

The sun was now clear of the clouds and the advance of the moon could be clearly seen.

Photographs were taken before, during, and after totality, but only one of the totality, when developed was worth preserving. Apparently the telescope, which was very easily moved in azimuth, had been blown aside by one of the furious blasts, and only a part of the corona is included in the field. It, however, clearly shows the form and position of the largest prominences, and the general form of the corona, such as could be taken in the time of exposure. The plates used were Wratten's rapid, and the exposure given to this plate was 1 second, and the time at which it was exposed was 7h. 35m. 13s.

The observations by Mr. Gordon shew that totality commenced at 7h. 34m. 46s. and ended at 7h. 36m. 15s. New Zealand mean time, equal to 11h. 30m. east or earlier than Greenwich.

Mr. Gell, an officer of the Public Works Department, took a photograph in an ordinary camera at 7h. 35m. 18s., of which an enlarged copy is given. His observation was taken in Lat. $41^{\circ} 16' 40''$, Long. $174^{\circ} 47' 10''$.

The readings of the barometer are as under:—

At 6h. 20m. ...	Barometer—29·68 ...	Thermometer—46·3 ...	In Shade
„ 7h. 6m. ...	„ 29·7 ...	„ 45· ...	„
„ 7h. 35m. ...	„ 29·7 ...	„ 45· ...	„
„ 7h. 47m. ...	„ 29·7 ...	„ 44·8 ...	„

Mr. Watt records a slight change in the direction of the wind at 7h. 15m. and that at totality there was a sensible decrease in the strength of the gale for about a minute. The appearance of faces around was as if a green light had been thrown upon them—fowls looked ill and hurried to their roosts, birds fluttered about. The cold during totality was quite perceptible to the person, but the mercury indicated no change readable. Small Brevier, No. 2 old style print, could be read in ordinary light at 54 inches, during totality it was read at 24 inches.

Mr. Gordon notes having observed three protuberances on the south-eastern limb, close together, the one nearest the horizon being the largest; three on the north-western limb, not distinctly separated, but merged into each other, the middle one projecting farthest; and one about at right angles to those on the lower limb of the sun. The drawing gives their position.

These protuberances had the appearance of clouds or some gaseous substance, having a mixture of rose and grey tinted colours. The corona he describes as rose tinted all round. The protuberances, especially those on the north-western and south-eastern limbs, projected far beyond the corona, or for a distance of a quarter, to a third of, the sun's diameter.

During totality he observed the planet Jupiter, below and west of the sun, apparently three diameters distant.

The two large spots shewn on the drawing, were clearly seen as shewn, with easterly and westerly elongations.

The moon was off the sun at 8h. 43m. as nearly as could be ascertained through drifting clouds.

Mr. Grant describes the scene, when the sun quite emerged from the clouds, at 7h. 13m. 33s., as very grand, the rays from the partially hidden sun very brilliant, and apparently those which emanated from the right-hand side of the sun were stronger and less steep than those from the other side, where the moon was, the observations amounting at the time to about four-sevenths of solar diameter. At 7h. 21m. 33s. the sun was still perfectly clear. Immediately before totality, and while the extreme lower right hand portion of the sun still remained uncovered, the form of the moon was visible almost in its entirety as a ghostly shape, whose spherical appearance was obscured through a graduated light being thrown from the sun upon the edge of the hitherto disc-like figure. This graduated edge was about one-tenth of a solar diameter in width. At this period, also, a peculiar change in the sun's rays seemed to take place. The rays of the sun, hitherto much lighter than the dark mass of cloud beneath, resumed now the appearance of dark bands, or rays of a darker shade than the clouds through, and upon which they shot.

At totality a bright coronation appeared all around the moon's edge, quite broken or serrated, but of an almost uniform width of about one-fourth the solar diameter. No protuberances were seen, except at the point of first contact, on the sun's upper left-hand edge. This part of the corona, at which the sun is first uncovered, seemed to take the form of a protuberance, having at its base—that is, on the moon's edge—a starlike spot which he took for a star, and anticipating it to be the major axis of an elliptical corona, looked for its complement on the opposite side, but without success. On examining the seeming protuberance it seemed to glow larger and brighter, until a blaze of sunshine informed us that the sun's face was again uncovered.

A reflected light appeared all round the inside of the moon's face during totality, the general width being about one-fourth of the lunar diameter and of greater width at the top than at the bottom. A narrow band appeared upon the extreme edge of the moon's face and extended inwards about one-twelfth the lunar diameter, which remained unlit by this apparently reflected light, and was of the ordinary gloomy colour. The light above mentioned was of a scintillating character, and, although graduated from the edge towards the centre of the moon, seemed to be composed of innumerable points of glistening silver. See sketch.

The colour of the corona is described as a brilliant white, very like the electric light, with perhaps in places, the faintest flame colour, the general appearance giving the idea of some white molten metal, whose top skin of dross had been disturbed, discovering the white hot liquid mass. This, together with a dazzling electric-light appearance which it seemed to possess, are the impressions made on the mind by the appearance of the corona.

Jupiter was seen and stated as about 30° left of the vertical, and about one solar diameter distant.

A plummet was suspended as a guide for the vertical.

The star like spot on the sun's left upper edge was seen immediately after totality; indeed, although closely observing, at no time was the sun's face quite obscured by the moon, the bright spot—ininitely brighter than a star—being always present.

At 8h. 21m. 3s. the altitude of the sun's upper limb was $23^{\circ} 55'$.