

drawn by a person using a special pen attached to the machine. He also built a small digital computer that was linked to the machine. Canfield studied the effects of molten potassium chlorate on the tensile strength of soft glass.

Two alternates were named: James Laurence Michel of Portland, Ore., and David Albert Rudman of Bloomington, Ind. Each of the 30 semifinalists received \$250 awards from Westinghouse Educational Foundation.

In explaining the rationale of the talent search, Edward G. Sherburne Jr., director of Science Service, said: "Doing independent research is a far better analogue of adult success than academic achievement." Science Service administers the talent search for Westinghouse under the direction of Dorothy Schriver.

David Axelrod, chairman of the board of judges, said of this year's 1,133 fully qualified entries: "The projects continue the trend toward less abstract work with more relevance to society. Even the students involved in mathematical research intend to end up in some field of social significance."

Seven hundred guests attended this year's announcement banquet. Lewis M. Branscomb, director of the National Bureau of Standards, was the keynote speaker. Robert L. Wells, vice president of Westinghouse, reminded the students of the real relevance of scientific research—relevance that becomes apparent only when the esoteric concepts are interpreted to the layman. He pointed out that Albert Einstein was able to make his highly difficult work understandable to the layman. □

Longitudinal waves from massive photons

The currently accepted theory of electrodynamics is based on the assumption that the photon, the light particle, has no rest mass. Theories can be built in which the photon does have a rest mass, and some physicists have looked for experimental effects of a massive photon (SN: 7/17/71, p. 46).

Now comes a Russian contribution to the massive-photon lore. In the Dec. 20 JETP LETTERS M. E. Gertsenshtein suggests that the experiments of Joseph Weber, which are believed to be recording gravity waves, could be recording a massive-photon effect. If his results are accepted as gravity waves, they raise serious cosmological difficulties (SN: 3/4/72, p. 149).

The construction of Weber's detectors is such, Gertsenshtein suggests, that they could be recording longitudinal electromagnetic waves. Massless photon electrodynamics allows only transverse electromagnetic waves, but a massive-photon theory could have longitudinal ones. □

march 11, 1972

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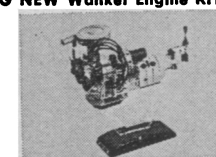
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