

1 ZT 16 46 DR L 25° 13.3' S  
λ 21° 25.7' W Ho 28° 55.6'

CT	05 36 56	ZT	Date
CE	8 50 s	ZD	
GMT		GMT	

GHA h	75° - 40.8'
m & s	
GHA ⊙	
aλ	
LHA	

Dec.	N	17° 19.4'
d.	-(0.7)	
Dec.		

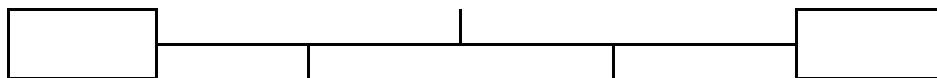
aL	
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Ht	
d ( )	
Hc	
Ho	
a	

Rising/Setting \_\_\_\_\_

Dec. \_\_\_\_\_ Lat. \_\_\_\_\_

Z	
Δz ( )	
Z	
Zn	



2 ZT 07 06 DR L 23° 52.0' S  
λ 83° 45.6' W Ho 19° 54.2'

CT	01 07 26	ZT	Date
CE	1 18 f	ZD	
GMT		GMT	

GHA h	
m & s	
GHA ⊙	
aλ	
LHA	

Dec.		
d.	( )	
Dec.		

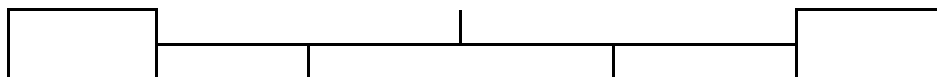
aL	
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Ht	
d ( )	
Hc	
Ho	
a	

Rising/Setting \_\_\_\_\_

Dec. \_\_\_\_\_ Lat. \_\_\_\_\_

Z	
Δz ( )	
Z	
Zn	



1 ZT 16 46 DR L 25° 13.3' N  
 λ 021° 25.7' W Ho 28° 55.6'

CT	05 36 56	ZT	1646	Date
CE	8 50 s	ZD	+ 1	
GMT	17 45 46	GMT	1746	Same Date

GHA h	75° - 40.8'
m & s	11° - 26.5'
GHA ⊙	87° - 07.3'
aλ	021° - 07.3' W
LHA	066° - 00.0'

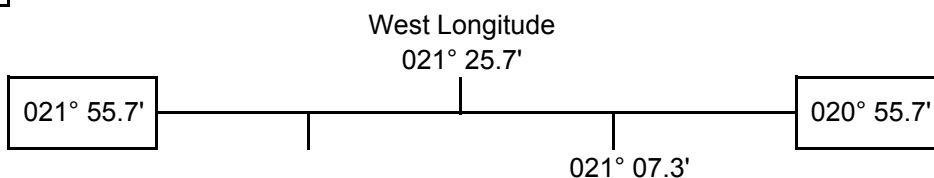
Dec.	N	17° 19.4'
d.	-(0.7)	-0.5'
Dec.	N	17° 18.9'

aL	25° N
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Ht	28° 25.8'
d (20.0)	6.3'
Hc	28° 32.1'
Ho	28° 55.6'
a	23.5' T

Rising/Setting          Setting  
 Dec.          south of          Lat.

Z	083.4°
Δz (-1)	-0.3°
Z	083.1°
Zn	276.9°



2 ZT 07 06 DR L 23° 52.0' N  
 λ 083° 45.6' E Ho 19° 54.2'

CT	01 07 26	ZT	0706	Date
CE	1 18 f	ZD	- 6	
GMT	01 06 08	GMT	0106	Same Date

GHA h	198° - 39.2'
m & s	1° - 32.0'
GHA ⊙	200° - 11.2'
aλ	083° - 48.8' E
LHA	284° - 00.0'

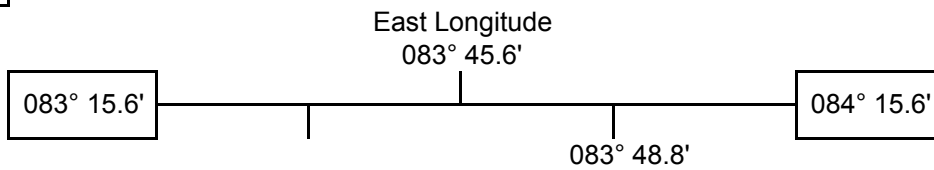
Dec.	N	17° 54.3'
d.	-(0.7)	-0.1'
Dec.	N	17° 54.2'

aL	24° N
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Ht	19° 17.1'
d (20.5)	18.5'
Hc	19° 35.6'
Ho	19° 54.2'
a	18.6' T

Rising/Setting          Rising  
 Dec.          south of          Lat.

Z	079.4°
Δz (-1)	-0.9°
Z	078.5°
Zn	078.5°



3

ZT 14 26

DR L 17° 43.0' S  
λ 109° 37.3' W

Ho 48° 42.8'

CT	07 36 19	ZT	Date
CE	10 00 f	ZD	
GMT		GMT	

GHA h
m & s
GHA ⊙
aλ
LHA

Dec.
d. ( )
Dec.

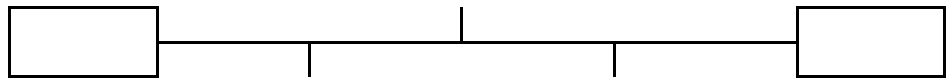
aL
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Ht
d ( )
Hc
Ho
a

Rising/Setting
----------------

Dec.
Lat.

Z
Δz ( )
Z
Zn



4

ZT 09 25

DR L 27° 56.3' S  
λ 159° 10.0' W

Ho 32° 14.4'

CT	10 14 56	ZT	Date
CE	10 21 s	ZD	
GMT		GMT	

GHA h
m & s
GHA ⊙
aλ
LHA

Dec.
d. ( )
Dec.

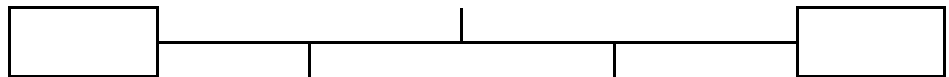
aL
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Ht
d ( )
Hc
Ho
a

Rising/Setting
----------------

Dec.
Lat.

Z
Δz ( )
Z
Zn



3 ZT 14 26 DR L 17° 43.0' N  
 $\lambda$  109° 37.3' E Ho 48° 42.8'

CT	07 36 19	ZT	1426	Date
CE	10 00 f	ZD	- 7	
GMT	07 26 19	GMT	0726	Same Date

GHA h	283° - 42.5'
m & s	6° - 34.8'
GHA $\odot$	290° - 17.3'
a $\lambda$	109° - 42.7' E
LHA	040° - 00.0'

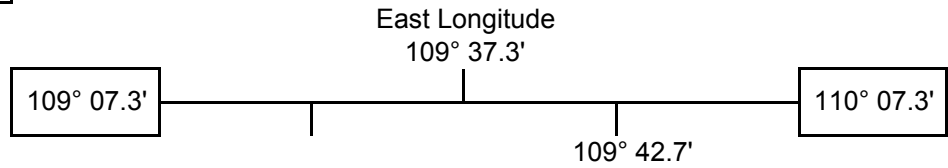
Dec.	N	5° 43.9'
d.	-(1.0)	-0.4'
Dec.	N	5° 43.5'

aL	18° N
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Ht	48° 49.5'
d (21.7)	15.7'
Hc	49° 05.2'
Ho	48° 42.8'
a	22.5' A

Rising/Setting          Setting  
 Dec.          south of          Lat.

Z	103.4°
$\Delta z$ (-1.4)	-1.0°
Z	102.4°
Zn	257.6°



4 ZT 09 25 DR L 27° 56.3' N  
 $\lambda$  159° 10.0' E Ho 32° 14.4'

CT	10 14 56	ZT	0925	Date
CE	10 21 s	ZD	- 11	
GMT	22 25 17	GMT	2225	Previous Date

GHA h	152° - 56.5'
m & s	6° - 19.3'
GHA $\odot$	159° - 15.8'
a $\lambda$	158° - 44.2' E
LHA	318° - 00.0'

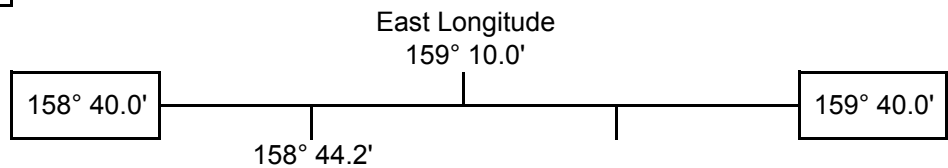
Dec.	S	12° 37.8'
d.	-(0.9)	-0.4'
Dec.	S	12° 37.4'

aL	28° N
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Ht	32° 58.2'
d (-42.8)	-26.7'
Hc	32° 31.5'
Ho	32° 14.4'
a	17.2' A

Rising/Setting          Rising  
 Dec.          south of          Lat.

Z	128.7°
$\Delta z$ (0.9)	0.6°
Z	129.3°
Zn	129.3°



5

ZT 13 29

DR L 19° 06.7' S  
λ 129° 08.7' W

Ho 76° 42.8'

CT	04 37 31	ZT	Date
CE	8 30 f	ZD	
GMT		GMT	

GHA h	
m & s	
GHA ⊙	
aλ	
LHA	

Dec.	
d. ( )	
Dec.	

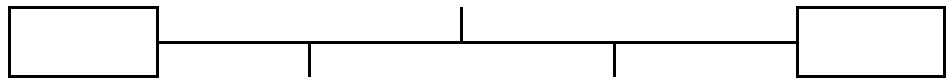
aL	
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Ht	
d ( )	
Hc	
Ho	
a	

Rising/Setting	
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Dec.		Lat.	
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Z	
Δz ( )	
Z	
Zn	



6

ZT 07 21

DR L 29° 37.2' S  
λ 171° 40.7' W

Ho 29° 26.7'

CT	08 11 17	ZT	Date
CE	10 02 s	ZD	
GMT		GMT	

GHA h	
m & s	
GHA ⊙	
aλ	
LHA	

Dec.	
d. ( )	
Dec.	

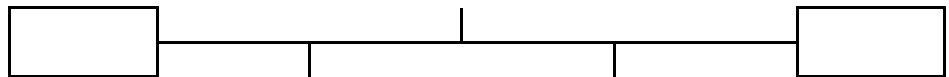
aL	
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Ht	
d ( )	
Hc	
Ho	
a	

Rising/Setting	
----------------	--

Dec.		Lat.	
------	--	------	--

Z	
Δz ( )	
Z	
Zn	



5 ZT 13 29 DR L 19° 06.7' N  
 λ 129° 08.7' E Ho 76° 42.8'

CT	04 37 31	ZT	1329	Date
CE	8 30 f	ZD	- 9	
GMT	04 29 00	GMT	0429	Same Date

GHA h	237° - 23.4'
m & s	7° - 15.0'
GHA ⊙	244° - 38.4'
aλ	129° - 21.6' E
LHA	014° - 00.0'

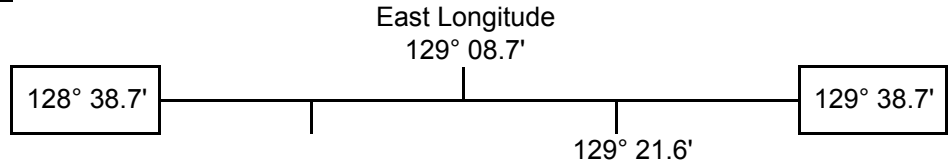
Dec.	N	16° 42.4'
d.	(0.7)	0.3'
Dec.	N	16° 42.7'

aL 19° N

Ht	76° 19.2'
d (13.2)	9.4'
Hc	76° 28.6'
Ho	76° 42.8'
a	14.2' T

Rising/Setting Setting  
 Dec. south of Lat.

Z	100.5°
Δz (-4.2)	-3.0°
Z	097.5°
Zn	262.5°



6 ZT 07 21 DR L 29° 37.2' N  
 λ 171° 40.7' E Ho 29° 26.7'

CT	08 11 17	ZT	0721	Date
CE	10 02 s	ZD	- 11	
GMT	20 21 20	GMT	2021	Previous Date

GHA h	121° - 41.2'
m & s	5° - 20.0'
GHA ⊙	127° - 01.2'
aλ	171° - 58.8' E
LHA	299° - 00.0'

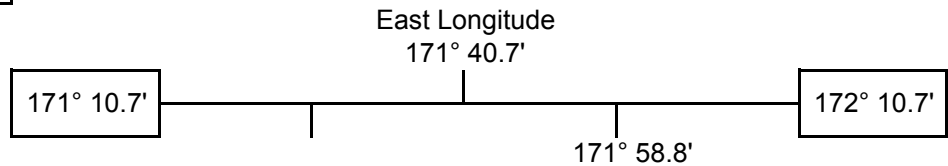
Dec.	N	8° 15.1'
d.	(0.9)	0.3'
Dec.	N	8° 15.4'

aL 30° N

Ht	29° 02.2'
d (29.7)	7.6'
Hc	29° 09.8'
Ho	29° 26.7'
a	16.9' T

Rising/Setting Rising  
 Dec. south of Lat.

Z	097.9°
Δz (-1)	-0.3°
Z	097.6°
Zn	097.6°



7 ZT 15 47 DR L 15° 24.6' S  
 λ 71° 23.6' W Ho 27° 38.6'

CT	10 49 38	ZT	Date
CE	2 36 f	ZD	
GMT		GMT	

GHA h
m & s
GHA ⊙
aλ
LHA

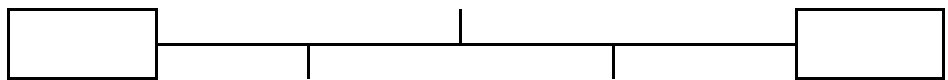
Dec.
d. ( )
Dec.

aL
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Ht
d ( )
Hc
Ho
a

Rising/Setting
Dec.
Lat.

Z
Δz ( )
Z
Zn



8 ZT 08 24 DR L 17° 35.2' S  
 λ 75° 13.4' W Ho 35° 34.9'

CT	03 25 29	ZT	Date
CE	1 24 f	ZD	
GMT		GMT	

GHA h
m & s
GHA ⊙
aλ
LHA

Dec.
d. ( )
Dec.

aL
----

Ht
d ( )
Hc
Ho
a

Rising/Setting
Dec.
Lat.

Z
Δz ( )
Z
Zn

