

MARTIN MARIETTA

news

ASTRONAUTICS GROUP

October 20, 1989

Number 22

Titan II has
new look,
missions





Smokey and Stephanie entertain

About 23,000 employees attended the Family Event concerts Oct. 7 featuring Smokey Robinson, left, and Stephanie Mills, right.

Corporate news

Information Systems Group streamlines management

As a means of strengthening the Corporation's position in the growing information systems market, the Information Systems Group is being streamlined, Robert J. Polutchko, president of the Information Systems Group, said in an Oct. 6 organizational announcement. Polutchko said a layer of management will be eliminated and responsibilities concentrated in six highly focused business operations.

The six business operations are: Information & Communications Systems, Simulation Systems, Air Traffic Systems, and three organizations that formerly existed as Data Systems—

Civil Information Systems, Facility & Professional Services, and Internal Information Systems. Each of these operations will report directly to Polutchko.

"This organization will efficiently centralize common support and administrative functions at the group management level," he said. "The business operations, in turn, will then be able to better focus their energies on performance and increasing Martin Marietta's competitiveness in the growing marketplace for information systems."

Corporation to update military airspace plan

The Corporation has been awarded a \$30.7 million contract to assist in modernizing the Department of Defense's military air traffic control and airspace systems.

Air Traffic Systems, a business operation of the Information Systems Group, received the three-year contract to define DOD requirements for integration into the Federal Aviation Administration's National Airspace Plan. The contract is a follow-on to a study conducted earlier by Martin Marietta for the DOD.

The company is the FAA's systems engineering and integration contractor for the National Airspace Plan. Since 1984, the Corporation has provided technical and management

support to the FAA in implementing a new, highly automated air traffic control and communications system. The DOD project will help assure compatibility and interoperability with the National Airspace Plan. The company also leads a six-company team upgrading Canada's airspace system.

"The DOD contract represents a continuing commitment by the U.S. government to maintain a comprehensive, nationwide airspace architecture," said Brian Etheridge, Air Traffic Systems vice president. "Our goal is to integrate military air traffic control systems smoothly with the National Airspace Plan."

Guidelines set for facility closures

Occasionally, bad winter weather forces the Astronautics Group to close its facilities. Should such a closure be necessary, employees will be notified in the morning on local radio and television stations.

James A. Sterhardt, vice president of Production Operations, said conditions will be assessed at each of the group's main locations, and there is a possibility that one facility will be open and another will not. Employees are advised to listen closely to the announcement to see if their facility is closed.

Emergency announcements will be broadcast beginning at 5 a.m. by the following stations:

KOA	85 AM
KSFYY	95.7 FM
KRXY	1600 AM
KDEN	1340 AM
KRXY	108 FM
KHOW	630 AM
KYGO	950 AM
KYGO	98.5 FM
KLZ	56 AM
KAZY	106.7 FM

KCNC Channel 4-TV will broadcast closure announcements on its 6 a.m. news.

Should a closure be necessary after the normal business day has begun, announcements will be made on the Video Information System at the Deer Creek Facility and on employee bulletin boards at other facilities. ■

Foundation scholarship applications available

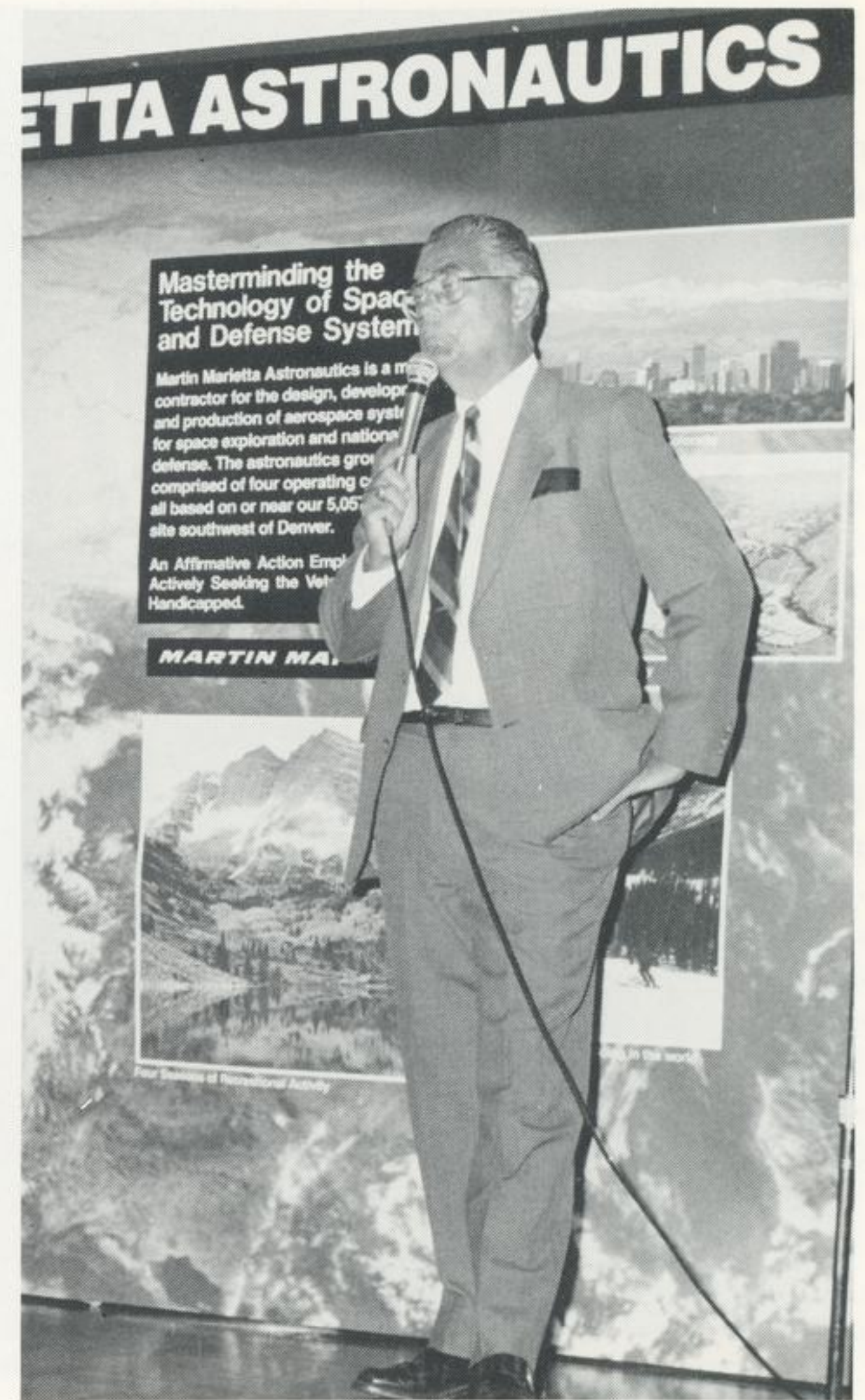
Martin Marietta Foundation scholarship applications are available for sons and daughters of employees who graduate from secondary school in the 1989-1990 academic year. The application deadline is Feb. 1, 1990.

For an applicant to be eligible, his or her parent must have been employed by Martin Marietta for at least two years as of Jan. 1, 1990, and be on the active payroll at the time of the award.

Applicants must be secondary school graduating seniors in the year of the award and must have academic records that unconditionally qualify them for admission to a regionally accredited college or university. Applications and supporting evidence should be sent directly to the Scholarship Selection Committee in Bethesda. Applications will be evaluated and winners will be selected by three people not associated with the corporation.

The scholarships are for \$3,000 and are renewable for three years if the student fulfills the academic requirements of the institution attended.

Application forms and information about the scholarship program may be obtained from Bette Wooster, Training and Development department, on the third floor of the Deer Creek Facility, 3B-423, Ext. 7-6650. ■



Supplier exposition a success

More than 30 business firms and 250 people participated in a Minority Supplier High-Technology Business Exposition last month at the Deer Creek Facility. The exposition, begun four years ago, allows Astronautics Group engineers, buyers, subcontract administrators and other interested parties to meet with and discuss potential business opportunities with representatives of high-technology disadvantaged business firms. Stanley F. Albrecht, vice president of Personnel, above right, told exhibitors the forum is a win-win situation for everyone involved. "It's very important for all

of us to pitch in and help each other," he said. "We hope you will view this year's exposition as our sincere attempt to increase our amount of activity with business firms like the ones represented in this room." James J. Conway, middle, from L.H. Research, describes his business to one of the many Astronautics Group employees who attended the exposition. Herb Watkins, manager of Materiel Operations, told attendees the Astronautics Group is proud "to be a part of this beneficial interchange" each year.

Employees receive patent awards

The Astronautics Group's Intellectual Property Review Board has distributed cash awards to employees for patents authorized last month.

Awards for September went to:

- **Dr. Mohan S. Misra and Frank M. Kustas** for their "Fabrication of Inter-metallic Compounds and Composites by Roll-Bond and Solid-State Reaction Processing;"
- **William D. Nygren** for "Parafin Actuator;"
- **Dr. Suraj P. Rawal and Misra** for their "Centrifugal Casting of Graphite/Magnesium (Gr/Mg) Tubes;" and
- **Michael G. Thornton and Dr. Benton C. Clark, III**, for their "Environmental Monitoring with Portable Analysis by X-Ray (EMPAX)."

PSP, SIP open enrollment planned for November

During the month of November, employees may enroll in or modify their investments in the Performance Sharing Plan (PSP) for salaried employees and the Savings and Investment Plan (SIP) for hourly employees.

Employees may change the percentage of payroll they want deducted, and also may change their tax mix (before or after tax contributions) during this period. These enrollments and changes become effective the first full pay period in January, which would be the Jan. 11 payroll for hourly and NES employees and Jan. 19 for all exempt salaried employees.

Elections in both plans, such as investment option changes for future contributions or transfer of funds from one account to another, may be made twice a year at any time. These changes become effective at the end of the month in which the request is processed.

Any salaried employee with at least six months of service is eligible to enroll in the PSP, while any hourly employee with at least 12 months of service by Jan. 1, 1990, can enroll in SIP.

Employees who withdraw or suspend contributions, and have satisfied their waiting period, are required to fill out an enrollment form to resume contributions.

Forms are available at the following locations:

- Deer Creek Facility, Benefits office, third floor, near south lobby
- Electronic Manufacturing, main lunchroom
- Greenwood Commons, Personnel, Building 6020
- Littleton Systems Center, Room 201
- Viewpoint I, Benefits office, Suite 206
- Waterton, Orb (building that connects the Administration and Engineering buildings), second floor
- Space Support Building, Room 607
- South Park I, Room 110
- South Park III, lobby

Send completed forms to the Employee Benefits office, Deer Creek Facility, Room 3B-409, mail stop DC 1343. Enrollment forms cannot be accepted after Nov. 30. ■

Company joins with radio operators to test Microsats

For the first time ever, four communications satellites have simultaneously experienced and survived the rigors of simulated space testing, thanks to the Astronautics Group. The group donated the use of facilities for thermal vacuum and vibration tests of the four amateur-built Microsats.

A team of international amateur radio operators gathered last month at the main plant to test the Radio Amateur Satellite Corporation's (AMSAT) Microsats. The Microsats are very small (nine cubic inches) spacecraft that weigh about 22 pounds each. They will be placed in low-Earth orbit later this year by an Ariane IV launch vehicle.

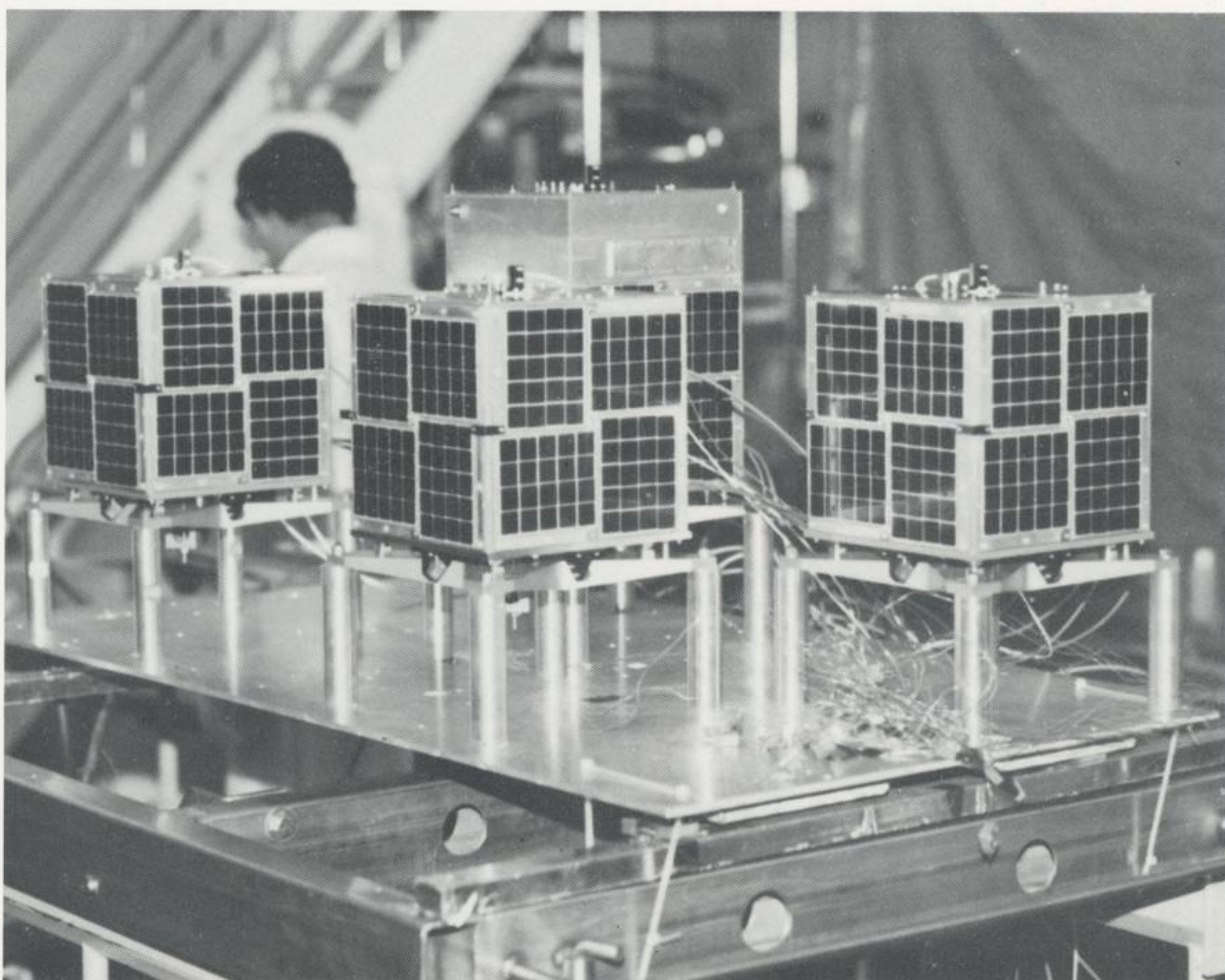
Two of the Microsats will become "flying mailboxes," performing digital store-and-forward communications. This will enable ham radio operators around the world to have access to reliable radio contact for emergency and recreational use.

Another Microsat will carry the Digital Orbiting Voice Encoder (DOVE). This computer voice synthesizer will radio down spacecraft telemetry and amateur radio bulletins that can be received on normal public service scanners.

The fourth Microsat will carry a variety of educational experiments, including amateur-built spectrometers, a magnetometer, a micro-meteoroid impact detector, and a Charge-Coupled Device (CCD) camera. Data and pictures of Earth will be transmitted around the world from this Microsat.

Built with funds provided by the non-profit organization, AMSAT, each of the \$65,000 spacecraft underwent eight days of testing designed to evaluate their operation and reliability in simulated space by exposing them to varying degrees of heat and cold while in a vacuum chamber. During vibration testing, the spacecraft were given the "shake test" to verify their ability to withstand the launch vibration environment.

The Martin Marietta/AMSAT relationship is not new. In 1965, OSCAR IV (Orbiting Satellite Carrying Amateur Radio) was launched on a Titan IIC. In 1986, the company donated



The four amateur-built Microsats, shown above, just completed testing in the Thermal Vacuum Chamber at Waterton.

thermal vacuum testing for OSCAR 13. That satellite still is performing flawlessly after one full year in space.

The Waterton Amateur Radio Society, an Astronautics Group recreation organization, coordinated and acted as host to the Microsat team. Members and other employee volunteers performed tasks ranging from escort duty to monitoring spacecraft telemetry and conducting performance tests during the environmental test program. The society has been involved in the Microsat project for more than a year and about 20 employees took part in the program.

Society vice president and staff engineer, Space Systems company, Dave Cowdin, also will be a member of the Microsat launch team.

At the Kourou, French Guiana, launch site, Cowdin will perform last-minute software loads and final prelaunch testing of the Microsat spacecraft.

"This is one of the greatest adventures in amateur radio today," Cowdin said.

Jack Crabtree, AMSAT test program manager and a subcontract manager in the Space Systems company, said "This test program was especially unusual because four spacecraft were simultaneously tested, and antennas were mounted on the roof of the Space Simulation Laboratory, at the main plant, so radio amateurs throughout the Denver area could actually monitor spacecraft performance during testing." ■

Corporation receives national Business in the Arts Award

Martin Marietta was one of 22 businesses to receive a Business in the Arts Award presented by the Business Committee for the Arts, Inc. and FORBES Magazine last week before a gathering of national business leaders at the Chase Manhattan Bank in New York.

Winners of the Business in the Arts Award were chosen on the basis of their innovative arts programs and the impact of these programs on their local communities. More than 474 small, medium and large businesses located in 199 cities, 44 states and four countries have won the award since it began in 1966.

During 1988, the Corporation provided a \$1.7 million grant to WNET to underwrite its PBS series "Great Performances," which

kept the program on the air at a time when its major funding was cut. Additionally, the Corporation committed \$1.5 million over ten years to endow the Great Hall in The National Museum of Women in the Arts, Washington, D.C., and donated \$100,000 while also matching \$17,000 in employee gifts to the Denver Symphony Orchestra.

"The arts furnish many meaningful experiences that enrich the lives of our employees and the communities in which they work and live," Norman R. Augustine, chairman and chief executive officer, said.

The Business Committee for the Arts is a national, not-for-profit organization of business leaders committed to encouraging and developing business partnerships with the arts.

Updated Colorado Trail Guides now available

Thanks to Martin Marietta, the second edition of the Colorado Trail Guide Book now is available.

The company provided the printing for the book and actively supports the Colorado Trail Foundation through donations.

The guide is the only official book available on the scenic 470-mile trail winding from Denver to Durango.

Employees can order the guide directly from the Colorado Trail by sending a check for \$15 to the Colorado Trail Foundation, P.O. Box 260876, Lakewood, Colo. 80226-0876. Those who order the book are asked to indicate that they are a Martin Marietta employee on the check. A complete set of detailed trail maps also are available for an additional \$20. ■

Galileo deployed for six-year journey to Jupiter

Seven years after it originally was scheduled for launch, the Galileo spacecraft began its journey to Jupiter Wednesday as the Space Shuttle Atlantis blasted off at 10:53 a.m. MDT.

Six-and-one-half hours later, Galileo was deployed from the shuttle's cargo bay and boosted on its 2.4-billion-mile flight by its Inertial Upper Stage rocket.

"The launch of Galileo brings to an exciting close a year in which this country returned to deep space after an 11-year absence," Grover Hall, vice president of NASA Space Systems, said. "This is the second major planetary mission that has been launched this year and the second in which Martin Marietta has been very much involved.

"We feel exploring Jupiter is important in many respects. For instance, Jupiter has storms that look like our hurricanes, so we're very interested in learning more about that planet's weather, which our instruments will allow us to do."

The Astronautics Group built the attitude and articulation control system electronics for the

Galileo spacecraft and three of the six instruments on the probe.

The attitude and articulation control system will maintain the spacecraft's orientation on its flight to Jupiter and during orbital maneuvers around the planet. It also is critical to more than 60 maneuvers the spacecraft must make during the mission.

The Martin Marietta-built probe instruments—atmosphere structure instrument, nephelometer and net flux radiometer—will go to work once the probe enters Jupiter's atmosphere. The atmosphere structure instrument will measure thermal structure and turbulence of Jupiter's atmosphere, the nephelometer will provide information about the planet's cloud structure, and the net flux radiometer will measure solar and planetary radiant energy levels in the atmosphere.

The attitude and articulation control system was built under contract to NASA's Jet Propulsion Laboratory, while the probe instruments were built for NASA's Ames Research Center.

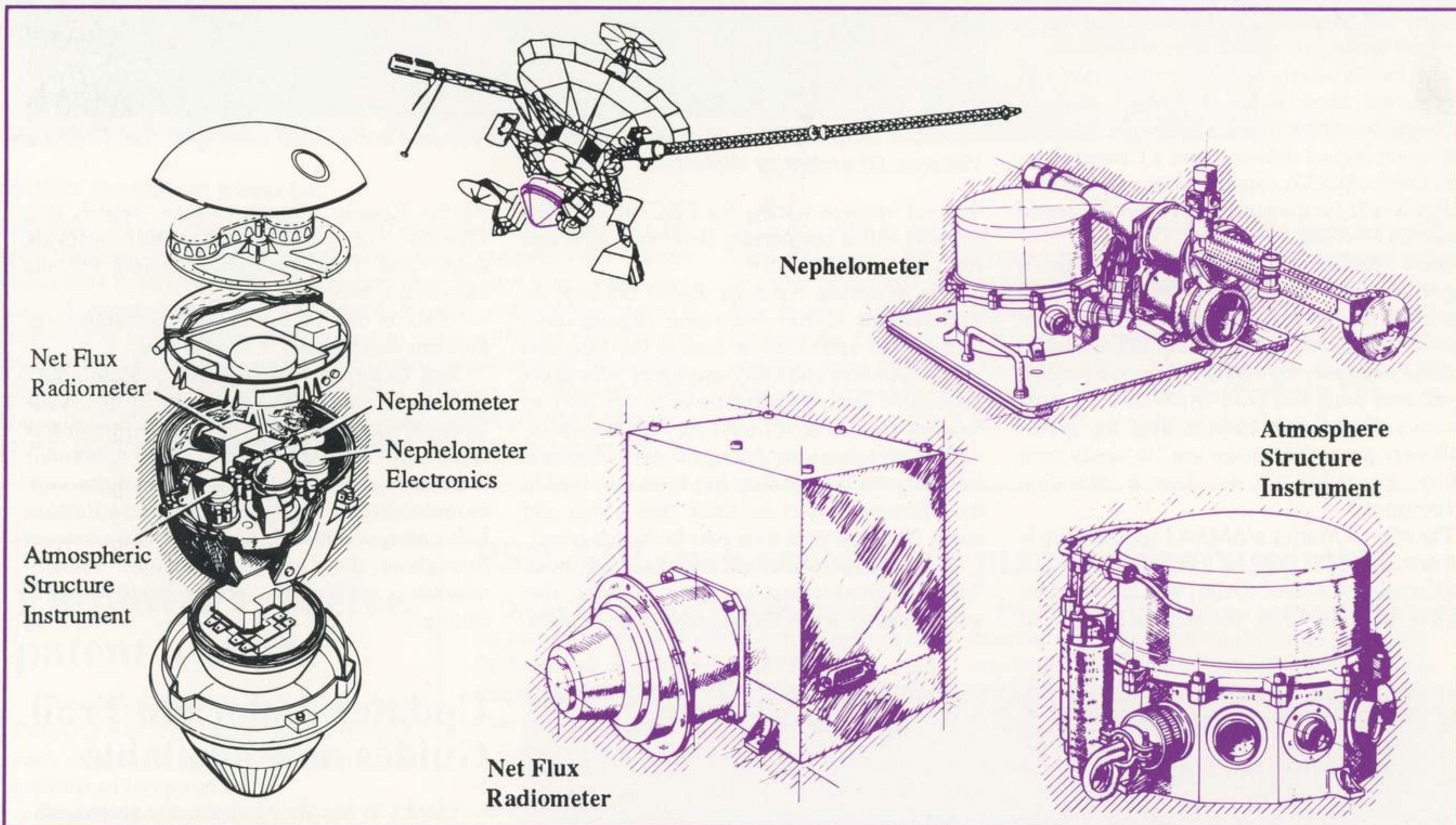
Launch of the Atlantis came three minutes

and 40 seconds into the 29-minute launch window—the only period of time on Wednesday that an Atlantis liftoff would place Galileo into the proper position for its looping flight path around Venus and Earth on its way to Jupiter.

"I believe this mission is an important step in planetary exploration that will tremendously increase our knowledge base," Hall said. "Galileo is the most sophisticated planetary spacecraft this country has ever launched in terms of the data it will collect and data it will send back, and we hope it will be the first of many planetary missions to follow in the next decade."

Atlantis had been scheduled for launch on Oct. 12, but was delayed by an engine computer problem until Tuesday. Poor weather conditions at the Kennedy Space Center forced another delay until Wednesday.

These delays were insignificant to those who have been anticipating Galileo's launch since 1982. The initial launch date slipped until 1986 because of development and scheduling problems, while the Challenger accident further delayed Galileo until this year. ■



Published articles for award consideration due Nov. 17

Employees who have published articles in the last year may submit their work before Nov. 17 to the Publication Awards Committee (PAC) for award consideration. Awards are made annually to recognize authors and encourage employees to make important, creative contributions in the professional fields.

Forms for entering a published article in the competition are available from Barbara Espinoza, Ext. 1-9534. For additional information, contact Jim Hoagland, PAC chairman, at Ext. 1-9291. ■

On the cover

Pictured is an enhanced version of the Air Force's Titan II space launch vehicle that the Astronautics Group is developing to support Department of Defense and Department of Commerce missions. The enhanced launcher has from two to 10 solid rocket motors added to the basic two-stage vehicle to increase payload capability. With the addition of SRMs, performance to polar low-Earth orbit can be more than doubled (from

4,200 pounds to polar low-Earth orbit to 9,800 pounds, depending on the inclination). The Titan II is launched from Vandenberg Air Force Base, Calif. The configuration shown in this concept has been selected by the Strategic Defense Initiative Organization to launch the Midcourse Space Experiment in 1992. The experiment is designed to collect target detection and tracking data.



Long-term service recognized

Several employees recently were honored at a dinner for extended Martin Marietta service. From left to right they are: Donald Crouch and Eric Strauss, each for 35 years of service; James Tutchtan, 40 years; Robert Cary, 35 years; and Charles Jackson, 50 years.

Film processing now offered

The Employee Services department, in conjunction with the newly opened employee store, now is offering film processing.

Drop boxes are located throughout Waterton, Deer Creek, Littleton Systems Center, and South Park West for employees' use.

Employees who take advantage of this service at the Engineering and Administration buildings should pick up and pay for the processing at the employee store, near the main cafeteria in the Engineering Building. All processing done through the other drop box locations is worked on a pre-pay basis. Directions are clearly printed on the film envelopes. Employees should make their checks payable to APG Qualex and include their badge number.

Qualex will process film rolls and discs overnight, while enlargements, slides, and other special requests usually take about five days.

This service is not offered for disposable cameras and, in compliance with company rules, no cameras are allowed on the premises.

Blood drive scheduled

The Belle Bonfils Blood Bank will be at Waterton's Space Support Building, sixth floor presentation room, from 9 a.m. to 2:40, p.m., Nov. 7 and 8. Employees should call Ext. 7-9424 to schedule an appointment to donate. Donors with appointments are given priority over those who have not scheduled.

Employee services/recreation

Lose Weight at Work—Join the Weight Watchers at Work Program beginning Thursday, Oct. 26, at Littleton Systems Center. The ten-week session meets from 11 a.m. to noon in Room 206. The \$15 registration fee has been waived. The \$74 class fee must be paid by Friday, Oct. 20, to Sue Lloyd, Ext. 7-0484. A two-check payment plan is available. Details are on the registration flyers located in the information racks at LSC, Southpark and South Lincoln facilities.

Photography Club—Platte Canyon Photography Club members will meet at 7 p.m., Monday, Oct. 23, at the Public Service building, 10001 W. Hampden Ave. Professional photographer John Ward, who has exhibited in galleries across the country, will give a slide presentation of his award-winning work. Contact Bill Privratsky, Ext. 7-4969, for details.

Basketball Leagues Forming—An organizational meeting for basketball team captains and interested players will be at 5 p.m., Wednesday, October 25, in the Deer Creek Facility's cafeteria. Team rosters and information sheets, describing nights and locations of league play, are in the recreation racks. Completed rosters with payment of \$10 per player are due in the recreation office at Deer Creek by Wednesday, Nov. 1.

Volunteer Basketball Coordinators Needed—Employees interested in Martin Marietta league play are needed as night directors to assist in coordinating basketball. Potential volunteers should call the Employee Services/Recreation office, Ext. 7-6605 or 7-6750, by Oct. 27.

First Place Winners in the 1989 Summer Tennis League: Women's 4.0 singles, Carol Morrison; women's 3.0 singles, Lisa Payne; women's 2.0-2.5 singles, Nancy Wong Anderson; men's 4.5+ singles, Patrick Godsil; men's 3.5 singles, Greg Heinsohn; men's 3.0 singles, Steven Byers; men's 2.0-2.5 singles, Jim Green; women's 3.5-4.0 doubles, Cindy Starnes and Carol Morrison; men's 4.5 doubles, Norm Bowers and Mike Bartolotta; men's 4.0 doubles, Jon McKenzie and Walter Habicht; men's 3.0-3.5 doubles, Lou Ripp and Dave Barnett; and mixed 3.5-4.0 doubles, Cindy Starnes and Guy Harris.

RTD Fare Saver Books—Ten-ride coupon books valued at \$10 are available for \$7.25 at the Employee Services office at Deer Creek, Waterton, and from volunteer recreation representatives at the Space Support Building and LSC.

Career Women's Association—CWA's Resource Committee will sponsor a Rise n'

Shine Breakfast featuring Carol North at 7:00 a.m., Friday, Oct. 27, at the Executive Dining Room, Eng Bldg. She will discuss "Status of Women in Management—Now and in the Future." Cost is \$6.50 for members and \$8.00 for guests. Reservations are due today. The CWA Education Committee invites all Martin Marietta employees and spouses to attend the "Childcare in the 90s" workshop, 7:00 p.m., Thursday, Nov. 2, at SPW I, MIC Room. Marty Harvey, a licensed childcare provider, will discuss how to determine if your childcare facility is having problems and if your child is receiving proper care. Reservations are \$5.00 for members, \$7.00 for nonmembers and are due 3:00 p.m., Mon., Oct. 30, to the nearest CWA booster (see recreation racks for more details).

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