

Space News Roundup

Vol. 22 No. 18

October 14, 1983

National Aeronautics and Space Administration

Shuttle art show opens in Houston

"The Artist and the Space Shuttle," a collection of 70 pieces of fine art by 35 internationally known artists, begins a two-month run Saturday at the University of Houston/Clear Lake — the first time the collection has been shown outside Washington D.C.

The show's opening will be marked by a series of four lectures with space artists Saturday and Sunday at JSC's Teague Auditorium at 11 a.m. and 2 p.m. each day. The artist/lecturers will be James Dean, Lamar Dodd, Frank Wright and Charles Schmidt.

The two-month exhibition, jointly sponsored by UH/CL and JSC, is the first stop for the 70-piece collection, which will tour the country for the next two years.

"The Artist and the Space Shuttle" is a selection from a larger exhibition that opened at the National Air and Space Museum in November 1981. The traveling show is circulated by the Smithsonian Institution Traveling Exhibitions Service.

The selection of the University of Houston/Clear Lake as a site for the first exhibition outside Washington stems from a proposal

made by Dr. Thomas Stauffer, UH/CL Chancellor, who suggested it would be an appropriate way to recognize JSC and celebrate NASA's 25th Anniversary.

The lecture series running concurrent with the show's opening is designed as a forum where the artists can give their personal views on their art.

James Dean, who for 13 years directed the NASA Art Program, will begin the series Saturday morning. His lecture, "The Artist as the Eyewitness Through the NASA Art Program," will review

the program philosophy, the relationship between artists and engineers, the difficulties that arose and the rewards which ensued. Dean's drawings and paintings have been exhibited at the National Gallery of Art in Washington, the National Academy of Design and the American Watercolor Society in New York and at numerous other museums and galleries throughout the United States and abroad.

The second lecture, which begins at 2 p.m. Saturday, will feature the well-known University of Georgia artist Lamar Dodd, who has been

an enthusiastic supporter of the NASA Art Program since its beginning. Dodd's lecture, "The Challenge," will use comparative slides giving the audience a look at why he approached his paintings as he did. Dodd holds the honors of Regents Professor Emeritus of Art and Chairman Emeritus of the Fine Arts Division at the University of Georgia.

At 11 a.m. Sunday, Frank Wright will discuss "Realism Beyond Photography; In Pursuit of the Real." This topic deals with the
(Continued on page 2)

More Shuttle crews named

Crews for two Shuttle flights next year and a new mission designation system were announced recently by NASA.

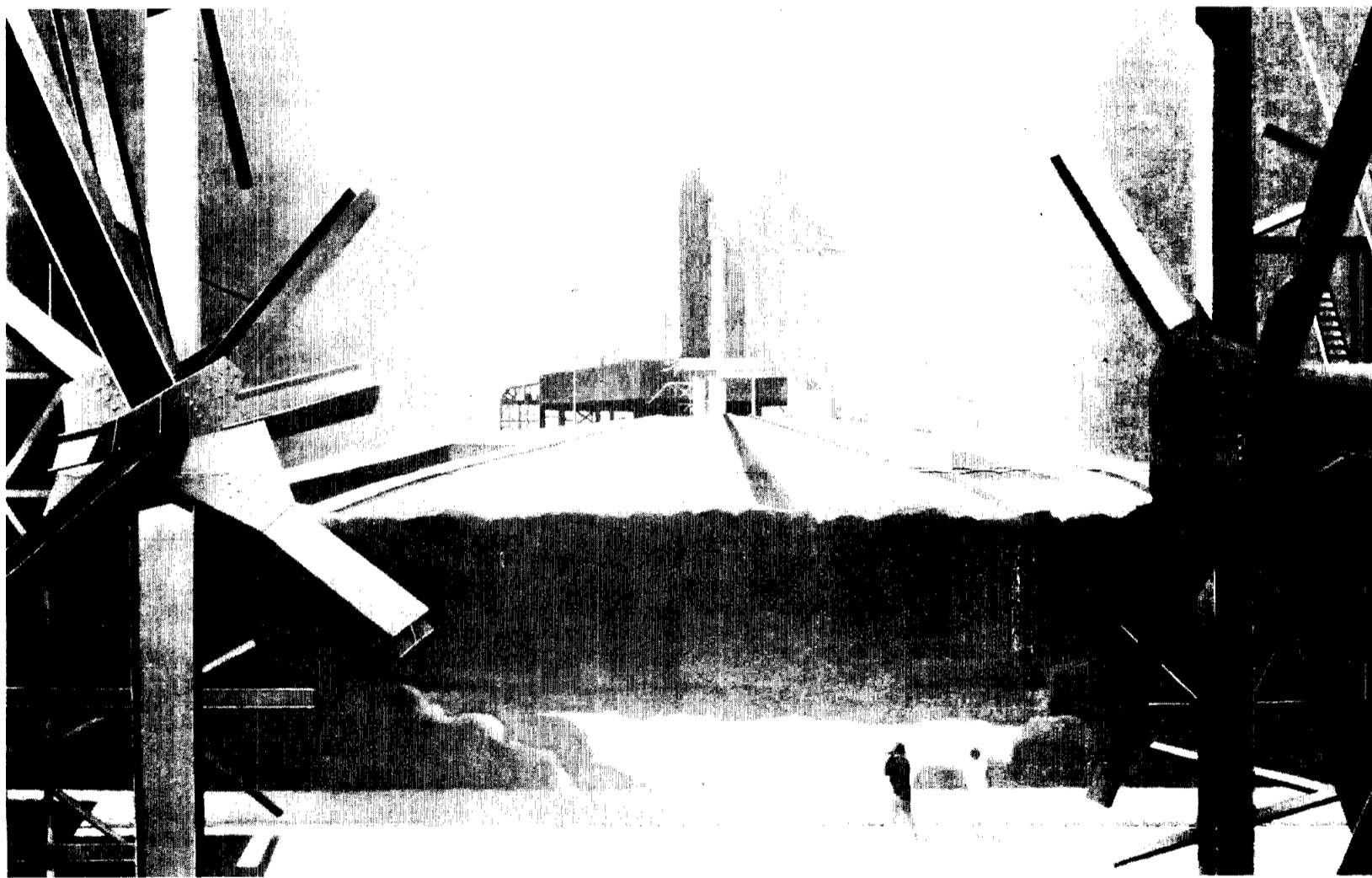
The new mission numbering system, which becomes effective after STS-9, will designate missions by payload assignment number rather than through a STS number. The first flight of 1984, for example, formerly STS-11, will now be known as 41-B.

The new crew announcements were for missions now designated 41-E and 41-G, the fourteenth and sixteenth flights of the Shuttle, respectively.

The 41-E Commander will be Karol J. Bobko, who was the Pilot for STS-6. The 41-E Pilot will be Donald E. Williams, and the Mission Specialists will be Rhea Seddon, Jeffrey A. Hoffman and S. David Griggs. Prime payloads for the 41-E mission will be the commercial satellites TELESAT and SYNCOM IV-1, the Large Format Camera and a multi-purpose experiment structure sponsored by NASA's Office of Aeronautics and Space Technology. The projected launch date is June 6, 1984.

The 41-G mission will be commanded by Frederick H. Hauck, who was the Pilot on *Challenger*

(Continued on page 2)



Spaceport

This oil by artist Alfred McAdams will be among the works on display in "The Artist and the Space Shuttle," a show opening this weekend at the University of Houston/Clear Lake Bayou Bldg. The oil is a pictorial fantasy of the launch of STS-5.

STS-9 impact could be long lasting

In many ways, the first flight of the European-built Spacelab aboard STS-9 bridges a gap in much the same manner that STS-5 took the Shuttle program into the operational era.

With the adoption of a new flight designation system, it will be the last of the STS missions, but the ninth flight of the Space Shuttle will be much more than that. The mission marks one of the most significant international cooperative ventures ever undertaken in spaceflight, and beyond that, it marks a highly important turning point for space science.

Not since Skylab has multidisciplinary space science — or better, science in space — been the single most important element of an American orbital mission. Indeed, STS-9 Mission Specialist Owen Garriott, who spent 59 days aboard Skylab in the summer and fall of 1973, would not single out any one experiment as the most important aboard Spacelab. When asked to do that at the preflight press conference Tuesday, Garriott instead pointed to the multidisciplinary interactive scientific aspects of the

flight as the most significant element.

"We are the first of a new breed of space travelers, in a sense," added Payload Specialist Byron Lichtenberg. "The true experiment of this flight will be proving the concept of scientists on the ground working interactively with their peers in orbit."

The interactive nature of the science to be performed on STS-9 is one of the reasons this flight is so important to future space operations. For the same reasons that the payload specialists — the first non-astronaut scientists to fly — are an important new feature of American space efforts, so too are the very procedures to be used. It is hard to overestimate the value to scientists on the ground of being able to communicate in real time with scientists in space while experiments are underway.

To quote the NASA brochure on Spacelab 1: "Never before have scientists who are not trained astronauts worked in space, actively conducting research in collaboration with investigators on the

ground. In the shirtsleeve environment of the well-equipped laboratory module, these scientists will enjoy many of the comforts of a ground-based lab. They can handle the equipment, react to unexpected experimental conditions and results, change their

Perspective

plans, and gain the greatest scientific yield from the mission. The involvement of users in all phases of the mission, from planning through post-flight review, including their presence onboard the flight, is a distinct advantage for space-age scientific research."

And if NASA's plans for a space station or a system of space platforms are approved, this interactive air-to-ground method of conducting scientific experiments is likely to become standard operating procedure in the future. In that sense, STS-9 will not only be a proof-of-concept test for Spacelab, but also for space stations in

equatorial or geosynchronous orbits, or space platforms in Earth polar or lunar orbits, all of which could follow in coming years, and all of which would be likely to operate on the same interactive principle.

Adding to the importance of the interactive science to be performed are the experiments themselves. Scientists from 11 European nations, Canada, Japan and the U.S. are providing instruments and procedures for over 70 different investigations. These will involve studies in the areas of astronomy and solar physics, space plasma physics, atmospheric physics and Earth observations, life sciences and materials sciences. Many of the instruments being used will be the largest, most powerful or most sensitive of their kind ever to be placed in orbit.

Launch of STS-9 is scheduled for 11:30 a.m. CST Oct. 28. The launch will carry Orbiter *Columbia* into the first high inclination (57-degree) orbit of the Shuttle program, with a standard altitude of

135 nautical miles. At nine days, it is the longest flight scheduled to date, and the crew — six people, working on a 24-hour basis — will be the largest in spaceflight history.

Two air-to-ground channels will be utilized, A/G1 for payload operations and A/G2 for Orbiter/Spacelab systems operations. The flight crew, Commander John W. Young, Pilot Brewster Shaw and Mission Specialist Robert Parker (Parker will divide his time between duties associated with the Orbiter and the Spacelab experiments), will be responsible for executing more Orbiter maneuvers than were performed in the first four Shuttle flights.

The science crew of Garriott, Lichtenberg and Payload Specialist Ulf Merbold (the first European to fly on an American spacecraft) will activate Spacelab about three hours after launch, and the laboratory will operate around the clock until deorbit preparations begin on Flight Day 9. Landing is scheduled to take place on Orbit 145 into Edwards Air Force Base.

Space News Briefs

Lousma retires from space program

Col. Jack R. Lousma, the Commander of STS-3 and Pilot aboard Skylab 3, retired from the Astronaut Corps effective Oct. 1. He was a NASA astronaut since April 1966, and was a backup crewman for the Apollo-Soyuz flight, and was a member of the Apollo 9, 10 and 13 support crews. He has been a Marine Corps officer since 1959, and will retire in the grade of colonel effective Nov. 1. Lousma said he is evaluating a number of alternatives both in and outside the aerospace industry for his future. But for the immediate future, he and his family will continue to reside in the Clear Lake area.

NASA, Fairchild sign Leasecraft JEA

NASA and Fairchild Industries have signed a Joint Endeavor Agreement (JEA) which will lead to the deployment of a commercial space platform in 1987. The platform, known as Leasecraft, will provide an orbiting, unmanned facility for experiments by commercial and government users. Under terms of the JEA, Fairchild will design and develop Leasecraft at an estimated cost of about \$200 million, while NASA will provide technical assistance, facilities to support development and flight time on the Shuttle. Leasecraft will be built along the lines of NASA's Multimission Modular Spacecraft (MMS), a generic design specifically intended for use with the Shuttle. Fairchild was a prime contractor during the development program of the MMS. Fairchild sees Leasecraft as being able to operate in low Earth orbit for about 10 years, with periodic visits by Shuttles to service equipment or exchange payloads about every six months.

AIAA to be information database

NASA has arranged to make bibliographic data containing descriptions of more than 1.2 million reports and articles covering the world's aeronautical and space literature since 1962 available for lease through the American Institute of Aeronautics and Astronautics in New York. Regularly updated with about 70,000 document citations each year, this computer-readable database is the most comprehensive aerospace information source available directly to U.S. organizations. There are an estimated 200,000 users whose work can benefit from the technology documented in this system. Known as the Aerospace Database, it is a combi of Scientific and Technical Aerospace Reports (STAR) and International Aerospace Abstracts (IAA). It will be licensed to online vendors and leased to domestic corporations for use in their database systems. The AIAA will undertake a national marketing effort, not only to reach potential users, but to train scientists and engineers to search the database directly.

Bulletin Board

Burke Baker offers Mars presentation

The latest presentation at the Burke Baker Planetarium, "Rendezvous with the Red Planet," is a historical, informative and occasionally fanciful look at one of Earth's most celebrated planetary neighbors. The program begins with an imaginary meeting in 1919 of three men who had a common interest in Mars: astronomer Percival Lowell, wireless pioneer Guglielmo Marconi and science fiction writer H.G. Wells. Theories about Mars, which then enjoyed widespread belief, are discussed in depth. The program then goes on to describe the reality of Mars today - what we have learned from the Mariner and Viking expeditions. The show runs through Nov. 20, and show times are Wednesday and Friday at 4 p.m., Saturday and Sunday at 2, 3 and 4 p.m., and Friday evenings at 8 p.m. Admission is \$2 for adults and \$1 for children under 12. For more information, call 526-4273.

Young person's concert planned

The Clear Lake Symphony at the University of Houston/Clear Lake will present a Young Person's Concert in the Clear Lake High School Auditorium on Saturday, Oct. 22. The program will feature Tschai-kowsky's "Sleeping Beauty," Prokofiev's "Cinderella," Humperdinck's "Hansel and Gretel" and Ravel's "Mother Goose Suite." Tickets are \$4 general admission and \$2 for senior citizens and students. For more information, call 488-9390 or 488-9288.

The Right Stuff

Sally's fans and cloudy decks do not a history make

The Right Stuff: A Robert Chartoff and Irwin Winkler production of a Philip Kaufman film; starring Charles Frank, Scott Glenn, Ed Harris, Lance Henriksen, Scott Paulin, Dennis Quaid, Sam Shepard, Fred Ward, Kim Stanley, Barbara Hershey, Veronica Cartwright and Pamela Reed; musical score by Bill Conti; written and directed by Philip Kaufman.

"There's a demon that lives out there around Mach 1," the down-home, drawling voice says as cloud formations whiz by, "and they call it the Sound Barrier."

So begins *The Right Stuff*, the much-hyped movie about astronauts, jet aces and rocket pilots, which had a sneak showing at the Galleria in Houston Monday night. The movie is true to the book of the same name by Tom Wolfe, but unlike the book, it is short on historical veracity. Like the book, however, it is good entertainment.

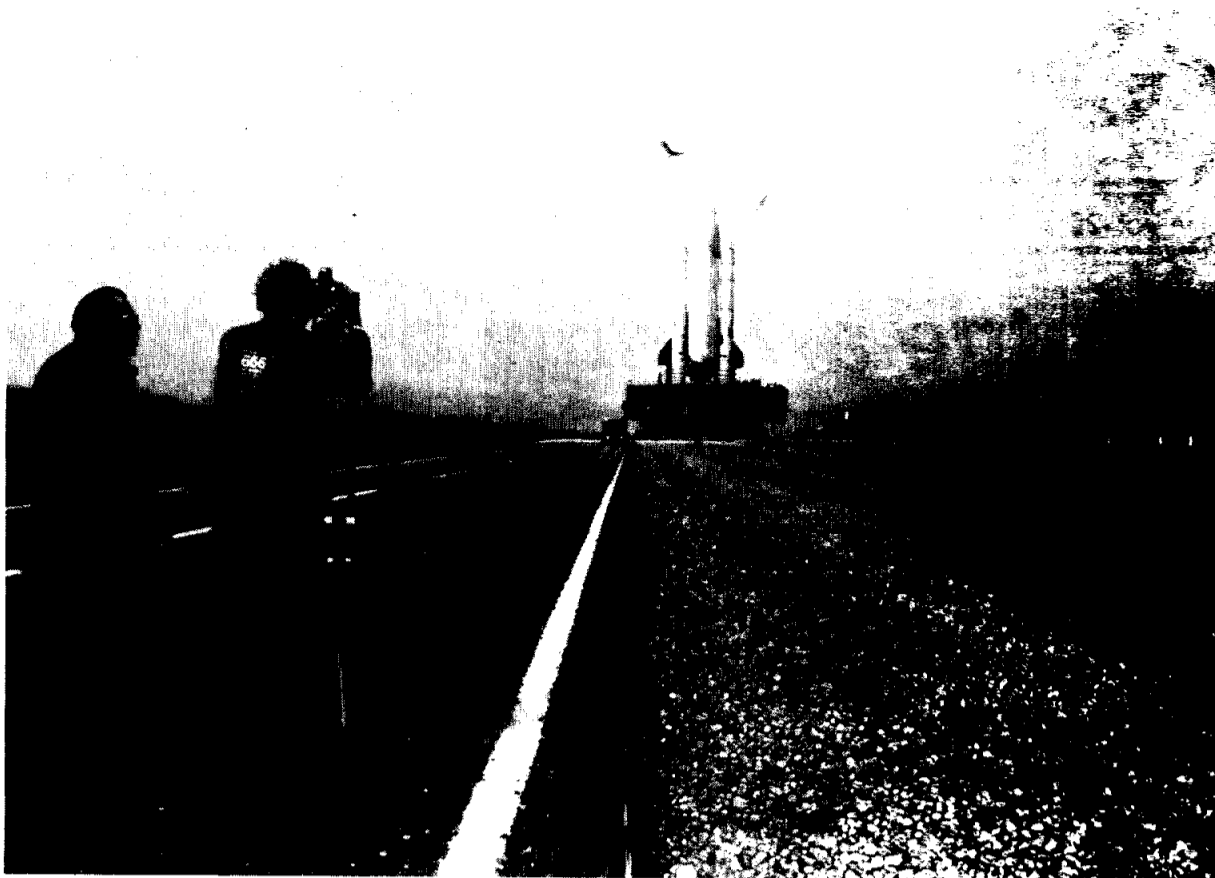
The first 15 minutes of the movie are darkly lit and almost surrealistic. A flight of one of the Bell X-1 aircraft ends with a big black hole in the high California desert, and we are treated to a lonely funeral

where a macabre official (presumably some grim functionary of the NACA — who is this man?) croaks out a mournful hymn over the grave of a dead flier. In fact, none of the three X-1s crashed during the transonic flight program at Muroc, later renamed Edwards Air Force Base, and you have to keep repeating to yourself, "It's only a movie, it's only a movie, and it sure isn't history," because it's not.

Later, as condensation from the liquid fuel parts, our hero, super ace Capt. Charles Yeager, played by Sam Shepard, sits on a horse and stares moodily at the X-1. It is a brute of an aircraft: short and stubby, built to ram through Mach 1 in the days before the Area Rule made it possible to finesse a delicately-designed machine through the mythical sound barrier. There they are, horse, man and machine, staring at one another in one of the many scenes from this lengthy (three hours) movie which should have ended up on the editing room floor.

Yeager makes his landmark flight

Shuttle art



Rollout, Columbia

The date was Dec. 29, 1980, as *Columbia* moved toward the pad for the first Shuttle launch. Artist Martin Hoffman captured the moment in this oil for the NASA Art Program, one of some 70 works on display at the Shuttle Art Exhibit opening this weekend.

(Continued from page 2)

brilliance of the early photographs and Daguerreotypes and the profound effect photography has had on our conception of reality. With photographs little known to the public, Wright will analyze the influence of the camera upon the major artists of the 19th and 20th Centuries. His most recent shows include the Kennedy Galleries in New York and the Corcoran Gallery of Art in Washington.

The lecture series will close Sunday at 2 p.m. with a presentation by Charles Schmidt, who will dis-

Crews named

(Continued from page 2)

during STS-7. The 41-G Pilot will be David M. Walker, and the Mission Specialists will be Anna L. Fisher, Joseph P. Allen and Dale A. Gardner. Allen first flew on STS-5, and Gardner's first flight was STS-8.

The 41-G cargo will include commercial satellites for TELSTAR, Satellite Business Systems and Hughes Aerospace, and an astronomy experiment known as

"Documenting the Shuttle Program: The Human Element." Schmidt feels there has been a tendency to use art in the space program to depict only the aspects of the hardware and its performance.

"Frequently," he said, "the most interesting situations involving people are not what NASA calls 'events,' but occur as part of the daily workings. They are non-events. Nevertheless, they are important, frequently unique and visually exciting, and a valid part of

the history of this immense undertaking." Schmidt is professor of painting and drawing at Tyler School of Art in Philadelphia. He has shown extensively throughout the United States and abroad and has presented numerous lectures and workshops.

The lecture series is open to all JSC personnel and the public, and there is no admission charge. For additional information on the exhibition, call the University of Houston's News and Information Office at 488-9326.

SPARTAN. The projected launch date is Aug. 1, 1984.

The new mission designation system was adopted since reordering of flights originally specified with an STS number may occur in the future. The system identifies missions with payload assignments, and those assignments are designated by the fiscal year of the launch, the launch site and the order of launch.

Fiscal Year 1984 mission designations will begin with the number "4." FY 1985 missions will begin with the number "5," and so on. Launch sites — either the Kennedy Space Center or Vandenberg AFB — will be identified with the number "1" or "2", respectively. Launch order, the third element of the designation system, is identified by a letter. Thus the third launch scheduled to take place in FY 1984, from KSC, is 41-C.

and here's John Glenn, one of the Original Seven Project Mercury astronauts, coming home from space in a fiery reentry, buffeted and compressed by nine Gs, and humming the Battle Hymn of the Republic. Again, this is entertainment, not history.

Okay, so it's not history, so what? Well, the movie is subtitled "How the Future Began," and the whole idea here, the movie's *raison d'être*, is to recreate the early days of manned rocket flight. It does not do that very accurately.

As entertainment, it is somewhat better. The movie has an earthy, humorous tone in places which is enjoyable. It has excellent special effects of jet flight and spaceflight, although the space sequences are flawed in places. Looking out at the Earth during Glenn's flight, for instance, we see in two or three brief scenes a sort of kaleidoscopic effect of shifting colors and lights which is somewhat like peering through the bottom of a Coke bottle and, in the context of the other really beautiful representations of

the Earth, has no apparent explanation. Stars twinkle in space here, and that also is a departure from real life.

But those are niggling points. Aside from its almost religious historical inaccuracy; its attempts at artistic cuts from scene to scene which really don't work (such as a cloud deck dissolving into Sally Rand's fans during a fan dance in the Houston Coliseum, and from Sally Rand's fans back into a cloud deck, ad tedium); its Boy Scout dialogue (a lot of what people said publicly back then was Boy Scout, but it is all just a little too uncomfortable); and its intolerable length (there's a lot of fill in this flick); the movie, in the words of one NASA official at the Houston premiere, "has its moments."

That it does. If you work in the space program, or if you just have an interest in planes and rockets in general, you probably ought to go see this movie. You might even enjoy it.

But don't go expecting a history lesson. — Brian Welch

Interview

Robert T. McCall

A conversation with one of America's great space artists

As a young illustrator in New York during the early 1950s, Bob McCall, a veteran of the U.S. Army Air Force in World War II, turned his interest in aircraft into a vocation. When the space program began, McCall's artwork was there, and since that time his renderings of space vehicles and the people who fly them have become world famous. Like James Dean and Lamar Dodd, he was among the first artists to contribute to the NASA Art Program, and he has covered every major launch since. McCall's busy schedule did not permit him to attend the Shuttle art show opening in Houston this week, but the Roundup recently had the opportunity to interview him in his Paradise Valley, Arizona studio:

Roundup: How did you get started in this field, specifically space art?

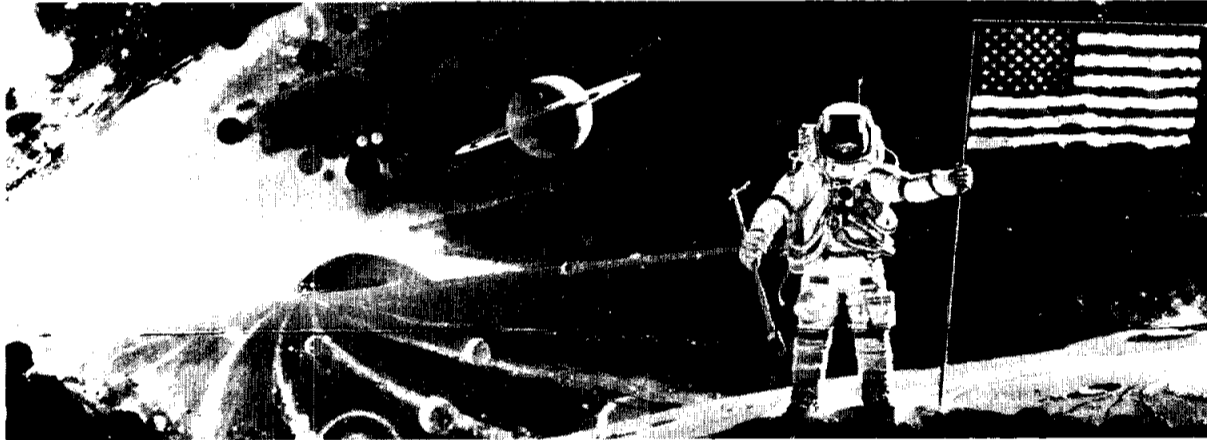
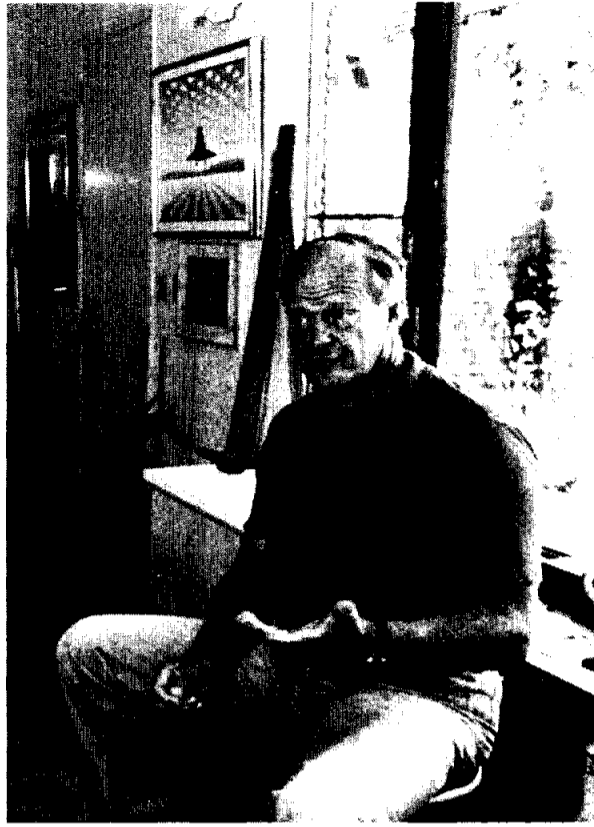
McCall: Well, as a youngster, I was interested in astronomy and science fiction and the future. As a very young teenager, I was interested in aircraft and as an illustrator in New York City, where I arrived in 1955, I sort of specialized in aircraft. That specialty developed and grew and I was doing some very important work in that field as a New York illustrator. And then when the space program started to build in the 50s, I was caught up in the excitement, and painting spacecraft is not unlike painting aircraft. It's the same kind of dynamic subject matter. The fighter pilots that I'd come to know became astronauts. So that's the evolution.

Roundup: What, for you, is your most memorable work?

McCall: I think it has to be the Space Mural at the Air and Space Museum in Washington. It's the most significant, most important thing I've done, I feel. The requirement was that I bring together all of the things that fascinated me most as an artist. I was asked to paint the Space Mural for this marvelous new museum. It's not only the largest painting I've ever done, it's one of the simplest in concept, which is very interesting to me. It's seen by more people, I think, and will continue to be seen by many, many people. So that's important too. And it was successful - I felt I got what I needed. I painted the picture I wanted to paint. So that unquestionably is the painting I get the most comment on, because so many people see it - close to 10 million people every year. Next to that, I think my most important picture would be the one at the Johnson Space Center, because there again, a lot of people see it, it will be there for a long time, and once again, I was doing exactly what I wanted. An artist is never more fortunate than when he is painting what he wants to paint.

Roundup: In that picture, a lot of what is done at JSC comes out right away. In the lower left hand corner of the mural, there is a decided emphasis on Mission Control and the people who have been involved down here on the ground, and the tone of the painting seems to have them looking out on tomorrow. Is that how you approached it?

McCall: Sure. Yes, that mural happened in, I think, a rather interesting way. Right after I finished a small mural at the Dryden Flight Research Facility, I talked with some people from Houston and said I would love to do something for the Johnson Space Center. So I made a proposal and the idea was left entirely up to me. Clearly, I wanted to do something that would say something very positive about our space program and particularly the manned space program,



Two views of McCall in his Arizona studio: before a sketch of his latest work, upper left, and with some of his completed paintings in the background, upper right. Below, detail from the Space Mural at the Air and Space Museum in Washington. The section below hangs next to the section which was reproduced on page one of the Roundup's Sept. 30 25th Anniversary Issue. (Photos by Otis Imboden)

so I made a comprehensive painting and sketch, which is now on view right below the mural. I showed it to Chris Kraft and some other people; they liked it, made a few changes and suggestions, and that's how the mural happened.

Roundup: What is the story behind the portraits in the mural?

McCall: Well, it was sort of on an impulse. All of those faces that appear there happened sort of right at the end of the mural project. They were not planned. In the original sketch, there were no portraits except for the astronauts. John Young, for instance, was not identified as John Young in the original sketch. That was a liberty I took as the six months went by during which time I was there painting. John had been designated as the commander of STS-1, so it seemed appropriate to me that the central figure be John Young. So I took that liberty, as I later took the liberty of putting all of those other people in the mural. As a mural artist, I have begun to realize we are a little different from other artists. Clients really kind of leave it to you and hope that you do what they are looking for. With that kind of freedom, the portraits in the JSC mural evolved. My only regret is I didn't put a lot of other people in there whose names have occurred to me since.

Roundup: Do you think artwork serves a higher and maybe more important function in the chronicling of spaceflight than, say, photography?

McCall: No, I could never say that. For one thing, a photograph records so much information and that is what we want. I just think art is an adjunct. It is another way of documenting and recording historical events. It is important, because an

artist does it so much differently than the camera does. But they cannot be compared. They are compared all of the time, of course, but they are two very different mediums.

Roundup: If there are phases to your career, have they been influenced by various events in the space program? Was your art different after the first picture of Earth from space, or after the first television and photography from the lunar surface, than it was before those events?

McCall: Oh, of course. That first lunar landing, and the pictures of Earth from space, had such an impact. We were seeing something we had never seen before, or ever expected to see.

Roundup: The space you paint is not at all black and empty space, is it?

McCall: And it is becoming less and less like space. As the years go by, I am painting space pictures which have blue skies and sunlit kinds of things. For example, in the mural at the Johnson Space Center, the sky is bright and inviting, and I wanted to make it that way. There again, the artist has that liberty. The camera would never have recorded it that way, but the artist can inject an emotion into his work. Now, a great photographer is every bit the same kind of artist, but he is using different tools.

Roundup: Do you try to inject a patriotic message into some of your artwork? There is, for instance, a theme in some of your work from the Shuttle program especially of flags and starfields and that kind of thing.

McCall: I was responding to my own excitement about that experience and then trying to communicate it. All artists are trying to

communicate to an audience. They want response, they want to get their message across, whatever it is. My message in those pictures was the feelings I had when I witnessed the sound and fury of a launch and then that landing, which was silent. The contrast was just incredible. And the emotions that were felt from the landing I think may have been even greater than the launch with all of its color and drama. The landing had a quiet kind of quality about it that just sort of got to you.

Roundup: What were some of the emotions you felt during STS-1?

McCall: Fear, and even maybe some terror when the launch occurred. Louise and I had spent the day before with Suzy Young, who was fairly nervous about the whole thing. And I had been with John and Bob in the suitup room. So having been that close to them made me all the more involved with that human element. But had all that not occurred, the terror part might not have been so keen, but when that big bird ignited, it was a whole different experience. It had its own unique quality. It was a different silhouette, a different shape rising - an airplane, imagine that - and it was very different from a Saturn. I did a lot of work, a number of paintings for *Popular Science* magazine - various ideas of what that Shuttle launch would be like, and this was maybe five years before it happened. And I couldn't believe that this event was really going to take place. This huge DC-9-sized aircraft on a monstrous cylinder, taking off straight up. I never really believed it would happen.

Roundup: How did you do with your *Popular Science* illustrations, by the way. Do you think you got close?

McCall: Well, yeah, but it was a little different than that. I did four different kinds of Shuttle illustrations where the tank was flyable and that sort of thing. But I learned you cannot anticipate very closely what will really happen if you are trying to delineate it in detail and make a guess at what certain vehicles are going to be like. An example is the lunar lander. You would never have dreamed it would look like that a few years before if you were trying to make a guess. Sure, we would know some of the sequence of events, but the configuration would have been hard to anticipate.

Roundup: When a space station is built and we have become accustomed to operations with it, how valuable do you think an art studio or a facility of that type would be, up there in orbit? Would you feel that some sort of environment for artistic creativity would be essential in a space habitat?

McCall: Well, certainly I believe that would be desirable, but I don't see that happening in the early days of a manned space station. Maybe when we have 30 or 40 residents up there, but I could see an artist travelling up there for a brief stay to work in that environment.

Roundup: What logistical problems would you encounter trying to paint in weightlessness? Could you use oils, for example?

McCall: Of course. Especially in a pressurized environment, and oils better than water colors, I suppose. The water would tend to move around, while the oil would stick to a palette. Just surface tension would hold it there, I think. No I can't see that it would be a big problem.

Roundup: There has been a great deal of talk lately about flying citizens, artists, writers or people from other walks of life on the Space Shuttle. As an artist, what case can be made for flying someone in your profession?

McCall: I think there's every reason in the world to fly creative people. The astronaut personality is fairly stereotyped, although as you get acquainted with a lot of astronauts you recognize they are very diverse. But essentially, the creative temperament has really not been the temperament which makes astronauts. So there are few astronauts that are as creative as your typical writer or artist or someone like that. I don't want that to sound as though they are deprived, because they are not, anything but that, but when the first group of creative people go up who are able to look for different things than the engineer/pilot type of person, we will be hearing different things about space. Maybe some things which are described in a fresher, new way, that the masses can relate to. That's why I think it is important that these individuals be flown just as soon as it seems safe to do it, because they are going to bring back a story that is different and it is important for people to hear that, because masses of people will be going to space given time. We don't know the schedule, but we do know it will happen. Historically new horizons have always yielded unexpected benefits.

Roundup: If you could don a space-suit and then sit and paint anywhere in the Solar System, where would it be?

McCall: I would like to be just above the rings of Saturn and out about 10,000 miles or a little farther from the surface, and adjacent to one of the moons. I think that would be a fantastic place to make a painting.

Gilruth Center News

Call x3594 for more information

Country western dance — Back by popular demand, these classes for both advanced and beginning dancers will begin Nov. 7. The course is \$20 per couple, and each class is limited to 15 couples, so call the Rec Center now for reservations and more information.

Word processing — Learn all about Word Star in this basic course which gives the student hands-on experience with various types of hardware and concentrates on legal letters, resumes and other types of everyday needs. The class begins Nov. 2 and meets from 7 to 10 p.m. on Mondays and Wednesdays. Cost of this class is \$154.

Weight loss — Learn about nutrition, exercise and behavioral patterns in this class designed to help change the thinking and eating patterns of those who have trouble keeping the weight off. The six-week class begins Oct. 18 and meets from 6 to 8 p.m. on Tuesdays. The cost is \$20 per person.

Yoga — This class is designed for those who desire a method for gaining inner peace, relaxation and better control of their bodies. The class begins Oct. 18 and runs on Tuesdays from 7 to 8 p.m. The cost is \$20 per person.

Guitar lessons — This beginner's class for people with minimal musical experience will concentrate on simple songs, chord changes, simple strums and melodies. The intermediate class also offered is for those who already know basic chords and can strum simple songs. Beginners meet Oct. 17 from 7 to 8 p.m.; intermediates meet beginning Oct. 17 from 8 to 9 p.m. Both classes run for six weeks and the cost is \$25 per person.

Defensive driving — Learn to drive safely and qualify for a 10% reduction in your auto insurance rates over the next three years. Class is held from 8 a.m. to 5 p.m. Nov. 19. The cost is \$22 per person and space is limited.

Dancercise — Part dance, part exercise, all fun. This class will gradually get you into shape. The six-week course begins Nov. 15 and meets on Tuesdays and Thursdays from 5:15 to 6:15 p.m. The cost is \$25 per person.

Phone RFP is on the Street

The RFP — request for proposal — is on the street: JSC is seeking a new telecommunications system to replace the present telephone setup.

The RFP, released Sept. 22, seeks proposals to not only replace telephones, but also to provide data service from any designated line. The new Center Telecommunications System (CTS) will be designed to allow each user to transmit data and talk at the same time over the same instrument.

A special hardware attachment

will provide the data capability. The voice/data communications systems currently being manufactured are capable of providing many features for users. Those features include user-initiated conferencing, speed dialing, call transfer, last number redial and a variety of others.

A copy of the RFP containing technical details of the new system has been distributed to each directorate at the Center. This document will assist those interested in data transmission to better

evaluate their future computer-related hardware purchases for compatible systems.

A contract for the new CTS will be awarded in 1984, with full operational capability scheduled for 1985. Following the selection of a supplier, a survey will be conducted to determine which features will best serve the various organizations on site.

Center personnel will be advised of the progress, and training in the use of the new system will be provided prior to the switchover.

Cookin' in the Cafeteria

Week of October 17-21, 1983

Monday: Cream of Chicken Soup; Beef Burgundy over Noodles, Fried Chicken, BBQ Sausage Link, Hamburger Steak (Special); Buttered Corn, Carrots, Green Beans. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Beef Noodle Soup; Baked Meatloaf, Liver & Onions, BBQ Spare Ribs, Turkey & Dressing (Special); Spanish Rice, Broccoli Buttered Squash.

Wednesday: Seafood Gumbo; Broiled Fish, Tamales w/Chili, Spanish Macaroni (Special); Ranch Beans,

Beets, Parsley Potatoes.

Thursday: Navy Bean Soup; Beef Pot Roast, Shrimp Chop Suey, Pork Chops, Chicken Fried Steak (Special); Carrots, Cabbage, Green Beans.

Friday: Seafood Gumbo; Broiled Halibut, Fried Shrimp, Baked Ham Tuna & Noodle Casserole (Special); Corn, Turnip Greens, Stewed Tomatoes.

Week of October 24-28, 1983

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

Pies.

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

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

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

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

Roundup Swap Shop

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

Property & Rentals

For sale: Wedgewood 3-2-2, over 2,000 sq. ft., 30 x 16 gameroom, landscaped, quiet, must see, \$70,900. Call 482-5393.

For sale: Baywind 2-2-2, downstairs, 826 sq. ft., fireplace, \$2,200 down, \$43,500. Call Elaine, x3803 or 334-2402.

For lease: 10 acres, Alvin area, fenced, on paved road. Call Damewood, 482-5572.

For sale or lease: Kings Park townhome, 2-2.5-2, 1,219 sq. ft., fireplace, \$650/mo. or \$67,500. Call Quin Sheppard, x3491 or 486-7770.

For sale: By owner, University Green patio home, great location, 3-2-2, many extras, spa/decking, covered patio, storm shutters, ceiling fans. Call 488-3377.

For sale: By owner, La Porte 3-2-2 in Fairmont Park, low equity, assumable, 1,500 sq. ft., ceiling fans, large family area, fireplace, fenced. Call 470-8973.

For sale: 5.38 acres, Crosby, TX, cleared, two accessible roads, low equity, \$3,500 and take over payments. Call 470-8973.

For rent or lease: Heritage Park 3-2-2, fireplace, fenced, drapes, patio, very nice, \$525/mo. Call 474-4991 after 4 p.m.

For sale: Seabrook, 1 acre unimproved restricted residential, city utilities, \$15,000. Call Nita, x5081 or 996-1429.

For lease: The Wharf, 2-2-1 luxury townhome, fabulous water view, no storm damage, long or short term, furnished or unfurnished. Call Corcoran, x3821 or 554-7160.

For lease: Sagemeadow 3-3-3, fenced, refrigerator, available now. Call Larry, x6204.

For lease: Forest Bend 2-1.5-2 townhouse, appliances, utility room, ceiling fans. Call Sandra, 486-8153, x153 or 482-0271.

For sale: Forest Bend 3-2-2A, open floor plan, cathedral ceilings, new outside paint, \$62,000, by owner. Call Jeff, x3967 or 996-0755 after 5 p.m.

For lease: Camino South 3-2-2, immaculate, near schools, churches and shopping, fenced. Call C. Price, x2851 or 488-3685.

For sale or lease: Nassau Bay townhouse, spacious, 2-2.5-2, new carpet and paint, best location, \$61,500 or \$525/mo. Call 334-4184.

For rent: Galveston By-The-Sea condo, 2 BR, furnished apartment for rent by day (2 minimum) week or month. Call Clements, 474-2622.

For lease: Sycamore Valley 3-3-2, Ellington area, fireplace, central A/H, fenced, patio, open floor plan, \$610/mo. Call Dave, x2886 or 485-1705 evenings.

Cars & Trucks

1979 Peugeot, 504 diesel, excellent condition, loaded, 31-36 MPG, \$5,300. Call 474-2906 after 6 p.m.

1976 Olds Omega, 2 door, AC, auto, all power, immaculate, 81K miles,

\$1,600. Call Patti, 280-0847 or Laura, x6181.

1977 Maverick, 2 door, AC, AM/FM stereo, new tires, \$650. Call Madeline, x2303 or 534-6252 after 5 p.m.

1977 Ford LTD, V-8, power, cruise, AM/FM/cassette, 66K miles. Call Judy, x3541 or 471-1473.

1980 Cadillac Coupe de Ville d'Elegance, fully equipped, like new, 40K miles. Call 334-3370.

1979 Celica GT Liftback, 55K miles, 5-speed, PB, PS, sport louvers, good tires, like new, \$4,700. Call Ed Armstrong, x2826 or 333-3279.

1968 Cougar, 302 V-8, classic, restored inside/out, professionally appraised, \$3,500 firm. Call 538-1148 evenings.

1977 Chevy Caprice, wrecked, 350 V-8, four door, \$750 or best offer. Call Burke, x5491 or 554-2364.

1974 Camaro, low miles, auto, 350 V-8, PS, PB, AC, AM/FM/cassette, reg. gas, original owner, \$2,500. Call Sharon, x2948.

1977 Olds Omega Brougham, 2 door, PS, PB, AC, AM/FM/cassette, tilt/cruise, power window/locks, 305 V-8, 55K miles, \$2,300. Call W. Shelton, x5451 or 554-6835.

1979 Chevy Monte Carlo, V-6, AC, PAS, PB, AM/FM/cassette, excellent condition, \$3,750. Call Roger, x3188 or 980-3125, 6 to 10 p.m.

1980 Renault Le Car, 4-speed, Michellins, AM/FM/cassette, Pioneer speakers, 36 MPG, must sell, \$1,600. Call 482-7030 after 6 p.m.

1976 Chevy Malibu wagon, AC, PS, PB, AM/FM, 9-passenger, \$1,200. Call Ronny Moore, x4401 or 486-0943.

Cycles

Yamaha 360MXA Motocrosser, showroom condition, \$1,200. Call Roy, x3591 or 488-6326.

1981 Honda CB900F Super Sport, F-2 fairing, backrest, luggage rack, cover and Kryptonite lock, low miles, \$2,600. Call Stephen Wright, x4261 or 480-3094.

1973 Yamaha LT3, 100 cc, excellent condition, street legal, low miles, \$225. Call 488-5580 after 4:30 p.m..

1976 Yamaha RD 400, very quick, excellent condition, mags, front/rear disc brakes, 6 speed, rack, rebuilt, extras, \$800. Call 480-6863 evenings.

1981 Kawasaki 750, excellent condition, many extras, 6,000 miles, \$1,600. Call John, 482-5731 after 5 p.m.

1978 Honda Hawk, 14K miles, recently rebuilt engine, nearly new drive chain, sprockets and mufflers, asking \$500. Call Hendrickson, x2051 or 470-2293 evenings.

Boats & Planes

1979 Pennyan 24 ft., flying bridge, 250 HP single 360 Chrysler, tunnel drive, V-berth, galley, head, excellent condition, many extras, \$13,000. Call Don, 554-6733.

For rent: Piper Lance, 6 place, 160 knots, full IFR, club seating, \$85/hr.

wet. Call L. Damewood, 471-1675. Lowline River john, 14 ft., 6 HP Johnson outboard, very good condition \$1,000. Call Young, x4164.

Audiovisual & Computers

Sharp cassette player/recorder, \$125; Bogen equalizer, \$50; Delco cassette player with AM/FM radio, \$30. Call Randy, 480-5194.

Misc. hi-fi equipment: receivers, amps, turntables, speakers, good working orders, cheap. Call 488-3966.

Two car speakers, 6" x 9", 3" mid-range, 2" tweeter, 40 oz. magnet, 35 Hz to 19 KHz, 200 watts max power, \$75 or best offer. Call Ed, x6226.

Commodore 64 home computer with 1541 disc drive, NEC JB1260 monitor, modem, computer desk and chair, reference guide, Zork II adventure game. Call Ron, x2991 or 480-8076.

Heath-Zenith Z-80 CPU 64K computer, two disc drives, Z-80 smart terminal, H-DOS and CPM operating system, micro soft basic and CPM basic-80, magic wand word processor, \$1,250. Call Bill Munro, x2291 or 334-2798.

Colevision master component, brand new, \$120 or best offer. Call Mike, 482-7079.

Household

Ward's best freezer, 23 cu. ft. chest type, textured white surface, 4 years old, extra baskets, \$295. Call 944-3026.

Matching couch and loveseat, contemporary style, moss green/ivory, excellent care and condition, \$300. Call 333-4458.

Black vinyl swivel rocker, \$15; two black vinyl swivel dining chairs, \$10 each; new swag lamp, \$10. Call Bob, 488-0397.

Twin bed excellent condition, \$75, green rocker, broken spring, \$25. Call 488-4915.

Dinette set, round table with leaf and four chairs; Singer sewing machine with cabinet. Call 482-4600.

Brown side-by-side 19 cu. ft. Sears refrigerator, 15 years old, defrost cycle stuck on, \$50. Call 554-6524.

Whirlpool refrigerator, 19.1 cu. ft., side-by-side, textured surface, almond, practically new, \$600. Call Nina, x3551 or 480-6720.

Jenkins Kiln, model K, with accessories, \$500; green lounge chair, \$35; rattan chair, \$40. Call 946-7860 or 481-3731.

Beautiful rattan dinette with large round table and four chairs, plush off-white corduroy cushions. Call 554-4306 after 3:30 p.m.

Hoover convertible vacuum cleaner, accessories, five pieces, never used, \$25. Call Jan, 280-5425 after 5:30 p.m. GE tank-type vacuum cleaner, with attachments, \$25; Kirby vacuum with attachments, \$40. Call Art, x2673 or 332-3153.

Two peach colored bedspreads, new, very nice, reasonable. Call Mary Tur-

pin, x7272 or 944-8201 after 5 p.m.

Two washing machines, \$20 each: one old, but works; one new, needs parts. Bench-type swing with chain, free; two cheap motorcycles. Call Steve, x5111 or 554-2435.

Men's starter golf club set, North-western, plus bag, \$75. Call Rusty, 485-3273 or 481-2098.

Brunswick regulation pool table and accessories, 1 inch slate top, \$700. Call Ike, x5539 or 488-1117.

Collector's item, antique Keystone 16mm motion picture projector, working condition, \$25. Call Frank, x3836 or x3837.

Diesel tractor, 31 HP, almost new (only 50 hours) with bush hog and implements, \$6,000. Call 488-4915.

Aluminum extension ladder, 20 ft., \$45. Call 482-7643.

Brunswick Golden Crown 4' x 8' pool table, 1 inch slate top, walnut, brown felt, originally \$2,600, asking \$1,100, includes accessories. Call 488-2652 after 6 p.m.

Square dance clothes: four size 14 dresses with matching bloomers; four men's shirts; brown shoes, more, \$150. Call Phyllis, x3017 or 337-7086 after 5 p.m.

Aluminum window screens, no tears, good condition, sizes 17.5 x 35.5 and 35.5 x 35.5, no reasonable offer refused. Call Jerry, x5226.

Trailer tire, never used, 20.5 x 8.0-10, 6 ply, \$30. Call Dave, x3394 or 488-3276.

Little girl's clothes, 6-6X, toddler boy's clothes, 3T, good variety, very reasonable, all in good condition. Call 488-6521.

New Remington 1100 12 gauge, 28" modified, \$250. Call Daryl, x5441 or 332-1396.

Electronics garage sale: scopes, VTVMs, signal generators, etc., old but good. Call 488-3966.

Boy's 10 speed bike and black and white TV, both in excellent condition, \$30 each. Call Carolyn, x5996.

Woman's London Fog overcoat/raincoat, size 12, excellent condition, worn once or twice, \$25. Call 554-4133 after 5 p.m.

Tow bar, fits 1978 Celica, cost \$175, asking \$75. Call 470-2293 after 6 p.m.

Carnivorous plants for sale, good selection, growing instructions included. Call Jeff, x3967 or 996-0755 after 5 p.m.



People Helping People The United Way

Pets

Want male Great Dane to breed with blonde female, now in heat. Call Randy, 480-5194.

Amazon parrot, 3 years old, red Lored, learning to talk, retails for \$300, make offer. Call Hendrickson, x2051 or 470-2293 after 6 p.m.

Female cocker spaniel, pretty and gentle, 9 months old, dog house and other items, \$75. Call 486-8057.

Found

Trifocal glasses, in street by Bldg. 4, Call Leo Reitan, x5871, Bldg. 4, Rm. 340.

Wanted

Carpool partner(s) between JSC West Gate and Deer Park via Red Bluff, 7:30 a.m. to 4 p.m. shift. Call Dan, x5967.

Want career-minded female to share expenses on 2-1.5-2 with fireplace, tennis courts, pool, patio. Call 480-8484.

Female roommate to share 2 BR apartment with same, 1/2 bills and rent in Clear Lake area. Call Virginia, x2471.

Miscellaneous

Matrix Roundback 12 string guitar with hardshell ovation case, excellent condition, \$350. Call 488-4233 after 6 p.m.



Lyndon B. Johnson Space Center

Space News Roundup

The Roundup is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for all space center employees. Roundup deadline is the first Wednesday after publication.



Editor

Brian Welch