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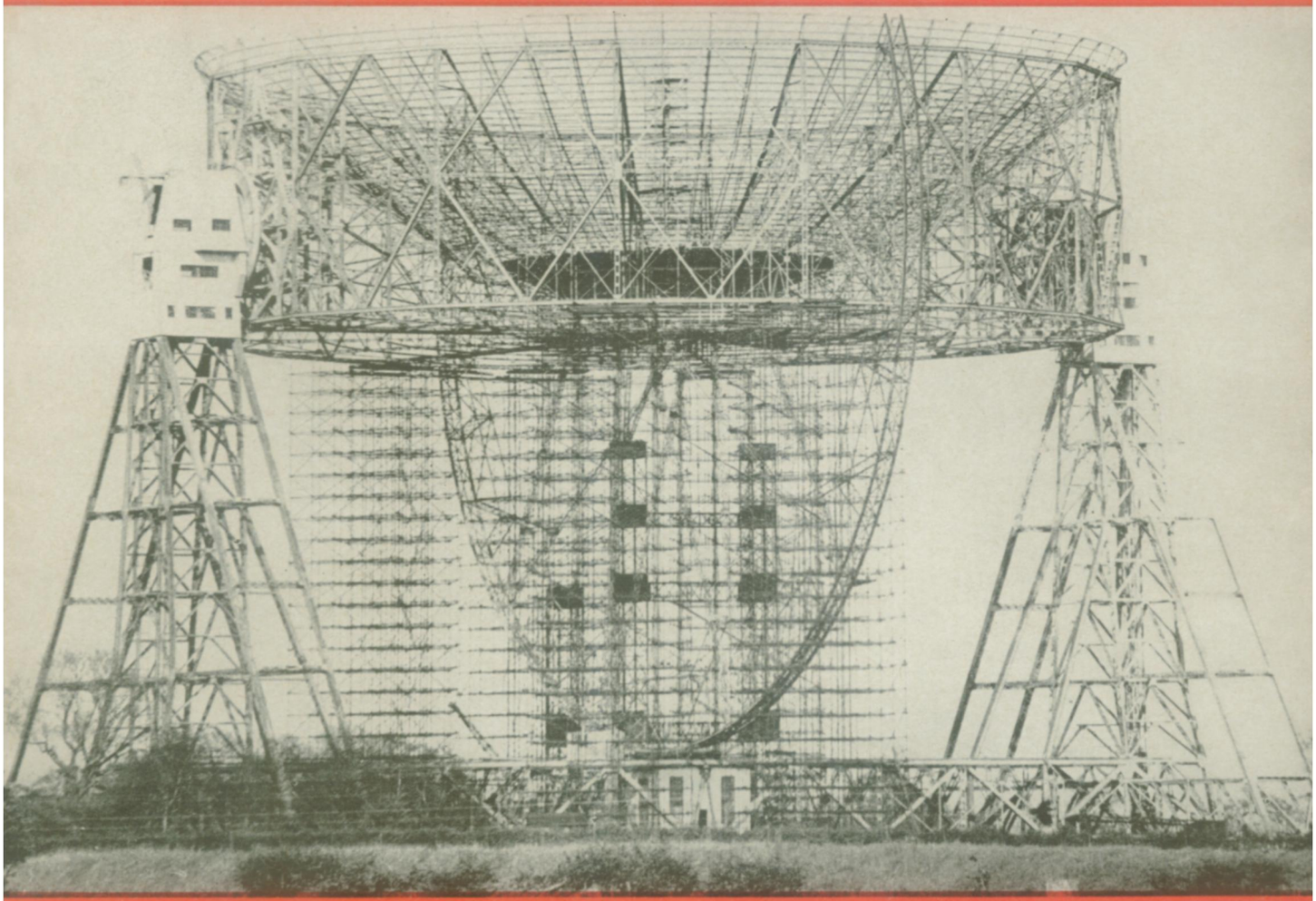
SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Largest Radio Telescope

See Page 12

A SCIENCE SERVICE PUBLICATION

Kodak reports to laboratories on:

four new sensitizings for an expanding universe . . . a clean deal for a liquid of refractive index 1.269 . . . easy entrée to a vast mass of knowledge about high speed photography

Finesse and sensitivity

Here we are, seemingly hoist in the dark with our own photographic petard, while in the act of coating photographic emulsion on glass to keep the astronomers in business.

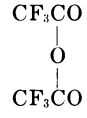
Photographic emulsion, the heart of the matter, comes here in beakers —a little beaker to coat a couple of dozen 2 by 10's, a bigger beaker for a dozen dozens of 8 by 10's to go to a man who wants to make sure his whole autumn's observing program will be on the same coating. Up to now we have listed 104 combinations of emulsion types and spectral sensitizing classes in which we can make *Kodak "Spectroscopic" Plates.* Now we have added four sensitizing classes for *Emulsion Type IIa.*

The lower case "a" means that the sensitivity emphasis has been so applied as to require the fewest hours of exposure to make visible the incredibly faint rather than to freeze a split microsecond with the least burst of brilliance. *Emulsion Type 103a* is even more sensitive in this respect, but *IIa* beats it for fine image structure and signal-to-noise ratio in the microphotometer tracings of stellar and galactic spectra.

The new *IIa* sensitizings are *Class F,* a very uniform one for the whole visible spectrum, especially for the red to 680 mμ; *Class E,* with low green sensitivity but the highest total red sensitivity, peaking at about 645 mμ, and cutting off sharply beyond about 660 mμ; *Class D,* the most generally useful one for the green region to about 630 mμ; and *Class G,* which provides the highest green sensitivity obtainable without appreciable red sensitivity.

Astronomers and others who employ photographic sensitivity with this order of finesse conduct their negotiations for materials with Special Sensitized Products Division, Eastman Kodak Company, Rochester 4, N. Y., which arranges for delivery through Kodak dealers—the very same, in many cases, who supply portrait photographers with Kodak Opal Paper *on which to picture the local brides. This also requires finesse and sensitivity.*

A hydrogenless oddity



With the lowest refractive index among Eastman Organic liquids (1.269), *Trifluoroacetic Anhydride* boils some 30 degrees lower than does *Trifluoroacetic Acid* (Eastman 6287). In plain *Acetic Anhydride* (Eastman 4), where intermolecular hydrogen-to-oxygen attractions strive for a liquid condition as long as possible, the BP is 22 degrees higher after dehydration than before, but when the hydrogens are replaced with fluorines, volatility reigns.

Whether or not such oddity assures *Trifluoroacetic Anhydride* of a future, it already has a past and (for all we know) a present. It has been made to serve as an unconsumed intermediate for the synthesis under mild conditions of various esters (including some from solid reactants), long-chain polyesters, ketones, and sulfones. A British outfit has gone to the expense of patenting some of these findings. Along a different line, there is a U. S. patent that speaks of reacting *Trifluoroacetic Anhydride* with acetaldehyde to yield vinyl trifluoroacetate, which is less flammable and much more stable to heat and water than vinyl chloroacetates. Come to think of it, *we* own that one.

Anyone who places an order with Distillation Products Industries, Rochester 3, N. Y. (Division of Eastman Kodak Company) for 25 grams of Trifluoroacetic Anhydride *is a valued customer of ours. Even if his outlook on life is wholly academic, as soon as our invoice for $3.35 plus transportation is paid he need feel in no wise indebted to us. Should his motive be suspected of being ultimately commercial, no salesman will call to assess the prospects for selling a tank car of it. This is not only a convenience to him but also to companies that sell chemicals by the tank car. About 3600 other such clean deals are set forth in List No. 40 of Eastman Organic Chemicals. Want a copy? (Incidentally, it tabulates 39 other available organic liquids in order of refractive index from 1.3289 to 1.7400.)*

Decency in the Temples of Science

Elsie Garvin keeps our researchers from wasting time with research. That is the properly bombastic way to describe the function exercised by Miss Garvin in our own Research Laboratories and by her equally competent sister and brother librarians in all the other great Temples of Science. They counteract the natural instinct of the scientist to rush to his test tubes and prove what had already been proved with crushing force 27 years previously.

But here *we sell the test tubes* or, less figuratively, the photographic materials that are just as representative a tool of research as test tubes used to be.

Yet we find Miss Garvin compiling a *Bibliography on High-Speed Photography* that runs to 35 pages of rather small type and provides easy entrée to a vast mass of knowledge accumulated over the decades about both equipment and techniques for every kind of high speed photography and about its findings in many, many branches of science and engineering—knowledge the duplication of which would consume incalculable miles of nice, fresh Kodak Film.

And what is to be done with Miss Garvin's bibliography? As long as the supply lasts, a free copy is to be sent *at our own expense* to any person wise enough to ask for it before plunging into a project in high speed photography.

Somehow it seems the decent thing to do. Requests should be addressed to Eastman Kodak Company, Professional Sensitized Goods Division, Rochester 4, N. Y.

Price quoted is subject to change without notice.

This is one of a series of reports on the many products and services with which the Eastman Kodak Company and its divisions are . . . *serving laboratories everywhere*

Kodak
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