



SUGGESTION AWARD—John I. Papac has received an award of \$1000 for a suggestion which is expected to save NASA more than \$500,000 per year. Jack Kinzler presents a certificate to Papac while Dr. Kraft, JSC Director, looks on approvingly.

## Employee Nets \$1000 For Money-Saving Idea

John I. Papac, JSC Contract Price Analyst, Procurement Operations Office, Administration and Program Support Directorate, has been awarded \$1000 for a suggestion which will result in estimated savings to NASA of more than \$500,000 per year. The suggestion concerns the elimination of duplicate payroll taxes. In the past, when a service support contract with any NASA field Center was awarded on a date other than January 1, the successor contractor was unable to take credit for the FICA (social security) and FUT (unemployment compensation) tax base previously paid by the former contractor. The new contractor was responsible for the full FICA and FUT expenses for the calendar year, including general and administrative expense and profit for reimbursement by the appropriate NASA field Center.

Papac, in 1971, discovered an Internal Revenue Service

ruling which states that a successor contractor could receive tax credit in computing the social security and unemployment limitation for wages paid to persons who were employed under the previous contract and continue to work for the new contractor.

Papac's suggestion that NASA utilize the ruling was investigated locally and at NASA Headquarters and was adopted by NASA in March, 1973.

Each Center is accumulating data to submit to Headquarters for reimbursement of excess taxes paid during the past three calendar years.

James L. Neal, JSC Assistant Director for Procurement, stated that savings to JSC for calendar year 1973 would be approximately \$56,489.

In addition to major financial savings to NASA, the application of this suggestion by NASA is expected to enhance

*(Continued on Page 3)*

# ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS



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## ASTP Working Groups Continue Activities

Approximately 75 Soviet aerospace specialists, including four cosmonauts, are scheduled to be at JSC this month to participate in Apollo-Soyuz Project activities.

The majority will arrive Monday, April 15. That group will include the U.S.S.R. project director, Prof. Konstantin D. Bushuyev, and Cosmonauts Aleksey A. Leonov, Valeriy N. Kubasov, Aleksey S. Yeliseyev and Valeriy F. Bykovskiy. Leonov and Kubasov are prime Soyuz crewmen for the July 1975 international space mission; Yeliseyev is the Soviet flight director; and Bykovskiy is training

officer for the Soviet ASTP flight crews.

Eight members of the communications and tracking working group arrived April 8, to join nine Soviet engineers and technicians who have been here since January 11, taking part in compatibility testing of radio and cable communications systems.

The joint compatibility tests were designed to identify any system performance limitations or operational constraints for the Apollo and Soyuz communications system.

Technical meetings also will cover mission planning, experi-

*(Continued on Page 2)*



VISITING SOVIETS—Pictured above are nine scientists and engineers from the Soviet Union who worked with JSC engineers to evaluate the communications and tracking system to be used in the Apollo Soyuz Test Project. Left to right are E. Gorlin, Y. Ispravnikov, B. Nikitin, U. S. S. R. Chairman, V. Bobylev, A. Kryukov, S. Zelenkov, V. Kuyantsev, V. Shirokov, and G. Sushchev. Each member in the group wore a blue cap with a yellow rose to establish a sense of togetherness.

## MacDougall Designated As EVS Coordinator

George F. MacDougall, Jr., Deputy Chief, Orbiter Project Control, Logistics Office (MC3) has been designated as the JSC Equipment Visibility System (EVS) Coordinator.

The EVS is an agency-wide system established as a part of NASA's plan to reduce costs through the optimum use and reuse of existing assets.

EVS collects data on plant equipment, special test equipment, special tooling, and nonflight space property (except computers) valued at \$1,000 or more held by NASA installations and contractors. Each Center receives a list of all the items in a master file coded by availability and updated monthly.

The EVS permits NASA Centers and contractors to determine if a required item of

equipment or an acceptable substitute is available in the NASA inventory before purchasing new equipment.

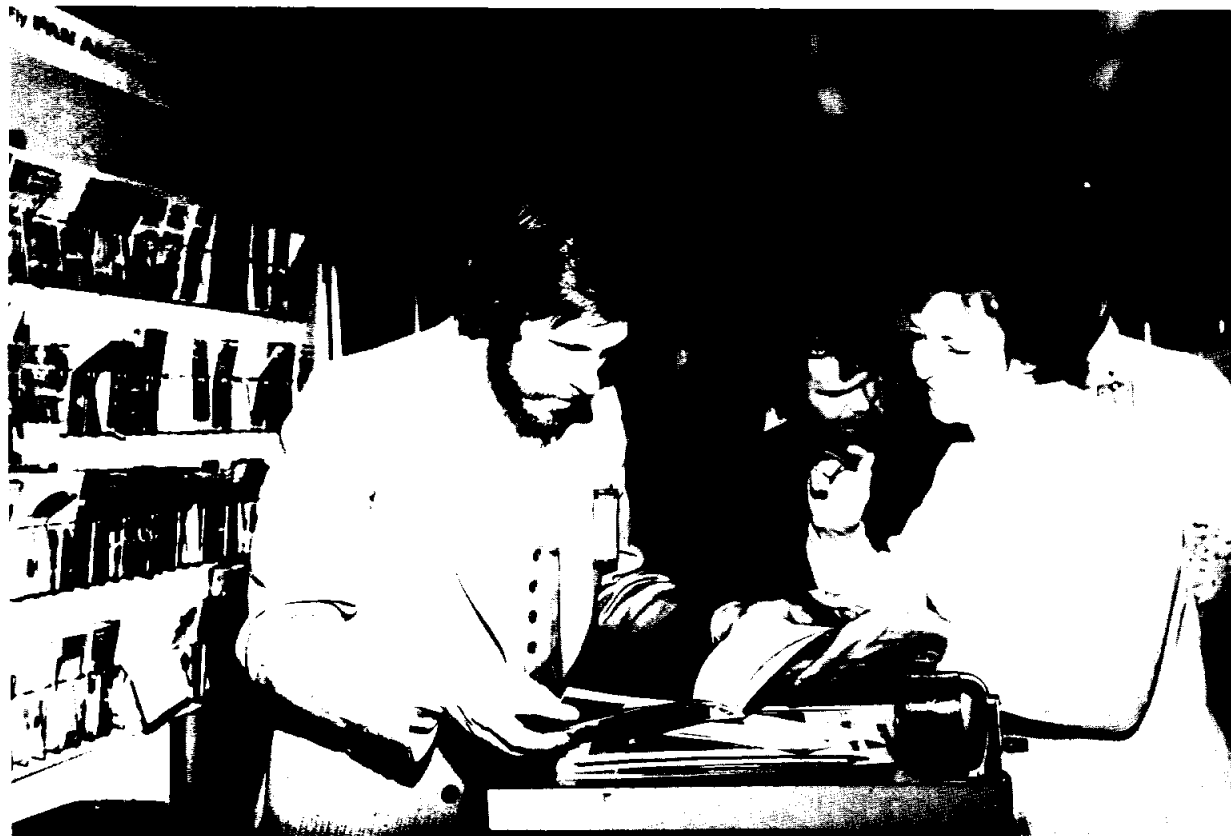
MacDougall is responsible for the planning and overall operation of the EVS at JSC and is the primary onsite EVS contact.

A significant element of the EVS is the EVS Data Center operated by the Logistics Division (JF). The Data Center is the JSC repository for EVS data and contains microfilm reading equipment used for viewing EVS reports.

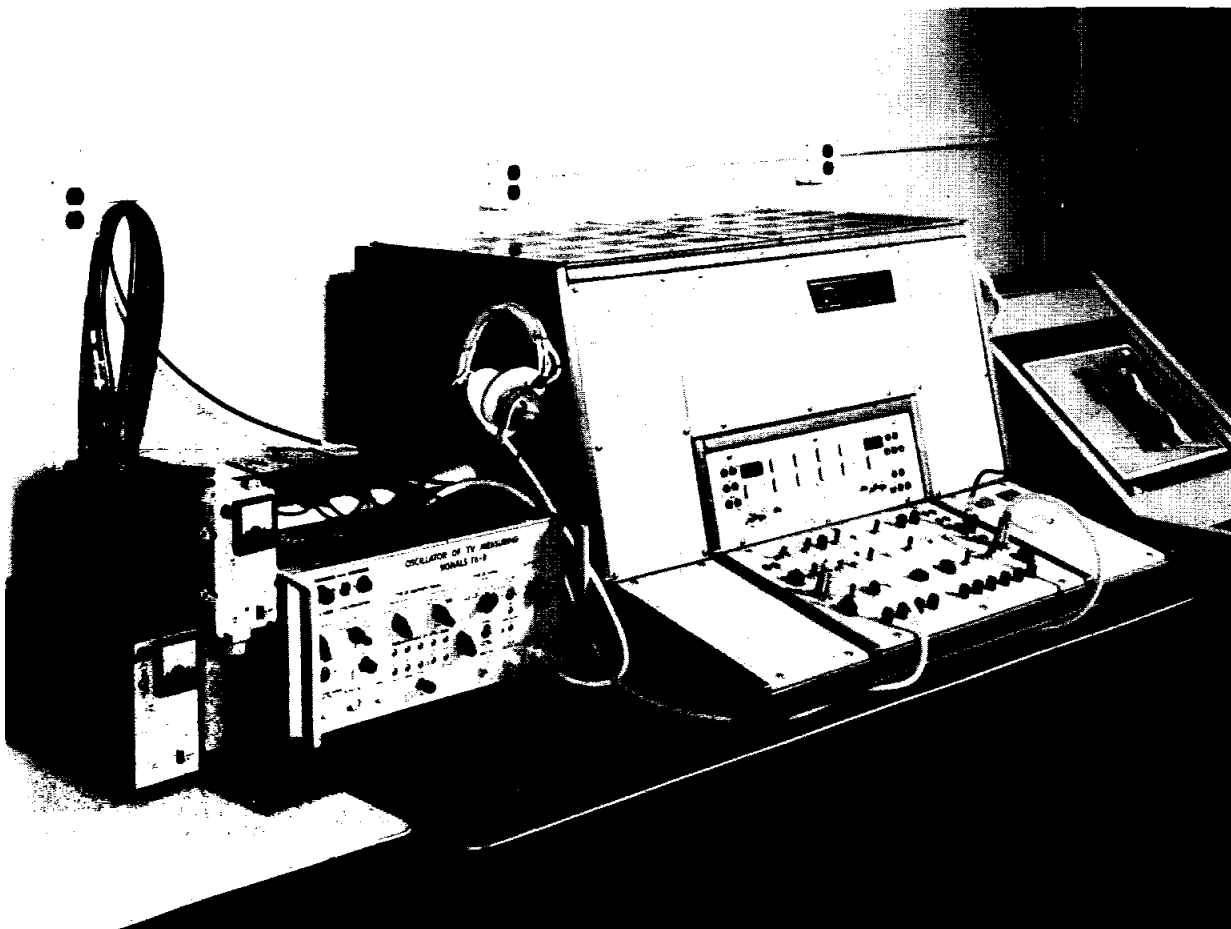
The Data center screens the items in the EVS master file to determine if existing equipment is available to fulfill JSC and contractor requests for equipment.



EVS—Freddie Pete (JF) screens the Equipment Visibility System (EVS) data file in the JSC Data Center and analyzes the potential reutilization of test equipment along with the JSC EVS coordinator, George MacDougall, Jr. (MC3).



**PREPARING FOR TRIP**—Reservationists in the Scheduled Airlines Ticket Office (SATO) at JSC talk to employees about pending trips. The airline office, located in Building 2, Room 130, represents all scheduled airlines worldwide. This office arranges business trips, vacations or tours for Center employees and onsite contractors. For more information call X-4495.



**SOYUZ EQUIPMENT**—The equipment pictured above is the Soyuz communications and tracking prototype which was manufactured in the U.S.S.R. and shipped here for joint compatibility tests with the Apollo prototype equipment.



**EARNED THEIR TRIP**—Pictured above are members of the Future Scientists of America (FSA) from Higgins High school in Marrero, Louisiana. The group visited JSC April 9-11. To be eligible for the trip, each student had to donate 50 hours of service (lab assistance) to the school and participate in several fund-raising drives. The purpose of the trip to JSC was to enhance the students' scientific knowledge.

## NASA/McDonnell Douglas Negotiate Contract for Space Shuttle Support

NASA has selected McDonnell Douglas Corporation, Houston, for negotiation leading to an award of a contract for Space Shuttle Engineering and Operation Support to the Space Shuttle Program Office at JSC.

The contractor's proposed cost for the two year cost-plus-award fee contract is approximately \$13.2 million. It is contemplated that there will be two extensions of approximately two years each.

The McDonnell Douglas Corporation will provide analytical support to the Space Shuttle Program in areas of technical and

engineering systems analysis; avionics systems engineering support; mission planning, mission analysis, and software formulation; computer systems and software integration systems engineering support; and crew procedures and flight planning.

Other firms submitting proposals for the work included: The Boeing Company, Houston, Texas; Martin Marietta Corporation, Denver, Colorado; Grumman Houston Corporation, Houston, Texas; and TRW, Inc., Houston, Texas.

The contract will be under the technical direction of JSC.

## EAA Attractions . . .

### ENTERTAINMENT

Don't miss out on the fun! Join your friends for a gala night of Las Vegas entertainment at the Gilruth Recreation Center, Saturday, May 25, from 7:30 p.m. to 1:00 a.m. Tickets are \$7.50 and include a sandwich buffet and free drinks.

There are only 500 tickets available. Purchase yours from Mary Yarbrough X-2995 today!

### TABLE TENNIS

The JSC Table Tennis Club is planning matches with other local tennis clubs and in June will sponsor an Open Spring Prize Tournament at the Gilruth Recreation Center.

Also, in May, a Table Tennis Clinic will be conducted for both beginners and advanced players. The clinic will feature individual instruction, instructional movies, films of world class players in competition and the like.

The JSC Table Tennis Club has established a ladder on which each player is rated. The rating are updated according to each player's performance in table tennis matches.

The club meets at the Recreation Center each Tuesday from 5:00-9:45 p.m. in rooms 204 and

206. For more information call Steve Jacobs, X-3561.

### ASTROWORLD

JSC night at Astroworld is only one week away—Friday April 19. The entire park will be in operation from 7:30 to midnight.

Tickets are \$3 each and may be purchased from EAA Reps or at the Building 11 Exchange Store.

If the event is called off because of rain, tickets may be used anytime during the 1974 season.

### ASTRO TICKETS

Houston Astro baseball coupons are available at the Building 11 Exchange store for \$2.50 and \$3.50. These coupons may be exchanged at the Astro box office or by mail for \$3.50 and \$4.50 seats for any Astro baseball.

### TICKET TALLEY

—Astroworld - April 19 only, all \$3 (reg \$6.25)

Sea-Arama May-June, adults \$3 (reg \$3.75); children \$2 (reg \$2.75)

Six Flags Over Texas—all season, adults \$5.50 (reg \$6.50) children \$4.50 (reg \$5.50)

ABWA Magic Show—April 19, adults \$1.75, children \$1.25

Astros—all season, any game, coupons \$2.50 and \$3.50 (\$3.50 and \$4.50 seats)

## ASTP Working Group (Continued From Page 1)

ments, control and guidance, mechanical design, life support and crew transfer.

About 30 members of the delegation, including the cosmonauts, will return to Moscow April 26. The remainder will leave JSC on May 3.

No specific joint crew training is scheduled during this visit; however, the cosmonauts are expected to spend some time in flight simulators and trainers. They will take part in discussions on the flight plan and on crew training periods planned in the Soviet Union in July and here in September.

The meetings this month are part of the continuing exchange of working groups between the U.S. and the U.S.S.R. in preparation for a joint manned earth-

orbital mission in July, 1975 to test compatible rendezvous and docking systems and techniques.

The U.S. technical director, Dr. Glynn S. Lunney, and several of the U.S. working groups met in Moscow last October.

## Attention

All Center employees are invited to the Ground Breaking Ceremonies for the new JSC Federal Credit Union Building. The ceremony will take place Monday, April 15, at noon on the corner of Gemini Avenue and Saturn Lane in Clear Lake City.

Dr. Christopher C. Kraft, JSC Director will be the guest of honor.

The Credit Union office will be closed for business from 11:30 a.m. until 1:30 p.m. on Monday.

# 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.

**MISCELLANEOUS**

Petri 200mm lens. f.4. mint cndn. \$75. x 2428 or 664-0638.  
 Ham gear, Collins 30L1 Linear, xint, \$300, waters sta cntrl, \$50, Viking ranger transmitter, \$75, Lindsey, 488-0517.  
 Colt Woodsman/Huntsman, 22 cal auto, 6" bbl, xtra magazine, wstom holster, prfct, \$65, 488-3966.  
 Scuba tank and back pack, U. S. diver's aluminum tank and white stag back pack, \$75, David, 946-0275.  
 B. Hogar irons, 2-9 plus pitching wedge, xint cndn, \$100, Spaulding Top Flite woods, 1-4, li nw, \$75, both \$150, Hardy, 332-3234.  
 Esley electrified antique organ, \$200, Milk can (rusted) \$5, Adrienne, x 5056 or 337-2888.  
 Franklin mint medals, cmplt 36 medal Presidentials, cmplt 40 medal First Ladies, 483-5067 or 488-1307.  
 Heath SB301/401, mint cnds, Drake TR-3 xtra clean, Drake, RV-4, Drake RV-4, Drake R4B, T4X, AC-4 and MS-4, all guarantee, Lindsey, x 2901.  
 23" lawnmower, 3.5 hp, Briggs and Stratton engine, adjustable wheels, grass catcher, \$25, 488-0426.  
 2 new Pro-Fit full coverage motorcycle helmets, size 7, \$32 each, 946-4752.  
 Self-propelled lawn mowers, 22", 3 1/2 hp Briggs, Stratton, used one season, \$55, 482-7138.  
 Rolliflex 2.8 f twin lens, reflex camera, accessories, xint cndn, \$250, 534-4603.  
 U. S. Army .30 cal, carbine, \$100, U. S. Army, 45 cal pistol, \$85, both NRA good, also 12 ga sncl barrel shotgun, \$25, 534-4603.  
 Beseler 23CII enlarger w/ 50 mm EI Nikon enlarging lens, paper cutter, film loader, 35 mm, b&w film, darkroom accessories, \$200, 534-4603.  
 Skyrovers Inc, flying club, two cessa Sky-lanes, one Cessna Skyhawk, one Piper J3, Cub, memberships for sale, Clyde Haddick, 944-4462.

Memberships available in Hobby-based flying club, fly Cessna 150, 172, Carcinal, Piper Arrow and Mooney, Doiron, 483-4393, Nieder, 483-4391, Ward, 483-3711.  
 70# weights, tv test equipment, Sams Photo Facts, Bike exerciser, Olympia typewriter, Smith, 479-5096.

**VEHICLES**

63 Pontiac Catalina sta wgn, auto, air, ps, pb, xint cndn, \$450, x-2428 or 664-0638.  
 Schwinn Varsity 10 spd, mint cndn, \$65, x 2428 or 664-0638.  
 62 Chevy Impala conv, 283, blue, 2-dr, auto, pwr, \$150 or bst ofr, x-4639.  
 MG-Midget, 70, 31,000 mi, 30 mpg, 488-6364.  
 3-spd bike w/ racing handlebars and seat, \$40, 488-1682.  
 70 Honda, S90 motorcycle, gd cndn, \$140, Morris, 481-3900.  
 Mini-bike in xint cndn, \$85, 488-1326.  
 Collg student must sell Montesa Cota 247 cc trails motorcycle, prfct cndn, less than 300 mi, street legal w/ extras, x 5961 or 334-1975.  
 71 Corvette 454 cnvrt, pwr, air, 4 spd, clean int cndn, 334-5385 aft 5.  
 74 Maverick, 2500 mi, 2-dr, auto, air, 6 cyl, radio, \$800 cash and assume payments or \$3700, 666-7841.  
 Dunebuggy, Corvair, Calif Custom, 30 mpg, Bullock, 488-6905.  
 Bike, woman's 5 spd Sears, 26", new, used by adult only, Sulester, x 6478 or 941-4733.  
 1965-67 Mustang, Thompson, 332-2229.  
 69 Ford Torino GT, mint cndn, auto, air, ps, new tires low mi, 18 mpg, Alford, 334-2844.  
 70 Olds Vista Cruiser, xint cndn, 9 pass, air, all power, trailer towing accessory package, 333-3349.  
**PROPERTY AND RENTALS**  
 Bungalow for rent, bike to sea, fresh paint, wall-wall carpets, \$170 mo furnished, 334-2360.  
 Old English 3 bdrm, 2 bath, new central air, carpets, unfurnished, from owner, \$31,00, EI

Lago, 334-2360.

Six furnished two bdrm duplex units, \$400 monthly net, Bay Area, \$35,000, 334-2360. For income or tax shelter.

Speculation property corner lot off Hwy 288 near Arcola, \$1,395, Joe Canniff, x 5545.

**BOATS**

Lido 14 sailboats, information on prices and cndn of 6 used Lido's for sale by owners, Hoover, 334-2392.

Day sailer, trailer, 2 sets of working sails, spinaker, completely rigged for racing or cruising, \$1495, Davidson, 946-2523.

Clipper 21, 7 1/2 horse outboard, self-contained head, running lights, compass, 2 sails, sleeps 4, \$2700, 334-1480.

Day Sailer, 19 ft lighting class, cedar construction, xint cndn w/ sails and spinnaker and heavy duty tilt trailer, 774-2473.

14' Hobie Cat w/ trailer, xint cndn, stored inside \$1095, 333-3001.

**PETS**

Free kittens, healthy, Shorthair, Darwinian natural selection bred, male and/or female available, ready April 24, Ulrich, 487-0307.

Two 3-month old puppies, Shepard/Border Cx Collie, female, free, 3438 or 331-5667 aft 5.

Gray Gelding, half-Arabian, not reg, trained Western, w/b good barrel horse, gentle but spirited, 331-5667 aft 5.

**HOUSEHOLD ARTICLES**

Beautiful old antique desk, xint cndn, bst ofr, 482-7029 aft 5.

Extra long bed, mattress, springs, baby bed, infant carseat, 9 x 12 green rug, color tv, b/w tv, Smith 479-5096.

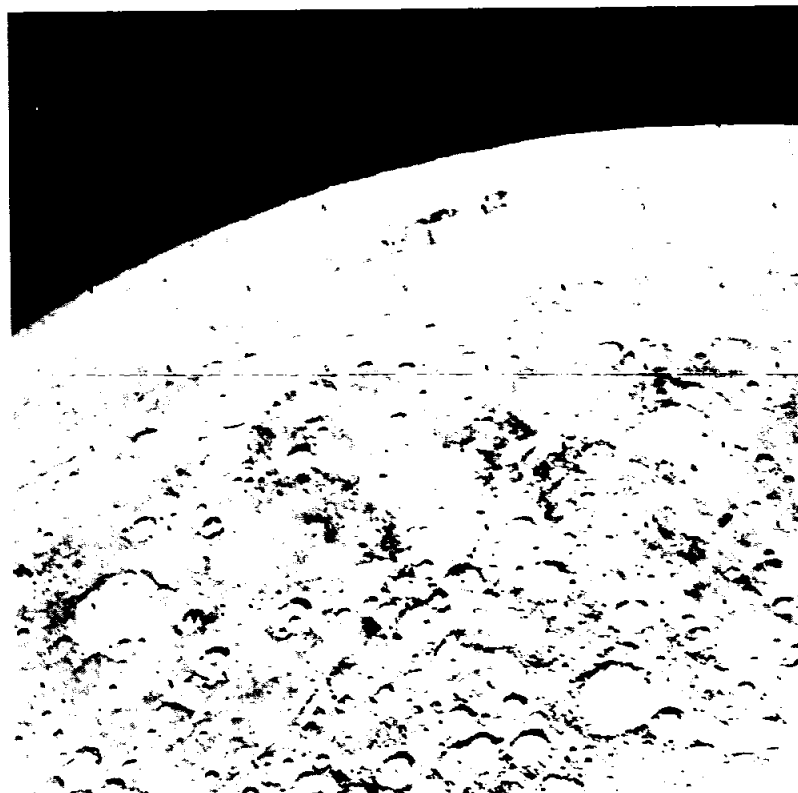
IBM Selectric, wide carriage, elite type, ball supplied, \$395, Canniff, x 5545.

**ATTENTION SINGLES**

"Bay Area Singles Club" party 8 p.m. Friday April 19, in Recreation Center of the Queen's Court Townhouses in Nassau Bay, for information call Jerry x-3561.



MERCURY—As Mariner 10 approached Mercury at nearly seven miles per second on March 29, it's t. v. camera took the top photo from an altitude of 35,000 kilometers (21,700 miles). The picture shows a heavily-cratered surface with many low hills. In the bottom photo, the southwestern quadrant of Mercury is portrayed. Largest craters seen in this picture are about 100 kilometers (62 miles in diameter).



## Protection Against Rabies is Simple

Protection for your family against the deadly disease of rabies is simple—Have your domestic animals VACCINATED against RABIES. The infectious agent of rabies is a virus and most warm-blooded animals are susceptible.

Urban rabies is a problem of dogs and occasionally other pets: Sylvatic or rural rabies is a disease of wild biting animals with a sporadic disease among dogs and domestic livestock. In the United States wildlife rabies is steadily increasing.

Educating the public to the dangers of rabies is a necessity. Warn children against picking up or handling a stray, sick or strange acting dog or cat. Promptly report any animals manifesting strange behaviour to the police. Wash all animal bites or scratches thoroughly with soap and water immediately. If there is any doubt about the animal's health consult a physician.

According to ACIP Recommendations, 1972, a healthy domestic dog or cat that bites a person should be captured, confined and observed by a veterinarian for 10 days (the commonly used 5-7 day observation period may not always be adequate). If the animal develops signs suggestive of rabies, the animal should be sacrificed and the head shipped under refrigeration to a qualified laboratory designated by local or state health department for examination. Early signs of rabies in wild or stray animals cannot be interpreted reliably; therefore, any such animal that bites or scratches a person should be killed at once and his brain examined for evidence of rabies. Having domestic pets vaccinated not only prevents them from contacting the disease, but also precludes scratch or bite victims from having to undergo the painful inoculation series for rabies. It is imperative questionable animals be captured and placed in isolation.

## GAO to Interview Center Employees

The following story was printed upon request by The General Accounting Office.

The General Accounting Office (GAO) will be available April 15-26 to interview Center employees who have submitted informal complaints under JSC's discrimination complaint system.

The interviews are being conducted as part of GAO's review of the effectiveness of NASA's EEO program. About 75 employees who have not submitted complaints will also be interviewed. The interviews are designed to

determine JSC employees' satisfaction and familiarity with the complaint system.

The review was requested by the Chairman of the Senate Labor and Public Welfare Committee and the results will be used in hearings scheduled early this summer.

All employees who have submitted informal complaints and would like to be interviewed should contact the EEO Office at X-4831 or GAO personnel at X-6244.



WINNERS—Carla Lockwood, left, was the winner in the "Most Eggs" category for 4 and 5 year-olds at the JSC Easter Egg Hunt. The 6, 7 and 8-year old winners were Thad Manning, "Most Eggs," and Karen Moore, "Golden Egg." Over 500 attended the annual event.



Take stock in America. Buy U.S. Savings Bonds.

## Employee—

(Continued From Page 1)

greater competition in service contracts since the incumbent contractor would no longer have a price advantage over competitors during the re-competition phase of a support service contract.

## Draper Lab Will Develop Software

JSC has signed a \$6,598,000 contract with the Charles Stark Draper Laboratory, Inc. of Cambridge, Massachusetts for Apollo-Soyuz Test Project (ASTP) and Space Shuttle Orbiter software development. The cost-plus-fixed-fee contract was awarded on a noncompetitive basis.

Covered under the contract will be the development of avionic software for the Shuttle Orbiter guidance, navigation and control system, and software support for the command module computer in the Apollo-Soyuz Test Project, a joint manned orbital mission with the Soviet Union scheduled for launch in July 1975.

Included in the Shuttle Orbiter work will be software design, design verification, simulation, requirements definition and avionics analysis. The ASTP portion of the contract covers mission testing and maintenance of the flight software, data and erasable memory generation and other technical support before and during the 12-day ASTP mission.

# ROUNDUP

NASA LYNDON B JOHNSON SPACE CENTER HOUSTON TEXAS

The Roundup is an official publication of the National Aeronautics and Space Administration Lyndon B. Johnson Space Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for JSC employees.

Editor: Janet Wrather      Photographer: A. "Pat" Patnesky

# Kerwin Discusses Medical Aspects of Skylab Mission

*Dr. Joseph P. Kerwin, Science Pilot on the first Skylab mission and the first medical doctor to enter space, appeared as a witness before the Subcommittee on Manned Space Flight of the House of Representatives during recent budget hearings. His testimony, in part, follows:*

... There's a tendency for skeptics to think that spaceflight is more stressful and difficult than we've found it to be, and that it will always be something of a stunt. I will not pretend that our crew wasn't happy to come home after 28 days—or Jerry Carr's crew after 84. Our environment did lack some of the comforts of home, but it's no stunt. The Skylab program has given us enough evidence to assess very accurately the effect of weightlessness on human performance. I would like to give my assessment.

First, what are the medical symptoms of weightlessness? In order to describe these briefly, I have pretended that the three of us on Skylab were one man, and have put together a composite medical history.

On the 13th of June, 1973, which was the 20th day of the mission, I was called from my busy practice to examine a patient who had the following story to tell: his chief complaint was an unexplained weight loss of about six and a half pounds.

The illness was as follows:

Three weeks ago, he was minding his own business on Launch Pad 39 at Cape Kennedy when he was suddenly launched into a circular orbit around the Earth. The resulting state of free fall has continued until the present. There was an initial period of somewhat decreased appetite which lasted three or four days. On weighing himself on the fifth day, he had lost three and a half pounds. Since that time, his food intake has returned to essentially normal and he feels well. But an additional three pounds have been lost at the end of three weeks.

On questioning the patient about his symptoms, I got the following answers: He describes a feeling of well-being. He says that his appetite and thirst are normal, and that he could eat more food if it were necessary. He says that he especially craves meat and ice cream. He has noted the following—abnormal for him—sensations:

—A feeling of fullness in the head, as though he had a cold, which he does not. This has been continuous since the very first minutes of his arrival in weightlessness, although it's less noticed now.

—He tends to assume a peculiar posture. When he is relaxed, his neck extends and moves

backward, his shoulders and elbows flex 20 or 30 degrees. The same is true of the hips and knees, and the shoulders tend to rise up toward his ears. This is uncomfortable at first, and it is a little bit annoying when he at-



KERWIN

tempts, for instance, to read a book down on his lap. But he gradually becomes accustomed to it and has stopped attempting to pull his shoulders down consciously because it is no good. They just go right back up as soon as he relaxes.

—He has noted a tendency to become sleepy, and even to take cat naps when he is motionless and relaxed. For instance, during the resting phase of the various medical experiments this happened. Frequent exercise is desired to restore a feeling of vigor and alertness.

He reports that distant sounds

appear to be more difficult to hear than they are on the ground. In the nose and throat area, he said that he and his fellow crewmates were quite hoarse during the first week or 10 days of the flight. He attributes this to the fact that they had to shout in order to be heard across the distances involved in the workshop.

They gradually gave up on shouting and began using the intercom system, instead, and the hoarseness has gone away.

He also has noticed in himself and his crewmates a peculiar nasal quality to the voice. This was immediate and has been continuous.

In the gastrointestinal system, the only abnormal finding is that it is very difficult to belch, to pass gas out through the mouth.

One does swallow a great deal of gas, and one finds that the GI system processes it downward very effectively with volume and frequency.

When asked about the vestibular system, this particular individual reported that there were no symptoms of motion sickness. There was, as reported previously, the slight decrease in appetite. Along the eighth or ninth day of the mission, the patient decided at that time that he felt better than he had during the first two or three days. But it was strictly hindsight. If you had asked him how he felt on the third day, he would have said he felt fine.

Since that time, he has been virtually immune to motion sickness. And he's discovered that his sensations of up and down and his method of moving are quite different from on the ground. With no gravity, he has no idea where the Earth is, unless he sees it out of the window. But he has to have some system of up, down, right, left, and so forth so that he can tell his eyes and hands where to go. And he does. He always feels that he is upright, no matter which way he's facing in the spacecraft. If he's standing on the floor of a compartment, the floor is "down." If he's standing on the ceiling, it's "down," and the floor is "up." It's an Alice-in-Wonderland sort of feeling, unexpected and rather pleasant. But he soon learns that he'd better not close his eyes, or he quickly and completely gets lost. Without vision in weightlessness, one has no idea where anything is — there is no outside world.

In the cardiovascular area, he has no complaints. His only difficulty has been during the lower body negative pressure exercise which is a great deal more difficult to complete in weightlessness than it was on the ground before the flight. The pulse rate is higher, the blood pressure is somewhat lower, and there is an increased tendency towards fainting on some of the

runs. This is the one medical experiment that is subjectively stressful in flight. However, he is not able to say that as the days go on the tests become more stressful. The distribution seems to be random. One day will be better, one day will be worse, but there is no clear-cut trend.

The quality of sleep has been good, although it seems to have taken him a little longer to get to sleep, at least at first. He feels this is strictly a subjective comfort thing, that he is not able to arrange his limbs in the same way that he does on the ground. ... The physical examination ... in flight is quite feasible. The findings were normal except for some minor points which are of interest to physicians. My diagnosis at the time was that the patient was healthy and not under significant stress. Subsequent events have not changed it. The weight loss, despite a healthy appetite and the exaggerated response to lower body negative pressure, I could not explain in flight. They are signs of some rather fascinating adjustment that the body makes to zero gravity.

## Rockets Launched

A record series of 79 rocket launches from 8 sites in the western hemisphere have been completed as part of a program to determine daily variation in temperature and wind conditions in the upper atmosphere at the time of the spring equinox.

The launches made at regular intervals over a twenty-four hour period beginning at 11:05 p.m. on March 19, were made from locations in North Central and South America, the Caribbean Sea, and the Atlantic Ocean.

Single-stage Loki and Super Loki rockets carried meteorological instruments to heights of about 70 kilometers (40 miles). The payloads were ejected and returned to Earth on parachutes.

As the instruments descended, atmospheric temperature readings were telemetered to ground receiving stations. At the same time, radar tracked the parachutes to reveal wind conditions in the upper atmosphere.

The series of launches is expected to bring scientists a better understanding of upper atmospheric circulation and temperature patterns, and should yield benefits in improved-weather forecasting.

Four of the launch sites—Mar Chiquita, Argentina; Natal, Brazil; Kourou, French Guiana; and Wallops Island, Virginia—are part of the Experimental Inter-American Meteorological Rocket Network.

The other four—Ascension Island; Fort Sherman, Canal Zone; Antigua British West Indies; and Fort Churchill, Canada—are in the U.S. Cooperative Meteorological Rocket Network.

## From The President . . .

THE WHITE HOUSE  
WASHINGTON

April 2, 1974

Dear Dr. Kraft:

My tour of the Lyndon B. Johnson Space Center was certainly a highlight of my visit to Texas on March 19 and 20, and I want you to know how much I appreciated the cordial welcome I received at the Center. You could not have been more gracious or helpful on this occasion, and this note comes to you with my thanks and very best wishes.

Sincerely,

Dr. Christopher Kraft  
Director  
Lyndon B. Johnson Space Center  
Houston, Texas 77058

## Fire Escape May Save Lives

A new emergency fire escape device, invented at the Marshall Space Flight Center, may help reduce the number of individuals who die every year trapped by fire on the upper floors of tall buildings.

The unique device allows a trapped individual to lower himself to the ground by means of a harness attached to a steel cable. It can be adapted for any building height.

The cable reel, with an automotive-type shock absorber is mounted on a metal frame and anchored outside of a window or on an inside wall. The reel and shock absorber are designed to control speed and allow a constant rate of descent. The device will lower a 150-lb person at a rate of 2 feet per second. A lighter weight individual will descend at a slightly slower rate.

There are different options available for reuse of the basic mechanism after the evacuee has reached a safe lower level. The device can be retractable, or extra harnesses with attached reels can be successively attached to the frame so that retraction is not necessary.

The eight-pound device, which would be relatively inexpensive to manufacture was designed and developed under NASA's Technology Utilization Program at MSFC.