

ROUNDUP

Lyndon B. Johnson
Space Center

NASA

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NIGHTWORK—Shuttle Orbiter *Enterprise* is hoisted into an unfamiliar position at Marshall Space Flight Center April 21 during preparations for Orbiter/external tank vibe tests later this month. *Enterprise* was hoisted into a test fixture originally built for Saturn V structural testing.

Skylab slowly comes to life as batteries build up charge

Like some latter-day Flying Dutchman, space station Skylab ghosts around the Earth every hour and a half as its orbit slowly wears out. Bill Peters' team of flight controllers this week went on a one-shift, seven-day a week vigil of the derelict Skylab to build up electrical power in the onboard batteries.

Skylab's orbit is now at 237 by 245 statute miles and slowly dropping as solar radiation causes drag-producing "bumps" in the atmosphere that reach Skylab's altitude.

Two additional batteries in the Skylab telescope mount were switched on charge over the weekend bringing the total to ten now on charge in the solar observatory. Six additional batteries likely will be switched to charge later. The two remaining telescope batteries apparently have cratered.

Five of the eight airlock batteries are charging, one is inoperative, and one remains to be switched to charge.

Peters' team does all the switching from the old Apollo Lunar Surface Experiment Package (ALSEP) control room in the Mission Control Center. Commands are uplinked through the Madrid and Bermuda tracking stations operated by Goddard Space Flight Center.

If enough electrical power can be stored in Skylab's batteries, it is hoped that the 200-pound flywheels in the control moment gyros can be spun up in early June. Spinning at more than 9000 rpm, the gyros exert torque on the space station to control attitude together with a cold-gas thruster system.

It is hoped that by placing Skylab in an attitude having minimum frontal area, the orbital decay can be delayed until a remote-controlled booster package can be flown up in an early Shuttle test flight. The booster package could either shove Skylab into a higher orbit or dump it into a remote ocean area, depending upon the circumstances at that time.

Career workshops start next month

The JSC Personnel Office will offer a series of career planning workshops beginning in June and will be open to all JSC federal employees. Total workshop time is about 11 hours spread through several sessions.

Applications for the workshops should be made on JSC Form 75 and routed to Employee Development Office/AH3.

Orbiter in shake tests, main engine burn set

A second firing of three Shuttle main engines is planned for May 18 at the National Space Technology Laboratories at Bay St. Louis, Mississippi. The burn is planned for 15 seconds duration at 70 percent thrust. The first all-up burn of three main engines was on April 21.

At MSFC meanwhile, preparations continue for vibration tests of Orbiter *Enterprise* and the mated external tank scheduled for May 15. (See photo at left.)

Power-up tests were begun April 26 on Orbiter 102 at Rockwell's Palmdale, California assembly plant. Still under way at *Roundup* press time, these tests wring out all Orbiter's subsystems. OV-102 will be ferried atop the Shuttle carrier aircraft Boeing 747 late this year to Kennedy Space Center after a 35-mile tow through the streets of Palmdale and Lancaster.

An attempt to drop a 48,000-pound dummy Shuttle solid rocket booster was aborted April 28 when the release mechanism on the B-52 failed to open. The B-52 from NASA Dryden Flight Research Center made the drop attempt at 21,000 feet above the National Parachute Test Range near El Centro.

October meet covers crop survey results

JSC will host a four-day symposium October 23-26 covering the four years of the Large Area Crop Inventory Experiment (LACIE) run jointly by JSC, Department of Agriculture and the National Oceanic and Atmospheric Administration.

LACIE was a "proof of concept" experiment using satellite remote sensing to survey a single crop—wheat—with a view toward general agricultural monitoring on a global basis.

The symposium will be in eight half-day sessions summarizing the LACIE experience.

The drop is a test of the three-parachute SRB recovery system. Dryden test engineers are analyzing the failure to release. A new test date had not been set at *Roundup* press time.

Engineers mark bicentennial week at Valley Forge

America's engineers will commemorate the beginning and birthplace of their profession with a celebration of the 200th anniversary of George Washington's "Call for Engineering Education," which occurred at Valley Forge on June 9, 1778. Two hundred years later, on June 9, 1978, many of the nation's leading engineers will gather at Valley Forge to salute Washington's foresight in establishing engineering education in this country.

Plans for the event include an appearance by President Jimmy Carter, an engineer himself, who recently issued his 1978 National Engineers Week Proclamation, in which he recognized Washington's "Call" as an important part of our national development. The observance at Valley Forge will be coordinated with the 1978 Engineers Week Program of the National Society of Professional Engineers.

General Chairman for the celebration at Valley Forge is General Bruce C. Clarke, U.S. Army Retired. General Clarke is noted for his participation in the Battle of the Bulge during World War II.

From Washington's initiative, engineering education in the United States has grown until today there are almost 295,000 graduate and undergraduate students studying engineering on a full-time basis and an additional 47,000 studying part-time at 289 institutions. There are also 78,000 students enrolled in engineering technology programs.



SPACEY SPEEDWRENCH—Ed Whitsett runs a dexterity and mobility test with a conceptual space tool while wearing a new Shuttle spacesuit. The hands holding the simulated bolt belong to Marion Hix.



THINK SMALL — JSC Director of Procurement James Neal, left, presents certificates to Edna McAnelly and John H. Chisler for FY 78 small business set-aside buyer with largest number of set-asides processed during a single year and for largest dollar value of individual set-asides processed by a single buyer. Small business specialist H. T. Christman is at right. President Jimmy Carter designated the week of May 1-6 as Small Business Week.

Pioneer 11 readied for Saturn

A solar wind detector aboard the Saturn-bound Pioneer 11 spacecraft has been awakened and found to be in good condition for next year's encounter of the

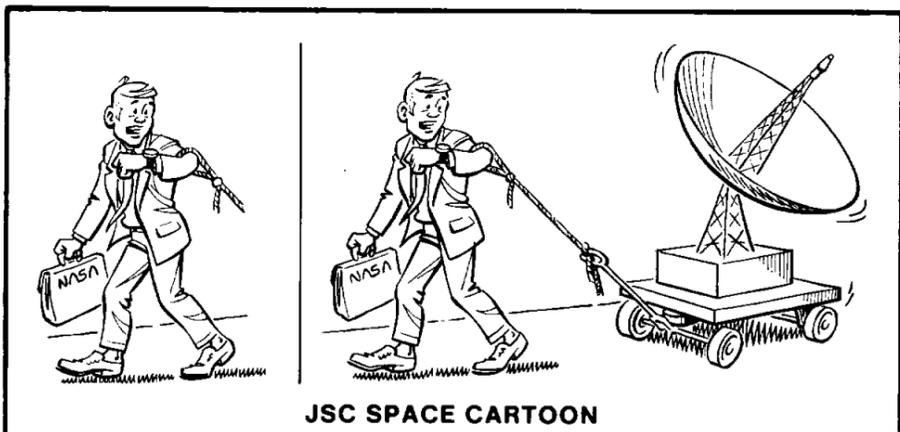
close kind with the ringed planet. The detector has coasted along dormant for three years.

The solar plasma analyzer maps the flow of the million-mile-an-hour solar wind—the streaming gas of ions and electrons which continuously flows out from the sun across the solar system.

The instrument will provide important information about solar wind particle interaction with Saturn's mysterious rings. Data gathered three years ago when Pioneer 11 swung around Jupiter will be compared with the new Saturn data.

THEATRE CLUB TICKETS

Houston Area Federal Business Association jointly with EAA offer memberships in the Restaurant and Theatre Club discounted from \$15 to \$5. Applications are available at the Bldg 11 Exchange Store.



"Satellite communications via wrist radio are possible today..." ...and we are working the antenna problem!

(Cartoon submitted by Pete Armitage/SA)

What's cookin' in the JSC cafeteria

WEEK OF MAY 15 - 19

MONDAY: French Onion Soup; Weiners & Baked Beans; Round Steak w/hash browns; Meatballs & Spaghetti (Special); Okra & Tomatoes; Carrots. Standard Daily Items: Roast Beef; Baked Ham; Fried Chicken; Fried Fish; Chopped Sirloin; Selection of Salads, Sandwiches and Pies.

TUESDAY: Beef & Barley; Shrimp Creole; Beef Stew; Fried Chicken (Special); Mixed Vegetables; Stewed Tomatoes; Buttered Rice.

WEDNESDAY: Seafood Gumbo; Fried Perch; New England Dinner; BBQ Plate; 8 oz T Bone Steak; Shrimp Salad; Swiss Steak (Special); Italian Green Beans; Beets; Lima Beans.

THURSDAY: Cream of Chicken Soup; Turkey & Dressing; Enchilidas w/chili; Weiners & Macaroni; Stuffed Bell Pepper (Special); Zucchini Squash; Green Beans.

FRIDAY: Seafood Gumbo; Broiled Flounder; 1/2 Chicken w/peach half; Fried Shrimp; Shrimp Salad; Salisbury Steak (Special); Mixed Vegetables; Cabbage; Breaded Okra.

WEEK OF MAY 22 - 26

MONDAY: Chicken & Rice Soup; Texas Hots w/beans; BBQ Ham Steak; Veal Parmesan; Beef & Macaroni (Special); Spinach; Carrots; Au Gratin Potato. Standard Daily Items: Roast Beef; Baked Ham; Fried Chicken; Fried Fish; Chopped Sirloin; Selection of Salads Sandwiches and Pies.

TUESDAY: Tomato Soup; Baked Chicken; BBQ Spare Ribs; Mexican Dinner (Special); Broccoli; Spanish Rice; Ranch Beans.

WEDNESDAY: Seafood Gumbo; Liver w/onions; BBQ Ham Steak; Shrimp Salad; Baked Meatloaf (Special); BBQ Plate; Brussel Sprouts; Green Beans; Whipped Potatoes.

THURSDAY: Beef & Barley Soup; Chicken & Dumplings; Corned Beef w/cabbage; Smothered Steak (Special); Cauliflower; Cabbage; Parsley Potato.

FRIDAY: Seafood Gumbo; Pork Chops; Creole Baked Cod; Ham Steak; Seafood Platter; Salmon & Tuna Croquette (Special); Green Beans; Beets.

Call goes out for Spacelab life sciences experiments

NASA is inviting scientists to submit proposals for life science experiments to be carried aboard the Space Shuttle and Spacelab in the early 1980s.

Proposals are sought for scientific investigations dealing with the physical effects of space flight on humans and other living systems, and the testing of equipment and procedures.

Life sciences opportunities are planned for the Shuttle and Spacelab during 1981, 1982 and 1983, possibly in conjunction with other scientific disciplines. Initial flights will last from 7 to 13 days. As experience with the Shuttle increases, flights may be extended.

Experiments selected as a result of the announcement will be performed in the pressurized cabin of the Space Shuttle Orbiter, in a pressurized Spacelab module, or—in cases where experiments require continuous exposure to the environment outside the spacecraft—attached to an unpressurized Spacelab pallet.

Providing a "shirtsleeve" environment in space, Spacelab and the Space Shuttle Orbiter will enable scientists to manipulate experimental material directly rather than by automated remote control alone.

The Shuttle and Spacelab also permit immediate follow-up of new findings—an important facet of any effective biological experimentation.

Respondents to NASA's Announcement of Opportunity may propose investigations which meet one or more of the following life sciences objectives:

- To investigate and understand physiological, performance and biochemical changes which have been observed in humans who have flown in space.

- To identify and investigate significant biological phenomena which may occur during or after exposure to the space environment.

- To test and demonstrate, under operational conditions, equipment and procedures which are needed by the NASA Life Sciences Program.

(Continued on page 4)

Syverson named Ames director

Clarence A. Syverson, Deputy Director of Ames Research Center, Mountain View, Calif., was named Director of the center April 30, 1978.

Syverson has been Acting Director at Ames since the resignation of Dr. Hans Mark in August 1977 to become Under Secretary of the Air Force.

In 1948, Syverson began his career with NASA's predecessor agency, the National Advisory Committee for Aeronautics, as a research scientist and assistant branch chief at Ames.

He became Chief of the 3.5-foot Hypersonic Wind Tunnel Branch in 1959 and from 1963 to 1966, he was Director of the Mission Analysis Division. In 1966, he was named Director of Aeronautics at Ames, the position he held until being appointed Deputy Director of the center in February 1969.

DePelchin Home honors JSC's Holt

Alan C. Holt, aerospace engineer in the JSC Crew Systems Division, and his wife Susan, an elementary schoolteacher in the community, were honored April 21 for their efforts as foster parents working with youngsters of the DePelchin Faith Home. The event was DePelchin's Appreciation Night.

The Holts have cared for two children during the last year, one of whom they took on a short-term emergency basis for one week. They have no children of their own.

Holt says, "Our foster parenting experiences have been challenging, enjoyable, and always rewarding. The greater the difficulties the more rewarding the experience has ultimately been. For a couple like ourselves who does not have children, foster parenting has provided us with some of the joys of having children. We view the turbulants as, more than anything else, valuable personal learning experiences. It's not easy to say goodbye to a child you have loved as your own. Our foster children will always have a place in our hearts. But we know that the love and joy we shared will continue to help guide our foster children through life."

About the DePelchin Faith Home, a United Way agency, Mr. Holt says, "We've had a very smooth relationship with the agency with just the right amount of communication. We were on our own with the child but they were always there to help us when we needed it."

LPI holds seminar

The Lunar and Planetary Institute has four sessions remaining in its seminar series. All sessions are in the Institute's Berkner Room and are at 4 pm, with the exception of the May 23 talk at noon.

Dates, speakers and paper titles are as follows:

May 12: Henry J. Moore, USGS, "Lava Flows on Mars, Earth and Moon;" May 16: Thomas Zang, Institute for Computer Applications in Science and Engineering, "Bar and Spiral Instabilities of Flat Galaxies;" May 23 (noon): John R. Bagby, Jr., Colorado State University, "Planetary Quarantine Management and Sample Return Missions;" and May 26: Rolf Oestertag, Universität München, "Sedimentological Investigations of Drill Cores in the Ejecta Blanket of the Ries Crater, Germany."

A freebie not for passing up

What benefit do JSC federal employees get that would cost \$250 or more if arranged for privately by an individual?

Give up? The annual physical examination provided by the JSC Clinic would cost more than \$250 at a diagnostic clinic.

Yet, strangely, from 10 to 20 percent of eligible JSC employees fail to take advantage of this benefit each year. Non-participation last year was 14 percent, but has run as high as 21 percent in previous years.

The JSC occupational health program is aimed toward the detection of disease in early stages when something can be done about it. Regular checkups pay off by enhancing the quality and length of one's life, and a longer life means more time to enjoy retirement.

When that Clinic appointment form comes in the mail, it could be worth your life to take advantage of the benefit it represents.

ROUNDUP Lyndon B. Johnson Space Center NASA

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Editor emeritus: Terry White
Photographer: A. "Pat" Patnesky

EAA Attractions

CLASSES

SUMMER OIL PAINTING CLASS — June 15; six weeks length; price \$37.50. Maximum 15 students. Payment and enrollment must be made no later than June 12. Contact Gilruth Center, Tim Kincaid, X-3594, Ted MacDonald, X-4921, or instructor, Lois Miller, X-3216, (FD4). Class will meet on Thursday night each week, 6-8 p.m., room 209, Gilruth Recreation Center.

ASTROWORLD TICKETS

Astroworld tickets are now available at the Bldg. 11 Exchange Store for \$7.00. This is a discount of \$1.50 off the regular \$8.50 price. These tickets will be available all season.

DISNEYLAND & DISNEYWORLD

Magic Kingdom cards for Disneyland and Disneyworld are also available free in the Exchange Store. The cards are good for ride ticket discounts at the parks and lodging discounts at some motel chains.

SIX FLAGS OVER TEXAS

Six Flags Over Texas tickets are now available at the Bldg. 11 Exchange Store for \$6.75. The regular price is \$8.50.

DEAN GOSS DINNER THEATER

Dean Goss Dinner Theater tickets are no longer sold at the Bldg. 11 Exchange Store. Get the tickets from Jim McBride, Bldg. 4, Rm. 130. Couples are \$16; singles \$8. Tickets are good any night except Saturday.

CARRIAGE TRADE DINNER CLUB

Envelopes for the Carriage Trade Dinner Club were mailed to all EAA representatives last week. If you haven't received one, see your rep. Membership: \$12.50 for six months, May 1 to Oct. 31. There are three local restaurants participating as well as two in Galveston and many in Houston.

JSC GOLF

Group II of the JSC Golf Association held its second tournament Apr. 15 at Glenbrook, one of Houston's more amazing courses. Strange things seem to occur there, usually involving both golfers and non-golfers wandering around in different directions.

Among those who sorted out which golfers were playing which hole, and were able to play along their own fairways, were our winners (1) Mike Gremillion and (2) Tom Matuszewski with net 68's, and (3) Dave Price and (4) Bill Zuber with net 69's.

Group I rolled its way through a very dry and hard Brock Park on April 29th. Our winners, who must have found good lies, were Ralph Najera, net 69, and Miit Heflin, Bill Shropshire, and Steve Gorman, finishing in that order with net 70's. Group I plays Texas City Bayou tomorrow.

MEN'S, WOMEN'S & MIXED SOFTBALL

The second 1978 softball season will run from June 19 to August 25. Sign-up is from May 25 to June 8. Men's, women's and mixed league will run for 10 weeks. EAA teams pay \$45. Non-EAA teams pay \$60. Fees for Men's A league are \$90 EAA, \$115 non-EAA.

MIXED VOLLEYBALL

The 1978 version of the JSC mixed volleyball season will be a 10-week league starting the week of June 5. Hopefully, enough teams will register so there can be two separate leagues, competitive and recreational. Sign-up deadline for either league is May 25. Roster forms are available from the Gilruth Recreation Center. Entry fees: EAA Teams, \$35; non-EAA Teams, \$70. A volleyball clinic will be held the week of May 22. Team captains will be notified about details later.

Now, for a pop quiz on blood pressure...

"Treat it for life" is the slogan for the 1978 National drive against high blood pressure. The JSC Occupational Medicine Program has participated in the National program for the past two years. Each year high blood pressure has been detected in persons who had no idea they had it. This is partly because most of us don't understand it. Do you? Take the quiz:

1. If I stay calm and relaxed, I won't have high blood pressure.
2. High blood pressure is the leading contributor to strokes, heart disease and kidney disease.
3. I can tell when my blood pressure is high.
4. Once I have high blood pressure, it usually means I will have to take medicine to control it for the rest of my life.
5. Headaches and dizziness are symptoms of high blood pressure.

6. There's nothing I can do about high blood pressure except watch my diet.

Numbers 2 and 4 are the only true answers.

During the week of May 15, the JSC Clinic will again conduct screening clinics at various locations onsite. These clinics are free of charge and are open to both civil service and contractor personnel. Times and locations as announced via the JSC Announcement. Have your blood pressure checked — know for sure.

Captain Kirk may beam down any day now

The New York Times

LARGE TYPE WEEKLY

In One Part

Monday, April 10, 1978

Many youngsters writing to JSC tend to confuse reality and science fiction by the way they phrase their questions.

But recently a package arrived at the Center's public information office addressed to: Capt. James T. Kirk, USS Starship *Enterprise*, Deep Space, c/o NASA, Houston, TX. The package was not from a young sci-fi buff, but from the National Braille Press in Boston and contained the Braille edition of *The New York Times* weekly.

Roundup Swap Shop

CARS & TRUCKS

- 66 Buick 4-dr sedan, loaded, clean, xint work car. \$595. Pittman, 488-2965.
- 76 4-dr Malibu Classic V8, auto, PS/PB, AM/FM, air, CB, lo miles, xint cond. Maas, 488-2965.
- 68 Austin Healey Sprite Roadster, \$500. Morris, 481-3900.
- Self-cont camper, slps 5, air, gen, 3/4-ton truck, PS/PB, cruise, 52,000 miles, xint cond, make offer. 946-0111.
- 70 Olds 88 4-dr, air, pwr steer/brks, xint cond, \$900. 488-1389.
- 76 GMC Vandura, dual air, cruise, 4 capt chairs, icebox, FM, cassette, 19K miles, \$6800. Moore, 488-7035.
- 77 Broadmoor mobile home, 2-1, CH&A, furn, carpets, dshwshr, \$1200 equity, assume pmts. Peterson, 986-5009.
- 75 ford LTD, air, auto, cruise, radio, xint cond, \$2100. Jones, 471-2638 after 5.
- 23-ft 74 Invader RV, new tires & batt, air, stereo, self cont, lrg propane tanks, tub/shwr, sep sleeping, demand water syst, gas/elec refrig, sep 12V/110V systrs, sleeps 5, 60-gal waste tank, towing xtras. Klotz, 488-1514.
- 74 Blazer 4WD, 350V8 4-bbl, towpack, elec trlr brks, lugrack, outside spare, air, AM/PB radio, 30-gal shielded gastank, burns reg. Klotz, 488-1514.
- 73 LeMans, orig owner, low miles, loaded \$1800. Sturtevant, 333-3905.
- 69 VW Bug, basically sound, but needs work. Fullerton, 488-5782.
- 71 Olds 98 luxury sedan, auto, air, stereo, 6-way seat, tilt telescope steer wheel, cruise, elec windows, all pwr, xint cond. \$1125. Jones, 944-4737.
- 69 Pontiac Catalina sta wgn, air, all pwr, \$500 or best offer. 488-1028.
- 67 Mustang, auto, air, AM/FM. 487-0155.
- 77 Cutlass Supreme 350, auto, air, pwr steer/brks, cruise, vinyl top, xint cond, \$5200. 488-4915.
- 72 Toyota Corona Mk II wagon, 2000cc, 4-spd, air, radio, buckets, \$1750. 488-4915.
- 77 Honda CVCC, red, 5-spd, low miles, under wmnty, air, AM, radials, 30-35 mpg, \$150 less than NADA. Ward, X-4976.

BOATS & PLANES

- American Eaglet pwrd sailplane wing/tail/ldng gear kits, compl encl trailer, plus other items, \$1200. Carver, 334-1619.
- 67 Cobia 17-ft trihull, 67 60-hp Johnson (needs work), trailer, \$500. Johnson, 481-1441.
- 16-ft Brownline Mayfly fbrgl canoe w/carryrack & paddles, xint cond, \$350. 488-1100 after 5.
- Gulf Coast 20 sailboat w/trlr & mtr, 5 sails incl spin. \$3000. 488-3172 after 5.

CYCLES

- 5-hp minibike, xint cond. Morris, 481-3900.
- 1-bike cycle trlr, perf for compacts, \$95. 482-5607.
- 65 Honda CB160 roadbike, lugrack, elec str, new chain & rear wheel, hvydty front fork, stab bar for off-road, \$225. 332-3709.
- 72 Yamaha 100, new pistons & rings. Reina, 488-1326.
- 5-spd Schwinn bike, fair cond. Bridge, 482-4272.
- Girl's 5-spd 26-in bike, never used, like new, \$60. 333-3897 after 5.
- 73 Yamaha Enduro 125 street/trail, nice, mech perf, \$275. Maas, 488-2965.

PROPERTY & RENTALS

- Lease: Nassau Bay 4-2-2, fireplace, fenced yard, refrig/freezer, new carpet, avail 15 June. Alexander, 333-3972.
- Beautiful Clear Lake Forest 4-2 1/2-2, formals, fenced yard, gas barbecue, wet bar, 2400 sq ft, new paint in and out. 474-5052.
- El Lago 2-story Colonial 4-2 1/2-2, formals country kitchen, large lot w/oaks. 334-3350.
- 86-acre rance, fenced, coastal and Bahia, creek and pond, 3-BR house, 2 chicken houses hold 31,000, barn, shed, corrals, etc. \$35K down, \$120K bal over 25 years. Lee Norman, Box 218, Garrison, TX 75946; 713/347-2261.
- Lot near Lake Travis, airport, golf course and World of Tennis at Lakeway; trees, paved street, utilities, owner financed, \$9000. 333-3382.

JSC TENNIS CLUB

On the week-end of March 31, April 1 and 2, the JSC Tennis Club held the JSC Ladder Tournament. Using feed-in consolation, the tournament determined the top eight players for each of the two events. The winners of the Men's bracket were: Tracie Blumentritt, first; Herb Cottle, second; Ken Robinson, third; Rob Kelso, fourth; Guy Downs, fifth; Johnny Porter, sixth; Fred Hill, seventh; and Mike Heck, eighth. Trish Sullivan won the Women's bracket. Following her were: Patty Miller, second; Barbara Kincade, third; Kelly Blumentritt, fourth; Sheila Sullivan, fifth; Lisa Serr, sixth; Paula Maestas, seventh; and Jane Lehman, eighth. All the other players in the tournament were ranked in groups according to how long they stayed in. The entire draw was used to establish the ladder for this year. Anyone interested in playing on the ladder and needing information should call Debbie Webb at X-2931.

Swap Shop advertising is open to JSC federal and on-site contractor employees. Goods or services must be offered as advertised, without regard to race, religion, sex or national origin. Non-commercial personal ads should be about 20 words and include home phone number. Typed or printed ad copy must be received by AP3/Roundup by Wednesday of the week prior to publication.

MUSICAL INSTRUMENTS

- Sears Mod 257 reed organ, dbl keyboard, chords, rhythm tabs, voices, w/ bench, \$200. Coen, 488-8286.
- Roth 3/4-size violin, chin rest, bow, case \$300. Coen, 488-8286.

WANTED

- Ride from Gulf Fwy/Telephone Rd to JSC Bldg 10 7:30-4:30. Alcorta, 921-8999 after 6.
- 8mm movie camera w/elec eye, batt or windup; also cartop wind deflector. Kennedy, 649-1236.
- Smokeless carpool from Alvin 8-4:30 but will adjust. Gonzales, X-4418.
- College prof at JSC on summer scholarship wants to share or rent apt during summer. Pendleton, X-3611.
- Pair water skis, plus slalom ski, Wilson, 333-3886.
- Bacliff Bass Club needs singles/couples, meets, tourney, prizes. Parker/4241 or Mobley/4428.
- Clear Lake Citizens to volunteer for CLC Volunteer Fire Dept, rewarding community service, will be trained & equipped. 488-0023 anytime.

MISCELLANEOUS

- Sears Roto-Spader W/wormgear drive, xint cond, \$175. 488-1100 after 5.
- Coleman Oasis tent 16x10 ft, good cond, \$75. 488-1100 after 5.
- Sears vinyl cartop carrier 14x48x48. 488-5037.
- Sears 22-in self-prop chair-gear drive mower. 488-5037.
- Four large wagon wheels for deco purposes; Kodak 300 slide projector w/rectangular tray, xint cond. 522-4738.
- Family Gym exerciser w/vibrator board, \$35. 333-2889 after 5.
- 5x7-ft puptent w/sewn-in floor, insect-proof zipper screen, \$15. 474-3861 after 5.
- Jim Turnisa golf clubs, 4 woods, 8 irons. Reina, 488-1326.
- Hvy-dty trailer hitch w/ball. Reina, 488-1326.

CAMERAS & STEREO

- French prov console stereo, AM/FM, rcd plyr, 2 rem spkrs. 482-7968.
- Waterproof airboat speakers, 30 db output, 3-50 Hz. McCutchen, X-3576.
- Scott integ amp, Sony tuner, 2 Electro Voice 10-in 2-way spkrs, sounds good, \$150. 488-3747.
- Motorola B&W TV, no UHF, \$40; 38/40 Colt Bisbey (collector's item) \$250. Mary, 331-1279.
- Kraco combo CB/AM/FM, retract antenna elec pwr, new, still in carton, \$20. Thompson, 332-2229.

PETS

- 15-hands gentle dun gelding, good first horse, all tack, \$475. Tracy Thompson, 332-2229.



BETWEEN TAKES — Actor Richard Harris (*A Man Called Horse*, et al) and actress wife Ann Turkel explore the cockpit of Orbiter *Enterprise* whilst waiting for the next take of sci-fi flick *The Ravagers* being filmed at Marshall Space Flight Center. *Enterprise* has since been upended and mated with the main tank for vibration tests later this month.

Eight vie for Spacelab II payload specialist jobs

Six American and two British scientists are candidates in the competition for two experimenters' seats aboard Spacelab II.

Experimenters picked to fly will be Payload Specialists, and are a new breed of scientists who will have the opportunity to operate their instruments in space.

Four from the group will be selected to train to operate the mission's 13 scientific investigations. At a later date, two of the four will be chosen to fly on the 7- to 12-day mission.

Selections were made by the scientists whose experiments will be flying aboard Spacelab 2. These scientists, representing 13 experiment teams from the U.S. and the United Kingdom, make up the Investigators Working Group (IWG), which is charged by NASA with directing the scientific investigations on this mission. The United Kingdom is sponsoring two major experiments on Spacelab 2. The Principal Investigators for these experiments participate fully and equally in the IWG, and thus have proposed scientists to participate as Payload Specialists.

Dr. E. W. (Gene) Urban, chief of the Cryogenic Physics Branch of the MSFC Space Sciences Laboratory, is mission scientist for Spacelab 2 and is chairman of the IWG.

Urban said that four of the candidates will undergo extensive training following a final selection this summer. Of the four payload specialists trained, two will go into space, while the other two will perform support and advisory roles in the Payload Operations Control Center at JSC.

Payload specialists, who are employed by the payload sponsoring agency, differ from NASA's permanent astronaut pilots and mission specialists in that they are selected and trained specifically for a particular mission. During the mission, the payload specialists provide an opportunity for the scientists responsible for the mission investigations to concentrate on carrying out the investigations that make up the payload. The responsibility of flying and maintaining the Space Shuttle vehicle rests with the permanent astronaut crew.

All four Payload Specialists train at MSFC.

Spacelab 2 is the second mission utilizing Spacelab equipment being developed and built by the European Space Agency (ESA). Spacelab 2 will be carried into orbit inside Space Shuttle Orbiter launched from the Kennedy Space Center in Florida. Later missions will also be launched from the Western Test Range in California.

Spacelab is designed to provide two basic components which can be arranged into several configurations. One component, the module, is a large pressurized container which allows the payload specialists to conduct their investigations under a "shirt sleeve" environment. The other component, the pallet, is a structural platform which is exposed to the space environment and provides power, data, and thermal functions to the instruments mounted there on.

Spacelab 2 will have no manned module. Most of its experiments will be exposed to space on pallets in the Orbiter payload bay. Because of this, the Payload Specialists will operate the instruments from the Orbiter crew cabin, working complementary shifts so that experimentation can continue 24 hours a day.

The eight finalists, ages, schools attended and places of employment are:

- Loren W. Acton, 42; University of Colorado; Lockheed Palo Alto Research Laboratory, Palo Alto, Calif.

- John-David F. Bartoe, 33; Georgetown University; Naval Research Laboratory, Washington, D.C.

- John W. Harvey, 37; University of Colorado; Kitt Peak National Observatory, Tucson, Ariz.

- Bruce E. Patchett, 30; Sussex University, U.K.; Appleton Laboratory, Astrophysics Research Division (Culham Laboratory), Abingdon, Oxon, U.K.

- N. Paul Patterson, 38; Yale University; Ball Brothers Research Corporation, Boulder, Colo.

- Dianne K. Prinz, 39; Johns Hopkins University; Naval Research Laboratory, Washington, D.C.

- George W. Simon, 43; California Institute of Technology; Sacramento Peak Observatory (Air Force Geophysics Laboratory), Sunspot, N.M.

- Keith T. Strong, 26; Advanced Studies in X-ray Astronomy, Mullard Space Science Laboratory, U.K.; Mullard Space Science Laboratory, Dorking, U.K.

(The Spacelab 2 finalists are the second group of candidates to be chosen for possible experimental flight assignments. Ten Spacelab 1 Payload Specialist finalists, six Americans and four Europeans, were selected last December to compete for two flight positions.)

Life sciences

(Continued from page 2)

Those who wish to submit a proposal should send a Letter of Intent to Dr. Stanley Deutsch, Director, Life Sciences Payloads and Applications, Code SBE-3, NASA Headquarters, Washington, D.C. 20546. Deadline for proposals is June 30, 1978.

Historian Emme retires

NASA historian Dr. Eugene M. Emme retired from NASA May 1, 1978. He plans to devote full time to lectures and to writing history related to aerospace science and technology.

As NASA historian since 1959, Emme was the developer of the NASA history program with its professional and general publications, comprising a set of records of the agency's development. Annual chronologies used by news media and congressional committees were followed by more complete histories on: Vanguard, Administrative History, Mercury, Ranger, Gemini and volumes on Apollo. The compiling of others within NASA continues.

Prof. Thomas Parke Hughes, chairman of the NASA Advisory Committee on History, notes that Emme "was not only present at the creation of what is virtually a new discipline — space history — but he also played a central role in establishing sound institutional support for that discipline."

Emme was the author or editor of official and professional works to encourage historical knowledge and interest in NASA: *Historical Sketch of NASA* (EP-29); editor of *The History of Rocket Technology* published by the Society of

the History of Technology (1964); *A History of Space Flight* (1965) and, most recently edited the proceedings of the history symposium at the National Air and Space Museum in *Two Hundred Years of Flight in America — A Bicentennial Survey*. The latter volume, just published by the American Astronautical Society, is the first book in its history series. Emme will continue to serve as general editor.

Cost cutters save \$103 million



Thompson

Martin

Ogden

Money savers at JSC were recognized in a late April Cost Reduction award ceremonies. Their ideas saved the agency and the Center more than \$103 million.

Top winner in the group was James W. Thompson whose scheme for recycling Shuttle Orbiter loose equipment between launch and landing sites in special shipping containers will save an estimated \$45 million. The second most valuable idea came from Steve N. Martin who suggested an onsite facility for processing and bonded storage of Shuttle extravehicular/intravehicular (spacesuits, etc) equipment for a savings estimated at \$2.69 million.

John W. Ogden's idea for a new preventive maintenance task order saves \$820,000 a year, and another Ogden idea for energy conservation in the Space Environment Simulation Laboratory saves \$20,100.

Other cost savers, their cost reduction ideas, and the estimated savings were: Richard W. Armstrong and Paul E. Shack, EVA air traffic control communications equipment \$512,000; Robert E. Easley, elimination of travel reservations group at RI-Downey, \$506,000; Lee R. Nichols, software tuning at Mitre Corp., \$800,000; Robert L. Carver, deleting excessive seal inspections, \$208,200; Placido L. Valdivia, use of summary sheets instead of a more complex form, \$157,300; and Robert L. Anderson, two areas for con-

servicing liquid nitrogen, \$155,200 and \$10,000

Also Edward O. Zeitler, aircraft survey imagery into the public domain, \$100,000; Lelan R. Whitaker, Mission Control Center logistics support policy, \$81,600; L. Harry Peck, cutting test prep time for quarter-scale ground vibration tests, \$65,000; James H. O'Kane, new use for Apollo/Skylab liquid-cooling garment, \$60,000; Everet L. Rogers, reusing on-hand government property, \$46,900; and Dorothy Phelan, Alma Martin, and Mary K. Kerber, method for JSC Instruction publication, \$20,200.

Wayne L. Draper, computer services contracting, \$14,000; Edward S. Johnson, Thomas F. Gallagher and A. K. Spivey, eliminate GFE, \$15,900; Wayne W. Potter, freon recovery in Space Environment Simulation Laboratory, \$13,700; Arturo Lozano, modify keypunch, \$9,000; William M. Schroeder, cut altitude simulation needs for orbital maneuvering engine tests; \$6,500; and John H. Chisler and Edward S. Johnson, cutting GFE, \$2,400.

Johnson also received the Ace Award for submitting five accepted cost reduction reports, while Easley, Armstrong, Shack and Martin got the Eagle Trophy for cost reduction reports of more than a half million dollars.

JSC Director Christopher C. Kraft, Jr. presented the awards.

Frog ears may solve human space nausea (they do have ears!)

Investigating the inner ear balance mechanism in space may help NASA researchers learn the cause of space sickness that has afflicted some human astronauts. Frogs will be used as research subjects on early missions aboard the Space Shuttle.

Lockheed Missiles & Space Co., Inc. biotechnology scientists and engineers are working on a six-month contract from the Ames Research Center, Moffett Field, Calif., which is the first phase of a project in which the behavior in space of the frog's otolith nerve bundle will be studied.

The otolith organs make up a portion of the inner ear balance mechanism. It is hoped the data gathered will shed light on the causes of space nausea, since the frog's otolith mechanism closely resembles man's.

According to Lockheed Project Leader R. Bruce Jagow, microelectronic sensors inserted in the frogs periodically will feed data into a recorder while on the ground and in space. A preflight testing on a ground-based centrifuge will furnish baseline data to compare with information gained in weightless space.