

GEOPHYSICS

Both Satellites Needed

See Front Cover

► WHEN THE U. S. earth satellite is launched, it will complement rather than rival its Russian counterpart.

Because the two satellites will be following different orbits, each will be in a position to provide better data on specific studies than the other.

The Red satellite now circling the planet earth is traveling the "Polar" orbit, a highly inclined orbit. The U. S. satellite, scheduled for launching this spring, will follow a much shallower orbit, almost "Equatorial."

This means the Russian satellite is in a better position for cosmic ray studies because it crosses those latitudes where the change in cosmic ray intensity is greater. The Polar route also permits better research on the auroras or "northern lights," because it cuts through the auroral regions.

The U. S. satellite, on the other hand, will be in a far better position to pick up information for geodetic studies, such as the earth's bulge. It also will provide more precise information of the earth's magnetic field during its run around the earth.

Both orbits provide equal opportunity for solar studies.

The choice of orbits by both the Soviet Union and the United States was made more because of geographical reasons.

As long as the Russians wanted to fire their satellite from within Russia, they had to choose a highly inclined orbit. The orbit is always at least the latitude of the launching site.

Planners for Operation Vanguard, the U. S. satellite program, had to be content with the Equatorial orbit when they decided on using Florida as their launching site. This decision was made primarily because Patrick Air Force Base at Cape Canaveral is fairly well equipped to do the job.

In the very early stages of planning the

orbit for the U. S. satellite there was some talk that an Equatorial orbit would be politically more feasible, although less scientifically feasible. It was suggested that a satellite traveling the Equatorial route would be flying over territory where permission could be obtained with little or no difficulty. This consideration, however, did not figure heavily in the final decision.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows the sub-satellite that the U. S. National Advisory Committee for Aeronautics (NACA) is contributing to our satellite program.

The sub-satellite, a 30-inch "balloon" made of a polyester plastic film bonded to aluminum foil, will be used to measure the resistance or drag encountered by the satellite in its travels around the earth. Together with its inflation tank it will weigh 0.69 pound. W. J. O'Sullivan holds the deflated sub-satellite which will be ejected and inflated automatically when it reaches peak altitude. The gas will then be released since it serves only to "iron out" wrinkles in the balloon.

One additional advantage of a Polar route is that it cuts over more land area than the Equatorial orbit, permitting more land-based tracking stations for scientists.

Science News Letter, October 19, 1957

MANPOWER

Manpower Expert Attacks Reports Shortage Ended

► THE GOVERNMENT'S top spokesman on scientific manpower has charged that there is still a serious shortage of scientists and engineers despite "some newspaper reports" to the contrary.

"The scarcity of scientists, engineers and skilled technicians is a very real fact in American life. It will continue to be a national problem for at least another eight

to ten years," Dr. Howard L. Bevis, chairman of the President's Committee on Scientists and Engineers, warned.

Dr. Bevis told the Upper New York-Ontario section of the American Society for Engineering Education that "The nation's scientific and technological manpower is still a precious resource, despite some newspaper reports that we have caught up with the shortage and that there is, in fact, a surplus of engineers."

He claimed the reports have grown out of cutbacks in some defense contracts, chiefly affecting the aviation and electronic industries.

These are "surface ripples in narrow, specialized areas of the economy," he declared.

Science News Letter, October 19, 1957

SCIENCE NEWS LETTER

VOL. 72 OCTOBER 19, 1957 NO. 16

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington 6, D. C., North 7-2255. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

Copyright © 1957 by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicated services issued by Science Service. Science Service also publishes CHEMISTRY (monthly) and THINGS of Science (monthly).

Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C., under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40, P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283) authorized February 28, 1950. Established in mimeograph form March 13, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index.



SCIENCE SERVICE

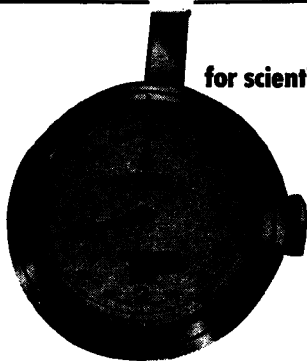
Member Audit Bureau of Circulation. Advertising Manager: Fred A. Moulton, 1719 N St., N.W., Washington 6, D. C., ME. 8-2562.

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: Karl Lark-Horovitz, Purdue University; William W. Rubey, U. S. Geological Survey; Wallace R. Brode, National Bureau of Standards. Nominated by the National Academy of Sciences: George W. Corner, Rockefeller Institute for Medical Research; Edward U. Condon, Washington University; Harlow Shapley, Harvard College Observatory. Nominated by the National Research Council: Jerome C. Hunsaker, Massachusetts Institute of Technology; I. I. Rabi, Columbia University; Leonard Carmichael, Smithsonian Institution. Nominated by the Journalistic Profession: Neil H. Swanson, Ruxton, Md.; O. W. Riegel, Washington and Lee University; Michael A. Gorman, Flint Journal. Nominated by the Scripps Estate: Charles E. Scripps, Cincinnati, Ohio; Edward J. Meeman, Memphis Press-Scimitar; Frank Ford, Washington, D. C.

Officers—President: Leonard Carmichael; Vice President and Chairman of Executive Committee: Charles E. Scripps; Treasurer: Wallace R. Brode; Secretary: Watson Davis.

Staff—Director: Watson Davis. Writers: Marjorie Van de Water, Ann Ewing, Howard Simons, Dorothy Schriver, John W. Robinson. Science Clubs of America: Joseph H. Kraus, Margaret E. Patterson. Photography: Fremont Davis. Production: Priscilla Howe, Marcia Nelson. Sales: Hallie Jenkins. Interlingua Division in New York: Alexander Gode, 80 E. 11th St., Gramercy 3-5410.



INGENIOUS REMINDER TIMER

for scientific experiments, research, laboratory projects, etc.

Clips on to wearing apparel . . . times anything from taking pills to public speaking by gentle alarm

On interval Timer that clips on to wearing apparel is this new ingenious aid. Has the weight and size of a man's wristwatch and can be carried anywhere like an ordinary fountain pen. Buzzes you at preset intervals. Set the dial for 5 minutes up to 4 hours as desired. Dependable and accurate, the Timer is easy to read. Ideal for busy executives, professional persons, parking at meters, catching trains, appointments, photography, etc. Knob winds both the fine Swiss jeweled movement plus the unique alarm simultaneously. Wind the Timer as often as you like, it never over-winds. Attractively finished in highest quality polished chrome. Gift boxed in transparent plastic case. Satisfaction guaranteed.

PERSONAL SIZE
Reg. \$12.95

Only \$6.95 ppd.

PHYSICIANS, DENTISTS, HOSPITALS AND TECHNICIANS, write for our Government Surplus Catalog 190-SN on your letterhead—lists more than 7500 surgical and hospital items.

TERMS: Send check or money order. Extra fee for C.O.D. Open account to physicians, hospitals and firms.

Arista Surgical Company

Dept. 190-SN, 67 LEXINGTON AVE., NEW YORK 10, N. Y.

CRAFTSMEN, HOBBYISTS AND PROFESSIONS, write for our Catalog M on medical surplus items, describing uses in other fields.