

A	71
A-	23
B+	13
B	9
B-	3
C	4
<hr/>	
Total	123

After I had satisfied myself that no better place than the Observatory vault could be found for the temporary storage of these plates, they were, in great part, deposited there, together with such portions of the Photoheliograph as have yet to be investigated before the reductions of the photographic measurements can be completed. A few of the plates were brought to San Francisco, and placed in the vaults of the Safe Deposit Company of that city. The original record of the photographs was left in the Observatory vault on the mountain, duplicate and triplicate copies of it having been carefully prepared and brought down for preservation elsewhere.

*Lawrence Observatory, Amherst, Mass.:  
1883, Jan. 24.*

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*Observations of the Transit of Venus, 1882, Dec. 6, made at Mells,  
Ten Miles South of Bath. By Maures Horner.*

**Instruments used:**

A five-inch Equatorial Refractor, by Cooke, 1864, with position circle and clockwork.

A spectroscope of two prisms, dispersion about  $15^\circ$ , by Hilger; iridium slit shutting without spring, with milled head graduated to 1-1000th of an inch. Prisms set to between C and D.

Sidereal time obtained from a *Cygni* by Troughton and Simms' portable transit instrument in conjunction with a Cooke pendulum-clock shortly after sunset.

The morning of the 6th was not quite without hope, for although the clouds appeared heavy, yet the wind kept nearly due north and the temperature low. At noon signs of a breaking in the sky became visible. All preparations were made, and some glimpses of the Sun obtained. The spectroscope was fixed, and the slit, 1-100th of an inch open, adjusted by means of the position circle tangentially as near to  $145^\circ$  as possible. At 1:30 G.M.T. the chromosphere was fairly well observed. Two small protuberances marked out the field of view; the larger one seemed to have rather a filamentary structure, and the space between appeared uneven, but not very active. At the place

March 1883.

*the Transit of Venus.*

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where contact was expected it was difficult to keep the image of the chromosphere steady, nevertheless good views were secured. Clouds again came over a few seconds after two o'clock. Suddenly the sky cleared, and at 18<sup>h</sup> 53<sup>m</sup> 19<sup>s</sup>.5 M.S.T., at about 144°, between the two protuberances an appearance was observed of two dusky streaks like two faint Sun-spot lines. These were so marked, that after two or three seconds the observer called to his time watcher and took his eye off to look towards the clock, then looking again through the spectroscope he saw the single dark thick band stretching down the spectrum.

When the planet had made some progress on the Sun's limb the spectroscope was removed, and a transit eyepiece, power about 85, on the first surface-reflecting prism was applied.

The boiling of the limb became very violent, and sometimes the dark glass was unnecessary.

The first appearance that attracted notice was a distinct prismatic fringe round the edge of the planet, then projected on the Sun to the extent of about three quarters of its disk. This was seen through clouds without dark glass, time 19<sup>h</sup> 9<sup>m</sup> 7<sup>s</sup> M.S.T. About a minute later, still without a shade, a faint hazy light was seen, which rapidly got more distinct, and appeared to encircle the part of the planet outside the Sun. Almost immediately the Sun shone out very clearly, making a neutral tint necessary, and at that moment the limbs of *Venus* could mentally be completed, and thus completed would appear to touch: time 19<sup>h</sup> 11<sup>m</sup> 36<sup>s</sup> M.S.T. In half a minute more the light outside became exceedingly beautiful, but unfortunately a cloud floated by and contact was *estimated* at 19<sup>h</sup> 12<sup>m</sup> 41<sup>s</sup> M.S.T. When the sky cleared at 19<sup>h</sup> 13<sup>m</sup> 19<sup>s</sup> the observer was much surprised to see the planet not completely clear, and therefore this last time was imagined to be very near the moment of contact, as given on page 4 of the Instructions—viz. "when light is about to glimmer," &c. The times given are local sidereal time.

Longitude of Observatory from Ordnance Map	...	m	s
		9	33.6
Latitude	„	°	'
		51	14

The beautiful hazy light outside the Sun's limb, immediately in the rear of the planet, was of considerable breadth; no bright line ring was noticed, nor was any regular black drop perceived, though any amount of such phenomena might have been manufactured out of the undulating limbs of the Sun and planet, especially if the focus had not been fixed before hand. The planet was carefully examined with all kinds of coloured glass and apertures, but nothing remarkable appeared except a distinct and persistent softening of the darkness towards the centre. One very beautiful display was made by a purple glass, which caused all the edges to glow with pink whilst the disks were blue. The most interesting effect was produced by a power of

about 30, which gave more perfect idea of the planet's comparative nearness and of its suspension in space than did the higher powers.

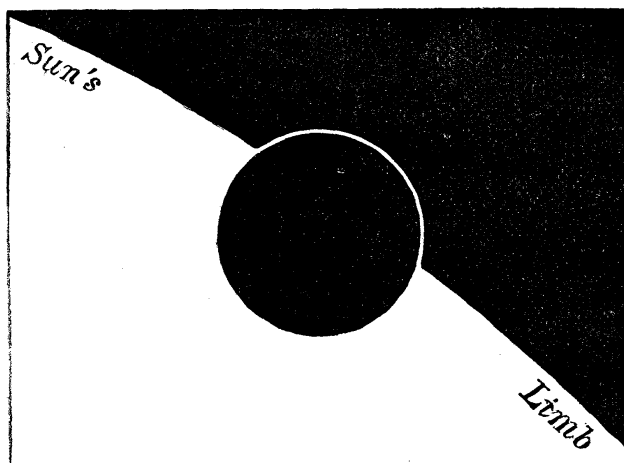
The planet's disk was easily seen by the unassisted eye, and indeed without any protection by some young retinas when the Sun was near setting.

The spectroscope observations were made by the Rev. George Horner, and the remainder by the writer of these notes.

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*Note on the Transit of Venus, 1882, Dec. 6.* By Charles Leeson Prince.

Since my communication to the Society of Dec. 7, respecting the Transit of *Venus*, I have had the following engraving made of the appearance of the planet's atmosphere shortly before internal contact, which, I trust, will be interesting to those who were not fortunate enough to witness the phenomenon.



*The Observatory, Crowborough :*  
1883, Feb. 5.

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*Notes on the Transit of Venus, 1882, December 6.* By the Rev. Fred. Howlett.

The drawing of the late Transit—of which I obtained a few brief glimpses between the clouds—as seen projected on a screen in a darkened chamber, is of no really scientific value, but is interesting as showing how very conspicuous the phenomenon appears when observed by the method just mentioned.