PROPOSED MAGNETIC AND ELECTRIC OBSERVATIONS DURING THE TOTAL SOLAR ECLIPSE OF AUGUST 30, 1905.

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Preliminary information regarding the parties, which propose making magnetic and electric observations is herewith given.

Preliminary Information regarding Stations.

CANADA. Photographic registration of the magnetic declination and of the horizontal intensity will be made in the belt of totality by a Canadian expedition under the direction of Professor R. F. Stupart, Director of the Meteorological Service, at North-West River, Labrador (latitude $53^{\circ}30'$, longitude $60^{\circ}03'$), where there will likewise be located a Canadian astronomical party, under the direction of the Chief Astronomer, Dr. W. F. King. Atmospheric electricity observations may also be attempted.

An expedition under the auspices of the Department of Terrestrial Magnetism of the Carnegie Institution for magnetic and electric observations will be located in Canada, at some suitable station, and, if feasible, at some intermediate point between Winnipeg and Labrador.

Observations outside of the belt will be secured at the Toronto Observatory and by the United States Coast and Geodetic Survey parties working near the Canadian boundary in Maine, Minnesota and Michigan.

ATLANTIC OCEAN. Magnetic observations will be procurable from *Cahiriveen* (extreme southwest part of Ireland), situated approximately 400 miles north of the belt of totality and from *Ponta Delgada*, about 700 miles south of the belt.

SPAIN. The Prussian Meteorological Institute hopes to be able to send an expedition for magnetic and electric observations, beginning the registrations about eight days before the day of eclipse, and continuing about the same period after the eclipse. Their proposed station will be in the vicinity of *Burgos*.

The Observatorio del Ebro at *Tortosa* is planning to make astronomical, meteorological, magnetic, and electric observations.

Electric observations will also be made most likely at some station in the eastern part of the belt, by *Professors Elster and Geitel*, under the auspices of the Department of Terrestrial Magnetism of the Carnegie Institution, and, if feasible, in conjunction with the Lick Observatory expedition.

It is also possible that some magnetic declination eye-readings will be secured in Spain or vicinity, by the expedition of the *United States Naval Observatory*, and also meteorological and possibly electric observations by *Professor F. H. Bigelow*, a member of this expedition.

Magnetic observations to the north of this portion of the belt will be procurable from the observatories in France and to the south, from observatories in Spain and Portugal.

ALGIERS. *M. Charles Nordmann*, of the Observatoire de Paris, will make, under the auspices of the Bureau des Longitudes, magnetic and electric observations at *Philippville*. He intends beginning the observa-

tions about eight days or more before the eclipse, and continuing for the same period after.

TUNIS. It is hoped that magnetic or electric observations, or both, will be secured at *Sfax*, under the auspices of the Bureau des Longitudes, by *M. Bigourdan*, of the Observatoire de Paris. Also, possibly some declination readings will be obtained by the United States Naval Observatory expedition.

EGYPT. Magnetic observations will be secured to the north of the belt at *Helwan*, fourteen miles south of Cairo, under the direction of *Mr. H. G. Lyons*, Director-General of the Survey Department of Egypt. It would be very desirable also to obtain observations at *Assuan*, within the belt, where the Lick Observatory will have an expedition, and also at some point to the south of the belt.

EUROPE. Magnetic and electric observations have been promised from a number of European stations situated north of the totality belt.

Should it be necessary, the Department of Terrestrial Magnetism of the Carnegie Institution will further supplement the stations, in case later returns should show that for one reason or another the desired distribution of work along the entire belt has not been secured.

Suggestions Regarding Observations.

Magnetic work. See the accounts of previous work as given in this Journal (vol. V, pp. 143-166; VII, pp. 16-22; VII, pp. 155-192).

In letter of January 2, 1905, Dr. Chree recommends taking quick run (open scale) magnetograms extending from some time before the hour of commencement to some time after the hour of completion of the eclipse, and taken for several days before and after the eclipse as well as on the day of eclipse itself. A comparison with similar records from a suitable station outside totality would be useful. He prefers quick run magnetograms by capable men to absolute eye-readings.

He furthermore says: "I should expect *a priori* that the chance of obtaining definite results was greatest at stations where in the ordinary course the changes in the declination and horizontal force at the hour of the eclipse were largest and most regular."

Electric work. Besides the suggestions contained in the article by Professors Elster and Geitel (pp. 17-20), and in the articles by Doctors Lüdeling and Nordmann (see Abstracts, pp. 58-62), the following are received from Professor Franz Exner, under the date January 6, 1905:

"Es wäre wohl sehr wünschenswerth, wenn an mehreren Orten Potentialmessungen während der ganzen Finsterniss gemacht würden, wozu subjective Beobachtung mit einem Handelectroscop vollkommen genügt. In zwei früheren Fällen hat sich ein plötzlicher Abfall des Potentials während der Totalität ergeben und es wäre sehr interessant zu erfahren, ob sich diese Beobachtung neuerlich bestätigt. Vielleicht finden Sie Gelegenheit in Ihrem Journal darauf aufmerksam zu machen und zu derartigen Messungen—die auch von Dilettanten leicht ausgeführt werden können—aufzufordern."