

Oceanographers To Research Mississippi Delta For NASA

A third research flight over the waters off the Mississippi Delta by Texas A&M space oceanographers is scheduled Monday.

A&M scientists are in the midst of a study to learn ways of conducting oceanographic research from space. The research is funded by the U. S. Naval Oceanographic Office in conjunction with NASA's Earth Resources Program.

Technically, it's a part of the Apollo spacecraft applications program.

Under one phase of the project, researchers are seeking to determine what happens to Mississippi River water when it enters the Gulf of Mexico. Long-range reamals may produce new information affecting fishing, sedimentation and buildup of the delta.

DR. DALE LEPPER, project head, expressed hopes for good weather for the flight which will originate in New Orleans. The quality of information gathered during the second flight, an October mission, was seriously affected by bad weather, he said.

Among the changes from earlier flights will be lower level passes for taking pictures. Photographs will be made from 1,000 feet or less altitude, at least 500 feet lower than in the initial flight July 7.

Dr. Guy A. Franceschini, oceanography and meteorology researcher for A&M, and Jim Arnold, a graduate student in meteorology under Dr. A. H. Thompson, will conduct the research for A&M.

Dr. Franceschini is attempting to develop a method of obtaining a true picture of sea surface temperatures although there may be intervening clouds between the airplane and the ocean.

ARNOLD is interested in cloud pattern relationships to ocean temperatures.

Approximately six tons of sophisticated scientific equipment is aboard the Convair 240 aircraft.

Project coordinator Don Walsh, who is writing his master's thesis about the research, said results of lower-level flights may include better infra red measurements closer to actual temperatures at ground level. Checks will be made with surface vessels to verify data obtained from the air.

SAC Officer Describes Use Of Computers

Other photographs will be shot from 50,000 feet to give an overall view of the area and aid in future development of instrumentation.

If the A&M research is successful in proving that oceanographic research can be accomplished from the air, additional research may be conducted from Apollo spacecraft in outer space.

Col. William Ratchford of the Strategic Air Command Headquarters at Omaha, Neb., told the Society for the Advancement of Management and the Association of Computer Machines that SAC is highly computerized.

Ratchford's topic was "Management Systems and Data Processing." As an introduction he showed a 20-minute film that he classified as "a slight bit of propaganda." The movie showed how SAC combat readiness is maintained to cope with any possible defense threats.

Computers are used by SAC for a variety of things, one of the most important being the analysis of SAC strength as compared to the strength of our enemies.

The communication system of SAC is complicated and vast. Direct telephone communication is maintained at all times with the President as he is the only person who can authorize the detonation of nuclear weapons.

Col. Ratchford explained the set-up of the SAC Control System with a series of slides. The system is manned by 375 people with an annual payroll of \$2,800,000. Ratchford noted that most of this has happened since 1956.

The mission of the SAC Control System embodies four parts: Force Control, Reconnaissance, Force Management, and Future Force Structure.

Four Air Force officers who are experts in the field of computers accompanied Ratchford and answered questions from the more than 100-member audience after the formal presentation.

Atom Smasher Described In Grad College Lecture

Construction of the world's largest atom smasher and super high-power microscope involved sandwiching 80,000 four-inch rings and discs into a tube two miles long.

Dr. Jesse W. M. DuMond, California Institute of Technology physics professor, Tuesday night gave a Texas A&M Graduate College lecture audience insight into the construction and working fundamentals of Stanford's two-mile linear accelerator.

Dr. DuMond served as a consultant for optical alignment of the 10,000-foot research facility. A physics student of his at Cal Tech, Dr. W. K. H. (Pief) Panofsky, is now director of the Stanford accelerator and Dr. DuMond's son-in-law.

"PIEF DIRECTED construction of the \$114 million SLAC (Stanford Linear Accelerator Center) facility," Dr. DuMond commented. "I'm proud of the fact that he got it built in six years, inside the estimate."

The huge research instrument pulses electrical energy at 24,000 kilowatts peak power into the tube, forming waves on which injected electrons ride at less than one per cent below the speed of light.

"Panofsky says relativity is no longer a theory," the National Academy of Sciences veteran related. "It's engineering, otherwise the accelerator wouldn't work."

"The SLAC accelerator operates at 20 billion electron volts," he described. "At 360 pulses a second, only three pulses—or 1/120th of a second—the instrument generates heat so fast in a cubic centimeter of tungsten that it's broken in three pieces."

THREE LARGE magnetic spectrometers in the multiple-structured switching yard will be used to study targets scattered when placed in the electron beam, DuMond added.

He said the accelerator is also "a super high power microscope." Optical microscopes enlarge an object the size of a living cell, consisting of millions of atoms.

Electron microscopes "see" objects the size of a virus, made up of thousands of atoms.

"Stanford's Mark III accelerator can 'see' an atomic nucleus," DuMond pointed out. "The two mile accelerator can pick out a proton, a particle inside an atom nucleus."

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 Name: Lonnie Benard
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THE GRADUATE COLLEGE
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 Name: Wiff, Donald Ray
 Degree: Ph.D. in Physics
 Dissertation: An Electronic Energy Band Calculation of Cubic Boron Nitride Via the Augmented-Plane-Wave Method
 Time: December 14, 1966 at 12:00 p. m.
 Place: Room 146 in Physics Bldg.
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THE GRADUATE COLLEGE
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 Name: Gaul, Roy David
 Degree: Doctor of Philosophy in Physical Oceanography
 Dissertation: Circulation over the Continental Margin of the Northeast Gulf of Mexico
 Time: December 14, 1966 at 3:00 p. m.
 Place: Room 209-C-3 in Goodwin Hall
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 Name: Hoyle, John Richard
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 Time: December 14, 1966 at 2:00 p. m.
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 Name: Buhr, Johann Hermann
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 Dissertation: Freeway Entrance Ramp Merging Control Systems
 Time: December 12, 1966 at 3:00 p. m.
 Place: Room 15 in Highway Research Center
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THE GRADUATE COLLEGE
 Final Examination for the Doctoral Degree
 Name: Smith, William Boyce
 Degree: Doctor of Philosophy in Statistics
 Dissertation: Parameter Estimation in the Presence of Incomplete Sets of Sufficient Statistics
 Time: December 13, 1966 at 3:00 p. m.
 Place: Room 102 in DPC-Statistics Bldg.
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