

In a letter to Mr. Carrington, dated 11th April, 1861, Capt. Noble writes:—

“Inasmuch as I think that every abnormal circumstance, however trivial, should be placed upon record, I may tell you that while examining the Sun on Thursday, March 28th, at 2^h 30^m G.M.T., with a power of 74, I found that the carefully determined solar focal length of the object-glass, with the eyepiece employed, was *shortened* exactly 0·11 inch! There was a good deal of haze about at the time. The barometer stood at 29ⁱⁿ·340, and the thermometers outside of the observatory at 55°. I can find no notice in any work to which I have access of this curious phenomenon of a considerable alteration in the focal length of a telescope, nor can I presume to theorise upon the matter. The quantity by which the focus was changed was too great to have had its origin in any unusual condition of my own eye; besides which, when the sky cleared, the focus lengthened again to its standard distance. It seems to me that in such alteration we have an explanation of a fertile source of many discrepancies which occur in accounts of the same phenomenon as viewed by different observers, and perhaps even a better one of the inconsistency of observations made by the same individual.”

Observations and Elements of Comet III. 1860. By Dr. C. G. Moesta, Director of the National Observatory of Santiago de Chile.

I enclose some observations of Comet III., 1860, seen by me for the first time on the evening of July 10th, and which has been observed here on several nights until the 13th of September. Most of the comparison-stars are probably not to be found in the Catalogues of southern stars, and I intend to determine their positions by the Meridian-Circle as soon as the season will permit it. On the 13th of August the Comet was compared with ν and κ *Centauri*, and on the 12th of September with Taylor 8002. Adopting the positions of these stars, such as they are given in the B.A.C. and Taylor's Catalogue, I obtained the following positions of the Comet:

	G.M.T.			App. R.A.			App. Decl.		
	h	m	s	h	m	s	o	'	"
August 13	14	43	8·7	13	47	26·92	—40	19	32·8
September 12	12	48	30·8	15	2	50·64	—47	24	1·6

With approximate elements I formed a normal place of the three observations made at Bonn and Altona (*Ast. Nach.* No. 1266), and after having applied the corrections for parallax and aberration, and reducing all observations to the mean equator for 1860.0, I collected the following places of the Comet:

G.M.T.	R.A.	Decl.
	^h ^m ^s	[°] ['] ["]
Altona and Bonn, June 23.50000	6 45 40.12	+42 18 45.6
Washington, July 14.56297	10 59 11.56	- 1 4 7.5
Santiago, Aug. 13.60642	13 47 24.98	-40 19 9.7
Santiago, Sept. 12.52198	15 2 48.07	-47 23 38.5

The observation of July 14th (*Ast. Nach.* No. 1273) is based upon the following position of Weisse X, 1099, as determined by me with the Meridian Circle:

For 1860.0,

Mean R.A. = 11^h 1^m 7^s.76, Decl. = -1° 8' 44".4

By variation of the distances of the Comet from the Sun I found the adjoined parabolic elements, which represent the first and last of the given places, leaving the following errors in the middle places,—

	O—C. δ long.	O—C. δ lat.
Washington, July 14	-7.1	- 2.5
Santiago, August 14	+6.7	-12.4

Elements.

T = 1860, June 16.05950 G.M.T.

$\Omega = 84^{\circ} 40' 3.8''$
 $\pi = 161 31 59.3$ } Mean Eq., 1860.0.
 $i = 79 18 33.76$

Log $q = 9.4667171$.

Motion direct.

It appears, therefore, that a parabola will represent very well the observations during three months, and that the eccentricity of the orbit must be very nearly equal to unity.

Santiago de Chile, Feb. 17, 1861.