

# USE OF SYNCHROTRON RADIATION FROM AN ELECTRON STORAGE RING AS AN ABSOLUTE STANDARD OF RADIANT FLUX FOR WAVELENGTHS FROM 1100 TO 3000 Å

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The synchrotron radiation from the Wisconsin 240 MeV electron storage ring was used to calibrate the absolute sensitivity of photoelectric detectors to radiant flux at wavelengths between 1100 and 3000 Å. The spectrum from an electron in the storage ring beam was theoretically predicted and the number of electrons in the beam determined exactly by observing the discrete decreases in radiant flux as single electrons were removed from the stored beam. Interference filters of measured transmission were used to limit the flux to the particular wavelength bandpasses desired (200–300 Å). Photomultipliers for use as laboratory standards of radiant flux, and more recently flight photometers for stellar observation via rockets, were calibrated against this standard.

## DISCUSSION

*R. Muri:* Can you eliminate all the hard X-ray radiation by your filtering system?

*E. T. Fairchild:* The lithium fluoride window stops the shorter wavelength radiation and it suffers only a slow degradation.