

SCIENCE

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FRIDAY, MAY 18, 1900.

THE APPROACHING TOTAL ECLIPSE OF THE SUN.

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THE plans of some of the principal parties from American observatories for the observation of the total solar eclipse occurring on the morning of May 28th are as follows :

The arrangements by the United States Naval Observatory have been made under the direction of Professor S. J. Brown, the Astronomical Director, and contemplate the occupation of three stations, two on the central line, and one near the northern limit of totality.

The first station on the central line is under the immediate supervision of Professor A. N. Skinner, and is located at Pinehurst, N. C. The party will comprise, in addition to the five members of the Observatory staff, associate members engaged in spectroscopic and other researches. These include Professor Ames of the Johns Hopkins University, and Doctors Dorsey, Huff and Reese, and other assistants from the physical laboratory of the University. In the photographic work Dr. F. L. Chase, of Yale University, and Mr. A. L. Colton, of the University of Michigan, will take an important part. The work at the station will comprise the establishment of the latitude and longitude, visual and telescopic observations and drawings of the corona ; photographs of the corona with the 40-foot photoheliograph lens, the $7\frac{3}{4}$ -inch visual lens belonging to the Naval Academy equa-

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torial 114-inch focal length, two 6-inch Dallmeyer lenses of 40-inch focus, one of them provided with a color screen and a special Voigtlander lens of special construction of 4-inches aperture and 8-inches focal length, also provided with a color screen. The spectroscopic work, under the direction of Professor Ames, will embrace observations of the reversing layer and corona with a concave grating of 10-foot radius and rulings 6x3.5 inches, 15,000 to the inch, and a plane grating with rulings of the same dimensions used in connection with a quartz objective of 3.5 inches aperture and 60 inches focal length. A prismatic camera with a very transparent prism of 6 inches length and 5.5 inches on the face, and an object-glass of 4 inches aperture and 6 inches focal length, will also be used at this station by some of the observatory force, as yet unassigned. Dr. Dorsey will make observations on the polarization of the corona with an apparatus designed by himself, while Professor E. R. Wood, of the University of Wisconsin, in co-operation with other observers along the eclipse line, with an instrument designed by himself, will measure the velocity, distance apart and direction of the shadow bands.

The second station on the central line will be at Barnesville, Ga., under the immediate supervision of Professor M. Updegraff, assisted by five of the regular staff of the observatory. The operations at this station will be similar to those at the last in regard to latitude and longitude, and the observations of the corona visually and with the telescope. The photographic work will embrace photographs of the corona with the 40-foot photoheliograph lens, a 6-inch visual lens of 96 inches focus provided with a color screen, and a 6-inch Brashear photographic telescope of 80 inches focus under the charge of Mr. C. A. Post of New York, to whom the instrument belongs. Additional photographs on smaller

scale will be taken with a 6-inch Dallmeyer, 33 inches focus, a 4-inch Dallmeyer, 17 inches focus, and a 3.5-inch Dallmeyer, 9.5 inches focus, provided with a color screen. The only spectroscopic work at this station will be photographs of the reversing layer and the corona with a slitless spectroscope, under the charge of Professor H. C. Lord of Columbus, Ohio, by whom it was designed and constructed.

The station at the northern limit near Griffin, Ga., will be for the study of the reversing layer and the corona, and will embrace observations with powerful gratings both flat and concave. Professor Crew and Dr. Tatnall of the Northwestern University will observe with a concave grating of 10-feet radius; Professor Humphreys of the University of Virginia, assisted by Mr. Dinwiddie of the same institution, will observe with a concave grating of 21.5 feet radius; while the grating objective will be used by Mr. L. E. Jewell of the Johns Hopkins University and Dr. Mitchell of Columbia University, New York. This instrument is identical to the one in use at Pinehurst. The two flat gratings and the concave grating at Pinehurst have peculiar and unusual qualities for the special line of investigation for which they will be used. The size of the ruled space on these gratings, and the peculiarities of the ruling, which throws all the light into the first order spectrum, gives a brilliancy to the spectrum which could not be attained by any practicable combination of prisms.

It happens that a large number of parties will congregate at Wadesboro, N. C., a situation which the weather observations for the past three years rather surprisingly singled out as likely to be favorable in its meteorological conditions. It is nevertheless unfortunate that these parties are not more widely scattered along the path of totality, so that fickle weather conditions should not affect all alike.

We have already described the plans of several of the parties at Wadesboro. They include one sent out by the British Astronomical Association, which successfully observed the recent eclipse in India; a group of observers from Princeton; a party from the Smithsonian Institution; several astronomers from the Yerkes Observatory of the University of Chicago, and a party from Vassar College. A great variety of observations will be undertaken by these large parties, the most novel of them being that of measuring the heat radiation of the corona during the ninety seconds of totality, by very delicate bolometers, which will be attempted by some of the members of the Smithsonian and the Yerkes observatory parties. Elaborate spectroscopic investigations will also be made, if the weather permits.

The Lick Observatory sends to Thomas-ton, Georgia, the well equipped expedition already described in this JOURNAL which plans extensive spectroscopic and photographic observations. Another California party, from the Chabot Observatory, will make numerous photographic exposures at Union Point, Georgia.

The party from Harvard College Observatory at Greenville, Alabama, will make a determined campaign with powerful appliances for the purpose of discovering an intra-Mercurial planet.

The Allegheny Observatory will send a party to Fort Deposit, Alabama, equipped with extensive photographic and spectroscopic apparatus as described in a recent issue.

Expeditions from the U. S. Weather Bureau and the Blue Hill Observatory will conduct appropriate observations at Newberry, S. C., and Washington, Ga., respectively.

With favorable weather conditions we may reasonably expect a considerable increase in our knowledge of the problems of

the solar surroundings, which can be only studied during the brief interval of total solar eclipses.

THE PRINCIPLES OF SCIOSOPHY.

"The physical world is the world of illusions. The non-physical is the world of realities in matter."—*Aber.*

"The cell is an illusion: it is merely a word: thus it is with the body, so it is with the earth and with the solar system."—*Judge.*

A RED letter day in the annals of the Astral Camera Club of Alcalde was Saturday, April 1, 1900. On this auspicious occasion was delivered the fifth annual memorial address before this organization, and in this address, for the first time in the history of human thought, were clearly set forth the principles of the divine cosmic science of Sciosophy.

But science I should not say, nor yet philosophy. It is not wholly either, but greater than either. Child of both and parent of both, as the heavens surround and include the earth, so does Sciosophy surround and include all else within the thought of humanity. Sciosophy, in the words of the venerable sage of Angels, is that "ocean of knowledge which spreads from shore to shore of the evolution of sentient beings, unfathomable in its deepest parts, though shallow enough at its shores." Though Sciosophy may be new, its elements are not. Nothing in the world of mind can be really new. The 'stones of Venice' were stones of course, before Venice rose from the sea. They waited the builder whose magic touch should transform rock into palace, who from the marble quarry should draw forth St. Marks. Thus Sciosophy has waited its hundred centuries for the living touch of Abner Dean. Its basal ideas, the Greeks held, the Hindus and the Arabs, while the restful teachers of all climes have foreseen their wondrous possibilities. Under the wand of the prophet behold as an exhalation