SCIENCE NEWS

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THE TOTAL ECLIPSE OF THE SUN

THE total eclipse of the sun on July 9 will be studied by professional and amateur astronomers from observation points along its path across the United States, Canada, Norway, Sweden, Finland and Russia.

Great interest in the eclipse has been reported in the Scandinavian countries and the U.S.S.R., a number of observation stations having been located along its path. The government's request that civilians do only essential traveling here in the United States has kept many plans from materializing, but a number of small groups expect to go to Idaho, Montana and into Canada to watch the moon blot out the sun early on Monday morning, July 9.

Several problems to be investigated have been outlined by Professor Bertil Lindblad, of the Stockholm Observatory, and a few American astronomers plan to cooperate. The problems are largely astrophysical, dealing with the flash spectrum and the polarization of the light of the corona.

Fire lookouts of the U. S. Forest Service expect to study the advancing shadow of the moon from mountain peaks in Montana and Idaho in response to a request from Dr. John Q. Stewart, of Princeton University Observatory. Dr. Stewart, who has outlined several observations which amateurs can make without special apparatus that will be of help to astronomers, will himself observe the eclipse with James Stokley, now with the General Electric Company, from the top of one of the Montana mountains.

A number of small groups of professional and amateur astronomers are planning to go to Canada, where the total eclipse will last longer and the sun will be higher in the sky when eclipsed than in the United States (the sun will rise eclipsed for observers in Cascade, Idaho, not far from Boise).

Ladd Observatory of Brown University, in cooperation with the "Skyscrapers," local amateur astronomical society, will send an expedition to a point near Regina, Saskatchewan. The principal studies to be made by the group, reports Professor Charles H. Smiley, chairman of the department of astronomy of the university, will be the precise timing of the four contacts of the eclipse and the determination of the absolute brightness of the outer corona by a series of photometric measures.

Dr. Roy K. Marshall, director of Fels Planetarium of the Franklin Institute, plans to go to Wolseley, Saskatchewan, taking with him, along with other delicate instruments, a Ross Fecker camera belonging to the Flower Observatory and a photoheliostat of the Cook Observatory, both of the University of Pennsylvania. Because of the short duration of totality, each camera will take only one picture, either long or short exposure, thus avoiding confusion and the waste of precious seconds in pulling and replacing slides and changing plate-holders.

A party from the Milwaukee Astronomical Society plans to make some extensive observations southwest of Pine River, Manitoba, probably in Duck Mountain Forest Preserve. The main piece of equipment will be an objective-prism camera to photograph the flash spectrum at second and third contacts, which will be accurately timed with Bureau of Standards time signals.

ITEMS

FIRE lookouts of the U. S. Forest Service will help astronomers by observing the July 9 eclipse. About 60 foresters in lookout towers on mountain peaks in Montana and Idaho, some of the peaks 10,000 to 12,000 feet above sea level, will study the advancing shadow of the moon. For them the shadow will sweep down for a minute or less at about 6: 14 A.M., Mountain War Time, or 5: 14 A.M., Pacific War Time. A questionnaire sent by Dr. John Q. Stewart, of Princeton University Observatory, suggests that three kinds of observations relating to the shadow would be helpful. Its motion in the sky can be reported in detail; the degrees of darkness on the ground estimated; and stars identified during totality, particularly the faintest stars. The total eclipse is over so quickly (30 seconds) that no single inexperienced observer will have time to carry out more than one observation. Although Dr. Stewart suggests that everyone spare a few seconds for a glance at the beautiful corona, he points out that observations of the corona by amateurs are not likely to be of scientific value, whereas adequate observations of the shadow are very desirable.

MOUNTAIN leather, a type of asbestos that has been only a museum curiosity in the past, is now found adaptable to industrial uses, particularly in filtering, sound-proofing and shock-absorbing materials. A deposit of limited size has been discovered near the entrance to Glacier Bay, Alaska, and experiments, conducted by the U. S. Bureau of Mines, give promise of possible wide commercial uses. This native material is known to geologists as paligorskite. When dry it is light in weight, tough, resembles buckskin, and tears somewhat like heavy cardboard. Upon wetting, it absorbs considerable water, swells and becomes soft, can be torn easily, resembles paper pulp, and is slimy to touch. In this condition it can probably be converted to a pulp in conventional paper-mill beaters, and then formed into many lightweight, acid- and fire-proof products.

ETHYL chloride, the chemical used to make tetraethyl lead that takes the knock out of gasoline, will soon be in production by a new process in a plant under construction at Baton Rouge. The process, developed by the Ethyl Corporation, yields ethyl chloride by reacting chlorine with waste products from one of the corporation's other ethyl chloride plants. The chemical has many uses in addition to its service in gasoline and in high-octane aviation fuel, several of which are connected with the war effort. The chlorine for the new process is produced by breaking common salt electrically into its two parts, sodium and chlorine. The sodium produced is used in the manufacture of tetraethyl lead after it is combined with metallic lead to form a lead-sodium alloy.