

EDITOR'S PROFILE of this issue

from a historical perspective ...

with Paul Wesling, SF Bay Area Council GRID editor (2004-2014)

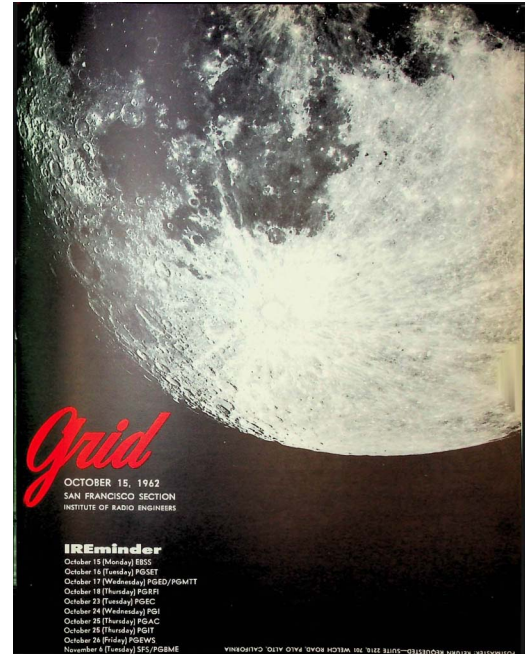
October, 1962 (mid-month):

Cover: A photo of the moon, showing Tycho crater, was taken by a new astrometric camera built by SRI and used with the Lick Observatory 36" telescope. More about the camera on page 12.

Page 18: William Shockley, co-inventor of the transistor and a Nobel prize winner, finally joins our Section of the IRE.

IRE member Dennis Fairclough moves to the SF Bay Area. In 1974 he was VP of Operations for a small startup -- Braegen Corp ("braegen" means "brain"), located near Wolfe and Arques in Sunnyvale. I joined Braegen and worked directly for Dennis. I recall doing some assembly-code programming on the Intel 8008 microprocessor (the "brain" of our terminal controller), as well as trouble-shooting design and manufacturing problems. Startups, though, are risky places to work. One day I had been visiting National Semiconductor regarding purchasing their 1k DRAM, and arrived back to see employees using office chairs to move boxes to their cars. "Get your personal possessions out -- the sheriff may be locking the doors later today!" I had managed to put in nearly a year. Most startups fail, even in Silicon Valley.

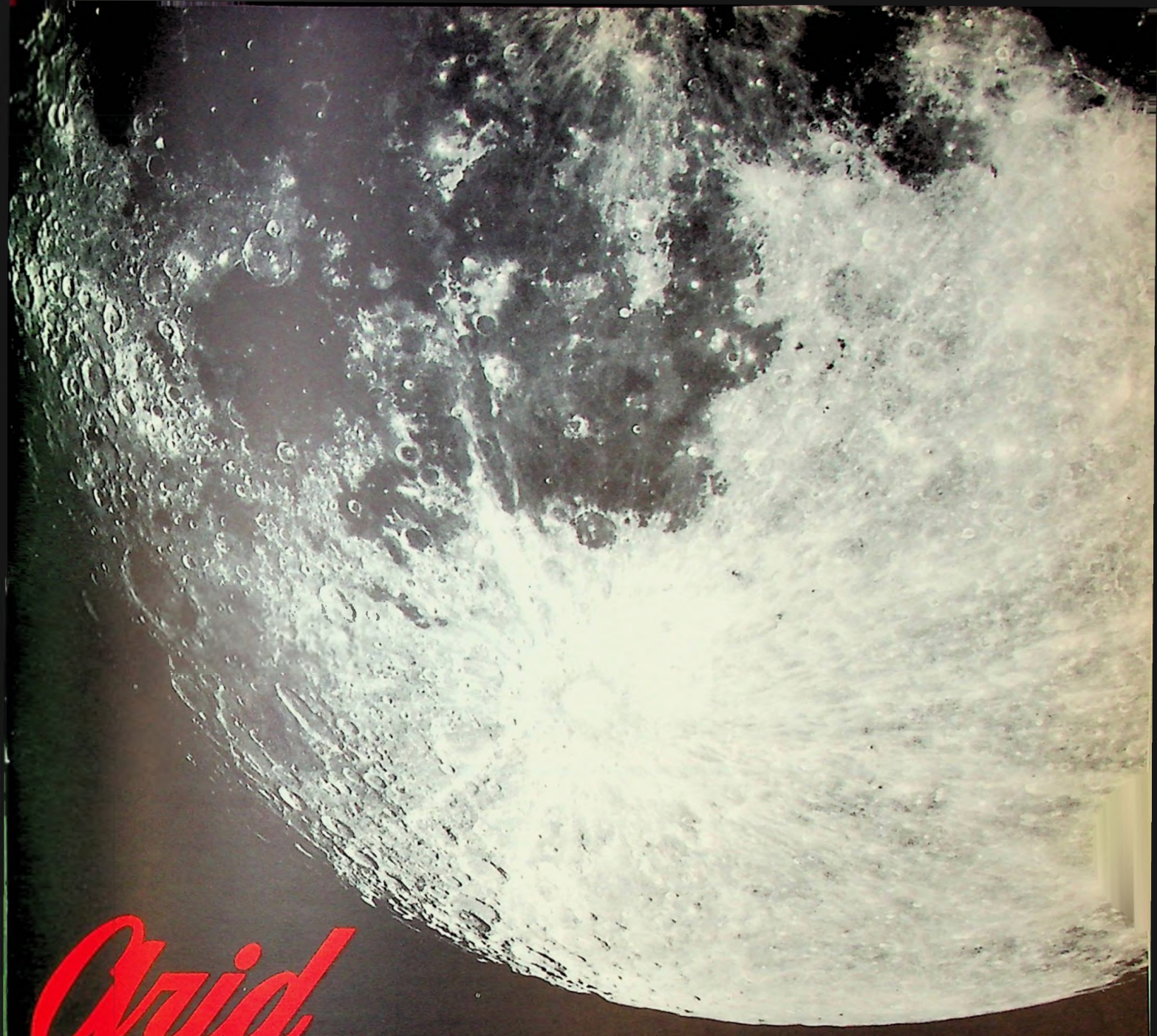
A further note: during those days, it was no problem getting a new job. I sent out some resumes, interviewed at several companies (including two divisions of HP), went on a week's vacation at Lake Tahoe, and then selected one of the resulting offers.



Archive of available SF Bay Area GRID Magazines is at this location:

https://ethw.org/IEEE_San_Francisco_Bay_Area_Council_History

At time of scanning, the bound volumes are held by Paul Wesling. July, 2021 Contact p.wesling@ieee.org



Grid

OCTOBER 15, 1962
SAN FRANCISCO SECTION
INSTITUTE OF RADIO ENGINEERS

IREminder

- October 15 (Monday) EBSS
- October 16 (Tuesday) PGSET
- October 17 (Wednesday) PGED/PGMTT
- October 18 (Thursday) PGRFI
- October 23 (Tuesday) PGEC
- October 24 (Wednesday) PGI
- October 25 (Thursday) PGAC
- October 25 (Thursday) PGIT
- October 26 (Friday) PGEWS
- November 6 (Tuesday) SFS/PGBME

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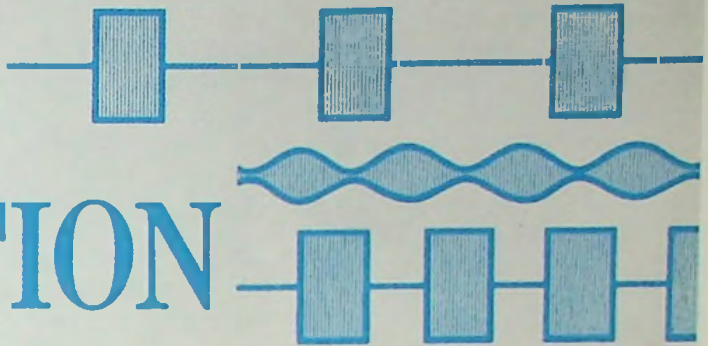
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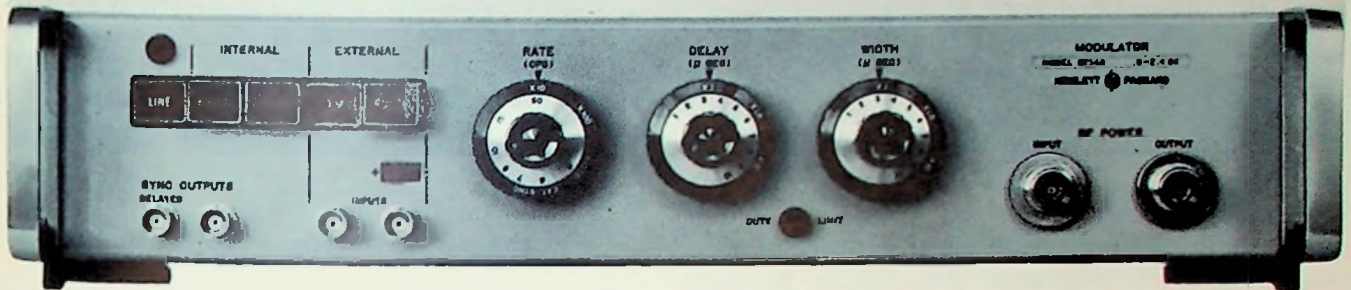
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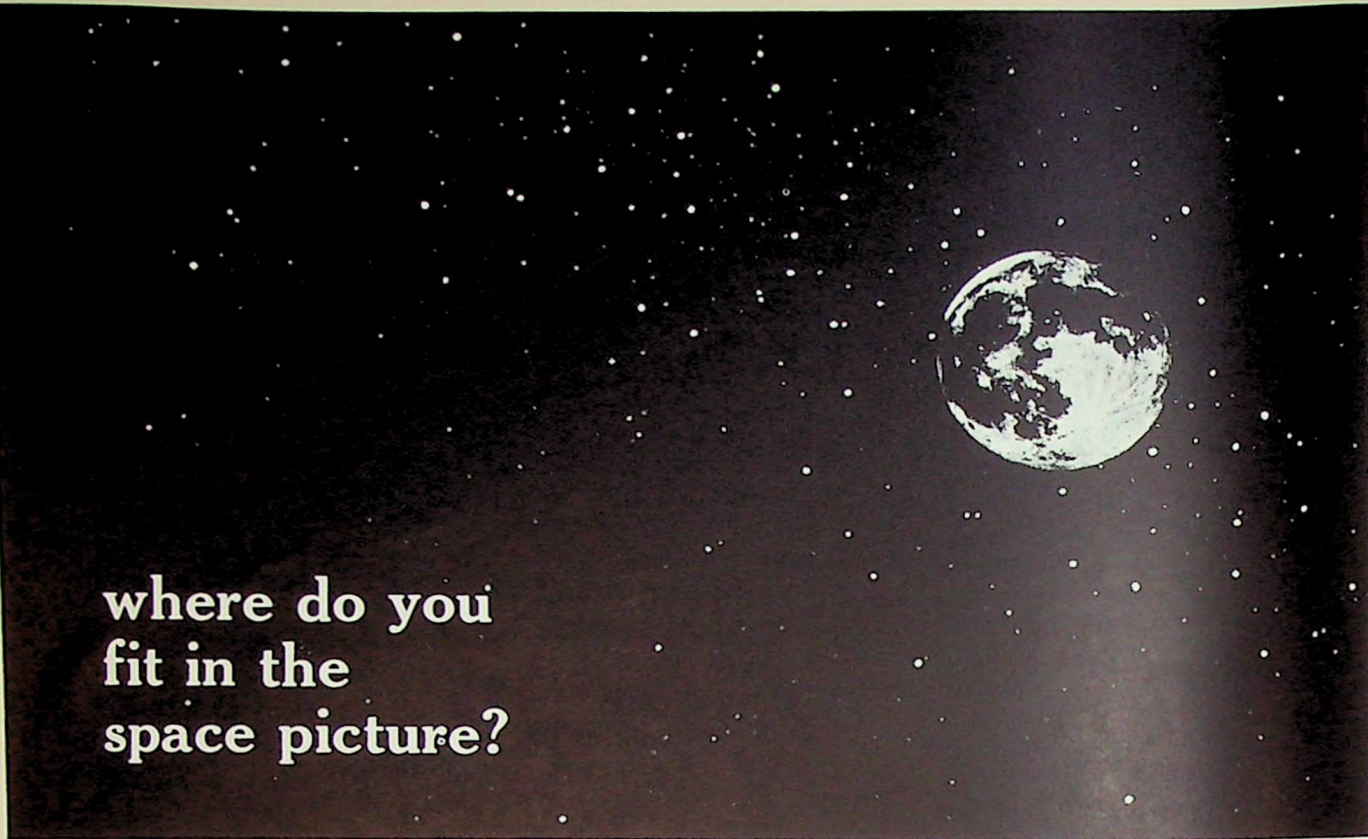
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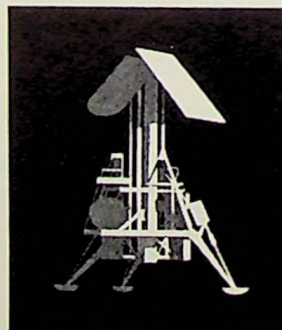
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cover

The moon at 13 days, photographed with the new astrometric camera built to order by SRI for the 36-inch refractor telescope at Lick Observatory, shows bright rays from

the crater Tycho, puzzlingly parallel, as if some rolling object plowed this furrow over the lunar surface. For more on this remarkable electronic camera, see page 12.

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SAN FRANCISCO SECTION

8:00 P.M. • Tuesday, November 6

"Porpoises and Sonar"

(Joint meeting with PGBME)

Speaker: Dr. Winthrop N. Kellogg, professor of experimental psychology, Florida State University, visiting consultant at SRI

Place: Main conference room, Stanford Research Institute, Menlo Park

Dinner: 6:00 P.M.

Reservations: Mrs. Doris Gould, Section office, DA 1-1332 for information and reservations

EAST BAY SUBSECTION

8:00 P.M. • Monday, October 15

"The Synthesis of Electronic Bi-stable Circuits"

Speakers: Professor D. O. Pederson and R. S. Pepper

Tour of the new high-temperature plasma and semiconductor facilities of the electronic research labs of the University of California, Berkeley

Place: Room 277, Cory Hall, University of California Campus

Meet-the-Speakers Dinner: 6:30 P.M. (place to be announced)

Reservations and information: Berkeley, TH 3-2740, Ext. 5434; or Livermore, HI 7-1100, Ext. 8011

PROFESSIONAL GROUPS

Automatic Control

8:00 P.M. • Thursday, October 25

"MH1 A Computer Operated Mechanical Hand or How to Send a Computer to Kindergarten"

Speaker: Dr. Hans Ernst, Control System Research Department, IBM Research Laboratories, San Jose

Place: Stanford University, Physics Lecture Hall

Dinner: 6:30 P.M., Rickey's Hyatt House, 4219 El Camino Real, Palo Alto

Reservations: Mrs. Pauline Elkman, DA 1-3300, by noon, Wednesday, Oct. 24

Bio-Medical Electronics

8:00 P.M. • Tuesday, November 6

(Joint meeting with San Francisco Section, see above)

Electron Devices

8:00 P.M. • Wednesday, October 17

(Joint meeting with PGMET)

"Quantum Noise in Optical Masers"

Speaker: Dr. William H. Louisell, Stanford University

Place: Physics Building, Stanford University

Electronic Computers

8:00 P.M. • Tuesday, October 23

"An Approach to General Pattern Recognition"

Speaker: Martin A. Fischler, Lockheed Missiles and Space Company

Place: Lockheed Auditorium, 3251 Hanover Street, Palo Alto

Dinner: 6:00 P.M., Red Shack, 4085 El Camino Way, Palo Alto

Reservations: None required

Engineering Writing & Speech

8:30 P.M. • Friday, October 26

(Joint meeting with the Society of Technical Writers and Publishers)

"How Proposals Are Evaluated"

Speaker: Mr. Harold Hornby, Ames Aeronautical Laboratory, Moffett Field

Dinner-Meeting: 6:30 Cocktails—7:30 Dinner

Place: To be announced

Reservations: Paul Jensen, YO 8-6211, Ext. 2795

MEETING CALENDAR

Information Theory

8:00 P.M. • Thursday, October 25

"Report on the Brussels International Symposium on Information Theory"

Speaker: Charles S. Weaver, project engineer, Philco, WDL

Place: Philco Auditorium, Building 56, 3825 Fabian Way, Palo Alto

Dinner: 6:00 P.M., Sakura Gardens, 2116 N. El Camino Real, Mountain View

Reservations: Mrs. Radl, YO 8-6211, Ext. 2460 or 2522

Instrumentation

8:30 P.M. • Wednesday, October 24

"Time Domain Reflectometry"

Speaker: Bernard M. Oliver, Hewlett-Packard Company, Palo Alto

Place: Hewlett-Packard, 1501 Page Mill Road, Palo Alto

Dinner: 6:00 P.M., L'Omelette, 4170 El Camino Real, Palo Alto

Reservations: Mrs. Salter, DA 1-3300, Ext. 273

Microwave Theory & Techniques

8:00 P.M. • Wednesday, October 17

(Joint meeting with PGED, see above)

Radio Frequency Interference

8:00 P.M. • Thursday, October 18

"The Frequency-Control Function on the Pacific Missile Range"

Speaker: Representative, Commander, Pacific Missile Range

Place: Auditorium, Building 202, Lockheed Missiles and Space Company

Space Electronics & Telemetry

8:15 P.M. • Tuesday, October 16

"Fuel Cells and Batteries for Space Applications"

Speakers: Dr. Morrin Eisenberg, Martin Klein, Electrochimica Corp., Menlo Park

Place: Lockheed Auditorium, Bldg. 202, 3251 Hanover St., Palo Alto

Dinner: 6:30 P.M., Red Shack, 4085 El Camino Way, Palo Alto

Reservations: Tom Linders, RE 9-4321, Ext. 28394 or 28453

pep conference

EXHIBITORS ANNOUNCED

A partial list of exhibitors at the 6th National Conference on Product Engineering and Production, November 1 and 2 at the Jack Tar Hotel, San Francisco, has been announced by W. Dale Fuller, Lockheed Missiles and Space Company, exhibits chairman.

They are Mesa Plastics Co., Los Angeles; U.S. Engineering Co., division of Litton Industries, Van Nuys; Kewanee Scientific Equipment, Adrian, Michigan; Hull Corp., Hatboro, Penn.; Blue M Engineering Co., Los Angeles; McGill and McGill, electronic representatives, Palo Alto; United Aircraft Corp., East Hartford, Conn.; Piddington and Associates, Pasadena; Photocircuits Corp., Glen Cove, N.Y.; Aerojet-General Corp., Azusa; and Stewart Engineering Co., Santa Cruz.

For full particulars on the conference, including the complete program, see the October 1 issue of *Grid*.

remarks from the chairs



Inasmuch as the section by-laws assign to the secretary the responsibility for operation of the section office, it may be appropriate to review here the current operation, some of the events that led up to it, and the outlook for the future.

The problems with which the office is

faced stem from its efforts to serve purposefully and efficiently the needs of the section membership in local activities. These activities consist primarily of the technical meetings arranged through the professional group chapters, in addition to section meetings and social events. As the size of the membership has grown, so has the number and variety of meetings. Keeping members accurately and promptly informed of this activity becomes a sizeable and expensive undertaking.

To that end, the *Grid* was established eight years ago as a section publication, carrying news and meeting reports as well as notices of scheduled events, and being financed through advertising. From small-scale beginnings, the *Grid* has now grown to an operation about four times as large financially as that of the rest of the section.

In order to keep all this under control, the entire operation has now been consolidated under one roof. The day-to-day

functioning is carried out under the supervision of one man, James Warnock, who is both executive secretary for the section and executive editor for the *Grid*. This arrangement permits closer control of over-all section finances to insure that the *Grid* is paying its own way in serving the needs of the section. A rigorous accounting and auditing system, difficult to implement under the previous split operation, is being established.

The past year has been one of costly transition. The new arrangement has now been completed, and the situation appears to be under control for the coming year. Life will get complicated again when we start to merge locally with the AIEE, but having our own house in order should ease that next transition.

ALAN T. WATERMAN, JR.
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meeting ahead

PGED'S NOISY MASERS

The advent of amplifiers at optical frequencies has opened new frontiers in the field of communications, according to Dr. William H. Louisell, a member of the technical staff of Bell Telephone Laboratories on leave of absence for a year as visiting associate professor of electrical engineering, Stanford University.

At the joint meeting of PGED and PGMTT on October 17 at Stanford, he will describe the increase in available bandwidths as but one of the attractive features of the optical part of the spectrum.

The limit of sensitivity of the optical maser is determined not by thermal noise, shot noise, or the like, but rather by what is called quantum noise, according to Dr. Louisell. The optical maser introduces an amount of noise equivalent to a resistor at 10,000°A.

The speaker's purpose is to study the statistical significance of this noise in its effects on amplified or attenuated signals as well as to show the quantum origin of this noise.

Professor Louisell attended the University of Florida, Kenyon College, and the University of Michigan. He received the B.S., M.S., and Ph.D. degrees in physics from the latter institution. He has been engaged in research on the gyromagnetic ratio of a free electron, broadband directional couplers, slalom electrostatic focusing of electron beams, parametric amplifiers, and quantum statistics of linear amplifiers.

He is the author of a recent book, "Coupled Mode and Parametric Electronics." He is a member of the American Physical Society, Sigma Xi, and Phi Kappa Phi.

meeting ahead

PGEC PATTERNS

Pattern recognition, one of the most arresting challenges of modern electronics, will be the subject of the October 23 meeting of PGEC.

In his talk, "An Approach to General Pattern Recognition," Martin A. Fischler, Lockheed Missiles and Space Company research laboratories, Palo Alto, will consider the challenge to be composed of two subproblems.

The first subproblem is one of abstracting significant features or characteristics from the patterns being

dealt with, while the second is concerned with identifying the pattern which gave rise to a particular set of features (i.e., a decision-making problem). A switching-theory approach is taken in designing the decision procedure.

The talk will describe some of the theoretical problems, laboratory equipment constructed for performing experiments, and results produced (theoretical and experimental) by the investigation.

The talk will be based on a paper by the same title published in the IRE Transactions on Information Theory (September, 1962—Proceedings of the International Symposium on Information Theory) coauthored by Fischler, R. L. Mattson, O. Firschein, and L. D. Healy, but will be supplemented by additional experimental results and descriptions.

meeting ahead

PULSE ECHOES FOR PGI

For years reflection measurements in the UHF and microwave regions of the spectrum have involved CW or swept CW techniques using slotted lines or directional couplers.

The advent of fast-pulse generators and sampling scopes, making it possible to use a pulse-echo approach, will be described by Dr. Barney Oliver, vice president, research and development, Hewlett-Packard Company, at the October 24 meeting of PGI.

Under the title, "Time Domain Reflectometry," he will discuss the interpretation of the echoes in terms of the impedance discontinuities which produce them. A demonstration of the method on a VHF antenna will be given.

Widely known to Bay Area electronic engineers, the speaker is a Fellow in IRE and a nominee for the board of the IEEE.

meeting ahead

PGIT BRUSSELS REPORT

From the end of July to the middle of October, Charles S. Weaver of Philco WDL journeyed eastward around the world, stopping in Brussels from September 3 to 7 to attend the International Symposium on Information Theory and deliver a talk on "Adaptive Communication Filtering." At PGIT's meeting on Thursday, October 25, he will present a report on

(Continued on page 10)

WINNERS' CIRCLE

Eleven of the leading entries in today's "Electronic Sweepstakes" wear the Neely colors. The Neely Enterprises track is a big one covering the entire states of California, Arizona, Nevada and New Mexico. When you have a problem that involves thoroughbred knowledge of electronic equipment, be sure to call your Neely Field Engineer. He's highly trained and from starting gate right down to the wire you can bet he'll bring you into the Winners' Circle every time.



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MORE MEETINGS

selected papers from the Brussels meeting.

A project engineer in the communication sciences department of the advanced technology laboratory, the speaker joined Philco's WDL in 1958 and has since been responsible for advanced studies in communication theory. These have concerned modulation, phase-locked-loop reception, and communication systems.

He is currently working on techniques for the detection of very weak signals in noise, applications of computers in the detection process, optimal filtering, and adaptive techniques. He is also working toward the Ph.D. at Stanford in the honors cooperative program.

He received the B.A. in mathematics from the College of Idaho in 1951, worked on low-noise microwave receivers in Philco's research division from 1951 to 1953, served as an electronics officer in the U.S. Navy from 1953 to 1956, and attended the University of California from 1956 to 1958, working as a research assistant in aircraft servo design and as a summer engineer on the Bevatron. He received the M.S. in electrical engineering there in 1958.

meeting ahead

TECHNICAL PROPOSAL REVIEW

What part of a proposal weighs most with a technical reviewer? How much does a beautiful (and costly) art cover mean? Does anyone really read biographical résumés? Under what circumstances may the technical reviewer be evaluating proposals and how do these influence his evaluation? Some answers and opinions on these questions and others regarding technical proposal review from a qualified and experienced technical reviewer from the NASA Ames Research Center in Mountain View will feature the October 26 meeting of PGEWS joint with the Society of Technical Writers and Publishers.

The speaker will be Harold Hornby, chief of systems, mission analysis group at Ames, who has had an extensive and varied experience in reviewing technical proposals on various NASA programs.

Since joining NASA in 1959, he has engaged in numerous space rendezvous and energy management

(Continued on page 11)

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MOORE HEADS MEET

John R. Moore, vice president, North American Aviation, Inc., and president of its autonetics division, will be chairman of the 1963 National Winter Convention on Military Electronics at the Ambassador Hotel in Los Angeles, January 30-31, and February 1.

A full program of secret sessions will highlight the fourth annual Los Angeles convention sponsored by PGMIL. Moore said the secret sessions will supplement the confidential and unclassified sessions previously held.

Initial schedules call for approximately 80 technical papers on a variety of subjects relating to military electronics, and exhibits from military and commercial organizations. "More than 34 booth reservations have already been received within two weeks of the initial invitations, indicating a record number of booths probable for the convention." The basic purpose of the convention will be "to exchange and disseminate technical information on military electronics."

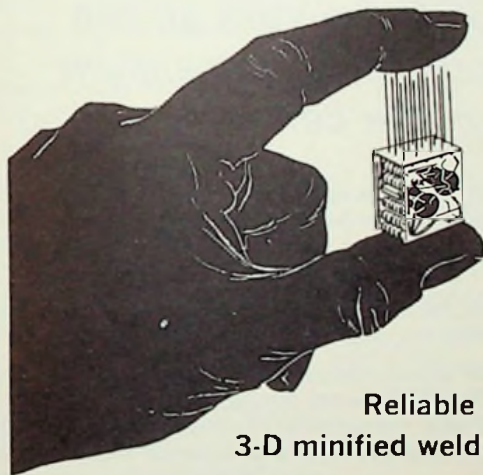
4TH WESTERN TECH CONFERENCE

Sponsored by the Los Angeles Section of AIEE and its committees on domestic appliances and domestic commercial applications, the day-long conference will be held October 29 at the Biltmore Hotel. It will cover the application of space technological advances to commercial and domestic applications.

Luncheon speaker will be Crosby M. Kelly, vice president, public relations, Litton Industries. For further program details and registration forms, write to Al Klika, Controls Company of America, Thermac Gas Division, 14296 E. 6th Street, Corona, Calif.

MORE MEETINGS

studies related to the solar probe, manned lunar landing, and manned interplanetary missions. He is technical manager for several study contracts, including an analysis of extra-terrestrial chemical propulsion requirements for future NASA planetary landing missions.



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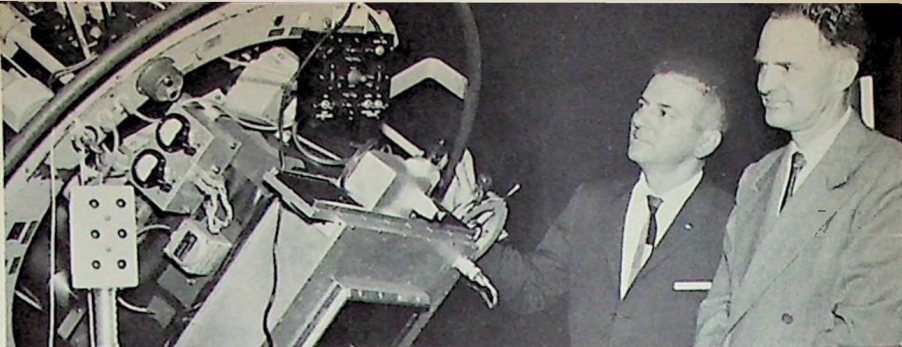


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PHOTOGRAPHING THE UNIVERSE

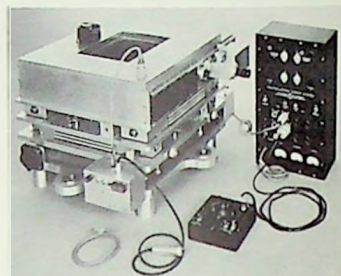
Astronomers at Lick Observatory, Mount Hamilton, are in the forefront in their studies, using a variety of modern equipment incorporating the latest in electronic techniques. Photoelectric devices of varied types are being applied in diverse ways toward precise photometry of faint stars, studies of stellar colors, spectrum scanning, electronic photography, as well as automatic star-tracking.

Recently completed and put into routine use is a new astrometric camera, built to the observatory's order by SRI. This latest addition is used with the 75-year-old 36-inch refractor telescope, still in first-class optical condition, thus assuring its continued usefulness for many years to come. The camera features photoelectric guidance, which enables close tracking of a selected guide-star for exposures of as long as several hours,

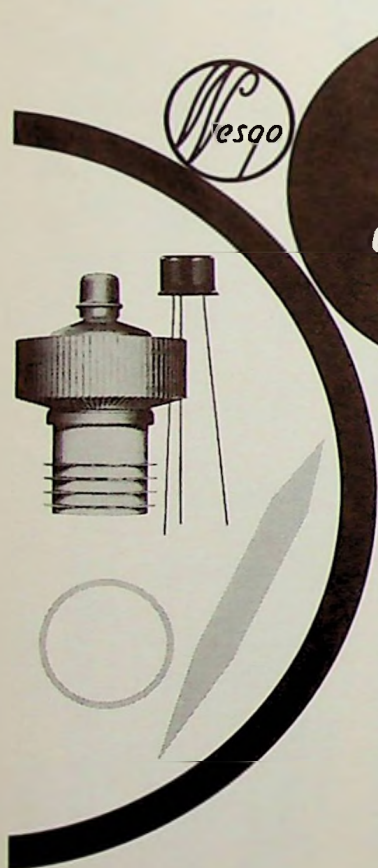


Mounted on the Lick telescope is the camera built by Curt Roche, left, under supervision of Robert Weitbrecht, IRE member, both of SRI. Electronics operate servomasters in X and Y directions, causing camera to track stars as picked up by phototubes in aluminum box on top

thus achieving a carefully focused, clear photograph of the celestial object under study, in spite of atmospheric refraction effects, telescope drive drifts, etc. Several hundred photographic plates have been accumulated in various observing programs such as stellar parallax and star cluster studies. The camera has been found to be reliable and easily operated.



Final form of the Lick astrometric camera. Assembly on left is camera proper containing servo-controlled X and Y motions. Black box, with its smaller control box, contains electronics needed to enable camera to perform its mission



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SE HABLA BALGOL

Deans, department heads, and a Nobel Prize winner are among 72 Stanford University professors and administrators who recently went back to school as students.

Their course was a concentrated nine-day seminar on computers and computer language. Twice the expected number of faculty members responded to the school of engineering's invitation to the COMPSEF II seminar, the sequel to last year's COMPSEF I (Computation Seminar for the Engineering Faculty), designed to give faculty members a chance to learn about computers, their strange language, and their remarkable contributions to education and research. The program is supported under a Ford Foundation grant made in 1959 for faculty development.

Instructors for the course included six Stanford experts: Prof. Robert V. Oakford, industrial engineering; Prof. George E. Forsythe, computer sciences and mathematics, and director of the Stanford computation center; Prof. Gene F. Franklin, electrical engineering; Prof. Harvey M. Wagner, industrial engineering, statistics, and business administration; R. Wade Cole, acting associate director of the computation center; and Robert T. Braden, computer sciences. A seventh lecturer, Robert S. Barton of Altadena, was a private consultant.

Specialists in education, business, genetics, medicine, engineering, and statistics were included in the 72 scholars devoting full time to lectures and the study of BALGOL—a computer language combination of algebra and English. Afternoons were devoted to practice in preparing actual programs in BALGOL for Stanford's computation center. The center gave their lab work top priority processing, keeping pace with successive sessions of the class.

Several hundred persons learn computer languages and techniques at Stanford each year, but most are students. Faculty members have to learn in their spare time, as in the current between-quarters seminar. A new home for Stanford's computation center is now under construction, where two big computer systems—an IBM 7090/1401 and Burroughs B5000—will be located.

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IT IS REPORTED:

Myron C. Pogue has been appointed manager of marketing research for Ampex Corporation, responsible for domestic and international marketing research for all products divisions.

James L. Farmer has been named senior representative for Army programs of the Motorola military electronics division and will headquarter at Red Bank, N.J.

William J. Corcoran has been appointed director of the research and advanced technology division at United Technology, Sunnyvale.

Philip B. Thomas has been named manager, manufacturing, and Charles N. Fournier named controller for the vacuum products division, Varian Associates. Arthur J. Rock, Harald N. Andreassen, and Robert L. Cooper have been named managers of district sales offices in San Francisco, Dallas, and Los Angeles, respectively.

Robert E. Wolfe fills the new post of vice president for manufacturing at Melabs, Palo Alto, including responsibility for production control, metal fabrication, components and circuits assembly, and testing.

Russell R. Miller has been named manager of product planning, Ampex Corporation Computer Products Company, Culver City, responsible for short- and long-range planning for development of ferrite and tape memory systems and components for computers.

Gordon C. Westwood has been appointed manager of the Palo Alto office of Carl A. Stone Associates, Inc. The firm has been named sales representative in northern California for Filtron, Inc., for RF shielded enclosures.

Carl D. Herold, John K. La Galante, and Lawrence L. Polson are three new additions to the technical staff of the systems division of Watkins-Johnson Co.

James Lambert, former production manager for Precision Instruments, has joined The Calma Company as sales engineer.

Al Anderson has been named production engineer by Alfred Electronics after six years with H-P.

Donald L. Putt, president of United Technology Corporation, has been elected a director of Granger Associates.

PAPERS CALLS

Nov. 5: 200-word abstract for the INTERMAG Conf. on Nonlinear Magnetics to be held at the Shoreham Hotel, Washington, D.C., Apr. 17-19. Address to: Dr. J. J. Suozzi, tech. prog. chm., Bell Telephone Laboratories, Inc., Whippany, N.J.

Nov. 15: 100-word abstract for a Fourth Joint Automatic Control Conf. to be held at the Univ. of Minnesota, Minneapolis, Minn., June 19-21, 1963. The sponsoring societies of the JACC

are the American Institute of Chemical Engineers (which has prime responsibility in 1963), the Institute of Electrical Engineers, the American Society of Mechanical Engineers, the IRE, and the Instrument Society of America. Abstracts and papers may be submitted through the member society headquarters, with the designation "for 1963 JACC," or to the prog. chm., Prof. Otis L. Updike, Dept. of Chemical Engineering, Univ. of Virginia, Charlottesville, Va.

Nov. 1-2—**6th National Conference on Product Engineering and Production.** San Francisco, Calif., Jack Tar Hotel. Exhibits: W. Dale Fuller, Lockheed Missiles and Space Div., P.O. Box 504, Sunnyvale, Calif. Program: George F. Reyling, Varian Associates, 611 Hansen Way, Palo Alto, Calif. IRE TRANSACTIONS on Product Engineering and Production after Conference.

Nov. 4-7—**15th Annual Conference on Engineering in Biology and Medicine.** IRE, AIEE & ISA. Conrad Hilton Hotel, Chicago, Ill. Exhibits: Professional Associates, 6520 Clayton Rd., St. Louis 17, Mo.

Nov. 5-7—**NEREM (Northeast Res. and Engineering Meeting).** Commonwealth Armory, Somerset Hotel, Boston, Mass. Exhibits: S. K. Gibson, Instruments of New England, 108 Greenwood Lane, Waltham 4, Mass. Program: I. Goldstein, Raytheon Co., Box 555, Hartwell Rd., Bedford, Mass. Digest: \$7.50. Contact IRE Boston Office after Conference.

Nov. 12-15—**8th Annual Conference on Magnetism and Magnetic Materials.** Penn-Sheraton, Pittsburgh, Pa. Exhibits: J. L. Whitlock, John Leslie Whitlock Assoc., 253 Waples Mill Rd., Oakton, Va. Program: G. W. Weiner, Westinghouse Elec. Corp. Res. Labs, Churchill Bor., Pitts. 35, Pa. Proceedings: In Journal of Applied Physics, Mar. or Apr. 1963.

Nov. 15-17—**1961 Annual Display of Aerospace Electrical Society** (formerly Aircraft Electrical Society), Pan Pacific Auditorium, Los Angeles, Calif. For information, contact Ed Niles, executive secretary, 3540 Wilshire Blvd., Los Angeles, Calif.

Nov. 16-17—**2nd Canadian IRE Communications Symposium.** Queen Eliz. Hotel, Montreal, P.Q., Canada. Exhibits. Program: Alan B. Oxley, Canadair Ltd., Box 6087, Montreal, P.Q., Canada.

Nov. 19-20—**MAECON (Mid-American Electronics Conference).** Hotel Continental, Kansas City, Mo. Exhibits. Program: Dr. John Warfield, Dept. of E.E., Univ. of Kansas, Lawrence, Kansas.

Nov. 28-30—**1962 Ultrasonics Symposium.** Columbia, Univ., New York City. Program: R. N. Thurston, Bell Tel. Labs., Murray Hill, N.J. IRE TRANSACTIONS on Ultrasonics Engineering.



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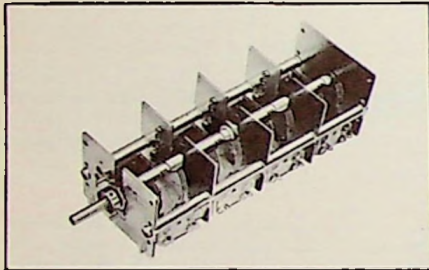
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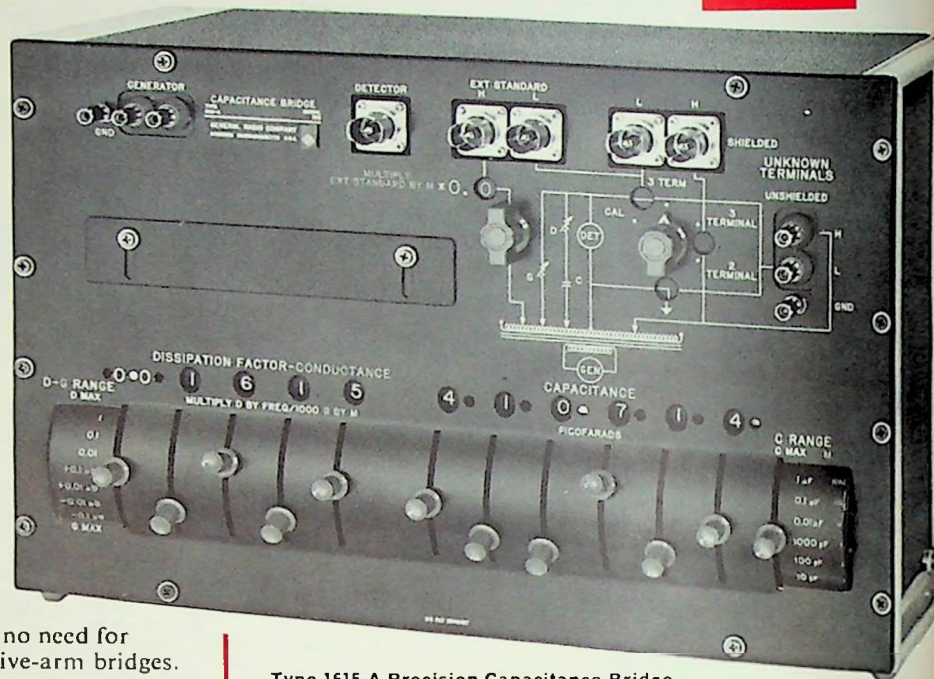


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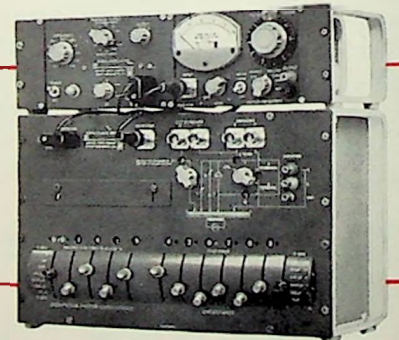
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