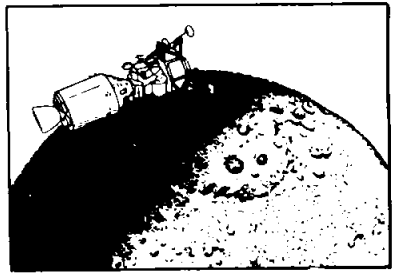


ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS



Friday May 24, 1974

Vol. 13 No. 13



SKYLAB STAMP CEREMONIES — Sigurd A. Sjöberg, Deputy Director of JSC, addresses the audience at First Day Issuance Ceremonies for the Skylab commemorative stamp, held recently at the Rice Hotel.

Schneider, Skylab Crews To Receive Collier Trophy

William C. Schneider, Director of NASA's Skylab Program, and the three Skylab crews have been designated as the recipients of the Robert J. Collier Trophy for their individual accomplishment "in making Skylab the outstanding event of 1973, and demonstrating that man can live well and work effectively in space."

U.S. Vice-President Gerald Ford will present the trophy to Schneider in Washington, D.C. on June 4 at a dinner hosted jointly by the National Aeronautic Association and the National Aviation Club.

The Trophy, which is awarded annually by NAA "for the greatest achievement in aeronautics in America, with respect to improving the performance, efficiency or safety of air or space vehicles..." was established in 1912 by Robert J. Collier, publisher and pioneer aviation enthusiast.

NAA is the official U.S. representative of the Federation Aeronautique Internationale, the organization responsible for the authentication of all official aviation and space records on a worldwide basis.

The Robert J. Collier Selection Committee, appointed by J. B. Montgomery, President of the National Aeronautic Association, was chaired by Jack S. Parker, Vice-Chairman of the Board, General Electric Company, and consisted of 23 distinguished aerospace leaders and authorities who unanimously selected the Skylab Program from a list of outstanding nominees.

Space Expenditures—"Investment In The Future"

"What are we getting from the Space Program? Why continue to spend all that money in space when we could use it here on Earth?"

Time and time again, NASA employees are confronted with such questions—questions which arise from a lack of knowledge of what the space program is all about.

During recent Founder's Day Ceremonies at Virginia Polytechnic Institute, JSC Director Christopher C. Kraft discussed the benefits of the space program. He said that money put into the program was an "investment in the future."

"Fifteen years ago, when the space program was taking its first improbable steps, our Nation...looked beyond current needs to take actions necessary to forge the future." Dr. Kraft stated, "Our nation agreed to set aside an increasing portion of its resources to expand our horizons—both physical and mental.

We are the beneficiaries of that investment—an investment that continues to pay rewards."

Dr. Kraft said that although the costs of the journey beyond Earth were great, the benefits returned to us are even greater.

"There can be little argument that an investment in the future is important," he continued, "but the taxpayer has a right to decide whether more immediate returns on our investment have justified the expenditure."

Kraft stated that detecting an immediate profit to our complex economy is difficult and that

(Continued On Page 4)

NASA's New Energy Office To Be Headed By Schmitt

Astronaut Harrison H. Schmitt has been named NASA's Assistant Administrator for Energy Programs. Dr. James C. Fletcher, NASA Administrator, announced the appointment last week.

"This new office will allow NASA to support the Federal agencies responsible for energy research and development more effectively, which in turn will insure the application of NASA developed technology to the critical energy problems facing our nation today," Dr. Fletcher said.

Dr. Schmitt, lunar module pilot on Apollo 17, will head a newly formed Office of Energy Programs at NASA Headquarters. The new post is a consolidation of energy related functions previously performed by several other NASA headquarters offices, notably the Office of Applications and the Office of Aeronautics and Space Technology.

The new office will be responsible for coordinating NASA support of other Federal agencies conducting energy research and development. It will also manage existing NASA programs apply-

(Continued On Page 4)



SCHMITT

4th Management Program Begins

JSC and the College of Business Administration of the University of Houston will jointly sponsor the fourth JSC Management Development Program (MDP) for both administrative and technical employees in August, 1974.

The four-semester program consists of four 3-hour graduate courses in administration and management of R & D activities, and frequent discussions with selected leaders from the academic and business community.

Each individual will be selected for participation on the basis of his past and potential contributions to JSC's programs. Nominees—generally in the GS-13

to GS-15 grade range—must be approved by the applicant's division chief and his director or program manager.

A total of 20 employees have completed the previous Management Development Program and 40 employees representing all directorates and program offices are currently enrolled in the two ongoing programs.

Since the selection process involves screening by JSC and acceptance by the University of Houston, applications and supporting documentation must be submitted to the Chief, Employee Development Office (AH3) by May 30, 1974.

(Continued On Page 4)

Service Awards Presented

Twenty-two Center employees on May 17 received Length of Service Awards. JSC Director Dr. Christopher C. Kraft presented the awards in a special ceremony.

Thirty-year awards went to Dorothy R. Wilson, John D. Collins, Edward B. Petrash, Paul F. Kiehl, Raymond E. Darrach, George E. Griffith, Eziaslav N. Harrin, Doris W. Reid and Ted

H. Skopinski. Receiving Twenty-five year awards were Bailey R. Chaney, Wayne W. Corbett, Donald E. Stullken, Russell A. Moses, Genevieve I. Thomas, James E. Bost, Arthur H. Hinners, Jr., Ulys Edgar Ward, Jr., Herman Peter Fisher, William Joseph Fox, Jr., Daniel G. Ramirez, Gene L. Benjamin, Rufus Hicks, and Earl P. Riley (Downey).



EEO COUNSEORS — Pictured with Dr. Kraft are the JSC Equal Employment Opportunity Counselors. Standing left to right are Frank Hickey, Pantaleon Moreno, Brice Jernigan, Joseph D. Atkinson, Jr., JSC EEO Officer, Arturo Campos, Dr. Kraft, Leo Villarreal, Ted Mendoza, Bill Der Bing. Seated left to right are Jewell Norsworthy, Gloria Martinez, Ester Washington, Eleanor Der Bing. Not pictured are Mary Lopez, Les Sullivan, Joe Fuller, JSC, Louis Gomez WSTF, and Gerald E. Anderson, Downey.

Charlesworth Chosen Outstanding Citizen

Clifford E. Charlesworth, Manager of the Earth Resources Program at JSC, was recently honored as one of the 14 outstanding Mississippians in ceremonies at Jackson, Mississippi.

The award was presented by the Mississippi Economic Council. The MEC is the state chamber of commerce and represents more than 3,300 business and professional associations within Mississippi.

The Council had compiled a list of several hundred former Mississippians who had distinguished themselves in their work. Of that number, 14 were selected for special recognition during the Council's 25th Anniversary.

Charlesworth, one-time resident of Jackson, Mississippi, has been Manager of the Earth Resources Program since April, 1972. He is responsible for managing the planning and direction of all earth resources functions delegated to JSC by NASA Headquarters.

Prior to his current position, Charlesworth was Deputy Manager of the Skylab Program. He also served as a Flight Director during the Gemini and Apollo Programs.

Among his many honors, Charlesworth has received the NASA Exceptional Service Medal twice and the NASA Group Achievement Award for his work on Apollo 11.

He is a member of the American Institute of Aeronautics and Astronautics and received his Bachelor of Science degree in physics from Mississippi College, Clinton.



CHARLESWORTH

Calio Gets Degree

Anthony J. Calio, Director of Science and Applications at JSC, has received an honorary doctor of science degree from Washington University, St. Louis, Missouri.

Calio plans and directs the Center's lunar and planetary research. He is also responsible for space physics research and development of earth observations at JSC.

Calio has received the NASA Distinguished Service Medal and the Exceptional Scientific Achievement Medal.

NASA Begins Fellowship Program With Colleges

NASA has launched the National Aerospace Fellowship Program, a pilot project, to encourage women and members of minority groups to seek careers in engineering and certain scientific fields.

The Agency has completed agreements with seven colleges and universities to award 20 aerospace fellowships to students in their junior or senior year who are in the top third of their class and who have shown a potential for space related science or engineering and have expressed an interest in these fields of study.

NASA officials emphasized that this is the initial year of the program, and if successful, they hope to see it expanded during the next academic year.

"We are trying a number of things to increase the flow of minorities and women into aerospace fields." Dr. Dudley

McConnell, NASA's Assistant Administrator for Equal Opportunity Programs, stated, "This program is new and exciting and as we work out the kinks it may change during the year, but the goal of the program is clear. NASA will also continue to increase the number of minorities and women in cooperative work-study programs and NASA is providing a range of options to attract and encourage outstanding minorities and women into technical areas."

Students who achieve outstanding records in this program and who demonstrate potential and interest in aerospace technology fields will be offered positions with NASA at the time of their graduation if appropriate job vacancies exist.

Participating schools and the number of fellowships are: Howard University, Washington, D. C., 4; Goucher College, Towson, Maryland, 2; Bennet College, Greensboro, North Carolina, 2; Morehouse College, Atlanta, Georgia, 2; Spelman College, Atlanta, Georgia, 2; New Mexico Highlands University, Las Vegas, New Mexico, 4; South-eastern State College, Durant, Oklahoma, 4.

Each student will receive \$2,500 for the academic year to cover tuition, fees, books, supplies and other education related costs. In addition, recipients of the fellowship will be invited to work at NASA installations of their choice during the summer. They will be reimbursed at the prevailing rate for Federal summer intern participants, which is currently approximately \$600 per month.

The students will report to selected NASA installations when the summer recess period begins at their respective schools. Four NASA centers have been selected by the students to provide them with summer experiences. Nine students elected to work at Goddard Space Flight Center this summer. Five will work at the Ames Research Center, four have chosen JSC, and two will spend their summer at the Langley Research Center.

Coach Of Houston Texans To Speak

Head Coach Jim Garrett of the World Football League Houston Texans will be the guest speaker at a dinner meeting by the JSC Toastmasters Club.

The event will be held at the Nassau Bay Hotel, 1600 NASA Road 1 at 6:30 p.m., May 28.

Garrett will discuss the new professional football league and will answer questions from the audience.

For further information, contact David N. Holman X-6267.

Kohoutek Workshop To Be Held Soon

A two-day workshop to disseminate scientific results of NASA related activities on Comet Kohoutek will be held June 13 and 14 at Marshall Space Flight Center. The workshop will be the only NASA-sponsored meeting on the Comet.

Scientists who used NASA facilities and NASA coordination, as well as scientists interested in early results from the various observational programs-Skylab, ground observations, rockets and airborne-will be taking part in the workshop.

About 22 papers have been identified so far for presentation and about eight more are expected before the agenda is completed.

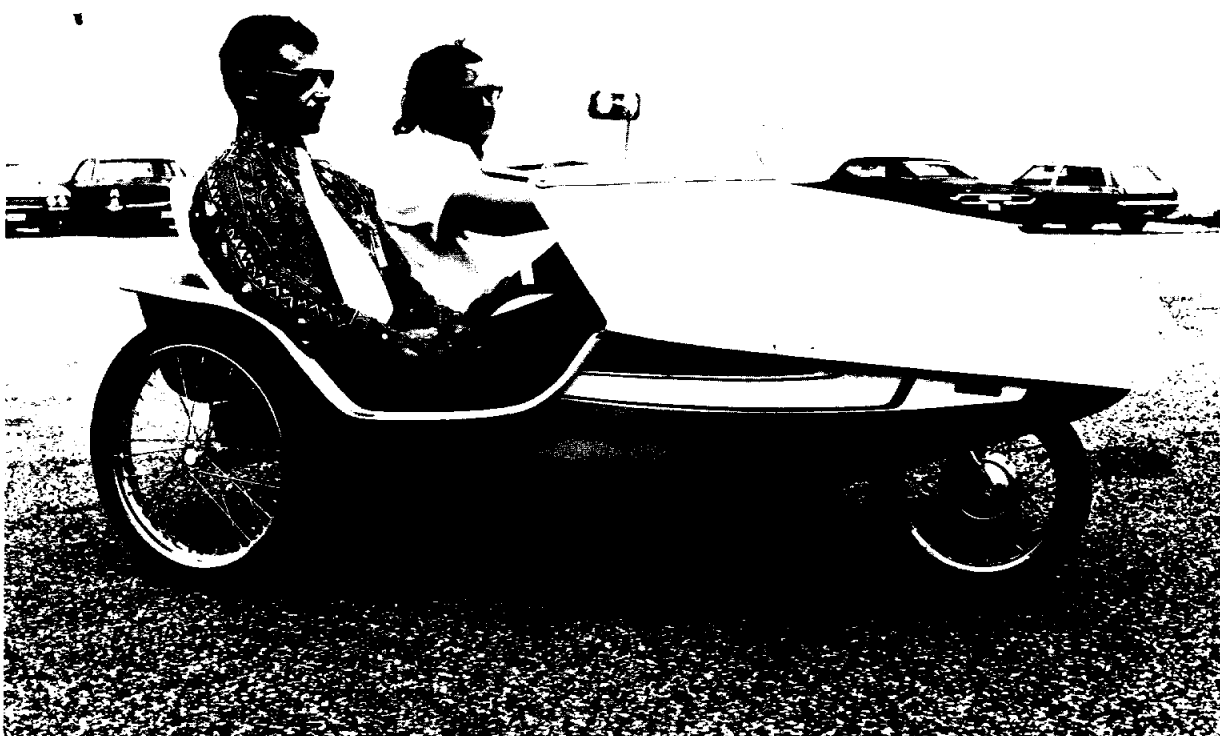
The workshop has been divided into four sessions-Tail Formation and evolution; Molecules and Atoms; Photometry, radiometry and Imagery; and Water and Related Observations.

Dr. S. R. O'Dell of Program Development at Marshall is chairman of the organizing committee. W. C. Snoddy of the Space Sciences Laboratory is vice-chairman and is coordinating Skylab operations.

Scientists attending this workshop will obtain a complete picture of the observational data taken on the comet which should aid greatly in the detailed analyses yet to be undertaken.



"WE CAN DO IT TOO!" — Four women recently were assigned to jobs as forklifters for Metro Contract Services at JSC. All four young ladies were performing general office duties before taking on their present assignments. The job entails moving any necessary equipment. Metro supplies JSC with equipment necessary for Center operations. On the fork-lifters are Alicia Jowell, left and Cecile Walker, right. Taking inventory are Barbara Hayes, left and Diana J. Schisser.



PEOPLE POWERED VEHICLE — Metro Contract Services warehouse manager George R. Peters and building supervisor Greg Moore cruise along in the recently developed people-powered vehicle. Operated on manpower along (foot pedals) the vehicle is used for transportation between building 421 and 5 other warehouses.

Contract Awarded

JSC has awarded a cost-plus-fixed-fee contract in the amount of \$2,104,900, to the Westinghouse Electric Corporation, Baltimore, Maryland, for color television cameras to be used in the Apollo-Soyuz Test Project.

Under the contract, Westinghouse will refurbish and modify 10 cameras used in the Skylab Program and provide two new cameras. The contract also covers associated equipment, such as synchronization modules, mounting brackets and zoom lenses. End date of the contract is March 31, 1975.



SMILING SECRETARY—Dorothy Holloway has a pretty smile on her face because she was selected the "Outstanding Secretary" for May. Dorothy is employed in the Operations Integration Office at JSC. Dr. Kraft presented her with a plaque. She also received a check for \$100.

Outstanding Secretary Chosen

May's Outstanding Secretary is Dorothy J. Holloway, employed in the Operations Integration Office at JSC.

According to Operations Integration Manager D.C. Cheatham, the great volume of work output of the office, including memoranda, briefings, reports and other documentation are always handled by Dorothy in a superior quality and timely fashion.

"Dorothy has a high regard for the importance of the work in the office and the result is excellent performance. She has accomplished a combination of office efficiency and pleasantness for both office personnel and visitors," Cheatham said.

He added that Dorothy always handles sensitive items with "proper discretion" and has been

able to distinguish items requiring urgent attention and those that are less pressing.

Dorothy was the first JSC secretary to support the Apollo Soyuz Project during working group operations, in Moscow. She contributed significantly to the technical success of the negotiations and "set an excellent precedent for the secretaries of subsequent visits."

"Both the professional competence with which Ms. Holloway accomplished her assignments and the attractive, sincere, interested and friendly manner in which she conducted herself during informal and official functions were quite impressive," Cheatham stated.

Dorothy has also been designated "Girl of the year" by Beta Sigma Phi Sorority

EAA Attractions . . .

LAST CHANCE!

This is your last reminder to attend JSC Las Vegas Night, tomorrow (May 25), 7 p. m. until . . .

The \$7.50 tickets include a sandwich buffet, free drinks and more. Tickets are available from Marv Yarbrough X2995.

VOLUNTEERS NEEDED

Don't be bashful! Volunteer your special talent for the JSC County Fair Picnic September 4. Call Phoncille Devore, x5404 or 331-5876

MAGIC KINGDOM

The Supply of Disney Magic Kingdom Club cards has run out. New cards are being ordered and should be available in the Building 11 Exchange store by June 1.

TABLE TENNIS

The JSC Table Tennis Club has scheduled its semiannual Open Table Tennis tournament for June 8 from 10 a. m.-4 p. m. at the Gilruth Recreation Center. The Tournament will be double elimination with trophies to 1st, 2nd, and 3rd place finishers. The entry fee is \$1; entries will be limited to 32 players.

Members of the Table Tennis Club will receive discounts up to 25% on balls, paddles, tables, shoes and other equipments. Dues are \$1 a year.

Contact Steve Jacobs for more information. (X5361).

BLOOD BANK

The JSC Blood Bank is requesting that any employee or his family who has an outstanding hospital blood bill contact Les Wynn at 3428 or Helon Crawford at 3809. The next blood drive is scheduled for July 12.

SEVEN SEAS

Discount tickets are available at the Bldg 11 Exchange store for Seven Seas—A Marineland Park adjacent to Six Flags Over Texas. The park is managed by Six Flags and features an underwater puppet show, dancing whales, a Dolphin show, killer birds and more. Plan to visit Seven Seas soon.

RECREATION SCHEDULE

Softball League Mon-Thurs, 5:30-8:30 p. m.

Karate Club, Gym, Mon, 5:30-7, Thurs, 6-9.

Judo Club, rm 204, Mon-Wed, 5-6:30.

Volleyball Club has suspended practice until Monday, June 10. Previous and prospective members are urged to attend practice when play is resumed (Mondays, gym, 8-9:45).

Table Tennis Club, Tues rm 204, 206, 6:30-9:45, special tournament Sat June 8.

Ballroom Dancing Classes, Wedn 6:30-9:45.

New! Bridge Club, rm 206, Thurs, 6:30-9:30

TICKET CORNER

Bldg 11 Exchange Store
Sea-Arama, May-June, adults, \$3, children \$2.

Astros, coupons any game \$2.50 and \$3.50

Astroworld, all season, adults, \$4.25, children \$3.25.

Seven Seas, all season, adults, \$3, children \$2.20.

Disney Magic Kingdom Club, free available June 1.

JIMMY WARREN BOWLING

Final Standings

5-16-74

Champs, won 81-lost 47, Spoilers 73 1/2-54 1/2, Pin Pounders 72 1/2-55 1/2, Associates, 70 1/2-57 1/2, Hexes 67-59, Alley Oops 67-59, Strikeouts 66-62, Ascenders 62-66, Ball Buster 61-67, Mixers 57-71, Hertz 55 1/2-72 1/2, Team X 55-73, Clowns 54 1/2-73 1/2, Jokers 54-74.

High team set, 3 games, Hexes-3121, high team game, Hertz-1133, high individual set, 3 games, Bob Gordon, 707 (Jokers), high individual game, T. Bruce, 279 (Hexes), Most Improved Bowler, Dick Swalin 6 pins (Ball Busters), highest League average, Bill Moon, 172 (Spoilers).

Members of 1st place team: John W. Dornbach, Capt., Tom F. Brahm, Dexter W. Haven, James L. Liput, Gerald E. McKain, Harold L. Prior, John D. Sargent, Edward E. Shumilak.

SOFTBALL STANDINGS

Monday, Blazers 4-0; Stokers 3-0; Keg Tappers 3-1; Serv-Air 3-1, Mets 3-2, Nerds 2-2, TRW 2-2, Simulators 1-2, Base Lions 0-4, Angles 0-5; Tuesday, Grounders 4-0, Marvels 4-0, Chugs 2-2, Grumman 1-3, Mc Donnell 1-3, ID's 0-4; Wednesday, Nads 4-0, Bombs 3-1, Philco 3-1, Dynamos 2-1, Boas 2-2, Boeing 2-2, Heros 1-2, Hombres 1-3, Klate-Holt 1-3, Rockwell 0-4; Thursday No. 1, Vagabonds 3-0, Bandits 3-1, Easy Riders 3-1, Taft Vits 1-3, TTA Oldtimers 1-3; Oreo's 0-3; Thursday No. 2, Disasters 3-1, Rats 3-1, SoPac 3-1, S.B.'s 1-2, Streakers 1-3, Wizards 0-3; Tuesday, Womens, Blazers 4-0, NASA No. 2 3-1, Lec No. 1 2-2, Singer 2-2, Lec No. 2 1-3, Philco 0-4.

Attention Singles!

Volleyball open to all singles every Friday night from 8-10 in the Ed White Memorial Center. For information, call Jerry X-3561.

Lunarfins Plan Training Course For JSC

The JSC Lunarfins are again this year planning an underwater training course for JSC and contractor employees and their families.

The 33-hour course will include classroom lectures and actual water performance.

Upon successfully completing the course, participants will receive the internationally recognized certification "C" card issued by the National Association of Underwater Instructors.

The cost of the course is \$52 and includes free use of tank-air-

regulator and backpack during the training period; pool fees; manual and certification fees; and one year's membership in the JSC Lunarfins.

Members of the Lunarfins receive reduced rates for the rental of club equipment and special charter boat rates for gulf diving.

To sign up for the underwater course, contact Fred Toole, X-2733, or Quinton Holmes, X-3001. The class will be limited to twenty people selected on a first-come-first-serve basis.

U.S. SAVINGS BONDS. FOR THE FUTURE.

ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER HOUSTON TEXAS

The Roundup is an official publication of the National Aeronautics and Space Administration Lyndon B. Johnson Space Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for JSC employees.

Editor: Janet Wrather

Photographer: A. "Pat" Patnesky

Roundup Swap-Shop

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

MISCELLANEOUS

Old records, approximately 200 45's from 50's and 60's, 2 boxes full of 50's and earlier 78's and 10" mostly Classical, some Broadway shows, \$75 for all. 944-8717.

Royal portable manual typewriter w/ case, \$25, outdoor tonga torches (2) new w/ wicks, both for \$6.

Ham gear, Sean 500 cx, li new, health, HW12A, xint, Lindsey, 488-0517.

Carosel Kodak slide projector, nds minor repair and cord, \$40, 334-5318 aft 7 p.m.

Skyrover, Inc, flying, membership available, 2 C-182 s 1 C-172, and J-3 CJB, Nixon, 333-4033 aft 6.

Sears tent 13x10, \$50, 20 gal aquarium w/ pump, filter, gravel, fluorescent light and bulb, \$30, 333-4033.

Shrimp net 25 ft, boards framed in stainless steel, \$25, 333-2509.

Charcoal grill w/ rotisserie used twice, prft cndn, \$5, 333-2509.

Barrel table, solid oak, \$20, 333-2509.

30 gal aquarium plus all fixings, make offr, Priest, 337-2973 aft 6.

6" Craftsman metal turning lathe, w/ acces, li new, \$400 value for \$250, 334-1869 aft 6.

Lawn mower, sif propelled, 488-3188 evenings.

Vivitar 70-210mm macro zoom lens for Konica, new, full guarantee, \$295, Handley, 482-7041.

2 H78x14 belted studded snow tires, almost new, \$20, 488-2619.

One Michelin X VV Tubeless radial tire, 215x14, 11,000 mi, make offr, Schnell, 337-2402.

Ruger std model .22, auto pistol, 4 3/4 ir, bbl, li nw, w/zip pouch, \$45, 488-3966.

Konica Auto Hexanon F3.5 80-200 zoom lens w/UV filter, shade, caps, case, hardly used, \$210, Hannigan, 534-4292.

90 lb bags of Portland cement for patios, walks or posts, \$1.50 each, Ward, X3361 or 334-1636.

Unused Chevy Corvair manual through 1964, \$4, Gardner, 4722 or 944-5615.

VEHICLES

J. C. Penney 10 spd bike, 2 yrs, used little, \$45, Ward, 5551.

72 Gran Torino sta, air, pwr str, 25,000 mi, orig owner, \$2200, 488-2619.

Lambert 10 spd super light weighted English bike, tubular tires, aluminum alloy components, 6 mos old, xint cndn, Michael x4416, 333-2468.

69 Chevy pickup, 307 V-8, air, standard, transmission, mechanically sound w/ w/out camper shell, 554-6057 or x4858.

71 Pontiac Catalina, 2 cr, vinyl hard top, auto, air, ps, pb, nw tires, 350 V8, 35,000 actual mi, mint cndn, x5293.

72 Honda Minitrail 70, helmet, bumper carrier, li nw, \$250, 333-3279 aft 5.

71 Maverick, 4-dr, metallic green, auto, air, pwr str, xint cndn, \$1550, Lindsey, 488-0517.

Boys' bike, 26", coaster brk, Montgomery Ward, gd cndn, \$25, 334-2180.

Airplane for rent, Cessna 150, \$12 per hour, have gas and planes, nd flyers, 332-1822 or 488-2537.

73 Buick Le Sabre Custom Coupe, blue, vinyl, stereo, chrome wh, air, 7500 mi, warranty, immaculate, \$3600, Contella, 488-0284/483-2881.

72 Datsun wgn, air, AM-FM stereo, 4 spd, 17000 mi, orig owner, \$2825, 4231 or 482-2458.

JSC Credit Union repo- 70 Ford LTD 4-dr htdp, shown by appointment, Sattelmair, 2066 or 2067.

63 Ford Galaxie, 2-dr ht, 352 auto, air, ps, above average cndn, \$350, Gardner, X4722 or 44-5615.

67 Ford Ranch Wagon, air, nw tires, pwr str, Moran, X2658.

HOUSEHOLD ARTICLES

Baby crib w/ mattress, vry gd cndn, \$25, matching chests, \$25, and \$15, Handley, 482-7041.

Solid birch bdrm set, 2 nite stands, bed, springs, mattress, dresser and mirror, 333-3279 aft 5.

Danish modern cocktail table and 2 tables by Lane, Walnut finish, no scars, \$45 all, Ward x5551.

Sofa (single bd), 2 matching chairs, \$300, Hoover portable vacum cleaner, all attachments, \$35, sm 10" round alabaster ped table, \$15, rectang Spanish Chandaliar, \$45, 334-5318

afit 7 p. m.

Upright piano, completely refurbished inc, new ivory, felts and hammers, sturdy cabinet, gd tone, \$225, Ward 5551.

Coffee table, comtemp, mahogany, armchair, contemp brown, xint cndn, reasonable, 334-3092.

PETS

AKC chocolate poodles, \$40, Patterson, 645-1746.

2-yr-old German Shepherd, female, obedience trained, free to good home, 334-3092 aft 6 p.m., CI Forest.

4 1/2' Boa-Constrictor, Maxine, x4634 or Susan, x944-4290.

PROPERTY AND RENTALS

New 2-story townhouse, 2-1 1/2, fireplace, shag carpet, washer/Dryer, refrig, drapes incl \$21.00 Peggy, x7409 or 534-6257.

BOATS

15 1/2 Lamar Bay Boat, 75 hp, Evinrude motor, big whl tilt trailer, snap-in cushions, bait wells, \$800, 944-1770.

66 18' Larson w/120 hp OMC I/O and bid wh trailer, gd cndn, \$1500, 645-3417 aft 6 p.m.

18' 6 mo old invader fiberglass trihull ski/pleasure boat w/ 85 hp Johnson outboard virtually new, \$3,600, firm, 3931, aboard vir-

Hobie Cat 16 ft catamaran, main and jib, custom trailer, gd cndn, Armstrong, 4926 or 332-2381.

WANTED

26" 3 or 5 spd bike preferably girl's must be reasonable, Billie, 333-3425 aft 5.

Good home for female basset hound, 11 years, gentle w/ children, 481-1847.

Nd carpool members from Winkler/Monroe-Gulf frwy area, 8-4:30, Bldg 16, Bill, X2786.

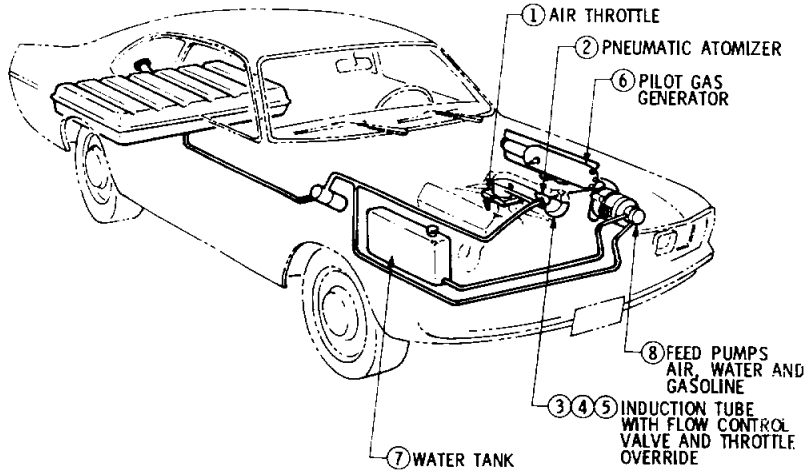
Carpool, live in West University, work 8-4:30, Hogan, x5101 or 667-1615.

One-half size violin, 488-0035, Piercy.

VOLUNTEERS NEEDED

Don't be bashful! Volunteer your special talent for the JSC Country Fair Picnic September 14. Call Phoncille Devore, x5404 or 331-

NASA Auto Studies May Cut Both Gas Usage, Pollution



CLEAN AIR SYSTEM—A new combustion system, using hydrogen as a fuel additive, is being developed at NASA's Jet Propulsion Laboratory in Pasadena, Calif., to drastically reduce smog emission from automobiles and piston engine aircraft.

NASA Energy Office *(Continued From Page 1)*

ing aeronautics and space technology to the generation, transmission, storage, conservation, utilization and management of energy in non-aerospace applications.

A geologist, Schmitt is currently Chief of the Astronaut Office, Science and Applications Directorate, at JSC. For the past three months he has been on temporary assignment at NASA Headquarters as Special Assistant to the Administrator for Energy Research and Development. In addition to his duties as Assistant Administrator, he will continue to serve as Astronaut Chief of the Science and Applica-

tions Directorate at JSC until his responsibilities here are completed and a replacement is named.

Schmitt was one of the first group of scientist-astronauts selected by NASA in 1965. He was born in Santa Rita, New Mexico, in 1935 and graduated from high school in Silver City, New Mexico.

He received a B. S. degree from California Institute of Technology in 1957, was a Fulbright fellow at the University of Oslo, Norway, in 1957-58 and received his Ph.D. in geology from Harvard University in 1964.

"Y" Offers Many Summer Activities

The Bay Area YMCA this summer is offering a new program geared toward the all-around athlete. Call "Superstar", the program will provide an opportunity for its participants to compete in such events as swimming, running, bicycling, tennis, basketball shooting, baseball hitting, golf, bowling, and punting, passing and kicking a football.

The program will take place May 20-June 20. Boys age 9-12 will compete in their choice of eight events. Awards will be presented in each activity and to overall high scorers in age groups 9-10 and 11-12. Each event is scheduled twice to accommodate all participants. Dates and times will be announced after registration.

Summer also marks the annual formation of the Bay Area YMCA track team. Boys and girls 7-13 may participate in track to improve their speed and agility for a variety of sports.

Practice is held in the mornings twice a week: Monday and Wednesday at Clear Lake Intermediate; Tuesday and Thursday at Webster Intermediate; and Wednesday and Friday at Seabrook Intermediate.

The track team will compete in the Junior Olympics, AAU meets and dual meets with other Houston YMCA's.

The YMCA is also offering two basketball clinics: June 17-28 at Clear Lake High and July 15-26 at Clear Creek High.

Brochures which contain information about the summer program may be obtained by calling 488-6905.

For Your Information . . . Recycling

Several PAO Fact Sheets have been printed on recycled paper. The quality is good, and no reproduction problems were encountered. More recycled paper has been ordered and will continue to be used on similar type documents. The term "printed on recycled paper" is being printed on the first page of each document.

Energy

Electrical energy consumed during April was 35 percent lower than predicted at the beginning of the fiscal year and was the lowest in April history since 1965. This reduction, combined with an April Natural gas savings of 37 percent, is an indication that the JSC energy conservation program has been extremely effective to date.

Management

(Continued From Page 1)

For more information, contact Dr. Winfred E. "Dutch" Holland, Director of the MDP at X-5913

Concepts which please both environmentalists and energy conservationists are few and far between.

But NASA is now working on one, which, if successful, will not only accomplish this but also benefit car owners.

It is an experimental engine concept, applicable to both the automobile and general aviation aircraft. It appears to significantly reduce pollution emissions while increasing the efficiency of the internal combustion engine.

This hydrogen injection concept uses a mixture of hydrogen gas, air, and gasoline vapor to power the engine and could eliminate the need for treating exhausts with catalytic mufflers.

Initial laboratory tests of the experimental concept indicate the system will produce a fuel which burns so completely that the exhaust product is nearly all water vapor and other inert components.

The tests also showed gasoline consumption would be reduced significantly as the thermal efficiency of the engine is increased. The laboratory system has been demonstrated to representatives of major American automobile manufacturers.

Under NASA funding, two conventional passenger cars have been purchased and modified for laboratory and road testing. The system will be incorporated into aircraft later in the development program.

Gases containing hydrogen for the fuel mix will be provided by reacting some of the gasoline with air and water vapor in a hydrogen generator. Other major components to be added to existing engines are a fuel atomizer-replacing the conventional carburetor--a water tank and fuel-air control equipment.

Drivers and pilots would refill water tanks as often as gasoline tanks. The system uses about five gallons of water for every 15-20 gallons of gasoline.

Initially, one of the automobiles is being equipped with an interim test system to be operated with bottled hydrogen gas. Later, engineers at NASA's Jet Propulsion Laboratory, Pasadena, Calif., will refit each test car with the hydrogen generator, following extensive fuel system testing on an engine dynamometer. Both Cars are Chevrolet four-door sedans equipped with automatic transmissions and power accessories.

The hydrogen generator is being developed concurrently at the NASA Lewis Research Center, Cleveland, Ohio. The generator will be mated to the engine fuel system to verify performance characteristics before it is integrated into an automobile to obtain practical in-use experience.

The fuel system, in addition to promising high-efficiency, low polluting engines, has a number of other benefits. It is usable with current engines and fuels; relatively inexpensive in high volume production; possesses the potential for use with non-petroleum fuels.

It has long been recognized that the internal combustion engine operates more efficiently and with very little pollution when hydrogen is used as the fuel. But this would require wide distribution and availability of hydrogen to the public.

Recently, however, it was determined that essentially the same desirable qualities can be achieved with gasoline when relatively small quantities of hydrogen are injected into the fuel/air mixture.

Indications are that the small amounts of hydrogen needed can be generated directly from the engine gasoline supply by adapting large-scale commercial processes to a practical size for use in automobiles or aircraft.

Although the basic NASA program is aimed at developing low pollution aircraft engines, the first phase of program testing uses automotive components and automobiles as an expedient and inexpensive way to demonstrate the validity of the hydrogen injection concept before applying it to aircraft.

Because the concept involves the basic combustion process, it is potentially applicable to any hydrocarbon fueled engine. The degree of benefit will depend upon the application and whether practical systems can be defined and demonstrated.

The idea of hydrogen injection in internal combustion engines is not new. As far back as 1935, the NASA Langley Aeronautical Memorial Laboratory (now Langley Research Center) did work on hydrogen injection into the diesel engines of airships.

Because the hydrogen in these airships had to be bled from time to time, the Langley people were looking for a good use for the hydrogen. If airships had not faded out from use, introduction of hydrogen injection engines might have happened decades ago.

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Investment In Future *(Continued From Page 1)*

the final evaluation must be made by the economist and other trained specialists.

Such an evaluation has been made by the Midwest Research Institute, according to Dr. Kraft. He said the Institute found that the return from investments in the sort of basic technological research and development undertaken by the space agency amounts to about 33 percent per year.

"The remarkable 33 percent return each year is not immediately visible to most people, because the dollars spent in space go to many companies, large and small, all over the nation. They buy inventions--an estimated 30,000 of them by the conclusion of the Apollo program--that serve us in uncountable ways--but inventions that do not have "product of space research" stamped on them when we see them in action.

The Wide geographic distribution of our economic benefits helps to assure us that the improvements in the standard of living will benefit many people from many places and from many walks of life. The total return, which continues to expand through the economy for an average of 18 years, amounts to 700 percent--seven dollars for every tax dollar spent." Kraft related.

He also discussed the vital area of Balance of trade. "Aviation Week Magazine points out that...aerospace exports reached a record \$5.1 billion last year. This enabled the United States to achieve an favorable net balance of \$1.7 billion rather than a defi-

cit of \$3.4 billion."

Kraft commented that the Earth Resources Technology Satellite sensors may provide essential data for detecting water for potential farmland, scarce minerals and potential deposits of oil and natural gas.

He added that the benefits of Skylab already have "begun to surface in a greatly advance understanding of currents and marine life, and in successful applications of space photography to mapping, regional planning, geology, and other needs."

Dr. Kraft also emphasized the value of our weather satellites and the international communications network made possible by space applications.

The investment of the 1970's that will probably pay the greatest return to future generations Kraft said, is the Space Shuttle.

"Within an estimated cost equal to about five dollars for each American, the Space Shuttle will be a modest investment in the future; but like previous programs, it will promise substantial rewards--again in the tens of billions over the coming years, he continued.

During his speech, Dr. Kraft quoted Dr. Robert H. Goddard, the Father of U. S. Rocketry: "It is difficult to say what is impossible, for the dream of yesterday is the hope of tomorrow."

Dr. Kraft added that "in our sacrifices and through our wise investments, we have worked to set man's course to peace, to prosperity, and if life prevails, to the stars."