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Booklet on phase microscopy is an illustrated educational text for the purpose of introducing phase microscopy to teachers and students. This 64-page booklet, entitled *Understanding and Using the Phase Microscope*, assumes no prior knowledge of the subject and includes sections on history, construction, technique and experiments. The history of phase microscopy is traced from Zernike's original work to today's modern instruments. Following this are chapters covering properties of light, fundamentals of optics, principles of phase microscopy, and descriptions of the types of phase microscopes. The final chapter contains 14 experiments designed to familiarize the student with the actual instrument and its applications. Emphasis is placed on linking basic ideas of phase-contrast with concepts applicable in all microscopy. Any science teacher can receive one free copy. (Additional copies are \$1.)—D.J.P. (Unitron Instrument Co., Dept. S23, 66 Needham St., Newton Highlands 61, Mass.)

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The material in this section is prepared by the following contributing writers:

Robert L. Bowman (R.L.B.), with the assistance of Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

Joshua Stern (J.S.), Basic Instrumentation Section, National Bureau of Standards, Washington 25, D.C. (physics, computing, electronics, and nuclear equipment).

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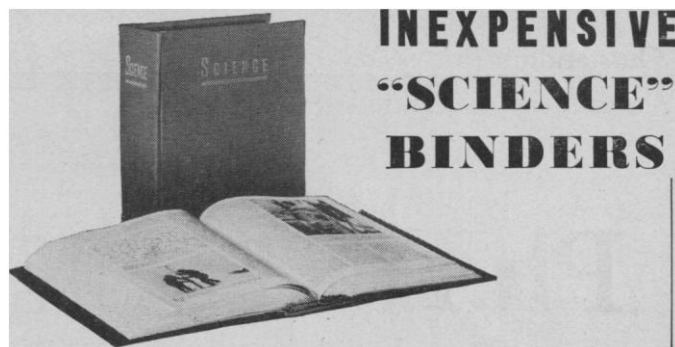
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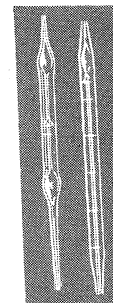


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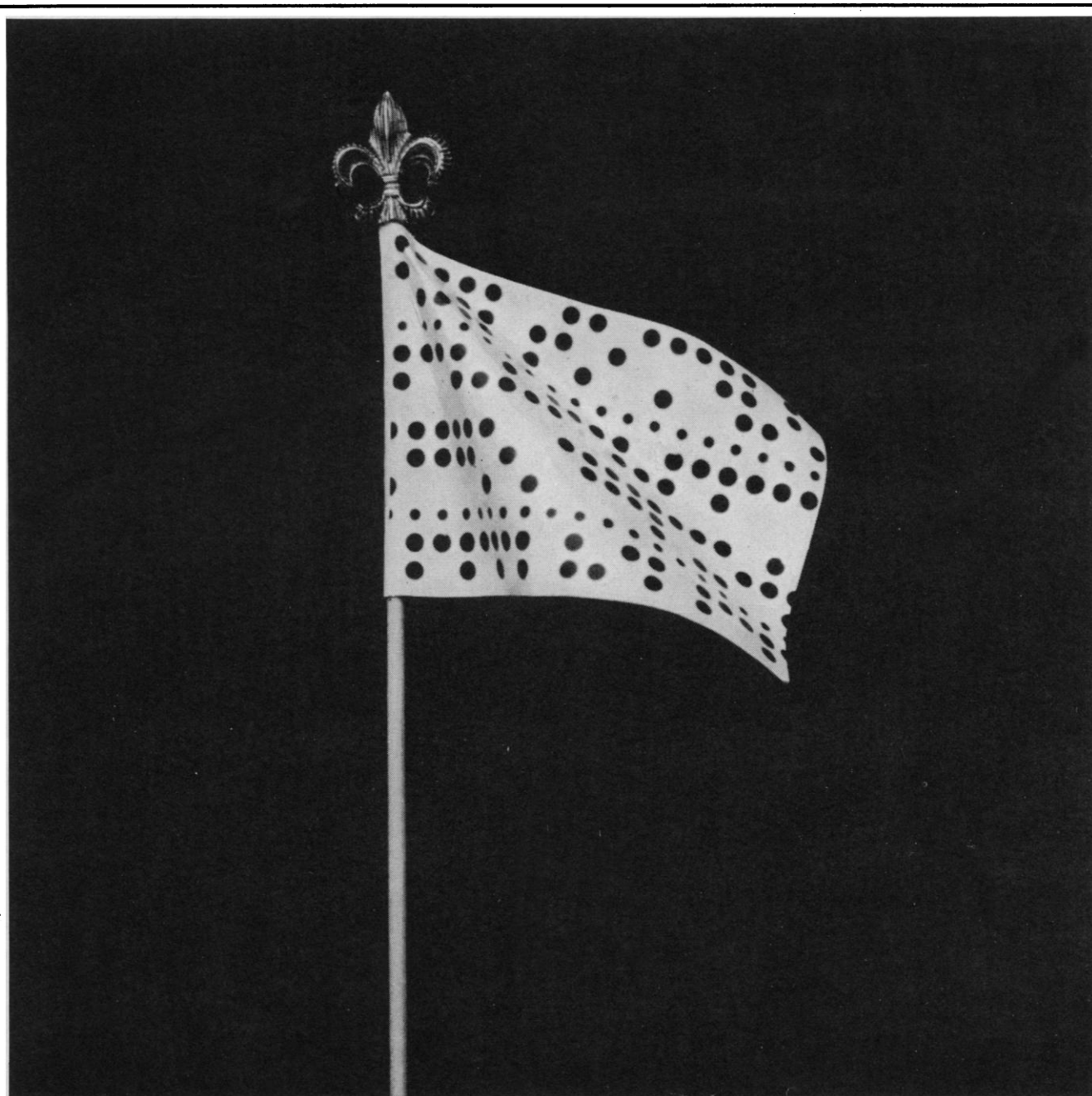
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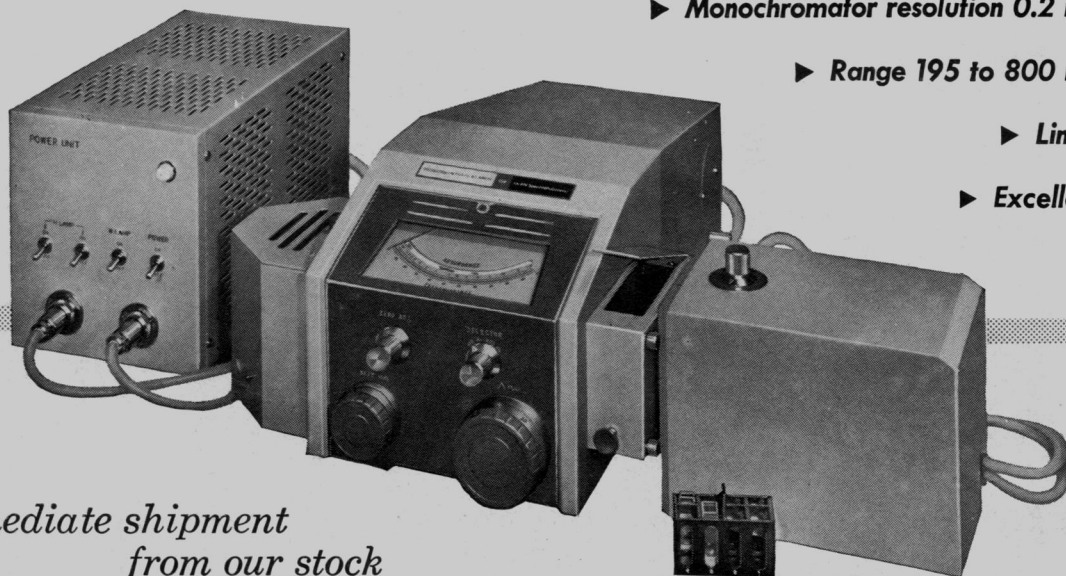
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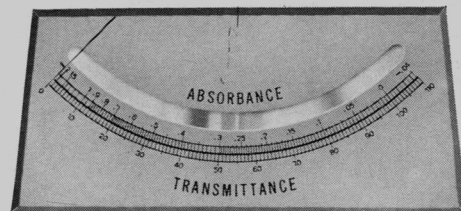
SPECTROPHOTOMETER, Hitachi Perkin-Elmer Model 139 UV-VIS (Ultraviolet-Visible Range). Diffraction grating type, compact modular construction, completely a.c. line operated, range 195 to 800 $m\mu$, meter indicating directly in transmittance and absorbance, for precise research or control use. Excellent design and workmanship provide an instrument of outstanding accuracy, stability, and versatility.

Wide Range Phototube. A single tube, with detectors of antimony-cesium and silver-cesium, covers entire range from 195 to 800 $m\mu$.

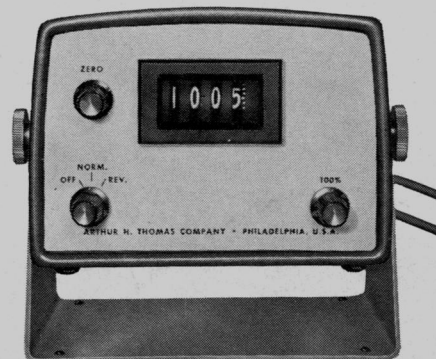
Energy Recording and Kinetic Studies. The exceptional stability of this instrument makes it especially suitable for these techniques.

Linear Wavelength Control. Easily read dial has uniformly spaced divisions over 1 mm wide, corresponding to 0.5 $m\mu$.

Meter Scale Expansion—Absorbance-transmittance meter scale has 10 \times expansion switch.



Mirrored Meter Scale, 5 1/2 inches long



THOMAS DIGITAL READOUT, with numerals approx. 1/2-inch high, available for use with above. Details on request.

Performance Specifications

Wavelength range—195 to 800 $m\mu$.

Resolution (monochromator)—0.2 $m\mu$ (2 \AA) throughout range.

Photometric accuracy—better than $\pm 0.5\%$ transmittance; better than ± 0.006 absorbance at 0.4 absorbance.

Slits—continuously adjustable from 0.005 to 3.0 mm. Height 20 mm.

Wavelength accuracy—better than $\pm 0.5 m\mu$ throughout range.

Wavelength reproducibility—better than 0.1 $m\mu$.

Photometric reproducibility—better than 0.002 absorbance between 0 and 0.5.

Cell path—5 mm, 10 mm, or 20 mm, in standard, 4-place holder.

9096-E. MODEL 139 SPECTROPHOTOMETER, as described. Complete with a.c. power supply, installed hydrogen and tungsten lamps, 4-place cell holder, matched set of 4 fused silica 10 mm absorption cells, etc. For 115 volts, 50 or 60 cycles, a.c. 2,300.00

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