

Space News Roundup

Vol. 20 No. 9

May 8, 1981

National Aeronautics and Space Administration

Shuttle Update

When STS-1 comes, can STS-2 be far behind? Although the dust is still settling and congratulatory telegrams continue to pour in from Columbia's first mission, preparations are well underway for the second flight scheduled for this fall.

Program officials have set a tentative launch date for October 17. The pace has hardly slackened at Kennedy Space Center which is operating on a six-day work week preparing the Orbiter and its associated components for flight number two.

Both right and left Orbital Maneuvering System pods on Columbia have been removed and some heat damage to the "stingers", the RCS jet units located behind the pods, is being repaired. Several hundred tiles are being replaced and the forward RCS module is being removed for refurbishing. The main engines will not be removed from the craft.

Other flight hardware has already been delivered to the Cape. The External Tank arrived April 22 and the Remote Manipulator System (the arm which will handle payloads) was offloaded at KSC April 23.

Stacking of the Solid Rocket Booster segments will begin May 18, and the Orbiter and ET will be mated August 21 with rollout tentatively set for September 12.

The mobile launcher platform, which sustained only minor damage, is repaired and ready to be returned to the VAB.

Reagan Names Administrator Aerospace Executive James Beggs

President Ronald Reagan has announced the nomination of business executive James M. Beggs as administrator of the National Aeronautics and Space Administration and has named Dr. Hans Mark as his choice for deputy administrator.

Beggs has been executive vice-president, aerospace, and a director of General Dynamics Corporation, St. Louis, Mo. Mark is a former Secretary of the Air Force and former director of NASA's Ames Research Center, Mountain View, Calif.

If confirmed, Beggs will succeed Dr. Robert A. Frosch who resigned Jan. 20 to take over as the first president of the American Association of Engineering Societies in New York. Frosch had been administrator since June 21, 1977.

Beggs, who would be the sixth man to head the nation's civilian space agency, has been responsible for General Dynamics Convair Electronics, Fort Worth and Pomona divisions.

He served with NASA in 1968-69 as associate administrator, Office of Advanced Research and Technology. From 1969 to 1973 he was Under Secretary of Transportation. He went to Summa Corporation as managing director, operations, and joined General Dynamics in January 1974. Prior to 1968, he was with Westinghouse Electric Corp. for 13 years.

A 1947 graduate of the U.S. Naval Academy, he served with the Navy until 1954. He earned a master's degree from the Harvard Graduate School of Business Administration.

A member of the board of governors of the National Space Club, the National Security Industrial Association and the American Astronautical Society, his other professional affilia-

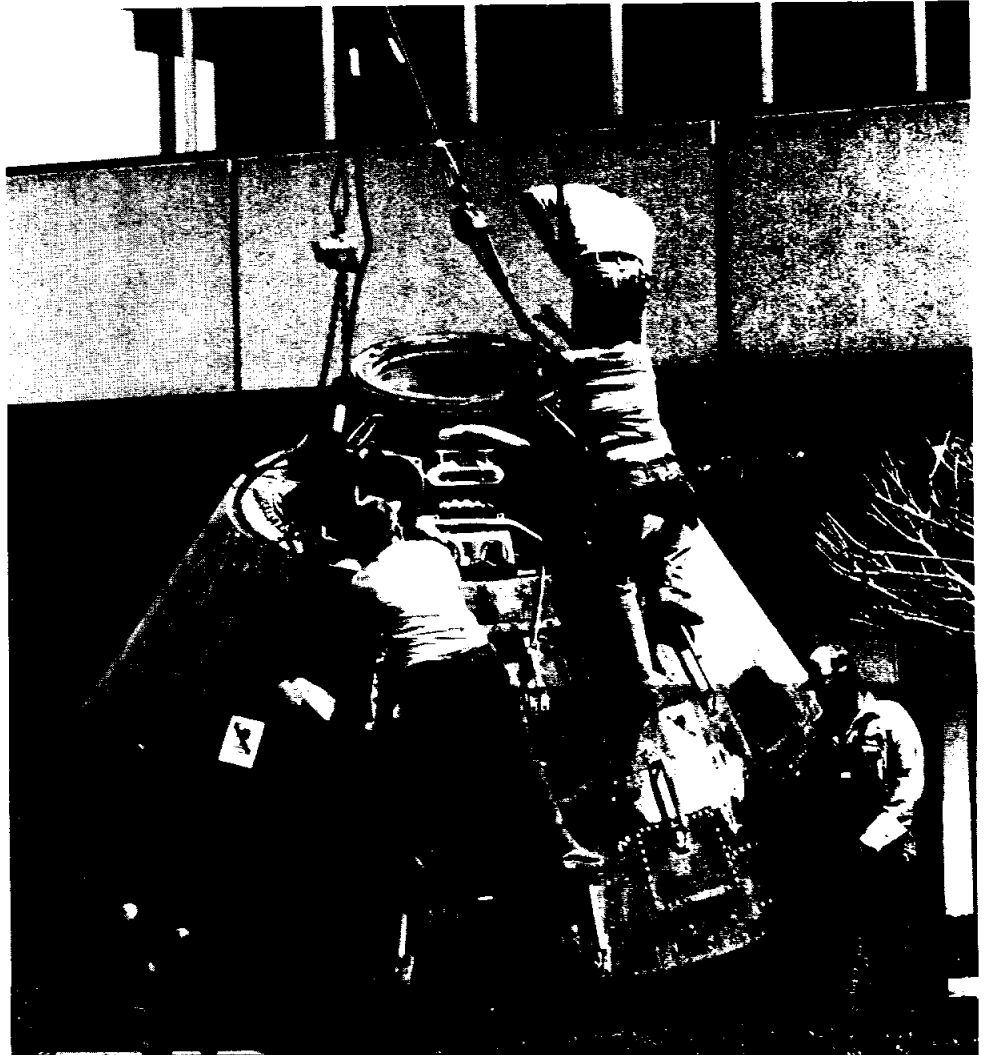
tions include the National Academy of Public Administration, the American Institute of Aeronautics and Astronautics, the American Society of Naval Engineers and Sigma Tau.

He holds an honorary LL.D. degree from Washington and Jefferson Col-

lege, Washington, Pa., and an honorary doctor of engineering management degree from Emory-Riddle Aeronautical University, Daytona Beach, Fla.

Born in Pittsburgh, Pa., Jan. 9,

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Reminiscent of the flag raising on Iwo Jima, workers carefully avoid the "DO NOT TOUCH" signs as they wrestle the Apollo 17 capsule from its Visitors Center home berth during preparations for STS-1. The capsule was temporarily displaced to Building 9A, but found its way back after the few hundred news people on hand for the mission vacated their temporary site.

Congratulations from here and there...

The remarkable achievements of the Columbia's maiden voyage evoked response from around the world in the form of telegrams and

Dear Chris:

The entire membership of the National Academy of Engineering joins me in congratulating you and your colleagues on the magnificent performance of the Shuttle during its first flight early this week. I have been asked by members of the media as to my feelings as to the significance of this flight and I told all of them that the major factor was the superb technical competence developed by NASA at its Manned Space Flight Center in Houston. Successes of Mercury, Gemini, Apollo, Space Laboratory and, now, the Shuttle are all strong proofs that the technical competence and the technical leadership you have developed at Houston are truly outstanding.

Courtland Perkins
President
National Academy of Engineering

The National Science Board unanimously expresses its warmest congratulations to all those engineers and scientists whose efforts contributed to an extraordinarily difficult achievement — the successful first orbital flight of the Space Shuttle Columbia. The National Science Board looks forward to the continuation of the American tradition of scientific and engineering excellence, of which this achievement is the most recent and dramatic demonstration.

(Commendation unanimously adopted by the National Science Board at its 225th meeting April 15-16, 1981.)

letters. A few are represented here in shortened form. The following letters were all addressed to Dr. Christopher C. Kraft, JSC Director.

Dr. Kraft:

I have followed the Shuttle's journey with the greatest of interest from here in Australia and would like to send you my warmest congratulations on such a magnificent achievement. Ever since visiting Edwards Air Force Base and NASA Headquarters in 1977, I have had a special interest in this splendid programme and hope you may be able to convey my congratulations and profound admiration to the astronauts and all those who were responsible for a mission which has caught so many people's imagination. I do hope that the rest of your programme proves to be as successful.

Charles
Buckingham Palace

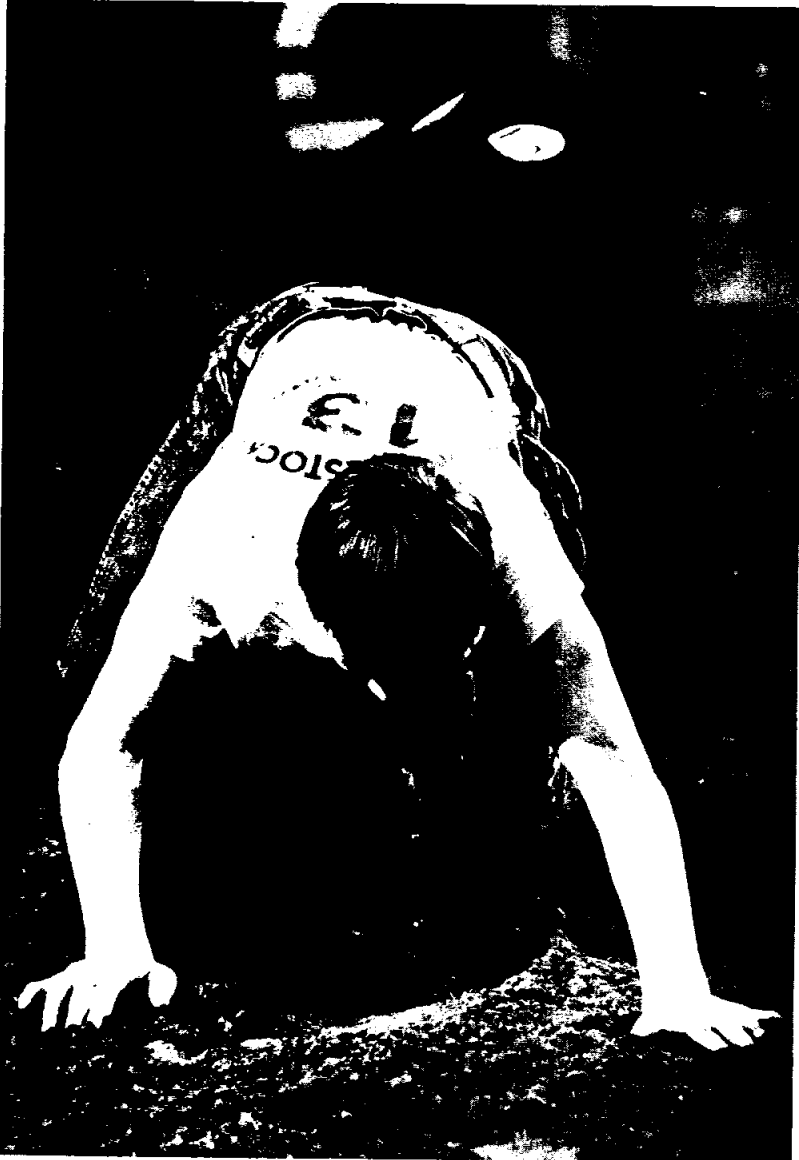
And, finally, this helpful note from a group of young space enthusiasts:

Dear NASA:

We bought this bottle of glue for you. Our fifth grade class wanted to do something for the space program. This glue will help keep the tiles in place for the next flight. If this doesn't work, we'll send you some crazy glue. Meanwhile, this stick of gum may be used until the glue hardens.

Sincerely,
Room 124, Wheatley Elementary
Lubbock, Texas

Bulletin Board



Steve Fillippa, 13, son of Mr. & Mrs. D. J. Fillippa, (Plant Engr. Div.) shows the form and determination which won him a calf in the recent Houston Livestock Show and Rodeo. Steve held on to halter the calf and escort it to the winner's circle. Steve will now purchase a "show calf" with his \$400 Certificate and return to next year's rodeo to complete in the 4-H Competition.

Program Gives Hand To JSC Employees

Running into difficulties in your life that are starting to affect your job? There is a place you can find help in a confidential setting and at no cost to you or your family.

JSC's Employee Assistance Office in Building 8 provides counseling and referral assistance to persons whose living problems appear to be getting beyond their control. Of the some 75 clients currently seeking assistance from the counselors, most are self-referred. About one out of four who visit the Office are referred by supervisors.

Problems presented to the counselors range from chemical abuse to family, health, legal and financial concerns. Occasionally, employees visit accompanied by their spouses or children. Those who take the initiative to get help usually find not only solutions to their problems, but also a sense of

relief from some of the stressors that have reduced their ability to function properly on the job or at home.

The EAP Office is under the direction of the Medical Operations Branch of the Medical Sciences Division. The office's 24-hour phone number is 483-6130.

Drs. Craig Fischer and Mike Berry, under the leadership of Dr. Sam Pool, oversee the work of the EAP Office at JSC.

Bond Drive Underway

The 1981 Savings Bond campaign opens with a patriotic theme — Take Stock in America, or as James Affleck, 1981 National Chairman, worded it for Houston — "Luv you, Red, White and Blue."

The 1981 campaign will be conducted at JSC during the month of May. As NASA's Campaign Chairman, Dr. Alan Lovelace points out, Savings Bonds offer us not only a patriotic opportunity, but an easy way to accumulate savings at an effective yield of 8%, which compares well with prominent investment opportunities. Certain tax advantages also make Savings Bonds attractive. So, when you are contacted by your organization's canvasser, sign up for the payroll deduction plan, and put "one nest egg in the eagle's nest."

Gem and Mineral Society

The Clear Lake Gem and Mineral Society May 18 will present a slide show program on Mt. St. Helens' recent volcanic activity. The program will be delivered by Dr. William P. Leeman of Rice University who has conducted his summer geologic field campus in the Mt. St. Helens area for the last several years. The meeting will begin at 7:30 p.m. in the Clear Lake Park Building on NASA Road one and is open to all interested persons. For additional information contact Mack Robinson, ext. 5871.

Recovery Division Reunited

A reunion of the Landing and Recovery Division is planned for June 5, 1981 from 5 p.m. to 11 p.m. at the Gilruth Recreation Center at JSC. Invitation is extended to other members of the recovery team associated with Mercury, Gemini, Apollo, Skylab and Shuttle programs including NASA and NASA contractor participants, the DOD and the news media. Reservations must be confirmed by May 22 by contacting Dale Moore or Kitty Rogers at (713) 483-3087 or 5827, respectively. A modest fee will be established to provide for hors d'oeuvres and drinks. Come join us or let us hear from you.

West Point Nomination

Congressman Ron Paul has announced the nomination of Bill Dornbach, son of retired JSC employee Dr. John Dornbach, for appointment to the U.S. Military Academy at West Point. Bill is a senior at Clear Creek High School and is an All-American swimmer. Dr. Dornbach formerly was Assistant Chief of the Earth Observations Division in Building 17.

Take a Dive with the Lunar Fins

Open the dive season by joining the Lunar Fins Scuba Club, an active dive club promoting trips locally and to the Caribbean. Basic scuba certification courses are offered seasonally. An extensive inventory of rental scuba gear is available to qualified members and members' air tanks are filled free. Check out the entertaining programs at the regular meeting the third Wednesday of every month. The next meeting is May 20 at 7:30 p.m. in the Clear Lake Park Building on NASA Road 1. For more information Call 480-1340 evenings.

Personnel Study

About 450 JSC employees will receive in the near future a questionnaire as part of a government-wide evaluation of agency personnel management programs.

The Office of Personnel Management is conducting the study to determine whether personnel programs are achieving their stated objectives. An OPM team will be on-site May 18-29 as part of the evaluation and will interview a number of managers and employees. Center employees who feel they have views which will contribute to the evaluation may arrange for an inter-

view by an OPM team member by calling Ruth Hollen before May 15, or by contacting one of the team members directly in Room 871 of Building 1 between May 18 and 20.

Golf Association Putts Along

The JSC Golf Association has completed two of its eight competitive tournaments. During a rainy opener at Wortham Park in March, Flight I was won by Max Englert (net 68) while Flight II was won by Larry Magers (67). A wet second tournament at Texas City Bayou April 4 ended with the Flight I winner Joe Villereal posting at net 67 and the Flight II winner John Andres shooting a 65.

The next tournament is scheduled for Saturday May 9. Think sunshine.

UH/CLC Orchestra Concert Tonight

The University of Houston at Clear Lake Community Orchestra under the direction of Dr. Charles Johnson will present the annual Youth Concerto Competition soloists Friday, May 8, at 8 p.m. in the Bayou Building on the UH/CLC campus. Tickets are \$2 general admission and \$1 for students and senior citizens.

Award Recipients

The following JSC employees received awards at a recent ceremony. The awards were presented by Henry E. Clements, technical assistant to the director.

SUGGESTIONS

Richard B. Benson, Jr.
James S. Cooper
Martha C. Speller
Monce A. Jones
Shirley A. Randolph
Cecilia C. de la Garza
Don L. Lind
David W. Camp
Percy H. Alison
Jerome W. Kalk
Harry E. Kolkhorst
Richard A. Perkins

INVENTIONS AND TECH BRIEF

Paul W. Shores
Charles W. Galloway
Calvin Schomburg
Herbert S. Kobayashi
Glenn M. Ecord
Thomas J. Dunn*
Ralph J. Marak
Ivan K. Spiker
John W. Akkerman
H. Eugene Winkler
William E. Thornton
Samuel H. Nassiff
Matthew I. Radnofsky

*Only tech brief award recipient.

Outstanding Secretary

Sandra E. Schmidt, described as a vital key to the successful operation of the Propulsion and Power Division, has received the Outstanding Secretary Award for March. She has been the division secretary since last April.

"In my career at Johnson Space Center, I have never had a secretary as efficient and energetic as Mrs. Schmidt," said Henry Pohl, Chief of the Propulsion and Power Division.

She is constantly looking for better ways to streamline the everyday procedures and has reorganized the division's filing system, said Pohl.



Cookin' in the cafeteria

**Menu subject to change without notice.

WEEK OF May 11 - 15, 1981

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

TUESDAY: Beef & Barley Soup; Beef Stew; Shrimp Creole; Fried Chicken (Special); Stewed Tomatoes, Mixed Vegetables, Broccoli.

WEDNESDAY: Seafood Gumbo; Fried Perch; New England Dinner; Swiss Steak (Special) Italian Green Beans, Cabbage, Carrots.

THURSDAY: Cream of Chicken Soup; Turkey & Dressing; Enchiladas w/Chili; Weiners & Macaroni; Stuffed Bell Pepper (Special) Zucchini Squash, English Peas, Rice.

FRIDAY: Seafood Gumbo; Baked Flounder; 1/4 Broiled Chicken w/Peach Half; Salisbury Steak (Special); Cauliflower au Gratin, Mixed Vegetables, Whipped Potatoes, Buttered Cabbage.

WEEK OF May 18 - 22, 1981

MONDAY: Chicken & Rice Soup; Texas Hots & Beans; BBQ Ham Steak; Steak Parmesan; Beef & Macaroni (Special); Green Beans, Carrots, Au Gratin Potatoes. Standard Daily Items: Roast Beef; Baked Ham; Fried Fish; Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

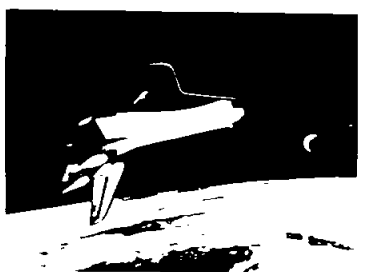
TUESDAY: Tomato Soup; Potato Baked Chicken; BBQ Spare Ribs; Mexican Dinner (Special); Squash, Ranch Beans, Spanish Rice, Broccoli.

WEDNESDAY: Seafood Gumbo; Baked Turbot; Liver & Onions; BBQ Ham Steak; Baked Meatloaf w/Creole Sauce (Special); Beets, Brussels Sprouts, Green Beans, Whipped Potatoes.

THURSDAY: Beef & Barley Soup; Chicken & Dumplings; Corned Beef w/Cabbage; Smothered Steak w/Cornbread Dressing (Special); Spinach, Cabbage, Cauliflower au Gratin, Parsley Potatoes.

FRIDAY: Seafood Gumbo; Pork Chop w/Yam Rosette; Creole Baked Cod; Tuna & Salmon Croquette (Special); Brussels Sprouts, Green Beans, Buttered Corn, Whipped Potatoes.

Roundup deadline is the first Wednesday after publication.



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 all space center employees.

1981 RACE SCHEDULE

Here is the race schedule for the remainder of 1981. All races are held at the Gilruth Recreation Center.

| DATE | TIME | NAME | DIS-TANCE(S) | ENTRY FEE |
|----------|--------|------------------|----------------|------------------|
| May 30 | 8 a.m. | Fun Run | 15 KM | 2.00 |
| June 27 | 8 a.m. | Weight Handicap | 5 KM | 2.00 |
| July 25 | 8 a.m. | Lunar Rendezvous | 5 KM | 6.00/7.00 (LATE) |
| Aug. 29 | 8 a.m. | Fun Run | 10 KM | 6.00 |
| Sept. 26 | 8 a.m. | Fun Run | 10 KM | 2.00 |
| Oct. 17 | 9 a.m. | 12th Intercenter | 2 Mile & 10 KM | NONE |
| Nov. 21 | 9 a.m. | Team Competition | 1/2 Marathon | 5.00 |
| Dec. 19 | 9 a.m. | Fun Run | 20 KM | 2.00 |

For more information call Carl McCollom at 483-3594.

Downey CETA Product

Cindy Mata, CETA Program office trainee at NASA/Downey, recently completed a 10-month training period at the California facility, through an arrangement which provides participants with on-the-job training without salary expense to the hiring agency. Cindy's "mentor" in the program was Maggie Lucas (left), program analyst for the NASA Program Support Office at Downey.



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 AP3 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.

Household Articles

Whirlpool washer/dryer, electric, good condition avocado \$95 pair - Sears 18,000 BTU window air conditioner, good condition \$175. 538-1206 after 6.

Full size mattress and box springs. Simmons Beauty Rest. Very good condition. 334-3447.

Gold velvet drapes. 7' high by 7' wide. Fine condition. 334-3447.

97" flexsteel sofa, earthtone tapestry, perfect condition \$375. 488-2597. Sears dishwasher (working condition); excellent for beach home Call 488-4576 after 5 p.m.

Excellent cond. 4 pc Calif. sectional 1 couch, avocado, 71", 61" sq. table, and end seat, \$445. Call 747-5610 after 5 p.m.

Zenith 20" color TV/console. Good picture. Nice piece of furniture \$100. Call 333-3525 after 4 p.m.

RCA portable stereo record player with AM/FM radio. Needs some repair \$25. Call 333-3525 after 4 p.m.

Antiques - dresser and dressing table with mirror. Both refinished with tung oil. \$150 each or \$275 for both. Call 333-3525 after 4 p.m.

Four piece living room group modern like new a steal at \$325. Kingsize water bed/shelf \$175. 470-0279/x4065.

Stereo am/fm receiver \$75.00 tape deck \$125.00 DBX \$150 470-0279 x4065.

TV & Stereo Heathkit GR-295 TV maple cab. new 23" color tube work's well \$225 x3576 or 944-7042.

Magic Chef combination range and microwave, gold, 15 mo old \$750 cash Shirley x4258.

Kingsize foam mattress & springs, fair condition \$75 Jim x3533 488-4188.

Rug pad 1/2 inch foam, 20 sq. yds. used one month \$25 333-3071.

Refrigerator, 20 cu.ft. frostless harvest yellow \$125 333-3071.

O'Keefe & Merrit goldtone double oven range \$200 firm call 486-5418 after 5.

Property & Rental

Rent: Friendswood, 3-2-2, wood fenced, walk to school, new paint, \$450 plus dep. x5303 Frank 482-6609 after 5.

Beach cottage for rent on shores of Gulf of Mexico. Sixty minutes from NASA. Private beach, good fishing very relaxing. Call Gene Horton x5350 \$35 day or \$200 week.

Waterfront lot for sale 110' x 300' \$14,000 P.S. Skabo x7272.

Wanted Christian, non-smoking female to share Clear Lake area apartment with same. 759-4976 between 7:30 am and 4pm.

For Lease: NASA/Sterling Knoll, 4-2-2, bilevel, w/b fireplace Convenient to NASA & Baybrook Mall. \$500 mo. 481-8079 after 5.

For Sale: Kirkwood South, by owner, 4-2-2 Large family room w/fireplace & cathedral ceiling. Assume 8 3/4 or new loan. Mid \$70. non-escalating 481-8284.

Rent: Heritage Park near Baybrook Mall immaculate 3-2-2 fire place,

cathedral ceiling, formal dining room, drapes fenced, \$500 mo. 474-3887 or 474-4991.

For Rent: Jamaica Beach cottage, \$220 wk. Make reservations now for summer season. Call 334-1640 after 6 pm.

Lease or sale: Glen Cove (near watergate) 3-2-2 trees fenced. \$425 mo. or \$49,500 with VA assumption. 488-1410 or 488-2432.

Visiting college professor will "house-sit" while you're on vacation. Will be on-site from July 11-Aug. 25. Call Joan x4757.

For Rent: 3 bedroom, 2 bath house Heritage Park (by Baybrook Mall) Bonnie 332-8291 (home) (work) x5844 available April or May.

Wanted: Female to share 3-2-2 w/same in Friendswood. For more information call Elizabeth at 996-9323 after 6.

120' x 300 Clear Creek lot for sale Build on the water. Must sell \$16,000. Skabo x7272 or 482-9411.

Rent - one furnished bedroom in a 3 br. house in Friendswood 160/mo including utilities. x7429 or 482-5393.

Wanted: Housing or bedroom accommodations for summer ASEE faculty fellows. Mid June through August. Call Nancy Robertson, x4724.

For Rent: Galveston By-The-Sea Condominium. Two bedroom furnished apartment for rent by day, week, or month. Clements 474-2622.

For sale: 1975 Mobile Home 2 bedroom 2 bath \$9,100. Call between 8:30 - 5:00 Ask for Collections 488-7070.

"Three's Company" didn't work. I'm in need of moving. Ya got a place to share? Let's talk! J. White before 4 p.m. 488-3720.

RENT: Sycamore Valley, 3-2-2, corner lot, immaculate condition. \$525/mo. 947-0319 after 5.

SALE: 1 bdr. condo., Webster 2 patios, fireplace washer/dryer, covered parking low 30's call x2321 or 486-5163.

Cars & Trucks

10 1/2 ft. El Dorado Cabover Pickup Camper - sleeps up to five, self-contained with stove, oven, water heater, sink, electric pump, shower, commode. Fits LWB. \$325. 554-6765 after 5.

Wanted cheap work car in running condition 487-8633.

'75 Pinto - auto, a/c AM/FM radio, hatchback, new tires, \$1000. Jeff x2651 or 334-5368.

'78 Honda Hawk, Hondamatic 400 cc, excellent condition, low mileage, lady owner, \$1000. Call Sharon after 6 p.m. 946-2735.

1969 VW - no heat - \$850 firm 484-1411.

75 Pinto Hatch Back, ac, new paint, sunroof, runs great \$1600 Eve. 333-5133.

74 Dart slant six engine 3-speed 4-door, a/c radio/tape many new parts very good condition \$1495/best offer 486-1680.

Wanted late model 1/2 ton pickup truck ps/pb air conditioning preferably GMC/Chev. Paul x2231 or phone 475-9772 after 6.

'76 Pinto 3 dr. Squire, 4 speed, a/c sun roof, FM/cas. original owner, Exc. \$1976 x6241 after 5. 643-8170.

1976 Mercury Monarch 4 dr. sedan v8 a/c p/b p/s Exc. \$2095 x6241 after 5, 643-8170.

50 Ford 2 dr. sedan, rebuilt flat head v8 engine Radio heater recent paint, new carpet \$2150 or trade 554-6685 after 5.

'77 T-Bird Town Landau, low miles, excellent condition, loaded. \$3495. 487-2386 after 4.

'78 Ford Fairmont Futura auto air power AM-FM stereo tape 62000 miles \$3250. x7343 or 488 2168.

'77 Chev. PU factory auxiliary gas tank \$100, Chrome rear step bumper \$85, front bumper guards \$15. Schnell 488-9005/337-2402.

1974 Thunderbird, 7.538 Ltrs., 7.97Qts, 1.9glns. Speedometer reads 66000 miles, mechanically good condition. Needs dings removed and some paint. Where is as is \$500. x2131.

1971 Triumph Spitfire, 57 k mi., new interior, starter water pump front tires, u-joints. Very good condition \$2100. Ron 480-4267.

1978 Datsun 210 GX Hatchback 34 mpg plus excellent condition air, 5-spd, stereo cassette Price \$3875. x2074 721-4078.

79 VW rabbit 4 spd, reg gas am/fm 2dr deluxe clean 32,000 miles asking 4,595. 331-1092 Walt.

1979 Honda Hawk. 7,000 miles Windshield, back rack. Excellent condition \$1250. Call Pierre at 486-5286 after 4 pm.

For Sale: 1976 Suburban, high mileage but good shape \$2495 Chanis x3048 or 331-4986.

1978 Honda Accord, 2 dr, 5 sp, ac, \$4700, Mallary x3066 482-7081.

Camper shell, Winnebago, paneled inside, fits 8' bed. Excellent condition, make offer. Schnell 488-9005/337-2402.

1980 VW Diesel pickup, white, with camper shell, 4 speed a/c, AM/FM Cassette. Call 334-2757 after 5 pm.

Sharp 1977 Chev. Chevette hatchback. Jim x4947 or 480-2927.

4-E-78-14 good tires on 6 lug wheels w/hubs \$35 ea. 554-2693 after 4 pm.

Carpools

WANTED: Male, non-smoker, for carpool from Alvin to JSC 7:30 - 4:00, Gonzales x4418, 331-9855.

Interested in forming a non-smoking carpool from Sunmeadow to JSC Bldg. 30 7:30 - 4:30 or 8:00 - 4:30 Max Kilburn x4402.

Need 3rd and 4th carpooler to Alameda Mall/Edgebrook area 7:30 4:15 shift (Bldg. 15 reserved parking) Ron x3526.

Need additional carpoolers from Sageglen/Wood Meadow area, 8:00-4:30. Reserved parking at Bldg 4. Mary x3856 or Lynn x2421.

Stereos & Cameras

Panagor 85-205 mm lens with case \$150 or best offer Gonzales x4418, 331-9855.

Yashica Electro 35 w/carrying case, conversion kit w/carrying case

including wide angle 1:4 and telephoto 1:4, sunpak GX17 flash attachment. Everything goes for \$100. 333-3791.

Cycles

Yamaha 125YZ 125 1975. Excellent condition, call Pat after 5 p.m. 482-5432.

XL-75 1978 Honda, looks like new, excellent beginner cycle. 486-8153 x411.

Honda El 100 Excellent condition \$475. Excellent cond. x3770 Sarah after 5 334-1254.

1977 Suzuki GS-550 18k mi \$750 Ron 480-4267.

1973 Piper Arrow 11, IFR, King equipment. 334-3069 after 6 pm week days.

Boats & Planes

Marine Engine, 1599 cc, 4 cyl., runs complete engine Chrysler 80, 80 HP, includes closed water systems mcw, x4105, 643-8944.

LEARN TO FLY: - with the Aero Club. Modern equipment and instructors are available at advantageous rates. Call Jerry Haptonstall at x5285 for information.

Wanted

Wanted 3 riders to Cincinnati or cities in between; May 8 to 19; new luxury car; \$110 R.T.; pulling small trailer will haul items either way Floyd Schell x4626.

Wanted used hang glider 487-8633. Wanted free or cheap childrens backyard swingset 487-8633.

Wanted 10 hp or larger lawn tractor with mower deck Also high wheel Yazoo type mower. Must be in good condition 488-3966.

Miscellaneous

Floating swimming pool lounge chair, fiberclad by Kransco new still in box \$35 Floyd Schell x4626.

86 qt. Igloo ice chest with two extra storage sections and large water container inside, used only once \$50 Floyd Schell x4626.

Large old ship Anchor rope, 4" use to decorate yard fence pool building etc. Wright x4105 643-8944.

Regulated power supplies; low voltage DC computer \$60; high voltage DC \$200. L.R.C laboratory load w/R and C substitution boxes \$50 Samounee x3771.

1 Browning compound bow, 1 26" boys' bike (coaster), 1 26" nomad travel trailer, all excellent condition call after 6:30 p.m. 489-0092.

For sale: lawnmower, self propelled 21" rotary, aluminum body, 2 grass catchers. Excellent condition \$100 Stan x6151 or 482-1425.

For sale: two 14" rims off 1978 Toyota pickup, \$5 ea. Stan x6151 or 482-1425.

For sale: Cromemco system-three computer, CRT, printer, accounting wordprocessing & program development software. Call 486-1179 or 482-9001.

Scuba diving wet suit \$100 487-8633.

Bookkeeping equipment \$250 many hive bodies, frames etc. 487-8633.

9'x9' nylon & canvas umbressa tent xint, used 3 times \$35 488-3966.

Wanted to buy: Pressure canner-minimum 7 quart capacity for canning produce from my home garden 482-4874 or x3271 ask for Lyn.

For sale: professional "metal drafting table", 3'-6" x 7' with tilt top and full length drawers, \$275. 488-1326 after 5 p.m.

For sale: a school of bicycles various sizes and sundry spare parts. Four wheels for VW Bug with tires — \$10 ea. or four for \$25 Amana radar range 8 years old, in excellent condition \$150 333-2941.

G.E. 23 inch B/W TV rebuilt picture, good external looks but needs repair \$10 Joe 481-0069 after 6.

"Calligraphy-Beautiful script handwriting name plates, award certificates for little league or school, montages. Call Briley 488-7901.

Data products printing computer terminal Tektronix model 211 oscilloscope \$400 each or trade for pickup or? 486-8564.

Antique magazines, 1917-21 2 Country Gentleman 2 Ladies Home Journal, 1 Leslie's 1 McClures 100 doe all 6 332-2756.

Lawn mower Toro 21" reel self propelled Hudson 333-3798 x5545.

Lawnmower Sears Egger 1, solid state, 20" new ignition and valves \$35 x6313.

Tire Goodyear L78-15 polyglass belted, new \$50 x6313.

T.V. Antenna for color, uhf, fm and all other related waves in the ether. Brand new including 50 ft. 2-lead wire. Vic-timized by cable T.V. x5803 or 334-2354.

For sale: original "Meatball" Round style NASA patches and tie pins. Also STA, LLTV flight patches. x7474.

"Mobile home axle, 10 ft. wide, complete with springs, electric brakes, wheels, and 8-ply tires. \$85.00 x2991.

PEDAL TO HEALTH at home. Exercise (bike), used twice. Like new \$60 Ph 488-8862 or x5111.

Pets

AKC black pekinese puppies -2 male 2 female - contact Roseanne at x2731 or 487-3076.

Black, male 4yr. old Toy Poodle, AKC Reg., shots \$75, 944-7042.

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Greenhouse Effect

Venus Probes Give Clue to Earth Atmosphere

Using NASA's Pioneer-Venus spacecraft data, a team of scientists has virtually proved that the searing 482 degree Celsius (900 degree Fahrenheit) surface temperature of Venus is due to an atmospheric greenhouse effect. Until now the Venus greenhouse effect has been largely a theory.

The work is important to understanding possible adverse effects on agriculture resulting from society's long-term use of fossil fuels.

Greenhouse effect means that the surface temperature is raised when energy in the form of sunlight easily passes through Venus' atmosphere to the surface but has difficulty escaping when converted to longer-wave heat radiation, and is held in by the atmosphere. The same principle provides much of the heat for nursery greenhouses on Earth.

Calculations, which used Pioneer measurements of atmosphere composition, temperature profiles and radiative heating, predicted Venus'

surface temperature "very precisely," says Dr. James Pollack of NASA's Ames Research Center, Mountain View, Calif., head of the Pioneer-Venus radiative heating team. The calculations predict not only Venus' surface temperature, but agree with temperatures measured at various altitudes above the surface by the four Pioneer Venus atmosphere probe craft.

Members of the radiative heating team were Dr. Pollack; Dr. Martin Tomasko, University of Arizona; and Dr. Brian Toon, NASA-Ames. Data from a large portion of the 30 instruments aboard the Pioneer Venus orbiter and probes craft were used in the calculations.

The accuracy of the Venus atmospheric heat balance predictions increases the confidence of scientists for making similar predictions for the Earth, including the effect on Earth's atmospheric heat budget caused by the burning of fossil fuels.

The main atmosphere ingredient holding in Venus' heat is carbon dioxide. Eighty years of burning fossil fuels on Earth has increased atmospheric carbon dioxide by 15 percent. Predictions of increased burning of fossil fuels like coal and oil suggest that the carbon dioxide in Earth's atmosphere could be doubled in 50 years.

Researchers point out that resulting heat trapping by carbon dioxide could raise average atmosphere temperatures from 1.5 to 4 C (3 to 7 F) above current temperatures.

This is minor compared to the inferno of Venus' surface. Nonetheless, such a temperature increase could well cause "incredible havoc," says Dr. Pollack. (During the most severe phases of the Earth's ice ages, average atmospheric temperature drop has been only 7 C (15 F)). Examples of major weather changes resulting from a 1 to 3.5 C (2 to 7 F) change in average temperatures might include catastrophic differences in rainfall in marginal agricultural areas such as wheat-growing regions of Canada, the U.S.S.R. and the United States.

Such temperature changes also might melt a small but important portion of the polar ice caps — enough to raise ocean levels and cause permanent flooding in major coastal cities.

Having calculated atmospheric heating for Venus (which is almost the most extreme case imaginable), calculations of carbon dioxide effects on Earth's atmospheric heat budget should be much easier.

While these predictions of carbon dioxide effects on the Earth's at-

mospheric temperature may be overstated, Pollack points out, we should determine whether they are or not, and Venus greenhouse data will certainly help.

Only half of the carbon dioxide so far sent into the Earth's atmosphere by human fossil-fuel burning has stayed there. The rest apparently has been absorbed into the oceans. However, ocean absorption effects have been included in the scientists' calculations of carbon dioxide doubling.

Pollack explains that Venus' surface temperature of 482 C (900 F) is remarkable. The planet is only 30 percent closer to the Sun than Earth, and with a relatively thin atmosphere like Earth's, its surface temperatures might be expected to be around a warm but habitable 38 C (100 F).

Earth's existing greenhouse effect heats up our planet's surface some 36 C (55 F), while Venus' surface temperature is wrenched upward by 425 C (800 F) due to the greenhouse effect. This happens despite the fact that Venus currently absorbs less solar energy than the Earth. Venus' highly reflective clouds bounce back much of its incoming solar energy (sunlight) to space.

Calculations by the Pioneer team, using data from the Pioneer Orbiter and measurements by the four Probe craft, which sampled the atmosphere from top to bottom, have characterized Venus' greenhouse exactly. The team now has established exact amounts of sunlight absorbed at various places in the atmosphere and at the surface.

They have established the role and

amount of heat trapping by the various gases and particles in Venus' atmosphere. These include carbon dioxide, water vapor, sulfur dioxide and various types of cloud particles. Finally, Venus' planet-wrapping haze layer provides a "cap" to the greenhouse, explaining the last 12 to 15 C (25 to 30 F) of temperature.

These calculations, in general, balanced the amount of sunlight absorbed with the heat radiated to get the temperature at various points.

Water vapor amounts reported by the Russian Venera spacecraft were used in the greenhouse calculations instead of the Pioneer measurements because they fit well with all the rest of the data. The amount of water vapor finally decided on was much less than had been thought required to produce the planetary greenhouse effect. The team found that the remaining heat expected to be absorbed by water vapor was, instead, absorbed by sulfur dioxide and Venus' heavy clouds.

Carbon dioxide, which makes up 96 percent of Venus' massive atmosphere, had by far the largest role in trapping heat on Venus. Water vapor and sulfur dioxide also trapped important amounts of heat, as did the clouds and planet-enveloping haze layer. The calculations include heat absorption by carbon dioxide in long heat radiation wave lengths that this gas does not normally absorb. However, under Venus' enormous atmospheric pressure, carbon dioxide absorbs heat even at very long wavelengths.

Beggs

Continued from page 1

1926, Beggs is married to the former Mary Harrison. They have five children.

Mark served as Secretary of the Air Force from July 1979 to 1981. He had served as under-secretary since 1977.

A physicist and nuclear engineer, he joined Ames Research Center in February, 1969, and prior to that was a professor and researcher and has served as a consultant to several government agencies and held a number of university committee assignments. He was chairman of the Department of Nuclear Engineering at the University of California, Berkeley, from 1964 to 1969 and was administrator of the Berkeley Research Reactor during the same period.

Born June 17, 1929, in Mannheim, Germany, Mark came to the United States in 1943 and became a citizen in 1945. He received his bachelor's degree in physics from the University of California at Berkeley in 1951 and a doctorate in physics from the Massachusetts Institute of Technology in 1954.

Mark has taught undergraduate and graduate courses in physics and engineering at Boston University, Massachusetts Institute of Technology, and the University of California at both the Berkeley and Davis campuses, and held an appointment as consulting professor of engineering at Stanford University.

He and his wife, the former Marian G. Thorpe, have two children.

NASA to Consolidate Flight Center Activity

NASA is consolidating its Dryden Flight Research Center under Ames Research Center management and its Wallops Flight Center under Goddard Space Flight Center Management.

Under the consolidations Dryden, Edwards, Calif., becomes an operational element of Ames, Mountain View, Calif.; and Wallops, Wallops Island, Va., becomes an operational element of Goddard, Greenbelt, Md. The Dryden and Wallops centers will retain their identities but will be under the overall management and direction of Ames and Goddard, respectively.

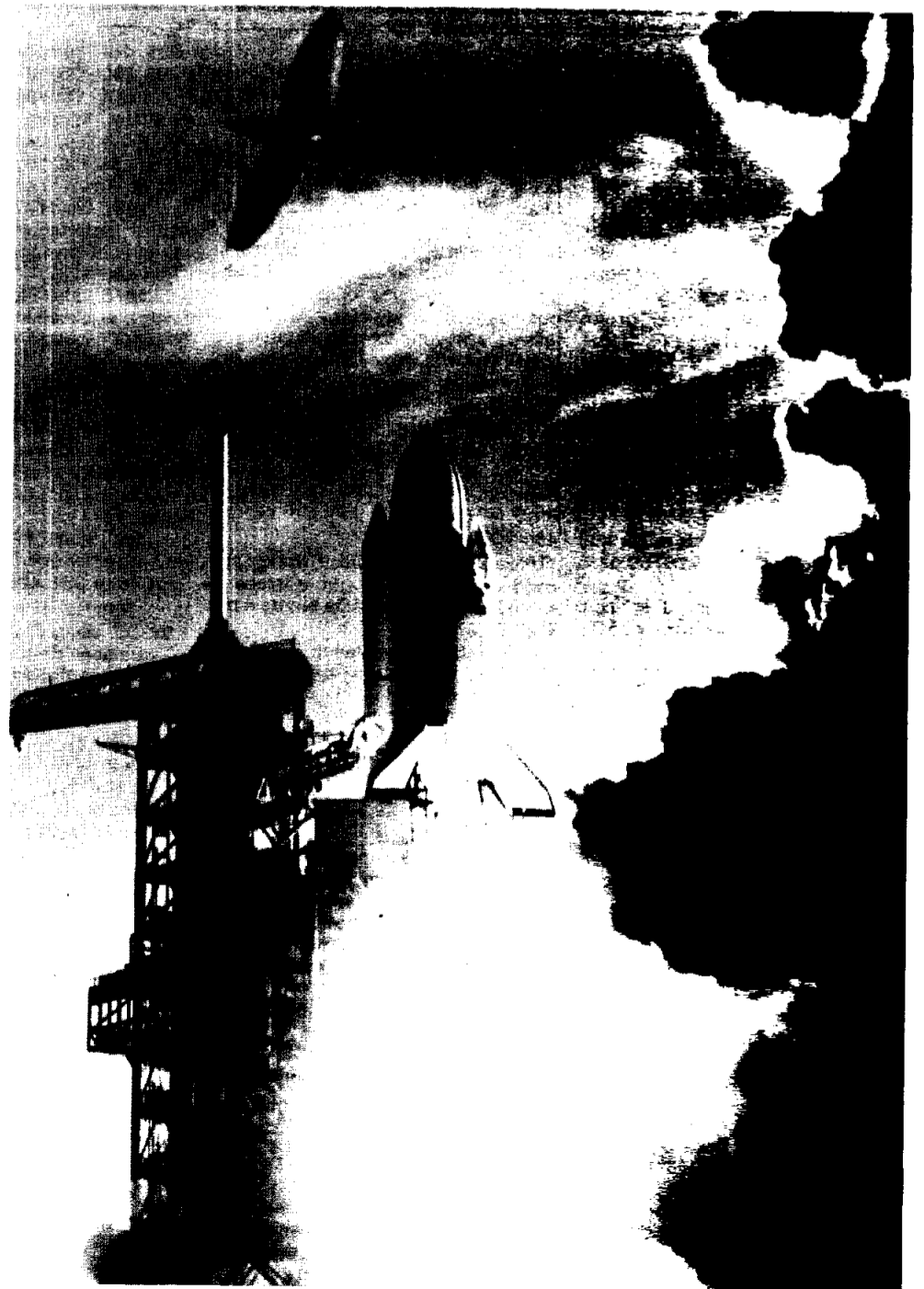
Dr. Alan M. Lovelace, NASA Acting Administrator, said the consolidations will focus the resources of each of the installations on what it can do

best.

"The close relationship between Ames' and Dryden's efforts in aeronautical programs and Wallops' and Goddard's efforts in suborbital programs, as well as the unique facility capabilities and the physical proximity of the installations provides an opportunity to improve overall program effectiveness through these consolidations," Lovelace said.

Flight research operations for Ames will be carried out primarily at Dryden and sounding rocket development and operations for Goddard will be carried out primarily at Wallops.

The consolidations are expected to be completed by Oct. 1.



Graceful Flight

Two creatures of the air share their element as an inhabitant of the Florida marshes soars near the Space Shuttle Columbia at liftoff April 12. Odds are that the bird will be a little more wary about approaching its mechanical cousin in the future.