

XIX. *Journal of a Voyage to The East Indies, in the Ship Grenville,*
Communicated by the

EXPLANATION OF THE COLUMNS.

1st, **T**HE *date*^(a).

2d, The *height* of the *thermometer*, according to FAHRENHEIT'S scale. therm^{om}eter belonged to Mr. RUSSELL, and hung in the open air in the balcony.

3d, including four columns, contains the *register* of the *marine barometers* which, as well as the thermometers, were made by NAIRNE and BLUNT: those marked R and D are quicksilver, of the kind usually made by them. That marked S is composed of quicksilver, and of a lighter fluid, for the purpose of making the alteration visible, which is a very great convenience at sea; a quicksilver thermometer being it for the sake of correcting its height, the heat by which is set down in the marked Th. next to that marked S.

4th, The *weather* and *winds* in four lines; 1st line from noon to 6 P.M.; 2d, 6 P.M. to midnight; 3d, from midnight to 6 A.M.; 4th, from 6 A.M. to noon.

In the column of *weather*, f. denotes *fair*; sq. *squally*; c. *cloudy*; h. *bazy*; r. *rain*; r. *hard rain*; fr. *small rain*; dr. r. *drizzling rain*; sh. *showers*; th. *thunder*; l. *lightning*.

It is proper to remark, that the *winds* are set down according to the *compass*, with allowance for the *Variation*.

5th in 2, The *difference* between the daily alteration of *latitude* by *account* and *observation*; N. denoting that the *observation* was to the *Northward* of the *account*; S. was to the *Southward*^(b).

(a) Here, for want of room, the day of the month only is expressed; but in the original journal the days of the of the Moon, are also inserted.

(b) Next to these columns in the original journal are the following, which are left out here only for want of room. Correct course, lee-way variation &c. allowed, and the different courses reduced to one straight course.

Distance on that straight course.

Difference of latitude by account,

Difference of latitude by observation,

The departure,

The difference of longitude by account,

The difference of longitude by the time-keeper,

} in minutes of a degree.

ville, Captain Burnet Abercrombie, in the Year 1775. By Alexander Dalrymple, Esq.
by the Honourable Henry Cavendish, F. R. S.

Read January 29, 1778.

scale. This
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being fixed to
the column
t.; 2d, from
r. rain; hr.
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nt; S. that it
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of room:
e.

6th in 2, The *difference* between the daily alteration of *longitude* by the *time-keeper*; W. denoting that the *longitude* by the *time-keeper* was by *account*; E. that it was to the *Eastward*.

The result of those differences indicates the daily effect of error in the course sailed, or distance run by log, would make the course from what it really was.

7th, The *longitude* from Greenwich, in seven columns.

1st, The *longitude* by *account*.

2d, The *longitude* by the *time-keeper*, which was made by his late improvements.

3d, The *difference* between the *longitudes* deduced from *observations* and from the *time-keeper uncorrected*; E. denoting the time-keeper to be East of ϵ ; w. denoting time-keeper to West of ϵ . This *keeper* not to be liable to any sudden changes in its rate or imprecision with which the observations of the Moon may be affected by circumstances of weather and of the ship's motion considered.

4th, The *longitude* by *observations* of the Moon's distance from the land, adjusted, by the log, to the noon nearest the time of observation.

5th, The number of *sights* or *distances* observed.

6th, The *object* whose *distance* from the Moon was observed;

* the Star; S. Spica Virginis; R. Regulus; A. Aldebaran; F. Fomalhaut; An. Antares.

7th, The *extreme difference* between the *highest* and *lowest* observations of a degree; when the *seconds* amount to more than 30 above is taken, otherwise the next minute below.

8th, The *latitude* in two columns:

1st, The *latitude* by *account*, carried on from the *land*, in the same manner as the *longitude* by *account*.

ple, Esq. F. R. S.

*longitude by the account and
per was to the Westward of*

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e the current appear different

de by ARNOLD, but without

om *observations* of the *Moon*
the time-keeper to be to the

This, admitting the *time-*
rate of going, indicates the
may be relied on, all circum-
d.

ince from the Sun or Stars,
observation.

erved; o denoting the Sun;
aran; At. Atair; P. Pollux;

vest observation; expressed in
re than 30, the next minute.

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had by obser-
 1. In each case it is
 2. Properly corrected
 3. of the Moon,
 4. period of each
 5. orbit of land or
 6. being altered its
 7. longitudes are
 8. as of the time
 9. the time, and
 10.
 11. have been in
 12. observation to
 13. compare with the
 14.
 15. CAVENDISH,
 16.
 17. CAVENDISH.
 18. conical holes
 19. in the East
 20. in order to see
 21. observing is

The mean dip corrected is what is supposed to be the *true dip*.
 correction is as follows.

By the observations on July 12th, when the poles were changed, the marked end of the needle was too heavy, so as to make that end too low at that place; and therefore, if we suppose that the force of the magnetism is strong in all parts of the earth, the error produced thereby in other parts is $\frac{1}{16}$ ths of a degree as the cosine of the dip to the radius. The observations at the poles were changed at Suez, agree well enough with this supposition. In all the observations the marked end of the needle pointed to the North. All that part of the voyage subsequent to July 12th is corrected by

$\left. \begin{array}{l} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \end{array} \right\}$	of a degree from the mean dip,	$\left(\begin{array}{cc} 63^\circ & \text{and } 52^\circ \\ 52 & 43 \end{array} \right)$	$\left\{ \begin{array}{l} \text{North, and at} \\ \text{the dip is} \end{array} \right.$
	when the mean dip is between	$\left(\begin{array}{cc} 43 & 30 \\ 30 & 0 \end{array} \right)$	

But as before the needle left London, changing the poles was found to be a great difference in the dip, the correction in the preceding part of the voyage was great, *videlicet*;

$\left. \begin{array}{l} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \end{array} \right\}$	of a degree is subtracted from the mean	$\left\{ \begin{array}{l} 70^\circ \\ 62 \\ 52 \\ 43 \\ 35 \\ 30 \\ 25 \end{array} \right.$
	dip, when that dip is between	

The dip was observed on board the Grenville at Deptford, after having been in a part of the ship in which the observations were usually made, and was found to be more than 5' from that observed with the same needle in a pretty large bay about five miles distant; so that the observations on board the Grenville were much influenced by the iron-work of the ship.

MPL.

tip. The foundation of this

changed, it appears, that the
at end point $\frac{1}{16}$ ths of a degree
force of magnetism is equally
in other places should be to
observations also made when
supposition: therefore, as in
the North, the mean dip in
d by subtracting

and adding as much when
the dip is as much South.

was found to make very little
the voyage is made not so

}	70° and 62°
	62 52
	52 43
	43 35
	35 30
	30 25
	25 0

after her return, in the same
and was found not to differ
pretty large garden in London,
the Grenville seem to be not

Journal of a Voyage to The East-Indies, in the Ship Gre

1775	Th.	Marine Barometer				Weather and Winds.	D.L.		D.L.		Longitude from															
		R.	S.	Th.	D.		A.O.	T.K.	A.	TK.	° W	° W														
		In. Dec.	In. Dec.	°	In. Dec.		N	S	W	E																
Apr.	28					f. h. f.																				
	29					f. h.																				
	30		30.2½	55		h. r.																				
						h.																				
						h. r.																				
						r. f.																				
May	1	59	30.4½	61		f.																				
						f.																				
						f.																				
						f.																				
						f.																				
	2	57		56		h. fr.																				
						hr. r.																				
						r. h. fr.																				
						h. r. f. h.																				
						c.																				
						c.																				
	3	54¾	30.0½	54		c.																				
						c. h.																				
						h.																				
						h.																				
						h. c.																				
						c.																				
						h.																				
						c. h.																				
						h. r.																				
						h. fr. c.																				
	4	56½	30.0¾	56¼		h.																				
						h.																				
						h. c.																				
						c.																				
						h.																				
						c. h.																				
						h. r.																				
						h. fr. c.																				
	5	57½	30.0	57½		h.																				
						h.																				
						h. r.																				
						h. fr. c.																				
	6	55¾	30.2	55½		h.																				
						h.																				
						h. c.																				
						c. f.																				
						f.																				
						f.																				
						f.																				
						f.																				
	7	57	30.2¼	56½		h.																				
						h.																				
						h. c.																				
						c. f.																				
						f.																				
						f.																				
						f.																				
						f.																				
	8	61¼	30.2¾	60¾		h.																				
						h.																				
						h.																				
						h.																				

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE.

Latitude from Greenwich						Latitude		Cor. Long.	Magnetical				ML.	N. I.		
TK.	D. D T.K.	D	S.	O.	E. D.	A.	O.		Variation.		Dip				Face	MD.
								Az.	Amp.	E.	W.					
° W'	W	° W'				° N'	° N'	° W'	° W'	' W'	°	°	°	°		
						49.43	49.50	5.35			72.4	73.6	73.1	73.1		Between Lizard P
6.12						49.25	49.19	6.12			73.	74.	73.4	73.4	Great swell.	37
6.19						48.42	48.25	6.19			72.	73.4	72.6	72.6		51
7.34						48.51	48.43	7.34			72.4	73.	72.6	72.6	Great swell.	47
						48.34	[48.26]	[7.41]			72.	72.4	72.2	72.2		18
8.18						47.51	47.20	8.18			71.4	72.6	72.1	72.1	Very steady.	48
7.27						46.56	46.12	7.27			71.	72.4	71.6	71.6	Great motion.	68
8.38						45.58	44.55	8.38	18.42*		71.	72.	71.4	71.4	Good deal of motion.	83
10.19						44.14	42.50	10.19			69.6	71.	70.3	70.3	Very steady.	126
10.43	3 14	10.40 10.29	4	0	27 46	41.52	40.9	10.43			68.4	69.2	68.7	68.6	Ditto.	142
															620	

N. B. Log-line 51 feet to 29'' $\frac{1}{2}$.

Between Ram-head and the Lizard.

Lizard Point E $\frac{1}{2}$ N = ENE $\frac{1}{2}$ N. 7 or 8 leagues off shore.

{ At 1 P.M. the Lizard Point bore by compass E $\frac{1}{2}$ N. Variation allowed ENE $\frac{1}{2}$ N 7 leagues. The Land's End N by E = N by W. Take a departure from the Lizard in 49° 57' 30" N lat. Long. 5° 15' W. First and middle part, lights airs and calm. Latter, pleasant breezes. Great swell from W.

Light breezes; great swell from Westward.

Major part light breezes; great swell from Westward.

Mostly calm. A very large swell from Westward.

Light breezes and a great swell.

{ First part, calm. Middle, an increasing breeze from Westward, with rain. Latter, a fine breeze from the Northward.

Mostly light breezes, with a swell from NW.

An increasing gale from the Eastward.

First part, fresh gales. Latter, moderate.

1775	Th.	Marine Barometer				Weather and Winds.	D.L.		D.L.		Longitude from	
		R.	S.	Th.	D.		A.O.	T.K.	A.	T.K.	A.	T.K.
		In.Dec.	In.Dec.	°	In.Dec.		N	S	W	E		
May	9	67	30.1 $\frac{1}{4}$	67		f. NNE. f. h. NNE. h. NNE. E by S. h. E by S. V.	'	'	'	'	° ' ° ' W W 10.34 10.42	
	10	68	30.0 $\frac{1}{2}$	67 $\frac{3}{4}$		h. ENE. NE. V. h. V. N by E. h. N. V. h. V. SE by E. ESE. SE.	4	19			11.7 11.34	
	11					f. SE by S. C. f. C. ENE. E. f. h. E. NE by E. C. h. V. C.	10	9			11.28 12.4	
	12	67 $\frac{1}{2}$	30.3 $\frac{3}{4}$	67 $\frac{1}{2}$		h. NW by W. WNW. NW. h. c. NW by W. f. h. V. NW by W. h. NW by W. C. W by N. W.	16	4			11.52 12.24	
	13	66 $\frac{1}{4}$	30.1	30.0 $\frac{3}{4}$	66	30.1	f. W by S. WNW. f. h. WNW. NW by W. NW. h. NW. NW by N. c. NNE. N.	21	9			12.35 13.16
	14	65	30.2 $\frac{1}{2}$	30.2 $\frac{1}{4}$	65 $\frac{1}{4}$	30.2 $\frac{1}{2}$	f. h. NE by N. h. NNE. N. f. c. N. c. N. NNE.	20	8			15.0 15.33
	15	67 $\frac{3}{4}$	30.2	67 $\frac{1}{2}$			h. NNE. f. c. NNE. NE by N. f. c. NE by N. NE. W by N. c. WNW. C. W.	25	14			15.59 16.46
	16	65 $\frac{1}{2}$	30.1 $\frac{1}{2}$	30.1 $\frac{1}{2}$	65 $\frac{1}{2}$	30.0 $\frac{1}{2}$	c. W. c. W. V. NE by E. c. NE by E. E by N. h. E by N.	2	7			By acct from Madeira in [16.50] 16.56 16.48
	17	67 $\frac{1}{2}$	30.1 $\frac{3}{4}$	67 $\frac{1}{4}$			h. NE. h. c. NE by E. c. E by N. E by S. c. E by N. ESE.	18	2			17.3 16.50

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPL

Latitude from Greenwich			S.	O.	E. D.	Latitude		Cor. Long.	Magnetical						ML.			
T.K.	D. of T.K.	C				A.	O.		Variation		Dip							
									Az.	Amp.	Face		MD.	C.D.				
W	E	W					E.	W.										
10.42	13	10.55	3	0	36	N	N	10.42	18.0*	17.43*	67.6	69.	68.3	68.2	Very steady.	96	Decreasi	
11.34						39.26	37.33	11.34	20 38*	18.36*	67.2	68.4	67.7	67.6	{ Good deal of motion.	55	{ Most sup a h	
12.4						39. 3	37.0	12. 4	20. 9*	19 57*	66.6	67.6	67.2	67.1	Ship yawing.	29	{ Light lows noon Sout vifbi if sh	
12.24						38.28	36. 9	12.24			65.6	67.2	66.4	66.3	{ Ditto, needle very steady.	41	{ Light velle. cruiz they	
13.16						37.46	35. 6	13.16	20.17*	20.38*	66.	67.	66.4	66.3	{ Ditto, needle very unsteady, bad observation.	62	{ An in there thro	
15.33						36.36	33.30	15.33	19.28*	19.16*	64.6	65.6	65.2	65.1		138	{ Fresh from	
16.46						35.50	[32.24]	16.46			64.2	65.6	65.	64.7			84	{ In F SEAF 10' i ALCO 1776 and 16th down and 1 accou
16.41						31.18	31.20	16.41			63.2	64.6	64.	63.7			67	{ First p: smoot
16.50						29 57	29.41	16.50			62.2	63.6	63.	62.7			81	These 24

LRYMPLE.

Decreasing breezes. Changed log-line 48 feet to 29 $\frac{1}{2}$.

Most part light airs. Several small land birds; two of them, supposed nightingales came on board, very tired; also saw a hawk.

Light airs of wind Easterly, with calms. Some swallows and other land birds, who seem very tired. In the afternoon, during the calm, when the ship's head was to the Southwestward, there was, for a little time, a counter current visible; it made like a wake on the ship's larboard beam, as if she was going broadside foremoft.

Light airs of wind throughout. P.M. saw two three-masted vessels with latine sails; they were supposed to be Barbary cruisers, but did not come near enough to let us know what they were. Some swallows about the ship.

An increasing breeze from the Northward. In the morning there were many petrels in the ship's wake: they continued throughout the day.

Fresh breezes, with some squalls. At noon saw Porto Santo from the mast-head, W by S. per compass.

In *Funchal* road. Major SEARS informed us, that Mr. SEARL, in consequence of our request, tried the therm. for 10' in a cool cellar, and found it 68°. N. B. Captain ALCOCK informed me, he observed the therm. on May 14, 1776, at 6 A.M. at *Funchal* 68°, and in the cellar 61°. and Mr. SEARL wrote to Mr. CAVENDISH, that on the 16th of May the therm. which stood at 69°, was carried down at 1 P.M. to a cellar, where it remained till 4 o'clock, and then was found to be at 62°, so that Major SEARS's account was probably erroneous.

First part, light airs. Middle and latter, pleasant breezes and smooth weather; several boats came off from *Funchal*.

These 24 hours pleasant breeze from Eastward.

Journal of a Voyage to The East-Indies, in the Ship Gro

1775	Th.	Marine Barometer				Weather and Winds.	D.L.			Longitude from	
		R.	S.	Th.	D.		A.	T.K.	A.	TK.	
		In. Dec.	In. Dec.	°	In. Dec.		N	S	WE	°	°
May 18	69	30.2	30.1 $\frac{3}{4}$	68 $\frac{1}{2}$	30.2	h. ENE. h. ENE. E. h. E. ENE. h. E. ENE.	15		10	17.9	16.46
19	68	30.2 $\frac{1}{2}$	30.2 $\frac{1}{4}$	67 $\frac{3}{4}$	30.2 $\frac{1}{4}$	h. E by N. h. NE by N. h.c. N by W. C. N by W. NNE. c. f. NNE.	6	1		17.17	16.55
20	68	30.1 $\frac{1}{4}$	30.1 $\frac{1}{2}$	68	30.1 $\frac{1}{4}$	c. NNE. NE. c. NE. N by E. NE by N. N by E. c. N by E. NNE. c. NNE.	24		3	17.42	17.17
21	68 $\frac{1}{2}$	30.1 $\frac{1}{4}$	30.1	68	30.1	f.c. NE by N. N by E. c. N by E. N by W. c. f. N by W. N by E. f. N by E. NNE.	1		4	18.18	17.57
22	70	30.1 $\frac{1}{2}$	30.1 $\frac{1}{4}$	70 $\frac{1}{4}$	30.1 $\frac{1}{2}$	f. N. f.c. N. NNE. c. NNE. c. NNE. NE by N. NE.	18			18.49	18.28
23	68	30.2	30.1 $\frac{3}{4}$	68	30.2	f. NE. NE by N. f. NE by N. f. NE by N. NE.			1	19.28	19.6
24	68 $\frac{1}{4}$	30.1	30.0 $\frac{1}{2}$	68 $\frac{1}{4}$	30.0 $\frac{3}{4}$	f. NE. NE by N. f. NE by N. f.c. NE by N. c. h. NE by N.	14		8	19.21	19.7
25	71 $\frac{3}{4}$	30.0	29.9 $\frac{1}{2}$	72	29.9 $\frac{1}{4}$	h. N by E. h. N by E. h. N by E. h. NNE.	1		4	18.33	18.23
26	76 $\frac{1}{2}$	30.0 $\frac{1}{2}$	30.0	76 $\frac{1}{2}$	30.0	h. NE by N. h. V. NW. NW. h. NW. V. NNE. h. c. NNE. E by S. ESE.	8		2	18.37	18.25

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE.

Latitude from Greenwich						Latitude		Cor. Long.	Magnetical						ML.	T.S. & taken there in
TK.	D.D. T.K.	D	S.	O.	D.	A.	O.		Variation.		Dip					
								Az.	Amp.	Face		MD.	C.D.			
° / ' W	° / ' W	° / ' W				° N' ° / ' N	° / ' W	° / ' W	' ° W	° °	° °			° °	° °	
16.46						29. 4	28.33	16.46	*18.23		61.2	62.6	62.	61.6	1273	53 { Light rif S
16.55						27.53	27.16	16.55	16.53* *16.39	17. 6*	60.2	61.2	60.6	60.4	74	
17.17						26.46	25.45	17.20	16.37* 15.42*	16.17* 15.42*	59.2	60.2	59.6	59.4	70	{ Light in th
17.57	57	18.54	4	⊙	29	25. 5	24. 3	18. 3		15 36*	58.2	59.2	58.6	58.4	106	{ Pleaſa found found trills
18.28	66	19.34	3	⊙	28	23.43	22.25	18.37	15.13*	*15. 2	56.4	57.4	57.	56.6	87	{ Light N.B. time left recte
19.6	41 65	19.47 20.11	4 3	⊙ ⊙	47 71	21.54	[20.36]	19.18	14.35* *13. 9	*13. 7	54.	55.2	54.5	54.3	115	{ In th found weat
19.7	79	20.26	3	⊙	37	19.21	17.49	19.22	13.56*	13.55*	51.	52.4	51.6	51.3	153	{ These water
18.23						17. 1	15.28	18.41	13.18*	12.32*	48.6	49.4	49.1	48.6	150	{ Fresh rema the r the w
18.25						16. 3	14.22	18.46			46.4	48.	47.2	46.7	59	{ Light Ther a ve a fat cover veral
															2140	

T.S. denotes the temperature of the sea-water taken up in a bucket about noon, and the thermometer immersed in this bucket for some minutes.

3

13 { Light breezes and smooth water. At noon, Peak of Tenerif S 50° E.

4 { Pleasant breezes from the Eastward. At noon, Peak of Tenerif (variation allowed) bore N 24° 30' E, which bearing, and the difference of latitude places it 27' to the Eastward of our situation at noon, when in 16° 55' long. by time-keeper, and consequently by time k. 16 28 is the longitude of Peak of Tenerif, only 4' less than PÉVILLE makes it; but, by the observations of the Moon, on the 21st and following days, it appears, the ship was 1° farther West than the time-keeper represented, which difference arose since the 9th of May, if the Lunar observations were to be relied on.

0 { Light breezes and smooth water throughout. Several pettrills in the wake.

16 { Pleasant trade. In Captain EKEBERG's chart there being soundings laid down not far to the Eastward of our situation, sounded at 8 P.M. but had no ground 40 fath. Several pettrills in the wake of ship.

17 { Light breezes with smooth water throughout. Many pettrills. N.B. There was apparently an error in this day's long. by time-keeper. The succeeding days diff. long. was as much less as this day's was more than account. I have here corrected it as conformable to the Lunar observations. T.S. 69°.

5 { In the evening, the water appeared of a muddy green, like soundings; but did not found. An increasing trade with fair weather, the water continuing of same colour. T.S. 69°.

13 { These 24 hours a fresh trade, and mostly fair weather, the water remaining the same as before. T.S. 68½°.

0 { Fresh trade and hazy weather. In the afternoon the sea remarkably confused, breaking different ways. Sounded in the morning, but had no ground 40 fath. In the morning the water appeared blue again. T.S. 71°.

9 { Light breezes chiefly. In the night, no ground 70 fath. There were many blubbers in the ship's wake, which made a very luminous appearance: they seemed in shape like a sausage about 8 or 9 inches long. In the day, sea was covered with Portugueze men of war, of which took up several; also some pilot-fish and skip-jacks. T.S. 74°.

1775	Th.	Marine Barometer				Weather and Winds.	D. L.			Longitude from			
		R.	S.	Th.	D.		A. O.	T. K.	N S W E	A.	T. K.		
												In. Dec.	In. Dec.
May	27	76 $\frac{1}{4}$	30.0 $\frac{1}{4}$	30.0	76	30.0	h. SE by E. h. c. V. E by N. c. h. E by N. V. h. V. NNW. NE.	7		4	18.18	18.2	
	28	78 $\frac{1}{2}$	30.0	30.0	78 $\frac{1}{2}$	30.0	f. NNE. N. f. N. NW by N. f. h. NW by N. h. NW by N. WNW.	1		3	17.26	17.7	
	29	80	30.1	30.1 $\frac{1}{4}$	80	30.1	h. W. h. C. SW. SW by W. h. SW by W. C. S. V. h. SW. SW by W. ESE. ENE.			2	8	17.16	16.49
	30	77 $\frac{1}{2}$	30.0 $\frac{3}{4}$	30.0 $\frac{3}{4}$	77	30.0 $\frac{3}{4}$	h. ENE. NE. V. W by S. h. SW by W. C. h. C. W. C. h. NW by N. NNW. N by W.	2		3	17.9	16.39	
	31	80	30.0 $\frac{1}{2}$	30.0	80	30.0	f. NNW. f. fq. hr. NW. NW by W. E. fq. hr. c. h. E. C. ENE. E by S. h. f. NE.	1		10	17.4	16.44	
June	1	82 $\frac{1}{2}$	30.1	30.1	82 $\frac{1}{2}$	30.1	f. NNE. N. NNW. f. SW by W. W. f. c. h. V. C. h. c. fq. h. NW. SE by E. SE.	10		10	16.51	16.11	
	2	82 $\frac{1}{2}$	30.0 $\frac{3}{4}$	30.0 $\frac{3}{4}$	82 $\frac{1}{2}$	30.0 $\frac{3}{4}$	h. SE. W. h. W. C. W. h. W. C. WNW. W by N h. W by N.			17		16.25	15.45
	3	82 $\frac{1}{4}$	30.0 $\frac{1}{4}$	30.0 $\frac{1}{2}$	81 $\frac{3}{4}$	30.0 $\frac{1}{2}$	h. NW. L. to E. fq. r. c. NW. NW by N. E. V. c. L. to E. V. S by W. V. E by S. ESE. h. f. E by S. E. ESE.			8	6	16.6	15.20
	4	81 $\frac{1}{4}$	30.0 $\frac{1}{2}$	30.0 $\frac{1}{2}$	80 $\frac{1}{2}$	30.0 $\frac{1}{2}$	f. SE. SSE. SE by S. SSE. S by E. c. L. all round, fq. SSE. S by E. S by W. fq. SSW. C. fq. c. C. NNW.	10		10	16.2	15.6	

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMP

Latitude from Greenwich			S.	O.	E.	D.	Latitude		Cor. Long.	Magnetical						ML.			
T.K.	D. (T.K.)	C					A.	O.		Variation		Dip							
										Az.	Amp.	Face		MD.	C.D.				
° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "			° / ' / "			
18. 2	W	E	W														2140	Light the n some makin appear	
15.32	N			13.48				18.26	W	W	46.	46.4	46.2	45.7			46		
17. 7																		Light Eastw in the 32 fa noon,	
14.28				12.45				17.34		13. 0*	44.4	45.	44.6	44.3	Very steady.		82		
16.49																		First ar fish at Sound 8 A.M ground	
13.57				12.12				17.19	12.37*	12.44*	43.6	44.	43.7	43.4			37		
16.39																		Light a midni lumin ing li birds. like th	
13.26				11.43				17.12		12.36*	42.6	43.4	43.1	42.6	Very steady.		32		
16.44																		Most p hard lightn came like a very Sound 40 fat	
12.22				10.40				17.20	12.24*	12.42*	41.6	42.4	42.1	41.5			69		
16.11																		Major r	
11.40				10. 8				16.50	13. 7*	12.46*	41.	42.	41.4	41.	Very unsteady.		53		
15.45																		First ar middle fath. fath. c	
11.14				9.59				16.26	12.35*	12.31*	40.4	41.2	40.7	40.3	{ Not very good observation.		39		
15.20	35 62	15.55 16.22	3 3	3 3	3 3	3 3	3 3	10.38	9.15	16.09	12.48*	12.55*	38.6	39.6	39.2	38.6	Very steady.	45	Major dozen to 35
15. 6								10.23	9.10	15.58			38.4	39.2	38.7	38.3		34	
														2577		The fir The la the clo and a above, it. It noon,			

RYMPLE.

Light airs of wind, variable, with very damp weather. In the night, no ground 40 fath. Many fish about the ship; some under the quarter, darting through the water, and making streaks of light in various directions, had a fine appearance. T.S. 75°.

Light breezes throughout. In the night, lightning to the Eastward. Many luminous blubbers and fish about the ship in the night. Passed several turtle. Had ground at 11 A.M. 32 fath. coarse sand, with black specks and shells. At noon, 30 fath. coarse sand and flat coral. T.S. 75°½.

First and latter, light breezes. Middle, calm. Great many fish about the ship, and in the morning vast flocks of birds. Soundings, sand of various kinds from 28 to 17½ fath. at 8 A.M.; at 9 A.M. 21 fath. blue mud; and at 11 A.M. no ground 35 fath. T.S. 77°.

Light airs and calm. At 5 P.M. 56 fath. green mud. At midnight, 45 fath. blue mud. In the night, the water very luminous when put in motion, and many shoals of fish looking like breakers. A.M. a turtle passed; vast flocks of sea birds. At noon, the sea covered with Portuguese men of war, like the ground with leaves in Oct. 23 f. blue mud. T.S. 76°½.

Most part pleasant land and sea breezes. At midnight, a hard squall from the land: it was preceded by great deal of lightning over the land, and long threatening before the squall came off. It rose in a dark black cloud, with a white streak like a bow under it, and below this very dark. It came off very hard, and raised the spray of the sea in a foam. P.M. Soundings, 25 to 21 fath. sand. A.M. No ground 60 and 40 fath. T.S. 80°.

Major part, light breezes. P.M. No ground 40 to 80 fath.

First and latter parts, pleasant breezes from Westward. The middle, calm, with hot sultry weather. At midnight, 80 fath. coarse black sand, with bits of coral. At noon, 26 fath. coarse brown sand. T. S. 81°.

Major part, light airs. Many sharks about the ship; above a dozen in sight at once; caught one. P.M. Soundings 27 to 35 fath. At noon, no ground 88 fath. T.S. 80°½.

The first part, light breezes of wind from the Southward. The latter, mostly calm, with hot weather. In the evening, the clouds very remarkable; some appearing like dirty wool, and apparently very near all round the horizon; the sky above, in many places, a fine pink, and blueish grey beneath it. In the morning, many grampusses about the ship. At noon, ground 60 fath. T. S. 83°¼.

Journal of a Voyage to The East-Indies, in the Ship G

1755	Th.	Marine Barometer,				Weather and Winds.	D.L.			Longitude from				
		R.	S.	Th.	D.		A.O.	A.	T.K.	A.	TK.			
		In. Dec.	In. Dec.	°	In. Dec.		N	S	W	E	°	'		
June														
5	30 $\frac{3}{4}$	30.0 $\frac{3}{4}$	30.0 $\frac{1}{2}$	80 $\frac{1}{4}$	30.0 $\frac{1}{2}$	{ h. c. C. W by S. c. L. all rd. r. W by S. WSW. V. NNW. r. h. sq. and hr. sq. r. NNW. SE by E. E by S. V. h. V. S by E. SSE.	10		20			15.43	14.28	
6	83	30.0 $\frac{3}{4}$	30.0 $\frac{3}{4}$	83	30.0 $\frac{3}{4}$	{ f. C. V. f. L. to Eastw. SW by W. h. sq. r. L. all rd. r. c. E by S. SE. E. E by N. c. f. E by N. C. SSE. S by E.	11		8			15.41	14.34	
7	82 $\frac{1}{2}$	30.1 $\frac{1}{2}$	30.1 $\frac{1}{4}$	82 $\frac{1}{4}$	30.1 $\frac{1}{4}$	{ h. SE by S. S by E. C. h. c. V. SSE. SE by S. c. sq. S by W. V. C. sq. c. C. S by E. SSE. S.	11		19			15.41	14.53	
8	83	30.1 $\frac{1}{4}$	30.1 $\frac{1}{4}$	83	30.1 $\frac{1}{4}$	{ c. hr. and L. to s.w. S. C. V. SW. sq. c. sq. SW. SW by W. SW. c. C. c. f. C.	23		12			15.22	14.22	
9	84	30.0 $\frac{1}{2}$	30.0 $\frac{1}{2}$	84	30.0 $\frac{1}{2}$	{ h. C. h. L. to westw. C. h. c. C. W by S. c. W by S.		3	3			15.18	14.14	
10	81 $\frac{1}{4}$	30.0 $\frac{1}{2}$	30.0 $\frac{1}{2}$	80 $\frac{3}{4}$	30.0	{ f. c. sq. r. W. NNE. sq. r. c. NNE. V. C. c. L. to E ^d . hr. C. V. C. ENE. r. c. ENE. V. SW by W.	3		19			15.0	14.15	
11	77 $\frac{1}{4}$	30.0 $\frac{1}{2}$	30.0 $\frac{1}{2}$	76 $\frac{1}{2}$	30.0 $\frac{1}{2}$	{ c. sq. r. SW. SW by S. c. f. c. sq. r. SW. sq. r. SSW. SW. WSW. hr. r. WSW. V.		30	24			14.19		
12	82	30.0 $\frac{3}{4}$	30.0 $\frac{3}{4}$	82	30.0 $\frac{3}{4}$	{ hr. V. SW. fr. r. c. SW. SW by S. SSW. c. r. SSW. C. V. c. C. V.						14.4	12.55	
13	81 $\frac{1}{2}$	30.0 $\frac{1}{2}$	30.0 $\frac{1}{2}$	81 $\frac{1}{2}$	30.0 $\frac{1}{2}$	{ c. WNW. NW. c. L. to westw. NW. c. NW. NW by N. c. th. L. to SW. V. NNE.			2			13.50	12.39	

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Distance from Greenwich						Latitude		Cor. Long.	Magnetical		Dip		ML.			
TK.	D. T.K.	D	S.	C.	E.	A.	O.		Az.	Amp	Face				MD.	C.D.
° / ' / "	° / ' / "	° / ' / "				° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "	° / ' / "			
W	E	W				N.	N.	W	W	W					2577	
14.28						9.43	8.40	15.43			38.2	38.4	38.3	37.7	48	Mostly l deal of board fr Englan. A.M. f pool to no grou
14.34						9.12	8.20	15.53	*13.33		36.6	37.2	37.	36.4	38	Mostly l wind ca nute or thunder 82°.
14.53						8.56	8.15	16.16		12.28*	36.6	37.6	37.2	36.6	31	Light airs c
14.22						8.33	8.15	15.49			36.6	37.6	37.2	36.6	30	{ First, li calm, mast by a pretty the top fore-top
14.14						8.29	8. 8	15.46			36.4	37.6	37.1	36.5	6	{ Mostly c up main
14.15	53	15.8	5	*S	48	8. 1	7.43	15.51			35.6	36.6	36.2	35.6	35	{ First, fai ble, with
						7. 9	[7.14]	[14.53]			34.6	35.6	36.2	35.6	64	{ Cloudy ar Southw.
12.55	58	13.53	3	*S	39	6.53	7. 5	14.39			35.2	35.4	35.3	34.7	22	{ Calm and very lar the harp
12.39	115	14.34	3	*S	15	6.25	6.37	14.27	13.18*		32.4 32.6	33.4 32.6	32.6	32.1	31	{ Tightened the screws. Light airs no grou
														2882		

Mostly light breezes. Past 2 P.M. a hard squall, with great deal of thunder, lightning, and rain. P.M. a boat came on board from the Polly, a whaling vessel, from Boston in New England; the vessel was hull down when they came aboard. A.M. spoke with the Mary, Captain JONES, from Liverpool to Sierra Leon. P.M. 40 to 36 fath. coarse sand. A.M. no ground 55 fath. T.S. $83^{\circ}\frac{1}{2}$.

Mostly light airs and calms. At midnight, a violent gust of wind came off: its violence did not continue above a minute or two; but brought much rain, and was attended with thunder and lightning. A.M. no ground 88 fath. T.S. 82° .

Light airs chiefly: a long swell from the SW. T.S. $82^{\circ}\frac{1}{2}$.

First, light airs. Middle, fresh breezes and squally. Latter, calm. At midnight, carried away the main and fore-top-mast by the badness of the rigging. Had, for some hours, a pretty fresh SW wind; but not enough to have endangered the top-masts had the rigging been good. At 11 got fore-top-mast up. T.S. 83° .

Mostly calm, with swell from Southward. At 9 A.M. got up main-top-mast. T.S. 82° .

First, fair. Middle, squally, with hard rain. Latter, variable, with calms. T.S. $81^{\circ}\frac{1}{2}$.

Cloudy and rainy, with a gentle breeze: great swell from Southw. T.S. 81° .

Calm and cloudy: great long swell from Southward. A.M. a very large shark was struck with the harpon; but it broke the harpon, and got off. Many fish and birds. T.S. 82° .

Light airs and cloudy through. Many fish and birds. P.M. no ground 70 fath. A.M. hooked a shark. T.S. $81^{\circ}\frac{1}{2}$.

1775	Th.	Marine Barometer				Weather and Winds.	D. L.		Longitude from	
		R.	S.	Th.	D.		D. L.	A.	A.	T.K.
							NIS	WJE		
	o	In. Dec.	In. Dec.	o	In. Dec.					
June										
14	82½	30.0¼	30.0¼	82½	30.0	c. V. C. c. SW by S. SSW. c. SSW. SW. hr. c. r. c. C. V. S by E.	15	4	o / W 13.20	o / W 12.14
15	83	30.0¼	30.0¼	82½	30.0	h. S by W. S. SSW. h. f. SSW. c. r. c. SSW. SW. V. c. T. to s.e. V. SW by W. SSW. SW.	15	7	12.39	11.26
16	82	30.0¼	30.0¼	82	30.0	c. fr. fq. r. SW. V. S by W. fq. L. to n.e. S by W. V. C. SW. SW by S. c. SW by S. C. c. r. c. V. C. V.	5		12.27	
17	79½	30.0¼	30.0¼	78½	30.0¼	fq. r. V. S by W. fq. r. c. V. SSW. c. r. c. SSW. S. SW. c. hr. c. SW by W. WSW. SW by W.	7	24	11.58	10.21
18	80½	30.0¼	30.0¼	80¼	30.0¼	c. SW by W. SW. C. W by N. fq. c. W by N. W by S. V. C. c. C. NE. c. NE. ENE.	7	5	11.44	10. 2
19	80½	30.0½	30.0½	80	30.0½	h. NNE. C. V. L. to nd. c. V. WSW. c. WSW. W by S. V. c. fr. c. V. C. SW by S.	5	1	11.29	9.46
20	82	30.0¼	30.0¼	81	30.0¼	c. SW by S. SSW. SW by S. c. L. fq. r. c. SW by S. SSW. SW by S. SW. SSW. c. SSW. V. S by W. c. r. S by E. C. SE by S. V.	16	5	10.52	9. 4
21	79	30.0½	30.0½	79	30.0½	c. S by E. S. SSW. c. L. from n. to s.e. fq. r. SSW. SW by S. SSE. S. r. hr. S. hr. c. r. S by E. C.	13	3	10.31	8.46
22	80¼	30.0¼	30.0¼	80½	30.0¼	hr. C. SSW. V. C. hr. C. ESE. V. hr. fq. hr. V. SSE. V. fq. r. V.	13	13	10.50	8.52

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Longitude from Greenwich					Latitude		Cor. Long.	Magnetical				ML.					
T.K.	D.C. T.K.	°	S.	O. D.	A.	O.		Variation		Dip							
W	E	W			N	N	W	Az.	Amp.	Face		MD.	C.D.				
								W	W	E.	W.						
12.14	120	14.14	3	Ar*	48	6.5	6.32	14.6		13.28*	32.6	33.6	33.2	32.5	2882	37	In the front more the bottom with grooves pearled
11.26						5.32	6.14	13.18		13.32*	32.	32.4	32.2	31.5	54		
						5.18	6.5	[12.59]			31.6	32.	31.7	31.2	19	PM. ma sharks.	
10.21						4.55	5.49	12.13			30.	30.6	30.3	29.6	43	Firft part, li land to thick :	
10.2						4.36	5.23	11.54			29.2	30.	29.5	28.7	24	Pleasant variab	
9.46						4.15	5.7	11.38	13.30*	13.50*	28.6	29.6	29.2	28.4	26	Light ai the mo any sq	
9.4						3.49	4.57	10.56	14.23* *14.43	14.41*	28.6	29.6	29.2	28.4	46	Mostly error o allowa Firft an heavy : In the leagues rock or of the The N and the a hill, that of At Sur distanc Variab	
8.46						3.45	[4.54]	10.38	14.40*		28.4	29.4	29.	28.2	44		
8.52						3.19	4.39	10.44			27.6	28.4	28.1	27.3	35		
													3210				

LRYPLE.

2 { In the night, many fish. A.M. struck an albacore; it has
7 { from the back fin to the tail nine little yellow fins, and nine
more such from the belly fin to the tail. Besides the fin on
the back, it has another fin, composed of a thin membrane,
with sharp prickly ribs; this fin it can strike, having a
groove to receive it, so that there remains no projection or ap-
pearance of it. Light airs. No ground 6, to 70 fath. T.S. 81°.

{ Light breezes, with a swell from the Southward. T.S. 82°.

{ PM. many fish; but swimming very deep. A.M. caught three
} sharks. Most part light airs and calm with rain. T.S. 81°.

{ First part, squally, with rain and wind Southerly. The lat-
} ter, light airs S.W. cloudy and rain. A.M. appearance of
land to Eastward under the clouds, but very obscure, being
thick and hazy weather. T.S. 81°.

{ Pleasant weather. A.M. some dolphins. Light airs of wind,
} variable with calms. T.S. 81°.

{ Light airs, with lightning and some thunder in the night. In
} the morning, it looked very black, but was not attended with
any squall. T.S. 81°.

{ Mostly light breezes and cloudy, with rain. I ascribe the
} error of this day's log partly to the course having made no
allowance for lee-way. T.S. 82°.

{ First and middle parts, light breezes, with some squalls, and
} heavy rain. The latter, calm, with cloudy weather and rain.
In the morning, at 8 P.M. saw the land, bearing E by S 7
leagues. Sounded 46 fath. mud; but there was the mark of
rock on the arming of the lead. At 10 A.M. the extremes
of the land from N by E½E to E distance about 7 leagues.
The N extreme I suppose is *Ponta Baixas* near *Seflos* river,
and the Southern extreme supposed about *Bacca*: There was
a hill, visible inland, to the left, which was supposed to be
that of *Baffa*. T.S. 81°.

{ At Sun-set, the extremes N½E to E½S (per compass)
} distance off shore about 6 leagues. 43 fath. blue mud.
Variable winds, with very much hard rain. T.S. 81°.

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1775	Th.	Marine Barometer				Weather and Winds.	D.L. A.			Longitude from			
		R.	S.	Th.	D.		N	S	WE	A.	TK.		
		In. Dec.	In. Dec.	°	In. Dec.								
June	23	82	30.0	29.9 $\frac{3}{4}$	81 $\frac{3}{4}$	30.0	r. c.	SSE. S. S by W.	}	12	1	° /	° /
						c. fq.	S by W. S. S by E.						
						r. c.	S by E. SSE.						
						c. h.	S. S by W. S.						
	24	80 $\frac{1}{2}$	30.0	29.9 $\frac{3}{4}$	80	29.9 $\frac{3}{4}$	h. fq. r.	S. S by W. SSW.	}	3	3	° /	° /
						fq. r. c.	S by W.						
						c. fq. c.	S by W.						
						c. fq. r.	S by W. S.						
	25	77 $\frac{3}{4}$	30.0 $\frac{1}{2}$	30.0 $\frac{1}{2}$	76 $\frac{1}{2}$	30.0	h. c.	S. S by W. SSW.	}	21	52	° /	° /
						c.	SSW.						
						c.	SSW.						
						c. r.	SSW. V. C. W by S.						
	26	80	30.0 $\frac{1}{2}$	30.0 $\frac{1}{4}$	80 $\frac{1}{2}$	30.0 $\frac{1}{2}$	hr. c. fq.	V. SSW.	}			° /	° /
						fq. r.	SW by S.						
						r.	SW by S. S by W. SSW.						
						r. c.	S by W.						
	27	80 $\frac{1}{4}$	30.0 $\frac{1}{2}$	30.0 $\frac{1}{2}$	80 $\frac{1}{4}$	30.0 $\frac{1}{2}$	c. fq.	SSW. SW by S. SSW.	}	24	44	° /	° /
						c. fq.	SSW. S by W.						
						fq. c.	S by W. S.						
						c.	S. S by W. S.						
	28	80 $\frac{1}{2}$	30.0 $\frac{3}{4}$	30.0 $\frac{1}{4}$	80 $\frac{1}{4}$	30.0 $\frac{3}{4}$	h.	S. S by E.	}	13	2	° /	° /
						h. fq. f. c.	S by E.						
						fq. c.	S.						
						c. f.	S. S by E.						
	29	79 $\frac{1}{2}$	30.1	30.1	79	30.1	c.	S. S by E. S.	}	20	39	° /	° /
						c.	S by E.						
						c. f.	S by E. S.						
						f.	S by E.						
	30	78 $\frac{1}{2}$	30.2	30.1 $\frac{1}{2}$	78 $\frac{1}{2}$	30.1	f.	S by E.	}	1	77	° /	° /
						f. c.	S by E.						
						c. f.	S by E.						
						f.	S by E. S.						
July	1	77 $\frac{1}{2}$	30.1 $\frac{1}{2}$	30.1 $\frac{1}{2}$	76 $\frac{3}{4}$	30.1	c.	S.	}	21	76	° /	° /
						c.	S.						
						c.	S by E. S.						
						c. f.	S. S by E. S.						
	2	78 $\frac{1}{2}$	30.1 $\frac{1}{4}$	30.1	78	30.1	h.	S by E. S. S by E.	}	14	62	° /	° /
						h. c.	S by E. SSE. S by E.						
						c.	S.						
						c.	S. S by E. S.						

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE

Longitude from Greenwich			S.	O.	E.	D.	Magnetical								ML.	
TK.	D.D. T.K.	D					Latitude		Cor. Long.	Variation.		Dip				
							A.	O.		Az.	Amp.	Face		MD.		C.D.
° ' "	° ' "	° ' "				° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "		
W		W					N	W						3210		
9.16						3.0	4.32	11.6			28.	28.4	28.2	27.4	54 Moderate.	
9.48						2.53	4.28	11.37			28.4	29.4	29.	28.2	73 { Most part T.S. 8.	
						2.35	[4.21]	[11.11]			27.4	27.6	27.5	26.7	58 { Most part surgeon jolly boy find his one glass 50 fath	
7.40						2.23	4.16	9.26			26.4	27.4	27.	26.2	58 A fresh breeze	
7.0						2.13	3.42	8.45			25.4	26.	25.6	25.	73 { Mostly making support spoke T.S. 8.	
8.2						1.34	2.50	9.45	14.42* *14.11		24.4	25.2	24.7	24.	76 { Fresh breeze T.S. 8.	
9.48						1.0	1.56	11.29	14.37* *13.44	14.25*	23.6	24.4	24.1	23.2	79 Fresh breeze Very unsteady.	
12.8						0.14	1.11	13.48	13.6* *12.7		23.6	24.4	24.1	23.2	78 { Fresh breeze Some 1 man of	
12.38						0.16	1.34	14.17	13.17*		24.6	24.4	24.5	23.6	66 Major part	
14.38						S 0.22	1.10	16.16	12.41*	12.47*	24.6	25.4	25.1	24.2	70 Pleasant breeze { N.B. going to Westward increases dip.	
														3895		

Moderate breezes. T.S. 81° .

{ Most part a fresh gale from Southward, with squalls and rain.
T.S. 81° .

{ Most part fresh breezes. At 8 P.M. Richard Jones, the surgeon's lad, fell over-board. Hove the ship to, and sent jolly boat and yawl in search of him; but they could not find him. No observation for latitude or time, not having one glimpse of the Sun all the forenoon. P.M. no ground 50 fath. T.S. $80^{\circ}\frac{1}{2}$.

A fresh breeze with much rain. P.M. no ground 70 fath. T.S. $80^{\circ}\frac{1}{2}$.

{ Mostly fresh breezes. At 2 P.M. from mast-head land, making like islands, was seen bearing E by N = ENE $\frac{1}{2}$ N, supposed Cape Palmas. P.M. no ground 70 fath. At 8 P.M. spoke with a French ship from *Haïti* to the coast of *Angola*. T.S. 80° .

{ Fresh breeze throughout, and a large Southerly swell.
T.S. $80^{\circ}\frac{1}{2}$.

Fresh breeze throughout. P.M. cloudy. A.M. fair. T.S. $79^{\circ}\frac{1}{2}$.

{ Fresh breezes with fair weather. P.M. many porpoises. Some bottle noses, and vast flocks of flying fish. A.M. a man of war bird. T.S. $76^{\circ}\frac{1}{2}$.

Major part moderate and cloudy. T.S. 78° .

Pleasant breeze, with fair weather and smooth water. T.S. 76° .

1775	Th.	Marine Barometer				Weather and Winds.	D.L. A.O. T.K.				Longitude from C						
		R.	S.	Th.	D.		N	S	W	E	A.	T.K.	D.				
		In.Dec.	In.Dec.	°	In.Dec.												
July	°																
3	79	30.0 $\frac{3}{4}$	30.0 $\frac{3}{4}$	79	30.0 $\frac{1}{2}$	h. S. S by E. S. h. S by E. SSE. S by E. S. S by E. h. fq. c. S by E. c. S by E. SSE. S by E. SSE.			3	35			° / ° W W	14.56	16.36	E	
4	77 $\frac{1}{2}$	30.1	30.0 $\frac{1}{4}$	77	30.0 $\frac{1}{2}$	h. SSE. SE by S. SE. SE by S. h. SE by S. SE. h. f. c. SE by S. c. f. SE.			14	30			15.44	17.55			
5	78 $\frac{1}{2}$	30.1 $\frac{1}{4}$	30.1 $\frac{1}{4}$	78 $\frac{1}{2}$	30.1	h. SE. SE by E. ESE. h. f. ESE. f. c. f. ESE. SE by E. f. SE by S. SE.			2	15			16. 4	18.30		9	
6	79 $\frac{3}{4}$	30.1	30.0 $\frac{3}{4}$	79 $\frac{3}{4}$	30.0 $\frac{1}{2}$	f. SE by E. SE. f. c. SE by E. SE. c. fq. r. c. SE. SE by E. SE by S. c. fq. r. SE by S.			12	29			16.49	19.44			
7	80	30.0 $\frac{1}{2}$	30.0 $\frac{3}{4}$	80	30.0 $\frac{1}{2}$	c. SE. SE by S. SE. c. f. SE. SE by E. SE. f. c. SE by E. c. fq. SE by E.			14	8			17.39	20.42			
8	79 $\frac{1}{2}$	30.0 $\frac{1}{2}$	30.0 $\frac{1}{2}$	79 $\frac{1}{2}$	30.0 $\frac{1}{2}$	fq. r. fq. SE by E. SE. fq. c. SE. c. SE. c. fq. r. h. f. SE. SE by E.			14	5			18.42	21.40			
9	79 $\frac{1}{2}$	30.1 $\frac{1}{2}$	30.1 $\frac{1}{4}$	79 $\frac{1}{2}$	30.1 $\frac{1}{2}$	f. fq. ESE. SE by E. SE. fq. f. SE. fq. c. SE. SE by E. c. SE by E. SE.			3	14			19.45	22.29			
10	77 $\frac{1}{2}$	30.1 $\frac{1}{2}$	30.1 $\frac{1}{4}$	77 $\frac{1}{2}$	30.1 $\frac{1}{2}$	f. SE. SE by E. c. fq. SE. SE by E. fq. SE by E. ESE. SE.			5	21			20.37	23. 0			
11	77	30.2 $\frac{3}{4}$	30.2 $\frac{1}{2}$	76 $\frac{3}{4}$	30.2 $\frac{1}{2}$	h. fq. r. c. SE. SE by E. c. fq. SE. SE by E. SE. fq. c. SE. SE by E. c. f. SE by E. SE.				8			21.42	23.57			
12	76 $\frac{1}{2}$	30.3	30.2 $\frac{3}{4}$	76 $\frac{1}{2}$	30.2 $\frac{1}{4}$	h. SE. h. f. SE. SE by E. f. c. SE by E. c. fq. SE. SE by E.			1	4			22.29	24.40			

YMPLE.

esh breeze throughout. T.S. 76°.

pleasant trade wind, with a Southerly swell. T.S. 76°½.

Night, sea luminous supposed blubber. Major part, pleasant breezes, with a swell from SE. T.S. 76°½.

A.M. great swell. In the forenoon, hard rain, small drops, but very close. First part, fresh trade; latter, squally and some rain. T.S. 77°½.

Great swell. The barometers very unsteady. Fresh gales and cloudy. T.S. 78°½.

to. Ditto Strong gales and squally. T.S. 78°.

to. Fresh gales throughout. T.S. 78°.

Ditto. Saw a petrel. Fresh gales from SE. with a large swell. T.S. 77°.

Major part fresh gales and squally, with a great confused swell. P.M. a weather gall. A.M. Swell much abated. Towards noon, moderate and fair. T.S. 75°.

Pleasant trade wind. Swell very much abated. A.M. saw a bird, supposed to be a shearwater. Mr. ROBERTS saw a man of war bird. T.S. 75°½.

Journal of a Voyage to The East-Indies, in the Ship C

1775	Th.	Marine Barometer,				Weather and Winds.	D.L.			Longitude from			
		R.	S.	Th.	D.		D.L.	A.	T.K.	A.	TK.		
		In.Dec.	In.Dec.	°	In.Dec.		N	S	W	E			
July													
13	76	30.2 $\frac{3}{4}$	30.2 $\frac{1}{2}$	76	30.2 $\frac{1}{2}$	{ h. fq. r. SE by E. SE by S. SE by E. fq. r. c. E by S. SE. c. SE. SE by S. SSE. c. SE by S. S by E. SSE.	2		6			W	W
14	76	30.3 $\frac{1}{4}$	30.3	76	30.2 $\frac{1}{2}$	{ t. fq. SE by S. SE. fq. f. SE by E. SE by S. c. fq. c. SE by S. SE. c. f. SE. SE by E. SE.	3		9			24.27	26.53
15	76 $\frac{1}{4}$	30.2 $\frac{1}{2}$	30.2 $\frac{1}{2}$	76 $\frac{1}{2}$	30.2 $\frac{3}{4}$	{ f. c. fq. SE. SE by S. SE. c. r. c. fq. r. SE by E. SE by S. SSE. V. fq. r. c. SE. c. h. SE by E.				I		25.20	27.45
16	74 $\frac{1}{2}$	30.3 $\frac{1}{2}$	30.3	74 $\frac{1}{2}$	30.2 $\frac{3}{4}$	{ c. SE. SE by E. c. SE by E. ESE. c. E by S. SE by E. E by S. SE by E. c. SE. ESE.		I	I			25.42	28. 8
17	73	30.4	30.3 $\frac{1}{4}$	73	30.3 $\frac{1}{2}$	{ c. SE by E. V. SSE. V. ESE. c. fr. fq. SE by E. V. SE. fq. fr. SE by E. V. fq. fr. c. fq. SE. E by S. ESE.	2		5			26. 2	28.33
18	75 $\frac{1}{2}$	30.4	30.3 $\frac{1}{2}$	75 $\frac{1}{2}$	30.3 $\frac{1}{2}$	{ f. SE by E. SE. f. c. SE by E. c. SE by E. SE. c. f. SE. E by S. ESE. E by S.	8		4			26.29	29. 4
19	73 $\frac{1}{2}$	30.4	30.3	73 $\frac{1}{2}$	30.3	{ c. fq. c. ENE. fr. fq. V. ESE. r. fq. r. f. fq. r. V. C. NE. V. fq. r. c. f. C. N. V. N.						26:12	28.47

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE

Latitude from Greenwich						Magnetical								M.L.			
TK.	D. D T.K.	D	S.	O.	D.	Latitude		Cor. Long.	Variation		Dip						
						A.	O.		Az.	Amp.	Face		MD.			C.D.	
											E.	W					
o /	/	o /				o /	o /	o /	o /	o /	o	o	o	o	4942	First part fair. perfect fore fore Change rious t	
W	E	W				S.	S.	W	W	W					111		Ch Re Dit Dit
25.47						16.17	15.33	27.37	*2.43	*2.42	3.4	3.4	3.4	3.4			
26.53						17.46	16.59	28.45	1.48* *1.45	1.36* *1.49	5.2	5.4	5.3	6.2	104	Constant tr	
27.45						18.58	18.11	29.39	*1.21		7.4	8.	7.6	8.5	88	First part,	
28. 8						19.47	19. 1	30. 4	0.42*		9.2	9.6	9.4	10.3	54	A.M. fair called abated.	
28.33	105	30.18	3	At	31	20.47	19.59	30 31			11.	11.2	11.1	12.	69	P.M. to curved midday noon, breezes water. to lye i	
29. 4	138 120	31.22 31. 4	3	At	11 23	22. 9	21.29	31.15	E 0.20*	E 0.13*	13.	13.	13.	13.7	87	Its longi Mean di and r Long. 8 By Dr. 1 T.S At Sun-set,	
28.47	145	31.12	3	At	15	22.48	22. 8	30 59			0.44*	14.4	14.4	14.4	15.3	47	Mostly ligh

First part, fresh gales and squally. Latter, moderate and fair. A.M. Fog Bank exactly like an island, the outline perfectly well defined, except the extremities: I never before saw any cloud so like land. T.S. 74°. Changed the poles of the dipping-needle. Mean of the various trials changed and re-changed 3½ S. viz.

	E.	W.	MD.
Changed the poles, marked end down,	4.4	4.	4.2
Re-changed, ditto up,	2.6	3.	2.7
Ditto, ditto down,	4.4	4.6	4.5
Ditto, ditto up,	2.4	2.4	2.4
Mean	3.4	3.4	3.4

Constant trade wind. T.S. 74°.

First part, moderate. Middle, hard squalls and rain. T.S. 74½°.

A.M. saw a bird like a booby, but shorter winged and necked, called by sailors, poor John. Light breezes, swell much abated. T.S. 74°.

P.M. to the NE. the clouds very remarkable, being in white curved rays, like the variation chart. At 7 A.M. saw Trinidad from mast-head SSE. At 9 visible from deck. At noon, Trinidad S 36° E 11 leagues. Major part, moderate breezes and cloudy weather; winds variable and smooth water. By the bearings of Trinidad at noon, allowing it to lie in 20° 27' S according to Dr. HALLEY.

Its longitude per T. K.	28.13 W	28.13
Mean diff. T.K. and 8 obf. ☉ and 1 *	1.58	8 obf. ☉ 2.12
Long. 8 obf. ☉ and 1 obf. * At.	30.11	8 obf. ☉ & 1 obf. * 30.25
By Dr. HALLEY,	29.50	29.50
Diff.	0.21	0.35
T.S. 74°.		

At Sun-set, Trinidad E by S ½ S 8 or 9 leagues. T.S. 76°.

Mostly light breezes and cloudy. T.S. 74°.

1775	Th.	Marine Barometer				Weather and Winds.	D.L.		Longitude from				
		R.	S.	Th.	D.		A.O.	T.K.	A.	T.K.			
	°	In. Dec.	In. Dec.	°	In. Dec.		N	S	W	E	°	'	
July	20	75	30.4	30.3 $\frac{1}{2}$	74 $\frac{1}{2}$	30.3		3	5			26.8	28.48
						f. C. f. C. NE. f. c. f. C. V. f. E. ENE. t. C. ENE.							
	21	73	30.4	30.3 $\frac{3}{4}$	73 $\frac{1}{4}$	30.3 $\frac{1}{4}$		4				25.35	28.15
						f. c. ENE. E by N. c. h. E by N. ENE. h. c. ENE. NE. f. NE. f. h. fq. fr. NE. V.							
	22	74 $\frac{1}{4}$	30.5	30.4 $\frac{1}{2}$	74	30.4 $\frac{1}{4}$		2	8			24.49	27.21
						c. f. V. NE by E. V. f. V. ENE.							
	23	74	30.6	30.5 $\frac{1}{2}$	74	30.5		7	8			24.55	27.35
						f. E. E by S. f. E. E by N. E. f. E by S. V. f. SE by E.							
	24	71 $\frac{1}{4}$	30.6	30.5 $\frac{1}{2}$	71 $\frac{1}{2}$	30.5		2	14			25.20	28.12
						f. SE by E. SE. f. SE by E. ESE. f. c. ESE. c. ESE. SE by E.							
	25	72 $\frac{1}{2}$	30.6	30.5 $\frac{1}{2}$	73	30.5		2	3			25.49	28.38
						c. ESE. SE. SE by E. c. SE by E. c. h. ESE. SE by E. h. V. SE.							
	26	71	30.6	30.5 $\frac{1}{2}$	71 $\frac{1}{2}$	30.5		4	6			26.23	29.18
						c. c. E by S. SE by E. Sd. c. fq. with fr. V. SE by E. fq. with fr. h. SE by E. V. h. f. SE. SE by E. V.							
	27	70 $\frac{1}{4}$	30.6	30.5 $\frac{1}{2}$	70 $\frac{1}{4}$	30.5		6	4			26.36	29.27
						f. ESE. SE. f. SE. SE by E. ESE. V. f. V. ESE. f. E. E by S.							
	28	68	30.5 $\frac{1}{2}$	30.4 $\frac{3}{4}$	68 $\frac{1}{4}$	30.4 $\frac{1}{2}$		6	9			26.18	29.0
						f. V. f. C. f. c. C. NE by E. C. c. f. WNW. W by S.							
	29	66 $\frac{1}{4}$	30.4 $\frac{1}{4}$	30.3 $\frac{3}{4}$	66 $\frac{1}{4}$	30.3 $\frac{1}{4}$		6	3			25.21	27.50
						h. W by S. V. c. V. NW. c. NW. V. c. V. WNW. NW by W.							

Ship Grenville, Capt. BURNET ABERCROMBIE, kept by ALEXANDER DALRYMPLE, 17

Distance from Greenwich						Latitude		Cor. Long.	Magnetical				ML.			
T.K.	D. of T.K.	°	S.	O.	E.	A.	O.		Variation		South Dip					
								Az.	Amp.	Face		MD.	C.D.			
										E.	W.					
28.48	137	31. 5	3	⊙	12	S 22.57	S 22.20	W 31. 0	E *0.44	E	14.6	15.	14.7	15.6	Not very steady.	5502 10 Mostly calm
28.15	115 128	30.10 30.23	3 4	⊙ ⊙	29 16	24. 7	23 34	30.27	*0.42	0.55* *1. 5	17.4	18.	17.6	18.5	{ Extremely unsteady, the ship having an irregular motion, tho' smooth water.	76 Major part
27.21	174 94	30.15 28.55	5 3	⊙ ⊙	22 18	25.10	24.39	29.33	0.11* W *0.15	0.17* W *0.22	19.4	20.4	20.	20.7	Very steady.	76 Pleasant breeze
27.35	147 135 140	30. 2 29.50 29.55	3 3 3	⊙ ⊙ ⊙	24 16 20	26.12	25.48	29.47	E 0. 6*	E 0.11*	21.	21.6	21.3	22.2	{ Extremely steady, though long swell.	65 Pleasant breeze
28.12						27.44	27.18	30.24	1. 0* *1.13	1.10*	23 4	24.	23.6	24.5		96 { Pleasant breeze T.S. 69c
28.38						28.54	28.30	30.50	2.12* *1.52	2.16* *1.27	26.	27.	26.4	27.3		76 { Light breeze was a fair a-stern.
29.18						29.55	29.35	31.29		1.52*	27.2	28.	27.5	28.4		69 Winds mostly
29.27						30.36	30.22	31.37	*3. 0	*3.14	27.6	28.6	28.2	29.1		43 Light airs.
29. 0						30.45	30 37	31. 8	2.45*	2.16*	27.6	28.6	28.2	29.1		18 Mostly calm
27.50						31. 5	31.33	30. 2	*2.10		29.	30.	29 4	30.3	Very unsteady.	55 Major part

E, 1775.

Mostly calm throughout, with smooth water. T.S. $74^{\circ}\frac{1}{2}$.

Major part light breezes, with smooth water. T.S. 72° .

Pleasant breeze and smooth water. T.S. 72° .

Pleasant breezes; a long swell. T.S. 70° .

{ Pleasant breeze. At 10 A.M. saw a sail bearing S by W.
} T.S. 69° .

{ Light breezes throughout. Passed by the sail at midnight; it
} was a small two-mast vessel. At 6 A.M. saw the vessel
} a-stern. T.S. $69^{\circ}\frac{1}{2}$.

Winds mostly variable. T.S. $67^{\circ}\frac{1}{2}$.

Light airs. T.S. 63° .

Mostly calm. T.S. 66° .

Major part light breezes. T.S. $67^{\circ}\frac{1}{2}$.

{ An increasing gale from NW quarter, with frequent squalls.
 { 9 P.M. bar. 30.1 $\frac{1}{2}$. 8 A.M. 30.2 $\frac{3}{4}$. T.S. 65 $\frac{1}{2}$.

{ Strong gales, with hard squalls and rain. 9 P.M. bar. 30.1 $\frac{1}{2}$.
 { 12. 30.1. 8 A.M. 29.9 $\frac{1}{2}$. 10. 29.9. 11 $\frac{1}{2}$. 29.8 $\frac{1}{2}$.

{ First part, blowing very fresh from N.W. Latter, more
 moderate, with very large sea. Bar. 1 $\frac{1}{2}$. 29.7 $\frac{1}{2}$. 2 $\frac{1}{2}$. 29.7.
 { 4. 29.7 $\frac{1}{2}$. 6. 29.8. 8. 29.8. 10. 29.8. A.M. 7. 29.8.

Major part, light breezes, with great swell.

{ Winds variable, with squally weather and confused sea.
 bar. 3 P.M. 29.8. 6. 29.7 $\frac{1}{2}$. 10. 29.7. 8 A.M. 29.3
 { 9 A.M. 29.2 $\frac{3}{4}$. About noon, it appeared very threatening
 to the Northward, but the clouds dissipated.

{ First part, squally with some rain. The middle, excessive
 hard gales, with a great sea; and the spray so thick that
 the ship was covered with it. 2 P.M. bar. 29.2 $\frac{3}{4}$. 4. 29.2.
 { 6. 29.2 $\frac{3}{4}$. 9. 29.5. 7 A.M. 29.7 $\frac{1}{2}$. 9. 29.7 $\frac{1}{2}$. 11. 29.8.

{ Squally weather, with much hail and rain, and a large swell.
 Bar. 4 P.M. 29.8 $\frac{1}{2}$. 6. 29.9. 8. 30.0. 7 A.M. 30.0 $\frac{1}{4}$.
 { 9 A.M. 30.0 $\frac{3}{4}$.

{ First and middle, fresh gales and squally. Latter, moderate;
 great swell. AM. some silver birds. Bar. 2 P.M. 30.0 $\frac{3}{4}$.
 { 5. 30.1. 10. 30.2. 7 A.M. 30.2. 9. 30.3.

{ First, light airs, with cloudy weather. Latter, fresh gales,
 with rain. P.M. Venus appeared very dim and fuzzy; a
 rim round the Moon. 9 A.M. bar. 30.1 $\frac{1}{2}$. 11. 30.0 $\frac{3}{4}$.

{ First and middle, hard gales, squally with rain. Latter,
 moderate and hazy; great swell. A.M. some silver birds,
 a pintado bird. Bar. 2 P.M. 29.9 $\frac{1}{2}$. 8 A.M. 29.9 $\frac{1}{2}$.
 { 9. 29.9 $\frac{1}{2}$. 10. { 30.0.
 { 30.0 $\frac{1}{2}$.

1775	Th.	Marine Barometer,				Weather and Winds.	D.L.				Longitude from			
		R.	S.	Th.	D.		A.O.	N	S	W	E	A.	TK.	
														In.Dec.
Aug.						f.					°	°		
9	62½		30.0½	62½		f. fq. h. fq. r.	NW by N.	NNW.	N by E.		W	W		
						fq. r. r. fq.	N by E.	N.		8	17	1.29	3.14	
						fq. fq. r.	N.							
10	62¼	30.2½	30.2	62	30.1½	fr. h.	N.	N by W.		4	4	1.15	0.26	
						h. dr. h.	N by W.	N.				E		
						h. c.	N by E.							
						c.	N by E.							
11	61¼	30.1½	30.0½	60¼	30.0	h.	N by E.			17	1	4.5	2.25	
						h. fq.	N by E.	NNE.				E		
						fq. c.	NNE.							
						c. f.	NNE.							
12	60	30.1	30.0¼	59½	29.9¼	h.	N by E.							
						h. fr.	N by E.							
						fr.	N.	V.			25	6.17	5.2	
						hr.	V.							
13	58¾	30.2	30.1¼	59¼	30.0	r. c.	N by W.	NNW.			10			
						c. fr. c. f.	NNW.	NW.						
						f.	NW.	NNW.				8.43	7.26	
						f. fq. r. c.	NNW.	NW by W.	W by N.					
14	58¼	30.3½	30.3¼	59	30.2½	f.	WSW.	SW by W.						
						c.	SW by W.	SSW.	S by W.		16	16	10.4	9.3
						c.	S by W.	V.						
						c.	V.	WSW.	C.					
15	60½	30.3	30.2¾	60½	30.1½	f. c.	V.							
						c.	NW by W.	NW.						
						c.	NW.	WNW.	V.		32	11.10	10.41	
						c.	V.	NNW.						
16	60½	30.1½	30.1¼	60½	30.0¾	c.	N by W.							
						c. f. c.	N by W.							
						fr. c. fq. c. fr.	N by W.	N by E.		2	9	13.32	13.12	
						fr. c.	N by E.							
17	61	30.2	30.2	61	30.1	c. fq. fq. r.	N by W.	V.	NNW.					
						fq. r.	NNW.	NW by N.		8	19	16.29	15.50	
						fq. r. c.	NW by N.	V.						
						c.	NW by N.							
18	61	30.2½	30.2½	61	30.1½	f.	N by E.	N by W.						
						f. c.	N by W.			4	9	19.1	18.13	
						c. h.	N by W.	N.	V.					
						h.	V.							

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE

Distance from Greenwich			S.	O.	E.	Latitude		Cor. Long.	Magnetical				ML.			
T.K.	D.D.	D				Latitude			Variation		South Dip					
						A.	O.		Az.	Amp.	Face				MD.	C.D.
'	'	'	'	'	'	'	'	'	'	'	'	'	'	'		
W	E	E				S	S	W	W	W					7222	
3.14						34.6	34.11	4.51	8.50*	8.1*					122	{ First, moderate squalls at 12½. 30.0
0.26						34.6	34.15	2.0			37.	39.	38.	38.6	136	{ Major part 7. 30.1. Two black silver birds
E						34.1	34.27	0.54	*12.43						140	{ Fresh gale 9 P.M. A.M. ma
2.25																
5.2						33.47	[34.36]	3.34			39.4	41.	40.2	41.	110	{ Most part, to 30.0½. Johns. fo pintado bi
7.26						33.37	34.13	6.3	*16.9						122	{ Most part, 4. 30.0½. Several p tados.
9.3						33.44	34.4	7.43	16.43*		41.4	43.2	42.3	43.1	67	{ First part, 30.1½. some porp
10.41						33.49	34.9	9.24			41.4	43.4	42.4	43.2	55	{ Extremely steady. First part, with cloud
13.12	94	11.38	4	⊙	13	33.53	34.15	11.58	18.18*	17.52*	42.6	44.	43.3	44.	119	{ Moderate Bar. 4 P 8 A.M. 30 several fil about.
15.50	75	14.35	1	⊙	21.5	34.1	34.15	14.39	19.39*	19.56*	43.4	45.2	44.3	45.	146	{ Fresh gales P.M. lar sheerwater 7 A.M. 3
18.13						34.5	34.15	17.5	20.50* *22.0	20.47*	45.6	46.4	46.1	46.6	126	{ Pleasant b A.M. tw swallow-t ral gramp
														8365		

AMPLE.

First, moderate breezes and fair. Latter, fresh gales, with squalls and rain. Bar. 8 P.M. 30.1. 9. 30.0 $\frac{1}{4}$. 11. 30.0. 12 $\frac{1}{2}$. 30.0 6 A.M. 29.9 $\frac{1}{2}$. 8. 29.9 $\frac{1}{2}$. 9 $\frac{1}{2}$. 30.0 $\frac{1}{2}$.

Major part, fresh gales. Bar. 2 $\frac{1}{2}$ P.M. 30.0 $\frac{1}{2}$. 5. 30.0 $\frac{3}{4}$. 7. 30.1. 8. 30.1 $\frac{1}{4}$. 11 $\frac{1}{2}$. 30.1 $\frac{1}{2}$. 6 A.M. 30.2. 9. 30.2. Two black alcatraffes. A.M. a few pintado birds and some silver birds.

Fresh gales, with squally weather and a large sea. Bar. 9 P.M. 30.2. 11. 30.1 $\frac{1}{2}$. 9 A.M. 30.1. 10. 30.0 $\frac{1}{2}$. A.M. many pintado birds, sheerwaters, &c. one alcatraff.

Most part, fresh breezes and hazy. Bar. 1 to 10 P.M. 30.0 $\frac{1}{4}$ to 30.0 $\frac{1}{2}$. 8 A.M. 30.0 $\frac{1}{4}$. 9. 30.0 $\frac{1}{2}$. A.M. several poor Johns, some sheerwaters, and a young alcatraff, but no pintado birds.

Most part, fresh gales with some rain. Bar. 1 P.M. 30.0. 4. 30.0 $\frac{1}{4}$. 8. 30.0 $\frac{1}{2}$. 8 A.M. 30.0 $\frac{1}{2}$. 9. 30.0 $\frac{3}{4}$. 11. 30.1 $\frac{1}{2}$. Several poor Johns, sheerwaters; and A.M. a few pintados.

First part, fresh breezes. Latter, light airs. Bar. 8 P.M. 30.1 $\frac{1}{4}$. 12. 30.2 $\frac{1}{2}$. 9 A.M. 30.3 $\frac{1}{4}$. 12. 30.3 $\frac{1}{4}$. A.M. some porpoises.

First part, variable. Latter, an increasing gale from NW. with cloudy weather. Bar. 9 P.M. 30.3 $\frac{1}{4}$. 11. 30.3.

Moderate gales, with some light squalls and smooth water. Bar. 4 P.M. 30.2 $\frac{1}{2}$. 6. 30.2. 10. 30.2 $\frac{1}{4}$. 12. 30.2. 8 A.M. 30.1 $\frac{1}{4}$. 11. 30.1 $\frac{1}{4}$. A.M. some pintado birds, and several silver birds, some sitting on the water, others flying about.

Fresh gales throughout, with cloudy weather and some squalls. P.M. large black alcatraffs. A.M. some pintado birds, sheerwaters, &c. Bar. 3 P.M. 30.1 $\frac{1}{4}$. 9. 30.1 $\frac{1}{4}$. 12. 30.1 $\frac{1}{2}$. 7 A.M. 30.1 $\frac{1}{2}$. 9. 30.1 $\frac{1}{4}$.

Pleasant breeze and mostly hazy. Several pintado birds. A.M. two birds, somewhat larger than silver birds, with swallow-tails flying above the ship; also a Cape hen, and several grampuffs. Bar. 9 P.M. 30.2 $\frac{1}{2}$. 12. 30.2 $\frac{1}{4}$. 9 A.M. 30.2 $\frac{1}{2}$.

Journal of a Voyage to The East-Indies, in the Ship Gre...

1775	T.	Marine Barometer				Weather and Winds.	D.L. A.O.	D.L. A. T.K.	Longitude from		
		R.	S.	Th.	D.				A.	T.K.	
		In.Dec.	In.Dec.	°	In.Dec.				°	'	
Aug. 19	60 $\frac{1}{4}$	30.1	30.0	60 $\frac{1}{2}$	30.0	} 7	} 8	°	°		
								'	'	E	E
20	61	30.0 $\frac{1}{2}$	30.0 $\frac{1}{2}$	60 $\frac{1}{2}$	29.9 $\frac{1}{2}$	} 7	} 8				
21											

h. N by E. WNW. NW by N.
 h. dr. NW by N. WNW.
 dr. fr. WNW. V.
 fr. V.

h. NNW.
 h. NNW. N. V. NE by N.
 h. N by E. N. NNE.
 h. N by E. NE.

Most part, light breezes and hazy. At 2 P.M. saw the land from mast-head ESE. per compass.

At 5½ h.	{	Peaked hum of Cape Good Hope,	S 52.48 E
		Hum. mistaken for Cape,	S 57. E
		L. ext. Table Land,	E 4. N
		L. ext. in sight,	E 19. N
At Sun-rise	{	Sugar Loaf,	N 69. E
		Table Land,	N 73. E
		Cape Good Hope,	S 60. E
At noon	{	L. ext.	N 55. E
		Cape Good Hope,	S 61. E
		Longitude per T.K.	19. 9 E
		Cape Good Hope per chart,	0.21 E
		Longitude of Cape per T.K.	19.30
		True longitude of Cape,	18.27
		Error of T.K.	1. 3

Major part, moderate and hazy. In False Bay.
 At 4 h. Cape Good Hope, E 16° S.
 Sunset * L. ext. N 21° E.
 R 2.18 Bluff Point in one with Hummock.
 72.30 Cape Good Hope * 2d.
 86. 6 Hanglip.
 * 2d Cape Good Hope.
 L 24.30 Hummock, called Cape last night.
 7. 0 Hummock.
 1.50 Outer Hummock and highest part diff.
 Ridge.
 R 13.48 Hanglip.
 Bellows, E 15° S.
 Sunrise, Hanglip, S 47° E.
 Cape Good Hope, S 36° W.
 White Sand Hills in Symmon's Bay, N 33° W.
 At noon { Hanglip Point, S 35° E
 Cape Good Hope, S 50. W
 Noah's Ark, NW about 4' dist.
 N. B. All these bearings are by compass, without allowing for variation.

At 4 P.M. being calm, hoisted out the pinnace, and towed in towards the harbour. At 7 anchored in 20 fath. Noah's Ark W. Roman Rock NW ½ W dist. about two miles.

Aug. 21	Strong gales and squally.	S. S by E.	At 4 A.M. found ship drove, veered to a whole cable.
22	{ Fresh gales with hard squalls. P.M. increasing.	S by E.	
23	{ Strong gales and excessive hard squalls. Towards midnight began to moderate. }		At 8, gale increasing, swayed up lower yards. At 1 P.M. anchored in Symmon's Bay, in 7½ fath.
24	Moderate and fair.	SE.	
25	Moderate and cloudy.	NW.	
26	Fresh breezes, with some rain.	W. SW.	
27	{ Light breezes mostly from SE. with fair weather. }	SE.	
28	Light breezes and fair.	V.	Sailed a Dutch snow.
29	{ First and middle, moderate and cloudy, with some rain. Latter, squally. }	NW to W.	Sailed La Bretagne, Capt. MANSON for Mauritius.
30	Strong gales and clear weather.	SW.	
Sept. 1	Moderate and fair for most part, and a swell.	SSE.	Returned.
2	Strong gales and hard squalls.	SE.	
3	{ Major part, squally with rain. Towards evening, light breezes and fair. }	NW.	Sailed again.
4	Moderate and fair.	V.	
5	{ Strong gales and very hard squalls; could not send a boat ashore. }	S by E.	
6	Moderate and fair.	V.	
7	{ Mostly light breezes. P.M. a fresh gale. }	V.	Sent long-boat to endeavour taking up the anchor: r
8	Moderate breezes.	W. S.	
9	Moderate and fair.	SW.	
10	Strong gales and hard squalls.	V.	
11	Light winds from Southward, and fair weather.	S by E.	
12	Fair.	S.	
13	Fair.	V.	
14	Light airs and	C.	Sailed the Anson, Capt. TRYON, for England.
15	first part, calm: Latter part, breezes,	C. W. S.	Sent long-boat again to try for the anchor, but could
16	Fair.	V.	
17	Strong gales, with rainy weather.	NW.	
18	Fresh gales.	NW.	

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMP

whole cable; got down top-gallant yards, lowered fore and main yards, and got sheet anchor overboard.

ds. At noon, close reefed top-fails, stopt the cable, and came to fail.

7½ fath. when moored, lower flag staff from Point WSW. Dolphin's Nose NE. Roman Rocks E½S. Noah's Ark SE.

urritius.

anchor: returned with 80 fathoms of cable, but could not weigh the anchor.

nd.

but could not purchase it.

LRYPLE.

ark SE. Hanglip SE $\frac{1}{4}$ S off shore $\frac{3}{4}$ of a mile.

Journal of a Voyage to The East-Indies, in the Ship

1775	Th.	Marine Barometer				Weather and Winds.	D.L. A.O.		D.L. A. T.K.		Longitude from	
		R.	S.	i h.	D.		N	S	W	E	A.	TK.
		In. Dec.	In. Dec.	o	In. Dec.						o	o
Sept.												
19	59		30.1	59	{ f. NW. NW by W. c. f. NW by W. WNW. f. C. c. C. E. C. WNW. NW. }					18.43	18.52	
20	59 $\frac{1}{4}$		30.0 $\frac{3}{4}$	59	{ c. NW. NW by N. c. fq. NW by N. N by W. fq. c. N by W. NNW. c. fq. fq. r. NNW. }	4				21.26		
21	57 $\frac{1}{2}$		30.1 $\frac{1}{2}$	57 $\frac{3}{4}$	{ c. NW by W. WNW. W by S. c. fq. c. W by S. W. c. W. W by S. c. fq. fq. r. W by S. }	8				24.22		
22	62		30.2 $\frac{1}{2}$	62	{ fq. W by S. SW. c. f. S by W. S. f. c. S. C. V. c. f. NE. NE by E. ENE. }	10	49			25.36		
23	66 $\frac{1}{2}$		29.6 $\frac{3}{4}$	66	{ f. NE by E. ENE. f. NE by E. f. NE by E. f. ENE. NE by E. }	6				27.8		
24	65		29.5 $\frac{1}{2}$	65	{ h. NE by E. h. NE by E. NE by N. V. h. c. V. W. c. W. WNW. NW by W. }	9				28.13	27.23	
25	58 $\frac{1}{2}$		29.7	58 $\frac{1}{2}$	{ c. W by N. V. W by N. c. h. c. r. c. W by N. WNW. V. NW. c. r. NW. V. r. fq. WSW. }	15				29.35		
26	61	29.9 $\frac{1}{2}$	29.9	61	{ fq. WSW. fq. fq. fr. fq. WSW. SW by W. c. r. SW by W. W by S. W by N. r. W by N. WNW. }	21		31		32.9	31.50	
27	62 $\frac{1}{2}$	30.1 $\frac{1}{2}$	30.1 $\frac{1}{4}$	62 $\frac{1}{2}$	{ c. N by W. c. fq. r. N by W. NNW. fq. r. h. NNW. W by N. fq. c. W by N. W. WNW. }	1				35.18		

the Ship Grenville, Capt. BURNET ABERCROMBIE, kept by ALEXANDER DALRYMPLE, 17

Latitude from Greenwich						Latitude		Cor. Long.	Magnetical					ML.	Cape	
TK.	D.D T.K.	D	S.	O.	E.	A.	O.		Variation.		South Dip					
								Az.	Amp.	Face		MD.	C.D.			
											E.	W.				
	E					S	S	E	W	W						
3	18.52						34.48	18.52							17	{ At Sun N by ext. i land. 9 or ESE: from At noon lip N N 57 great
5						35.59	35.55	[21.15]							154	Fresh gal
2						36.21	36.9	[24.1]							144	Fresh gal
6						36.37	36.15	[25.5]							66	{ First breez it wa Man
8						37.34	37.6	[26.27]							92	{ First confu 9-30 tado
3	27.23					37.58	37.39	27.23							58	{ First a ver traffe
5						37.32	36.58	[29.0]							69	{ First p fwell trils, 29.6½
9	31.50					37.1	36.6	31.50			52.4	53.4	53.	53.4	127	{ Strong alcate 2 P. 29.9.
3						36.40	35.24	[34.55]							158	{ First p fwell. 4 P. 30.1.
														885		

Cape of GOOD HOPE lat. 34.22° S.
long. 18.27° E.

7 { At Sun-set, Cape Good Hope NW=W^dNW. Table Land N by W=N^dW by N. Hanglip E 7 N=E 29 $\frac{1}{2}$ N. Eastern ext. in sight E 50^sS=E 17 $\frac{1}{2}$ N distance 6 leagues from nearest land. At Sun-rise, Cape Good Hope N by W $\frac{1}{2}$ W=N^dW $\frac{1}{2}$ N 9 or 10 leagues. Hanglip Point NE=NNE. Ext. to E^d. ESE=E. Saw a faⁿ, supposed the Gatton, come round from Table Bay, to join us.
At noon, Cape Good Hope N per comp. =N 22 $\frac{1}{2}$ W. Hanglip N 35 E=N 12 $\frac{1}{2}$ E 9 leagues. Eastern ext. N 80 E=N 57 $\frac{1}{2}$ E. Major part, light breezes and fair weather, with great swell from SW.

4 Fresh gale, with a very large sea. Bar. 9 P.M. 30.1. 8 A.M. 30.1.

4 Fresh gales and great swell. Bar. 8 P.M. 30.1. 8 A.M. 30.1.

6 { First part, decreasing gale. Middle, calm. Latter part, a breeze from the NE. Great swell. A.M. bar. 30.3. N.B. it was not observed at noon. Past 1 P.M. it was 30.2 $\frac{1}{2}$. Many alcatraffes, pettrils, pintado birds, &c.

2 { First part, fresh gales. Latter, hard gales, with great and confused sea. Mostly fair weather. 2 P.M. bar. 30.2 $\frac{1}{2}$. 9. 30.1. 11. 30.0. 8 $\frac{1}{2}$ A.M. 29.8. Many pettrils, pintado birds, &c.

8 { First part, hard gales from N^d. Latter, from W^d. with a very large NE swell, confused in heaps. Many alcatraffes, pettrils, pintado birds, &c. Bar. 29.6 to 29.5 $\frac{1}{2}$.

9 { First part, light breezes. Latter part, fresh breezes. A.M. swell much abated. Many alcatraffes, pintado birds, pettrils, &c. Bar. 2 P.M. 29.5 $\frac{3}{4}$. 3. 29.6. 12. 29.6. 8 A.M. 29.6 $\frac{1}{2}$. 9. 29.6 $\frac{1}{4}$.

7 { Strong gales, mostly W^d. with squalls and some rain. Many alcatraffes, pintado birds, &c. and great many pettrils. Bar. 2 P.M. 29.6 $\frac{1}{2}$. 4. 29.7. 6. 29.8. 9. 29.8 $\frac{1}{2}$. 8 A.M. 29.9. 9. 29.9 $\frac{1}{4}$. 11. 29.9 $\frac{1}{4}$.

8 { First part, fresh gales and squalls. Latter, moderate. A great swell. Many alcatraffes, pintado birds, pettrils, &c. Bar. 4 P.M. 29.8 $\frac{1}{2}$. 6. 29.9. 9. 29.9. 12. 29.9. 8 A.M. 30.1. 9. 30.1 $\frac{1}{4}$. 11. 30.1 $\frac{1}{4}$.

1775	Th.	Marine Barometer,				Weather and Winds.	D.L.		Longitude from C			
		R.	S.	Th.	D.		A.O.	T.K.	A.	TK.	D.T.	
												In.Dec.
Sept.	28	62 $\frac{3}{4}$	30.3	30.2 $\frac{3}{4}$	62 $\frac{1}{2}$	30.2	h. fq, r. r. W by N. r. h. W. W by N. h. W by N. NW by W. h. V. NW by W.	1	9	36.54	36.26	1
	29	67 $\frac{1}{4}$	29.9 $\frac{1}{2}$	29.9 $\frac{1}{4}$	67	29.9	f. fq. h. fq. N by W. V. N by E. c. N by E. N. c. N. N by E.	4	27	39.48	39.47	
	30	56 $\frac{1}{2}$	30.2	30.1 $\frac{3}{4}$	56 $\frac{1}{2}$	30.1 $\frac{3}{4}$	c. h. fq, r, L, Th. N by E. N. V. L. to sw. c. V. W. c. fq, r. W by S. fq, r. h. c. W by S. SW by W. SW.	20	6	42.52	42.57	
Oct.	1	61 $\frac{1}{4}$	30.3 $\frac{1}{4}$	30.3	61	30.2 $\frac{1}{2}$	h. c. WSW. S by W. S. c. S. SSE. S by E. c. SE. SE by E. SE by S. c. SE. C. E.	19	12	43.59		
	2	65 $\frac{1}{2}$	30.1 $\frac{1}{4}$	30.1 $\frac{3}{4}$	65	30.1	c. fr. E by S. E. V. fr. c. fq. h. V. ESE. E. ENE. h. NE. h. NE. NE by N.				45.24	45.41
	3	67 $\frac{1}{4}$	30.3	30.2 $\frac{3}{4}$	67	30.2	f. NE. f. h. f. NE. f. fq. h. NE. h. f. NE. NE by E.	2	3	47.36	47.56	32
	4	66 $\frac{1}{2}$	30.3 $\frac{1}{4}$	30.2 $\frac{3}{4}$	66	30.2 $\frac{1}{2}$	h. NE by E. h. NE. h. NNE. h. NNE.	2	6	50.15	50.41	34
	5	67	30.2 $\frac{1}{2}$	30.2 $\frac{1}{4}$	67	30.1 $\frac{3}{4}$	h. NE by N. h. NE by N. h. fq. c. NE by N. N. c. N.	2	1	53. 8	53.35	
	6	62 $\frac{1}{4}$	30.2	30.1 $\frac{3}{4}$	62	30.1 $\frac{1}{4}$	h. N by W. h. N by W. NNW. h. NNW. NW. h. c. NW. WNW. NW. V. S by E. SSE.	12	20	55.14	56. 1	
	7	62 $\frac{1}{2}$	30.3 $\frac{3}{4}$	30.3 $\frac{3}{4}$	62	30.2 $\frac{1}{2}$	c. fq. r. SE by E. V. SSE. r. h. ESE. SE by S. S by E. S. h. f. S by W. f. S by W. V.	17	13	56.11	57.11	26

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE.

Distance from Greenwich						Magnetical							G denot Gatton				
T.K.	D.D T.K.	D	S.	O.	E. D.	Latitude		Cor. Long.	Variation		South Dip			ML.			
						A.	O.		Az.	Amp.	Face				MD.	C.D.	
											E.	W					
36.26	E	E				S	S	E	W	W	57.4	58.4	58.	58.4	Very unsteady.	885	Pleasant br &c. Bar. 8 A.M. 30
						36. 3	34.49	36.26		27.30*						86	
39.47						35.49	34.31	39.47	27.43*							144	Major part pettrils, & 30.2 1/2. 5 8. 29.9 1/2
42.57						35.34	33.56	42.57								153	First and lightning, ther. Ma ver bird. 6. 29.7 1/2
						35.22	33.25	[44.10]								64	First part, A.M. man 9. 30.3. 1
45.41	9 59W	45.32 46.40	6 3	26 21	u A*	35.55	33.58	45.41					59or60	Extremely unsteady.	85	First part, traffes, &c 30.3. 8.	
47.56	32E	47.24	5	38	3	36. 6	34.11	47.56	26.49*		59.	60.	59.4	60.	Very un- steady.	110	Moderate l birds, grea 4 az. 26° 30.1 1/2. 12
50.41	34W	51.15	3	26	3	36.13	34.20	50.41							Larboard-side of cabin.	132	Mostly fresh water smoc 30.2 1/2. 4 9. 30.3.
53.35						36.11	34.16	53.35	25.57*	25.39*						143	Fresh breeze 4 az. 26° 30.2 1/2. 6.
56. 1						36. 4	33.57	56. 1	24.42*		59.4	61.	60.2	60.6	Very steady.	106	First part, an alcatraz var. 2 az. 2 10. 30. 2.
57.11	26E	56.45	4	33	u A*	35.49	33.25	57.11								53	First and mi and fair v and other b 9 1/2. 30.2 1/2.

MPLE.

G denotes *Capt. Money's* Observations in the *Gatton*, the longitude reduced to *noon*.

Pleasant breeze. Many alcatraffes, pintado birds, pettrils, &c. Bar. 3 P.M. 30.1½. 6. 30.2. 10. 30.2½. 12. 30.2½. 8 A.M. 30.2½.

Major part, fresh gales. Many alcatraffes, pintado birds, pettrils, &c. *Gatton*, var. az. 28° 13' W. Bar. 1 P.M. 30.2½. 5. 30.1½. 9. 30.1. 12. 30.0½. 6 A.M. 29.9½. 8. 29.9½. 10. 29.9½.

First and middle, fresh gales, with hard squalls, thunder, lightning, and rain. Latter, blowing fresh and hazy weather. Many pettrils, pintado birds, &c. and A.M. one filter bird. Bar. 2 P.M. 29.8½. 4½. 29.8½. 5½. 29.7½. 6. 29.7½. 8½. 29.8½. 9½. 29.9. 11. 29.3.

First part, fresh gales. Latter, light breezes and calm. A.M. many alcatraffes, &c. Bar. 2½ P.M. 30.2. 5. 30.2. 9. 30.3. 12. 30.3. 6 A.M. 30.3½. 8. 30.3½. 11½. 30.3.

First part, light breeze. Latter, fresh. P.M. many alcatraffes, &c. G long. ☉ and ☾, 45° 31' E. Bar. 5½ P.M. 30.3. 8. 30.3. 12. 30.2. 8 A.M. 30.1½.

Moderate breezes throughout, weather changeable. Few birds, great dews, and water remarkably smooth. G var. 4 az. 26° 46'*, amp. 26° 47'*. Bar. 2 P.M. 30.1½. 6. 30.1½. 12. 30.2½. 8 A.M. 30.2½. 9½. 30.3.

Mostly fresh gales. Some pintado birds. A.M. great dews; water smooth. G long. ☉ and ☾ 50° 39' E. Bar. 1½ P.M. 30.2½. 4. 30.2½. 7½. 30.2. 12. 30.2. 6 A.M. 30.2½. 9. 30.3.

Fresh breezes. Some pintado birds. A.M. one pettril. G var. 4 az. 26° 9'*, amp. 26° 7'*. Bar. 2 P.M. 30.2½. 6. 30.2½. 6 A.M. 30.1½. 8. 30.2. 9½. 30.2½.

First part, fresh gales. Latter, light and variable. P.M. an alcatraff. A.M. several alcatraffes and pintado birds. G var. 2 az. 24° 42'*. Bar. 1½ P.M. 30.2. 4. 30.1½. 6. 30.1½. 10. 30.2. 12. 30.1½. 8 A.M. 30.1½. 9. 30.2.

First and middle, light breezes and rain. Latter, light breezes and fair weather. P.M. a *urite* passed; several alcatraffes and other birds. Bar. 2½ P.M. 30.1½. 5. 30.1½. 6. 30.2. 9½. 30.2½. 12. 30.2½. 8 A.M. 30.2½.

Ship Grenville, Capt. BURNET ABERCROMBIE, kept by ALEXANDER DALRYMPLE, 17

Distance from Greenwich						Latitude		Cor. Long.	Magnetical				ML.				
TK.	D. D. T.K.	D	S.	O.	E. D.	A.	O.		Variation.		South Dip						
								Az.	Amp.	Face		MD.	C.D.				
										E.	W.						
57-55	E	E				S	S	E	W	W	61.	63.	62.	62.4	Pretty steady. Larboard-side of cabin. Ditto. Starboard-side of cabin.	1961	
						35-50	33-28	57-55	23-48*	24. 2*	61.4	62.	61.6	62.2		21	Mostly noon a few b P.M. 3
59-53	4	59-49	5	A*	32	36. 5	33-30	59-53	23-49*	23-57*	61.4	62.2	61.7	62-3	Very steady.	89	Major part same time some d Bar 2½
60-22	45	59-37	6	A*	28	36. 0	33-20	60-22	21.43*	21.52*	61.4	62.4	62.	62.4	Pretty steady.	24	Mostly granpu az. 22°
62-21						36. 6	33-20	62-21	23-10*	22-47*	61.4	62.4	62.	62.4	Not very steady.	77	Pleasant long fw
63-54						36.10	33-20	63-54	21. 5*	20-51*	62.2	63.2	62.6	63.2	Very steady.	68	First part swell f 30-2½.
65-59						36.14	33-26	65-59	20.27*	20.34*	62.4	63.2	62.7	63.3	Not very steady.	96	First part birds. G var. 10½ 3
67-52	W 25	68.17	5	0	27	36. 4	33-14	67-52	19-35*		61.6	62.4	62.1	62.5	Pretty steady.	78	Pleasant Bar. 6
						35-55	[33-17]	[70-24]	18.43*							117	First part damp 6 P.M
72-44	E 35	72. 9	2	0	19	35. 4	32-38	72-44			61.4	62.2	61.7	62.3	Not steady.	120	Fresh g birds, 6. 29-7 10. 30
73-35						34-57	31-41	73-35								66	First part with a &c. 30-2½ 30-4
														12717			

Mostly light airs and calms, with large swell from SW. Few birds. G var. 3 az. $23^{\circ} 32'$ *, amp. $23^{\circ} 50'$ *. Bar. 6 P.M. $30.3\frac{1}{2}$. 8 A.M. $30.3\frac{1}{4}$. 10. $30.3\frac{1}{4}$.

Major part, pleasant breezes and fair weather. Just before noon a *seal* passed close to the ship on the larboard side, at same time a flock of a vast number of *small white birds* at some distance on starboard quarter. G var. 2 az. $23^{\circ} 25'$ *. Bar $2\frac{1}{2}$ P.M. 30.3 . 7. $30.2\frac{1}{4}$. 1 A.M. $30.3\frac{1}{4}$. 9. $30.3\frac{1}{2}$.

Mostly light airs, with a large swell from W^d. P.M. a *grampus* very near the ship. Several alcatrafes, &c. G var. az. $22^{\circ} 19'$ *, amp. $22^{\circ} 23'$ *.

Pleasant breezes. Some pintado birds, &c. smooth water, but a long swell from SW. G var. az. $22^{\circ} 30'$ *, amp. $22^{\circ} 45'$ *.

First part, pleasant breezes. Latter, light airs, with great swell from SW. Some pintado birds, &c. Bar. 2 P.M. $30.2\frac{1}{2}$. $11\frac{1}{2}$. $30.2\frac{1}{4}$. $8\frac{1}{2}$ A.M. 30.3 .

First part, light breezes. Latter, moderate. Several pintado birds. A.M. a silver bird and pettril, several poor Johns. G var. 3 az. $21^{\circ} 28'$ *, amp. $20^{\circ} 59'$ *. Bar. 2 P.M. $30.2\frac{1}{4}$. $10\frac{1}{2}$. $30.2\frac{1}{4}$. 1 A.M. $30.2\frac{1}{4}$.

Pleasant breeze. Great dews. G long. ☉ and ☽ $67^{\circ} 56'$. Bar. 6 P.M. 30.2 . 11. $30.2\frac{1}{4}$. 12. $30.2\frac{1}{2}$. 8 A.M. $30.2\frac{1}{2}$.

First part, moderate. Latter, fresh gales and squally. Very damp weather. G var. 2 az. $19^{\circ} 23'$ *, amp. $19^{\circ} 43'$. Bar. 6 P.M. 30.2 . 12. $30.1\frac{1}{4}$. 9 A.M. $29.9\frac{1}{2}$.

Fresh gales, with squally weather. A.M. many pintado birds, some alcatrafes, &c. Bar. 2 P.M. $29.8\frac{1}{2}$. 4. $29.8\frac{1}{4}$. 6. $29.7\frac{1}{4}$. 10. $29.8\frac{1}{2}$. 12. 29.9 . $7\frac{1}{2}$ A.M. $30.1\frac{1}{2}$. 9. 30.2 . 10. 30.2 .

First part, moderate. Latter, light airs inclinable to calm, with a great swell. Several pintado birds, some alcatrafes, &c. At night, water luminous like blubbers. Bar. 2 P.M. $30.2\frac{1}{4}$. $4\frac{1}{2}$. 30.3 . 6. 30.3 . 10. $30.3\frac{1}{2}$. 12. 30.4 . 8 A.M. 30.4 . 9. $30.4\frac{1}{2}$. 10. $30.4\frac{1}{2}$.

1775	Th.	Marine Barometer.				Weather and Winds.	D.L. A.O. T.K.				Longitude from			
		R.	S.	Th.	D.		N	S	W	E	A.	TK.		
		In.Dec.	In.Dec.	°	In.Dec.									
Oct.	°													
18	63 $\frac{1}{4}$	30.4 $\frac{1}{4}$	30.4	63	30.3 $\frac{1}{4}$	f. c. V. C. c. C. E by N. V. NE. V. c. h. c. NE by E. NE. V. c. V. N by E.			6			° / ° E E 70.32 73.31		
19	66 $\frac{1}{2}$	30.4	30.4	66 $\frac{1}{2}$	30.3	h. c. NNE. N. N by E. NE. c. NNE. N by E. NNE. NE. c. NE. NE by N. NNE. c. NE by N. N by E.		5	10			71.18 74.27		
20	65		30.3	64 $\frac{1}{4}$		f. NE by N. f. NE by N. N by E. f. N. NNE. f. NNE. N by E. N.		1	8			72.21 75.38		
21	63 $\frac{1}{4}$	30.2 $\frac{1}{2}$	30.2	64 $\frac{1}{4}$	30.1 $\frac{1}{4}$	f. N. N by W. f. c. N by W. c. fq. c. NNW. NW by N. c. fq. r. NW by N. NW. V. SW by S.		10	22			73.16 76.55		
22	61 $\frac{3}{4}$	30.4	30.3 $\frac{1}{2}$	61 $\frac{1}{2}$	30.3	f. SSW. f. SSW. S by E. c. SSE. c. SSE. SE.		7	15			74.46 78.10		
23	66	30.3 $\frac{3}{4}$	30.3 $\frac{1}{4}$	66	30.3	c. SE by E. ESE. E. c. E. V. c. fq. E by N. fq. c. E by N.		21	4			75.9 78.29		
24	71	30.3 $\frac{3}{4}$	30.3	71	30.2 $\frac{1}{2}$	f. NE by E. f. NE by E. NE. f. NE. NE by E. f. NE by E. V.		3	24			74.43 77.39		
25	71 $\frac{1}{4}$	30.3 $\frac{3}{4}$	30.3 $\frac{1}{4}$	70 $\frac{1}{2}$	30.2 $\frac{1}{2}$	f. NE by N. C. f. ENE. E by S. C. f. c. C. c. f. C. SW by S. C.		5	2			74.47 77.45		
26	70 $\frac{1}{4}$	30.3 $\frac{3}{4}$	30.3	70 $\frac{1}{4}$	30.3	h. fq. r. S by W. S by E. SE. fq. r. fq. c. r. SE. ESE. r. fq. r. ESE. fq. fq. r. V.		8	1			75.43 78.40		
27	71	30.3	30.2 $\frac{1}{2}$	70 $\frac{3}{4}$	30.2	fq. r. fq. V. E. E by S. fq. fq. r. E by S. fq. r. E by N. E. E by N. fq. r. fq. E by N. E.		37	4			75.41 78.34		

the Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE

Latitude from Greenwich						Latitude		Cor. Long.	Variation		Magnetical				ML.	
TK.	D. D T.K.	D	S.	O.	E. D.	A.	O.		Az.	Amp.	Face		MD.	C.D.		
											E.	W.				
73.31		E				S	S	E	W	W	61.	62.	61.4	62.	Pretty steady.	2717 33
74.27						34.52	31.41	74.27			60.6	61.6	61.2	61.6	Very steady.	40
75.38	{ 3W 64E 60E	75.41	4	⊙	37	34.49	31.39	75.38	14. 9*	14.48*						55
		74.34	4	⊙	51											
		74.38	4	⊙	35											
76.55						33.45	30.25	76.55			59.4	60.4	60.	60.4	Very steady.	84
78.10						31.47	28.20	78.10	12.44*	12.49*	58.	58.6	58.3	58.7	Not steady.	142
78.29						29.55	26.28	78.29			56.4	57.2	56.7	57.3	Very steady.	97
77.39						29. 4	25.37	77.39	* 7.53* 10.10	8. 1*	56.2	56.6	56.4	57.		59
77.45						29. 6	25.44	77.45	10. 3* *9.20	*9. 8	56.2	57.	56.5	57.1	{ Extremely unsteady.	7
78.40						27.17	23.47	78.40								120
78.34						25.49	21.42	78.34								89
															3443	

RYMPLE.

ML.

2717

33 { Mostly light airs and calm, with a large swell. At night, sea luminous like blubbers. Several alcatraffes, &c. lost sight of Gaton; got sight of her again before noon. Bar. 2 P.M. 30.4. 5½ 30.4. 11. 30.4. 1 A.M. 30.4. 8. 30.4½. 10. 30.4½.

40 { Light airs. Sea luminous at night like blubber. P.M. an uncommon bird like Cape hen, some alcatraffes. Bar. 2 P.M. 30.4. 4. 30.4. 10. 30.4. 12½. 30.4. 7½ A.M. 30.3½. 8½. 30.4. 10. 30.4½.

55 { Pleasant breezes. Sea luminous at night like blubbers. A.M. sky mare's tails. No birds. G var. 4 az. 15° 24'*. amp. 15° 2'*. Long. ☉ and ☽ 75° 56'. Bar. 2½ P.M. 30.3½. 11. 30.3½. 1 A.M. 30.3½. 8. 30.3½.

84 { Moderate breezes. Sea luminous at night like blubbers. Towards evening became cloudy. No birds. G var. 2 az. 14° 10'*. Bar. 2 P.M. 30.3. 6. 30.2½. 8. 30.2½. 10½. 30.2½. 12. 30.2½. 8 A.M. 30.2. 9. 30.1½. 10. 30.2. 11. 30.2½.

142 { Fresh gales. A.M. one or two poor Johns. No other birds. G var. 2 az. 12° 31'*, amp. 12° 51'*. Bar. 2 P.M. 30.2. 4. 30.1½. 5½. 30.2. 6½. 30.2½. 10½. 30.2½. 12. 30.2½. 9 A.M. 30.3½.

97 { Major part, moderate breezes. P.M. several poor Johns, though slenderer and smaller than usual. A.M. poor Johns, a petril, and a sheerwater. Bar. 2 P.M. 30.3. 6½. 30.3½. 12. 30.3½. 8½. 30.3½. 9. 30.3½. 10. 30.3½.

59 { First part, pleasant breeze. Latter, light air and variable. P.M. an alcatrafs. A.M. an alcatrafs. G var. 2 az. 8° 54'*, amp. 9° 9'*. Bar. 2 P.M. 30.3. 4. 30.2½. 6. 30.3. 7½. 30.3. 11. 30.3.

7 { Mostly calm. Some birds at distance. G var. az. 8° 38'*. Bar. 2 P.M. 30.3. 8. 30.3. 10. 30.3½. 8 A.M. 30.3. 8½. 30.3½. 9. 30.3½.

120 { Fresh gales, with squalls and rain; sometimes squalls very hard. Great irregular swell. Several birds, chiefly poor Johns or black sheerwaters, being of the colour of the former, and shape like the latter, but without white breasts. Bar. 2 P.M. 30.3. 5. 30.2½. 6. 30.2½. 8. 30.3. 12. 30.2½. 9 A.M. 30.3.

89 { Fresh gales and squally. Several sheerwaters, or birds like them, of different colours, grey, brown, and blackish; some white breasted and white under the wings. Bar. very unsteady these two days from ship's motion. Great irregular sea. Bar. 2 P.M. 30.2½. 2½. 30.3. 4. 30.2½. 6. 30.2½. 10. 30.3. 12. 30.3. 8 A.M. 30.2½. 9. 30.2½. 10. 30.2½.

3443

Journal of a Voyage to The East-Indies, in the Ship Gro

1775	Marine Barometer				Weather and Winds.	D. L.		Longitude from	
	R.	S.	Th.	D.		A. O.	T. K.	A.	T. K.
	In. Dec.	In. Dec.	°	In. Dec.		N S	W E	°	°
Oct. 28	72	30.2½	30.2	72	30.1½	16	8	76.9	79.10
29	73	30.2½	30.2	73¼	30.1½	2	8	76.52	79.45
30	75	30.2	30.1½	74½	30.1	5	15	77.39	80.17
31	77	30.1	30.0½	77	30.0	3	3	78.10	80.51
Nov. 1	78	30.1	30.0¼	78½	30.0	1	1	78.17	80.59
2	81	30.0¼	30.0¼	81	30.0	10		78.26	80.58
3	81	30.0½	30.0	80¼	29.9½	5	9	79.5	81.28
4	82	30.0½	29.9¼	82	29.9¼	5	13	79.36	81.46
5	82	30.0	29.9½	81½	29.9	7	18	80.19	82.11

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE.

Latitude from Greenwich						Latitude		Cor. Long.	Magnetical						ML.	
T.K.	D. (T.K.)	⊙	S.	O.	D.	A.	O.		Variation		South Dip					
								Az.	Amp.	Face		MD.	C.D.			
											E.	W.				
79.10	E	E				S	S	E	W	W					3443	96 { Mostl. large Bar. 6. 30
79.45	35 56	79.10 78.49	4 4	⊙ ⊙	27 10	22.54	18.33	79.33							93 { Fresh P.M. high, G lor 6. 30 10. 3	
80.17						21.11	16.45	79.59		4. 4*	46.2	47.2	46.6	47.3	113 { Strong Vaff. 3. 30 30. 1½	113 { Unsteady.
80.51						19. 8	14.45	80.27	*3.17		44.	45.	44.4	45.1	127 { Squally unfaet 4. 30 8. 30	
80.59						17.15	12.51	80.29			41.	42.	41.4	42.1	114 { Squally shap, ⊙ an 9½. 3	114 { Very steady.
80.58	114 108	79. 4 79.10	8 6	⊙ ⊙	42 30	15.44	11.20	80.22	1.20* *1.12	*1.42	38.6	39.4	39.1	39.7	92 { Moder. grey v more Bar. 30.0½	
81.28						13.47	9.18	80.46	0.59*		35.4	36.4	36.	36.6	123 { Pleasur a trop tance, var. a 7½ A.	123 { Not steady.
81.46	82 41	80.24 81. 5	6 6	*A	17 28	11.57	7.23	80.58	0. 3*		32.6	33.6	33.2	34.	114 { Major I and m	
82.11						10. 5	5.26	81.17	*0. 8		29.2	29.6	29.4	30. 3	119 { Extremely steady.	4434

3	<p>Mostly fresh gales from Eastward, with squalls and rain and a large swell. Several birds as before. A.M. many flying fish. Bar. very unsteady, 1 P.M. 30.2½. 4 30.1½. 5½ 30.2. 6. 30.2. 8. 30.2½. 10. 30.2½. 12. 30.2½. 9 A.M. 30.2½.</p>
3	<p>Fresh gales, with some squalls. Several birds as before. P.M. a large white bird which flapped its wings and flew high, unlike the birds which are found in the main sea. G long. ☉ and ☽ 77° 39' E. Bar. 2 P.M. 30.1½. 4 30.1½. 6. 30.1½. 10. 30.2. 11½. 30.2. 8 A.M. 30.2½. 9. 30.2½. 10. 30.2½.</p>
3	<p>Strong gales, with frequent squalls. Some birds as before. Vast flocks of flying fish. Swell abated. Bar. 2 P.M. 30.2. 3. 30.1½. 4. 30.1½. 10½. 30.2. 12½. 30.2. 8 A.M. 30.1½. 9. 30.1½.</p>
7	<p>Squally. Few birds as before. Swell increased and weather unsettled. G long. ☉ and ☽ 79° 8' E. Bar. 2 P.M. 30.1. 4. 30.1. 6. 30.0½. 10. 30.1. 12½. 30.1. 6 A.M. 30.0½. 8. 30.0½. 9. 30.0½. 10½. 30.0½.</p>
4	<p>Squally. P.M. a tropic bird, which resembles a paroquet in shape, but is of a whitish grey. Swell much abated. G long. ☉ and ☽ 79° 10' E. Bar. 2 P.M. 29.9½. 4 30.0. 6. 30.0. 9½. 30.0½. 12½. 30.0. 9 A.M. 30.0½.</p>
3	<p>Moderate breezes, with some squalls. A.M. few birds; the grey white under wings; frequently overcast. A.M. a little more swell from Northward. G var. 2° 3'*, amp. 2° 4'*. Bar. 2½ P.M. 29.9½. 6. 30.0. 12½. 30.0½. 8 A.M. 30.0½. 9½. 30.0½. 11½. 30.0½.</p>
3	<p>Pleasant gale, with fair weather. A.M. a bird, larger than a tropic bird, with black wings and white body at a distance, it flapped the wings very much. A head swell. G var. az. 1° 0'*, 0° 52'*. Bar. 2 P.M. 30.0½. 6. 30.0½. 7½ A.M. 30.0½.</p>
1	<p>Major part moderate. P.M. some <i>Southern lights</i>, very rare and motionless. Bar. 2½ P.M. 29.9½. 6. 29.9½. 8. 30.0.</p>
1	<p>Fresh gales, with fair weather. P.M. a large bird of the booby kind above the ship; it had a long neck, and was something in shape and size like a wild goose. At night, <i>Southern lights</i>, some diverging in rays downwards, some like a rare cloud, very little motion; a faint ring round ☽. A.M. four tropic birds. G var. 4 az. 0° 21' *E. az. *0° 4' E. Bar. 2½ P.M. 29.9½. 6. 29.9½. 1 A.M. 29.9. 8. 29.9½.</p>

1775	Th.	Marine Barometer.				Weather and Winds.	D.L.		A.		Longitude from	
		R.	S.	Th.	D.		N	S	W	E	A.	TK.
	°	In.Dec.	In.Dec.	°	In.Dec.					°	°	
Nov.												
6	2 3/4	30.0 1/4	29.9 3/4	82 1/4	29.9 1/4	c. E. c. E. c. E. E by N. E. c. E by N. E.	i		18			E E 80.48 82.22
7	83	30.0	29.9 1/2	82 1/2	29.9	h. E. E by S. h. E. E by S. h. ESE. c. SE by E.	9		31			81.46 82.49
8	83 1/4	30.0 1/4	29.9 1/4	82 1/2	29.9 1/4	h. SE by E. h. E by N. ENE. E. h. fq. E. E by S. f. E by S.	17		20			82.12 82.55
9	83 3/4	29.9 3/4	29.9	83 1/4	29.8 1/2	f. V. E. f. E by N. E. f. hr. dr. E. E by N. V. c. E.			14 53			82.31 82.21
10	81 3/4	29.9 3/4	29.9	81 1/4	29.9 3/4	c. E by S. E. E by S. c. r. c. V. c. V. E by N. E by S. c. fq. E by S. SE by E. SE. SE by E.	3		45			83.19 82.24
11	83 3/4	29.9 3/4	29.9	83 1/2	29.8 3/4	h. c. SE by E. c. E by S. ESE. E by S. c. E by S. E. E by S. fq, hr. c. ESE. V.	9		33			84. 5 82.37
12	80 3/4	29.9 1/2	29.9	80 1/4	29.8 1/2	fq. r. V. r. L. to nw. f. V. c. fq, r. L. to e. V. E by N. fq. r. V. NE. V.			32			84.25 82.25
13	82	29.9 1/2	29.8 3/4	82	29.8 1/2	c. r. c. C. V. C. c. hr. c. L. to s. C. c. C. c. fq, r. c. C. V. NW. V.	2		19			84 33 82.14
14	82	29.9 1/2	29.8 3/4	82	29.8 1/2	c. fq, hr. NW by W. V. c. V. NW. C. c. C. V. W by S. c. r. c. W by S. SW. SSW.			2			85. 0 82.39

the Ship Grenville, Capt. BURNET ABERCROMBIE, kept by ALEXANDER DALRYMPLE, I.

Latitude from Greenwich			S.	O.	D.	Latitude		Cor. Long.	Magnetical					ML.				
TK.	D. T.K.	D				A.	O.		Variation.		South Dip							
									Az.	Amp.	Face		MD.			C.D.		
° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "				
82.22	75	81.7	5	F	37	S	8.24	3.44	81.22	*0.8		26.2	26.6	26.4	27.3	Very steady.	4434 101	Moderate motion G var 29.8½
82.49						S	6.19	2.30	81.43	1.12*	1.6*	24.4	25.	24.6	25.5	Not steady, ship laying to for boat.	89	Moderate Bar. 2
82.55						S	5.17	1.11	81.43			22.	22.2	22.1	23.	Extremely steady.	69	Major the G. Mr. 8 P.M.
82.21						S	4.20	0.18	81.3			20.	20.4	20.2	21.1	Very steady.	61	Variable 9 A.M.
82.24						N	3.18	0.47	81.0	0.52*		19.4	19.	19.4	20.1	Not very steady.	81	Mostly appear time li fresh w the ref the sit not fe 29.8½
82.37						S	2.3	2.1	81.7			15.4	15.6	15.5	16.4		82	Most part latter c
82.25						S	1.12	2.52	80.49			15.4	16.	15.6	16.5	Pretty steady, but ship not having steerage-way.	61	Winds land b distanc a gull. 8 A.M.
82.14	95	80.39	3	0	28	S	1.12	2.54	80.32			14.4	15.4	15.	15.7	Very steady.	8	Light ai &c. 1 0's li P.M. 2
82.39						S	1.7	2.59	80.51			15.	16.	15.4	16.3	Not very steady.	28	Winds plover: Bar. 2 1 11½ 20

LE, 1775.

Moderate breezes. *Northern lights* to Northward. Little motion, but great extent, and afterwards *Southern lights*. G var. amp. $0^{\circ} 48'$ *E. Bar. 2 P.M. 29.9 $\frac{1}{2}$. 1 A.M. 29.9 $\frac{1}{2}$. 9. 30.0.

Moderate breezes. G var. az. $0^{\circ} 45'$ *E, amp. $0^{\circ} 13'$ *E. Bar. 2 P.M. 30.0. 6. 29.9 $\frac{1}{2}$. 1 A.M. 29.9 $\frac{1}{2}$. 8. 29.9 $\frac{1}{2}$.

Major part, moderate breezes. A.M. came on board from the *Gaston* Major SEARS and Capt. ALCOCK for Madrafs, Mr. HORSLEY went aboard that ship for Bombay. Bar. 2 P.M. 29.9. 12. 29.9 $\frac{1}{2}$. 9 A.M. 29.9 $\frac{1}{2}$.

Variable winds, with rain at times. Bar. 4 P.M. 29.8 $\frac{1}{2}$. 9 A.M. 29.7 $\frac{1}{2}$.

Mostly fresh breezes. At 10 $\frac{1}{2}$ A.M. there was to the SE. the appearance of something black like a rock, and at the same time like a *foal*; but it being to windward, and ship having fresh way, could not determine whether it was a *foal* or the reflection of the Sun behind the clouds. This is nearly the situation of the *Ouro*. A man sent to mast-head could not see any thing. Bar. 2 P.M. 29.8 $\frac{1}{2}$. 9. 29.8 $\frac{1}{2}$. 12. 29.8 $\frac{1}{2}$. 8 A.M. 29.9 $\frac{1}{2}$.

Most part the wind Easterly, with some squalls towards the latter end. Bar. 1 A.M. 29.9. 8. 29.9 $\frac{1}{2}$.

Winds variable with unsettled weather. P.M. a bird like a land bird. A.M. many yellow tails; two black birds at a distance like land birds: a white bird with black wings, like a gull. Bar. 2 P.M. 29.8 $\frac{1}{2}$. 4. 29.8. 9. 29.9. 12. 29.9. 8 A.M. 29.9 $\frac{1}{2}$. 10 $\frac{1}{2}$. 29.9 $\frac{1}{2}$. 11. 29.8 $\frac{1}{2}$.

Light airs and calms, with hard rain. Many fish, porpoises, &c. A.M. a mottled grey bird of the booby kind. The \odot 's limb not distinct when longitude observed. Bar. 2 P.M. 29.8 $\frac{1}{2}$. 12 $\frac{1}{2}$. 29.8 $\frac{1}{2}$. 7 $\frac{1}{2}$ A.M. 29.8 $\frac{1}{2}$. 8 $\frac{1}{2}$. 29.9 $\frac{1}{2}$.

Winds and weather very unsettled. P.M. a sea bird like a plover: many fish. P.M. caught a shark. A.M. saw a fall. Bar. 2 P.M. 29.8 $\frac{1}{2}$. 4. 29.8 $\frac{1}{2}$. 12 $\frac{1}{2}$. 29.9. 8 A.M. 29.9 $\frac{1}{2}$. 11 $\frac{1}{2}$. 29.9.

Journal of a Voyage to The East-Indies, in the Ship

1775	Th.	Marine Barometer.				Weather and Winds.	D.L.		A.		Longitude from	
		R.	S.	Th.	D.		N	S	W	E	A.	TK.
		In.Dec.	In.Dec.	°	In.Dec.							
Nov.	°											
15	81 $\frac{3}{4}$	29.9 $\frac{1}{2}$	29.9	81 $\frac{3}{4}$	29.8 $\frac{1}{2}$	c. fq, r. fq, hr. V. c. fq. r. V. W by N. W by S. r. fq, r. c. W by S. SSE. SSW. c. SW.	19	2			°	°
16	81	30.0	29.9 $\frac{1}{4}$	80 $\frac{1}{2}$	29.9	c. fq, hr. SW. S. hr. V. S by W. hr. c. S by W. SW. c. r. c. SW.	9	6			86. 9	83.46
17	80	29.9 $\frac{3}{4}$	29.9	80	29.8 $\frac{3}{4}$	fq, hr. c. fq. S. V. c. hr. c. fq, hr. S by W. SSE. SE. fq, hr. V. S by E. r. c. S by E. C.	21		18		88. 2	86. 3
18	83 $\frac{1}{2}$	30.0	29.9 $\frac{1}{4}$	83 $\frac{1}{2}$	29.9	fr. c. C. E. E by S. c. r. E by S. r. c. E. E by N. NE by E. c. fq. NE by E. NE by N. N by E.	6		9		88.16	86.26
19	83	29.9 $\frac{3}{4}$	29.9	83	29.8 $\frac{3}{4}$	c. fq, r. fq, th, L, hr. NNW. NW. V. fq, th, L, hr. V. C. V. C. r. c. V. N. c. r. c. N. N by E. NE by N.	18	19			88.57	87.26
20	82 $\frac{1}{2}$	30.0	29.9 $\frac{1}{2}$	82 $\frac{1}{4}$	29.9	fq, fr. fq. NE by N. NE. fq, fq, L, hr. hr. NE by E. E by N. NE by E. ENE. NE. hr. fq. V. SE by E. SE. SSE. c. fq, flying th. SSE. S by W.	30		13		90.27	89. 9
21	80 $\frac{3}{4}$	30.0 $\frac{1}{4}$	29.9 $\frac{3}{4}$	80 $\frac{1}{2}$	29.9 $\frac{1}{4}$	r. SW. V. r, L. to nw. V. C. V. h. V. C. h. r. h. C. V. W. V. N.	15		27		90.54	90. 3
22	81 $\frac{1}{4}$	30.0	29.9 $\frac{1}{2}$	81 $\frac{3}{4}$	29.9	c. fq. N. N by W. fq, hr. c. r. N by W. C. SE by S. V. r. V. r. c. NE by E. C.	14		55		91.17	91.21
23	82		29.9 $\frac{1}{2}$	82		c. C. E. V. c. V. E by N. c. h. NE by E. NE. h. NE by E. NE. NNE.	6		8		91. 8	91.20

Ship Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE

Latitude from Greenwich						Latitude		Cor. Long.	Magnetical		South Dip		ML.			
TK.	D. D T.K.	D	S.	O.	D.	A.	O.		Az.	Amp.	Face	MD.			C.D.	
83.46	E	E				0.57	2.50	81.52	W	W	14.4	14.6	14.5	15.4	5014	Mostly colour shorter 29.8½
84.48	76	83.32	4	0	18	0.46	2.52	82.48			13.4	14.	13.6	14.5	71	
86. 3						0.32	3.27	83.57			14.4	15.2	14.7	15.6	57	Very steady.
86.26						0. 3	4. 2	84.13			11.1	11.5	11.3	12.2	59	First part latter, very 4. 29. At first was all when and for E 14. W 15.
87.26						0. 3	3.44	85. 7			10.6	11.2	11.	11.7	38	Mostly bird in pretty P.M.
89. 9						0.17	3. 0	86.40			11.4	12.2	11.7	12.6	44	Variable wings like a few ye like a 1 A.M
90. 3						0. 3	3.29	87.28			10.2	10.6	10.4	11 3	102	Fresh h The li to be a like a 29.8½ 10. 29
91.21						N 0. 9	3.55	88.39			10.6	11.2	11.	11.7	30	Variable A.M. ½ P.M 12½ A.
91.20						0.45	4.37	88.31			7.6	8.4	8.1	9.	30	Major aboard kind. Water 12½ A.
															39	First part weathe birds. Bar. 41 9. 30c

Mostly variable wind and rain. P.M. a sail; shewed French colours on firing a gun to speak with her, but did not shorten sail. Several birds and many fish. Bar. 2 P.M. 29.8½. 6. 29.9. 12. 29.9½. 8 A.M. 29.9½.

First part, mostly squally with very heavy rain. Middle and latter, light airs and cloudy with some rain. ☉'s limb not very distinct when long. observed. Bar. 2 P.M. 29.8½. 4. 29.8½. 10. 29.9½. 12. 29.9½. 8 A.M. 29.9½. 9. 30.0.

Very unfettered weather with rain. Bar. 1 P.M. 29.9½. 2. 29.9. 4. 29.9. 9½. 30.0. 1 A.M. 29.9½. 9. 29.9½. At first the dipping-needle had no motion, but with the face East was at 120¼; when moved a little, it remained motionless; when moved with the face to West, the needle turned round, and stood any where. Moved several times, it pointed with face E 14¼. W 15¾. } Very steady.

Mostly light breezes. P.M. saw two dolphins, heard a tropic bird in night. A.M. caught two dolphins. Dipping-needle pretty steady, and no appearance of defect as yesterday. Bar. 2 P.M. 29.8½. 4. 29.8½. 12½ A.M. 29.9. 8. 29.9½. 11. 29.9½.

Variable winds, with rain. P.M. a swallow with short wings and white breast. A.M. a small land bird shaped like a water wag-tail, but in colour like a linnet, with a few yellowish feathers in the flank. A.M. a bird at distance like a gannet. Bar. 2 P.M. 29.8½. 4. 29.8½. 6. 29.8½. 1 A.M. 29.9½. 8. 29.9½.

Fresh breezes, with some squalls and a great deal of rain. The land bird aboard still. P.M. heard a bird, supposed to be a booby. A.M. passed a drift; a grey sea bird shaped like a plover. A black sea bird at a distance. Bar. 1 P.M. 29.8½. 6. 29.8½. 1 A.M. 29.9. 7½. 29.9½. 9. 29.9½. 10. 29.9½. 11. 29.9½. 11½. 29.9½.

Variable, with rain and calms. The land bird aboard still. A.M. saw a tropic bird. Passed a drift. Light airs. Bar. ½ P.M. 29.9½. 2. 29.9. 4. 29.9½. 6. 29.9½. 7. 29.9½. 12½ A.M. 29.9½. 8. 29.9½. 10. 30.0.

Major part, light breezes, with some rain. The land bird aboard still. P.M. saw a booby, some fish of the porpoise kind. A.M. a horse fly, several riplings, and many fish. Water luminous at night. Bar. 4 P.M. 29.9½. 5. 29.9½. 12½ A.M. 29.9½. 7. 29.9½. 8½. 30.0. 9. 30.0. 10½. 30.0.

First part, calm. Latter, light breeze from NE, with hazy weather. The land bird aboard still. A.M. several tropic birds. Passed a bamboo adrift. Water luminous at night. Bar. 4 P.M. 29.9½. 6. 29.9. 14½ A.M. 29.9½. 8. 29.9½. 9. 30.0.

1775	Th.	Marine Barometer.				Weather and Winds.	D.L.			Longitude from Gre				
		R.	S.	Th.	D.		A.O.	T.K.	A.	TK.	D.D	T.K.		
													N	S
	°	In.Dec.	In.Dec.	°	In.Dec.					°	'	°	'	'
Nov.														
24	82 $\frac{1}{4}$	30.0 $\frac{1}{4}$	29.9	82 $\frac{1}{4}$	29.9	{ f. NNE. NE by N. NE. f. NE. r. f. NE by N. f. fq, r. c. NE. }			10	32		90.29	90. 9	E
25	82	30.0 $\frac{1}{4}$	29.9 $\frac{3}{4}$	82	29.9 $\frac{1}{4}$	{ c. fq. NE. V. fq. c. r. V. E by N. fq, r. V. ENE. fq. c. fq. NE by E. NE. }			19	43		90.13	89.10	E
26	82	30.0 $\frac{1}{4}$	29.9 $\frac{3}{4}$	81 $\frac{1}{2}$	29.9 $\frac{1}{4}$	{ fq, fr. c. fq, r. V. NE. V. fq, r. fq. c. NE. V. c. V. NE by E. c. fq. NE. NE by E. V. }			8	30		90 19	88.46	
27	83 $\frac{1}{2}$	30.0 $\frac{1}{4}$	29.9 $\frac{3}{4}$	83 $\frac{1}{2}$	29.9 $\frac{1}{2}$	{ fq, fq, r. NE. V. c. L. all round. V. E by N. fq. h. L. all rd. E. E by N. h. E by N. }			3	55		90.48	88.20	79
28	84 $\frac{1}{2}$	29.9 $\frac{1}{4}$	29.9 $\frac{1}{4}$	84 $\frac{1}{2}$	29.9	{ c. E by N. c. E by N. ENE. E by N. c. fq. E by N. E. fq. c. E by N. }			4	20		90.50	88. 2	142
29	84 $\frac{1}{2}$	30.0 $\frac{1}{2}$	30.0	84 $\frac{1}{2}$	29.9 $\frac{1}{2}$	{ fq, r. c. fq. V. E. fq, r. c. V. ENE. c. ENE. c. h. NE by E. ENE. NE by E. }			15	13		90.39	87.38	152 139 160

in the Ship Grenville, Capt. BURNET ABERCROMBIE, kept by ALEXANDER DALRYMPL

From Greenwich						Latitude		Cor. Long.	Magnetical							
D. D	T. K.	D	S.	O.	D.	A.	O.		Variation.		South Dip					
								Az.	Amp.	Face		MD.	C.D.			
										E.	W.			h. m.	N. lat.	Long.
		E				N	N	E	E							
9						1.37	5.19	88.13	0.53*	{ 7. 7.2 7.1 8. 6.4 6.6 6.5 7.4				{ 11. 0PM 9. 0AM	4.39	88.29
														Very steady.	5.17	88.18
10						2.50	6.13	87. 7		{ 8.2 8.4 8.3 9.2 6.2 6.6 6.4 7.3 5.6 6.2 6. 6.7 5. 5.4 5.2 6.1 4.4 5. 4.6 5.5			{ 1. 0PM 9.15 12.30AM 9.10 0.30 PM	5.23	88.10	
															5.45	88.11
16						3.23	6.38	86.36		5.4	6.2	5.7	6.6	Very steady.	6. 4	87.25
20	79	87. 1	5	0	43	3.28	6.40	86. 3		4.2	4.6	4.4	5.3	Very unsteady.		
22	142	85.40	6	0	38	4.46	8. 2	85.40		{ 3. 3.4 3.2 4.1 1.6 2.2 2. 2.7				{ 1. 0AM 0.30 PM	7.20	86. 2
														Very steady.	8. 5	85.40
8	152	85. 6	5	0	37					{ 0.4 1. 0.6 1.5 0.2 0.6 0.4 1.3 0.0 0.4 0.2 1.1			{ 6.30 9. 0 11.10	8.20	85.39	
	139	85.19	7	0	20	5.57	9.28	85.10		ND.				Very steady.	8.30	85.38
	160	84.58	6	0	21					{ 0.2 0.2 0.0 0.7 1.2 1.6 1.4 0.5 1.2 1.4 1.3 0.4			{ 1. 0AM 9. 0 0.45PM	8.35	85.36	
														Pretty steady,	9.14	85.15.
															Not very steady.	

YMPLE, 1775.

		ML.	
		5484	
mation.			<p>Moderate breezes, and mostly fair. The land bird aboard still. A.M. saw a ship, the Dudley, Capt. BARRINGTON, from Madrafs to the Nicobars and Pegu; the Captain came on board. At 10 faw another ship. Bar. 6 P.M. 29.9. N.B. <i>Standing to SW. from 10 A.M. to 1 P.M. the dipping needle increased in dip, the distance not above 10 miles</i></p>
Long.		73	
88.29			
88.26			
			<p>Winds from NE. with frequent squalls and rain. The land bird aboard still. 1 P.M. spoke the ship Floyer, from Madrafs to Malay Coast, Capt. RICH. Water luminous. Sea bfrd shaped like plover, grey with upper part of head black, and wings tipped with black. Same bird seems to have been about ship several days. Bar. 5 P.M. 29.9. 6. 29.9. 1 A.M. 29.9½. 8. 30.0. 9. 30.0½. 11. 30.0½.</p>
88.18		81	
88.10			
88.11			
87.25			
			<p>Fresh gales and squally throughout. The land bird aboard still. Sea very luminous. P.M. a small mew came on board. Bar. 2 P.M. 29.9½. 10. 30.0. 1 A.M. 29.9½. 8. 30.0.</p>
		87	
			<p>Winds most Easterly, with squalls and rain. Sent a boat on board a country snow with red colours; she was bound from <i>Tranksbar</i> to <i>Acheen</i>. Sight ☉ not very good. Bar. 4 P.M. 29.9½. 6. 29.9½. 12½ A.M. 29.9½. 8½. 30.0½.</p>
		64	
86. 2			<p>Moderate breezes, and mostly cloudy. Bar. 2 P.M. 29.9½. 4. 29.9. 6. 29.9. 12½ A.M. 29.9½. 8. 29.9½. 11. 29.9½.</p>
85 40		78	
pitching.			<p>Increasing breeze from Eastward, with squally weather and rain. Bar. 3 P.M. 29.8½. 4. 29.8½. 6. 29.9. 1 A.M. 29.9. 9. 30.0. 10. 30.0.</p>
85.39		72	
85.38			
85.37			
85.36			
85.15.			
y steady.		5939	

Journal of a Voyage to The East-Indies, in the Ship Gre...

1775	Fr.	Marine Barometer				Weather and Winds.	D. L.			Longitude from			
		R.	S.	Th	D.		N	S	W	E	A.	T.K.	D
		In. Dec.	In. Dec.		In. Dec.								
Nov.						c.							
30	84½	30.2¼	30.0	85	29.9½	c.	NE by E.	} 11	5	90.15	87.19	E	
					c. h.	ENE. NE by E.							
					h.	NE by E.							
Dec.						h.	NE by E. N. NE by N.	} 6	9	90.36	87.34	E	
1	78		30.0	77½	h.	NE by N. NNE.							
					h. c. fq, r.	NNE. NE.							
						fq, r. fq, hr.	NE. V.	} 9	5	91.20	88.13	E	
					iq, r. r.	V.							
					r. c.	V. NE. N by E.							
						c.	N by E. NE by N. NNE.	} 8	9	92.4	89.6	E	
					c.	NE by N.							
					c.	NE by N. NNE.							
						c.	NE by N. NE.	} 4	3	92.16	89.21	E	
					c. h.	NNE. N by E.							
					h. f.	N. NNW. N by W.							
						h.	NNW. NW. NW by W. V.	} 2	5	91.58	89.8	E	
					h. c. L. tonw.	V. WNW.							
					c.	WNW. V.							
						c.	SW. V. SSW.	} 9	9	91.16	88.17	E	
					h.	SSW.							
					h.	SSW. S.							
						h. f.	S. V. SE by S.	} 12	17	89.26	86.10	E	
					f.	SE by S.							
					f.	SE. SE by E.							
						f. fq, r. fq, fr.	SE by E. E. ENE. V.	} 9	9	87.9	83.50	E	
					fq, hr. c.	V. C. NE by E.							
					c.	E by N.							
						c.	ENE. NE by E.	} 12	3	87.9	83.50	E	
					c.	NE by E. NE. NE by E.							
					c.	NE by E.							
						c. f.	NE by E.	} 12	3	87.9	83.50	E	
					h.	ENE.							
					c. f.	ENE. NE.							
						f.	NE. ENE.	} 12	3	87.9	83.50	E	
					f. h.	ENE.							

Grenville, Capt. BURNET ABERCROMBIE, 1775, kept by ALEXANDER DALRYMPLE.

de from Greenwich					Latitude		Cor. Long.	Magnetical				ML.					
T.K.	D. c T.K.	α	S.	O. D.	A.	O.		Variation		South Dip							
							Az.	Amp.	Face		MD.	C.D.					
							°	°	°	°	°	°					
87.19	E	E	E		7.13	10.55	84.55	E	E	4.	4.4	4.2	3.3	Very steady.	79	Moderate b 29.9½. 8	
87.34					7.24	[11. 1]	85.15			3.6	4.2	4.	3.1	Pretty steady.	61	Variable w land bird 1 P.M. 30 12½ A. M	
88.13					7.17	10.50	85.58			2.2	2.6	2.4	1.5	Not steady.	52	First part, very black and it ca A.M. the 4. 29.9. 7½. 29.9½.	
89. 6	97	87.29	4	*A *F	43	7. 8	10.33	86.49		3.	3.6	3.3	2.4	Not very steady.	47	Decreasing land bird. 4. 29.9. 29.9½.	
89.21	116	87.25	6	*A	12	7.52	11.13	87. 2	1.32*	1.41*	5.4	5.6	5.5	4.6	Very steady.	52	Mostly ligh 29.8½. 6.
89. 8					8.39	12. 2	86.47	*1.12	*1.22	6.6	7.2	7.	6.1	Very steady.	50	Light breeze flew like a 7 A.M. 29	
88.17	137	86. 0	6	*P	28	9.42	12.56	85.44		7.6	8.2	8.	7.1	Pretty steady.	75	First part, The same Saw a fnc Bar. 4 P.M. 10. 30.0. 29.9½. 8½	
86.10					11. 0	14. 2	83.45			8.6	9.2	9.	8.1	Pretty steady.	134	Fresh gales, board. A r 4. 29.9½.	
83.50	188 205	80.42 80.15	5 6	*A *A	36 43	11.27	14 17	81.23		9.2	9.6	9.4	8.5	Very steady.	135	Fresh breeze 2½ P.M. 29 30.0½. 9.	

Moderate breezes, and mostly hazy. Bar. 3 P.M. 29.9 $\frac{1}{2}$. 5. 29.9 $\frac{1}{4}$. 8 A.M. 30.0.

Variable winds and weather, with much rain. A.M. a small land bird, probably same we lost some days ago. Bar. 1 P.M. 30.0. 3. 29.9 $\frac{1}{4}$. 4. 29.9 $\frac{1}{4}$. 6. 29.9 $\frac{1}{4}$. 9 $\frac{1}{2}$. 30.0 $\frac{1}{4}$. 12 $\frac{1}{2}$ A.M. 29.9 $\frac{1}{4}$. 7 $\frac{1}{2}$. 30.0. 8. 30.0 $\frac{1}{4}$. 8 $\frac{1}{2}$. 30.0 $\frac{1}{2}$.

First part, squally with rain. Past 6 P.M. weather looked very black and threatening, but the barometer did not fall, and it came to nothing. Middle and latter, moderate A.M. the same land bird. Bar. 2 P.M. 29.9 $\frac{1}{2}$. 2 $\frac{1}{2}$. 29.8 $\frac{3}{4}$. 4. 29.9. 6. 29.9. 9 $\frac{1}{4}$. 30.0. 12 $\frac{1}{2}$ A.M. 29.9 $\frac{1}{4}$. 6. 29.9. 7 $\frac{1}{2}$. 29.9 $\frac{1}{2}$. 8 $\frac{1}{4}$. 29.9 $\frac{1}{4}$. 11 $\frac{1}{2}$. 29.9 $\frac{1}{4}$.

Decreasing breeze, with pleasant weather. A.M. the same land bird. A small mew about ship. Bar. 2 $\frac{1}{2}$ P.M. 29.9. 4. 29.9. 7. 29.9 $\frac{1}{4}$. 12. 29.9 $\frac{1}{4}$. 7 A.M. 29.9 $\frac{1}{4}$. 7 $\frac{1}{2}$. 29.9 $\frac{1}{2}$.

Mostly light airs. A.M. the same land bird. Bar. 2 P.M. 29.8 $\frac{3}{4}$. 6. 29.8 $\frac{3}{4}$. 10. 29.9 $\frac{1}{4}$. 12. 29.9 $\frac{1}{4}$. 7 A.M. 29.9.

Light breezes. A.M. the same land bird. P.M. a land bird, it flew like an owl. Bar. 3 P.M. 29.9. 4. 29.9 $\frac{1}{4}$. 7. 29.9 $\frac{1}{2}$. 7 A.M. 29.9 $\frac{1}{4}$. 11 $\frac{1}{2}$. 29.9 $\frac{1}{4}$.

First part, moderate breezes. Middle and latter, squally. The same land bird on board. A sand lark on board. Saw a snow standing to N^d: it hoisted English colours. Bar. 4 P.M. 29.9 $\frac{1}{4}$. 7 $\frac{1}{2}$. 30.0. 7 $\frac{1}{4}$, in squall, 29.9 $\frac{1}{4}$. 10. 30.0. 12 $\frac{1}{2}$ A.M. 29.9 $\frac{1}{2}$. 12 $\frac{1}{4}$, before hard rain, 29.9. 29.9 $\frac{1}{4}$. 8 $\frac{1}{2}$. 30.0. 9 $\frac{1}{4}$. 30.0.

Fresh gales, with pleasant weather. The same land bird on board. A mottled bird came on board. Bar. 2 $\frac{1}{2}$ P.M. 29.9 $\frac{1}{4}$. 4. 29.9 $\frac{1}{4}$. 6. 29.9 $\frac{1}{4}$. 10. 30.0. 3 A.M. 30.0 $\frac{1}{2}$. 11. 30.0 $\frac{1}{4}$.

Fresh breeze throughout. A small land bird aboard. Bar. 2 $\frac{1}{2}$ P.M. 29.9 $\frac{1}{2}$. 4. 30.0. 6. 30.0. 1 A.M. 30.0. 30.0 $\frac{1}{2}$. 9. 31.0 $\frac{1}{4}$.

1775	Th.	Marine Barometer.				Weather and Winds.	D.L.		D.L.		Longitude from			
		R.	S.	Th.	D.		A.O.	T.K.	A.	TK.	D	I		
							N	S	W	E				
cc.	°	ln.Dec.	ln.Dec.	°	ln.Dec.					°	'	°	'	
9	80		30.1		79½	h. ENE. h. ENE. h. E. h. E. ENE.			22	1	86.18		82.56	
10						f. ENE			6		86.14			

10
1776
Sept

10	At anchor in Madrafs Road, in the Grenville's cuddy (cabbn before the round-houfe)												
	Ashore, in the fort of the Company's houfe near the church,												
28	Ditto,	-	-	-	-	-	-	-	-	-	-	-	-
Oct 3	Ditto,	-	-	-	-	-	-	-	-	-	-	-	-

By the latitude observed at noon, the 9th of December, and the bearings of PULICAT Flag Staff, we were then from Fort St. George, } 0.13 E. 80.42 Longitude 9th n
 Longitude of FORT ST. GEORGE, by eclipse of Jupiter's first satellite, } 80.29 82.56 Longitude by T
 Longitude of 9th noon, by map, - - - 80.42 2.14 Error of Time-
 Longitude by mean of 52 D observations, - - - 80.28
 Difference, - - - - - .14

N. B. There being a very considerable difference in the position of Fort St. George acco-

Lat. 13. 8. 0 N. 7th Oct. 1776, A.D. on board the Swallow sloop of war } ☉ merid. alt. } by a Hadley made by Bird. Long. from
 } ☉ double alt. }
 13. 8. 0 } 1761, Rev. Mr. Hirst, many obs. made not long ago with an excellent quadrant (vide Ph. Tr. vol. LII. part I. 80.28.45 H
 } p 396). N.B. It does not clearly appear whether these obs. were made by Mr. Hirst or by some other person. 80.15. 0 A
 13. 8. 0 } Several observations by Mr. William Nicholson, master of the Elizabeth man of war, p. 48. Remarks 80.24. 0 A
 } and Observations made on a voyage to the East Indies. 80. 2.15 R
 13. 7. 0 Major James Rennell, sur eyor-general of Bengal. 80.41. 0 R
 13. 4. 54 Major William Stevens, chief engineer of Fort St George. 81. 1.45 D
 13. 4. 4, Rev. Mr. William Smith, alt. of *, some to Northward, some to Southward.
 By a survey which has been made of the country from FORT ST. } 14.36" W of Fort St. George. PONDICH
 GEORGE to All. mpawva, All. m. a. va is 17 fathoms miles, or }
 FROM PONDICHERRY, by M. D'après, All. mpawva is } 13. E.
 Fort St. George Eastward of Pondicherry, 27.36

Ship Grenville, Capt. BURNET ABERCROMBIE, kept by ALEXANDER DALRYMPLE, 177

Distance from Greenwich						Latitude		Cor. Long.	Magnetical				ML.	Remarks	
TK.	D. T.K.	D	S.	O.	E.	A.	O.		Variation.		South Dip				
									Az.	Amp.	Face				
											E.	W.	MD.	C.D.	
° ' "	° ' "	° ' "				° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	
E	E	E				N	N	E	E	E					
82.56						11.9	13.37	80.42			5.6	6.2	5.	5.1	Very steady.
						10.47	[13.9]								86
							13.7				5.6	6.6	6.2	5.3	
							13.8				5.6	5.6	5.6	4.7	
											5.6	6.	5.7	5.	
											5.6	6.	5.7	5.	

N.B. All the observations of the dip were taken with the needle standing on the table in the Grenville's round-house towards the starboard side of the ship, except 2d, 3d, 6th, and 8th of October 1775; and 10th and 28th of September, and 3d of October 1776.

made 9th noon by map.
made by Time-keeper.

of Time-keeper since 18th Sept. in 83 days.

urge according to the different observers, I have annexed a view of them.

Long. from Greenwich.

- 80.28.45 Hon. Thomas Howe, eclipse of Jupiter's first satellite, 5th July 1755.
- 80.15.0 A.D. mean of 52 observations, compared together by the Time-keeper, in this Journal.
- 80.24.0 A.D. ☉ and ☽ 7th Oct. 1776, 3 fights ext. diff. 10'.
- 80.2.15 Rev. Mr. Hirst, *Transit of Venus* 1761.
- 80.41.0 Rev. Mr. Smith, by Dr. Maskelyne's calculation, } Em. 27th May 1777.
- 81.1.45 Ditto, by Mr. Smith's calculation, }

PONDICHERY, by M. Le Gentil 1769, is in 11.55.42 N. 79.52.30 E long. from Greenwich.
27.36

Which places Fort St. George in

80.20.6

Pleasant
land; ar
h We

- 2
- 2 1/2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 10 1/2
- 11
- 12

At 6h. 30

At 9h. 40

At noon,

h We

- 1 7/8
- 2 5/8

At 5h. 30

* For ab

6732

8479

15,211

To the Cape

3, 1775.

9th December.

Pleasant gale. At 2 $\frac{1}{2}$ P.M. had soundings, 2S fath. gravelly sand; and at day-light saw the land bearing SW by W.

h	Weather.	Winds.	Course.	K.F.	Soundings.	
2	} h.		E	WSW	30. no ground.	
2 $\frac{1}{2}$					24. gravelly sand.	
3					SbE $\frac{1}{2}$ E	1. 20. 19. 18. 17. ditto.
4					SSE	2. 16 $\frac{1}{2}$. 18. 17 $\frac{1}{2}$. 20. ditto.
5						2. 25. 25 $\frac{1}{2}$. 26. ditto.
6					SSE	2. 25 $\frac{1}{2}$. 25. blue mud.
7						2. 25 $\frac{1}{2}$. 26. ditto.
8					ENE	2. 26. 27. ditto.
9						2.3 27. 26. 25.
10					S	3. 25. 24 $\frac{1}{2}$.
10 $\frac{1}{2}$						2.2 23. 21. 20. 19. 18 $\frac{1}{2}$. 18.
11					S by E	2. 18. 17 $\frac{1}{2}$. 17 $\frac{1}{2}$. 17.
12	SSE	4. 18. to 25.				

At 6h. 30. Armegon Hill, W 13° N 10 or 12 miles off shore. Southernmost part in Pulicat Ridge in sight, SW. The extreme in haze.

At 9h. 40. * A Hill or Grove, W 11° S.

- R 28.30 Sandy Point of Armegon.
- 35.16 White Building.
- 43.38 Ext. in sight to the Northward.
- L 4.37 Highest Peak of Pulicat Ridge.
- 14.25 Kettle Bottom, ditto.
- 22.40 Ext. in sight to the Southward:

At noon, * PULICAT Flag-staff, S 52° W.

- R 33. 6 Kettle Bottom, Pulicat Ridge.
- 46.30 Highest Peak, ditto.
- 50. 0 Sandy Point.
- L 5. 0 Point to Southward of Pulicat.
- 19.30 Tuft near South ext. in sight.

10th December.

h	Weather.	Winds.	Course.	K.F.	Soundings.
1	} f.			S	4.5 27. 23.
2				S by W	4.5 20. 13.

At 5h. 30'. Anchored in Madrafs Road in 10 $\frac{1}{2}$ fath.
* FORT ST. GEORGE Flag staff, S 31° W.
about 4 miles off shore.

- R 14.31 Obelisk and Punch-house in one.
- 18.15 Armenian Church.
- 49.12 White-house on the Sea-beach.
- L 18.47 Nabob's White Building.
- 25. 9 St. Thomas's Mount.
- 28.40 Triplicane Pagoda.
- 29. 6 Peak of 4 Sierras.

er any *weather* marked, implies that
 . imply *squally* with *rain*, *thunder* and
 e all been in the period of six hours,
 ead N denoting that the *latitude* by

Read	D.L.		A.		Long. from Gr.		Latitude	
	A.O.		T.K.		A.	T.K.	A.	O.
	N	S	W	E				
	'	'	'	'	o	'	o	'
—	9							
—	-23							
—	-19							
—	-10							
—	-	-	-	-	—	—	39.30	
—	-26							
—	-20							
—	-16							
—	-	-	-	-	—	—	15.22	
—	-	-	-	-	16.41			
—	-	-	-	-		19		
—	-	-	-	-	—	14 15		
—	-	-	-	-	—	—	3.34	
—	18	-	-	-	10.16			
—	-	-	-	-	10.20			
—	-	-	-	-	11.24			
—	-	-	-	-	12.31			
—	-	-	-	-	—	—	0.33 S	
—	-	-	-	-	—	—	1.23	
—	-	-	-	-	—	—	2.34	
—	-	-	-	-	—	28.14		
—	-	-	-	9				

* D d d 15

ERRATA and ADDENDA in the GRENVILLE'S

For	D.L.		Long. from Gr.		Latitude		Read
	D.L.	A.	A.	T.K.	A.	O.	
	A.O.	T.K.					
July 29th, add 6' to Long. T.K. till 10th August inclusive, and				27.56		31.33	
Aug. 3d, add 11' to Long. A. to 9th August inclusive, and			13.56				
10th, subtract 11' from Long. A. till 18 August inclusive; } and				2.25			
subtract 6' from Long. T.K. till 12th August inclusive, }							
13th, subtract 4' from Long. T.K. till 18th August inclusive, and				7.26			
14th, — — — — —	16						
19th, — — — — —				19.9			
Sept. 20th, subtract 10' from Long. A. till 8th Dec. inclusive, and			21.26				
27th, subtract 20' from Lat. A. till 16th Oct. inclusive, and					36.40		
Oct. 17th, subtract 59' from Lat. A. till 22d inclusive. —					34.57		
23d, — — — — —					29.55		
24th, subtract 41' from Lat. A. till 10th of Nov. inclusive, and					29.4		
Nov. 5th, — — — — —	7						
9th, — — — — —	14						
11th, subtract 31' from Lat. A. till 17th inclusive, and —					2.3		
18th, — — — — —					0.3		
19th, — — — — —					0.3		
20th, — — — — —					0.17		
21st, — — — — —					0.3		
22d, add 31' to Lat. A. till 9th Dec. inclusive, and —					N		
Dec. 9th, — — — — —			86.18		0.9		
10th, — — — — —			86.14				

LE'S JOURNAL.

Read	D. L.			Long. from Gr.		Latitude	
	D. L.	A.	T. K.	A.	T. K.	A.	O.
	A. O.	T. K.	N				
	/	/	/	0	0	0	0
—	—	—	3	—	28. 2	31. 3	
—	—	—	—	14. 7			
—	—	—	—	—	2.19		
—	—	—	—	—	7.22		
—	16	—	—	—			
—	—	—	—	—	19. 5		
—	—	—	—	21.16			
—	—	—	—	—		36.20	
—	—	—	—	—		33.58	
—	—	—	—	—		29.17	
—	—	—	—	—		28.23	
—	5	—	—	—			
—	—	4	—	—			
—	—	—	—	—		1.32	
—	—	—	—	—		N	
—	—	—	—	—		0.28	
—	—	—	—	—		0.28	
—	—	—	—	—		0.14	
—	—	—	—	—		0.28	
—	—	—	—	—		0.40	
—	—	—	—	86. 8			
—	—	—	—	86. 2			

Register of the Dip in His Majesty's Sloop

N. B. The ship having an iron tiller, and much iron about the after part, it was found, the observations taken in were not consistent or meriting confidence. From *Anjengo* they were all taken on the binnacle, which seemed to be the best place in the ship.

		Lat.	Long.	Magnetical						
				Variation		South Dip				
				Az.	Amp.	Face		M.D.	C.D.	
						E.	W.			
1776										
Oct. 14	Ashore at <i>Trinquemalé</i> on Ceyloan.	8° 32' N	81° 30' E	0° W	0° W	3.6	3.6	3.6	4.5	
28	{ At anchor 10 fath. sand and shells, <i>Anjengo</i> Road. }	8.41	76.54	1.12*	1.13*	3.4	3.4	3.4	4.3	Very steady.
30		9.58	75.4			1.6	1.6	1.6	2.5	Pretty steady.
31		9.54	74.24	1.3*	0.53*	2.1	2.1	2.1	3.	Ditto.
Nov. 1	Off <i>Kalpeny</i> .	9.57	73.35	1.25*		1.7	1.7	1.7	2.6	Not very steady.
2	Off <i>Scheulpar</i> . } <i>Lacadivé</i> Ill' }	9.59	72.30			1.5	1.5	1.5	2.4	Pretty steady.
3		9.38	71.18			2.7	2.7	2.7	3.6	Ditto.
4		9.49	70.26	1.30*		3.2	3.2	3.2	4.1	Ditto.
5		9.53	69.11	2.12*	1.54*	3.	3.	3.	3.7	Ditto.
6		9.55	67.35			3.	3.	3.	3.7	Not very steady.
7		10.43	65.30	4.0*	4.3*	1.4	1.4	1.4	2.3	Ditto.
				*4.4	*4.18	ND.	ND.	ND.		{ Not steady, 1
8		11.57	63.22	4.23*		0.4	0.4	0.4	0.3	{ when most at
									ND.	
9		12.45	60.34	5.15*		3.	3.	3.	2.1	Very unsteady.
				*5.37						
10		12.59	57.21	6.0*	6.6*	4.	4.	4.	3.1	Pretty steady.
				*7.4						
11		13.29	55.12	7.30*	7.54*	5	5.	5.	4.1	Ditto.
				*8.24						
12	Off <i>Socotra</i> .	13.16	52.55	7.57*	8.15*	5.4	5.4	5.4	4.5	Ditto.
13		13.28	50.58	9.20*	8.58*	5.6	6.6	6.2	5.3	Very steady.
				*8.59	*9.0					
14	In sight of <i>Coast of Arabia</i> .	13.51	49.37	9.35*	9.32*	7.2	8.6	8.	7.1	Quite steady.
15	Ditto.	13.37	48.33	9.1*	9.30*	8.	9.	8.4	7.5	Ditto.
				*8.46	*9.30					

Sloop of War The Swallow, Captain JOHN ALEXANDER PANTON.

taken in the cabin
 med to be the only

ady.

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steady.

eady, but taken
 most at rest.

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eady.

1776		Lat.	Long.	Magnetical				
				Variation		North Dip		
				Az.	Amp.	Face		MD.
				E.	W.			
Nov. 16	In fight of <i>Coast of Arabia.</i>	12.54	47. 4	9.31* *10.38	9.39* *10.35	6.2	7.2	6.6
17	<i>Cape Aden</i> in fight.	12.41	45.25	*11.25	*11.30	6.2	7.2	6.6
18		12.38	[44. 5]	11. 3* *11.14	11. 5* *11.18	7.2	8.2	7.6
20	At anchor at <i>Mocha.</i>	13.22	44.10	11.35*	11.22*	8.6	9.6	9.2
21	Ditto.	13.22	44.10		11. 2*	8.4	9.4	9.
	<i>Alhore</i> at the <i>Company's factory.</i>	13.20	44.11			9.2	9.6	9.4
22	In fight of <i>Gebel Zeker.</i>	14.24	43.35		11.11*	12.4	12.4	12.4
23	In fight of <i>Gebel Tar.</i>	15.29	43.12	13.10* *13.14	12.50*	14.2	14.2	14.2
24	Ditto.	16. 2	42.49	14. 3* *12.57	13.53*	15.6	15.6	15.6
25		16.24	42.22	14. 2* *13.31	14.10*	16.6	16.6	16.6
26		17. 5	41.54	13.44*	13.50*	19.1	19.1	19.1
27		18.14	41. 0	13.54*	13.58*	20.6	21.	20.7
28		19.36	40.30	13.12* *12.56	13.19* *12.42	24.2	24.6	24.4
29	Off <i>Judda.</i>	20.59	39.56	12.52*	12.59*	26.7	26.7	26.7
30		21.43	39. 3		12.49*	29.6	29.6	29.6
Dec. 1	In fight of <i>Coast of Abyssinia.</i>	21.55	37.57				about	30.
2		22.44	38.24			32.6	32.6	32.6
3		22.46	38.11			32.	32.	32.
4		22.54	37.44			32.4	32.4	32.4
6	At anchor on <i>Coast of Arabia.</i>	24.16	38.29			34.6	34.6	34.6
7	Off <i>Coast of Arabia.</i>	24.17	38.21	14.52*	15. 0*			

North Dip			
7.	MD.	C.D.	
	°	°	
.2	6.6	5.7	Pretty steady.
.2	6.6	5.7	Ditto.
.2	7.6	6.7	Ditto.
.6	9.2	8.3	Ditto.
.4	9.	8.1	Not steady, much wind.
.6	9.4	8.5	
.4	12.4	11.5	Pretty steady.
.2	14.2	13.3	Very steady.
.6	15.6	14.7	Ditto.
.6	16.6	15.7	Ditto.
.1	19.1	18.2	Ditto.
.	22.7	20.	Pretty steady.
.6	24.4	23.5	Ditto.
.7	26.7	26.	Ditto.
6	29.6	28.7	{ Very unsteady, much wind and patching.
u	30.		Very unsteady.
6	32.6	32.	Not very steady.
	32.	31.2	Pretty steady.
4	32.4	31.6	Not very steady.
6	34.6	34.	Pretty steady.

1776	Lat.	Long.	Magnetical						Remarks					
			Variation		South Dip									
			Az.	Amp.	Face		MD.	C.D.						
				E.	W.									
Dec. 8	24.17	38.30	° E	° E	°	°	°	°	Much wind.					
9	24.16½	38.30		14.1*	35.	35.	35.	34.2	Pretty steady.					
10	24.16¾	38.30		13.50*	35.	35.2	35.1	34.3	Very steady.					
11									13.50*	35.	35.	35.	34.2	{ Not very steady, good deal of wind.
14														
15	24.19	38.18			35.	35.	35.	34.2	Not steady, swell from S ^d .					
17	24.25	36.30			35.	36.	35.4	34.6	Much motion, with wind.					
19	25.4	36.10	*11.48	*11.41	36.2	36.2	36.2	35.4	Pretty steady.					
20	25.45	36.26	11.30*	11.40*	38.	38.	38.	37.2	Not very steady.					
21	26.9	36.11			38.4	38.4	38.4	37.6	Pretty steady.					
22	26.25	36.1	12.15*	12.5*	38.6	39.	38.7	38.1	Extremely steady.					
23	26.55	35.38	12.58*	12.46*	39.7	40.7	40.3	39.5	Very steady.					
25									27.36	ab ^t	42.	Very unsteady, much wind		
26													27.47	13.19*
27	27.58				13.29*									
28	28.4				42.	42.	42.	41.2	Pretty steady.					
29	28.16				42.2	42.2	42.2	41.4	Ditto, a little swell.					

Astronomical Observations

	Long. from Greenwich.				Remarks
	D. & T.K.	°	O.S.	E. D.	
Nov. 1	W	73.31.30	6.32		Kalpeny bearing N.
4	E	70.26.	5.15		
6	W	67.5.	5.13		At anchor
7	E	65.52.	4.6		
15	W	47.11.	6.20		20th. Obs ^d glafs, a Per W: Ecl
16	E	46.14.	5.28		
Nov. 19	° E	44.8.18	5.14		At anchor
20		44.16.	5.8		
21		44.6.	3.15	*A	20th. Obs ^d glafs, a Per W: Ecl
24	.21	42.28.	5.13	*A	
29	1.9	38.47.	5.33	*A	Ecl
Dec. 2	.35	37.49.	7.20	°	
3	.38	37.34.	5.15	°	

of War The Swallow, Captain JOHN ALEXANDER PANTON.

	1777	Lat.	Long.	Magnetical						
				Variation.		South Dip				
				Az.	Amp.	Face		MD.	C.D.	
				E.	W.					
	Jan. 2	29.12	32.12	° E'	' E°	43.6	44.	43.7	43.2	} Fresh wind ar of motion.
	3	29.35			12.50*	46.	46.	46.	45.3	
dy, good	4	29.51	32.12			45.2	45.6	45.4	44.7	Perfectly steady.
from S ^d .	5	29.58.12	32.15			45.6	45.6	45.6	45.1	
ith wind.	6	29.58. 1	29.58			45.2	45.2	45.2	44.5	Very steady.
	7					45.2	45.2	45.2	44.5	
						43.6	43.3	43.4	44.	A little wind.
						44.4	44.4	44.4	44.	Ditto.
much wind.	8	29.58.25	29.58			44.5	44.5	44.5	44.	Perfectly steady.
	9					45.5	45.7	45.6	45.1	Ditto.
	10		29.58							
		29.58.10	30. 2							

Observations in The Swallow.

	D. (T.K.)	C	Long. from Greenwich.	
			O.S.	E.D.
at anchor in Mocha Road.	° E'	° ' "		
oth. Observed an immerfion of 1ft fat. of Jupiter with my glafs, a good deal of wind and fhip not very fill,	Dec. 6	.29 37 50.	⊙	3 3
Per watch — — 11. 0.30	1777 Jan. 4 {	32.12.	⊙	3 10
Watch flower than apparent time 1.52.19		32.11.	⊙	5 10
Eclipse per naut. alm. — — 12.52.49	5	32.42.	⊙	5 8
9.56.48	6 {	31.47.	⊙	5 14
2.56. 1 = 44.0.15		32.21.	⊙	5 24

Off Suez.

At anchor in Suez Road.

h wind and good deal
motion.

tly steady.

eady.

e wind.

tly steady.

z *Read.*

XIX. *Journal of a Voyage to The East Indies, in the Ship Grenville, Captain Burnet Abercrombie, in the Year 1775.* By Alexander Dalrymple, Esq. F. R. S.

Communicated by the Honourable Henry Cavendish, F. R. S.

Read January 29, 1778.

EXPLANATION OF THE COLUMNS.

1st, THE date^(a).

2d, The height of the thermometer, according to FAHRENHEIT'S scale. This thermometer belonged to Mr. RUSSELL, and hung in the open air in the balcony.

3d, including four columns, contains the register of the marine barometers, all of which, as well as the thermometers, were made by NAIRNE and BLUNT: those marked R and D are quicksilver, of the kind usually made by them. That marked S is compounded of quicksilver, and of a lighter fluid, for the purpose of making the alterations more visible, which is a very great convenience at sea; a quicksilver thermometer being fixed to it for the sake of correcting its height, the heat by which is set down in the column marked Th. next to that marked S.

4th, The weather and winds in four lines; 1st line from noon to 6 P.M.; 2d, from 6 P.M. to midnight; 3d, from midnight to 6 A.M.; 4th, from 6 A.M. to noon.

In the column of weather, f. denotes fair; sq. squally; c. cloudy; h. hazy; r. rain; hr. hard rain; sr. small rain; dr. r. drizzling rain; sh. showers; th. thunder; l. lightning.

It is proper to remark, that the winds are set down according to the compass, without any allowance for the Variation.

5th in 2, The difference between the daily alteration of latitude by account and observation; N. denoting that the observation was to the Northward of the account; S. that it was to the Southward^(b).

(a) Here, for want of room, the day of the month only is expressed; but in the original journal the days of the week, and of the Moon, are also inserted.

(b) Next to these columns in the original journal are the following, which are left out here only for want of room: Correct course, lee-way variation &c. allowed, and the different courses reduced to one straight course. Distance on that straight course.

Difference of latitude by account,
Difference of latitude by observation,
The departure,

The difference of longitude by account,
The difference of longitude by the time-keeper,

} in minutes of a degree.

6th in 2, The difference between the daily alteration of longitude by the account and time-keeper; W. denoting that the longitude by the time-keeper was to the Westward of account; E. that it was to the Eastward.

The result of those differences indicates the daily effect of current; however an error in the course sailed, or distance run by log, would make the current appear different from what it really was.

7th, The longitude from Greenwich, in seven columns.

1st, The longitude by account.

2d, The longitude by the time-keeper, which was made by ARNOLD, but without his late improvements.

3d, The difference between the longitudes deduced from observations of the Moon and from the time-keeper uncorrected; E. denoting the time-keeper to be to the East of ϵ ; w. denoting time-keeper to West of ϵ . This, admitting the time-keeper not to be liable to any sudden changes in its rate of going, indicates the precision with which the observations of the Moon may be relied on, all circumstances of weather and of the ship's motion considered.

4th, The longitude by observations of the Moon's distance from the Sun or Stars, adjusted, by the log, to the noon nearest the time of observation.

5th, The number of sights or distances observed.

6th, The object whose distance from the Moon was observed; \odot denoting the Sun; * the Star; S. Spica Virginis; R. Regulus; A. Aldebaran; At. Atair; P. Pollux; F. Fomalhaut; An. Antares.

7th, The extreme differences between the highest and lowest observation; expressed in minutes of a degree; when the seconds amount to more than 30, the next minute above is taken, otherwise the next minute below.

8th, The latitude in two columns:

1st, The latitude by account, carried on from the land, in the same manner as the longitude by account.

* D d d 2

2d,

2d, The latitude by *observation*; and where the *latitude* could not be had by *observation*, it is deduced by *account* from the *last observation*, in which case it is included within [].

9th, The *correct longitude* from Greenwich deduced from the *time-keeper corrected* by the *sight of lands*, whereof the *longitudes* are known, and by *observations of the Moon*, taking a *mean* of the several observations of the *Moon* made within a short period of each other. The *error* of the *time-keeper*, between the *longitude corrected by sight of land* or *observations of the Moon*, is supposed to have arisen by the *time-keeper* having altered its rate of going *uniformly* between these observations; and the *intermediate longitudes* are determined by the *time-keeper* on this supposition. Where no observations of the *time* were made, it is deduced by the account from the *last observation of the time*, and is then included within [].

10th, The *magnetical observations of the variation and dip*, in seven columns.

1st, } The varia- { azimuth, } * *before*, denoting the observation to have been in
2d, } tion by { amplitude, } the *morning*; * *after*, denoting the observation to
have been in the *evening*. The *variation* was observed by the officers with the
compasses belonging to the ship.

3d, The *dip* with the *face of the instrument* to the East.

4th, Ditto, ditto, ditto, West.

5th, The *mean dip* of the foregoing observations.

6th, The *mean corrected*, or what is *supposed* to be the *true dip*.

7th, The *circumstances* under which the *observations of the dip* were made.

12th, The *miles run by log*.

The *dip* was observed with a *dipping-needle* belonging to the hon. Mr. CAVENDISH, made by SISSON.

The following *remarks* on the *dipping-needle* and *observations* are by Mr. CAVENDISH.

The ends of the axis of the dipping-needle are made conical, and turn in conical holes of bell-metal, in the manner of Mr. LORIMER'S needle, described in Phil. Transf. vol. LXV. p. 79. The dip was constantly observed both with the face of the instrument to the East and to the West, and the poles were changed twice during the voyage, in order to see whether the needle continued well balanced. The use of this method of observing is explained in Phil. Transf. vol. LXVI. p. 396.

The mean dip corrected is what is supposed to be the *true dip*. The foundation of this correction is as follows.

By the observations on July 12th, when the poles were changed, it appears, that the marked end of the needle was too heavy, so as to make that end point $\frac{1}{16}$ ths of a degree too low at that place; and therefore, if we suppose that the force of magnetism is equally strong in all parts of the earth, the error produced thereby in other places should be to $\frac{1}{16}$ ths of a degree as the cosine of the dip to the radius. The observations also made when the poles were changed at Suez, agree well enough with this supposition: therefore, as in all the observations the marked end of the needle pointed to the North, the mean dip in all that part of the voyage subsequent to July 12th is corrected by subtracting

of a degree from the mean dip,	}	63° and 52°	}	North, and adding as much when the dip is as much South.
		52 43		
when the mean dip is between	}	43 30	}	
		30 0		

But as before the needle left London, changing the poles was found to make very little difference in the dip, the correction in the preceding part of the voyage is made not so great, *videlicet*;

of a degree is subtracted from the mean dip, when that dip is between	}	70° and 62°	}	
		62 52		
		52 43		
		43 35		
		35 30		
		30 25		
		25 0		

The dip was observed on board the Grenville at Deptford, after her return, in the same part of the ship in which the observations were usually made, and was found not to differ more than 5' from that observed with the same needle in a pretty large garden in London, about five miles distant; so that the observations on board the Grenville seem to be not much influenced by the iron-work of the ship.

1775	Th.	Marine Barometer				Weather and Winds.	D. L.		Longitude from Greenwich				S.	O.	E.	D.	Magetical					ML.					
		R.	S.	Th.	D.		A. O.	T. K.	A.	T. K.	D. c T. K.	c					Latitude		Cor. Long.	Variation			Dip				
																	A.	O.		Az.	Amp.		Face		MD.	C. D.	
				N	S	W	E							E.	W.												
May	9	67	30.1 1/2	67		f. h. NNE. h. NNE. E by S. h. E by S. V.	11	13	10.34	10.42	13	10.55	3	36	40.17	38.24	10.42	18.0*	17.43*	67.6	69.	68.3	68.2	Very steady.	96	Decreasing breezes. Changed log-line 48 feet to 29 1/2.	
	10	68	30.0 1/2	67 1/2		f. h. ENE. NE. V. h. V. N by E. h. N. V. h. V. SE by E. ESE. SE.	4	19	11.7	11.34					39.26	37.33	11.34	20 38*	18.36*	67.2	68.4	67.7	67.6	{ Good deal of motion.	55	{ Most part light airs. Several small land birds; two of them, supposed nightingales came on board, very tired; also saw a hawk.	
	11					f. SE by S. C. f. C. ENE. E. f. h. E. NE by E. C. h. V. C.	10	9	11.28	12.4					39.3	37.0	12.4	20.9*	19.57*	66.6	67.6	67.2	67.1	Ship yawing.	29	{ Light airs of wind Easterly, with calms. Some swallows and other land birds, who seem very tired. In the afternoon, during the calm, when the ship's head was to the Southwestward, there was, for a little time, a counter current visible; it made like a wake on the ship's larboard beam, as if she was going broadside foremost.	
	12	67 1/2	30.3 1/2	67 1/2		f. h. NW by W. WNW. NW. h. c. NW by W. f. h. V. NW by W. h. NW by W. C. W by N. W.	16	4	11.52	12.24					38.28	36.9	12.24			65.6	67.2	66.4	66.3	{ Ditto, needle very steady.	41	{ Light airs of wind throughout. P.M. saw two three-mast vessels with latine sails; they were supposed to be Barbary cruisers, but did not come near enough to let us know what they were. Some swallows about the ship.	
	13	66 1/2	30.1	30.0 1/2	66	30.1	f. W by S. WNW. f. h. WNW. NW by W. NW. h. NW. NW by N. c. NNE. N.	21	9	12.35	13.16					37.46	35.6	13.16	20.17*	20.38*	66.	67.	66.4	66.3	{ Ditto, needle very unsteady, bad observation.	62	{ An increasing breeze from the Northward. In the morning there were many petrels in the ship's wake: they continued throughout the day.
	14	65	30.2 1/2	30.2 1/2	65 1/2	30.2 1/2	f. h. NE by N. h. NNE. N. f. c. N. c. N. NNE.	20	8	15.0	15.33					36.36	33.30	15.33	19.28*	19.16*	64.6	65.6	65.2	65.1		138	{ Fresh breezes, with some squalls. At noon saw Porto Santo from the mast-head, W by S. per compass.
	15	67 1/2	30.2	67 1/2		f. h. NNE. f. c. NNE. NE by N. f. c. NE by N. NE. W by N. c. WNW. C. W.	25	14	15.59	16.46					35.50	[32.24]	16.46			64.2	65.6	65.	64.7		84	{ In Funchal road. Major SEARL informed us, that Mr. SEARL, in consequence of our request, tried the therm. for 10' in a cool cellar, and found it 68°. N. B. Captain ALCOCK informed me, he observed the therm. on May 14, 1776, at 6 A.M. at Funchal 68°, and in the cellar 61°; and Mr. SEARL wrote to Mr. CAVENDISH, that on the 16th of May the therm. which stood at 69°, was carried down at 1 P.M. to a cellar, where it remained till 4 o'clock, and then was found to be at 62°, so that Major SEARL's account was probably erroneous.	
	16	65 1/2	30.1 1/2	30.1 1/2	65 1/2	30.0 1/2	c. W. c. W. V. NE by E. c. NE by E. E by N. h. E by N.	2	7	By acct from Madeira in [16.50] 16.56	16.41					31.18	31.20	16.41			63.2	64.6	64.	63.7		67	{ First part, light airs. Middle and latter, pleasant breezes and smooth weather; several boats came off from Funchal.
	17	67 1/2	30.1 1/2	67 1/2		f. h. NE. h. c. NE by E. c. E by N. E by S. c. E by N. ESE.	18	2	17.3	16.50					29.57	29.41	16.50			62.2	63.6	63.	62.7		81	{ These 24 hours pleasant breeze from Eastward.	

1775	Th.	Marine Barometer				Weather and Winds.	D.L. A.O.	D.L. T.K.	Longitude from Greenwich				S.	C.	D.	E.	Magnetical						ML.	T.S. denotes the temperature of the sea-water taken up in a bucket about noon, and the thermometer immersed in this bucket for some minutes.											
		R.	S.	Th.	D.				A.	TK.	D.D.	D.					Latitude		Cor. Long.	Variation.		Dip													
		In. Dec.	In. Dec.	°	In. Dec.				°	'	°	'					°	'		°	'	Az.			Amp.	Face	MD.	C.D.							
May 18	69	30.2	30.1½	68½	30.2	h.		°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	1273	
						h.		W	W	W	W			°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	53	Light breezes and smooth water. At noon, Peak of Tenerif 8 50° E.
						h.								°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	74	Pleasant breezes from the Eastward. At noon, Peak of Tenerif (variation allowed) bore N 24° 30' E, which bearing, and the difference of latitude places it 27' to the Eastward of our situation at noon, when in 16° 55' long. by time-keeper, and consequently by time k. 16 28 is the longitude of Peak of Tenerif, only 4' less than PEREGRINUS makes it; but, by the observations of the Moon, on the 11th and following days, it appears, the ship was 1° farther West than the time-keeper represented, which difference arose since the 9th of May, if the Lunar observations were to be relied on.
						h.								°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	70	Light breezes and smooth water throughout. Several petrels in the wake.
						h.								°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	106	Pleasant trade. In Captain PEREGRINUS's chart there being soundings laid down not far to the Eastward of our situation, founded at 8 P.M. but had no ground 40 fath. Several petrels in the wake of ship.
						h.								°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	87	Light breezes with smooth water throughout. Many petrels. N.B. There was apparently an error in this day's long. by time-keeper. The succeeding days diff. long. was as much less as this day's was more than account. I have here corrected it as conformable to the Lunar observations. T.S. 69°.
						h.								°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	115	In the evening, the water appeared of a muddy green, like soundings; but did not found. An increasing trade with fair weather, the water continuing of same colour. T.S. 69°.
						h.								°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	153	These 24 hours a fresh trade, and usually fair weather, the water remaining the same as before. T.S. 68½.
						h.								°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	150	Fresh trade and hazy weather. In the afternoon the sea remarkably confused, breaking different ways. Sounded in the morning, but had no ground 40 fath. In the morning the water appeared blue again. T.S. 71°.
						h.								°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	59	Light breezes chiefly. In the night, no ground 70 fath. There were many bladders in the ship's wake, which made a very luminous appearance: they seemed in shape like a sausage about 8 or 9 inches long. In the day, sea was covered with Portuguese men of war, of which took up several; also some pilot-fish and skip-jacks. T.S. 74°.

1775	Th.	Marine Barometer				Weather and Winds.	D. L.		Longitude from Greenwich				Latitude		Cor. Long.	Magnetical					ML.			
		R.	S.	Th.	D.		A. O.	T. K.	A.	T. K.	D. c T. K.	c	S.	O.		D.	Variation		Dip					
																	Az.	Amp.	Face			MD.	C.D.	
In. Dec.	In. Dec.	°	In. Dec.	D. L.	N	S	W	E	A.	O.	°	'	°	'	°	'	°	'	°	'	°	'	°	'
May	27	76 1/4	30.0 1/4	30.0	76	30.0			W	W	E	W	N	N	W	W	W	W	46.	46.4	46.2	45.7	2140	Light airs of wind, variable, with very damp weather. In the night, no ground 40 fath. Many fish about the ship; some under the quarter, darting through the water, and making streaks of light in various directions, had a fine appearance. T.S. 75°.
	28	78 1/4	30.0	30.0	78 1/4	30.0							14.28	12.45	17.34		13. 0°	44.4	45.	44.6	44.3	82	Light breezes throughout. In the night, lightning to the Eastward. Many luminous blubbers and fish about the ship in the night. Passed several turtle. Had ground at 11 A.M. 32 fath. coarse sand, with black specks and shells. At noon, 30 fath. coarse sand and flat coral. T.S. 75 1/2°.	
	29	80	30.1	30.1 1/2	80	30.1							13.57	12.12	17.19		12.37*	12.44*	43.6	44.	43.7	43.4	37	First and latter, light breezes. Middle, calm. Great many fish about the ship, and in the morning vast flocks of birds. Soundings, sand of various kinds from 28 to 17 1/2 fath. at 8 A.M.; at 9 A.M. 21 fath. blue mud; and at 11 A.M. no ground 35 fath. T.S. 77°.
	30	77 1/2	30.0 1/2	30.0 1/2	77	30.0 1/2							13.26	11.43	17.12		12.36*	42.6	43.4	43.1	42.6	32	Light airs and calm. At 5 P.M. 56 fath. green mud. At midnight, 45 fath. blue mud. In the night, the water very luminous when put in motion, and many shoals of fish looking like breakers. A.M. a turtle passed; vast flocks of sea birds. At noon, the sea covered with Portuguese men of war, like the ground with leaves in Oct. 23 f. blue mud. T.S. 76 1/2°.	
	31	80	30.0 1/2	30.0	80	30.0							12.22	10.40	17.20		12.24*	12.42*	41.6	42.4	42.1	41.5	69	Most part pleasant land and sea breezes. At midnight, a hard squall from the land: it was preceded by great deal of lightning over the land, and long threatening before the squall came off. It rose in a dark black cloud, with a white streak like a bow under it, and below this very dark. It came off very hard, and raised the spray of the sea in a foam. P.M. Soundings, 25 to 21 fath. sand. A.M. No ground 60 and 40 fath. T.S. 80°.
June	1	82 1/2	30.1	30.1	82 1/2	30.1							11.40	10. 8	16.50		13. 7*	12.46*	41.	42.	41.4	41.	53	Major part, light breezes. P.M. No ground 40 to 80 fath.
	2	82 1/2	30.0 1/2	30.0 1/2	82 1/2	30.0 1/2							11.14	9.59	16.26		12.35*	12.31*	40.4	41.2	40.7	40.3	39	First and latter parts, pleasant breezes from Westward. The middle, calm, with hot sultry weather. At midnight, 80 fath. coarse black sand, with bits of coral. At noon, 26 fath. coarse brown sand. T. S. 81°.
	3	82 1/2	30.0 1/2	30.0 1/2	81 1/2	30.0 1/2							10.38	9.15	16.09		12.48*	12.55*	38.6	39.6	39.2	38.6	45	Major part, light airs. Many sharks about the ship; above a dozen in sight at once; caught one. P.M. Soundings 27 to 35 fath. At noon, no ground 88 fath. T.S. 80 1/2°.
	4	81 1/2	30.0 1/2	30.0 1/2	80 1/2	30.0 1/2							10.23	9.10	15.58				38.4	39.2	38.7	38.3	34	The first part, light breezes of wind from the Southward. The latter, mostly calm, with hot weather. In the evening, the clouds very remarkable; some appearing like dirty wool, and apparently very near all round the horizon; the sky above, in many places, a fine pink, and bluish grey beneath it. In the morning, many grampusses about the ship. At noon, ground 60 fath. T. S. 81 1/2°.
																						2577		

1755	Th.	Marine Barometer,				Weather and Winds.	D.L. A.O.	D.L. A.T.K.	Longitude from Greenwich				S.	E.	D.	Latitude		Cor. Long.	Magnetical					ML.		
		R.	S.	Th.	D.				A.	TK.	D.) T.K.	D				A.	O.		Az.	Amp	Dip		C.D.			
		In.Dec.	In.Dec.	°	In.Dec.																E.	W.	MD.		C.D.	
June	5	30.0½	30.0½	80½	30.0½	h.c. C. W by S. c. L. all r. r. W by S. WSW. V. NNW. r. h. sq. and hr. sq. r. NNW. SE by E. E by S. V. h. V. S by E. SSE.	10	20	15.43	14.28														2577	Mostly light breezes. Past a P.M. a hard squall, with great deal of thunder, lightning, and rain. P.M. a boat came on board from the Polly, a whaling vessel, from Boston in New England; the vessel was hull down when they came aboard. A.M. spoke with the Mary, Captain JONES, from Liverpool to Sierra Leon. P.M. 40 to 36 fath. coarse sand. A.M. no ground 55 fath. T.S. 83°.	
	6	30.0½	30.0½	83	30.0½	f. C. V. f. L. to Eastw. SW by W. h. sq. r. L. all r. r. c. E by S. SE. E. E by N. c. f. E by N. C. SSE. S by E.	11	8	15.41	14.34														38	Mostly light airs and calms. At midnight, a violent gust of wind came off: its violence did not continue above a minute or two; but brought much rain, and was attended with thunder and lightning. A.M. no ground 83 fath. T.S. 82°.	
	7	30.1½	30.1½	82½	30.1½	h. SE by S. S by E. C. h.c. V. SSE. SE by S. c. sq. S by W. V. C. sq. c. C. S by E. SSE. S.	11	19	15.41	14.53															31	Light airs chiefly: a long swell from the SW. T.S. 82°.
	8	30.1½	30.1½	83	30.1½	c. hr. and L. to s.w. S. C. V. SW. sq. c. sq. SW. SW by W. SW. e. C. c. f. C.	23	12	15.22	14.22															30	First, light airs. Middle, fresh breezes and squally. Latter, calm. At midnight, carried away the main and fore-top-mast by the badness of the rigging. Had, for some hours, a pretty fresh SW wind; but not enough to have endangered the top-masts had the rigging been good. At 11 got fore-top-mast up. T.S. 83°.
	9	30.0½	30.0½	84	30.0½	h. C. h. L. to westw. C. h.c. C. W by S. c. W by S.	3	3	15.28	14.14															6	Mostly calm, with swell from Southward. At 9 A.M. got up main-top-mast. T.S. 82°.
	10	30.0½	30.0½	80½	30.0	f. c. sq. r. W. NNE. sq. r. c. NNE. V. C. c. L. to E. hr. C. V. C. ENE. r. c. ENE. V. SW by W.	3	19	15.0	14.15	53	15.8	5	8.48	8.1	7.43	15.51								35	First, fair. Middle, squally, with hard rain. Latter, variable, with calms. T.S. 81°.
	11	30.0½	30.0½	76½	30.0½	c. sq. r. SW. SW by S. c. f. c. sq. r. SW. sq. r. SSW. SW. WSW. hr. r. WSW. V.	30	24		14.19															64	Cloudy and rainy, with a gentle breeze: great swell from Southw. T.S. 81°.
	12	30.0½	30.0½	82	30.0½	hr. V. SW. fr. r. c. SW. SW by S. SSW. c. r. SSW. C. V. c. C. V.			14.4	12.55	58	13.53	3	5.39	6.53	7.5	14.39								22	Calm and cloudy: great long swell from Southward. A.M. a very large shark was struck with the harpoon; but it broke the harpoon, and got off. Many fish and birds. T.S. 82°.
	13	30.0½	30.0½	81½	30.0½	c. WNW. NW. c. L. to westw. NW. c. NW. NW by N. c. th. L. to SW. V. NNE.		2	13.50	12.39	115	14.34	3	5.15	6.25	6.37	14.27	13.18*							31	Light airs and cloudy through. Many fish and birds. P.M. no ground 70 fath. A.M. hooked a shark. T.S. 81°.
																									2882	

1775	Th.	Marine Barometer,				Weather and Winds.	D.L. A.O.	D.L. A.T.K.	Longitude from Greenwich				S.	O.	E.	D.	Latitude		Cor. Long.	Magnetical				ML.																						
		R.	S.	Th.	D.				A.	TK.	D. D T.K.	D					A.	O.		Az.	Amp.	Dip			MD.	C.D.																				
		In. Dec.	In. Dec.	In. Dec.	In. Dec.				N	S	W	E					E.	W																												
July 13	76	30.2½	30.2½	76	30.2½	h. fq. r. SE by E. SE by S. SE by E. fq. r. c. E by S. SE. c. SE. SE by S. SSE. c. SE by S. S by E. SSE.	2	6	23.30	25.47							S.	S.	W	W	W	W	3-4	3-4	3-4	3-4	4942	First part, fresh gales and squally. Latter, moderate and fair. A.M. Fog Bank exactly like an island, the outline perfectly well defined, except the extremities: I never before saw any cloud so like land. T.S. 74°. Changed the poles of the dipping-needle. Mean of the various trials changed and re-changed 3½ S. viz. <table border="1"> <tr><td>E.</td><td>W.</td><td>MD.</td></tr> <tr><td>4-4</td><td>4</td><td>4-1</td></tr> <tr><td>2-6</td><td>3</td><td>2-7</td></tr> <tr><td>4-4</td><td>4-6</td><td>4-5</td></tr> <tr><td>2-4</td><td>2-4</td><td>2-4</td></tr> <tr><td>Mean</td><td>3-4</td><td>3-4</td></tr> </table>	E.	W.	MD.	4-4	4	4-1	2-6	3	2-7	4-4	4-6	4-5	2-4	2-4	2-4	Mean	3-4	3-4
E.	W.	MD.																																												
4-4	4	4-1																																												
2-6	3	2-7																																												
4-4	4-6	4-5																																												
2-4	2-4	2-4																																												
Mean	3-4	3-4																																												
14	76	30.3½	30.3	76	30.2½	1. fq. SE by S. SE. fq. l. SE by E. SE by S. c. fq. c. SE by S. SE. c. l. SE. SE by E. SE.	3	9	24.27	26.53							17.46	16.59	28.45	1.48*	1.36*	5-2	5-4	5-3	6-2	104	Constant trade wind. T.S. 74°. Not very steady.																			
15	76½	30.2½	30.2½	76½	30.2½	f. c. fq. SE. SE by S. SE. c. r. c. fq. r. SE by E. SE by S. SSE. V. fq. r. c. SE. c. h. SE by E.	1		25.20	27.45							18.58	18.11	29.39	1.21*		7-4	8.	7-6	8-5	88		First part, moderate. Middle, hard squalls and rain. T.S. 74°.																		
16	74½	30.3½	30.3	74½	30.2½	c. SE. SE by E. c. SE by E. ESE. c. E by S. SE by E. E by S. SE by E. c. SE. ESE.	1	1	25.42	28.8								19.47	19.1	30.4	0.42*		9-2	9-6	9-4	10-3	54	A.M. saw a bird like a booby, but shorter winged and necked, called by sailors, poor John. Light breezes, swell much abated. T.S. 74°.																		
17	73	30.4	30.3½	73	30.3½	c. SE by E. V. SSE. V. ESE. c. fr. fq. SE by E. V. SE. fq. fr. SE by E. V. fq. fr. c. fq. SE. E by S. ESE.	2	5	26.2	28.33	105	30.18	3	11	31			20.47	19.59	30.31			11.	11.2	11.1	12.	69	P.M. to the NE. the clouds very remarkable, being in white curved rays, like the variation chart. At 7 A.M. saw Trinidad from mast-head SSE. At 9 visible from deck. At noon, Trinidad S 36° E 11 leagues. Major part, moderate breezes and cloudy weather; winds variable and smooth water. By the bearings of Trinidad at noon, allowing it to lye in 20° 27' S according to Dr. HALLEY. <table border="1"> <tr><td>Its longitude per T. K.</td><td>28.13 W</td><td>28.13</td></tr> <tr><td>Mean diff. T.K. and D 8 obf. ⊙</td><td>1.58</td><td>8 obf. ⊙ 1.12</td></tr> <tr><td>and 1*</td><td></td><td></td></tr> <tr><td>Long. 8 obf. ⊙ and 1 obf. ⊙ At.</td><td>30.11</td><td>8 obf. ⊙ & D 30.15</td></tr> <tr><td>By Dr. HALLEY,</td><td>29.10</td><td>29.50</td></tr> <tr><td>Diff.</td><td>0.11</td><td>0.35</td></tr> </table> T.S. 74°.	Its longitude per T. K.	28.13 W	28.13	Mean diff. T.K. and D 8 obf. ⊙	1.58	8 obf. ⊙ 1.12	and 1*			Long. 8 obf. ⊙ and 1 obf. ⊙ At.	30.11	8 obf. ⊙ & D 30.15	By Dr. HALLEY,	29.10	29.50	Diff.	0.11	0.35
Its longitude per T. K.	28.13 W	28.13																																												
Mean diff. T.K. and D 8 obf. ⊙	1.58	8 obf. ⊙ 1.12																																												
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Long. 8 obf. ⊙ and 1 obf. ⊙ At.	30.11	8 obf. ⊙ & D 30.15																																												
By Dr. HALLEY,	29.10	29.50																																												
Diff.	0.11	0.35																																												
18	75½	30.4	30.3½	75½	30.3½	l. SE by E. SE. l. c. SE by E. c. SE by E. SE. c. l. SE. E by S. ESE. E by S.	8	4	26.29	29.4	138	31.22	3	⊙	11			22.9	21.29	31.15	0.20*	0.13*	13.	13.	13.	13.7	87	At Sun-set, Trinidad E by S ½ S 8 or 9 leagues. T.S. 76°.																		
19	73½	30.4	30.3	73½	30.3	c. fq. c. ENE. fr. fq. V. ESE. r. fq. r. f. fq. r. V. C. NE. V. fq. r. c. l. C. N. V. N.			26.12	28.47	145	31.12	3	⊙	15			22.48	22.8	30.59	0.44*		14-4	14-4	14-4	15-3	47	Mostly light breezes and cloudy. T.S. 74°.																		

1775	T.	Marine Barometer				Weather and Winds.	D.L. A.O.	D.L. A.T.K.	Longitude from Greenwich				S.	O.	E. D.	Latitude		Cor Long.	Magnetical					ML.		
		R.	S.	Th.	D.				A.	T.K.	D. c T.K.	c				Az.	Amp.		Face		MD.	C.D.				
		In. Dec.	In. Dec.	In. Dec.	In. Dec.														E.							
Aug. 19	60	30.1	30.0	60	30.0	h. dr. fr.	N by E. WNW. NW by N. NW by N. WNW. V. V.	7	8	19.49	19.9					S	S	18.6	W	W					8365	Most part, light breezes and hazy. At 2 P.M. saw the land from mast-head ESE. per compass.
20	61	30.0	30.0	60	29.9	h. h. h. h.	NNW. N. V. NE by N. N by E. N. NNE. N by E. NE.										34.15		22.31*	45.6	45.6	45.6	46.3	Very steady.	70	Major part, moderate and hazy. In False Bay. At 4 h. Cape Good Hope, E 16° S. Sunrise L. ext. N 21° E. R 2.18 Bluff Point in one with Hummock. 7.10 Cape Good Hope * 2d. 86.6 Hanglip. * 2d Cape Good Hope. L 24.10 Hummock, called Cape last night. 7.0 Hummock. 1.10 Outer Hummock and highest part diff. Ridge. R 13.48 Hanglip. Bellows, E 15° S. Sunrise, Hanglip, S 47° E. Cape Good Hope, S 36° W. White Sand Hills in Symmon's Bay, N 33° W. At noon { Hanglip Point, S 35° E. Cape Good Hope, S 50° W. Noah's Ark, NW about 4' dist. N. B. All these bearings are by compass, without allowing for variation.
21																									8479	At 4 P.M. being calm, hoisted out the pinnace, and towed in towards the harbour. At 7 anchored in 20 fath. Noah's Ark W. Roman Rock NW 1/4 W dist. about two miles.

Aug. 21	Strong gales and squally.	S. S by E.	At 4 A.M. found ship drove, veered to a whole cable; got down top-gallant yards, lowered fore and main yards, and got sheet anchor overboard.
22	{ Fresh gales with hard squalls. P.M. increasing.	S by E.	
23	{ Strong gales and excessive hard squalls. Towards midnight began to moderate.		At 8, gale increasing, fwayed up lower yards. At noon, close reefed top-sails, flopt the cable, and came to fail.
24	Moderate and fair.	SE.	At 1 P.M. anchored in Symmon's Bay, in 7½ fath. when moored, lower flag staff from Point WSW. Dolphin's Nose NE. Roman Rocks E½S. Noah's Ark SE. Hanglip SE½S off shore ¼ of a mile.
25	Moderate and cloudy.	NW.	
26	Fresh breezes, with some rain.	W. SW.	
27	{ Light breezes mostly from SE. with fair weather.	SE.	
28	Light breezes and fair.	V.	Sailed a Dutch snow.
29	{ First and middle, moderate and cloudy, with some rain. Latter, squally.	NW to W.	Sailed La Bretagne, Capt. MANSON for Mauritius.
30	Strong gales and clear weather.	SW.	Returned.
Sept. 1	Moderate and fair for most part, and a swell.	SSE.	
2	Strong gales and hard squalls.	SE.	
3	{ Major part, squally with rain. Towards evening, light breezes and fair.	NW.	Sailed again.
4	Moderate and fair.	V.	
5	{ Strong gales and very hard squalls; could not send a boat ashore.	S by E.	
6	Moderate and fair.	V.	
7	{ Mostly light breezes. P.M. a fresh gale.	V.	Sent long-boat to endeavour taking up the anchor: returned with 80 fathoms of cable, but could not weigh the anchor.
8	Moderate breezes.	W.	
9	Moderate and fair.	SW.	
10	Strong gales and hard squalls.	V.	
11	Light winds from Southward, and fair weather.	S by E.	
12	Fair.	S.	
13	Fair.	V.	
14	Light airs and	V.	Sailed the Anson, Capt. TRYON, for England.
15	first part, calm: Latter part, breezes,	C.	
16	Fair.	C. W.	Sent long-boat again to try for the anchor, but could not purchase it.
17	Strong gales, with rainy weather.	V.	
18	Fresh gales.	NW.	
		NW.	

1775	Th.	Marine Barometer,				Weather and Winds.	D.L. A.O.	D.L. T.K.	Longitude from Greenwich				S.	O.	E.	Cor. Long.	Magnetical						ML.	G denotes Capt. Money's Observations in the Gutten, the longitude reduced to <i>mean</i> .						
		R.	S.	Th.	D.				A.	TK.	D. by T.K.	D.					Latitude		Variation		South Dip									
																	A.	O.	Az.	Amp.	Face	MD. C.D.								
Sept.	28	62½	30.3	30.2½	62½	30.2	9		E	E	E	E				S	S	E	W	W							885			
		In. Dec.	In. Dec.		In. Dec.																							86	Pleasant breeze. Many alcastraffes, pintado birds, pettrils, &c. Bar. 3 P.M. 30.1½. 6. 30.2. 10. 30.2½. 12. 30.2½. 8 A.M. 30.2½.	
																												144	Major part, fresh gales. Many alcastraffes, pintado birds, pettrils, &c. Gutten, var. az. 28° 13' W. Bar. 1 P.M. 30.2½. 5. 30.1½. 9. 30.1. 12. 30.0½. 6 A.M. 29.9½. 8. 29.9½. 10. 29.9½.	
																												153	First and middle, fresh gales, with hard squalls, thunder, lightning, and rain. Latter, blowing fresh and hazy weather. Many pettrils, pintado birds, &c. and A.M. one silver bird. Bar. 2 P.M. 29.8½. 4½. 29.8½. 5½. 29.7½. 6. 29.7½. 8½. 29.8½. 9½. 29.9. 11. 29.3.	
Oct.	1	61½	30.3½	30.3	61	30.2½	19																					64	First part, fresh gales. Latter, light breezes and calm. A.M. many alcastraffes, &c. Bar. 2½ P.M. 30.2. 5. 30.2. 9. 30.3. 12. 30.3. 6 A.M. 30.3½. 8. 30.3½. 11½. 30.3.	
																													85	First part, light breeze. Latter, fresh. P.M. many alcastraffes, &c. G long. ☉ and ☌, 45° 31' E. Bar. 5½ P.M. 30.3. 8. 30.3. 12. 30.2. 8 A.M. 30.1½.
																													110	Moderate breezes throughout, weather changeable. Few birds, great dews, and water remarkably smooth. G var. 4 az. 26° 46', amp. 26° 47'. Bar. 2 P.M. 30.1½. 6. 30.1½. 12. 30.1½. 8 A.M. 30.2½. 5½. 30.3.
																													132	Moderately fresh gales. Some pintado birds. A.M. great dews; water smooth. G long. ☉ and ☌, 50° 39' E. Bar. 1½ P.M. 30.2½. 4. 30.2½. 7½. 30.2. 12. 30.2. 6 A.M. 30.2½. 9. 30.3.
																													143	Fresh breezes. Some pintado birds. A.M. one pettril. G var. 4 az. 26° 9', amp. 26° 7'. Bar. 2 P.M. 30.2½. 6. 30.2½. 8 A.M. 30.1½. 8. 30.2. 9½. 30.1½.
																													106	First part, fresh gales. Latter, light and variable. P.M. an alcastraff. A.M. several alcastraffes and pintado birds. G var. 2 az. 24° 41'. Bar. 1½ P.M. 30.2. 4. 30.1½. 6. 30.1½. 10. 30.2. 12. 30.1½. 8 A.M. 30.1½. 9. 30.2.
																													53	First and middle, light breezes and rain. Latter, light breezes and fair weather. P.M. a north pettril; several alcastraffes and other birds. Bar. 2½ P.M. 30.1½. 5. 30.1½. 6. 30.2. 9½. 30.1½. 12. 30.1½. 8 A.M. 30.2½.

1775	Ft.	Marine Barometer				Weather and Winds.	D.L. A.O.	D.L. T.K.	Longitude from Greenwich				S.	O.	D.	Latitude		Cor. Long.	Magnetical				ML.			
		R.	S.	Th	D.				A.	T.K.	D. c.	ε				A.	O.		Az.	Amp.	South Dip			C.D.		
		In. Dec.	In. Dec.	In. Dec.	In. Dec.				N.	E.	W.	E.				E.	E.		E.	E.	E.	W.			MD.	
Nov. 30	84½	30.2½	30.0	85	29.9½	11	5	90.15	87.19						S	S	E	E	E					5939	Moderate breezes, and mostly hazy. Bar. 3 P.M. 29.9½. 5-29.9½. 8 A.M. 30.0.	
Dec. 1	78		30.0	77½		6	90.36	87.34							7.24	[11. 1]	85.15			4.	4.4	4.2	3.3	Very steady.		61
2	82½	30.0	29.9½	82	29.9½	9	91.20	88.13							7.17	10.50	85.58			2.2	2.6	2.4	1.5	Not steady.	52	Decreasing breeze, with pleasant weather. A.M. the same land bird. A small mew about ship. Bar. 2½ P.M. 29.9. 4. 29.9. 7. 29.9½. 12. 29.9½. 7 A.M. 29.9½. 7½. 29.9½.
3	83½	30.0	29.9	83½	29.9	8	92.4	89.6	97	87.29	4	*A 43			7.8	10.33	86.49			3.	3.6	3.3	2.4	Not very steady.	47	
4	83	30.0	29.9½	83½	29.9	4	92.16	89.21	116	87.25	6	*A 12			7.52	11.13	87.2	1.32*	1.41*	5.4	5.6	5.5	4.6	Very steady.	52	Light breezes. A.M. the same land bird. P.M. a land bird, it flew like an owl. Bar. 3 P.M. 29.9. 4. 29.9½. 7. 29.9½. 7 A.M. 29.9½. 11½. 29.9½.
5	84	30.0½	29.9½	83½	29.9½	2	91.58	89.8							8.39	12.2	86.47	*1.12	*1.22	6.6	7.2	7.	6.1	Very steady.	50	
6	83	30.0	30.0	83½	29.9	9	91.16	88.17	137	86.0	6	*P 28			9.42	12.56	85.44			7.6	8.2	8.	7.1	Pretty steady.	75	Fresh gale, with pleasant weather. The same land bird on board. A mottled bird came on board. Bar. 2½ P.M. 29.9½. 4. 29.9½. 6. 29.9½. 10. 30.0. 3 A.M. 30.0½. 11. 30.0½.
7	80½	30.0½	30.0½	80½	29.9½	12	89.26	86.10							11.0	14.2	83.45			8.6	9.2	9.	8.1	Pretty steady.	134	
8	81½	31.0½	31.0	81½	30.0½	12	87.9	83.50	188	80.42	5	*A 36			11.27	14.17	81.23			9.2	9.6	9.4	8.5	Very steady.	135	

In the explanation of *weather* dr. denotes *drizzling rain*, and a comma (,) after any *weather* marked, implies that *all the weathers*, so separated by *comma*, are connected: thus, fq, r, th, L. imply *squally with rain, thunder and lightning*: fq. r. th, L. imply *squally, rain, thunder and lightning*, to have all been in the period of six hours, but not at the same time.

In the explanation of the 5th column, for N denoting that the *observation* read N denoting that the *latitude by observation*.

For	D.L. Long. from Gr.					Read										
	D.L. A.O.		A. T.K.		Latitude		D.L. A.O.		A. T.K.		Latitude					
	N	S	W	E	A.	TK.	A.	O.	N	S	W	E	A.	TK.	A.	O.
	'	'	'	'	° E'	'	'	'	'	'	'	'	'	'	'	'
May 2d,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10th, add 4' to Lat. A till 15th inclusive, and	—	—	—	—	—	—	—	39.26	—	—	—	—	—	—	—	—
14th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.30
15th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18th, in column ^{D. 3} T.K. for W read E	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22d,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
27th, subtract 10' from Lat. A till 20th of June inclusive, and	—	—	—	—	—	—	—	15.32	—	—	—	—	—	—	—	15.22
June 1st, subtract 10' from Long. A to 25th of June inclusive, and	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21st, subtract 11' from Lat. A till 1st July inclusive, and	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
26th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
27th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
28th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
29th, add 13' to Long. A till 2d August inclusive, and	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
July 2d,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3d,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4th, add 21' to Lat. A. till 19 August inclusive, and	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24th, add 2' to Long. T.K. till 28th July inclusive, and	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
28th,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

For	D. L.		Long. from Gr.		Latitude		Read	D. L.		Long. from Gr.		Latitude		
	A. O.	T. K.	A.	T. K.	A.	O.		A. O.	T. K.	A.	T. K.	A.	O.	
	S	W/E						N	S	W/E				
July 29th, add 6' to Long. T.K. till 10th August inclusive, and Aug. 3d, add 11' to Long. A. to 9th August inclusive, and 10th, subtract 11' from Long. A. till 18 August inclusive; } and subtract 6' from Long. T.K. till 12th August inclusive, } 13th, subtract 4' from Long. T.K. till 18th August inclusive, and 14th, — — — — — 19th, — — — — — Sept. 20th, subtract 10' from Long. A. till 8th Dec. inclusive, and 27th, subtract 20' from Lat. A. till 16th Oct. inclusive, and Oct. 17th, subtract 59' from Lat. A. till 22d inclusive. — 23d, — — — — — 24th, subtract 41' from Lat. A. till 10th of Nov. inclusive, and Nov. 5th, — — — — — 9th, — — — — — 11th, subtract 31' from Lat. A. till 17th inclusive, and — 18th, — — — — — 19th, — — — — — 20th, — — — — — 21st, — — — — — 22d, add 31' to Lat. A. till 9th Dec. inclusive, and — Dec. 9th, — — — — — 10th, — — — — —	—	3	—	27.56	—	31.33	—	—	3	—	28.2	31.3		
	—	—	13.56	—	—	—	—	—	—	14.7	—	—	—	2.19
	—	—	—	7.26	—	—	—	—	—	—	—	7.22	—	—
	16	—	—	—	—	—	—	16	—	—	—	—	—	—
	—	—	—	19.9	—	—	—	—	—	—	—	19.5	—	—
	—	—	21.26	—	—	—	—	—	—	21.16	—	—	—	—
	—	—	—	—	36.40	—	—	—	—	—	—	—	36.20	—
	—	—	—	—	34.57	—	—	—	—	—	—	—	33.58	—
	—	—	—	—	29.55	—	—	—	—	—	—	—	29.17	—
	—	—	—	—	29.4	—	—	—	—	—	—	—	28.23	—
	7	—	—	—	—	—	—	5	—	—	—	—	—	—
	—	14	—	—	—	—	—	—	4	—	—	—	—	—
	—	—	—	—	2.3	—	—	—	—	—	—	—	1.32	N
	—	—	—	—	0.3	—	—	—	—	—	—	—	0.28	—
	—	—	—	—	0.3	—	—	—	—	—	—	—	0.28	—
	—	—	—	—	0.17	—	—	—	—	—	—	—	0.14	—
	—	—	—	—	0.3	—	—	—	—	—	—	—	0.28	—
	—	—	—	—	N	—	—	—	—	—	—	—	—	—
	—	—	—	—	0.9	—	—	—	—	—	—	—	0.40	—
	—	—	86.18	—	—	—	—	—	—	86.8	—	—	—	—
	—	—	86.14	—	—	—	—	—	—	86.2	—	—	—	—

N. B. The ship having an iron tiller, and much iron about the after part, it was found, the observations taken in the cabin were not consistent or meriting confidence. From *Anjings* they were all taken on the binnacle, which seemed to be the only fit place in the ship.

1776	Lat.	Long.	Magnetical						Remarks
			Variation		South Dip				
			Az.	Amp.	Face		MD.	C.D.	
				E.	W.				
Oct. 14	N. 8.32	E. 81.30	W	W	3.6	3.6	3.6	4.5	
25	8.41	76.54	1.12*	1.13*	3.4	3.4	3.4	4.3	Very steady.
30	9.58	75.4			1.6	1.6	1.6	2.5	Pretty steady.
31	9.54	74.24	1.3*	0.53*	2.1	2.1	2.1	3.	Ditto.
Nov. 1	9.57	73.35	1.25*		1.7	1.7	1.7	2.6	Not very steady.
2	9.59	72.30			1.5	1.5	1.5	2.4	Pretty steady.
3	9.38	71.18			2.7	2.7	2.7	3.6	Ditto.
4	9.49	70.26	1.30*		3.2	3.2	3.2	4.1	Ditto.
5	9.53	69.11	2.12*	1.54*	3.	3.	3.	3.7	Ditto.
6	9.55	67.35			3.	3.	3.	3.7	Not very steady.
7	10.43	65.30	4.0*	4.3*	1.4	1.4	1.4	2.3	Ditto.
8	11.57	63.22	4.23*		ND.	ND.	ND.	0.3	{ Not steady, but taken when most at rest.
9	12.45	60.34	5.15*		3.	3.	3.	2.1	Very unsteady.
10	12.59	57.21	6.0*	6.6*	4.	4.	4.	3.1	Pretty steady.
11	13.29	55.12	7.30*	7.54*	5.	5.	5.	4.1	Ditto.
12	13.16	52.55	7.57*	8.15*	5.4	5.4	5.4	4.5	Ditto.
13	13.28	50.58	9.20*	8.58*	5.6	6.6	6.2	5.3	Very steady.
14	13.51	49.37	9.35*	9.32*	7.2	8.6	8.	7.1	Quite steady.
15	13.37	48.33	9.1*	9.30*	8.	9.	8.4	7.5	Ditto.

1776	Lat.	Long.	Magnetical						Remarks
			Variation		North Dip				
			Az.	Amp.	Face		MD.	C.D.	
		E.	W.						
Nov. 16	12.54	47.4	9.31*	9.39*	6.2	7.2	6.6	5.7	Pretty steady.
17	12.41	45.25	11.25*	11.30*	6.2	7.2	6.6	5.7	Ditto.
18	12.38	[44.5]	11.3*	11.5*	7.2	8.2	7.6	6.7	Ditto.
20	13.22	44.10	11.35*	11.22*	8.6	9.6	9.2	8.3	Ditto.
21	13.22	44.10		11.2*	8.4	9.4	9.	8.1	Not steady, much wind.
22	13.20	44.11			9.2	9.6	9.4	8.5	At anchor at the Company's factory.
23	14.24	43.35		11.11*	12.4	12.4	12.4	11.5	Pretty steady.
24	15.29	43.12	13.10*	12.50*	14.2	14.2	14.2	13.3	Very steady.
25	16.2	42.49	14.3*	13.53*	15.6	15.6	15.6	14.7	Ditto.
26	16.24	42.22	14.2*	14.10*	16.6	16.6	16.6	15.7	Ditto.
27	17.5	41.54	13.44*	13.50*	19.1	19.1	19.1	18.2	Ditto.
28	18.14	41.0	13.54*	13.58*	20.6	21.	20.7	20.	Pretty steady.
29	19.36	40.30	13.12*	13.19*	24.2	24.6	24.4	23.5	Ditto.
30	20.59	39.56	12.52*	12.59*	26.7	26.7	26.7	26.	Ditto.
Dec. 1	21.43	39.3		12.49*	29.6	29.6	29.6	28.7	{ Very unsteady, much wind and patching.
2	22.44	38.24			31.6	32.6	32.6	32.	Very unsteady.
3	22.46	38.11			32.	32.	32.	31.2	Not very steady.
4	22.54	37.44			32.4	32.4	32.4	31.6	Pretty steady.
6	24.16	38.29			34.6	34.6	34.6	34.	Not very steady.
7	24.17	38.21	14.52*	15.0*					Pretty steady.

1776	Lat.	Long.	Magnetical							1777	Lat.	Long.	Magnetical								
			Variation		South Dip								Variation.		South Dip						
			Az.	Amp.	Face		MD.	C.D.					Az.	Amp.	Face		MD.	C.D.			
				E.	W.																
Dec. 8	24.17	38.30	E'	E'	35.	35.	35.	34.2	Much wind,	Jan. 2	29.12	32.12	E'	E'	43.6	44.	43.7	43.2	Fresh wind and good deal of motion.		
9	24.16	38.30			14. 1*	35.	35.	34.2	Pretty steady.	3	29.35	32.12			12.50*	46.	46.	46.	45.3	Ditto.	
10					13.50*	35.	35.2	35.1	34.3	Very steady.	4	29.51	32.12				45.2	45.6	45.4	44.7	Perfectly steady.
11	24.16	38.30			13.50*	35.	35.	35.	34.2	{ Not very steady, good deal of wind.	5	29.58	32.15				45.6	45.6	45.6	45.1	
14						35.2	35.2	35.2	34.4	Very steady.	6	29.58	32.15				45.2	45.2	45.2	44.5	Very steady.
15	24.19	38.18				35.	35.	35.	34.2	Not steady, swell from S ⁴ .	7	29.58	32.16				45.2	45.2	45.2	44.5	
17	24.25	36.30				35.	36.	35.4	34.6	Much motion, with wind.	8	29.58.25	32.16				44.5	44.5	44.5	44.	Perfectly steady.
19	25. 4	36.10	*11.48	*11.41	36.2	36.2	36.2	35.4	35.4	Pretty steady.	9	29.58	32.16				45.5	45.7	45.6	45.1	Ditto.
20	25.45	36.26	11.30*	11.40*	38.	38.	38.	37.2	37.2	Not very steady.	10	29.58.10	32.16								
21	26. 9	36.11			38.4	38.4	38.4	37.6	37.6	Pretty steady.											
22	26.25	36. 1	12.15*	12. 5*	38.6	39.	38.7	38.1	38.1	Extremely steady.											
23	26.55	35.38	12.58*	12.46*	39.7	40.7	40.3	39.5	39.5	Very steady.											
25	27.36					ab'	42.			Very unsteady, much wind.											
26	27.47																				
27	27.58																				
28	28. 4					42.	42.	42.	41.2	Pretty steady.											
29	28.16					42.2	42.2	42.2	41.4	Ditto, a little swell.											

Astronomical Observations in The Swallow.

Long. from Greenwich.					Long. from Greenwich.					Long. from Greenwich.				
D. c	Γ.K.	ε	O.S.	E. D.	D. c	Γ.K.	ε	O.S.	E. D.	D. c	Γ.K.	ε	O.S.	E. D.
Nov. 1	.22	73.31.30	⊙	6 33	Nov. 19	E	0	11	5 14	Dec. 6	.29	37.50.	⊙	3 3
4		70.26.	⊙	5 15	20		44.16.	⊙	5 8	1777		32.12.	⊙	3 10
6	.30	67. 5.	⊙	5 13	21		44. 6.	⊙	3 15	Jan. 4		32.11.	⊙	5 10
7	.22	65.52.	⊙	4 6	24	.21	42.28.	⊙	5 13	5		32.42.	⊙	5 8
15	1.22	47.11.	⊙	6 20	29	1. 9	38.47.	⊙	5 33	6		31.47.	⊙	5 14
16	.50	46.14.	⊙	5 28	Dec. 2	.35	37.49.	⊙	7 20			32.21.	⊙	5 24
					3	.38	37.34.	⊙	5 15					

Kalpeny bearing N.
At anchor in Mecha Road.
 20th. Observed an immersion of 1st sat. of Jupiter with my glass, a good deal of wind and ship not very still,
Per watch — — — 11. 0.30
Watch slower than apparent time 1.52.19
Eclipse per naut. alm. — — — 12.52.49
 — — — 9.56.48
 2.56. 1 = 44. 0. 15

Off Suez.
At anchor in Suez Road.