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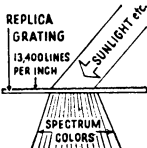


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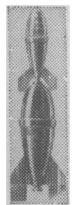
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PHYSICS

Lithium-Six Is Lightest Metal Known to Exist

► THE LIGHTEST metal known to man, lithium-6, is also probably the lightest metal that can exist in the universe.

Dr. Donald Montgomery, Michigan State University physics professor, has deduced this from experiments measuring the spaces between atoms in lithium-6 compared to lithium-7. Since the atomic spacing is greater in lithium-6 than in lithium-7, the former must always be lighter than the latter.

"Even if atoms of hydrogen, the lightest element, were compressed so tightly they formed a metal, the pressure would be so great that it would be heavier, by volume, than lithium," Dr. Montgomery said.

His tests also support the idea that even at absolute zero, 459.7 degrees below zero Fahrenheit, there is still some atomic motion. Previous theory holds that all atomic motion ceases at absolute zero.

In other experiments, Dr. Montgomery has studied the absorption of infrared waves by compounds containing lithium-6 and lithium-7. He believes this work shows the current theory on absorption of light by solids is inadequate.

Since guided missiles can be guided to a target by infrared waves, the invisible radiation given off by hot objects, it is possible his findings might help in locating new materials through which the waves would pass into an infrared-sensitive device in a missile.

Dr. Montgomery's work is supported by grants from the Atomic Energy Commission, the U. S. Army Office of Ordnance Research, and the Michigan State All-University Research fund.

Science News Letter, October 4, 1958

CONSERVATION

Forest Fire Danger Rises, More Blazes in 1958

► LIGHTNING and dry weather mean fire and this year the incidence of forest fires has soared.

In national forests the number of fires reported so far this year totals 8,232 compared with only 5,652 for the same period in 1957. With the fall fire season yet to come, the U. S. Forest Service warns, the number of fires and the acreage destroyed through burning can be expected to continue increasing. The danger of man-made fires, still the most important cause of forest fires, increases as hunters, picnickers and fall foliage sightseers take to the woods.

So far this year, however, lightning has been one of the major causes. In California lightning accounted for some 600 fires in just two weeks in July. Montana, with 68 lightning-caused fires in one day, had to borrow smoke jumpers from nearby states to fight the flames.

Another danger that can come from the skies seems to be jet airplanes, the Forest Service reports. Several small fires resulted where a jet crashed in a wooded area.

While the number of fires has been in-

creasing, the acreage burned has declined over last year. Only about half as many acres, 38,062, have been lost so far this year compared with 72,737 acres in 1957.

Improved detecting methods and better equipment account for the fact that fires are being suppressed before they get out of hand. Aerial spraying of fire retardants is being used. Fire fighters are also taking to the air to get where they are needed. Recently helicopters have been used both to get equipment to the scene and to transport men. Forest experts agree that a good share of the credit for keeping down the acreage burned should go to the airborne fire fighter.

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