

# Space News Roundup

Vol. 22 No. 10

May 27, 1983

National Aeronautics and Space Administration

## Goetz named Deputy Director

Robert C. Goetz has been named Deputy Director of the Johnson Space Center.

A 21-year NASA employee, Goetz is currently Director for Structures at the Langley Research Center in Hampton, VA. His appointment will become effective July 1.

Goetz will replace Clifford E. Charlesworth who has held the position since 1979. Charlesworth



Robert C. Goetz

was made Director of Space Operations, one of three new top management positions created in a recent reorganization at JSC. Director Gerald D. Griffin said the appointment of Goetz "adds strong technical leadership for our future research and development programs. At the same time, it allows Cliff Charlesworth to apply his extraordinary experience toward making the Space Shuttle a truly

operational transportation system."

Goetz joined NASA in 1962 to conduct research in hypersonic aeroelasticity in the Dynamic Loads Division at Langley. He served in increasingly responsible technical positions there until 1979, when he was assigned to NASA Headquarters in Washington, D.C., to head up structures and dynamics research. He returned to Langley in 1980 as Special Assistant to the Chief of the Structures and Dynamics Division where he was placed in charge of advanced research.

Goetz was born in Miami, Florida. He received a Bachelor of Science degree from Georgia Institute of Technology in 1959 and a Master of Science degree in Engineering Mechanics from Virginia Polytechnic Institute in 1967.

He is the author of over 30 publications and presentations on hypersonic aeroelasticity, Space Shuttle dynamics and aeroelasticity, dynamic loads and flutter. Goetz has received several awards, among them a Sigma Xi Award for his master's thesis and a NASA Exceptional Service Medal, presented in October 1981, "For outstanding contributions to Shuttle technology and for direction of a broad range of analytical and experimental (thermal tile) certification efforts for STS-1." He is an Associate Fellow of the AIAA.

Goetz and his wife, Josemarie, have two children.

## More astronaut selections start

The first of what will become an annual selection of Space Shuttle astronauts will be instituted later this year as flight operations pick up.

NASA anticipates openings for six pilots and six mission specialists in this selection. Pilot astronauts are responsible for control of Space Shuttles during launch, reentry and other required maneuvers, and for maintenance of flight systems. Mission specialists' responsibilities include management and operation of Shuttle systems which support payloads during flight.

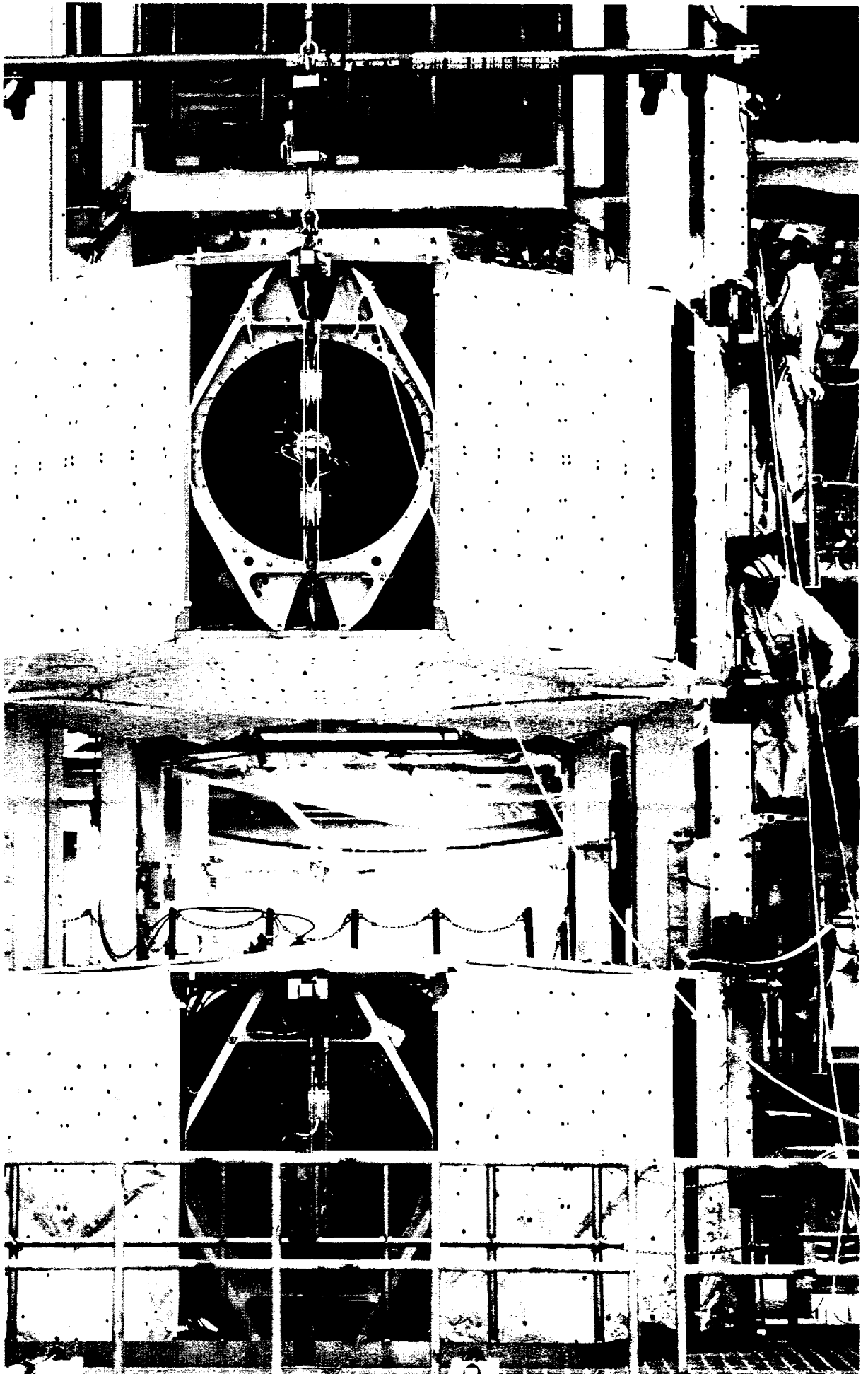
Applications from civilians will be accepted between Oct. 1 and Dec. 1, 1983. Selections will be made in the spring of 1984 and

successful candidates will report to work that summer. Military services begin this month screening candidates for nomination to NASA.

Minimum qualifications for pilot astronauts are:

- A bachelor's degree from an accredited institution in engineering, biological or physical science, or mathematics.
- At least 1,000 hours time as pilot in command of high performance jet aircraft. Flight test experience is highly desirable.
- Ability to pass a NASA Class I space flight physical examination, which is similar to military and civilian flight physicals.
- Height between 64 and 76 inches.

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Technicians at the Cape position Telesat Canada's Anik C-2 satellite in workstands at the Vertical Processing Facility above Palapa B-1 as preparations for the June 18 launch of STS-7 continue. Rollout of the Orbiter Challenger from the Vehicle Assembly Building came last week, with the move to pad 39-A taking about 16 hours.

## Private upper stage development underway

The most valuable real estate in this part of the solar system, according to the company's president, is 22,300 miles straight up in geosynchronous Earth orbit, and the job of making financial hay from that outlook is well underway.

"Our plan is to finance, develop, market and operate a medium size upper stage for the Space Transportation System," David W. Thompson, President of Orbital Systems Corp. (OSC), told a gathering of Houston businessmen at a Space Foundation luncheon recently. Thompson is 29 years old.

In April, when NASA signed a cooperative agreement with OSC to build an upper stage, it was something of a landmark in the growing effort to commercialize

and profit from our expertise in space. Thompson and two others, Bruce W. Ferguson, 28, and Scott L. Webster, 30, were students at the Harvard Business School two years ago where they did a study for NASA on how the government might encourage more private investment in space. The study was well received, and one of its conclusions — that there are not enough entrepreneurs willing to "make things happen" in space — later became a piece of sound advice for the trio themselves.

They organized the corporation, borrowed money and raised financial backing from private investors with the idea of building the Transfer Orbit Stage (TOS), a system capable of delivering 2,800 to 6,800

pounds to geosynchronous orbit.

"We went to NASA and in less than one month, we had entered into a Memorandum of Understanding," Webster said. "The 29-day turnaround set a record."

The final agreement, signed April 18, calls for the development of an upper stage which will complement the Payload Assist Modules, the Inertial Upper Stages and the wide-bodied Centaurs now in use or development. The TOS, which was originally to have been a government development program, will now be integrated from mostly off-the-shelf hardware by OSC, which will act as the exclusive marketing agent and will proceed without any government subsidies or purchase guarantees.

Martin Marietta/Denver has been signed as the prime contractor, and the United Technologies Corp. will provide the solid fuel rockets. NASA will provide technical monitoring and ensure that the TOS will be compatible with the Space Shuttle. A TOS Program Office will also be set up at the Marshall Space Flight Center.

First launch of the TOS is scheduled for 1986, and the company foresees some 34 missions through 1992. It is being billed as the most economical delivery system and Thompson said it will make NASA's Shuttle more competitive with Europe's Ariane launcher. The project is estimated to cost \$30 million through 1986. User cost is now set at about \$20 million per

launch.

Houston lawyer Art Dula, reflecting on the progress of OSC, said there are historical patterns to be observed in the commercialization of space. "In the 18th Century, Great Britain had to dedicate 1½ percent of their Gross National Product to exploiting North America. Today we do about one-half percent in space. That is not enough."

The success of OCS, he said, illustrates the three stages of commercial exploitation of a frontier. "In stage one it is theoretically impossible. In stage two it is technically possible, but who can make money at it? In stage three it is, 'Good gracious, why didn't you tell me about it?'"

## Space News Briefs

### Another comet to make close approach

The joke at the Jet Propulsion Laboratory is there was a once in a lifetime event earlier this month and there's going to be another one in June. For the second time in the span of a month, a comet will pass close to Earth — within 6.28 million miles — on June 12 or 13 and it may be visible to the naked eye in some areas. The comet, named Sugano-Saigusa-Fujikawa for its Japanese discoverers, is now in the Constellation Andromeda, and can be seen with telescopes just over the horizon in the early morning hours. It will rise earlier each night and will likely be in the evening sky during its close approach. Earlier this month, astronomers scrambled to observe Comet IRAS-Araiki-Alcock as it sped by at a distance of some 3 million miles. Since telescopes are usually reserved months in advance, the early sighting of the new comet will give astronomers time to prepare for its passage.

### Exosat launch set for late May

A NASA Delta 3914 was scheduled to launch the European X-Ray Observatory Satellite from Space Launch Complex 2 West at Vandenberg Air Force Base May 26. The European Space Agency observatory will make a detailed study of the known X-Ray sources in space and search for others. Exosat, a 1,125-pound satellite, will be lofted into a highly elliptical orbit with a perigee of 217 miles and an apogee of 124,274 miles. The unique orbit will allow for up to 80 hours of observations at a time while maintaining relatively stable thermal conditions by keeping the spacecraft in full sunlight for most of the year. Exosat's scientific payloads include two imaging telescopes similar to those flown on the U.S. Einstein Observatory and a gas scintillator spectrometer which will be flown for the first time. Exosat was originally to have been launched on the Ariane L6 launcher but was switched to a Delta after the failure of the Ariane L5 last year.

### B-57 to fly near tornados

Researchers from the Dryden Flight Research Facility are in Oklahoma this month looking for tornados and they've got Fitz Fulton ready to fly a B-57 within a half mile of the funnel clouds if conditions permit. The effort is part of a wind dynamics study designed to shed new information both on severe storm conditions and the stresses and loads encountered by aircraft. "Tornados generally move from 20 to 30 miles per hour," said Fulton, chief pilot on the project. "It is felt you can fly as close as a half-mile with safety." The project is a joint study of NASA and the National Oceanic and Atmospheric Administration's Severe Storms Laboratory in Norman, Oklahoma. NASA will rely on the Lab's radar to keep the B-57 a safe distance from the tornados. "They'll keep us out of the hot spots," said NASA Project Manager Wen Painter. "Most of the flying is done below 500 feet, and a tornado's suddenly changing winds can top 60 miles per hour. It keeps you on your toes."

## Bulletin Board

### Lunarflins to offer scuba course

The JSC diving club, the Lunarflins, will offer a six-week basic course beginning June 7. The course will include classroom lectures at the Gilruth Center and supervised practical experience in the pool. The club also schedules regular boat trips to coral reefs, sunken wrecks and platforms in the Gulf, as well as diving vacations in the Caribbean. For more information on the class, call the Rec Center at x3594.

### Juneteenth celebration set for June 17

The Juneteenth celebration, a traditional event held "nowhere else but in Texas," will begin at 11 a.m. June 17 at the Gilruth Center. A barbecue dinner will be sold during the lunch period from 11 a.m. to 1 p.m. and a slate of games are scheduled for the afternoon. Bid whist, dominoes, backgammon, softball, kickball and horseshoes are planned. Prizes will be available for contest winners and T-shirts will be available for purchase. All NASA and contractor families and members of the Clear Lake community are invited. The celebration will last until 6 p.m.

### Longhorn Fun Run scheduled

The Bay Area Longhorn Fun Run, sponsored by the Bay Area Texas Exes and Schlitz, will be held beginning at 8 a.m. June 11 at the Gilruth Center. Early entries must be received by June 8. Late entries will be accepted until 7:55 a.m. race day. The fees are \$6 for early entrants and \$8 for late entrants. The course is a one mile and 5000 meter race to start and finish at the Gilruth. Trophies will be awarded to the first overall, male and female. There will be free refreshments. Proceeds from the race will benefit the Bay Area Texas Exes scholarship fund. For more information, call Peggy Adams at 482-1361 or Becky Hoffman at 334-4007.

### Pressure Systems Week designated

May 29 to June 4 has been designated Pressure Systems Week at JSC as part of an effort to increase awareness of the hazards associated with pressure systems both on the job and at home. In 1982, 3,977 accidents were reported nationwide involving pressure systems. Those accidents killed 23 people and injured another 149. In 1976, JSC began an inspection and certification program for all ground based pressure systems on site. Many hazards have been identified or eliminated. One identified in air compressor tanks across the country has been a recurring defect: cracks in the shell of the tank adjacent to the motor and compressor platform and leg attachment welds. If you have an air compressor at home, you should follow three steps in inspecting the device: 1) inspect the motor and compressor platform and leg attachment welds for cracks, arc strikes and undercutting; 2) drain the moisture from the tank weekly; 3) manually check the relief valve for proper operation. For more information, call the Pressure Systems Manager's office at x3194.

NASA  
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.

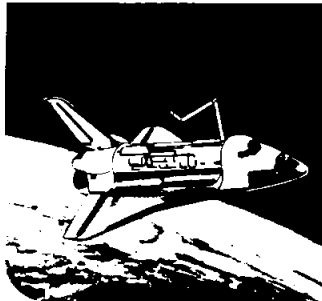
Editor

Brian Welch



### Anything went

The theme of the JSC picnic May 7 was "Almost Anything Goes," and it did. Witness the spectacle of Dan Brandenstein wearing a summer weight suit as he and Ginny McKissack endure the dunk tank, above; Elsie the Cow exhibiting bovine incredulity; the passage of an egg from nose to nose during one of the many contests; a character stalking away from the dunk tank, bearing a striking resemblance to a wet A. J. Roy, left; and the dizzying swirls around a bat during the Anything Goes contest, right. Below, Rick Hauck smirks while his partner Mary Lee Meider sinks, and two young people enjoy other aspects of the picnic — the food and the rides. Some 2,400 people attended the picnic.



Interview

# Tom Brokaw

*A candid look at spaceflight from the other side of the camera*

When Tom Brokaw graduated in 1962 with a degree in political science from the University of South Dakota, he thought he would be a lawyer. He was married, however, and the need to support his new family propelled him into a career as a reporter, morning news editor, weekend anchor and even a film processor for a South Dakota television station. In 1964, he moved to Atlanta where he went to work for the NBC affiliate there, WSB. Brokaw says he arrived in time to cover much of the early civil rights activity in the South, and by virtue of some of his stories, was hired by NBC and went to work in Los Angeles. In 1973, an eventful year for politics, Brokaw moved to Washington, D.C. and began covering the White House during the Watergate hearings. He spent three years on the White House beat and then became an anchor on the Today Show, for which he endured rising very early in the morning for the next five years. In the midst of a great deal of publicity in 1981, he assumed the role many had long predicted he would end up with: co-anchor for the NBC Nightly News. Brokaw was in Houston earlier this month for an interview with Dr. Sally K. Ride, a mission specialist for STS-7. As the first American woman scheduled to fly in space, Dr. Ride has become one of the most sought after astronauts since the crew of Apollo 11 and the Original Seven. Brokaw talked about that phenomena and other subjects during the following interview:



“... as a journalist, I recognize that what we are talking about here is the future.”

**Roundup:** You just finished an interview with the first American woman scheduled to go into space. How profound is Dr. Ride's selection and her flight next month?

**Brokaw:** It's very important. I think Sally, understandably, is deemphasizing the fact that she's a female and emphasizing the fact that she's a highly trained physicist and astronaut. And that's true, but at the same time, while I think she's going to be a first rate member of the flight crew, the symbolism to the rest of the country, to men and women, is going to be extraordinarily important. I have three teenage daughters, and I tend to be conscious of what interests them and what their prospects are in life as young women. These are your New York kids who have seen it all in many ways, but when I said I was coming down here to interview Sally Ride, their eyes lit up. She is very important to them. It's important that women are doing these things.

**Roundup:** Does that kind of interest justify what sometimes borders on — or even crosses the line into — intrusion? After all, the astronauts are not public figures in the sense that they ran for office or were elected to positions of high visibility. For the most part they are scientists and pilots and engineers who happen to work in the spaceflight business.

**Brokaw:** Well, it's always delicate. On the other hand, they work for a big public agency with a lot of tax dollars involved, and they work for an agency that has no reservations about using them for its own public relations purposes when it is useful to the agency. So it's a conflict which has to be worked out, I think, within the boundaries of good taste. Now I have a public life as well, in a manner of speaking. People are constantly trying to get me to do things with my wife or come to our home and take pictures and we won't let them. So I understand that point of view. You draw the curtain sometimes and I respect that.

**Roundup:** Then what the female astronauts, any astronauts for that matter, go through in the fishbowl of public scrutiny must be familiar ground to you and other major media figures who are part of the entire process.

**Brokaw:** Yes, but it's even more intense for them. Because we have deliberately chosen this field that we're in knowing that the public side comes with it. That was probably a secondary consideration or not even a consideration at all for somebody like Sally. She wanted to become an astronaut not because it would make her famous but because the work interests her. The fact of the matter is, it comes with the turf, and as much as I know she is not comfortable with it, it seems clear to me that she has reached an accommodation and does it with grace, and knows where to draw the line. And I think that's fine. It is unavoidable that we're going to pay attention to her. These are people who engage in a very public enterprise. It has adventure, romance and can-do scientific aspects that are appealing to people in our business. Just as astronauts set out to solve certain problems in their business, we have to work within our field. It is a natural thing that people are going to be interested. It just comes with the turf. I'm not saying this to denigrate, but the astronauts had to know that coming in. My guess is it must be part of the evaluation procedure here at NASA. They must look at these applicants in terms of how they will react to the media, and can they work with the pressures involved and that kind of thing.

**Roundup:** Do you think the next female crew member, Judy Resnik, will encounter the same heightened interest as Sally Ride?

**Brokaw:** No, I think it will taper off. Sally's flight is really analogous to the first Shuttle flight. Sally is the first. That will get attention. I think astronauts will always be in a special category. But it is not the same phenomena it once was and NASA is not promoting it in the same fashion as they once did. The astronauts were the most effective salesmen for the program in the early days. The public was going to foot the bill in part because they had a real attachment to them. But it has become a more routine part

of our lives and we will have a more routine attitude towards the astronauts.

**Roundup:** Would you describe yourself as having a moderate or high degree of personal interest in the space program?

**Brokaw:** I have a high degree of interest in it all. I'm not scientifically inclined. It is not a natural interest of mine. I tend to be drawn to political life, but as a journalist I recognize that what we are talking about here is the future. And there's a generation of young people growing up who do have a keen identification with the space program. I do love the adventure of it all. I do like the idea of these people taking on these enormously complicated problems and solving them, and doing it under conditions of some risk. And I admire their discipline. I admire someone like Sally Ride, for example, obviously an extremely well-trained physicist, a good athlete and a self-confident person, who comes down here, puts herself into a program under trying circumstances, and stays with it and maintains control of herself.

**Roundup:** Is it easier for television news to convey those romantic images rather than the scientific message?

**Brokaw:** People have only a vague idea of what goes on up there, and we do devote a fair amount of attention to the payloads and scientific aspects of the flight. But the fact of the matter is the people we are servicing, the audience, is interested in 'Did they get up all right?' and 'Is it going okay?' and 'Are they going to get back?' And they are not terrifically interested in all the nitty gritty of the scientific programs. So that's a problem. But you see, we're just a part of a wide spectrum of the media. There are scientific magazines with a specialized readership who give plenty of attention to the science, and people who need that kind of detail have access to it.

**Roundup:** Time constraints must also be difficult when trying to explain things like a monodisperse latex reactor or an induced environment contamination monitor.

**Brokaw:** Well, I'm a heavy promoter of subjects of scientific and technical interest. I think there's a real hunger for it. But sure, it's a problem with 22 minutes on the

evening news. Some people who are a little older than I am in journalism are not all that crazy about the space program. They think it's kind of boring. They just come from a different background. They don't identify with it in the same way they identify with a political convention or a demonstration of some kind.

**Roundup:** Last night (May 10), the Nightly News carried a story which implied that a correction burn on the Tracking and Data Relay Satellite was really a failure, when in fact it was a one hour, 22-minute burn that increased the perigee by around 300 miles. The point is not if the Nightly News made a mistake, but rather, what is it about scientific and technical projects that sometimes seems not to translate very well on the air?

**Brokaw:** Well, you examine everything on its merits. The launch of that satellite has not exactly been a shining moment, for whatever reason. It is very important to the program and there's lots of money tied up in it. They tried again and it didn't work very well and we went on to say they would try again. It's not that everybody is out to put the knock on NASA, but these are programs we have to examine just as carefully as we do every other program, whether it be food stamps or income tax reform or defense spending or whatever.

**Roundup:** NASA tends to pride itself on being an open agency and up front about the things it is doing. Does that seem to be a truism in your business, or is NASA seen as just another government agency with an ax to grind?

**Brokaw:** An open agency? Yes, I think one of the extraordinary things about the space program is you get to see it warts and all. You go to the Cape, for example, and they have a glitch of some kind and it's right there on national television. And they have to explain themselves in front of a lot of cameras. I always have said, both on the air and privately, that it's a great strength of NASA and the system that this program exists in open air. NASA, like any other agency, is very protective of its image, however. Someone in NASA complained to me that they always hear the negative things. And I chuckled to myself and thought, 'Good grief! NASA has had an

enormous amount of positive coverage every time there's a launch and a landing. Hours have been devoted to the success of the program. But those of us in journalism are always more sensitive to the criticism than the praise. I work in television news.

**Roundup:** That's what perks your ears up?

**Brokaw:** Sure.

**Roundup:** Let's talk about that period from 1979 to 1981, when NASA went through an absolute blood bath in the media over the delays in the Shuttle Program. A lot of people have neither forgotten nor forgiven that.

**Brokaw:** Well a lot of that, it seems to me, was NASA's own doing. Deadlines were not met, promises that were made in an effort to get funding were not fulfilled in the same fashion that NASA promised they would be fulfilled. That's our job to cover those things. We have to provide a standard of some kind against which public agencies can be measured. If this were private enterprise, a closely-held corporation, this would be a different thing. But this is a big public agency and especially at a time when there is a national debate going on about the use of public resources, we have to look closely at the program. NASA is competing for commercial business with European space ventures and there are people in the scientific community who have been critical of the Shuttle, and whether or not it will be commercially viable. These are all matters which need to be examined.

**Roundup:** What is your opinion of the policies on classifying Department of Defense payloads and on not announcing very much about the space adaptation syndrome unless it affects the missions directly?

**Brokaw:** Well the defense thing, I think you can make a case for national security. There wasn't a big outcry when they said they would classify payloads. We understand that. On the motion sickness business, I also understand that. I think it gets down to the fact that everything has to be examined, but they made a reasonable case that there are some matters which are very private. If, however, it is a continuing physiological problem with spaceflight, then I think we do have an obligation to deal with it. I don't think there is a conspiracy to cover up the fact of space motion sickness. And I've been told there is rather active debate within the astronaut corps over how much to say about it.

**Roundup:** At what point do you think the networks will assume the stance of merely reporting launches and landings and pretty much leaving it at that?

**Brokaw:** When they reach that stage of regularity and routine flight, our attitude will reflect that. We went with live coverage of the last one only because it was the maiden flight of a new bird and it had had some problems. We probably wouldn't have covered that except for the problems it had on the pad. I grew up in a small town in South Dakota. We got commercial airline service when I was in high school. The first year, the local paper printed a box on the front page every month with names of the passengers departing and arriving. And pretty soon they stopped doing that because passengers arrived with some regularity. It's a small scale example of the same type of thing.

**Roundup:** If or when today's plans come to pass, we will probably have several platforms and space stations above us in orbit in 25 or

(Continued on page 4)

## Gilruth Center News

Call x3594 for more information

**SCUBA** — The NAUI-certified open water SCUBA course begins June 7 with classes from 6:30 to 9 p.m. on Tuesdays. Pool sessions will be held Wednesdays beginning at 7:30 p.m. Cost of the class is \$70 and enrollment is limited. No equipment is necessary prior to the first meeting.

**Children's movie** — The next feature will be "Snoopy Come Home," beginning at 10 a.m. June 25. The cost is \$1 per person and includes popcorn and soft drinks. Tickets are on sale at the Bldg. 11 Exchange Store and must be bought in advance.

**Beginning oil painting** — Learn the relaxing art of oil painting. The class explores basic brush techniques and colors in painting miniature florals. The class begins at 7 p.m. Tuesday, May 31 and runs for five weeks. The cost is \$20 per person. Pre-registration is required.

**Race** — The next Rec Center Fun Run will begin at 8 a.m. June 25. The race will be a weight handicap run and the length is 5 km and 1 mile. The cost is \$2.

**Ladies exercise** — This class meets from 5:15 to 6:15 Tuesdays and Thursdays at a cost of \$12 per month.

**Karate** — This course meets Mondays and Wednesdays from 5:30 to 7 p.m. at a cost of \$20 per person.

**Aerobics** — Dance away those extra inches with Jacki Sorensen's dance class, held from 9 to 10 a.m. Mondays and Wednesdays and from 4:15 to 5:15 p.m. Tuesdays and Thursdays. The cost for this 8-week session is \$40. The class begins July 11.

## Astronauts

(Continued from page 1)

For mission specialists, minimum qualifications are:

- A bachelor's degree from an accredited institution in engineering, biological or physical science or mathematics.

- Degree must be supplemented by at least three years related professional experience. An advanced degree is desirable and may be substituted for the experience requirement.

- Ability to pass a NASA Class II

space flight physical examination, which is similar to military and civilian flight physicals.

- Height between 60 and 76 inches.

NASA has an affirmative action program goal of including qualified minorities and women among the newly-selected candidates.

The number of candidates to be recruited in subsequent selection periods will vary depending upon mission requirements and the rate of attrition in the existing astronaut corps.

## Brokaw

(Continued from page 3)

50 years. If so, do you think there will be a need for some sort of news gathering organization in orbit?

**Brokaw:** Journalism may be the second oldest profession. It's really a matter of storytelling, of passing along information you've heard, of sharing with other people the changes which are going on. And we'll go wherever change takes us. My guess is that as you have space platforms, there will be news sheets of one kind or another. News will be important. Wherever you go in this world, however remote the region, people are eager to know what is going on over the mountain and in the valley. I can't imagine it will be any different on a space platform.

**Roundup:** In a sense, we are using space platforms right now. Witness communications satellites, which have fostered some massive changes in your business.

**Brokaw:** That's right. Some profound changes. Lebanon was a pretty good example. Last year, during the President's trip to Europe, the war in Lebanon broke out, and I was in Europe with the President and wanted to do some broadcasts. I was able to go stand outside Number 10 Downing Street and broadcast live to the United States events which were taking place in Lebanon, in Paris and in London by pulling it all together from there. I think that's quite extraordinary. And it was not that difficult to arrange. It was just a handful of people who pulled it all

together.

**Roundup:** In June, Pioneer 10 will become the first manmade object to leave the solar system, an event of some considerable significance. When you look at that and reflect on Shuttle flights and women in space, what are your personal feelings about being able to carry this news to people at this time in our history?

**Brokaw:** It's wonderful. The fact is that landing on the Moon, as dramatic as that first step was, was really dramatic because we had slipped the bonds of Earth. Space obviously is the ultimate frontier. It contains infinite mysteries about our origins. For a journalist, this is a huge and very rich field to explore. I feel very strongly we should explore it as thoroughly as possible.



## Cookin' in the Cafeteria

Week of May 30-June 3, 1983

**Monday:** Holiday.

**Tuesday:** Split Pea Soup; Meatballs & Spaghetti, Liver & Onions, Baked Ham w/Sauce, Corned Beef Hash (Special); Buttered Cabbage, Cream Style Corn, Whipped Potatoes.

**Wednesday:** Seafood Gumbo; Cheese Enchiladas, Roast Pork w/Dressing, BBQ Link (Special); Pinto Beans, Spanish Rice, Turnip Greens.

**Thursday:** Beef & Barley Soup; Roast Beef w/Dressing, Fried Perch, Lasagne w/Meat, Chopped Sirloin, Chicken Fried Steak (Special); Whipped Potatoes, Peas & Carrots, Buttered Squash.

**Friday:** Seafood Gumbo; Fried Shrimp, Baked Fish, Beef Stroganoff, Fried Chicken (Special); Okra & Tomatoes, Buttered Broccoli, Carrots in Cream Sauce.

Week of June 6-10, 1983

**Monday:** Beef & Barley Soup; Beef Chop Suey, Breaded Veal Cutlet w/Cream gravy, Grilled Ham Steak,

Weiners w/Baked Beans (Special); Buttered Rice, Brussels Sprouts, Whipped Potatoes. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

**Tuesday:** Celery Soup; Fried Shrimp, Pork Chop w/Applesauce, Turkey a la King, Chinese Pepper Steak (Special); Au Gratin Potatoes, Breaded Squash, Buttered Spinach.

**Wednesday:** Seafood Gumbo; Fried Catfish w/Hush Puppies, Braised Beef Ribs, Mexican Dinner (Special); Spanish Rice, Ranch Beans, Buttered Peas.

**Thursday:** Green Split Pea Soup; Corned Beef w/Cabbage, & New Potatoes, Chicken & Dumplings, Tamales w/Chilli, Hamburger Steak w/Onion Gravy (Special); Navy Beans, Buttered Cabbage, Green Beans.

**Friday:** Seafood Gumbo; Deviled Crabs, Broiled Halibut, Liver & Onions, BBQ Link (Special); Buttered Corn, Green Beans, New 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 lease: Friendswood 3-2-1, 1,800 sq. ft., landscaped, trees, fenced, microwave if needed. Call 482-6816.

For lease: 3-2-2A split contemporary, Wood Meadow, I-45 at Scarsdale, fence, high efficiency AC, earth tones, can arrange lawn maintenance, move in today. Call Mitchell, x4941 or 488-2392.

For rent: Galveston Gulf front condo, 1 BR completely equipped, pool and tennis, introductory rates, reserve now for summer vacation. Call Nussman, 721-2459.

For lease: Heritage Park, new side, 3-2-2, cathedral ceiling, drapes, fenced, available June 1, \$550. Call 486-0462 after 6 p.m.

For sale: 2-2 Springwood trailer, 14 x 70, Bryan near A&M, excellent neighborhood, \$18,000. Call C. C. Gay, Jr. 333-4131.

For lease: Egret Bay 2-2-2, covered parking, fireplace, W/D. Call John Lintott, x4164 or 488-6102 after 5 p.m.

For lease: Egret Bay 2-2-2, fireplace, W/D, water view, \$550/mo. plus deposit. Call Feibelman, x3466 or 333-2877.

For rent: Heritage Park 3 BR house, fenced, available June-October, rent negotiable. Call Chuck, x3817 or 334-4944.

Housemate to share 3-2-2 brick home in Pipers Meadow, near NASA. Comfortable relaxing atmosphere. Call Mark, 333-6543 or 480-2168.

For sale: 10 acre tracts or larger, low down, excellent owner finance. Call Steve, 482-1832.

For lease: Baywind 1 BR split level condo, kitchen appliances, W/D connections, fireplace, 1 year at \$435/mo. Call Dornell, x4986 or 488-9002 after 5 p.m.

For sale: Sharpstown 3-2-2, remodeled, new appliances, southwest area, extras, \$79,500. Call Dave W., x6196.

For lease: Ramada duplex, 2-1.5-1, garage and fenced yard, \$450/mo. Call Charlie, x6126 or 474-5098.

For lease: Baywind 1 condo, 2-2 W/D, \$450/mo. plus deposit. Call Franklin, x3987 or 474-5267 after 5 p.m.

Mobile home space for rent, Bacliff, Baker and Kinne. Call 488-1758.

For lease: Oakbrook West, 4-2-2, air, built-ins, ceiling fans, open floor plan, on golf course, \$700/mo. Call Gorman, x2447.

### Cars & Trucks

1980 Phoenix, creampuff, 6-cyl., 5-dr., 32K miles, \$1,000 Sony AM/FM stereo system w/Alpine speakers, \$4,500 firm. Call Barbara, x2871.

1977 Ford LTD, 4 dr. AC, PB, PS, PW, cruise, tilt, AM/FM/tape, excellent condition, low miles. Call 471-1473.

1977 Dodge van, Tradesman B100, 318 V-8, AC, PS, swivel bucket seats, AM/FM/tape stereo, custom wheels, 52K miles, \$3,300. Call McBride, x6226 or 337-4643.

1973 Dodge 9-passenger station wagon, 318 V-8, AC, PS, AM/FM, cruise, new tires, \$850. Call Jon, x3381 or 554-6166 after 4 p.m.

1977 Fiat X-1/9 convert., AC, AM/FM/Cassette, excellent condition, \$3,100. Call 486-8266 or 480-8325.

1978 Pontiac Gran Prix, AM/FM/tape, power locks, windows, trunk seat, cruise, tilt, sport wheels, loaded. Great condition. Call Rick, x5266 or 480-5911.

1977 AMC Gremlin, auto, AC, 6 cyl., low miles, \$1,300. Call Dennis, 481-2473 after 5 p.m.

1974 Datsun 260Z, 4 spd., mags, AC, AM/FM stereo, good condition, \$2,500. Call 480-3094.

1980 Chevy Caprice Classic station wagon, diesel, silver w/burgandy interior, fully loaded, 41K miles, \$5,500. Call Dan, x3021 or 331-3719 after 6 p.m.

1975 Ford Torino, AC, PS, PB, AM, 4 dr., new radial tires, blue, new battery, very good condition, \$1,995. Call 921-7212 or 926-8556.

1972 Chevy Caprice Classic, good engine and transmission, ugly body, \$350. Call Ron, x2447 or 488-1100 after 5 p.m.

1979 Capri Turbo RS, AC, PS, PB, AM/FM/cassette, new Michelin tires, showroom condition. Call Dr. Lambert, x2781 or 554-7079.

### Cycles

1980 Honda CX-500 custom, black, fairing, rack, garaged, immaculate, \$1,650. Call Stan, 488-6822 after 5 p.m.

1972 Suzuki 750 GT-J, low miles, excellent shape, \$900. Call R.T., x2525.

20-inch girl's bicycle, Huffy "Sweet Thunder," excellent condition, \$35. Call 485-5106.

### Boats & Planes

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

Gulfoast 20 sailboat, 4 HP outboard, trailer, \$3,400. Call 333-5871 after 5 p.m.

John boat, 7.5 HP outboard, trailer w/new tires, excellent condition, hardly used, \$600. Call 334-5392.

Boat and trailer, 14 ft. semi-V aluminum, \$325; three life vests, \$50.

FAA Pilot ground school, \$10 through Gulf Coast Aero Club; \$8/mo. dues, starts early June. Call Mark, x4436 or 554-2538.

### Audio & Computer

Stereo system w/receiver, turntable, two cassette decks, speakers and rack, one year old, \$1,175 or may consider selling separate. Call 471-1473.

TRS-80 Model 1 Level II, 16K memory, monitor and cassette, \$450; 32K Expan interface w/cable, \$275; RS-232 board w/manual, never been used, \$95. Call Tony Patino, x4891 or 944-5299 after 6 p.m.

Radio Shack PC-2 pocket computer, 8K module, basic, built-in scientific, used two months, \$338 value for \$235. Call C.W., x3101 or 643-8944.

Stereo console w/sliding doors, beautiful walnut finish, would make perfect liquor cabinet, components need work, best offer over \$100. Call 474-2660.

Stanton 681-EEE phono cartridge, perfect, \$25; Collaro turntable, changer w/Empire cartridge, \$20. Call 488-3966.

### Household

Magic Chef oven w/griddle, like new, gas, \$400. Call R.T., x2525.

Sears sewing machine and cabinet, excellent condition, used twice, \$150 or best offer. Call Shannon, x4831.

Refrigerator and dishwasher, excellent condition, \$700. Call 482-6816 or 996-0568.

Formal hanging lamp, \$110; round two-tier table, \$15; sewing machine w/cabinet, \$125; acubalance scale, \$30; mirror, \$10; lamp shade, \$5. Call 333-9234.

Solid oak desk, 60" x 32", five draw-

ers, two sliding boards, cash or barter for living room furniture. Call 480-6744.

Oster kitchen center with accessories, perfect condition, \$100; Hamilton Beach food processor with 5 blades and holder, \$40; gold vinyl reclining chair, \$60. Call Lee, x3459 or 488-1146.

Bedroom suite, good condition, \$150; vacuum cleaner with all attachments, excellent condition, \$75. Call 482-7546.

Loveseat, brown and white, three years old, good condition, \$65. Call Glenn, x2796.

Brown/gold plaid corner unit/daybed, like new mattress, excellent condition, \$255; old Kenmore washer for parts, \$10. Call 996-9738 after 4 p.m.

Sealy king size mattress, box springs, frame, 1 1/2 years old, \$350; formica butcher block dinette table w/four chairs, 1 1/2 years old, \$225. Call Pam, x3939 or 480-4766.

Recliner chair, plaid, good condition, \$75. Call 333-2395.

Sears Kenmore zig-zag sewing machine, with cabinet, like new, \$130. Call Sue, 488-1326 after 4 p.m.

Spanish living room group: sofa, coffee table, two end tables, excellent condition, \$200. Call 488-0845 after 5 p.m.

### Wanted

Infant care and light housework in my home, 8 to 5 weekdays, to begin early August. Call Bill Fisher, x2421 or 474-2948 nights and weekends.

Want bunk beds in good shape, reasonable. Call Shannon, x4831.

Need non-smoker to join carpool, Garden Villas/Glenbrook Valley/Hobby area, 7:30 or 8 to 4:30 shift. Call Bill, x5156.

Person to share ride from FM 149 and I-45 to JSC for 7:30 to 4:30 shift. Call Barbara, x2817 or 820-3637 evenings.

Need ride from I-610 and Scott to NASA, 7:30 to 4, will help pay gas. Call Dee, x2226.

Roommate to share 2-2-2 condo close to JSC, prefer non-smoking male. Call Charlie, 280-4208 or 488-4578 evenings.

Immediately need conscientious nutritionally aware person to provide day-care for 20 months, 4 and 5, work hours 8:30 to 4. Call Sandra Cook, x3796 or 488-1579.

Want baby clothes, 12-24 months, boy, and baby bike seat. Call Linda, x4086 or 480-3771 after 6 p.m.

### Pets

Pedigreed black and white cocker spaniel, born 3-20-83, shots and wormed, champion bloodlines, \$150. Call 538-1712 or 334-1212.

Two female guinea pigs, four months old, black/cinnamon and black/cinnamon/white, medium length hair, very sweet, \$9 each. Call Norma, x5193 or 486-8127 after 5:30 p.m.

Siamese kittens for sale, \$20 each. Call Schultz, x6121 or 488-4049.

### Miscellaneous

Rolex Sub-Mariner chronograph, stainless, excellent condition, \$725. Call Dick Johnson, 333-4150.

Skil Saw, brand new, electric 2 1/2 HP, 10 amp, medium duty, circular blade, never used, \$60. Call Brian, x5111 or 480-5149.

Four Montgomery Ward steel belted radials, A 78 13's, to fit Mazda or Toyota, good condition, \$20 each. Call Randy, x3594 or 480-5194.

Beginner's model banjo in excellent condition with case, \$100. Call 488-0597.

Leslie organ speaker, \$150. Call Lyn, x4415.

Five HP Ward's riding mower, 24" cutter, very good condition, new paint, \$235. Call 921-7212.

Sears 3 1/2 HP lawn mower, 20", self-propelled, rear bagger, \$40. Call 485-5106.

Trailer hitch for 1978 Honda Accord, easily installed, \$15. Call 488-6822 after 5 p.m.

Factory engine and chassis manuals for 1981 Chrysler and Plymouth rear wheel drive cars. Call Dial, x6434 or 332-0165.

Turbo hydromatic 350 transmission, in perfect condition, \$250. Call Stephan, x3547.

BMX heavy duty rims, 20", chrome steel, orig. Mongoose equipment, \$40. Call 488-3966.

Water ski, Obrien 220-XL, new; wet suit, medium and small, \$30 each. Call 643-8944.

Mastercut 22" self-propelled lawn mower, side bagger, 3.5 HP, \$80. Call 488-6549 after 6 p.m.

Six 7.5 x 16.8-ply truck tires, on 8-lug rims, practically new. Call Stephan, x3547.

Sears garden tiller, unused for four years, \$80. Call Ron, x2447 or 488-1100 after 5 p.m.