

taken, from 4 to 8 inches diameter. The number of photographs of the sun obtained during the year was therefore only 92.

THE TRANSIT OF VENUS IN 1882.—Mr. Stone's Report exhibiting the results deduced from the British observations of the transit of Venus in December 1882 has been published. The resulting values for the sun's mean equatorial horizontal parallax from the different phases of the transit, are as follow:—

External contact at ingress	$\pi = 8''.760 \pm 0''.122$
Internal " " "	$\pi = 8''.823 \pm 0''.023$
" " " egress	$\pi = 8''.827 \pm 0''.050 (\alpha)$
" " " "	$\pi = 8''.882 \pm 0''.043 (\beta)$

(α) or (β) are the values resulting from this phase according to the phenomenon selected to represent true contact. The mean of these gives for

Internal contact at egress	$\pi = 8''.855 \pm 0''.036$
External " " "	$\pi = 8''.953 \pm 0''.048$

The combination of the values deduced from the internal contacts at ingress and egress gives $\pi = 8''.839 \pm 0''.021$ or $\pi = 8''.825 \pm 0''.028$ according as (α) or (β) is used. In the mean from internal contacts $\pi = 8''.832 \pm 0''.024$.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 MAY 15-21.

(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 May 15.

Sun rises, 4h. 10m.; souths, 11h. 56m. 8' 1s.; sets, 19h. 42m.; decl. on meridian, 18° 51' N.; Sidereal Time at Sunset, 11h. 15m.

Moon (one day after Last Quarter) rises, 1h. 35m.; souths, 6h. 34m.; sets, 11h. 40m.; decl. on meridian, 12° 20' S.

Planet.	Rises.	Souths.	Sets.	Decl. on meridian.
	h. m.	h. m.	h. m.	
Mercury ...	3 49 ...	11 3 ...	18 17 ...	13 33 N.
Venus ...	6 6 ...	14 38 ...	23 10 ...	25 29 N.
Mars ...	3 59 ...	11 36 ...	19 13 ...	17 33 N.
Jupiter... ..	16 57 ...	22 13 ...	3 29* ...	9 27 S.
Saturn... ..	7 40 ...	15 48 ...	23 56 ...	22 13 N.

* Indicates that the setting is that of the following morning.

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

May.	Star.	Mag.	Disap.	Reap.	Corresponding angles from vertex to right for inverted image.
			h. m.	h. m.	
19 ...	29 Ceti ...	6½ ...	2 52 ...	3 50 ...	63° 26'

Variable Stars.

Star.	R.A.	Decl.	h. m.
	h. m.		
T Cassiopeiæ ...	0 17.1 ...	55 10 N. ...	May 20, m
U Cephei ...	0 52.3 ...	81 16 N. ...	19, 2 38 m
R Sculptoris ...	1 21.8 ...	33 8 S. ...	17, M
S Cancri ...	8 37.5 ...	19 26 N. ...	17, 20 28 m
U Ophiuchi... ..	17 10.8 ...	1 20 N. ...	15, 0 16 m
β Lyræ... ..	18 45.9 ...	33 14 N. ...	19, 2 0 m ₂
R Lyræ ...	18 51.9 ...	43 48 N. ...	16, m
R Cygni ...	19 33.8 ...	49 57 N. ...	21, M
S Vulpeculæ ...	19 43.8 ...	27 0 N. ...	18, M
η Aquilæ ...	19 46.7 ...	0 43 N. ...	19, 23 0 m
S Sagittæ ...	19 50.9 ...	16 20 N. ...	17, 1 0 M
T Delphini ...	20 40.1 ...	15 59 N. ...	20, M
δ Cephei ...	22 25.0 ...	57 50 N. ...	17, 0 0 M

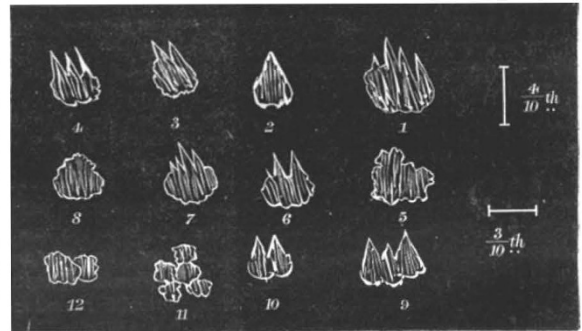
M signifies maximum; m minimum; m₂ secondary minimum.

Meteor-Showers.

	R.A.	Decl.	
Near α Coronæ ...	231 ...	27 N.	Rather slow and faint.
" η Aquilæ ...	294 ...	0	Very swift.
From Delphinus ...	315 ...	15 N.	Very swift.

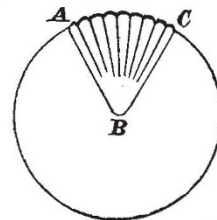
REMARKABLE HAILSTONES.

MR. E. J. LOWE writes to us from Shirenewton Hall, Chepstow, that remarkable hailstones fell there on April 5 from 1 55 p.m. till 2 p.m. They were far apart, and fell with but little force, and were entirely opaque, and had a vertical cleavage. Some were conical, with an irregular base; some were spiked at the apex, and of these no two were alike; others were very irregular in form. A great number were composed of two or three united; in one case as many as five were fast together. The longest were four-tenths of an inch long, and three-tenths of an inch broad. They melted very slowly, lasting as much as two minutes. The temperature was 39° 5, wet bulb 35° 4, and temperature on grass 36° 7. The hailstones were quite different from anything that Mr. Lowe had ever seen. The accompanying figure records a few of them.



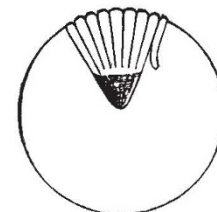
Another account of remarkable hailstones has been sent to us by Mr. Reginald G. Durrant, of Marlborough College:—

“On April 24, about 12.30,” Mr. Durrant writes, “while walking between Melrose and Kelso, a friend and myself were overtaken by a sudden and very violent hailstorm, accompanied by thunder. The violent burst lasted about two minutes, in which time the ground was completely covered with large hailstones rather more than half an inch long. I say ‘long’ advisedly, for all the specimens I examined were conical, and were all of them formed in the same way. The points had all the appearance of snow, being softer than the main bulk of the ‘stones.’ These snow portions occupied about one-third of the whole length, being white and non-transparent. The main portions of the hailstones were hard and ice-like, stranded lengthwise with from forty to fifty fibres of ice—each fibre curved separately at the top—and together forming a curved surface, as of a sphere having the snow point for its centre. Thus—



Angle A B C of section between 50° and 60°.

“On melting, the pointed part became translucent, while the other part became more opaque than at first, strands often remaining for a time, partially separated and curving outwards, as though they had been freed from compression in their lower extremities. Thus—



“The above appearances might admit of the hypothesis that these hailstones were fragments of radiated crystalline spheres,