

NUMBER 3/1983

Survivor



# Jupiter instruments are delivered to NASA

Two research instruments for an interplanetary mission to Jupiter's atmosphere have been delivered to the National Aeronautics and Space Administration.

The instruments, designed to measure physical properties of the Jovian atmosphere, will be mounted in the Galileo spacecraft probe expected to be launched toward Jupiter in 1986.

A nephelometer will measure the size and shape of small particles suspended in the atmosphere, and an atmospheric structure instrument (ASI) will detect variations in atmospheric pressure and density. Both were designed and built in Denver and are being tested at NASA's Ames Research Center in California.

When the Galileo spacecraft reaches Jovian orbit, it will release an atmospheric probe that will reach a velocity of nearly 100,000 miles an hour before a parachute slows its descent. The probe will continuously gather and transmit data to Earth until it is crushed by the planet's dense atmosphere.

Because the instruments must work in an adverse environment, an extreme-test program was run to ensure operability. Instruments were tested in a centrifuge to 400 times Earth's gravity to prove their ability to withstand rapid deceleration. They were tested further in a hyperbaric chamber to 20 times Earth's atmospheric pressure (about 300 psi). Additionally, the instruments were designed with specially hardened electronics and casings for protection from Jupiter's high radiation levels.

Two sets of flight hardware were produced, one for testing and the other for a spare. Either set eventually may be placed in the actual Galileo probe.

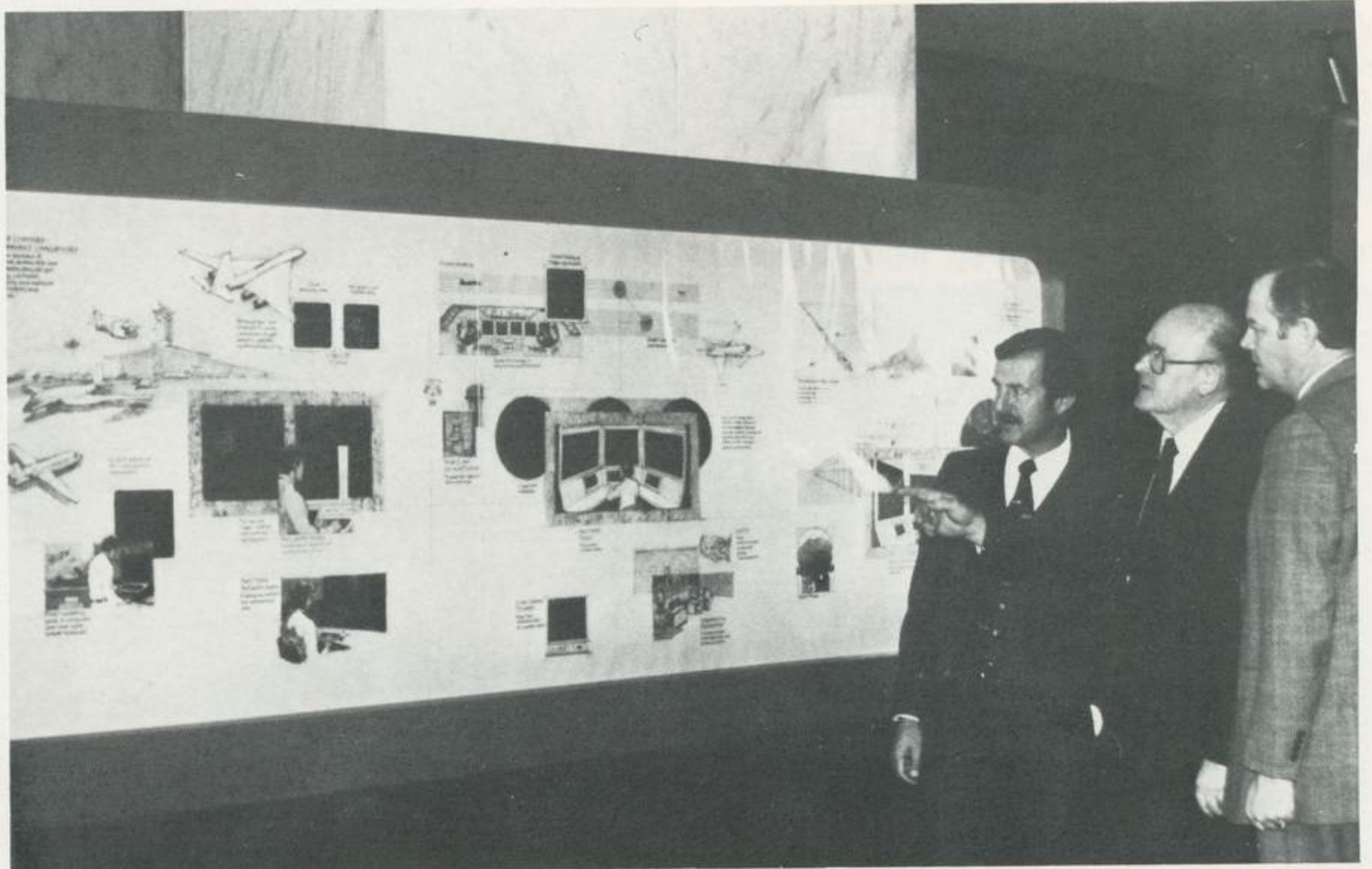
Martin Marietta was awarded \$5.2 million for the two instruments in 1978; \$1.9 million for the ASI, and \$3.3 million for the nephelometer.

In addition to the two atmospheric research instruments, the company is developing a net flux radiometer and the spacecraft's articulation and attitude control system.

The net flux radiometer will measure radiant energy levels within the infrared and visible light spectrum above and below the probe to detect, for example, the presence of water and ammonium in the atmosphere, and to measure thermal and solar radiation.

## On the cover

Snow from the Christmas blizzard of '82 is still around as Lt. Sharon A. "Casey" Norman, center, accepts a survivor's T-shirt commemorating the event. Tom M. Crawford Jr., director of personnel safety and security, left, and Capt. Albert J. Sulzer, right, presented shirts to all plant protection employees who worked 24 hours straight (or more) during the storm.



A panel depicting the air traffic control system is on display in the lobby of the FAA building. Discussing the exhibit are, from left, Stephen L. Copps, director of ATC systems; Albert P. Albrecht, FAA associate administrator; and Keith J. Frederick, ATC program development manager.

## Air traffic control exhibit goes to FAA headquarters

An exhibit featuring the Denver Aerospace concept of the air traffic control (ATC) system of the future was put on display in the lobby of the Federal Aviation Administration Building in Washington, D.C., last week.

The exhibit was presented by Stephen L. Copps, director of ATC systems, and Keith J. Frederick, ATC program development manager. Accepting for the FAA was Albert P. Albrecht, associate administrator.

The display, a smaller version of one developed for the company's booth at the annual meeting of the Air Traffic Control Association last October, features Da Vinci-style drawings that are similar to those appearing in the aerospace company's advertising program.

The FAA plans to modernize and automate the country's air traffic control system in several phases over the next 20 years.

Included with the exhibit is a quotation from FAA Administrator J. Lynn Helms that summarizes the FAA's modernization objectives: "The nation's need for air safety and economic growth requires us to accommodate the growth of aviation. The demands of the nation's voters, the public outcry to reduce cost of government, increase productivity, and decrease regulation—both individually and collectively—require us to do it. The requirements of meeting the public needs for safe, efficient, and accessible travel require us to do so. The benefits to this

nation of insuring aviation leadership require us to do it."

Preproposal studies and analyses have been underway here for more than a year. A request for proposal for the systems integration role in the modernization is expected next month, and Denver Aerospace will submit a bid.

The air traffic control team recently moved to offices in the Littleton Systems Center.

## Tax forms available for employee use

Federal and state income tax forms are available to employees at various locations.

At the main plant, see Lori Sharp, Recreation, Eng. 124G.

At Littleton Systems Center, see Alan Bill, module 108B.

Barbara Elder has tax forms at Greenwood Commons, building 8100, second floor.

At South Lincoln, see Lucy Winka in the personnel representative's office.

At Denver Systems Center II, Kay Shuey has the forms in module 263.

Kris Lockhart has forms at the Inverness facility in room 110 of building 98.

## Shut-ins, elderly are aided by employees

An elderly shut-in was just one of many who have had their holidays brightened over the past eight years by contributions from employees.

"I've rocked 1500 miles in my rocking chair already," said Susie Ball in appreciation of her gift from employees.

The fund was started by Emil P. Fuscick and Carol A. Novak of central purchasing, "because we wanted to help the elderly," Fuscick said.

"Many organizations were helping youngsters, but none seemed to be doing anything for the elderly, the shut-ins, or the handicapped."

"We began working with Home Health Services of Metro Denver because they seemed to be interested in the same kinds of people," Fuscick said. "Their objective is to keep those they serve in a home environment and out of institutions."

While gifts and food baskets are provided only at Christmas, employees working on the project have formed some year-round associations with the people they have helped.

"I regularly visit an elderly woman who decided to continue residing at home after our first visit a couple of years ago," Fuscick said. "She said after our visit that it was the nicest Christmas she had had in 84 years."

"It's people like her who keep us doing what we are doing," he said.

Funds for the program have been contributed by employees in Central Purchasing, Accounts Payable, Treasury, and the Checkout, Control, and Monitoring Subsystems Organizations.

William H. Severson, also of central purchasing, has been helping coordinate the program with Fuscick and Novak.

## Pownall elected chairman of Corporation board

Thomas G. Pownall has been elected chairman of the board of Martin Marietta Corporation. He succeeds J. Donald Rauth.

Pownall joined Martin Marietta 20 years ago as vice president for advanced planning in aerospace. In 1969, he became president of Martin Marietta Aerospace. He served in that capacity until 1976, when he moved into general management as executive vice president of the Corporation.

He was elected president of the Corporation in 1977 and chief executive officer in 1982.

Rauth retired as a corporate employee January 31, but will continue to serve as a member of Martin Marietta's board and as chairman of its executive committees. He became president of the Corporation in 1972 and chairman of the board in 1977.



*A rocking chair was what Susie Ball needed and that's what she got from generous employees who created a fund to help elderly persons and shut-ins.*

## New phone system training is set

Training sessions for the new digital-computer-switched telephone system will be conducted February 14 through 25.

Department supervisors are coordinating schedules so employees can conveniently attend the half-hour training sessions at the main plant.

Consultants from Northern Telecom Inc. will use a Denver-Aerospace-produced videotape presentation, and will distribute printed user instructions at each session.

The new system, employing the latest in telephone equipment, will go into service for the main plant complex February 25. The Littleton System Center will be connected in March using a digital microwave system that will accommodate voice and data applications.

Existing rotary dial instruments at the main plant will be replaced with Digitone sets between February 25 and March 25.

The telecommunications center has installed new processing equipment to speed messages. Other system features include call forwarding, call park, ring again, speed calling, three-way conference, and call pickup.

### MARTIN MARIETTA NEWS

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DENVER AEROSPACE  
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## Discounts available on homes for sale

Twenty-nine homes for sale through the Denver Aerospace real estate department may be purchased by employees at discounts of up to six percent.

"When the company agrees to purchase a home from an employee transferring to another location, we specify that we may sell the home to another employee at a discount," said Dale Phelps, who heads the real estate organization.

"Six percent may not sound like a lot," he added, "but that means you can buy a \$100,000 home for \$94,000. That's a saving."

In 1982, 21 of the 80 homes sold were to employees.

"We would like to have sold more to employees," Phelps said.

Up-to-date listings showing address, price, and terms are available from Phelps. His office is on the southeast mezzanine of the inventory building, Ext. 4408.

Homes now available range in price from \$35,000 to \$196,000. Most are west of Broadway and south of Hampden. Some are in the southeast; one is in Golden; two are in Aurora; another is in Broomfield; and one is in Castle Rock.

To see a home, employees should call Phelps or Edie Lindsey in the real estate office for an appointment.

The office offers assistance in obtaining financing for the homes.

None of the homes is for rent.

## Old Crows Association chapter is formed here

A new chapter of the Association of Old Crows has been formed locally, with many Denver Aerospace members.

The Association of Old Crows is a national organization providing members with a forum for information exchange, discussion, and social activities.

Membership in the Mile High Country Crows is open to everyone interested in electronic-warfare-related topics. Meetings will be held every other month. Voting is now taking place for new officers to be installed at the March meeting.

For information about the Mile High Country Crows, call Glick Bishop, Ext. 3925; Jean Eisele, Ext. 2310; James Kummer, Ext. 2969; or Alan Oberg, Ext. 8345.

## Data System's Walters new corporate VP

Richard J. Walters, president of Data Systems, has been elected a corporate vice president.

Previously, the Corporation announced that Data Systems would be accorded internal status equivalent to that of other Martin Marietta operating companies.



United Way officials expressed a big "thanks" to employees for their contributions to the 1982 drive on a recent visit to the plant. In the photo, from left, Dominic N. Verrastro, manager of employee relations; Dick Dean, United Way's volunteer general chairman; Fitzroy Newsum, manager of civic liaison and a member of the United Way board; and Rolland Hoffman, United Way president.

## United Way receives \$581,250 from campaign

Coordinators for the 1982 United Way campaign were honored for their fundraising efforts at a luncheon February 3.

Mile High United Way received \$581,250 from the campaign—\$510,000 in employee pledges and cash contributions and \$71,250 as the Martin Marietta Corporation gift.

Participation increased from 76 percent to 87 percent during the campaign.

Per capita giving by employees topped \$64.

Speakers at the luncheon were Dick Dean, United Way's volunteer general chairman, and Rolland Hoffman, president of the organization.

Coordinators honored were:

Jeremiah M. Turco, Horace W. Clair, Mollie Lantzy, Rosalyn Foran, Geneva Purdy, Roy Hall, Beverly Thompson, John Leonard, Betty Purkey, Irene Woodzell, John Caporali, Robert C. Moore,

Robert S. Hada, Claude Potter, Barbara E. Gomnes, Jennifer Milillo, Barbara L. Hoeft, Norma Crosby, John Dominguez, Otha Jones, Robert Weston, Marlene Johancen, Donald L. Plomondon,

Gary L. McCormick, Cheryl Howard, Roy Salem, Nadine Holder, Sherrie Lundgren, Charles Pique, Andrew J. Kancir Jr., Virginia Mortimer, James W. Defibaugh, Charles Parker, Dale Flood, Della Hemelstrand, Donna Peterson, and George McCone.

## New Michoud director named

Robert W. Smith has been named Michoud division director for development. Smith replaces Allan M. Norton, who has moved to Aerospace company headquarters as vice president for research and development.

Smith's new duties include direction of the division's advanced programs, management information services, and engineering activities. He also directs the division's operations at NASA's Marshall Space Flight Center in Huntsville, Alabama, and at NASA's National Space Technology Laboratories in Bay St. Louis, Mississippi.

Smith joined the company in Denver in 1969, working on Earth resources experiments for the Skylab program. He transferred to New Orleans in 1973 as manager of systems engineering. Later, he was named program manager for production readiness to help increase external tank production rates.

## USAF space commander to visit February 15

Gen. James V. Hartinger, commander of the Air Force Space Command, will fly the MMU simulator during a visit to Denver Aerospace February 15.

During the day-long orientation visit, the general also will address the senior large staff meeting, tour the nearfield antenna facility, and take part in several briefing programs.

That evening, he will be the principal speaker at a special dinner meeting of the Rocky Mountain chapter of AIAA. The dinner is open to all. Reservations may be made today by calling one of the following extensions: 2042, 6103, 3444, or 7604.

## New technology awards are made to employees

Ten employees have received cash awards for new technology disclosures submitted as a result of work on NASA contracts.

The awards were made by the new technology evaluation committee.

Employees and titles of the disclosures:

Dr. Wayne E. Simon, electronics: Swirl diffuser.

H. Michael Thomas, John C. Tietz, Lawrence M. Germann, and Joy H. Kelly, electronics: A flash CORDIC converter.

Robert L. Berry, Peter W. Abbott, Dr. George Morosow, Richard A. Vigil, engineering mechanics: An integrating approach for evaluating locomotive operational safety.

Jack R. Postuchow, engineering mechanics: Snake cord.



Innovators of the flash CORDIC converter check the application of the hardware on a small computer. From left are Lawrence M. Gernmann, John C. Tietz, Joy H. Kelly, and H. Michael Thomas. The converter, shown at right, solves trigonometry problems hundreds of times faster than the computer alone could solve them. It has applications in robot control, map generation, computer graphics, and image processing.