

XE128.0526566  
4-18/4-22-66

## News Release

# GRADUATE RESEARCH CENTER OF THE SOUTHWEST

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RELEASE AT NATIONAL ACADEMY OF SCIENCES and AGU PRESS ROOM,  
IN CONNECTION WITH URSI-AGU SPRING CONFERENCES, April 18-22.

EDS: This is supplementary material concerning faculty and staff members of the Graduate Research Center of the Southwest who are appearing at the URSI-AGU Conferences; it is intended to supplement abstracts and other information given in the AGU TRANSACTIONS.

THE GRADUATE RESEARCH CENTER of the SOUTHWEST is a private, non-profit institution located in the Dallas suburban area. It conducts fundamental research in Atmospheric and Space Sciences, Geosciences, Mathematics, Biology; has a faculty and staff of 320; has just observed its fifth anniversary since charter issue, and is deeply concerned with higher education, chiefly at the post-doctoral level. It is not a part of any university, and does not grant degrees as a matter of practice. The GRC works with many universities to provide post-doctoral training for prospective graduate faculty members and to supplement the graduate education programs of the universities by allowing transfer students to complete dissertation research on its campus.

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The following supplementary information is furnished re the GRC faculty members who are presenting papers and chairing sessions at the current meetings; the information is in chronological order:

APRIL 19 - URSI Spring Meeting, National Academy of Sciences. 0900 Hours

Commission 3-4, Paper 5 (Probe Measurements in the Ionosphere).

ASSOC. PROF. WALTER J. HEIKKILA, Graduate Research Center of the Southwest, will present: Results of a Multiple Ionospheric Probe (MIP) Rocket Experiment. Co-Author is Project Engineer Nick Eaker.

A NIKE-Apache rocket payload was instrumented with five types of electron density probes to permit accurate empirical comparison of different techniques of ionospheric experiments. Flight was made from Wallops Island, Va., one hour after sunrise, on September 1, 1965. (Later flights have also been made, with similar instrumentation, in April, 1966).

A resonance relaxation experiment which detected plasma resonances of the types seen by ionospheric topside sounders provided an accurate electron density profile. The number density in the E-Region was relatively constant up to 150 km. but did show presence of a horizontal gradient and a valley with a depth of 15 per cent.

The capacitance of an 11 cm. sphere was measured at a frequency well above the plasma frequency, with several values of negative sphere bias with respect to the plasma. Accurate results were obtained, permitting a critical evaluation of the H-F capacitance probe technique. A correction factor in the order of 60 per cent is required to account for the effect of the ion sheath on this probe; this factor showed a small progressive

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change during flight, possibly due to the changing attack angle of the vehicle. The ion current to the sphere was measured simultaneously, providing a good test of electrostatic probe operation.

Total payloads for these flights weight in the order of 60 to 85 pounds, and are packaged in a tubular structure; separable nose cones or capacitor nose cones may be used.

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GENERAL NOTE RE AGU TRANSACTIONS ABSTRACTS:

Reference to Southwest Center for Advanced Studies should be revised to Graduate Research Center of the Southwest throughout, as a preference of the institution.

REVISION TO NAME, AGU TRANSACTIONS ABSTRACTS:

On Page 109, spelling of Asst. Prof. John S. Reitzel, Graduate Research Center of the Southwest, should be revised as above (in connection with Physical Oceanography paper 05, by Beckerle, Payne, Hersey and Reitzel).

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APRIL 19 - AGU Meeting, Sheraton-Park Hotel. 1330 Hours.

Atmospheric Physics, Paper P21. Cotillion Room.

ASST. PROF. HAROLD B. LIEMOHN, Graduate Research Center of the Southwest, will present Gravity Waves in a Realistic Atmosphere. Co-Author is Asst. Prof. James E. Midgley, Graduate Research Center of the Southwest. See abstract, Page 128 TRANSACTIONS.

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Symposium on Pioneer 6, Paper P3. North Cotillion Room.

PROF. KENNETH G. McCRACKEN, Graduate Research Center of the Southwest, will present The Degree of Anisotropy of the Cosmic Radiation in the Energy Range 10-100 Mev.

Co-Authors are: Research Scientist William C. Bartley, Research Associate Robert P. Bukata, and Asst. Prof. U. R. Rao.

THIS PAPER IS NOT ABSTRACTED IN TRANSACTIONS. Experiment launch occurred December 16, 1965, and data is not yet fully in hand.

A SPECIAL NEWS RELEASE HAS BEEN PREPARED RE THIS PAPER, AND WILL BE DISTRIBUTED THROUGH PETE WALLER, Information Officer, NASA-Ames.

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APRIL 20 - AGU Meeting, Sheraton-Park Hotel. 1330 Hours

Terrestrial Heat Flow, Paper T43. Frederick Room.

ASST. PROF. JOHN S. REITZEL, Graduate Research Center of the Southwest, will present Bottom Temperature Gradients in Lakes with Trapped Sea Water. See abstract, page 181 TRANSACTIONS.

Reitzel performed his experiments with a transmitting probe let out from small

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boats by a power winch and cable. Specific locations were in British Columbia and Norway. The lake structures were those formed by a cutoff of an old fjord through rise of a rock lip.

Reitzel also is a co-author of Physical Oceanography Paper 05, as noted on page 2.

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APRIL 21 - AGU Meeting, Sheraton-Park Hotel. 0830 Hours.

Magnetic Disturbances and Variations, Paper GA43. Exhibit Hall 1A.

RESEARCH ASSOCIATE BENJAMIN GOTTLEIB will present Critical Examination of a Theory of Auroral Electrojets. Co-Author is Prof. Jules A. Fejer, Graduate Research Center of the Southwest. See abstract, Page 59 TRANSACTIONS.

Doctor Gottlieb is an Indian post-doctoral student at the Graduate Research Center of the Southwest.

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APRIL 21 - AGU Meeting, Sheraton-Park Hotel. 1030 Hours.

Experimental Geochemistry, Papers V49 and V50. Continental Room.

ASST. PROF. IAN MacGREGOR, Graduate Research Center of the Southwest, will present The Effect of Pressure on the Minimum Melting Composition in the System MgO-SiO<sub>2</sub>-TiO<sub>2</sub>. See abstract, pages 207-208, TRANSACTIONS.

ASST. PROF. BRIAN T. C. DAVIS, Graduate Research Center of the Southwest, will present Experiments in the Jadeite-Diopside System at 30 Kilobars. Co-Author is Peter M. Bell. See abstract, Page 208, TRANSACTIONS.

Working as a research team in high-pressure, high-temperature studies of the Earth's crustal and mantle structure, Professors MacGregor and Davis are currently producing synthetics to match mineral samples taken from the Kimberly diamond mine regions, in their laboratory. They traveled to the diamond mines in September, 1965, with special permission of the operating company, to obtain the natural materials.

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APRIL 21 - AGU Meeting, Sheraton-Park Hotel. 1330 Hours.

Solar Wind and X-Ray Observations, Paper P115. Richmond Room.

ASST. PROF. PAUL J. EDWARDS, Graduate Research Center of the Southwest, will present New Upper Limits to the Hard X-Ray Flux from the Quiet Sun. See abstract, Page 148, TRANSACTIONS.

X-Ray observation equipment has been flown by the Graduate Research Center at locations including near-polar and near-equatorial regions; such as Fort Churchill, Hyderabad, India; Australia, and on the Antarctic Continent. Additional test flights have been made from the NCAR balloon base at Palestine, Texas. Flights in general are at 20-mile-plus altitudes, using plastic balloon lifts.

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APRIL 22 - AGU Meeting, Sheraton-Park Hotel. 1330 Hours.

Marine Geophysics, Paper O69. Wilmington Room.

ASSOC. PROF. D. IAN GOUGH, Graduate Research Center of the Southwest, will present Magnetic Anomalies and Crustal Structure in the Gulf of Mexico. See abstract, Page 124, TRANSACTIONS.

Studies done both from small craft and on co-operative oceanographic voyages with Texas A&M University, aboard the R/V ALAMINOS, have shown that a Gulf of Mexico segment off the west coast of Florida has basement rock structure warped with the Appalachian Trend, somewhat contrary to past geological conclusions.

Presence of a strong magnetic anomaly about 250 miles off the tip of Florida was also investigated. No indication of a major bottom surface feature was found.

--4-13-66--al mitchell--By Mail to URSI/AGU--