

10 SAGITTÆ.—Mr. S. C. Chandler has discussed, in the *Astronomische Nachrichten*, Mr. Gore's observations of this star, together with some of his own, and some observations made for the Harvard and Oxford Photometric Catalogues. The result of his inquiry is to give  $M = 1885$  December 4d. 9h. 36m. G.M.T. + 8d. 9h. 11' 0m. (E - 391), the duration of increase being 3' 00d., and of decrease 5' 38d., and the magnitude at maximum being 5.6, and at minimum 6.4. Mr. Chandler considers it likely that the period will prove to be within two minutes of the truth. Mr. Espin's value, however, is 1h. 28m. shorter.

THE OBSERVATORY OF RIO DE JANEIRO.—M. Cruls, in a communication to the Paris Academy of Sciences, states that the long-talked-of transference of the Rio Observatory is about to be commenced. The site chosen lies nearly on the same parallel as the present Observatory, but two minutes farther to the west. The Brazilian Observatory possesses, from its proximity to the tropic, an advantage over all others, in that for forty days in the year the sun's zenith distance does not exceed 1°. M. Cruls anticipates that in the new edifice he will be able to undertake, with success, observations of terrestrial magnetism, and of atmospheric electricity, and he would wish to set up a delicate seismograph for recording slight movements of the soil. He trusts also that the Observatory will bear its share in the great photographic survey of the heavens proposed by Admiral Mouchez.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1886 OCTOBER 24-30

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on October 24

Sun rises, 6h. 41m.; souths, 11h. 44m. 16' 6s.; sets, 16h. 47m.; decl. on meridian, 11° 50' S.; Sidereal Time at Sunset, 18h. 59m.

Moon (New on October 27) rises, 2h. 37m.; souths, 9h. 19m.; sets, 15h. 48m.; decl. on meridian, 4° 45' N.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian
Mercury	8 22	12 47	17 12	18 30 S.
Venus	5 41	11 9	16 37	6 58 S.
Mars	10 44	14 37	18 30	23 30 S.
Jupiter	5 33	11 3	16 33	6 37 S.
Saturn	21 24*	5 26	13 28	21 18 N.

\* Indicates that the rising is that of the preceding evening.

Oct. h. 30 ... 10 ... Mars in conjunction with and 6° 5' south of the Moon.

Variable Stars

Star	R.A. h. m.	Decl. ° ' N.	Oct.	h. m.
U Cephei	0 52.2	81 16 N.	24,	4 51 <i>m</i>
R Ceti	2 20.2	0 42 S.	29,	4 30 <i>m</i>
Algol	3 0.8	40 31 N.	24,	23 3 <i>m</i>
λ Tauri	3 54.4	12 10 N.	27,	19 52 <i>m</i>
			25,	22 30 <i>m</i>
U Ophiuchi	17 10.8	1 20 N.	29,	21 22 <i>m</i>
		and at intervals of 20	24,	1 19 <i>m</i>
β Lyræ	18 45.9	33 14 N.	30,	21 30 <i>m</i>
S Vulpeculæ	19 43.7	27 0 N.	28,	28 <i>m</i>
R Sagittæ	20 8.9	16 23 N.	29,	29 <i>m</i>
δ Cephei	22 24.9	57 50 N.	25,	2 30 <i>m</i>
			28,	21 30 <i>m</i>

*M* signifies maximum; *m* minimum.

Meteor Showers

The present week offers fewer active radiants than the one just past. The following radiants are, however, represented:—Near β Canis Minoris, R.A. 105°, Decl. 12° N.; and from Cancer, R.A. 133°, Decl. 21° N. Both yield swift meteors, especially the latter. October 24 and 29 are fireball dates.

GEOGRAPHICAL NOTES

THE last volume of the *Izvestia* of the Caucasus Geographical Society (vol. viii. 2) contains a great variety of geographical information. General Stebnitzky contributes a most interesting paper on the figure of the earth, being a discussion of results obtained from pendulum-observations in connection with the opinions expressed by M. Faye. An excellent map of the province of Kubañ, on a scale of 13 miles to an inch, is accompanied by a sketch of the colonisation of the province, which already has a Russian population of more than one million inhabitants. M. Koshkul gives a short description of the "Naphtha Mountain," in the Transcasian region. The telegraphic determination of the longitudes of Tiflis, Shemakha, and Baku acquires the more interest, as it allows of the determination of the general error (14" 3) of the Caucasian triangulation and the deviations from the vertical line, due to local causes at these three places. A list of points whose position has been determined by the triangulation made in the Transcasian region, as also in Khiva and Bukhara, is given by MM. Pervas and Gedeonoff, and will be most welcome to cartographers. Among the notes we notice the following:—On the Caucasians of Kubañ, due to M. Zagursky, whose researches on the languages of the Caucasus are always so great a help to ethnography; a list of the Caucasian population in Kubañ in 1883, from which we learn that from Kubañ alone no less than 13,600 Circassians have emigrated since 1871; M. Chantre's craniological measurements are summed up by M. Zagursky; and M. Lessar contributes a paper on the north-western frontier of Afghanistan. The "Appendix" shows where the chief attention of the Caucasus Geographical Society is now directed. They contain translations of a work dealing with Armenia (the "Torus Akhpar" guide through Armenia, by the Archbishop Garegin Sravandzantz); of the Turkish "Salname" for the Erzeround Vilayet; of notes on Syrian-Khaldeans, by a native from Hosrabad; and of Mr. Charles Wilson's lecture on Asia Minor, delivered before the London Geographical Society.

THE first fascicule of the full Reports of the Polar Meteorological Station at the mouth of the Lena has just been published. It is the first fascicule of the second part, and contains the meteorological observations made since September 1, 1882, to August 31, 1883, compiled by M. Eigner, and published under the supervision of Dr. R. Lenz; the second fascicule of the same volume will contain the meteorological observations in 1883-84; while the first volume is reserved to magnetical observations, and the third will be devoted to the non-obligatory observations, among which the auroræ will occupy a prominent place. The meteorological observations now published, comprise the pressure of air, the temperature, elasticity of vapours, relative moistness, force and duration of wind, nebulosity, snow and rain, as also the temperature on the surface of the soil and the snow, and at depths of 40, 80, and 160 cm., these last two missing for the months of July and August 1883, in consequence of an accident to a thermometer. All observations are given in full, that is, for every hour, as also the monthly averages. The daily range of all elements is also represented by curves, whose scale is exactly that accepted for the publication of the French observations at Cape Horn; the work is accompanied, moreover, by a map of the mouth of the Lena, and of the station itself, as also by a drawing representing the station amidst the tundra, on the banks of a branch of the Lena. A full description of the instruments and their corrections is given both in Russian and in German.

THE October number of the *Proceedings* of the Royal Geographical Society has for its leading paper one by Sir Francis de Winton, on the Congo Free State, the conditions of its administration by Europeans, and its probable future. In this latter respect Sir Francis de Winton is naturally inclined to look on the favourable side. Of more strictly geographical interest is the letter from Mr. Grenfell recounting his latest explorations in the missionary steamer *Peace*, of the tributaries of the Congo, between Leopoldville and Stanley Falls, with very detailed maps.

*Petermann's Mitteilungen* for October contains a long paper by M. Nikitin, the chief geologist of the Russian Geological Committee on Glaciers in Russia. His object is to lay down the limits of the traces of glacial action in that country. Lieut. von François's journeys in the southern Congo basin are the subject of the next paper; and, finally, there is a brief account