

VI. *Extract of a Letter from Capt. BASIL HALL, R. N. F. R. S.
to WILLIAM HYDE WOLLASTON, M. D. V. P. R. S. contain-
ing observations of a Comet seen at Valparaiso.*

Read January 10, 1822.

MY DEAR SIR,

His Majesty's ship Conway,
Valparaiso, May 4, 1821.

I HAVE much pleasure in sending you some observations which I have just made upon a comet that has been in sight here for 33 days. It is now almost gone, and I scarcely hope to get another satisfactory observation of its place. I was unfortunately in the interior of the country when it first appeared, so that it was not until the 8th of April that I was able to make any observation with accuracy. Since that day I have determined its place, as you will see, for several other days, and I trust there are data enough to work upon.

ever sincerely your's, &c. &c.

BASIL HALL.

TABLE, showing the Places of the Comet seen at Valparaiso, in April and May 1821.

Latitude $33^{\circ} 2' 18''$, 9 S°. Longitude $71^{\circ} 36'$ W.

As observed by Capt. BASIL HALL, Lieut. WILLIAM ROBERTSON, and Mr. HENRY FOSTER, of His Majesty's Ship Conway.

Date.	Mean Time.	R in Time.	Declination. (South.)	Stars with which the Comet was compar- ed. (From Con. des Temps, 1819.	Interval between the Passage of the Com- et and the Star. (Sidereal Time.)	Difference of decli- nation. (Comet S°. or N° of *.)	REMARKS.
1821. Apr. 8	h. m. s. 7.10.58	h. m. s. 2.34.16	° ' " 7.51.49	10 ρ ³ Eridani (4)	h. m. s. 21.14,5	26.26 N	Clear night. Land breeze, which gave the telescope a slight tremulous motion.
11	6.54.45	2.46.29	7.12. 2	20 τ Orionis (4)	2.22.26,8	9.20 S	Clear still night. Circumstances favourable.
12	7. 2.30	2.50.14,6	6.58.39	—	2.18.41,7	4. 3 N	Circumstances favourable.
14	6.54.00	2.57.14,9	6.33.45	38 ο Eridani (4)	1. 5.53,8	44.48,6 N	Comet very faint; but nucleus distinct in the telescope. Circumstances favourable.
17	7.00.29	3. 6.43,1	5.58.11	17 Eridani (4,5)	15. 1,9	16.34,9 S	Comet almost obliterated to the naked eye by the moon's light. The observations however are good this evening.
18	6.36.52	3. 9.32,1	5.46.17	—	12.13,0	4.40,8 S	All circumstances favourable.
19	6.34.54	3.12.26,0	5.34. 1	—	9.19,0	7.34,7 N	Comet very faint—weather hazy, with a fresh breeze, which gave a tremulous motion to the telescope. Circumstances not favourable.
20	6.28.19	3.15. 8,0	5.23.58	—	6.37,1	17.38,3 N	All circumstances favourable, although the Comet appeared rather fainter than usual.
21	6.30.10	3.17.46,4	5.13.32,7	—	3.58,6	28. 3,3 N	All circumstances very favourable.
24	6.49.30	3.25.14,4	4.45.18,3	42 ξ Eridani (3,4)	49.32,6	35.26,3 S	Circumstances all favourable. Comet very faint.
29	6.48.36	3.36.29,2	3.57.46,8	—	38.17,8	12. 5,2 N	Circumstances all favourable, but Comet fainter.
May 1	6.31.40	3.40.15,8	3.41.15,9	48 ν Eridani (4)	47. 7,7	2.10,4 N	Circumstances very favourable. Comet very distinct.
3	6.29.37	3.44.20,4	3.25.53,1	—	43. 3,1	17.33,2 N	Circumstances favourable—but the Comet very faint. This was the last observation made.

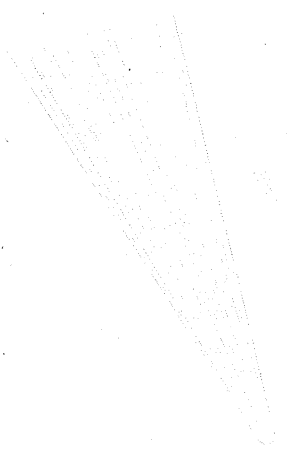
The foregoing right ascensions and declinations were determined by means of a wire micrometer attached to a power of about 80. The comet was always so near the horizon before it became visible, that on no evening during the whole month that it was observed, could its \mathcal{R} and declination be measured more than once. Unfortunately there were few known stars near the comet, so that it was often necessary to wait a considerable time before any one passed through the field of view. The high range of hills which encircle Valparaiso, also, interfered with these observations, as the comet became hid sooner than it otherwise might have been. During the first week the nucleus was very distinct, and might have been measured by the micrometer; but I was then in the interior of the country, and did not commence observing it till the 8th, when the nucleus had become so indistinct as to render any measurements of this kind uncertain. Lieutenant ROBERTSON of the Conway, assisted by Mr. FOSTER, midshipman of that ship, measured the angular distance of the comet from Aldebaran, Sirius, and Canopus, from its first appearance, until the splendour of the moonlight so far obliterated the comet, as to prevent any good distances being taken. These distances are given here, as they may serve to determine the comet's place, if required, for several days before the micrometrical observations were commenced.

1st April	{	Aldebaran	44.42.0	2d April	{	43.24.0	3d April	{	42.1.40	
7 P. M.	{	Sirius	66.52.40	7 P. M.	{	67.8.30	7.10 P. M.	{	65.28.40	
	{	Canopus	68.10.50		{	67.18.40		{	66.5.00	
		Barom.	29.91			Barom.	29.86		Barom.	30.
		Ther.	61.			Ther.	64		Ther.	68
7th April	{	Aldebaran	37.35.22	8th April	{	36.33.10	9th April	{	35.35.30	
7.15 P. M.	{	Sirius	60.46.48	7.5 P. M.	{	59.45.25	7.2 P. M.	{	58.49.40	
	{	Canopus	64.11.17		{	63.45.27		{	63.20.40	
		Barom.	29.97			Barom.	29.86		Barom.	29.94
		Ther.	60			Ther.	60		Ther.	62

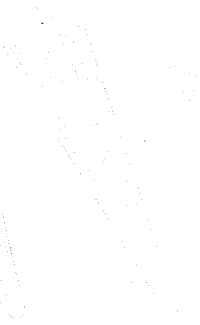
(The error of the index has been applied to these distances.)



April 2nd.



April 20th



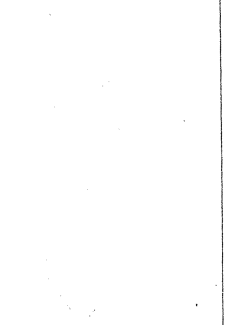
21st



24th



1st May



3rd May, last night seen.

On its first appearance, the comet was of a dull white colour: the tail seemed to be split, or to have a dark streak between its sides. On the second evening, the tail subtended an angle of 7° , reaching to ρ Ceti: the northern part of the tail was the longest. On the third, the appearance was much the same. It was hid till the seventh by clouds: the tail then appeared shorter, and the nucleus less bright; changes which at the time were ascribed to the interference of the moon's light; but which, I think, must have arisen from the increased distance of the comet. The tail at first was nearly at right angles to the horizon, but at each succeeding night it inclined more to the south. The time of its appearance was always very short, and that time was generally occupied with the adjustment of the micrometer, so that I was not enabled to draw it so frequently as I could have wished; but these few sketches [Pl. IV.] will give some idea of its appearance.

BASIL HALL.