ASTRONOMY

Dr. Sun & the Moon

Generations of schoolboys who have been taught that moonlight is nothing more than reflected sunlight may well have been misinformed. More and more scientists have become convinced that the moon occasionally generates light of its own. During periods of intense solar activity, say modern astronomers, high-energy protons expelled from the sun strike luminescent meteorite material on the lunar surface, and the collisions cause some areas of the moon to glow. Now a Chinese-born, Westinghouse Electric Corp. scientist has gone a step further. An ever-shifting, narrow strip of the moon, he believes, constantly emits a glow of its own.

Lunar Bombardment. Writing in Nature, Physicist Kuan-Han Sun suggests that a combination of the solar wind, meteorites, and lunar temperature changes provide ideal conditions for thermoluminescence—the release of stored-up energy in the form of visible light during a rapid temperature rise. Like other bodies in the solar system, Sun points out, the moon is constantly bombarded by a solar wind consisting of charged, low-energy particles boiled off the solar surface and “blown” into space. Because these particles, which are mostly protons, follow magnetic lines of force, they can strike the moon from all directions, hitting its dark side as well as the side that faces the sun.

On the sunny side, where temperatures rise as high as 250°F., the luminescent meteorite particles that litter the lunar surface give off a small amount of light as soon as they are struck by the solar protons. On the dark side, the meteorites cannot luminesce because of the — 240°F.