th. outer zone showed great fluctuations, probably connected with solar activity.

The earth's radiation belt may be the greatest radiation danger an astronaut will face. But he could also be harmed if he should be in space when the sun bursts with solar flares.

Pioneer IV in March, 1959, showed the energy particles of the earth's outer radiation belt increased after solar disturbances. Other satellite and probe data showed connections between these activities and visible auroras.

Besides the magnetic and gravitational forces and the streams of plasma and radiation, interplanetary space also has meteors that can puncture satellites and space probes.

Meteors may be great masses of several hundred tons or, much more commonly, tiny specks that would merely sandblast a satellite or probe. If one of the big ones, like those that caused giant craters in Arizona and northern Siberia, should strike New York at a meteoric speed of many miles a second, the resulting blast waves would destroy the city as suddenly and certainly as a nuclear bomb. Luckily, large meteors are very rare.

Meteors that reach the earth's surface are called meteorites. Wholly metallic meteorites, called siderites, are chiefly an iron-nickel alloy. Some meteorites are composed of silicates and metal; these are called sideriolites. Meteorites composed almost entirely of silicates are called aerolites.

When meteors from space hit the earth's atmosphere, they become "shooting stars" heated to incandescence by friction with the air. Meteors that are very fast moving are believed to come from interstellar space, but scientists know very little more about them than that.

Some of the slower ones seem to be in the orbits of comets.

If a spherical vehicle with a one yard diameter and one-quarter inch thick skin were sent into space, some scientists think the mean average time between punctures might be 150,000 years. Other scientists calculate the mean average as short as 300 years.

• Science News Letter, 78:282 October 29, 1960

PHYSICS

Electron Accelerator Will Be Built for NBS

➤ A $1,700,000 accelerator that can hurl an intense beam of electrons at speeds close to the velocity of light with a very high precision will be built for the National Bureau of Standards in Washington, D. C. The intense source of electrons will provide the NBS with greatly advanced research and engineering capabilities.

The new linear electron accelerator, or Linac, will be 100,000 times more powerful than existing NBS high energy equipment. Measuring 100 feet in length, Linac will produce electron beams with peak energies up to 150,000,000 electron volts and power outputs of 40 kilowatts or more. It will be built by the High Voltage Engineering Corporation, Burlington, Mass.

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