

and the force is itself the cause of the orbiting motion, according to Newton's laws.

It is a pity that there should be scope for confusion over this basic principle of mechanics, as a scientific venture has rarely captured the interest of the public to the extent of the present space program (or spent as much public money). Furthermore, the interest will be greatly increased by the first Apollo mission, and there will then be a fundamental difference. The gravitational forces on an Apollo crewman will be very weak for much of his journey, and his weightless condition will indeed be due to his remoteness from the earth and moon.

Perhaps science writers, in view of the great public interest, should take care to make the distinction between the two different kinds of "weightlessness."

F. E. M. LILLEY

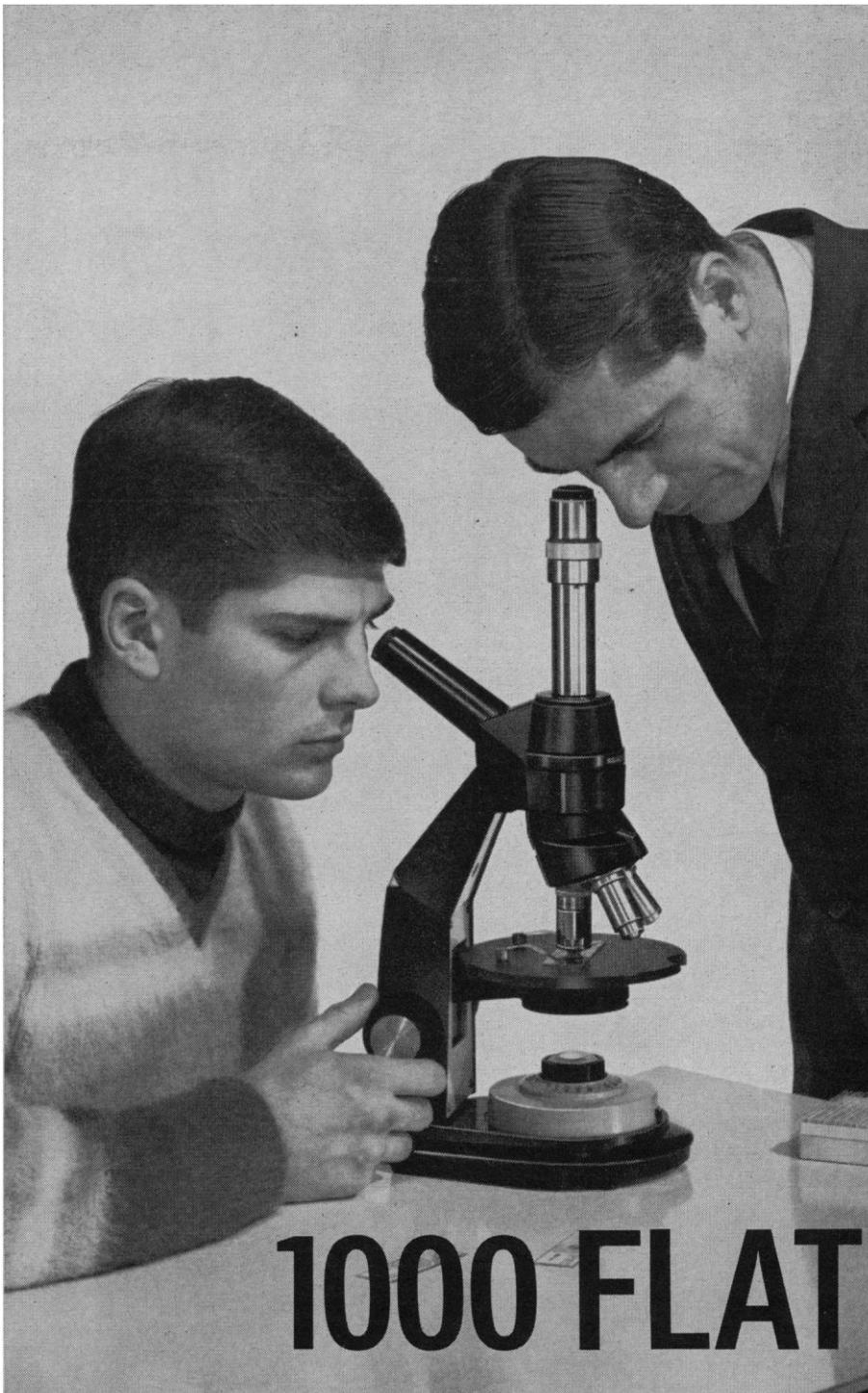
*Department of Geodesy and  
Geophysics, University of Cambridge,  
England*

### A Trained Eye on UFO's

Correspondence in your columns on UFO's points to a grievous lack of trained observers. For the elucidation of these rare and mysterious objects, first-class observations are necessary, and very few people, even among those supposed to be scientifically trained, can observe. The following drill, commonly used by observers of meteors, fireballs, and so on, is applicable and deserves to be better known. It is assumed you can transfer your whole attention to the phenomenon.

On becoming aware of the object, stand still and start counting seconds. Kick with your heel to mark your position exactly. Hold a hand out at arm's length and gauge the angular size of the object. (The thumb in width subtends  $2\frac{1}{2}^\circ$ , the open hand,  $20^\circ$ .) Note the brightness of the object, compared to other visible objects, and any changes that may occur. Establish the beginning and the end of the object's path with reference to marks on the horizon. Determine whether the object passes behind or in front of any landmark. Try to fix the position of touchdown on earth, if you think that has occurred. After the object has disappeared, make written notes of the above details. Transfer the seconds count to accurate time by your watch. Listen critically for sounds as-

9 JUNE 1967



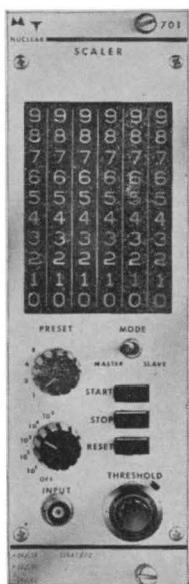
# 1000 FLAT

Need oil immersion 1000 $\times$  magnification for true edge-to-edge images of cell nuclei? Or for histological, bacteriological, or morphological studies? Then your students should have professional quality Academic 255 Flat Field Microscopes by Bausch & Lomb. These new instruments are built for long lasting, maintenance-free service, but are priced well within school/college budgets. They feature an optional double-viewing head with measuring pointers to help the student learn faster. To get all the details, of this and all the other Academic 255 Microscopes, write for our Catalog 31-2172. There's no obligation. Write Bausch & Lomb, 85642 Bausch Street, Rochester, New York 14602.

**BAUSCH & LOMB** 

In Canada, Bausch & Lomb Optical Co., Ltd., 16 Grosvenor St., Toronto, Ontario.

*Maximized  
Value...  
Our Reason  
For Being.*



In accordance  
AEC TID-20893

## For Instance:

- Model 700 6 decade  
Microcircuit scaler, 10 MHz,  
discriminator.....\$575.00
- Model 750 5 decade  
Microcircuit timer....\$550.00

There are others.

More Information..?

**CALL COLLECT**



**AREA CODE 312**

**344-2212**

**MECH-TRONICS NUCLEAR CORP.**  
1723 North 25th Avenue  
Melrose Park, Illinois 60160

sociated with the object and time them. Proceed to the position of touch-down and search for material objects. Notice any smell, as of ozone, at this point. Feel for a temperature gradient. Pace off the heelmark from a permanent landmark for later transfer to a map reference. Obtain a watch correction to the nearest second, preferably from a radio time signal. Forward a fair copy of the notes to the nearest observatory.

Practice this for a few evenings on meteors, to get the hang of it. And next time Venus is a daylight object, go to a busy intersection with a companion and point it out to him. (Look! A flying saucer! See how fast it goes, past those clouds!) The reports in the press the next morning will be very entertaining.

F. P. HUGHES

315 Poplar Street,  
Hawkesbury, Ontario, Canada

## A Poverty of Spirit in Underdeveloped Nations

Parsegian made some valuable points concerning the factors that spur underdeveloped nations toward greater productivity and self-reliance (Letters, 21 Apr.). But he fails to consider the problems of a population debilitated by chronic diseases such as malaria, vitamin deficiency, intestinal parasites, semistarvation due to insufficient food, and, worst of all, by a poverty of the spirit, the result of living for generations at an animal level of existence.

One does not have to leave the limits of the United States to find areas where, a generation ago, the population suffered from malaria, vitamin deficiency, and all the other conditions that lead to debilitation. In various military training camps in the South during World War II, there was a constant alert for the presence of the anopheles mosquito, a malaria carrier. The state of Missouri closed its trachoma hospital about 1950, only because of the availability of antibiotics. The derogatory appellation of "red-neck" usually describes one of the symptoms of pellagra, a vitamin deficiency disease.

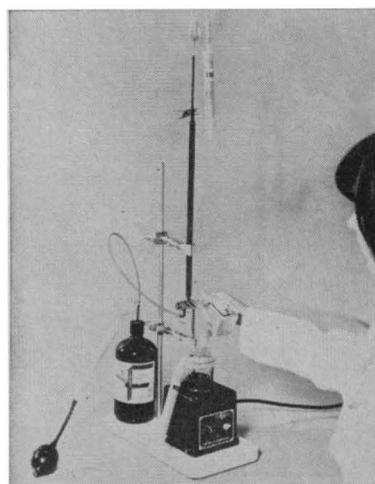
Debilitation in parts of the South, in earlier years, led to the conclusion that the people were lazy, good-for-nothing, and that there was no need to help, for the money would be wasted. Many conditions have been



## PERFORM CHEMICAL TESTS FASTER, MORE ACCURATELY

Just drop L/I Automatic REPI-PETS\* and Automatic Dilutors into your reagent bottles and leave them there. These two instruments sample, dispense, dilute, transfer and mix with a guaranteed accuracy of 1%, reproducibility 0.1%. You'll save between 50-95% of your analysis time!

L/I instruments give you complete freedom from contamination, can handle **any** reagent, require no change in your methods, and never need cleaning. Volumes? From microliters to deciliters. Available in 1, 10, 20 and 50 ml sizes. Prices: REPIPETS \$47.50, Dilutors \$89.50. Write for details.



## WATER DETERMINATIONS IN 4 MINUTES!

Use L/I Aquametry Apparatus to measure water content in foods, drugs, organics—all materials. Range 1 ppm. to 100% water without adjustment. 1% accuracy over entire range. Price \$235.

\* trademark-(REpetitive PIPETS)

**LABINDUSTRIES**

1802H Second Street  
Berkeley, California 94710