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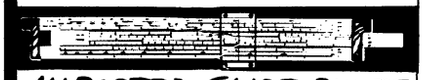

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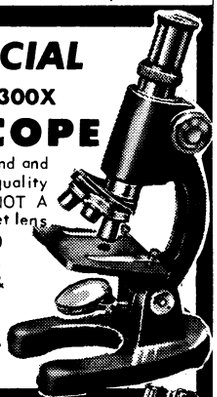

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ASTRONAUTICS

Pioneer Lacked Extra Push

➤ PIONEER, man's first space probe, came within a fraction of the 35,250-foot-per-second velocity needed to put it into an orbit around the moon. It reached a maximum velocity of 34,400 feet per second.

Even though the vehicle burned up in the earth's atmosphere, its successful flight to a distance of 79,316 miles from the earth's center showed the chances are good for hurling a rocket around the moon very soon. The moon will next be closest to earth on Nov. 10, when it will be 222,300 miles away.

Dr. T. Keith Glennan, administrator for the National Aeronautics and Space Administration, stressed the international value and significance of Pioneer, and said that all scientific information gathered by it would be made available to all nations, "completely, accurately and quickly."

Dr. William W. Kellogg, chairman of the U. S. panel on earth satellites for the IGY, said the preliminary findings from Pioneer showed the radiation belt around earth decreased as the rocket fled into space. At 19,550 miles from the earth's center, the radiation reading was only two roentgens per hour, compared to about ten roentgens per hour at 5,160 miles. The roentgen is a unit of radiation dosage, the highest permissible for workers under Atomic Energy Commission regulations being three-tenths of a roentgen per week.

Dr. Kellogg said the instruments reported three roentgens per hour at 11,500 miles. This means future space travelers may be able to pass through the radiation belt without danger.

Because only two impacts by micrometeorites were recorded in the first 36 hours of Pioneer's space flight, Dr. Kellogg said there was considerable question that the instruments were working properly.

Preliminary analysis showed that the earth's magnetic field out into space followed the accepted theoretical pattern.

How successfully the television-like equipment, sent moonward to take pictures of the 40% of the lunar surface not seen by man, operates will have to await launching of the next Vanguard satellite. A rapidly decreasing temperature spoiled attempts to fire the terminal rocket that activated the scanner, which could also have given a crude picture of earth's cloud cover, Dr. Louis G. Dunn, president of Space Technology Laboratories, Inglewood, Calif., said. This company designed and built the instrument payload of Pioneer.

Gen. O. J. Ritland, vice commander of the Air Force Ballistic Missile Division, said the launching of Pioneer opened a new era in space research that would eventually lead to exploration of Mars, Venus and the sun.

The Pioneer space flight was part of the U. S. participation in the International Geophysical Year, a world-wide probe of the earth and its environment. U. S. participation in IGY is sponsored by the National Academy of Sciences.

Science News Letter, October 25, 1958

ENGINEERING

Few Changes in Cars

➤ GENERALLY LARGER and heavier cars with fancier fins and gaudier grilles is the description for 1959 automobiles. But, say some automotive experts, there will be precious few new engineering innovations.

Whereas the auto makers installed such features as power steering, tubeless tires and new transmission systems in recent years, the 1959 models will show only a few basic engine and structural changes and some mechanical gimmicks.

Among a skimpy array of engineering advances, many of the manufacturers have modified their engines for greater fuel economy. With improvements in such elements as carburetors, camshafts, crankshafts and engine breathing, the auto makers say up to $1 per tankful of gas can be saved.

Several new models are said to have more effective braking systems built in. For instance, Buick with air-cooled brakes and Chevrolet with larger braking surfaces boast safer stopping. Pontiac and Buick, besides, have added special traction differentials for delivering power to wheels when they are floundering in ice, snow or mud.

Swivel front seats are being placed in Chrysler Corporation autos. These seats pivot out toward the door.

Chrysler cars also offer optionally an automatic headlight dimmer which adjusts the high-low beams to oncoming traffic and the tail-lights of cars ahead. Available, too, at an option is an electronic rear-view mirror which automatically diverts the glare from lights of following cars.

Two makes, Cadillac and Pontiac, have reported the installation of new speedometer devices. On Cadillac, the driver can maintain a set pace with his foot off the accelerator by setting a control for the desired speed. On Pontiac, if the driver selects a set speed on a device built into the speedometer, the device warns him by an audible and visual signal when that pace is exceeded.

Some 1959 models have been coated with body enamels which reputedly will sizably lengthen the life of the finish. Ford, for one, declares its finish will not require waxing for the life of the car.

Other new features: American Motors' Ambassador's removable front seat head rests; Cadillac's electric master switch which locks all doors from either front seat; Pontiac's special locks which prevent children from opening rear doors, and Oldsmobile's adjustable reading lamp.

Science News Letter, October 25, 1958

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