OUR ASTRONOMICAL COLUMN.

COMET 1907*b*.—From a note published in No. 4175 (p. 366, May 10) of the *Astronomische Nachrichten* we learn that the comet discovered by Mr. Mellish on April 14 had been previously seen by Mr. Grigg, of Thames, New Zealand, on April 9. A set of elements computed by Mr. Merfield from observations made on April 9, 10, and 11 is given.

In the same journal Dr. Ebell continues his ephemeris for this object up to June 19, showing that the comet is now approximately half-way between ι and θ Ursæ Majoris. R.A. = 9h. 2·6m., $\delta = +51° \ 18'$.

THE VALUE OF THE SOLAR PARALLAX.—The discussion of the Greenwich photographs of Eros, the results of which were communicated to the Royal Astronomical Society (*Monthly Notices*, vol. lxvii, No. 6, p. 380) at its April meeting, gave $8''.800 \pm 0''.0044$ as the value of the solar parallax. This result was obtained from the measurement of 151 plates taken with the Astrographic 13-inch refractor and 103 plates taken with the Thompson 26-inch refractor, between October 14, 1900, and January 15, 1901, and agrees very closely with the value, $8''.802 \pm 0''.005$, published by Sir David Gill in 1897.

EARLY AND LATE PERSEIDS.—In a paper recently communicated to the Royal Astronomical Society Mr. Denning gives a list of the apparent paths of probable and possible Perseids observed by him during the periods July 7 to 22 and August 17 to 25 inclusive, from 1876 to the present time. The observations suggest that true Perseids may be looked for after the first week in July, but not until July 19 does the stream become conspicuous enough to enable a good radiant to be determined. Mr. Denning asks other observers to supply data from which the radiant during the earlier period might be determined with more certainty; at present there is reasonable doubt that the shower commences so early as July 7. Similarly the extension of the date of apparition to August 25 is in question, although Mr. Denning is sure that true Perseids have been observed as late as August 20.

A list of the radiants determined is also given, and the author states that quite possibly the shower extends over a period of fifty nights (*Monthly Notices*, vol. lxvii., April, p. 416).

NEW ELEMENTS OF JUPITER'S SEVENTH SATELLITE.—From twelve observations distributed evenly along the observed arc passed over by Jupiter's seventh satellite during the period January 3, 1905, to September 25, 1906, Dr. F. E. Ross has computed a new set of elements for that satellite. The principal perturbations have been included, and the observations are represented by the elements with an average error of only $0'.4$. The inclination of the satellite's orbit, referred to the earth's equator for the epoch January 0·0, 1905 (G.M.T.), is given as $25° \ 18'.6$, whilst referred to Jupiter's orbit the inclination is $27° \ 58'.3$. The period, according to these elements, is 260·06 days.

Observations secured by Prof. Max Wolf on December 22 and 23, 1906, and by Prof. Perrine on November 23, are not consistent with these elements, the respective residuals in R.A. being $+10'.0$ and $-3'.3$ (*Astronomische Nachrichten*, No. 4175, p. 359).

THE COMPUTATION OF COMETARY ORBITS.—In Circular 128 of the Harvard College Observatory, Prof. E. C. Pickering points out what needless duplication occurs in the computation of cometary orbits. For comet 1907*a* three almost identical sets of elements were communicated to the Harvard College Observatory, whilst others, giving similar values, were published elsewhere. To obviate this waste of energy Prof. Pickering suggests that these computations should be carried out on some cooperative system, each computer taking them in turn, and further suggests that the labour thus saved might with advantage be expended on the computation of orbits of minor planets, of which objects so many are now being discovered regularly.

ASTROGRAPHIC CATALOGUE WORK AT THE PERTH OBSERVATORY (W.A.).—Although most of the Government Astronomer's report of the work performed at the Perth (W. Australia) Observatory during the year 1905 is devoted to meteorological observation, Mr. Cooke has a few words to say about the regrettable delay in the prosecution of the Astrographic Catalogue work undertaken by the West Australian Government.

The zone apportioned to the observatory was from 32° to 40° south declination, and includes 1375 regions; of these 145 remained to be taken at the date of the report. But the operations of measuring and reducing the plates were not then commenced, and there is a grave possibility that the plates may deteriorate sufficiently to render them useless. The taking of long-exposure plates for photo-mechanical reproduction was commenced, but was afterwards stopped on account of the expense. Some 10,000 standard stars have to be observed by means of the transit circle, and Mr. Cooke suggests that "this will form the basic work of the Perth Observatory, probably for centuries."

THE TOTAL SOLAR ECLIPSE OF AUGUST 30, 1905.—During the total eclipse of August 30, 1905, Prof. Schwarzschild, of the Göttingen Observatory, together with Prof. Runge, made observations with a prismatic camera and a corona-graph at Guelma, in Algeria. Part xxx. of the *Astronomische Mitteilungen der königl. Sternwarte zu Göttingen* contains a complete discussion of the results obtained. The brightness and spectral photometry of the corona are first dealt with at some length, and then the spectra obtained are discussed, the origin, wave-length, intensity, and extension of each arc being given; the region photographed was from λ 4590 to λ 3330, and the identifications include the elements Yt, Zr, La, Ce, Nd, and Yb.

THE ERUPTION OF KRAKATOA AND THE PULSATION OF THE EARTH.

THE vibration of the earth may be caused by volcanic eruptions and earthquakes, but it is doubtful if any regular pulsation can be called forth by a sudden impulse such as an earthquake or paroxysmal outbursts of volcanoes. If any rhythmic pulsation ever comes into existence, it is most probably due to some exciting cause of long duration, such as volcanoes of continuous activity giving rise to occasional explosions, thus causing frequent blows to the earth. The eruptions of Krakatoa afford an example of such a method of excitation, and we have reason to believe that there were pulsations with a period of about 67m.

The exact time of several minor explosions before the great outburst at 10 a.m., August 27, 1883, is not well known, but if we assume that the air was simultaneously affected, the record of the gasometer at Batavia gives us valuable information as to the sequence of the numerous explosions beginning on August 26. The regular succession of remarkable excursions in the indications of the gasometer, reproduced in the Royal Society report on Krakatoa eruption, is at once evident from the following table:—

			Time interval	
	h. m.	h. m.	h. m.	m.
August 26 ...	5 20 p.m.	6 49 =	3 24·5 × 2 =	68·2 × 6
,, 27 ...	0 9 a.m.			
	1 55 ,,	3 20 =	66·7 × 3	
	2 38 ,,			
	3 30 ,,			
	4 41 ,,			
	4 55 ,,	3 27 =	69·0 × 3	
	*5 43 ,,			
	*6 57 ,,			
	8 25 ,,	3 22 =	67·3 × 3	
	9 42 ,,			
	**10 15 ,,	1 00 =	60	
	*11 15 ,,			

The great explosions are marked with asterisks, while the sign is doubled for the principal outburst.

The whole interval = 67·2m. × 16. The mean interval of successive explosions on August 27, if those at 1h. 55m. and 2h. 38m. and at 4h. 41m. and 4h. 55m. are counted as a single phenomenon, is also 67m. The recurrence of several explosions at multiple intervals of 67m. shows that they were not always irregular, but had a