

# Once Rookie Crew Now World's Space Champs

Skylab 4 astronauts Jerry Carr, Ed Gibson and Bill Pogue, once described as "space rookies", now hold the world's record for the longest total flight time in space.

The crew passed Alan Bean's record of 69 days, 15 hours, 45 minutes and 29 seconds on January 25 at 12:45 a.m.

Cap Com Dick Truly broke the good news to the crew. "The purple gang is very happy to be the guys to congratulate you as the undisputed space champs of the world," he said.

Alan Bean also congratulated the astronauts. "You did it the hard way—all in one shot, he stated, "It took Pete (Conrad) four times to do it and me, twice."

Bean was lunar module pilot on Apollo 12 and commander of Skylab 3.

Conrad was pilot of Gemini 5; command pilot of Gemini 11; spacecraft commander of Apollo 12 and commander of Skylab 2. He logged a total of 1179 hours and 37 minutes in space.

NASA Administrator Dr.

James C. Fletcher and Deputy Administrator Dr. George M. Low also sent messages to the crew:

"Congratulations on breaking the last remaining manned space flight duration record, and especially for the outstanding work you have done and are continuing to do in the field of space science, space applications and in learning about man's reaction to space. Keep up the good work."

The crew had already surpassed the Skylab three spaceflight duration record of 59 days, 11 hours, 9 minutes and 4 seconds.

They have been in space 78 days; if splashdown takes place on February 8 as planned, Carr, Gibson, and Pogue will have logged a total of 84 days in space.

Commander Carr told Dick Truly that records are made to be broken and that sooner or later someone would probably break the one set by Skylab 4.

"I'm sure you're right," Jerry," Truly remarked, "But I think it's going to be awhile."

# ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS



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## JSC Employees Make Movie Debut

With "stars in their eyes" employees from all over the Center lined up to make their debut in the movies—many of them giving up annual leave to take advantage of what could be a "once in a lifetime" opportunity.

If you're watching ABC's Mystery Movie, Saturday, March 2 on channel 13, chances are you'll see some familiar JSC faces in a movie entitled "Houston, We've got a Problem," filmed by Universal studios, Inc., at the Center and various other locations in the JSC community.

The movie, which centers around the Apollo 13 mission, was written by Dick Nelson, produced by Herman S. Saunders and directed by Larry Doheny.

Saunders said the concept of developing a story around the events of Apollo 13 originated last February. Universal, however, did not want to convey the facts as a documentary. *Conse-*

*(Continued on Page 2)*



FRIENDLY DISCUSSION—Actor Ed Nelson and JSC Flight Operations Deputy Director Eugene Kranz hold a discussion at the Control Center. Nelson plays the part of Kranz in "Houston, We've Got a Problem," a movie depicting the events of Apollo 13. Kranz was one of the Flight Directors during the Apollo 13 mission which was aborted during the third day of flight.

## Crew Studies Oceans

Using cameras just like those owned by photographers on the Earth's surface, astronauts aboard the Skylab space station are permanently recording the appearance of an ever-changing sea.

Gerald Carr, Edward Gibson, and William Pogue, with the most thorough training ever given a team of orbiting observers, have already seen and reported extensively on little known ocean phenomena—phenomena that affect the lives of every person on Earth.

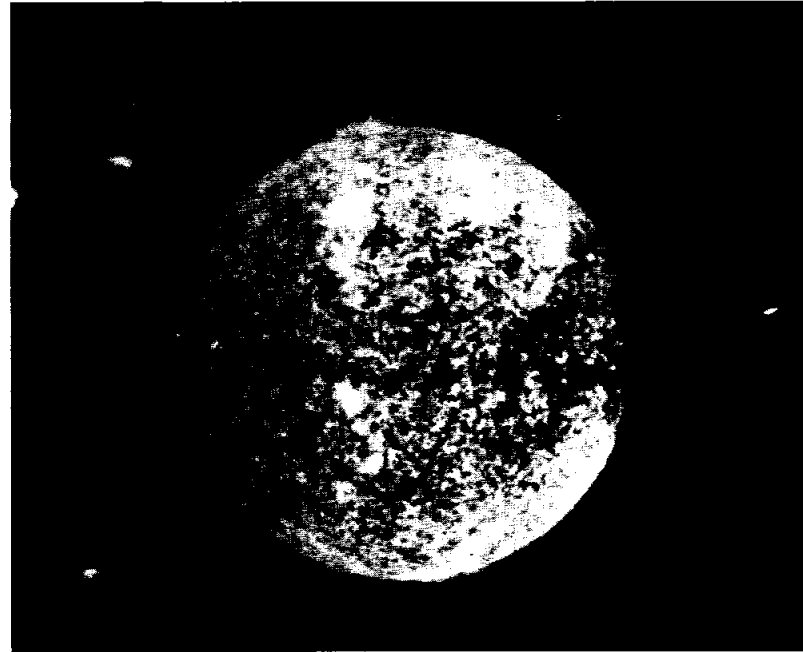
From their excellent vantage point 270 miles above the planet's surface, the astronauts have seen and photographed ocean currents and huge concentra-

tions of marine life in areas so remote that such changing conditions would be virtually impossible to monitor from any other location.

A tremendous range of oceanographic studies will benefit from the Skylab observations.

George A. Maul, a principal investigator for Skylab's earth resources research and an oceanographer with the National Oceanic and Atmospheric Administration's Atlantic Oceanographic and Meteorological Laboratories in Miami, Florida, says the unique observations by Carr, Gibson, and Pogue will add significantly to man's knowledge and understanding of the

*(Continued on Page 4)*



THIS IS a view of a solar eruption taken from Skylab II. The photo was made with the SO82A spectroheliograph camera. The eruption extended more than one-third solar radius. Skylab IV Science Pilot Ed Gibson, author of a book entitled "The Quiet Sun," has spent almost one third of his science time in the space station studying and making observations of the sun using the workshop's Apollo Telescope Mount instruments.

## Member of Space Task Group Dies

Frederick John Bailey, former Chief of JSC's Flight Safety and Reliability Office (now Safety, Reliability and Quality Assurance) died last Friday in Merritt Island, Florida after a sustained illness.

Bailey was one of the original members of NASA's Space Task Group—a team of thirty-six scientists, administrators, and clerical personnel given responsibility for preparing the first attempts to launch man beyond the atmosphere.

Bailey served as Assistant Chief of Flight Research for the National Advisory Committee on Aeronautics (NACA) located just North of Hampton, Virginia, from 1934-1959. He then trans-

ferred to Kennedy Space Center (then Atlantic Missiles Range Operations) where he served as Technical Assistant to the Director.

In 1960, Bailey joined JSC (then MSC) and served as Chief of Flight Safety and Reliability until he retired in 1970.

Bailey was born in Washington, D.C. on January 27, 1911. He received his B.A. degree from Middleburg College in Middleburg, Vermont and completed requirements for his M.A. and Ph.D. degrees at Massachusetts Institute of Technology (MIT).

He leaves a widow, the former Mary Weiss, and two children, Sandra and Rick.

## Solar Flare Creates Much Excitement

A solar flare recorded on January 21, 1974 by the Skylab 4 mission has created considerable excitement within the worldwide solar physics community.

The flare was not large by comparison with those recorded on previous Skylab flights. Ground observers classified it as a medium sized flare.

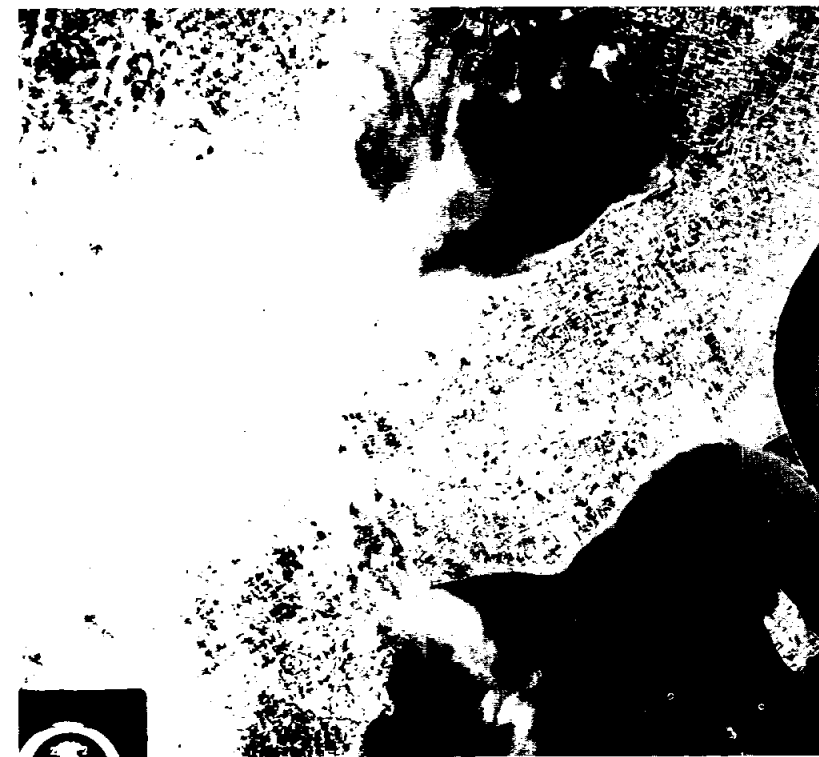
The excitement stems from the news that for the first time in the history of the Skylab missions a solar flare has been recorded from its beginning through its expiration.

Previous Skylab crews have not been able to gather data on solar flare beginnings because the systems that warn of flares were not sensitive enough to detect the comparatively weak X-ray emissions from the Sun that signal the beginning of a solar flare.

In the hope that he might catch the earliest stages of a solar flare, Skylab Science Pilot Edward G. Gibson had been spending long hours observing the Sun through the Skylab Apollo Telescope Mount (ATM) instruments.

On January 21, Dr. Gibson's vigils were rewarded when he observed indications of increasing radiation from the western half of the Sun and immediately concentrated the ATM instruments on the phenomenon.

According to ground control- *(Continued on Page 3)*



DETROIT—A near vertical view of the metro Detroit area showing the Detroit River and Neighboring Windsor, Ontario. Visible are the numerous arteries that give a clue to the "Motor City's" identity. Photo from Skylab III.

# Universal Studios Depict Drama of Apollo 13



## Debut—

*(Continued From Page 1)*  
quently, the idea of a "Docu-Drama" emerged, wherein the facts surrounding the problems of the mission would overlay a fictional story.

Many JSC employees remember the tenseness that invaded the Center almost four years ago: Apollo 13, planned as a lunar landing mission was successfully launched from Complex 39A, Kennedy Space Center, April 11, 1970. However, the mission had to be aborted enroute to the moon during the third day of flight due to loss of Service Module liquid oxygen and consequent loss of capability to generate electrical power in the Command/Service Module.

Shortly after the anomaly, the CSM was powered down and the remaining flight, except for entry was made with the Lunar Module providing all necessary power, environmental control, guidance and propulsion.

Flight crew members were: Commander, James Lovell, Jr.; Command Module Pilot, John L. Swigert, Jr.; and Lunar Module Pilot, Fred W. Haise, Jr.

Saunders said that he was impressed with the confidence displayed by the flight controllers during this trying period, "They never even considered the alternative to not getting the guys back to earth safely," he state.

Shooting a movie is fun, Saunders says. But he also admits that difficulties do sometimes arise. "Houston, We've got a Problem" proved to be no different.

"First there was the problem of having to wait for the first two manned Skylab Missions. Then when NASA officials decided that the movie could be filmed during Skylab 4, there were no hotel accommodations available for the cast and crew because of the Super Bowl," Saunders explained.

The Super Bowl was held January 13; the crew flew to Houston January 14; and Universal started shooting the movie January 15.

"We shot everyday through January 25, including Saturdays and Sundays," Saunders said.

He was amazed at the cooperation he received from NASA employees.

"I expected a great deal when I got here, but I was absolutely overwhelmed by the kindness of the people here. We of Hollywood feel that the astronauts are the stars and the people involved in the space program are all a part of it. It's a whole new world to us. Yet the people of NASA were so co-operative," he said.

Saunders estimated that more than 200 JSC employees participated in the movie.



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## Roundup Swap-Shop

Swap Shop advertising is available to JSC and on-site contractor personnel. Articles or services must be offered as advertised, without regard to race, religion, sex or national origin. Ads should be 20 words or less, including home telephone number. Name and office code must accompany, but need not be included in ad copy. Typed or printed copy must be received (AP3 Attn: Roundup) by Thursday of the week before publication.

### PROPERTY

Lease/sale: 3-1/2-1 brick home. Friendswood near school. Storage bldg. \$215/month plus deposit. available 2/15/74, Ext 6431 or 482-3964 after 6 or weekends.

### VEHICLES

64 Honda 150cc, exc cond, only 9880 miles. 75mpg. \$200. 488-4120.

Avon fairing for BMW; fits 250/5, 260/5 & R75/5. \$75. 488-4120.

Bike, 20" girls, less than 3 yrs old. \$15. 488-3385.

Bike, 20" boys spider, banana seat, high rise handle bars, gd cond. \$8. 481-2591

69 Dodge Charger, auto, a/c, vinyl top. Rainey 488-4384.

1932 Ford 5 window coupe w/extras. N. Prince Ext 2171 or 991-4537 after 6pm.

72 Plymouth Fury III, a/c, auto. WSW. \$1,400. McPhillips. 337-1471.

71 LTD Country Squire wagon, auto, a/c, power/str-brks-seats, AM/FM stereo. \$1995. Lea. EXT 3301 or 481-0297.

69 Corvette 427, a/c, full pwr, tilt/telescope steering, 2 tops, mag wheels, chrome exhausts, custom paint. \$2775. 488-1326.

Bike, Mont. Ward 26" boys coaster brk, gd cond, \$25. Konradi 334-2180.

68 Honda Trail 90 less than 3000 miles, dual range 8 spd Xmission. \$140. EXT 6278 or 482-2723.

Corvair Calif. Custom dunebuggy. 30 mpg. Bullock 488-6095.

### PETS

Boxer pups, AKC, exc blood lines. Pratt, 479-5152.

AKC toy poodles, silver and apricot, ready for Valentines Day. Ward, 486-5445.

### WANTED

Carpool using I-45 from Winkler/Monroe to JSC. Boyd EXT 4671 or 941-7697.

Piano teacher to teach adult who has taken 1.5 yrs lesson. NASA area prefer. 474-4359 after 5.

Individual to form carpool from Southampton subdivision. Houston, to JSC. Steve Gorman Ext 2481.

Sewing machine, prefer Singer Zig-Zag and in gd cond. Lyn. 334-5052 after 5.

Motorcycles/motor bikes under 200ccs, running or not, need 3. Call Dan, 488-5691 or 483-3583.

### HOUSEHOLD

Janssen console piano, french prov. finish in cherry wood, like new. \$500, McCown, 471-0716.

Living room sofa, trad. design off-white color, exc cond. \$60. Roy Parker Ext 4535 or 333-2253.

Baby play pen. \$10. 946-40\*3.

Genuine antique brass bed. \$250, Steve Gorman Ext 2481.

Casual matching couch and chair, good condition, green-orange-yellow. \$96, exc for game room. 332-2749 after 4:30.

### MISCELLANEOUS

Minolta 16MG subminiature camera, deluxe case. Perfect cond w/film 9 dozen flashbulbs and acces. \$65. Handley 482-7041.

Snow ski equip: boots/skis/poles/bindings for child 8-12, exc cond. \$25. Skis/poles/bindings for child 11-15, exc cond. \$20. 334-2725.

Drums, Ludwig & Majestic mixed: 2 base drums, snare, base tom, floor tom, HI-hat, 16" cymbal. \$140. Mark. 488-5037.

Sears Winchester 22 Magnum, lever action, w/Weaver scope. \$30. 481-3223 after 4:30 or Ext 3003.

7.5mm Erma baby German Luger pistol, extra clip, ammo, brand new. \$60, J. T. Kilpatrick, 534-4603.

To buy or trade: Plate blocks and mint sheets. Call 488-0317.

Stan Leonard golf clubs, 6 irons, 3 woods, unused. \$50. Heiken, 333-2897.

Yashica 12, TLR, light meter built-in. \$35. Heiken, 333-2897.

Electric bass guitar, double pickup, hollow body, violin shaped, exc cond. \$65, Mark. 488-5037.

For sale Baywood Cntry club membership \$150. 488-5738.

For sale Singer sewing machine, straight stitch in wd cbnt. \$35. 474-2137.

Hanksraft Cool-Vapor vaporizer-humidifier, like new. \$5. 474-2137.

Encyclopedia Americana w/3 shelf bookstand, walnut, and yearly annuals. \$100. Sheilander EXT 4442 or 729-3698 after 5.

### BOATS

Lido 14 sailboats: info on prices and cond of used Lidos for sale by owners. R. A. Hoover. 334-2392.

14.5 fiberglass V-hull w/55 hp Johnson in exc cond: new tank, btrs, extras. \$1100 or best offer. Allgeir. 333-4627.

1964 26' Chriscraft cab cruiser. bunks, head, galley. \$3,000 or offer. Nassau Bay Marina Stall 17. 483-7209 or 332-1979.

## Old And New Energy Saving Ideas

The following checklist of tips for saving gas and electricity this winter contains some ideas which are obvious, and some which many of you probably never thought of before.

### HEATING YOUR HOME

• If every one in the country used just two degrees less heating this winter, there would be enough energy saved per day to supply power for 49,000 homes for an entire year.

• Proper insulation and weatherstripping can cut heating costs up to 45 per cent. Make sure your home is properly protected.

• Clean or replace filters in forced air systems at least twice a year and check frequently. Keep grills and warm air ducts free of dust and lint. Keep all heating outlets free of obstructions.

• Frequent changes in thermostat settings increase heating costs. Set thermostats to an agreed temperature during the day and leave it alone. Remember to lower thermostat setting at bedtime or when you're away from home for the day.

• Turn off heat vents and close off rooms that are not being used during the day.

• Keep windows and doors tightly closed when heat is on. Close fireplace dampers to prevent warm air from escaping.

• On sunny days, let the sun do some of the heating during the day by opening drapes, shades and blinds. Close drapes at other times and at night. This can stop up to 16 per cent of heat lost through windows and sliding glass doors.

### IN THE KITCHEN

• Preheat oven only when absolutely necessary. The broiler never requires preheating.

• Thawed foods will cook faster than frozen ones, so remove food from freezer in advance.

• Cook by time and temperature. Use a meat thermometer when roasting and a minute

timer to time other items. Remember, every time you open the door the oven temperature drops from 25 to 50 degrees.

• Use high heat only to bring water to a boil or to start cooking, then reduce heat to finish. When possible, use a tight cover on pots and pans so food can cook at a medium or low setting.

• Plan meals ahead. If you are going to use the oven for roasting or baking, why not include baked potatoes and vegetables on the same menu? You can cook frozen or fresh vegetables in the oven easier than on a stove.

• If you have a dishwasher, fill it completely before operating. Partial loads waste fuel and hot water.

• Properly used portable cooking equipment such as broilers, roasters and skillets can save energy by using less electricity than an oven for the same task.

• Refrigerators and freezers are the only kitchen appliances in operation all day, every day, so it is important that they be functioning at peak efficiency. Check door seals periodically: Close the door on a piece of paper; if it pulls out easily the seal is no good and should be replaced. Thick frost reduces cooling ability. Defrost as soon as frost becomes 1/4 inch thick. Open doors only when necessary. By removing and replacing several items at once, you will reduce loss of cold air.

### DOING THE LAUNDRY

• Save up until you have a full load. It takes just as much energy to do a small load as it does a full one.

• Warm or cold water instead of hot can be used for almost all your laundry except whites.

• Follow detergent directions. Your washer motor works harder when you overdo the suds, so always measure instead of just pouring it in.

• Clean the lint screen every

time you use the dryer. The increased air flow will dry your clothes faster.

• Use a timer to avoid overdrying.

• Check for small hot water leaks (a dripping shower fixture, a leaky faucet). Ninety drips of water per minute add up to 430 gallons of water in one month.

### LIGHTING

• Forget the old theory about it being cheaper to leave a light burning than to turn it off and on again. It just isn't true. Even with the small surge needed for each turn-on, a light that is burning is using kilowatts, and when it's out, it's not. It's as simple as that.

• Turn off lights whenever they are not being used.

• When furnishing or redecorating a home, remember that a light-colored interior decor requires less lighting and fewer lamps.

• Consider the use of fluorescent lamps for kitchen, bathroom, laundry and work areas. A 40-watt fluorescent bulb will produce more light than a 100-watt incandescent, and will last up to 10 times as long.

### AT WORK

• Turn off business machines—electric typewriters, calculators, etc.—when not in use.

• Eliminate decorative lighting, such as lamps, in office areas.

• In offices where lighting is controlled by an independent switch, turn off lights when not in use 30 minutes or more.

• Eliminate portable electric heaters and coffee pots.

• Turn off machine tools when not in use.

## Solar Flares *(Continued From Page 1)*

lers and scientists, Gibson's patience and vigilance have resulted in the acquisition of data of extreme significance to the understanding of solar processes not otherwise possible to obtain.

Involved early in the Skylab program by participating in the design and development of the ATM solar instruments, Gibson has been described by ATM principal investigators as one of the most enthusiastic Skylab astronauts regarding solar physics. Dr. Gibson, an experienced solar physicist, is the author of "The Quiet Sun," a book that has received considerable praise.

Dr. Neil R. Sheeley, solar physicist with the U.S. Naval Research Laboratory (NRL), Washington, D.C., was on duty at the ATM science room console while Gibson was making his unforeseen observations. Dr. Sheeley stated that to the best of his knowledge neither of the previous Skylab crews had been able to catch a flare from beginning to end.

"The importance is that certain things happened in the rise of a flare that don't happen at any other time. One of these is the flash phase. At some time in the increase of X-radiation, there is a 15- to 20-second period in which the energy increases very quickly," Sheeley noted.

"We had no way of plotting or predicting it," Sheeley continued, "—it can come at any time. It was a challenge to Gibson and

very exciting for the crew and for mission planners, and it will be very exciting for scientists after the mission is over."

Sheeley is one of the principal scientists on the team responsible for the coronal spectroheliograph (SO82A) and the chromospheric spectrograph (SO82B) telescopes. The Principal Investigator for the SO82 experiments is Dr. R. Tousey, head of NRL's Rocket Spectroscopy Branch.

Dr. A. S. Krieger of American Science and Engineering, Inc., (AS&E), noted that "One of the most important and baffling mysteries in solar physics concerns the process whereby energy is transferred from the Sun's magnetic field into thermal, or heat energy. This process takes place during the early phases of a solar flare. Thanks to Dr. Gibson's alertness we have been able to observe this process from Skylab for the first time.

"If we can further unlock the secrets of this energy-transfer process, it may become possible to develop energy-transfer processes on Earth that will be of inestimable value in our search to find cheaper sources of energy," Dr. Krieger said.

Dr. Krieger is principal scientist on the ATM X-ray Spectrographic Telescope (SO54) team. The SO54 was developed and built by AS&E, Cambridge, Massachusetts. Dr. G. Vaiana of AS&E is principal investigator for the SO54 experiment.

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OUTSTANDING SECRETARY—Dr. Kraft presented a plaque to Connye Lenczewski, Outstanding Secretary for January. Connye is secretary to the Technical Assistant of the Skylab Program.

## ROUNDUP

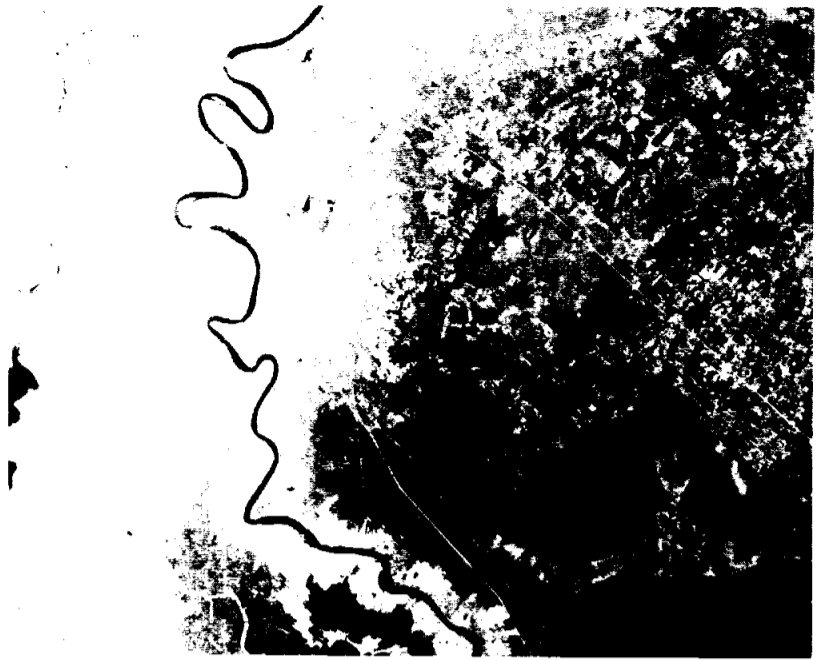
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Editor: Janet Wrather      Photographer: A. "Pat" Patnesky

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# Skylab Astronauts Reveal Ocean's Mysteries (Continued From Page 1)



BATON ROUGE—The Mississippi River meanders from Baton Rouge at the top to the suburbs of New Orleans at the bottom. Also visible is the former bed of the Mississippi to the left of the current channel. Photo from Skylab III.

## JSC Dancing Club Begins Lessons

Want to go out but feel that the lead in your feet will make you a "stick in the mud?" You and the wife been envious of the teen-age set when they go out dancing and you two stay home watching the color set? Well, fear not, there's a club on site which will bring out the rumba from your back seat, put Mercury's wings on your leaden feet and generally pick up your spirits again. The club is the Ballroom Dancing club and it meets every Wednesday night at the Gilruth Recreation Center at 7:00.

Bob Calvert is the instructor and teaches everything from the Waltz to the swing and rock steps. Couples who join also have voting participation in deciding what types of dance steps they want to learn.

A new feature of the club is the beginner class which will start the first week of February. Generally the evenings last about 1½ hours and Calvert is known to mix humor with dance steps—the modern version of the stand-up comedian.

Persons interested in either the beginner club or the regular "grab a partner and swing" club should contact Ruby Laird at EXT 3361.

If the tube's not what it's cracked up to be, give Ruby a call, put on your dancing shoes and rediscover an old custom.

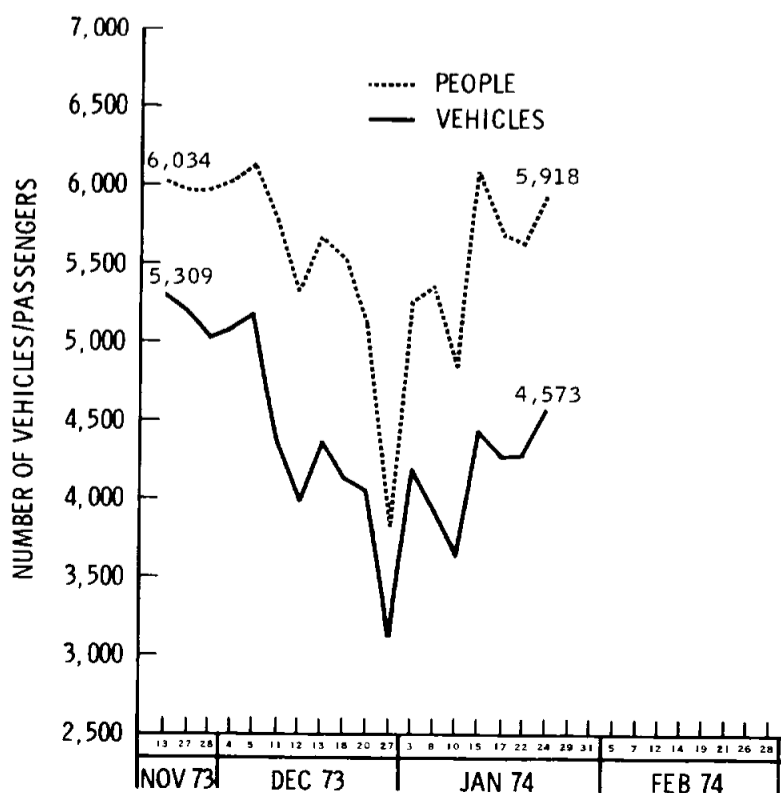


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## Attention:

**There will be a blood drive for all federal employees and on-site contractors at the Gilruth Recreation Center on February 20, 1974. Appointments may be made by calling Les Wyn, X-3428 or Helon Crawford, X-3809.**

## JSC TRAFFIC DATA



oceans.

With hand held cameras, the astronauts are gathering data that will permit scientists to make significant revisions of ocean color charts prepared before the Second World War, says Maul.

One area of particular interest, says Maul, is the South Atlantic Ocean, where only 4 per cent of the world's oceanographic stations are located.

On numerous occasions, Skylab astronauts passing over this area have observed, described, and photographed the Falkland Current, a river of cold water flowing from just beyond the Antarctic in a great arc swirling northeast along the coast of Argentina to mix with the Brazil Current from the north.

It has been known for years that the Falkland Current carries great icebergs into the Atlantic from their source in Antarctica's Weddell Sea, hundreds of miles to the south. Its location—remote from the heavily travelled shipping lanes of the North Atlantic—has severely restricted the scientific investigation of its winding course.

Until the Skylab crew began ocean observations, the most definitive studies of the Falkland and Brazil Currents had been made by German and British expeditions in the late 1920's and early 1930's—studies that took years to complete, says Maul.

Because ocean currents affect weather conditions, the distribution of marine life, the movement of sediments, and the course of international shipping, very detailed knowledge of the changes they undergo would be of clear benefit to people everywhere.

Within the Falkland Current, and in many other places on the surface of the world's oceans, the astronauts have observed yet another transient feature of great importance to man. Huge concentrations of microscopic marine life covering hundreds of square miles of the sea surface have been observed and photographed by the third Skylab crew.

Because these microorganisms are at the base of the ocean food chain that supplies an important part of the world's protein, knowledge about the population explosions or "plankton blooms" is essential to ecologically sound management of food sources.

Jerry Carr described one suspected bloom, which may have been produced by sunlight warming the ocean's surface during the southern hemisphere's summer:

"You could see the Falkland Current again very, very plainly, the long, light-green, almost fluorescent-looking light-green, serpentine current moving its way to the northeast.

"I found another patch of red.

I would estimate the patch of red to be 15 to 20 miles wide and 25 to 40 miles in length."

Carr said the red surface was within the current, never touching the blue of the adjacent waters.

Such red plankton blooms are often associated with massive fish kills. As algae populations explode, changing the ocean color to a distinct red, the great volume of waste material and the death and decay of the one-celled creatures may make the water poisonous to larger life forms.

Such "red tides" strike coasts, around the world, killing great numbers of fish, and sometimes making shellfish poisonous to man.

The prediction and prevention of such destructive growths is virtually impossible without timely world-wide observations of the sort made by the Skylab astronauts.

Maul notes that the third crew has also seen and recorded large oceanic eddies, and swirling cloud patterns produced by islands jutting from the surface of the sea. The study of currents by the space crew has also revealed new information about the movement of oil spills, and the crew has detected and photographed branching within the world's currents.

By regular reports to the ground, the Skylab astronauts have aided scientists in planning more effective use of the sophisticated cameras and electronic sensors in the space station's Earth Resources Experiment Package.

Data from the ocean and atmospheric studies conducted during earth resource surveys made by the astronauts will be returned on February 8, when they splash into the Pacific Ocean.

The skill of trained observers may become an increasingly important part of man's venture into near-Earth space when the Space Shuttle becomes available in the coming decade. Maul says that space researchers could be part of an alarm system to forewarn of dangerous ocean phenomena such as red tides and to observe and report other important changes in the surface of the sea.

Space photography of the Gulf of Mexico, supported by the visual observations of the current Skylab crew, allowed oceanographer Dr. Robert E. Stevenson of the Office of Naval Research, La Jolla, California to detect swirling disks within the Gulf Stream, which carries more water than all the world's rivers combined.

The Gulf Stream has long been treated as a warm current, and has frequently been credited with bringing Europe its mild winters. But Stevenson has suggested that the disks or eddies are much cooler than the sur-

rounding current.

If continuing research confirms the finding indicated by Skylab photography, the new data may change both oceanographic maps and the predictability of hurricanes, which draw their strength from warmer waters and are frequently dissipated by cooler regions.

## Office Realigned

An organizational change and a functional realignment of Center technology utilization activities are effective immediately. The Technology Utilization Office, previously located within the Management Services Division of the Center Operations Directorate, is reassigned to the Technical Planning Office (Code AT) under Mr. Joseph P. Loftus, Jr.

The Technology Utilization Office is responsible for maintaining a program for the identification and documentation of new technology developed during the research, engineering, and development efforts of JSC and its contractors; serving as New Technology Representative of the Contracting Officer in the administration of the New Technology contract clause; and disseminating certain Technology Utilization Program information both within and outside of NASA. The Technology Utilization Office is also responsible for managing a program to support selected technology transfer projects.

## Employees Retire

Two key NASA personnel—Dr. Homer E. Newell and Vincent L. Johnson—recently retired from the agency. Dr. Newell served as NASA's Associate Administrator; Johnson was Deputy Associate Administrator for Space Science.

In announcing Dr. Newell's departure, NASA Administrator Dr. James C. Fletcher said, "He has served this agency with distinction and dedication and will be sorely missed."

Dr. Newell received his Ph.D. in mathematics from the University of Wisconsin in 1940. He is a native of Holyoke, Massachusetts.

Dr. Fletcher noted that Johnson has been "an able and conscientious leader in advancing NASA's unmanned space programs."

Johnson was Director of the Launch Vehicle and Propulsion Programs in the Office of Space Science and Applications from 1964 to 1967. He was responsible for the management and development of the light and medium launch vehicles used in NASA's unmanned Earth orbital and deep space programs.

Johnson was born in Red Wing, Minnesota and attended the University of Minnesota.