



Celestial Time Table for June

Monday, June 2, 4:56 p.m., Moon at first quarter. **Thursday, June 5**, 11:00 p.m., Mercury farthest east of sun. **Saturday, June 7**, 9:00 p.m., Moon nearest; distance 223,800 miles. **Monday, June 9**, 7:34 a.m., Full moon. **Monday, June 16**, 4:24 a.m., Moon passes Mars; 10:45 a.m., Moon in last quar-

ter. **Friday, June 20**, 2:00 a.m. Moon farthest; distance 251,900 miles; 7:00 a.m., Venus passes Mercury. **Saturday, June 21**, 2:34 p.m., Sun farthest north, summer commences. **Tuesday, June 24**, 2:22 p.m., New moon. **Wednesday, June 25**, 12:54 p.m., Moon passes Mercury. **Thursday, June 26**, 5:50 a.m., Moon passes Venus.

Eastern standard time throughout.

GEOLOGY

"Reverse Matter" Theory of Meteorites Called Unnecessary

THE theory of meteorites made of "reverse matter," which explode and vanish when striking ordinary matter, is not necessary to explain the failure to locate meteoritic fragments around certain craters which seem to have been produced by the impact of giant masses of stone or rock from the sky, says Dr. H. H. Nininger, director of the American Meteorite Laboratory in a report to the Society for Research on Meteorites.

The theory of reverse, or "contraterrene," matter was proposed about a year ago by Dr. Vladimir Rojansky, of Union College. Ordinary matter is made of atoms having nuclei of positively charged protons, and negatively charged electrons revolving around them. Contraterrene atoms, on the other hand, if they exist, have negative nuclei and positrons, electrons with positive charges, revolving around. If ordinary and contraterrene matter were to come into contact, the charges would cancel, and both would disappear in a violent outburst of energy.

Following this proposal, it was suggested by Dr. Lincoln La Paz, of Ohio State University, and also by Dr. Samuel Herrick, Jr., of the University of California, Los Angeles, that contraterrene meteorites sometimes land on the earth. Dr. La Paz's idea was that they

might have caused craters like those at Tunguska, Siberia, which seem to have been the result of meteoritic impact in 1908, even though expeditions have found no meteorites in the vicinity.

Dr. Herrick made the proposal that a contraterrene meteorite was responsible for the "phantom Bertha," last summer, when a boating party in Long Island Sound were startled by what seemed to be a shell fired across their bow, hitting the water and exploding nearby. It was shown, however, that it could not have been a shell.

Without commenting on whether or not contraterrene matter may exist, Dr. Nininger declares that either the meteorless craters or the mysterious "shell" can be explained "without assuming the existence of any such purely hypothetical material." He says that if even the famous Arizona meteorite crater, near which many tons of meteorites have been found, had been formed in a partly swampy and wooded area, like that of central Siberia, probably not a single meteorite would have been found.

The story of the "phantom Bertha," he declares, "is entirely consistent with an ordinary daylight meteorite fall, such as hundreds that have been related either in the literature on meteorites or to the

writer in conversation with witnesses of such events."

"We should never be afraid to look for new facts or new explanations," Dr. Nininger concludes, "but, so long as well-established facts are sufficient to explain a given set of phenomena, we are surely courting a return to the days of 'spirits and mystery' when we shrink from painstaking or even back-breaking investigation and seek refuge in untried hypotheses, especially when these hypotheses rest entirely on assumptions."

In a later report to the Society for Research on Meteorites, Dr. La Paz answers Dr. Nininger, and defends his hypothesis. The Russian Academy of Sciences, he says, "sent well-organized expeditions, elaborately equipped with excavating tools, drills and modern geophysical equipment," to the Siberian site to search for meteorites. Their methods, he states, were essentially similar to those used successfully to hunt for meteorites in Arizona.

"On the basis of discoveries actually made at the Arizona crater," he declares, "there can be no reasonable doubt that intensive searches made by Russian scientists would have resulted in the recovery of meteoritic material if, as Nininger asks us to imagine, the Canyon Diablo rather than the Podkamennaya Tunguska fall had occurred on the Stony Tunguska River in 1908."

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and butter, meat, and potatoes, and so on, it was discovered that some of the standards set could not be supplied from any combination of foods that the majority of people were able to get. So the scheduled announcement was cancelled and the whole problem restudied. Now the National Research Council's committee on food and nutrition, representing doctors, nutritionists and public health authorities among others, is satisfied that it has standards which will guide us to fitness for defense along the diet route.

The yardstick, translated from laboratory terms, was announced by Dr. Lydia J. Roberts, head of the department of home economics of the University of Chicago, at the National Nutrition Conference for Defense called by President Roosevelt. Here it is:

One pint of milk daily for an adult, more for children.

One serving of meat.

One egg daily, or some suitable substitute such as beans.