

GENERAL SCIENCE

Science Scholarship Winners

A young astronomer who has one of the nation's best satellite tracking stations was awarded the grand Westinghouse Science Scholarship in the 24th Science Talent Search.

► THE NATION'S most promising young scientist of the year is Larry Dean Howard, a 17-year-old Californian who has developed a method for defining satellite orbits.

Larry, the son of Mr. and Mrs. Rennie Wesley Howard, Canoga Park, Calif., has been awarded the \$7,500 Westinghouse Science Scholarship in the 24th annual Science Talent Search. He was selected from a field of more than 2,900 high school seniors in the nation who submitted qualified entries.

Larry, recent graduate of William H. Taft High School in Los Angeles, prepared a project involving a method of using differential calculus to process satellite observations to get the maximum information possible. His technique also provides a way to make corrections with a minimum calculation time.

Four other scholarships were also awarded:

\$6,000 to John Richard Gott III, 17, Louisville, Ky., who worked with a computer to develop a concept in crystal metallic structure.

\$5,000 to Louis Halle Rowen, 16, New York, N.Y., who carried out a mathematical investigation of the interrelations of the properties of the number of divisors of positive integers.

\$4,000 to James A. Strauchen, 16, Rego Park, N.Y., who studied the properties and clinical effects of an antibody that clumps human red blood cells previously exposed to penicillin.

\$3,000 to Helen Anita Greer, 16, Brooklyn, N.Y., who carried out a series of experiments to determine the frequency of transfer of certain genes to bacteria.

Two alternate winners were also named in case any of the five scholarships are not used. The alternates are Arthur E. Frankel, 17, Austin, Texas, and David A. Pensak, 16, Princeton, N.J.

Twenty-six boys and nine girls received Westinghouse awards of \$250 each in recognition of their top level ability and promise as creative scientists of the future.

The Science Talent Search is conducted annually by SCIENCE SERVICE through its Science Clubs of America and is supported by the Westinghouse Educational Foundation.

Top winner Larry, whose major interest is astronomy, has one of the nation's best satellite tracking stations in his own garage. A participant in the Moonwatch program since 1960, he tracked and calculated the orbit of Kappa I in 1962 when it was still a classified satellite. The tracking station, ranked by his teacher as second only to the one at the California Institute of Tech-

nology, was built partly from surplus equipment donated by the space agencies. He plans to become either a theoretical astronomer or space scientist after graduation from the California Institute of Technology, Pasadena.

John Gott of Mayme S. Waggener High School is also a talented astronomer. In 1963 he was named the "Most Outstanding Junior Astronomer in the United States" by the Astronomical League. The son of Dr. and Mrs. J. Richard Gott Jr., he plans to study at Harvard University for a career in mathematics or the physical sciences.

Louis Rowen, captain of the math team at the Bronx High School of Science, wants to study mathematics at Columbia University and then enter teaching and original research. He is the son of Mr. and Mrs. Seymour Michael Rowen.

James Strauchen, who attends Forest Hills High School, plans to study for a medical career at Columbia University. The son of Mr. and Mrs. Murray Strauchen, his hobbies are hematology, microbiology, photography and tropical fish.

Helen Greer of Erasmus Hall High School is also planning a medical career. Both her parents, Mr. and Mrs. Paul Greer, are teachers.

• Science News Letter, 87:166 March 13, 1965

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Talent Search Winners See Brain, Computer Link

► A MACHINE that by the stroke of an electronic pen links the human brain to a computer has been devised.

This development was demonstrated to a group of high school scientists, winners at the 24th annual Science Talent Search. The demonstration was conducted by the National Bureau of Standards on its newly developed Machine for Automatic Graphics Interface to a Computer, designated MAGIC by the Bureau.

The device is a computer accessory having a large cathode-ray tube, like a 23-inch television set, and an electronic pen with which the operator "writes" on the screen. He can select graphic information from machine memory or other data sources, change or add to it with the pen, and then store it or use it.

The Bureau's visitors were selected as winners by the Science Talent Institute from over 22,000 contestants. This year's 40 winners came from 21 states.

MAGIC was developed by the NBS Institute for Applied Technology as a versatile man-computer link, but is itself a specialized

computer having a memory and performing logical operations. Graphic material can be drawn on its screen with the probe, numbers and words can be read in from keyboard or tape, and both types of information can be transferred into or out of its memory or to other machines. It can speed rearranging lists, redrawing parts of pictorial material and editing.

Weather mapping, architectural and electronic designing, and machine teaching are applications in which MAGIC can be used. The data on its screen can be stored at any time and correctly reproduced without need for proofreading.

• Science News Letter, 87:166 March 13, 1965

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Most Winners Believe Other Life in Universe

► A GROUP of tomorrow's top scientists believe that life exists elsewhere in the universe.

A survey of the 40 winners of the 24th Annual Science Talent Search disclosed that almost 93% of these aspiring scientists accept the presence of some kind of life on another planetary system.

"It is foolish and selfish to think that we are the only inhabitants of this huge, incalculable universe," a Florida senior commented. Other Science Talent Search winners added that the existence of life only on earth is not only "illogical," but also "inconceivable."

A number of these high school seniors noted that the laws of probability combined with the infinities of the universe almost guarantee the existence of life on another planet.

Increasing knowledge of the origin of the universe and of life itself, along with advances in technology, were the benefits mentioned most often.

Second in line was the possibility of world peace and international cooperation that the conquest of outer space might bring.

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TALENTED YOUNG SCIENTISTS

—The finalists in the Science Talent Search are shown at the top center on the steps of the Capitol. Scholarship winners and their alternates are shown with their exhibits at the Science Talent Institute. At top left, Larry D. Howard, first winner; right, Louis H. Rowen, third winner; Center, left to right, Richard Gott, second winner; James A. Strauchen, fourth winner. Bottom, left to right, David A. Pensak, second alternate; Arthur E. Frankel, first alternate; Helen A. Greer, fifth winner. In the center, winners 2, 3, 1, 5 and 4 join hands.

Photographs by Fremont Davis →

