Ephemeris for Berlin Midnight

1887	R.A. h m s	Decl. ° ′	log Δ	log *r*	Brightness
Feb. 12	20 4 1	+ 37 25·2	0·33827	0·26127	0·83
16	20 16 44	39 50·3	0·34157	0·26929	
20	20 29 54	42 12·3	0·34566	0·27733	0·74
24	20 43 32	44 30·2	0·35051	0·28538	
28	20 57 38	+ 46 43·4	0·35608	0·29341	0·66

The brightness on January 24 is taken as unity.

THE ROUSDON OBSERVATORY.—We have received Mr. Peek's report on the astronomical work done at the Rousdon Observatory, Lyme Regis, in 1886. During the year, 146 nights were available for observation, the most cloudy month having been February, and the clearest December. Selected lists of long-period variable stars are under systematic observation with the 6·4-inch equatorial. The following comets have also been observed: 1885 *d* and *e*, 1886 *a*, *b*, *c*, *e*, and *f*. The great nebula in Andromeda is under regular observation. We would suggest to Mr. Peek the propriety of publishing the observations of cometary positions at as early a date as is possible; their value is much increased by speedy publication.

MINOR PLANET No. 264.—This asteroid has been named Libussa by Prof. Peters, of Clinton, U.S.A., the discoverer.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 *FEBRUARY* 13-19

(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 February 13

Sun rises, 7h. 20m.; souths, 12h. 14m. 25·5s.; sets, 17h. 8m.; decl. on meridian, 13° 21′ S.: Sidereal Time at Sunset, 2h. 42m.

Moon (at Last Quarter February 15) rises, 22h. 48m.*; souths, 4h. 27m.; sets, 9h. 55m.; decl. on meridian, 7° 5′ S.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian ° ′
Mercury ...	7 43 ...	12 38 ..	17 33 ...	13 7 S.
Venus	8 1 ...	13 22 ...	18 43 ...	8 28 S.
Mars	7 56 ...	13 16 ...	18 36 ...	8 33 S.
Jupiter... ...	23 43* ...	4 44 ...	9 45 ...	12 11 S.
Saturn... ...	13 29 ...	21 37 ...	5 45* ...	22 19 N.

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.

Occultations of Stars by the Moon (visible at Greenwich)

Feb.	Star	Mag.	Disap. h. m.	Reap. h. m.	Corresponding angles from vertex to right for inverted image ° °
13 ...	94 Virginis ...	... 6 ...	5 26 ...	6 22 ...	38 305
14 ...	ξ′ Libræ ...	... 6 ...	1 4 ...	2 6 ...	52 202

Feb. h.
13 ... 12 ... Jupiter in conjunction with and 3° 43′ south of the Moon.

Variable Stars

Star	R.A. h. m.	Decl. ° ′		h. m.	
U Cephei	0 52·3	... 81 16 N.	... Feb. 15,	20 58	*m*
S Piscium	1 11·7	... 8 20 N.	... ,, 18,		*M*
R Arietis	2 9·7	... 24 32 N.	... ,, 15,		*M*
Algol	3 0·8	... 40 31 N.	... ,, 13,	18 50	*m*
ζ Geminorum ...	6 57·4	... 20 44 N.	... ,, 13,	4 0	*M*
R Boötis	14 32·2	... 27 14 N.	... ,, 17,		*M*
δ Libræ	14 54·9	... 8 4 S.	... ,, 17,	0 57	*m*
U Coronæ	15 13·6	... 32 4 N.	... ,, 14,	1 37	*m*
V Coronæ	15 45·5	... 39 55 N.	... ,, 14,		*M*
U Ophiuchi... ...	17 10·8	... 1 20 N.	... ,, 15,	2 41	*m*
		and at intervals of		20 8	
T Herculis	18 4·8	... 31 0 N.	... Feb. 18,		*M*
β Lyræ...	18 45·9	... 33 14 N.	... ,, 20,	22 0	*M*
R Lyræ	18 51·9	... 43 48 N.	... ,, 13,		*m*
δ Cephei	22 25·0	... 57 50 N.	... ,, 13,	4 0	*m*
R Cassiopeiæ ...	23 52·7	... 50 46 N.	... ,, 15,		*M*

M signifies maximum; *m* minimum.

Meteor-Showers

On February 17, a radiant near *v* Herculis, R.A. 238°, Decl. 48° N. On February 20, from Coma Berenices, R.A. 180°, Decl. 33° N.; and another from near ρ Herculis, R.A. 263°, Decl. 36° N. Other radiants of the week:—Near λ Draconis, R.A. 165°, Decl. 73° N., and near β Ophiuchi, R.A. 260°, Decl. 0°.

GEOGRAPHICAL NOTES

IN a private letter from Mr. H. M. Stanley, published yesterday, he says that when he reached Cairo he found that all the political authorities and experts there were opposed to the idea of his taking the Congo route. They thought that as the Expedition was to be armed with several hundred Remingtons and a machine-gun of the latest invention it was to be an offensive force, conducted after strict military rules, and that Mr. Stanley would therefore meet with no insuperable difficulties either by the Karagwé or by the Masai route. On this point he undeceived them, and he also showed that if serious fighting were necessary his men would be wholly unable to meet great masses of native warriors. Besides, the probable result of a struggle with Uganda would be that Mr. Mackay, the missionary, and the French Bishop and Père, now in Mwanga's power, would be murdered. The total length of each land journey is given by Mr. Stanley as follows:—Congo route: Mataddi to Stanley Pool, 235 English miles; Stanley Falls to Lake Albert, 360 English miles—total 595 English miles. Karagwé route: Zanzibar to Lake Albert, 950 English miles. Masai route: *viâ* Taveta, Kenia, and Turkan, 925 English miles. Mr. Stanley also calculates the length of the various routes by days, assuming that only an average of six miles could be made daily. Congo route: land journeys, 99 days; Zanzibar to Congo, by steamer, 20 days; Lower Congo, by steamer, 3 days; Upper Congo, by steamer, 35 days. Total, 157 days. Karagwé route: land journey, 156 days. Masai route: land journey, 154 days.

THE most important contribution to the new number of the *Bulletin* of the Paris Geographical Society is the series of maps of the River Ogové in West Africa, by Lieut. Mizon. These maps, which are on the scale of about 1 kilometre to an inch, and refer to the whole course of the river as surveyed by Lieut. Mizon, are executed with much care. In the brief text which accompanies the maps, the author describes his method of observation, and gives the positions of some of the more important points. M. Jamkowski contributes an article on Fernando Po, in which he gives some welcome information on the curious people known as Bubis, who inhabit the mountainous districts of the island. Other papers in this number are on the "Ksour" of Bouda (West Sahara), by M. Chatelier; two papers on Tonquin, by Lieut. Gouin; and a paper on the expedition of General de Bussy in the Deccan in the eighteenth century.

IN the Bulletin of the American Geographical Society, No. 2, 1886, Commander H. C. Taylor, U.S.N., describes the various projects which from time to time have been advanced for the construction of a canal across Nicaragua, and attempts to show that this is the most favourable route for a canal between the Atlantic and Pacific. Dr. G. E. Ellis gives an interesting *résumé* of the history of the Hudson's Bay Company, 1670-1870.

LAKE TAHOE, long regarded as the deepest fresh-water lake in the United States, must now take the second place. Capt. C. E. Dutton, of the U.S. Geological Survey, made, in July 1886, a series of soundings at Crater Lake, Oregon, with unexpected results. The mountain wall that surrounds the lake is 900 feet high; the average depth is 1500 feet, and the maximum 1996.

To the January number of *Petermann's Mitteilungen*, Dr. Theobald Fischer contributes the first part of a study of the coasts of North Africa, in which he attempts to account with precision, on geological and meteorological bases, as well as by the action of the sea, for the various features of the North African coast. The present instalment deals mainly with the Algerian and Tunisian coast, and the investigation forms part of a detailed study which Dr. Fischer is making of the whole Mediterranean coasts. The paper is accompanied by maps, while another map illustrates the distribution of languages in Germany and Austria, the accompanying text being by Prof. F. Held. Dr. Possewitz contributes a paper on the laterite outcrops in the Island of Banka.