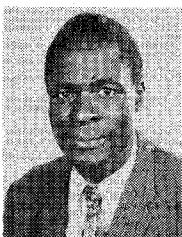


Contributors



Robert J. Akello was born in Nairobi, Kenya, on April 21, 1946. From 1966 to 1972 he studied in the Moscow Electrotechnical Institute of Telecommunications, USSR, from where he graduated with the M.Sc. degree. His research topic was on noise limitation in radio-relay and satellite systems operating in common frequency bands.

In 1972 he briefly worked with the Kenya Government on the development plan for the National Broadcasting Network before being appointed Lecturer at the Kenya Polytechnic, Nairobi. He is currently on study-leave and pursuing his Ph.D. studies in the field of GaAs FET amplifiers, at the University College of North Wales, Bangor. His other interests are in the fields of antennas, propagation of millimetric waves in hazardous media, and electromagnetic compatibility.

Mr. Akello is an Associate Member of the IEE, London.

Bioengineering and Research Assistant Professor of Electrical Engineering. He is currently engaged in teaching and research in electromagnetic theory.

Dr. Barber is a member of Sigma Tau and Tau Beta Pi.

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George N. Catravas was born in Cephalonia, Greece. He received the D.Ch. degree in chemistry from the University of Athens, Athens, Greece. He then received the Ph.D. degree in organic chemistry and the D.Sc. (Doctorat d'Etat) degree in organic and biochemistry from the Universities of Leeds (England) and Paris (Sorbonne), respectively.

Between 1955 and 1956 he conducted research at the Department of Biochemistry of the University of Chicago on a fellowship of the U.S. National Academy of Science and F.O.A. and continued his research at the same University until 1963 as an Assistant Professor of Biochemistry. Between 1963 and 1966 he was Head of Biochemical Research at the Technicon Corporation, Ardsley, NY, and since 1966 he has been with the Armed Forces Radiobiology Research Institute, Defense Nuclear Agency, Bethesda, MD. Since 1967 he has been on the Faculty of the Department of Biology of American University, Washington, DC, as an Adjunct Professor, and he is a Visiting Radiobiologist for the American Institute of Biological Sciences. He holds six U.S. and international patents and has written more than 80 scientific publications. He is currently involved in research on neurochemical effects of drugs, ionizing radiation, and microwaves.

Dr. Catravas is a member of the Radiation Research Society, AAAS, New York Academy of Sciences, Groupement Technique des Corps Gras (France), Chemical Society (England), American Society of Biological Chemists, American Society for Neuroscience, and Sigma Xi.

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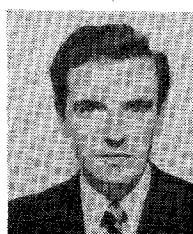


Dilip Kumar Banerjee was born in Calcutta, India, on February 15, 1932. He received the M.Sc. degree in physics in 1952 and the Ph.D. degree in radio communications in 1955, both from Banaras Hindu University, Varanasi, Uttar Pradesh, India.

From 1956 to 1957 he was a Senior Scientific Assistant of the Research Department, All India Radio, New Delhi. During the period from October 1957 to December 1960, he served in Blau Punkt Werke Gm bH, Hildesheim, Körting Radiowerke Gm bH, Grassau and Valvo Gm bH, Hamburg, West Germany. Also he was with the Technical University at Braunschweig, West Germany, as a German Academic Exchange Programme (DAAD) scholar from May 1961 to April 1963. He joined the Department of Electrical Engineering, Indian Institute of Technology, Madras, India, as an Assistant Professor in June 1963, and since May 1973 he has been with the same department as a Professor. His current research includes work on UHF techniques and microwave communication systems.

J. B. Davies (M'73), for a photograph and biography please see page 165 of the February 1977 issue of this TRANSACTIONS.

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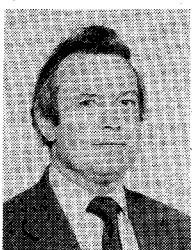


Peter W. Barber (M'74) was born in Anchorage, AK, on September 5, 1942. He received the B.S. degree in electrical engineering from Washington State University, Pullman, in 1964, and the M.S. and Ph.D. degrees in engineering from the University of California, Los Angeles, in 1967 and 1973, respectively.

From 1964 to 1974 he was employed as an Electrical Engineer by the McDonnell Douglas Corporation, Long Beach, CA, where he was primarily engaged in the design of aircraft antennas. Since July 1974, he has been associated with the University of Utah, Salt Lake City, where he is currently Assistant Professor of

O. J. Davies was born in Cardiff, Wales, on May 15, 1944. He received the B.Sc. degree in physics in 1966, and the M.Sc. and Ph.D. degrees in microwave engineering in 1967 and 1971, respectively, all from the University of London, London, England.

Since then he has been a member of the academic staff of the Department of Electronic and Electrical Engineering, University College London. During the summer of 1972, he was a consultant to the National Physical Laboratories, England. During 1975-1976 while on leave from University College, he worked in the Groupe d'Electromagnétisme at Laboratoire des Signaux et Systèmes, École Supérieure d'Électricité, Paris, France, on guided wave discontinuity problems. His current interests include numerical solution of electromagnetic problems and automated measuring systems.



Robert Davies was born in Cardiff, South Wales, on September 15, 1938. He received the B.Sc. degree in electrical engineering from the University College of South Wales and Monmouthshire, in 1959, and the Ph.D. degree from Queen's University, Belfast, Northern Ireland, in 1964 for work on microwave ferrite devices.

Since 1964 he has been concerned with microwave devices and components at the Mullard Research Laboratories, Redhill, Surrey, England. Initially, his work was concerned with varactor diode measurements and parametric amplifiers. Subsequently, it expanded to encompass solid-state microwave oscillators and microwave integrated-circuit techniques and subassemblies. Currently, he heads the Microwave Techniques Group, which is involved with the study and fabrication of microwave solid-state subassemblies, primarily for radar and navigation systems.

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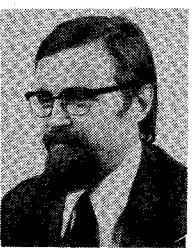


Joseph Gonda is a native of Hungary. He received the M.S. and Ph.D. degrees in 1957 and 1964, respectively, from the Technical University of Budapest.

He is a member of the Single Sideband Microwave Radio Department at Bell Laboratories, Merrimack Valley, MA. As a Member of Technical Staff, he is involved in the design of a microwave generator for single sideband radio. He joined Bell Laboratories, Merrimack Valley, MA, in 1969. His first assignments included the design of transistor and IMPATT microwave oscillators. He later became involved in broad-band frequency multiplier design. He assumed his present assignment in August 1976. Prior to coming to the United States in 1969, he worked at the Research Institute for Telecommunication in Budapest and the Technical University of Budapest. He holds two patents on microwave circuits and has published 11 articles on microwave active circuits and network theory.

Mr. Gonda has received the "Virág-Pollack" award from the Telecommunication Society in Hungary.

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Pietro de Santis (M'65) was born in Rome, Italy, on November 24, 1937. He received the "Dottore in Ingegneria Elettronica" degree with highest honors from the University of Rome, Rome, Italy, in 1962, and the M.S. degree in electrophysics from the Polytechnic Institute in Brooklyn, Brooklyn, NY, in 1965. In 1971 he received the Libera Docenza in electromagnetic fields and circuits.

In 1962 he joined the Research Department of Selenia S.p.A., Rome, where he was engaged in research work on microwave plasmas and ferrites. Since 1969 he has been Professore Incaricato of Microwaves at the University of Naples, Naples, Italy. Presently, he is a Visiting Professor at the Naval Research Laboratory, Washington, DC.

Dr. de Santis is a member of the American Physical Society, the Associazione Elettronica Italiana, and a corresponding member of the SMAG/TC HFM. He was the Italian representative to the Management Committee of the European Microwave Conference from 1973-1975. He was General Chairman of the European Microwave Conference 1976.

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John A. Grange was born in Kent, England, on June 8, 1930. He received the B.A. degree in English literature in 1975 from Columbia University, NY.

From 1948 to 1950 he served in the Royal Air Force, where he was primarily engaged in maintenance of ground-to-air transmitters. On leaving the service he acquired further training in electronics at the Woolwich Polytechnic while working in the electronic service industry. After emigrating to Canada in 1954 he joined the Canadian Broadcasting Corporation as a technician until 1956 when he became resident in the U.S.A. Various electronic equipment servicing, calibration, and design work followed until in 1967 he joined NASA at the Goddard Institute for Space Studies, NY, as a Research Technician, where he is currently engaged in the development of millimeter-wave mixers.

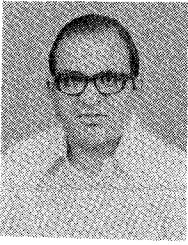
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Brian Easter (M'76) was born in Chelmsford, Essex, England, in 1924. He studied at University College, London, England, and Chelsea Polytechnic, London, England, and was awarded the B.Sc. (Eng.) and M.Sc. degrees by the University of London, London, England, in 1945 and 1951, respectively.

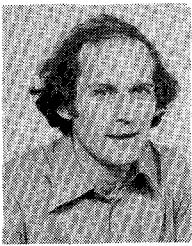
From 1944 to 1947 he was employed by Marconi's Wireless Telegraph Company, Ltd., working on high-frequency communication receivers. From 1948 to 1965 he was employed at the Hirst Research Center of the General Electric Company at Wembley, and was mainly concerned with problems in the development of microwave radio-relay systems. Since 1965 he has been a member of the academic staff of the School of Electronic Engineering Science, University College of North Wales, Bangor, Caerns., Wales. His recent interests have centered on passive microwave circuits including microstrip transmission lines and circuits.

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Krishna Kumar Gupta was born in New Delhi, India, on April 1, 1942. He received the B.Sc. (Hons) and the M.Sc. degrees from the Delhi University in 1964 and 1966, respectively, and the M.Sc. (Tech) degree in electronics from the Birla Institute of Technology and Science, Pilani, India, in 1968.

From 1969 to 1970, he was a Senior Research Fellow at the Central Electronics Engineering Research Institute, Pilani. After serving as a Senior Research Fellow and as a Research Associate at Indian Space Research Organisation, Ahmedabad, and at the Indian Institute of Technology, Bombay, respectively, he joined the Center for Systems and Devices of the I.I.T., Madras in 1973. His areas of interest are microwaves, antennas, and radar system engineering.



Ian D. Higgins was born in Tickhill, England, on June 3, 1948. He received the B.Sc. degree in electronics from the Victoria University of Manchester, College of Science and Technology, Manchester, England, in 1969.

Since 1969 he has been a member of the Scientific Staff of the Mullard Research Laboratories, Redhill, Surrey, England, working on microwave integrated circuits and varactor-tuned Gunn oscillators. His current interest is in field-effect transistor circuits.

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Ivan Kneppo was born in Nové Sady, Czechoslovakia, on March 8, 1938. He received the electrical engineer-degree (Ing.) from the Czech Technical University, Prague, Czechoslovakia, in 1962, and the C.Sc. degree in technical sciences from the Slovak Academy of Sciences, Bratislava, Czechoslovakia, in 1965.

From 1962 to the present he has been with the Slovak Academy of Sciences (SAV). His research interests are the methods and technique of biological, optical, and microwave

measurements.

Dr. Kneppo is a member of the Czechoslovak National URSI Committee, the Society of the Slovak Mathematicians and Physicists, and the Czechoslovak Scientific and Technical Society.

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Wolfgang J. R. Hoefer (M'71) was born in Urmitz/Rhein, Germany, on February 6, 1941. He received the diploma in electrical engineering from the Technische Hochschule Aachen, Aachen, Germany, in 1965, and the degree of Docteur Ingénieur from the University of Grenoble, Grenoble, France, in 1968.

After one year of teaching and research at the Institut Universitaire de Technologie, Grenoble, he joined the Department of Electrical Engineering at the University of Ottawa, Ottawa, Ont., Canada. His research interests include microwave measurement techniques, discontinuities, and MIC-design. He is currently spending a sabbatical year with the Space Division of the AEG-Telefunken in Backnang, Germany.

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A. Konrad (S'70-M'75) was born on February 15, 1946. He received the B.Eng., M.Eng., and Ph.D. degrees in electrical engineering from McGill University, Montreal, P.Q., Canada, in 1970, 1971, and January 1975, respectively.

During the summer of 1975 he was a Visiting Researcher at the Institut National Polytechnique de Grenoble, Grenoble, France, where he was working on three-dimensional curvilinear finite elements for anisotropic electrostatic field problems. In the same year, he joined the Energy and Services Section of the Division of Building Research of the National Research Council, Ottawa, Ont., Canada, as an Assistant Research Officer. He is currently involved in research related to the harnessing of solar energy.

Dr. Konrad is a member of the Order of Engineers of Quebec. In April 1972 he won first prize in the Canada-wide graduate student paper competition of the Canadian Nuclear Association with the paper entitled "Linear accelerator cavity field calculation by the finite element method" (*IEEE Trans. Nucl. Sci.*, vol. NS-20, pp. 802-808, 1973).

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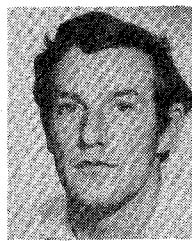


David S. James (M'71) was born in Bradford-on-Avon, England, on January 24, 1945. He received the B.Sc. and Ph.D. degrees in electronics engineering from the University College of North Wales, Bangor, U.K.

From 1970 to 1977 he was employed by the Department of Communications, Communications Research Centre in Ottawa, Ont., Canada. He is now with Ferranti Ltd., Manchester, U.K. His work involves the development of passive and solid-state microwave circuits, especially low-noise satellite subsystems.

Dr. James was Chairman of the Ottawa X-MTT Chapter, and is a member of the A.V.S. and the I.E.E. (U.K.).

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Anthony R. Kerr (S'64-A'66) was born in England on August 30, 1941. He received the B.E., M.Eng.Sc., and Ph.D. degrees from the University of Melbourne, Melbourne, Australia, in 1964, 1967, and 1969, respectively.

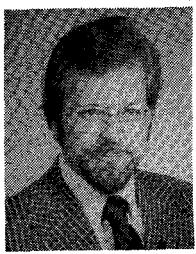
In 1969 he joined the Commonwealth Scientific and Industrial Research Organization, Sydney, Australia, to develop low-noise receivers for radio astronomy. From 1971 to 1974 he worked on low-noise cryogenic receivers for millimeter-wave astronomy with the National Radio Astronomy Observatory, Charlottesville, VA. He is presently with the Goddard Institute for Space Studies, New York, NY, developing low-noise receivers for millimeter and submillimeter wavelengths.



Robert J. Mattauch (S'61-M'66) was born in Rochester, PA, on May 30, 1940. He received the B.S.E.E. degree from the Carnegie Institute of Technology, Pittsburgh, PA, in 1962 and the M.E.E. and Ph.D. degrees in electrical engineering from North Carolina State University, Raleigh, in 1963 and 1967, respectively. He was a Ford Fellow at North Carolina State University.

In 1966 he joined the faculty of the Department of Electrical Engineering at the University of Virginia, Charlottesville. His areas of research activity include millimeter-wave Schottky-barrier mixer and varactor diodes, GaAs epitaxy, and Josephson junction mixer elements for millimeter-wave applications. He is a Professor of Electrical Engineering and presently the Director of the Semiconductor Device Laboratory at the University of Virginia.

Dr. Mattauch is a member of Eta Kappa Nu, Sigma Xi, Tau Beta Pi, and Phi Kappa Phi.

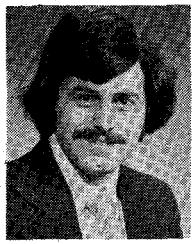


Alastair D. McAulay (M'75) received the B.A. and M.A. degrees both from Cambridge University, England, in 1961 and 1964, respectively, and the Ph.D. degree in electrical engineering from Carnegie-Mellon University in 1974.

He is working in the field of acoustic signal processing at the Honeywell Marine Systems Division in Seattle, WA. Previous experience includes research into airborne antisubmarine-warfare systems for the Boeing Company and

responsibility for the control and communication electronics for an automated airport people-moving system for the Westinghouse Electric Corporation.

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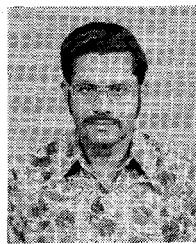


Thomas A. Milligan (S'67-M'68) was born in Dayton, OH, on May 21, 1945. He received the B.S. degree in electrical engineering from the University of Wisconsin, Madison, in 1968, and the M.S. degree in electrical engineering from Johns Hopkins University, Baltimore, MD, in 1970.

From 1968 to 1975 he worked for the Aerospace Division, Defense and Space Center, Westinghouse Electric Corporation, Baltimore, MD, where he was engaged in the design of passive microwave components and parametric amplifiers, and the development of computer-aided design techniques. From 1975 to 1976 he was employed by the Vari-L Company, Denver, CO, working on wide-band mixers. He is currently at the Aerospace Division, Martin Marietta Corporation, Denver, CO, engaged in antenna design.

Mr. Milligan is a member of Tau Beta Pi, Phi Kappa Phi, and Eta Kappa Nu.

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Perambur S. Neelakantaswamy was born in Nanjangud, India, on February 11, 1945. He received the B.E. degree in electronics and communications from the University of Madras in 1966, and the M.E. degree in electrical communication engineering from the Indian Institute of Science, Bangalore, India, in 1968, and the Ph.D. degree from the I.I.T., Madras, in September 1975.

From 1968 to 1970, he was a member of the teaching staff at the Department of Aeronautical Engineering (Rockets and Missiles Group), Indian Institute of Science, Bangalore. Since August 1970, he has been with the Department of Electrical Engineering, Indian Institute of Technology, Madras, India, as a Lecturer. During the period June 1973 to September 1974 he was on deputation for advanced research work at the Technical University at Aachen, West Germany, under the German Academic Exchange Programme (DAAD). His current research includes work on instrumentation (biomedical and industrial), antennas, and microwave techniques.

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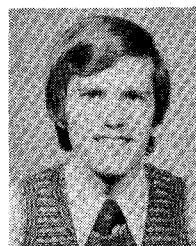
Stephen A. Oliva (M'75) was born on February 2, 1946. He is a captain in the United States Army Signal Corps. He received the B.S. degree in electrical engineering from the University of Rhode Island, Kingston, in 1967 and the M.S. degree in electrical engineering from Rutgers University, New Brunswick, NJ, in 1974.

His past assignments include the First Infantry Division in Vietnam where he provided communications support, and Headquarters, Commander in Chief Atlantic, Norfolk, VA, where he worked in ADP systems management. In his present assignment at the Armed Forces Radiobiology Research

Institute in Bethesda, MD, he is involved in research on the biological effects of both microwaves and extremely low frequencies, as well as the effects of electromagnetic pulse.

Captain Oliva is a member of the Armed Forces Communications Electronics Association and the Washington Society of Engineers. He is also a member of Tau Beta Pi.

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Robert G. Olsen (S'66-M'73) was born in Brooklyn, NY, on April 9, 1946. He received the B.S.E.E. degree from Rutgers University, New Brunswick, NJ, in 1968 and the M.S.E.E. and Ph.D. degrees from the University of Colorado, Boulder, in 1970 and 1974, respectively.

From 1971 to 1973 he was employed by the Westinghouse Georesearch Laboratory, Boulder, CO, where he worked on underground electromagnetic propagation problems.

Since 1973 he has been with the Department of Electrical Engineering, Washington State University, Pullman, WA, where he is working with antenna theory and the biological effects of microwave radiation.

Dr. Olsen is a member of Eta Kappa Nu and Tau Beta Pi.

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Guy R. Painchaud (S'71-M'75) was born in Ottawa, Ont., Canada, on July 24, 1950. He received the B.Sc. degree in electrical engineering from the University of Ottawa in 1973. He was the recipient of an EIC award and an NRC postgraduate scholarship. During 1973-1974, he took graduate courses leading to the M.Sc. degree.

In 1975, he joined the staff of the Space Electronics Directorate of the Communications Research Centre, Ottawa, where he is currently working on MIC components and subsystems. His interests are in the field of microwave components and systems.

Mr. Painchaud is a member of the Association of Professional Engineers of the Province of Ontario and the Engineering Institute of Canada.

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Gordon P. Riblet (M'73) was born in Boston, MA, on December 12, 1943. He received the M.S. and Ph.D. degrees in physics from the University of Pennsylvania, Philadelphia, PA, in 1966 and 1970, respectively.

From 1970 to 1972 he was employed as a Research Scientist at the University of Cologne, Cologne, Germany, performing research in solid-state physics. Since 1972 he has been employed as a Research Scientist at the Microwave Development Laboratories, Natick, MA, working in the areas of ferrite devices and computerized test measurements.



Henry J. Riblet (A'45-M'55-F'58) was born in Calgary, Canada, on July 21, 1913. He received the B.S. and Ph.D. degrees from Yale University, New Haven, CT, in 1935 and 1939, respectively.

From 1939 to 1941 he taught Mathematics at Adelphi College, Garden City, NY, and at Hofstra College, Hempstead, NY. He joined the Staff of the Massachusetts Institute of Technology Radiation Laboratory, Cambridge, in 1942, and at the close of World War II was in charge of one of the three developmental sections at the Antenna Group. From 1946 to 1948 he headed the RF group at the Submarine Signal Company, Boston, MA. In 1949 he helped form the Microwave Development Laboratories, Inc., Needham Heights, MA, where he is now employed. He served as Professor of Engineering Practice at Harvard University from 1960 to 1963.

Dr. Riblet is a fellow of the IEEE and was awarded the Microwave Career Award of the M.T.T. Professional Group in 1976.

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William E. Schroeder (S'66-M'71) was born in Takoma, MD, on July 21, 1943. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Michigan, Ann Arbor, in 1965, 1967, and 1972, respectively.

While at Michigan, he was associated with the Electron Physics Laboratory, where he conducted research on IMPATT devices. In 1972, he joined Bell Laboratories, Allentown, PA, as a member of the technical staff in the Solid-State Microwave Device Department, where he has been working on device-circuit interaction topics. Currently, he is involved in developing high-power GaAsFET microwave amplifiers.

Dr. Schroeder is a member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi. He serves on the Editorial Board of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES.

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I. M. Stephenson, photograph and biography not available at the time of publication.

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S. S. Saad was born in Alexandria, Egypt, on February 11, 1945. He received the B.Sc. and M.Sc. degrees in electrical engineering in 1965 and 1969, respectively, from the University of Alexandria, Egypt, and the Ph.D. degree from the University of London, London, England, in 1973.

At present, he is a Research Engineer at the National Research Centre, Cairo, Egypt.

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Michal Weis was born in Zlate Moravce, Czechoslovakia, on September 21, 1947. He received the electrical engineer-degree (Ing.) from the Slovak Technical University, Bratislava, Czechoslovakia, in 1971.

From 1971 to 1974 he was with the Research Institute of Human Bioclimatology, where he worked in the field of biophysics. Since 1974 he has worked in the Microwave Measurements Group, Electrotechnical Institut, Slovak Academy of Sciences.

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F. W. Schott (S'41-M'44-SM'61) was born in Phoenix, AZ, on October 2, 1919. He received the Ph.D. degree in electrical engineering from Stanford University in 1948.

He has held the following positions: Ensign, United States Navy, 1944-1946; Instructor, San Diego State College, 1946 to 1947; Acting Instructor, Stanford University, 1947; and Assistant Professor-Associate Professor-Professor, University of California at Los Angeles, 1948 to date. During 1949 to 1950, he was on leave of absence with the U.S. Navy Electronics Laboratory, and during 1956 he was with Hughes Aircraft Company, Culver City. The year 1957 to 1958 was spent on a sabbatical leave at the Swiss Federal Institute of Technology.

Dr. Schott is a member of several professional societies and is a Registered Electrical Engineer in the State of California.

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Taro Yodokawa (M'68) was born in Lima, Peru. He received the B.S. and M.S. degrees from the University of California, Los Angeles, in 1968 and 1971, respectively, and is currently completing his Ph.D. there.

From 1959 to 1963, he was with Jampro Antenna Company, Sacramento, CA, engaged in the development of high-power transmitting antennas for broadcast stations, and associated equipment. From 1963 to 1967 he was with Dorne and Margolin, Chatsworth, CA, where he was working in the areas of air-borne antennas. From 1967 to 1972 he was with TRW Systems, Redondo Beach, CA, engaged in the various types of antennas and components for the space applications. From 1972 to 1975 he was with Hughes Aircraft Company, Fullerton, CA, and worked in the areas of spacecraft array antennas, phased arrays, and array feeds. Currently, he is employed at TRW Defense and Space Systems Group, Redondo Beach, CA, as a staff member in the Advanced Antenna Systems Group, Communications and Antenna Laboratory, engaged in conceptual design and development of multiple-beam and phased-array antennas for space applications.

D. H. Schrader (M'62), photograph and biography not available at the time of publication.