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**Vol. 10**

# ***ETC/USA/'74***

## **INTERNATIONAL TELEMETERING CONFERENCE**

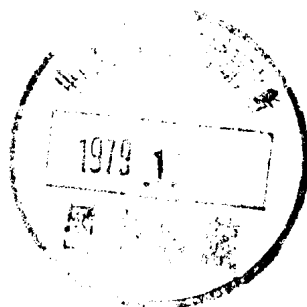
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**1974**

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Dr. Ed Posner, Manager of Data Processing and Management Science in the Tracking and Data Acquisition Planning Office at Caltech's Jet Propulsion Laboratory, is well-known to ITC attendees from previous years, having been variously an author, session chairman, and Program vice-chairman. Dr. Posner has been involved in all phases of NASA telemetry research in his 13 years at JPL, but is perhaps best known to the Telemetry Community for his work on Data Compression. He is co-inventor of the digital command system to be flown on the Viking Orbiter and Mariner Jupiter-Saturn spacecraft. Dr. Posner is also Lecturer in Electrical Engineering at Caltech, where he has taught courses on automobile traffic theory. Dr. Posner wishes to use this space to acknowledge the help provided by his Assistant, Susan D. Young, who helped insure the success of this Conference and its Proceedings.

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## **SESSION I**

### **NEW APPLICATIONS FOR TELEMETRY INSTRUMENTATION**



**LAWRENCE L. RAUCH**

Lawrence L. Rauch received the Bachelor's degree from the University of Southern California in 1941 and the Doctor's degree from Princeton University in 1949. From 1943 to 1946 he was the research supervisor of the NDRC/OSRC Project at Princeton University which developed and applied the first electronic high-speed time-division telemetering system for aircraft. In 1946 he was in charge of atmospheric overpressure telemetry for Operation Crossroads at Bikini Atoll. In 1952-53 Dr. Rauch was the last chairman of the Telemetering Working Group, Panel on Test-Range Instrumentation, Research and Development Board, Department of Defense (the predecessor of the Telemetering Working Group of the Interrange Instrumentation Group). From 1957-63 he was a member of the administrative committee of the IRE Professional Group on Space Electronics and Telemetry and from 1960-63 a member of the Executive Committee of the National Telemetering Conference. He was Western Hemisphere Program Chairman of the International Telemetering Conference in London, September 1963 and Program Chairman of ITC/USA/'67 in Washington, D.C. From 1963-70 he was a member of the NASA Research Advisory Committee on Communications, Instrumentation and Data Processing.

Dr. Rauch's consulting activities have included the development of early pulse-position modulation and pulse-code modulation telemetering systems. He served as consultant in the telemetry and instrumentation area for the Atlas, Thor, Titan and Minuteman rockets. He also contributed to the design of telemetry systems for Telstar and certain NASA vehicles.

Dr. Rauch's awards and recognitions include the War Dept./Navy Dept. Certificate of Appreciation for an Outstanding Contribution to the Work of the Office of Scientific Research and Development during World War II, 1947; Special Award by the IRE Professional Group on Space Electronics and Telemetry for Important Contributions to Telemetry, 1957; Fellow of the IRE (IEEE) for contributions to the theory and practice of radio-telemetry, 1960; Annual Award of the National Telemetering Conference for an Outstanding Contribution to the Telemetering Field, 1960; Donald P. Eckman Education Award of the Instrumentation Society of America in recognition of significant contributions to education in the fields of telemetry, analog computation, and non-linear control systems and his pioneering establishment of instrumentation programs in a university curriculum, 1966.

Dr. Rauch joined the faculty of the University of Michigan in 1949. He has served as chairman of the Nuclear Engineering Program from 1951-52 and of the Instrumentation Engineering Program from 1953-63. He was visiting professor at L'Ecole Nationale Supérieure de l'Aéronautique et de l'Espace in Toulouse, France in 1970. He is currently Professor in the Departments of Aerospace and Electrical and Computer Engineering. He is chairman of the interdepartmental graduate Program in Computer, Information and Control Engineering and Associate Chairman of the Department of Electrical and Computer Engineering for the Computer and Information Systems Division.

## NEW APPLICATIONS FOR TELEMETRY INSTRUMENTATION

Lawrence L. Rauch, University of Michigan  
Panel Chairman

Loyle E. Baltz, Ford Motor Company  
Automotive and Ground Transportation Telemetry and  
Instrumentation

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Aerospace Telemetry and Instrumentation

D. Ronald Radar, University of Southern California  
Biomedical Telemetry and Instrumentation

John R. Warren, U. S. Forest Service  
Ecology-Related Telemetry and Instrumentation

This is a panel discussion session which, with the participation of the audience, hopes to explore trends and future prospects in telemetry. In such a broadly applied field as telemetry it would be unworkable (if not impossible) to assemble a panel representing the full breadth of the field. Instead, the panel represents a sampling of the application areas of telemetry from which we hope the discussion will extend to all areas of interest to those attending ITC/USA/'74.

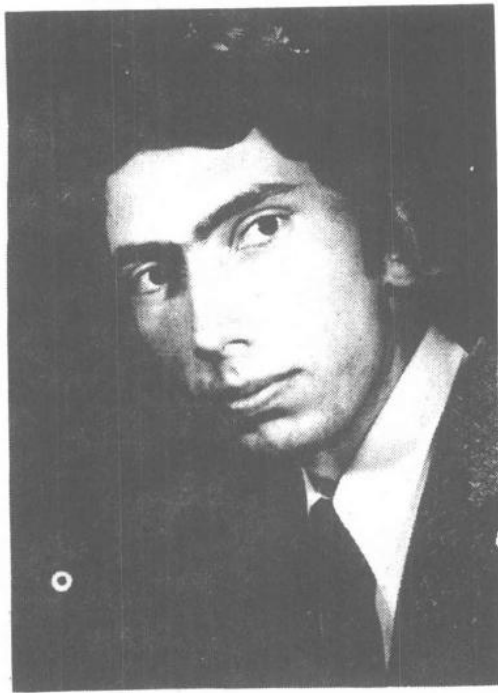




## **SESSION II**

### **DEEP SPACE COMMUNICATION FROM THE HELIOS SOLAR PROBE**

**ERNST STOLLE, Session Organizer**



**ERNST STOLLE**