

ROUNDUP

Lyndon B. Johnson
Space Center

NASA

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VENUS:

Weeks ahead promise insight to planet as Pioneer probes its atmosphere and surface

The Pioneer Venus mission, Multiprobe and Orbiter, enters the Venusian atmosphere in two weeks, 20 days after the Multiprobe split-up.

The three 200-pound probes spun off the transporter bus November 19 and set out for their designated entry points, spread 6000 miles apart over Venus' Earth-facing atmosphere. They will enter the atmosphere on December 9. The transporter bus will follow the probes, take measurement of the upper atmosphere, then burn up as it nears the surface.

Circling the planet for at least eight months, the Pioneer Orbiter will make the longest observations yet of Venus. It is the first U.S. spacecraft to orbit the planet, entering orbit December 4.

The probes will measure the atmosphere from top to bottom as they fly down to Venus' searing surface. While they are not designed to survive impact,

Encounter Timeline

11/19 Probes launched by pyrotechnic clamp release and thrown off by force of bus rotation.
11/27 20-hour test of Venus orbit insertion sequence
12/2 Maneuver to orient Orbiter for insertion.
12/6 First Orbiter "camera" Cloud Photopolarimeter

12/7 Measurements of upper atmosphere with ultraviolet, ion mass, and neutral mass spectrometers; infrared radiometer readings of temperature and sunlight.
12/8 More data on upper atmosphere; final adjustments to bus entry angle.

the probes may also return data from the surface.

The Orbiter measurements will cover one complete rotation of Venus on its axis—243 Earth days.

All four probes have their own command, communications, and power systems. Heat shields and titanium pressure vessels will help them withstand

Venus' 480 degree heat, its atmosphere of carbon dioxide, carbon monoxide, and hydrochloric acid, and its pressure 100 times the atmosphere of Earth.

The mass, diameter, and mean density of Earth and Venus are almost identical. One question scientists hope to answer is how two similar planets can evolve so differently, and if there is any chance of

Earth becoming like Venus. Gaining an understanding of Venus' "simple" weather machine may also help us understand the Earth's complex weather processes.

The Multiprobe and Orbiter will conduct 30 experiments. Drag measurements as "friction" of the atmosphere slows down the Orbiter may show variations in density that correlate with solar wind activity. A radio determination of Venus' internal mass distribution may tell about the planet's evolution.

The probes will locate sources of radiative energy, and measure the structure of the atmosphere.

Mission Operations Center at Ames in California is controlling the spacecraft. NASA's Deep Space Network at JPL is doing tracking.

The first photographic image will arrive at Ames in the evening, December 6.

Suppose they gave a pecan harvest without any pecans

Most of the families who turned out for November 18's pecan harvest went home with empty bags, the Employee Activities Association reports, because impatient pecan hunters stripped the trees and grounds of nuts a week before the official harvest.

The annual pecan-picking event was created by the space center's first director, Robert R. Gilruth. Because nuts produced on site are technically government property, Gilruth set up an EAA event where employees and families take part in an annual harvest.

Gathering the on-site pecans has become a tradition. In order to assure "equal opportunity" in the harvest, groundskeepers shake the trees about a week before the announced date. All comers gather on the appointed morning to await the opening of the grove, and the scene is reminiscent of the opening of the Oklahoma Territory to settlers.

One disappointed employee observed, "The 'sooners' must have gotten here first."

"We had a better crop this year than last, but we had more abuse," said Alan Graves, one of the harvest supervisors.

Two weeks before the scheduled event, the 70 trees were shaken, and reports went out of a bountiful harvest. Then the problem developed. Security guards

removed several people from the area for gathering pecans.

The grounds are patrolled by three day guards and two at night. As soon as the nuts begin to fall, guards are alerted to watch for pre-harvest pickers, chase them out of the area, and tell them to leave the pecans behind.

"We had several such incidents this year," said Everett Shafer of security.

At 7 a.m. November 18, Graves went out to survey the area. "Someone had gone in there with rakes and gotten about 50 percent of them," he said.

Graves and others are concerned about safety. When persons go in unauthorized, "they climb the trees," one groundskeeper said. Damage is done to the trees and there could be personal injury.

Jerry Jones, vice-president elect of the EAA, feels that for the event to be fair, "everyone should have equal access." At the EAA meet, the quota is one bag per family. "If the grove is open all the time, people would help themselves to as many pecans as they can get. I've seen that happen," Jones said.

"They are ruining a good thing," the groundskeeper said. "The purpose for the outing is to have a family occasion for the employees. People came back with no pecans, and that's a shame."

Employees raise XMAS funds

\$3,500 goal will aid 125 families

It is the season of giving, and the Family Affair Christmas Project kicks off its annual fund raising drive December 4. This year the group hopes to raise \$3,000 to \$3,500 to buy food and toys for 125 needy families in the Houston area.

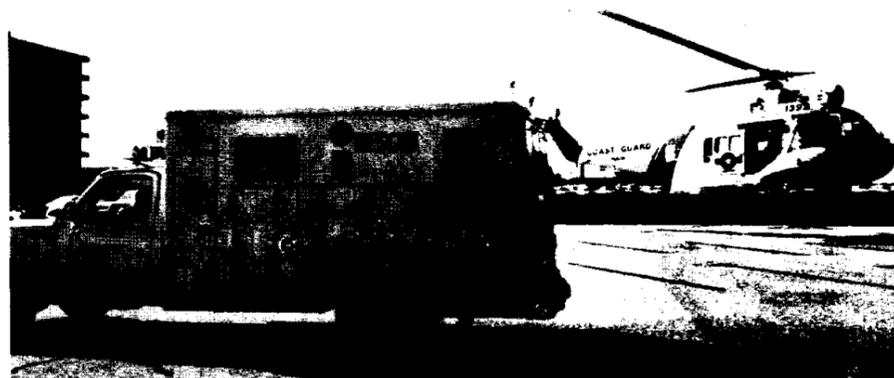
Coordinators are set up in each building to collect donations.

In 1971, a group of space center employees set up the Christmas project. Charity and community action organizations in Harris County provide names of

families, and the space program provides volunteers who go in person to the homes delivering bundles and Christmas spirit.

Last year the group was able to reach 121 families.

The drive is successful each year thanks to the generosity of space center employees. This year's drive continues through December 12. If no area coordinator contacts you and you want to contribute, contact Julius Mayhorn at x3381 or mail code FD6.



NASA RESCUE—The Coast Guard has picked up an injured shrimp boat worker from an oil rig 70 miles out and is delivering him to the JSC heliport where an ambulance waits to rush him to the U.S. Public Health Hospital in Nassau Bay. November 8 marked the first time the tri-agency emergency medical agreement was put to use.

Sports

Tennis Club winds up year

*Thud! Thump! Slash! Spin!
Swing 'im wide & back again
Pull 'im forward, push 'im back
Wait an opening, then attack!
--Gresh*

Sound like your game? That's how it went during the JSC Tennis Club fall singles tennis tournament at Friendswood



Racket Club over the October 28 weekend.

It was an unusually good weekend for tennis, whether you played, watched, or both.

JSTC members in the winners' circle included Dan McFarlin second to Jim McNatt, and Jim Blumentritt consolation winner in the championship class; Ed Fendell consolation winner over Don Barnett in men's advanced; Gresh Downs consolation winner over David Ballard in men's intermediate; Lyle White second to Bob Stevenson; and Pete Peterson consolation winner in men's novice.

The men's over-35 was won by FRC's Buddy Lee (a sleeper) over Walt Schwab. Gordon Fullerton had his customary battle with Jim Downs, although not in the finals this time.

In the women's events, Ann Williams won over Betsy Magin with Lisa Serris consolation winner in "A." Marie Fullerton showed her customary class in winning "B" over Lisa Woods, and Jane Lehman won the consolation over Natalie Felan.

This concludes the 1978 tennis tournament schedule, the end of another outstanding year for JSTC tennis. Plans for 1979 will be made early next year.

If you desire information, contact Frank Newman x7204, Jim Walker x3551, or Gresh Downs 486-1297.

Golfers hold last '78 match

On Veterans Day, 12 reported to the Lake Houston Golf Course for the final tournament of 1978—a scramble event with special challenges thrown in. Of the top six teams, two scored one under par, four were even par.

The winning team was comprised of Bill Chase, Harold Epps, Dick Hart, and Cliff Alexander. Second place was Steve Gorman, Wakie Dunham, Mike Gremillion, and Walt Meek. Third was the threesome of Ted Breezy, Dick Siler, and Jerry Hoff.

In the special events, Bill Shropshire, Jim Briley, Bill Chase, Bill Nunnery, Milt Heflin, and Al Ligrani won closest-to-the-hole prizes on par-3 drives. Breezy won the longest drive hole, and Gorman won the most accurate drive hole. Afterwards, a long drive contest held at the driving range was won by Dunham, Chase, and Gorman.

Following the tournament, trophies were presented to the 1978 winners, Al McIntyre, Bill Miller, Steve Gorman, Jim Poindexter, Al Ligrani, and Tom Matuszewski. Plaques were given to Tom Chambers and Andy Anderson for their holes-in-one, and to Ted Breezy for Sportsmanship.



This year the golf associations 70 members played 11 different courses in competition with one another. The 1978 winners, determined by points won during competitive play, won over several other players by narrow margins. It was a successful year.

Officers for 1979 have been elected: President, Lonnie Cundieff; Tournament Chairmen Tom Matuszewski and Mike Gremillion; Treasurer, Ruben Taylor; and Handicap Chairman, Steve Gorman. Membership solicitation will start in January 1979, and the next tournament will be in February or March.

Learn formal dance steps at Rec Center

If you are under 30, you probably don't know a lot of formal ballroom dancing steps. If you're over 30, you can probably use a refresher course. A "very successful" 10-week class is finishing and a new one begins November 29, at Gilruth Recreation Center Wednesday nights from 6:45 to 8:15.

Rae Calvert will teach the Phase I (introductory) class and will include the rumba, fox trot, cha cha, tango, and swing disco in the lesson plan. Each dance will be covered in two lessons. A Phase II class, taught by Bob Calvert, will also be held at 6:45. A high intermediate and advanced class will be taught, each at 8:15 at the Rec Center.

Cost is \$40 a couple for a 10-week course, plus \$1 per member per year Dance Club dues. For further information and pre-registration, contact Lyyle Jiongo, x3445.



NORMAN ROCKWELL—The illustrator, shown here with Jack Mays, visited JSC in 1966 to do research. Rockwell died November 8.

EAA Attractions

EAA CHRISTMAS DANCE

The EAA Christmas Dance will be Friday and Saturday, Dec. 8 and 9. The music will be the same both nights — a rock band in the gym and conventional band in the auditorium. The Friday meal will be roast beef, \$10 per person. Saturday the meal will be prime rib, \$13 per person. As usual, all beverages are included in the ticket price. Table reservations are made when you purchase your ticket from Kandy Hosea x7474.

CHRISTMAS BLOOD DRIVE

The third (and last) 1978 JSC Blood Drive will be on Nov. 30 in the Gilruth Rec. Center. With the Christmas season approaching can you think of a better gift for your fellow employees — and it doesn't cost a cent! In addition it provides free all the blood you or your family might need for the next 12 months. And it doesn't even hurt — well — a little maybe but not

much. For an appointment call Helon Crawford x3197 or Jim McBride x2541.

EAA CHILDREN'S CHRISTMAS PARTY

The annual EAA Children's Christmas Party will be held in Bldg. 2 Auditorium Saturday Dec. 16 from 2 to 4. As usual Santa Claus, Mrs. Santa Claus, and assorted elves will be on hand. A cartoon program will be presented and each child will receive gifts and have the opportunity to talk to Santa and have a picture taken. Tickets are on sale at the Bldg. 11 store for \$1.50 starting Dec. 1. No tickets will be sold at the door.

DON'T BE LATE LAST DAY FOR CANDY

Tomorrow, Nov 28, is the last day of the EAA Christmas candy sale. See your EAA Rep to place an order. Pick up your order Dec. 14 between 11 and 1.

At the Exchange Stores

TICKETS

- Astroworld - \$5.50 (reg. \$8.50)
- Six Flags - \$6.75 (reg. \$8.50)
- Dean Goss - \$20 couple, \$10 single (not valid Fri. or Sat. reg. \$14.50)
- General Cinema - \$2.40 (reg. \$3 to \$3.75)
- Disney Magic Kingdom cards - free
- ABC Theatre tickets - \$2

FBA CHRISTMAS DANCE

A dance sponsored by FBA and FEB will be held at Gilruth Rec Center December 1 with music by the Phil Gray Orchestra. Tickets are \$12.50 per person, and all federal employees and guests are invited. For information, call the Exchange Store at x4813 or Roy Aldridge, JSC's FBA rep, at x5419.

SPECIAL ORDER BOOKS

You can purchase, at a discount, special order books through the JSC Exchange Store in Bldg. 11 or Bldg. 3. Discounts depend on the policy of the publisher. Sorry, no phone orders. Come by or mail your order to the Exchange Stores, Code AW.

ROCKET TICKETS

You can purchase \$7 Houston Rocket basketball tickets for only \$5.50 thanks to JSC's membership in the Houston Galveston Area Industrial Recreation Committee. Sit in a special HGAIIRC section at the Summit and enjoy the Rockets' greatest season ever. Tickets can be bought up to five days before each home game.

What's cookin' in the JSC cafeteria

WEEK OF NOV 27 - DEC 1

MONDAY: Beef & Barley Soup; Beef Chop Suey; Breaded Veal Cutlet w/cream gravy; Grilled Ham Steak; Weiners w/baked beans (Special); Whipped Potatoes, Brussels Sprouts, Buttered Rice. Standard Daily Items: Roast Beef; Baked Ham; Fried Chicken; Fried Fish; Chopped Sirloin; Selections of Salads, Sandwiches & Pies.

TUESDAY: Celery Soup; Frito Pie; Turkey a la King; Port Chop w/applesauce; Chinese Pepper Steak (Special); Au Gratin Potatoes; Breaded Squash; Buttered Spinach.

WEDNESDAY: Clam Chowder; Fried Catfish w/hush puppies; Braised Beef Ribs; Mexican Dinner (Special); Spanish Rice; Ranch Beans; Buttered Peas.

THURSDAY: Green 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); Breaded Squash; Green Beans; Lima Beans; New Potatoes.

WEEK OF DEC 4 - 8

MONDAY: French Onion Soup; BBQ 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: Cream of Tomato Soup; Cheese Enchiladas; Roast Pork w/dressing; Oven Crisp Flounder; BBQ Link (Special); Pinto Beans; Spanish Rice; Turnip Greens.

THURSDAY: Beef & Barley Soup; Roast Beef w/dressing; Stuffed Flounder; Lasagne w/meat; Chicken Fried Steak (Special); Whipped Potatoes; Peas & Carrots; Buttered Squash.

FRIDAY: Seafood Gumbo; Fried Shrimp; Broiled Halibut; Beef Stroganoff; Fried Chicken (Special); Breaded Okra; Buttered Broccoli; Carrots in Cream Sauce.

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Editor: Kay Ebeling
Photographer: A. "Pat" Patnesky

Doors opening for part-time professionals

By Kay Ebeling
Roundup editor

A bill signed by President Carter last month will change federal policy on part-time employment. It lifts bureaucratic hiring barriers and puts Personnel in an aggressive role establishing shortened hours.

The bill is of special benefit to women and older employees.

Titled the Part-Time Employment Act of 1978, the new law changes accounting procedures so that part-time employees no longer count as full-time in a division's staff ceiling. The Act calls for federal personnel offices to evaluate jobs throughout their agencies, see which ones can be changed to part-time, establish an annual goal for part-time hiring, then set up affirmative action plans to reach those goals. The bill goes into effect October 1980.

"Most any kind of work can be established on a part-time basis," said Kay Keener, senior staff specialist at headquarters. "Anywhere a specific job is done over a period of time, or where someone else can pick up where you left off is a possibility."

Keener said the new law is "directed towards two areas: working wives and older employees," and that it is "particularly adaptable for women," where two

roles, professional and mother, are taken on. Full-time hours can be a problem for a woman with a family. As it is now, most part-time jobs are in department stores or fast food houses.

The new bill opens the option to be a part-time professional. For the woman who takes a few years to devote to a

it. Response so far has been low.

At JSC, five jobs were made into ten part-time positions. To date, four are filled, two are being held for handicapped, and four are still available. Agency-wide, out of 60 jobs created, only 15 were filled, Keener said.

The biggest deterrent has been in ac-

And NASA as a whole could gain from the new law. A recent Labor Department study found that part-time employees in general are more productive, more loyal, and less inclined to absenteeism than full-time employees—while putting less strain on company payrolls, the *Wall Street Journal* reports.

The study covered 68 major corporations and concluded: "Employers are going to be money ahead using part-timers."

In that same flurry of bills, Carter also signed a law for agencies to experiment with "flexi-time," varied hours: ten-hour days four days a week, 9:30 - 6 workdays, etc. Although NASA is not one of the agencies in the initial flexi-time experiment, "it is an option we are considering," Keener said. "Some of our centers are toying with the idea."

Here at JSC, Duane Ross, Personnel Management Specialist, was pleased to hear about the new bill. "It means we won't have to go to OMB to get a derived ceiling when we want to hire part-time employees," he said.

"But we'll still have to go through the same hoops getting people certified through the Civil Service Commission."

New law creates options for working wives and retirees; it may increase productivity.

family, "it's a whole lot easier to come back later on" if you've been working part-time, Keener added.

Promotions can happen, even in part-time jobs, although "that is something you have to weigh," Keener said. "It doesn't necessarily follow that there are other part-time jobs to move into," she said.

"Some of our (HQ) part-time people have been promoted, but to date there just aren't that many part-time jobs."

NASA began its part-time employment program last summer, after Carter circulated a memo to all agencies requesting

counting. If a person were hired part-time, he was counted as full-time in the agency's hiring ceiling. "Under the new law, we will count the number of hours, not the number of bodies," Keener said.

Women are only one group who will profit. A person approaching retirement may not want to retire, or may want to ease into retirement by working part-time. Under JSC's new policy, that person can accrue health and vacation benefits, prorated according to the hours worked. Also, a retiree who worked 20 hours a week receives the full annuity, based on grade level and the full-time salary.

Reserve now for secretaries' January seminar

With a theme "Today and Tomorrow" the National Secretaries Association ninth annual seminar takes place Saturday, January 27, 1979. Reservation deadline is November 30.

The secretaries will hear talks on motivation and work habits. Dr. George Dempsey, Baylor psychiatrist, will talk about self improvement in his speech, "Dare to be What You Can Be." Keynote speaker is Honorable Lindley Beckworth of Longview, former U.S. Congressman and federal judge. He will speak on "Duty." And Walter Sharp of UofH will speak on management problems, from time management to following contract rules.

There will also be exhibits, lunch, a door prize, and the company of other secretarial professionals.

Make reservations checks (\$15) payable to NSA, NASA Clear Lake Chapter, and mail them to 405 Christina Lane, Friendswood, TX 77546. The expense is tax deductible.



WHITE SANDS OPEN HOUSE—Harry Wiley, NASA engineer, briefs visitors on the Shuttle Forward Reaction Control System at the open house held October 14 at JSC's test facility in New Mexico.

3,000 visitors took tours through the test stands, control center, altitude simulation system, laboratories, test article preparation buildings, and the Tracking Data Relay Satellite System Facility.

Roundup Swap Shop

PROPERTY & RENTALS

For Lease: One bdrm. New Condo, Baywind II, immediate occupancy, \$245/mo. plus elec. Call 334-1817 after 5.

Lease: CLC, new 1 br. condo, drapes, f/pl, app. \$245 mo. plus dep, no pets. Avail. Nov. 15. 488-5019 after 5.

Lease: Middlebrook 3-2-2 with large fam room, fireplace, screened back porch, gas grill, landscaped, near park & schools. McCollum. 488-2913.

Lease: Baywind II, new one bdrm condo, fireplace, refrig w/icemaker. 488-4276.

WANTED

Wanted: Ride from Dickinson to JSC. Will pay gas. Please call Cris, X5811 or 534-3756. Home needed for large, good-natured cat, young neutered male, grey and white. 474-4650.

Needed: Good used tires, F78X14 white sidewalls. Phone 474-2203 Poindexter.

Attention TRS 80 owners: We are forming an association of TRS 80 owners. If interested call Norman Boles 471-3709 or X4671.

Would like to join or start car pool from Pasadena (Shaver/Spencer area) 8-4:30. Would be willing to adjust hours. Mary. 477-0665 or X2576.

CYCLES

'72 Yamaha 100 cc, needs mech. repair. \$160 488-1326 after 5.

'77 Honda four CB550F Supersport, new tires, adjustable sissy bar backrest, luggage rack, engine crash bar, and 2 extra Honda tail/stop lights. \$1200. Dick Goody 333-3024.

BOATS & PLANES

17 Foot Thompson Mahogany Boat, less than 40 hrs. on 55 H.P. Evinrude, new trailer with elec. winch. Sacrifice for \$1250. League City 554-7370.

MUSICAL INSTRUMENTS

Yamaha Electone Organ, Model DK40A, Italian prov., exc. cond. \$1250 inc. \$100 of music 944-5818. Norris Taylor.

STEREOS & CAMERAS

Omega B600 enlarger with 50mm lens, negative carriers for 35mm, 645, and 2 1/4 X 2 1/4 film. Like new, packed in orig. carton. \$85. 488-6737 after 5.

CARS & TRUCKS

'74 Gran Torino, PS/PB, air, automatic, AM-FM 8 track, new tires, \$2000. 477-0665.

'78 Plymouth Volare 2-Dr. blue/blue custom trim, auto, power, 8000 miles, warranty, \$4350. Phone 466-5127. Ellis.

'75 Eldorado motor home GMC 350 front and rear A/C almost new tires. \$6500. 944-2785.

'78 Ford, 150, 4X4, Pos. Track, 351 cu. in., custom wheels on mags, 10,000 miles. Donny Casey 427-3788 after 5.

'77 Datsun 810, PS, PB, AC, AM/FM stereo, CB cassette player, cruise control, low mileage, extended transferable warranty, exc. cond. many other extras. Jones. 488-8119.

'76 Fiat Spyder AC, Stereo, 5-SP, mint \$600. Below dealer 333-4959 X 5893.

'77 Buick, brown & white, new tires, cruise control, tilt steering, AM/FM stereo, (Quad), sun roof top, power seats, doors & windows, 24,000 miles. \$600 down, and take up notes. 328-1880.

'77 Camero Type LT, loaded, new tires, exc. cond., sacrifice at \$5275 or best offer. 484-1522.

'73 Pontiac LeMans, 2-door, AC, PS, PB, good tires, V-8, very dependable, \$1500. Robertson, 488-5642.

'67 Cutlass 4 dr. 6 cy., std., good body, tires, AC \$675. Hake. 554-3778.

HOUSEHOLD ARTICLES

Early American couch and chair. Gold/Red. Good condition. \$100 both. X4801. Hansen.

Eight, 8 ft. X 18" shutters for room divider, \$40 all. Also beautiful large antique curved glass china cabinet all original shelves. \$850. 488-5564.

Corner group; two beds (lounges) w/bolsters and table, gold and white. \$100. Standing rolled map file, 40-unit, on wheels \$25. Kaltenbach. 331-5751 after 5.

MISC.

Mediterranean CRUISE tour Greece, Israel, Egypt, Italy on the Victoria, 10 countries, 13 days, all expenses. \$1699 (Includes airfare) 333-4959 or 521-0794.

Seat Base with factory seat belt & shoulder harness for '77 Ford Van. \$25. Bauch 333-3382.

1978 shelled pecans—\$5/pound. 534-2167.

Will board dogs and cats at my home. Limited grooming by appointment. 332-4854.

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



Vanguard transferred to new assignment

After 12 years of supporting Apollo, Skylab, and Apollo Soyuz manned space flight missions, the USNS Vanguard, last of an original five-ship tracking and reentry coverage flotilla, was transferred October 1 to the United States Navy for navigational and ocean survey work.

Vanguard served NASA astronauts throughout ten Apollo, four Skylab, and one Apollo Soyuz mission as a floating tracking station carrying out assignments in the Atlantic, Indian, and Pacific Oceans.

Built by General Dynamics Corp.'s Quincy, Mass., shipyards, Vanguard was commissioned October 15, 1966, and

became the last of three identical ships (Mercury, Redstone, Vanguard) to come off the Quincy ways specifically designed for, and dedicated to, manned space flight. However, the three sister ships frequently demonstrated their versatility by supporting automated scientific satellite missions.

The Vanguard's capabilities were extensive. It could function as well as any ground tracking station. Voice commands, biomedical data, spacecraft environment reports and command/control functions were transmitted and received through the ship direct from the Mission Control Center at Houston. The ship was

in the tracking network to make certain there was communication with spacecraft when they could not be "seen" by land tracking stations.

Precise distances traveled and hours of mission support have not been calculated, but Space Tracking and Data Network (STDN) veterans estimate that fully half of the Vanguard's NASA lifetime was spent in a mission support status; the remainder being in port, yard repair, or transit time.

Presently berthed in Oakland, Calif., Vanguard will begin its new career under the Navy's Strategic Systems Project Office.

Give your prodigy a payload for XMAS

Operations can get the gift for the child who wants to know everything

Stuck on what to get little Artimus for Christmas? Your oil-rich cousin Beaugard got bored with last year's toy?

You may find the answer in Bloomingdale's Christmas Catalog for 1978. There under learning gifts is an ad for "'One small step for man, one giant leap for mankind' Getaway Special."

"Hold onto your helmets--" it reads. "Now you can conduct your own research and development experiment on a Space Shuttle." Then it explains how for just \$3,000 to \$10,000 you can send your own R&D payload into space.

Actually, the small payload is an option. The big seller, according to a Bloomingdale's spokeswoman, is a "trip to space" the store has arranged with Marshall and the Alabama Space and Rocket Center.

For \$250, a family of four can tour Marshall Space Flight Center, don space suits to ride a zero-g simulator, and drive a moon buggy over lunar landscapes.

"The response has been overwhelming," the Bloomingdale's spokeswoman said. "We've had to book extra trips."

Mark Craig, JSC engineer, didn't even know "getaway specials" were being advertised as Christmas presents. He, with colleagues in the American Institute of Aeronautics and Astronautics, has been promoting sales of small payloads for use in schools.

"Now is the time to make reservations for 1982 flights," he said in a speech at the American Astronautical Society meeting last month. The cost is \$500 down, with half the balance due within 18 months of the contract, and the other half due within two months of flight.



Craig's project brings the space program within reach of high school and college students. For instance, the local Rotary Club has purchased a small payload for the Clear Creek Independent School District. Now 70 math and science students are competing to see who can come up with the best experiment.

The "getaway special" project is a result of NASA's effort to use "every nook and cranny" of space on the shuttles, Craig said. Primary payloads on operational flights will not occupy the total

space available to meet the maximum allowable weight.

"This presents a unique opportunity to place students' experiments in space on a regular basis," Craig said.

Craig, along with JSC's Tom Murtagh and Charles Jacobson at McDonnell Douglas, is encouraging groups to buy the payloads and donate them to schools. But he doesn't know anyone who has bought a small payload for his child for Christmas.

Neither does Donna Skidmore of the

STS Operations Office at Headquarters. That office has booked over 250 small payloads for the shuttle, over half for industrial use. "But no one has put down earnest money yet in response to the Bloomingdale's ad," she said.

The Bloomingdale's spokeswoman in New York had a similar story. "You mean the one for three to four thousand dollars?" she said. "No, No, we haven't gotten any calls on that yet."

There are still 20 shopping days until Christmas.