

APPENDIX No. 5—Continued.

September 22, 1846.—*Santa Fe.*

Time, a. m.			Double altitudes of sun's upper limb.	
<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>Deg.</i>	<i>min.</i>
4	38	38.8	75	20
4	39	03.0	75	30
4	39	31.5	75	40
4	40	01.0	75	50
4	40	29.2	76	00
4	40	58.6	76	10
4	41	28.5	76	20
4	41	59.5	76	30
4	42	27.5	76	40
4	42	57.0	76	50
Lost by clouds.			77	00

Thermometer 65°.

APPENDIX No. 5—Continued.

September 23, 1846.—*Santa Fe.*

DETERMINATION OF TIME.

Time, p. m.			Double altitudes of <i>a</i> Andromedæ, in the east.			Chronometer fast.		
<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>Deg.</i>	<i>min.</i>	<i>sec.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>
5	03	21.8	119	03	15	7	33	35.7
5	04	29.0	119	30	35	7	33	35.6
5	05	29.0	119	54	40	7	33	36.3
5	06	36.8	120	22	45	7	33	34.9
5	07	27.0	120	42	10	7	33	37.2
5	08	10.8	121	04	05	7	33	36.0
5	09	11.0	121	22	10	7	33	42.6 rej.
5	09	54.1	121	41	25	7	33	38.2
5	10	36.3	121	58	55	7	33	37.2
5	11	36.5	122	23	50	7	33	36.0

Thermometer 62°.

Time, p. m.			Double altitudes of <i>a</i> Lyrae, in the west.			Chronometer fast.		
<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>Deg.</i>	<i>min.</i>	<i>sec.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>
5	14	47.5	101	07	00	7	33	37.3
5	15	44.0	100	43	50	7	33	33.4 rej.
5	16	32.8	100	26	20	7	33	36.5
5	17	20.5	100	07	30	7	33	34.9
5	18	10.5	99	48	20	7	33	34.9
5	19	01.8	99	27	55	7	33	32.8 rej.
5	19	51.0	99	10	05	7	33	35.4
5	20	52.8	98	46	20	7	33	35.0
6	21	49.5	98	25	20	7	33	36.1

Thermometer 62°.

Chronometer fast by 9 obs. of east star.....	<i>h.</i>	<i>m.</i>	<i>s.</i>
Chronometer fast by 7 obs. of west star.....	7	33	36.34
			35.81
Mean.....	7	33	36.08

APPENDIX No. 5—Continued.

September 30, 1846.—Camp 62, seven miles below Isolett, west bank
Rio del Norte.

DETERMINATION OF LONGITUDE.

Time, p. m.	Distance of Antares from moon's western limb.	Longitude.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>h. m. s.</i>
3 04 20.8	67 11 30	7 08 40.9
3 06 18.6	67 12 15	7 09 06.1
3 11 05.8	67 13 20	7 06 41.4
3 14 13.5	67 14 20	7 07 44.3
3 16 04.2	67 14 50	7 07 25.4
3 18 14.5	67 15 40	7 07 53.7
3 20 08.5	67 16 30	7 08 37.8
3 21 48.5	67 17 05	7 08 47.2

Thermometer 48°.

Time, p. m.	Distance of α Pegasi from moon's western limb.	Longitude.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>h. m. s.</i>
3 36 07.5	38 56 10	7 04 55.2
3 38 19.2	38 55 00	7 05 44.7
3 39 58.8	38 54 30	7 05 21.3
3 43 32.0	38 53 20	7 04 52.6
3 44 47.5	38 52 30	7 05 44.7
3 49 21.8	38 50 55	7 05 21.3
3 50 53.0	38 50 25	7 05 05.6
3 53 04.0	38 49 40	7 04 50.0

Thermometer 48°.

Longitude by 8 observations of Antares.....	<i>h. m. s.</i>	7 08 07.10
Longitude by 8 observations of α Pegasi.....		05 14.42
Mean.....		<u>7 06 40.76</u>

APPENDIX No. 5—Continued.

September 30, 1846.—Camp 62.

DETERMINATION OF TIME.

Time, p. m.	Double altitudes of α Andromedæ, in the east.	Chronometer fast.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>h. m. s.</i>
4 06 17.5	105 51 05	7 36 24.0
4 07 04.8	106 10 45	7 36 23.5
4 07 54.0	106 31 35	7 36 22.0
4 08 47.6	106 54 05	7 36 20.8
4 09 30.0	107 10 30	7 36 23.4
4 10 23.8	107 33 05	7 36 21.3
4 11 21.9	107 56 25	7 36 25.6

Thermometer 48°.

Time, p. m.	Double altitudes of α Lyræ, in the west.	Chronometer fast.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>h. m. s.</i>
4 25 41.8	109 55 15	7 36 25.7
4 26 44.0	109 31 25	7 36 25.2
4 27 28.8	109 13 50	7 36 24.7
4 28 12.0	108 57 00	7 36 24.5
4 28 55.8	108 40 10	7 36 22.9
4 29 45.0	108 20 50	7 36 24.2
4 30 39.0	107 59 55	7 36 23.4

Thermometer 48°.

Chronometer fast by 7 observations of east star..	<i>h. m. s.</i>	7 36 22.66
Chronometer fast by 7 observations of west star..		24.37
Mean.....		<u>7 36 23.52</u>

APPENDIX No. 5—Continued.

September 30, 1846.—Camp 62.

DETERMINATION OF LATITUDE.

Time, p. m.	Double altitudes of Polaris.	Latitude.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>Deg. min. sec.</i>
4 35 38.0	71 29 50	34 48 28
4 42 11.0	71 34 00	34 48 34
4 43 09.0	71 34 40	34 48 36
4 44 10.0	71 35 20	34 48 37
4 44 46.0	71 35 40	34 48 34
4 45 18.5	71 36 05	34 48 36
4 46 16.8	71 36 35	34 48 34
4 47 21.5	71 36 55	34 48 24

Thermometer 48°.

Mean of 8 observations, 34° 48' 33".

APPENDIX No. 5—Continued.

October 4, 1846.—Lamp 65, west bank Rio del Norte, about two miles below Linitans.

LUNAR DISTANCE.

Time, p. m.	Fomalhaut and moon's western limb.	Double altitude of moon's lower limb.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>Deg. min. sec.</i>
4 04 09.8	47 15 50	66 37 10
4 06 01.8	47 15 50	67 20 40
4 07 09.2	47 16 35	67 46 20
4 08 53.8	47 17 10	68 27 00
4 11 57.5	47 18 45	69 38 40
4 13 40.0	47 19 10	70 18 50
4 15 32.0	47 20 05	71 01 30
4 17 08.0	47 20 35	71 38 30

Time, p. m.	Aldebaran and moon's western limb.	Double altitude of moon's lower limb.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>Deg. min. sec.</i>
4 28 56.5	51 59 05	76 09 40
4 31 05.0	51 58 40	76 58 40
4 32 46.0	51 57 45	77 36 10
4 34 43.0	51 56 30	78 19 50
4 36 58.0	51 56 10	79 10 30
4 38 35.0	51 55 35	79 47 50
4 40 27.0	51 54 55	80 38 50
4 41 41.5	51 54 10	80 57 00
4 43 13.0	51 53 40	81 31 30

Thermometer 60°.

APPENDIX No. 5—Continued.

October 4, 1846.—Camp 65, west bank of the Rio del Norte.

DETERMINATION OF LATITUDE.

Time, p. m.	Double altitudes of Polaris.	Latitude.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>Deg. min. sec.</i>
2 22 50.5	68 42 50	34 07 27
2 24 00.0	68 44 00	34 07 34
2 24 50.0	68 44 55	34 07 42
2 26 07.8	68 45 55	34 07 40
2 27 14.2	68 46 50	34 07 42
2 28 16.2	68 47 45	34 07 45
2 28 58.0	68 48 20	34 07 46
2 30 09.8	68 49 10	34 07 47
2 30 58.7	68 49 50	34 07 44
2 31 36.5	68 50 10	34 07 39
2 32 19.8	68 50 35	34 07 34
2 33 09.0	68 51 10	34 07 32

Thermometer 64°.

Mean of 12 observations, 34° 07' 59".

Time, p. m.	Double altitudes of Polaris.	Latitude.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>Deg. min. sec.</i>
01 30 30	68 42 50	34 07 27
01 32 00	68 44 00	34 07 34
01 33 50	68 44 55	34 07 42
01 35 08	68 45 55	34 07 40
01 36 14	68 46 50	34 07 42
01 37 16	68 47 45	34 07 45
01 38 18	68 48 20	34 07 46
01 39 20	68 49 10	34 07 47
01 40 22	68 49 50	34 07 44
01 41 24	68 50 10	34 07 39
01 42 26	68 50 35	34 07 34
01 43 28	68 51 10	34 07 32

Thermometer 62°.

APPENDIX No. 5—Continued.

October 4, 1846.—Camp 65, west bank of the Rio del Norte.

DETERMINATION OF TIME.

Time, p. m.	Double altitudes of <i>a</i> Andromeda, in the east.	Chronometer fast.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>h. m. s.</i>
3 01 27.9	85 21 25	7 36 51.0
3 02 21.8	85 43 50	7 36 49.7
3 03 01.2	85 58 30	7 36 53.8 rej.
3 03 54.0	86 21 15	7 36 51.1
3 04 42.5	86 41 25	7 36 50.5
3 07 23.0	87 45 45	7 36 50.2
3 08 23.0	88 12 05	7 36 50.1
3 09 10.5	88 31 50	7 36 49.6
3 09 45.8	88 46 20	7 36 49.5
3 10 31.5	89 04 50	7 36 50.1

Thermometer 62°.

Time, p. m.	Double altitudes of <i>a</i> Lyræ, in the west.	Chronometer fast.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>h. m. s.</i>
3 46 00.0	118 58 50	7 36 52.2
3 46 58.8	118 35 35	7 36 51.3
3 47 59.0	118 12 50	7 36 53.5
3 48 57.5	117 49 50	7 36 53.1
3 49 43.8	117 32 25	7 36 54.7
3 50 31.7	117 12 30	7 36 51.7
3 51 14.8	116 56 25	7 36 53.6
3 52 09.8	116 34 45	7 36 53.1

Thermometer 62°.

	<i>h. m. s.</i>
Chronometer fast by 9 obs. of east star	7 36 50.20
“ 18 “ west star	52.90
Mean	7 36 51.56

APPENDIX No. 5—Continued.

October 5, 1846.—Camp 66, near Socorro.

Time, p. m.			Double altitudes of α Andromedæ.		
<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>Deg.</i>	<i>min.</i>	<i>sec.</i>
3	36	56.2	101	37	30
3	38	15.8	102	10	10
3	38	58.7	102	28	25
3	39	47.5	102	38	25
3	40	46.8	103	13	10
3	41	30.0	103	31	05
3	42	05.5	103	46	50

Time, p. m.			Double altitudes of α Lyræ, in the west.		
<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>Deg.</i>	<i>min.</i>	<i>sec.</i>
3	46	28.0	117	10	35
3	47	29.7	116	47	00
3	48	22.0	116	26	05
3	49	19.5	116	04	00
3	50	12.8	115	43	35
3	51	10.1	115	22	10
3	51	58.5	115	02	40

Thermometer 58°.

APPENDIX No. 5—Continued.

October 7, 1846.—Camp 68, west bank of the Rio del Norte.

DETERMINATION OF TIME.

Time, p. m.			Double altitudes of α Andromedæ, in the east.			Chronometer fast.		
<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>Deg. min. sec.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>		
4	38	30.5	130 21 55	7	37	02.3		
4	39	38.2	130 50 05	7	37	02.2		
4	40	37.8	131 14 15	7	37	03.6		
4	41	30.5	131 36 30	7	37	02.7		
4	42	27.0	132 00 20	7	37	01.8		
4	43	11.5	132 19 10	7	37	01.3		
4	43	55.7	132 37 05	7	37	01.9		

Thermometer 62°.

Time, p. m.			Double altitudes of α Lyræ, in the west.			Chronometer fast.		
<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>Deg. min. sec.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>		
4	47	29.0	90 21 10	7	37	06.4		
4	48	06.0	90 06 40	7	37	05.6		
4	49	02.0	89 45 25	7	37	06.0		
4	49	51.8	89 26 05	7	37	05.5		
4	50	38.7	89 08 50	7	37	07.2		
4	51	37.8	88 45 50	7	37	06.2		
4	52	31.4	88 24 55	7	37	05.2		
4	53	20.0	88 06 00	7	34	04.2		
4	54	06.0	87 49 00	7	37	05.8		

Thermometer 62°.

Chronometer fast by 7 obs. of east star.....	<i>h.</i>	<i>m.</i>	<i>s.</i>
Chronometer fast by 9 obs. of west star.....	7	37	02.26
Mean	7	37	04.02

APPENDIX No. 5—Continued.

October 7, 1846.—Camp 68, west bank of the Rio del Norte.

DETERMINATION OF LATITUDE.

Time, p. m.	Double altitudes of Polaris.	Latitude.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>Deg. min. sec.</i>
5 20 51.02	69 53 45	33 41 04 rej.
5 22 12.8	69 54 45	33 41 16
5 23 18.0	69 55 10	33 41 16
5 23 46.0	69 55 30	33 41 20
5 24 37.0	69 55 50	33 41 20
5 25 26.0	69 56 10	33 41 18
5 26 03.5	69 56 35	33 41 22
5 26 45.0	69 56 50	33 41 21
5 27 24.0	69 57 05	33 41 20
5 28 09.5	69 57 20	33 41 18

Mean of 9 observations, 33° 41' 19".

APPENDIX No. 5—Continued.

October 10, 1846.—Camp 70.

DETERMINATION OF LATITUDE.

Time, p. m.	Double altitudes of β Aquarii, near the meridian.	Latitude.
<i>h. m. s.</i>	<i>Deg. min. sec.</i>	<i>Deg. min. sec.</i>
3 34 46.0	100 46 50	35 19 19
3 35 56.5	100 48 00	33 19 45
3 37 15.5	100 49 55	33 19 36
3 38 38.2	100 51 10	33 19 41
3 39 49.0	100 51 30	33 19 50
3 40 57.05	100 53 10	33 19 28
3 41 57.5	100 54 10	33 19 10
3 43 12.8	100 54 35	33 19 05
3 45 12.5	100 53 50	33 19 24
3 46 15.0	100 53 05	33 19 36
3 47 02.0	100 52 20	33 19 47
3 47 51.2	100 51 50	33 19 45
3 48 58.8	100 51 10	33 19 41
3 50 19.0	100 49 40	33 19 45
3 51 55.2	100 47 40	33 19 45
3 52 54.5	100 46 20	33 19 42
3 54 32.8	100 42 40	33 19 68

Thermometer 48°.

Mean of 17 observations, 33° 19' 38".

APPENDIX No. 5—Continued.

October 10, 1846.—Camp 70.

DETERMINATION OF LATITUDE.

Time, p. m.			Double altitudes of Polaris.			Latitude.		
<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>Deg. min. sec.</i>			<i>Deg. min. sec.</i>		
4	02	30.2	68	36	35	33	20	15
4	03	47.0	68	37	50	33	20	29
4	05	11.2	68	38	05	33	20	11
4	05	54.5	68	38	50	33	20	19
4	06	44.0	68	39	55	33	20	37
4	07	31.3	68	40	10	33	20	30
4	08	19.2	68	40	40	33	20	30
4	09	12.5	68	41	10	33	20	28
4	09	43.5	68	41	25	33	20	26
4	10	34.0	68	41	50	33	20	24
4	11	15.5	68	42	30	33	20	31
4	12	08.5	68	43	10	33	20	36
4	13	03.0	68	43	00	33	20	14.
4	14	05.0	68	44	00	33	20	25
4	14	45.8	68	44	20	33	20	24
4	15	20.8	68	44	35	33	20	21
4	15	56.8	68	44	50	33	20	19

		Latitude of camp.		
		<i>Deg.</i>	<i>min.</i>	<i>sec.</i>
Latitude by 17 observations of <i>b</i> Aquarii.....		33	19	38
“ “ “ “ Polaris.....		33	20	25
Mean.....		33	20	02

APPENDIX No. 5—Continued.

October 10, 1846.—Camp 70, east side of the Rio del Norte.

DETERMINATION OF TIME.

Time, p. m.			Double altitudes of sun's upper limb.		Chronometer fast.		
<i>h.</i>	<i>m.</i>	<i>s.</i>	<i>Deg.</i>	<i>min.</i>	<i>h.</i>	<i>m.</i>	<i>s.</i>
5	01	7.5	75	30	7	37	42.5
5	01	39.2	75	40	7	37	41.9
5	02	12.8	75	50	7	37	42.6
5	02	45.0	76	00	7	37	42.0
5	03	18.0	76	10	7	37	42.0
5	03	51.8	76	20	7	37	42.8
5	04	23.5	76	30	7	37	42.5
5	04	56.9	76	40	7	37	41.8
5	05	30.5	76	50	7	37	42.2
5	06	03.0	77	00	7	37	41.5

Thermometer 68°.

Mean of 10 observations, *7h. 37m. 42.18s.*