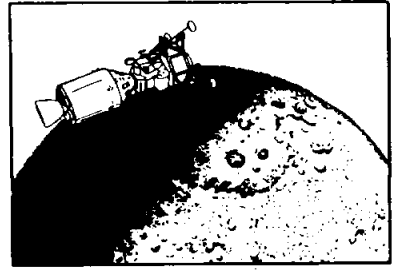


# ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS



Vol. 13 No. 20

August 30, 1974

## Skylab Medical Results

The Skylab Life Sciences Symposium presenting the medical results of the three Skylab missions was held here at Bldg. 2 this past Wednesday through Thursday. Over 30 technical papers were presented during the conference which was attended by almost 400 medical and biological investigators.

Conference Chairman Richard S. Johnston, director of Life Sciences at JSC, opened the symposium with a welcome from JSC Director Dr. Christopher C. Kraft, Jr.

In his opening remarks, Johnston stated that there was nothing in the medical results from the Skylab missions to preclude man from spending up to a year in space.

The symposium was divided into the following general areas: General Program Overview;

Neurophysiology; Musculoskeletal Changes, Biochemistry and Hematology/Cytology; Cardiovascular and Metabolic Function.

In a paper on the Effect of Prolonged Weightlessness on Cardiovascular Function, principal investigators W.L. Henry et al. of the National Institutes of Health, found that although the heart's ventricular size was decreased immediately after flight and did not return to pre-flight values until one month after splashdown, no significant changes in either cardiac mass or function were experienced following the 84-day SL4 mission.

Dr. W.E. Thornton, Life Scientist in the Astronaut Office, presented a paper on muscular deconditioning and its prevention citing the fact that although

weightlessness could cause rapid atrophy of many major muscle groups, especially the so-called "anti-gravity" groups, it has been effectively demonstrated on Skylab missions that such deconditioning can be prevented relatively easily through the use of familiar exercise techniques. This was demonstrated when, following the SL3, the treadmill was launched for SL4 crew use to keep their lower limbs in shape.

Dr. G.D. Whedon, also of NIH, Bethesda, MD, and his group addressed their paper to the ef-

(Continued on Page 2)

## ENERGY SAVINGS

It was just about this time last year when the "energy crunch" hit home. Gas prices started their steady, discouraging, climb upward and people in the North-



SCIENTIST-ASTRONAUT DR. ED GIBSON is shown here busy at work on the Apollo Telescope Mount Control and Display panel. Dr. Gibson spent 338 hours at the ATM C&D console.

east began to worry about heating their homes and offices when winter hit.

As part of a nationwide, federal campaign to conserve already reduced energy resources, NASA and JSC initiated conservation practices which included turning out center lighting during night and weekend periods; reducing the amount of lighting in unused office areas such as hallways; and cutting back on the heating or cooling (which-ever was in season).

An energy savings goal for JSC was established representing 7 percent of the energy consumed during the previous year.

According to Joseph Piland, Director of Center Operations and whose responsibility it was to implement the JSC savings program, an energy reduction of 20 percent was actually achieved. This equals 914 billion BTU's or an equivalent of 6.8 million gallons of gasoline.

More down-to-earth, the energy savings represented a cost benefit to the center of \$918,000.

Piland placed the principal credit for this achievement on the entire Center staff for their spirit and cooperation. "It's clearly another data point which illustrates the ability of this group of people to meet or exceed established goals."

## Dr. Gibson To Leave

Dr. Edward Gibson, science pilot on the 84-day long Skylab-4 mission, announced he will leave NASA astronaut corps on November 30, 1974.

Gibson, 37, will join The Aerospace Corporation of Los Angeles as a senior staff scientist and will specialize in the interpretation of solar data gathered during the 171 days of manned operation of the Skylab program. Dr. Gibson who received a doctorate of engineering from California Institute of Technology and an honorary doctorate of Science from the University of Rochester (new York) authored a text book on solar science during his years with NASA.

Gibson has been a scientist astronaut since 1965 and was the science pilot on the third and final manned visit to Skylab space station (November 16, 1973 to February 8, 1974). This was the longest manned flight (84 days, 1 hour and 15 minutes) in the history of manned space exploration to date. He was the crewman primarily responsible for the 338 hours of operation of the Apollo Telescope Mount which made extensive observations of solar processes.

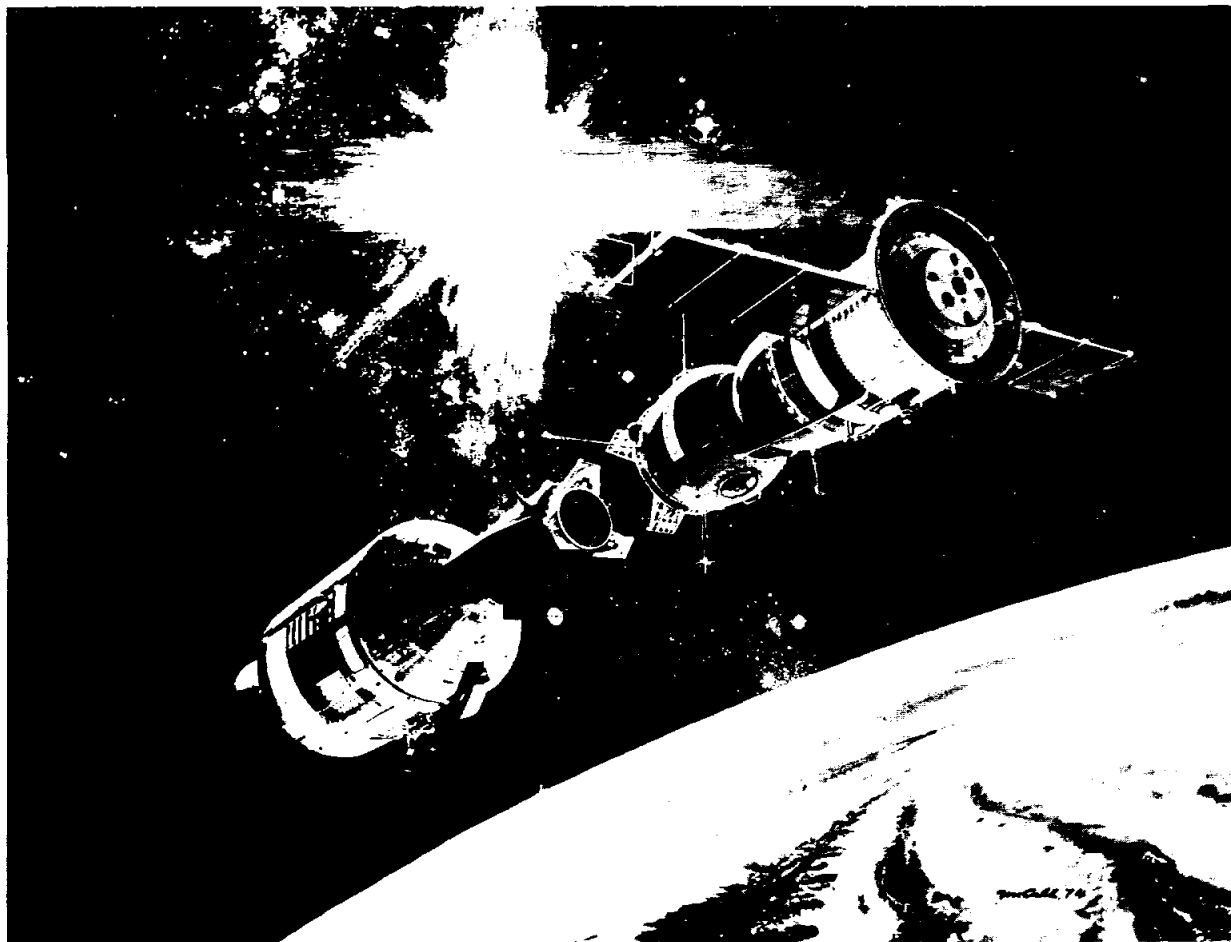
In his new job with The Aerospace Corporation, Dr. Gibson will concentrate his studies on solar activity, how it developed, the underlying causes and its effect on the Earth.

Dr. Gibson announced his resignation while in LA as one of the key speakers at the Skylab Conference held at the University of Southern California. He delivered a paper on "Flight Experience of an Astronaut." More than 70 technical and scientific papers were presented during the three days of the conference.

Dr. Gibson said his decision to leave "was a very difficult one to make." He said "I have greatly enjoyed and have felt a tremendous challenge in my work with NASA and feel my experience in the Skylab was the most challenging year of my life."

"I am leaving only because of the tremendous amount of solar data we have accumulated in Skylab and I feel compelled to rollup my sleeves and make the best of the data."

Dr. Gibson is a native of Buffalo, New York. Before joining NASA, he was a senior research scientist with the Applied Research Laboratories of the Philco Corporation at Newport Beach, California. His technical publications are in the field of plasma physics and solar physics.



AN ARTIST'S CONCEPT illustrating an Apollo spacecraft about to dock with a Soviet Soyuz vehicle in earth-orbit. The mission, scheduled for July 1975, is designed to test equipment and techniques which will establish international crew rescue capability in space. Each nation is developing separately docking systems based on a mutually agreeable single set of interface design specifications. Artist for this concept is Robert McCall, longtime associate of the space program.

## Hybrid Technology: Another Space Spinoff

How to cross-fertilize the many technologies is the object of a Technology Transfer Conference to be held on 24 and 25 September in Houston at the Conrad Hilton School of Hotel & Restaurant Management, University of Houston.

The conference is being sponsored by NASA in cooperation with the Houston Chamber of Commerce. Papers in five areas will be presented at the confer-

ence. The areas are Technology Transfer, Energy, Medical and Life Sciences, Information and Data Systems, and Transportation and Materials.

Bernard Sakowitz, Chairman of the Board, Houston CofC, states that the conference's main objectives are to demonstrate how much technology-oriented talent the Houston area offers and to transfer technology developed in one field to an otherwise

unrelated field - especially how to use government-developed space innovations in non-space industries.

Jeffrey T. Hamilton, Director of NASA's Technology Utilization Office, will present a paper on the "Transfer of Space Technology to Industry;" R.M. Voris, also from the Tech Utilization Office in Washington, will address the same topic with a paper entitled "The Technology Pipe-

line."

Edward L. Hays, Urban Systems Project Office Manager, and Willie S. Beckham, Jr., project engineer for the MIST, will present papers on the Modular Integrated Utility System (MIUS) and the MIUS Integration and Subsystems Test Laboratory (MIST).

Norman Belasco, Chief of Integrated Medical and Beha-

(Continued on Page 2)

## NASA, NASA How Does Your Garden Grow?

Most JSC employees are proud of the attractive appearance of the grounds at the Center. However many of them do not realize how much work is involved in the maintaining a beautiful land-

scape, and probably fewer are aware of who is responsible for the upkeep of the onsite area.

Well for your information, employees, it's all because of "Speedy"--Speedy Maintenance

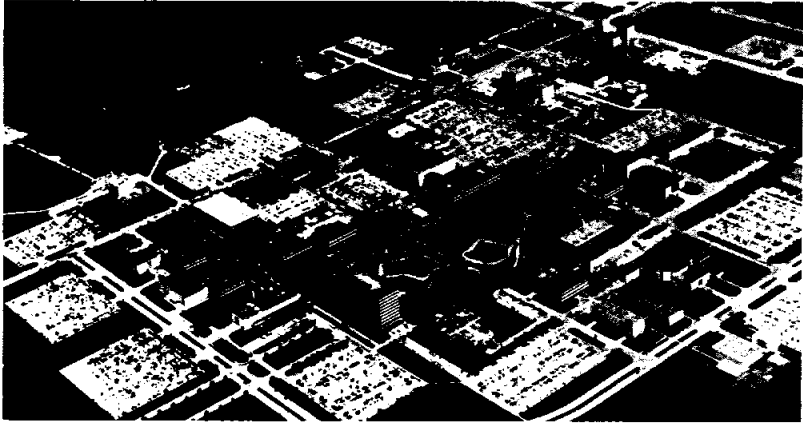
Company, that is, now in its second year at JSC.

In the past, ground maintenance was part of a larger plant maintenance contract. It later evolved into a separate contract so that more attention could be devoted to JSC's outside appearance.

Speedy is responsible for daily maintenance chores as well as long range planning for upkeeping the grounds at the Center.

The ground maintenance crew is being trained in such skills as pruning to enhance the natural form of plants and trees, the use of insecticides and herbicides, and the life cycles of insects.

Owner and project manager of Speedy is Rudy Johnson, graduate of the University of Nebraska.



THIS IS A 1972 AERIAL View of the Johnson Space Center. Results of the careful landscaping given the site are evident even from this altitude. The knolls surrounding the duck ponds are particularly attractive in the fall and spring when the ducks make ample use of this "free sanctuary."

## Skylab Medical Results

(Continued from Page 1)

fect of weightlessness on mineral and nitrogen balance. In the Skylab experiment, increases in urinary calcium during space flight and in-flight changes in calcium balance were closely similar in degree to those found in bed-rest immobilization. The similarity to bed-rest patterns suggests that the calcium losses would continue for a very long time. Significant losses of nitrogen and phosphorus occurred which were associated with observed reduction in muscle tissue. Both mineral and muscle losses occurred despite vigorous exercise regimens during flight. The conclusion from this group of PIs was that capable musculo-skeletal function will be threatened during prolonged space flights lasting up to 3 years unless protective measures can be developed. In a paper on Skylab Sleep Monitoring, Dr. James D. Frost, et al. from the Baylor College of Medicine, Houston, stated that sleep problems encountered in earlier space flights did not occur because of the Zero-G environment per se, but possibly were the result of living and working in more restricted space than the Skylab environment.

Perhaps the most obvious change due to weightless conditions which the crewmen themselves experienced was their changed anthropomorphic shape. Within a few days each crew experienced increased height and

decreased girth.

In a paper addressing those changes, Dr. Thornton, et al., reported that although the anatomical changes are of considerable interest and import to the human engineer, the shifts in blood and extravascular fluid are more consequential. This team reported that by mission day three all crewmen had lost more than 2 liters of extravascular fluid from the calf and thigh. The shift continued throughout the mission until recovery when a sharp reversal was noted. The Thornton team hypothesized that the driving force for the shift is the intrinsic and unopposed lower limb elasticity which forces venous blood and other fluids toward the head. This shift may be the driving force for a number of other phenomena, including blood volume loss and changes in leg hemodynamics.

Dr. Jerry R. Hordinsky, crew surgeon for the Skylab missions, reported the only problem during the first mission was an inflammation of the left ear in the commander. During the second mission, Dr. Hordinsky reported that all three crewmen reported motion-sickness symptoms for 3 days. During the last flight, two of the crewmen reported motion-sickness symptoms, skin dryness and nasal fullness. Overall post-flight readaptation was very good for all crews, Hordinsky said, and more rapid for the SL4 84-day crew than for the other

two.

A symposium panel discussion was held on the final day of the conference. Panel members included noted physicians from the Albert Einstein College of Medicine, HEW, McGill University, the University of Pennsylvania, the Mayo Clinic and the Michigan State University School of Medicine. None of the panel members were principal investigators for the Skylab medical experiments and thus presented a view from outside the space community.

## Holidays

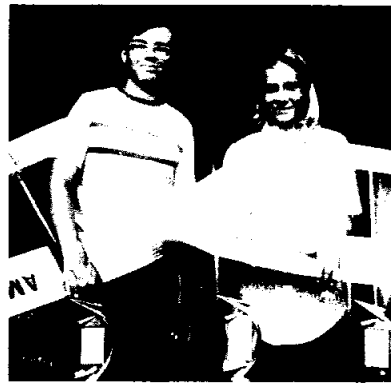
Listed below are the legal Federal holidays for the period September 1974 through October 1974:

Monday, September 2 Labor Day

Monday, October 14 Columbus Day

Monday, October 28 Veterans Day

All offices will be closed and employees will be excused from duty without charge to leave or loss of pay except those involved in functions considered essential for operations.



TWO OF THE NASA AREA winners at the Model Airplane Championships are shown here with their entries and awards. John Dodson, son of Joe Dodson WT4, is on the left and Ricky Colonna, son of Richard Colonna, WT1 stands next to him. The championships were held at Spring, Texas and Lake Charles, Louisiana.

## Model Plane Championship

Several JSC employees and their families attended the recent National Model Airplane Championships which were conducted by the Academy of Model Aeronautics at Spring, Texas and Lake Charles, Louisiana.

The following employees were successful fliers in the free flight events at Lake Charles: Fred Pearce, Experiments Systems Division, won first place in the rubber-powered Wakefield event for the open age group. He also placed third in the Unlimited rubber powered event (open class). Frank Parmenter, Planning Office, placed second in the A-2 Nordic glider event (open class). Joe Dodson, Test Division, won first place in the Rise-Off-Water event establishing a new national record, and placed second in the Old Timers' Replica event for .020 cu. in. displacement engines. Larry Petty, Tech Services won 9th place in open class hand-launched-glider.

Ricky Colonna, 12-year-old son of Test Division's Richard A. Colonna, won third place in the class A gas-powered event for junior fliers. He also, placed fourth in the junior 1/2 A gas event. John Dodson, 16-year-old son of Joe Dodson, placed third in the senior class A gas event.

## UH/CLC Acquires Library Properties

The University of Houston at Clear Lake City may be the only new university in the country opening its doors for the first time this fall. Others are closing in droves. The contrast was cited in the Chronical of Higher Education, a journal for college educators and administrators in its August 5, 1974 issue.

A story titled "After the Shutdown" lists 71 private colleges which have closed, merged or gone public in the 70's. Of that number, 41 closed, 15 merged, and seven became public institutions. The same story states that UH/CLC has bought the libraries of two of the closing colleges--Parsons in Iowa and St. Joseph in Emmitsburg, Md.

The two libraries netted UH/CLC 300,000 volumes. The Parsons library of 130,000 volumes was acquired for \$402,675, or approximately \$3 per volume, compared to \$10 or \$15 if the books were purchased separately. The cost of the Saint Joseph collection was \$306,000.

## Borman Promoted At Eastern Air

Frank Borman, Pilot of Gemini 7 mission and Commander of Apollo 9 mission, was recently elected a director of Eastern Airlines. Borman was also named executive vice president and general operations manager of the airline.

## Secretary Group Elects Officers

The NASA-Clear Lake Chapter of the National Secretaries Association recently elected its officers for the 1974-75 year. They are President: Virginia Thompson, BA2; Vice President: Lea Bell, Lockheed Electronics; Corresponding Secretary: Dana Taylor, Nassau Bay National Bank; and Treasurer: Lee Carr, Clear Lake City Water Authority.

The National Secretaries Association is an international organi-

zation representing the largest single vocational group among business women. It is a non-profit, non-partisan group devoted primarily to the ideal improvement of the secretarial profession.

NSA is designed to augment the interests of a secretary and to help each member broaden their education, to sharpen skills and develop each member to their fullest measure.



## SUGGESTIONS NET CASH

RECENT EMPLOYEE AWARD winners are shown here with their certificates. Standing, left to right, are: William J. Boone, III, CH; Herbert S. Kobayashi, EE; Norman Belasco, DE; Leo G. Monford, Jr. EZ; and Jack Kinzler, Chief, Tech Services Division who presented the awards. Bottom row, left to right, are: Lawrence D. Kissinger, EC; Sandra S. Burdsal, CF; Jeri W. Brown, EW; and Joe F. Melugin, EG.

# 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**

Conn Coronet. Used 1 semester. Absolutely like new. \$150. 487-2142 After 6 Carl P. Maxey 75 yds beige carpet w/o pad, GD cndn, \$35 all or \$50/yd. 488-2713. R. J. Williams CG6 Seasoned oak fireplace wood. \$55.00 a cord. Large walnut secretary desk. Heavy glass top. Swivel chair, good condition, \$65.00. Wards gas drier. Good condition, \$75.00 Floor polisher, needs new cord, \$5.00 332-4685  
12 power observing scope: 75 mm objective, Jaegers optics, star diagonal rack & pinion focusing. \$80. 481-3952.

Emergency Locator Transmitter (ELT) Model EBC - 102A. New Condition - Never used. \$390.00 Dave Pendley x 4601 or 258-5622.

Butane tank suitable for trailer or camper, \$10. Call after 5 Bauch x 5987 or 333-3382  
Royal elect. office typewriter, \$120; new 13 diamond dinner ring, \$350, value \$450 up black vinyl love seat \$75; solid state stereo amp. \$35; two gas dryers, \$20 and \$40 Bernard Cox x 5886 or 482-3629

Tandberg 1600x open reel tape deck. Cross-field head, solid state. 2 yrs old \$175.00 488-3966

HO Scale Raceway with board, \$7 child's pedal car \$4 amt Tricycle #3, Boy's 2,3,4, clothes & shoes, good condition & reasonable, size 4 winter Coat \$6 shower & window curtain set, hair dryer \$3, Lincoln Cent Starter Set \$9 to 74 (all mints) \$175. 488-2248 Dean Cubley EE 1/2

35mm Chromega professional color enlarger. Best of the line. Make offer. Gene Horton 334-2360.

Ludwig snare drum with stand practice pad and case \$75.00 Yamaha alto saxophone with strap and case \$225.00. Wanted 20 spyder hi rise bike 487-0155

Found: Mens bifocal glasses, gray frames. Found in parking lot of Building 31. See Coennen, Room 234, Building 31.

**VEHICLES**

Utility Trailer, 5'x6' with removeable top, large wheels, perfect for camping. \$135.00 944-3640 M.J. Denny Lt x 2208

35 mpg - Excellent condition 1972 MG Mid get - 29,000 miles Evenings 644-7064 McAnnelly BB532 x 6158

MG-B Factory workshop manual. \$9.00 Schulze. 422-5636.

Yamaha 175 cc Enduro 1973 model, 300 actual miles \$650.00. 4711676 Fulton Plauch For sale 1964 Dodge Dart (G.T.) 6 cyl. IEng. a.t. radio, heater, fair condition \$350.00 554-6630 office 4131 Homer Hill Jr.

1973 Grand Prix; vinyl roof; auto/air; cruise; AM/FM stereo; electric windows, seats, locks; tilt wheel, excellent condition. After 6 p.m. 479-6141 1974 Capri, V-6, 4-spd, sunroof, AM/FM, decor group, air, mag wheels, loaded. Excellent condition, under warranty. After 6 p.m. 479-6141. Barbara Perkins

1973 VEGA GT Air automatic, radio, 16,000 miles, \$2500 488-0284 or 2586 Milton C. Contella.

73 GT250 Suzuki, 1500 miles, 12,000 mile warranty, purchased in February, 2 helmets included, \$750. Gonzales, 643-1929 Susie Gonzales.

71 Mazda R-100 (rotary engine) low mileage, new paint, A/C, and Michelin Radial tire. 1800 or trade down. 482-3629

Honda SL-70, \$200. 482-7858 C.H. Woodling Code FE x 5283

63 Plymouth Valiant, 6 cyl, air radio, good rubber tilt 3rd car for h.s. student or WRK car. 534-6133 William Milligan EA33

73 Nova Hatchback, 350 engine ac ps pb at 13,000 miles excellent condition 3100.00 W. Scott x 3458 or 554-6148 Walt Scott

73 Honda 450 excellent condition call 554-2036 or 488-0980 Richard x 6151

Starcraft 6 camper. Good condition except top canvas. See at 5 Hillcrest, Dayton, Texas. Pendley. Ext 4601 or 258-5622. \$500.00 David Pendley.

65 Chevy Impala, 2-Door Hardtop, Blue, Auto Air, RAdio. See to appreciate. \$400.00. Wayne Wolz. 481-2327.

Bicycle, 20" Girl's high-rise with accessories. \$18.50. R.Lea. 488-2597.

1966 GTO convertible 4 spd very good cond., 1-owner, best offer, 488-5610 or ext 6355 ask for Heselmeier.

Hard-top tent trailer, sleeps 4. Large beds, opens to 7x14 \$350.00 554-3778 Fred Hake x 2696.

**HOUSEHOLD**

22 cubic foot chest type freezer. Want to trade for smaller upright type 487-0149 Tom Gallagher x 2281

KLH Model 21 FM receiver, \$25. 523-2137. EJB Michael K. Lake

For Sale: AKAI MS-7 Tape recorder. Excellent condition. Two microphones and auxiliary cords. \$150.00 call x 5491 - Jim Mager.

Stereo tape recorder, reel-to-reel. Full capability. Dual speakers, cables, operation and maintenance manuals. Philips professional model. \$85.00 G. Gibson. 482-1801 or TRW 333-3133, x 2421.

**REAL ESTATE**

Dickinson: New 2-bedroom townhouse. Fireplace, washer/dryer, refrigerator, drapes included. \$21,000 (\$194 month). Call Peggy x 7409. Peggy 483-7409.

For Sale - Lot at Hilltop Lakes Resort, overlooks main lodge and nearby lakes. Phone 333-3813. Arthur R. White x 3831

100x200 Lot at Woodcreek near Wimberly, TX includes club membership golf and lodge privileges, utilities, \$5500.00 488-1385 Glenn M. Ecord.

Sagemont, owner, 3-2-2, Fireplace Fence, Covered Patio, Corner Lot 3 yrs old, 7 1/2, Low notes, 481-2491 Kresch, CF6

15 acres with frontage on NASA highway one. Excellent for shopping center, apartments Gene Horton 334-2360.

6 Unit duplex, furnished, full occupancy. Excellent return or take shelter. Rental property tenant, commercially Seabrook. Gene Horton 334-2360

Two adjacent 50' x 150' Gulf front lots, Tidelands subdivision, Boliver Peninsula. 48 miles from JSC. \$4500 firm. Cherry 4901

**BOATS**

Gulf Coast 20 sailboat Seagull, trailer, head, etc. \$2350. Jack ext. 3887 or 488-3196 after 4:30 Jack Breiby

**WANTED**

Need carpool from Winkler-Monroe Gulf Frwy, 7:30 a.m./4p.m. Bill 2786

Riders to join car pool from area of Westheimer/610 Loop, 8 a.m./4:40 p.m. shift. Contact Cathy Lamb, x 2551

Girls 16" or 20" single-speed bicycle in good condition. No high rise. With or without training wheels. R. Farley 471-2629 code FE3

Wanted to buy glass top wrought iron table with 4 chairs - Billie 333-3425 after 5. ski clothing - size 12 ski pants, gloves, after ski boots (size 6-7) Billie, 333-3425 after 5 WA/B. Gibson, x 6233

Lady to help clean two bedroom town house one day per week, 333-4275. Francis F. Davis BC 42.

Want to form car pool from Bellaire Area. Hours from 8:30 to 5 p.m. Phone 483-5526 or 664-0638 Gary George Ewill

**LOST AND FOUND**

Found: Men's bifocal glasses, gray frames. Found in parking lot of Building 31. See Coennen, Room 234, Building 31.

**TENNIS LESSONS**

The Tennis Club is planning to offer lessons if enough interest is indicated.

Contact Gid Weber 554-6760.

Fall Softball Leagues Start on September 3.

# EAA Attractions

**TICKET CORNER - BLDG. 11 EXCHANGE STORE**

—Astros - Any Gam - \$2.50 and \$3.50 for \$3.50 and \$4.50 seats.

—Astroworld - All Season - Adults \$4.25, Children \$3.25.

—Houston E-Z Riders Tennis All Matches - \$3.00 coupon for \$5.00 seats.

—Six Flags - All Season - Adults \$5.60 and Children \$4.70.

—Seven Seas -- All Season - Adults \$3.00 and Children \$2.20.

—Lion Country Safari - Year Around - Adults \$3.35 and Children \$2.45.

—Disney Magic Kingdom Club - Free

—Houston Texas Football - Free Coupons Good for \$1.50 discount on \$8.00 ticket.

—ABC Interstate Theatres - \$1.00 coupon good for admission to any ABC Theatre.

—Sea Aram - Good until October 31 - Adults \$3.00 and Children \$2.00.

**MIXED VOLLEY BALL LEAGUE**

Tuesday Night: Set-Ups 14-4; Boas 11-7; Upshots 11-7; Digits 9-9; LEC Systems 6-12; Victors 3-15

Thursday Night: Guys and Gals 17-1; Rats 14-4; Coors 12-6; Bobbles 10-8; Wizzards 8-10; Exchange 5-13; Keg Tappers 4-14.

**SOFTBALL**

The first METS JSC Softball Tournament held on August 17 was won by Maribelle's NADS, the same team that won the JSC Men's Summer Tournament. Competing teams were from nasa', Ellington, Friendswood, Houston and Pasadena. The nads utilized a stingy defence combined with timely hitting by Robert Preston, Skip Robbins, and Ron Huffman to sweep through the double elimination tournament undefeated. Skip Robbins was selected the most valuable player in the tournament for his outstanding defensive play and his hitting. Robert Preston's overall performance including two homeruns contributed greatly to the NAD's success.

# This Year's Picnic To Be Bigger, Better

If you haven't been reading your bulletin boards or leave and earnings stuffers or haven't talked to your EAA rep--then you probably don't know that the annual picnic, JSC Country Fair, is just around the corner. September 14 to be specific.

The picnic will have a new face this year with a number of "firsts:" 1) It will be on-site at the Gilruth Rec Center; There will be two menus-- one for adults and one for children; 3) the rock band will play in an air conditioned building; 4) There will be an employees arts and crafts display; and 5) There will be continuous entertainment patterned after the Old Time Medicine Shows.

The food this year will be catered by Lenox BarBQ. The child's menu will have three hot dogs (available one at a time if you wish,) potato chips, and relishes. Adult beverages will include beer and there will be an unlimited supply of soft drinks, sno-cones, cotton candy and popcorn.

Among the entertainers will be Buffalo Bullfrog and the Bluegrass Brigade playing traditional bluegrass and the "new grass sound:" Tommy Keeton plus 3 playing country and western tunes; six old time fiddlers playing hoedown favorites; and playing in the gym for dancing and listening, the "Wooden Leg" rock group.

For the competitive of spirit there will be tricycle races, egg tosses, bubble gum contests, a cowchip throwing contest (modified) and a log pull.

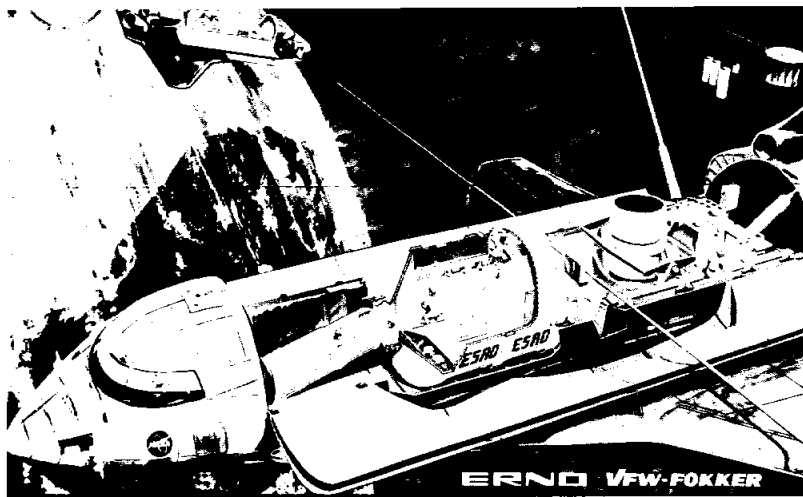
For the sport spectators there will be a professional tennis exhibition and an organized softball tournament.

For the kids there's the games midway, carnival rides, cartoons in the auditorium, and wandering clown who makes comic figures with balloons.

Tickets, available in the Building 3 Exchange Store and from your EAA rep are \$2.50 for adults and \$1.00 for children. Ticket sales will be limited in order to prevent overcrowding our facilities -- so buy early.

The picnic will start at 11:00 a.m. and end at 5:00 p.m. with food service from 12 to 3:00 p.m. Parking will be on the paved parking lots around buildings 9, 10, 30, 45, 440, etc. with shuttle busses operating to the picnic area. Bring your own lawn chairs, tables, blankets or what have you as picnic tables are in short supply.

Oh, bring your Kodaks as there will also be silly bodies, you provide the head, EAA does the rest to change your personality completely.



ARTISTS CONCEPT of a manned Spacelab module and an unmanned pallet operating in the cargo bay of a Space Shuttle orbiter. The Spacelab Program is a cooperative venture between NASA and the nine-country European Space Research Organization (ESRO). Cost of the ESRO Spacelab program is estimated at \$400 million. VFW Fokker, a consortium of European airframe and electronics manufacturers will construct the Spacelab. NASA will transport the laboratory into earth orbit using the Shuttle Orbiter vehicle. Nominal mission duration for the Spacelab is being planned for seven days. The Spacelab module will accommodate laboratory and observatory equipment and will support telescopes and other instruments for earth and solar system observation.

# Area Chorus Season Starts

The Bay Area Chorus will meet for its first rehearsal after the summer break on Sunday, September 8. The rehearsal will be conducted at the Harris County Park Community Building located on Clear Lake off Nasa Rd 1 opposite the entrance to Clear Lake Forest.

Old Members are requested to meet at 7:00 p.m. Anyone who has not met with the Chorus previously, but is interested in good music and excellent training from one of the area's best directors, Mr. Milton Pullen, is requested to meet with the Chorus at 7:45 p.m.

For further information, please contact Jim Fitch at 333-4467, Judith Savely at 488-5590 or Norbert Vaughn at 482-6343 after 6:00 p.m.



THIS IS THE TYPE OF backdrop which the EAA picnic committee has constructed for photographic "gag" shots at the picnic in September. Bring your friends and camera!

## 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



# ASTP

## Mixing Work & Play in Moscow

This suite of photographs illustrates aspects of the two American crew visits to the Soviet Union which occurred in November last year and June-July of this year. Clockwise, the photos are: 1 (upper left) Astronaut Thomas P. Stafford, light coat, and Eugene A. Cernan, also light coat, on a tour of the Soviet capital—Moscow. The structure in the background is the Cathedral of the Intecession (St. Basil's) Museum. The group includes Cosmonauts and Astronauts. Photo was taken in November, 1973. 2 (upper right) Cosmonaut

and commander of the ASTP Soviet crew Aleksey A. Leonov and Thomas Stafford, commander of the ASTP American crew, are shown inside the Soyuz mockup in Star City, USSR, during recent training activities in July of this year. 3 (center right) In uniform, from left-to-right, are Anatoliy V. Filipchenko, member of the first USSR back-up crew, Donald K. Slayton, prime crewman, Tom Stafford, US commander, and Nikolay N. Rukavishnikov, also a member of the first Soviet back-up crew. 4 (low-

er right) Donald Slayton is shown peacefully fishing as Anatoliy Filipchenko watches. 5 (lower left) A group of Astronauts and their Cosmonaut hosts look over one of the rooms in the Grand Kremlin Palace during a November tour of historic buildings in the heart of Moscow. Those identifiable in the photo are Tom Stafford (center), Gene Cernan (partially obscured behind Stafford). 6 (center left) Astronaut Stafford presents a trophy to the winner of a harness race while in the USSR this past November.

