

SPACEPORT

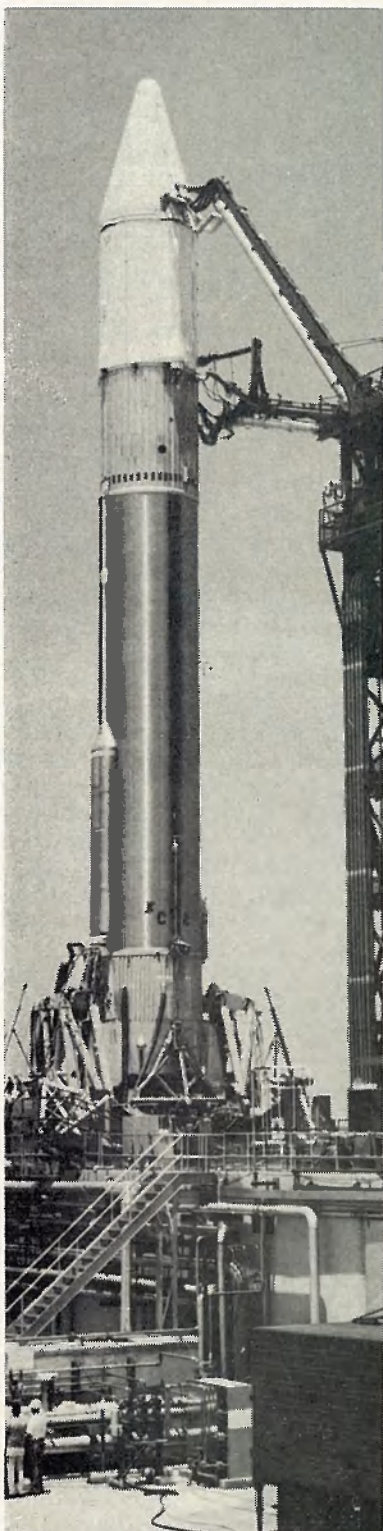


NEWS

Volume 2, Number 48

NASA Launch Operations Center, Cape Canaveral, Florida

November 27, 1963



CENTAUR

CENTAUR SET FOR LAUNCH

The launch of NASA's second Centaur — AC-2 — postponed a day to allow workers to mourn the man who had visited them at Complex 36 only 10 days ago, stood ready for flight this morning.

In this second developmental flight, the 109-foot-tall Centaur will not carry a scientific payload.

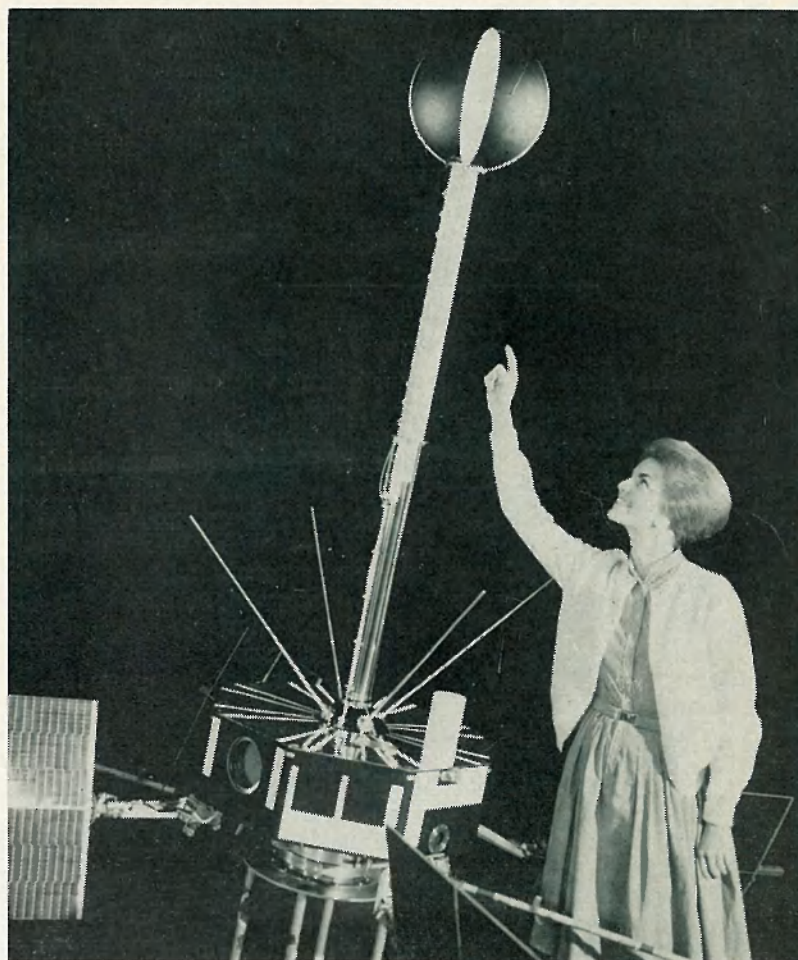
The burned-out second stage — weighing about five tons — is to go into orbit, however, and the weight of a spacecraft will be simulated by developmental instruments located throughout the vehicle to gather flight performance data.

Lift-off thrust of the Atlas booster stage will be 367,000 pounds. The Centaur stage will be powered by two RL-10 engines with a thrust of 15,000 pounds each.

Major test objectives of today's mission are to:

1. Demonstrate the structural integrity of the Atlas Centaur vehicle.
2. Verify the Atlas Centaur separation system.
3. Demonstrate the ability of the Centaur propulsion system to be ignited in space and to burn for 380 seconds.
4. Evaluate the accuracy of the Centaur guidance system.

In addition, the mission will serve to evaluate Atlas Centaur. (See CENTAUR, Page 4)



PHOTOGENIC Sibyle Strickland points out the features of NASA's Interplanetary Explorer Satellite (IMP), that was to have been launched into an eccentric orbit last night.

IMP A To Check Cosmic Rays

NASA's first Interplanetary Explorer Satellite—IMP A—was scheduled to be circling the globe in a cigar-shaped orbit this morning, measuring cosmic rays and solar winds in the space region beyond the influence of the Earth's magnetic field.

The 138-pound, odd-shaped craft was set for launch at press time atop a Delta booster. On board were nine separate scientific experiments.

One of IMP's key objectives is to study charged particle radiation emanating from the sun and sources beyond the sun in interplanetary space.

Such information is of im-

portance to the Apollo manned lunar landing program. It can be used in the design of protective shielding for manned spacecraft.

The "way-out", eccentric orbit IMP is flying will give scientists added information on the composition and depth of the back of the magnetosphere — the envelope formed by the Earth's magnetic field which protects man from the radiation levels experienced in interplanetary space.

The IMP (Interplanetary Monitoring Platform) series, which is to include seven satellites, will make scientific ob-

(See IMP A, Page 5)

The
Inside
Story

See page 8



We're A Day Early

Spaceport News has been published a day early this week, due to the Thanksgiving holiday.



TO PURSUE HIS VISION

All of us in NASA are shocked and deeply grieved at the untimely death of President Kennedy. No great nation in history, faced with a time of turmoil and change, ever had a leader more capable of seeing through to the opportunities which lay ahead. We will sorrow with his family and continue to pursue his vision.

James E. Webb
NASA Administrator

ASK NOT

NASA along with the rest of the world, lost a great friend and leader Friday.

President John F. Kennedy had only six days before his untimely death been here at Canaveral on a brisk spaceport inspection.

That he was an avid supporter of the nation's space program was re-emphasized just last week in a speech the day before he fell victim to an assassin's bullet.

"There will be setbacks and frustrations and disappointments, in space" he said. "And there will be pressures for our country to do less and temptations to do something else. But this research must and will go on. The conquest of space must and will go ahead."

The visit to Canaveral November 16th, was Mr. Kennedy's third trip to the Cape since taking office.

He had listened attentively to briefings; inspected facilities closely; took time out of his schedule to shake hands with mechanics and technicians and to ask them how things were going; he was inquisitive, and his questions reflected a remarkable knowledge of America's space plans.

What historians will write about John Fitzgerald Kennedy in the textbooks to come perhaps will reflect a difference of opinion.

But whatever is written of him, it must be added that he was a man with unlimited foresight. He saw the great potentials of space exploration, and he lent his full support to NASA's programs.

He was, after all, the man who issued the initial challenge to land Americans on the moon by the end of the decade.

Many of us, like the secret serviceman who banged his fists in anguish on the late President's car after the assassination, wish there were something we could do.

There is.

President Kennedy himself best expressed it in the closing remarks of his inaugural address: "Ask not what your country can do for you, ask what you can do for your country."

Let's take it from there.



BILL SCHELL, left, Harry Gobbard and Helen Eagen, all of Base operations, were busy Saturday, moving into a new pre-fabricated building just south of Hangar D. More LOC office personnel are moving into the area this week.

THANKSGIVING NOTES

Miscellaneous notes and quotes on Thanksgiving:

"And therefore, I, William Bradford (by the grace of God today, and the franchise of this good people), say — through virtue of vested power — ye shall gather with one accord, and hold in the month of November, Thanksgiving unto the Lord." (The First Thanksgiving Day, 1622).

"Dear the people coming home, dear glad faces long away. Dear the merry cries, and dear all the glad and happy play. Dear the thanks, too, that we give for all of this, Thanksgiving Day." (Every Day Thanksgiving Day, Harriet Prescott Spofford).

"Thanksgiving, like ambassadors, cabinet officers and others smeared with political ointment, depends for its existence on Presidential appointment." (Ogden Nash)

"There is one day that is ours. There is one day when all we Americans who are not self-made go back to the old home to eat salteratus biscuits and marvel how much nearer to the porch the old pump looks than it used to . . . Thanksgiving Day . . . is the one day that is purely American." (O. Henry).

SPACE ALMANAC

A CHRONOLOGY OF
EVENTS IN SPACE
EXPLORATION AND
RESEARCH.

1 Year Ago

December 3rd, successful ground tests of Automatic Picture Transmission (APT) subsystem were reported by NASA. To be flight-tested on a TIROS satellite next year, APT would eventually enable weather stations to obtain local cloud-cover pictures from orbiting weather satellites.

Reserve School Set

The establishment of an Engineer Department Reserve School on Merritt Island has been announced.

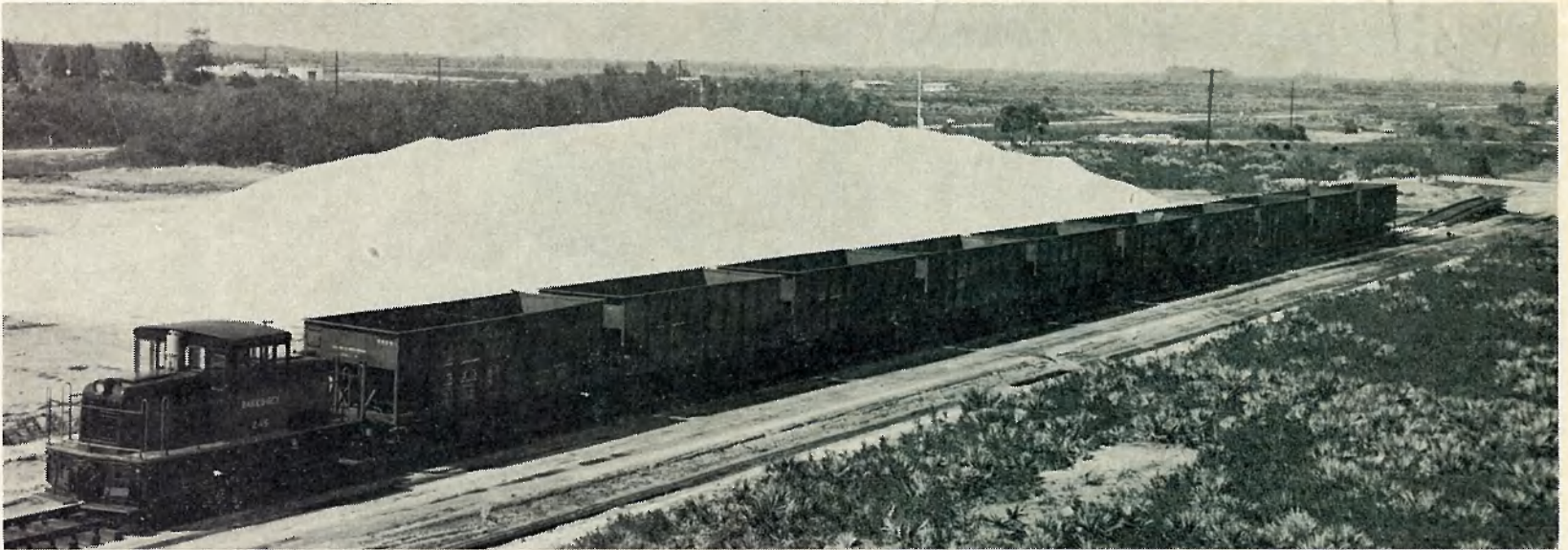
Completion of the school's four-year Engineer Officer Career Course will provide the educational qualifications for promotion in the Army Reserve to the rank of lieutenant colonel.

The unit meets each Thursday at 5:30 p.m. at the Canaveral District Office of the Corps of Engineers on Merritt Island.

Instructor for the school is Maj. Lloyd G. Ernest. Additional information about the school may be obtained by contacting Maj. Ernest at UL 3-6661.

SPACEPORT NEWS

Published each week by the National Aeronautics and Space Administration's Launch Operations Center, Cape Canaveral, Florida.



Telephone Sky Lines Hold Key To Future

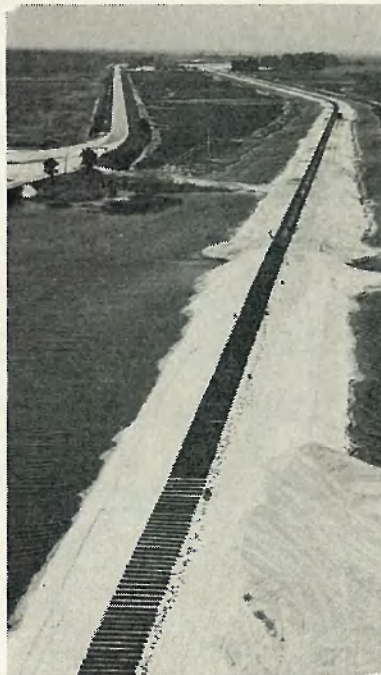
Telephone lines in the skies instead of under the oceans might hold the key to steadily rising demands for intercontinental phone service.

NASA experts say that these lines, in the form of communications satellites orbiting in space, may help close the gap between the demand for global phone service and the technological capability to meet it.

The need for additional facilities is reflected in the fact that in 1940, only 73,300 overseas phone calls were handled.

Last year, five million calls were made.

With communication satellites like NASA's Syncom and Relay already demonstrating their value in international communications, NASA scientists feel that no corner of the world is too remote for high quality communications.



TIES STRETCH out like so many toothpicks, waiting for rails, leading into the Merritt Island Launch Area. In top photo, lime rock is hauled in for use as ballast to stabilize ties.

Merritt Island Railroad Nears Completion Date

It's ironic that in an era where railroad construction is decidedly on the wane, Canaveral's space age boom has lent a helping hand.

NASA is building about 19 miles of tracks, at a cost of approximately \$2.5 million, to transport supplies into the Merritt Island Launch Area, and to the Titan III pad area.

B. B. McCormick and Bailes-Sey are the contractors building the lines, and work is expected to be completed by this January.

Under terms of an agreement, the Florida East Coast Railroad Company will provide tracks from the mainland to the Wilson area, at the intersection of A1A and state road 402.

From that point, NASA's two lines will split. One will run directly east toward the ocean to Launch Complex 39 and the Titan III area, and the other will be routed south past the Vertical Assembly Building to the Merritt Island Industrial Area.

Initially, construction supplies will be hauled over the lines, and later operational supplies will be brought in via rail.

The Florida East Coast line from Wilson runs westward and connects into the main system just southeast of Mims.

Alert Credit Unions

Credit unions should be ever alert to changing conditions and should adapt themselves to the changing needs and desires of their members.

STREAKING AEROBEE MEASURES RADIATION

An Aerobee 150A sounding rocket streaked into the sky over NASA's Wallops Island, Va., Station last week carrying instrumentation to measure ultraviolet radiation.

The 200-pound payload carried two instruments designed to measure the amount and distribution of ultraviolet radiation in the earth's upper atmosphere. Peak altitude was 115 statute miles.

The experiment is part of a continuing program to develop techniques for measuring ultraviolet dayglow and determining from it the physical processes occurring in the upper atmosphere.

During the 8-minute flight, a scanning spectrometer measured the ultraviolet spectrum at several altitudes looking both out into space and back at the earth.

The experiment was designed: (1) to measure the distribution of various atoms and molecules in the earth's upper atmosphere that produce ultraviolet radiation or dayglow; and (2) to ascertain the accuracy of such measurements in determining the composition of a planetary atmosphere by looking down from above.

INMATES DIET TO AID ASTRONAUTS

Eighteen inmates of a California state prison are going without food for six months to help make the astronauts' flight to the moon easier.

They haven't eaten anything solid for two months now, testing a liquid chemical diet for NASA's Office of Space Sciences.

The diet, administered four times a day, is composed entirely of synthetics, and is designed to determine whether man can live on such foods for long periods of time, such as astronauts will experience on lunar and interplanetary flights.

Overweight inmates have lost excess fat since beginning the diet, and underweight prisoners have gained. All have remained in excellent health.

Although the prisoners don't talk much about food, the pinups on their cell walls have changed from cheese-cake to photos of pork chops, hams and chickens.

CENTAUR LAUNCH SET

(Continued from Page 1) taur vibration, elastic behavior and structural adequacy; determine environmental levels; verify trajectory and orbit parameters; and evaluate performance of major subsystems.

To determine how well the flight objectives will be met by AC-2, a wealth of information will be radioed back to ground stations during the flight.

Of the 480 data measurements to be radioed from Centaur, some 320 are devoted to the upper stage.

Vehicle Has Key Role As Payload Launcher

Since it is pioneering liquid hydrogen technology in flight, Centaur has broad applications in other major NASA programs. Hydrogen also will fuel upper stages of the Saturn I, I-B, and V vehicles and NERVA — nuclear engine for rocket vehicle applications.

With its high-energy capability, Centaur will play a key role in launching U.S. scientific payloads of medium weight. It will be capable of lifting some 8,500 pounds of scientific equipment into near-Earth orbit, 2,300 pounds to the Moon, and 1,300 pounds to Mars or Venus.

It is planned for use by NASA in launching the Surveyor softlanding spacecraft to the surface of the Moon and, later, Mariner B spacecraft on missions about the near planets.

Field Projects Branch To Direct Launch

Today's launch will be conducted by General Dynamics-Astronautics under direction of the Goddard Space Flight Center's Field Projects Branch which acts as launch systems manager for the Lewis Research Center.

This is Field Projects Branch's first launch operation with the Centaur but it has logged 19 straight successes with the Delta vehicle.

FPB acts as launch operations systems manager for all NASA unmanned spacecraft at Cape Canaveral which use the Atlas Agena (except for Gemini target vehicles), Atlas Centaur or Delta vehicles.

The first stage portion of the Centaur flight is similar to that of the normal Atlas. The booster's three main engines and two verniers are ignited on the pad and the vehicle released.

After about 15 seconds of flight, the vehicle is to begin a programmed pitchover, or tilting.

After more than two minutes of powered flight, the two main engines are to be jettisoned.

At the time of Atlas sustainer engine cutoff — about four minutes after the lift-off — the Atlas will be separated from Centaur by linear-shaped charges, which cut through the interstage adapter, and eight retrorockets mounted on the aft end of Atlas. This will occur at an altitude of about 140 minutes.

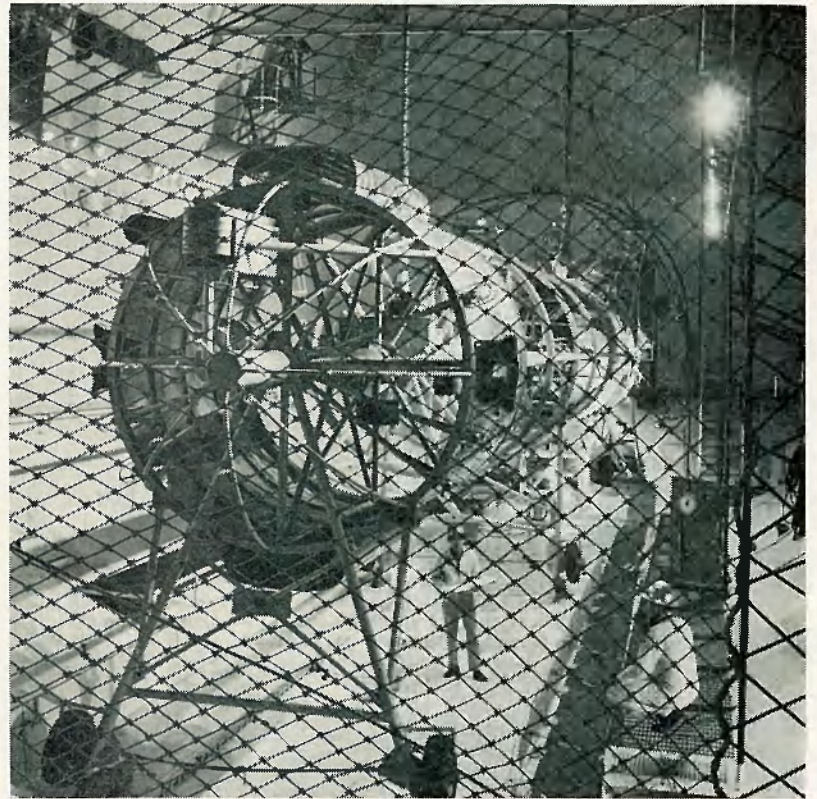
For the AC-2 mission, the hydrogen - oxygen engines will be ignited only once, to demonstrate successful ignition and burn. During later missions, Centaur will fly into a parking orbit about the Earth, coast until it is in the most advantageous position for a lunar or deep space trajectory, then restart its engines to accelerate the vehicle to escape velocity.

This is to be the second of eight planned Centaur vehicle test flights.

The first was attempted on May 8, 1962, and ended 55 seconds after lift-off when a weather shield came off the second stage and was followed by a rupture of the hydrogen tank which resulted in an explosion.

ENGINEERING JOBS

Engineering jobs in the Federal Government increased almost 8 percent between October 1959 and October 1960, to move into second place among major full-time white-collar occupational groups. Totaling 101,626 on October 31, 1960, they accounted for 6.8 percent of the nearly 1.5-million white-collar jobs. This and other Federal employment data was published in the fifth edition of "Occupations of Federal White-Collar Workers" published by the Civil Service Commission.



A SIMULATED Atlas Centaur vehicle configuration is shown at the Lewis Research Center's space power chamber, which can be exhausted to an altitude of 100,000 feet. Tests were conducted to verify a new Atlas-Centaur separation system.

Colorless Liquid Hydrogen Powerful - Temperamental

Hydrogen in its natural gaseous state has been known as a major element of our atmosphere for almost four centuries. Men have been trying to use hydrogen to fly for almost half that time — since 1766 when the English chemist Henry Cavendish announced that hydrogen or "inflammable air" was lighter than air.

Twenty years after Cavendish's work, the first "charliers" began to bob about in the skies above France. Named for their inventor, J. A. C. Charles, these hydrogen balloons fell into disuse when the explosive qualities of hydrogen became apparent. Hydrogen was not widely used again until the dirigible era that ended abruptly with the fatal flight of the Hindenburg in 1937.

Now, as a liquid fuel for Centaur, hydrogen has again entered the propulsion scene. But this time research and development preceded the use of hydrogen. In fact, an entire new technology has been evolved for handling, controlling and utilizing hydrogen in its liquid form.

Supercooled to 423 degrees below zero, this colorless, odorless liquid is powerful — and temperamental. It must be kept at its cryogenic temperature of -423 degrees or it will vaporize. It is very lightweight — only one-fourteenth as heavy as air.

Taming liquid hydrogen for use in chemical engines is a stepping stone toward the eventual use of liquid hydrogen in nuclear rockets. The lightweight, cold liquid hydrogen can be passed through a nuclear reactor. As it passes through, it heats up and the resulting hot gas can be expanded through a rocket nozzle to provide thrust.

Lightweight hydrogen has been called the ultimate fuel. The Sun itself "burns" hydrogen in its internal thermonuclear reactions that provide light and heat to our solar system.

Publishers Impressed On Cape Tour

Some 150 members of the Inter American Press Association, from North, South and Central America toured NASA facilities at Canaveral Saturday, and were thoroughly impressed with what they saw.

"Without question, they were delighted, particularly with the thoroughness of the presentation," said Richard Yager of the Miami Herald, coordinator for the trip.

Lee Hills, publisher of the Detroit Free Press, served as host IAPA committee chairman.

The Association, made up primarily of newspaper publishers, is a non-profit organization of Western Hemisphere publications devoted to the promotion and protection of freedom of the press and the peoples' right to know in the New World.

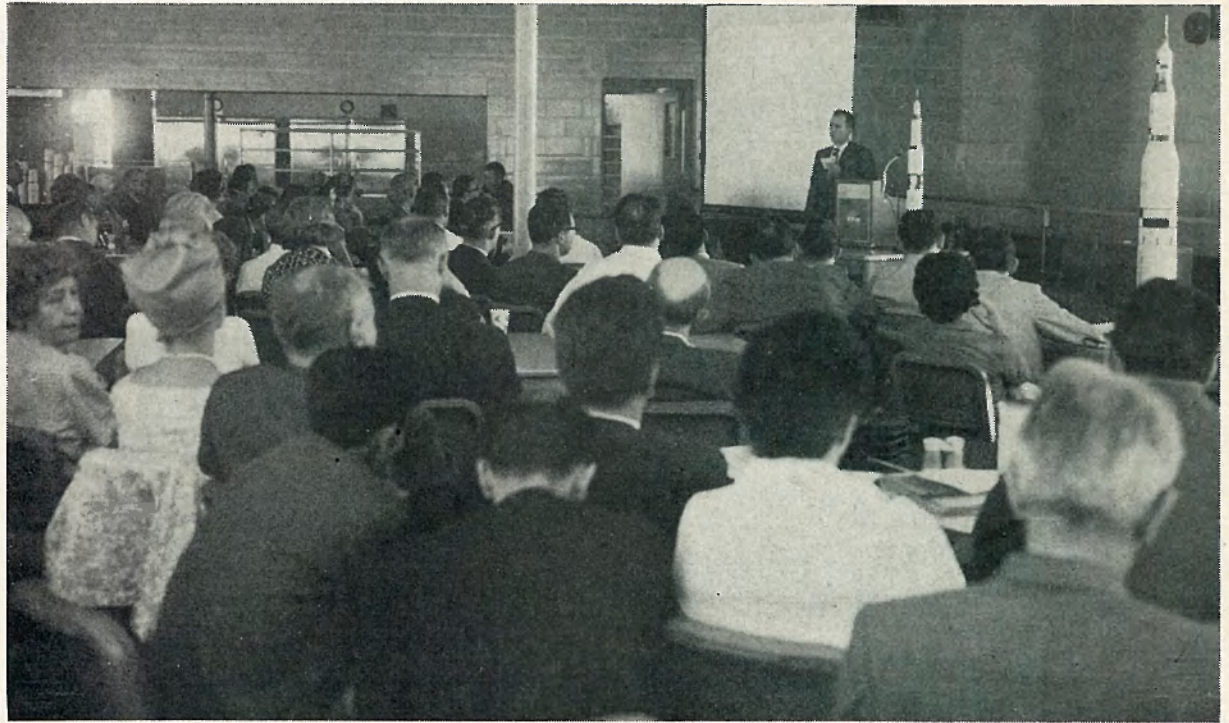
They were given a general briefing on NASA operations upon their arrival at Canaveral by Albert Siefert, Deputy LOC Director.

From there they were briefed on the Delta launch vehicle and the Interplanetary Monitoring Platform satellite by Fred Stevens.

A general briefing on the Centaur launch vehicle by S. B. Brandt followed, then came a presentation on the Gemini spacecraft at Hangar AF by Bill Meyer.

After lunch, Bill Clearman of the Saturn office, took the IAPA members on a round trip to the moon by detailing how the astronauts will make the journey later this decade.

A Saturn SA-5 briefing by Ed Mathews and close look at the giant vehicle on Launch Complex 37 closed out their tour.



MEMBERS of the Inter American Press Association listen attentively to Bill Clearman's briefing on the Manned Lunar Landing Program. The group toured Canaveral Saturday.

IMP A

(Continued from Page 1)

servations in the same general area of interplanetary space over an extended period of the solar cycle.

These long-term observations may result in clearer understanding of the development and dynamics of the solar system.

The IMP's design is similar to the earlier highly successful Explorer XII, XIV and XV satellites.

It has an octagon-shaped base, 12 inches deep and about 28 inches in diameter. All but two of its experiments are mounted in this eight-sided base.

Protruding from the top of the satellite — like a one-sided dumbbell — is a rubidium-vapor magnetometer mounted on a boom which telescopes out to a distance of six feet in orbit.

SATELLITE TO STUDY MAGNETIC FIELDS

For thousands of years man has looked into the seeming infinity of space and thought of it as an empty void. Only recently has this thesis been proved incorrect.

We now know that far from being empty expanse, space is filled with an ionized gas—an electrically neutral mixture of atomic ions and electrons.

Unlike air in the atmosphere, particles in space move at tremendous speeds. Their continual movement throughout the universe is controlled by magnetic fields. A variety of these fields are believed to exist in the universe.

In our solar system, however, it is the Sun's magnetic field that conditions the movement of particles in interplanetary space. These fields are dramatically altered by periodic disturbances which occur on the surface of the Sun.

The IMP with its unique geocentric orbit of high eccentricity permits the investigation of major magnetic field phenomena in space.

The primary interest in the study of the interplanetary medium is the interplanetary magnetic field and its ambient state.

Simultaneous measurements of magnetic field phenomena on the IMP spacecraft and later spacecraft will provide additional information about interplanetary space.

CS STATISTICS

In 1954 there were 146 Federal civilian employees for every 10,000 people in the Nation; in 1962 the ratio had dropped to 133 in 10,000. In 1954 there were 276 State and local government employees for every 10,000 citizens; in 1962 the ratio had increased to 370 employees to 10,000 citizens.

Radiation Causes Vanguard I's Voice To Change

Scientists at NASA's Lewis Research Center are studying the radiation phenomenon that they believe caused Vanguard I's voice to change.

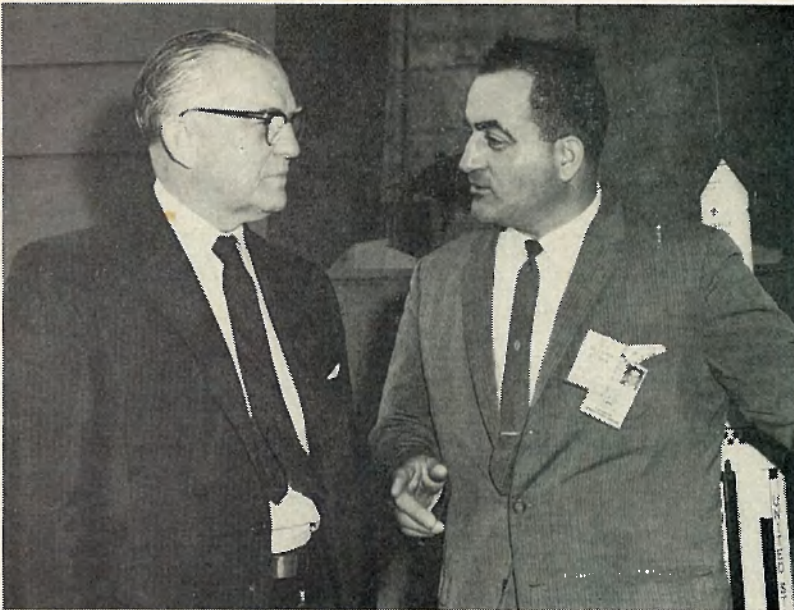
Vanguard I, launched March 17, 1958, first noted the pear-shape of the Earth. The satellite had continued to transmit information for more than five years when its transmit-

ting frequency began to change.

Dr. Jim Blue, Lewis scientist, attributed this "voice change" to a structural change inside Vanguard's quartz crystal. He explained that all materials subject to radiation in space are susceptible to atomic rearrangement or damage.

In the case of Vanguard I, radiation damage probably changed the natural frequency of the crystal and, thus, Vanguard's voice.

Dr. Blue's radiation physics group is using the Lewis 60-inch cyclotron to study the basic aspect of radiation damage — or, what defects occur in which materials?



CONGRESSIONAL visitor, Senator John Stennis (D.-Miss.), left, is briefed on the Saturn project at Complex 37 by Rocco Petrone, Assistant LOC director for Plans and Projects Management. The Senator toured NASA-Cape facilities last week.



THREE comic captions were submitted by LOC employees last week to fit the situation facing astronaut Neil Armstrong, left. Dave McElroy of ADPB, submitted, "I've heard of the Chinese Water Torture, but this is ridiculous." J. C. Davidson, of LO-VE, sent in, "Too much vermouth," and Prosper Fagnant of the Director's Office, mailed "Please Mommy, I don't have to potty."

Don't tell-a-phone our secrets.

NASA Pilots Fly Planes At 1,120 mph

NASA engineers and pilots working in cooperation with the Federal Aviation Agency, have completed a series of studies simulating flight profiles of a supersonic transport (SST) at the Flight Research Center, Edwards, Calif.

They used a two-place Navy A5A jet bomber to study possible air traffic control problems and to obtain operational data for planning future supersonic transport flights.

Twenty-one simulated flights were programmed along busy federal airways converging on Los Angeles. The airplane was put in several phases of flight—takeoff, climb, level cruising, descent.

In the climb up to 30,000 feet, subsonic speed was maintained. Then the airplane was flown in level flight at 50,000 feet at supersonic speed of Mach 1.7 (about 1,120 mph).

FAA controllers, monitoring the simulated flights, said they had no difficulties during the descent and landing phases; however, they had control problems during the take-offs and climb-out phases because of greater speeds and faster climb.



FRIENDS of Susie Walls gave her a farewell party and gift last week as she cleaned out her desk prior to transferring to the Marshall Space Flight Center. She had been with LOC's Material Support Branch.



FRED TUCKER of Material Support, became a father last week, and it was the eighth baby to employees of that branch in the past 10 days.

600-DAY PLANETARY FLY-BY PLANNED

A Martian's first look at something from another planet may very well be a spacecraft designed in California. More specifically, it could be the concept submitted to NASA under a study conducted by engineers and scientists of the Lockheed Missiles & Space Company.

This interplanetary space vehicle would be capable of fly-by missions of Mars and Venus, with a crew of three.

The spacecraft would contain systems capable of supporting the crew and providing for their physical requirements. Within the capabilities of planned boosters, it could be launched by a single vehicle, erected in Earth orbit and then injected into an interplanetary orbit.

To maintain a constant state of alertness, to avoid boredom and to keep the astronauts in top physical condition, crew changes in the control center would be made every four hours.

Velocity contour charts would provide an exact means to determine any earth departure date for an interplanetary trip, departure velocity, planetary arrival velocity and arrival date, plus planetary escape velocity and Earth arrival velocity.

For example, on a two-planet fly-by in 1970, Earth departure date would be December 25. The spacecraft would pass Mars November, 1971, go by Venus June 7, 1972, and return to Earth on August 21 of that year, a 600-day roundtrip.

Germany Joins List

The West German Republic has joined the growing list of nations participating in global communications via satellite.

RELAY I, NASA's orbiting communications satellite, was used to carry the inaugural message from a new German ground station to the United States last week.

Richard Stuecklen, head of the German Republic's Post Office and Telecommunications talked via the satellite with NASA Administrator James E. Webb.

Their conversation was the first official use of the station which joins a world-wide network of ground stations for RELAY experimentation.



BILL MORTON, Vice President of the Indian River Sports Car Club explains procedures of Gymkhana race to NASA employees, left to right, John Bentley, Leroy and Martha Barnes, and Charles Buckley. The Barneses and Buckley are frequent Gymkhana competitors, and Bentley has raced professionally.

100,000 DEGREES? ONLY LUKEWARM

When you mix up a lot of things that are hot — 100,000 degrees or more — how hot is the mixture?

According to physicists at NASA's Lewis Research Center here, such a mixture of electrons and ions might well be no more than barely warm to the touch.

This is because they are so small compared with the space separating them that they cannot radiate their intense heat.

Becomes "Plasma"

When the molecules in a gas become sufficiently superheated, they will break up into their component positive ions and negative electrons and become a "plasma." Although the wildly swirling electrons have been measured at temperatures of more than 400,000 Fahrenheit, they are only a small part of the total plasma volume and the entire plasma is seldom warmer than room temperature.

Plasmas contain a great deal of energy but Lewis researchers have been exploring the prospect of adding even more energy by forcing the randomly swirling particles into resonant motion by piping radio frequency into a hydrogen plasma.

When these waves are at the correct frequency, the ions swirl in tiny circles that get bigger as the ions move faster. As they go faster, they get hotter.

The plasma Physics Branch

at Lewis is studying the possibility of initiating and controlling a fusion reaction in a plasma.

This heating project, called ICRA for Ion Cyclotron Resonance Apparatus, is in line with the possibility of using a controlled thermonuclear fusion reaction for propulsive power. The hydrogen bomb is controlled thermonuclear fusion and the stars and suns of the universe are examples of natural thermonuclear plasmas.

Fusion will occur when two molecules bump into each other hard enough to stick together or fuse. In the reaction being considered, the molecules will fuse only momentarily before splitting up again into two molecular particles—but not the original two. This reaction is one billion four hundred thousand degrees, but Eli Reshotko, who directs the ICRA group, says 600,000,000 degrees is a "reasonable" first goal to test the idea.

A plasma can carry an electric current just like a copper wire, thus becoming a source of possible propulsive power. A current-carrying plasma placed in magnetic field will move at a high velocity in a direction opposite to both fields. Thus, an accelerated plasma moving rearward could drive a spacecraft forward through space in much the same way that hot gases from gallons of burning fuel now lift satellites into orbit.

Plans Being Developed

Plans are being developed jointly by the Civil Service Commission and Bureau of the Budget to update the standards which govern the establishment and operation of Federal employee health units.

Goal of the study is to extend health service to many Federal employees who have not yet been included in an employee health program.

WINDOWS, WINDOWS EVERYWHERE — AND NOT A ONE TO OPEN

There are 1,158 windows in the headquarters building at the Marshall Space Flight Center, and not one of them opens.

The environmental control system is as sophisticated as those in the giant Saturn rockets built there.

It consists of 103 thermostats strategically located in the nine-story building. Each



IRSC Club To Sponsor Gymkhana

Colonel J. W. Whitaker, recently appointed Activities Chairman for a "Fun Festival to be sponsored by the Satellite High School Parent-Teacher-Student Association on Saturday, December 7, has announced an afternoon and evening program of interesting entertainment.

A major event of the Fun Festival will be a Gymkhana, conducted by the Indian River Sports Car Club. Ray Bridenbaugh, President of the IRSCC, describes the Gymkhana as a precision test of driving skill and automobile handling around an intricate and tightly prescribed course in a minimum period of time.

Registration for the Gymkhana, which is expected to draw sports car enthusiasts from a large segment of east-central Florida, including several LOC employees, will begin at noon and the competition will begin at 1 p.m. Seat belts will be required in addition to a \$2.00 registration fee for club members and \$3.00 for all other entrants.

The IRSCC is donating all receipts to the P.T.S.A., which is providing the insurance coverage and appropriate trophies for the event. Bridenbaugh will serve as Event Master for the Gymkhana and there will be no charge to spectators.

Other activities included in the Fun Festival, and which are also free to the public will be a showing of most of the 1964 model automobiles, a hobby exhibit, and a concert by the S.H.S. Advanced Band.

is pneumatically connected to a control center which monitors humidity, equipment operation and outside temperatures.

A solar thermometer turns on the cooling system when outside temperature hits 65 degrees. An outside temperature of 35 degrees automatically kicks up more heat from the Center's steam plant.

VILLAGE SMITHY'S 'MIGHTY MAN' MYTH NO LONGER VALID

The village smithy still stands.

At Marshall Space Flight Center the blacksmith is not a "mighty man" as in Longfellow's poem — it's a whole shopful of "mighty men" who thrive on "hardware" problems of the space age.

Located in the middle of modern high-speed computers and automatic facilities, the Test Division Support Shop operates on the old-fashioned ingenuity of the village blacksmith in an age where there is little engineering precedent in testing giant space vehicles.

The "smithies" move the big space boosters around at Marshall and fasten them in stands for engine tests.

From only a rough drawing, they build a giant steel blast deflector which has stood up for years under the 1.5 million pound thrust blast and shows little sign of wear.

The shop doesn't get into production of rockets — although it tools small scale rockets for testing. Rather, it deals in a variety of things, and each one can present an unprecedented challenge.

Saturn V Supplement

NASA has announced the signing of a supplemental agreement to the contract with the Boeing Co., Seattle, Wash., for development, fabrication and test of the first stage of the Saturn V manned lunar landing space vehicle.

The agreement realigns manufacturing, assembly and support responsibilities for the 7.5 million pound thrust first stage (S-IC) at an additional cost of \$27,443,676.

Under a contract awarded in February, 1963, 10 S-IC's — one test stage and nine flight vehicles — will be built by the Boeing Company Saturn Booster Branch at the Marshall Center's Michoud Operations in New Orleans.

Girl Friday To Marry

Petite Betty Latham, girl-Friday of the LOC Protocol Office, will marry Gary de Grow of Chrysler, Saturday in their native city, Nashville, Tennessee.



ALL SET to do her own turkey shooting with this pilgrim-vintage musket is pretty Connie Fletcher, receptionist in the E and O building. Connie reminds us of the holiday tomorrow.



Dear Sir:

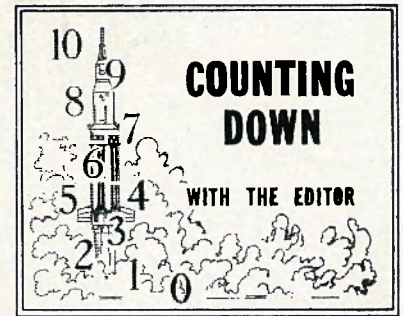
How and where will we get the money to build enough rockets to send most of the people in the U.S. to the moon, and what would the other countries do without us?

Mark B.
Cincinnati, Ohio

NASA NEWCOMERS

Nine new employees have joined NASA-LOC in the last two weeks. They are: James Dalton, Paul Davis, Alice Hansen, Robert Hegwood, John Miraglia, Harry Neas, Wilbert Robinson, Anthony Shostak, Jr. and Ernest Swieda.

Six new employees recently joined the Launch Support Equipment Engineering Division in Huntsville. They are: William Clautice, Jesse Hawkins, Robert Helton, Hugh Kilgo, Edwin Morgan and Robert Owens.



Results of the Spaceport News' readership survey have been totaled, and although response was disappointing — two-thirds of one per cent — those who did answer were pretty comprehensive in their comments.

Of the 20 readers who responded, 10 thought the News was an excellent employee publication, eight thought it good, and one fair.

Criticisms ranged from "you carry too much news that the daily papers have already run," to "not enough 'little' people are covered."

One reader expressed a desire for more technically-slanted articles, whereas another said he wanted less technical emphasis ("a newspaper should be a get away from it thing.")

About 40 per cent of those answering the survey said they read Spaceport News cover to cover. Another 35 per cent read most of it, and 10 per cent read only some articles.

Half of the answerers wished to see more use of photos and cartoons.

Of the individual types of articles, the Capeside Inquiring Photographer was the most popular, and was followed closely by pinups, community living activities, items of historical interest, profiles of employees, stories about operations of specific departments or offices, space feature articles and items of feminine interest.

Some of the features that weren't so favorably received were announcements of births and marriages, service award photos and stories, newcomers, government benefits and space almanac.

All suggestions will be carefully considered in a continuing effort to improve the paper.

But alas, if Spaceport News were ever to go commercial, it would probably fold fast. Most of those who answered the survey said they would be unwilling to pay a dime for it,