

**GOVERNMENT OF SINDH  
WILDLIFE & FOREST DEPARTMENT**

Dated: 28-08-2009

**Khirthar Protected Areas Complex  
PART – I: Khirthar National Park****NOTIFICATION**

No. WL &amp; FT (SOI-DCF-993)/74

In exercise of the powers conferred by section 15 of the Sindh Wildlife Protection Ordinance, 1972 (Sindh Ordinance V of 1972) the Government of Sindh is pleased to revise the boundaries of the Khirthar Protected Areas Complex specified in the schedule given below with immediate effect.

**SCHEDULE**

- |                       |   |
|-----------------------|---|
| <b>1) District(s)</b> | : Jamshoro & Karachi  |
| <b>2) Tehsil(s)</b>   | : Thano Bulla Khan, Kotri, Gadap Town                                       |
| <b>3) Locality</b>    | : Kohistan Tract  |
| <b>4) Area</b>        | : 322,675 hectare   |
| <b>5) Coordinates</b> | : 67° 06' 25.13" to 67° 56' 01.44" E and 25° 09' 17.45" to 26° 07' 28.53" N |

**BOUNDARIES****North:**

It starts from the junction of boundary lines of Sindh Province and Taluka Thano Bulla Khan at grid reference point N1 (67° 25' 25.63", 26° 07' 05.83"). Then it moves along the taluka boundary of Thano Bulla Khan up to grid reference point N5 (67° 52' 03.49", 26° 04' 23.01"), which is the north-eastern corner of the Khirthar National Park {Grid reference points between N1 and N5 are; N2 (67° 36' 31.46", 25° 53' 51.14"), N3 (67° 42' 03.39", 26° 01' 04.11") and N4 (67° 47' 52.33", 25° 53' 40.51")}.}

**East:**

Eastern side of the Boundary starts from grid reference point E1 (67° 52' 03.49", 26° 04' 23.01"). Then it moves along eastern foothills of Rani Kot Range and follows the wall of Rani Kot Fort up to grid reference point E2 (67° 56' 01.27", 25° 53' 03.41") where it crosses the Rani Kot Dhoro. From E2 it moves in southern direction along the foothills of Rani Kot Range and reaches grid reference point E3 (67° 55' 07.66", 25° 50' 56.59"). From E3 it follows a tributary of Moe Sand Dhoro and the track to Geran Lak up to Geran Lak at grid reference point E4 (67° 52' 50.22", 25° 48' 56.61"). From E4 the boundary moves in western direction following a tributary of Sham Dhoro up to grid reference point E5 (67° 51' 25.40", 25° 48' 46.41"). From E5 it follows Sham Dhoro up to grid reference point E9 (67° 49' 01.62", 25° 39' 23.15"). {Grid reference points between E5 and E9 are; E6 (67° 51' 26.79", 25° 47' 12.25"), E7 (67° 50' 36.54", 25° 44' 47.34") and E8 (67° 49' 41.07", 25° 41' 45.95")}. Khirthar National Park and Hothiano-Eri-Sumbak-Surjan Game Reserve have

a common boundary from grid reference point E4 to E6. From E9 the boundary follows Baran Nadi up to grid reference point E11 (67° 54' 04.37", 25° 25' 10.51"), crossing by E10 (67° 50' 27.65", 25° 32' 19.14") in between. E11 is at the junction of Baran Nadi and Mohri Nadi which is also the south-eastern corner of the Khirthar National Park.

### **South:**

Southern side of the Khirthar National Park Boundary starts from grid reference point S1 (67° 54' 04.37", 25° 25' 10.51") at the junction of Baran Nadi and Mohri Nadi. From S1 it moves along Mohri Nadi in the western direction following grid reference point S2 (67° 49' 38.38", 25° 27' 02.72") and S3 (67° 43' 24.75", 25° 24' 00.53"). S3 is at the junction of Isar Nadi and Trangur Nadi. From S3 it moves in northern direction up to grid reference point S5 (67° 43' 44.07", 25° 30' 34.81") along the Trangur Nadi. {Grid reference point between S3 and S5 is; S4 (67° 42' 15.81", 25° 27' 23.23")}. From S5 it moves in north-eastern direction along the Zay Wari Dhoro (A tributary of Trangur Nadi) up to grid reference point S6 (67° 44' 57.31", 25° 33' 31.49"). From S6 it moves along the foothills of Kambhoo Jabal up to grid reference point S7 (67° 44' 31.18", 25° 35' 59.08"). From S7 to S8 (67° 40' 55.03", 25° 36' 14.76"), it follows Watiwari Dhoro which is a tributary of Bhal Dhoro. From S8, boundary line follows Bhal Dhoro and its tributary up to grid reference point S10 (67° 34' 13.28", 25° 35' 58.62"). {Grid reference point between S8 and S10 is; S9 (67° 37' 50.99", 25° 35' 49.27")}. From S10 it follows Hikabaro Dhoro up to grid reference point S11 (67° 31' 48.74", 25° 34' 44.35"). From S11 it shifts in north-western direction following the tops of Bill Hills up to the grid reference point S12 (67° 28' 10.33", 25° 36' 05.09"). From S12 it follows Mosaro Dhoro (a tributary of Mol Dhoro) up to the grid reference point S13 (67° 26' 45.69", 25° 35' 15.48"), which is at the center of Mol Dhoro. From S13 the boundary shifts in north-western direction and reaches grid reference point S14 (67° 26' 14.68", 25° 35' 39.44") at the center line of Drig Dhoro. From S14 it follows a tributary of Drig Dhoro and track up to grid reference point S15 (67° 24' 08.17", 25° 36' 37.93") that lies on Borido Lak. From S15 boundary moves in southern direction following the boundary line of Karachi District up to grid reference point S21 (67° 16' 27.22", 25° 11' 05.35") {Grid reference points between S15 to S21 are; S16 (67° 24' 24.45", 25° 32' 59.45"), S17 (67° 25' 19.28", 25° 28' 05.64"), S18 (67° 23' 23.42", 25° 22' 31.60"), S19 (67° 21' 33.78", 25° 18' 32.52") and S20 (67° 18' 33.93", 25° 15' 35.16")}. From S3 to S18 Khirthar National Park and Mahal Kohistan Wildlife Sanctuary have a common boundary line. From S21 the boundary moves in south-western direction along the Hasan Nullah and reaches grid reference point S22 (67° 13' 54.97", 25° 09' 17.45"). S22 lies near the Goth Haji Jokhio. From S22 the boundary crosses Karmatani Lat Nullah and moves up to grid reference point S23 (67° 12' 18.26", 25° 11' 12.14") near the Goth Godar. From S23 it shifts westward and follows the boundary line of Shah Chib Deh reaches grid reference point S24 (67° 10' 43.67", 25° 12' 02.44") at Shoring Nullah. From S24 it moves along the ridge-line of Shorawand hills and reaches Khabadi Heights (altitude: 310.3m) at S25 (67° 09' 02.03", 25° 12' 37.11"). From S25 the boundary moves along the Road to Hab Dam and then on the wall of Hab Dam up to grid reference point S26 (67° 06' 25.14", 25° 15' 01.55"). S26 is the south-western corner of the Khirthar National Park.

**West:**

From W1 (67° 06' 25.14", 25° 15' 01.55") the boundary moves in northern direction following the provincial boundary of Sindh up to grid reference point W9 (67° 25' 25.63", 26° 07' 05.83") {Grid reference points between W1 and W9 are; W2 (67° 10' 01.60", 25° 19' 51.63"), W3 (67° 11' 05.41", 25° 27' 44.18"), W4 (67° 16' 44.80", 25° 34' 41.99"), W5 (67° 20' 47.77", 25° 38' 26.20"), W6 (67° 22' 27.14", 25° 44' 00.62"), W7 (67° 26' 02.54", 25° 49' 08.27") and W8 (67° 24' 53.58", 25° 57' 37.99")}

**REFERENCE**

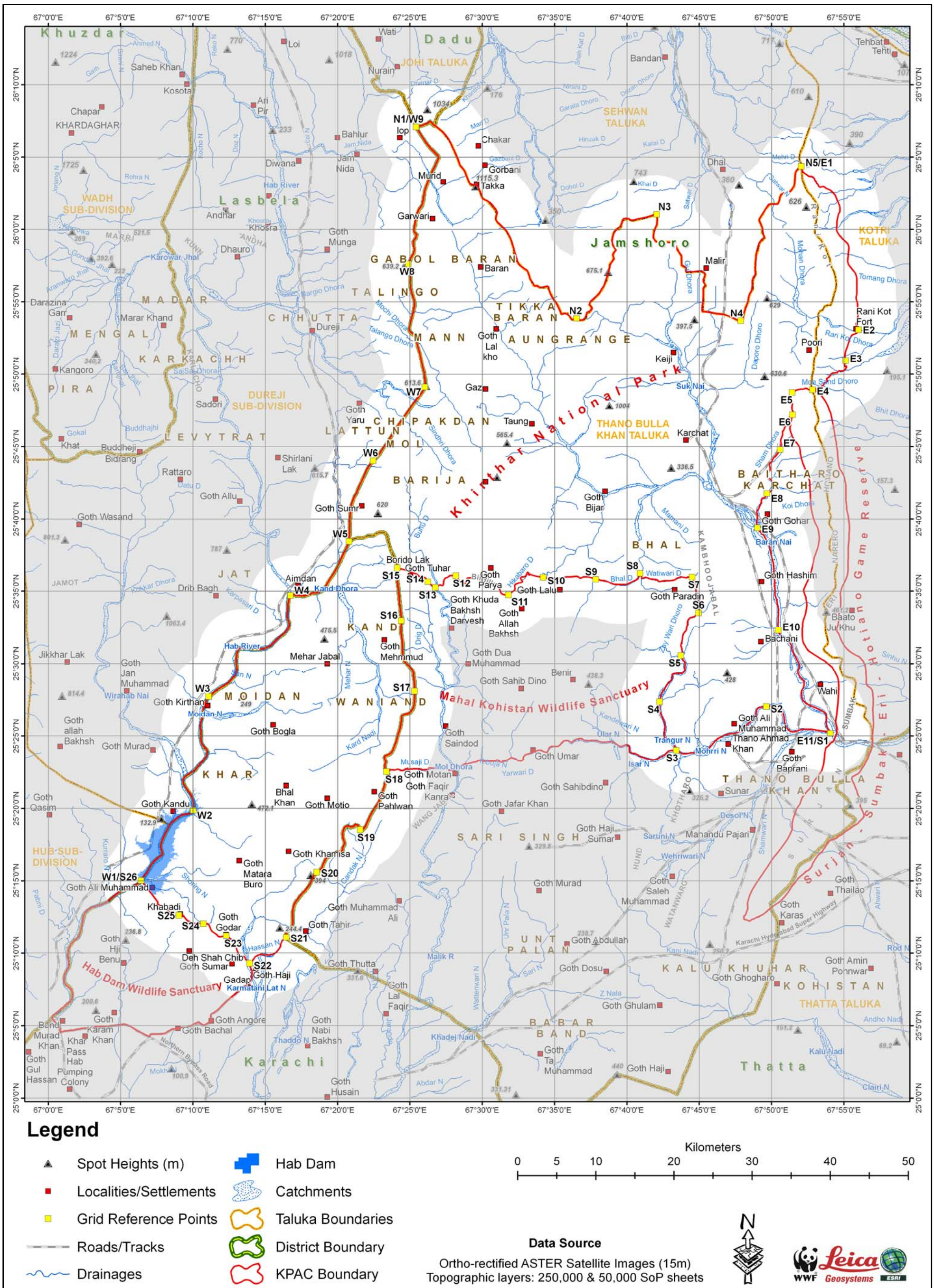
Ortho-rectified ASTER (15 m) Satellite Images  
1:250,000 and 1:50,000 Survey of Pakistan Maps  
Projection: Geographic Coordinate System  
Spheroid & Datum: World Geodetic System (WGS) 84  
(Single frequency GPS receiver was used for the field data collection)

**(Authority)**  
**Government of Sindh**

**A copy is forwarded to:-**

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2. \_\_\_\_\_
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Map Page: GIS map of the Khirthar Protected Areas Complex - Part-I: Khirthar National Park



## List of selective boundary coordinates

No.	Longitude	Latitude	No.	Longitude	Latitude
1	67° 13' 54.97"	25° 09' 17.45"	309	67° 25' 52.26"	25° 48' 49.43"
2	67° 13' 47.72"	25° 09' 28.17"	310	67° 26' 02.54"	25° 49' 08.27"
3	67° 13' 38.31"	25° 09' 31.50"	311	67° 26' 03.39"	25° 49' 23.26"
4	67° 13' 35.28"	25° 09' 42.80"	312	67° 25' 59.11"	25° 50' 06.69"
5	67° 13' 27.99"	25° 09' 45.93"	313	67° 25' 40.69"	25° 51' 26.79"
6	67° 13' 13.34"	25° 09' 45.59"	314	67° 25' 22.70"	25° 52' 31.72"
7	67° 12' 50.95"	25° 10' 40.84"	315	67° 25' 18.85"	25° 52' 39.00"
8	67° 12' 25.26"	25° 11' 08.10"	316	67° 24' 57.01"	25° 52' 59.98"
9	67° 12' 18.26"	25° 11' 12.14"	317	67° 24' 56.58"	25° 53' 07.70"
10	67° 11' 47.09"	25° 11' 08.94"	318	67° 25' 14.57"	25° 54' 22.52"
11	67° 11' 19.91"	25° 11' 30.13"	319	67° 25' 18.42"	25° 55' 02.78"
12	67° 11' 14.32"	25° 11' 36.52"	320	67° 25' 01.71"	25° 56' 04.20"
13	67° 11' 06.63"	25° 11' 56.60"	321	67° 25' 03.00"	25° 56' 57.31"
14	67° 10' 59.96"	25° 12' 02.16"	322	67° 25' 00.86"	25° 57' 05.02"
15	67° 10' 35.60"	25° 12' 04.67"	323	67° 24' 50.58"	25° 57' 14.44"
16	67° 10' 15.43"	25° 12' 03.28"	324	67° 24' 50.15"	25° 57' 20.87"
17	67° 09' 58.24"	25° 12' 06.06"	325	67° 25' 00.86"	25° 57' 57.70"
18	67° 09' 38.81"	25° 12' 14.00"	326	67° 25' 13.71"	25° 58' 20.44"
19	67° 09' 12.74"	25° 12' 40.57"	327	67° 25' 18.42"	25° 58' 37.15"
20	67° 08' 46.99"	25° 12' 34.03"	328	67° 25' 15.00"	25° 58' 47.85"
21	67° 08' 36.13"	25° 12' 36.91"	329	67° 25' 13.28"	25° 59' 10.55"
22	67° 08' 25.14"	25° 12' 44.37"	330	67° 25' 23.13"	25° 59' 23.83"
23	67° 08' 22.91"	25° 12' 50.31"	331	67° 25' 27.42"	25° 59' 38.39"
24	67° 08' 03.99"	25° 12' 58.70"	332	67° 25' 17.56"	25° 59' 49.10"
25	67° 07' 53.85"	25° 13' 11.06"	333	67° 25' 15.00"	25° 59' 56.81"
26	67° 07' 33.24"	25° 13' 21.95"	334	67° 25' 27.84"	26° 01' 03.62"
27	67° 07' 33.59"	25° 13' 31.60"	335	67° 25' 37.26"	26° 01' 26.32"
28	67° 06' 25.13"	25° 15' 01.55"	336	67° 25' 50.54"	26° 01' 43.89"
29	67° 23' 23.42"	25° 22' 31.60"	337	67° 26' 01.68"	26° 02' 41.45"
30	67° 23' 31.56"	25° 22' 15.33"	338	67° 26' 08.53"	26° 03' 04.15"
31	67° 23' 16.14"	25° 21' 43.29"	339	67° 26' 32.95"	26° 04' 03.68"
32	67° 23' 01.15"	25° 20' 52.75"	340	67° 26' 58.64"	26° 04' 57.82"
33	67° 22' 49.16"	25° 20' 23.45"	341	67° 26' 56.50"	26° 05' 05.96"
34	67° 22' 23.03"	25° 19' 44.48"	342	67° 26' 24.81"	26° 05' 37.22"
35	67° 21' 55.19"	25° 18' 45.80"	343	67° 26' 05.53"	26° 06' 00.78"
36	67° 21' 40.63"	25° 18' 31.67"	344	67° 25' 25.63"	26° 07' 05.83"
37	67° 21' 33.78"	25° 18' 32.52"	345	67° 25' 51.33"	26° 07' 12.68"
38	67° 21' 23.93"	25° 18' 50.08"	346	67° 26' 22.60"	26° 07' 28.53"
39	67° 21' 13.22"	25° 18' 53.51"	347	67° 26' 37.16"	26° 07' 13.97"
40	67° 21' 07.65"	25° 18' 46.66"	348	67° 26' 51.79"	26° 07' 05.76"
41	67° 20' 57.37"	25° 18' 43.66"	349	67° 27' 26.91"	26° 06' 33.39"
42	67° 20' 40.24"	25° 18' 47.94"	350	67° 27' 48.33"	26° 05' 59.55"
43	67° 20' 29.96"	25° 18' 43.23"	351	67° 28' 16.17"	26° 04' 58.04"
44	67° 20' 20.54"	25° 18' 20.10"	352	67° 28' 26.88"	26° 04' 28.49"
45	67° 20' 21.82"	25° 17' 58.26"	353	67° 28' 47.86"	26° 04' 01.08"
46	67° 20' 27.82"	25° 17' 39.84"	354	67° 29' 07.14"	26° 03' 14.40"
47	67° 20' 27.39"	25° 17' 32.56"	355	67° 29' 12.70"	26° 03' 09.26"
48	67° 20' 20.97"	25° 17' 19.28"	356	67° 29' 37.55"	26° 03' 02.83"
49	67° 20' 20.54"	25° 17' 07.29"	357	67° 29' 46.54"	26° 02' 49.56"

50	67° 20' 15.82"	25° 17' 03.44"	358	67° 30' 01.10"	26° 02' 09.72"
51	67° 19' 53.12"	25° 16' 58.30"	359	67° 30' 31.51"	26° 01' 52.16"
52	67° 19' 40.32"	25° 16' 51.83"	360	67° 30' 56.78"	26° 01' 23.47"
53	67° 19' 11.19"	25° 16' 32.13"	361	67° 31' 01.92"	26° 01' 08.05"
54	67° 18' 54.49"	25° 15' 51.87"	362	67° 30' 57.60"	26° 00' 58.15"
55	67° 18' 21.94"	25° 15' 22.31"	363	67° 30' 56.31"	26° 00' 39.74"
56	67° 18' 05.23"	25° 14' 47.19"	364	67° 31' 37.86"	25° 59' 55.19"
57	67° 17' 02.27"	25° 13' 27.10"	365	67° 31' 50.28"	25° 59' 36.35"
58	67° 16' 54.57"	25° 13' 01.74"	366	67° 32' 03.13"	25° 59' 04.23"
59	67° 16' 52.42"	25° 12' 33.05"	367	67° 32' 30.11"	25° 57' 38.44"
60	67° 16' 53.71"	25° 12' 01.35"	368	67° 32' 39.53"	25° 57' 29.01"
61	67° 16' 50.28"	25° 11' 50.22"	369	67° 33' 02.23"	25° 57' 14.02"
62	67° 16' 27.58"	25° 11' 29.23"	370	67° 33' 08.23"	25° 57' 06.74"
63	67° 16' 25.32"	25° 11' 13.82"	371	67° 33' 17.65"	25° 56' 34.62"
64	67° 16' 27.22"	25° 11' 05.35"	372	67° 33' 35.21"	25° 56' 06.78"
65	67° 16' 10.04"	25° 10' 51.36"	373	67° 33' 45.28"	25° 56' 06.48"
66	67° 16' 01.25"	25° 10' 23.39"	374	67° 33' 59.84"	25° 55' 59.20"
67	67° 15' 45.66"	25° 10' 03.41"	375	67° 34' 30.25"	25° 56' 04.34"
68	67° 15' 33.27"	25° 09' 55.02"	376	67° 34' 35.39"	25° 56' 00.05"
69	67° 15' 19.69"	25° 09' 51.42"	377	67° 34' 42.24"	25° 55' 32.64"
70	67° 14' 53.71"	25° 09' 51.82"	378	67° 34' 56.80"	25° 55' 07.37"
71	67° 14' 40.12"	25° 09' 54.62"	379	67° 35' 07.94"	25° 54' 54.10"
72	67° 14' 26.14"	25° 09' 49.02"	380	67° 35' 26.35"	25° 54' 11.69"
73	67° 14' 17.35"	25° 09' 43.03"	381	67° 35' 29.78"	25° 54' 09.55"
74	67° 14' 03.76"	25° 09' 23.45"	382	67° 35' 46.91"	25° 54' 11.26"
75	67° 13' 54.97"	25° 09' 17.45"	383	67° 36' 02.76"	25° 53' 59.27"
76	67° 23' 23.42"	25° 22' 31.60"	384	67° 36' 10.04"	25° 53' 45.14"
77	67° 23' 17.00"	25° 22' 40.59"	385	67° 36' 14.75"	25° 53' 44.28"
78	67° 23' 14.86"	25° 22' 57.30"	386	67° 36' 31.46"	25° 53' 51.14"
79	67° 23' 20.42"	25° 23' 11.44"	387	67° 36' 36.60"	25° 53' 43.00"
80	67° 23' 13.35"	25° 23' 32.64"	388	67° 36' 47.73"	25° 53' 42.14"
81	67° 23' 18.50"	25° 23' 38.20"	389	67° 36' 58.44"	25° 53' 45.57"
82	67° 23' 42.05"	25° 23' 50.63"	390	67° 37' 05.72"	25° 53' 51.99"
83	67° 23' 49.33"	25° 24' 03.05"	391	67° 37' 13.00"	25° 54' 15.55"
84	67° 24' 05.61"	25° 24' 45.87"	392	67° 37' 29.28"	25° 54' 24.11"
85	67° 24' 09.89"	25° 25' 06.43"	393	67° 37' 34.42"	25° 54' 30.11"
86	67° 24' 18.46"	25° 25' 29.56"	394	67° 37' 35.70"	25° 54' 35.25"
87	67° 24' 27.03"	25° 26' 24.39"	395	67° 37' 25.08"	25° 54' 51.31"
88	67° 24' 32.16"	25° 26' 28.67"	396	67° 37' 27.22"	25° 55' 00.74"
89	67° 24' 51.87"	25° 26' 33.38"	397	67° 38' 06.63"	25° 55' 36.28"
90	67° 25' 01.29"	25° 26' 39.97"	398	67° 38' 23.76"	25° 56' 05.41"
91	67° 25' 14.14"	25° 26' 58.82"	399	67° 38' 52.03"	25° 57' 37.66"
92	67° 25' 18.42"	25° 27' 20.66"	400	67° 39' 07.02"	25° 57' 58.65"
93	67° 25' 19.70"	25° 28' 18.48"	401	67° 39' 01.45"	25° 58' 18.35"
94	67° 25' 13.71"	25° 29' 24.14"	402	67° 39' 13.87"	25° 58' 34.63"
95	67° 25' 04.71"	25° 29' 40.42"	403	67° 39' 02.74"	25° 58' 52.62"
96	67° 24' 36.87"	25° 30' 09.97"	404	67° 38' 58.45"	25° 59' 07.61"
97	67° 24' 30.45"	25° 30' 25.82"	405	67° 39' 00.17"	25° 59' 27.74"
98	67° 24' 27.88"	25° 31' 35.63"	406	67° 39' 05.73"	25° 59' 44.87"
99	67° 24' 21.46"	25° 32' 27.76"	407	67° 39' 32.29"	26° 00' 13.57"
100	67° 24' 25.31"	25° 32' 45.32"	408	67° 39' 45.91"	26° 00' 44.83"
101	67° 24' 24.45"	25° 33' 13.59"	409	67° 40' 01.75"	26° 00' 46.55"

102	67° 24' 08.18"	25° 35' 38.65"	410	67° 40' 13.32"	26° 00' 39.69"
103	67° 24' 10.99"	25° 36' 29.12"	411	67° 40' 23.17"	26° 00' 38.84"
104	67° 24' 08.17"	25° 36' 37.93"	412	67° 41' 23.56"	26° 00' 52.54"
105	67° 25' 22.88"	25° 36' 13.27"	413	67° 41' 56.11"	26° 01' 04.53"
106	67° 25' 30.98"	25° 36' 09.74"	414	67° 42' 03.39"	26° 01' 04.11"
107	67° 25' 39.09"	25° 36' 01.64"	415	67° 42' 05.53"	26° 00' 59.40"
108	67° 25' 59.17"	25° 35' 58.82"	416	67° 42' 05.96"	26° 00' 38.41"
109	67° 26' 10.80"	25° 35' 48.60"	417	67° 41' 49.26"	25° 59' 32.15"
110	67° 26' 14.68"	25° 35' 39.44"	418	67° 41' 50.11"	25° 59' 23.58"
111	67° 26' 27.36"	25° 35' 25.34"	419	67° 41' 55.68"	25° 59' 14.16"
112	67° 26' 42.87"	25° 35' 14.42"	420	67° 42' 02.53"	25° 59' 07.74"
113	67° 27' 05.42"	25° 35' 26.04"	421	67° 42' 10.67"	25° 59' 05.60"
114	67° 27' 15.64"	25° 35' 22.87"	422	67° 43' 09.35"	25° 59' 05.17"
115	67° 27' 19.87"	25° 35' 29.92"	423	67° 43' 17.49"	25° 59' 01.31"
116	67° 27' 19.16"	25° 35' 41.20"	424	67° 43' 23.48"	25° 58' 54.03"
117	67° 27' 22.23"	25° 35' 49.42"	425	67° 43' 25.63"	25° 58' 40.32"
118	67° 27' 27.93"	25° 35' 55.80"	426	67° 43' 46.19"	25° 58' 12.49"
119	67° 27' 44.77"	25° 36' 05.09"	427	67° 43' 47.47"	25° 57' 33.94"
120	67° 28' 10.33"	25° 36' 05.09"	428	67° 44' 05.03"	25° 57' 24.09"
121	67° 28' 23.11"	25° 35' 45.34"	429	67° 44' 03.75"	25° 57' 06.10"
122	67° 28' 34.15"	25° 35' 32.56"	430	67° 45' 10.35"	25° 57' 08.54"
123	67° 28' 38.79"	25° 35' 30.82"	431	67° 45' 22.34"	25° 56' 59.55"
124	67° 28' 48.09"	25° 35' 32.56"	432	67° 45' 23.62"	25° 56' 52.69"
125	67° 28' 59.12"	25° 35' 55.22"	433	67° 45' 15.92"	25° 56' 30.42"
126	67° 29' 19.46"	25° 35' 57.54"	434	67° 45' 23.19"	25° 56' 08.58"
127	67° 29' 25.26"	25° 36' 00.45"	435	67° 45' 16.34"	25° 55' 54.87"
128	67° 29' 46.76"	25° 35' 55.22"	436	67° 45' 12.49"	25° 54' 22.49"
129	67° 30' 00.70"	25° 35' 55.22"	437	67° 45' 16.34"	25° 54' 19.49"
130	67° 30' 20.45"	25° 35' 47.09"	438	67° 46' 42.52"	25° 54' 07.50"
131	67° 30' 25.10"	25° 35' 40.70"	439	67° 47' 46.33"	25° 53' 40.51"
132	67° 30' 37.88"	25° 35' 37.79"	440	67° 47' 52.33"	25° 53' 40.51"
133	67° 30' 44.85"	25° 35' 31.40"	441	67° 47' 58.33"	25° 53' 50.36"
134	67° 30' 56.46"	25° 35' 29.08"	442	67° 48' 18.89"	25° 54' 51.78"
135	67° 31' 10.98"	25° 35' 10.49"	443	67° 48' 27.03"	25° 55' 29.47"
136	67° 31' 16.21"	25° 34' 54.81"	444	67° 48' 37.73"	25° 55' 50.03"
137	67° 31' 20.86"	25° 34' 49.58"	445	67° 48' 40.30"	25° 56' 30.98"
138	67° 31' 43.51"	25° 34' 42.61"	446	67° 48' 52.72"	25° 56' 55.82"
139	67° 31' 48.74"	25° 34' 44.35"	447	67° 48' 52.29"	25° 57' 27.09"
140	67° 32' 15.46"	25° 35' 07.00"	448	67° 48' 57.43"	25° 58' 28.76"
141	67° 32' 13.78"	25° 35' 21.35"	449	67° 49' 07.71"	25° 59' 02.17"
142	67° 32' 17.21"	25° 35' 28.21"	450	67° 49' 17.99"	25° 59' 16.73"
143	67° 32' 47.19"	25° 35' 39.34"	451	67° 49' 26.56"	25° 59' 23.58"
144	67° 32' 47.19"	25° 35' 42.77"	452	67° 49' 29.13"	25° 59' 30.01"
145	67° 32' 39.05"	25° 35' 51.76"	453	67° 49' 26.13"	25° 59' 36.86"
146	67° 32' 40.34"	25° 35' 58.62"	454	67° 49' 21.42"	26° 00' 09.50"
147	67° 32' 52.33"	25° 35' 59.05"	455	67° 49' 08.14"	26° 00' 41.62"
148	67° 32' 57.47"	25° 36' 01.62"	456	67° 49' 47.54"	26° 01' 43.72"
149	67° 33' 07.75"	25° 36' 18.75"	457	67° 49' 53.54"	26° 01' 45.44"
150	67° 33' 13.74"	25° 36' 08.04"	458	67° 50' 21.81"	26° 01' 44.15"
151	67° 33' 21.02"	25° 36' 08.90"	459	67° 50' 27.38"	26° 01' 46.72"
152	67° 33' 53.58"	25° 36' 00.76"	460	67° 50' 39.16"	26° 02' 24.20"
153	67° 34' 17.56"	25° 35' 58.62"	461	67° 50' 44.72"	26° 02' 28.05"

154	67° 34' 31.27"	25° 35' 53.48"	462	67° 51' 15.56"	26° 02' 35.76"
155	67° 35' 22.24"	25° 35' 54.33"	463	67° 51' 24.56"	26° 02' 47.33"
156	67° 35' 44.93"	25° 35' 59.05"	464	67° 51' 36.55"	26° 03' 13.45"
157	67° 36' 22.20"	25° 36' 02.04"	465	67° 51' 39.55"	26° 03' 54.57"
158	67° 36' 33.76"	25° 36' 01.62"	466	67° 51' 42.97"	26° 04' 04.85"
159	67° 36' 47.89"	25° 35' 55.19"	467	67° 51' 50.25"	26° 04' 13.84"
160	67° 36' 57.75"	25° 35' 59.47"	468	67° 52' 03.49"	26° 04' 23.01"
161	67° 37' 19.59"	25° 35' 59.47"	469	67° 52' 04.49"	26° 04' 10.68"
162	67° 37' 38.86"	25° 35' 55.62"	470	67° 52' 10.53"	26° 03' 58.86"
163	67° 37' 45.81"	25° 35' 50.46"	471	67° 52' 34.99"	26° 03' 42.13"
164	67° 37' 55.14"	25° 35' 48.31"	472	67° 52' 52.12"	26° 03' 38.28"
165	67° 38' 27.70"	25° 35' 44.56"	473	67° 53' 16.97"	26° 02' 58.02"
166	67° 39' 07.53"	25° 35' 27.86"	474	67° 53' 20.39"	26° 02' 55.45"
167	67° 39' 36.23"	25° 35' 27.00"	475	67° 53' 34.10"	26° 02' 58.88"
168	67° 40' 03.21"	25° 35' 30.00"	476	67° 53' 40.52"	26° 02' 55.88"
169	67° 40' 34.44"	25° 35' 45.52"	477	67° 54' 05.79"	26° 02' 41.74"
170	67° 40' 43.58"	25° 35' 52.81"	478	67° 54' 23.78"	26° 02' 22.04"
171	67° 40' 52.46"	25° 36' 13.91"	479	67° 54' 41.34"	26° 01' 40.93"
172	67° 40' 55.03"	25° 36' 14.76"	480	67° 54' 43.91"	26° 01' 20.79"
173	67° 40' 59.74"	25° 36' 07.48"	481	67° 54' 32.77"	26° 00' 45.24"
174	67° 41' 01.45"	25° 35' 54.20"	482	67° 54' 29.78"	25° 59' 55.56"
175	67° 41' 20.30"	25° 35' 57.63"	483	67° 54' 40.91"	25° 59' 35.01"
176	67° 41' 39.57"	25° 35' 50.78"	484	67° 55' 15.60"	25° 59' 00.31"
177	67° 42' 03.56"	25° 35' 49.07"	485	67° 55' 19.46"	25° 58' 51.74"
178	67° 42' 11.69"	25° 35' 41.36"	486	67° 55' 20.74"	25° 58' 44.46"
179	67° 42' 16.41"	25° 35' 40.50"	487	67° 55' 15.60"	25° 57' 53.92"
180	67° 42' 32.12"	25° 35' 44.09"	488	67° 55' 18.17"	25° 57' 37.65"
181	67° 43' 11.09"	25° 35' 45.80"	489	67° 55' 47.30"	25° 56' 58.68"
182	67° 43' 43.21"	25° 35' 59.94"	490	67° 55' 53.30"	25° 56' 30.83"
183	67° 44' 04.63"	25° 35' 56.51"	491	67° 55' 53.72"	25° 55' 33.01"
184	67° 44' 31.18"	25° 35' 59.08"	492	67° 55' 51.58"	25° 55' 11.17"
185	67° 44' 41.46"	25° 35' 32.10"	493	67° 55' 56.72"	25° 54' 51.04"
186	67° 44' 41.04"	25° 35' 21.82"	494	67° 55' 58.44"	25° 54' 03.50"
187	67° 44' 50.88"	25° 34' 49.27"	495	67° 55' 50.73"	25° 53' 27.95"
188	67° 45' 00.81"	25° 33' 49.87"	496	67° 56' 01.43"	25° 53' 03.96"
189	67° 44' 57.31"	25° 33' 31.49"	497	67° 55' 57.58"	25° 52' 53.26"
190	67° 44' 48.74"	25° 33' 25.62"	498	67° 55' 36.59"	25° 52' 42.55"
191	67° 44' 41.46"	25° 33' 16.20"	499	67° 55' 24.94"	25° 52' 28.36"
192	67° 44' 23.47"	25° 33' 11.91"	500	67° 55' 06.63"	25° 51' 36.52"
193	67° 44' 13.62"	25° 33' 02.06"	501	67° 55' 04.48"	25° 51' 09.54"
194	67° 44' 07.20"	25° 32' 21.37"	502	67° 55' 07.66"	25° 50' 56.59"
195	67° 43' 53.49"	25° 32' 02.61"	503	67° 55' 05.01"	25° 50' 43.86"
196	67° 43' 50.49"	25° 31' 51.91"	504	67° 55' 01.77"	25° 50' 39.72"
197	67° 43' 47.92"	25° 31' 30.06"	505	67° 55' 03.21"	25° 50' 32.54"
198	67° 43' 43.21"	25° 31' 15.07"	506	67° 55' 09.68"	25° 50' 32.90"
199	67° 43' 49.64"	25° 30' 51.52"	507	67° 55' 10.76"	25° 50' 28.40"
200	67° 43' 44.07"	25° 30' 34.81"	508	67° 55' 04.71"	25° 50' 18.96"
201	67° 43' 52.64"	25° 30' 14.68"	509	67° 54' 54.12"	25° 50' 12.54"
202	67° 44' 01.20"	25° 30' 04.83"	510	67° 54' 41.22"	25° 50' 13.70"
203	67° 44' 00.32"	25° 29' 31.12"	511	67° 54' 31.02"	25° 50' 07.14"
204	67° 43' 54.32"	25° 29' 22.99"	512	67° 54' 09.66"	25° 50' 02.89"
205	67° 43' 47.90"	25° 29' 19.99"	513	67° 53' 58.88"	25° 49' 48.69"



206	67° 43' 16.63"	25° 29' 19.13"	514	67° 53' 48.62"	25° 49' 39.95"
207	67° 43' 09.35"	25° 29' 16.56"	515	67° 53' 51.63"	25° 49' 30.60"
208	67° 43' 07.21"	25° 29' 12.71"	516	67° 53' 37.18"	25° 49' 23.57"
209	67° 43' 07.21"	25° 28' 55.57"	517	67° 53' 36.41"	25° 49' 17.54"
210	67° 42' 51.79"	25° 28' 39.30"	518	67° 53' 19.65"	25° 49' 05.49"
211	67° 42' 29.09"	25° 28' 06.49"	519	67° 53' 06.28"	25° 49' 01.55"
212	67° 42' 22.32"	25° 27' 52.52"	520	67° 53' 00.26"	25° 48' 55.76"
213	67° 42' 15.81"	25° 27' 25.86"	521	67° 52' 54.33"	25° 48' 54.63"
214	67° 42' 15.38"	25° 26' 56.68"	522	67° 51' 26.79"	25° 47' 12.25"
215	67° 42' 19.24"	25° 26' 34.84"	523	67° 51' 10.80"	25° 46' 57.12"
216	67° 42' 35.94"	25° 25' 55.17"	524	67° 51' 05.23"	25° 46' 45.13"
217	67° 42' 38.51"	25° 25' 40.18"	525	67° 51' 03.95"	25° 46' 26.71"
218	67° 42' 34.66"	25° 25' 16.20"	526	67° 50' 58.38"	25° 46' 24.57"
219	67° 42' 35.94"	25° 24' 52.64"	527	67° 50' 46.39"	25° 46' 03.58"
220	67° 43' 02.11"	25° 24' 40.65"	528	67° 50' 46.39"	25° 45' 49.02"
221	67° 43' 11.96"	25° 24' 29.94"	529	67° 50' 38.25"	25° 45' 31.89"
222	67° 43' 24.75"	25° 24' 00.53"	530	67° 50' 36.97"	25° 45' 22.46"
223	67° 51' 26.79"	25° 47' 12.25"	531	67° 50' 39.11"	25° 45' 14.76"
224	67° 51' 30.50"	25° 47' 18.11"	532	67° 50' 36.54"	25° 44' 47.34"
225	67° 51' 23.65"	25° 47' 40.80"	533	67° 50' 18.98"	25° 44' 21.65"
226	67° 51' 26.23"	25° 48' 03.01"	534	67° 50' 09.13"	25° 44' 13.51"
227	67° 51' 17.60"	25° 48' 31.58"	535	67° 50' 00.51"	25° 43' 57.08"
228	67° 51' 19.58"	25° 48' 43.62"	536	67° 49' 51.63"	25° 43' 47.08"
229	67° 51' 44.38"	25° 48' 56.20"	537	67° 49' 54.40"	25° 43' 27.08"
230	67° 52' 13.31"	25° 48' 59.62"	538	67° 49' 46.07"	25° 43' 09.30"
231	67° 52' 20.50"	25° 49' 02.76"	539	67° 49' 44.40"	25° 42' 58.18"
232	67° 52' 37.26"	25° 48' 55.91"	540	67° 50' 06.63"	25° 42' 28.18"
233	67° 52' 54.33"	25° 48' 54.63"	541	67° 50' 06.07"	25° 42' 11.51"
234	67° 06' 25.13"	25° 15' 01.55"	542	67° 49' 57.73"	25° 41' 55.40"
235	67° 06' 41.26"	25° 15' 26.57"	543	67° 49' 41.07"	25° 41' 45.95"
236	67° 06' 48.77"	25° 15' 34.14"	544	67° 49' 34.95"	25° 41' 29.84"
237	67° 07' 08.48"	25° 16' 09.26"	545	67° 49' 22.17"	25° 41' 25.95"
238	67° 07' 34.17"	25° 16' 36.67"	546	67° 49' 17.73"	25° 41' 20.39"
239	67° 07' 53.10"	25° 16' 50.46"	547	67° 49' 17.73"	25° 41' 07.61"
240	67° 07' 46.25"	25° 17' 17.44"	548	67° 49' 07.17"	25° 40' 43.17"
241	67° 07' 45.82"	25° 17' 29.01"	549	67° 48' 58.84"	25° 40' 31.50"
242	67° 07' 59.53"	25° 18' 06.27"	550	67° 49' 01.62"	25° 40' 07.60"
243	67° 08' 20.94"	25° 18' 47.82"	551	67° 48' 57.73"	25° 39' 39.82"
244	67° 08' 30.36"	25° 19' 00.66"	552	67° 49' 03.84"	25° 39' 17.60"
245	67° 08' 57.78"	25° 19' 23.36"	553	67° 49' 27.69"	25° 38' 52.24"
246	67° 09' 15.34"	25° 19' 33.21"	554	67° 49' 51.25"	25° 38' 09.41"
247	67° 09' 44.89"	25° 19' 37.50"	555	67° 49' 58.10"	25° 37' 26.83"
248	67° 09' 56.46"	25° 19' 43.92"	556	67° 50' 07.52"	25° 36' 57.28"
249	67° 10' 01.60"	25° 19' 51.63"	557	67° 50' 13.09"	25° 35' 41.90"
250	67° 10' 03.31"	25° 20' 02.77"	558	67° 50' 14.37"	25° 34' 41.34"
251	67° 09' 56.88"	25° 20' 45.30"	559	67° 50' 21.23"	25° 34' 23.78"
252	67° 09' 20.48"	25° 21' 42.26"	560	67° 50' 28.51"	25° 33' 49.51"
253	67° 09' 19.19"	25° 21' 59.39"	561	67° 50' 26.37"	25° 32' 42.70"
254	67° 09' 26.05"	25° 22' 10.10"	562	67° 50' 27.65"	25° 32' 19.14"
255	67° 10' 01.60"	25° 22' 32.80"	563	67° 50' 31.93"	25° 32' 05.01"
256	67° 10' 46.14"	25° 23' 20.77"	564	67° 50' 38.79"	25° 31' 54.73"
257	67° 10' 54.27"	25° 23' 34.05"	565	67° 51' 07.83"	25° 31' 36.61"

258	67° 10' 58.99"	25° 23' 50.07"	566	67° 51' 13.82"	25° 31' 30.19"
259	67° 10' 58.99"	25° 23' 59.92"	567	67° 51' 22.82"	25° 31' 13.05"
260	67° 10' 54.70"	25° 24' 07.20"	568	67° 51' 22.82"	25° 31' 04.49"
261	67° 10' 35.43"	25° 24' 29.90"	569	67° 51' 31.81"	25° 30' 40.50"
262	67° 10' 33.72"	25° 25' 18.72"	570	67° 51' 55.80"	25° 29' 53.90"
263	67° 10' 30.29"	25° 25' 33.72"	571	67° 51' 56.22"	25° 29' 45.77"
264	67° 10' 30.29"	25° 25' 46.39"	572	67° 51' 48.95"	25° 29' 24.78"
265	67° 10' 38.86"	25° 26' 14.66"	573	67° 51' 50.23"	25° 29' 17.93"
266	67° 10' 42.71"	25° 26' 33.94"	574	67° 51' 58.37"	25° 29' 03.79"
267	67° 10' 42.71"	25° 26' 48.93"	575	67° 52' 12.50"	25° 28' 49.44"
268	67° 10' 49.99"	25° 27' 19.34"	576	67° 52' 15.07"	25° 28' 37.02"
269	67° 11' 05.41"	25° 27' 44.18"	577	67° 52' 15.07"	25° 28' 30.17"
270	67° 11' 41.82"	25° 28' 12.62"	578	67° 52' 05.22"	25° 28' 08.33"
271	67° 12' 19.47"	25° 28' 36.04"	579	67° 52' 03.94"	25° 27' 59.33"
272	67° 12' 33.60"	25° 28' 47.61"	580	67° 52' 09.50"	25° 27' 30.21"
273	67° 12' 56.73"	25° 29' 15.88"	581	67° 52' 21.50"	25° 27' 16.93"
274	67° 13' 01.87"	25° 29' 32.15"	582	67° 53' 31.31"	25° 26' 43.95"
275	67° 12' 58.87"	25° 30' 00.85"	583	67° 53' 44.16"	25° 26' 34.10"
276	67° 12' 59.73"	25° 30' 26.97"	584	67° 53' 48.01"	25° 26' 13.97"
277	67° 13' 03.58"	25° 30' 50.10"	585	67° 53' 47.42"	25° 25' 42.87"
278	67° 13' 09.15"	25° 31' 00.81"	586	67° 54' 04.37"	25° 25' 10.51"
279	67° 13' 14.29"	25° 31' 04.24"	587	67° 53' 46.45"	25° 25' 17.79"
280	67° 14' 33.95"	25° 31' 00.38"	588	67° 52' 40.92"	25° 25' 27.63"
281	67° 14' 57.94"	25° 31' 02.52"	589	67° 52' 07.94"	25° 25' 26.78"
282	67° 15' 24.06"	25° 31' 16.23"	590	67° 51' 31.96"	25° 25' 17.36"
283	67° 15' 56.40"	25° 31' 48.95"	591	67° 51' 16.11"	25° 25' 19.50"
284	67° 16' 16.96"	25° 32' 05.66"	592	67° 51' 10.12"	25° 25' 24.21"
285	67° 16' 36.66"	25° 32' 28.36"	593	67° 50' 59.84"	25° 25' 40.91"
286	67° 16' 38.37"	25° 32' 46.35"	594	67° 50' 53.84"	25° 25' 56.33"
287	67° 16' 31.52"	25° 33' 13.33"	595	67° 50' 51.70"	25° 26' 19.89"
288	67° 16' 33.66"	25° 34' 04.72"	596	67° 50' 46.56"	25° 26' 40.02"
289	67° 16' 38.37"	25° 34' 30.42"	597	67° 50' 41.85"	25° 26' 46.87"
290	67° 16' 44.80"	25° 34' 41.99"	598	67° 50' 20.01"	25° 27' 02.72"
291	67° 16' 57.22"	25° 34' 44.99"	599	67° 49' 29.81"	25° 27' 02.72"
292	67° 17' 42.96"	25° 34' 41.26"	600	67° 49' 06.25"	25° 26' 58.01"
293	67° 18' 16.80"	25° 34' 52.40"	601	67° 49' 00.26"	25° 26' 52.44"
294	67° 18' 46.78"	25° 34' 57.53"	602	67° 48' 51.69"	25° 26' 15.60"
295	67° 18' 55.77"	25° 35' 03.53"	603	67° 48' 42.27"	25° 26' 04.04"
296	67° 19' 08.19"	25° 35' 17.66"	604	67° 48' 30.28"	25° 25' 57.62"
297	67° 19' 48.89"	25° 36' 23.62"	605	67° 48' 05.01"	25° 25' 37.48"
298	67° 20' 36.21"	25° 37' 58.36"	606	67° 47' 48.73"	25° 25' 16.07"
299	67° 20' 47.77"	25° 38' 26.20"	607	67° 47' 28.60"	25° 25' 10.93"
300	67° 20' 50.34"	25° 40' 07.28"	608	67° 47' 04.61"	25° 25' 08.79"
301	67° 20' 58.06"	25° 41' 04.25"	609	67° 46' 41.83"	25° 25' 01.64"
302	67° 21' 10.05"	25° 41' 35.34"	610	67° 46' 16.99"	25° 24' 48.79"
303	67° 21' 55.45"	25° 43' 13.51"	611	67° 46' 04.14"	25° 24' 37.65"
304	67° 22' 11.72"	25° 43' 41.35"	612	67° 45' 40.15"	25° 24' 09.81"
305	67° 22' 55.84"	25° 44' 31.46"	613	67° 45' 14.03"	25° 23' 55.25"
306	67° 23' 07.83"	25° 44' 54.16"	614	67° 43' 54.36"	25° 23' 45.40"
307	67° 24' 10.36"	25° 46' 27.10"	615	67° 43' 24.75"	25° 24' 00.53"
308	67° 25' 15.85"	25° 48' 03.17"			