the presenters which also include representatives of major Skylab aerospace contractors.

Results of Skylab operations—a total of 171 days of manned scientific observations of the earth, the Sun, distant stars and man himself—and detailed experiment results will be reported to the AAS members by the 77 NASA, university and contractor presentations during the three day session. Several of the sessions will be aired over the USC closed circuit television system.

Dr. Ed Gibson who spent 84 days aboard the last Skylab mission with Gerald Carr, and William Pogue, will discuss "Astronauts Flight Experience"

during the opening session on August 20.

Also participating on the opening session will be Skylab Director Schneider; Leland Belew, MSFC Skylab Program manager; Robert Hock, KSC Skylab program manager; and Arnold Aldrich, JSC Skylab program manager.

The meeting will address all facets of the program in terms of evolution, accomplishments, and applications to future NASA missions. The Program, according to the AAS, "will be presented by the men who conceived, designed, managed, conducted and flew the Skylab missions."

JSC participants will take part in the following sessions: "Skylab Operations Support",



ENROUTE TO EDWARDS AFB—This American Airlines 747 recently obtained by JSC for use in transporting Space Shuttle Orbiter and related Shuttle hardware cross country is shown prior to its delivery to the NASA Flight Research Center, Edwards Air Force Base, California. The 747 will also be used in the planned approach and landing tests of the reusable Orbiter. The aircraft was transferred from American Airline facilities at Tulsa, Oklahoma to the California facility several weeks ago for verification and test flights.

Dr. Parker Named New S&AD Astronaut Chief



Dr. Robert A. R. Parker, scientist-astronaut and program scientist for the Skylab missions, has been named the new Chief, Astronaut Office, Science and Applications Directorate.

Dr. Parker takes the reins from Dr. Harrison H. Schmitt

who was named Assistant Administrator for Energy Programs at NASA Headquarters in May. Dr. Owen Garriott, Deputy Director, Science and Applications Directorate, was Acting Chief of the Astronaut Office, S&AD prior to Dr. Schmitt's departure for Washington.

Dr. Parker was named a NASA scientist-astronaut in 1967 and was a member of the support crews for the Apollo 15 and 17 missions. He holds a Doctorate in Astronomy from the California Institute of Technology.

The Astronaut Office, Science and Applications Directorate, was created in a reorganization this past February.

Top NASA Officials View Docking Test

NASA management officials last week received a briefing and demonstration of the docking mechanism that will be used in next year's planned linking between American and Soviet spacecrafts.

The session was held in the High-Bay area of JSC's Structures and Mechanic Laboratory and was conducted by Vladimir Syromyatnikov, senior researcher of the Soviet State Research Institute on Machine Building and Soviet chairman for Working Group 3, which is concerned with ASTP docking problems and procedures.

NASA officials who were present at the briefing and demonstration were John F. Yardley, Associate Administrator for Manned Space Flight; Chester

M. Lee, U.S. Program Director of the Apollo Soyuz Test Project; Dr. Christopher C. Kraft, Director of JSC, Dr. Kurt Debus, Director of the Marshall Space Flight Center (MSFC).

Unlike the familiar probe-and-drogue Apollo docking system, the Apollo-Soyuz docking system utilizes hydraulically-dampened tapered petals, or guides, which align the two rings for a pressure-tight seal.

Both the Soviet and American-made compatible docking system underwent dynamic testing during July in a computerized docking system simulator which duplicates the motion, forces and impact loads that are expected at the time Apollo and Soyuz dock for two days of joint operations in orbit.

ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS



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Anthony Calio Receives Fellowship

Anthony J. Calio, Director of Science and Applications at JSC, has been accepted by the Stanford Graduate School of Business as a Stanford-Sloan Fellow.

The Stanford-Sloan Program, which begins September 9 in Palo Alto, California, is limited to 40 upper level managers between 32 and 45 years of age. The program trains managers to understand the sensitive elements—consumer, investment, and government expenditures—that affect the economy both domestically and internationally.

Each year the Stanford Program is changed slightly. The 1974-75 program will continue to stress decision theory, economics, finance, marketing, and behavioral management science and will include a new emphasis on business/government rela-

tionships, corporate law, taxation, multinational organizations, management of non-profit organizations, and the changing business environment. Case studies are made of the traditional challenges arising from continued progress in science and technology and the new demands arising out of the increased emphasis on human and environmental values in business. Of a fellow's academic time, one fourth is spent on seminars, one fourth in electives, and one-half is directed in course work.

Field trips to prominent West and East Coast corporations and interviews with top business leaders in both private and governmental agencies will supplement the program.

During Dr. Calio's 10-month

leave of absence, which began August 12, Dr. Owen K. Garriott, Deputy Director of Science and Applications and scientist-astronaut on Skylab 3, will be Acting Director of Science and Applications.

Dr. Calio, previously Assistant Director of Planetary Exploration at NASA Headquarters in Washington, D.C., came to JSC in 1968 as Deputy Director of Science and Applications. Since 1969, as Director of Science and Applications, Dr. Calio has successfully defined, planned, and directed the scientific activities associated with Apollo. He is currently the Manager of the Lunar Science Project, which involves 1,000 scientists (associated with 140 domestic and 40 foreign institutions) engaged in the analysis of lunar data.



ASTP DOCKING TEST—Robert White, left, and Vladimir Syromyatnikov look over a Soyuz spacecraft docking system prior to an Apollo-Soyuz Test Project docking mechanism fitness test conducted in Building 13 at JSC. White is the American chairman of ASTP Working Group No.3, and Syromyatnikov is his Soviet counterpart. This working group is concerned with ASTP docking problems and procedures.

JSC Engineers Burn Boeing 737

JSC engineers recently deliberately set fire to a section of an airliner fuselage as part of a continuing program to evaluate new space-age fabrics and coatings.

The test was one of several tests in which inflight and crash fires simulated for measuring the degree of increased protection for passengers and aircraft offered by the new materials.

Fabrics, coatings, foams and laminates developed in the manned space flight program and aeronautics research for their fire-resistant qualities are evaluated in a Boeing 737 fuselage at the Center. The materials are used for ceiling panels, seat upholstery and padding, curtains and sidewalls. A quart of JP4 jet fuel was ignited under a passenger seat in a closed-off 15-foot long section of the fuselage.

JSC test engineers and representatives of the Federal Aviation Administration, Airline Pilots Association, Aerospace Industries Association and other observers watched the test burn on closed-circuit television.

The first test burn, made in June 1972, was a baseline test using the standard pre-1968 cabin interior materials installed in the aircraft at the time of its manufacture. Aircraft materials standards were changed in 1968.

The second test burn, with a section of the fuselage fitted out with new interior materials, was run in June 1973 and the third test the following month. The first two tests used JP-4 jet fuel in a pan under a passenger seat, while the third test used a

methanol-acetone mix for its smokeless qualities.

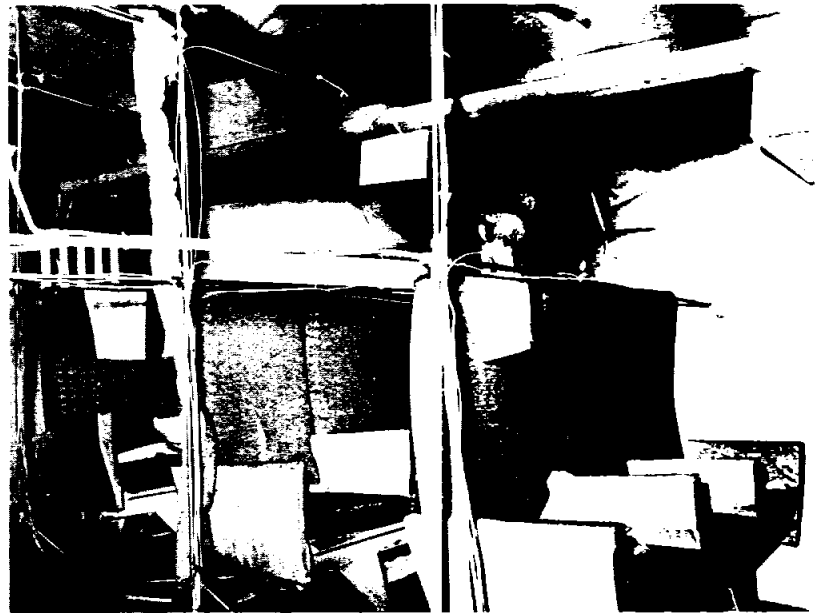
The tests are aimed toward determining whether the new materials can offer increased passenger and aircraft fire protection. Some materials may be eliminated as potential improvement by reason of not having enough durability, generating

too much smoke or toxic fumes, or having too-high a cost. Test results are compared with test programs run by other government and industry groups.

Additional tests in the aircraft fuselage are planned, including an external jet fuel fire simulating a crash fire during takeoff or landing.



FIRE DAMAGE USING PRE-1968 MATERIALS



FIRE DAMAGE USING NEW MATERIALS.

Schneider Gets New Post

William C. Schneider has been appointed Deputy Associate Administrator for Manned Space Flight, NASA Headquarters, Washington, D. C. In this position, he will report to

the Associate Administrator for Manned Space Flight, John F. Yardley.

Prior to this appointment, Schneider had served as both Acting Associate Administrator and Acting Deputy Associate Administrator for Manned Space Flight. From 1968 until the end of the Skylab program in early 1974, he was Director Of that program.

Before coming to NASA in 1963 from IT&T's Federal Laboratories, he had worked for the U. S. Navy and the National Advisory Committee on Aeronautics, NASA's predecessor.

A native of New York City, Schneider earned his B.S. Degree in Aeronautics from the Massachusetts Institute of Technology and his M.S. Degree in Aeronautics from the University of Virginia.

Ms. Northcutt To Address FEW

Poppy Northcutt, Woman's Advocate, City of Houston, will be the keynote speaker at a meeting of the Federally Employed Women (FEW), Inc., August 21, 5:30 p.m. at the Gilruth Recreation Center. The meeting is being sponsored by the FEW members of NASA.

The Greater Houston Area Chapter of FEW, an organization advocating better opportunities and equality for women in government, was chartered at a dinner held recently at the Ellington Air Force Base Officers' Club.

FEW provides essential services and information to its members and performs a vital advocacy role for female federal employees with the Civil Service Commission and Congress.

Membership is open to any one who strives for the purpose of the organization, including men; however, a member must be federally employed to vote or hold office.

For further information concerning FEW contact Ms. Folkes, 641-0143 or 331-3287

NASA At NAACP

Eight representatives from NASA Headquarters and various field Centers recently participated in the 65th annual convention of the National Association for the Advancement of Colored People (N.A.A.C.P.), held at the Rivergate Convention Center in New Orleans.

The representatives attended sessions to answer questions about the agency and to discuss opportunities in NASA available to minority groups. A NASA display booth was available for visitors to view.

Roscoe Monroe, assistant director for community relations in the Office of Equal Opportunity at NASA Headquarters, and Leon Perry, a Headquarters public information officer, headed the group at the convention.

Centers represented were Johnson Space Center, Marshall Space Flight Center, Kennedy Space Center and Goddard Space Center.

Visitors to the NASA exhibit and to the discussions include Kivie Kaplan, president of the N.A.A.C.P.; Roy Wilkins, N.A.A.C.P. executive assistant for the Leadership Conference of which N.A.A.C.P. is a member.

Officials noted that planning has begun for active NASA participation in the 1975 N.A.A.C.P. Convention to be held in Washington, D. C.

Blood

(Continued From Page 4)

mer at the Veterans Administration Hospital, Temple, Texas, to assess the effectiveness of bio-feedback conditioning as well as other previously established hypertension control methods.

A second evaluation of the system will be conducted this fall at Texas Tech University Medical School to determine the effect of hypertension drug treatment, placebo drugs and patient suggestibility.

53 Faculty Members At JSC

1974 NASA/ASEE Summer Faculty Fellowship Program this year has 53 Summer Faculty Members in the program.

The Summer Faculty Fellowship Institutes are sponsored by NASA in cooperation with the American Society for Engineering Education in two major categories: engineering systems design and aeronautics and space research.

NASA field centers and local universities administer the programs, with funding coming from the NASA Office of University Affairs in the form of grants to the universities. Johnson Space Center's partners in the program are the University of Houston, Rice University and Texas University.

The 20 engineering and systems design fellows working for

11 weeks this summer at JSC are conducting a systems study of solid waste by incineration, with an energy source as a by-product. The 33 aeronautics and space research fellows at JSC for 10 weeks are working in such diverse fields as planetary and earth sciences, space medicine and environmental physiology, life support systems, communications, guidance and control.

Representing this year 39 colleges and universities in 21 states and Puerto Rico, the summer faculty fellowship program is in its tenth summer for the aeronautics and space research group, and in the seventh summer for engineering systems design.

Barbara Eandi of the University Affairs Office coordinates the program at JSC.



RONALD L. BERRY, Acting Chief of the Mission Integration Branch, is shown here receiving the William A. Jump Memorial Foundation Meritorious Award from JSC Director Christopher C. Kraft. Mr. Berry received the award based on his exemplary performance while working for a public agency.

ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER HOUSTON TEXAS

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Editor: Janet Wrather

Photographer: A. "Pat" Patnesky



DISTINGUISHED ALUMNUS—Astronaut Paul J. Weitz was honored recently at the Pennsylvania State University as a Distinguished Alumnus of the University. The award is given to alumni whose personal life, professional achievements, and community service exemplify the objectives of the University. On hand for the presentation were Dr. John W. Oswald, right, president of the University, and Michael Baker, Jr. president of the University's Board of Trustees.

EAA Attractions

Tennis Courts

The JSC Tennis Club is planning a family style meeting at the Gilruth Recreation Center Friday, August 23 at 7:30 p.m. Two exhibition tennis matches of one pro set each are planned.

A men's Doubles Match will feature the two highest ranked "old" men on the tennis ladder, Gid Weber and Jim Blumentritt, playing the two top juniors, Paul and Dan Weber.

The women's singles match will feature Tracy Blumentritt a top ranked junior playing Karen Evans, one of the best area women players.

Following the matches, a movie entitled "The Greatest Tennis Match Ever Played," (Laver vs Rosewall) will be shown in the Rec. Center. The film, featuring stop action and slow motion should be both entertaining and educational.

The event is open to all EAA members and families. Refreshments and beverages will be served during the matches and movie. One dollar donations will be accepted.

In case of bad weather, the program will start inside at 8 p.m. and a second movie will be shown.

If you plan to attend, notify Lois Miller, x3281 or Carolyn Thompson, x2931 no later than Thursday, August 22.

Volleyball

Mixed volleyball league standings Tuesday, Set-ups, 11-1; Boas, 9-3; Upshots 6-6; Digits 5-7; victors 3-9; LEC Systems 2-10.

Thursday, Guys and Gals 11-1; Bobbles 10-2; Rats 10-2; Coors 7-5; Wizzards 5-7. Exchange 3-9; Saints and Sinners 2-10, Tag Tappers 0-12.

Men's and Women's Fall Volleyball League will start immediately after the fall softball season. Watch for announcements of the organizational meeting.

The men's summer softball winners were, Monday, Blazers; Tuesday, Marvels; Wednesday,

NADs; Thursday no. 1, Vagabonds; Thursday no. 3, Rats. The NADs won the 16 team Double Elimination Tournament.

Men's organizational meeting was held Aug. 14, play begins Sept. 3. Women's organizational meeting will be held Aug. 21, 5:15 p.m., rm 215 of the recreation center.

Attention Singles!

Bay Area Singles Club Activities: Aug. 16, Singles party at Chateau Dijon Apts.; Aug. 17, (9:30a.m. - 5p.m.) discussion on "Psychology of Self-Image;" Aug. 18, ship channel trip; Aug. 23, Hawaiian Luau; Aug. 30, tennis weekend in New Braunfels.

For information, contact Jerry Kuminecz, x-3561.

Softball

The EAA Invitational Softball Tournament will be Aug. 23-24 with 18 teams competing in the single elimination event.

Tennis Courts

All tennis players should familiarize themselves with new court policies which are available from either the Tennis Club or the recreation center.

Recreation Schedule

Karate Club, Monday, 6:30-9 gym; Tuesday, 5:30-7:30, rm 206; Thursday, 5:30-7:30, rm 206.

Judo club, Monday, 5:30-7:30 rm 204; Wednesday, 5:30-7:30, 204 Table Tennis Lessons, Thursday 7:30-45, rm 206 Bridge Club, Thursday, 7:30-10:45 rm 204 Ballroom dancing, Wednesday, 7:45-9:45, rm 206 Men's Volleyball Club, Monday, 8-9:45, gym Lunarfans, Thursday, 6:30-9, rm 215.

Ticket Corner - Bldg. 11

—Astros - Any Game - \$2.50 and \$3.50 coupons for \$3.50 and \$4.50 seats.
—Astroworld - All Season - Adults \$4.25, Children \$3.25.
—Houston Texans Football - All Home Games \$7.00 Coupon for \$8.00 seats.
—Houston E-Z Riders Tennis - All Matches - \$3.00 coupon for \$5.00 seats.

MISCELLANEOUS

Packing and storing trunk, 40"x 22", blue, great for college, li nw, \$30 or bst ofr, 471-3528.

New (roll end) 5-10x 12-0 light green and white carpeting, gd for hallway or camper/van, \$40, R.K. Sampson, 481-2716.

KLH model 21 FMreceiver, \$25, 523-2137.

Twin Finn surf board, \$75, youth beginners golf clubs, bag and cart \$25, 453-6788 aft 6.

Republic glass-lined, 40 gal, natural gas wa-

ter heater in working cndn, bst ofr, 488-1100.

Akau MSP- 7 tape recorder, xint cndn, 2 mics and auxillary cards, \$150, Mager, x5491.

.44 calibre cap and ball replica Navy Colt revolver. Nvr fired, blue steel cylinder and barrel, brass frame, fruitwood grips, \$65, Ullrich, 487-0307.

Out board motors, 10 hp Wizard, \$5, 5 hp champion, \$15, Fullerton, 488-5782.

Diamond wedding set for bst ofr ovr \$250, orig cost \$650, Kodak M-22 movie camera, used once, \$20, 585-4614 aft 10 p.m.

Cornet, xint cndn, Conn "Director" Model, \$100, 334-2993.

Black and Decker lawn mower plus bag, used one season, li nw, \$20, Briggs, 333-2717

Eight unfinished ladder-back chairs, \$5 each or all for \$35, 481-0191.

Nw large (25"x32") wooden dog house w/ removable cedar shingle roof, \$18, 488-2318.

Glass and wine cage for sm animal, measures 24"x14" x 11", original cost \$30, sell for \$15, Rubenstein, 334-2354.

Portable elect typewriter, SCM coronamic wi cassette ribbon, 12", 4 mos old, vry little use, \$230 orig. now \$160, 488-1777.

Pan American Cornet wi new Bach mouthpiece, Moran, 333-2847 aft 5.

Sears 10x 16 tent, li nw, \$120, 482-7140.

Miller Fall's reciprocating saw in steel box, used once \$60, Burt, 333-2117.

10 h.p. Sears Craftsman lawn tractor wi 36" mowing unit xint cndn, \$325, Teasdale, 485-2158.

HOUSEHOLD ARTICLES

Hoover portable, apartment size (takes full load) washer and dryer, top line, used 3 mos, \$250, 331-5826 or 482-3095 aft 3pm.

Portable Whirlpool dishwasher, top of line, detachable cutting board top, converts to in-

stalled type, used 1 yr, xint cndn, cost \$360, now \$175, 331-5826 or 482-3095 aft 3 p.m.

50 Chev, 2-dr Sedan, gd potential show car, 474-2706 aft 6.

65 Mustang, orig owner, rad, htr, air, \$750, Fullerton, 488-5782.

68 Chrysler sta wgn, 9 pass, ac pwr str, brks, 64,000 mi, 1 owner, xint cndn, \$995, 473-6840.

73 Toyota Corolla, 2-sr Coupe, blue, auto, air, service manuals, 27 mpg, Thomas, 488-4371.

66 Bonneville S/W full pwr, 3-2 bbils, nw tires for bst ofr, 585-4614 aft 10 p.m.

73 Nimrod camper sleeps 6, \$850, 482-7889.

59 Ford Fairlane, standard shift wi ovr-

drive, \$450, 57,000 actual miles, 333-2134.

65 Mustang convert wi four spd trans, V-8 eng, \$695, 333-2134.

64 Pontiac, 4-dr, xint cndn, gd tires, prfct carpet, no rust or dents, 334-5940, \$325.

71 Ford LTD Brougham, ac, auto, radio wi FM converter, \$1450, Lily, 471-4351.

71 Champion mobile home, 3 br, 2 b, vry gd cndn, \$6700 or \$300 and assume note of \$113.74, 471-4351.

71 2-dr Plymouth Duster, 23,000 mi, nw tires, battery, red exterior wi bic interior, xint cndn, 946-7104.

Mobile home 12x65, 2 br, washer/dryer, cntrl air/heat, furnishes or unfurnishes, skirting, xint cndn, 554-6729.

73 Maverick, 4-dr, V-8, auto, ps, air, lux decor, reclining bucket seats, radial tires, nyl top, am/fm stereo, xint shepe, 16000 mi, Briley, 946-8263.

66 Ford sta wgn, gd cndn, a/c, am/fm stereo, \$550, 534-2476.

Cessna 150 for sale, zero timer, S.M.O.H., 90 channel Nav-Com, \$4450, Laurentz, 488-2537.

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Roundup Swap-Shop

Swap Shop advertising is available to JSC and on-site contractor personnel. Articles or services must be offered as advertised, without regard to race, religion, sex or national origin. Ads should be 20 words or less, including home telephone number. Name and office code must accompany, but need not be included in ad copy. Typed or printed copy must be received (AP3 Attn: Roundup) by Thursday of the week before publication.

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drive, \$450, 57,000 actual miles, 333-2134.

65 Mustang convert wi four spd trans, V-8 eng, \$695, 333-2134.

64 Pontiac, 4-dr, xint cndn, gd tires, prfct carpet, no rust or dents, 334-5940, \$325.

71 Ford LTD Brougham, ac, auto, radio wi FM converter, \$1450, Lily, 471-4351.

71 Champion mobile home, 3 br, 2 b, vry gd cndn, \$6700 or \$300 and assume note of \$113.74, 471-4351.

71 2-dr Plymouth Duster, 23,000 mi, nw tires, battery, red exterior wi bic interior, xint cndn, 946-7104.

Mobile home 12x65, 2 br, washer/dryer, cntrl air/heat, furnishes or unfurnishes, skirting, xint cndn, 554-6729.

73 Maverick, 4-dr, V-8, auto, ps, air, lux decor, reclining bucket seats, radial tires, nyl top, am/fm stereo, xint shepe, 16000 mi, Briley, 946-8263.

66 Ford sta wgn, gd cndn, a/c, am/fm stereo, \$550, 534-2476.

Cessna 150 for sale, zero timer, S.M.O.H., 90 channel Nav-Com, \$4450, Laurentz, 488-2537.

50 Chev, 2-dr Sedan, gd potential show car, 474-2706 aft 6.

65 Mustang, orig owner, rad, htr, air, \$750, Fullerton, 488-5782.

68 Chrysler sta wgn, 9 pass, ac pwr str, brks, 64,000 mi, 1 owner, xint cndn, \$995, 473-6840.

73 Toyota Corolla, 2-sr Coupe, blue, auto, air, service manuals, 27 mpg, Thomas, 488-4371.

66 Bonneville S/W full pwr, 3-2 bbils, nw tires for bst ofr, 585-4614 aft 10 p.m.

73 Nimrod camper sleeps 6, \$850, 482-7889.

59 Ford Fairlane, standard shift wi ovr-

drive, \$450, 57,000 actual miles, 333-2134.

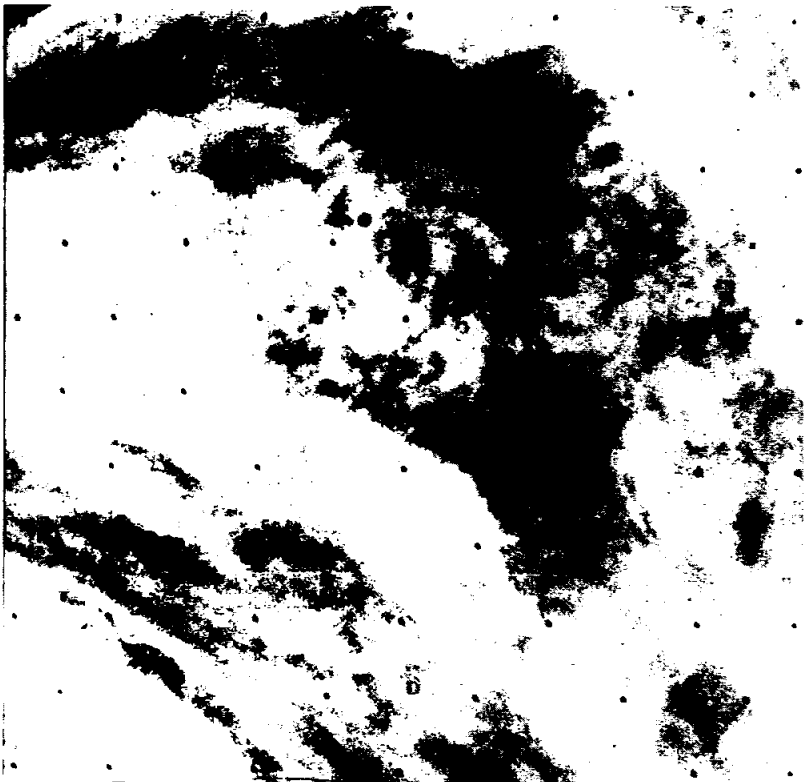
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Venus May Hold Clues To Weather



THIS IS AN ULTRAVIOLET—View of Venus taken by Mariner 10 during the satellite's pass near the planet on February 6, 1974. Detail within the dark area at the top show rising and descending air currents typical of convection here on Earth.

Monitoring System Undergoes Tests

An automated blood pressure monitoring system developed for the NASA Integrated Medical and Behavioral Laboratory Measurement System Program (IMBLMS), is being evaluated for use in studies on control of high blood pressure in human beings.

The system uses the blood pressure cuff, originally developed for IMBLMS, in conjunction with an automatic blood pressure monitoring system to obtain blood pressure measurements.

The JSC Bioengineering Systems Division, Bioinstrumentation Laboratory has modified the system and has delivered it to Dr. Ted Andreychuk, Professor of Psychology, Texas Tech University, for evaluation with hypertensive subjects.

Previous studies involving humans as experimental subjects have demonstrated that heart rate and blood pressure can be controlled through conditioning techniques.

In essence, human subjects learned to increase or decrease their blood pressure with or without corresponding changes in heart rate when biosensory data was displayed.

The NASA-funded Southwest Research Institute, (SWRI) Biomedical Applications Team, San Antonio, recognized that the pressure ramp programmer used in the IMBLMS program could be modified to provide continuous blood pressure monitoring.

IMBLMS was a highly flexible, advanced laboratory system originally designed to transmit medical information from Skylab to physicians on

Earth.

The IMBLMS concept can also be adapted to provide hospital quality care to remote communities at a distance from established hospital facilities.

Modifications to the blood pressure system, including the incorporation of an automatic blood pressure monitor similar to the one used on Skylab, were specified by the SWRI Biomedical Applications Team and were performed by JSC's Bioinstrumentation Laboratory.

The pressure ramp programmer begins a new pressure cycle at one minute intervals with a total of 30 seconds for each cycle. Numerical display of blood pressure is provided as well as continuous pressure display on a strip chart recorder.

"If high blood pressure can be lowered permanently by biofeedback conditioning, a significant alternative would be available to current pharmacological and surgical methods of treatment which sometimes have detrimental side effects," J. L. Sigmon, a member of the SWRI Applications team, said.

He added that an area of potential application of biofeedback conditioning of the cardiovascular system is in the modification of symptoms in disorders effecting those areas of the cardiovascular system controlled by the autonomic nervous system. One example is "essential hypertension" in which the major symptom is an elevation of blood pressure without an apparent cause.

Dr. Andreychuk has started a three-month evaluation program of the pressure ramp program.

(Continued on Page 2)

When two Pioneer spacecraft arrive at Venus in 1978 to probe that planet's murky atmosphere, the information they gather may also help us learn more about planet Earth.

NASA believes the study of weather patterns on other planets—and on Venus in particular—can provide clues to the mysteries of our own weather system.

On Earth, the basic causes of weather patterns are not clearly understood, as evidenced by the shifting tornado and hurricane paths that catch communities unaware every year.

Many factors complicate Earth's meteorology. Mixing of oceanic and continental air masses, cloud formation, axial tilt, and rapid planet rotation make our atmosphere difficult to study.

But Venus is simpler to study because it has a basic atmosphere that is 95 percent carbon dioxide, a very slow rotation (243 Earth days—1 rotation of Venus), very little tilt to its axis, and no oceans.

If scientists can understand how these variables affect the atmosphere of our closest planetary neighbor, they hope to be able to define more clearly the impact of the numerous variables in the Earth's weather system.

Further insights into basic weather processes will come through NASA's current first-hand studies of Jupiter's fast-spinning atmosphere which is sometimes rendered so opaque by very large dust storms that the surface can no longer be seen.

A new interest in understanding weather has been generated by concern over the increasing pollution of Earth's atmosphere. Some scientists feel that atmospheric pollution, if not corrected, could eventually evolve into a kind of global smog, similar to the present atmosphere of Venus.

But as yet, scientists know very little about long-term climatic trends.

Two pioneer missions to Venus will explore the Venusian atmosphere in 1978. Scientists hope to use the information they receive from the spacecraft to construct a better model of the dynamics of the Earth's atmosphere.

The two-spacecraft mission consists of an orbiter and a multi probe spacecraft, to be launched in May and August of 1978. Both spacecraft will arrive five days before the probe-carrying spacecraft.

To accomplish this timing, the orbiter will be launched on a trajectory which will take it more than 180 degrees around

the solar system in eight months. The probe vehicle's trajectory will be a direct path from the Earth to Venus, requiring only four months.

The orbiter, carrying 38 kilograms (85 pounds) of instruments, is designed to study the Venusian atmosphere over one 243-day period. The orbiter's elliptical orbit will bring the spacecraft to within 200km (125 miles) of the surface, with a maximum distance from the planet set at 60,000 km (37,300 miles). Most of the data gathering will occur when the craft is closest to the planet, about one hour per day.

The Pioneer Venus mission is managed by the Ames Research Center, Mountain View, Calif.



THIS ENHANCED VIEW OF VENUS—was taken by Mariner 10's on-board TV camera and processed through the JPL Image Processing Lab, California in Venus' upper atmosphere from the equator through the poles.

ASTP Show Set In Downey

The actual Apollo Soyuz Test Project flight hardware to be flown on the joint U.S.-U.S.S.R. space mission in 1975 will be on display at the Rockwell International Space Division facility, 12214 Lake wood, Downey, California on August 19.

The command and Service Module, the Docking Module and Docking system will be on display following an ASTP background briefing at 11 a.m. PDT.

Briefing participants will include Chester M. Lee, ASTP Program Director, NASA Headquarters, Washington, D.C.; Glenn S. Lunney, ASTP Program Manager, JSC; Ray Larson, vice-president and ASTP Program Manager, Rockwell International; and Dr. Thomas Giuli, ASTP experiments, JSC.

Also, the Skylab Life Sciences Symposium will be held at JSC, August 27-29. NASA officials and principal investigators will report on all aspects of the Skylab Life Sciences and Medical Activities.



AUTOMATED BLOOD PRESSURE MONITORING SYSTEM—Bob Weggemann, systems engineering technician, JSC Bioengineering Systems Division, demonstrates use of a blood pressure monitoring system originally developed for the NASA Integrated Medical and Behavioral Laboratory Measurement System Program (IMBLMS). The system was modified by the JSC Bioengineering Systems Division Bioinstrumentation Laboratory and is being evaluated for use in studies on the control of high blood pressure in human beings.

