empirical causes of the increased amount of the projected light by the ER-55 Projector. And, of course, it would be highly desirable to have quantitative data.

Mr. Bean properly gave the credit to all those who participated in the development of this new unusual device. For historical interest, I may add that several years ago the possibility of utilizing an elliptical reflector was discussed with me by the members of the Engineer Research and Development Laboratories at Fort Belvoir, and that I was rather pessimistic about this idea. However, the Fort Belvoir project did not envision an off-axis ellipsoidal reflector such as Mr. Bean had in progress. As I understand, the project was never given sufficiently high priority and eventually was abandoned.

I may emphasize also the very excellent work done by the Corning Glass Company in overcoming the difficulties involved in producing a very satisfactory glass blank; by the Fecker Company in finishing the blank to an accuracy usually unobtainable for such products in ordinary manufacturing practice; and by the Silver Shop in producing replicas of excellent optical quality.

Summarizing, I may say that this is a new development which may become another milestone in the history of optics and of photogrammetric instruments.

35 Everett Street
Sherborn, Massachusetts

K. PESTRECOY

Received January 19, 1953.

A Scintillation Counter for the Measurement of Weak β Rays

RECENT publications (*1–4*) have emphasized the value of the liquid scintillator technique for the measurement of β rays in general, but more especially of those emitted by C^{14} and H^3 whose detection and counting was, up to now, a painstaking job. A description of the counter that we have been using for several months may be of interest to those attempting to systematize the method.

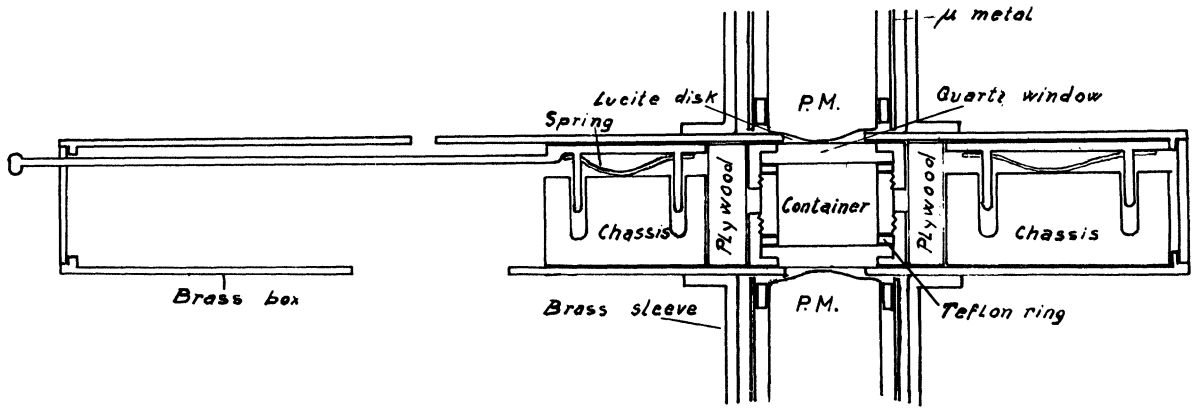

FIG. 1.

Our assembly (Fig. 1) consists essentially of a movable brass chassis in a light-tight brass box. The chassis is provided with a plywood receptacle into which a small cylindrical brass container with Pyrex or quartz faces can be fitted. In the off position one can either put the container into or remove it from the receptacle, while no light falls on the photomultiplier tubes. In the on position one finds the container between the sensitive areas of the tubes and, with proper electronic circuitry, gets only coincidence pulses from the system. The box is built in such a way as to permit adjustment of the space between the tubes.

We had to face three main problems: (*a*) Making a liquid-tight container, with due regard to the fact that it would hold powerful organic solvents; this difficulty was overcome with Teflon flat rings. (*b*) Getting good optical transmission from the container to the photocathodes; this was partly achieved by means of a lucite disk carved on one face to fit the tube head of the photomultiplier and stuck to it with Canada balsam. (*c*) Getting the proper chemicals which, to our knowledge, are produced neither in France nor in Germany; thus far we have used the rather inefficient α-naphthylamine dioxane mixture for the measurement of HTO samples with, however, encouraging results.

JEAN-CLAUDE ROUCAYROL
Laboratoire de Physique médicale
Faculté de Médecine de l'Université de la Sarre
Hombourg, Sarre

References

1. RABEN, M. S., and BLOEMBERGEN, N. *Science,* **114**, 363 (1951).
2. FARMER, E. C., and BERSTEIN, I. A. *Science,* **115**, 460 (1952).
3. HAYES, F. N., HIEBERT, R. D., and SCHUCH, R. L. *Science,* **116**, 140 (1952).
4. BLUH, O., and TERENTIUK, F. *Nucleonics,* **10**, No. 9, 48 (1951).

Manuscript received February 9, 1953.