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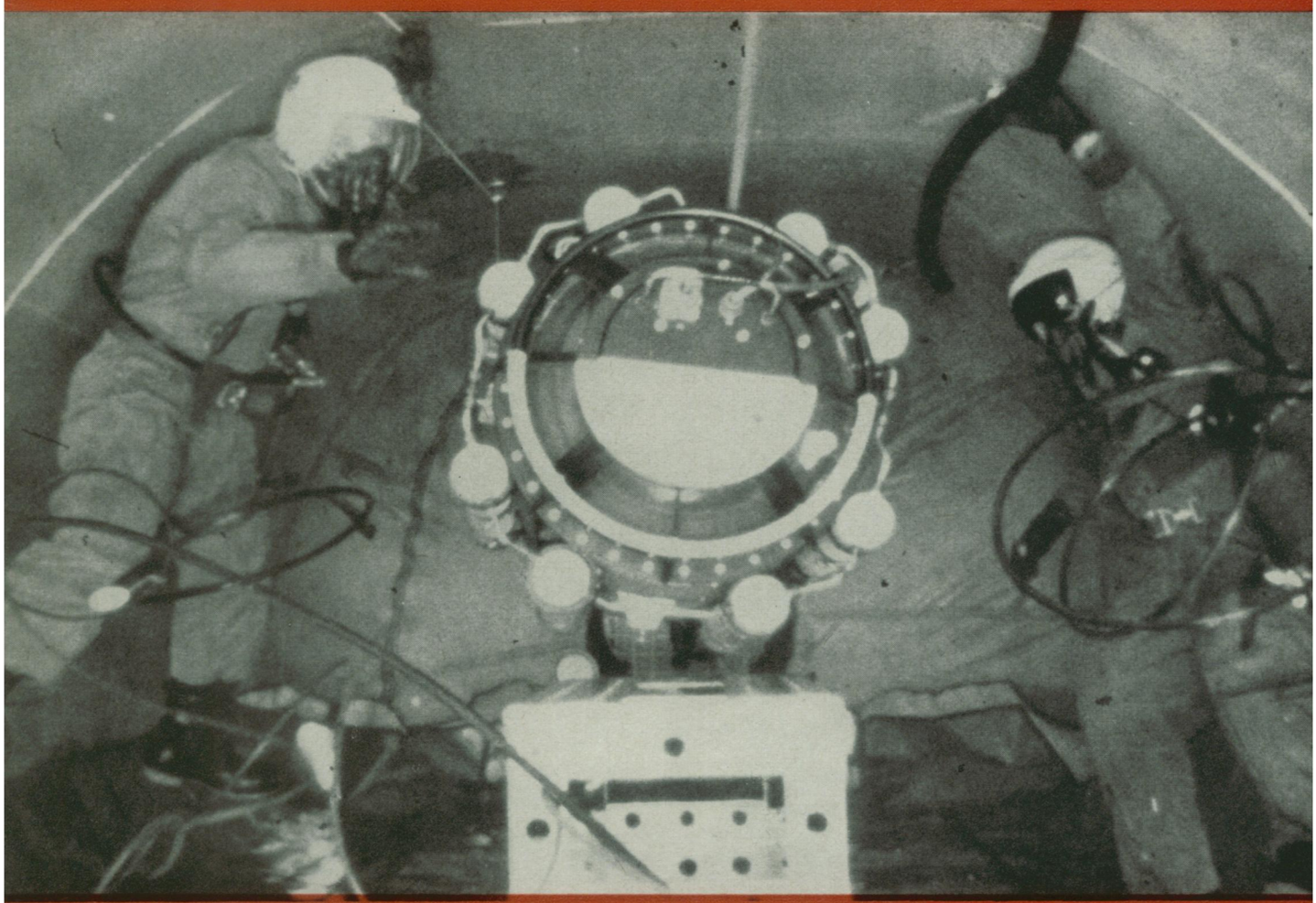
SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Weightless Testing

See page 285

A SCIENCE SERVICE PUBLICATION


WATCH THIS SPACE
In a moment a new satellite will streak into view. Bell Laboratories may help guide it into orbit, for few are so eminently qualified in the science of missile guidance. Bell Laboratories' Command Guidance System has guided such trailblazers as Tiros and Echo into precise orbits. The same system will guide more new satellites into predetermined orbits as Bell Laboratories continues pioneering in outer space to improve communications on earth.
BELL SYSTEM
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World center of communications research and development

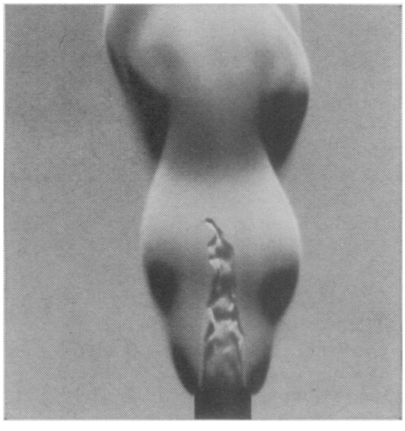
Kodak reports on:

19 pages of savvy on schlieren... what can be done with a puree... special plates, backyard telescopes, and the infrared

Thin air can be photographed

The technique of schlieren photography has now been debased to the point where a man can send in to Kodak for a free booklet on how to do it, can carefully read all 19 pages, and can set himself up as a schlieren man. Yes, and perhaps a case can be made that it is not necessarily immoral to go at it just that way.

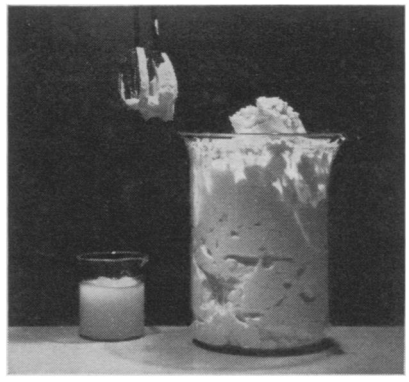
Though the schlieren method of photographing refractive index gradients in gases and liquids has been around for quite a while, general literature about it is scant; most of what has been published about it dwells on some particular application. You can find packaged schlieren outfits advertised, but the advertisements are low-pressure. Everybody who is doing schlieren now learned the hard way and is entitled to respect. One such savvy schlieren group works at Battelle Memorial Institute and another at Cornell Aeronautical Laboratory, Inc.



Here is an enchanting display item from Battelle's gallery—a turbulent Bunsen flame, frozen in a 13-microsecond schlieren portrait. Areas lighter than background represent decreasing index in an arbitrary direction within the plane of the picture; darker areas represent change in the opposite direction. To measure the quantitative rate of change with distance demands the very considerable elaboration of interferometric technique. A third method, called shadow photography, delineates the second derivative of refractive index with distance. Our booklet merely hints at the existence of these other methods. Given enough encouragement to expand it some day, we might cover them in useful detail.

To start encouraging us, send for "Schlieren Photography" to Eastman Kodak Company, Special Sensitized Products Division, Rochester 4, N. Y.

Light as air



Millions of Americans now facing a biological problem without significant precedent in all human history may well sit up and take notice of this picture. Theirs is the problem of avoiding more calories than their doctors say are good for them while enjoying the primal delight of good eating to which evolution has attuned the nervous system.

Both beakers contain the same quantity of applesauce. The one on the right contains only two additional ingredients: 1% of *Myverol Distilled Monoglycerides, Type 18-00* and 1000% of air. Both of these added ingredients are recognized by competent authorities to be as harmless as applesauce itself. One adds the monoglyceride, warms, and whips warm or cold. An ordinary kitchen mixer will do. If the result is a bit too airy for the common taste, one can either use more strongly flavored applesauce, freeze while mixing (as in making ice cream), or both. Even unfrozen, the whip is every bit as stiff as it looks in the picture and stays so for several hours. If you want more time, you can dry it down to a powder, package it, ship it to a store, and let a customer whip it after reconstituting with hot water.

It doesn't have to be applesauce, either. We have made the idea work just as well with pears, bananas, peaches, tomato juice, grape juice, and sweet potatoes. We don't see why it wouldn't work with any other strained or pureed fruit or vegetables, or even with puree-like materials for purposes other than food.

We don't sell applesauce or any other purees. We don't even sell Myverol Distilled Monoglycerides in family-size quantities. We love to sell them, though, in processor-size quantities and love to talk to processors about them. The address is Distillation Products Industries, Rochester 3, N. Y. (Division of Eastman Kodak Company).

Our connections with the heavens

We have three connections with the heavens:

1. Years ago we threw our weight on the side of the angels by a Good Deed. We went to work for the astronomers, a group noted for the slimness of their budgets. We made them the special photographic plates needed for all the projects that have seemed pressing to them, like measuring the angular momentum of galaxies. This work has netted us a medal or two but no wealth. That's all right. Questions about these plates are answered by Eastman Kodak Company, Special Sensitized Products Division, Rochester 4, N. Y. Professional astronomers know that address very well.

2. Amateur astronomers are among the most numerous of scientific-type hobbyists. Many thousands of persons who have to deal all day with tiresome human affairs like to reach out toward the ultimate verities through a backyard telescope. But, being human themselves, they hanker for tangible trophies of the sport. These photography can provide. To guide, we provide a free booklet, "Astrophotography with Your Camera," from the same address the professionals know. The amateur astronomers far outnumber the professionals and buy standard Kodak films at popular prices.

3. A protostar evolving from clouds of dust a million light-years away and an ICBM a thousand miles from the U. S. border have a certain resemblance in the infrared. At Ohio State University we have some astronomers working for us on an astronomical job which lack of suitable equipment has long delayed—preparation of an atlas of infrared emitters on the celestial sphere to 13.5 microns. We made them the missing equipment. We need the atlas. We have our reasons. The equipment includes a drift-free homodyne amplifier which takes a signal from our liquid-helium-cooled copper-doped germanium detector on the 69-inch Perkins Observatory telescope. It can cramp down to a .0011 cycle/sec scanning bandwidth so that in 20 minutes it can distinguish the emission of a single star from intergalactic infrared noise. Those who have need and funds for such up-to-date infrared systems should get in touch with Eastman Kodak Company, Apparatus and Optical Division, Rochester 4, N. Y.

Kodak
TRADE MARK

This is another advertisement where Eastman Kodak Company probes at random for mutual interests and occasionally a little revenue from those whose work has something to do with science