THE SUN ECLIPSE.

AN EXPECTATION TO WITNESS IT.

February 4.

An interesting astronomical expedition is being fitted out at Harvard College for a twofold purpose. The first in order of time will be an expedition to California for observation of the total eclipse of the sun on January 1, 1890. Immediately after the eclipse one of the corps of observers will proceed to Peru, taking with him a party of the apparatus. He will be joined later by others, and the work will then be entered upon, which has been a year or more in contemplation, of making a complete survey of the Southern hemisphere.

The solar total eclipse invites a renewed attempt to solve various problems connected with the sun's corona by means of photography, and other problems relating to the amount and intensity of the light emitted by the sun under the conditions suggested. This work will be under the personal direction of W. H. Pickering, chief of the department of photography of the observatory. The eclipse will take place about 2 p.m. on the coast of California, and during the remainder of the afternoon, if the sky be clear, will be visible in totality over a strip of country about 150 miles wide and will be partial as far as Suncooook, also total, in Canada, a short distance north of Lake Superior. As a partial eclipse it will be seen over a much wider expanse.

The Harvard Observatory party will take a position near the town of Willow, in the Sacramento Valley, the observatory station being at an altitude of two thousand feet above the sea level. The party will consist of W. H. Pickering, chief; L. Lawrence Rotch, Samuel Bailey, E. S. King and Robert Black. Mr. Rotch has already more than a national reputation as a meteorologist, and it will be in that line that his services will be rendered. The other three have been for some time past active associates at the observatory.

Many instruments of subordinate service are completed in the equipment. Among these are a five-inch and four-inch photographing cameras of the ordinary kind. One of the instruments is for measuring the brightness of the corona, and is an ingenious piece of apparatus, a primary feature of which is a perforated plate having perhaps 1,000 minute apertures for the passage of separate shafts of light, each one of which may be used for the purpose of observation. An important part of the work will be the spectroscopy of the spectrum, for which special apparatus is provided. There will be two other important observing stations established in the path of the totality. One of these will be that of the Lick Observatory. Prof. David, of the national coast survey, will have charge of an expedition fitted out private expense, and will occupy a station in Nevada.

With the ending of the eclipse, a part of the apparatus of the Harvard expedition, the 13-inch and 8-inch Lick eyepiece telescopes, will be continued in service in California. Certain wealthy and enterprising friends of the University of Southern California propose to set up an observatory which shall equal it in having a larger telescope. The great Lick instrument is of 36-inch aperture. The telescope to be made for the university named will be of 40-inch aperture. The selection of a site for this purpose is of great importance. As a contribution to this end, the two Harvard instruments mentioned will be operated experimentally for a year on Mount Pikes Peak, height 14,000 feet, in Southern California, after which they will be taken to Peru and placed in the permanent observatory of Harvard there. This observatory will cooperate in the Southern campaign with the work of the Harvard College Observatory. 23.
The Sun's Eclipse.

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