

Scientists Planning Gulf Science Year

Scientists are now planning the most intensive study of the Gulf of Mexico ever attempted—a Gulf Science Year which will include among varied projects, research on those actions of sea and air which cause such disasters as Hurricane Beulah.

A fleet of ships, underwater craft, instrumented buoys and platforms, and possibly even satellites, may be used to probe the weather, marine life, circulations, geological structures, effects of man and other processes in the Gulf. Target date is 1970.

Led by Dr. Richard A. Geyer, head of the Oceanography Department at Texas A&M University, the planning effort is sponsored by a research combined of 16 universities and institutes, the Gulf Universities Research Corporation (GURC).

The total program of planning, observing, analyzing and reporting results may span a four-year period. One specific intention of the program is to provide scientific data which would increase man's effective use of the Gulf.

Dr. John C. Calhoun, vice president for programs at Texas A&M University and president of GURC, explains that "the Gulf provides a natural laboratory which is large and complex enough to provide a basis for generalization to other areas, yet small enough to be a pilot region for testing integrated environmental research."

"Of all the continental shelf areas, there is more invested in the Gulf than in any other area," he added. "As better economical use of continental shelf areas is investigated, there is no more suitable area than the Gulf where a major investment has already been made."

Already, a steering committee has been formed and panel chairmen selected for seven areas of scientific interest:

Dr. Luis R. A. Capurro of Texas A&M, General Circulation in the Gulf; Dr. Anton Hales, Southwest Center for Advanced Studies, Dallas, with Dr. Charles Helsey of SCAS as deputy, Panel on Tectonics (geological structures); and Dr. M. A. Estoque, University of Miami, Air-Sea Interaction.

Biological Processes and Biogeography panel is headed by Dr. Walter Abbott, Gulf Coast Research Laboratory. Dr. Ernest Gloyna, University of Texas, directs research concerned with Man's Effect on the Gulf. Dr. William B. Heroy Jr., Geotechnical Corporation, Dallas, heads investigations on Man's Use of the Gulf. And Dr. William Walton, Pan-American Petroleum Corporation, and Dr. Arnold Bouma, Texas A&M University's Department of Oceanography, serve as co-chairmen for the panel on Sedimentary Processes.

The steering committee for the planning of the Gulf Science Year is composed of Dr. Geyer; Dr. Carl Oppenheimer of Florida State University; Dr. Clarence Durham of Louisiana State University; Dr. Lyman Reese of the University of Texas; Dr. John Clothworthy of the University of Miami; Dr. Harris Stewart of the Environmental Science Services Administration; and Dr. Claude Hocott of Esso Production Research.

"It's about time we had a comprehensive research effort in the Gulf," said Dr. Geyer, who is vice chairman of the Commission on Marine Science, Engineering and Resources. "It will be comparable to the Indian Ocean Expedition. Of course, A&M has been active in the Gulf since 1949, but here we're talking about synoptic research—covering the whole area at the same time."

"It may be international in scope. Our friends in Mexico should have a research ship by next year operating out of Vera Cruz," he continued.

Dr. Geyer said it is hoped that at least five or six oceanographic vessels would be available for the GSY.

"We hope by then (1970) to

get some satellite coverage," he noted. "We have a project going at A&M with NASA and Naval Oceanographic Office on use of remote sensors to study the mouth of the Mississippi."

If studies show use of ultraviolet, infrared, photographic and other devices can provide valuable data on oceanography, then perhaps an experiment package could be put aboard a weather or scientific satellite by 1970, Geyer said. One value here, he explained, would be to provide "ground truth" readings against which to check satellite data.

One major emphasis, he related, will be on those Gulf processes which change with time—time dependent variables. One ship investigating an ocean current, for instance, may take weeks to complete the study, while the current may have changed in the meantime. But a number of ships or other devices can provide simultaneous studies, Geyer pointed out.

The planning group already has identified five products of the GSY: (1) An intensive study and coordinated investigation effort on a pilot ocean and continental shelf area to be used as a basis for doing broader global efforts.

(2) An analysis of the Gulf system as a unit—its hydro-sphere, geosphere and atmosphere, including their boundaries, their processes and their living systems.

(3) A scientific basis for understanding natural changes in the Gulf and actions related to multiple use of ocean resources, stimulation of resource development, recreational uses of the Gulf, formulation of regulations and other needs requiring scientific and environmental data.

(4) An inventory of the existing spectrum of Gulf research activities and their trends.

(5) A short-term impulse of investigations that will direct future research into the most fruitful channels.

"The GSY is a significant venture for GURC and the Gulf region," Dr. Geyer said. "The scope of the investigations will be on



PLANNING GULF SCIENCE YEAR
Dr. John C. Calhoun, left, and Dr. Richard A. Geyer look over a map of the Gulf of Mexico as they discuss plans for the biggest scientific investigation of the Gulf ever made. The two Texas A&M University officials are leading the effort sponsored by the Gulf Universities Research Corporation, a research combined of 16 universities and institutes.

such a large scale that no single institution could manage such a program effectively. GSY will involve the coordination of the efforts of a large number of organizations in a significant regional program of research for the Gulf of Mexico."

It is possible, noted GURC President Calhoun, who is chairman of the National Academy of Science Committee on Oceanography, that total research efforts might be more than \$10 million. For planning such a venture, funds are being sought from government and private agencies which support science.

Members of the non-profit GURC are Florida State University, Gulf South Research Institute, Louisiana State University, Rice University, Southern Methodist University, Southwest Center for Advanced Studies, Southwest Research Institute, Texas A&M University, Texas Christian University, Texas Technological College, Tulane University, University of Alabama, University of Florida, University of Houston, University of Miami and University of Texas.

Texas A&M To Participate In Atlantic Ocean Research

A cooperative oceanographic research project between the United States and Argentina will be continued in the Southwest Atlantic during 1967-68 under National Science Foundation support.

Dr. Luis R. A. Capurro of Texas A&M's Oceanography Department will direct studies carried out in cooperation with scientists and government agencies of Argentina. NSF has granted \$36,300 through the A&M Research Foundation for the research.

Under study is a well-defined front between the warm Brazil current and the polar Falkland current in the Southwest Atlantic. "Little was known of the frontal system until the research program began last year," Capurro said. Three cruises were completed in 1966-67, for infrared thermometer measurements, current profiles and synoptical ocean coverage.

Captain Capurro, a former Argentine Navy officer, said seven days will be spent at each of 150 stations this year. Three ships scheduled for 140 days on the research are supplied by Argentina's Hydrographic Office and National Institute of Oceanography.

An aircraft will be used for obtaining sea surface temperatures and frontal photography. A former Woods Hole Institution research ship, Atlantis I will be employed. The specially designed research vessel has been in outfitting drydock at Boston.

Capurro commanded several oceanographic ships, an icebreaker and was Argentine Navy hydrographer four years. He is a native of Buenos Aires.

Minister To Speak To Unitarians

"Man as a Machine" is the topic on which Richard A. Stadelman will speak to the Unitarian Fellowship Sunday at 8 p.m. at the Unitarian Fellowship Building, 305 Old Highway 6 South, in College Station.

Mr. Stadelman arrived this September to join the staff of the Department of Philosophy at Texas A&M. He has previously taught Philosophy at Tulane University and Louisiana State University in New Orleans. He received his A.B. degree with honors from Earlham College in 1954 and in 1958 received his Bachelor of Divinity degree from Yale.

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9:00 A.M.—Bible Study
5:15 P.M.—Young People's Class
6:00 P.M.—Worship
7:15 P.M.—Aggie Class
9:30 A.M.—Tues. - Ladies Bible Class
7:15 P.M.—Wednesday - Bible Study

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8:00 A.M.—Adult Service

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7:30 P.M.—Wednesday Vesper

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8:45 A.M.—Morning Worship
7:30 P.M.—Wednesday Vesper

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(Missouri Synod)
10:00 A.M.—Bible Class
8:45 A.M.—Morning Worship
7:30 P.M.—Wednesday Vesper

CHURCH OF THE NAZARENE
9:45 A.M.—Sunday School
10:45 A.M.—Morning Worship
6:30 P.M.—Young People's Service
7:00 P.M.—Preaching Service

CHRISTIAN SCIENCE SOCIETY
9:30 A.M.—Sunday School
11:00 A.M.—Sunday Service
11:00 A.M.—2 P.M.—Tues. Reading Rm.
7:00-8:00 P.M.—Wed., Reading Room
8:00 P.M.—Wed. Evening Worship

FIRST BAPTIST
710 Eisenhower
9:30 A.M.—Sunday School
10:45 A.M.—Morning Worship
6:10 P.M.—Training Union
7:20 P.M.—Evening Worship
6:30 P.M.—Choir Practice & Teachers' meetings (Wednesday)
7:30 P.M.—Midweek Services (Wed.)

SECOND BAPTIST
9:45 A.M.—Sunday School
11:00 A.M.—Church Service
6:30 P.M.—Training Union
7:30 P.M.—Church Service

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8:30 & 10:45 A.M.—The Church at
Worship
9:30 A.M.—Bible Classes For All
Holy Communion—1st Sun. Ea. Mo.

CENTRAL CHRISTIAN CHURCH
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9:45 A.M.—Bible School
10:45 A.M.—Morning Worship
6:00 P.M.—Youth Hour
7:00 P.M.—Evening Worship

ST. MARY'S CATHOLIC
Sunday Masses—7:30, 9:00 and 11:00

FAITH CHURCH UNITED CHURCH OF CHRIST
9:15 A.M.—Sunday School
10:30 A.M.—Morning Worship
7:30 P.M.—Evening Service

COLLEGE HEIGHTS ASSEMBLY OF GOD
9:45 A.M.—Sunday School
11:00 A.M.—Morning Worship
6:30 P.M.—Young People's Service
7:30 P.M.—Evening Worship

A&M METHODIST
8:30 A.M.—Morning Worship
9:45 A.M.—Sunday School
10:55 A.M.—Morning Worship
8:30 P.M.—Campus & Career Class
5:30 & 6:00 P.M.—MYF Meetings

CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS
26th East and Coulter, Bryan
8:30 A.M.—Priesthood meeting
10:00 A.M.—Sunday School
5:00 P.M.—Sacrament Meeting

FIRST CHRISTIAN CHURCH
Homestead & Ennis
9:45 A.M.—Sunday School
10:50 A.M.—Morning Worship
6:30 P.M.—Young People

GRACE BAPTIST CHURCH
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An Independent Bible Church
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11:00 A.M.—Morning Worship
7:30 P.M.—Evening Worship



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THE FIRST PAGE OF Adventure

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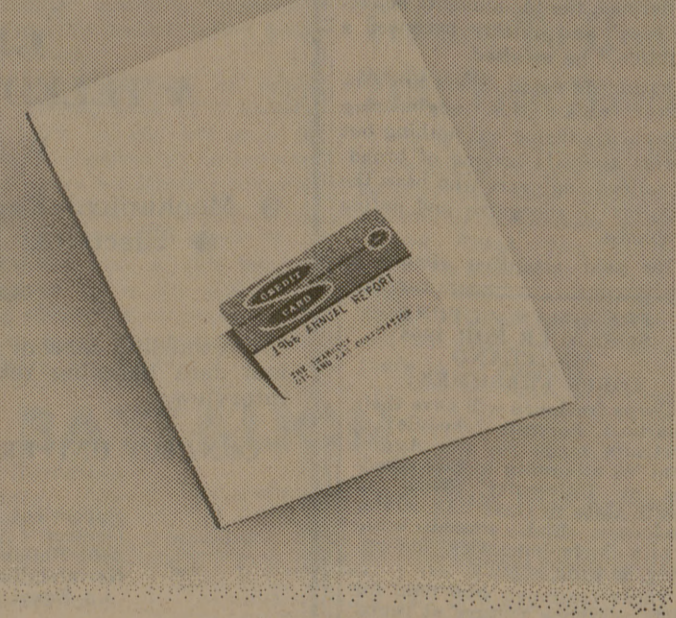
Sunday Genesis 28:10-17	Monday Proverbs 12:17-28	Tuesday Luke 21:10-19	Wednesday Romans 10:1-10	Thursday Ephesians 3:14-19	Friday Colossians 2:1-7	Saturday II Timothy 4:9-18
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