

Space News Roundup

Vol. 23 No. 12

June 29, 1984

National Aeronautics and Space Administration

ShopTalk

Inside: The manifest

The *Roundup's* regular features are somewhat abbreviated this issue to make room for a special printing of the latest Space Shuttle manifest, which came out May 30. Although launch dates and particular missions are certainly subject to change, we think the manifest which begins on Page 2 will give you an idea of what NASA has on tap between now and the first part of 1987. The Swap Shop and other features will return to their usual length next issue.

Larry Griffin leaves JSC

Air Force Col. Richard L. "Larry" Griffin has left the Johnson Space Center to join the USAF Space Command as head of the 2nd Wing Planning Group Directorate. Griffin has served at JSC since August 1982 as Assistant to the Director for Department of Defense Affairs. He will be located at Peterson AFB, Colorado, until completion of the Consolidated Space Operations Center (CSOC) administration and engineering building at Falcon Air Force Station in late 1985. The CSOC complex, now under construction, will serve as the center for Air Force Space Shuttle operations and will be the eventual home for the 2nd Space Wing now being created.

Pioneer test is a "go"

Recent maneuvers of the Pioneer Venus Orbiter to observe a passing comet indicate the spacecraft can be used to study Halley's Comet during its closest approach to the Sun in 1986. This brings to four the number of sophisticated observatories spread out across the Solar System that the U.S. will have in place when the famous comet returns. Both planet Venus and Comet Halley will be on the far side of the Sun during the closest, or perihelion, approach. This puts Pioneer Venus in the best position to see that phase of the comet's passage. Other observatories are the International Cometary Explorer, the recently repaired Solar Maximum observatory, and the Astro payload to fly aboard the Shuttle in March, 1986.

Galactic Interaction common

An unexpectedly high percentage of galaxies seen by the Infrared Astronomical Satellite (IRAS) are merging, colliding or otherwise interacting with one another, IRAS scientists have reported. IRAS observed 20,000 galaxies last year, of which as many as 25 percent may be part of interacting or merging groups of galaxies, the scientists said. Previously, less than five percent of all visually identified galaxies were seen to be interactive. The scientists also reported that IRAS has identified more than 40 nearby stars which may be orbited by solid material, suggesting that suns with solar systems forming or already formed may be common in the Milky Way.

SETI to step up

The Search for Extraterrestrial Intelligence (SETI) program will have a major increase in horsepower in the next two years when NASA brings on line a system capable of scanning millions of channels at once. Harvard Physicist Paul Horowitz, who is conducting one of the most extensive searches using an 85-foot radio telescope, said he can only scan 128,000 different channels, a small fraction of the many millions of possible channels where one might find signals from the cosmos. Horowitz said there have been about 45 different searches for extraterrestrial signals over the last 20 or 30 years, but so far no convincing evidence has turned up.



A No Go at T-4 seconds

Disappointment and concern register on the faces of CAPCOMs John Blaha and Dick Richards as they watch their console monitors during the attempted 12th Space Shuttle launch. During the second 41-D launch attempt June 26, the launch computers initiated a main engine shutdown with four seconds to go when the main fuel valve for Engine No. 3 failed to properly respond to commands. At press time, NASA management was awaiting a damage assessment before setting a new launch date to STS 41-D.

Lunar soil eyed for concrete

NASA is sending 40 grams of lunar soil to Chicago for a study to see if the samples can be made into concrete and ultimately used to build a variety of space structures.

The study, to be performed at Construction Technology Laboratories in Skokie, Illinois, will be the first to use lunar soil with an eye toward engineering efforts in space, according to Douglas P. Blanchard, Lunar Sample Curator here.

Lunar material is special in this regard, Blanchard said, because it is already in space, and as a construction material would not have to be lofted into orbit out of Earth's gravity well. "Lunar soil is on a body with one sixth the gravity of Earth," Blanchard said. "If it can be used to make concrete, it would be easier to take this raw material from the surface of the Moon than it would be to bring it up from Earth."

T.D. Lin, a research engineer with the Portland Cement Association at the Construction Technology Laboratories, will conduct the study. Lin, who hopes to have the results of his study for presentation to the National Academy of Lunar Sciences in October, said concrete would offer many advantages in space construction, including insulation, durability, heat resistance and mass.

NASA's Lunar and Planetary Sample Team, a science advisory group, made the decision to grant Lin's request for lunar soil to study. "I think there was a feeling on the committee that this was a potential future use for lunar resources. They cautiously thought they ought to start enabling this kind of study," Blanchard said.

About 80 percent of the collection is kept at JSC in Bldg. 31A. Another 14 percent is housed at Brooks Air Force Base in San Antonio. Two percent has been destroyed in analysis, two percent is on public display, and the remaining two percent is in the hands of investigators all over the world.

Blanchard said around 200 laboratories in the U.S. and other countries have conducted tests on lunar samples since the early 1970s.—Lynn Parsons

Varied flight assignments made

A varied list of scientists was announced by NASA in early June for participation in upcoming Shuttle missions as payload specialists.

The list includes an oceanographer to fly on STS 41-G and four career scientists to fly on the next two Spacelab missions.

Paul D. Scully-Power, a civilian oceanographer with the U.S. Navy, has been added to the 41-G crew on a mission scheduled to fly in October. He joins Robert L. Crippen, Commander; Jon A. McBride, Pilot; Mission Specialists Dr. Kathryn D. Sullivan, Dr. Sally K. Ride and David D. Leestma; and Canadian Payload Specialist Dr. Marc D. Garneau.

At seven people, the 41-G crew will be the largest crew in space flight history.

Also named for future missions were four career scientists. Dr. Lodewijk van den Berg of EG&G Corporation of Goleta, California,

and Dr. Taylor G. Wang of the Jet Propulsion Laboratory, were named as payload specialists for Spacelab 3, which is now scheduled for a January 1985 launch. NASA also announced the selection of Dr. Mary Helen Johnston of the Marshall Space Flight Center and Dr. Eugene H. Trinh of JPL as alternate payload specialists for Spacelab 3.

Dr. Loren W. Acton of the Lockheed Palo Alto Research Laboratory in Palo Alto, California, and Dr. John-David Bartoe of the Naval Research Laboratory in Washington, D.C., were named as payload specialists for Spacelab 2, which is scheduled for an April 1985 launch. NASA also named Dr. Dianne K. Prinz of the Naval Research Laboratory and Dr. George W. Simon of the Air Force Geophysics Laboratory as alternate payload specialists for the flight.

Scully-Power, of the Navy's

Underwater Systems Center, will make oceanographic observations during the 41-G flight. The 57-degree inclination orbit of the flight will provide a unique opportunity for observation of three-fourths of the Earth's oceans from space. The data collected is expected to add extensively to NASA and Navy oceanographic research programs.

Scully-Power, a qualified Navy diver, has participated in 24 scientific cruises, 13 for which he was Chief Scientist. Born in Australia, he is a naturalized U.S. citizen.

Dr. van den Berg was born in Sluis, The Netherlands, and is now a chemical engineer. Dr. Wang was born in Shanghai, People's Republic of China, and is now a physicist at JPL. Spacelab 3, the first operational mission of the research facility, will emphasize materials processing in space. Other Spacelab 3 crew members are Commander Robert

Overmyer, Pilot Fred Gregory, and Mission Specialists Dr. Don Lind, Dr. Norman Thagard and Dr. William E. Thornton.

Dr. Acton, a native of Lewiston, Montana, is a research senior staff scientist with the Space Sciences Laboratory. Dr. Bartoe, a native of Abington, Pennsylvania, is an astrophysicist with the Naval Research Lab. The flight crew for Spacelab 2 consists of Commander Charles Fullerton, Pilot David Griggs, and Mission Specialists Dr. Story Musgrave, Dr. Anthony England and Dr. Karl Henize.

Spacelab 2, which follows Spacelab 3 due to equipment development delays, will mark the first time that Spacelab hardware will be flown without a habitable module. Hardware for the flight will include three pallets, an "igloo" containing Spacelab subsystems, and a special support fixture for a large cosmic ray experiment.

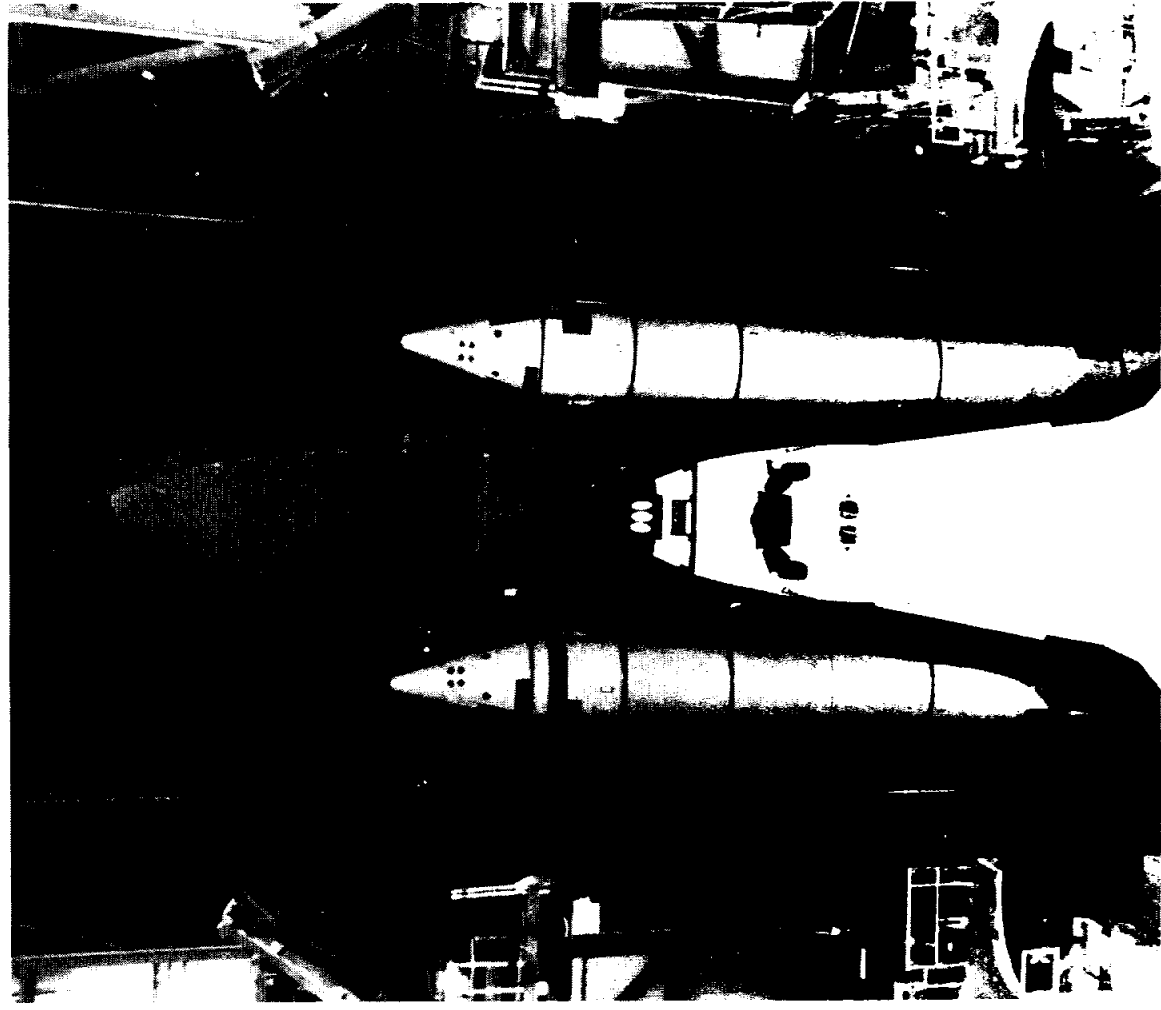
The Manifest

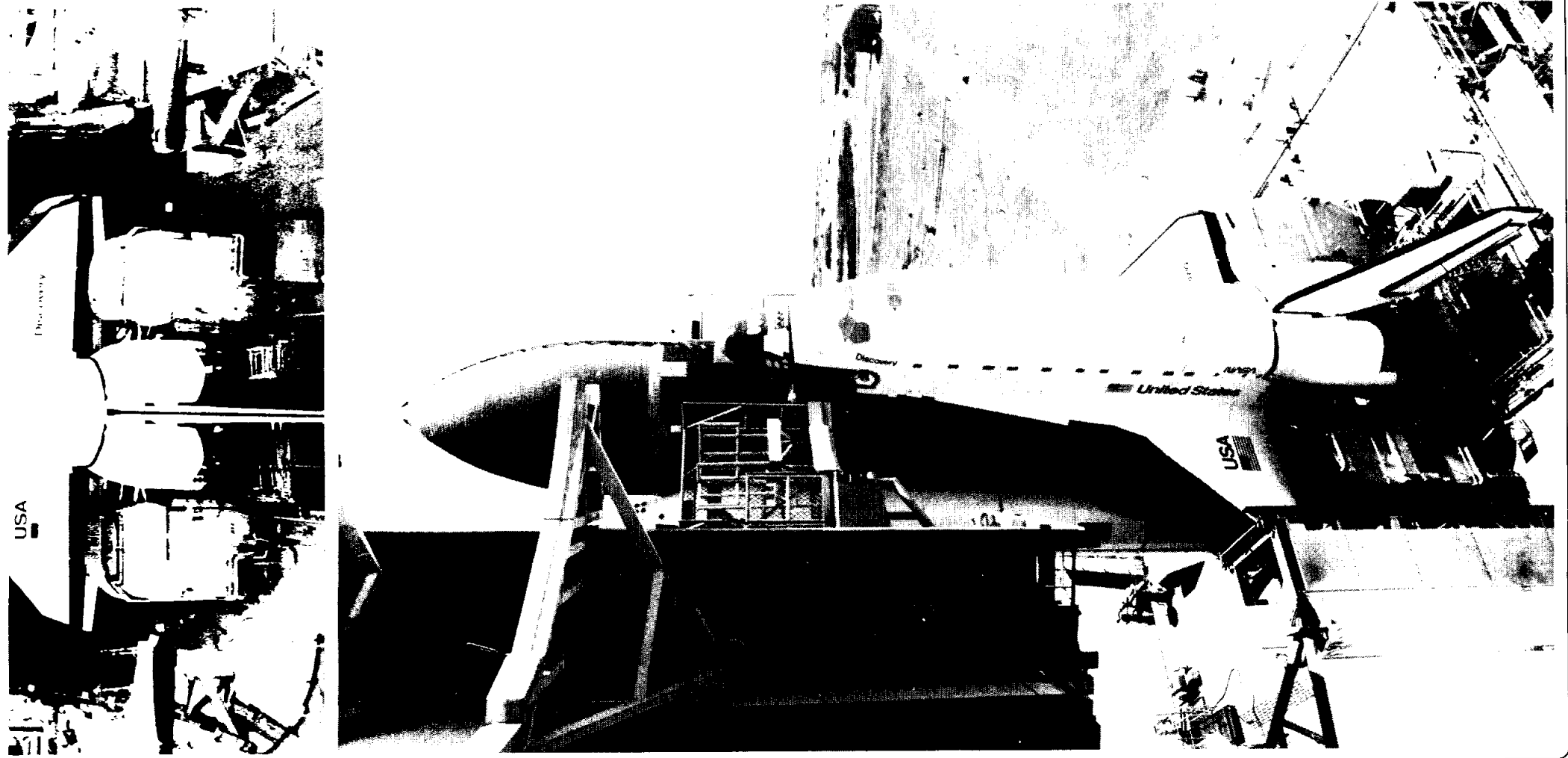
Shuttle operations through 1986

| Mission | Date | Orbiter | Incl./ Alt. | Crew/ Duration | Payloads | Carrier | Other Payloads | Load Factor** | |
|-------------|--------------------|------------|---|---------------------|--|-------------------------|--|---------------|-------|
| 41-D | Discovery | Discovery | 28.5° 173 n.m. | Six Seven days | <ul style="list-style-type: none"> LFC-1 (Large Format Camera) OAST-1 (Office of Aeronautics and Space Technology) SYNCOM IV-1 (Hughes Communications Services Co.) | MPESS MPESS | Continuous Flow Electrophoresis System/Block III (CFES III), IMAX, Radiation Monitoring Equipment (RME), CINEMA-360, Shuttle Student Involvement Project (SSIP), CLOUDS, Get Away Special (GAS), Monodisperse Latex Reactor (MLR). | .80L | |
| 41-F | August 29, 1984 | Discovery | 28.5° 160 n.m. | Five Seven days | <ul style="list-style-type: none"> SPARTAN-1 (Shuttle Pointed Autonomous Research Tool for Astronomy) SBS-D (Satellite Business Systems) TELSTAR 3-C (AT&T, first of two) SYNCOM IV-2 (Hughes) | MPESS PAM-D PAM-D | Automated Directional Solidification Furnace (ADSF), Isoelectric Focusing Experiment (IEF), RME, GAS (2), SSIP (1), MLR, AFE (American Flight Echocardiograph). | .95W | |
| 41-G | October 1, 1984 | Challenger | 57.0° 190 n.m. | Seven Eight days | <ul style="list-style-type: none"> OSTA-3 (Office of Space and Terrestrial Applications) ERBS (Earth Radiation Budget Satellite) | IP+ MPESS | IMAX, RME, GAS (6), TLD (Thermo Luminescent Dosimeter), APE (Auroral Photography Experiment), CANEX (Canadian Payload Specialist Experiments). | .88L | |
| 51-A | November 2, 1984 | Discovery | 28.5° 160 n.m. | Six Six days | <ul style="list-style-type: none"> MSL-1 (Materials Science Laboratory) TELESAT-H (TELESAT Canada) GAS Bridge (23 GAS canisters) Payload Opportunity | MPESS PAM-D | CFES III, RME, ARC (Aggregation of Red Blood Cells experiment), SSIP (1). | .65W | |
| 51-C | December 9, 1984 | Challenger | Department of Defense Flight | | | | | | 1.00D |
| 51-B | January 17, 1985 | Discovery | 57.0° 190 n.m. | Seven Seven days | <ul style="list-style-type: none"> Spacelab-3 (Maintaining readiness, however, for December 1984 launch if necessary) | LM+ MPESS | GAS experiment | 1.00L | |
| 51-E | February 12, 1985 | Challenger | 28.5° 150 n.m. | Six Five days | <ul style="list-style-type: none"> TELESAT-H (TELESAT Canada) TDRS-B (Second Tracking and Data Relay Satellite) | PAM-D IUS/2 | IOCM (Interim Operational Contamination Monitor), OASIS (Orbiter Experiments Autonomous Supporting Instrumentation System), MLR, SSIP (1), FEE (French Echocardiograph Experiment). | 1.00W | |
| 51-D | March 18, 1985 | Discovery | 28.5° 250 n.m. | Six Six days | <ul style="list-style-type: none"> Long Duration Exposure Facility Retrieval SYNCOM IV-3 (Hughes) | | GAS (4), ADSF, SSIP (1), ACES (Acoustic Containerless Experiment), AFE. | .88L | |
| 51-F | April 17, 1985 | Challenger | 50.0° 202 n.m. | Seven Seven days | <ul style="list-style-type: none"> Spacelab-2 | IG+3P | | .95L | |
| 51-G | May 30, 1985 | Columbia | 28.5° 160 n.m. | Five Seven days | <ul style="list-style-type: none"> TELSTAR 3-D (AT&T) MORELOS-A (Secretari de Comunicaciones y Transportes of Mexico; formerly MEXSAT, first of two) ARABSAT-A (Arab Satellite Communications Organization for Saudi Arabia) EASE/ACCESS (Evaluation of simple assembly during EVAs) | PAM-D PAM-D | GAS (8), MLR, SSIP (1), AFE. | .89W | |
| 51-L | July 2, 1985 | Challenger | 28.5° 160 n.m. | Six Seven days | <ul style="list-style-type: none"> EOS-1 (Electrophoresis Operations in Space, McDonnell Douglas and Johnson & Johnson) TDRS-C (Third Tracking and Data Relay Satellite, on-orbit spare) | IUS/2 | ARC, IOCM, OASIS | .93W | |
| 51-I | August 8, 1985 | Columbia | 28.5° 160 n.m. | Five Seven days | <ul style="list-style-type: none"> MSL-2 (Second Materials Science Lab flight) SYNCOM IV-4 (Hughes) AUSSAT-1 (Australian Overseas Telecommunications Commission, first of four) ASC-1 (American Satellite Company, first of three) | MPESS PAM-D | | 1.00W | |
| 51-J | September 20, 1985 | Atlantis | Department of Defense Flight; First Atlantis Flight | | | | | | 1.00D |
| 51-A | October 14, 1985 | Columbia | 57.0° | Eight | <ul style="list-style-type: none"> Spacelab D-1 | LM | | 1.00L | |

1984

1985





1986

| Discovery | | Challenger | | Columbia | | Atlantis | | Columbia | | Challenger | | Atlantis | | Columbia | | Challenger | | Discovery | | Atlantis | | Columbia | | Challenger | | |
|-------------|--------------------|------------|-------|----------|------------|---|-----------------------------------|----------|------------------------------|-------------------------|--|----------|--|----------|--|------------|--|-----------|--|----------|--|----------|--|------------|--|--|
| 62-A | October 15, 1985 | Five | 28.5° | 160 n.m. | Seven days | • MORELOS-B • SATCOM KU-1 (Radio Corporation of America) | PAM-D PAM-D2 | 1.00D | Department of Defense Flight | First Vandenberg Launch | | | | | | | | | | | | | | | | |
| 61-B | November 6, 1985 | Five | 28.5° | 160 n.m. | Seven days | • AUSSAT-2 (Australia) • MSL-3 (Third Materials Science Lab flight) | PAM-D MPES | 82W | | | | | | | | | | | | | | | | | | |
| 51-H | November 27, 1985 | Seven | 57.0° | 160 n.m. | Seven days | • EOM-1 (First Earth Observation Mission, basically a reflight of Spacelab-1 experiments) | SM+1P | 1.00L | | | | | | | | | | | | | | | | | | |
| 61-C | December 23, 1985 | Five | 28.5° | 160 n.m. | Seven days | • SPARTAN-2 • WESTAR-7 (Western Union) • SATCOM KU-2 (RCA) • GSTAR-C (General Telephone and Electronics Satellite Corp. — GTE) | MPES PAM-D PAM-D2 PAM-D2 | 1.00W | | | | | | | | | | | | | | | | | | |
| 61-D | January 22, 1986 | Six | 28.5° | 160 n.m. | Seven days | • Spacelab 4 (Processing under review) • SKYNET-4A (United Kingdom) | LM PAM-D2 | 1.00W | | | | | | | | | | | | | | | | | | |
| 61-E | March 6, 1986 | Six | 28.5° | 160 n.m. | Seven days | • INTELSAT VI-1 (First of 12 advanced satellites for INTELSAT Communications Network) • ASTRO-1 (An ultraviolet astronomy package) | 1G+2P | 1.00W | | | | | | | | | | | | | | | | | | |
| 61-F | May 15, 1986 | Four | 28.5° | 130 n.m. | Two days | • ISPM (International Solar Polar Mission) | Centaur (First use) | .95W | | | | | | | | | | | | | | | | | | |
| 61-G | May 21, 1986 | Four | 28.5° | 130 n.m. | Two days | • Galileo (Interplanetary Jupiter exploration probe) | Centaur | .92W | | | | | | | | | | | | | | | | | | |
| 61-H | June 27, 1986 | Five | 28.5° | 160 n.m. | Seven days | • EOS-2 (Second Electrophoresis Operations in Space mission) • INSAT 1-C (Indian National Satellite) • SKYNET-4B (United Kingdom) • STC DBS-A (Satellite Television Corp./ Direct Broadcasting Satellite; subscription television) | PAM-D PAM-D2 PAM-D | .96W | | | | | | | | | | | | | | | | | | |
| 61-I | July 16, 1986 | Five | 28.5° | 160 n.m. | Seven days | • INTELSAT VI-2 (Second INTELSAT advanced satellite) • MSL-4 (Fourth Materials Science Lab flight) • SUNLAB-1 (Spacelab equipment dedicated to studies of the Sun) | MPES 1G+1P | 1.00W | | | | | | | | | | | | | | | | | | |
| 61-J | August 13, 1986 | Four | 28.5° | 320 n.m. | Three days | • Space Telescope (Maintaining readiness for June 1986 launch) | | 1.00D | | | | | | | | | | | | | | | | | | |
| 61-K | August 21, 1986 | | | | | | Department of Defense Flight | 1.00D | | | | | | | | | | | | | | | | | | |
| 61-L | September 12, 1986 | | | | | | • Payload Opportunity | .00 | | | | | | | | | | | | | | | | | | |
| 62-B | September 29, 1986 | | | | | | Department of Defense Flight | 1.00D | | | | | | | | | | | | | | | | | | |
| 71-A | October 1, 1986 | Four | 28.5° | 160 n.m. | Seven days | • MSL-5 (Fifth Materials Science Lab flight) • ASC-2 (American Satellite Corp.) • STC DBS-B (Satellite Television Corp.) • DOD PAM-1 (Department of Defense) | MPES PAM-D PAM-D PAM-D2 | .79W | | | | | | | | | | | | | | | | | | |
| 71B | October 23, 1986 | Four | 28.5° | 160 n.m. | Seven days | • SATCOM KU-3 (RCA) • CRRES (Combined Release and Radiation Effects Satellite; radiation, solar terrestrial physics) • Payload Opportunity | PAM-D2 | .55W | | | | | | | | | | | | | | | | | | |
| 71-C | November 6, 1986 | | | | | | Department of Defense Flight | 1.00D | | | | | | | | | | | | | | | | | | |
| 71D | November 26, 1986 | Six | 28.5° | 160 n.m. | Seven days | • ASTRO-2 (Ultraviolet astronomy) • DOD PAM-2 (Department of Defense) • USAT-1 (United States Satellite Systems, Inc.) | 1G+2P PAM-D2 PAM-D2 | .84W | | | | | | | | | | | | | | | | | | |
| 71E | December 17, 1986 | Four | 28.5° | 160 n.m. | Seven days | • EOM-2 (Second Earth Observations Mission) • DOD PAM-3 (Department of Defense) • GALAXY KU-2 (Hughes Aircraft Corp.) | 1G+1P PAM-D2 | .98W | | | | | | | | | | | | | | | | | | |

Roundup Swap Shop

Ads must be under 20 words total per person, double spaced, and typed or printed. Deadline for submitting or cancelling ads is 5 p.m. the first Wednesday after publication. Send ads to AP 3 Roundup, or deliver them to the Newsroom, Building 2 annex. No phone-in ads will be taken. Swap Shop is open to JSC federal and on-site contractor employees for non-commercial personal ads.

Property and Rentals

For Lease: Kirkmont 3-2-2, fenced yard on cul-de-sac, PISD, central H/A, built-ins, \$520/mo. Call Gene, 482-3969.

For Sale: Executive home on golf course, 4-3-2, approx. 2500 sq. ft., open concept, private master suite, lots of glass, \$158,500. Call Quinn at x4326 or 481-0289.

For Lease: Piper's Meadow 4-2-2, approx. 1400 sq. ft., \$535/mo. plus deposit. Call 486-7572 after 5 p.m.

For Sale: Investors only, lease house, Heritage Park, 3-2-2, att. garage, fenced yard, newly painted interior, \$50,000, with \$10,000 down and 1st mortgage \$27,300 at 8 1/2% and 2nd mortgage \$21,200 at 13%. Call Quinn at x4326 or 481-0289.

For Lease: Lake front condo, 2-1, 5 minutes from JSC, private tennis courts and marina, 24 hour security, \$365/mo. Call x2979 or 480-5583 or 482-7156.

For Lease or Sale: Baywind I, 2-2 condo, FPL, new carpet, W/D conn., \$475/mo. or \$45,000. Call Bob at x2141.

For Sale: Sagemont 4-2-2, spacious, new roof, FPL, large den, \$75,900 at 11 1/2%. Call 941-8218 or 339-1951.

For Sale: Arlington Heights, 4-2-2, formals, paneled den, trees, large fenced yard, \$86,000. Call 944-4997.

For Rent: Galveston Gulf Front Condo, treat yourself to a relaxing vacation, low rates. Call Nussmen at 488-7762.

For Sale: Galveston condo, 61st and Seawall, sleeps six, storm windows, two pools. Low equity and assume. Call Peggy at x5341 or 338-2118 after 5 p.m.

Lease/option to buy: Forest Bend, 4-2-2, FPL, fenced yard, game room, \$550/mo. rent to apply to purchase. Call M. Smith at x6247 or 486-0462.

For lease/option to buy: New Heritage Park, 3-2-2, appliances, drapes, walk to school, \$550/mo., apply rent to purchase. Call M. Smith at x6247 or 486-0462.

For Lease: Seabrook 1 BR condo, FPL, W/D, pool, tennis, \$350/mo. Call G. Harbaugh at x3606 or 480-3613.

For Rent: Jamaica Beach near marina, 4 BR, 1 1/2 bath, furnished, sleeps 8-10. Call D. Smith at x2001 or 337-3970.

For Sale: Deer Park 2-1 1/2 study, near schools, \$63,000, equity \$18,500, \$530/mo. Call 476-5287 after 6 p.m.

For Sale: Middlebrook II, 4-2-2, formal living and dining, FPL, fenced yard, \$87,900. Call Ron at x4039 or 488-7387 after 5 p.m.

For Sale/Lease: Webster 1 BR condo with W/D, and fan, \$325/mo. plus deposit or assume 11% fixed loan plus equity. Call Richard at x4770 or 487-7113.

For Sale: 1 BR condo, new drapes and carpet, \$32,900. Call 538-1160 evenings.

For Sale: Custom home in Dickinson, both formals, 4-2-2, landscaped, utility, \$105,000. Call 337-5738.

For Sale/Lease: 2-2 1/2-1 executive townhome, 2 miles from JSC, no pets, \$575/mo. or \$72,000. Call 333-2636 after 5 p.m.

For Rent: Condo, 1-1 with garage, mini-blinds, W/D, pool, security. Call Kimbra at 488-2082.

For Lease: Middlebrook, 3-2-2, spacious, FPL, no pets, \$650/mo. plus deposit. Call Gary at 474-3839.

For Sale: House in League City, 3-1 1/2-2, central H/A, fans, fenced yard, 12% fixed loan, \$640/mo., \$5,000 equity. Call Keith at 483-3643 or 332-8251.

For Lease: Baywind II, 1 BR condo, FPL, W/D conn. Call Jim Wiltz at x5437 or 944-0451 after 5 p.m.

For Lease: Baywind I, 1 BR condo, pool, exercise room, \$295/mo. Call Marge at 538-4766.

For Lease: Baywind II, 1 BR furnished condo, \$325/mo. plus first and last month's rent. Call 333-3070.

For Rent: Southbridge near Alameda Mall, 3-2-2 split-level, FPL, fans, mini-blinds, fenced yard, \$575 plus deposit. Call 991-1584.

For Sale: College Station, 3 BR house, fenced yard, two blocks from TAMU campus. \$49,500. Call 334-1278.

For Sale: 101 acre farm, house furnishings, utilities, 3 trail bikes, bass pond, fruit and pecan trees, \$975/acre, 1/2 minerals. Call Don at x4606 or 488-8105.

For Lease: Piper's Meadow 3-2-2 FPL, fans, fenced yard, \$595/mo. Call 480-0279 or 333-4302 after 5 p.m.

For Sale: 2 lots, Camelot Forest, Sargent Tx, on New Caney Creek, camping, boating, \$5,000 for both, Call Jeanie at 433-3750 after 6 p.m.

For Lease: Egret Bay 1-1-2 FPL, W/D. Call x6451 or 482-7061.

For Sale or Lease: Country Side Estates, League City 2-2-2, FPL, non-escalating assumable 9.5% asking \$69,000. Call 488-8682.

For Lease: Baywind I, 2-2-2 condo, five minutes from JSC, \$400/mo. Call Mike at 483-5331 or 538-6343 after 6 p.m.

For Lease: 10 acres Alvin area, fenced yard, cattle, horses. Call Damewood at 482-5572.

For Sale: Condo, 2-2, W/D, FPL, five minutes from JSC, equity and assume 9 1/2% loan. Call Larry at 996-0158 or 973-6904.

For Lease: Egret Bay condo, 2-2 w/under bldg. parking, W/D, FPL, \$500/mo. plus \$250 deposit. Call Jim at x3486 or 333-2877.

Cars, Trucks and Bikes

1981 Dodge Colt 2 door, no air, good condition, \$2500. Call 480-7200.

1977 Cutlass Supreme Brougham, full power, AM/FM, new paint, \$1,800 negotiable. Call Thompson at 474-4433 or 480-0555 after 5:30 p.m.

1980 Yamaha SR250 outstanding condition, helmet and cover, \$650. Call Mike Fox at x5027 or 488-6246.

1950 Chevy, 4 DR, 97,000 miles, 3 previous owners, refurbished. Call Smith at x4571 or 471-2419 after 5 p.m.

For Sale: 350 cc and 70 cc Honda motorcycles, \$200. Call R.N. Prince at 334-5652.

1981 Phoenix 4 DR hatchback, V6 auto, AC, PS, PB, AM/FM, tape deck, 52,000 miles, must sell, \$3,800. Call Everett at x6224 or 488-6024.

1975 Chevy pickup with 8 ft. cabover camper shell, 77,000 miles, \$2,000. Call Randy at x4521 or 482-4083 after 5 p.m.

1972 Yamaha Enduro, \$50.00. Call Vic Booth at x5231 or 538-4260.

1984 Honda ATC-200 S, \$1,050. Call Bill at x4119.

1977 Chevy Caprice, \$1,000. Call Bill at x4119.

1973 International 3/4 T.P.U. low miles, 2 new tires-battery-tuneup, \$1,895 or best offer. Call Dusty at x5336 or 482-0040.

1981 Mercury Lynx station wagon, 4 speed, cruise control, \$3,950 negotiable. Call Virgil at x2156.

1983 Honda V-45 Sabre, perfect condition, low miles, 2 matching helmets, \$2,600. Call 480-6032 after 6 p.m.

1980 Chevy Chevette, low mileage, A/C, 4 DR, \$2,795. Call Richard at x5545 or 946-2523.

1967 Cougar, runs good, body needs work, best offer. Call Walter Jr. at 538-4766.

1975 VW Bug, excellent condition, new engine, new tires and paint. Call 488-8584.

1982 Honda CM450 Custom, Windsor Fairing, luggage rack, low mileage, \$1,900. Call J.D. 486-1619.

1982 Datsun 210 H, 5-speed, A/C, AM/FM/cassette, \$4,200. Call Roseanne at x2731 or 487-3076.

Two motorcycles for sale, 1979 Yamaha, 1980 Honda both are in excellent condition. Call Frank at 332-7383 or 483-5425.

1982 Harley Davidson golf cart, gas three-wheel and 1983 tilt trailer, \$1,700. Call (409) 945-4437 after 5 p.m.

1978 Chevrolet Malibu, 305 V8, excellent condition, \$2,000. Call Jeanie at 433-3750 after 6 p.m.

Hutch Pro BMX Dirt Bike, excellent condition, used six months, \$300. Call Ron x3526 or 944-6590.

1973 BMW 2002, AC, AM/FM/cassette, new rear-end assembly. Call 333-3871 from 10-12 p.m.

1975 Pontiac Catalina, tacky anti-rust body but best running car owner ever had. Best offer. Call Cliff at x4457 or 486-8810.

1977 Malibu Classic, 2 DR/V8/67,000 miles, \$2,100. Call 480-7200 after 5 p.m.

1968 VW Bug, automatic, blue, 120,000 miles, \$650. Call Fred at x3404.

1979 Chevy Luv, Mikado, fiberglass campertop, excellent condition, \$2,950. Call 482-1582.

RVs and Mobile Homes

1984 14 ft. x 76 ft. Sunrizon mobile home, 2 BR w/fans, 2 garden baths, location Safari mobile home community, League City, \$3,200 down assume payments. Call 554-4962.

1983 Beaver Classic-35 Island Queen motor home, like new, 8,000 miles, loaded 5,000 under list, \$93,000. Call 538-1816.

Trailer, 4 ft. x 6 ft. x 30 in., \$250. Call Jeanie 433-3750 after 6 p.m.



Boats and Planes

Scuba complete setup, two tanks with current Hydro/VIP, many extras, excellent condition, best offer over \$1,100. Call Bill at x5228.

Full IFR Piper Warrior PA-28-161 for rent, \$38/hr. wet. Also, Cessna 150-27/hr. wet. No dues or monthly fees. Based at Houston Gulf. Instructors available immediately. Call 946-1750 after 2 p.m.

Full IFR Cessna-172 for only \$26.85/hr. wet. Dual NAU. Comm, ADF, XPNDR, DME. Call Mark at x4436 or 554-2536.

Pearson 26, 1980, 5 sails including spinnaker, 10 HP elec. start O.B., Bimini, dinghy, many extras. Perfect shape, \$19,900. Call John Donachy at 486-9500 or 556-6312.

1969 Tylcraft sailboat, 24 ft. sloop, twinned keel plus 6 HP Johnson outboard, nice sails, slip at Walden, \$3,500. Call 643-7108.

Aircraft for rent, Cherokee Lance-6 place, club seating, \$75/hr. wet, 250 TT/25 RT and check ride. Cherokee 140-4 place, 120 knots, private pilot, \$30/hr. wet. Both A/C hangered in Friendswood. Will rent for less with commitment on hours. Call L. Damewood at 482-5572.

Audiovisual and Computers

Free 25 in. TV, 12 year-old- Heathkit 25 in. color TV, with complete manual, handyman's delight. Still works, good picture tube. Call John Donachy at 486-9500.

AR 15, still in the box, never used, \$450. Call Joan at x3057.

Model AR 40 Solid State Electronics. Antenna rotator system, E.C. \$75. Call x3833.

Two color television sets, Sears solid state 21 in. \$125, and Zenith 19 in. \$100. Call x5013 or 943-3038.

Panasonic 5 in. portable TV, United Audio Dual 1019 changer, TEAC 360 S cassette player/recorder, pioneer SX-727 receiver, 10 reels or reel to reel tape. Call 486-0785 after 6 p.m.

Household

Home deep freeze, 12 cubic ft., top load, \$75, also girl's rabbit coat, like new, \$40. Call Ed Armstrong at x5107 or 333-3279 after 5 p.m.

Washer \$100, dryer \$100. Call Glenn

at 943-1790 or 480-8800-ext. 74.

Wooden writing desk, antique library table, storage trunks, area rug. Call 333-9234.

Round pool table, one of a kind, \$40. Call 538-2082.

House full of antique gold drapes with traverse rods. Make offer. Call Frank at 332-7383 or 483-5425.

Sears 22 in. self-propelled mower, engine perfect, propulsion needs work, \$65. Call 488-3966.

Green couch and rocker recliner \$100, chrome and glass coffee table and end table \$100. Call Pam x4051 or 332-3904.

G.E. 16 ft. upright freezer, \$300. Call D. Long 538-1816.

Music

Spinet piano (Estey), excellent condition, almost new \$995. Call 998-7714 after 6 p.m.

Pets

White poodle, male, 5 months old, AKC, all shots, accessories, groomed, \$300. Call Sam at 481-5715 after 5 p.m.

Abandoned puppy, needs good home, 3-4 months, cute, good natured, female, now has all shots. Call B. Craig at x4031 or 420-2936 after 6 p.m.

Pomeranian puppies, AKC, champion lineage, male and female. Call Annita Weldon at 482-1461 after 5 p.m.

AKC, Boxer puppies, flashy fawn, champion sire, \$300. Call 482-6291.

New Zealand White Rabbits, one male, one female plus supplies, \$30. Call 332-8188.

Wanted

Responsible roommate needed to share 3 BR house in Countryside, M/F non-smoker preferred, \$240/mo. plus 1/3 utilities. Call 554-7706.

Housemate to share large house in Manvel/Pearland area. Must love dogs, non-smoker preferred. Call Sharon at x4941 or 489-1701 after 6 p.m.

Camper top for long bed pick-up, prefer molded fiberglass type. Call x3833 or 921-7212.

1977 Honda automobile shop manual. Call Kennedy at x2569 or 649-1236.

Responsible non-smoking adult to watch infant in my home. Call 280-0620.

Miscellaneous

Four brand new uniroyal steeler tires, size p235/75 R15, \$250. Call Rogers at x3576.

Golf clubs, matching set of Wilson Staff irons, 2-PW. Bought through country club proshop, \$100 or best offer. Smith x4571 or 471-2419 after 5 p.m.

Antique claw footed bathtub, \$75, new pro kennex Bovo Ace, mid-size, tennis racket 4 1/4 grip. Call 482-6291.

Baby bassinet \$19, walker \$9, deluxe play-yard \$35, like new, Smith-Corona electric typewriter, power correct, seldom used, \$119. Call Lee at x5156.

Exercycle, like new, paid \$75, will sell for \$45. Call Joan at x3057.

Rockwell Homecraft 10 in. table saw, \$325. Call James at 280-0539 after 5 p.m.

Vacation package, four days in Costa Rica, round trip airfare for family included. \$700-negotiable. Call Kevin at 541-2064 after 7 p.m.

Van Halen tickets, 2, for sale, floor first show, best offer. Call Carl at 488-4412.

Bedroom chandelier, hand painted, French leaf-scroll, design with five-lights. \$75. Call 488-1326 after 4:30 p.m.

Bicycle 26 in. girls Huffly Olympia, 10-speed, good condition, \$50. Call Tony at 483-3987.

Apollo 7-17 glasses, never used, spinoffs 76-83. Lunar Science autographed by Stuart Ross, *This New Ocean: Project Mercury*. Call 333-9234.

Maternity clothes, sizes 5-7. Good condition. Call 280-0620.

Schwinn Tandem bicycle \$55, ships hatch cover, \$25. Bumper drop step for P/U trailer hitch, \$25. Call 488-8682.

Want to buy electric trains. Call Don at x2449.

Gun cabinet-holds ten guns. Key and felt included. \$275. Lighted curio cabinet \$125. Call Tom at 480-2776.

35 mm camera, Minolta XG-1 with flash \$175. Call Jeanie at 433-3750 after 6 p.m.

Carpools

Carpool wanted from I-45 Greens road area to JSC, 8 a.m. to 4:30 p.m. Call Matrenia at x4031 or 580-2530 after 6 p.m.

Bulletin Board

Osborne group to meet

The Clear Lake Osborne and CP/M group will hold its next meeting beginning at 9 a.m. July 14 at the Gilruth Recreation Center. The group offers presentations, question and answer periods and educational exchanges. For more information on the meeting or the group, call Maynard Huntley at x6441 or write P.O. Box 57613, Webster, TX 77598.

Alley Preferred Passes available

The Alley Theatre Preferred Pass is again being offered for the 1984-85 season to NASA employees and contractors. Each preferred pass consists of six coupons which may be redeemed for the best available seats for any Alley production on either stage. The program is designed for maximum flexibility and convenience. The price is \$49. Brochure forms which explain the program are available at the Bldg. 11 Exchange Store or from your EAA representative. Orders mailed by July 12 will receive an extra ticket. For more information, call Doris Wood at x6545.

Cookin' in the Cafeteria

Week of July 2-6, 1984

Monday: Beef & Barley Soup; Beef Chop Suey, Breaded Veal Cutlet w/Cream Gravy, Grilled Ham Steak, Weiners w/Baked Beans (Special); Buttered Rice, Brussels Sprouts, Whipped Potatoes. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Celery Soup; Fried Shrimp, Pork Chop w/Applesauce, Turkey a la King, Chinese Pepper Steak (Special); Au Gratin Potatoes, Breaded Squash, Buttered Spinach.

Wednesday: HOLIDAY

Thursday: Green Split Pea Soup; Corned Beef w/Cabbage & New Potatoes, Chicken & Dumplings, Tamales w/Chili, Hamburger Steak w/Onion Gravy (Special); Navy Beans, Buttered Cabbage, Green Beans.

Friday: Seafood Gumbo; Deviled Crabs, Broiled Halibut, Liver & Onions, BBQ Link (Special); Buttered Corn, Green Beans, New Potatoes.

*At Building #3

On Wednesday we feature The Reuben: Corned Brisket, Swiss Cheese on a bed of Sauerkraut, Poupon Mustard on Rye

and 1/4 Pickle. Delicious. Monday & Thursday check out our French Dip Sandwich.

Week of July 9-13, 1984

Monday: French Onion Soup; BBQ Sliced Beef, Parmesan Steak, Spare Rib w/Kraut, Chili & Macaroni (Special); Ranch Style Beans, English Peas, Mustard Greens. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Split Pea Soup; Meatballs & Spaghetti, Liver & Onions, Baked Ham w/Sauce, Corned Beef Hash (Special); Buttered Cabbage, Cream Style Corn, Whipped Potatoes.

Wednesday: Seafood Gumbo; Cheese Enchiladas, Roast Pork w/Dressing, BBQ Link (Special); Pinto Beans, Spanish Rice, Turnip Greens.

Thursday: Beef & Barley Soup; Roast Beef w/Dressing, Fried Perch, Lasagne w/Meat, Chopped Sirloin, Chicken Fried Steak (Special); Whipped Potatoes, Peas & Carrots, Buttered Squash.

Friday: Seafood Gumbo; Fried Shrimp, Baked Fish, Beef Stroganoff, Fried Chicken (Special); Okra & Tomatoes, Buttered Broccoli, Carrots in Cream Sauce.

NASA
Lyndon B. Johnson Space Center

Space News Roundup

