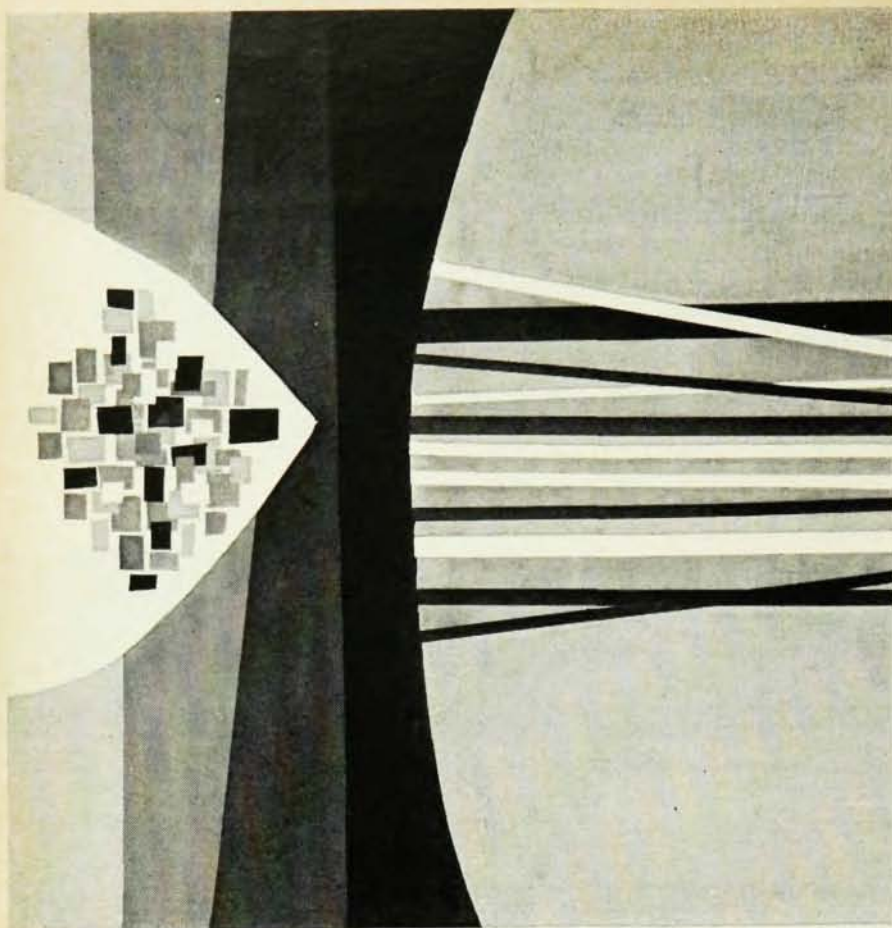




Interpretation by William Thonson

PROBLEM:
RF Structures for
Proton Acceleration

To design and develop high power electromagnetic slow wave systems capable of accelerating protons from 4% of light velocity up to selected speeds as high as 85% of the velocity of light. These systems are the heart of a new facility being designed to provide meson beams of unprecedented intensity.

Qualified applicants interested in working on this or similarly challenging problems at Los Alamos are invited to send resumes to:
Director of Personnel,
Division 64-119

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will be the mechanical, electronic, and optical shops, as well as a photographic laboratory. The twin-tower observatory will allow new research programs, notably in image orthicon spectroscopy. Head of the research center is J. Allen Hynek, chairman of the Astronomy Department at Northwestern and director of the University's Dearborn Observatory.

Visiting scientists

A considerable expansion is planned during the current academic year in the AAPT/AIP Visiting Scientists Program for colleges. During the preceding year, the National Science Foundation provided support for visits of scientists to some 120 colleges and universities, whereas for 1964-65 approximately 200 schools will be visited. This year, all applications from colleges that have not previously participated in the program will be given priority. However, most of the applications from schools that have already participated can probably be accepted. Department chairmen should send their requests promptly to the Visiting Scientists Program in Physics-College, American Institute of Physics, 335 East 45 Street, New York, N.Y. 10017.

Lawrence Hall of Science

A search for equipment and instruments used in atomic research by the late Ernest O. Lawrence and other researchers in the early days of the Lawrence Radiation Laboratory has been launched to equip the Hall of Science under construction at the University of California in Berkeley.

The equipment will be collected and displayed in the Lawrence Memorial Room of the new facility. Dr. Lawrence, Berkeley's first Nobel laureate and the inventor of the cyclotron, founded and headed the Lawrence Radiation Laboratory until his death in 1958.

The Hall of Science is intended to be a national center for research in science education. It will be directed by Harvey E. White. The initial facilities will include a four-story building for study and demonstration in science teaching, a science informa-

NEW ACCURACY for true rms ac measurement!

unequalled crest factor for accurate
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linear scale for excellent resolution,
plus linear dc output

measures $100\ \mu\text{v}$ to $300\ \text{v}$, -72 to
 $+52\ \text{db}$, $10\ \text{cps}$ to $10\ \text{mc}$

small, compact, easy to use, and
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With the new 3400A, true rms measurements can be made of nonsinusoidal signals having crest factors (ratio of peak to rms) as high as 10 at full-scale over frequency range of $10\ \text{cps}$ to $10\ \text{mc}$. This high crest factor increases for downscale readings, being inversely proportional to meter deflection. For greatest accuracy, 12 ranges in precise $10\ \text{db}$ steps permit most readings to be taken on the upper two-thirds of the linear voltage scale.

Call your Hewlett-Packard field engineer today for a demonstration and for all the details.

SPECIFICATIONS

Range:
 $100\ \mu\text{v}$ to $300\ \text{v}$ rms; 12 full scale ranges from $1\ \text{mv}$ to $300\ \text{v}$ in a 1, 3, 10 sequence; -72 to $+52\ \text{db}$

Meter Scales:
voltage, 0 to 1 and 0 to 3; decibel, -12 to $+2\ \text{db}$

Frequency Range:
 $10\ \text{cps}$ to $10\ \text{mc}$

Accuracy:
within $\pm 1\%$ of full scale, $50\ \text{cps}$ to $1\ \text{mc}$; $\pm 2\%$ of full scale, $1\ \text{mc}$ to $2\ \text{mc}$; $\pm 3\%$ of full scale, $2\ \text{mc}$ to $3\ \text{mc}$; $\pm 5\%$ of full scale, 10 to $50\ \text{cps}$ and from 3 to $10\ \text{mc}$

Response:
responds to rms value (heating value) of the input signal for all waveforms

Crest Factor (ratio of peak amplitude to rms amplitude):
 10 to 1 at full scale, inversely proportional to pointer deflection; e.g., 20 to 1 at half scale, 100 to 1 at tenth scale

Response Time:
typically $< 2\ \text{sec}$ to within 1% of final value for a step change

Overload Protection:
 $40\ \text{db}$ or $425\ \text{v}$ rms, whichever is less, on each range

Maximum Input:
 $425\ \text{v}$ rms

Input Impedance:
 $10\ \text{megohms}$ shunted by $25\ \text{pf}$

Output:
negative $1\ \text{v}$ dc at full scale deflection, proportional to pointer deflection; $1\ \text{ma}$ maximum; nominal source impedance is $1000\ \text{ohms}$

Power:
 115 or $230\ \text{v} \pm 10\%$, 50 to $60\ \text{cps}$, approximately $7\ \text{watts}$

Dimensions:
 $5\frac{1}{8}$ " wide, $6\frac{1}{2}$ " high, 11 " deep

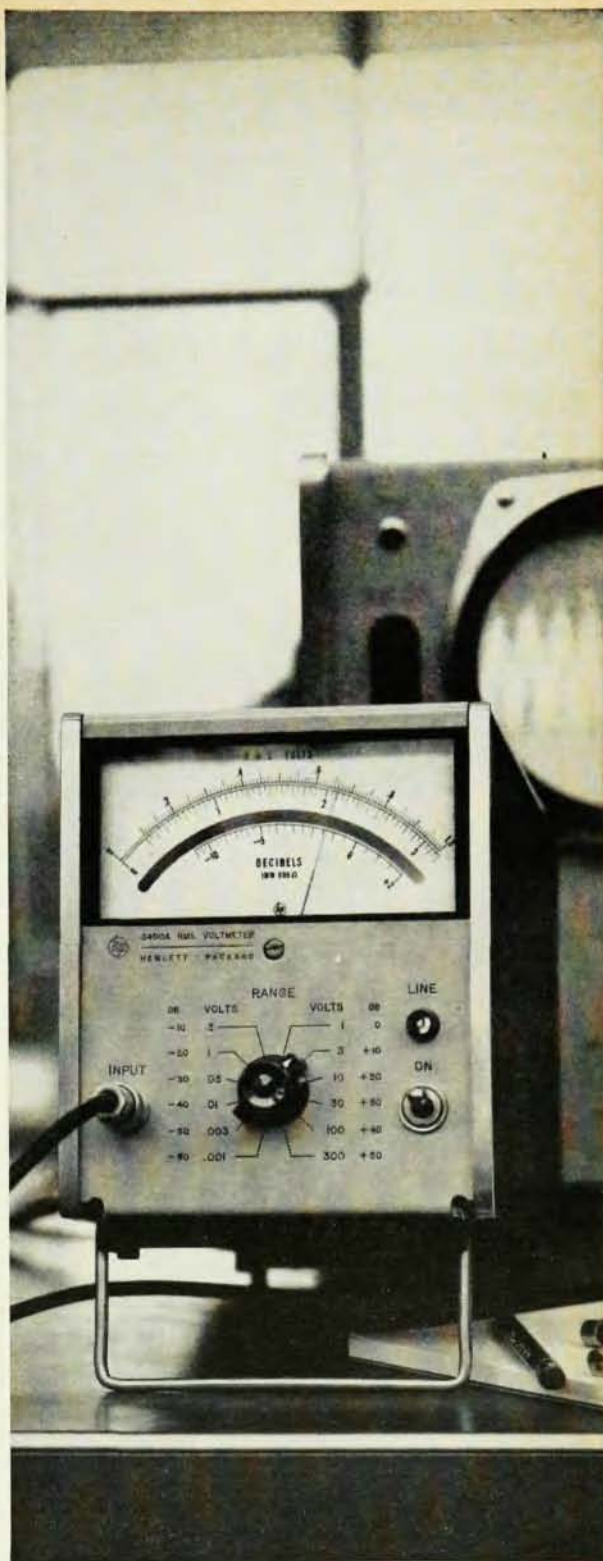
Weight:
net $7\frac{1}{4}$ lbs.

Accessory Furnished:
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Price:
3400A RMS Voltmeter, \$525

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FROM SPACE SCIENCES the NEW MICRO-VALVE

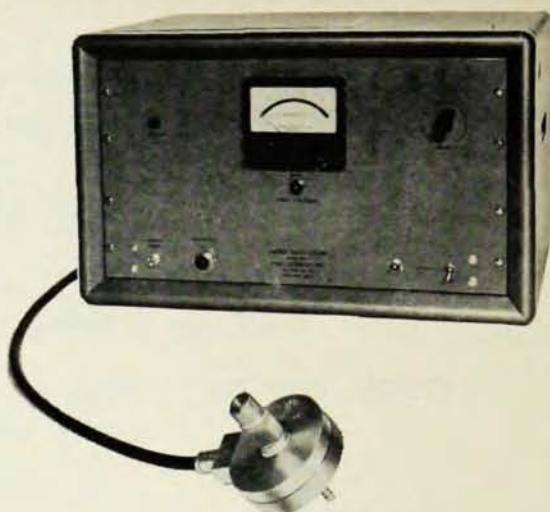
The new Space Sciences Micro-Valve is a fast-acting, electrically driven unit designed to permit rapid injection of small pulses of gas into vacuum.

Originally developed for use in plasma research and engineering, the Micro-Valve has proven to be a valuable instrument in the following fields:

- PROPULSION
- SURFACE STUDIES
- GAS SAMPLING
- DYNAMIC GAUGE CALIBRATION
- GAS MOTION STUDIES

OPERATING SPECIFICATIONS

CAPACITY.....	Continuously variable from 1 to 1000 micrograms of gas at a single opening.
OPENING DURATION.....	10 to 1000 microseconds.
PRESSURE DIFFERENTIAL.....	With 1 to 4 atmospheres on the high pressure side, valve maintains 10 ⁻⁷ mm Hg on the low-pressure side.
TIMING.....	Valve may be operated by remote manual control or may be triggered electronically for synchronization with other events.
GASES.....	Air, nitrogen, argon, helium, hydrogen and others including gas mixtures.



The Micro-Valve consists of two elements: the valve assembly and a remotely located driver unit. The small valve assembly may be mounted in a variety of configurations as an integral part of apparatus within a vacuum environment or attached externally to an opening in the vacuum enclosure.

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*to be held in connection with the joint meeting of the
American Physical Society-American Association of
Physics Teachers*

January 27-30, 1965

Hotel Statler Hilton, New York City

LOOKING FOR PHYSICISTS?

Universities, institutions, government laboratories, and companies wishing to post notices of positions may send descriptions of the openings on 8½ x 11 paper in multiple copies (25 required) to the Institute office by January 12, 1965, or post them on arrival at the meeting. If you plan to have a representative present, to interview applicants, please indicate his name at the bottom of the job description sheets.

SEEKING A NEW POSITION?

Applicants may obtain registration forms and further information from the Institute office. *Pre-registration is important.* Complete registration forms must be received at the Institute by January 12, 1965 to insure their inclusion at this register.

INTERVIEWS.

It is to the advantage of the registrants to be present. Interviews will be arranged between employers' representatives and applicants attending the meeting.

COMPLETE REGISTER of applicants will be available upon request at the meeting and after the meeting at a nominal service charge.

PLEASE REPORT TO THE SECOND FLOOR, HOTEL STATLER HILTON, UPON ARRIVAL AT THE MEETING

AMERICAN INSTITUTE OF PHYSICS, 335 East 45 Street, New York, N.Y. 10017

tion center, and the Lawrence Memorial Room. These will be financed by about \$4.5 million from gifts and special funds. The University is currently seeking additional donated funds for construction of a nuclear science hall and a space science hall. Later plans call for a planetary space hall, an auditorium, and six smaller halls for programmed instruction.

Fulbrights for South Asia

Six universities are seeking American guest lecturers in physics in the 1965-66 program of grants under the Fulbright-Hays Act. The openings are in India: Rajasthan University (solid-state physics, statics, and quantum mechanics), and Banaras Hindu University (electron micrology); and in Pakistan: Universities of the Panjab and Peshawar (experimental physics), University of Dacca (experimental nuclear physics), and University of Sind (solid-state physics and thermodynamics). Additional details are available from the Committee on International Exchange of Persons, Conference Board of Associated Research Councils, 2101 Constitution Ave., Washington, D. C. 20418.

ORNL scientists at Tennessee

During the current academic year, a total of thirty specialists from the Oak Ridge National Laboratory will serve as part-time faculty members at the University of Tennessee. The scientists, representing seven fields of study, including nuclear engineering, will teach regular classes on the campus and supervise research projects at Oak Ridge for graduate students. The over-all program was established in 1963 through a \$750 000, ten-year grant from the Ford Foundation, and last year nineteen Oak Ridge scientists spent twenty percent of their time teaching at the University. They were released from a portion of their duties at the Laboratory in order to participate.

Health physics

Opportunity for graduate study in the field of health physics is being offered through two Atomic Energy

SOLID STATE PHYSICIST

General Dynamics | Astronautics requires MS or PhD degree physicist for an experimental maser/laser development program. Responsibilities will include the study of impurity diffusion, electron injection mechanisms, and crystal growing techniques. Tasks also involve paramagnetic resonance measurements on Indium Antimonide and other intermetallic compounds.

Please send complete resume, plus salary requirements, to Mr. B. L. Dobler, Chief of Professional Placement and Personnel, Mail Zone 130-90, General Dynamics | Astronautics, 5911 Kearny Villa Road, San Diego, California 92112. An Equal Opportunity Employer.

G | | | | | D

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