



longest this will obscure the sun for 2 minutes 30 seconds. But the following year brings the best total eclipse in centuries. On June 20, 1955, the moon's shadow will cross Ceylon, Siam and the Philippines, and the maximum duration of totality will be the unprecedented figure of 7 minutes 10 seconds, only about 20 seconds less than the greatest possible length of an eclipse. That one will certainly be well observed.

Time Table for November

Nov.	EST	
1	1:02 a. m.	New moon, total eclipse of sun, visible from vicinity of Indian Ocean

3	11:54 a. m.	Moon passes Mars
4	2:00 p. m.	Mercury farthest west of sun, visible before sunrise
	2:54 p. m.	Moon passes Jupiter
8	11:46 a. m.	Moon in first quarter
10	10:00 a. m.	Moon farthest, distance 251,400 miles
15	early a. m.	Meteors of Leonid shower, though brightness of moon will interfere with visibility
16	1:30 p. m.	Full moon
23	4:22 p. m.	Moon in last quarter
	9:26 p. m.	Moon passes Saturn
25	8:00 p. m.	Moon nearest, distance 229,500 miles
28	1:01 a. m.	Moon passes Venus
30	1:44 p. m.	New moon

Subtract one hour for CT, two hours for MT, and three for PT.
 Science News Letter, October 23, 1948

MINERALOGY

Sources of Oil Shale

➤ **OIL SHALE**, important raw material to furnish fuel oils as petroleum deposits approach exhaustion, is not always a true shale, and it does not contain oil, the American Society of Mechanical Engineers was told in Amarillo, Tex., by Tell Ertl, Union Oil Company of California, Rifle, Colo.

Oil shale is a sedimentary rock containing organic matter insoluble in ordinary solvents but capable of yielding an oil on heating. Some is a true shale since its inorganic matter is argillaceous, that is, composed of clay, but in many the inorganic matter is calcareous or dolomitic. These should be called marlstones, limestones, dolomites or magnesian marlstones. The Green river oil shale of Colorado, Utah and Wyoming is a magnesian marlstone.

The organic matter in oil shale is a solid known as kerogen, that probably consists of a mixture of compounds of carbon, hydrogen, oxygen, nitrogen and sulfur, he stated. On heating oil shale to a temperature above 750 degrees Fahrenheit, the kerogen is cracked into coke, gases condensable to an oil, and non-condensable gases.

Oil shale is found in most of the countries of the world and most of the states of the United States, he said. It was formed in lakes or seas in which the deposit of inorganic matter was slow and in which

abundant organic matter lived or was accumulated. The organic matter of the better known oil shale deposits consists largely of macerated and putrefied microscopic vegetal organisms such as spore cases and algae. Larger vegetal matter, such as leaves and stems, and also animal matter, form part of the organic constituents of oil shales.

The most extensive oil shale deposit in the United States is the black shale of the Chattanooga formation, which is richest in Indiana, Ohio and Kentucky, though found also in 14 surrounding states. It will probably not yield over 15 gallons per ton for any large tonnage.

The richest oil shale deposit in America is found in the Green river formation of Colorado, Utah and Wyoming. It is in this region that the U. S. Bureau of Mines is recovering oil in its plant at Rifle, Colo. The oil shale is resistant to erosion and forms the tops of plateaus, one in each of these three states. The Piceance Creek Basin of northwestern Colorado contains the greatest thickness and highest grade of oil shale deposits known in the United States.

Science News Letter, October 23, 1948

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