Day, 1887.	Errors of Longitude. Hansen *minus* Observed. Uncorrected for the Change of t made in 1864, but corrected for the Mean Error of the Tables 1847 to 1863.	Errors of Longitude. Hansen *minus* Observed. Corrected by Newcomb.	Errors of Longitude. Hansen *minus* Observed. Corrected for the Change of t made in 1864, and for the Mean Error of the Tables 1847 to 1863.	Errors of Ecliptic P.D. Hansen *minus* Observed. Uncorrected for the Change of t made in 1864.	Errors of Ecliptic P.D. Hansen *minus* Observed. Corrected by Newcomb.	Errors of Ecliptic P.D. Hansen *minus* Observed. Corrected for the Change of t made in 1864.
	″	″	″	″	″	″
Nov. 27	+17·92	+1·73	+0·17	+0·96	+0·91	+0·75
29	+17·14	+0·54	−0·90	−0·83	−0·44	−0·29
30	+16·65	−0·10	−1·77	−0·77	−0·36	+0·09
Dec. 5	+18·94	+0·95	−0·86	−3·52	−2·17	−1·75
6	+14·99	−3·33	−5·16	−3·48	−2·06	−1·81
8	+20·49	+1·15	−0·64	−3·53	−2·63	−2·34
26	+15·63	−1·15	−2·50	−1·68	−1·45	−1·27
27	+17·31	+0·34	−1·03	−1·85	−1·19	−1·10
31	+17·95	+0·02	−1·84	−2·09	−0·58	−0·28
Sums, without regard to signs	**1866″·88**	**254″·11**	**249″·44**	**182″·24**	**134″·93**	**132″·05**
Means, without regard to signs	**18″·13**	**2″·47**	**2″·42**	**1″·77**	**1″·31**	**1″·28**
Mean Errors for the year	**+18″·13**	**+0″·71**	**−0″·91**	...	...	...

Radcliffe Observatory, Oxford:
1891 *January* 8.

Photographic Evidence of Variability in the Nucleus of the Great Nebula in Andromeda. By Isaac Roberts, F.R.S.

The photographic evidence of variability in the nucleus of the great nebula in *Andromeda* will best be appreciated if I give in chronological order the dates when the photographs were taken, and describe the appearance of the nucleus on each plate.

On August 30, 1885, a plate was exposed during 30 minutes, when the nucleus did not appear to be distinctly stellar. The Nova was then near, and was much brighter than the nucleus. The star images on the plate, including that of the Nova, are elongated because of bad clock driving, but the nucleus does not show elongation, though stars which were as faint as the nucleus are elongated.

On October 24, 1886, a plate was exposed during 73 minutes, and it shows a faint stellar nucleus, which is elongated and two centred, like all the stars on the plate.

On October 10, 1887, a plate was exposed during 3 hours, which shows the nucleus very faintly stellar, and it is elongated like all the stars on the plate. The rings surrounding the nebula are visible on this plate, but I did not obtain full evidence of their true character until the end of 1888.

On November 15, 1887, a plate was exposed during 2 hours and 35 minutes, but no trace of a stellar nucleus can be detected. The stars on the plate are elongated, but there is no elongation of the nucleus. There is a faint trace of the rings visible.

On October 1, 1888, a plate was exposed during 2 hours, but there is no stellar nucleus visible. The rings are strongly shown.

On October 2, 1888, a plate was exposed during 2 hours and 32 minutes, but the nucleus is not stellar. The rings are strongly shown.

On December 29, 1888, a plate was exposed during 4 hours, on which the rings are strongly shown, but there is no stellar nucleus.

On October 12, 1890, a plate was exposed during 3 hours and 5 minutes, but the nucleus is not stellar.

On November 1, 1890, a plate was exposed during 15 minutes, and the nucleus is distinctly stellar. Its stellar character is more strongly shown on this negative than on the others where it is visible.

On December 9, 1890, a plate was exposed during 15 minutes, and also another immediately following it, with an exposure of 5 minutes, and a stellar nucleus is very strongly shown on both plates. On another plate, which was exposed on the same night during one hour, the stellar nucleus is strongly visible through the nebulosity.

From the evidence given above we may reasonably infer that the nucleus of the nebula is variable, and that it will be practicable to study the character of the variability without the necessity of giving long exposures of the plates.

Summary of the evidence given above:—

1885 August 30. Exposure 30 minutes. No stellar nucleus.

1886 October 24. Exposure 73 minutes. Faint stellar nucleus.

1887 October 10. Exposure 3 hours. Very faint stellar nucleus.

1887 November 15. Exposure 2 hours and 35 minutes. No trace of a stellar nucleus.

1888 October 1. Exposure 2 hours. No stellar nucleus.

1888 October 2. Exposure 2 hours and 32 minutes. No stellar nucleus.

1888 December 29. Exposure 4 hours. No stellar nucleus.

1890 October 12. Exposure 3 hours and 5 minutes. No stellar nucleus.

1890 November 1. Exposure 15 minutes. The nucleus is very strongly stellar.

1890 December 9. Exposures 5, 15, and 60 minutes respectively. The nucleus is strongly stellar on each plate.

Isaac Roberts' New Observatory on Crowborough Hill, Sussex.
By Isaac Roberts, F.R.S.

The observatory is placed on the summit of Crowborough Hill, in Sussex, which is one of the highest points in the South of England, and commands the horizon around without material obstruction. The floor of the observatory is 780 feet 7 inches above sea-level. The whole of the buildings are erected on a level platform of concrete, the top of which is about four feet above the ground, which slopes towards the south-east. The buildings are one story in height, and the floors are raised fifteen inches above the platform or terrace, and are on one uniform level throughout. The limit to one story in height permits the telescopes to be brought down to within twenty degrees of the horizon when pointed over the roof of the house. The observatory is placed due south, and is 20 feet square inside, with a transit room opening from it on the west side. Adjoining the observatory on the north side is a physical laboratory and a chemical laboratory, with dark room and photo-enlarging arrangements. These and the observatory are connected with the dwelling-house by a corridor, on one side of which is a mechanic's shop, heating-chamber, and library. At the end of the corridor is the dwelling-house. The dome of the observatory is hemispherical, and constructed with wood ribs, sheeted with wood and covered with copper. The dome has two slits, each 3 feet 8 inches in width, parallel with each other, and 5 feet 8 inches from centre to centre. The shutters of the lower half of each slit slide horizontally round the dome, and the upper halves slide upon and over the top of the dome, so that both slits can be opened full breadth from the horizontal to 18 inches beyond the zenith. By opening both slits the observatory is soon cooled down to the external temperature; but there is one disadvantage in this dual slit plan—it gives the dome a pole, which in some positions of the telescope is a little troublesome.

The latitude of the observatory is N. 51° 3′ 7″; longitude, E. $0^h\ 0^m\ 37^s$.

The site of the observatory was selected after much inquiry and investigation as to probability of the occurrence of numerous clear intervals of sky during the year suitable for the pursuit of stellar photography, and although it is premature to express a decided opinion, I am quite safe in stating that this locality is an improvement upon the former site of my observatory at Maghull.