of a different character; the latter view appears necessary to explain the variation in chemical activity.

IN the formula given in last week's NATURE (p. 85) for converting Fahrenheit to centigrade degrees, the minus signs should have been plus; thus

$$C=(\tfrac{1}{2}+\tfrac{1}{2}\cdot\tfrac{1}{10}+\tfrac{1}{2}\cdot\tfrac{1}{100})(F-32).$$

Though the formula was incorrectly stated, the example given of its use showed plainly that a plus sign was intended.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN DECEMBER:—

Dec. 3. 3h. Jupiter in conjunction with Moon. Jupiter 1° 58′ N.
,, 10h. 36m. to 11h. 10m. Moon occults ζ Geminorum (variable).
5. 11h. 15m. Minimum of Algol (β Persei).
8. 8h. 4m. Minimum of Algol (β Persei).
10–12. Epoch of Geminid meteoric shower (Radiant 108°+33°).
9. 6h. Venus in conjunction with β′ Scorpii.
13. 2h. Mercury and Venus in conjunction. Mercury 0° 49′ N.
,, 18h. 1m. to 19h. 28m. Transit of Jupiter's Sat. IV. (Callisto).
,, 19h. Venus in conjunction with Moon. Venus 2° 40′ S.
15. Venus. Illuminated portion of disc = 0·075; of Mars = 0·938.
19. 4h. 40m. to 5h. 39m. Moon occults γ Capricorni (mag. 3·8).
,, 8h. 32m. to 8h. 54m. Moon occults δ Capricorni (mag. 3·0).
20. 13h. Saturn in conjunction with Moon. Saturn 1° 15′ N.
24. 3h. 26m. to 6h. 26m. Transit of Jupiter's Sat. III. (Ganymede).
25. Saturn. Major axis of outer ring = 38″·59; minor axis = 3″·79.
,, 10h. 59m. to 12h. 12m. Moon occults μ Ceti (mag. 4·4).
28. 3h. Jupiter in opposition to the Sun.
,, 9h. 46m. Minimum of Algol (β Persei).
30. 8h. 6m. to 9h. 37m. Transit of Jupiter's Sat. IV. (Callisto).
31. 6h. 35m. Minimum of Algol (β Persei).
,, 6h. 41m. to 9h. 41m. Transit of Jupiter's Sat. III. (Ganymede).

COMETS 1906g (THIELE) AND 1906h (METCALF).—Further observations of comets 1906g and 1906h are recorded in No. 4134 of the *Astronomische Nachrichten*. Prof. Hartwig, observing at Bamberg on November 11, found that 1906g was of circular form with a diameter of 2′, having a central condensation 1′ in diameter and of the tenth magnitude. On November 14 the condensation was very hazy and difficult to measure, whilst the total magnitude was about 9·0. Several sets of elements and ephemerides are published in the same journal, and the following is an extract from the ephemeris computed by Dr. E. Strömgren:—

Ephemeris 12h. M.T. Berlin.

1906	α (true) h m.	δ (true) ° ′	Brightness
Nov. 30	11 8	39 1	
Dec. 2	11 22	41 34	1·3
,, 4	11 38	43 59	
,, 6	11 54	46 14	1·2

Brightness at time of discovery = 1·0 (= mag. 8·5).

The comet is now circumpolar, and apparently travelling in a line roughly parallel to, and south of, that joining ψ and χ Ursæ Majoris.

Comet 1906h is so faint that it may only be observed with large telescopes.

PHOTOGRAPHIC OBSERVATIONS OF GIACOBINI'S 1905 COMET.—Some excellent photographs of comet 1905c, taken with the 10-inch Brashear doublet of the Yerkes Observatory by Prof. Barnard, are reproduced in No. 4, vol. xxiv., of the *Astrophysical Journal*. That secured on December 29, 1905, shows a great deal of structure in a tail 4½° long. Joined to the comet's head by a narrow neck, this tail first broadens out and then narrows again, its well-defined edges thus presenting a peculiar convex appearance. The photograph taken on January 7, 1906, shows an even greater amount of structure, a large number of thread-like strands diverging from a position about 1° from the head. Although the tail of this comet was subject to great physical changes, Prof. Barnard considers that all the phenomena were due entirely to the solar action, there being no evidence of any outside distorting influence such as was suspected in the case of Brooks's comet (1903 IV.).

SUN-SPOTS AND MAGNETISM.—A retrospect of the stages whereby our present knowledge of the relation between sun-spots and terrestrial magnetism has been advanced at Greenwich is published in the *Observatory* (No. 376) by Mr. William Ellis. For a long period Mr. Ellis had charge of the magnetic observations at Greenwich, and he describes steps of advance in which he took an actual part. These observations were commenced at Greenwich, and in several of our colonies, in 1840, and in September of the next year there occurred a considerable magnetic storm which was clearly shown to have commenced simultaneously in widely separated parts of the Empire, thereby suggesting an external independent cause. By the year 1852 General Sabine, from a discussion of the collected results, was able to suggest that this common cause was probably intimately connected with solar phenomena. Mr. Ellis proceeds to discuss the observations of both solar and magnetic phenomena, giving a number of direct references which should prove both interesting and useful to other observers.

THE SOLAR ECLIPSE OF NEXT JANUARY.—The Tashkent Observatory has issued a map of Turkestan showing the path of the moon's shadow during the total solar eclipse which will take place on January 13, 1907. In the circular accompanying the map a series of meteorological observations is given, and these show that the prospects of a clear sky during the eclipse are not particularly favourable. So far as is yet known, three expeditions, one each from the Pulkowa and Hamburg Observatories, and one from the Bureau des Longitudes, are going to Samarkand (*Astronomische Nachrichten*, No. 4133).

NAKED-EYE OBSERVATIONS OF VENUS.—In the November number of the *Bulletin de la Société astronomique de France* M. A. Benoit discusses numerous recorded instances of the crescent form of Venus having been seen by the unaided eye. To determine the question of the probability of such an observation being possible, a number of observations was especially made at the Juvisy Observatory during the period March–June, 1905. Although on one occasion the observers thought they certainly saw the crescent, subsequent examination with field glasses showed them to have been mistaken, and from the complete discussion M. Benoit concludes that this naked-eye observation is impossible.

THE INTERNATIONAL CHART AND CATALOGUE.—As the completion of the international scheme for charting the heavens is now within sight, a correlated history of its inception and prosecution should prove of general interest. Such an account is given, in German, in No. 48, vol. v. (new series), November 25, 1906, of the *Naturwissenschaftliche Wochenschrift* by Dr. H. Ludendorff, and is illustrated by engravings of the instruments and a reproduction from a portion of one of the Potsdam plates.

THE PERSEIDS, 1906.—In No. 10, vol. xxxv., of the *Memorie della Società degli Spettroscopisti*, Prof. Zammarchi records the results of the meteor observations made on the nights of August 10–14 at the Vescovile di Brescia Observatory. In all, 231 Perseids were observed, and for the majority of these the paths, brightness, colour, &c., are recorded. Many of the meteors left persistent trails, and two of them apparently followed zigzag paths.