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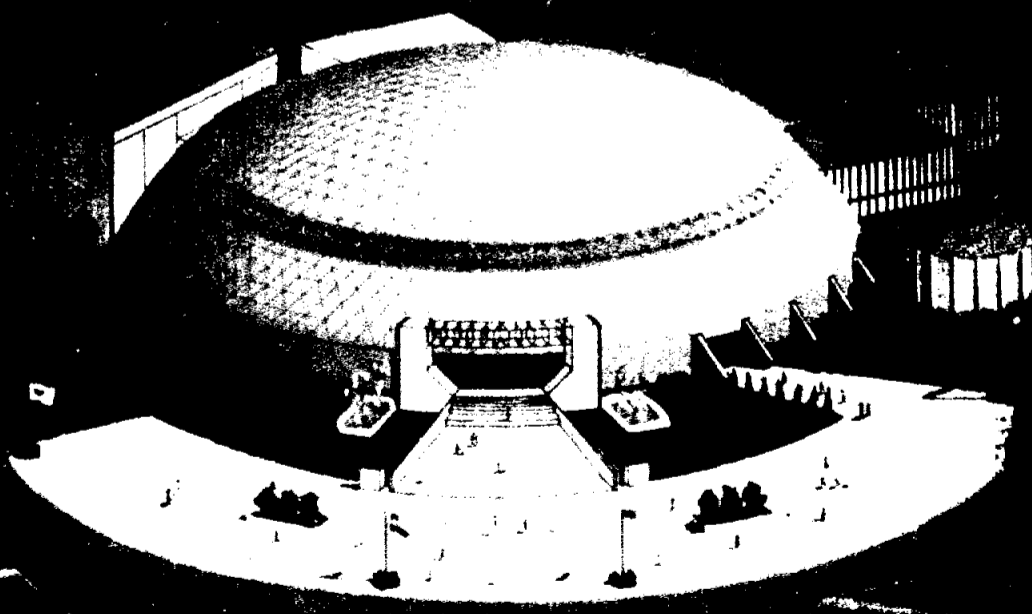
Lyndon B. Johnson Space Center

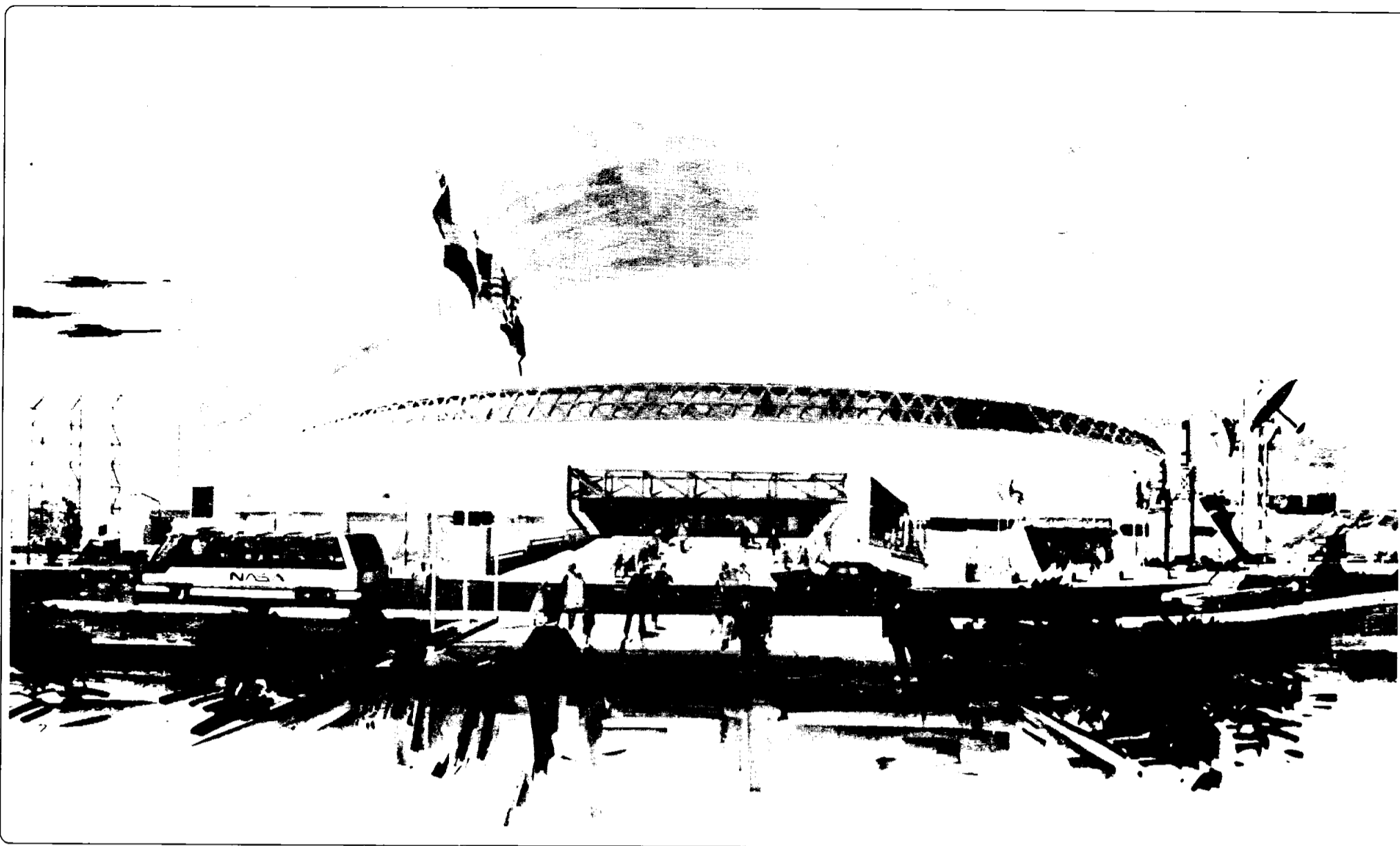
# Space News Roundup

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## *JSC's new Visitor Center*





## \$40 million visitor complex to be built at JSC

The Johnson Space Center and the Manned Space Flight Education Foundation, Inc. have signed a memorandum of understanding (MOU) leading to creation of a \$40 million visitor complex and educational facility here.

The complex, whose central feature is now envisioned as a 120,000-square-foot domed structure, will be built at JSC to accommodate the ever-growing number of visitors to the Space Center.

No federally appropriated funds will be used to build or support the complex, which will be financed by the non-profit educational foundation through a bond issue and other sources of private funding.

The 123 acre site is immediately adjacent to the Space Center's main entrance on NASA Road One.

Groundbreaking on the new facility is anticipated in the first quarter of 1987, with completion scheduled in the last quarter of 1988.

As now envisioned, the complex would serve JSC's estimated 1.3 million annual visitors with lunar landscape and Mission Control Center simulations, two movie theaters, an exhibit hall for manned spaceflight artifacts, classrooms, office space, food services and a large bookstore and gift shop.

The movie theaters will be built

to show films in the IMAX and OMNIMAX formats. The format, larger than 70 millimeter, provides the viewer with a 180-degree left-to-right and 90-degree top-to-bottom panorama. Typically, IMAX/OMNIMAX theaters include more than 80 high fidelity audio speakers. There are fewer than 20 such theaters in the world, and the nearest one to Houston is in Fort Worth. Together, the theaters will seat approximately 800 people.

Two films on spaceflight, "Hail Columbia" and "The Dream is Alive," have been produced by IMAX Corp. in cooperation with NASA and the Smithsonian Institution's National Air and Space Museum. For the making of "The Dream is Alive," IMAX cameras were carried into space aboard the Space Shuttle on four missions.

As now planned, the Visitor Center complex also will include a detailed Mooncape, allowing visitors to see Apollo era hardware in the context of a lunar landing mission. The simulation will depict activities at one of the six U.S. landing sites on the Moon, and will house displays of equipment used by Apollo astronauts to train for those missions.

Also envisioned is a reproduction of the Mission Control Center, where visitors will be able to experi-

ence the drama of Apollo-era mission operations. Actual voice and telemetry tapes from past space missions will be used to recreate memorable highlights of the Moon missions on flight controller's consoles and displays. Visitors will see how data is displayed and acted upon, and guests will be able to learn how flight operations have been conducted at JSC since 1964.

Other planned exhibits include the full-scale trainer version of the Skylab Orbital Workshop. The trainer is one of only two full-scale working mockups in existence—the other is housed at the National Air and Space Museum in Washington, D.C.

Also planned are educational displays on the Space Shuttle, the Space Station, spacesuits, the history of flight and the history of the universe. The complex also will house JSC's growing collection of original space artwork.

The manned space flight artifact collection at JSC includes a flight-article Saturn V booster (which will remain in its present location in JSC's Rocket Park), the Apollo 17 Command Module that took Eugene Cernan, Harrison Schmitt and Ronald Evans to the Moon in 1972, Gordon Cooper's Mercury capsule, known as Faith 7, and the Gemini 5 spacecraft which took Cooper and

Charles P. Conrad into orbit for eight days in August 1965. The JSC collection also includes LTA-8, a Lunar Module test article which is one of two remaining from the Apollo Program. The other Lunar Module is housed at the Air and Space Museum.

The collection also includes one of the world's most extensive spacesuit exhibits and a large number of items used by U.S. astronauts in space over the last quarter century.

JSC, the repository for approximately 80 percent of the U.S. lunar materials collection, will display two Moon rocks, collected during the Apollo 12 and Apollo 15 missions. A third sample, known as the Touchstone, is encased in lucite in such a way as to allow visitors to touch a portion of this rock from another world. The Smithsonian displays the only other touchstone in existence.

Bus tours will provide visitors with access to the Space Center proper, including the Lunar Sample Building, the Mockup and Training Facility where full scale Space Shuttle—and, in the future, Space Station—mockups are used for astronaut training, and the Mission Control Center.

The MOU, signed Sept. 10 by JSC Director Aaron Cohen and

Foundation Chairman William R. Kelly, charges the Foundation with the responsibility to oversee construction and operation of the Visitor Center for JSC.

The Foundation Board of Directors will ultimately consist of eleven members, six of whom will be Johnson Space Center officials, and five of whom will represent the private sector. In addition to Kelly, who is JSC Director for Center Support, other JSC members of the Board are Associate Director Dr. Carolyn Huntoon, Deputy Personnel Officer Harvey L. Hartman, Astronaut Office Deputy Chief Paul J. Weitz, Mission Operations Assistant Director John W. O'Neill and Center Operations Deputy Director Grady McCright.

Dr. Christopher C. Kraft, Jr., former Director of JSC, is the first person from the private sector named to the Foundation Board. Others will be named in the near future.

President and Chief Operating Officer of the Foundation is Public Affairs Director Harold S. Stall, who will direct the building program and oversee day to day operations of the Visitor Center along with Vice President Charles A. Biggs, JSC's Chief of Public Services. Treasurer of the Foundation is James D. Wilcox, Deputy Comptroller at the Space Center.

## MOU will govern operation of Visitor Center

The Manned Space Flight Education Foundation, Inc. will construct and operate the new visitor complex at the Johnson Space Center under the terms of a Memorandum of Understanding (MOU) with JSC.

The MOU, signed by Johnson Space Center (JSC) Director Aaron Cohen and Foundation Chairman William R. Kelly, defines the mutual roles of JSC and the Foundation for a period of 30 years.

The Foundation, a Texas non-profit corporation chartered in July 1986, will bear the entire cost of construction, maintenance and operation of the Visitor Center complex with funding from the private sector. No federally appropriated funds will be used either in construction or operation of the complex.

Under the agreement, a license was granted by JSC to the Foundation for use of a 123-acre tract that is now part of the Federal reservation that comprises the Space Center. Title to the property will remain with the U.S. Government. Title to the structures and other facilities of the Visitor Center will be vested in the Foundation.

The agreement grants the Foundation all rights of commerce on the licensed premises. The sale of gifts, souvenirs and food to visitors has been a major source of income in the past for the NASA Exchange-JSC which supports the center's employee activities organization. The Foundation will compensate for the transfer of those commercial rights by paying the Exchange \$700,000 annually out of revenues.

Under the provisions of the MOU, the Foundation will also:

- Submit site and building plans to the JSC Deputy Director for review and approval;
- Select and supervise construction and operations contractors;
- Provide office space for JSC Civil Service and contractor personnel at the new complex as deemed necessary by JSC;
- Submit an annual site operations and maintenance plan to the JSC Deputy Director;
- Obtain prior approval from the Space Center before entering into any third party agreements which involve use of the Visitor Center for events which are not strictly educational or informational (such as promotional, publicity-related or some community events);

• Submit to JSC a plan for security arrangements for Government-loaned property and displays;

- Provide first priority consideration to JSC for the scheduling of meetings, conferences and other similar activities;
- Provide JSC, upon written request, access to corporate records;
- Obtain prior approval from JSC before embarking on any future phases of construction;
- Replace the current Security Control Center, Bldg. 100, at a location to be designated by JSC;
- Provide free access to the Visitor Center to official visitors when accompanied by JSC protocol officers, and;
- Provide 1,000 Visitor Center passes annually to the JSC Director for use as he deems appropriate.

The agreement also details responsibilities of JSC. Under those provisions, the Space Center will:

- Provide a license to the Foundation for use of the 123-acre tract that lies in the extreme southwest corner of the 1620-acre JSC site;
- Provide equipment, items and other property for displays and exhibits;
- Make available the expertise of JSC personnel from a wide range of disciplines on a mission non-interference basis;
- Review site and building plans of the Foundation to assure architectural conformity with existing JSC facilities, and;
- Use its best efforts to provide emergency, ambulance, medical and fire protection to the visitor complex.

# JSC employees to benefit from Visitor Center

The Manned Space Flight Education Foundation will provide at least \$700,000 annually for employee activities at JSC, through quarterly payments to the NASA Exchange-JSC.

The arrangement protects both the level of funding for employee activities and the financial viability of the new Visitor Center in the early years of operation.

In the past, the NASA Exchange-JSC has been the recipient of all revenues from the sale of gift and food items in the Bldg. 3 and Bldg. 11 Cafeterias, and from the vending machine sales around the Center. Those funds have been used to finance the varied employee activities at JSC, and were used for construction of the Gilruth Recreation Center in 1972.

The Memorandum of Understanding creating the new Visitor Center grants the Manned Space Flight Education Foundation the exclusive rights to food and merchandise sales at the new Visitor Center in exchange for annual payments of at least \$700,000 to the NASA Exchange-JSC. The payments will compensate for the Exchange's loss of revenues from cafeteria and gift shop sales to visitors.

The NASA Exchange-JSC is the umbrella organization that comprises the JSC Exchange Council, the Employee Activities Association and all of the Exchange operations. Each NASA Center has an Exchange organization.

The NASA exchange system is a parallel of the one used by the Department of Defense, said Exchange Council Chairman Harvey L. Hartman. "The Exchange is meant to provide for the welfare and morale of employees, and to do so with non-appropriated funds," he said. "In other words, no tax dollars are used to finance recreational or morale boosting activities."

At JSC, the Exchange divides into three interlocking organizations. The exchange Council is equivalent to a Board of Directors. The Employee Activities Association, with about 50 elected representatives linked along organizational lines, is equivalent to an assembly. The NASA Exchange is the operational entity, which handles Recreation Center, cafeteria and gift shop operations, and employs about 90 people.

The Exchange Council consists of 10 employees appointed by the Center Director and three representatives from the EAA. Each year,

the EAA and the NASA Exchange submit budgets to the Council. Funds come from income generated by vending machines, the cafeterias and the gift shops. "The prime generators of income are the gift shops, especially the one in Bldg. 3," Hartman explained.

We aim to operate the cafeterias and the catering activity at the Rec Center on a break even basis. The Gilruth Center itself, however, tends to require a subsidy to deliver its services, as do the EAA activities like the annual picnic, dances and discount tickets," Hartman said.

The annual budgets support not only Exchange operations and Rec Center and EAA activities, but other functions as well. A new softball field and increased parking at the Rec Center, planned for later this year, will be paid for through this budget, Hartman said. The funds have also paid for the NASA Exchange Scholarships that have gone to 48 sons and daughters of JSC employees since 1966.

"There is some good, solid logic for NASA in going through with this project," Hartman said. "But we also are committed, and center management is committed, to continue to serve the interest of the employees."

The agreement further protects employee interests because it is indexed to 1987 dollars for the 30-year duration of the Memorandum of Understanding between JSC and the Foundation. The indexing will protect against inflation in the future.

Additionally, the MOU calls for the Exchange to be given "most favored beneficiary" status for the distribution of any excess revenues that may develop.

The Exchange also agreed to help the Foundation get on its feet during the first two years of opera-

tions. The subsidy to the EAA for the first two years will be \$300,000, but for the following four years would be \$700,000, plus another \$200,000 in each of those years. "In this way, we'll be helping them get started, while the employees' interests will be made whole through the process," Hartman said.

"I believe it's a good deal for everyone involved," Hartman continued. "I'm confident that we'll be able to provide employees in the future the same high level of services and activities that they've known and relied on in the past."

## How the Exchange will operate

The NASA Exchange plans to operate JSC's two cafeterias and gift shops "at full tilt" until the new Visitor Complex opens in the fall of 1988.

After that time, the Exchange will continue to operate both cafeterias for employees, but will scale back the gift shop operations to serve on-site employee needs, according to Exchange Council Chairman Harvey L. Hartman.

Hartman said the scaling back of the gift shop operations on-site would probably mean a small

reduction in the number of NASA Exchange employees. The Exchange now employs about 90 people, including Gilruth Recreation Center, cafeteria and gift shop staffs, and Hartman said from "half a dozen to a dozen" employees could be affected.

"It is our intent to give Exchange employees priority consideration for jobs at the new Visitor Center," Hartman said. "We don't anticipate much in the way of reductions in the number of cafeteria employees. Most of the changes will be in the Exchange Store area."

# Community leaders praise Visitor Center Project

Both the Clear Lake area and Houston were represented by a wide variety of community leaders at the announcement Oct. 22 of the Memorandum of Understanding which will set in motion JSC's new Visitor Center project.

"This morning, Bill Kelly and I signed a document that is what I would call a landmark in the history of the Johnson Space Center," JSC Director Aaron Cohen said. "This memorandum of understanding will allow us to start construction of a visitor center. Interest in manned space flight has never been higher, and through this project we will be

able to tell our visitors what the space program is all about."

U.S. Representative Mike Andrews said the project is cause for "a real celebration for the Johnson Space Center and for the Houston community." Andrews recalled the speech made by President John F. Kennedy at Rice University in 1962, in which Kennedy predicted that the exploration of space would go on whether America takes part or not. "We mean to be a part of it," Andrews said, "and we mean to lead it."

"And surely in 25 years since President Kennedy made that state-

ment, we have led it," Andrews said. "And the Johnson Space Center and Houston have been a large part of that leadership role. Our accomplishments, our failures, have all been played out right here at JSC. So it is only fitting that we announce today a center where we can exemplify and study and learn and teach about our country's space program, its history, its past and its future. Given the tremendous popularity of JSC's current limited visitor center—and it is small—I'm certain that this new and greatly expanded center will attract millions of people to the Johnson Space

Center and to Houston. They'll come from across the nation, they'll come from around the world to Houston to learn about our story and the story of space. This center will tell the world that the dream is surely alive."

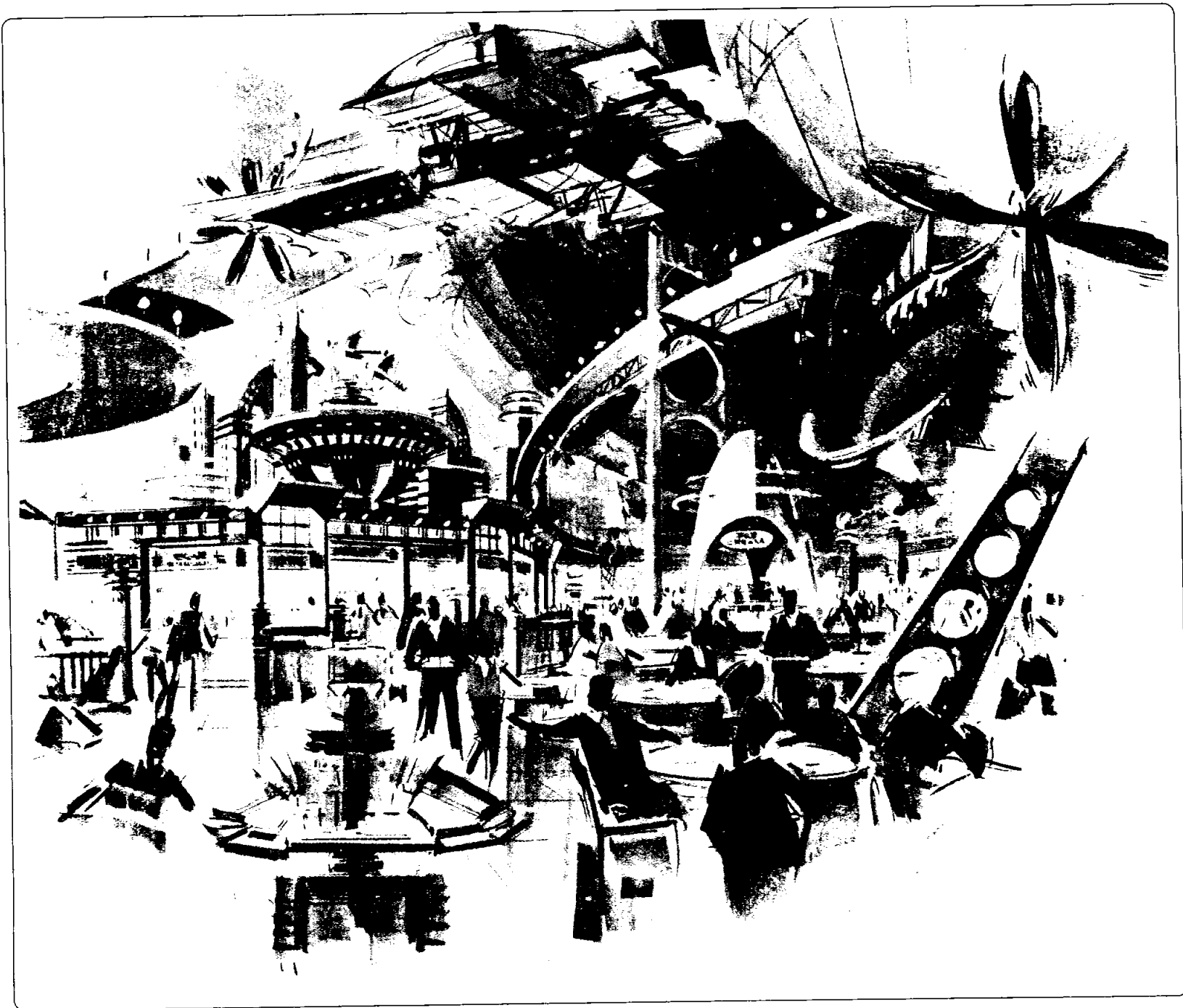
U.S. Sen. Phil Gramm, who was unable to attend the announcement but sent greetings through Pat Black, the regional director of his office here, said, "The Johnson Space Center has been a symbol of excellence for Houston and for the nation for over 20 years. Now the JSC Visitor Center is going to greatly enhance public awareness

of the history, accomplishments and operations of the Johnson Space Center. As JSC continues to make bold advances in the research and development of manned space travel, the Visitor Center will increase public participation in the excitement of NASA's mission. These facilities are an indication of NASA's commitment to JSC and Houston, as the preeminent institution of our nations' manned space program. In 1988, I will be the first to bring my family to Houston to tour this exciting new facility. Again, congratulations."

(Continued on page 7)

## A look inside the dome

This artist's concept of the food service area in the new Visitor Center is somewhat fanciful (planners do not anticipate condiment-serving robots), but illustrates how science, technology and history could be used to inform and entertain. The motif is Victorian, right out of Jules Verne, and would offer a counterpoint to the late 20th Century technology on display elsewhere in the complex. "It would be a way for visitors to step back from what they've seen and contemplate how space travel and exploration were viewed in the past," one planner said.



# The Foundation

## Eleven-member board and officers to administer Visitor Center

The affairs of the Manned Space Flight Education Foundation, Inc., chartered to develop the new Johnson Space Center (JSC) Visitor Complex, will be administered by an 11-member Board of Directors.

The Board will be comprised of six JSC officials and five persons chosen from the private sector. The Foundation's business will be administered by three officers—a President, who functions as the corporation's chief operating officer, a Vice President/Secretary and a Treasurer. Officers will be elected annually by the Board and may serve consecutive terms.

The Foundation has applied for tax exemption under Section 501 (c)(3) of the Internal Revenue Code, making contributions tax exempt for the corporation and tax deductible for the contributor.

The Foundation, a nonprofit, nonstock, nonmembership Texas corporation, was chartered in July 1986.

The bylaws of the corporation specify that of the six JSC officials on the Board of Directors, one be chosen as the Chairman of the Board. Directorship duties are part of the official NASA position descriptions for JSC employees on the Board. Each director has one vote, exercisable in person or by proxy, and a term of office of three years.

"These provisions act to preserve NASA's influence on the operation of the Foundation," said Board Chairman William R. Kelly. "We believe this long term commitment requires an assurance to NASA that the first and foremost concern of the Foundation will be in the spirit of providing the best possible educational and informational facility for our visitors. Through this structure, the Foundation will have no stockholders or other constituencies to serve other than the interests of NASA and JSC."

None of the JSC officers or directors will benefit financially from their Foundation duties. All serve without compensation.

Following are brief biographical sketches of the seven current Board directors and the three Foundation officers.

### Directors

**WILLIAM R. KELLY**, the Chairman of the Board of Directors, is Director of Administration at JSC, where he is responsible for the management and direction of the administrative and facility support functions of the Center, as well as for overall direction of the developmental and operational testing at the White Sands Test Facility. Kelly is the recipient of numerous NASA awards, including the Exceptional Service Medal, and is a member of the National Management Association and the Houston Federal Executive Board.

**HARVEY L. HARTMAN** is Deputy Personnel Officer at JSC and Chairman of the Center's Exchange Council which oversees the NASA Exchange-JSC and the Employee Activities Association. In his role as Deputy Personnel Officer, Hartman shares respon-

sibility for managing the Center's manpower and personnel programs. He also serves as training director for the Center. He is the past president of the JSC Chapter of the National Management Association and is a recipient of NASA's Exceptional Service Medal.

**DR. CAROLYN L. HUNTOON**, Associate Director of JSC, shares responsibility with the Director and Deputy Director for management of the complex and diverse tasks of the Center. As a senior manager, Huntoon plays a role in the execution of manned space flights, contributes to the life sciences

from the private sector to be elected to the Foundation Board of Directors. Kraft has been deeply involved in the design and conduct of manned space flight missions since the 1950s, and was an original member of the Space Task Group, an organization which eventually grew into the Johnson Space Center. Kraft was the first flight director in the history of U.S. manned space flight and was instrumental in developing the science of flight control. He was Director of Flight Operations and later Deputy Director of JSC before being named Director in 1972. Kraft is the recipient of many

the former Chief of the Plant Engineering Division at JSC. He is a registered professional engineer in Texas and a member of the Texas Society of Professional Engineers. His awards and honors include a Superior Performance Award and the NASA Exceptional Service Medal.

**JOHN W. O'NEILL** is Assistant Director for Operations in the Mission Operations Directorate at JSC. In that capacity, he is responsible for two divisions—Flight Design & Dynamics and Operations—which are critical to the success of manned space flights. The two organizations provide mission planning, reconfiguration requirements, trajectories, payload and timeline procedures and other services integral to mission operations. O'Neill is the recipient of numerous awards, including the Apollo 11 Lunar Landing Team Award, the Presidential Medal of Freedom as a member of the Apollo 13 mission operations team, and the NASA Exceptional Service Medal.

**PAUL J. WEITZ**, a senior NASA astronaut and member of the corps since 1966, is a veteran of two space flights and has logged 793 hours in Earth orbit. Weitz served as pilot on Skylab 2, the first manned Skylab mission, from May 25 to June 22, 1973. He was spacecraft commander of STS-6, the

first flight of the Orbiter *Challenger*, from April 4 to 9, 1983. Weitz is currently serving as Technical Assistant to the Director at JSC. His numerous honors and awards include the NASA Distinguished Service Medal, the Collier Trophy for 1973 and the Goddard Memorial Trophy for 1975.

### Officers

**HAROLD S. STALL**, President and Chief Operating Officer of the Foundation, has been Director of Public Affairs at JSC since 1975. In that capacity, he is responsible for planning and directing a comprehensive information and public services program for the Center, including providing for public visitors. Stall is a former Manager of Public Relations and Advertising for Hughes Aircraft Co. He is a two-time recipient of NASA's Exceptional Service Medal.

**CHARLES A. BIGGS**, Vice President of the Foundation, is the Chief of Public Services at JSC. He is responsible for directing the JSC exhibits and visitor programs, coordinating the Center's protocol activities, managing the public education programs and the JSC Speaker Bureau and supervising the answering of the public mail. Biggs is the recipient of the NASA-JSC Superior Achievement Award and the NASA Exceptional Service Medal.

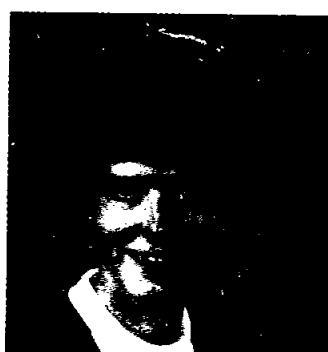
**JAMES D. WILCOX**, Treasurer of the Foundation, is Deputy Comptroller at JSC, where he is responsible for assisting in the management of the Center's financial and budget planning activities. He was formerly JSC's Budget Officer and was Manager of the National Space Transportation System Program Control Office.



William R. Kelly



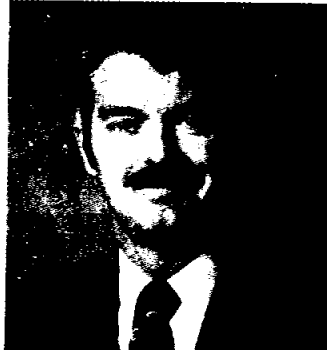
Harvey L. Hartman



Dr. Carolyn L. Huntoon



Dr. Christopher C. Kraft



Grady E. McCright



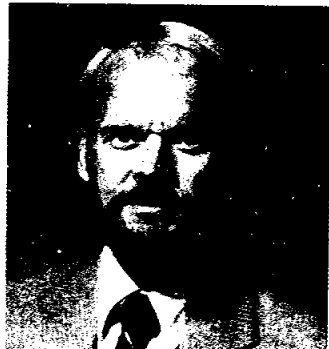
John W. O'Neill



Paul J. Weitz



Harold S. Stall



Charles A. Biggs



James D. Wilcox

research and experimentation process, and helps manage the Center's personnel, fiscal and institutional matters. With a background in physiology and endocrinology, Huntoon has been an integral part of the medical team that has made manned space flight possible. Huntoon holds numerous NASA and professional honors and awards, including the Exceptional Scientific Achievement Medal, NASA's highest scientific honor.

**DR. CHRISTOPHER C. KRAFT, JR.**, former Director of JSC, was the first person

honors and awards from the space agency and the aerospace industry. He is currently an aerospace consultant.

**GRADY E. MCCRIGHT** is Deputy Director of Center Operations at JSC. In that capacity, he shares responsibility with the Director of Center Operations for the management logistics, technical services, plant engineering, photographic and television services, management services and facility design. McCright is the former Chief of Technical Support at the White Sands Test Facility and

## Visitor Center offers promise, Foundation members say

Bill Kelly leaned back in his chair, cupped his hands and smiled when the discussion got around to the new Visitor Center.

"I am elated, and just can't wait for us to get going," Kelly said. As Chairman of the Board of Directors of the Manned Space Flight Education Foundation, Kelly faces busy days ahead.

He and the other Civil Service members of the Foundation will be overseeing the construction and initial operation of a large facility from scratch, all the while continuing to meet the responsibilities of their day-to-day jobs.

Kelly, the Director of Administration, seems unfazed by the coming workload. "This is a very exciting project. It will be a very sophisticated educational facility and will really help the public understand what is happening with manned space flight. I can't think of anything more important that we as

public servants could hope to accomplish."

Associate Director Dr. Carolyn L. Huntoon believes the benefits which will come from an improved

in the world. It will be a magnificent opportunity for our people, as well as the public."

For Deputy Personnel Officer Harvey L. Hartman, the challenges

that interests of employees are met by the new facility.

"This is an exciting prospect," Hartman said. "I believe the employees' interests will be served,

very sophisticated structure. We want a world class visitor center, one that will last for 25 or 50 years. We plan for it to fit into the motif of the rest of the Center, not to overshadow it."

Paul Weitz, Technical Assistant to the Director and another member of the Foundation, has no illusions about the challenges ahead. "This is definitely a non-trivial exercise," he said. "I think we'll be pretty busy over the next couple of years, but the real work will peak in about six to nine months."

Weitz said education is the key word in the Foundation's formal title. "Education can mean different things to different people. For some, it might be just an increased awareness of what we do here, and it may convince other taxpayers that we are spending their dollars wisely. Or it might inspire young people to pursue excellence. This

**"I think the people of JSC will be proud to see this new Visitor Center take shape, and to know that it is one of the best facilities of its kind in the world. It will be a magnificent opportunity for our people, as well as the public."**

—Dr. Carolyn L. Huntoon

educational facility will be mirrored by benefits to employees. "One of the most exciting things about this project, for me, is that we will be able to provide an increased level of funding for employee activities at JSC," she said. "In addition, I think the people of JSC will be proud to see this new Visitor Center take shape, and to know that it is one of the best facilities of its kind

ahead will mean a great deal of overtime. Aside from his duties in the Personnel Office, Hartman is Chairman of the JSC Exchange Council, which oversees the Employee Activities Association and the NASA Exchange-JSC. He sees his role on the Foundation Board as a mixture of helping to insure the success of the new Visitor complex, as well as insuring

just as the Agency's interests will be served. This facility has the potential to bring a whole new perspective on space flight to a great many people. I don't think we would be true JSCers if we didn't believe we can build the best possible facility."

Grady McCright, Deputy Director of Center Operations, echoes those sentiments. "This will be a very,

(Continued on page 7)

# Physical changes in store for Center

Construction of the new visitor complex means there are changes ahead in the physical features of the Johnson Space Center.

The most obvious change will be the addition to the JSC skyline of a domed structure nearly as tall as Bldg. 45. At the currently planned height of 84 feet, the Visitor Center dome will be the fifth tallest building at JSC, after Buildings 1, 45, 32 and 49.

The precise dimensions of the central dome await approval of the formal architectural and engineering work, still some weeks away, but plans call for a dome that would encompass some 120,000 square feet.

The variable will be the exact height of the base walls on which the dome itself will be built.

And while other changes are easy to identify, the exact form they will take is still uncertain in some cases.

Highway access to and from the visitor complex is one example. Changes will be necessary in the roads around the new complex to assure smooth traffic flow, but planners are not yet certain what final form those changes will take. Again, much depends on the architectural and engineering work, and on negotiations with the state and county.

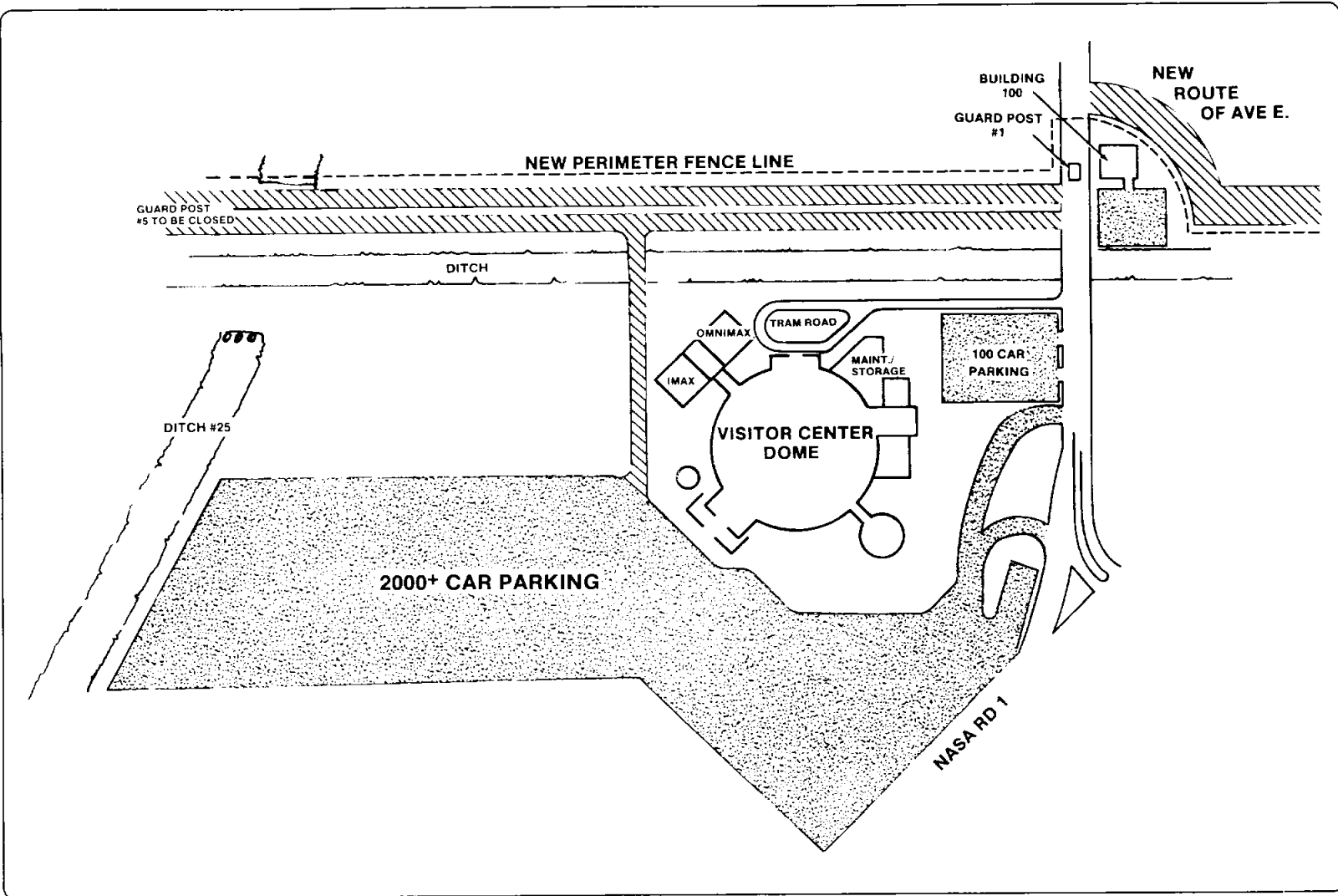
Access to the site from NASA Road One, for example, might require construction of an overpass, said Grady McCright, Deputy Director of Center Operations. "We have to remember that from 1 to 2 million people a year will be visiting the new complex. We'll be interested in working very closely with the state, county and neighboring cities to make sure that this traffic does not add to the problems on NASA Road One."

What is sure is that the complex will rise on a 123-acre tract south of Avenue E stretching from the main gate to the Credit Union gate. The complex would include parking for more than 2,000 cars.

Construction will take place on about one third of the tract—site preparation is planned out to the location of Ditch 25—but the entire 123 acres will be licensed to the Manned Space Flight Educational Foundation for possible expansion. The JSC perimeter fence will be pulled in to north of Avenue E. Title to the land will remain vested in the U.S. Government.

McCright, who also is a Director on the Foundation Board, said the Center will close Guard Post 5 at the gate where Avenue E exits the site near the Credit Union. With the perimeter fence pulled in north of the road, he pointed out, a security checkpoint would not be necessary at that location.

McCright said negotiations with the state and county will also seek



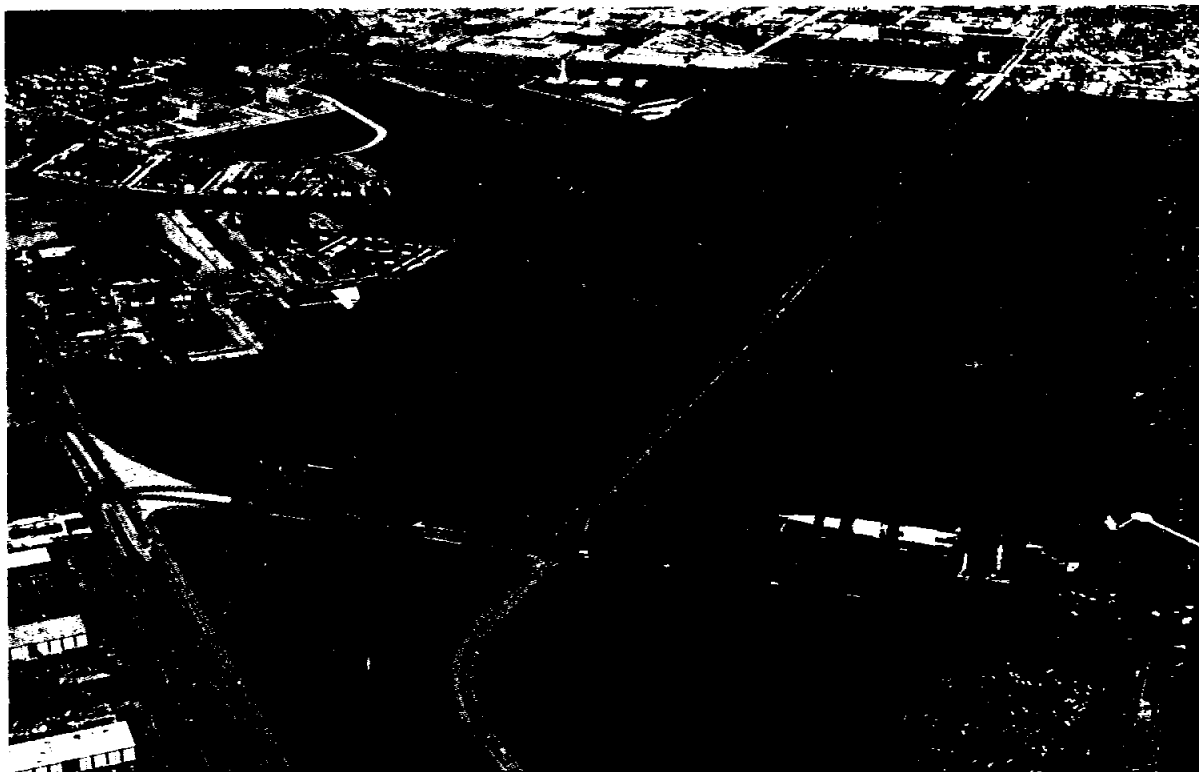
to turn this part of Avenue E into a public thoroughfare, accessible at all times. Although now only two-lanes with wide shoulders, the roadbed itself is graded for a four-lane road.

Another guard post, the one at JSC's main entrance at Ave. E and NASA Road One, would be moved to a position north of the intersection of Avenue E and Second Street. A new Security Control Center, which will retain the Building 100 designation, would be built at the northeast corner of the Avenue E/Second Street intersection.

The cost of relocating Bldg. 100 will be borne by the Foundation.

The existing Bldg. 100 may be leveled to make way for Visitor Center construction, or retained to fit into the design of the new complex. Officials will wait for a judgement by the architects before making that decision.

With relocation of the main security checkpoint, a change in the path of Ave. E/Fifth St. also will be necessary, McCright said. "If there were no changes made, the gate could not handle traffic which turned left off Second Street and onto Fifth Street," he said. "We will have to route the road so that Fifth Street can be reached only after passing through the security



This aerial photograph shows the 123-acre tract on which the Visitor Center will be built. The parcel is bordered by Avenue E, Second Street and JSC's perimeter fence line along NASA Road One.

checkpoint."

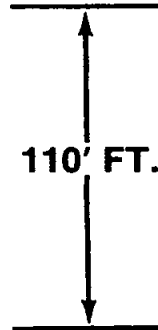
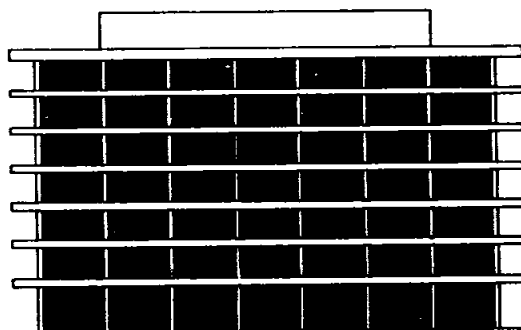
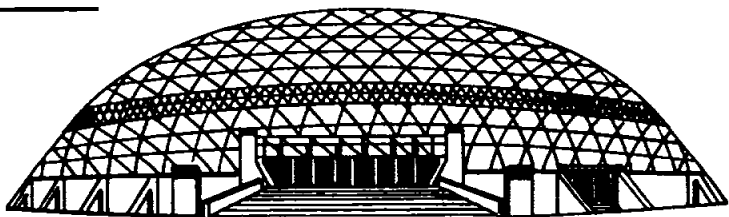
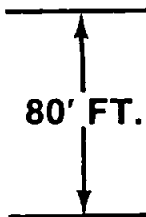
Chuck Biggs, Chief of Public Services, said the physical changes will mean less traffic congestion

on-site. "It will mean that an employee coming back from lunch won't have to sit in line at the main gate behind five or six other cars as

visitors get directions from the guard. It will also mean fewer cars in the parking lots around Buildings 2, 13 and 15."

## VISITOR CENTER DOME

## BLDG. 45



This artwork graphically illustrates the size of the proposed Visitor Center dome as compared with a familiar JSC landmark, Bldg. 45.

## Interview

## Harold S. Stall

*How the Visitor Center came to be, and what it means for the future*

**Roundup:** Why does JSC need a new Visitor Center?

**Stall:** Because what we have now is simply inadequate. Our visitor program is ad hoc, in many cases, and some of the major facilities we do have are about to go away. The present day Visitor Center is primarily auditorium, and when we are flying, a significant fraction of the remainder of the building is turned over to the working press. When you get right down to the net square footage available for visitors, for displaying our artifacts and telling our story, there's not much left. If you consider that our visitors over the years have included, first and foremost, the people who pay the bills, the taxpayers, as well as various heads of state, royalty, and visitors from other nations, you will quickly realize that the visitor program at JSC is not an insignificant undertaking. But the difficulty has been that we've gotten busier and busier. We have two major programs underway, Shuttle and Station, and our facilities have not grown apace. The last real construction was in 1972. And so there is relatively little accommodation for the visitor to come see our center and the artifacts of our history. The problem is exacerbated by the fact that many of our artifacts are very large scale. Some of these are actual spacecraft or full scale mockups. They are big. In the case of Skylab, the Orbital Work Shop now housed in Bldg. 5, you are talking about a structure that is virtually the height of a four-story building. There is only one place on this center that we can put it, and that high bay area of Bldg. 5, within the next 24 months or so, is going to become a training facility for Space Station and there will no longer be a place for Skylab, either for viewing or for storage. The Lunar Module Training Article is in the lobby of our auditorium in Bldg. 2 because that's the only place we have to put that large piece of priceless hardware. It's not well displayed there, but that's the only place we can put it. In addition to the problems we face with our facilities, we also must deal with an ever increasing number of visitors. We were bulging at the seams this summer. Visitor traffic was so high we had to create a temporary parking lot in the grass south of Bldg. 15. Most employees who park in the lots adjacent to the Visitor Center have at one time or another returned from lunch or a meeting elsewhere on site and found their parking lot occupied by a camper or a station wagon with out of state plates. It's sort of a mixed blessing. We are glad that people are interested in what we are doing, but at the same time it would be nice to be able to get to work without a 15 minute hike, or without having to walk through grass to get around a slow moving crowd of 15 or 20 tourists. So these are some of the reasons why we need a new Visitor Center.

**Roundup:** This project is a large one. In raw numbers, can JSC really support something like this?

**Stall:** Well, in raw numbers, we can't support our visitor program now. That's our problem. We had 1,200,000 visitors through the gates in the fiscal year just ended. We are just under 1 million in the first nine months of calendar year 1986. And we cannot physically handle the number of people who come to visit JSC. Essentially, our sticking point in the past in meeting these problems has been the availability of Construction of Facility dollars. Money. The Visitor Center, however, is part of NASA's charter, no question about it. Look at the visitor facilities at the other manned space flight centers, Kennedy and Marshall. They are popular, they



**"This is going to be a world class facility. It will be institutional construction. The architecture is compatible with JSC, and culturally the project is compatible with the Johnson Space Center and its mission."**



**"Parking the Lunar Module there (the present-day Visitor Center in Bldg. 2) is the equivalent of displaying the Hope Diamond in a cigar box. It's still the Hope Diamond, but it is in a hopelessly inadequate context."**



**"We are not building a theme park. We are not going to have roller coaster rides and water slides with some thinly veiled space theme. This is a real facility for communicating with people about what we do at JSC."**

are well attended and they serve a very useful purpose in communicating with the American public about the space program. KSC's visitor center is one of the top five tourist attractions in the state of Florida, and it is easy to see why. Even with the presence of Disney World and EPCOT Center and the other attractions around Orlando, it is still a major draw, and it was before Disney came to that part of the world. And the reason is because Americans are extremely interested in what we are doing. And since they are paying for the work, it follows that we ought to make the proper accommodations to let them find out more about it.

**Roundup:** How long has a new Visitor Center been under study?

**Stall:** About five years, really, but the last year of work has been the most intensive. We notified the Congress last October that we were going to conduct a study to see whether it was feasible for JSC to build and operate a Visitor Center without using federal funds. We brought in consultants who have expertise in the field, and a great deal of this has come together in the last 12 months.

**Roundup:** And what are the conclusions of the feasibility study?

**Stall:** The primary conclusion was that all of this is viable. But to lay the groundwork for that conclusion, I should try to give you a feel for what areas the study addressed. It was completed in March and it generally got very good marks. First, it gave us a feel for the size of the facility we will require. Secondly, it gave us an architectural direction. It also addressed cost and financing, projected visitor traffic and other matters. The bottom line was a total projected development cost of just under \$40 million. We worked out a plan for financing the construction and operation of the center through a combination of a bond issue, institutional donations and the revenue generated by the facility itself. What we also learned from the study is that there is a certain critical mass. Unless you have this much, you don't have enough, and you can't be economically feasible.

**Roundup:** What kind of visitor attendance do you anticipate?

**Stall:** Like all good bureaucrats, I get my crystal ball from the lowest bidder, so I am a little hesitant to be very certain about that number. When we approach a visitor count for our feasibility study, we were very conservative. If this complex is not going to be supported by federal dollars, it will have to support itself from its own revenue stream, and that is directly attributable to the number of people who

come to the center. So we initialized our visitor traffic projections based on the latest actual year of data that we had in hand. Last year was 1.2 million. At the time of the study, the last full year was 1.15 million. It continues to grow, as you see. We think the complex should be built in such a way that it can continue to grow as visitor traffic grows. Out through 1991, our projections are that visitor traffic will grow to 1.7 million. And I'll quickly say that that number could be grossly understated. But even so, we will have a facility able to accommodate a larger number than that, and the land itself will be able to support a master plan growth to a larger facility if that is indicated by the number of people coming here. That brings up another point that is important to this, by the way. While visitors do pay modest fees for the experiences at both KSC and Huntsville—there is a charge for the IMAX theater and the bus tour of KSC, for example—we've never had those kinds of offerings so there has never been a charge. But we will have to institute a modest admission fee to make this project work. The charge will cover the IMAX and OMNIMAX theaters and everything else the visitors enjoy while they are here, including the bus tour of the center. And as a matter of fact, our feasibility study shows that the charge for all of this can be even below the charges that visitors are paying at either of our sister centers. So we know that we've got a viable project.

**Roundup:** What would the charge be?

**Stall:** In 1986 dollars, we're looking at \$5.95 for a non-discounted, adult admission, which results in a per capita admission of \$5 once you discount for school groups, senior citizens and other group arrangements.

**Roundup:** Would it cost a JSC employee to visit the facility?

**Stall:** Similar to the situation at KSC and Huntsville, JSC employees would be considered visitors, as else. With over 10,000 employees in the JSC community, multiplied by their immediate family and then tacking on visits from Aunt Emily and the rest of the family during the summer, a significant fraction of our visitor traffic would be non-paying if we didn't do that. And since this facility must be self supporting financially, we simply cannot afford to give JSC employees free access, much as we would like to. But we think that our employees will feel they are getting full value for what they pay. And I should add that the Foundation has agreed to give to the JSC

Director 1,000 passes each year, and those can be used as the Director sees fit. In addition, the Foundation will pay \$700,000 a year to the Exchange Council for the right to sell food and beverages and operate a gift shop on the Visitor Center site. That is a substantial amount of money, and will be used to finance improvements to the Gilruth Recreation Center and the offerings of the Employee Activities Association. That \$700,000 will be adjusted on a quarterly basis with a Department of Labor indexing statistic, so that number will grow over the years. All in all, I think the employees will be getting something of which they can be proud, and they will benefit in the process. This is going to be a world class facility. It will be institutional construction. The architecture is compatible with JSC, and culturally the project is compatible with the Johnson Space Center and its mission.

**Roundup:** How do you mean?

**Stall:** Well, we are not building a theme park. We are not going to have roller coaster rides and water slides with some thinly veiled space theme. This is a real facility for communicating with people about what we do at JSC, and what the manned space flight program is all about. And so culturally, since we are an operationally oriented center, the message will be reflective of the kind of atmosphere that JSC really represents. Let me give you an example. For the past few years, there has been an annual Engineering Expo at the Gilruth Center. It is an opportunity for JSC people in different disciplines to see what their colleagues are doing in other buildings and laboratories around the center. We want to take advantage of that very same kind of activity and transplant it from the Gilruth Center, the cenonce a year, to the Visitor Center every day. It could be an enormously interesting and beneficial exercise, both for employees and our visitors. We would be able to feature a given piece of technology or show what progress is being made on a given reasearch project. We would take the real hardware that the engineers are working with on a day to day basis, set it up in the Visitor Center, and let those engineers with their red badges talk to visitors and explain the project. School children and graduate students alike, moms and dads and cousins, would be able to see real NASA hardware, talk to real NASA engineer or scientist, and get a very solid sense of having seen and experienced NASA at work. The greatest resource this Agency has is its people, and the

mystique of NASA is in many ways tied to the technology we work with. How many times have I seen tourists, on their way into Bldg. 2, stop and marvel at the liquid nitrogen tank out by the side of Bldg. 13? To NASA folks, it's just a mundane white tank with steam coming out of it, but tourists who have not been exposed to this are rapt with awe. Imagine then, the benefit our visitors would derive from meeting with our best and brightest. And imagine the morale boost an engineer or scientist can get by spending one or two days talking with our constituents, the people who pay our salaries. And we could change the demonstration on virtually a daily basis. Almost every day, something new could be available for people to look at, talk about and see. We lose a great deal by being part of a faceless, monolithic federal government. We gain everything by being flesh and blood human beings who do work and can talk about it. And if nothing else, this Visitor Center will offer this kind of opportunity for JSC to tell its story.

**Roundup:** Aside from those kinds of demonstrations, what else might the typical visitor experience in this new facility?

**Stall:** Goose bumps, I hope. That's about the best I can tell you now because much of what will be inside the dome has yet to spring from the designer's genius. But I can give you another example. I mentioned how inadequate the Lunar Module display is in the present Visitor Center. Parking the LM there is the equivalent of displaying the Hope Diamond in a cigar box. It's still the Hope Diamond, but it is in a hopelessly inadequate context. Well, we want to create the proper context for the LM—a lunar landscape. We want to display the LM and the suited astronauts, the lunar rover and the ALSEP experiments on a lunar terrain, and overhead will be a star field as seen from the surface of the Moon. We want to give our visitors a truly realistic perspective of what it must have been like to stand on the Moon during the era of Apollo. Only with this kind of sensation does one begin to understand what we have done. That's the kind of thing we can do in a new facility. Similarly, we have plans for recreating the Apollo era Mission Control. In the next few years, the Mission Control Center will be modified, and the Apollo era MOCRs will be reconfigured. Much of the old equipment will ultimately go into our MOCR recreation in the new visitor center. Using actual voice and data tapes, we will be able to give the visitor an idea of what some of the significant moments in manned space flight were like, not from the vantage point of a television viewer, but from the vantage point of the flight controllers who were actually in the MOCR during the first landing on the Moon or during the Apollo 8 circumlunar navigation, for example. From a historical perspective these are the kinds of things we should be doing with our visitor program. Flying off into space is not something that has been done until the very recent past, and the people of this center have played a pivotal role in making that possible. And if we believe that mankind will build on our work and journey in ever increasing numbers out into the Solar System, engaging in enterprises on the Moon, establishing settlements on Mars, mining the asteroids and exploring the outer planets, then our work has an epochal quality to it. It is exactly that quality which attracts and holds so many of JSC's people, and it is exactly that quality which we will celebrate in the new visitor center.

# Community leaders praise Visitor Center Project

(Continued from page 3)

Dr. June Scobee, the widow of STS 51-L Commander Dick Scobee, announced that the Challenger Center for Space Science Education intends to build at JSC a regional facility associated with the main Challenger Children's Center which will be built in Washington, D.C.

"After the accident last January," Scobee said, "all of the families came together to make some decisions on the direction they would like to take in the way of a living memorial for the crew. We knew the crew would have wanted to follow through with what their mission was all about. So the Challenger Center is in truth pursuing the goals of that mission—to fly, to explore, and to teach. Just as that crew were pioneers into space, the families want to carry on that pioneering spirit."

The satellite program would be the first outside Washington to offer educational opportunities under the aegis of the Challenger Center for Science and Education.

"We are very excited about NASA's decision to build a new Visitor Center complex," said Stephen L. Sandstedt, executive director of the Clear Lake Area Economic Development Foundation (CLAEDF). "This will be a big boost to our local economy. Not only will it add jobs, but it will identify the Clear Lake Area as a destination point for tourists."

Roy Pezoldt, CLAEDF President and Clear Lake City project man-



Participants in the Oct. 22 press conference announcing the JSC Visitor Center project included, left to right, Dr. June Scobee, Executive Director of the Children's Challenger Center; Pat Black, representing

Friendswood Development Co., said the project is the result of cooperation between the public and private sectors. "The center is a classic example of economic development—one that will create benefits for the entire community.

We hope to encourage additional firms to become corporate partners in the venture," he said.

"It is fitting that NASA is making this decision to expand the Visitor Center," said University of Houston-Clear Lake President Dr. Thomas

Stauffer. "Data analysis and management and computer technology are among the areas of expertise for which the Johnson Space Center has become world renowned. It is exciting to know that this same knowledge is being applied to the

development of learning experiences in which Johnson Space Center visitors can participate, hopefully leaving them with a deeper understanding of space science and respect for space exploration."

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## Visitor Center offers promise, Foundation members say

(Continued from page 5)

is something worth doing, and it's very difficult to precisely define what the impact can be. I'd hate to put limits on it."

Foundation member John W. O'Neill, Assistant Director for Mission Operations, said he hopes the

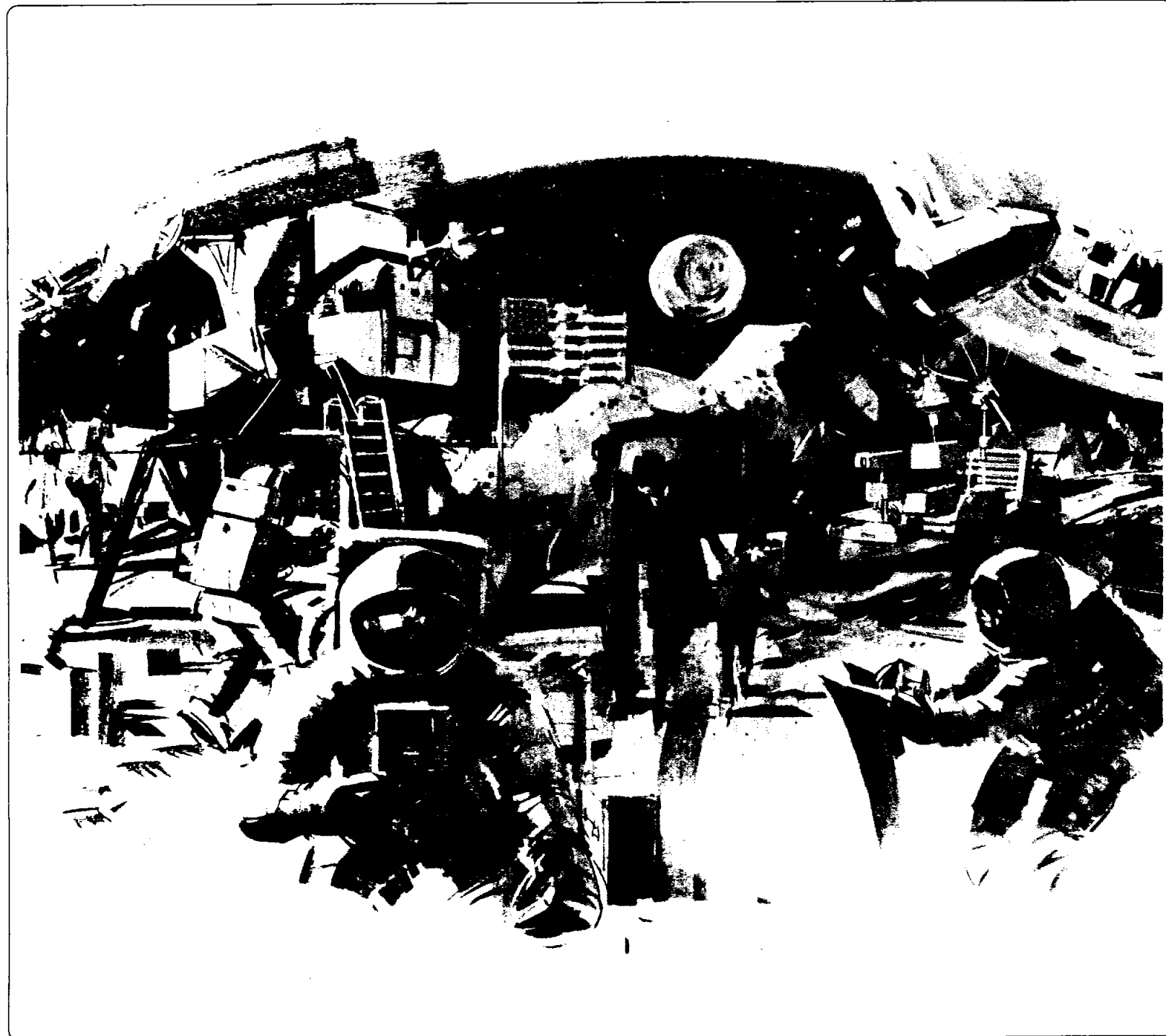
Visitor Center can convey a sense of the teamwork necessary to conduct manned space flight programs. "I think people support the development of the Visitor Center because they feel we need to convey what we have done, what our future

holds and what the challenges of space flight really are," he said. "I hope the center can show people the teamwork that is necessary to meet the demands of a mission, how mission controllers, engineers, scientists and the people who build

and fly the spacecraft have to work together to make it all happen."

Former JSC Director Christopher C. Kraft Jr., the first person from the private sector named to the Foundation, said construction of a new visitor center is an important

milestone for JSC. "This is a necessary and worthy project," he said. "JSC has long needed a larger visitor center. And this facility will make it possible to better tell the Center's story, and the story of manned space flight."



### A stroll on a lunar landscape

Visitors walk among artifacts from the Apollo era in this artist's concept of the proposed lunar landscape in the new Visitor Center. The goal of this exhibit would be to display Apollo hardware in the proper context, and offer visitors the opportunity to better understand the legacy of Apollo.

# Complex to include IMAX/OMNIMAX theaters

When JSC's new Visitor Center opens in the fall of 1988, two of the most popular attractions are sure to be the IMAX and OMNIMAX theaters.

"There is, quite simply, no more spectacular form of motion picture projection available," said Chuck Biggs, Chief of Public Services. "We believe these two theaters will be powerful educational tools, as well as important additions to the City of Houston. Viewing an IMAX film is something of an emotional experience as well, and the closest thing we have to simulating the sensations of spaceflight for large numbers of people."

The nearest IMAX theater is in Ft. Worth, and only 21 are in operation worldwide.

The two film formats offer unsurpassed clarity and impact. IMAX films are projected on a large, flat screen, whereas OMNIMAX is projected on a dome. Both use state-of-the-art technology to produce high-fidelity film frames that are ten times larger than a conventional 35 millimeter frame.

The 70-millimeter, 15-perforation format is the largest film frame in motion picture history. The format provides viewers with a 180-degree horizontal and 90-degree vertical panorama. Typically, IMAX/OMNIMAX theaters include more than 80 high-fidelity audio speakers, surrounding the audience with sound.

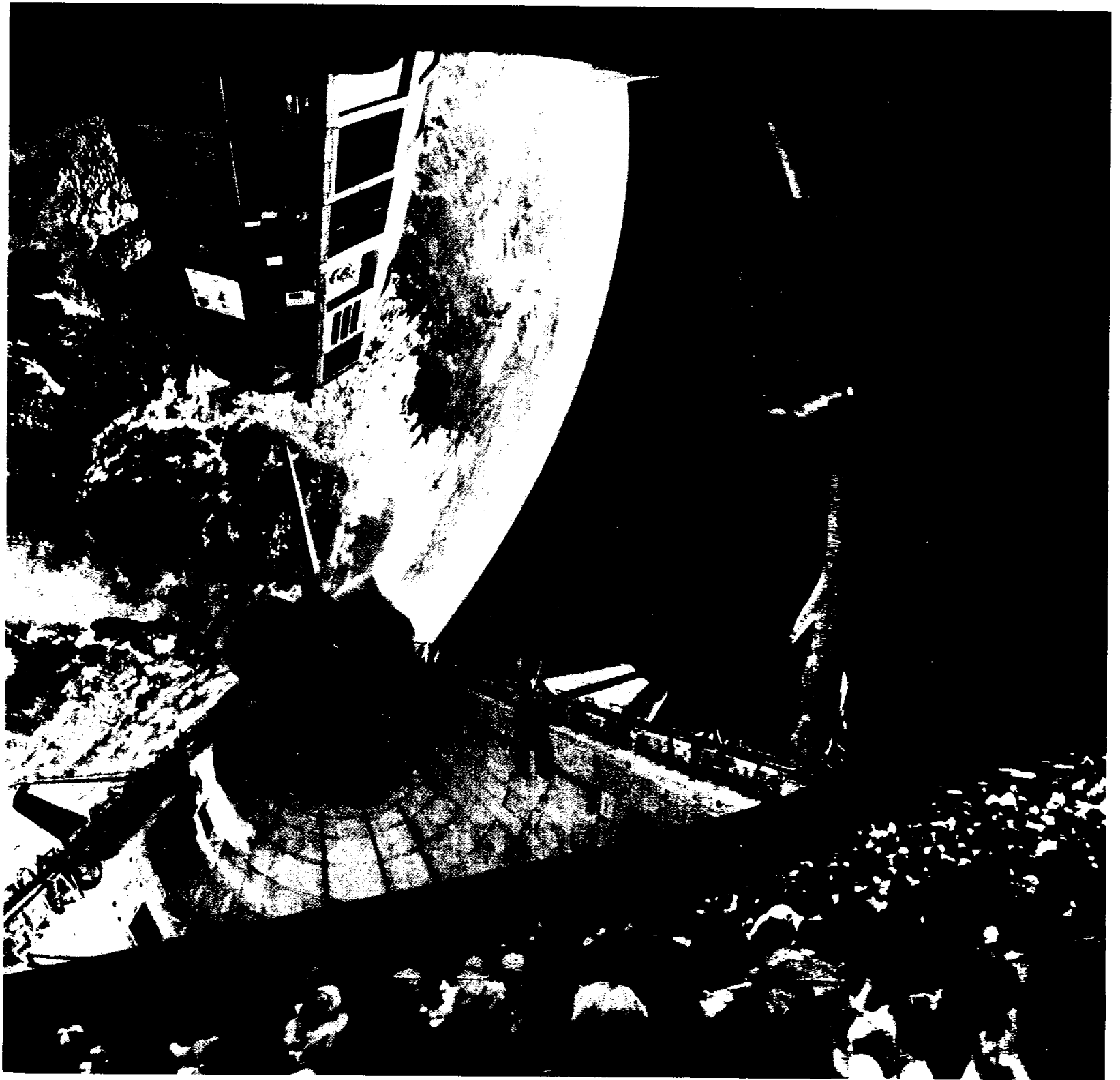
The IMAX theater at the new JSC Visitor Center will seat about 500 people. The OMNIMAX theater would seat about 330 people. "Our plans call for two theaters in order to meet projections on the number of people who will visit the Center," Biggs said. "If you look at the peak hour of the peak day of the peak month of the year, a 500 seat theater will not handle everyone." Access to the theaters will be included in the Visitor Center's projected \$5.95 adult admission price.

Two films on spaceflight, "Hail Columbia!" and "The Dream is Alive," have been released in the IMAX/OMNIMAX format. Much of the footage for "The Dream is Alive" was shot in space by astronaut crew members on Shuttle missions 41-C, 41-D and 41-G.

Footage from 41-C (April 6-13, 1984) included the capture, repair and deployment of the Solar Max satellite and the deployment of the Long Duration Exposure Facility.

Scenes from 41-D (Aug. 30-Sept. 5, 1984) included the testing of a 100-foot Lockheed solar array and the deployment of three communications satellites.

During STS 41-G (Oct. 5-13, 1984), IMAX was used to record the first spacewalk by an American woman, Dr. Kathryn Sullivan, and took advantage of that flight's high inclination orbit to capture unique



"The Dream is Alive," one of a number of IMAX/OMNIMAX movies that will be available to JSC visitors when the new Visitor Center opens, first premiered at the Air and Space Museum in Washington, D.C. Here, patrons view the film in the IMAX format.

and dramatic views of the Earth.

More recently, an IMAX Cargo Bay Camera was flown on STS 61-B (Nov. 26-Dec. 3, 1985) to record extravehicular activity associated with the EASE/ACCESS operations.

NASA's involvement in the production of "The Dream is Alive" came at the request of the Smithsonian Institution's National Air and Space Museum. In keeping with its charter to disseminate as widely as possible information about U.S. space exploration, NASA agreed

to allow astronauts to be trained to operate the IMAX camera in space and arranged for the camera to be flown on the Shuttle missions.

"The Dream is Alive" premiered at the Air and Space Museum's Samuel P. Langley Theater in 1985. Since the museum opened in 1976, the Langley Theater, featuring IMAX films, has become one of the most successful in the world. More than 15,000,000 have attended the daily showings.

As successful as it is, attendance increased 40% in 1985 on the strength of "The Dream is Alive." In Los

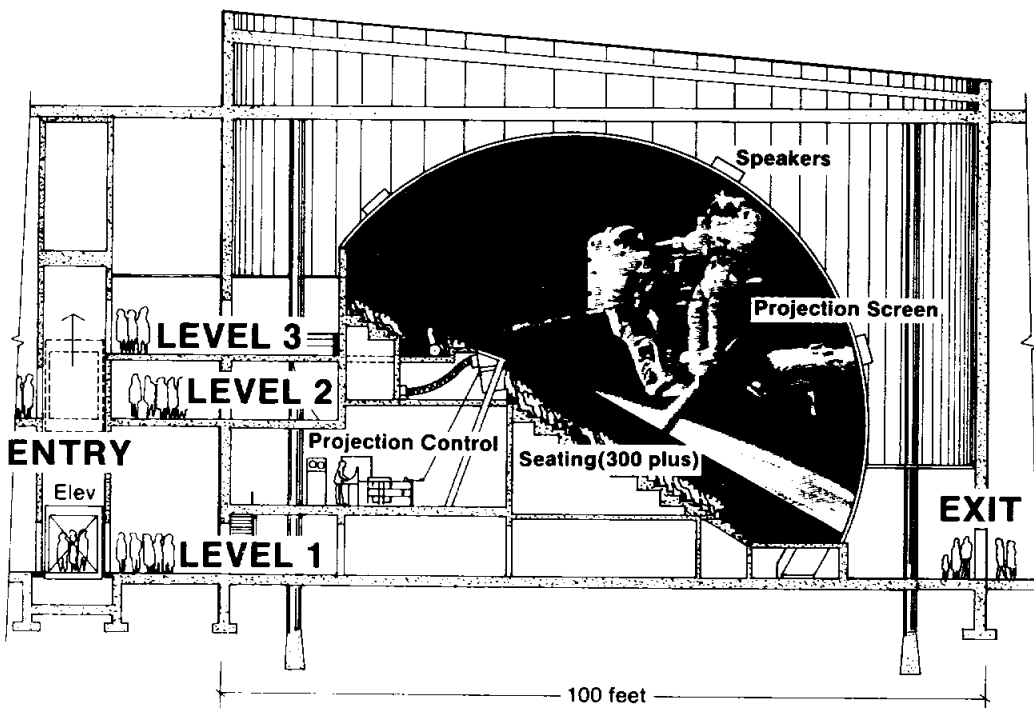
Angeles, a museum reported a 400% increase in attendance after installing an IMAX theater, Biggs said.

Imax Systems Corp., located in Toronto, designs and builds IMAX and OMNIMAX cameras and projectors and licenses their use worldwide.

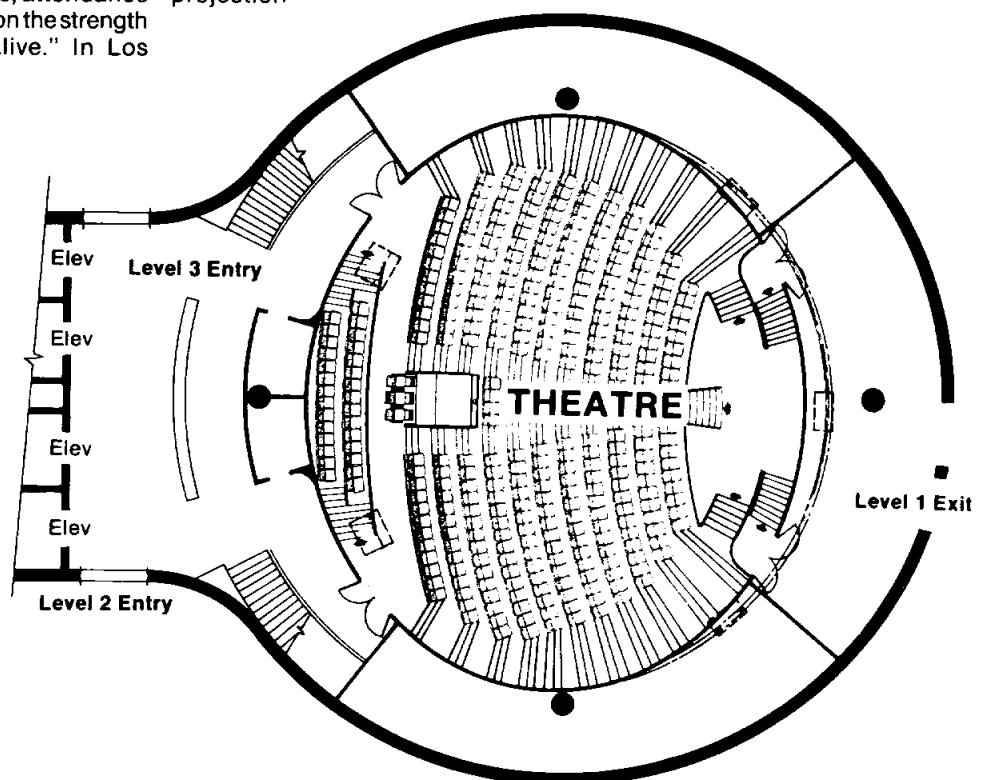
Graeme Ferguson, President of Imax Systems Corp., first became aware of potential of large format motion picture projection

when he produced the film "Polar Life" for Expo '67 in Montreal. Ferguson and two school friends, Robert Kerr and William Shaw, worked with Ferguson's brother-in-law, Roman Kroitor, to develop the IMAX and OMNIMAX formats. Their first film was "North of the Superior" in 1971.

Ferguson was principal investigator for the IMAX payloads on the Space Shuttle.



ELEVATION



PLAN

The design of a typical OMNIMAX theater is illustrated in these architectural renderings. Current plans for the JSC OMNIMAX theater would generally follow this plan.