

# HIGH VOLTAGE ENGINEERING REPORT

DECEMBER, 1963

## A New Industrial Radiation Center

A new, complete production-scale service radiation processing center is now in operation in Burlington, Mass. Owned and operated by Electronized Chemicals Corporation (a subsidiary of High Voltage Engineering), the new unit houses 3 electron accelerators of varying capacities, bringing together the widest range of radiation processing facilities ever offered under one roof.

The new facility offers anyone interested in radiation processing effects a unique opportunity to carry out development work before making a capital investment in equipment. In fact, economics may dictate the use of a rental facility indefinitely. Or you may conclude that an accelerator belongs in your laboratory or plant. We're glad to be able to offer you either approach. Write for ECC facilities brochure.

## Particle Accelerators and Space Research

The effect of space radiations on instruments, devices, and materials is of major concern to researchers today. Steady progress in man's ability to predict these variables is being made through the basic studies of High Voltage Engineering customers.

Take micrometeoroids, for example. A system now being assembled — with a 2 MeV Van de Graaff as its core — will accelerate micron-size particles of iron and other materials to the hypervelocities of space. This simulated "space dust" will impact on materials and equipment in vacuum. Physical, chemical, and other changes in targets will then be carefully determined.

Actually, High Voltage Accelerators are more widely used for creating the basic radiations of space. The 4 MeV Van de Graaff unit, for example, can produce a substantial portion of the energy spectrum — electrons, x-rays, positive ions, and neutrons — under controlled conditions in the laboratory.\*

The same machine can be used for materials evaluation, radiation calibration, dosimetry studies, sterilization, activation analysis, radiation chemistry, and basic research.

Perhaps you should investigate the value of an Accelerator in your test program?

\*Write for Space Radiation Simulation Chart.

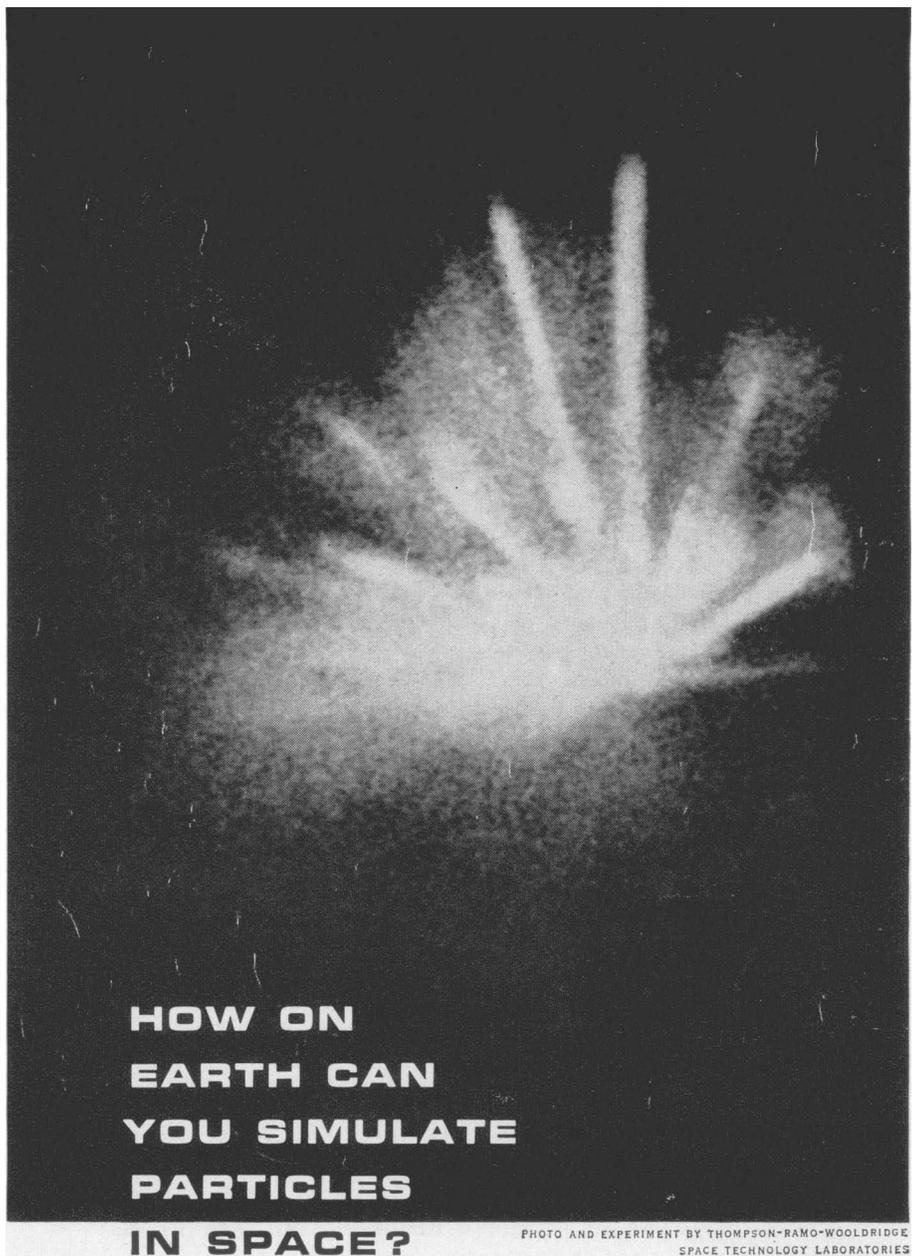


PHOTO AND EXPERIMENT BY THOMPSON-RAMO-WOOLDRIDGE  
SPACE TECHNOLOGY LABORATORIES

In this picture — taken of a simulated micrometeoroid impacting on a wire target — a particle accelerator helped do the job. Accelerating a micron-size particle to the hyper-velocities associated with space.

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Single-purpose Van de Graaff units can also be used for specialized space applications such as providing intense ( $2 \times 10^{12}$ ) fast neutrons for burst simulation.

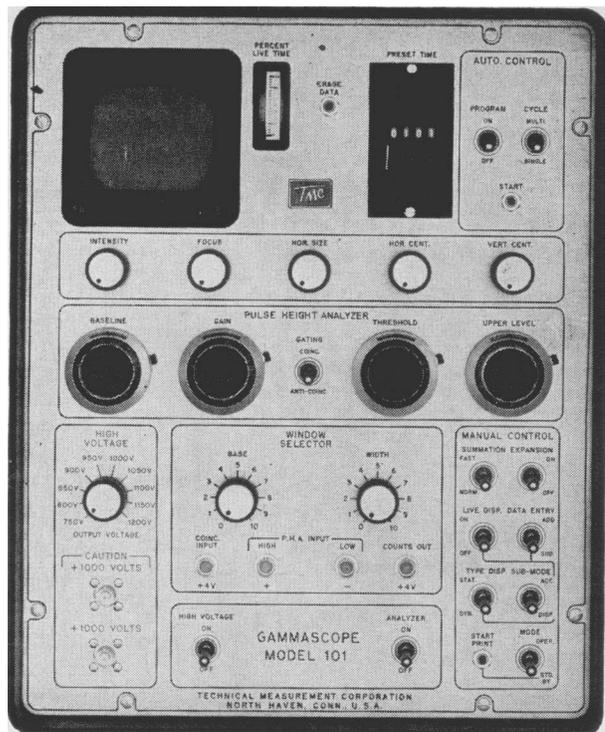
High Voltage Engineering particle accelerators are at work on a score of aerospace research programs in the United States. Why not investigate the value of an accelerator in your environmental test program? High Voltage Engineering Corporation, Burlington, Mass. **Subsidiaries: Ion Physics Corporation; Electronized Chemicals Corporation, Burlington, Mass.; High Voltage Engineering (Europa) N.V., Amersfoort, The Netherlands.**

\*Write for space radiation simulation chart.

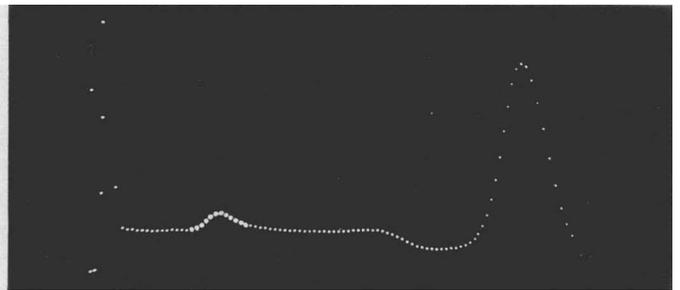
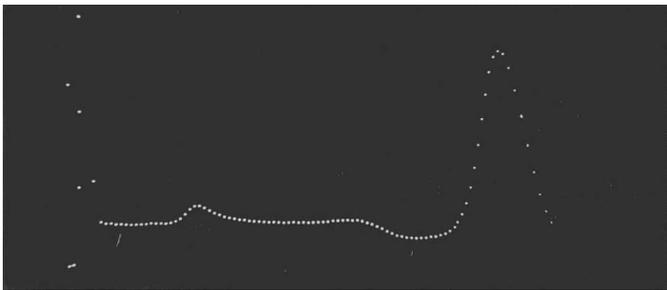


# HIGH VOLTAGE ENGINEERING

# Gammascopes<sup>®</sup>



## 100-channel pulse height analyzer with visual single-channel window



### \$5990 (including digital printer)

• high voltage supply • linear amplifier • live timer • live time meter • add/subtract logic • output for totalizing counts • static or dynamic display • digital print-out

Here is a 100-channel analyzer with all the advantages of multi-channel operation yet it is comparable in price to single-channel scanning spectrometers. The GAMMASCOPE will complete a spectrum analysis much faster — with less difficulty in set-up and calibration — than any single-channel system. The GAMMASCOPE measures gamma rays, beta particles, high energy protons, charged particles, and fission products. Typical applications are neutron activation analysis, "singles spectra" monitoring, experiment set-up, medical studies, nuclear physics education and health physics monitoring.

The variable single-channel window enables the experimenter to integrate the counts stored within any selected area of the displayed spectrum. The selected area is intensified on the spectrum display. The advantage is accurate study of peaks or any other segment of the over-all spectrum. For laboratories now using single-channel scanning systems the advantages of a GAMMASCOPE are these:

**Time-saved** — The GAMMASCOPE, with automatic operation and 100-channel storage capacity, will analyze and display a complete spectrum in a small part of the time required when manual operation or auxiliary scanning equipment such as motor drives, stepping motors and electronic sweeps are used.

**Size** — The GAMMASCOPE and its digital printer will essentially replace an entire rack of equipment.

**Accuracy** — The GAMMASCOPE with digital printer read-out provides more accurate results than the normal analog read-out of single-channel spectrometer systems.

**Energy calibration** — In the GAMMASCOPE, energy calibration is simplified by a visual representation of the energy spectrum.

**Short-lived isotopes** — The GAMMASCOPE will effectively handle analysis of short-lived emitters whereas single-channel systems often require counting times that exceed the isotope's half-life.

**\$5990 including digital printer f.o.b. North Haven slightly higher overseas**

The GAMMASCOPE is fully described in a new brochure that is available from your nearest TMC office or from the main office of Technical Measurement Corporation, 441 Washington Ave., North Haven, Connecticut — Telephone: 203-239-2501.



TECHNICAL MEASUREMENT CORPORATION