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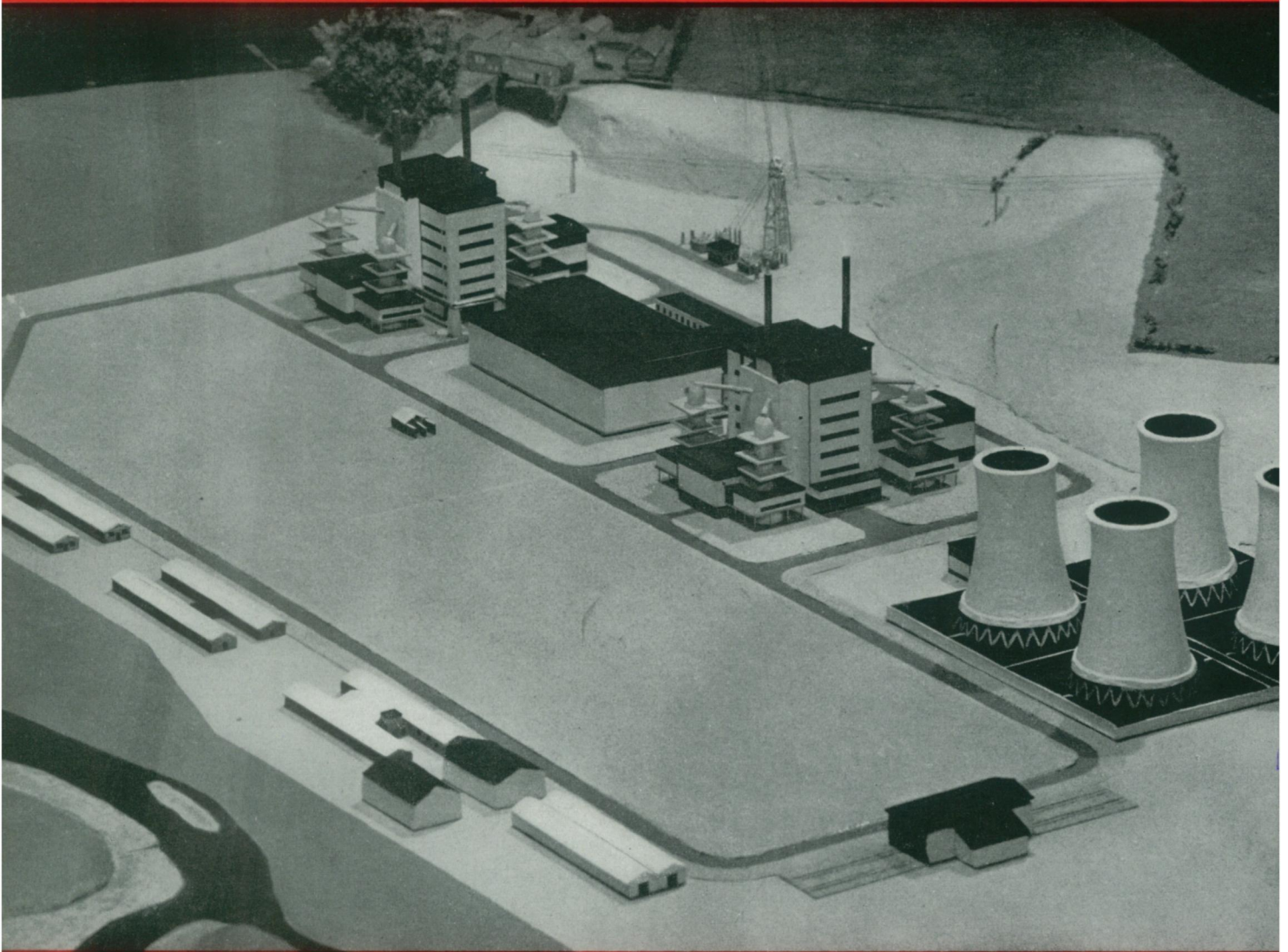
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SCIENCE NEWS LETTER

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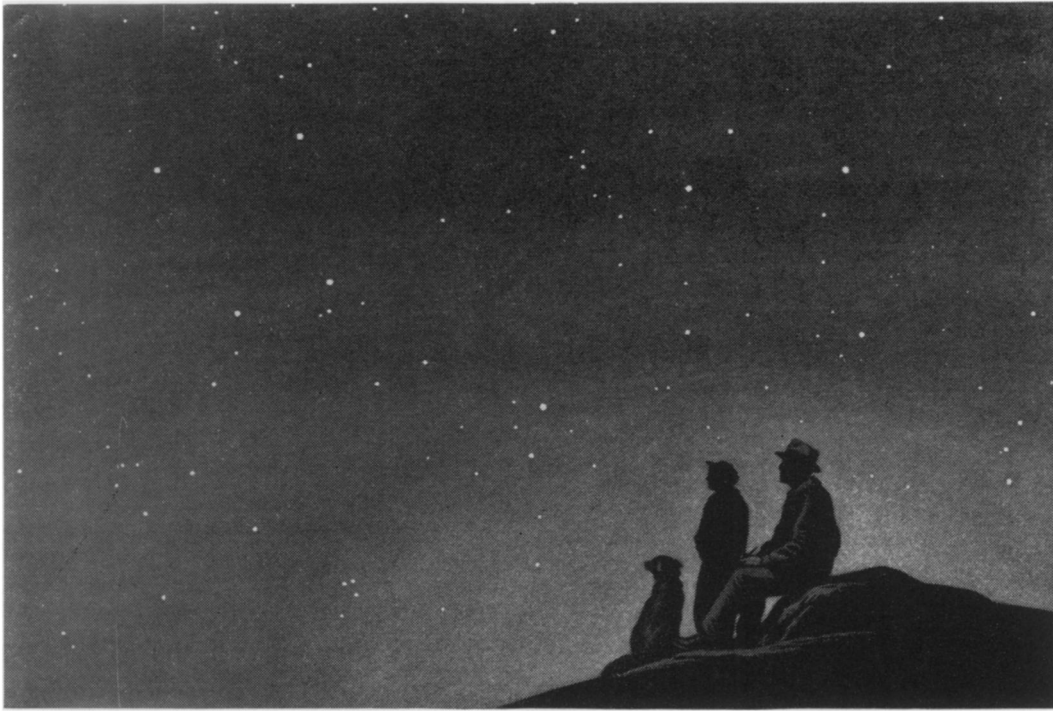
THE WEEKLY SUMMARY OF CURRENT SCIENCE



Atomic Power Station

See Page 359

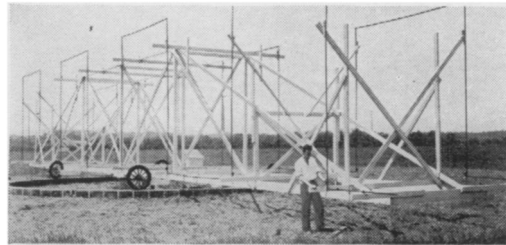
A SCIENCE SERVICE PUBLICATION



How silent is the night?

Watching the serenity of Christmas skies, we are conscious of deep silence. Yet the stars are talking to us all the while—talking in radio waves that are full of meaning to scientists probing the depths of space.

The important discovery that some stars produce radio waves was made by a Bell Laboratories scientist while exploring atmospheric disturbances which might interfere with transoceanic telephone service. His discovery marked the birth of the fast-growing science of radio astronomy. It is telling us of mysterious lightless stars that broadcast radio waves, and it promises exciting revelations about vast regions of space concealed by clouds of cosmic dust.



Directional radio antenna used by Karl G. Jansky, in the discovery of stellar radio signals at the Holmdel, New Jersey, branch of Bell Telephone Laboratories. In 1932 he detected waves of 14.6 meters coming from the direction of Sagittarius in the Milky Way.

It is another example of how Bell Telephone Laboratories scientists make broad and important discoveries as they seek ways to make your telephone serve you better.



BELL TELEPHONE LABORATORIES

EXPLORING AND INVENTING, DEVISING AND PERFECTING, FOR CONTINUED IMPROVEMENTS AND ECONOMIES IN TELEPHONE SERVICE

Kodak reports to laboratories on:

our service to those who want more than a little of things like a thorium reagent... sensitized materials for the autoradiographer... help in photographing a black cat in a coalbin at midnight

Thorium

Without previous experience in the manufacture of m-cresoxyacetic acid, we accepted an order for several kilos of the compound the other day. This is not exceptional. The generalized nature of our synthetic operations often permits us to make chemicals in larger-than-laboratory quantities more efficiently than our customers can do it for themselves. Accustomed as we are in these cases to keep our nose out of other people's business, we didn't ask any questions. Nevertheless, we did note that a team from a university in South India had broken into print not long ago with the tidings that m-cresoxyacetic acid makes an excellent reagent for separating thorium from the rare earths of the local monazite sands and from uranium. Impressed, we called the compound *m-Toloxycetic Acid* in accordance with *Chemical Abstracts* nomenclature and added it as Eastman 6883 to our list of more than 3500 Eastman Organic Chemicals.

By writing to *Distillation Products Industries, Eastman Organic Chemicals Department, Rochester 3, N. Y.*, you can obtain any or all of the following: 1) a frank appraisal of our readiness to supply larger-than-laboratory quantities of any organic compound you require; 2) a catalog of the organics we stock; 3) an abstract of the procedure for thorium; 4) 10 grams of m-Toloxycetic Acid for \$3.50 to carry it out with; 5) an explanation of the system by which we renamed it as we did.

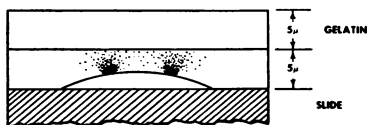


Autoradiography

One who makes good microscope preparations is something of an artist, although he may also be a first-rate scientist. If autoradiography is involved in the preparation, it widens the scope for artistry in matching medium to subject. For autoradiographer no less than for fashion photographer, we provide a choice of sensitized medium and technique:

Kodak Autoradiographic Permeable Base Stripping Film (Experimental) has a 5-micron-thick emulsion (thinnest emulsion to be found in any Kodak sensitized product, by

the way) coated atop a 5-micron layer of plain gelatin which provides mechanical support after the two together are stripped off the ordinary film base that acts as a carrier. Emulsion side down, the combination is then floated onto the microscope slide. Processing solutions permeate the photographically inert gelatin, but since it takes on no density, it cannot contribute to the overlapping of densities from active sites. *K.A.P.B.S.F. (E.)* is supplied 35mm wide and unperforated, 5 feet to a roll.



Not to be confused with it is *Kodak Autoradiographic Stripping Film, Type NTB*. This consists of a 10-micron emulsion on a thin cellulose ester film which can be split off from a carrier sheet of ordinary film base. The impermeable cellulose ester layer tends to eliminate chemical and abrasion artifacts and prevents direct contact between the photographic developer and the radioactive section. It also prevents stain in the tissue section from staining the emulsion. The material comes as 4" x 5" sheets.

For work where low radiation flux necessitates sacrifice of fine-grain qualities for higher sensitivity, we can supply 25-micron-coated *Kodak Autoradiographic Plates, Type A*. An even greater sacrifice in that direction is represented by *Kodak Autoradiographic Plates, Type No-Screen*.

If you know which autoradiographic material you want, just call up your Kodak Industrial Dealer and order it. If you have questions, write Eastman Kodak Company, Industrial Photographic Division, Rochester 4, N. Y., and find out if we can answer them.

Intense development

Call us peculiar if you will. Here for better than half a dozen years we have had a means of doubling effective emulsion speed by merely adding something to the developer and yet we've made precious little noise

about it. This is not diffidence but reluctance to set off a trend that might in the long run prove inimical to beautiful photography. The gain in sensitivity is not without cost in loss of definition, high base fog, and emphasis on fingerprints, abrasion marks, etc.

But perhaps our attitude has been too stuffy. One of the major newspaper organizations, though rarely faced with photographing a black cat in a coalbin at midnight, has been accepting help from "Solution A" on difficult night shots. Since the results are good enough for them, they're probably good enough for others who find that the most sensitive films still need to be squeezed a little occasionally.

We have no desire to enshroud "Solution A" in mystery. Its ingredients are hydrazine dihydrochloride, which promotes development of some silver halide grains that have not actually absorbed light photons,



and 6-nitrobenzimidazole nitrate, an anti-foggant. When 30 cc of it is thoroughly mixed into one liter of the familiar *Kodak Developer D-19*, you have *Kodak Developer SD-19a*. Develop conventional high speed negative materials in this at 75 F for 8 to 12 minutes with intermittent agitation. Best speed increase is generally found at a development time that gives a base fog around 0.40.

Any Kodak dealer can order for you Kodak Solution A for Kodak Developer SD-19a. (He'd better write it down just that way!) A quart costs \$2.65. It is specifically designed for use with *Kodak Developer D-19* and no other.

All prices quoted are 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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