

ASTRONOMICAL PHENOMENA FOR THE WEEK 1888 SEPTEMBER 30—OCTOBER 6.

(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 September 30

Sun rises, 6h. 1m.; souths, 11h. 49m. 46'2s.; sets, 17h. 38m.; right asc. on meridian, 12h. 28'4m.; decl. 3° 4' S. Sidereal Time at Sunset, 18h. 18m.

Moon (New on October 5, 15h.) rises, 23h. 22m.*; souths, 7h. 30m.; sets, 15h. 32m.: right asc. on meridian, 8h. 8'0m.; decl. 20° 22' N.

Planet.	R.ses.		Souths.		Sets,		Right asc. and declination on meridian.		
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.		
Mercury..	8 25	...	13 16	...	18 7	...	13 55'2	...	14 2 S.
Venus....	8 5	...	13 12	...	18 19	...	13 50'4	...	10 55 S.
Mars.....	12 20	...	16 9	...	19 58	...	16 47'9	...	24 1 S.
Jupiter...	11 11	...	15 25	...	19 39	...	16 4'1	...	20 13 S.
Saturn...	1 10	...	8 41	...	16 12	...	9 19'2	...	16 28 N.
Uranus...	6 53	...	12 25	...	17 57	...	13 3'6	...	6 7 S.
Neptune..	19 37*	...	3 24	...	11 11	...	4 1'7	...	18 56 N.

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

Occultation of Planet and Star by the Moon (visible at Greenwich).

Oct.	Star.	Mag.	Disap.		Reap.		Corresponding angles from vertex to right for inverted image.
			h. m.	h. m.	h. m.	h. m.	
1 ...	Saturn	...	15 59	...	16 49	...	110° 288
3 ...	Leonis	...	3 0	...	3 52	...	55 199

Oct. 1 ... 15 ... Saturn in conjunction with and 0° 55' south of the Moon.

Variable Stars.

Star.	R.A.		Decl.		h. m.
	h. m.	h. m.			
U Cephei ...	0 52'4	...	81 16 N.	...	Oct. 1, 4 13 m
S Arietis ...	1 58'6	...	11 59 N.	...	" 4, 3 52 M
Algol ...	3 0'9	...	40 31 N.	...	" 2, 4 20 m
R Persei ...	3 22'9	...	35 17 N.	...	" 5, 1 8 m
ζ Geminorum ...	6 57'5	...	20 44 N.	...	Sept. 30, 4 4 0 M
R Cancri ...	8 10'4	...	12 4 N.	...	Oct. 4, 2, 3 M
S Ursæ Majoris ...	12 39'1	...	61 42 N.	...	" 1, m
U Ophiuchi...	17 10'9	...	1 20 N.	...	Sept. 30, 21 20 m
W Sagittarii ...	17 57'9	...	29 35 S.	...	Oct. 5, 22 6 m
β Lyræ ...	18 46'0	...	33 14 N.	...	Sept. 30, 19 0 m
R Lyræ ...	18 51'9	...	43 48 N.	...	Oct. 3, 19 0 m ₂
S Sagittæ ...	19 50'9	...	16 20 N.	...	" 3, m
X Cygni ...	20 39'0	...	35 11 N.	...	Sept. 30, 21 0 M
T Vulpeculæ ...	20 46'7	...	27 50 N.	...	Oct. 3, 5 0 M
Y Cygni ...	20 47'6	...	34 14 N.	...	" 3, 5 0 m
δ Cephei ...	22 25'0	...	57 51 N.	...	" 5, 3 0 m
					Sept. 30, 21 0 m

M signifies maximum; m minimum; m₂ secondary minimum.

Meteor-Showers.

	R.A.	Decl.	
Near η Aurigæ ...	75	...	41 N. ... Swift; streaks. October 2.
	225	...	52 N. ... Bright; slow. October 2.

GEOGRAPHICAL NOTES.

LIEUT. WISSMANN, who is to command the German Emin Pasha Expedition, has already done much excellent work in Africa, for which he received one of the medals of the Royal Geographical Society a few months ago. In his hands the interests of science are sure to be attended to. The Expedition will consist of two contingents, which will proceed through

German East Africa by the south shore of Victoria Nyanza to the region between that lake and the Albert Nyanza. That the Expedition is sure to meet with difficulties is evident from the telegrams which are almost daily appearing from Berlin and from Zanzibar. The whole coast region is rising against the Germans, and it is to be feared that Lieut. Wissmann will have to proceed through a practically hostile country all the way to Wadelai. It is a pity that in the matter of Emin Pasha, which interests all Europe, Germany and England could not work hand in hand.

THE new American Geographical Society recently founded at Washington, and including the most eminent geologists and geographers of the United States, has already held several meetings, and begun work in earnest. It has been resolved that the Society will undertake the task of bringing out a new physical atlas of the United States, and for this purpose it has appointed a committee of specialists to proceed with the undertaking.

It is to be regretted that Dr. Meyer's Expedition to Kilimanjaro has met with opposition in traversing Usambara, and has been compelled to return to the coast. Dr. Meyer, who was accompanied by Lenz's former companion, Dr. Baumann, intended to make a thorough survey of the whole region around Kilimanjaro, which, it will be remembered, he recently scaled to within a few hundred feet of the summit. The Chief Semboja, who is reported to have attacked the Expedition, has hitherto been on friendly terms with the whites. He is a great friend of the missionaries of the Church Missionary Society, and Mr. H. H. Johnston, in his book on Kilimanjaro, speaks in highly favourable terms of him, and was indeed indebted to him for many friendly services. It is to be feared, therefore, that the Germans have shown some want of tact in dealing with the Usambara people. It is to be hoped that Dr. Meyer may be able to resume his journey, and carry out the objects of his expedition.

THE last number of the *Izvestia* of the Russian Geographical Society will be welcome to geographers, as it contains a chapter from the work of Przevalsky, now in print, about his fourth journey to Central Asia. All discoveries made during that journey are summed up in this chapter, and the relations of the mountain ridges, mapped by the Russian traveller to other hilly tracts, formerly known, or explored by Mr. Carey, are shown. We hope that this chapter, the chief one of the whole work, will soon be translated into English. After giving a general sketch of the Kuen-lun Mountains, M. Przevalsky describes his journey along the Zaisan-saitu River, the ridges of Tsaidam, "Columbus" and "Moscow," the Lake Unfreezing, Przevalsky's ridge, and the "Windy Valley," which offers an advantageous route to China; as also the return journey, the excursion to the Khatyn-zun River, the passage across the Altyn-tagh, and the return to Lake Lob-nor. The forty pages covered by the article are a rich mine of geographical information. The same number of the *Izvestia* contains an abstract from A. D. Carey's "Journey to East Turkistan," with a map.

THE remarkable facts communicated by M. Yadrintseff as to the drying up of lakes in Siberia have induced the Russian Geographical Society to take decisive steps for the exploration of the lakes of the Empire. A great number of copies of an instruction by Dr. Forel, of Lausanne, have been sent out to correspondents of the Society, as also a programme for collecting data on the subject, and it is hoped that in a year or two most valuable data will thus be gathered.

IN the last number of *Petermann's Mitteilungen*, Herr J. Menges raises once more the question of the possibility of utilizing the African elephant. Herr Menges points out that there is strong evidence that the elephant was made use of in ancient times in Africa, and asserts that no serious attempt has been made in modern times to subdue it to the uses of humanity. He maintains that it is quite as docile as the Indian elephant, and much stronger, and that if it could be really tamed and trained to work, it would be of immense utility in the opening up of Africa. But, unless some protection is accorded to the African elephant, Herr Menges believes that by the end of next century it will be quite extinct. We are therefore glad to notice that the British East African Company will take special means for the protection of the animal, and they might very well make some attempt to prove whether or not it is capable of being tamed.