

Next U. S. Eclipse Will Be in 1932

Astronomy

This Will Be Total for Northeast Part of Country

AMERICANS who miss the eclipse of the sun in California on April 28 will only have to wait a few years—until the afternoon of August 31, 1932—for another. Then a total eclipse will be visible along a path about a hundred miles wide, crossing northeastern Vermont, all of New Hampshire but the southwestern corner, southwestern Maine, the northeastern corner of Massachusetts in the vicinity of Gloucester, and Cape Cod.

This will be much better astronomically than the one on April 28, for it will last more than a minute and a half, instead of the second and a half this month. The path will be wide enough that astronomers will not have to worry about being on it, as they must now. Already Dr. Frederick Slocum, of the Van Vleck Observatory at Middletown, Conn., has made a study of weather conditions at this time of year, and finds that interior Maine, at such places as Hiram, East Baldwin and West Buxton, offer some of the best chances. Probably these towns will be a mecca for the world's astronomers at that time, for the International Astronomical Union will hold its first American meeting immediately afterwards. In fact, the meeting would ordinarily have been held in 1931, but was postponed a year in order to permit astronomers from foreign lands to combine the eclipse and meeting.

However, some American astronomers will have a chance to see the sun eclipsed without waiting for two years. On October 21 of this year a path of totality will cross the south Pacific. A tiny Island, Niuaufu, in the Tonga group, is the only accessible land on the path. Dr. S. A. Mitchell, of the University of Virginia, a veteran eclipse observer, will head an expedition there under the sponsorship of the U. S. Naval Observatory.

After 1932, the next eclipse seen in the United States is on August 9, 1945, but it will only be visible at sunrise in Montana. Thence it travels northeastward across Canada, where astronomers may observe it. In 1954, on June 30, one begins in Nebraska, and travels to the northeast over Lake Superior, the southern end of Hudson Bay and Labrador. Probably this will be well observed. On March 7, 1970, one crosses Florida. As this is near

Coming Eclipses in United States

August 31, 1932	*Path crosses Vermont, New Hampshire, Maine and Massachusetts.
August 9, 1945	Begins in Montana and Idaho at sunrise and passes north-eastward across Canada.
November 1, 1951	Begins at North Carolina coast and travels eastward, possibly visible on land at sunrise.
June 30, 1954	*Begins in Nebraska at sunrise, thence northeastward, crossing Lake Superior and Canada.
October 2, 1959	Begins near Long Island at sunrise and travels eastward over Atlantic. Possibly visible in New York.
March 7, 1970	*Crosses Florida.
May 30, 1984	*Central eclipse; total across Mexico and southeastern United States, leaving the coast near Maryland.
May 10, 1994	Annular eclipse, path crosses United States from California to Maine.
May 20, 2012	Annular eclipse; crosses from California to Texas.
August 21, 2017	*Crosses the country from California to North Carolina, one of the best in the coming century.
April 30, 2022	*Crosses from Texas to New Jersey.
October 14, 2023	Annular eclipse, path crosses southern California.
* Best eclipses, probably will be observed by astronomers in America.	

the middle of the path, there will probably be a number of astronomers watching it.

May 30, 1984, brings another central eclipse, like the one this month, but the total part of the path is longer and wider. Then the total eclipse will be visible along a path crossing Mexico and the southeastern states, going to sea near Maryland.

On May 10, 1994, an annular eclipse will cross the entire country from California to Maine, though as the moon will not completely conceal the bright solar disc, but will leave a ring of light around it, astronomers will probably not give it much attention. It will, however, be an interesting

spectacle, so you might put the date down in your calendar. In 2012 another eclipse occurs on May 20, visible along a path from California to Texas.

The year 2017 brings one of the best American eclipses in the coming century, for then the path of totality sweeps squarely across the country from California to North Carolina. This occurs on August 21, and the path will probably be dotted with the super-telescopes that astronomers of that distant date will enjoy.

Another annular eclipse, on October 14, 2023, visible along a band across southern California, completes the American eclipses of the next century.

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Flowers From Steel

Metallurgy

THE same fascinating sparks that the village children used to watch "flying like chaff from a threshing floor" are now used to save industry thousands of dollars, for they have been found to be an index to the many kinds of modern steels which differ from one another only slightly in carbon or alloy content.

When held against a flying grindstone a steel containing only 15 hundredths of one per cent. carbon gives a shower of slender spearlike sparks, while a one per cent. carbon steel yields a much fuller shower with many small branches, remindful of a bunch of flowers of pure white stems, leaves

and blossoms. Similarly the different alloy elements like molybdenum, nickel and chromium leave a characteristic impression upon a steel's spark.

Characteristic sparks from a one per cent. steel are shown on the cover.

These differing sparks and their causes are being studied at Canton, Ohio, by Walter G. Hildorf and C. H. McCollam, metallurgists of the Timken Tube and Steel Co., and their findings are already in use in many plants. Spark testing, as the method is called, has provided a cheap and rapid means of sorting different grades of steel which it is almost impossible to tell apart from outward appearance.

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