

Planet.	Rises.		Sets.		Right asc. and declination on meridian.	
	h. m.	h. m.	h. m.	h. m.	h. m.	°
Mercury...	8 30	13 15	18 0	13 49.4	14	59 S.
Venus....	2 44	9 46	16 48	10 19.9	11	18 N.
Mars.....	2 49	9 51	16 53	10 24.8	11	18 N.
Jupiter...	13 35	17 27	21 19	18 1.6	23	30 S.
Saturn....	2 23	9 34	16 45	10 7.0	12	56 N.
Uranus...	7 22	12 46	18 10	13 19.8	7	48 S.
Neptune..	19 50*	3 39	11 28	4 11.2	19	24 N.

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

Oct.	h.	
1	11	Jupiter in conjunction with and 0° 39' south of the Moon.
1	13	Venus in conjunction with and 0° 22' south of Mars.
4	1	Mercury stationary.

Variable Stars.

Star.	R.A.		Decl.	h.	m.
	h. m.	°			
S Ceti ...	0 18.4	9 57 S.	Oct. 1,		M
U Cassiopeiæ ...	0 40.2	47 39 N.	„ 3,		M
U Cephei ...	0 52.5	81 17 N.	„ 5,	3 26	m
Algol ...	3 1.0	40 32 N.	„ 4,	3 45	m
λ Tauri ...	3 54.5	12 11 N.	„ 5,	0 59	m
U Boötis ...	14 49.2	18 9 N.	Sept. 30,		M
S Herculis ...	16 46.8	15 8 N.	„ 29,		M
U Ophiuchi...	17 10.9	1 20 N.	„ 29, 20	52	m
			Oct. 4,	21 38	m
Y Sagittarii ...	18 14.9	18 55 S.	Sept. 29,	21 0	m
R Scuti ...	18 41.6	5 20 S.	Oct. 3,		M
β Lyræ... ..	18 46.0	33 14 N.	„ 4,	0 30	M
R Cygni ...	19 33.8	49 57 N.	„ 4,		M
S Aquilæ ...	20 6.5	15 18 N.	„ 3,		m
R Delphini ...	20 9.6	8 45 N.	„ 1,		M
T Vulpeculæ ...	20 46.8	27 50 N.	Sept. 30,	23 0	m

M signifies maximum; m minimum.

Meteor-Showers.

	R.A.	Decl.		
Near η Aurigæ ...	75	41 N.	October 2.	Swift.
	225	52 N.	October 2.	Slow, bright.
„ δ Draconis ...	290	68 N.		Swift.

GEOGRAPHICAL NOTES.

ON the 12th inst. the administration of the Congo State received intelligence by way of Zanzibar that Mr. H. M. Stanley, on leaving the basin of the Albert Nyanza, endeavoured to make his way southwards by passing to the west of the Victoria Nyanza, but was unsuccessful. He then went northwards, and reached the eastern shore of the lake, Emin Pasha accompanying him. Mr. Stanley made a long stay on the borders of the lake, awaiting supplies from Msalala and Jabora, for which he had sent. He left Emin Pasha on the eastern shore of the lake several months ago, and proceeded in the direction of Mombassa. Mr. Stanley is expected to reach the eastern coast of Africa towards the end of October next.

ACCORDING to information received at Lloyd's from Tromsø, dated September 9, the German travellers Kukenthal and Walter, belonging to the Bremen Arctic Expedition, who were shipwrecked last spring in the *Bertina*, have arrived safely at Tromsø.

M. JOSEPH MARTIN, the French explorer, known in connection with his late expedition to Eastern Siberia, recently left Pekin with a small escort for Tibet, intending to proceed along the Great Wall, subsequently passing through the towns of Liang-Chow and Sining and the province of Koko-Nor, where he expects to arrive next spring. The object of the expedition is of a purely scientific character.

MR. FREDERICK JEPPE, of Pretoria, has recently issued, through Lulau and Co., an excellent map of the Transvaal and neighbouring territories on the scale of 15 78 miles to an inch. It includes not only the Transvaal, but the Orange Free State and all the countries between these and the coast, from Delagoa Bay down to Pondoland. It goes north to close on the

Zambesi, including Matabeleland, Bechuanaland, Griqualand West, and the northern parts of Cape Colony. There are, moreover, a number of special inset maps. The physical features, mountains, rivers, &c., are laid down clearly and in detail. The gold-fields are coloured yellow, the topography is almost exhaustive, and the map is really a gazetteer of the extensive and important region which it embraces. Mr. Jeppe gives a list of the various authorities which he has used in the compilation of his map, and these are the best and latest available.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, September 9.—M. Des Cloizeaux, President, in the chair.—On the fixation of atmospheric nitrogen, by M. Berthelot.—Observations on the formation of ammonia and volatile azotised compounds at the expense of vegetable earth and of plants, by the same. He traces the researches, initiated by him six years ago, establishing the fixation, by earth and plants, of free nitrogen of the air, with the aid of mineral matters and living organisms. Analysis of the liquid condensed within a bell jar inclosing earth, or earth with vegetation, proves the exhalation (of ammonia, &c.) above referred to; and like the ptomaines, &c., produced by animals in a closed space, the products are toxic to the organisms yielding them.—On the nitrification of ammonia, by M. Th. Schloësing. Small quantities of gaseous nitrogen (negligible in agricultural practice), are liberated during the oxidation of ammonia in soil. The author shows that the nitrification of ammonia put into a soil in the form of sulphate, may be effected very quickly, when favoured by the nature of the soil, its humidity and its temperature. In slow combustion of the organic matter of soil, through the agency of the nitric ferment, much more oxygen is used in burning the carbon and hydrogen, than in nitrification of the nitrogen. But in a soil enriched with ammonia, the activity of the ferment is much increased, in conveying oxygen to the ammonia, and it seeks from organic matter only the carbon needed for its development and multiplication.—On the bacteriological study of the lesions of contagious peripneumonia of the ox, by M. S. Arloing. He distinguishes a bacillus and three kinds of micrococci.—On some observations made at the Observatory of Algiers, by M. Ch. Trépiéd. The separation of the nucleus of Brooks's comet, affirmed by the Mount Hamilton observers, could not be certainly made out. This Observatory, begun in the spring of 1885, on a height (350 metres) overlooking Algiers, has now all its instruments except a photographic equatorial. M. Trépiéd notes that the telescopic image of a star, during the sirocco, becomes a continuous luminous spot, the intensity diminishing outwards; an effect, doubtless, of dust.—Observations of Brooks's comet and its companion, made at the Observatory of Algiers with the 0.50 m. telescope, by MM. Rambaud and Sy.—The spectro-photography of the invisible parts of the solar spectrum, by M. Ch. V. Zenger. He describes as advantageous combinations, prisms of quartz and anethol; of quartz and calcareous spar; of the latter and sulphide of carbon; and of rock salt and anethol. One prism of rock salt, with two of anethol, gives nine times more dispersion, and the red part is six times more dispersed between A and D, than by a 60° prism of rock salt.—Researches on sulphites, by M. P. J. Hartog.—On a new monobromized camphor; on the constitution of monosubstituted derivatives of camphor, by M. P. Cazeneuve. The new compound is obtained similarly to the chlorine compound, got by the action of hypochlorous acid, and has similar properties.—On phenoldisulphonic acid, by M. S. Allain-Le Canu.—Influence, on bare soil, of gypsum and clay, on the conservation of nitrogen, the fixation of atmospheric nitrogen, and nitrification, by M. Péchard. The sulphate of lime retains the ammonia in the state of sulphate, and contributes indirectly to the production of nitric acid, by keeping the nitrogen in a form easily nitrifiable; also directly, (in a way not well understood) by its power of deoxidation and reoxidation. Gypsum and clay, both added to sandy soil, concur in fixing ammonia; the former keeps the fixing power of the latter active by removing its ammonia in the state of sulphate easily nitrifiable (clay alone is rather adverse to nitrification).—Manufacture of red glasses for windows (twelfth and thirteenth centuries), by MM. Ch. Er. Guignet, and L. Magne. A microscopic examination of these old glasses shows.