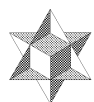


Sectortabellen

voor het

APC-systeem



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# Bij de sectortabellen voor het APC-systeem

## Het gebruik van de tabellen

Deze sectortabellen zijn berekend voor 5° NB tot en met 70° NB, met een interval van 5°, en voor 49° NB tot en met 54° NB met een interval van 1°. De ingang van de tabel is de rechte klimming van het zuidpunt,  $\alpha_z$ . Voor  $\alpha_z$  van 0° tot en met 360° met een interval van 5° zijn alle twaalf sectorcuspen weergegeven, en de lengte en breedte van het zuidpunt,  $\lambda_z$  en  $\beta_z$ . Deze laatste twee waarden worden gebruikt om de ware plaats of astrologische lengte van de planeten te berekenen.<sup>1,2</sup>

De waarde van  $\alpha_z$  kan worden berekend uit de sterrentijd volgens:  $\alpha_z = 15 \times ST$ . Door interpolatie tussen de regels van de tabel worden dan de juiste waarden gevonden bij de berekende  $\alpha_z$ . Daarna kan nog worden geïnterpoleerd tussen de uitkomsten van twee opeenvolgende tabellen om de juiste waarden te vinden bij de precieze noorderbreedte.

## Nauwkeurigheid

De maximale fout die ontstaat door lineaire interpolatie tussen opeenvolgende  $\alpha_z$  waarden bedraagt circa 0,06°. De maximale fout bij interpolatie tussen opeenvolgende noorderbreedte waarden voor breedten in Nederland en België (49°-54°) is circa 0,02°, bij lage breedten (<49°) circa 0,07° en op hoge breedten (>54°) circa 0,20°. Daarbij geldt dat de fout toeneemt bij toenemende breedte.

## Bron van de gegevens

De eerste aanzet tot het ascendant-parallelcirkel-systeem is gegeven door L. Knecht.<sup>3</sup> De juiste formules voor de sectorgrenzen zijn onder meer gegeven door P.F. van Solt, en later door H. Cosman.<sup>4,5</sup> Een moderne formulering is gegeven door Th. Ram in Urania.<sup>6</sup> Niet onvermeld mag blijven de recente reeks artikelen van Douwe van Zwol.<sup>7</sup> De formules die voor de onderhavige tabellen zijn gebruikt met de bijbehorende definitieën luiden als volgt.

n	= volgnummer sector	$\lambda_z$	= lengte zuidpunt
$\Phi$	= geografische breedte	$\beta_z$	= breedte zuidpunt
$\alpha_z$	= rechte klimming zuidpunt	$k_{v_{asc}}$	= klimmingsverschil ascendant
$\varepsilon$	= hellingshoek ecliptica (hier voor 1-1-2000, 0 <sup>h</sup> UT)	$\delta_{asc}$	= declinatie ascendant
		$\alpha_{0,n}$	= schuine klimming / -daling cusp n
		$\lambda_n$	= lengte cusp n

1.  $\tan \lambda_z = (\sin \alpha_z \cos \varepsilon \tan \Phi - \sin \varepsilon) / (\cos \alpha_z \tan \Phi)$
2.  $\sin \beta_z = -\cos \Phi \cos \varepsilon - \sin \Phi \sin \varepsilon \sin \alpha_z$
3.  $\tan k_{v_{asc}} = (\tan \Phi \tan \varepsilon \cos \alpha_z) / (1 + \tan \Phi \tan \varepsilon \sin \alpha_z)$
4.  $\tan \delta_{asc} = \sin k_{v_{asc}} / \tan \Phi$
5. voor  $n < 8$ :  $\alpha_{0,n} = k_{v_{asc}} + \alpha_z + 90 + (n - 1) (90 - k_{v_{asc}}) / 3$   
voor  $n \geq 8$ :  $\alpha_{0,n} = k_{v_{asc}} + \alpha_z + 90 + (n - 13) (90 + k_{v_{asc}}) / 3$
6.  $\tan \lambda_n = (\tan \delta_{asc} \tan \Phi \sin \alpha_z + \sin \alpha_{0,n}) / (\cos \varepsilon (\tan \delta_{asc} \tan \Phi \cos \alpha_z + \cos \alpha_{0,n}) + \sin \varepsilon \tan \Phi \sin (\alpha_z - \alpha_{0,n}))$

## De filosofische achtergrond

Een discussie over huizensystemen en een bespreking van de filosofische achtergrond van het APC-systeem zijn onder meer te vinden in de *Syllabus astro-techniek*, en in Cosmans *Why APC-houses?*.<sup>8,5</sup>

Ingmar de Boer, 25 november 2001 / 5 augustus 2002

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5° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	12.40 𐄂	66.06 Z	1.99 𐄂	29.04 𐄂	28.00 𐄂	0.00 𐄂	3.16 𐄂	4.10 𐄂	1.99 𐄂	29.84 𐄂	28.73 𐄂	0.00 𐄂	2.38 𐄂	3.25 𐄂
5	12.57 𐄂	65.64 Z	6.57 𐄂	3.77 𐄂	3.15 𐄂	5.45 𐄂	8.39 𐄂	8.89 𐄂	6.57 𐄂	4.58 𐄂	3.89 𐄂	5.45 𐄂	7.63 𐄂	8.06 𐄂
10	12.65 𐄂	65.23 Z	11.15 𐄂	8.57 𐄂	8.37 𐄂	10.88 𐄂	13.54 𐄂	13.62 𐄂	11.15 𐄂	9.38 𐄂	9.11 𐄂	10.88 𐄂	12.80 𐄂	12.80 𐄂
15	12.63 𐄂	64.83 Z	15.74 𐄂	13.43 𐄂	13.64 𐄂	16.28 𐄂	18.61 𐄂	18.29 𐄂	15.74 𐄂	14.23 𐄂	14.37 𐄂	16.28 𐄂	17.89 𐄂	17.50 𐄂
20	12.52 𐄂	64.44 Z	20.35 𐄂	18.35 𐄂	18.96 𐄂	21.64 𐄂	23.59 𐄂	22.91 𐄂	20.35 𐄂	19.14 𐄂	19.67 𐄂	21.64 𐄂	22.90 𐄂	22.16 𐄂
25	12.29 𐄂	64.07 Z	25.00 𐄂	23.34 𐄂	24.30 𐄂	26.94 𐄂	28.49 𐄂	27.50 𐄂	25.00 𐄂	24.11 𐄂	24.99 𐄂	26.94 𐄂	27.84 𐄂	26.78 𐄂
30	11.96 𐄂	63.72 Z	29.68 𐄂	28.40 𐄂	29.66 𐄂	2.18 𐄂	3.31 𐄂	2.08 𐄂	29.68 𐄂	29.14 𐄂	0.32 𐄂	2.18 𐄂	2.70 𐄂	1.39 𐄂
35	11.52 𐄂	63.39 Z	4.41 𐄂	3.51 𐄂	5.03 𐄂	7.35 𐄂	8.06 𐄂	6.64 𐄂	4.41 𐄂	4.22 𐄂	5.65 𐄂	7.35 𐄂	7.50 𐄂	5.99 𐄂
40	10.96 𐄂	63.09 Z	9.19 𐄂	8.69 𐄂	10.38 𐄂	12.45 𐄂	12.76 𐄂	11.20 𐄂	9.19 𐄂	9.36 𐄂	10.96 𐄂	12.45 𐄂	12.24 𐄂	10.59 𐄂
45	10.28 𐄂	62.81 Z	14.03 𐄂	13.91 𐄂	15.71 𐄂	17.46 𐄂	17.41 𐄂	15.77 𐄂	14.03 𐄂	14.53 𐄂	16.24 𐄂	17.46 𐄂	16.93 𐄂	15.21 𐄂
50	9.49 𐄂	62.55 Z	18.93 𐄂	19.18 𐄂	21.00 𐄂	22.41 𐄂	22.02 𐄂	20.36 𐄂	18.93 𐄂	19.74 𐄂	21.48 𐄂	22.41 𐄂	21.59 𐄂	19.85 𐄂
55	8.59 𐄂	62.32 Z	23.89 𐄂	24.47 𐄂	26.25 𐄂	27.28 𐄂	26.60 𐄂	24.98 𐄂	23.89 𐄂	24.98 𐄂	26.67 𐄂	27.28 𐄂	26.22 𐄂	24.53 𐄂
60	7.59 𐄂	62.12 Z	28.92 𐄂	29.78 𐄂	1.44 𐄂	2.09 𐄂	1.17 𐄂	29.65 𐄂	28.92 𐄂	0.22 𐄂	1.80 𐄂	2.09 𐄂	0.83 𐄂	29.25 𐄂
65	6.49 𐄂	61.95 Z	4.00 𐄂	5.09 𐄂	6.57 𐄂	6.84 𐄂	5.72 𐄂	4.36 𐄂	4.00 𐄂	5.46 𐄂	6.87 𐄂	6.84 𐄂	5.44 𐄂	4.02 𐄂
70	5.30 𐄂	61.81 Z	9.13 𐄂	10.38 𐄂	11.62 𐄂	11.53 𐄂	10.29 𐄂	9.12 𐄂	9.13 𐄂	10.69 𐄂	11.87 𐄂	11.53 𐄂	10.06 𐄂	8.84 𐄂
75	4.04 𐄂	61.70 Z	14.30 𐄂	15.66 𐄂	16.62 𐄂	16.19 𐄂	14.87 𐄂	13.94 𐄂	14.30 𐄂	15.88 𐄂	16.80 𐄂	16.19 𐄂	14.70 𐄂	13.73 𐄂
80	2.73 𐄂	61.62 Z	19.52 𐄂	20.90 𐄂	21.54 𐄂	20.81 𐄂	19.47 𐄂	18.82 𐄂	19.52 𐄂	21.05 𐄂	21.66 𐄂	20.81 𐄂	19.36 𐄂	18.68 𐄂
85	1.37 𐄂	61.58 Z	24.75 𐄂	26.09 𐄂	26.40 𐄂	25.41 𐄂	24.12 𐄂	23.77 𐄂	24.75 𐄂	26.16 𐄂	26.46 𐄂	25.41 𐄂	24.06 𐄂	23.69 𐄂
90	0.00 𐄂	61.56 Z	0.00 𐄂	1.23 𐄂	1.20 𐄂	0.00 𐄂	28.80 𐄂	28.77 𐄂	0.00 𐄂	1.23 𐄂	1.20 𐄂	0.00 𐄂	28.80 𐄂	28.77 𐄂
95	28.63 𐄂	61.58 Z	5.25 𐄂	6.31 𐄂	5.94 𐄂	4.59 𐄂	3.54 𐄂	3.84 𐄂	5.25 𐄂	6.23 𐄂	5.88 𐄂	4.59 𐄂	3.60 𐄂	3.91 𐄂
100	27.27 𐄂	61.62 Z	10.48 𐄂	11.32 𐄂	10.64 𐄂	9.19 𐄂	8.34 𐄂	8.95 𐄂	10.48 𐄂	11.18 𐄂	10.53 𐄂	9.19 𐄂	8.46 𐄂	9.10 𐄂
105	25.96 𐄂	61.70 Z	15.70 𐄂	16.27 𐄂	15.30 𐄂	13.81 𐄂	13.20 𐄂	14.12 𐄂	15.70 𐄂	16.06 𐄂	15.13 𐄂	13.81 𐄂	13.38 𐄂	14.34 𐄂
110	24.70 𐄂	61.81 Z	20.87 𐄂	21.16 𐄂	19.94 𐄂	18.47 𐄂	18.13 𐄂	19.31 𐄂	20.87 𐄂	20.88 𐄂	19.71 𐄂	18.47 𐄂	18.38 𐄂	19.62 𐄂
115	23.51 𐄂	61.95 Z	26.00 𐄂	25.98 𐄂	24.56 𐄂	23.16 𐄂	23.13 𐄂	24.54 𐄂	26.00 𐄂	25.64 𐄂	24.28 𐄂	23.16 𐄂	23.43 𐄂	24.91 𐄂
120	22.41 𐄂	62.12 Z	1.08 𐄂	0.75 𐄂	29.17 𐄂	27.91 𐄂	28.20 𐄂	29.78 𐄂	1.08 𐄂	0.35 𐄂	28.83 𐄂	27.91 𐄂	28.56 𐄂	0.22 𐄂
125	21.41 𐄂	62.32 Z	6.11 𐄂	5.47 𐄂	3.78 𐄂	2.72 𐄂	3.33 𐄂	5.02 𐄂	6.11 𐄂	5.02 𐄂	3.40 𐄂	2.72 𐄂	3.75 𐄂	5.53 𐄂
130	20.51 𐄂	62.55 Z	11.07 𐄂	10.15 𐄂	8.41 𐄂	7.59 𐄂	8.52 𐄂	10.26 𐄂	11.07 𐄂	9.64 𐄂	7.98 𐄂	7.59 𐄂	9.00 𐄂	10.82 𐄂
135	19.72 𐄂	62.81 Z	15.97 𐄂	14.79 𐄂	13.07 𐄂	12.54 𐄂	13.76 𐄂	15.47 𐄂	15.97 𐄂	14.23 𐄂	12.59 𐄂	12.54 𐄂	14.29 𐄂	16.09 𐄂
140	19.04 𐄂	63.09 Z	20.81 𐄂	19.41 𐄂	17.76 𐄂	17.55 𐄂	19.04 𐄂	20.64 𐄂	20.81 𐄂	18.80 𐄂	17.24 𐄂	17.55 𐄂	19.62 𐄂	21.31 𐄂
145	18.48 𐄂	63.39 Z	25.59 𐄂	24.01 𐄂	22.50 𐄂	22.65 𐄂	24.35 𐄂	25.78 𐄂	25.59 𐄂	23.36 𐄂	21.94 𐄂	22.65 𐄂	24.97 𐄂	26.49 𐄂
150	18.04 𐄂	63.72 Z	0.32 𐄂	28.61 𐄂	27.30 𐄂	27.82 𐄂	29.68 𐄂	0.86 𐄂	0.32 𐄂	27.92 𐄂	26.69 𐄂	27.82 𐄂	0.34 𐄂	1.60 𐄂
155	17.71 𐄂	64.07 Z	5.00 𐄂	3.22 𐄂	2.16 𐄂	3.06 𐄂	5.01 𐄂	5.89 𐄂	5.00 𐄂	2.50 𐄂	1.51 𐄂	3.06 𐄂	5.70 𐄂	6.66 𐄂
160	17.48 𐄂	64.44 Z	9.65 𐄂	7.84 𐄂	7.10 𐄂	8.36 𐄂	10.33 𐄂	10.86 𐄂	9.65 𐄂	7.09 𐄂	6.41 𐄂	8.36 𐄂	11.04 𐄂	11.65 𐄂
165	17.37 𐄂	64.83 Z	14.26 𐄂	12.50 𐄂	12.11 𐄂	13.72 𐄂	15.63 𐄂	15.77 𐄂	14.26 𐄂	11.71 𐄂	11.39 𐄂	13.72 𐄂	16.36 𐄂	16.57 𐄂
170	17.35 𐄂	65.23 Z	18.85 𐄂	17.20 𐄂	17.20 𐄂	19.12 𐄂	20.89 𐄂	20.62 𐄂	18.85 𐄂	16.38 𐄂	16.46 𐄂	19.12 𐄂	21.63 𐄂	21.43 𐄂
175	17.43 𐄂	65.64 Z	23.43 𐄂	21.94 𐄂	22.37 𐄂	24.55 𐄂	26.11 𐄂	25.42 𐄂	23.43 𐄂	21.11 𐄂	21.61 𐄂	24.55 𐄂	26.85 𐄂	26.23 𐄂
180	17.60 𐄂	66.06 Z	28.01 𐄂	26.75 𐄂	27.62 𐄂	0.00 𐄂	1.27 𐄂	0.16 𐄂	28.01 𐄂	25.90 𐄂	26.84 𐄂	0.00 𐄂	2.00 𐄂	0.96 𐄂

## 5° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII													
185	17.85	66.49	Z	2.60	♁	1.62	♂	2.95	♋	5.45	♍	6.37	♎	4.86	♏	2.60	♐	0.76	♑	2.16	♒	5.45	♓	7.09	♈	5.65	♉
190	18.18	66.93	Z	7.21	♁	6.58	♂	8.34	♋	10.88	♍	11.41	♎	9.51	♏	7.21	♐	5.71	♑	7.55	♒	10.88	♓	12.11	♈	10.29	♉
195	18.59	67.36	Z	11.85	♁	11.61	♂	13.79	♋	16.28	♍	16.38	♎	14.14	♏	11.85	♐	10.74	♑	13.01	♒	16.28	♓	17.06	♈	14.90	♉
200	19.06	67.80	Z	16.54	♁	16.73	♂	19.28	♋	21.64	♍	21.28	♎	18.75	♏	16.54	♐	15.86	♑	18.52	♒	21.64	♓	21.94	♈	19.49	♉
205	19.59	68.22	Z	21.28	♁	21.93	♂	24.81	♋	26.94	♍	26.13	♎	23.34	♏	21.28	♐	21.08	♑	24.07	♒	26.94	♓	26.75	♈	24.06	♉
210	20.18	68.64	Z	26.08	♁	27.22	♂	0.34	♍	2.18	♎	0.91	♏	27.94	♐	26.08	♑	26.39	♒	29.63	♓	2.18	♈	1.50	♉	28.62	♊
215	20.83	69.05	Z	0.96	♂	2.59	♋	5.88	♍	7.35	♎	5.65	♏	2.54	♐	0.96	♑	1.79	♒	5.21	♓	7.35	♈	6.20	♉	3.20	♊
220	21.52	69.44	Z	5.92	♂	8.02	♋	11.39	♍	12.45	♎	10.33	♏	7.17	♐	5.92	♑	7.27	♒	10.77	♓	12.45	♈	10.85	♉	7.79	♊
225	22.25	69.80	Z	10.97	♂	13.52	♋	16.87	♍	17.46	♎	14.99	♏	11.83	♐	10.97	♑	12.82	♒	16.30	♓	17.46	♈	15.46	♉	12.41	♊
230	23.02	70.14	Z	16.10	♂	19.07	♋	22.29	♍	22.41	♎	19.62	♏	16.54	♐	16.10	♑	18.43	♒	21.78	♓	22.41	♈	20.04	♉	17.07	♊
235	23.82	70.46	Z	21.33	♂	24.65	♋	27.66	♍	27.28	♎	24.23	♏	21.30	♐	21.33	♑	24.08	♒	27.20	♓	27.28	♈	24.61	♉	21.78	♊
240	24.65	70.74	Z	26.65	♂	0.25	♍	2.95	♎	2.09	♏	28.84	♐	26.12	♑	26.65	♒	29.75	♓	2.56	♈	2.09	♉	29.17	♊	26.55	♋
245	25.51	70.98	Z	2.06	♋	5.84	♍	8.16	♎	6.84	♏	3.45	♐	1.02	♑	2.06	♒	5.42	♓	7.84	♈	6.84	♉	3.74	♊	1.39	♋
250	26.38	71.19	Z	7.54	♋	11.42	♍	13.29	♎	11.53	♏	8.09	♐	6.00	♑	7.54	♒	11.07	♓	13.03	♈	11.53	♉	8.32	♊	6.30	♋
255	27.27	71.35	Z	13.09	♋	16.95	♍	18.33	♎	16.19	♏	12.75	♐	11.07	♑	13.09	♒	16.69	♓	18.14	♈	16.19	♉	12.92	♊	11.30	♋
260	28.18	71.47	Z	18.70	♋	22.43	♍	23.30	♎	20.81	♏	17.45	♐	16.22	♑	18.70	♒	22.26	♓	23.17	♈	20.81	♉	17.57	♊	16.38	♋
265	29.09	71.54	Z	24.34	♋	27.85	♍	28.18	♎	25.41	♏	22.20	♐	21.47	♑	24.34	♒	27.76	♓	28.12	♈	25.41	♉	22.26	♊	21.55	♋
270	0.00	71.56	Z	0.00	♍	3.19	♎	3.00	♏	0.00	♐	27.00	♑	26.81	♒	0.00	♓	3.19	♈	3.00	♉	0.00	♊	27.00	♋	26.81	♌
275	0.91	71.54	Z	5.66	♍	8.45	♎	7.74	♏	4.59	♐	1.88	♑	2.24	♒	5.66	♓	8.53	♈	7.80	♉	4.59	♊	1.82	♋	2.15	♌
280	1.82	71.47	Z	11.30	♍	13.62	♎	12.43	♏	9.19	♐	6.83	♑	7.74	♒	11.30	♓	13.78	♈	12.55	♉	9.19	♊	6.70	♋	7.57	♌
285	2.73	71.35	Z	16.91	♍	18.70	♎	17.08	♏	13.81	♐	11.86	♑	13.31	♒	16.91	♓	18.93	♈	17.25	♉	13.81	♊	11.67	♋	13.05	♌
290	3.62	71.19	Z	22.46	♍	23.70	♎	21.68	♏	18.47	♐	16.97	♑	18.93	♒	22.46	♓	24.00	♈	21.91	♉	18.47	♊	16.71	♋	18.58	♌
295	4.49	70.98	Z	27.94	♍	28.61	♎	26.26	♏	23.16	♐	22.16	♑	24.58	♒	27.94	♓	28.98	♈	26.55	♉	23.16	♊	21.84	♋	24.16	♌
300	5.35	70.74	Z	3.35	♎	3.45	♏	0.83	♐	27.91	♑	27.44	♒	0.25	♓	3.35	♈	3.88	♉	1.16	♊	27.91	♋	27.05	♌	29.75	♍
305	6.18	70.46	Z	8.67	♎	8.22	♏	5.39	♐	2.72	♑	2.80	♒	5.92	♓	8.67	♈	8.70	♉	5.77	♊	2.72	♋	2.34	♌	5.35	♍
310	6.98	70.14	Z	13.90	♎	12.93	♏	9.96	♐	7.59	♑	8.22	♒	11.57	♓	13.90	♈	13.46	♉	10.38	♊	7.59	♋	7.71	♌	10.93	♍
315	7.75	69.80	Z	19.03	♎	17.59	♏	14.54	♐	12.54	♑	13.70	♒	17.18	♓	19.03	♈	18.17	♉	15.01	♊	12.54	♋	13.13	♌	16.48	♍
320	8.48	69.44	Z	24.08	♎	22.21	♏	19.15	♐	17.55	♑	19.23	♒	22.73	♓	24.08	♈	22.83	♉	19.67	♊	17.55	♋	18.61	♌	21.98	♍
325	9.17	69.05	Z	29.04	♎	26.80	♏	23.80	♐	22.65	♑	24.79	♒	28.21	♓	29.04	♈	27.46	♉	24.35	♊	22.65	♋	24.12	♌	27.41	♍
330	9.82	68.64	Z	3.92	♏	1.38	♐	28.50	♑	27.82	♒	0.37	♓	3.61	♈	3.92	♉	2.06	♊	29.09	♋	27.82	♌	29.66	♍	2.78	♎
335	10.41	68.22	Z	8.72	♏	5.94	♐	3.25	♑	3.06	♒	5.93	♓	8.92	♈	8.72	♉	6.66	♊	3.87	♋	3.06	♌	5.19	♍	8.07	♎
340	10.94	67.80	Z	13.46	♏	10.51	♐	8.06	♑	8.36	♒	11.48	♓	14.14	♈	13.46	♉	11.25	♊	8.72	♋	8.36	♌	10.72	♍	13.27	♎
345	11.41	67.36	Z	18.15	♏	15.10	♐	12.94	♑	13.72	♒	16.99	♓	19.26	♈	18.15	♉	15.86	♊	13.62	♋	13.72	♌	16.21	♍	18.39	♎
350	11.82	66.93	Z	22.79	♏	19.71	♐	17.89	♑	19.12	♒	22.45	♓	24.29	♈	22.79	♉	20.49	♊	18.59	♋	19.12	♌	21.66	♍	23.42	♎
355	12.15	66.49	Z	27.40	♏	24.35	♐	22.91	♑	24.55	♒	27.84	♓	29.24	♈	27.40	♉	25.14	♊	23.63	♋	24.55	♌	27.05	♍	28.38	♎
360	12.40	66.06	Z	1.99	♐	29.04	♑	28.00	♒	0.00	♓	3.16	♈	4.10	♉	1.99	♊	29.84	♋	28.73	♌	0.00	♍	2.38	♎	3.25	♏

10° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	23.91 𐄂	64.63 Z	4.01 𐄂	0.14 𐄂	28.16 𐄂	0.00 𐄂	4.22 𐄂	6.23 𐄂	4.01 𐄂	1.71 𐄂	29.59 𐄂	0.00 𐄂	2.60 𐄂	4.47 𐄂
5	24.60 𐄂	63.83 Z	8.57 𐄂	4.81 𐄂	3.24 𐄂	5.45 𐄂	9.52 𐄂	11.05 𐄂	8.57 𐄂	6.38 𐄂	4.67 𐄂	5.45 𐄂	7.94 𐄂	9.33 𐄂
10	25.16 𐄂	63.07 Z	13.12 𐄂	9.53 𐄂	8.37 𐄂	10.88 𐄂	14.72 𐄂	15.79 𐄂	13.12 𐄂	11.09 𐄂	9.80 𐄂	10.88 𐄂	13.19 𐄂	14.13 𐄂
15	25.57 𐄂	62.33 Z	17.66 𐄂	14.30 𐄂	13.56 𐄂	16.28 𐄂	19.83 𐄂	20.46 𐄂	17.66 𐄂	15.84 𐄂	14.97 𐄂	16.28 𐄂	18.35 𐄂	18.86 𐄂
20	25.82 𐄂	61.63 Z	22.22 𐄂	19.13 𐄂	18.79 𐄂	21.64 𐄂	24.84 𐄂	25.08 𐄂	22.22 𐄂	20.64 𐄂	20.17 𐄂	21.64 𐄂	23.43 𐄂	23.54 𐄂
25	25.88 𐄂	60.97 Z	26.80 𐄂	24.02 𐄂	24.05 𐄂	26.94 𐄂	29.76 𐄂	29.65 𐄂	26.80 𐄂	25.48 𐄂	25.38 𐄂	26.94 𐄂	28.43 𐄂	28.19 𐄂
30	25.73 𐄂	60.34 Z	1.41 𐄂	28.96 𐄂	29.33 𐄂	2.18 𐄂	4.59 𐄂	4.19 𐄂	1.41 𐄂	0.37 𐄂	0.60 𐄂	2.18 𐄂	3.34 𐄂	2.81 𐄂
35	25.34 𐄂	59.76 Z	6.06 𐄂	3.96 𐄂	4.61 𐄂	7.35 𐄂	9.35 𐄂	8.71 𐄂	6.06 𐄂	5.31 𐄂	5.82 𐄂	7.35 𐄂	8.19 𐄂	7.41 𐄂
40	24.69 𐄂	59.22 Z	10.74 𐄂	9.02 𐄂	9.89 𐄂	12.45 𐄂	14.04 𐄂	13.21 𐄂	10.74 𐄂	10.28 𐄂	11.02 𐄂	12.45 𐄂	12.97 𐄂	12.01 𐄂
45	23.75 𐄂	58.73 Z	15.47 𐄂	14.11 𐄂	15.15 𐄂	17.46 𐄂	18.67 𐄂	17.72 𐄂	15.47 𐄂	15.29 𐄂	16.19 𐄂	17.46 𐄂	17.70 𐄂	16.62 𐄂
50	22.48 𐄂	58.28 Z	20.25 𐄂	19.24 𐄂	20.38 𐄂	22.41 𐄂	23.26 𐄂	22.25 𐄂	20.25 𐄂	20.32 𐄂	21.32 𐄂	22.41 𐄂	22.39 𐄂	21.24 𐄂
55	20.87 𐄂	57.88 Z	25.08 𐄂	24.40 𐄂	25.57 𐄂	27.28 𐄂	27.82 𐄂	26.79 𐄂	25.08 𐄂	25.36 𐄂	26.40 𐄂	27.28 𐄂	27.05 𐄂	25.89 𐄂
60	18.89 𐄂	57.54 Z	29.96 𐄂	29.57 𐄂	0.71 𐄂	2.09 𐄂	2.35 𐄂	1.36 𐄂	29.96 𐄂	0.41 𐄂	1.42 𐄂	2.09 𐄂	1.68 𐄂	0.57 𐄂
65	16.53 𐄂	57.24 Z	4.89 𐄂	4.75 𐄂	5.79 𐄂	6.84 𐄂	6.88 𐄂	5.96 𐄂	4.89 𐄂	5.46 𐄂	6.39 𐄂	6.84 𐄂	6.31 𐄂	5.30 𐄂
70	13.79 𐄂	57.00 Z	9.85 𐄂	9.92 𐄂	10.81 𐄂	11.53 𐄂	11.40 𐄂	10.61 𐄂	9.85 𐄂	10.49 𐄂	11.29 𐄂	11.53 𐄂	10.94 𐄂	10.07 𐄂
75	10.70 𐄂	56.81 Z	14.86 𐄂	15.07 𐄂	15.78 𐄂	16.19 𐄂	15.93 𐄂	15.31 𐄂	14.86 𐄂	15.50 𐄂	16.14 𐄂	16.19 𐄂	15.59 𐄂	14.89 𐄂
80	7.32 𐄂	56.67 Z	19.89 𐄂	20.19 𐄂	20.68 𐄂	20.81 𐄂	20.48 𐄂	20.05 𐄂	19.89 𐄂	20.48 𐄂	20.92 𐄂	20.81 𐄂	20.25 𐄂	19.77 𐄂
85	3.72 𐄂	56.59 Z	24.94 𐄂	25.27 𐄂	25.52 𐄂	25.41 𐄂	25.07 𐄂	24.84 𐄂	24.94 𐄂	25.42 𐄂	25.64 𐄂	25.41 𐄂	24.95 𐄂	24.70 𐄂
90	0.00 𐄂	56.56 Z	0.00 𐄂	0.31 𐄂	0.31 𐄂	0.00 𐄂	29.69 𐄂	29.69 𐄂	0.00 𐄂	0.31 𐄂	0.31 𐄂	0.00 𐄂	29.69 𐄂	29.69 𐄂
95	26.28 𐄂	56.59 Z	5.06 𐄂	5.30 𐄂	5.05 𐄂	4.59 𐄂	4.36 𐄂	4.58 𐄂	5.06 𐄂	5.16 𐄂	4.93 𐄂	4.59 𐄂	4.48 𐄂	4.73 𐄂
100	22.68 𐄂	56.67 Z	10.11 𐄂	10.23 𐄂	9.75 𐄂	9.19 𐄂	9.08 𐄂	9.52 𐄂	10.11 𐄂	9.95 𐄂	9.52 𐄂	9.19 𐄂	9.32 𐄂	9.81 𐄂
105	19.30 𐄂	56.81 Z	15.14 𐄂	15.11 𐄂	14.41 𐄂	13.81 𐄂	13.86 𐄂	14.50 𐄂	15.14 𐄂	14.69 𐄂	14.07 𐄂	13.81 𐄂	14.22 𐄂	14.93 𐄂
110	16.21 𐄂	57.00 Z	20.15 𐄂	19.93 𐄂	19.06 𐄂	18.47 𐄂	18.71 𐄂	19.51 𐄂	20.15 𐄂	19.39 𐄂	18.60 𐄂	18.47 𐄂	19.19 𐄂	20.08 𐄂
115	13.47 𐄂	57.24 Z	25.11 𐄂	24.70 𐄂	23.69 𐄂	23.16 𐄂	23.61 𐄂	24.54 𐄂	25.11 𐄂	24.04 𐄂	23.12 𐄂	23.16 𐄂	24.21 𐄂	25.25 𐄂
120	11.11 𐄂	57.54 Z	0.04 𐄂	29.43 𐄂	28.32 𐄂	27.91 𐄂	28.58 𐄂	29.59 𐄂	0.04 𐄂	28.64 𐄂	27.65 𐄂	27.91 𐄂	29.29 𐄂	0.43 𐄂
125	9.13 𐄂	57.88 Z	4.92 𐄂	4.11 𐄂	2.95 𐄂	2.72 𐄂	3.60 𐄂	4.64 𐄂	4.92 𐄂	3.21 𐄂	2.18 𐄂	2.72 𐄂	4.43 𐄂	5.60 𐄂
130	7.52 𐄂	58.28 Z	9.75 𐄂	8.76 𐄂	7.61 𐄂	7.59 𐄂	8.68 𐄂	9.68 𐄂	9.75 𐄂	7.75 𐄂	6.74 𐄂	7.59 𐄂	9.62 𐄂	10.76 𐄂
135	6.25 𐄂	58.73 Z	14.53 𐄂	13.38 𐄂	12.30 𐄂	12.54 𐄂	13.81 𐄂	14.71 𐄂	14.53 𐄂	12.28 𐄂	11.33 𐄂	12.54 𐄂	14.85 𐄂	15.89 𐄂
140	5.31 𐄂	59.22 Z	19.26 𐄂	17.99 𐄂	17.03 𐄂	17.55 𐄂	18.98 𐄂	19.72 𐄂	19.26 𐄂	16.79 𐄂	15.96 𐄂	17.55 𐄂	20.11 𐄂	20.98 𐄂
145	4.66 𐄂	59.76 Z	23.94 𐄂	22.59 𐄂	21.81 𐄂	22.65 𐄂	24.18 𐄂	24.69 𐄂	23.94 𐄂	21.29 𐄂	20.65 𐄂	22.65 𐄂	25.39 𐄂	26.04 𐄂
150	4.27 𐄂	60.34 Z	28.59 𐄂	27.19 𐄂	26.66 𐄂	27.82 𐄂	29.40 𐄂	29.63 𐄂	28.59 𐄂	25.81 𐄂	25.41 𐄂	27.82 𐄂	0.67 𐄂	1.04 𐄂
155	4.12 𐄂	60.97 Z	3.20 𐄂	1.81 𐄂	1.57 𐄂	3.06 𐄂	4.62 𐄂	4.52 𐄂	3.20 𐄂	0.35 𐄂	0.24 𐄂	3.06 𐄂	5.95 𐄂	5.98 𐄂
160	4.18 𐄂	61.63 Z	7.78 𐄂	6.46 𐄂	6.57 𐄂	8.36 𐄂	9.83 𐄂	9.36 𐄂	7.78 𐄂	4.92 𐄂	5.16 𐄂	8.36 𐄂	11.21 𐄂	10.87 𐄂
165	4.43 𐄂	62.33 Z	12.34 𐄂	11.14 𐄂	11.65 𐄂	13.72 𐄂	15.03 𐄂	14.16 𐄂	12.34 𐄂	9.54 𐄂	10.17 𐄂	13.72 𐄂	16.44 𐄂	15.70 𐄂
170	4.84 𐄂	63.07 Z	16.88 𐄂	15.87 𐄂	16.81 𐄂	19.12 𐄂	20.20 𐄂	18.91 𐄂	16.88 𐄂	14.21 𐄂	15.28 𐄂	19.12 𐄂	21.63 𐄂	20.47 𐄂
175	5.40 𐄂	63.83 Z	21.43 𐄂	20.67 𐄂	22.06 𐄂	24.55 𐄂	25.33 𐄂	23.62 𐄂	21.43 𐄂	18.95 𐄂	20.48 𐄂	24.55 𐄂	26.76 𐄂	25.19 𐄂
180	6.09 𐄂	64.63 Z	25.99 𐄂	25.53 𐄂	27.40 𐄂	0.00 𐄂	0.41 𐄂	28.29 𐄂	25.99 𐄂	23.77 𐄂	25.78 𐄂	0.00 𐄂	1.84 𐄂	29.86 𐄂

10° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	6.90 ♁	65.45 Z	0.57 ☾	0.47 ☿	2.82 ♀	5.45 ♀	5.44 ♂	2.92 ♀	0.57 ☾	28.68 ☾	1.17 ♀	5.45 ♁	6.85 ♀	4.48 ♁
190	7.82 ♁	66.28 Z	5.17 ☾	5.50 ☿	8.30 ♀	10.88 ♀	10.42 ♂	7.53 ♀	5.17 ☾	3.69 ♀	6.66 ♀	10.88 ♁	11.79 ♀	9.07 ♁
195	8.82 ♁	67.13 Z	9.83 ☾	10.63 ☿	13.85 ♀	16.28 ♀	15.33 ♂	12.12 ♀	9.83 ☾	8.80 ♀	12.22 ♀	16.28 ♁	16.67 ♀	13.63 ♁
200	9.91 ♁	68.00 Z	14.54 ☾	15.85 ☿	19.44 ♀	21.64 ♀	20.19 ♂	16.69 ♀	14.54 ☾	14.03 ♀	17.84 ♀	21.64 ♁	21.48 ♀	18.17 ♁
205	11.08 ♁	68.87 Z	19.31 ☾	21.17 ☿	25.07 ♀	26.94 ♀	25.00 ♂	21.27 ♀	19.31 ☾	19.37 ♀	23.51 ♀	26.94 ♁	26.23 ♀	22.70 ♁
210	12.31 ♁	69.73 Z	24.17 ☾	26.58 ☿	0.70 ♀	2.18 ♂	29.76 ♂	25.86 ♀	24.17 ☾	24.82 ♀	29.21 ♀	2.18 ♀	0.93 ♁	27.24 ♁
215	13.59 ♁	70.59 Z	29.11 ☾	2.09 ♀	6.33 ♀	7.35 ♂	4.47 ♀	0.47 ☾	29.11 ☾	0.39 ♀	4.92 ♁	7.35 ♀	5.57 ♁	1.79 ☾
220	14.93 ♁	71.43 Z	4.15 ☿	7.67 ♀	11.93 ♀	12.45 ♂	9.15 ♀	5.11 ☾	4.15 ♀	6.06 ♀	10.62 ♁	12.45 ♀	10.17 ♁	6.36 ☾
225	16.32 ♁	72.25 Z	9.29 ☿	13.33 ♀	17.48 ♀	17.46 ♂	13.80 ♀	9.80 ☾	9.29 ♀	11.81 ♀	16.28 ♁	17.46 ♀	14.74 ♁	10.97 ☾
230	17.74 ♁	73.03 Z	14.55 ☿	19.03 ♀	22.98 ♀	22.41 ♂	18.43 ♀	14.54 ☾	14.55 ♀	17.65 ♀	21.90 ♁	22.41 ♀	19.28 ♁	15.63 ☾
235	19.20 ♁	73.77 Z	19.91 ☿	24.78 ♀	28.40 ♀	27.28 ♂	23.05 ♀	19.36 ☾	19.91 ♀	23.53 ♀	27.46 ♁	27.28 ♀	23.81 ♁	20.35 ☾
240	20.69 ♁	74.44 Z	25.39 ☿	0.53 ♀	3.75 ♂	2.09 ♀	27.67 ♀	24.25 ☾	25.39 ♀	29.44 ♀	2.94 ♀	2.09 ♁	28.34 ♁	25.13 ☾
245	22.21 ♁	75.05 Z	0.97 ♀	6.28 ♀	9.00 ♂	6.84 ♀	2.30 ☾	29.23 ☾	0.97 ♀	5.36 ♁	8.33 ♀	6.84 ♁	2.87 ☾	0.00 ☿
250	23.74 ♁	75.57 Z	6.64 ♀	12.01 ♀	14.17 ♂	11.53 ♀	6.96 ☾	4.32 ♀	6.64 ♀	11.27 ♁	13.63 ♀	11.53 ♁	7.43 ☾	4.95 ☿
255	25.29 ♁	75.99 Z	12.40 ♀	17.68 ♀	19.24 ♂	16.19 ♀	11.66 ☾	9.50 ♀	12.40 ♀	17.13 ♁	18.84 ♀	16.19 ♁	12.02 ☾	9.99 ☿
260	26.85 ♁	76.30 Z	18.23 ♀	23.29 ♀	24.22 ♂	20.81 ♀	16.40 ☾	14.80 ♀	18.23 ♀	22.93 ♁	23.96 ♀	20.81 ♁	16.64 ☾	15.14 ☿
265	28.43 ♁	76.50 Z	24.10 ♀	28.83 ♀	29.12 ♂	25.41 ♀	21.20 ☾	20.21 ♀	24.10 ♀	28.65 ♁	28.99 ♀	25.41 ♁	21.32 ☾	20.38 ☿
270	0.00 ☾	76.56 Z	0.00 ♀	4.27 ♂	3.93 ♀	0.00 ☾	26.07 ☾	25.73 ♀	0.00 ♁	4.27 ♀	3.93 ♁	0.00 ☾	26.07 ☾	25.73 ☿
275	1.57 ☾	76.50 Z	5.90 ♀	9.62 ♂	8.68 ♀	4.59 ☾	1.01 ♀	1.35 ♀	5.90 ♁	9.79 ♀	8.80 ♁	4.59 ☾	0.88 ☿	1.17 ♀
280	3.15 ☾	76.30 Z	11.77 ♀	14.86 ♂	13.36 ♀	9.19 ☾	6.04 ♀	7.07 ♀	11.77 ♁	15.20 ♀	13.60 ♁	9.19 ☾	5.78 ☿	6.71 ♀
285	4.71 ☾	75.99 Z	17.60 ♀	20.01 ♂	17.98 ♀	13.81 ☾	11.16 ♀	12.87 ♀	17.60 ♁	20.50 ♀	18.34 ♁	13.81 ☾	10.76 ☿	12.32 ♀
290	6.26 ☾	75.57 Z	23.36 ♀	25.05 ♂	22.57 ♀	18.47 ☾	16.37 ♀	18.73 ♀	23.36 ♁	25.68 ♀	23.04 ♁	18.47 ☾	15.83 ☿	17.99 ♀
295	7.79 ☾	75.05 Z	29.03 ♀	0.00 ♀	27.13 ♀	23.16 ☾	21.67 ♀	24.64 ♀	29.03 ♁	0.77 ♁	27.70 ♁	23.16 ☾	21.00 ☿	23.72 ♀
300	9.31 ☾	74.44 Z	4.61 ♂	4.87 ♀	1.66 ☾	27.91 ☾	27.06 ♀	0.56 ♁	4.61 ♀	5.75 ♁	2.33 ☾	27.91 ☾	26.25 ☿	29.47 ♀
305	10.80 ☾	73.77 Z	10.09 ♂	9.65 ♀	6.19 ☾	2.72 ♀	2.54 ♀	6.47 ♁	10.09 ♀	10.64 ♁	6.95 ☾	2.72 ☿	1.60 ♀	5.22 ♀
310	12.26 ☾	73.03 Z	15.45 ♂	14.37 ♀	10.72 ☾	7.59 ♀	8.10 ♀	12.35 ♁	15.45 ♀	15.46 ♁	11.57 ☾	7.59 ☿	7.02 ♀	10.97 ♀
315	13.68 ☾	72.25 Z	20.71 ♂	19.03 ♀	15.26 ☾	12.54 ♀	13.72 ♀	18.19 ♁	20.71 ♀	20.20 ♁	16.20 ☾	12.54 ☿	12.52 ♀	16.67 ♀
320	15.07 ☾	71.43 Z	25.85 ♂	23.64 ♀	19.83 ☾	17.55 ♀	19.38 ♀	23.94 ♁	25.85 ♀	24.89 ♁	20.85 ☾	17.55 ☿	18.07 ♀	22.33 ♀
325	16.41 ☾	70.59 Z	0.89 ♀	28.21 ♀	24.43 ☾	22.65 ♀	25.08 ♀	29.61 ♁	0.89 ♁	29.53 ♁	25.53 ☾	22.65 ☿	23.67 ♀	27.91 ♀
330	17.69 ☾	69.73 Z	5.83 ♀	2.76 ☾	29.07 ☾	27.82 ♀	0.79 ♁	5.18 ♀	5.83 ♁	4.14 ☾	0.24 ☿	27.82 ☿	29.30 ♀	3.42 ♂
335	18.92 ☾	68.87 Z	10.69 ♀	7.30 ☾	3.77 ♀	3.06 ♀	6.49 ♁	10.63 ♀	10.69 ♁	8.73 ☾	5.00 ☿	3.06 ♀	4.93 ♀	8.83 ♂
340	20.09 ☾	68.00 Z	15.46 ♀	11.83 ☾	8.52 ♀	8.36 ♀	12.16 ♁	15.97 ♀	15.46 ♁	13.31 ☾	9.81 ☿	8.36 ♀	10.56 ♀	14.15 ♂
345	21.18 ☾	67.13 Z	20.17 ♀	16.37 ☾	13.33 ♀	13.72 ♀	17.78 ♁	21.20 ♀	20.17 ♁	17.88 ☾	14.67 ☿	13.72 ♀	16.15 ♀	19.37 ♂
350	22.18 ☾	66.28 Z	24.83 ♀	20.93 ☾	18.21 ♀	19.12 ♀	23.34 ♁	26.31 ♀	24.83 ♁	22.47 ☾	19.58 ☿	19.12 ♀	21.70 ♀	24.50 ♂
355	23.10 ☾	65.45 Z	29.43 ♀	25.52 ☾	23.15 ♀	24.55 ♀	28.83 ♁	1.32 ♁	29.43 ♁	27.08 ☾	24.56 ☿	24.55 ♀	27.18 ♀	29.53 ♂
360	23.91 ☾	64.63 Z	4.01 ☾	0.14 ♀	28.16 ♀	0.00 ♁	4.22 ♀	6.23 ♁	4.01 ☾	1.71 ☿	29.59 ☿	0.00 ♀	2.60 ♂	4.47 ♀

15° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	3.96 𐄂	62.40 Z	6.08 𐄂	1.25 𐄂	28.32 𐄂	0.00 𐄂	5.40 𐄂	8.51 𐄂	6.08 𐄂	3.55 𐄂	0.42 𐄂	0.00 𐄂	2.85 𐄂	5.77 𐄂
5	5.35 𐄂	61.31 Z	10.61 𐄂	5.85 𐄂	3.31 𐄂	5.45 𐄂	10.76 𐄂	13.34 𐄂	10.61 𐄂	8.14 𐄂	5.42 𐄂	5.45 𐄂	8.28 𐄂	10.69 𐄂
10	6.62 𐄂	60.27 Z	15.11 𐄂	10.48 𐄂	8.37 𐄂	10.88 𐄂	16.02 𐄂	18.09 𐄂	15.11 𐄂	12.75 𐄂	10.46 𐄂	10.88 𐄂	13.62 𐄂	15.52 𐄂
15	7.76 𐄂	59.27 Z	19.61 𐄂	15.17 𐄂	13.47 𐄂	16.28 𐄂	21.16 𐄂	22.74 𐄂	19.61 𐄂	17.40 𐄂	15.54 𐄂	16.28 𐄂	18.86 𐄂	20.29 𐄂
20	8.75 𐄂	58.32 Z	24.10 𐄂	19.90 𐄂	18.61 𐄂	21.64 𐄂	26.19 𐄂	27.34 𐄂	24.10 𐄂	22.08 𐄂	20.64 𐄂	21.64 𐄂	24.00 𐄂	25.00 𐄂
25	9.57 𐄂	57.43 Z	28.61 𐄂	24.69 𐄂	23.79 𐄂	26.94 𐄂	1.12 𐄂	1.87 𐄂	28.61 𐄂	26.80 𐄂	25.75 𐄂	26.94 𐄂	29.06 𐄂	29.66 𐄂
30	10.17 𐄂	56.59 Z	3.14 𐄂	29.53 𐄂	28.99 𐄂	2.18 𐄂	5.95 𐄂	6.36 𐄂	3.14 𐄂	1.55 𐄂	0.86 𐄂	2.18 𐄂	4.03 𐄂	4.28 𐄂
35	10.52 𐄂	55.81 Z	7.69 𐄂	4.41 𐄂	4.20 𐄂	7.35 𐄂	10.71 𐄂	10.83 𐄂	7.69 𐄂	6.34 𐄂	5.97 𐄂	7.35 𐄂	8.92 𐄂	8.88 𐄂
40	10.57 𐄂	55.09 Z	12.27 𐄂	9.34 𐄂	9.40 𐄂	12.45 𐄂	15.38 𐄂	15.27 𐄂	12.27 𐄂	11.15 𐄂	11.05 𐄂	12.45 𐄂	13.74 𐄂	13.47 𐄂
45	10.23 𐄂	54.43 Z	16.89 𐄂	14.32 𐄂	14.60 𐄂	17.46 𐄂	20.00 𐄂	19.71 𐄂	16.89 𐄂	15.99 𐄂	16.11 𐄂	17.46 𐄂	18.51 𐄂	18.06 𐄂
50	9.43 𐄂	53.84 Z	21.55 𐄂	19.32 𐄂	19.76 𐄂	22.41 𐄂	24.56 𐄂	24.14 𐄂	21.55 𐄂	20.85 𐄂	21.13 𐄂	22.41 𐄂	23.23 𐄂	22.65 𐄂
55	8.04 𐄂	53.31 Z	26.24 𐄂	24.35 𐄂	24.89 𐄂	27.28 𐄂	29.08 𐄂	28.59 𐄂	26.24 𐄂	25.71 𐄂	26.11 𐄂	27.28 𐄂	27.91 𐄂	27.27 𐄂
60	5.93 𐄂	52.85 Z	0.98 𐄂	29.39 𐄂	29.98 𐄂	2.09 𐄂	3.58 𐄂	3.06 𐄂	0.98 𐄂	0.58 𐄂	1.03 𐄂	2.09 𐄂	2.57 𐄂	1.91 𐄂
65	2.91 𐄂	52.46 Z	5.75 𐄂	4.44 𐄂	5.02 𐄂	6.84 𐄂	8.06 𐄂	7.56 𐄂	5.75 𐄂	5.44 𐄂	5.90 𐄂	6.84 𐄂	7.21 𐄂	6.58 𐄂
70	28.79 𐄂	52.14 Z	10.55 𐄂	9.48 𐄂	10.00 𐄂	11.53 𐄂	12.54 𐄂	12.08 𐄂	10.55 𐄂	10.29 𐄂	10.71 𐄂	11.53 𐄂	11.85 𐄂	11.29 𐄂
75	23.39 𐄂	51.89 Z	15.39 𐄂	14.50 𐄂	14.93 𐄂	16.19 𐄂	17.02 𐄂	16.65 𐄂	15.39 𐄂	15.12 𐄂	15.46 𐄂	16.19 𐄂	16.50 𐄂	16.05 𐄂
80	16.64 𐄂	51.71 Z	20.25 𐄂	19.51 𐄂	19.81 𐄂	20.81 𐄂	21.51 𐄂	21.25 𐄂	20.25 𐄂	19.92 𐄂	20.16 𐄂	20.81 𐄂	21.17 𐄂	20.85 𐄂
85	8.69 𐄂	51.60 Z	25.12 𐄂	24.48 𐄂	24.63 𐄂	25.41 𐄂	26.04 𐄂	25.90 𐄂	25.12 𐄂	24.68 𐄂	24.81 𐄂	25.41 𐄂	25.86 𐄂	25.69 𐄂
90	0.00 𐄂	51.56 Z	0.00 𐄂	29.41 𐄂	29.41 𐄂	0.00 𐄂	0.59 𐄂	0.59 𐄂	0.00 𐄂	29.41 𐄂	29.41 𐄂	0.00 𐄂	0.59 𐄂	0.59 𐄂
95	21.31 𐄂	51.60 Z	4.88 𐄂	4.31 𐄂	4.14 𐄂	4.59 𐄂	5.19 𐄂	5.32 𐄂	4.88 𐄂	4.10 𐄂	3.96 𐄂	4.59 𐄂	5.37 𐄂	5.52 𐄂
100	13.36 𐄂	51.71 Z	9.75 𐄂	9.15 𐄂	8.83 𐄂	9.19 𐄂	9.84 𐄂	10.08 𐄂	9.75 𐄂	8.75 𐄂	8.49 𐄂	9.19 𐄂	10.19 𐄂	10.49 𐄂
105	6.61 𐄂	51.89 Z	14.61 𐄂	13.95 𐄂	13.50 𐄂	13.81 𐄂	14.54 𐄂	14.88 𐄂	14.61 𐄂	13.35 𐄂	12.98 𐄂	13.81 𐄂	15.07 𐄂	15.50 𐄂
110	1.21 𐄂	52.14 Z	19.45 𐄂	18.71 𐄂	18.15 𐄂	18.47 𐄂	19.29 𐄂	19.71 𐄂	19.45 𐄂	17.92 𐄂	17.46 𐄂	18.47 𐄂	20.00 𐄂	20.52 𐄂
115	27.09 𐄂	52.46 Z	24.25 𐄂	23.42 𐄂	22.79 𐄂	23.16 𐄂	24.10 𐄂	24.56 𐄂	24.25 𐄂	22.44 𐄂	21.94 𐄂	23.16 𐄂	24.98 𐄂	25.56 𐄂
120	24.07 𐄂	52.85 Z	29.02 𐄂	28.09 𐄂	27.43 𐄂	27.91 𐄂	28.97 𐄂	29.42 𐄂	29.02 𐄂	26.94 𐄂	26.42 𐄂	27.91 𐄂	0.02 𐄂	0.61 𐄂
125	21.96 𐄂	53.31 Z	3.76 𐄂	2.73 𐄂	2.09 𐄂	2.72 𐄂	3.89 𐄂	4.29 𐄂	3.76 𐄂	1.41 𐄂	0.92 𐄂	2.72 𐄂	5.11 𐄂	5.65 𐄂
130	20.57 𐄂	53.84 Z	8.45 𐄂	7.35 𐄂	6.77 𐄂	7.59 𐄂	8.87 𐄂	9.15 𐄂	8.45 𐄂	5.86 𐄂	5.44 𐄂	7.59 𐄂	10.24 𐄂	10.68 𐄂
135	19.77 𐄂	54.43 Z	13.11 𐄂	11.94 𐄂	11.49 𐄂	12.54 𐄂	13.89 𐄂	14.01 𐄂	13.11 𐄂	10.29 𐄂	10.00 𐄂	12.54 𐄂	15.40 𐄂	15.68 𐄂
140	19.43 𐄂	55.09 Z	17.73 𐄂	16.53 𐄂	16.26 𐄂	17.55 𐄂	18.95 𐄂	18.85 𐄂	17.73 𐄂	14.73 𐄂	14.62 𐄂	17.55 𐄂	20.60 𐄂	20.66 𐄂
145	19.48 𐄂	55.81 Z	22.31 𐄂	21.12 𐄂	21.08 𐄂	22.65 𐄂	24.03 𐄂	23.66 𐄂	22.31 𐄂	19.17 𐄂	19.29 𐄂	22.65 𐄂	25.80 𐄂	25.59 𐄂
150	19.83 𐄂	56.59 Z	26.86 𐄂	25.72 𐄂	25.97 𐄂	27.82 𐄂	29.14 𐄂	28.45 𐄂	26.86 𐄂	23.64 𐄂	24.05 𐄂	27.82 𐄂	1.01 𐄂	0.47 𐄂
155	20.43 𐄂	57.43 Z	1.39 𐄂	0.34 𐄂	0.94 𐄂	3.06 𐄂	4.25 𐄂	3.20 𐄂	1.39 𐄂	28.13 𐄂	28.88 𐄂	3.06 𐄂	6.21 𐄂	5.31 𐄂
160	21.25 𐄂	58.32 Z	5.90 𐄂	5.00 𐄂	6.00 𐄂	8.36 𐄂	9.36 𐄂	7.92 𐄂	5.90 𐄂	2.66 𐄂	3.81 𐄂	8.36 𐄂	11.39 𐄂	10.10 𐄂
165	22.24 𐄂	59.27 Z	10.39 𐄂	9.71 𐄂	11.14 𐄂	13.72 𐄂	14.46 𐄂	12.60 𐄂	10.39 𐄂	7.26 𐄂	8.84 𐄂	13.72 𐄂	16.53 𐄂	14.83 𐄂
170	23.38 𐄂	60.27 Z	14.89 𐄂	14.48 𐄂	16.38 𐄂	19.12 𐄂	19.54 𐄂	17.25 𐄂	14.89 𐄂	11.91 𐄂	13.98 𐄂	19.12 𐄂	21.63 𐄂	19.52 𐄂
175	24.65 𐄂	61.31 Z	19.39 𐄂	19.31 𐄂	21.72 𐄂	24.55 𐄂	24.58 𐄂	21.86 𐄂	19.39 𐄂	16.66 𐄂	19.24 𐄂	24.55 𐄂	26.69 𐄂	24.15 𐄂
180	26.04 𐄂	62.40 Z	23.92 𐄂	24.23 𐄂	27.15 𐄂	0.00 𐄂	29.58 𐄂	26.45 𐄂	23.92 𐄂	21.49 𐄂	24.60 𐄂	0.00 𐄂	1.68 𐄂	28.75 𐄂

15° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	27.51 𐌛	63.53 Z	28.47 𐌶	29.24 𐌸	2.66 𐌶	5.45 𐌶	4.54 𐌸	1.01 𐌹	28.47 𐌹	26.43 𐌺	0.07 𐌻	5.45 𐌼	6.62 𐌛	3.31 𐌶
190	29.07 𐌛	64.70 Z	3.07 𐌸	4.35 𐌿	8.25 𐌶	10.88 𐌶	9.45 𐌸	5.56 𐌹	3.07 𐌺	1.49 𐌻	5.65 𐌻	10.88 𐌼	11.49 𐌛	7.83 𐌶
195	0.71 𐌶	65.90 Z	7.72 𐌸	9.57 𐌿	13.90 𐌶	16.28 𐌶	14.31 𐌸	10.09 𐌹	7.72 𐌺	6.68 𐌻	11.32 𐌻	16.28 𐌼	16.29 𐌛	12.34 𐌶
200	2.41 𐌶	67.14 Z	12.44 𐌸	14.90 𐌿	19.60 𐌶	21.64 𐌶	19.12 𐌸	14.63 𐌹	12.44 𐌺	12.00 𐌻	17.06 𐌻	21.64 𐌼	21.04 𐌛	16.83 𐌶
205	4.17 𐌶	68.39 Z	17.24 𐌸	20.34 𐌿	25.33 𐌶	26.94 𐌶	23.89 𐌸	19.17 𐌹	17.24 𐌺	17.46 𐌻	22.87 𐌻	26.94 𐌼	25.72 𐌛	21.32 𐌶
210	5.98 𐌶	69.67 Z	22.13 𐌸	25.89 𐌿	1.07 𐌶	2.18 𐌸	28.61 𐌸	23.74 𐌹	22.13 𐌺	23.06 𐌻	28.71 𐌻	2.18 𐌛	0.36 𐌶	25.82 𐌶
215	7.83 𐌶	70.96 Z	27.13 𐌸	1.55 𐌶	6.80 𐌶	7.35 𐌸	3.30 𐌹	28.34 𐌹	27.13 𐌺	28.81 𐌻	4.57 𐌼	7.35 𐌛	4.94 𐌶	0.34 𐌸
220	9.73 𐌶	72.25 Z	2.24 𐌿	7.29 𐌶	12.49 𐌶	12.45 𐌸	7.96 𐌹	2.99 𐌺	2.24 𐌻	4.67 𐌻	10.42 𐌼	12.45 𐌛	9.49 𐌶	4.90 𐌸
225	11.66 𐌶	73.54 Z	7.48 𐌿	13.12 𐌶	18.13 𐌶	17.46 𐌸	12.59 𐌹	7.69 𐌺	7.48 𐌻	10.66 𐌻	16.24 𐌼	17.46 𐌛	14.01 𐌶	9.49 𐌸
230	13.62 𐌶	74.82 Z	12.85 𐌿	19.01 𐌶	23.71 𐌶	22.41 𐌸	17.22 𐌹	12.46 𐌺	12.85 𐌻	16.74 𐌻	22.01 𐌼	22.41 𐌛	18.51 𐌶	14.14 𐌸
235	15.61 𐌶	76.06 Z	18.35 𐌿	24.93 𐌶	29.20 𐌶	27.28 𐌸	21.84 𐌹	17.32 𐌺	18.35 𐌻	22.89 𐌻	27.71 𐌼	27.28 𐌛	23.00 𐌶	18.85 𐌸
240	17.63 𐌶	77.26 Z	23.99 𐌿	0.86 𐌶	4.60 𐌸	2.09 𐌹	26.47 𐌹	22.27 𐌺	23.99 𐌻	29.08 𐌻	3.33 𐌛	2.09 𐌶	27.49 𐌶	23.65 𐌸
245	19.66 𐌶	78.39 Z	29.76 𐌿	6.79 𐌶	9.90 𐌸	6.84 𐌹	1.12 𐌺	27.33 𐌺	29.76 𐌻	5.28 𐌼	8.85 𐌛	6.84 𐌶	1.99 𐌸	28.53 𐌸
250	21.71 𐌶	79.41 Z	5.65 𐌶	12.67 𐌶	15.10 𐌸	11.53 𐌹	5.80 𐌺	2.51 𐌻	5.65 𐌻	11.46 𐌼	14.27 𐌛	11.53 𐌶	6.51 𐌸	3.51 𐌿
255	23.77 𐌶	80.29 Z	11.64 𐌶	18.50 𐌶	20.20 𐌸	16.19 𐌹	10.53 𐌺	7.82 𐌻	11.64 𐌻	17.60 𐌼	19.58 𐌛	16.19 𐌶	11.08 𐌸	8.60 𐌿
260	25.84 𐌶	80.97 Z	17.71 𐌶	24.25 𐌶	25.19 𐌸	20.81 𐌹	15.31 𐌺	13.26 𐌻	17.71 𐌻	23.65 𐌼	24.79 𐌛	20.81 𐌶	15.68 𐌸	13.80 𐌿
265	27.92 𐌶	81.41 Z	23.84 𐌶	29.90 𐌶	0.10 𐌹	25.41 𐌹	20.16 𐌺	18.84 𐌻	23.84 𐌻	29.61 𐌼	29.90 𐌛	25.41 𐌶	20.35 𐌸	19.12 𐌿
270	0.00 𐌸	81.56 Z	0.00 𐌶	5.45 𐌸	4.91 𐌹	0.00 𐌺	25.09 𐌺	24.55 𐌻	0.00 𐌼	5.45 𐌛	4.91 𐌶	0.00 𐌸	25.09 𐌸	24.55 𐌿
275	2.08 𐌸	81.41 Z	6.16 𐌶	10.88 𐌸	9.65 𐌹	4.59 𐌺	0.10 𐌻	0.39 𐌻	6.16 𐌼	11.16 𐌛	9.84 𐌶	4.59 𐌸	29.90 𐌸	0.10 𐌶
280	4.16 𐌸	80.97 Z	12.29 𐌶	16.20 𐌸	14.32 𐌹	9.19 𐌺	5.21 𐌻	6.35 𐌻	12.29 𐌼	16.74 𐌛	14.69 𐌶	9.19 𐌸	4.81 𐌿	5.75 𐌶
285	6.23 𐌸	80.29 Z	18.36 𐌶	21.40 𐌸	18.92 𐌹	13.81 𐌺	10.42 𐌻	12.40 𐌻	18.36 𐌼	22.18 𐌛	19.47 𐌶	13.81 𐌸	9.80 𐌿	11.50 𐌶
290	8.29 𐌸	79.41 Z	24.35 𐌶	26.49 𐌸	23.49 𐌹	18.47 𐌺	15.73 𐌻	18.54 𐌻	24.35 𐌼	27.49 𐌛	24.20 𐌶	18.47 𐌸	14.90 𐌿	17.33 𐌶
295	10.34 𐌸	78.39 Z	0.24 𐌸	1.47 𐌹	28.01 𐌹	23.16 𐌺	21.15 𐌻	24.72 𐌻	0.24 𐌛	2.67 𐌶	28.88 𐌶	23.16 𐌸	20.10 𐌿	23.21 𐌶
300	12.37 𐌸	77.26 Z	6.01 𐌸	6.35 𐌹	2.51 𐌺	27.91 𐌺	26.67 𐌻	0.92 𐌼	6.01 𐌛	7.73 𐌶	3.53 𐌸	27.91 𐌸	25.40 𐌿	29.14 𐌶
305	14.39 𐌸	76.06 Z	11.65 𐌸	11.15 𐌹	7.00 𐌺	2.72 𐌻	2.29 𐌻	7.11 𐌼	11.65 𐌛	12.68 𐌶	8.16 𐌸	2.72 𐌿	0.80 𐌶	5.07 𐌶
310	16.38 𐌸	74.82 Z	17.15 𐌸	15.86 𐌹	11.49 𐌺	7.59 𐌻	7.99 𐌻	13.26 𐌼	17.15 𐌛	17.54 𐌶	12.78 𐌸	7.59 𐌿	6.29 𐌶	10.99 𐌶
315	18.34 𐌸	73.54 Z	22.52 𐌸	20.51 𐌹	15.99 𐌺	12.54 𐌻	13.76 𐌻	19.34 𐌼	22.52 𐌛	22.31 𐌶	17.41 𐌸	12.54 𐌿	11.87 𐌶	16.88 𐌶
320	20.27 𐌸	72.25 Z	27.76 𐌸	25.10 𐌹	20.51 𐌺	17.55 𐌻	19.58 𐌻	25.33 𐌼	27.76 𐌛	27.01 𐌶	22.04 𐌸	17.55 𐌿	17.51 𐌶	22.71 𐌶
325	22.17 𐌸	70.96 Z	2.87 𐌹	29.66 𐌹	25.06 𐌺	22.65 𐌻	25.43 𐌻	1.19 𐌛	2.87 𐌶	1.66 𐌸	26.70 𐌸	22.65 𐌿	23.20 𐌶	28.45 𐌶
330	24.02 𐌸	69.67 Z	7.87 𐌹	4.18 𐌺	29.64 𐌺	27.82 𐌻	1.29 𐌼	6.94 𐌛	7.87 𐌶	6.26 𐌸	1.39 𐌿	27.82 𐌿	28.93 𐌶	4.11 𐌸
335	25.83 𐌸	68.39 Z	12.76 𐌹	8.68 𐌺	4.28 𐌻	3.06 𐌻	7.13 𐌼	12.54 𐌛	12.76 𐌶	10.83 𐌸	6.11 𐌿	3.06 𐌶	4.67 𐌶	9.66 𐌸
340	27.59 𐌸	67.14 Z	17.56 𐌹	13.17 𐌺	8.96 𐌻	8.36 𐌻	12.94 𐌼	18.00 𐌛	17.56 𐌶	15.37 𐌸	10.88 𐌿	8.36 𐌶	10.40 𐌶	15.10 𐌸
345	29.29 𐌸	65.90 Z	22.28 𐌹	17.66 𐌺	13.71 𐌻	13.72 𐌻	18.68 𐌼	23.32 𐌛	22.28 𐌶	19.91 𐌸	15.69 𐌿	13.72 𐌶	16.10 𐌶	20.43 𐌸
350	0.93 𐌿	64.70 Z	26.93 𐌹	22.17 𐌺	18.51 𐌻	19.12 𐌻	24.35 𐌼	28.51 𐌛	26.93 𐌶	24.44 𐌸	20.55 𐌿	19.12 𐌶	21.75 𐌶	25.65 𐌸
355	2.49 𐌿	63.53 Z	1.53 𐌺	26.69 𐌺	23.38 𐌻	24.55 𐌻	29.93 𐌼	3.57 𐌶	1.53 𐌸	28.99 𐌸	25.46 𐌿	24.55 𐌶	27.34 𐌶	0.76 𐌹
360	3.96 𐌿	62.40 Z	6.08 𐌺	1.25 𐌻	28.32 𐌻	0.00 𐌼	5.40 𐌛	8.51 𐌶	6.08 𐌸	3.55 𐌿	0.42 𐌶	0.00 𐌶	2.85 𐌸	5.77 𐌹

20° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	12.46 ☾	59.56 Z	8.24 ☾	2.38 ♀	28.47 ♀	0.00 ♁	6.73 ♀	10.99 ♂	8.24 ☾	5.38 ☾	1.22 ♀	0.00 ♀	3.15 ♂	7.18 II
5	14.52 ☾	58.24 Z	12.71 ☾	6.90 ♀	3.38 ♀	5.45 ♁	12.15 ♀	15.82 ♂	12.71 ☾	9.88 ☾	6.15 ♀	5.45 ♀	8.67 ♂	12.15 II
10	16.53 ☾	56.98 Z	17.16 ☾	11.45 ♀	8.35 ♀	10.88 ♁	17.45 ♀	20.54 ♂	17.16 ☾	14.39 ☾	11.10 ♀	10.88 ♀	14.09 ♂	17.03 II
15	18.47 ☾	55.79 Z	21.59 ☾	16.05 ♀	13.37 ♀	16.28 ♁	22.62 ♀	25.17 ♂	21.59 ☾	18.93 ☾	16.08 ♀	16.28 ♀	19.41 ♂	21.82 II
20	20.34 ☾	54.65 Z	26.01 ☾	20.68 ♀	18.43 ♀	21.64 ♁	27.67 ♀	29.72 ♂	26.01 ☾	23.49 ☾	21.08 ♀	21.64 ♀	24.63 ♂	26.54 II
25	22.12 ☾	53.58 Z	0.44 ♀	25.37 ♀	23.53 ♀	26.94 ♁	2.60 ♂	4.20 ☾	0.44 ☾	28.08 ☾	26.08 ♀	26.94 ♀	29.74 ♂	1.21 ☾
30	23.79 ☾	52.57 Z	4.87 ♀	0.10 ♀	28.65 ♀	2.18 ♀	7.43 ♂	8.63 ☾	4.87 ☾	2.69 ♀	1.09 ♀	2.18 ♂	4.77 II	5.83 ☾
35	25.33 ☾	51.64 Z	9.32 ♀	4.87 ♀	3.78 ♁	7.35 ♀	12.17 ♂	13.02 ☾	9.32 ☾	7.33 ♀	6.09 ♀	7.35 ♂	9.71 II	10.42 ☾
40	26.70 ☾	50.78 Z	13.80 ♀	9.68 ♀	8.91 ♁	12.45 ♀	16.82 ♂	17.39 ☾	13.80 ☾	11.99 ♀	11.07 ♀	12.45 ♂	14.57 II	14.99 ☾
45	27.87 ☾	49.99 Z	18.30 ♀	14.53 ♀	14.03 ♁	17.46 ♀	21.41 ♂	21.74 ☾	18.30 ☾	16.67 ♀	16.02 ♀	17.46 ♂	19.37 II	19.55 ☾
50	28.75 ☾	49.28 Z	22.83 ♀	19.40 ♀	19.14 ♁	22.41 ♀	25.93 ♂	26.08 ☾	22.83 ☾	21.35 ♀	20.93 ♀	22.41 ♂	24.12 II	24.11 ☾
55	29.24 ☾	48.65 Z	27.38 ♀	24.30 ♀	24.21 ♁	27.28 ♀	0.42 ☾	0.42 ☾	27.38 ☾	26.04 ♀	25.80 ♀	27.28 ♂	28.82 II	28.68 ☾
60	29.18 ☾	48.10 Z	1.97 ♀	29.22 ♀	29.24 ♁	2.09 ♂	4.87 ☾	4.78 ☾	1.97 ♀	0.73 ♀	0.62 ♂	2.09 II	3.49 ☾	3.27 ♀
65	28.27 ☾	47.63 Z	6.59 ♀	4.13 ♁	4.23 ♀	6.84 ♂	9.30 ☾	9.16 ☾	6.59 ♀	5.42 ♀	5.39 ♂	6.84 II	8.15 ☾	7.88 ♀
70	26.00 ☾	47.25 Z	11.24 ♀	9.05 ♁	9.18 ♀	11.53 ♂	13.72 ☾	13.56 ☾	11.24 ♀	10.09 ♀	10.11 ♂	11.53 II	12.80 ☾	12.53 ♀
75	21.39 ☾	46.95 Z	15.91 ♀	13.95 ♁	14.08 ♀	16.19 ♂	18.14 ☾	17.99 ☾	15.91 ♀	14.74 ♀	14.78 ♂	16.19 II	17.45 ☾	17.21 ♀
80	12.52 ☾	46.73 Z	20.59 ♀	18.84 ♁	18.92 ♀	20.81 ♂	22.58 ☾	22.45 ☾	20.59 ♀	19.36 ♀	19.39 ♂	20.81 II	22.11 ☾	21.93 ♀
85	25.98 ☾	46.60 Z	25.29 ♀	23.70 ♁	23.72 ♀	25.41 ♂	27.03 ☾	26.94 ☾	25.29 ♀	23.96 ♀	23.96 ♂	25.41 II	26.80 ☾	26.68 ♀
90	0.00 ☾	46.56 Z	0.00 ♁	28.52 ♁	28.48 ♀	0.00 ☾	1.52 ☾	1.48 ♀	0.00 ♀	28.52 ♀	28.48 ♂	0.00 ☾	1.52 ♀	1.48 ♀
95	4.02 ♂	46.60 Z	4.71 ♁	3.32 ♀	3.20 ♂	4.59 ☾	6.04 ☾	6.04 ♀	4.71 ♀	3.06 ♂	2.97 II	4.59 ☾	6.28 ♀	6.30 ♀
100	17.48 ♀	46.73 Z	9.41 ♁	8.07 ♀	7.89 ♂	9.19 ☾	10.61 ☾	10.64 ♀	9.41 ♀	7.55 ♂	7.42 II	9.19 ☾	11.08 ♀	11.16 ♀
105	8.61 ♀	46.95 Z	14.09 ♁	12.79 ♀	12.55 ♂	13.81 ☾	15.22 ☾	15.26 ♀	14.09 ♀	12.01 ♂	11.86 II	13.81 ☾	15.92 ♀	16.05 ♀
110	4.00 ♀	47.25 Z	18.76 ♁	17.47 ♀	17.20 ♂	18.47 ☾	19.89 ☾	19.91 ♀	18.76 ♀	16.44 ♂	16.28 II	18.47 ☾	20.82 ♀	20.95 ♀
115	1.73 ♀	47.63 Z	23.41 ♁	22.12 ♀	21.85 ♂	23.16 ☾	24.61 ☾	24.58 ♀	23.41 ♀	20.84 ♂	20.70 II	23.16 ☾	25.77 ♀	25.87 ♀
120	0.82 ♀	48.10 Z	28.03 ♁	26.73 ♀	26.51 ♂	27.91 ☾	29.38 ☾	29.27 ♀	28.03 ♀	25.22 ♂	25.13 II	27.91 ☾	0.76 ♀	0.78 ♁
125	0.76 ♀	48.65 Z	2.62 ♀	1.32 ♂	1.18 ☾	2.72 ☾	4.20 ♀	3.96 ♀	2.62 ♂	29.58 ♂	29.58 II	2.72 ♀	5.79 ♀	5.70 ♁
130	1.25 ♀	49.28 Z	7.17 ♀	5.89 ♂	5.88 ☾	7.59 ☾	9.07 ♀	8.65 ♀	7.17 ♂	3.92 II	4.07 ☾	7.59 ♀	10.86 ♀	10.60 ♁
135	2.13 ♀	49.99 Z	11.70 ♀	10.45 ♂	10.63 ☾	12.54 ☾	13.98 ♀	13.33 ♀	11.70 ♂	8.26 II	8.59 ☾	12.54 ♀	15.97 ♀	15.47 ♁
140	3.30 ♀	50.78 Z	16.20 ♀	15.01 ♂	15.43 ☾	17.55 ☾	18.93 ♀	18.01 ♀	16.20 ♂	12.61 II	13.18 ☾	17.55 ♀	21.09 ♀	20.32 ♁
145	4.67 ♀	51.64 Z	20.68 ♀	19.58 ♂	20.29 ☾	22.65 ☾	23.91 ♀	22.67 ♀	20.68 ♂	16.98 II	17.83 ☾	22.65 ♀	26.22 ♀	25.13 ♁
150	6.21 ♀	52.57 Z	25.13 ♀	24.17 ♂	25.23 ☾	27.82 ☾	28.91 ♀	27.31 ♀	25.13 ♂	21.37 II	22.57 ☾	27.82 ♀	1.35 ♁	29.90 ♁
155	7.88 ♀	53.58 Z	29.56 ♀	28.79 ♂	0.26 ☾	3.06 ♀	3.92 ♀	1.92 ♂	29.56 ♂	25.80 II	27.40 ☾	3.06 ♀	6.47 ♁	4.63 ♀
160	9.66 ♀	54.65 Z	3.99 ♂	3.46 ☾	5.37 ☾	8.36 ♀	8.92 ♀	6.51 ♂	3.99 II	0.28 ☾	2.33 ♀	8.36 ♀	11.57 ♁	9.32 ♀
165	11.53 ♀	55.79 Z	8.41 ♂	8.18 ☾	10.59 ☾	13.72 ♀	13.92 ♀	11.07 ♂	8.41 II	4.83 ☾	7.38 ♀	13.72 ♀	16.63 ♁	13.95 ♀
170	13.47 ♀	56.98 Z	12.84 ♂	12.97 ☾	15.91 ☾	19.12 ♀	18.90 ♀	15.61 ♂	12.84 II	9.46 ☾	12.55 ♀	19.12 ♀	21.65 ♁	18.55 ♀
175	15.48 ♀	58.24 Z	17.29 ♂	17.85 ☾	21.33 ☾	24.55 ♀	23.85 ♀	20.12 ♂	17.29 II	14.18 ☾	17.85 ♀	24.55 ♀	26.62 ♁	23.10 ♀
180	17.54 ♀	59.56 Z	21.76 ♂	22.82 ☾	26.85 ☾	0.00 ♀	28.78 ♀	24.62 ♂	21.76 II	19.01 ☾	23.27 ♀	0.00 ♁	1.53 ♀	27.62 ♀

20° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	19.66 ㄴ	60.93 Z	26.28 ㄱ	27.89 ㄷ	2.47 ㄹ	5.45 ㄺ	3.66 ㄻ	29.10 ㄼ	26.28 ㄽ	23.97 ㄾ	28.82 ㄿ	5.45 ㅀ	6.39 ㅁ	2.11 ㅂ
190	21.82 ㄴ	62.35 Z	0.85 ㄷ	3.08 ㄹ	8.17 ㄺ	10.88 ㄻ	8.50 ㄼ	3.57 ㄽ	0.85 ㄾ	29.06 ㄿ	4.49 ㅀ	10.88 ㅁ	11.18 ㅂ	6.57 ㅃ
195	24.02 ㄴ	63.81 Z	5.48 ㄷ	8.40 ㄹ	13.94 ㄺ	16.28 ㄻ	13.30 ㄼ	8.04 ㄽ	5.48 ㄾ	4.31 ㄿ	10.27 ㅀ	16.28 ㅁ	15.92 ㅂ	11.02 ㅃ
200	26.26 ㄴ	65.32 Z	10.20 ㄷ	13.85 ㄹ	19.76 ㄺ	21.64 ㄻ	18.06 ㄼ	12.53 ㄽ	10.20 ㄾ	9.72 ㄿ	16.15 ㅀ	21.64 ㅁ	20.59 ㅂ	15.46 ㅃ
205	28.53 ㄴ	66.87 Z	15.01 ㄷ	19.42 ㄹ	25.60 ㄺ	26.94 ㄻ	22.78 ㄼ	17.03 ㄽ	15.01 ㄾ	15.30 ㄿ	22.10 ㅀ	26.94 ㅁ	25.21 ㅂ	19.90 ㅃ
210	0.83 ㄱ	68.46 Z	19.93 ㄷ	25.13 ㄹ	1.46 ㄺ	2.18 ㄻ	27.47 ㄼ	21.56 ㄽ	19.93 ㄾ	21.05 ㄿ	28.10 ㅀ	2.18 ㅁ	29.78 ㅂ	24.36 ㅃ
215	3.16 ㄱ	70.08 Z	24.97 ㄷ	0.95 ㄹ	7.30 ㄺ	7.35 ㄻ	2.12 ㄼ	26.14 ㄽ	24.97 ㄾ	26.98 ㄿ	4.13 ㅀ	7.35 ㅁ	4.31 ㅂ	28.84 ㅃ
220	5.52 ㄱ	71.73 Z	0.15 ㄹ	6.88 ㄺ	13.09 ㄻ	12.45 ㄼ	6.75 ㄽ	0.77 ㄾ	0.15 ㄿ	3.07 ㅀ	10.15 ㅁ	12.45 ㅂ	8.80 ㅃ	3.36 ㄷ
225	7.90 ㄱ	73.41 Z	5.48 ㄹ	12.90 ㄺ	18.83 ㄻ	17.46 ㄼ	11.37 ㄽ	5.47 ㄾ	5.48 ㄿ	9.30 ㅀ	16.15 ㅁ	17.46 ㅂ	13.27 ㅃ	7.93 ㄷ
230	10.30 ㄱ	75.10 Z	10.96 ㄹ	18.99 ㄺ	24.49 ㄻ	22.41 ㄼ	15.98 ㄽ	10.26 ㄾ	10.96 ㄿ	15.66 ㅀ	22.09 ㅁ	22.41 ㅂ	17.71 ㅃ	12.56 ㄷ
235	12.73 ㄱ	76.80 Z	16.61 ㄹ	25.12 ㄺ	0.06 ㄻ	27.28 ㄼ	20.59 ㄽ	15.14 ㄾ	16.61 ㄿ	22.11 ㅀ	27.96 ㅁ	27.28 ㅂ	22.16 ㅃ	17.27 ㄷ
240	15.16 ㄱ	78.51 Z	22.42 ㄹ	1.25 ㄺ	5.52 ㄻ	2.09 ㄼ	25.23 ㄽ	20.14 ㄾ	22.42 ㄿ	28.62 ㅀ	3.73 ㅁ	2.09 ㅂ	26.60 ㅃ	22.06 ㄷ
245	17.61 ㄱ	80.21 Z	28.39 ㄹ	7.37 ㄺ	10.87 ㄻ	6.84 ㄼ	29.89 ㄽ	25.27 ㄾ	28.39 ㄿ	5.15 ㅀ	9.39 ㅁ	6.84 ㅂ	1.06 ㄷ	26.95 ㄷ
250	20.08 ㄱ	81.89 Z	4.51 ㄹ	13.44 ㄺ	16.11 ㄻ	11.53 ㄼ	4.59 ㄽ	0.54 ㄾ	4.51 ㄿ	11.66 ㅀ	14.94 ㅁ	11.53 ㅂ	5.56 ㄷ	1.95 ㄹ
255	22.55 ㄱ	83.50 Z	10.76 ㄹ	19.43 ㄺ	21.23 ㄻ	16.19 ㄼ	9.34 ㄽ	5.97 ㄿ	10.76 ㅀ	18.11 ㅁ	20.37 ㅂ	16.19 ㅃ	10.09 ㄷ	7.07 ㄹ
260	25.03 ㄱ	84.96 Z	17.11 ㄹ	25.33 ㄺ	26.24 ㄻ	20.81 ㄼ	14.16 ㄽ	11.56 ㄿ	17.11 ㅀ	24.46 ㅁ	25.68 ㅂ	20.81 ㅃ	14.67 ㄷ	12.33 ㄹ
265	27.51 ㄱ	86.10 Z	23.54 ㄹ	1.11 ㄺ	1.15 ㄻ	25.41 ㄼ	19.06 ㄽ	17.31 ㄿ	23.54 ㅀ	0.69 ㅁ	0.87 ㅂ	25.41 ㅃ	19.32 ㄷ	17.71 ㄹ
270	0.00 ㄷ	86.56 Z	0.00 ㄹ	6.77 ㄺ	5.96 ㄻ	0.00 ㄼ	24.04 ㄽ	23.23 ㄿ	0.00 ㅀ	6.77 ㅁ	5.96 ㅂ	0.00 ㄷ	24.04 ㄷ	23.23 ㄹ
275	2.49 ㄷ	86.10 Z	6.46 ㄹ	12.29 ㄺ	10.68 ㄻ	4.59 ㄼ	29.13 ㄽ	29.31 ㄿ	6.46 ㅀ	12.69 ㅁ	10.94 ㅂ	4.59 ㄷ	28.85 ㄷ	28.89 ㄹ
280	4.97 ㄷ	84.96 Z	12.89 ㄹ	17.67 ㄺ	15.33 ㄻ	9.19 ㄼ	4.32 ㄽ	5.54 ㅀ	12.89 ㅁ	18.44 ㅂ	15.84 ㅃ	9.19 ㄷ	3.76 ㄹ	4.67 ㄹ
285	7.45 ㄷ	83.50 Z	19.24 ㄹ	22.93 ㄺ	19.91 ㄻ	13.81 ㄼ	9.63 ㄽ	11.89 ㅀ	19.24 ㅁ	24.03 ㅂ	20.66 ㅃ	13.81 ㄷ	8.77 ㄹ	10.57 ㄹ
290	9.92 ㄷ	81.89 Z	25.49 ㄹ	28.05 ㄺ	24.44 ㄻ	18.47 ㄼ	15.06 ㄽ	18.34 ㅀ	25.49 ㅁ	29.46 ㅂ	25.41 ㅃ	18.47 ㄷ	13.89 ㄹ	16.56 ㄹ
295	12.39 ㄷ	80.21 Z	1.61 ㄻ	3.05 ㄼ	28.94 ㄽ	23.16 ㄿ	20.61 ㄿ	24.85 ㅀ	1.61 ㅁ	4.73 ㅂ	0.11 ㄷ	23.16 ㄷ	19.13 ㄹ	22.63 ㄹ
300	14.84 ㄷ	78.51 Z	7.58 ㄻ	7.94 ㄼ	3.40 ㄽ	27.91 ㄿ	26.27 ㄿ	1.38 ㅀ	7.58 ㅁ	9.86 ㅂ	4.77 ㄷ	27.91 ㄷ	24.48 ㄹ	28.75 ㄹ
305	17.27 ㄷ	76.80 Z	13.39 ㄻ	12.73 ㄼ	7.84 ㄽ	2.72 ㄿ	2.04 ㅀ	7.89 ㅁ	13.39 ㅂ	14.86 ㅃ	9.41 ㄷ	2.72 ㄹ	29.94 ㄹ	4.88 ㄹ
310	19.70 ㄷ	75.10 Z	19.04 ㄻ	17.44 ㄼ	12.29 ㄽ	7.59 ㄿ	7.91 ㅀ	14.34 ㅁ	19.04 ㅂ	19.74 ㅃ	14.02 ㄷ	7.59 ㄹ	5.51 ㄹ	11.01 ㄹ
315	22.10 ㄷ	73.41 Z	24.52 ㄻ	22.07 ㄼ	16.73 ㄽ	12.54 ㄿ	13.85 ㅀ	20.70 ㅁ	24.52 ㅂ	24.53 ㅃ	18.63 ㄷ	12.54 ㄹ	11.17 ㄹ	17.10 ㄹ
320	24.48 ㄷ	71.73 Z	29.85 ㄻ	26.64 ㄼ	21.20 ㄽ	17.55 ㄿ	19.85 ㅀ	26.93 ㅁ	29.85 ㅂ	29.23 ㅃ	23.25 ㄷ	17.55 ㄹ	16.91 ㄹ	23.12 ㄹ
325	26.84 ㄷ	70.08 Z	5.03 ㄼ	1.16 ㄽ	25.69 ㄿ	22.65 ㄿ	25.87 ㅀ	3.02 ㅁ	5.03 ㅂ	3.86 ㄷ	27.88 ㄷ	22.65 ㄹ	22.70 ㄹ	29.05 ㄹ
330	29.17 ㄷ	68.46 Z	10.07 ㄼ	5.64 ㄽ	0.22 ㄿ	27.82 ㄿ	1.90 ㅀ	8.95 ㅁ	10.07 ㅂ	8.44 ㄷ	2.53 ㄹ	27.82 ㄹ	28.54 ㄹ	4.87 ㄻ
335	1.47 ㄹ	66.87 Z	14.99 ㄼ	10.10 ㄽ	4.79 ㄿ	3.06 ㅀ	7.90 ㅁ	14.70 ㅂ	14.99 ㅃ	12.97 ㄷ	7.22 ㄹ	3.06 ㄹ	4.40 ㄹ	10.58 ㄻ
340	3.74 ㄹ	65.32 Z	19.80 ㄼ	14.54 ㄽ	9.41 ㄿ	8.36 ㅀ	13.85 ㅁ	20.28 ㅂ	19.80 ㅃ	17.47 ㄷ	11.94 ㄹ	8.36 ㄹ	10.24 ㄹ	16.15 ㄻ
345	5.98 ㄹ	63.81 Z	24.52 ㄼ	18.98 ㄽ	14.08 ㄿ	13.72 ㅀ	19.73 ㅁ	25.69 ㅂ	24.52 ㅃ	21.96 ㄷ	16.70 ㄹ	13.72 ㄹ	16.06 ㄹ	21.60 ㄻ
350	8.18 ㄹ	62.35 Z	29.15 ㄼ	23.43 ㄽ	18.82 ㄿ	19.12 ㅀ	25.51 ㅁ	0.94 ㅂ	29.15 ㅃ	26.43 ㄷ	21.50 ㄹ	19.12 ㄹ	21.83 ㄹ	26.92 ㄻ
355	10.34 ㄹ	60.93 Z	3.72 ㄿ	27.89 ㄿ	23.61 ㄿ	24.55 ㅀ	1.18 ㅁ	6.03 ㅂ	3.72 ㄷ	0.90 ㄹ	26.34 ㄹ	24.55 ㄹ	27.53 ㄹ	2.11 ㄼ
360	12.46 ㄹ	59.56 Z	8.24 ㄿ	2.38 ㄿ	28.47 ㄿ	0.00 ㅀ	6.73 ㅁ	10.99 ㅂ	8.24 ㄷ	5.38 ㄹ	1.22 ㄹ	0.00 ㄹ	3.15 ㄻ	7.18 ㄼ

25° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	19.53 𐄀	56.26 Z	10.51 𐄀	3.54 𐄀	28.61 𐄀	0.00 𐄀	8.26 𐄀	13.72 𐄀	10.51 𐄀	7.23 𐄀	2.02 𐄀	0.00 𐄀	3.49 𐄀	8.75 𐄀
5	22.19 𐄀	54.77 Z	14.92 𐄀	7.98 𐄀	3.44 𐄀	5.45 𐄀	13.74 𐄀	18.53 𐄀	14.92 𐄀	11.63 𐄀	6.86 𐄀	5.45 𐄀	9.12 𐄀	13.77 𐄀
10	24.84 𐄀	53.35 Z	19.30 𐄀	12.45 𐄀	8.33 𐄀	10.88 𐄀	19.07 𐄀	23.21 𐄀	19.30 𐄀	16.03 𐄀	11.72 𐄀	10.88 𐄀	14.64 𐄀	18.67 𐄀
15	27.49 𐄀	52.00 Z	23.65 𐄀	16.95 𐄀	13.27 𐄀	16.28 𐄀	24.26 𐄀	27.79 𐄀	23.65 𐄀	20.45 𐄀	16.60 𐄀	16.28 𐄀	20.04 𐄀	23.48 𐄀
20	0.15 𐄀	50.72 Z	27.98 𐄀	21.49 𐄀	18.25 𐄀	21.64 𐄀	29.32 𐄀	2.27 𐄀	27.98 𐄀	24.89 𐄀	21.50 𐄀	21.64 𐄀	25.33 𐄀	28.21 𐄀
25	2.82 𐄀	49.51 Z	2.31 𐄀	26.07 𐄀	23.26 𐄀	26.94 𐄀	4.24 𐄀	6.68 𐄀	2.31 𐄀	29.34 𐄀	26.40 𐄀	26.94 𐄀	0.51 𐄀	2.88 𐄀
30	5.52 𐄀	48.37 Z	6.65 𐄀	0.69 𐄀	28.30 𐄀	2.18 𐄀	9.06 𐄀	11.03 𐄀	6.65 𐄀	3.81 𐄀	1.30 𐄀	2.18 𐄀	5.59 𐄀	7.49 𐄀
35	8.25 𐄀	47.32 Z	10.99 𐄀	5.34 𐄀	3.35 𐄀	7.35 𐄀	13.77 𐄀	15.33 𐄀	10.99 𐄀	8.30 𐄀	6.19 𐄀	7.35 𐄀	10.57 𐄀	12.05 𐄀
40	11.03 𐄀	46.34 Z	15.34 𐄀	10.03 𐄀	8.41 𐄀	12.45 𐄀	18.39 𐄀	19.60 𐄀	15.34 𐄀	12.80 𐄀	11.06 𐄀	12.45 𐄀	15.48 𐄀	16.59 𐄀
45	13.89 𐄀	45.45 Z	19.72 𐄀	14.75 𐄀	13.46 𐄀	17.46 𐄀	22.93 𐄀	23.84 𐄀	19.72 𐄀	17.32 𐄀	15.90 𐄀	17.46 𐄀	20.31 𐄀	21.11 𐄀
50	16.85 𐄀	44.65 Z	24.11 𐄀	19.50 𐄀	18.50 𐄀	22.41 𐄀	27.41 𐄀	28.08 𐄀	24.11 𐄀	21.84 𐄀	20.71 𐄀	22.41 𐄀	25.08 𐄀	25.63 𐄀
55	19.97 𐄀	43.93 Z	28.53 𐄀	24.27 𐄀	23.51 𐄀	27.28 𐄀	1.84 𐄀	2.31 𐄀	28.53 𐄀	26.36 𐄀	25.47 𐄀	27.28 𐄀	29.80 𐄀	0.15 𐄀
60	23.33 𐄀	43.31 Z	2.97 𐄀	29.05 𐄀	28.49 𐄀	2.09 𐄀	6.24 𐄀	6.54 𐄀	2.97 𐄀	0.87 𐄀	0.19 𐄀	2.09 𐄀	4.48 𐄀	4.68 𐄀
65	27.09 𐄀	42.78 Z	7.43 𐄀	3.84 𐄀	3.43 𐄀	6.84 𐄀	10.61 𐄀	10.79 𐄀	7.43 𐄀	5.38 𐄀	4.86 𐄀	6.84 𐄀	9.15 𐄀	9.23 𐄀
70	1.53 𐄀	42.34 Z	11.92 𐄀	8.63 𐄀	8.33 𐄀	11.53 𐄀	14.97 𐄀	15.06 𐄀	11.92 𐄀	9.87 𐄀	9.49 𐄀	11.53 𐄀	13.80 𐄀	13.80 𐄀
75	7.31 𐄀	42.00 Z	16.42 𐄀	13.41 𐄀	13.19 𐄀	16.19 𐄀	19.33 𐄀	19.34 𐄀	16.42 𐄀	14.35 𐄀	14.06 𐄀	16.19 𐄀	18.45 𐄀	18.39 𐄀
80	16.22 𐄀	41.76 Z	20.94 𐄀	18.17 𐄀	18.00 𐄀	20.81 𐄀	23.70 𐄀	23.66 𐄀	20.94 𐄀	18.80 𐄀	18.59 𐄀	20.81 𐄀	23.11 𐄀	23.02 𐄀
85	4.97 𐄀	41.61 Z	25.47 𐄀	22.91 𐄀	22.78 𐄀	25.41 𐄀	28.08 𐄀	28.00 𐄀	25.47 𐄀	23.23 𐄀	23.07 𐄀	25.41 𐄀	27.79 𐄀	27.68 𐄀
90	0.00 𐄀	41.56 Z	0.00 𐄀	27.63 𐄀	27.51 𐄀	0.00 𐄀	2.49 𐄀	2.37 𐄀	0.00 𐄀	27.63 𐄀	27.51 𐄀	0.00 𐄀	2.49 𐄀	2.37 𐄀
95	25.03 𐄀	41.61 Z	4.53 𐄀	2.32 𐄀	2.21 𐄀	4.59 𐄀	6.93 𐄀	6.77 𐄀	4.53 𐄀	2.00 𐄀	1.92 𐄀	4.59 𐄀	7.22 𐄀	7.09 𐄀
100	13.78 𐄀	41.76 Z	9.06 𐄀	6.98 𐄀	6.89 𐄀	9.19 𐄀	11.41 𐄀	11.20 𐄀	9.06 𐄀	6.34 𐄀	6.30 𐄀	9.19 𐄀	12.00 𐄀	11.83 𐄀
105	22.69 𐄀	42.00 Z	13.58 𐄀	11.61 𐄀	11.55 𐄀	13.81 𐄀	15.94 𐄀	15.65 𐄀	13.58 𐄀	10.66 𐄀	10.67 𐄀	13.81 𐄀	16.81 𐄀	16.59 𐄀
110	28.47 𐄀	42.34 Z	18.08 𐄀	16.20 𐄀	16.20 𐄀	18.47 𐄀	20.51 𐄀	20.13 𐄀	18.08 𐄀	14.94 𐄀	15.03 𐄀	18.47 𐄀	21.67 𐄀	21.37 𐄀
115	2.91 𐄀	42.78 Z	22.57 𐄀	20.77 𐄀	20.85 𐄀	23.16 𐄀	25.14 𐄀	24.62 𐄀	22.57 𐄀	19.21 𐄀	19.39 𐄀	23.16 𐄀	26.57 𐄀	26.16 𐄀
120	6.67 𐄀	43.31 Z	27.03 𐄀	25.32 𐄀	25.52 𐄀	27.91 𐄀	29.81 𐄀	29.13 𐄀	27.03 𐄀	23.46 𐄀	23.76 𐄀	27.91 𐄀	1.51 𐄀	0.95 𐄀
125	10.03 𐄀	43.93 Z	1.47 𐄀	29.85 𐄀	0.20 𐄀	2.72 𐄀	4.53 𐄀	3.64 𐄀	1.47 𐄀	27.69 𐄀	28.16 𐄀	2.72 𐄀	6.49 𐄀	5.73 𐄀
130	13.15 𐄀	44.65 Z	5.89 𐄀	4.37 𐄀	4.92 𐄀	7.59 𐄀	9.29 𐄀	8.16 𐄀	5.89 𐄀	1.92 𐄀	2.59 𐄀	7.59 𐄀	11.50 𐄀	10.50 𐄀
135	16.11 𐄀	45.45 Z	10.28 𐄀	8.89 𐄀	9.69 𐄀	12.54 𐄀	14.10 𐄀	12.68 𐄀	10.28 𐄀	6.16 𐄀	7.07 𐄀	12.54 𐄀	16.54 𐄀	15.25 𐄀
140	18.97 𐄀	46.34 Z	14.66 𐄀	13.41 𐄀	14.52 𐄀	17.55 𐄀	18.94 𐄀	17.20 𐄀	14.66 𐄀	10.40 𐄀	11.61 𐄀	17.55 𐄀	21.59 𐄀	19.97 𐄀
145	21.75 𐄀	47.32 Z	19.01 𐄀	17.95 𐄀	19.43 𐄀	22.65 𐄀	23.81 𐄀	21.70 𐄀	19.01 𐄀	14.67 𐄀	16.23 𐄀	22.65 𐄀	26.65 𐄀	24.66 𐄀
150	24.48 𐄀	48.37 Z	23.35 𐄀	22.51 𐄀	24.41 𐄀	27.82 𐄀	28.70 𐄀	26.19 𐄀	23.35 𐄀	18.97 𐄀	20.94 𐄀	27.82 𐄀	1.70 𐄀	29.31 𐄀
155	27.18 𐄀	49.51 Z	27.69 𐄀	27.12 𐄀	29.49 𐄀	3.06 𐄀	3.60 𐄀	0.66 𐄀	27.69 𐄀	23.32 𐄀	25.76 𐄀	3.06 𐄀	6.74 𐄀	3.93 𐄀
160	29.85 𐄀	50.72 Z	2.02 𐄀	1.79 𐄀	4.67 𐄀	8.36 𐄀	8.50 𐄀	5.11 𐄀	2.02 𐄀	27.73 𐄀	0.68 𐄀	8.36 𐄀	11.75 𐄀	8.51 𐄀
165	2.51 𐄀	52.00 Z	6.35 𐄀	6.52 𐄀	9.96 𐄀	13.72 𐄀	13.40 𐄀	9.55 𐄀	6.35 𐄀	2.21 𐄀	5.74 𐄀	13.72 𐄀	16.73 𐄀	13.05 𐄀
170	5.16 𐄀	53.35 Z	10.70 𐄀	11.33 𐄀	15.36 𐄀	19.12 𐄀	18.28 𐄀	13.97 𐄀	10.70 𐄀	6.79 𐄀	10.93 𐄀	19.12 𐄀	21.67 𐄀	17.55 𐄀
175	7.81 𐄀	54.77 Z	15.08 𐄀	16.23 𐄀	20.88 𐄀	24.55 𐄀	23.14 𐄀	18.37 𐄀	15.08 𐄀	11.47 𐄀	16.26 𐄀	24.55 𐄀	26.56 𐄀	22.02 𐄀
180	10.47 𐄀	56.26 Z	19.49 𐄀	21.25 𐄀	26.51 𐄀	0.00 𐄀	27.98 𐄀	22.77 𐄀	19.49 𐄀	16.28 𐄀	21.74 𐄀	0.00 𐄀	1.39 𐄀	26.46 𐄀

25° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	13.12 ㄴ	57.80 Z	23.95 ㄱ	26.39 ㄷ	2.24 ㄹ	5.45 ㅍ	2.79 ㅊ	27.16 ㅋ	23.95 ㅍ	21.23 ㅍ	27.37 ㄱ	5.45 ㅁ	6.17 ㄴ	0.87 ㄱ
190	15.79 ㄴ	59.40 Z	28.48 ㄱ	1.67 ㄴ	8.06 ㄹ	10.88 ㅍ	7.56 ㅊ	1.55 ㅍ	28.48 ㅍ	26.34 ㅍ	3.14 ㅍ	10.88 ㅁ	10.89 ㄴ	5.26 ㄱ
195	18.47 ㄴ	61.05 Z	3.08 ㄷ	7.09 ㄴ	13.95 ㄹ	16.28 ㅍ	12.29 ㅊ	5.95 ㅍ	3.08 ㅍ	1.63 ㄱ	9.04 ㅍ	16.28 ㅁ	15.54 ㄴ	9.64 ㄱ
200	21.15 ㄴ	62.75 Z	7.78 ㄷ	12.66 ㄴ	19.90 ㄹ	21.64 ㅍ	16.99 ㅊ	10.36 ㅍ	7.78 ㅍ	7.12 ㄱ	15.06 ㅍ	21.64 ㅁ	20.15 ㄴ	14.02 ㄱ
205	23.85 ㄴ	64.50 Z	12.58 ㄷ	18.38 ㄴ	25.89 ㄹ	26.94 ㅍ	21.66 ㅊ	14.80 ㅍ	12.58 ㅍ	12.81 ㄱ	21.17 ㅍ	26.94 ㅁ	24.70 ㄴ	18.41 ㄱ
210	26.57 ㄴ	66.29 Z	17.51 ㄷ	24.26 ㄴ	1.87 ㅍ	2.18 ㅊ	26.29 ㅊ	19.29 ㅍ	17.51 ㅍ	18.71 ㄱ	27.35 ㅍ	2.18 ㄴ	29.20 ㄴ	22.82 ㄱ
215	29.29 ㄴ	68.12 Z	22.59 ㄷ	0.27 ㄹ	7.83 ㅍ	7.35 ㅊ	0.91 ㅍ	23.82 ㅍ	22.59 ㅍ	24.82 ㄱ	3.57 ㅁ	7.35 ㄴ	3.67 ㄱ	27.26 ㄱ
220	2.03 ㄱ	69.98 Z	27.82 ㄷ	6.42 ㄹ	13.75 ㅍ	12.45 ㅊ	5.51 ㅍ	28.42 ㅍ	27.82 ㅍ	1.15 ㅍ	9.80 ㅁ	12.45 ㄴ	8.09 ㄱ	1.74 ㄷ
225	4.79 ㄱ	71.88 Z	3.23 ㄴ	12.66 ㄹ	19.60 ㅍ	17.46 ㅊ	10.10 ㅍ	3.11 ㅍ	3.23 ㄱ	7.66 ㅍ	15.99 ㅁ	17.46 ㄴ	12.50 ㄱ	6.27 ㄷ
230	7.55 ㄱ	73.80 Z	8.83 ㄴ	18.99 ㄹ	25.35 ㅍ	22.41 ㅊ	14.69 ㅍ	7.89 ㅍ	8.83 ㄱ	14.34 ㅍ	22.13 ㅁ	22.41 ㄴ	16.89 ㄱ	10.87 ㄷ
235	10.33 ㄱ	75.75 Z	14.62 ㄴ	25.35 ㄹ	1.00 ㅊ	27.28 ㅊ	19.29 ㅍ	12.79 ㅍ	14.62 ㄱ	21.15 ㅍ	28.19 ㅁ	27.28 ㄴ	21.28 ㄱ	15.56 ㄷ
240	13.12 ㄱ	77.72 Z	20.62 ㄴ	1.72 ㅍ	6.53 ㅊ	2.09 ㅍ	23.92 ㅍ	17.82 ㅍ	20.62 ㄱ	28.04 ㅍ	4.14 ㄴ	2.09 ㄱ	25.67 ㄱ	20.34 ㄷ
245	15.92 ㄱ	79.70 Z	26.81 ㄴ	8.06 ㅍ	11.93 ㅊ	6.84 ㅍ	28.58 ㅍ	23.01 ㅍ	26.81 ㄱ	4.96 ㅁ	9.97 ㄴ	6.84 ㄱ	0.09 ㄷ	25.23 ㄷ
250	18.72 ㄱ	81.69 Z	3.19 ㄹ	14.34 ㅍ	17.21 ㅊ	11.53 ㅍ	3.29 ㅍ	28.36 ㅍ	3.19 ㅍ	11.86 ㅁ	15.66 ㄴ	11.53 ㄱ	4.54 ㄷ	0.24 ㄴ
255	21.54 ㄱ	83.67 Z	9.73 ㄹ	20.52 ㅍ	22.35 ㅊ	16.19 ㅍ	8.07 ㅍ	3.90 ㄱ	9.73 ㅍ	18.68 ㅁ	21.22 ㄴ	16.19 ㄱ	9.03 ㄷ	5.39 ㄴ
260	24.35 ㄱ	85.62 Z	16.41 ㄹ	26.58 ㅍ	27.38 ㅊ	20.81 ㅍ	12.92 ㅍ	9.64 ㄱ	16.41 ㅍ	25.37 ㅁ	26.64 ㄴ	20.81 ㄱ	13.58 ㄷ	10.68 ㄴ
265	27.18 ㄱ	87.42 Z	23.18 ㄹ	2.50 ㅊ	2.29 ㅍ	25.41 ㅍ	17.86 ㅍ	15.58 ㄱ	23.18 ㅍ	1.91 ㄴ	1.93 ㄱ	25.41 ㄱ	18.20 ㄷ	16.13 ㄴ
270	0.00 ㄷ	88.44 Z	0.00 ㅍ	8.26 ㅊ	7.09 ㅍ	0.00 ㅍ	22.91 ㅍ	21.74 ㄱ	0.00 ㅁ	8.26 ㄴ	7.09 ㄱ	0.00 ㄷ	22.91 ㄷ	21.74 ㄴ
275	2.82 ㄷ	87.42 Z	6.82 ㅍ	13.87 ㅊ	11.80 ㅍ	4.59 ㅍ	28.07 ㅍ	28.09 ㄱ	6.82 ㅁ	14.42 ㄴ	12.14 ㄱ	4.59 ㄷ	27.71 ㄷ	27.50 ㄴ
280	5.65 ㄷ	85.62 Z	13.59 ㅍ	19.32 ㅊ	16.42 ㅍ	9.19 ㅍ	3.36 ㄱ	4.63 ㅍ	13.59 ㅁ	20.36 ㄴ	17.08 ㄱ	9.19 ㄷ	2.62 ㄴ	3.42 ㄹ
285	8.46 ㄷ	83.67 Z	20.27 ㅍ	24.61 ㅊ	20.97 ㅍ	13.81 ㅍ	8.78 ㄱ	11.32 ㅍ	20.27 ㅁ	26.10 ㄴ	21.93 ㄱ	13.81 ㄷ	7.65 ㄴ	9.48 ㄹ
290	11.28 ㄷ	81.69 Z	26.81 ㅍ	29.76 ㅊ	25.46 ㅍ	18.47 ㅍ	14.34 ㄱ	18.14 ㅍ	26.81 ㅁ	1.64 ㄱ	26.71 ㄱ	18.47 ㄷ	12.79 ㄴ	15.66 ㄹ
295	14.08 ㄷ	79.70 Z	3.19 ㅊ	4.77 ㅍ	29.91 ㅍ	23.16 ㅍ	20.03 ㄱ	25.04 ㅍ	3.19 ㄴ	6.99 ㄱ	1.42 ㄷ	23.16 ㄷ	18.07 ㄴ	21.94 ㄹ
300	16.88 ㄷ	77.72 Z	9.38 ㅊ	9.66 ㅍ	4.33 ㅍ	27.91 ㅍ	25.86 ㄱ	1.96 ㅁ	9.38 ㄴ	12.18 ㄱ	6.08 ㄷ	27.91 ㄷ	23.47 ㄴ	28.28 ㄹ
305	19.67 ㄷ	75.75 Z	15.38 ㅊ	14.44 ㅍ	8.72 ㅍ	2.72 ㄱ	1.81 ㅍ	8.85 ㅁ	15.38 ㄴ	17.21 ㄱ	10.71 ㄷ	2.72 ㄴ	29.00 ㄴ	4.65 ㅍ
310	22.45 ㄷ	73.80 Z	21.17 ㅊ	19.13 ㅍ	13.11 ㅍ	7.59 ㄱ	7.87 ㅍ	15.66 ㅁ	21.17 ㄴ	22.11 ㄱ	15.31 ㄷ	7.59 ㄴ	4.65 ㄹ	11.01 ㅍ
315	25.21 ㄷ	71.88 Z	26.77 ㅊ	23.73 ㅍ	17.50 ㅍ	12.54 ㄱ	14.01 ㅍ	22.34 ㅁ	26.77 ㄴ	26.89 ㄱ	19.90 ㄷ	12.54 ㄴ	10.40 ㄹ	17.34 ㅍ
320	27.97 ㄷ	69.98 Z	2.18 ㅍ	28.26 ㅍ	21.91 ㅍ	17.55 ㄱ	20.20 ㅍ	28.85 ㅁ	2.18 ㄱ	1.58 ㄷ	24.49 ㄷ	17.55 ㄴ	16.25 ㄹ	23.58 ㅍ
325	0.71 ㄴ	68.12 Z	7.41 ㅍ	2.74 ㅍ	26.33 ㅍ	22.65 ㄱ	26.43 ㅍ	5.18 ㄴ	7.41 ㄱ	6.18 ㄷ	29.09 ㄷ	22.65 ㄴ	22.17 ㄹ	29.73 ㅍ
330	3.43 ㄴ	66.29 Z	12.49 ㅍ	7.18 ㅍ	0.80 ㄱ	27.82 ㄱ	2.65 ㅁ	11.29 ㄴ	12.49 ㄱ	10.71 ㄷ	3.71 ㄴ	27.82 ㄴ	28.13 ㄹ	5.74 ㅊ
335	6.15 ㄴ	64.50 Z	17.42 ㅍ	11.59 ㅍ	5.30 ㄱ	3.06 ㅍ	8.83 ㅁ	17.19 ㄴ	17.42 ㄱ	15.20 ㄷ	8.34 ㄴ	3.06 ㄹ	4.11 ㅍ	11.62 ㅊ
340	8.85 ㄴ	62.75 Z	22.22 ㅍ	15.98 ㅍ	9.85 ㄱ	8.36 ㅍ	14.94 ㅁ	22.88 ㄴ	22.22 ㄱ	19.64 ㄷ	13.01 ㄴ	8.36 ㄹ	10.10 ㅍ	17.34 ㅊ
345	11.53 ㄴ	61.05 Z	26.92 ㅍ	20.36 ㅍ	14.46 ㄱ	13.72 ㅍ	20.96 ㅁ	28.37 ㄴ	26.92 ㄱ	24.05 ㄷ	17.71 ㄴ	13.72 ㄹ	16.05 ㅍ	22.91 ㅊ
350	14.21 ㄴ	59.40 Z	1.52 ㅍ	24.74 ㅍ	19.11 ㄱ	19.12 ㅍ	26.86 ㅁ	3.66 ㄱ	1.52 ㄷ	28.45 ㄷ	22.44 ㄴ	19.12 ㄹ	21.94 ㅍ	28.33 ㅊ
355	16.88 ㄴ	57.80 Z	6.05 ㅍ	29.13 ㅍ	23.83 ㄱ	24.55 ㅍ	2.63 ㄴ	8.77 ㄱ	6.05 ㄷ	2.84 ㄴ	27.21 ㄴ	24.55 ㄹ	27.76 ㅍ	3.61 ㅍ
360	19.53 ㄴ	56.26 Z	10.51 ㅍ	3.54 ㄱ	28.61 ㄱ	0.00 ㅁ	8.26 ㄴ	13.72 ㄱ	10.51 ㄷ	7.23 ㄴ	2.02 ㄹ	0.00 ㅍ	3.49 ㅊ	8.75 ㅍ

30° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	25.43 ☾	52.61 Z	12.93 ☾	4.77 ♀	28.75 ♀	0.00 ♁	10.07 ♀	16.78 ♂	12.93 ☾	9.12 ☾	2.81 ♀	0.00 ♀	3.91 ♂	10.51 II
5	28.56 ☾	51.01 Z	17.27 ☾	9.12 ♀	3.51 ♀	5.45 ♁	15.60 ♀	21.53 ♂	17.27 ☾	13.40 ☾	7.56 ♀	5.45 ♀	9.65 ♂	15.57 II
10	1.73 ♀	49.47 Z	21.55 ☾	13.49 ♀	8.31 ♀	10.88 ♁	20.95 ♀	26.15 ♂	21.55 ☾	17.69 ☾	12.33 ♀	10.88 ♀	15.27 ♂	20.51 II
15	4.95 ♀	48.00 Z	25.81 ☾	17.90 ♀	13.16 ♀	16.28 ♁	26.15 ♀	0.64 ☾	25.81 ☾	21.98 ☾	17.11 ♀	16.28 ♀	20.76 ♂	25.33 II
20	8.24 ♀	46.60 Z	0.04 ♀	22.33 ♀	18.06 ♀	21.64 ♁	1.19 ♂	5.04 ☾	0.04 ☾	26.29 ☾	21.91 ♀	21.64 ♀	26.13 ♂	0.05 ☾
25	11.61 ♀	45.28 Z	4.26 ♀	26.80 ♀	22.99 ♀	26.94 ♁	6.10 ♂	9.35 ☾	4.26 ☾	0.60 ♀	26.71 ♀	26.94 ♀	1.37 II	4.70 ☾
30	15.11 ♀	44.04 Z	8.48 ♀	1.30 ♀	27.94 ♀	2.18 ♀	10.88 ♂	13.59 ☾	8.48 ☾	4.93 ♀	1.50 ♀	2.18 ♂	6.51 II	9.28 ☾
35	18.76 ♀	42.88 Z	12.70 ♀	5.84 ♀	2.91 ♁	7.35 ♀	15.54 ♂	17.78 ☾	12.70 ☾	9.26 ♀	6.28 ♀	7.35 ♂	11.54 II	13.82 ☾
40	22.62 ♀	41.81 Z	16.93 ♀	10.41 ♀	7.89 ♁	12.45 ♀	20.11 ♂	21.94 ☾	16.93 ☾	13.61 ♀	11.03 ♀	12.45 ♂	16.48 II	18.31 ☾
45	26.75 ♀	40.84 Z	21.17 ♀	15.00 ♀	12.87 ♁	17.46 ♀	24.60 ♂	26.06 ☾	21.17 ☾	17.96 ♀	15.76 ♀	17.46 ♂	21.34 II	22.79 ☾
50	1.24 ♀	39.96 Z	25.42 ♀	19.62 ♀	17.83 ♁	22.41 ♀	29.03 ♂	0.17 ☾	25.42 ☾	22.31 ♀	20.46 ♀	22.41 ♂	26.13 II	27.25 ☾
55	6.23 ♀	39.17 Z	29.69 ♀	24.25 ♀	22.78 ♁	27.28 ♀	3.40 ☾	4.27 ☾	29.69 ☾	26.65 ♀	25.12 ♀	27.28 ♂	0.87 ☾	1.70 ♀
60	11.92 ♀	38.49 Z	3.98 ♀	28.90 ♀	27.70 ♁	2.09 ♂	7.73 ☾	8.37 ☾	3.98 ♀	1.00 ♀	29.73 ♀	2.09 II	5.56 ☾	6.16 ♀
65	18.64 ♀	37.90 Z	8.28 ♀	3.55 ♁	2.59 ♀	6.84 ♂	12.03 ☾	12.48 ☾	8.28 ♀	5.33 ♀	4.30 ♂	6.84 II	10.23 ☾	10.63 ♀
70	26.86 ♀	37.42 Z	12.61 ♀	8.21 ♁	7.44 ♀	11.53 ♂	16.32 ☾	16.60 ☾	12.61 ♀	9.65 ♀	8.82 ♂	11.53 II	14.88 ☾	15.12 ♀
75	7.31 ♂	37.05 Z	16.94 ♀	12.86 ♁	12.25 ♀	16.19 ♂	20.60 ☾	20.74 ☾	16.94 ♀	13.95 ♀	13.30 ♂	16.19 II	19.52 ☾	19.62 ♀
80	21.02 ♂	36.78 Z	21.29 ♀	17.49 ♁	17.03 ♀	20.81 ♂	24.89 ☾	24.89 ☾	21.29 ♀	18.23 ♀	17.73 ♂	20.81 II	24.17 ☾	24.15 ♀
85	8.83 II	36.61 Z	25.64 ♀	22.11 ♁	21.77 ♀	25.41 ♂	29.19 ☾	29.08 ☾	25.64 ♀	22.48 ♀	22.13 ♂	25.41 II	28.83 ☾	28.71 ♀
90	0.00 ☾	36.56 Z	0.00 ♁	26.72 ♁	26.48 ♀	0.00 ☾	3.52 ☾	3.28 ♀	0.00 ♀	26.72 ♀	26.48 ♂	0.00 ☾	3.52 ♀	3.28 ♀
95	21.17 ☾	36.61 Z	4.36 ♁	1.29 ♀	1.17 ♂	4.59 ☾	7.87 ☾	7.52 ♀	4.36 ♀	0.92 ♂	0.81 II	4.59 ☾	8.23 ♀	7.89 ♀
100	8.98 ♀	36.78 Z	8.71 ♁	5.85 ♀	5.83 ♂	9.19 ☾	12.27 ☾	11.77 ♀	8.71 ♀	5.11 ♂	5.11 II	9.19 ☾	12.97 ♀	12.51 ♀
105	22.69 ♀	37.05 Z	13.06 ♁	10.38 ♀	10.48 ♂	13.81 ☾	16.70 ☾	16.05 ♀	13.06 ♀	9.26 ♂	9.40 II	13.81 ☾	17.75 ♀	17.14 ♀
110	3.14 ♀	37.42 Z	17.39 ♁	14.88 ♀	15.12 ♂	18.47 ☾	21.18 ☾	20.35 ♀	17.39 ♀	13.40 ♂	13.68 II	18.47 ☾	22.56 ♀	21.79 ♀
115	11.36 ♀	37.90 Z	21.72 ♁	19.37 ♀	19.77 ♂	23.16 ☾	25.70 ☾	24.67 ♀	21.72 ♀	17.52 ♂	17.97 II	23.16 ☾	27.41 ♀	26.45 ♀
120	18.08 ♀	38.49 Z	26.02 ♁	23.84 ♀	24.44 ♂	27.91 ☾	0.27 ♀	29.00 ♀	26.02 ♀	21.63 ♂	22.27 II	27.91 ☾	2.30 ♀	1.10 ♁
125	23.77 ♀	39.17 Z	0.31 ♀	28.30 ♀	29.13 ♂	2.72 ☾	4.88 ♀	3.35 ♀	0.31 ♂	25.73 ♂	26.60 II	2.72 ♀	7.22 ♀	5.75 ♁
130	28.76 ♀	39.96 Z	4.58 ♀	2.75 ♂	3.87 ☾	7.59 ☾	9.54 ♀	7.69 ♀	4.58 ♂	29.83 ♂	0.97 ☾	7.59 ♀	12.17 ♀	10.38 ♁
135	3.25 ♁	40.84 Z	8.83 ♀	7.21 ♂	8.66 ☾	12.54 ☾	14.24 ♀	12.04 ♀	8.83 ♂	3.94 II	5.40 ☾	12.54 ♀	17.13 ♀	15.00 ♁
140	7.38 ♁	41.81 Z	13.07 ♀	11.69 ♂	13.52 ☾	17.55 ☾	18.97 ♀	16.39 ♀	13.07 ♂	8.06 II	9.89 ☾	17.55 ♀	22.11 ♀	19.59 ♁
145	11.24 ♁	42.88 Z	17.30 ♀	16.18 ♂	18.46 ☾	22.65 ☾	23.72 ♀	20.74 ♀	17.30 ♂	12.22 II	14.46 ☾	22.65 ♀	27.09 ♀	24.16 ♁
150	14.89 ♁	44.04 Z	21.52 ♀	20.72 ♂	23.49 ☾	27.82 ☾	28.50 ♀	25.07 ♀	21.52 ♂	16.41 II	19.12 ☾	27.82 ♀	2.06 ♁	28.70 ♁
155	18.39 ♁	45.28 Z	25.74 ♀	25.30 ♂	28.63 ☾	3.06 ♀	3.29 ♀	29.40 ♀	25.74 ♂	20.65 II	23.90 ☾	3.06 ♀	7.01 ♁	3.20 ♀
160	21.76 ♁	46.60 Z	29.96 ♀	29.95 ♂	3.87 ☾	8.36 ♀	8.09 ♀	3.71 ♂	29.96 ♂	24.96 II	28.81 ☾	8.36 ♀	11.94 ♁	7.67 ♀
165	25.05 ♁	48.00 Z	4.19 ♂	4.67 ☾	9.24 ☾	13.72 ♀	12.89 ♀	8.02 ♂	4.19 II	29.36 II	3.85 ♀	13.72 ♀	16.84 ♁	12.10 ♀
170	28.27 ♁	49.47 Z	8.45 ♂	9.49 ☾	14.73 ☾	19.12 ♀	17.67 ♀	12.31 ♂	8.45 II	3.85 ☾	9.05 ♀	19.12 ♀	21.69 ♁	16.51 ♀
175	1.44 ♀	51.01 Z	12.73 ♂	14.43 ☾	20.35 ☾	24.55 ♀	22.44 ♀	16.60 ♂	12.73 II	8.47 ☾	14.40 ♀	24.55 ♀	26.49 ♁	20.88 ♀
180	4.57 ♀	52.61 Z	17.07 ♂	19.49 ☾	26.09 ☾	0.00 ♀	27.19 ♀	20.88 ♂	17.07 II	13.22 ☾	19.93 ♀	0.00 ♁	1.25 ♀	25.23 ♀

30° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	7.66 ㄴ	54.28 Z	21.45 ㄱ	24.69 ㄷ	1.95 ㄸ	5.45 ㄹ	1.91 ㄺ	25.17 ㄻ	21.45 ㄼ	18.14 ㄽ	25.63 ㄾ	5.45 ㄿ	5.94 ㅀ	29.56 ㅁ
190	10.74 ㄴ	56.01 Z	25.91 ㄱ	0.05 ㄺ	7.90 ㄸ	10.88 ㄹ	6.60 ㄺ	29.46 ㄻ	25.91 ㄼ	23.24 ㄽ	1.50 ㅀ	10.88 ㄿ	10.58 ㅁ	3.87 ㄱ
195	13.80 ㄴ	57.78 Z	0.46 ㄷ	5.57 ㄺ	13.94 ㄸ	16.28 ㄹ	11.26 ㄺ	3.77 ㄼ	0.46 ㄽ	28.54 ㄾ	7.53 ㅀ	16.28 ㄿ	15.16 ㅁ	8.19 ㄱ
200	16.86 ㄴ	59.61 Z	5.12 ㄷ	11.28 ㄺ	20.04 ㄸ	21.64 ㄹ	15.90 ㄺ	8.10 ㄼ	5.12 ㄽ	4.08 ㄾ	13.71 ㅀ	21.64 ㄿ	19.69 ㅁ	12.50 ㄱ
205	19.91 ㄴ	61.48 Z	9.89 ㄷ	17.17 ㄺ	26.18 ㄸ	26.94 ㄹ	20.50 ㄺ	12.47 ㄼ	9.89 ㄽ	9.86 ㄾ	20.01 ㅀ	26.94 ㄿ	24.17 ㅁ	16.82 ㄱ
210	22.96 ㄴ	63.38 Z	14.82 ㄷ	23.24 ㄺ	2.31 ㄹ	2.18 ㄺ	25.09 ㄻ	16.88 ㄼ	14.82 ㄽ	15.90 ㄾ	26.39 ㅀ	2.18 ㅁ	28.60 ㅁ	21.17 ㄱ
215	26.02 ㄴ	65.32 Z	19.90 ㄷ	29.48 ㄺ	8.42 ㄹ	7.35 ㄺ	29.65 ㄻ	21.36 ㄼ	19.90 ㄽ	22.21 ㄾ	2.84 ㄿ	7.35 ㅁ	3.00 ㄱ	25.56 ㄱ
220	29.08 ㄴ	67.28 Z	25.18 ㄷ	5.87 ㄸ	14.47 ㄹ	12.45 ㄺ	4.21 ㄼ	25.91 ㄽ	25.18 ㄾ	28.79 ㄾ	9.30 ㄿ	12.45 ㅁ	7.36 ㄱ	29.98 ㄱ
225	2.14 ㄱ	69.26 Z	0.66 ㄺ	12.39 ㄸ	20.44 ㄹ	17.46 ㄺ	8.76 ㄼ	0.56 ㄽ	0.66 ㄾ	5.63 ㅀ	15.74 ㄿ	17.46 ㅁ	11.70 ㄱ	4.47 ㄷ
230	5.21 ㄱ	71.25 Z	6.36 ㄺ	19.00 ㄸ	26.31 ㄹ	22.41 ㄺ	13.32 ㄼ	5.31 ㄽ	6.36 ㄾ	12.68 ㅀ	22.12 ㄿ	22.41 ㅁ	16.02 ㄱ	9.03 ㄷ
235	8.29 ㄱ	73.23 Z	12.30 ㄺ	25.65 ㄸ	2.05 ㄻ	27.28 ㄻ	17.90 ㄼ	10.20 ㄽ	12.30 ㄾ	19.92 ㅀ	28.40 ㄿ	27.28 ㅁ	20.35 ㄱ	13.68 ㄷ
240	11.37 ㄱ	75.20 Z	18.49 ㄺ	2.31 ㄹ	7.66 ㄻ	2.09 ㄼ	22.52 ㄼ	15.25 ㄽ	18.49 ㄾ	27.27 ㅀ	4.57 ㅁ	2.09 ㄱ	24.68 ㄱ	18.44 ㄷ
245	14.47 ㄱ	77.11 Z	24.92 ㄺ	8.92 ㄹ	13.12 ㄻ	6.84 ㄼ	27.17 ㄼ	20.48 ㄽ	24.92 ㄾ	4.67 ㄿ	10.59 ㅁ	6.84 ㄱ	29.04 ㄱ	23.31 ㄷ
250	17.57 ㄱ	78.95 Z	1.60 ㄸ	15.44 ㄹ	18.44 ㄻ	11.53 ㄼ	1.89 ㄽ	25.90 ㄾ	1.60 ㅀ	12.04 ㄿ	16.46 ㅁ	11.53 ㄱ	3.44 ㄷ	28.32 ㄷ
255	20.67 ㄱ	80.64 Z	8.49 ㄸ	21.83 ㄹ	23.61 ㄻ	16.19 ㄼ	6.68 ㄽ	1.55 ㄾ	8.49 ㅀ	19.32 ㄿ	22.16 ㅁ	16.19 ㄱ	7.88 ㄷ	3.48 ㄺ
260	23.78 ㄱ	82.07 Z	15.55 ㄸ	28.07 ㄹ	28.65 ㄻ	20.81 ㄼ	11.56 ㄽ	7.44 ㄾ	15.55 ㅀ	26.43 ㄿ	27.71 ㅁ	20.81 ㄱ	12.39 ㄷ	8.80 ㄺ
265	26.89 ㄱ	83.07 Z	22.74 ㄸ	4.13 ㄻ	3.55 ㄼ	25.41 ㄼ	16.55 ㄽ	13.58 ㄾ	22.74 ㅀ	3.34 ㅁ	3.10 ㄱ	25.41 ㄱ	16.98 ㄷ	14.30 ㄺ
270	0.00 ㄷ	83.44 Z	0.00 ㄹ	10.01 ㄻ	8.34 ㄼ	0.00 ㄽ	21.66 ㄾ	19.99 ㄾ	0.00 ㄿ	10.01 ㅁ	8.34 ㄱ	0.00 ㄷ	21.66 ㄷ	19.99 ㄺ
275	3.11 ㄷ	83.07 Z	7.26 ㄹ	15.70 ㄻ	13.02 ㄼ	4.59 ㄽ	26.90 ㄾ	26.66 ㄾ	7.26 ㄿ	16.42 ㅁ	13.45 ㄱ	4.59 ㄷ	26.45 ㄷ	25.87 ㄺ
280	6.22 ㄷ	82.07 Z	14.45 ㄹ	21.20 ㄻ	17.61 ㄼ	9.19 ㄽ	2.29 ㄾ	3.57 ㅀ	14.45 ㄿ	22.56 ㅁ	18.44 ㄱ	9.19 ㄷ	1.35 ㄺ	1.93 ㄸ
285	9.33 ㄷ	80.64 Z	21.51 ㄹ	26.52 ㄻ	22.12 ㄼ	13.81 ㄽ	7.84 ㄾ	10.68 ㅀ	21.51 ㄿ	28.45 ㅁ	23.32 ㄱ	13.81 ㄷ	6.39 ㄺ	8.17 ㄸ
290	12.43 ㄷ	78.95 Z	28.40 ㄹ	1.68 ㄼ	26.56 ㄼ	18.47 ㄽ	13.54 ㄾ	17.96 ㅀ	28.40 ㄿ	4.10 ㄱ	28.11 ㄱ	18.47 ㄷ	11.56 ㄺ	14.56 ㄸ
295	15.53 ㄷ	77.11 Z	5.08 ㄻ	6.69 ㄼ	0.96 ㄽ	23.16 ㄾ	19.41 ㄾ	25.33 ㅀ	5.08 ㅁ	9.52 ㄱ	2.83 ㄷ	23.16 ㄷ	16.88 ㄺ	21.08 ㄸ
300	18.63 ㄷ	75.20 Z	11.51 ㄻ	11.56 ㄼ	5.32 ㄽ	27.91 ㄾ	25.43 ㄾ	2.73 ㄿ	11.51 ㅁ	14.75 ㄱ	7.48 ㄷ	27.91 ㄷ	22.34 ㄺ	27.69 ㄸ
305	21.71 ㄷ	73.23 Z	17.70 ㄻ	16.32 ㄼ	9.65 ㄽ	2.72 ㄾ	1.60 ㅀ	10.08 ㄿ	17.70 ㅁ	19.80 ㄱ	12.10 ㄷ	2.72 ㄺ	27.95 ㄺ	4.35 ㄹ
310	24.79 ㄷ	71.25 Z	23.64 ㄻ	20.97 ㄼ	13.98 ㄽ	7.59 ㄾ	7.88 ㅀ	17.32 ㄿ	23.64 ㅁ	24.69 ㄱ	16.68 ㄷ	7.59 ㄺ	3.69 ㄸ	11.00 ㄹ
315	27.86 ㄷ	69.26 Z	29.34 ㄻ	25.53 ㄼ	18.30 ㄽ	12.54 ㄾ	14.26 ㅀ	24.37 ㄿ	29.34 ㅁ	29.44 ㄱ	21.24 ㄷ	12.54 ㄺ	9.56 ㄸ	17.61 ㄹ
320	0.92 ㄺ	67.28 Z	4.82 ㄼ	0.02 ㄽ	22.64 ㄾ	17.55 ㄾ	20.70 ㅀ	1.21 ㅁ	4.82 ㄱ	4.09 ㄷ	25.79 ㄷ	17.55 ㄺ	15.53 ㄸ	24.13 ㄹ
325	3.98 ㄺ	65.32 Z	10.10 ㄼ	4.44 ㄽ	27.00 ㄾ	22.65 ㄾ	27.16 ㅀ	7.79 ㅁ	10.10 ㄱ	8.64 ㄷ	0.35 ㄺ	22.65 ㄺ	21.58 ㄸ	0.52 ㄻ
330	7.04 ㄺ	63.38 Z	15.18 ㄼ	8.83 ㄽ	1.40 ㄾ	27.82 ㄾ	3.61 ㄿ	14.10 ㅁ	15.18 ㄱ	13.12 ㄷ	4.91 ㄺ	27.82 ㄺ	27.69 ㄸ	6.76 ㄻ
335	10.09 ㄺ	61.48 Z	20.11 ㄼ	13.18 ㄽ	5.83 ㄾ	3.06 ㅀ	9.99 ㄿ	20.14 ㅁ	20.11 ㄱ	17.53 ㄷ	9.50 ㄺ	3.06 ㄸ	3.82 ㄹ	12.83 ㄻ
340	13.14 ㄺ	59.61 Z	24.88 ㄼ	17.50 ㄽ	10.31 ㄾ	8.36 ㅀ	16.29 ㄿ	25.92 ㅁ	24.88 ㄱ	21.90 ㄷ	14.10 ㄺ	8.36 ㄸ	9.96 ㄹ	18.72 ㄻ
345	16.20 ㄺ	57.78 Z	29.54 ㄼ	21.81 ㄽ	14.84 ㄾ	13.72 ㅀ	22.47 ㄿ	1.46 ㄱ	29.54 ㄱ	26.23 ㄷ	18.74 ㄺ	13.72 ㄸ	16.06 ㄹ	24.43 ㄻ
350	19.26 ㄺ	56.01 Z	4.09 ㄽ	26.13 ㄽ	19.42 ㄾ	19.12 ㅀ	28.50 ㄿ	6.76 ㄱ	4.09 ㄷ	0.54 ㄺ	23.40 ㄺ	19.12 ㄸ	22.10 ㄹ	29.95 ㄻ
355	22.34 ㄺ	54.28 Z	8.55 ㄽ	0.44 ㄾ	24.06 ㄾ	24.55 ㅀ	4.37 ㅁ	11.86 ㄱ	8.55 ㄷ	4.83 ㄺ	28.09 ㄺ	24.55 ㄸ	28.05 ㄹ	5.31 ㄼ
360	25.43 ㄺ	52.61 Z	12.93 ㄽ	4.77 ㄾ	28.75 ㄾ	0.00 ㄿ	10.07 ㅁ	16.78 ㄱ	12.93 ㄷ	9.12 ㄺ	2.81 ㄸ	0.00 ㄹ	3.91 ㄻ	10.51 ㄼ

35° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	0.40 兂	48.73 Z	15.56 𠄎	6.09 𠄎	28.90 𠄎	0.00 𠄎	12.25 𠄎	20.25 𠄎	15.56 𠄎	11.06 𠄎	3.62 兂	0.00 兂	4.42 兂	12.56 𠄎
5	3.90 兂	47.03 Z	19.79 𠄎	10.34 𠄎	3.57 𠄎	5.45 𠄎	17.81 𠄎	24.91 𠄎	19.79 𠄎	15.23 𠄎	8.27 兂	5.45 兂	10.29 兂	17.65 𠄎
10	7.46 兂	45.39 Z	23.97 𠄎	14.61 𠄎	8.29 𠄎	10.88 𠄎	23.18 𠄎	29.42 𠄎	23.97 𠄎	19.39 𠄎	12.94 兂	10.88 兂	16.02 兂	22.59 𠄎
15	11.10 兂	43.83 Z	28.11 𠄎	18.91 𠄎	13.05 𠄎	16.28 𠄎	28.36 𠄎	3.80 𠄎	28.11 𠄎	23.55 𠄎	17.62 兂	16.28 兂	21.61 兂	27.40 𠄎
20	14.86 兂	42.34 Z	2.22 𠄎	23.23 𠄎	17.86 𠄎	21.64 𠄎	3.37 𠄎	8.08 𠄎	2.22 𠄎	27.71 𠄎	22.31 兂	21.64 兂	27.06 兂	2.11 𠄎
25	18.75 兂	40.93 Z	6.32 𠄎	27.58 𠄎	22.70 𠄎	26.94 𠄎	8.23 𠄎	12.26 𠄎	6.32 𠄎	1.88 兂	27.00 兂	26.94 兂	2.37 𠄎	6.73 𠄎
30	22.80 兂	39.60 Z	10.41 𠄎	1.96 𠄎	27.56 𠄎	2.18 𠄎	12.96 𠄎	16.37 𠄎	10.41 𠄎	6.05 兂	1.68 兂	2.18 兂	7.56 𠄎	11.27 𠄎
35	27.08 兂	38.37 Z	14.49 𠄎	6.37 𠄎	2.45 𠄎	7.35 𠄎	17.56 𠄎	20.43 𠄎	14.49 𠄎	10.23 兂	6.34 兂	7.35 兂	12.64 𠄎	15.75 𠄎
40	1.62 兂	37.22 Z	18.58 𠄎	10.81 𠄎	7.35 𠄎	12.45 𠄎	22.06 𠄎	24.44 𠄎	18.58 𠄎	14.41 兂	10.98 兂	12.45 兂	17.61 𠄎	20.19 𠄎
45	6.51 兂	36.17 Z	22.67 𠄎	15.27 𠄎	12.24 𠄎	17.46 𠄎	26.48 𠄎	28.43 𠄎	22.67 𠄎	18.59 兂	15.60 兂	17.46 兂	22.49 𠄎	24.60 𠄎
50	11.84 兂	35.22 Z	26.78 𠄎	19.75 𠄎	17.13 𠄎	22.41 𠄎	0.82 𠄎	2.39 𠄎	26.78 𠄎	22.77 兂	20.18 兂	22.41 兂	27.30 𠄎	28.99 𠄎
55	17.74 兂	34.38 Z	0.89 𠄎	24.25 𠄎	22.01 𠄎	27.28 𠄎	5.11 𠄎	6.34 𠄎	0.89 兂	26.95 兂	24.73 兂	27.28 兂	2.05 𠄎	3.37 𠄎
60	24.37 兂	33.64 Z	5.02 𠄎	28.75 𠄎	26.86 𠄎	2.09 𠄎	9.36 𠄎	10.29 𠄎	5.02 兂	1.11 兂	29.23 兂	2.09 𠄎	6.76 𠄎	7.74 𠄎
65	1.94 兂	33.01 Z	9.16 𠄎	3.27 𠄎	1.69 𠄎	6.84 𠄎	13.58 𠄎	14.25 𠄎	9.16 兂	5.27 兂	3.69 兂	6.84 𠄎	11.42 𠄎	12.12 𠄎
70	10.69 兂	32.49 Z	13.31 𠄎	7.78 𠄎	6.49 𠄎	11.53 𠄎	17.78 𠄎	18.21 𠄎	13.31 兂	9.40 兂	8.11 兂	11.53 𠄎	16.07 𠄎	16.51 𠄎
75	20.87 兂	32.08 Z	17.47 𠄎	12.30 𠄎	11.26 𠄎	16.19 𠄎	21.98 𠄎	22.19 𠄎	17.47 兂	13.53 兂	12.49 兂	16.19 𠄎	20.70 𠄎	20.91 𠄎
80	2.63 𠄎	31.79 Z	21.64 𠄎	16.80 𠄎	15.99 𠄎	20.81 𠄎	26.18 𠄎	26.18 𠄎	21.64 兂	17.63 兂	16.82 兂	20.81 𠄎	25.33 𠄎	25.33 𠄎
85	15.86 𠄎	31.62 Z	25.82 𠄎	21.29 𠄎	20.70 𠄎	25.41 𠄎	0.39 𠄎	0.20 兂	25.82 兂	21.71 兂	21.11 兂	25.41 𠄎	29.97 𠄎	29.77 𠄎
90	0.00 𠄎	31.56 Z	0.00 𠄎	25.77 𠄎	25.37 𠄎	0.00 𠄎	4.63 𠄎	4.23 兂	0.00 兂	25.77 兂	25.37 兂	0.00 𠄎	4.63 𠄎	4.23 𠄎
95	14.14 𠄎	31.62 Z	4.18 𠄎	0.23 𠄎	0.03 𠄎	4.59 𠄎	8.89 𠄎	8.29 兂	4.18 兂	29.80 兂	29.61 兂	4.59 𠄎	9.30 𠄎	8.71 𠄎
100	27.37 𠄎	31.79 Z	8.36 𠄎	4.67 𠄎	4.67 𠄎	9.19 𠄎	13.18 𠄎	12.37 兂	8.36 兂	3.82 兂	3.82 𠄎	9.19 𠄎	14.01 𠄎	13.20 𠄎
105	9.13 𠄎	32.08 Z	12.53 𠄎	9.09 𠄎	9.30 𠄎	13.81 𠄎	17.51 𠄎	16.47 兂	12.53 兂	7.81 兂	8.02 𠄎	13.81 𠄎	18.74 𠄎	17.70 𠄎
110	19.31 𠄎	32.49 Z	16.69 𠄎	13.49 𠄎	13.93 𠄎	18.47 𠄎	21.89 𠄎	20.60 兂	16.69 兂	11.79 兂	12.22 𠄎	18.47 𠄎	23.51 𠄎	22.22 𠄎
115	28.06 𠄎	33.01 Z	20.84 𠄎	17.88 𠄎	18.58 𠄎	23.16 𠄎	26.31 𠄎	24.73 兂	20.84 兂	15.75 兂	16.42 𠄎	23.16 𠄎	28.31 𠄎	26.73 𠄎
120	5.63 𠄎	33.64 Z	24.98 𠄎	22.26 𠄎	23.24 𠄎	27.91 𠄎	0.77 兂	28.89 兂	24.98 兂	19.71 兂	20.64 𠄎	27.91 𠄎	3.14 𠄎	1.25 𠄎
125	12.26 𠄎	34.38 Z	29.11 𠄎	26.63 𠄎	27.95 𠄎	2.72 𠄎	5.27 兂	3.05 兂	29.11 兂	23.66 兂	24.89 𠄎	2.72 𠄎	7.99 𠄎	5.75 𠄎
130	18.16 𠄎	35.22 Z	3.22 𠄎	1.01 𠄎	2.70 𠄎	7.59 𠄎	9.82 兂	7.23 兂	3.22 兂	27.61 兂	29.18 𠄎	7.59 𠄎	12.87 𠄎	10.25 𠄎
135	23.49 𠄎	36.17 Z	7.33 𠄎	5.40 𠄎	7.51 𠄎	12.54 𠄎	14.40 兂	11.41 兂	7.33 兂	1.57 𠄎	3.52 𠄎	12.54 𠄎	17.76 𠄎	14.73 𠄎
140	28.38 𠄎	37.22 Z	11.42 𠄎	9.81 𠄎	12.39 𠄎	17.55 𠄎	19.02 兂	15.59 兂	11.42 兂	5.56 𠄎	7.94 𠄎	17.55 𠄎	22.65 𠄎	19.19 𠄎
145	2.92 𠄎	38.37 Z	15.51 𠄎	14.25 𠄎	17.36 𠄎	22.65 𠄎	23.66 兂	19.77 兂	15.51 兂	9.57 𠄎	12.44 𠄎	22.65 𠄎	27.55 𠄎	23.63 𠄎
150	7.20 𠄎	39.60 Z	19.59 𠄎	18.73 𠄎	22.44 𠄎	27.82 𠄎	28.32 兂	23.95 兂	19.59 兂	13.63 𠄎	17.04 𠄎	27.82 𠄎	2.44 𠄎	28.04 𠄎
155	11.25 𠄎	40.93 Z	23.68 𠄎	23.27 𠄎	27.63 𠄎	3.06 兂	3.00 兂	28.12 兂	23.68 兂	17.74 𠄎	21.77 𠄎	3.06 𠄎	7.30 𠄎	2.42 𠄎
160	15.14 𠄎	42.34 Z	27.78 𠄎	27.89 𠄎	2.94 𠄎	8.36 兂	7.69 兂	2.29 兂	27.78 兂	21.92 𠄎	26.63 𠄎	8.36 𠄎	12.14 𠄎	6.77 𠄎
165	18.90 𠄎	43.83 Z	1.89 𠄎	2.60 𠄎	8.39 𠄎	13.72 兂	12.38 兂	6.45 兂	1.89 𠄎	26.20 𠄎	1.64 𠄎	13.72 𠄎	16.95 𠄎	11.09 𠄎
170	22.54 𠄎	45.39 Z	6.03 𠄎	7.41 𠄎	13.98 𠄎	19.12 兂	17.06 兂	10.61 兂	6.03 𠄎	0.58 𠄎	6.82 𠄎	19.12 𠄎	21.71 𠄎	15.39 𠄎
175	26.10 𠄎	47.03 Z	10.21 𠄎	12.35 𠄎	19.71 𠄎	24.55 兂	21.73 兂	14.77 兂	10.21 𠄎	5.09 𠄎	12.19 𠄎	24.55 𠄎	26.43 𠄎	19.66 𠄎
180	29.60 𠄎	48.73 Z	14.44 𠄎	17.44 𠄎	25.58 𠄎	0.00 兂	26.38 兂	18.94 兂	14.44 𠄎	9.75 𠄎	17.75 𠄎	0.00 𠄎	1.10 𠄎	23.91 𠄎

## 35° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	3.04 ㄴ	50.48 Z	18.73 ㄶ	22.70 ㄷ	1.57 ㄸ	5.45 ㄹ	1.01 ㄺ	23.10 ㄻ	18.73 ㄼ	14.59 ㄽ	23.51 ㄾ	5.45 ㄿ	5.71 ㅀ	28.15 ㅁ
190	6.45 ㄴ	52.30 Z	23.10 ㄶ	28.14 ㄷ	7.69 ㄸ	10.88 ㄹ	5.62 ㄺ	27.29 ㄻ	23.10 ㄼ	19.63 ㄽ	29.48 ㄾ	10.88 ㄿ	10.27 ㅀ	2.38 ㅁ
195	9.83 ㄴ	54.16 Z	27.57 ㄶ	3.78 ㄷ	13.89 ㄸ	16.28 ㄹ	10.20 ㄺ	1.49 ㄻ	27.57 ㄼ	24.91 ㄽ	5.64 ㄾ	16.28 ㄿ	14.77 ㅀ	6.61 ㅁ
200	13.18 ㄴ	56.06 Z	2.15 ㄷ	9.63 ㄸ	20.17 ㄹ	21.64 ㄺ	14.76 ㄻ	5.72 ㄼ	2.15 ㄽ	0.46 ㄾ	11.99 ㄿ	21.64 ㅀ	19.22 ㅁ	10.85 ㅂ
205	16.52 ㄴ	57.99 Z	6.87 ㄷ	15.71 ㄸ	26.48 ㄹ	26.94 ㄺ	19.30 ㄻ	9.99 ㄼ	6.87 ㄽ	6.30 ㄾ	18.50 ㄿ	26.94 ㅀ	23.62 ㅁ	15.10 ㅂ
210	19.86 ㄴ	59.96 Z	11.76 ㄷ	22.01 ㄸ	2.79 ㄹ	2.18 ㄺ	23.82 ㄻ	14.32 ㄼ	11.76 ㄽ	12.46 ㄾ	25.13 ㄿ	2.18 ㅀ	27.97 ㅁ	19.38 ㅂ
215	23.18 ㄴ	61.94 Z	16.83 ㄷ	28.52 ㄸ	9.07 ㄹ	7.35 ㄺ	28.33 ㄻ	18.71 ㄼ	16.83 ㄽ	18.96 ㄾ	1.84 ㄿ	7.35 ㅀ	2.29 ㅁ	23.69 ㅂ
220	26.51 ㄴ	63.92 Z	22.11 ㄷ	5.21 ㄸ	15.28 ㄹ	12.45 ㄺ	2.84 ㄻ	23.19 ㄼ	22.11 ㄽ	25.81 ㄾ	8.59 ㄿ	12.45 ㅀ	6.58 ㅁ	28.06 ㅂ
225	29.84 ㄴ	65.91 Z	27.64 ㄷ	12.07 ㄸ	21.40 ㄹ	17.46 ㄺ	7.34 ㄻ	27.77 ㄼ	27.64 ㄽ	3.00 ㄾ	15.33 ㄿ	17.46 ㅀ	10.84 ㅁ	2.49 ㅂ
230	3.17 ㄶ	67.87 Z	3.43 ㄷ	19.03 ㄸ	27.39 ㄹ	22.41 ㄺ	11.87 ㄻ	2.47 ㄼ	3.43 ㄽ	10.50 ㄾ	22.01 ㄿ	22.41 ㅀ	15.10 ㅁ	6.99 ㅂ
235	6.51 ㄶ	69.79 Z	9.51 ㄷ	26.05 ㄸ	3.24 ㄹ	27.28 ㄺ	16.41 ㄻ	7.33 ㄼ	9.51 ㄽ	18.26 ㄾ	28.58 ㄿ	27.28 ㅀ	19.35 ㅁ	11.59 ㅂ
240	9.85 ㄶ	71.65 Z	15.90 ㄷ	3.05 ㄸ	8.94 ㄹ	2.09 ㄺ	21.00 ㄻ	12.36 ㄼ	15.90 ㄽ	26.19 ㄾ	5.00 ㄿ	2.09 ㅀ	23.61 ㅁ	16.30 ㅂ
245	13.20 ㄶ	73.40 Z	22.61 ㄷ	9.99 ㄸ	14.47 ㄹ	6.84 ㄺ	25.64 ㄻ	17.59 ㄼ	22.61 ㄽ	4.21 ㄾ	11.27 ㄿ	6.84 ㅀ	27.90 ㅁ	21.14 ㅂ
250	16.55 ㄶ	75.01 Z	29.63 ㄷ	16.81 ㄸ	19.84 ㄹ	11.53 ㄺ	0.35 ㄻ	23.07 ㄼ	29.63 ㄽ	12.20 ㄾ	17.34 ㄿ	11.53 ㅀ	2.23 ㅁ	26.12 ㅂ
255	19.91 ㄶ	76.39 Z	6.93 ㄸ	23.45 ㄹ	25.04 ㄺ	16.19 ㄻ	5.15 ㄼ	28.81 ㄽ	6.93 ㄾ	20.06 ㄿ	23.23 ㅀ	16.19 ㅁ	6.61 ㅂ	1.27 ㅃ
260	23.27 ㄶ	77.49 Z	14.47 ㄸ	29.90 ㄹ	0.09 ㄺ	20.81 ㄻ	10.05 ㄼ	4.84 ㄽ	14.47 ㄾ	27.70 ㄿ	28.92 ㅀ	20.81 ㅁ	11.06 ㅂ	6.60 ㅃ
265	26.63 ㄶ	78.19 Z	22.19 ㄸ	6.11 ㄹ	4.99 ㄺ	25.41 ㄻ	15.08 ㄼ	11.20 ㄽ	22.19 ㄾ	5.06 ㅀ	4.42 ㅁ	25.41 ㅂ	15.60 ㅃ	12.14 ㅄ
270	0.00 ㄷ	78.44 Z	0.00 ㄸ	12.10 ㄹ	9.75 ㄺ	0.00 ㄻ	20.25 ㄼ	17.90 ㄽ	0.00 ㄾ	12.10 ㅀ	9.75 ㅁ	0.00 ㅂ	20.25 ㅃ	17.90 ㅄ
275	3.37 ㄷ	78.19 Z	7.81 ㄸ	17.86 ㄹ	14.40 ㄺ	4.59 ㄻ	25.58 ㄼ	24.94 ㄽ	7.81 ㄾ	18.80 ㅀ	14.92 ㅁ	4.59 ㅂ	25.01 ㅃ	23.89 ㅄ
280	6.73 ㄷ	77.49 Z	15.53 ㄸ	23.40 ㄹ	18.94 ㄺ	9.19 ㄻ	1.08 ㄼ	2.30 ㄽ	15.53 ㄾ	25.16 ㅀ	19.95 ㅁ	9.19 ㅂ	29.91 ㅃ	0.10 ㅄ
285	10.09 ㄷ	76.39 Z	23.07 ㄸ	28.73 ㄹ	23.39 ㄺ	13.81 ㄻ	6.77 ㄼ	9.94 ㄽ	23.07 ㄾ	1.19 ㅁ	24.85 ㅂ	13.81 ㅄ	4.96 ㅅ	6.55 ㅆ
290	13.45 ㄷ	75.01 Z	0.37 ㄹ	3.88 ㄺ	27.77 ㄻ	18.47 ㄼ	12.66 ㄽ	17.80 ㄾ	0.37 ㅀ	6.93 ㅁ	29.65 ㅂ	18.47 ㅄ	10.16 ㅅ	13.19 ㅆ
295	16.80 ㄷ	73.40 Z	7.39 ㄹ	8.86 ㄺ	2.10 ㄻ	23.16 ㄼ	18.73 ㄽ	25.79 ㄾ	7.39 ㅀ	12.41 ㅁ	4.36 ㅂ	23.16 ㅄ	15.53 ㅅ	20.01 ㅆ
300	20.15 ㄷ	71.65 Z	14.10 ㄹ	13.70 ㄺ	6.39 ㄻ	27.91 ㄼ	25.00 ㄽ	3.81 ㄾ	14.10 ㅀ	17.64 ㅁ	9.00 ㅂ	27.91 ㅄ	21.06 ㅅ	26.95 ㅆ
305	23.49 ㄷ	69.79 Z	20.49 ㄹ	18.41 ㄺ	10.65 ㄻ	2.72 ㄼ	1.42 ㄽ	11.74 ㄾ	20.49 ㅀ	22.67 ㅁ	13.59 ㅂ	2.72 ㅄ	26.76 ㅅ	3.95 ㅆ
310	26.83 ㄷ	67.87 Z	26.57 ㄹ	23.01 ㄺ	14.90 ㄻ	7.59 ㄼ	7.99 ㄽ	19.50 ㄾ	26.57 ㅀ	27.53 ㅁ	18.13 ㅂ	7.59 ㅄ	2.61 ㅅ	10.97 ㅆ
315	0.16 ㄸ	65.91 Z	2.36 ㄹ	27.51 ㄺ	19.16 ㄻ	12.54 ㄼ	14.67 ㄽ	27.00 ㄾ	2.36 ㅀ	2.23 ㅁ	22.66 ㅂ	12.54 ㅄ	8.60 ㅅ	17.93 ㅆ
320	3.49 ㄸ	63.92 Z	7.89 ㄹ	1.94 ㄺ	23.42 ㄻ	17.55 ㄼ	21.41 ㄽ	4.19 ㅀ	7.89 ㅁ	6.81 ㅂ	27.16 ㅄ	17.55 ㅅ	14.72 ㅆ	24.79 ㅈ
325	6.82 ㄸ	61.94 Z	13.17 ㄹ	6.31 ㄺ	27.71 ㄻ	22.65 ㄼ	28.16 ㄽ	11.04 ㅀ	13.17 ㅁ	11.29 ㅂ	1.67 ㅄ	22.65 ㅅ	20.93 ㅆ	1.48 ㅈ
330	10.14 ㄸ	59.96 Z	18.24 ㄹ	10.62 ㄺ	2.03 ㄻ	27.82 ㄼ	4.87 ㄽ	17.54 ㅀ	18.24 ㅁ	15.68 ㅂ	6.18 ㅄ	27.82 ㅅ	27.21 ㅆ	7.99 ㅈ
335	13.48 ㄸ	57.99 Z	23.13 ㄹ	14.90 ㄺ	6.38 ㄻ	3.06 ㄼ	11.50 ㄽ	23.70 ㅀ	23.13 ㅁ	20.01 ㅂ	10.70 ㅄ	3.06 ㅅ	3.52 ㅆ	14.29 ㅈ
340	16.82 ㄸ	56.06 Z	27.85 ㄹ	19.15 ㄺ	10.78 ㄻ	8.36 ㄼ	18.01 ㄽ	29.54 ㅀ	27.85 ㅁ	24.28 ㅂ	15.24 ㅄ	8.36 ㅅ	9.83 ㅆ	20.37 ㅈ
345	20.17 ㄸ	54.16 Z	2.43 ㄹ	23.39 ㄺ	15.23 ㄻ	13.72 ㄼ	24.36 ㄽ	5.09 ㅀ	2.43 ㅁ	28.51 ㅂ	19.80 ㅄ	13.72 ㅅ	16.11 ㅆ	26.22 ㅈ
350	23.55 ㄸ	52.30 Z	6.90 ㄹ	27.62 ㄺ	19.73 ㄻ	19.12 ㄼ	0.52 ㅀ	10.37 ㅁ	6.90 ㅂ	2.71 ㅄ	24.38 ㅅ	19.12 ㅆ	22.31 ㅈ	1.86 ㅉ
355	26.96 ㄸ	50.48 Z	11.27 ㄹ	1.85 ㄺ	24.29 ㄻ	24.55 ㄼ	6.49 ㅀ	15.41 ㅁ	11.27 ㅂ	6.90 ㅄ	28.99 ㅅ	24.55 ㅆ	28.43 ㅈ	7.30 ㅉ
360	0.40 ㄸ	48.73 Z	15.56 ㄹ	6.09 ㄺ	28.90 ㄻ	0.00 ㄼ	12.25 ㅀ	20.25 ㅁ	15.56 ㅂ	11.06 ㅄ	3.62 ㅅ	0.00 ㅆ	4.42 ㅈ	12.56 ㅉ

40° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	4.64 ㄸ	44.65 Z	18.46 ㊄	7.52 ㊀	29.07 ㊀	0.00 ㊄	14.97 ㊀	24.26 ㊀	18.46 ㊄	13.11 ㊄	4.45 ㄸ	0.00 ㄿ	5.08 ㊀	14.97 ㊀
5	8.42 ㄸ	42.89 Z	22.55 ㊄	11.67 ㊀	3.64 ㊀	5.45 ㊄	20.54 ㊀	28.78 ㊀	22.55 ㊄	17.13 ㊄	9.00 ㄸ	5.45 ㄿ	11.09 ㊀	20.07 ㊀
10	12.28 ㄸ	41.18 Z	26.60 ㊄	15.83 ㊀	8.27 ㊀	10.88 ㊄	25.88 ㊀	3.13 ㊄	26.60 ㊄	21.15 ㊄	13.56 ㄸ	10.88 ㄿ	16.94 ㊀	25.01 ㊀
15	16.24 ㄸ	39.54 Z	0.60 ㊀	20.01 ㊀	12.94 ㊀	16.28 ㊄	1.01 ㊀	7.35 ㊄	0.60 ㊄	25.17 ㊄	18.13 ㄸ	16.28 ㄿ	22.64 ㊀	29.79 ㊀
20	20.32 ㄸ	37.98 Z	4.57 ㊀	24.21 ㊀	17.65 ㊀	21.64 ㊄	5.96 ㊀	11.46 ㊄	4.57 ㊄	29.18 ㊄	22.71 ㄸ	21.64 ㄿ	28.17 ㊀	4.46 ㊄
25	24.56 ㄸ	36.50 Z	8.52 ㊀	28.43 ㊀	22.39 ㊀	26.94 ㊄	10.75 ㊀	15.48 ㊄	8.52 ㊄	3.19 ㄸ	27.28 ㄸ	26.94 ㄿ	3.55 ㊀	9.02 ㊄
30	28.99 ㄸ	35.10 Z	12.46 ㊀	2.68 ㊀	27.17 ㊀	2.18 ㊀	15.39 ㊀	19.43 ㊄	12.46 ㊄	7.21 ㄸ	1.84 ㄿ	2.18 ㊀	8.80 ㊀	13.50 ㊄
35	3.65 ㄿ	33.79 Z	16.39 ㊀	6.96 ㊀	1.96 ㊄	7.35 ㊀	19.90 ㊀	23.32 ㊄	16.39 ㊄	11.22 ㄸ	6.38 ㄿ	7.35 ㊀	13.92 ㊀	17.92 ㊄
40	8.59 ㄿ	32.58 Z	20.32 ㊀	11.25 ㊀	6.77 ㊄	12.45 ㊀	24.30 ㊀	27.17 ㊄	20.32 ㊄	15.23 ㄸ	10.91 ㄿ	12.45 ㊀	18.92 ㊀	22.28 ㊄
45	13.88 ㄿ	31.47 Z	24.26 ㊀	15.57 ㊀	11.58 ㊄	17.46 ㊀	28.62 ㊀	0.99 ㊄	24.26 ㊄	19.24 ㄸ	15.40 ㄿ	17.46 ㊀	23.83 ㊀	26.60 ㊄
50	19.59 ㄿ	30.46 Z	28.20 ㊀	19.91 ㊀	16.39 ㊄	22.41 ㊀	2.87 ㊄	4.78 ㊄	28.20 ㊄	23.24 ㄸ	19.87 ㄿ	22.41 ㊀	28.65 ㊀	0.90 ㊀
55	25.82 ㄿ	29.56 Z	2.14 ㊀	24.26 ㊀	21.19 ㊄	27.28 ㊀	7.05 ㊄	8.57 ㊄	2.14 ㄸ	27.23 ㄸ	24.29 ㄿ	27.28 ㊀	3.40 ㊄	5.18 ㊀
60	2.66 ㊀	28.78 Z	6.10 ㊀	28.62 ㊀	25.97 ㊄	2.09 ㊀	11.20 ㊄	12.35 ㊄	6.10 ㄸ	1.22 ㄿ	28.68 ㄿ	2.09 ㊀	8.10 ㊄	9.46 ㊀
65	10.23 ㊀	28.11 Z	10.07 ㊀	2.98 ㊄	0.73 ㊀	6.84 ㊀	15.32 ㊄	16.13 ㊄	10.07 ㄸ	5.19 ㄿ	3.02 ㊀	6.84 ㊀	12.76 ㊄	13.73 ㊀
70	18.61 ㊀	27.55 Z	14.04 ㊀	7.35 ㊄	5.46 ㊀	11.53 ㊀	19.42 ㊄	19.92 ㊄	14.04 ㄸ	9.14 ㄿ	7.33 ㊀	11.53 ㊀	17.39 ㊄	18.01 ㊀
75	27.87 ㊀	27.12 Z	18.02 ㊀	11.72 ㊄	10.17 ㊀	16.19 ㊀	23.51 ㊄	23.72 ㊄	18.02 ㄸ	13.08 ㄿ	11.59 ㊀	16.19 ㊀	22.01 ㊄	22.29 ㊀
80	7.99 ㊀	26.81 Z	22.01 ㊀	16.08 ㊄	14.86 ㊀	20.81 ㊀	27.61 ㊄	27.54 ㊄	22.01 ㄸ	17.00 ㄿ	15.81 ㊀	20.81 ㊀	26.61 ㊄	26.59 ㊀
85	18.79 ㊀	26.62 Z	26.00 ㊀	20.43 ㊄	19.52 ㊀	25.41 ㊀	1.72 ㊄	1.37 ㄸ	26.00 ㄸ	20.89 ㄿ	20.00 ㊀	25.41 ㊀	1.22 ㊀	0.90 ㊀
90	0.00 ㊄	26.56 Z	0.00 ㊄	24.77 ㊄	24.16 ㊀	0.00 ㊄	5.84 ㊄	5.23 ㄸ	0.00 ㄿ	24.77 ㄿ	24.16 ㊀	0.00 ㊄	5.84 ㊀	5.23 ㊀
95	11.21 ㊄	26.62 Z	4.00 ㊄	29.10 ㊄	28.78 ㊀	4.59 ㊄	10.00 ㊄	9.11 ㄸ	4.00 ㄿ	28.63 ㄿ	28.28 ㊀	4.59 ㊄	10.48 ㊀	9.57 ㊀
100	22.01 ㊄	26.81 Z	7.99 ㊄	3.41 ㊀	3.39 ㊀	9.19 ㊄	14.19 ㊄	13.00 ㄸ	7.99 ㄿ	2.46 ㊀	2.39 ㊀	9.19 ㊄	15.14 ㊀	13.92 ㊀
105	2.13 ㊀	27.12 Z	11.98 ㊄	7.71 ㊀	7.99 ㊀	13.81 ㊄	18.41 ㊄	16.92 ㄸ	11.98 ㄿ	6.28 ㊀	6.49 ㊀	13.81 ㊄	19.83 ㊀	18.28 ㊀
110	11.39 ㊀	27.55 Z	15.96 ㊄	11.99 ㊀	12.61 ㊀	18.47 ㊄	22.67 ㊄	20.86 ㄸ	15.96 ㄿ	10.08 ㊀	10.58 ㊀	18.47 ㊄	24.54 ㊀	22.65 ㊀
115	19.77 ㊀	28.11 Z	19.93 ㊄	16.27 ㊀	17.24 ㊀	23.16 ㊄	26.98 ㊄	24.81 ㄸ	19.93 ㄿ	13.87 ㊀	14.68 ㊀	23.16 ㊄	29.27 ㊀	27.02 ㊀
120	27.34 ㊀	28.78 Z	23.90 ㊄	20.54 ㊀	21.90 ㊀	27.91 ㊄	1.32 ㄸ	28.78 ㄸ	23.90 ㄿ	17.65 ㊀	18.80 ㊀	27.91 ㊄	4.03 ㊀	1.38 ㊄
125	4.18 ㊀	29.56 Z	27.86 ㊄	24.82 ㊀	26.60 ㊀	2.72 ㊄	5.71 ㄸ	2.77 ㄿ	27.86 ㄿ	21.43 ㊀	22.95 ㊀	2.72 ㊀	8.81 ㊀	5.74 ㊄
130	10.41 ㊀	30.46 Z	1.80 ㊀	29.10 ㊀	1.35 ㊄	7.59 ㊄	10.13 ㄸ	6.76 ㄿ	1.80 ㊀	25.22 ㊀	27.13 ㊀	7.59 ㊀	13.61 ㊀	10.09 ㊄
135	16.12 ㊀	31.47 Z	5.74 ㊀	3.40 ㊀	6.17 ㊄	12.54 ㊄	14.60 ㄸ	10.76 ㄿ	5.74 ㊀	29.01 ㊀	1.38 ㊄	12.54 ㊀	18.42 ㊀	14.43 ㊄
140	21.41 ㊀	32.58 Z	9.68 ㊀	7.72 ㊀	11.08 ㊄	17.55 ㊄	19.09 ㄸ	14.77 ㄿ	9.68 ㊀	2.83 ㊀	5.70 ㊄	17.55 ㊀	23.23 ㊀	18.75 ㊄
145	26.35 ㊀	33.79 Z	13.61 ㊀	12.08 ㊀	16.08 ㊄	22.65 ㊄	23.62 ㄸ	18.78 ㄿ	13.61 ㊀	6.68 ㊀	10.10 ㊄	22.65 ㊀	28.04 ㊀	23.04 ㊄
150	1.01 ㊄	35.10 Z	17.54 ㊀	16.50 ㊀	21.20 ㊄	27.82 ㊄	28.16 ㄸ	22.79 ㄿ	17.54 ㊀	10.57 ㊀	14.61 ㊄	27.82 ㊀	2.83 ㊄	27.32 ㊄
155	5.44 ㊄	36.50 Z	21.48 ㊀	20.98 ㊀	26.45 ㊄	3.06 ㄸ	2.72 ㄿ	26.81 ㄿ	21.48 ㊀	14.52 ㊀	19.25 ㊄	3.06 ㊀	7.61 ㊄	1.57 ㊀
160	9.68 ㊄	37.98 Z	25.43 ㊀	25.54 ㊀	1.83 ㊄	8.36 ㄸ	7.29 ㄿ	0.82 ㊀	25.43 ㊀	18.54 ㊀	24.04 ㊄	8.36 ㊀	12.35 ㊄	5.79 ㊀
165	13.76 ㊄	39.54 Z	29.40 ㊀	0.21 ㊄	7.36 ㊄	13.72 ㄸ	11.87 ㄿ	4.83 ㊀	29.40 ㊀	22.65 ㊀	28.99 ㊄	13.72 ㊀	17.06 ㊄	9.99 ㊀
170	17.72 ㊄	41.18 Z	3.40 ㊀	4.99 ㊄	13.06 ㊄	19.12 ㄸ	16.44 ㄿ	8.85 ㊀	3.40 ㊀	26.87 ㊀	4.12 ㊀	19.12 ㊀	21.73 ㊄	14.17 ㊀
175	21.58 ㊄	42.89 Z	7.45 ㊀	9.93 ㊄	18.91 ㊄	24.55 ㄸ	21.00 ㄿ	12.87 ㊀	7.45 ㊀	1.22 ㊄	9.46 ㊀	24.55 ㊀	26.36 ㊄	18.33 ㊀
180	25.36 ㊄	44.65 Z	11.54 ㊀	15.03 ㊄	24.92 ㊄	0.00 ㄿ	25.55 ㄿ	16.89 ㊀	11.54 ㊀	5.74 ㊄	15.03 ㊀	0.00 ㊄	0.93 ㊀	22.48 ㊀

40° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	29.08 ㊟	46.48 Z	15.71 ㄨ	20.32 ㄨ	1.08 ㄨ	5.45 ㄨ	0.09 ㄨ	20.93 ㄨ	15.71 ㄨ	10.44 ㄨ	20.83 ㄨ	5.45 ㊟	5.46 ㄨ	26.61 ㄨ
190	2.75 ㄨ	48.35 Z	19.95 ㄨ	25.83 ㄨ	7.38 ㄨ	10.88 ㄨ	4.60 ㄨ	24.98 ㄨ	19.95 ㄨ	15.37 ㄨ	26.88 ㄨ	10.88 ㊟	9.93 ㄨ	0.74 ㄨ
195	6.38 ㄨ	50.26 Z	24.31 ㄨ	1.58 ㄨ	13.78 ㄨ	16.28 ㄨ	9.10 ㄨ	29.06 ㄨ	24.31 ㄨ	20.56 ㄨ	3.18 ㄨ	16.28 ㊟	14.34 ㄨ	4.88 ㄨ
200	9.98 ㄨ	52.21 Z	28.78 ㄨ	7.59 ㄨ	20.26 ㄨ	21.64 ㄨ	13.58 ㄨ	3.17 ㄨ	28.78 ㄨ	26.05 ㄨ	9.71 ㄨ	21.64 ㊟	18.71 ㄨ	9.02 ㄨ
205	13.56 ㄨ	54.18 Z	3.41 ㄨ	13.88 ㄨ	26.78 ㄨ	26.94 ㄨ	18.04 ㄨ	7.33 ㄨ	3.41 ㄨ	1.89 ㄨ	16.46 ㄨ	26.94 ㊟	23.03 ㄨ	13.18 ㄨ
210	17.13 ㄨ	56.17 Z	8.21 ㄨ	20.45 ㄨ	3.30 ㄨ	2.18 ㄨ	22.49 ㄨ	11.54 ㄨ	8.21 ㄨ	8.11 ㄨ	23.38 ㄨ	2.18 ㄨ	27.30 ㄨ	17.38 ㄨ
215	20.69 ㄨ	58.16 Z	13.22 ㄨ	27.28 ㄨ	9.79 ㄨ	7.35 ㄨ	26.93 ㄨ	15.82 ㄨ	13.22 ㄨ	14.77 ㄨ	0.42 ㊟	7.35 ㄨ	1.54 ㄨ	21.61 ㄨ
220	24.24 ㄨ	60.13 Z	18.48 ㄨ	4.37 ㄨ	16.20 ㄨ	12.45 ㄨ	1.37 ㄨ	20.19 ㄨ	18.48 ㄨ	21.88 ㄨ	7.54 ㊟	12.45 ㄨ	5.74 ㄨ	25.90 ㄨ
225	27.80 ㄨ	62.08 Z	24.01 ㄨ	11.66 ㄨ	22.49 ㄨ	17.46 ㄨ	5.82 ㄨ	24.68 ㄨ	24.01 ㄨ	29.46 ㄨ	14.66 ㊟	17.46 ㄨ	9.92 ㄨ	0.25 ㄨ
230	1.36 ㄨ	63.99 Z	29.86 ㄨ	19.08 ㄨ	28.64 ㄨ	22.41 ㄨ	10.28 ㄨ	29.29 ㄨ	29.86 ㄨ	7.49 ㄨ	21.72 ㊟	22.41 ㄨ	14.09 ㄨ	4.69 ㄨ
235	4.92 ㄨ	65.82 Z	6.07 ㄨ	26.58 ㄨ	4.63 ㄨ	27.28 ㄨ	14.78 ㄨ	4.07 ㄨ	6.07 ㄨ	15.90 ㄨ	28.66 ㊟	27.28 ㄨ	18.26 ㄨ	9.21 ㄨ
240	8.49 ㄨ	67.56 Z	12.66 ㄨ	4.05 ㄨ	10.43 ㄨ	2.09 ㄨ	19.32 ㄨ	9.04 ㄨ	12.66 ㄨ	24.60 ㄨ	5.43 ㄨ	2.09 ㄨ	22.43 ㄨ	13.85 ㄨ
245	12.06 ㄨ	69.16 Z	19.67 ㄨ	11.41 ㄨ	16.05 ㄨ	6.84 ㄨ	23.93 ㄨ	14.25 ㄨ	19.67 ㄨ	3.44 ㊟	12.00 ㄨ	6.84 ㄨ	26.63 ㄨ	18.63 ㄨ
250	15.64 ㄨ	70.58 Z	27.08 ㄨ	18.60 ㄨ	21.47 ㄨ	11.53 ㄨ	28.62 ㄨ	19.74 ㄨ	27.08 ㄨ	12.27 ㊟	18.34 ㄨ	11.53 ㄨ	0.87 ㄨ	23.55 ㄨ
255	19.23 ㄨ	71.77 Z	4.90 ㄨ	25.55 ㄨ	26.70 ㄨ	16.19 ㄨ	3.41 ㄨ	25.54 ㄨ	4.90 ㄨ	20.92 ㊟	24.44 ㄨ	16.19 ㄨ	5.17 ㄨ	28.66 ㄨ
260	22.82 ㄨ	72.68 Z	13.05 ㄨ	2.22 ㄨ	1.76 ㄨ	20.81 ㄨ	8.33 ㄨ	1.71 ㄨ	13.05 ㄨ	29.26 ㊟	0.31 ㄨ	20.81 ㄨ	9.55 ㄨ	3.97 ㄨ
265	26.41 ㄨ	73.24 Z	21.46 ㄨ	8.60 ㄨ	6.64 ㄨ	25.41 ㄨ	13.39 ㄨ	8.29 ㄨ	21.46 ㄨ	7.20 ㄨ	5.95 ㄨ	25.41 ㄨ	14.03 ㄨ	9.51 ㄨ
270	0.00 ㄨ	73.44 Z	0.00 ㄨ	14.69 ㄨ	11.38 ㄨ	0.00 ㄨ	18.62 ㄨ	15.31 ㄨ	0.00 ㊟	14.69 ㄨ	11.38 ㄨ	0.00 ㄨ	18.62 ㄨ	15.31 ㄨ
275	3.59 ㄨ	73.24 Z	8.54 ㄨ	20.49 ㄨ	15.97 ㄨ	4.59 ㄨ	24.05 ㄨ	22.80 ㄨ	8.54 ㊟	21.71 ㄨ	16.61 ㄨ	4.59 ㄨ	23.36 ㄨ	21.40 ㄨ
280	7.18 ㄨ	72.68 Z	16.95 ㄨ	26.03 ㄨ	20.45 ㄨ	9.19 ㄨ	29.69 ㄨ	0.74 ㄨ	16.95 ㊟	28.29 ㄨ	21.67 ㄨ	9.19 ㄨ	28.24 ㄨ	27.78 ㄨ
285	10.77 ㄨ	71.77 Z	25.10 ㄨ	1.34 ㄨ	24.83 ㄨ	13.81 ㄨ	5.56 ㄨ	9.08 ㄨ	25.10 ㊟	4.46 ㄨ	26.59 ㄨ	13.81 ㄨ	3.30 ㄨ	4.45 ㄨ
290	14.36 ㄨ	70.58 Z	2.92 ㄨ	6.45 ㄨ	29.13 ㄨ	18.47 ㄨ	11.66 ㄨ	17.73 ㄨ	2.92 ㄨ	10.26 ㄨ	1.38 ㄨ	18.47 ㄨ	8.53 ㄨ	11.40 ㄨ
295	17.94 ㄨ	69.16 Z	10.33 ㄨ	11.37 ㄨ	3.37 ㄨ	23.16 ㄨ	18.00 ㄨ	26.56 ㄨ	10.33 ㄨ	15.75 ㄨ	6.07 ㄨ	23.16 ㄨ	13.95 ㄨ	18.59 ㄨ
300	21.51 ㄨ	67.56 Z	17.34 ㄨ	16.15 ㄨ	7.57 ㄨ	27.91 ㄨ	24.57 ㄨ	5.40 ㊟	17.34 ㄨ	20.96 ㄨ	10.68 ㄨ	27.91 ㄨ	19.57 ㄨ	25.95 ㄨ
305	25.08 ㄨ	65.82 Z	23.93 ㄨ	20.79 ㄨ	11.74 ㄨ	2.72 ㄨ	1.34 ㄨ	14.10 ㊟	23.93 ㄨ	25.93 ㄨ	15.22 ㄨ	2.72 ㄨ	25.37 ㄨ	3.42 ㄨ
310	28.64 ㄨ	63.99 Z	0.14 ㄨ	25.31 ㄨ	15.91 ㄨ	7.59 ㄨ	8.28 ㄨ	22.51 ㊟	0.14 ㄨ	0.71 ㄨ	19.72 ㄨ	7.59 ㄨ	1.36 ㄨ	10.92 ㄨ
315	2.20 ㄨ	62.08 Z	5.99 ㄨ	29.75 ㄨ	20.08 ㄨ	12.54 ㄨ	15.34 ㄨ	0.54 ㄨ	5.99 ㄨ	5.32 ㄨ	24.18 ㄨ	12.54 ㄨ	7.51 ㄨ	18.34 ㄨ
320	5.76 ㄨ	60.13 Z	11.52 ㄨ	4.10 ㄨ	24.26 ㄨ	17.55 ㄨ	22.46 ㄨ	8.12 ㄨ	11.52 ㄨ	9.81 ㄨ	28.63 ㄨ	17.55 ㄨ	13.80 ㄨ	25.63 ㄨ
325	9.31 ㄨ	58.16 Z	16.78 ㄨ	8.39 ㄨ	28.46 ㄨ	22.65 ㄨ	29.58 ㄨ	15.23 ㄨ	16.78 ㄨ	14.18 ㄨ	3.07 ㄨ	22.65 ㄨ	20.21 ㄨ	2.72 ㄨ
330	12.87 ㄨ	56.17 Z	21.79 ㄨ	12.62 ㄨ	2.70 ㄨ	27.82 ㄨ	6.62 ㊟	21.89 ㄨ	21.79 ㄨ	18.46 ㄨ	7.51 ㄨ	27.82 ㄨ	26.70 ㄨ	9.55 ㄨ
335	16.44 ㄨ	54.18 Z	26.59 ㄨ	16.82 ㄨ	6.97 ㄨ	3.06 ㄨ	13.54 ㊟	28.11 ㄨ	26.59 ㄨ	22.67 ㄨ	11.96 ㄨ	3.06 ㄨ	3.22 ㄨ	16.12 ㄨ
340	20.02 ㄨ	52.21 Z	1.22 ㄨ	20.98 ㄨ	11.29 ㄨ	8.36 ㄨ	20.29 ㊟	3.95 ㄨ	1.22 ㄨ	26.83 ㄨ	16.42 ㄨ	8.36 ㄨ	9.74 ㄨ	22.41 ㄨ
345	23.62 ㄨ	50.26 Z	5.69 ㄨ	25.12 ㄨ	15.66 ㄨ	13.72 ㄨ	26.82 ㊟	9.44 ㄨ	5.69 ㄨ	0.94 ㄨ	20.90 ㄨ	13.72 ㄨ	16.22 ㄨ	28.42 ㄨ
350	27.25 ㄨ	48.35 Z	10.05 ㄨ	29.26 ㄨ	20.07 ㄨ	19.12 ㄨ	3.12 ㄨ	14.63 ㄨ	10.05 ㄨ	5.02 ㄨ	25.40 ㄨ	19.12 ㄨ	22.62 ㄨ	4.17 ㄨ
355	0.92 ㄨ	46.48 Z	14.29 ㄨ	3.39 ㄨ	24.54 ㄨ	24.55 ㄨ	9.17 ㄨ	19.56 ㄨ	14.29 ㄨ	9.07 ㄨ	29.91 ㄨ	24.55 ㄨ	28.92 ㄨ	9.68 ㄨ
360	4.64 ㄨ	44.65 Z	18.46 ㄨ	7.52 ㄨ	29.07 ㄨ	0.00 ㊟	14.97 ㄨ	24.26 ㄨ	18.46 ㄨ	13.11 ㄨ	4.45 ㄨ	0.00 ㄨ	5.08 ㄨ	14.97 ㄨ

45° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	8.31 𠄎	40.45 Z	21.69 𠄎	9.13 𠄎	29.25 𠄎	0.00 𠄎	18.48 𠄎	28.96 𠄎	21.69 𠄎	15.28 𠄎	5.31 𠄎	0.00 𠄎	5.93 𠄎	17.92 𠄎
5	12.31 𠄎	38.63 Z	25.62 𠄎	13.16 𠄎	3.73 𠄎	5.45 𠄎	23.99 𠄎	3.25 𠄎	25.62 𠄎	19.15 𠄎	9.75 𠄎	5.45 𠄎	12.11 𠄎	22.99 𠄎
10	16.39 𠄎	36.86 Z	29.50 𠄎	17.19 𠄎	8.26 𠄎	10.88 𠄎	29.26 𠄎	7.39 𠄎	29.50 𠄎	23.01 𠄎	14.20 𠄎	10.88 𠄎	18.10 𠄎	27.88 𠄎
15	20.58 𠄎	35.17 Z	3.33 𠄎	21.23 𠄎	12.82 𠄎	16.28 𠄎	4.29 𠄎	11.39 𠄎	3.33 𠄎	26.87 𠄎	18.65 𠄎	16.28 𠄎	23.91 𠄎	2.61 𠄎
20	24.89 𠄎	33.54 Z	7.13 𠄎	25.30 𠄎	17.43 𠄎	21.64 𠄎	9.13 𠄎	15.28 𠄎	7.13 𠄎	0.72 𠄎	23.11 𠄎	21.64 𠄎	29.53 𠄎	7.20 𠄎
25	29.37 𠄎	32.00 Z	10.92 𠄎	29.38 𠄎	22.08 𠄎	26.94 𠄎	13.78 𠄎	19.09 𠄎	10.92 𠄎	4.56 𠄎	27.55 𠄎	26.94 𠄎	4.99 𠄎	11.68 𠄎
30	4.03 𠄎	30.54 Z	14.68 𠄎	3.48 𠄎	26.75 𠄎	2.18 𠄎	18.29 𠄎	22.84 𠄎	14.68 𠄎	8.40 𠄎	1.99 𠄎	2.18 𠄎	10.29 𠄎	16.06 𠄎
35	8.91 𠄎	29.17 Z	18.44 𠄎	7.61 𠄎	1.44 𠄎	7.35 𠄎	22.67 𠄎	26.52 𠄎	18.44 𠄎	12.24 𠄎	6.40 𠄎	7.35 𠄎	15.44 𠄎	20.38 𠄎
40	14.07 𠄎	27.90 Z	22.20 𠄎	11.75 𠄎	6.15 𠄎	12.45 𠄎	26.94 𠄎	0.17 𠄎	22.20 𠄎	16.07 𠄎	10.80 𠄎	12.45 𠄎	20.47 𠄎	24.63 𠄎
45	19.54 𠄎	26.74 Z	25.95 𠄎	15.91 𠄎	10.87 𠄎	17.46 𠄎	1.12 𠄎	3.79 𠄎	25.95 𠄎	19.90 𠄎	15.16 𠄎	17.46 𠄎	25.39 𠄎	28.85 𠄎
50	25.39 𠄎	25.68 Z	29.71 𠄎	20.09 𠄎	15.58 𠄎	22.41 𠄎	5.23 𠄎	7.39 𠄎	29.71 𠄎	23.71 𠄎	19.50 𠄎	22.41 𠄎	0.22 𠄎	3.03 𠄎
55	1.67 𠄎	24.73 Z	3.48 𠄎	24.28 𠄎	20.29 𠄎	27.28 𠄎	9.29 𠄎	10.98 𠄎	3.48 𠄎	27.52 𠄎	23.79 𠄎	27.28 𠄎	4.97 𠄎	7.19 𠄎
60	8.43 𠄎	23.90 Z	7.25 𠄎	28.48 𠄎	24.99 𠄎	2.09 𠄎	13.31 𠄎	14.57 𠄎	7.25 𠄎	1.31 𠄎	28.05 𠄎	2.09 𠄎	9.66 𠄎	11.35 𠄎
65	15.74 𠄎	23.19 Z	11.03 𠄎	2.69 𠄎	29.67 𠄎	6.84 𠄎	17.30 𠄎	18.16 𠄎	11.03 𠄎	5.09 𠄎	2.27 𠄎	6.84 𠄎	14.30 𠄎	15.49 𠄎
70	23.63 𠄎	22.61 Z	14.81 𠄎	6.90 𠄎	4.33 𠄎	11.53 𠄎	21.27 𠄎	21.76 𠄎	14.81 𠄎	8.85 𠄎	6.45 𠄎	11.53 𠄎	18.91 𠄎	19.64 𠄎
75	2.08 𠄎	22.15 Z	18.60 𠄎	11.11 𠄎	8.98 𠄎	16.19 𠄎	25.24 𠄎	25.37 𠄎	18.60 𠄎	12.59 𠄎	10.59 𠄎	16.19 𠄎	23.49 𠄎	23.79 𠄎
80	11.05 𠄎	21.82 Z	22.40 𠄎	15.31 𠄎	13.60 𠄎	20.81 𠄎	29.22 𠄎	29.00 𠄎	22.40 𠄎	16.31 𠄎	14.69 𠄎	20.81 𠄎	28.07 𠄎	27.95 𠄎
85	20.42 𠄎	21.63 Z	26.20 𠄎	19.51 𠄎	18.20 𠄎	25.41 𠄎	3.20 𠄎	2.64 𠄎	26.20 𠄎	20.02 𠄎	18.75 𠄎	25.41 𠄎	2.64 𠄎	2.12 𠄎
90	0.00 𠄎	21.56 Z	0.00 𠄎	23.70 𠄎	22.79 𠄎	0.00 𠄎	7.21 𠄎	6.30 𠄎	0.00 𠄎	23.70 𠄎	22.79 𠄎	0.00 𠄎	7.21 𠄎	6.30 𠄎
95	9.58 𠄎	21.63 Z	3.80 𠄎	27.88 𠄎	27.36 𠄎	4.59 𠄎	11.25 𠄎	9.98 𠄎	3.80 𠄎	27.36 𠄎	26.80 𠄎	4.59 𠄎	11.80 𠄎	10.49 𠄎
100	18.95 𠄎	21.82 Z	7.60 𠄎	2.05 𠄎	1.93 𠄎	9.19 𠄎	15.31 𠄎	13.69 𠄎	7.60 𠄎	1.00 𠄎	0.78 𠄎	9.19 𠄎	16.40 𠄎	14.69 𠄎
105	27.92 𠄎	22.15 Z	11.40 𠄎	6.21 𠄎	6.51 𠄎	13.81 𠄎	19.41 𠄎	17.41 𠄎	11.40 𠄎	4.63 𠄎	4.76 𠄎	13.81 𠄎	21.02 𠄎	18.89 𠄎
110	6.37 𠄎	22.61 Z	15.19 𠄎	10.36 𠄎	11.09 𠄎	18.47 𠄎	23.55 𠄎	21.15 𠄎	15.19 𠄎	8.24 𠄎	8.73 𠄎	18.47 𠄎	25.67 𠄎	23.10 𠄎
115	14.26 𠄎	23.19 Z	18.97 𠄎	14.51 𠄎	15.70 𠄎	23.16 𠄎	27.73 𠄎	24.91 𠄎	18.97 𠄎	11.84 𠄎	12.70 𠄎	23.16 𠄎	0.33 𠄎	27.31 𠄎
120	21.57 𠄎	23.90 Z	22.75 𠄎	18.65 𠄎	20.34 𠄎	27.91 𠄎	1.95 𠄎	28.69 𠄎	22.75 𠄎	15.43 𠄎	16.69 𠄎	27.91 𠄎	5.01 𠄎	1.52 𠄎
125	28.33 𠄎	24.73 Z	26.52 𠄎	22.81 𠄎	25.03 𠄎	2.72 𠄎	6.21 𠄎	2.48 𠄎	26.52 𠄎	19.02 𠄎	20.71 𠄎	2.72 𠄎	9.71 𠄎	5.72 𠄎
130	4.61 𠄎	25.68 Z	0.29 𠄎	26.97 𠄎	29.78 𠄎	7.59 𠄎	10.50 𠄎	6.29 𠄎	0.29 𠄎	22.61 𠄎	24.77 𠄎	7.59 𠄎	14.42 𠄎	9.91 𠄎
135	10.46 𠄎	26.74 Z	4.05 𠄎	1.15 𠄎	4.61 𠄎	12.54 𠄎	14.84 𠄎	10.10 𠄎	4.05 𠄎	26.21 𠄎	28.88 𠄎	12.54 𠄎	19.13 𠄎	14.09 𠄎
140	15.93 𠄎	27.90 Z	7.80 𠄎	5.37 𠄎	9.53 𠄎	17.55 𠄎	19.20 𠄎	13.93 𠄎	7.80 𠄎	29.83 𠄎	3.06 𠄎	17.55 𠄎	23.85 𠄎	18.25 𠄎
145	21.09 𠄎	29.17 Z	11.56 𠄎	9.62 𠄎	14.56 𠄎	22.65 𠄎	23.60 𠄎	17.76 𠄎	11.56 𠄎	3.48 𠄎	7.33 𠄎	22.65 𠄎	28.56 𠄎	22.39 𠄎
150	25.97 𠄎	30.54 Z	15.32 𠄎	13.94 𠄎	19.71 𠄎	27.82 𠄎	28.01 𠄎	21.60 𠄎	15.32 𠄎	7.16 𠄎	11.71 𠄎	27.82 𠄎	3.25 𠄎	26.52 𠄎
155	0.63 𠄎	32.00 Z	19.08 𠄎	18.32 𠄎	25.01 𠄎	3.06 𠄎	2.45 𠄎	25.44 𠄎	19.08 𠄎	10.91 𠄎	16.22 𠄎	3.06 𠄎	7.92 𠄎	0.62 𠄎
160	5.11 𠄎	33.54 Z	22.87 𠄎	22.80 𠄎	0.47 𠄎	8.36 𠄎	6.89 𠄎	29.28 𠄎	22.87 𠄎	14.72 𠄎	20.87 𠄎	8.36 𠄎	12.57 𠄎	4.70 𠄎
165	9.42 𠄎	35.17 Z	26.67 𠄎	27.39 𠄎	6.09 𠄎	13.72 𠄎	11.35 𠄎	3.13 𠄎	26.67 𠄎	18.61 𠄎	25.71 𠄎	13.72 𠄎	17.18 𠄎	8.77 𠄎
170	13.61 𠄎	36.86 Z	0.50 𠄎	2.12 𠄎	11.90 𠄎	19.12 𠄎	15.80 𠄎	6.99 𠄎	0.50 𠄎	22.61 𠄎	0.74 𠄎	19.12 𠄎	21.74 𠄎	12.81 𠄎
175	17.69 𠄎	38.63 Z	4.38 𠄎	7.01 𠄎	17.89 𠄎	24.55 𠄎	20.25 𠄎	10.85 𠄎	4.38 𠄎	26.75 𠄎	6.01 𠄎	24.55 𠄎	26.27 𠄎	16.84 𠄎
180	21.69 𠄎	40.45 Z	8.31 𠄎	12.08 𠄎	24.07 𠄎	0.00 𠄎	24.69 𠄎	14.72 𠄎	8.31 𠄎	1.04 𠄎	11.52 𠄎	0.00 𠄎	0.75 𠄎	20.87 𠄎

45° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	25.62 ♄	42.32 Z	12.31 ♃	17.39 ☾	0.42 ♁	5.45 ♀	29.12 ♀	18.61 ☿	12.31 ♀	5.52 ☽	17.32 ♀	5.45 ♄	5.17 ♃	24.88 ♃
190	29.50 ♄	44.23 Z	16.39 ♃	22.94 ☾	6.92 ♁	10.88 ♀	3.53 ☿	22.52 ☿	16.39 ♀	10.24 ☽	23.42 ♀	10.88 ♄	9.55 ♃	28.89 ♃
195	3.33 ♃	46.18 Z	20.58 ♃	28.79 ☾	13.56 ♁	16.28 ♀	7.93 ☿	26.45 ☿	20.58 ♀	15.24 ☽	29.82 ♀	16.28 ♄	13.88 ♃	2.92 ♃
200	7.13 ♃	48.16 Z	24.89 ♃	4.96 ♃	20.29 ♁	21.64 ♀	12.32 ☿	0.42 ♀	24.89 ♀	20.57 ☽	6.54 ♃	21.64 ♄	18.15 ♃	6.95 ♃
205	10.92 ♃	50.14 Z	29.37 ♃	11.48 ♃	27.08 ♁	26.94 ♀	16.69 ☿	4.43 ♀	29.37 ♀	26.29 ☽	13.54 ♃	26.94 ♄	22.38 ♃	11.01 ♃
210	14.68 ♃	52.13 Z	4.03 ☾	18.37 ♃	3.86 ♀	2.18 ☿	21.05 ☿	8.50 ♀	4.03 ☽	2.47 ♀	20.81 ♃	2.18 ♃	26.57 ♃	15.10 ♃
215	18.44 ♃	54.10 Z	8.91 ☾	25.61 ♃	10.60 ♀	7.35 ☿	25.41 ☿	12.64 ♀	8.91 ☽	9.18 ♀	28.27 ♃	7.35 ♃	0.72 ♃	19.24 ♃
220	22.20 ♃	56.05 Z	14.07 ☾	3.20 ♁	17.25 ♀	12.45 ☿	29.77 ☿	16.87 ♀	14.07 ☽	16.50 ♀	5.87 ♄	12.45 ♃	4.83 ♃	23.43 ♃
225	25.95 ♃	57.96 Z	19.54 ☾	11.07 ♁	23.76 ♀	17.46 ☿	4.14 ♀	21.21 ♀	19.54 ☽	24.46 ♀	13.50 ♄	17.46 ♃	8.92 ♃	27.68 ♃
230	29.71 ♃	59.79 Z	25.39 ☾	19.14 ♁	0.11 ☿	22.41 ☿	8.54 ♀	25.69 ♀	25.39 ☽	3.08 ♃	21.09 ♄	22.41 ♃	12.99 ♃	2.02 ☾
235	3.48 ♃	61.54 Z	1.67 ♃	27.30 ♁	6.26 ☿	27.28 ☿	12.97 ♀	0.34 ☽	1.67 ♀	12.33 ♃	28.54 ♄	27.28 ♃	17.05 ♃	6.45 ☾
240	7.25 ♃	63.17 Z	8.43 ♃	5.42 ♀	12.20 ☿	2.09 ♀	17.45 ♀	5.20 ☽	8.43 ♀	22.06 ♃	5.79 ♃	2.09 ♃	21.12 ♃	10.99 ☾
245	11.03 ♃	64.65 Z	15.74 ♃	13.37 ♀	17.92 ☿	6.84 ♀	22.00 ♀	10.31 ☽	15.74 ♀	2.08 ♄	12.78 ♃	6.84 ♃	25.21 ♃	15.66 ☾
250	14.81 ♃	65.93 Z	23.63 ♃	21.05 ♀	23.41 ☿	11.53 ♀	26.65 ♀	15.74 ☽	23.63 ♀	12.12 ♄	19.48 ♃	11.53 ♃	29.34 ♃	20.48 ☾
255	18.60 ♃	66.99 Z	2.08 ♁	28.39 ♀	28.69 ☿	16.19 ♀	1.41 ☽	21.55 ☽	2.08 ♃	21.92 ♄	25.87 ♃	16.19 ♃	3.52 ☾	25.49 ☾
260	22.40 ♃	67.78 Z	11.05 ♁	5.33 ☿	3.75 ♀	20.81 ♀	6.32 ☽	27.81 ☽	11.05 ♃	1.24 ♃	1.96 ♃	20.81 ♃	7.80 ☾	0.71 ♃
265	26.20 ♃	68.27 Z	20.42 ♁	11.86 ☿	8.62 ♀	25.41 ♀	11.41 ☽	4.60 ♀	20.42 ♃	9.96 ♃	7.76 ♃	25.41 ♃	12.18 ☾	6.20 ♃
270	0.00 ☾	68.44 Z	0.00 ♀	18.01 ☿	13.30 ♀	0.00 ☽	16.70 ☽	11.99 ♀	0.00 ♄	18.01 ♃	13.30 ♃	0.00 ☾	16.70 ☾	11.99 ♃
275	3.80 ☾	68.27 Z	9.58 ♀	23.80 ☿	17.82 ♀	4.59 ☽	22.24 ☽	20.04 ♀	9.58 ♄	25.40 ♃	18.59 ♃	4.59 ☾	21.38 ☾	18.14 ♃
280	7.60 ☾	67.78 Z	18.95 ♀	29.29 ☿	22.20 ♀	9.19 ☽	28.04 ☽	28.76 ♀	18.95 ♄	2.19 ♃	23.68 ♃	9.19 ☾	26.25 ☾	24.67 ♃
285	11.40 ☾	66.99 Z	27.92 ♀	4.51 ♀	26.48 ♀	13.81 ☽	4.13 ♀	8.08 ♃	27.92 ♄	8.45 ♃	28.59 ♃	13.81 ☾	1.31 ♃	1.61 ♁
290	15.19 ☾	65.93 Z	6.37 ☿	9.52 ♀	0.66 ☽	18.47 ☽	10.52 ♀	17.88 ♃	6.37 ♃	14.26 ♃	3.35 ☾	18.47 ☾	6.59 ♃	8.95 ♁
295	18.97 ☾	64.65 Z	14.26 ☿	14.34 ♀	4.79 ☽	23.16 ☽	17.22 ♀	27.92 ♃	14.26 ♃	19.69 ♃	8.00 ☾	23.16 ☾	12.08 ♃	16.63 ♁
300	22.75 ☾	63.17 Z	21.57 ☿	19.01 ♀	8.88 ☽	27.91 ☽	24.21 ♀	7.94 ♄	21.57 ♃	24.80 ♃	12.55 ☾	27.91 ☾	17.80 ♃	24.58 ♁
305	26.52 ☾	61.54 Z	28.33 ☿	23.55 ♀	12.95 ☽	2.72 ♀	1.46 ♃	17.67 ♄	28.33 ♃	29.66 ♃	17.03 ☾	2.72 ♃	23.74 ♃	2.70 ♀
310	0.29 ♃	59.79 Z	4.61 ♀	27.98 ♀	17.01 ☽	7.59 ♀	8.91 ♃	26.92 ♄	4.61 ♃	4.31 ☾	21.46 ☾	7.59 ♃	29.89 ♃	10.86 ♀
315	4.05 ♃	57.96 Z	10.46 ♀	2.32 ☽	21.08 ☽	12.54 ♀	16.50 ♃	5.54 ♃	10.46 ♃	8.79 ☾	25.86 ☾	12.54 ♃	6.24 ♁	18.93 ♀
320	7.80 ♃	56.05 Z	15.93 ♀	6.57 ☽	25.17 ☽	17.55 ♀	24.13 ♃	13.50 ♃	15.93 ♃	13.13 ☾	0.23 ♃	17.55 ♃	12.75 ♁	26.80 ♀
325	11.56 ♃	54.10 Z	21.09 ♀	10.76 ☽	29.28 ☽	22.65 ♀	1.73 ♄	20.82 ♃	21.09 ♃	17.36 ☾	4.59 ♃	22.65 ♃	19.40 ♁	4.39 ☿
330	15.32 ♃	52.13 Z	25.97 ♀	14.90 ☽	3.43 ♀	27.82 ♀	9.19 ♄	27.53 ♃	25.97 ♃	21.50 ☾	8.95 ♃	27.82 ♃	26.14 ♁	11.63 ☿
335	19.08 ♃	50.14 Z	0.63 ☽	18.99 ☽	7.62 ♀	3.06 ♃	16.46 ♄	3.71 ♃	0.63 ☾	25.57 ☾	13.31 ♃	3.06 ♁	2.92 ♀	18.52 ☿
340	22.87 ♃	48.16 Z	5.11 ☽	23.05 ☽	11.85 ♀	8.36 ♃	23.46 ♄	9.43 ♃	5.11 ☾	29.58 ☾	17.68 ♃	8.36 ♁	9.71 ♀	25.04 ☿
345	26.67 ♃	46.18 Z	9.42 ☽	27.08 ☽	16.12 ♀	13.72 ♃	0.18 ♃	14.76 ♃	9.42 ☾	3.55 ♃	22.07 ♃	13.72 ♁	16.44 ♀	1.21 ♀
350	0.50 ♁	44.23 Z	13.61 ☽	1.11 ♀	20.45 ♀	19.12 ♃	6.58 ♃	19.76 ♃	13.61 ☾	7.48 ♃	26.47 ♃	19.12 ♁	23.08 ♀	7.06 ♀
355	4.38 ♁	42.32 Z	17.69 ☽	5.12 ♀	24.83 ♀	24.55 ♃	12.68 ♃	24.48 ♃	17.69 ☾	11.39 ♃	0.88 ♁	24.55 ♁	29.58 ♀	12.61 ♀
360	8.31 ♁	40.45 Z	21.69 ☽	9.13 ♀	29.25 ♀	0.00 ♄	18.48 ♃	28.96 ♃	21.69 ☾	15.28 ♃	5.31 ♁	0.00 ♀	5.93 ☿	17.92 ♀

49° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	10.93 𠄎	37.01 Z	24.59 𠄎	10.59 𠄎	29.43 𠄎	0.00 𠄎	22.12 𠄎	3.34 𠄎	24.59 𠄎	17.13 𠄎	6.04 𠄎	0.00 𠄎	6.83 𠄎	20.79 𠄎
5	15.06 𠄎	35.15 Z	28.35 𠄎	14.49 𠄎	3.83 𠄎	5.45 𠄎	27.53 𠄎	7.39 𠄎	28.35 𠄎	20.87 𠄎	10.38 𠄎	5.45 𠄎	13.16 𠄎	25.81 𠄎
10	19.28 𠄎	33.35 Z	2.06 𠄎	18.41 𠄎	8.26 𠄎	10.88 𠄎	2.66 𠄎	11.28 𠄎	2.06 𠄎	24.59 𠄎	14.73 𠄎	10.88 𠄎	19.28 𠄎	0.63 𠄎
15	23.60 𠄎	31.62 Z	5.74 𠄎	22.33 𠄎	12.74 𠄎	16.28 𠄎	7.55 𠄎	15.06 𠄎	5.74 𠄎	28.31 𠄎	19.08 𠄎	16.28 𠄎	25.18 𠄎	5.26 𠄎
20	28.05 𠄎	29.95 Z	9.38 𠄎	26.27 𠄎	17.26 𠄎	21.64 𠄎	12.23 𠄎	18.74 𠄎	9.38 𠄎	2.01 𠄎	23.43 𠄎	21.64 𠄎	0.88 𠄎	9.76 𠄎
25	2.65 𠄎	28.36 Z	13.01 𠄎	0.23 𠄎	21.81 𠄎	26.94 𠄎	16.73 𠄎	22.34 𠄎	13.01 𠄎	5.71 𠄎	27.77 𠄎	26.94 𠄎	6.40 𠄎	14.14 𠄎
30	7.43 𠄎	26.86 Z	16.62 𠄎	4.20 𠄎	26.40 𠄎	2.18 𠄎	21.08 𠄎	25.88 𠄎	16.62 𠄎	9.41 𠄎	2.09 𠄎	2.18 𠄎	11.73 𠄎	18.42 𠄎
35	12.42 𠄎	25.45 Z	20.22 𠄎	8.19 𠄎	1.00 𠄎	7.35 𠄎	25.30 𠄎	29.37 𠄎	20.22 𠄎	13.09 𠄎	6.40 𠄎	7.35 𠄎	16.91 𠄎	22.62 𠄎
40	17.67 𠄎	24.14 Z	23.82 𠄎	12.20 𠄎	5.62 𠄎	12.45 𠄎	29.43 𠄎	2.83 𠄎	23.82 𠄎	16.77 𠄎	10.68 𠄎	12.45 𠄎	21.96 𠄎	26.77 𠄎
45	23.19 𠄎	22.93 Z	27.42 𠄎	16.23 𠄎	10.25 𠄎	17.46 𠄎	3.46 𠄎	6.26 𠄎	27.42 𠄎	20.44 𠄎	14.93 𠄎	17.46 𠄎	26.88 𠄎	0.87 𠄎
50	29.05 𠄎	21.84 Z	1.02 𠄎	20.27 𠄎	14.88 𠄎	22.41 𠄎	7.44 𠄎	9.68 𠄎	1.02 𠄎	24.10 𠄎	19.15 𠄎	22.41 𠄎	1.70 𠄎	4.94 𠄎
55	5.28 𠄎	20.86 Z	4.62 𠄎	24.32 𠄎	19.51 𠄎	27.28 𠄎	11.36 𠄎	13.10 𠄎	4.62 𠄎	27.75 𠄎	23.34 𠄎	27.28 𠄎	6.44 𠄎	8.99 𠄎
60	11.91 𠄎	19.99 Z	8.23 𠄎	28.38 𠄎	24.13 𠄎	2.09 𠄎	15.25 𠄎	16.51 𠄎	8.23 𠄎	1.38 𠄎	27.49 𠄎	2.09 𠄎	11.11 𠄎	13.02 𠄎
65	18.98 𠄎	19.26 Z	11.85 𠄎	2.45 𠄎	28.74 𠄎	6.84 𠄎	19.11 𠄎	19.93 𠄎	11.85 𠄎	4.99 𠄎	1.59 𠄎	6.84 𠄎	15.72 𠄎	17.05 𠄎
70	26.48 𠄎	18.65 Z	15.47 𠄎	6.52 𠄎	3.33 𠄎	11.53 𠄎	22.97 𠄎	23.36 𠄎	15.47 𠄎	8.59 𠄎	5.66 𠄎	11.53 𠄎	20.30 𠄎	21.07 𠄎
75	4.41 𠄎	18.18 Z	19.10 𠄎	10.59 𠄎	7.91 𠄎	16.19 𠄎	26.82 𠄎	26.80 𠄎	19.10 𠄎	12.17 𠄎	9.69 𠄎	16.19 𠄎	24.85 𠄎	25.10 𠄎
80	12.71 𠄎	17.84 Z	22.73 𠄎	14.66 𠄎	12.47 𠄎	20.81 𠄎	0.68 𠄎	0.25 𠄎	22.73 𠄎	15.72 𠄎	13.68 𠄎	20.81 𠄎	29.39 𠄎	29.14 𠄎
85	21.28 𠄎	17.63 Z	26.36 𠄎	18.72 𠄎	17.02 𠄎	25.41 𠄎	4.55 𠄎	3.73 𠄎	26.36 𠄎	19.26 𠄎	17.63 𠄎	25.41 𠄎	3.92 𠄎	3.18 𠄎
90	0.00 𠄎	17.56 Z	0.00 𠄎	22.78 𠄎	21.55 𠄎	0.00 𠄎	8.45 𠄎	7.22 𠄎	0.00 𠄎	22.78 𠄎	21.55 𠄎	0.00 𠄎	8.45 𠄎	7.22 𠄎
95	8.72 𠄎	17.63 Z	3.64 𠄎	26.82 𠄎	26.08 𠄎	4.59 𠄎	12.37 𠄎	10.74 𠄎	3.64 𠄎	26.27 𠄎	25.45 𠄎	4.59 𠄎	12.98 𠄎	11.28 𠄎
100	17.29 𠄎	17.84 Z	7.27 𠄎	0.86 𠄎	0.61 𠄎	9.19 𠄎	16.32 𠄎	14.28 𠄎	7.27 𠄎	29.75 𠄎	29.32 𠄎	9.19 𠄎	17.53 𠄎	15.34 𠄎
105	25.59 𠄎	18.18 Z	10.90 𠄎	4.90 𠄎	5.15 𠄎	13.81 𠄎	20.31 𠄎	17.83 𠄎	10.90 𠄎	3.20 𠄎	3.18 𠄎	13.81 𠄎	22.09 𠄎	19.41 𠄎
110	3.52 𠄎	18.65 Z	14.53 𠄎	8.93 𠄎	9.70 𠄎	18.47 𠄎	24.34 𠄎	21.41 𠄎	14.53 𠄎	6.64 𠄎	7.03 𠄎	18.47 𠄎	26.67 𠄎	23.48 𠄎
115	11.02 𠄎	19.26 Z	18.15 𠄎	12.95 𠄎	14.28 𠄎	23.16 𠄎	28.41 𠄎	25.01 𠄎	18.15 𠄎	10.07 𠄎	10.89 𠄎	23.16 𠄎	1.26 𠄎	27.55 𠄎
120	18.09 𠄎	19.99 Z	21.77 𠄎	16.98 𠄎	18.89 𠄎	27.91 𠄎	2.51 𠄎	28.62 𠄎	21.77 𠄎	13.49 𠄎	14.75 𠄎	27.91 𠄎	5.87 𠄎	1.62 𠄎
125	24.72 𠄎	20.86 Z	25.38 𠄎	21.01 𠄎	23.56 𠄎	2.72 𠄎	6.66 𠄎	2.25 𠄎	25.38 𠄎	16.90 𠄎	18.64 𠄎	2.72 𠄎	10.49 𠄎	5.68 𠄎
130	0.95 𠄎	21.84 Z	28.98 𠄎	25.06 𠄎	28.30 𠄎	7.59 𠄎	10.85 𠄎	5.90 𠄎	28.98 𠄎	20.32 𠄎	22.56 𠄎	7.59 𠄎	15.12 𠄎	9.73 𠄎
135	6.81 𠄎	22.93 Z	2.58 𠄎	29.13 𠄎	3.12 𠄎	12.54 𠄎	15.07 𠄎	9.56 𠄎	2.58 𠄎	23.74 𠄎	26.54 𠄎	12.54 𠄎	19.75 𠄎	13.77 𠄎
140	12.33 𠄎	24.14 Z	6.18 𠄎	3.23 𠄎	8.04 𠄎	17.55 𠄎	19.32 𠄎	13.23 𠄎	6.18 𠄎	27.17 𠄎	0.57 𠄎	17.55 𠄎	24.38 𠄎	17.80 𠄎
145	17.58 𠄎	25.45 Z	9.78 𠄎	7.38 𠄎	13.09 𠄎	22.65 𠄎	23.60 𠄎	16.91 𠄎	9.78 𠄎	0.63 𠄎	4.70 𠄎	22.65 𠄎	29.00 𠄎	21.81 𠄎
150	22.57 𠄎	26.86 Z	13.38 𠄎	11.58 𠄎	18.27 𠄎	27.82 𠄎	27.91 𠄎	20.59 𠄎	13.38 𠄎	4.12 𠄎	8.92 𠄎	27.82 𠄎	3.60 𠄎	25.80 𠄎
155	27.35 𠄎	28.36 Z	16.99 𠄎	15.86 𠄎	23.60 𠄎	3.06 𠄎	2.23 𠄎	24.29 𠄎	16.99 𠄎	7.66 𠄎	13.27 𠄎	3.06 𠄎	8.19 𠄎	29.77 𠄎
160	1.95 𠄎	29.95 Z	20.62 𠄎	20.24 𠄎	29.12 𠄎	8.36 𠄎	6.57 𠄎	27.99 𠄎	20.62 𠄎	11.26 𠄎	17.77 𠄎	8.36 𠄎	12.74 𠄎	3.73 𠄎
165	6.40 𠄎	31.62 Z	24.26 𠄎	24.74 𠄎	4.82 𠄎	13.72 𠄎	10.92 𠄎	1.69 𠄎	24.26 𠄎	14.94 𠄎	22.45 𠄎	13.72 𠄎	17.26 𠄎	7.67 𠄎
170	10.72 𠄎	33.35 Z	27.94 𠄎	29.37 𠄎	10.72 𠄎	19.12 𠄎	15.27 𠄎	5.41 𠄎	27.94 𠄎	18.72 𠄎	27.34 𠄎	19.12 𠄎	21.74 𠄎	11.59 𠄎
175	14.94 𠄎	35.15 Z	1.65 𠄎	4.19 𠄎	16.84 𠄎	24.55 𠄎	19.62 𠄎	9.13 𠄎	1.65 𠄎	22.61 𠄎	2.47 𠄎	24.55 𠄎	26.17 𠄎	15.51 𠄎
180	19.07 𠄎	37.01 Z	5.41 𠄎	9.21 𠄎	23.17 𠄎	0.00 𠄎	23.96 𠄎	12.87 𠄎	5.41 𠄎	26.66 𠄎	7.88 𠄎	0.00 𠄎	0.57 𠄎	19.41 𠄎

49° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	23.14 ♁	38.91 Z	9.24 ♀	14.47 ☾	29.69 ☿	5.45 ♀	28.29 ♀	16.62 ♂	9.24 II	0.89 ☾	13.61 ♀	5.45 ♁	4.91 ♀	23.31 ♀
190	27.15 ♁	40.85 Z	13.15 ♀	20.03 ☾	6.41 ♀	10.88 ♀	2.62 ♂	20.39 ♂	13.15 II	5.35 ☾	19.67 ♀	10.88 ♁	9.20 ♀	27.21 ♀
195	1.12 ♀	42.81 Z	17.16 ♀	25.93 ☾	13.27 ♀	16.28 ♀	6.93 ♂	24.19 ♂	17.16 II	10.08 ☾	26.12 ♀	16.28 ♁	13.45 ♀	1.13 ♀
200	5.07 ♀	44.80 Z	21.30 ♀	2.21 ☿	20.25 ♀	21.64 ♀	11.23 ♂	28.02 ♂	21.30 II	15.15 ☾	2.95 ♀	21.64 ♁	17.65 ♀	5.06 ♀
205	8.99 ♀	46.79 Z	25.59 ♀	8.92 ☿	27.29 ♀	26.94 ♀	15.52 ♂	1.90 II	25.59 II	20.64 ☾	10.16 ♀	26.94 ♁	21.80 ♀	9.01 ♀
210	12.89 ♀	48.77 Z	0.08 ☾	16.09 ☿	4.33 ♀	2.18 ♂	19.81 ♂	5.83 II	0.08 ☾	26.63 ☾	17.74 ♀	2.18 ♀	25.91 ♀	13.00 ♀
215	16.79 ♀	50.72 Z	4.79 ☾	23.74 ☿	11.32 ♀	7.35 ♂	24.09 ♂	9.82 II	4.79 ☾	3.24 ♀	25.62 ♀	7.35 ♀	29.99 ♀	17.04 ♀
220	20.69 ♀	52.64 Z	9.79 ☾	1.85 ♀	18.21 ♀	12.45 ♂	28.38 ♂	13.91 II	9.79 ☾	10.57 ♀	3.71 ♁	12.45 ♀	4.02 ♀	21.13 ♀
225	24.59 ♀	54.51 Z	15.13 ☾	10.36 ♀	24.94 ♀	17.46 ♂	2.68 II	18.10 II	15.13 ☾	18.73 ♀	11.91 ♁	17.46 ♀	8.03 ♀	25.28 ♀
230	28.49 ♀	56.29 Z	20.88 ☾	19.15 ♀	1.48 ♂	22.41 ♂	7.00 II	22.43 II	20.88 ☾	27.82 ♀	20.09 ♁	22.41 ♀	12.01 ♀	29.52 ♀
235	2.40 ♀	57.98 Z	27.14 ☾	28.07 ♀	7.80 ♂	27.28 ♂	11.36 II	26.92 II	27.14 ☾	7.85 ♀	28.13 ♁	27.28 ♀	15.98 ♀	3.85 ☾
240	6.32 ♀	59.53 Z	3.98 ☿	6.93 ♀	13.87 ♂	2.09 II	15.77 II	1.63 ☾	3.98 ♀	18.70 ♀	5.92 ♀	2.09 ♀	19.95 ♀	8.28 ☾
245	10.25 ♀	60.93 Z	11.50 ☿	15.55 ♀	19.70 ♂	6.84 II	20.26 II	6.60 ☾	11.50 ♀	0.09 ♁	13.39 ♀	6.84 ♀	23.93 ♀	12.83 ☾
250	14.19 ♀	62.13 Z	19.79 ☿	23.78 ♀	25.27 ♂	11.53 II	24.85 II	11.91 ☾	19.79 ♀	11.61 ♁	20.50 ♀	11.53 ♀	27.93 ♀	17.53 ☾
255	18.14 ♀	63.11 Z	28.88 ☿	1.50 ♂	0.59 II	16.19 II	29.56 II	17.65 ☾	28.88 ♀	22.79 ♁	27.21 ♀	16.19 ♀	2.00 ☾	22.39 ☾
260	22.09 ♀	63.84 Z	8.72 ♀	8.68 ♂	5.66 II	20.81 II	4.45 ☾	23.91 ☾	8.72 ♀	3.28 ♀	3.54 ♀	20.81 ♀	6.16 ☾	27.47 ☾
265	26.04 ♀	64.29 Z	19.19 ♀	15.32 ♂	10.50 II	25.41 II	9.53 ☾	0.83 ♀	19.19 ♀	12.85 ♀	9.50 ♀	25.41 ♀	10.43 ☾	2.83 ☿
270	0.00 ☾	64.44 Z	0.00 ♀	21.46 ♂	15.13 II	0.00 ☾	14.87 ☾	8.54 ♀	0.00 ♁	21.46 ♀	15.13 ♀	0.00 ☾	14.87 ☾	8.54 ☿
275	3.96 ☾	64.29 Z	10.81 ♀	27.17 ♂	19.57 II	4.59 ☾	20.50 ☾	17.15 ♀	10.81 ♁	29.17 ♀	20.47 ♀	4.59 ☾	19.50 ☾	14.68 ☿
280	7.91 ☾	63.84 Z	21.28 ♀	2.53 II	23.84 II	9.19 ☾	26.46 ☾	26.72 ♀	21.28 ♁	6.09 ♀	25.55 ♀	9.19 ☾	24.34 ☾	21.32 ☿
285	11.86 ☾	63.11 Z	1.12 ♂	7.61 II	28.00 II	13.81 ☾	2.79 ♀	7.21 ♀	1.12 ♀	12.35 ♀	0.44 ☾	13.81 ☾	29.41 ☾	28.50 ☿
290	15.81 ☾	62.13 Z	10.21 ♂	12.47 II	2.07 ☾	18.47 ☾	9.50 ♀	18.39 ♀	10.21 ♀	18.09 ♀	5.15 ☾	18.47 ☾	4.73 ☿	6.22 ♀
295	19.75 ☾	60.93 Z	18.50 ♂	17.17 II	6.07 ☾	23.16 ☾	16.61 ♀	29.91 ♀	18.50 ♀	23.40 ♀	9.74 ☾	23.16 ☾	10.30 ☿	14.45 ♀
300	23.68 ☾	59.53 Z	26.02 ♂	21.72 II	10.05 ☾	27.91 ☾	24.08 ♀	11.30 ♁	26.02 ♀	28.37 ♀	14.23 ☾	27.91 ☾	16.13 ☿	23.07 ♀
305	27.60 ☾	57.98 Z	2.86 II	26.15 II	14.02 ☾	2.72 ♀	1.87 ♀	22.15 ♁	2.86 ♀	3.08 ☾	18.64 ☾	2.72 ☿	22.20 ☿	1.93 ♀
310	1.51 ☿	56.29 Z	9.12 II	0.48 ☾	17.99 ☾	7.59 ♀	9.91 ♀	2.18 ♀	9.12 ♀	7.57 ☾	23.00 ☾	7.59 ☿	28.52 ☿	10.85 ♀
315	5.41 ☿	54.51 Z	14.87 II	4.72 ☾	21.97 ☾	12.54 ♀	18.09 ♀	11.27 ♀	14.87 ♀	11.90 ☾	27.32 ☾	12.54 ☿	5.06 ♀	19.64 ♀
320	9.31 ☿	52.64 Z	20.21 II	8.87 ☾	25.98 ☾	17.55 ♀	26.29 ♀	19.43 ♀	20.21 ♀	16.09 ☾	1.62 ☿	17.55 ☿	11.79 ♀	28.15 ♀
325	13.21 ☿	50.72 Z	25.21 II	12.96 ☾	0.01 ♀	22.65 ♀	4.38 ♁	26.76 ♀	25.21 ♀	20.18 ☾	5.91 ☿	22.65 ☿	18.68 ♀	6.26 ♂
330	17.11 ☿	48.77 Z	29.92 II	17.00 ☾	4.09 ♀	27.82 ♀	12.26 ♁	3.37 ♀	29.92 ♀	24.17 ☾	10.19 ☿	27.82 ☿	25.67 ♀	13.91 ♂
335	21.01 ☿	46.79 Z	4.41 ☾	20.99 ☾	8.20 ♀	3.06 ♀	19.84 ♁	9.36 ♀	4.41 ☾	28.10 ☾	14.48 ☿	3.06 ♀	2.71 ♀	21.08 ♂
340	24.93 ☿	44.80 Z	8.70 ☾	24.94 ☾	12.35 ♀	8.36 ♀	27.05 ♁	14.85 ♀	8.70 ☾	1.98 ☿	18.77 ☿	8.36 ♀	9.75 ♀	27.79 ♂
345	28.88 ☿	42.81 Z	12.84 ☾	28.87 ☾	16.55 ♀	13.72 ♀	3.88 ♀	19.92 ♀	12.84 ☾	5.81 ☿	23.07 ☿	13.72 ♀	16.73 ♀	4.07 II
350	2.85 ♀	40.85 Z	16.85 ☾	2.79 ♀	20.80 ♀	19.12 ♀	10.33 ♀	24.65 ♀	16.85 ☾	9.61 ☿	27.38 ☿	19.12 ♀	23.59 ♀	9.97 II
355	6.86 ♀	38.91 Z	20.76 ☾	6.69 ♀	25.09 ♀	24.55 ♀	16.39 ♀	29.11 ♀	20.76 ☾	13.38 ☿	1.71 ♀	24.55 ♀	0.31 ♂	15.53 II
360	10.93 ♀	37.01 Z	24.59 ☾	10.59 ♀	29.43 ♀	0.00 ♁	22.12 ♀	3.34 ☾	24.59 ☾	17.13 ☿	6.04 ♀	0.00 ♀	6.83 ♂	20.79 II

50° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	11.54 𠄎	36.14 Z	25.36 𠄎	10.98 𠄎	29.49 𠄎	0.00 𠄎	23.18 𠄎	4.54 𠄎	25.36 𠄎	17.61 𠄎	6.23 𠄎	0.00 𠄎	7.10 𠄎	21.61 𠄎
5	15.71 𠄎	34.28 Z	29.08 𠄎	14.85 𠄎	3.85 𠄎	5.45 𠄎	28.55 𠄎	8.51 𠄎	29.08 𠄎	21.31 𠄎	10.55 𠄎	5.45 𠄎	13.47 𠄎	26.60 𠄎
10	19.95 𠄎	32.47 Z	2.75 𠄎	18.73 𠄎	8.27 𠄎	10.88 𠄎	3.63 𠄎	12.34 𠄎	2.75 𠄎	25.00 𠄎	14.87 𠄎	10.88 𠄎	19.62 𠄎	1.39 𠄎
15	24.31 𠄎	30.72 Z	6.38 𠄎	22.63 𠄎	12.72 𠄎	16.28 𠄎	8.47 𠄎	16.05 𠄎	6.38 𠄎	28.68 𠄎	19.19 𠄎	16.28 𠄎	25.55 𠄎	6.00 𠄎
20	28.78 𠄎	29.05 Z	9.98 𠄎	26.53 𠄎	17.22 𠄎	21.64 𠄎	13.10 𠄎	19.66 𠄎	9.98 𠄎	2.35 𠄎	23.51 𠄎	21.64 𠄎	1.27 𠄎	10.46 𠄎
25	3.41 𠄎	27.45 Z	13.56 𠄎	0.45 𠄎	21.75 𠄎	26.94 𠄎	17.55 𠄎	23.20 𠄎	13.56 𠄎	6.01 𠄎	27.82 𠄎	26.94 𠄎	6.79 𠄎	14.81 𠄎
30	8.21 𠄎	25.94 Z	17.13 𠄎	4.39 𠄎	26.30 𠄎	2.18 𠄎	21.86 𠄎	26.69 𠄎	17.13 𠄎	9.67 𠄎	2.11 𠄎	2.18 𠄎	12.14 𠄎	19.06 𠄎
35	13.22 𠄎	24.52 Z	20.69 𠄎	8.35 𠄎	0.88 𠄎	7.35 𠄎	26.04 𠄎	0.12 𠄎	20.69 𠄎	13.32 𠄎	6.39 𠄎	7.35 𠄎	17.32 𠄎	23.23 𠄎
40	18.48 𠄎	23.20 Z	24.24 𠄎	12.32 𠄎	5.48 𠄎	12.45 𠄎	0.11 𠄎	3.53 𠄎	24.24 𠄎	16.95 𠄎	10.64 𠄎	12.45 𠄎	22.37 𠄎	27.35 𠄎
45	24.01 𠄎	21.98 Z	27.80 𠄎	16.31 𠄎	10.08 𠄎	17.46 𠄎	4.11 𠄎	6.92 𠄎	27.80 𠄎	20.58 𠄎	14.87 𠄎	17.46 𠄎	27.29 𠄎	1.42 𠄎
50	29.86 𠄎	20.87 Z	1.36 𠄎	20.32 𠄎	14.69 𠄎	22.41 𠄎	8.04 𠄎	10.29 𠄎	1.36 𠄎	24.20 𠄎	19.06 𠄎	22.41 𠄎	2.11 𠄎	5.45 𠄎
55	6.07 𠄎	19.89 Z	4.92 𠄎	24.33 𠄎	19.30 𠄎	27.28 𠄎	11.93 𠄎	13.65 𠄎	4.92 𠄎	27.80 𠄎	23.21 𠄎	27.28 𠄎	6.84 𠄎	9.47 𠄎
60	12.66 𠄎	19.02 Z	8.49 𠄎	28.36 𠄎	23.90 𠄎	2.09 𠄎	15.78 𠄎	17.02 𠄎	8.49 𠄎	1.39 𠄎	27.33 𠄎	2.09 𠄎	11.50 𠄎	13.47 𠄎
65	19.67 𠄎	18.28 Z	12.06 𠄎	2.39 𠄎	28.49 𠄎	6.84 𠄎	19.61 𠄎	20.39 𠄎	12.06 𠄎	4.96 𠄎	1.41 𠄎	6.84 𠄎	16.11 𠄎	17.46 𠄎
70	27.08 𠄎	17.66 Z	15.64 𠄎	6.42 𠄎	3.06 𠄎	11.53 𠄎	23.43 𠄎	23.78 𠄎	15.64 𠄎	8.52 𠄎	5.45 𠄎	11.53 𠄎	20.68 𠄎	21.46 𠄎
75	4.90 𠄎	17.18 Z	19.23 𠄎	10.46 𠄎	7.62 𠄎	16.19 𠄎	27.25 𠄎	27.17 𠄎	19.23 𠄎	12.05 𠄎	9.45 𠄎	16.19 𠄎	25.22 𠄎	25.45 𠄎
80	13.05 𠄎	16.84 Z	22.82 𠄎	14.49 𠄎	12.17 𠄎	20.81 𠄎	1.07 𠄎	0.58 𠄎	22.82 𠄎	15.57 𠄎	13.41 𠄎	20.81 𠄎	29.75 𠄎	29.45 𠄎
85	21.46 𠄎	16.63 Z	26.41 𠄎	18.51 𠄎	16.70 𠄎	25.41 𠄎	4.91 𠄎	4.02 𠄎	26.41 𠄎	19.06 𠄎	17.33 𠄎	25.41 𠄎	4.26 𠄎	3.45 𠄎
90	0.00 𠄎	16.56 Z	0.00 𠄎	22.53 𠄎	21.22 𠄎	0.00 𠄎	8.78 𠄎	7.47 𠄎	0.00 𠄎	22.53 𠄎	21.22 𠄎	0.00 𠄎	8.78 𠄎	7.47 𠄎
95	8.54 𠄎	16.63 Z	3.59 𠄎	26.55 𠄎	25.74 𠄎	4.59 𠄎	12.67 𠄎	10.94 𠄎	3.59 𠄎	25.98 𠄎	25.09 𠄎	4.59 𠄎	13.30 𠄎	11.49 𠄎
100	16.95 𠄎	16.84 Z	7.18 𠄎	0.55 𠄎	0.25 𠄎	9.19 𠄎	16.59 𠄎	14.43 𠄎	7.18 𠄎	29.42 𠄎	28.93 𠄎	9.19 𠄎	17.83 𠄎	15.51 𠄎
105	25.10 𠄎	17.18 Z	10.77 𠄎	4.55 𠄎	4.78 𠄎	13.81 𠄎	20.55 𠄎	17.95 𠄎	10.77 𠄎	2.83 𠄎	2.75 𠄎	13.81 𠄎	22.38 𠄎	19.54 𠄎
110	2.92 𠄎	17.66 Z	14.36 𠄎	8.54 𠄎	9.32 𠄎	18.47 𠄎	24.55 𠄎	21.48 𠄎	14.36 𠄎	6.22 𠄎	6.57 𠄎	18.47 𠄎	26.94 𠄎	23.58 𠄎
115	10.33 𠄎	18.28 Z	17.94 𠄎	12.54 𠄎	13.89 𠄎	23.16 𠄎	28.59 𠄎	25.04 𠄎	17.94 𠄎	9.61 𠄎	10.39 𠄎	23.16 𠄎	1.51 𠄎	27.61 𠄎
120	17.34 𠄎	19.02 Z	21.51 𠄎	16.53 𠄎	18.50 𠄎	27.91 𠄎	2.67 𠄎	28.61 𠄎	21.51 𠄎	12.98 𠄎	14.22 𠄎	27.91 𠄎	6.10 𠄎	1.64 𠄎
125	23.93 𠄎	19.89 Z	25.08 𠄎	20.53 𠄎	23.16 𠄎	2.72 𠄎	6.79 𠄎	2.20 𠄎	25.08 𠄎	16.35 𠄎	18.07 𠄎	2.72 𠄎	10.70 𠄎	5.67 𠄎
130	0.14 𠄎	20.87 Z	28.64 𠄎	24.55 𠄎	27.89 𠄎	7.59 𠄎	10.94 𠄎	5.80 𠄎	28.64 𠄎	19.71 𠄎	21.96 𠄎	7.59 𠄎	15.31 𠄎	9.68 𠄎
135	5.99 𠄎	21.98 Z	2.20 𠄎	28.58 𠄎	2.71 𠄎	12.54 𠄎	15.13 𠄎	9.42 𠄎	2.20 𠄎	23.08 𠄎	25.89 𠄎	12.54 𠄎	19.92 𠄎	13.69 𠄎
140	11.52 𠄎	23.20 Z	5.76 𠄎	2.65 𠄎	7.63 𠄎	17.55 𠄎	19.36 𠄎	13.05 𠄎	5.76 𠄎	26.47 𠄎	29.89 𠄎	17.55 𠄎	24.52 𠄎	17.68 𠄎
145	16.78 𠄎	24.52 Z	9.31 𠄎	6.77 𠄎	12.68 𠄎	22.65 𠄎	23.61 𠄎	16.68 𠄎	9.31 𠄎	29.88 𠄎	3.96 𠄎	22.65 𠄎	29.12 𠄎	21.65 𠄎
150	21.79 𠄎	25.94 Z	12.87 𠄎	10.94 𠄎	17.86 𠄎	27.82 𠄎	27.89 𠄎	20.33 𠄎	12.87 𠄎	3.31 𠄎	8.14 𠄎	27.82 𠄎	3.70 𠄎	25.61 𠄎
155	26.59 𠄎	27.45 Z	16.44 𠄎	15.19 𠄎	23.21 𠄎	3.06 𠄎	2.18 𠄎	23.99 𠄎	16.44 𠄎	6.80 𠄎	12.45 𠄎	3.06 𠄎	8.25 𠄎	29.55 𠄎
160	1.22 𠄎	29.05 Z	20.02 𠄎	19.54 𠄎	28.73 𠄎	8.36 𠄎	6.49 𠄎	27.65 𠄎	20.02 𠄎	10.34 𠄎	16.90 𠄎	8.36 𠄎	12.78 𠄎	3.47 𠄎
165	5.69 𠄎	30.72 Z	23.62 𠄎	24.00 𠄎	4.45 𠄎	13.72 𠄎	10.81 𠄎	1.32 𠄎	23.62 𠄎	13.95 𠄎	21.53 𠄎	13.72 𠄎	17.28 𠄎	7.37 𠄎
170	10.05 𠄎	32.47 Z	27.25 𠄎	28.61 𠄎	10.38 𠄎	19.12 𠄎	15.13 𠄎	5.00 𠄎	27.25 𠄎	17.66 𠄎	26.37 𠄎	19.12 𠄎	21.73 𠄎	11.27 𠄎
175	14.29 𠄎	34.28 Z	0.92 𠄎	3.40 𠄎	16.53 𠄎	24.55 𠄎	19.45 𠄎	8.69 𠄎	0.92 𠄎	21.49 𠄎	1.45 𠄎	24.55 𠄎	26.15 𠄎	15.15 𠄎
180	18.46 𠄎	36.14 Z	4.64 𠄎	8.39 𠄎	22.90 𠄎	0.00 𠄎	23.77 𠄎	12.39 𠄎	4.64 𠄎	25.46 𠄎	6.82 𠄎	0.00 𠄎	0.51 𠄎	19.02 𠄎

50° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	22.55 ♁	38.05 Z	8.42 ♀	13.65 ♂	29.48 ≍	5.45 ♀	28.08 ♀	16.10 ♂	8.42 II	29.62 II	12.51 ♀	5.45 ♁	4.84 III	22.89 III
190	26.60 ♁	39.99 Z	12.28 ♀	19.20 ♂	6.25 ♀	10.88 ♀	2.38 ♂	19.84 ♂	12.28 II	3.99 ♁	18.55 ♀	10.88 ♁	9.11 III	26.76 III
195	0.60 III	41.96 Z	16.24 ♀	25.10 ♂	13.18 ♀	16.28 ♀	6.67 ♂	23.60 ♂	16.24 II	8.64 ♁	24.99 ♀	16.28 ♁	13.33 III	0.64 ♀
200	4.57 III	43.94 Z	20.32 ♀	1.40 ≍	20.22 ♀	21.64 ♀	10.95 ♂	27.39 ♂	20.32 II	13.63 ♁	1.84 III	21.64 ♁	17.51 III	4.54 ♀
205	8.52 III	45.93 Z	24.56 ♀	8.16 ≍	27.33 ♀	26.94 ♀	15.22 ♂	1.23 II	24.56 II	19.03 ♁	9.10 III	26.94 ♁	21.65 III	8.46 ♀
210	12.46 III	47.91 Z	28.99 ♀	15.40 ≍	4.45 ♀	2.18 ♂	19.48 ♂	5.12 II	28.99 II	24.95 ♁	16.75 III	2.18 III	25.74 III	12.43 ♀
215	16.39 III	49.86 Z	3.65 ♂	23.17 ≍	11.52 ♀	7.35 ♂	23.74 ♂	9.08 II	3.65 ♁	1.48 ♀	24.75 III	7.35 III	29.79 III	16.43 ♀
220	20.32 III	51.78 Z	8.59 ♂	1.43 ♀	18.47 ♀	12.45 ♂	28.01 ♂	13.12 II	8.59 ♁	8.78 ♀	2.99 ♁	12.45 III	3.81 ♀	20.49 ♀
225	24.26 III	53.63 Z	13.88 ♂	10.13 ♀	25.26 ♀	17.46 ♂	2.29 II	17.27 II	13.88 ♁	16.96 ♀	11.36 ♁	17.46 III	7.79 ♀	24.62 ♀
230	28.20 III	55.40 Z	19.59 ♂	19.14 ♀	1.86 ♂	22.41 ♂	6.59 II	21.55 II	19.59 ♁	26.15 ♀	19.72 ♁	22.41 III	11.75 ♀	28.83 ♀
235	2.14 ♀	57.07 Z	25.82 ♂	28.30 ♀	8.22 ♂	27.28 ♂	10.93 II	26.00 II	25.82 ♁	6.38 III	27.95 ♁	27.28 III	15.70 ♀	3.13 ♂
240	6.10 ♀	58.61 Z	2.66 ≍	7.39 ♀	14.34 ♂	2.09 II	15.32 II	0.66 ♁	2.66 ♀	17.55 III	5.91 III	2.09 ♀	19.64 ♀	7.53 ♂
245	10.07 ♀	59.99 Z	10.23 ≍	16.22 ♀	20.19 ♂	6.84 II	19.79 II	5.59 ♁	10.23 ♀	29.37 III	13.53 III	6.84 ♀	23.58 ♀	12.05 ♂
250	14.04 ♀	61.17 Z	18.61 ≍	24.61 ♀	25.79 ♂	11.53 II	24.36 II	10.85 ♁	18.61 ♀	11.37 ♁	20.76 III	11.53 ♀	27.56 ♀	16.70 ♂
255	18.02 ♀	62.14 Z	27.87 ≍	2.45 ♂	1.12 II	16.19 II	29.06 II	16.55 ♁	27.87 ♀	23.01 ♁	27.57 III	16.19 ♀	1.59 ♂	21.52 ♂
260	22.01 ♀	62.85 Z	7.99 ♀	9.70 ♂	6.20 II	20.81 II	3.93 ♁	22.80 ♁	7.99 III	3.87 III	3.97 ♀	20.81 ♀	5.70 ♂	26.55 ♂
265	26.00 ♀	63.29 Z	18.79 ♀	16.35 ♂	11.03 II	25.41 II	9.01 ♁	29.74 ♁	18.79 III	13.70 III	9.98 ♀	25.41 ♀	9.95 ♂	1.86 ≍
270	0.00 ♂	63.44 Z	0.00 ♀	22.47 ♂	15.64 II	0.00 ♁	14.36 ♁	7.53 ♀	0.00 ♁	22.47 III	15.64 ♀	0.00 ♂	14.36 ♂	7.53 ≍
275	4.00 ♂	63.29 Z	11.21 ♀	28.14 ♂	20.05 II	4.59 ♁	20.02 ♁	16.30 ♀	11.21 ♁	0.26 ♀	20.99 ♀	4.59 ♂	18.97 ♂	13.65 ≍
280	7.99 ♂	62.85 Z	22.01 ♀	3.45 II	24.30 II	9.19 ♁	26.03 ♁	26.13 ♀	22.01 ♁	7.20 ♀	26.07 ♀	9.19 ♂	23.80 ♂	20.30 ≍
285	11.98 ♂	62.14 Z	2.13 ♂	8.48 II	28.41 II	13.81 ♁	2.43 ♀	6.99 III	2.13 III	13.45 ♀	0.94 ♂	13.81 ♂	28.88 ♂	27.55 ≍
290	15.96 ♂	61.17 Z	11.39 ♂	13.30 II	2.44 ♁	18.47 ♁	9.24 ♀	18.63 III	11.39 III	19.15 ♀	5.64 ♂	18.47 ♂	4.21 ≍	5.39 ♀
295	19.93 ♂	59.99 Z	19.77 ♂	17.95 II	6.42 ♁	23.16 ♁	16.47 ♀	0.63 ♁	19.77 III	24.41 ♀	10.21 ♂	23.16 ♂	9.81 ≍	13.78 ♀
300	23.90 ♂	58.61 Z	27.34 ♂	22.47 II	10.36 ♁	27.91 ♁	24.09 ♀	12.45 ♁	27.34 III	29.34 ♀	14.68 ♂	27.91 ♂	15.66 ≍	22.61 ♀
305	27.86 ♂	57.07 Z	4.18 II	26.87 II	14.30 ♁	2.72 ♀	2.05 III	23.62 ♁	4.18 ♀	4.00 ♂	19.07 ♂	2.72 ≍	21.78 ≍	1.70 ♀
310	1.80 ≍	55.40 Z	10.41 II	1.17 ♁	18.25 ♁	7.59 ♀	10.28 III	3.85 III	10.41 ♀	8.45 ♂	23.41 ♂	7.59 ≍	28.14 ≍	10.86 ♀
315	5.74 ≍	53.63 Z	16.12 II	5.38 ♁	22.21 ♁	12.54 ♀	18.64 III	13.04 III	16.12 ♀	12.73 ♂	27.71 ♂	12.54 ≍	4.74 ♀	19.87 ♀
320	9.68 ≍	51.78 Z	21.41 II	9.51 ♁	26.19 ♁	17.55 ♀	27.01 III	21.22 III	21.41 ♀	16.88 ♂	1.99 ≍	17.55 ≍	11.53 ♀	28.57 ♀
325	13.61 ≍	49.86 Z	26.35 II	13.57 ♁	0.21 ♀	22.65 ♀	5.25 ♁	28.52 III	26.35 ♀	20.92 ♂	6.26 ≍	22.65 ≍	18.48 ♀	6.83 ♂
330	17.54 ≍	47.91 Z	1.01 ♁	17.57 ♁	4.26 ♀	27.82 ♀	13.25 ♁	5.05 ♀	1.01 ♂	24.88 ♂	10.52 ≍	27.82 ≍	25.55 ♀	14.60 ♂
335	21.48 ≍	45.93 Z	5.44 ♁	21.54 ♁	8.35 ♀	3.06 III	20.90 ♁	10.97 ♀	5.44 ♂	28.77 ♂	14.78 ≍	3.06 ♀	2.67 ♀	21.84 ♂
340	25.43 ≍	43.94 Z	9.68 ♁	25.46 ♁	12.49 ♀	8.36 III	28.16 ♁	16.37 ♀	9.68 ♂	2.61 ≍	19.05 ≍	8.36 ♀	9.78 ♀	28.60 ♂
345	29.40 ≍	41.96 Z	13.76 ♁	29.36 ♁	16.67 ♀	13.72 III	5.01 III	21.36 ♀	13.76 ♂	6.40 ≍	23.33 ≍	13.72 ♀	16.82 ♀	4.90 II
350	3.40 ♀	39.99 Z	17.72 ♁	3.24 ♀	20.89 ♀	19.12 III	11.45 III	26.01 ♀	17.72 ♂	10.16 ≍	27.62 ≍	19.12 ♀	23.75 ♀	10.80 II
355	7.45 ♀	38.05 Z	21.58 ♁	7.11 ♀	25.16 ♀	24.55 III	17.49 III	0.38 ♂	21.58 ♂	13.90 ≍	1.92 ♀	24.55 ♀	0.52 ♂	16.35 II
360	11.54 ♀	36.14 Z	25.36 ♁	10.98 ♀	29.49 ♀	0.00 ♁	23.18 III	4.54 ♂	25.36 ♂	17.61 ≍	6.23 ♀	0.00 ♀	7.10 ♂	21.61 II

51° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	12.15 𠄎	35.27 Z	26.16 𠄎	11.39 𠄎	29.54 𠄎	0.00 𠄎	24.32 𠄎	5.78 𠄎	26.16 𠄎	18.11 𠄎	6.42 𠄎	0.00 𠄎	7.39 𠄎	22.46 𠄎
5	16.34 𠄎	33.40 Z	29.83 𠄎	15.23 𠄎	3.89 𠄎	5.45 𠄎	29.64 𠄎	9.67 𠄎	29.83 𠄎	21.77 𠄎	10.71 𠄎	5.45 𠄎	13.79 𠄎	27.43 𠄎
10	20.61 𠄎	31.58 Z	3.45 𠄎	19.07 𠄎	8.28 𠄎	10.88 𠄎	4.67 𠄎	13.43 𠄎	3.45 𠄎	25.42 𠄎	15.01 𠄎	10.88 𠄎	19.98 𠄎	2.19 𠄎
15	24.99 𠄎	29.83 Z	7.03 𠄎	22.93 𠄎	12.71 𠄎	16.28 𠄎	9.45 𠄎	17.07 𠄎	7.03 𠄎	29.06 𠄎	19.30 𠄎	16.28 𠄎	25.93 𠄎	6.77 𠄎
20	29.49 𠄎	28.14 Z	10.59 𠄎	26.80 𠄎	17.18 𠄎	21.64 𠄎	14.02 𠄎	20.62 𠄎	10.59 𠄎	2.69 𠄎	23.59 𠄎	21.64 𠄎	1.67 𠄎	11.20 𠄎
25	4.14 𠄎	26.54 Z	14.12 𠄎	0.69 𠄎	21.68 𠄎	26.94 𠄎	18.42 𠄎	24.10 𠄎	14.12 𠄎	6.32 𠄎	27.87 𠄎	26.94 𠄎	7.21 𠄎	15.51 𠄎
30	8.97 𠄎	25.01 Z	17.65 𠄎	4.59 𠄎	26.21 𠄎	2.18 𠄎	22.67 𠄎	27.52 𠄎	17.65 𠄎	9.93 𠄎	2.14 𠄎	2.18 𠄎	12.57 𠄎	19.72 𠄎
35	13.99 𠄎	23.58 Z	21.16 𠄎	8.51 𠄎	0.77 𠄎	7.35 𠄎	26.80 𠄎	0.90 𠄎	21.16 𠄎	13.54 𠄎	6.38 𠄎	7.35 𠄎	17.76 𠄎	23.86 𠄎
40	19.26 𠄎	22.25 Z	24.68 𠄎	12.45 𠄎	5.34 𠄎	12.45 𠄎	0.83 𠄎	4.25 𠄎	24.68 𠄎	17.14 𠄎	10.61 𠄎	12.45 𠄎	22.80 𠄎	27.94 𠄎
45	24.79 𠄎	21.03 Z	28.19 𠄎	16.40 𠄎	9.92 𠄎	17.46 𠄎	4.78 𠄎	7.59 𠄎	28.19 𠄎	20.72 𠄎	14.80 𠄎	17.46 𠄎	27.72 𠄎	1.98 𠄎
50	0.64 𠄎	19.91 Z	1.71 𠄎	20.37 𠄎	14.50 𠄎	22.41 𠄎	8.67 𠄎	10.91 𠄎	1.71 𠄎	24.30 𠄎	18.96 𠄎	22.41 𠄎	2.53 𠄎	5.98 𠄎
55	6.82 𠄎	18.91 Z	5.23 𠄎	24.35 𠄎	19.09 𠄎	27.28 𠄎	12.52 𠄎	14.23 𠄎	5.23 𠄎	27.86 𠄎	23.09 𠄎	27.28 𠄎	7.26 𠄎	9.96 𠄎
60	13.38 𠄎	18.04 Z	8.75 𠄎	28.33 𠄎	23.66 𠄎	2.09 𠄎	16.33 𠄎	17.54 𠄎	8.75 𠄎	1.41 𠄎	27.17 𠄎	2.09 𠄎	11.92 𠄎	13.93 𠄎
65	20.32 𠄎	17.29 Z	12.28 𠄎	2.33 𠄎	28.23 𠄎	6.84 𠄎	20.12 𠄎	20.87 𠄎	12.28 𠄎	4.94 𠄎	1.22 𠄎	6.84 𠄎	16.52 𠄎	17.89 𠄎
70	27.65 𠄎	16.67 Z	15.82 𠄎	6.32 𠄎	2.79 𠄎	11.53 𠄎	23.90 𠄎	24.20 𠄎	15.82 𠄎	8.45 𠄎	5.23 𠄎	11.53 𠄎	21.08 𠄎	21.85 𠄎
75	5.35 𠄎	16.19 Z	19.36 𠄎	10.32 𠄎	7.33 𠄎	16.19 𠄎	27.69 𠄎	27.55 𠄎	19.36 𠄎	11.94 𠄎	9.20 𠄎	16.19 𠄎	25.61 𠄎	25.80 𠄎
80	13.37 𠄎	15.84 Z	22.90 𠄎	14.31 𠄎	11.86 𠄎	20.81 𠄎	1.48 𠄎	0.92 𠄎	22.90 𠄎	15.41 𠄎	13.12 𠄎	20.81 𠄎	0.12 𠄎	29.77 𠄎
85	21.62 𠄎	15.63 Z	26.45 𠄎	18.30 𠄎	16.37 𠄎	25.41 𠄎	5.29 𠄎	4.31 𠄎	26.45 𠄎	18.86 𠄎	17.02 𠄎	25.41 𠄎	4.62 𠄎	3.74 𠄎
90	0.00 𠄎	15.56 Z	0.00 𠄎	22.29 𠄎	20.88 𠄎	0.00 𠄎	9.12 𠄎	7.71 𠄎	0.00 𠄎	22.29 𠄎	20.88 𠄎	0.00 𠄎	9.12 𠄎	7.71 𠄎
95	8.38 𠄎	15.63 Z	3.55 𠄎	26.26 𠄎	25.38 𠄎	4.59 𠄎	12.98 𠄎	11.14 𠄎	3.55 𠄎	25.69 𠄎	24.71 𠄎	4.59 𠄎	13.63 𠄎	11.70 𠄎
100	16.63 𠄎	15.84 Z	7.10 𠄎	0.23 𠄎	29.88 𠄎	9.19 𠄎	16.88 𠄎	14.59 𠄎	7.10 𠄎	29.08 𠄎	28.52 𠄎	9.19 𠄎	18.14 𠄎	15.69 𠄎
105	24.65 𠄎	16.19 Z	10.64 𠄎	4.20 𠄎	4.39 𠄎	13.81 𠄎	20.80 𠄎	18.06 𠄎	10.64 𠄎	2.45 𠄎	2.31 𠄎	13.81 𠄎	22.67 𠄎	19.68 𠄎
110	2.35 𠄎	16.67 Z	14.18 𠄎	8.15 𠄎	8.92 𠄎	18.47 𠄎	24.77 𠄎	21.55 𠄎	14.18 𠄎	5.80 𠄎	6.10 𠄎	18.47 𠄎	27.21 𠄎	23.68 𠄎
115	9.68 𠄎	17.29 Z	17.72 𠄎	12.11 𠄎	13.48 𠄎	23.16 𠄎	28.78 𠄎	25.06 𠄎	17.72 𠄎	9.13 𠄎	9.88 𠄎	23.16 𠄎	1.77 𠄎	27.67 𠄎
120	16.62 𠄎	18.04 Z	21.25 𠄎	16.07 𠄎	18.08 𠄎	27.91 𠄎	2.83 𠄎	28.59 𠄎	21.25 𠄎	12.46 𠄎	13.67 𠄎	27.91 𠄎	6.34 𠄎	1.67 𠄎
125	23.18 𠄎	18.91 Z	24.77 𠄎	20.04 𠄎	22.74 𠄎	2.72 𠄎	6.91 𠄎	2.14 𠄎	24.77 𠄎	15.77 𠄎	17.48 𠄎	2.72 𠄎	10.91 𠄎	5.65 𠄎
130	29.36 𠄎	19.91 Z	28.29 𠄎	24.02 𠄎	27.47 𠄎	7.59 𠄎	11.04 𠄎	5.70 𠄎	28.29 𠄎	19.09 𠄎	21.33 𠄎	7.59 𠄎	15.50 𠄎	9.63 𠄎
135	5.21 𠄎	21.03 Z	1.81 𠄎	28.02 𠄎	2.28 𠄎	12.54 𠄎	15.20 𠄎	9.28 𠄎	1.81 𠄎	22.41 𠄎	25.22 𠄎	12.54 𠄎	20.08 𠄎	13.60 𠄎
140	10.74 𠄎	22.25 Z	5.32 𠄎	2.06 𠄎	7.20 𠄎	17.55 𠄎	19.39 𠄎	12.86 𠄎	5.32 𠄎	25.75 𠄎	29.17 𠄎	17.55 𠄎	24.66 𠄎	17.55 𠄎
145	16.01 𠄎	23.58 Z	8.84 𠄎	6.14 𠄎	12.24 𠄎	22.65 𠄎	23.62 𠄎	16.46 𠄎	8.84 𠄎	29.10 𠄎	3.20 𠄎	22.65 𠄎	29.23 𠄎	21.49 𠄎
150	21.03 𠄎	25.01 Z	12.35 𠄎	10.28 𠄎	17.43 𠄎	27.82 𠄎	27.86 𠄎	20.07 𠄎	12.35 𠄎	2.48 𠄎	7.33 𠄎	27.82 𠄎	3.79 𠄎	25.41 𠄎
155	25.86 𠄎	26.54 Z	15.88 𠄎	14.49 𠄎	22.79 𠄎	3.06 𠄎	2.13 𠄎	23.68 𠄎	15.88 𠄎	5.90 𠄎	11.58 𠄎	3.06 𠄎	8.32 𠄎	29.31 𠄎
160	0.51 𠄎	28.14 Z	19.41 𠄎	18.80 𠄎	28.33 𠄎	8.36 𠄎	6.41 𠄎	27.31 𠄎	19.41 𠄎	9.38 𠄎	15.98 𠄎	8.36 𠄎	12.82 𠄎	3.20 𠄎
165	5.01 𠄎	29.83 Z	22.97 𠄎	23.23 𠄎	4.07 𠄎	13.72 𠄎	10.70 𠄎	0.94 𠄎	22.97 𠄎	12.93 𠄎	20.55 𠄎	13.72 𠄎	17.29 𠄎	7.07 𠄎
170	9.39 𠄎	31.58 Z	26.55 𠄎	27.81 𠄎	10.02 𠄎	19.12 𠄎	14.99 𠄎	4.58 𠄎	26.55 𠄎	16.57 𠄎	25.33 𠄎	19.12 𠄎	21.72 𠄎	10.93 𠄎
175	13.66 𠄎	33.40 Z	0.17 𠄎	2.57 𠄎	16.21 𠄎	24.55 𠄎	19.29 𠄎	8.23 𠄎	0.17 𠄎	20.33 𠄎	0.36 𠄎	24.55 𠄎	26.11 𠄎	14.77 𠄎
180	17.85 𠄎	35.27 Z	3.84 𠄎	7.54 𠄎	22.61 𠄎	0.00 𠄎	23.58 𠄎	11.89 𠄎	3.84 𠄎	24.22 𠄎	5.68 𠄎	0.00 𠄎	0.46 𠄎	18.61 𠄎

51° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	21.98 ♄	37.18 Z	7.57 ♁	12.77 ☾	29.24 ☿	5.45 ♀	27.86 ♀	15.57 ☽	7.57 ♀	28.29 ♀	11.32 ♀	5.45 ♄	4.76 ♀	22.45 ♀
190	26.05 ♄	39.13 Z	11.38 ♁	18.31 ☾	6.07 ♀	10.88 ♀	2.14 ☽	19.27 ☽	11.38 ♀	2.58 ☿	17.34 ♀	10.88 ♄	9.01 ♀	26.29 ♀
195	0.08 ♀	41.10 Z	15.28 ♁	24.21 ☾	13.07 ♀	16.28 ♀	6.40 ☽	22.99 ☽	15.28 ♀	7.14 ☿	23.76 ♀	16.28 ♄	13.21 ♀	0.14 ♁
200	4.09 ♀	43.09 Z	19.31 ♁	0.53 ☿	20.19 ♀	21.64 ♀	10.66 ☽	26.75 ☽	19.31 ♀	12.03 ☿	0.62 ♀	21.64 ♄	17.37 ♀	4.00 ♁
205	8.07 ♀	45.08 Z	23.49 ♁	7.33 ☿	27.38 ♀	26.94 ♀	14.91 ☽	0.55 ♀	23.49 ♀	17.33 ☿	7.92 ♀	26.94 ♄	21.48 ♀	7.90 ♁
210	12.04 ♀	47.05 Z	27.85 ♁	14.65 ☿	4.57 ♀	2.18 ☽	19.15 ☽	4.40 ♀	27.85 ♀	23.15 ☿	15.66 ♀	2.18 ♀	25.55 ♀	11.83 ♁
215	16.00 ♀	49.00 Z	2.45 ☾	22.53 ☿	11.71 ♀	7.35 ☽	23.39 ☽	8.32 ♀	2.45 ☿	29.61 ☿	23.77 ♀	7.35 ♀	29.59 ♀	15.80 ♁
220	19.97 ♀	50.90 Z	7.33 ☾	0.95 ♀	18.74 ♀	12.45 ☽	27.63 ☽	12.31 ♀	7.33 ☿	6.84 ♀	2.17 ♄	12.45 ♀	3.58 ♁	19.84 ♁
225	23.93 ♀	52.75 Z	12.56 ☾	9.86 ♀	25.60 ♀	17.46 ☽	1.89 ♀	16.42 ♀	12.56 ☿	15.02 ♀	10.72 ♄	17.46 ♀	7.55 ♁	23.94 ♁
230	27.91 ♀	54.51 Z	18.22 ☾	19.12 ♀	2.25 ☽	22.41 ☽	6.17 ♀	20.65 ♀	18.22 ☿	24.29 ♀	19.29 ♄	22.41 ♀	11.49 ♁	28.12 ♁
235	1.89 ♁	56.16 Z	24.41 ☾	28.54 ♀	8.66 ☽	27.28 ☽	10.49 ♀	25.05 ♀	24.41 ☿	4.71 ♀	27.72 ♄	27.28 ♀	15.41 ♁	2.38 ☾
240	5.88 ♁	57.68 Z	1.25 ☿	7.89 ♀	14.82 ☽	2.09 ♀	14.86 ♀	29.66 ♀	1.25 ♀	16.23 ♀	5.87 ♀	2.09 ♁	19.32 ♁	6.75 ☾
245	9.88 ♁	59.04 Z	8.84 ☿	16.94 ♀	20.71 ☽	6.84 ♀	19.31 ♀	4.53 ☿	8.84 ♀	28.52 ♀	13.66 ♀	6.84 ♁	23.23 ♁	11.23 ☾
250	13.89 ♁	60.21 Z	17.32 ☿	25.52 ♀	26.33 ☽	11.53 ♀	23.86 ♀	9.74 ☿	17.32 ♀	11.06 ♄	21.03 ♀	11.53 ♁	27.17 ♁	15.84 ☾
255	17.91 ♁	61.16 Z	26.77 ☿	3.48 ☽	1.67 ♀	16.19 ♀	28.54 ♀	15.40 ☿	26.77 ♀	23.22 ♄	27.95 ♀	16.19 ♁	1.16 ☾	20.60 ☾
260	21.94 ♁	61.86 Z	7.16 ♀	10.79 ☽	6.76 ♀	20.81 ♀	3.39 ☿	21.62 ☿	7.16 ♀	4.50 ♀	4.43 ♁	20.81 ♁	5.24 ☾	25.57 ☾
265	25.97 ♁	62.29 Z	18.35 ♀	17.46 ☽	11.58 ♀	25.41 ♀	8.47 ☿	28.58 ☿	18.35 ♀	14.62 ♀	10.49 ♁	25.41 ♁	9.44 ☾	0.82 ☿
270	0.00 ☾	62.44 Z	0.00 ♀	23.56 ☽	16.17 ♀	0.00 ☿	13.83 ☿	6.44 ♀	0.00 ♄	23.56 ♀	16.17 ♁	0.00 ☾	13.83 ☾	6.44 ☿
275	4.03 ☾	62.29 Z	11.65 ♀	29.18 ☽	20.56 ♀	4.59 ☿	19.51 ☿	15.38 ♀	11.65 ♄	1.42 ♁	21.53 ♁	4.59 ☾	18.42 ☾	12.54 ☿
280	8.06 ☾	61.86 Z	22.84 ♀	4.43 ♀	24.76 ♀	9.19 ☿	25.57 ☿	25.50 ♀	22.84 ♄	8.38 ♁	26.61 ♁	9.19 ☾	23.24 ☾	19.21 ☿
285	12.09 ☾	61.16 Z	3.23 ☽	9.40 ♀	28.84 ♀	13.81 ☿	2.05 ♀	6.78 ♀	3.23 ♀	14.60 ♁	1.46 ☾	13.81 ☾	28.33 ☾	26.52 ☿
290	16.11 ☾	60.21 Z	12.68 ☽	14.16 ♀	2.83 ☿	18.47 ☿	8.97 ♀	18.94 ♀	12.68 ♀	20.26 ♁	6.14 ☾	18.47 ☾	3.67 ☿	4.48 ♀
295	20.12 ☾	59.04 Z	21.16 ☽	18.77 ♀	6.77 ☿	23.16 ☿	16.34 ♀	1.48 ♄	21.16 ♀	25.47 ♁	10.69 ☾	23.16 ☾	9.29 ☿	13.06 ♀
300	24.12 ☾	57.68 Z	28.75 ☽	23.25 ♀	10.68 ☿	27.91 ☿	24.13 ♀	13.77 ♄	28.75 ♀	0.34 ☾	15.14 ☾	27.91 ☾	15.18 ☿	22.11 ♀
305	28.11 ☾	56.16 Z	5.59 ♀	27.62 ♀	14.59 ☿	2.72 ♀	2.28 ♀	25.29 ♄	5.59 ♁	4.95 ☾	19.51 ☾	2.72 ☿	21.34 ☿	1.46 ♀
310	2.09 ☿	54.51 Z	11.78 ♀	1.88 ☿	18.51 ☿	7.59 ♀	10.71 ♀	5.71 ♀	11.78 ♁	9.35 ☾	23.83 ☾	7.59 ☿	27.75 ☿	10.88 ♀
315	6.07 ☿	52.75 Z	17.44 ♀	6.06 ☿	22.45 ☿	12.54 ♀	19.28 ♀	14.98 ♀	17.44 ♁	13.58 ☾	28.11 ☾	12.54 ☿	4.40 ♀	20.14 ♀
320	10.03 ☿	50.90 Z	22.67 ♀	10.16 ☿	26.42 ☿	17.55 ♀	27.83 ♀	23.16 ♀	22.67 ♁	17.69 ☾	2.37 ☿	17.55 ☿	11.26 ♀	29.05 ♀
325	14.00 ☿	49.00 Z	27.55 ♀	14.20 ☿	0.41 ♀	22.65 ♀	6.23 ♄	0.39 ♁	27.55 ♁	21.68 ☾	6.61 ☿	22.65 ☿	18.29 ♀	7.47 ☽
330	17.96 ☿	47.05 Z	2.15 ☿	18.17 ☿	4.45 ♀	27.82 ♀	14.34 ♄	6.85 ♁	2.15 ☾	25.60 ☾	10.85 ☿	27.82 ☿	25.43 ♀	15.35 ☽
335	21.93 ☿	45.08 Z	6.51 ☿	22.10 ☿	8.52 ♀	3.06 ♀	22.08 ♄	12.67 ♁	6.51 ☾	29.45 ☾	15.09 ☿	3.06 ♀	2.62 ♀	22.67 ☽
340	25.91 ☿	43.09 Z	10.69 ☿	26.00 ☿	12.63 ♀	8.36 ♀	29.38 ♄	17.97 ♁	10.69 ☾	3.25 ☿	19.34 ☿	8.36 ♀	9.81 ♀	29.47 ☽
345	29.92 ☿	41.10 Z	14.72 ☿	29.86 ☿	16.79 ♀	13.72 ♀	6.24 ♀	22.86 ♁	14.72 ☾	7.01 ☿	23.60 ☿	13.72 ♀	16.93 ♀	5.79 ♀
350	3.95 ♀	39.13 Z	18.62 ☿	3.71 ♀	20.99 ♀	19.12 ♀	12.66 ♀	27.42 ♁	18.62 ☾	10.73 ☿	27.86 ☿	19.12 ♀	23.93 ♀	11.69 ♀
355	8.02 ♀	37.18 Z	22.43 ☿	7.55 ♀	25.24 ♀	24.55 ♀	18.68 ♀	1.71 ☾	22.43 ☾	14.43 ☿	2.14 ♀	24.55 ♀	0.76 ☽	17.23 ♀
360	12.15 ♀	35.27 Z	26.16 ☿	11.39 ♀	29.54 ♀	0.00 ♄	24.32 ♀	5.78 ☾	26.16 ☾	18.11 ☿	6.42 ♀	0.00 ♀	7.39 ☽	22.46 ♀

52° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	12.74 𠄎	34.39 Z	26.98 𠄎	11.81 𠄎	29.60 𠄎	0.00 𠄎	25.54 𠄎	7.06 𠄎	26.98 𠄎	18.61 𠄎	6.61 𠄎	0.00 𠄎	7.69 𠄎	23.36 𠄎
5	16.96 𠄎	32.52 Z	0.60 𠄎	15.61 𠄎	3.92 𠄎	5.45 𠄎	0.80 𠄎	10.88 𠄎	0.60 𠄎	22.23 𠄎	10.88 𠄎	5.45 𠄎	14.14 𠄎	28.30 𠄎
10	21.26 𠄎	30.69 Z	4.17 𠄎	19.42 𠄎	8.28 𠄎	10.88 𠄎	5.76 𠄎	14.55 𠄎	4.17 𠄎	25.84 𠄎	15.15 𠄎	10.88 𠄎	20.36 𠄎	3.02 𠄎
15	25.66 𠄎	28.93 Z	7.70 𠄎	23.24 𠄎	12.69 𠄎	16.28 𠄎	10.49 𠄎	18.12 𠄎	7.70 𠄎	29.45 𠄎	19.41 𠄎	16.28 𠄎	26.34 𠄎	7.57 𠄎
20	0.18 𠄎	27.24 Z	11.21 𠄎	27.08 𠄎	17.13 𠄎	21.64 𠄎	15.00 𠄎	21.60 𠄎	11.21 𠄎	3.04 𠄎	23.67 𠄎	21.64 𠄎	2.10 𠄎	11.96 𠄎
25	4.85 𠄎	25.62 Z	14.70 𠄎	0.93 𠄎	21.61 𠄎	26.94 𠄎	19.34 𠄎	25.01 𠄎	14.70 𠄎	6.62 𠄎	27.92 𠄎	26.94 𠄎	7.65 𠄎	16.23 𠄎
30	9.70 𠄎	24.09 Z	18.18 𠄎	4.80 𠄎	26.12 𠄎	2.18 𠄎	23.53 𠄎	28.38 𠄎	18.18 𠄎	10.20 𠄎	2.16 𠄎	2.18 𠄎	13.02 𠄎	20.41 𠄎
35	14.74 𠄎	22.65 Z	21.65 𠄎	8.68 𠄎	0.65 𠄎	7.35 𠄎	27.60 𠄎	1.70 𠄎	21.65 𠄎	13.76 𠄎	6.38 𠄎	7.35 𠄎	18.21 𠄎	24.51 𠄎
40	20.01 𠄎	21.31 Z	25.12 𠄎	12.58 𠄎	5.19 𠄎	12.45 𠄎	1.58 𠄎	5.00 𠄎	25.12 𠄎	17.32 𠄎	10.57 𠄎	12.45 𠄎	23.25 𠄎	28.56 𠄎
45	25.55 𠄎	20.07 Z	28.59 𠄎	16.50 𠄎	9.75 𠄎	17.46 𠄎	5.48 𠄎	8.28 𠄎	28.59 𠄎	20.87 𠄎	14.73 𠄎	17.46 𠄎	28.17 𠄎	2.56 𠄎
50	1.38 𠄎	18.95 Z	2.06 𠄎	20.42 𠄎	14.31 𠄎	22.41 𠄎	9.33 𠄎	11.54 𠄎	2.06 𠄎	24.40 𠄎	18.86 𠄎	22.41 𠄎	2.98 𠄎	6.53 𠄎
55	7.54 𠄎	17.94 Z	5.54 𠄎	24.36 𠄎	18.87 𠄎	27.28 𠄎	13.13 𠄎	14.81 𠄎	5.54 𠄎	27.92 𠄎	22.95 𠄎	27.28 𠄎	7.70 𠄎	10.47 𠄎
60	14.06 𠄎	17.06 Z	9.02 𠄎	28.31 𠄎	23.42 𠄎	2.09 𠄎	16.90 𠄎	18.08 𠄎	9.02 𠄎	1.42 𠄎	27.01 𠄎	2.09 𠄎	12.35 𠄎	14.40 𠄎
65	20.94 𠄎	16.31 Z	12.50 𠄎	2.27 𠄎	27.97 𠄎	6.84 𠄎	20.65 𠄎	21.35 𠄎	12.50 𠄎	4.91 𠄎	1.03 𠄎	6.84 𠄎	16.94 𠄎	18.32 𠄎
70	28.19 𠄎	15.68 Z	16.00 𠄎	6.22 𠄎	2.50 𠄎	11.53 𠄎	24.40 𠄎	24.64 𠄎	16.00 𠄎	8.37 𠄎	5.00 𠄎	11.53 𠄎	21.49 𠄎	22.25 𠄎
75	5.78 𠄎	15.19 Z	19.49 𠄎	10.18 𠄎	7.03 𠄎	16.19 𠄎	28.14 𠄎	27.95 𠄎	19.49 𠄎	11.82 𠄎	8.94 𠄎	16.19 𠄎	26.00 𠄎	26.17 𠄎
80	13.67 𠄎	14.84 Z	22.99 𠄎	14.14 𠄎	11.54 𠄎	20.81 𠄎	1.90 𠄎	1.27 𠄎	22.99 𠄎	15.25 𠄎	12.83 𠄎	20.81 𠄎	0.50 𠄎	0.09 𠄎
85	21.78 𠄎	14.63 Z	26.50 𠄎	18.09 𠄎	16.03 𠄎	25.41 𠄎	5.68 𠄎	4.61 𠄎	26.50 𠄎	18.65 𠄎	16.70 𠄎	25.41 𠄎	4.99 𠄎	4.03 𠄎
90	0.00 𠄎	14.56 Z	0.00 𠄎	22.03 𠄎	20.52 𠄎	0.00 𠄎	9.48 𠄎	7.97 𠄎	0.00 𠄎	22.03 𠄎	20.52 𠄎	0.00 𠄎	9.48 𠄎	7.97 𠄎
95	8.22 𠄎	14.63 Z	3.50 𠄎	25.97 𠄎	25.01 𠄎	4.59 𠄎	13.30 𠄎	11.35 𠄎	3.50 𠄎	25.39 𠄎	24.32 𠄎	4.59 𠄎	13.97 𠄎	11.91 𠄎
100	16.33 𠄎	14.84 Z	7.01 𠄎	29.91 𠄎	29.50 𠄎	9.19 𠄎	17.17 𠄎	14.75 𠄎	7.01 𠄎	28.73 𠄎	28.10 𠄎	9.19 𠄎	18.46 𠄎	15.86 𠄎
105	24.22 𠄎	15.19 Z	10.51 𠄎	3.83 𠄎	4.00 𠄎	13.81 𠄎	21.06 𠄎	18.18 𠄎	10.51 𠄎	2.05 𠄎	1.86 𠄎	13.81 𠄎	22.97 𠄎	19.82 𠄎
110	1.81 𠄎	15.68 Z	14.00 𠄎	7.75 𠄎	8.51 𠄎	18.47 𠄎	25.00 𠄎	21.63 𠄎	14.00 𠄎	5.36 𠄎	5.60 𠄎	18.47 𠄎	27.50 𠄎	23.78 𠄎
115	9.06 𠄎	16.31 Z	17.50 𠄎	11.68 𠄎	13.06 𠄎	23.16 𠄎	28.97 𠄎	25.09 𠄎	17.50 𠄎	8.65 𠄎	9.35 𠄎	23.16 𠄎	2.03 𠄎	27.73 𠄎
120	15.94 𠄎	17.06 Z	20.98 𠄎	15.60 𠄎	17.65 𠄎	27.91 𠄎	2.99 𠄎	28.58 𠄎	20.98 𠄎	11.92 𠄎	13.10 𠄎	27.91 𠄎	6.58 𠄎	1.69 𠄎
125	22.46 𠄎	17.94 Z	24.46 𠄎	19.53 𠄎	22.30 𠄎	2.72 𠄎	7.05 𠄎	2.08 𠄎	24.46 𠄎	15.19 𠄎	16.87 𠄎	2.72 𠄎	11.13 𠄎	5.64 𠄎
130	28.62 𠄎	18.95 Z	27.94 𠄎	23.47 𠄎	27.02 𠄎	7.59 𠄎	11.14 𠄎	5.60 𠄎	27.94 𠄎	18.46 𠄎	20.67 𠄎	7.59 𠄎	15.69 𠄎	9.58 𠄎
135	4.45 𠄎	20.07 Z	1.41 𠄎	27.44 𠄎	1.83 𠄎	12.54 𠄎	15.27 𠄎	9.13 𠄎	1.41 𠄎	21.72 𠄎	24.52 𠄎	12.54 𠄎	20.25 𠄎	13.50 𠄎
140	9.99 𠄎	21.31 Z	4.88 𠄎	1.44 𠄎	6.75 𠄎	17.55 𠄎	19.43 𠄎	12.68 𠄎	4.88 𠄎	25.00 𠄎	28.42 𠄎	17.55 𠄎	24.81 𠄎	17.42 𠄎
145	15.26 𠄎	22.65 Z	8.35 𠄎	5.49 𠄎	11.79 𠄎	22.65 𠄎	23.62 𠄎	16.24 𠄎	8.35 𠄎	28.30 𠄎	2.40 𠄎	22.65 𠄎	29.35 𠄎	21.32 𠄎
150	20.30 𠄎	24.09 Z	11.82 𠄎	9.59 𠄎	16.98 𠄎	27.82 𠄎	27.84 𠄎	19.80 𠄎	11.82 𠄎	1.62 𠄎	6.47 𠄎	27.82 𠄎	3.88 𠄎	25.20 𠄎
155	25.15 𠄎	25.62 Z	15.30 𠄎	13.77 𠄎	22.35 𠄎	3.06 𠄎	2.08 𠄎	23.38 𠄎	15.30 𠄎	4.99 𠄎	10.66 𠄎	3.06 𠄎	8.39 𠄎	29.07 𠄎
160	29.82 𠄎	27.24 Z	18.79 𠄎	18.04 𠄎	27.90 𠄎	8.36 𠄎	6.33 𠄎	26.96 𠄎	18.79 𠄎	8.40 𠄎	15.00 𠄎	8.36 𠄎	12.87 𠄎	2.92 𠄎
165	4.34 𠄎	28.93 Z	22.30 𠄎	22.43 𠄎	3.66 𠄎	13.72 𠄎	10.59 𠄎	0.55 𠄎	22.30 𠄎	11.88 𠄎	19.51 𠄎	13.72 𠄎	17.31 𠄎	6.76 𠄎
170	8.74 𠄎	30.69 Z	25.83 𠄎	26.98 𠄎	9.64 𠄎	19.12 𠄎	14.85 𠄎	4.16 𠄎	25.83 𠄎	15.45 𠄎	24.24 𠄎	19.12 𠄎	21.72 𠄎	10.58 𠄎
175	13.04 𠄎	32.52 Z	29.40 𠄎	1.70 𠄎	15.86 𠄎	24.55 𠄎	19.12 𠄎	7.77 𠄎	29.40 𠄎	19.12 𠄎	29.20 𠄎	24.55 𠄎	26.08 𠄎	14.39 𠄎
180	17.26 𠄎	34.39 Z	3.02 𠄎	6.64 𠄎	22.31 𠄎	0.00 𠄎	23.39 𠄎	11.39 𠄎	3.02 𠄎	22.94 𠄎	4.46 𠄎	0.00 𠄎	0.40 𠄎	18.19 𠄎

52° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	21.42 ♁	36.31 Z	6.69 ♀	11.84 ☾	28.99 ☿	5.45 ♀	27.64 ♀	15.03 ☽	6.69 II	26.92 II	10.05 ♀	5.45 ♁	4.67 III	21.99 III
190	25.52 ♁	38.26 Z	10.44 ♀	17.36 ☾	5.88 ♀	10.88 ♀	1.89 ☽	18.69 ☽	10.44 II	1.11 ☿	16.02 ♀	10.88 ♁	8.90 III	25.80 III
195	29.58 ♁	40.24 Z	14.29 ♀	23.26 ☾	12.95 ♀	16.28 ♀	6.13 ☽	22.38 ☽	14.29 II	5.56 ☿	22.42 ♀	16.28 ♁	13.08 III	29.61 III
200	3.61 III	42.23 Z	18.26 ♀	29.59 ☾	20.15 ♀	21.64 ♀	10.36 ☽	26.09 ☽	18.26 II	10.34 ☿	29.27 ♀	21.64 ♁	17.22 III	3.45 ♀
205	7.62 III	44.21 Z	22.37 ♀	6.43 ☿	27.42 ♀	26.94 ♀	14.59 ☽	29.85 ☽	22.37 II	15.54 ☿	6.61 III	26.94 ♁	21.31 III	7.31 ♀
210	11.62 III	46.19 Z	26.67 ♀	13.83 ☿	4.70 ♀	2.18 ☽	18.81 ☽	3.66 II	26.67 II	21.24 ☿	14.42 III	2.18 III	25.36 III	11.20 ♀
215	15.62 III	48.13 Z	1.20 ☾	21.83 ☿	11.92 ♀	7.35 ☽	23.02 ☽	7.53 II	1.20 ☿	27.59 ☿	22.66 III	7.35 III	29.37 III	15.15 ♀
220	19.61 III	50.03 Z	6.01 ☾	0.42 ♀	19.02 ♀	12.45 ☽	27.25 ☽	11.49 II	6.01 ☿	4.75 ♀	1.22 ♁	12.45 III	3.35 ♀	19.15 ♀
225	23.61 III	51.86 Z	11.17 ☾	9.55 ♀	25.95 ♀	17.46 ☽	1.48 II	15.54 II	11.17 ☿	12.90 ♀	9.98 ♁	17.46 III	7.30 ♀	23.22 ♀
230	27.62 III	53.61 Z	16.77 ☾	19.08 ♀	2.66 ☽	22.41 ☽	5.74 II	19.72 II	16.77 ☿	22.21 ♀	18.77 ♁	22.41 III	11.21 ♀	27.37 ♀
235	1.63 ♀	55.25 Z	22.91 ☾	28.79 ♀	9.12 ☽	27.28 ☽	10.04 II	24.07 II	22.91 ☿	2.82 III	27.43 ♁	27.28 III	15.11 ♀	1.60 ☾
240	5.66 ♀	56.75 Z	29.72 ☾	8.43 ♀	15.32 ☽	2.09 II	14.39 II	28.62 II	29.72 ☿	14.69 III	5.80 III	2.09 ♀	18.99 ♀	5.93 ☾
245	9.70 ♀	58.10 Z	7.34 ☿	17.74 ♀	21.25 ☽	6.84 II	18.81 II	3.43 ☿	7.34 ♀	27.51 III	13.78 III	6.84 ♀	22.87 ♀	10.37 ☾
250	13.74 ♀	59.25 Z	15.91 ☿	26.51 ♀	26.89 ☽	11.53 II	23.33 II	8.58 ☿	15.91 ♀	10.66 ♁	21.30 III	11.53 ♀	26.76 ♀	14.93 ☾
255	17.80 ♀	60.18 Z	25.54 ☿	4.61 ☽	2.25 II	16.19 II	27.99 II	14.19 ☿	25.54 ♀	23.41 ♁	28.34 III	16.19 ♀	0.71 ☾	19.64 ☾
260	21.86 ♀	60.87 Z	6.24 ♀	11.99 ☽	7.34 II	20.81 II	2.83 ☿	20.38 ☿	6.24 III	5.17 III	4.91 ♀	20.81 ♀	4.75 ☾	24.54 ☾
265	25.93 ♀	61.30 Z	17.85 ♀	18.67 ☽	12.16 II	25.41 II	7.90 ☿	27.34 ☿	17.85 III	15.61 III	11.02 ♀	25.41 ♀	8.92 ☾	29.72 ☾
270	0.00 ☾	61.44 Z	0.00 ♀	24.73 ☽	16.73 II	0.00 ☿	13.27 ☿	5.27 ♀	0.00 ♁	24.73 III	16.73 ♀	0.00 ☾	13.27 ☾	5.27 ☿
275	4.07 ☾	61.30 Z	12.15 ♀	0.28 II	21.08 II	4.59 ☿	18.98 ☿	14.39 ♀	12.15 ♁	2.66 ♀	22.10 ♀	4.59 ☾	17.84 ☾	11.33 ☿
280	8.14 ☾	60.87 Z	23.76 ♀	5.46 II	25.25 II	9.19 ☿	25.09 ☿	24.83 ♀	23.76 ♁	9.62 ♀	27.17 ♀	9.19 ☾	22.66 ☾	18.01 ☿
285	12.20 ☾	60.18 Z	4.46 ☽	10.36 II	29.29 II	13.81 ☿	1.66 ♀	6.59 III	4.46 III	15.81 ♀	2.01 ☾	13.81 ☾	27.75 ☾	25.39 ☿
290	16.26 ☾	59.25 Z	14.09 ☽	15.07 II	3.24 ☿	18.47 ☿	8.70 ♀	19.34 III	14.09 III	21.42 ♀	6.67 ☾	18.47 ☾	3.11 ☿	3.49 ♀
295	20.30 ☾	58.10 Z	22.66 ☽	19.63 II	7.13 ☿	23.16 ☿	16.22 ♀	2.49 ♁	22.66 III	26.57 ♀	11.19 ☾	23.16 ☾	8.75 ☿	12.26 ♀
300	24.34 ☾	56.75 Z	0.28 II	24.07 II	11.01 ☿	27.91 ☿	24.20 ♀	15.31 ♁	0.28 ♀	1.38 ☾	15.61 ☾	27.91 ☾	14.68 ☿	21.57 ♀
305	28.37 ☾	55.25 Z	7.09 II	28.40 II	14.89 ☿	2.72 ♀	2.57 III	27.18 ♁	7.09 ♀	5.93 ☾	19.96 ☾	2.72 ☿	20.88 ☿	1.21 ♀
310	2.38 ☿	53.61 Z	13.23 II	2.63 ☿	18.79 ☿	7.59 ♀	11.23 III	7.79 III	13.23 ♀	10.28 ☾	24.26 ☾	7.59 ☿	27.34 ☿	10.92 ♀
315	6.39 ☿	51.86 Z	18.83 II	6.78 ☿	22.70 ☿	12.54 ♀	20.02 III	17.10 III	18.83 ♀	14.46 ☾	28.52 ☾	12.54 ☿	4.05 ♀	20.45 ♀
320	10.39 ☿	50.03 Z	23.99 II	10.85 ☿	26.65 ☿	17.55 ♀	28.78 III	25.25 III	23.99 ♀	18.51 ☾	2.75 ☿	17.55 ☿	10.98 ♀	29.58 ♀
325	14.38 ☿	48.13 Z	28.80 II	14.85 ☿	0.63 ♀	22.65 ♀	7.34 ♁	2.41 ♀	28.80 ♀	22.47 ☾	6.98 ☿	22.65 ☿	18.08 ♀	8.17 ☽
330	18.38 ☿	46.19 Z	3.33 ☿	18.80 ☿	4.64 ♀	27.82 ♀	15.58 ♁	8.76 ♀	3.33 ☾	26.34 ☾	11.19 ☿	27.82 ☿	25.30 ♀	16.17 ☽
335	22.38 ☿	44.21 Z	7.63 ☿	22.69 ☿	8.69 ♀	3.06 III	23.39 ♁	14.46 ♀	7.63 ☾	0.15 ☿	15.41 ☿	3.06 ♀	2.58 ♀	23.57 ☽
340	26.39 ☿	42.23 Z	11.74 ☿	26.55 ☿	12.78 ♀	8.36 III	0.73 III	19.66 ♀	11.74 ☾	3.91 ☿	19.64 ☿	8.36 ♀	9.85 ♀	0.41 II
345	0.42 ♀	40.24 Z	15.71 ☿	0.39 ♀	16.92 ♀	13.72 III	7.58 III	24.44 ♀	15.71 ☾	7.62 ☿	23.87 ☿	13.72 ♀	17.05 ♀	6.74 II
350	4.48 ♀	38.26 Z	19.56 ☿	4.20 ♀	21.10 ♀	19.12 III	13.98 III	28.89 ♀	19.56 ☾	11.31 ☿	28.11 ☿	19.12 ♀	24.12 ♀	12.64 II
355	8.58 ♀	36.31 Z	23.31 ☿	8.01 ♀	25.33 ♀	24.55 III	19.95 III	3.08 ☾	23.31 ☾	14.97 ☿	2.36 ♀	24.55 ♀	1.01 ☽	18.16 II
360	12.74 ♀	34.39 Z	26.98 ☿	11.81 ♀	29.60 ♀	0.00 ♁	25.54 III	7.06 ☾	26.98 ☾	18.61 ☿	6.61 ♀	0.00 ♀	7.69 ☽	23.36 II

53° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	13.31 𐄀	33.51 Z	27.83 𐄀	12.24 𐄀	29.66 𐄀	0.00 𐄀	26.85 𐄀	8.40 𐄀	27.83 𐄀	19.12 𐄀	6.81 𐄀	0.00 𐄀	8.02 𐄀	24.32 𐄀
5	17.56 𐄀	31.63 Z	1.39 𐄀	16.01 𐄀	3.96 𐄀	5.45 𐄀	2.04 𐄀	12.12 𐄀	1.39 𐄀	22.71 𐄀	11.05 𐄀	5.45 𐄀	14.52 𐄀	29.22 𐄀
10	21.88 𐄀	29.80 Z	4.91 𐄀	19.78 𐄀	8.30 𐄀	10.88 𐄀	6.93 𐄀	15.71 𐄀	4.91 𐄀	26.28 𐄀	15.29 𐄀	10.88 𐄀	20.77 𐄀	3.90 𐄀
15	26.31 𐄀	28.03 Z	8.39 𐄀	23.57 𐄀	12.68 𐄀	16.28 𐄀	11.58 𐄀	19.20 𐄀	8.39 𐄀	29.84 𐄀	19.52 𐄀	16.28 𐄀	26.78 𐄀	8.40 𐄀
20	0.86 𐄀	26.33 Z	11.85 𐄀	27.37 𐄀	17.09 𐄀	21.64 𐄀	16.03 𐄀	22.61 𐄀	11.85 𐄀	3.39 𐄀	23.75 𐄀	21.64 𐄀	2.56 𐄀	12.75 𐄀
25	5.55 𐄀	24.70 Z	15.29 𐄀	1.18 𐄀	21.54 𐄀	26.94 𐄀	20.30 𐄀	25.96 𐄀	15.29 𐄀	6.93 𐄀	27.97 𐄀	26.94 𐄀	8.12 𐄀	16.99 𐄀
30	10.40 𐄀	23.16 Z	18.72 𐄀	5.01 𐄀	26.02 𐄀	2.18 𐄀	24.43 𐄀	29.26 𐄀	18.72 𐄀	10.47 𐄀	2.18 𐄀	2.18 𐄀	13.49 𐄀	21.13 𐄀
35	15.46 𐄀	21.71 Z	22.15 𐄀	8.85 𐄀	0.52 𐄀	7.35 𐄀	28.44 𐄀	2.52 𐄀	22.15 𐄀	13.99 𐄀	6.36 𐄀	7.35 𐄀	18.69 𐄀	25.19 𐄀
40	20.74 𐄀	20.36 Z	25.57 𐄀	12.71 𐄀	5.04 𐄀	12.45 𐄀	2.37 𐄀	5.76 𐄀	25.57 𐄀	17.51 𐄀	10.52 𐄀	12.45 𐄀	23.73 𐄀	29.20 𐄀
45	26.27 𐄀	19.12 Z	29.00 𐄀	16.59 𐄀	9.57 𐄀	17.46 𐄀	6.22 𐄀	8.98 𐄀	29.00 𐄀	21.01 𐄀	14.66 𐄀	17.46 𐄀	28.64 𐄀	3.16 𐄀
50	2.09 𐄀	17.99 Z	2.42 𐄀	20.48 𐄀	14.11 𐄀	22.41 𐄀	10.01 𐄀	12.20 𐄀	2.42 𐄀	24.50 𐄀	18.75 𐄀	22.41 𐄀	3.45 𐄀	7.09 𐄀
55	8.23 𐄀	16.97 Z	5.85 𐄀	24.38 𐄀	18.64 𐄀	27.28 𐄀	13.76 𐄀	15.41 𐄀	5.85 𐄀	27.98 𐄀	22.82 𐄀	27.28 𐄀	8.16 𐄀	10.99 𐄀
60	14.70 𐄀	16.08 Z	9.29 𐄀	28.29 𐄀	23.18 𐄀	2.09 𐄀	17.49 𐄀	18.63 𐄀	9.29 𐄀	1.44 𐄀	26.84 𐄀	2.09 𐄀	12.80 𐄀	14.89 𐄀
65	21.52 𐄀	15.32 Z	12.73 𐄀	2.20 𐄀	27.70 𐄀	6.84 𐄀	21.20 𐄀	21.85 𐄀	12.73 𐄀	4.88 𐄀	0.82 𐄀	6.84 𐄀	17.38 𐄀	18.77 𐄀
70	28.69 𐄀	14.69 Z	16.18 𐄀	6.12 𐄀	2.21 𐄀	11.53 𐄀	24.91 𐄀	25.09 𐄀	16.18 𐄀	8.30 𐄀	4.77 𐄀	11.53 𐄀	21.91 𐄀	22.66 𐄀
75	6.19 𐄀	14.20 Z	19.63 𐄀	10.04 𐄀	6.71 𐄀	16.19 𐄀	28.62 𐄀	28.35 𐄀	19.63 𐄀	11.70 𐄀	8.67 𐄀	16.19 𐄀	26.42 𐄀	26.54 𐄀
80	13.96 𐄀	13.85 Z	23.08 𐄀	13.95 𐄀	11.20 𐄀	20.81 𐄀	2.34 𐄀	1.62 𐄀	23.08 𐄀	15.08 𐄀	12.53 𐄀	20.81 𐄀	0.90 𐄀	0.43 𐄀
85	21.92 𐄀	13.63 Z	26.54 𐄀	17.87 𐄀	15.68 𐄀	25.41 𐄀	6.08 𐄀	4.91 𐄀	26.54 𐄀	18.44 𐄀	16.36 𐄀	25.41 𐄀	5.37 𐄀	4.32 𐄀
90	0.00 𐄀	13.56 Z	0.00 𐄀	21.77 𐄀	20.16 𐄀	0.00 𐄀	9.84 𐄀	8.23 𐄀	0.00 𐄀	21.77 𐄀	20.16 𐄀	0.00 𐄀	9.84 𐄀	8.23 𐄀
95	8.08 𐄀	13.63 Z	3.46 𐄀	25.68 𐄀	24.63 𐄀	4.59 𐄀	13.64 𐄀	11.56 𐄀	3.46 𐄀	25.09 𐄀	23.92 𐄀	4.59 𐄀	14.32 𐄀	12.13 𐄀
100	16.04 𐄀	13.85 Z	6.92 𐄀	29.57 𐄀	29.10 𐄀	9.19 𐄀	17.47 𐄀	14.92 𐄀	6.92 𐄀	28.38 𐄀	27.66 𐄀	9.19 𐄀	18.80 𐄀	16.05 𐄀
105	23.81 𐄀	14.20 Z	10.37 𐄀	3.46 𐄀	3.58 𐄀	13.81 𐄀	21.33 𐄀	18.30 𐄀	10.37 𐄀	1.65 𐄀	1.38 𐄀	13.81 𐄀	23.29 𐄀	19.96 𐄀
110	1.31 𐄀	14.69 Z	13.82 𐄀	7.34 𐄀	8.09 𐄀	18.47 𐄀	25.23 𐄀	21.70 𐄀	13.82 𐄀	4.91 𐄀	5.09 𐄀	18.47 𐄀	27.79 𐄀	23.88 𐄀
115	8.48 𐄀	15.32 Z	17.27 𐄀	11.23 𐄀	12.62 𐄀	23.16 𐄀	29.18 𐄀	25.12 𐄀	17.27 𐄀	8.15 𐄀	8.80 𐄀	23.16 𐄀	2.30 𐄀	27.80 𐄀
120	15.30 𐄀	16.08 Z	20.71 𐄀	15.11 𐄀	17.20 𐄀	27.91 𐄀	3.16 𐄀	28.56 𐄀	20.71 𐄀	11.37 𐄀	12.51 𐄀	27.91 𐄀	6.82 𐄀	1.71 𐄀
125	21.77 𐄀	16.97 Z	24.15 𐄀	19.01 𐄀	21.84 𐄀	2.72 𐄀	7.18 𐄀	2.02 𐄀	24.15 𐄀	14.59 𐄀	16.24 𐄀	2.72 𐄀	11.36 𐄀	5.62 𐄀
130	27.91 𐄀	17.99 Z	27.58 𐄀	22.91 𐄀	26.55 𐄀	7.59 𐄀	11.25 𐄀	5.50 𐄀	27.58 𐄀	17.80 𐄀	19.99 𐄀	7.59 𐄀	15.89 𐄀	9.52 𐄀
135	3.73 𐄀	19.12 Z	1.00 𐄀	26.84 𐄀	1.36 𐄀	12.54 𐄀	15.34 𐄀	8.99 𐄀	1.00 𐄀	21.02 𐄀	23.78 𐄀	12.54 𐄀	20.43 𐄀	13.41 𐄀
140	9.26 𐄀	20.36 Z	4.43 𐄀	0.80 𐄀	6.27 𐄀	17.55 𐄀	19.48 𐄀	12.49 𐄀	4.43 𐄀	24.24 𐄀	27.63 𐄀	17.55 𐄀	24.96 𐄀	17.29 𐄀
145	14.54 𐄀	21.71 Z	7.85 𐄀	4.81 𐄀	11.31 𐄀	22.65 𐄀	23.64 𐄀	16.01 𐄀	7.85 𐄀	27.48 𐄀	1.56 𐄀	22.65 𐄀	29.48 𐄀	21.15 𐄀
150	19.60 𐄀	23.16 Z	11.28 𐄀	8.87 𐄀	16.51 𐄀	27.82 𐄀	27.82 𐄀	19.53 𐄀	11.28 𐄀	0.74 𐄀	5.57 𐄀	27.82 𐄀	3.98 𐄀	24.99 𐄀
155	24.45 𐄀	24.70 Z	14.71 𐄀	13.01 𐄀	21.88 𐄀	3.06 𐄀	2.03 𐄀	23.07 𐄀	14.71 𐄀	4.04 𐄀	9.70 𐄀	3.06 𐄀	8.46 𐄀	28.82 𐄀
160	29.14 𐄀	26.33 Z	18.15 𐄀	17.25 𐄀	27.44 𐄀	8.36 𐄀	6.25 𐄀	26.61 𐄀	18.15 𐄀	7.39 𐄀	13.97 𐄀	8.36 𐄀	12.91 𐄀	2.63 𐄀
165	3.69 𐄀	28.03 Z	21.61 𐄀	21.60 𐄀	3.22 𐄀	13.72 𐄀	10.48 𐄀	0.16 𐄀	21.61 𐄀	10.80 𐄀	18.42 𐄀	13.72 𐄀	17.32 𐄀	6.43 𐄀
170	8.12 𐄀	29.80 Z	25.09 𐄀	26.10 𐄀	9.23 𐄀	19.12 𐄀	14.71 𐄀	3.72 𐄀	25.09 𐄀	14.29 𐄀	23.07 𐄀	19.12 𐄀	21.70 𐄀	10.22 𐄀
175	12.44 𐄀	31.63 Z	28.61 𐄀	0.78 𐄀	15.48 𐄀	24.55 𐄀	18.95 𐄀	7.29 𐄀	28.61 𐄀	17.88 𐄀	27.96 𐄀	24.55 𐄀	26.04 𐄀	13.99 𐄀
180	16.69 𐄀	33.51 Z	2.17 𐄀	5.68 𐄀	21.98 𐄀	0.00 𐄀	23.19 𐄀	10.88 𐄀	2.17 𐄀	21.60 𐄀	3.15 𐄀	0.00 𐄀	0.34 𐄀	17.76 𐄀

53° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	20.86 ㊄	35.44 Z	5.79 ㄥ	10.86 ㄥ	28.71 ㄣ	5.45 ㄥ	27.42 ㄥ	14.48 ㄥ	5.79 ㄢ	25.49 ㄢ	8.67 ㄥ	5.45 ㊄	4.59 ㄢ	21.52 ㄢ
190	24.99 ㊄	37.40 Z	9.48 ㄥ	16.35 ㄥ	5.67 ㄥ	10.88 ㄥ	1.64 ㄥ	18.10 ㄥ	9.48 ㄢ	29.57 ㄢ	14.59 ㄥ	10.88 ㊄	8.79 ㄢ	25.29 ㄢ
195	29.08 ㊄	39.37 Z	13.27 ㄥ	22.24 ㄥ	12.81 ㄥ	16.28 ㄥ	5.86 ㄥ	21.74 ㄥ	13.27 ㄢ	3.92 ㄣ	20.94 ㄥ	16.28 ㊄	12.95 ㄢ	29.07 ㄢ
200	3.14 ㄢ	41.36 Z	17.17 ㄥ	28.58 ㄥ	20.09 ㄥ	21.64 ㄥ	10.06 ㄥ	25.42 ㄥ	17.17 ㄢ	8.58 ㄣ	27.79 ㄥ	21.64 ㊄	17.06 ㄢ	2.87 ㄥ
205	7.18 ㄢ	43.35 Z	21.21 ㄥ	5.45 ㄣ	27.45 ㄥ	26.94 ㄥ	14.26 ㄥ	29.14 ㄥ	21.21 ㄢ	13.64 ㄣ	5.15 ㄢ	26.94 ㊄	21.13 ㄢ	6.69 ㄥ
210	11.21 ㄢ	45.32 Z	25.44 ㄥ	12.92 ㄣ	4.82 ㄥ	2.18 ㄥ	18.46 ㄥ	2.90 ㄢ	25.44 ㄢ	19.22 ㄣ	13.03 ㄢ	2.18 ㄢ	25.16 ㄢ	10.55 ㄥ
215	15.24 ㄢ	47.25 Z	29.89 ㄥ	21.04 ㄣ	12.12 ㄥ	7.35 ㄥ	22.65 ㄥ	6.73 ㄢ	29.89 ㄢ	25.44 ㄣ	21.39 ㄢ	7.35 ㄢ	29.16 ㄢ	14.46 ㄥ
220	19.26 ㄢ	49.14 Z	4.62 ㄥ	29.82 ㄣ	19.31 ㄥ	12.45 ㄥ	26.85 ㄥ	10.63 ㄢ	4.62 ㄣ	2.48 ㄥ	0.13 ㊄	12.45 ㄢ	3.11 ㄥ	18.43 ㄥ
225	23.30 ㄢ	50.97 Z	9.70 ㄥ	9.20 ㄥ	26.31 ㄥ	17.46 ㄥ	1.06 ㄢ	14.64 ㄢ	9.70 ㄣ	10.56 ㄥ	9.11 ㊄	17.46 ㄢ	7.03 ㄥ	22.46 ㄥ
230	27.33 ㄢ	52.70 Z	15.23 ㄥ	19.02 ㄥ	3.08 ㄥ	22.41 ㄥ	5.30 ㄢ	18.77 ㄢ	15.23 ㄣ	19.89 ㄥ	18.15 ㊄	22.41 ㄢ	10.93 ㄥ	26.58 ㄥ
235	1.38 ㄥ	54.33 Z	21.31 ㄥ	29.05 ㄥ	9.60 ㄥ	27.28 ㄥ	9.57 ㄢ	23.05 ㄢ	21.31 ㄣ	0.66 ㄢ	27.07 ㊄	27.28 ㄢ	14.80 ㄥ	0.78 ㄥ
240	5.44 ㄥ	55.82 Z	28.07 ㄥ	9.01 ㄥ	15.85 ㄥ	2.09 ㄢ	13.90 ㄢ	27.54 ㄢ	28.07 ㄣ	12.90 ㄢ	5.68 ㄢ	2.09 ㄥ	18.65 ㄥ	5.08 ㄥ
245	9.52 ㄥ	57.15 Z	5.70 ㄣ	18.60 ㄥ	21.81 ㄥ	6.84 ㄢ	18.30 ㄢ	2.29 ㄣ	5.70 ㄥ	26.28 ㄢ	13.87 ㄢ	6.84 ㄥ	22.49 ㄥ	9.47 ㄥ
250	13.60 ㄥ	58.29 Z	14.34 ㄣ	27.59 ㄥ	27.48 ㄥ	11.53 ㄢ	22.80 ㄢ	7.37 ㄣ	14.34 ㄥ	10.14 ㊄	21.57 ㄢ	11.53 ㄥ	26.35 ㄥ	13.98 ㄥ
255	17.69 ㄥ	59.21 Z	24.16 ㄣ	5.84 ㄥ	2.86 ㄢ	16.19 ㄢ	27.43 ㄢ	12.91 ㄣ	24.16 ㄥ	23.58 ㊄	28.75 ㄢ	16.19 ㄥ	0.25 ㄥ	18.62 ㄥ
260	21.79 ㄥ	59.88 Z	5.19 ㄥ	13.29 ㄥ	7.96 ㄢ	20.81 ㄢ	2.25 ㄣ	19.06 ㄣ	5.19 ㄢ	5.88 ㄢ	5.41 ㄥ	20.81 ㄥ	4.24 ㄥ	23.45 ㄥ
265	25.89 ㄥ	60.30 Z	17.28 ㄥ	19.97 ㄥ	12.77 ㄢ	25.41 ㄢ	7.31 ㄣ	26.01 ㄣ	17.28 ㄢ	16.68 ㄢ	11.58 ㄥ	25.41 ㄥ	8.36 ㄥ	28.53 ㄥ
270	0.00 ㄥ	60.44 Z	0.00 ㄥ	25.99 ㄥ	17.32 ㄢ	0.00 ㄣ	12.68 ㄣ	4.01 ㄥ	0.00 ㊄	25.99 ㄢ	17.32 ㄥ	0.00 ㄥ	12.68 ㄥ	4.01 ㄣ
275	4.11 ㄥ	60.30 Z	12.72 ㄥ	1.47 ㄢ	21.64 ㄢ	4.59 ㄣ	18.42 ㄣ	13.32 ㄥ	12.72 ㊄	3.99 ㄥ	22.69 ㄥ	4.59 ㄥ	17.23 ㄥ	10.03 ㄣ
280	8.21 ㄥ	59.88 Z	24.81 ㄥ	6.55 ㄢ	25.76 ㄢ	9.19 ㄣ	24.59 ㄣ	24.12 ㄥ	24.81 ㊄	10.94 ㄥ	27.75 ㄥ	9.19 ㄥ	22.04 ㄥ	16.71 ㄣ
285	12.31 ㄥ	59.21 Z	5.84 ㄥ	11.38 ㄢ	29.75 ㄢ	13.81 ㄣ	1.25 ㄥ	6.42 ㄢ	5.84 ㄢ	17.09 ㄥ	2.57 ㄥ	13.81 ㄥ	27.14 ㄥ	24.16 ㄣ
290	16.40 ㄥ	58.29 Z	15.66 ㄥ	16.02 ㄢ	3.65 ㄣ	18.47 ㄣ	8.43 ㄥ	19.86 ㄢ	15.66 ㄢ	22.63 ㄥ	7.20 ㄥ	18.47 ㄥ	2.52 ㄣ	2.41 ㄥ
295	20.48 ㄥ	57.15 Z	24.30 ㄥ	20.53 ㄢ	7.51 ㄣ	23.16 ㄣ	16.13 ㄥ	3.72 ㊄	24.30 ㄢ	27.71 ㄥ	11.70 ㄥ	23.16 ㄥ	8.19 ㄣ	11.40 ㄥ
300	24.56 ㄥ	55.82 Z	1.93 ㄢ	24.92 ㄢ	11.35 ㄣ	27.91 ㄣ	24.32 ㄥ	17.10 ㊄	1.93 ㄥ	2.46 ㄥ	16.10 ㄥ	27.91 ㄥ	14.15 ㄣ	20.99 ㄥ
305	28.62 ㄥ	54.33 Z	8.69 ㄢ	29.22 ㄢ	15.20 ㄣ	2.72 ㄥ	2.93 ㄢ	29.34 ㊄	8.69 ㄥ	6.95 ㄥ	20.43 ㄥ	2.72 ㄣ	20.40 ㄣ	0.95 ㄥ
310	2.67 ㄣ	52.70 Z	14.77 ㄢ	3.42 ㄣ	19.07 ㄣ	7.59 ㄥ	11.85 ㄢ	10.11 ㄢ	14.77 ㄥ	11.23 ㄥ	24.70 ㄥ	7.59 ㄣ	26.92 ㄣ	10.98 ㄥ
315	6.70 ㄣ	50.97 Z	20.30 ㄢ	7.54 ㄣ	22.97 ㄣ	12.54 ㄥ	20.89 ㄢ	19.44 ㄢ	20.30 ㄥ	15.36 ㄥ	28.94 ㄥ	12.54 ㄣ	3.69 ㄥ	20.80 ㄥ
320	10.74 ㄣ	49.14 Z	25.38 ㄢ	11.57 ㄣ	26.89 ㄣ	17.55 ㄥ	29.87 ㄢ	27.52 ㄢ	25.38 ㄥ	19.37 ㄥ	3.15 ㄣ	17.55 ㄣ	10.69 ㄥ	0.18 ㄥ
325	14.76 ㄣ	47.25 Z	0.11 ㄣ	15.54 ㄣ	0.84 ㄥ	22.65 ㄥ	8.61 ㊄	4.56 ㄥ	0.11 ㄥ	23.27 ㄥ	7.35 ㄣ	22.65 ㄣ	17.88 ㄥ	8.96 ㄥ
330	18.79 ㄣ	45.32 Z	4.56 ㄣ	19.45 ㄣ	4.84 ㄥ	27.82 ㄥ	16.97 ㊄	10.78 ㄥ	4.56 ㄥ	27.10 ㄥ	11.54 ㄣ	27.82 ㄣ	25.18 ㄥ	17.08 ㄥ
335	22.82 ㄣ	43.35 Z	8.79 ㄣ	23.31 ㄣ	8.87 ㄥ	3.06 ㄢ	24.85 ㊄	16.36 ㄥ	8.79 ㄥ	0.86 ㄣ	15.74 ㄣ	3.06 ㄥ	2.55 ㄥ	24.55 ㄥ
340	26.86 ㄣ	41.36 Z	12.83 ㄣ	27.13 ㄣ	12.94 ㄥ	8.36 ㄢ	2.21 ㄢ	21.42 ㄥ	12.83 ㄥ	4.58 ㄣ	19.94 ㄣ	8.36 ㄥ	9.91 ㄥ	1.42 ㄢ
345	0.92 ㄥ	39.37 Z	16.73 ㄣ	0.93 ㄥ	17.05 ㄥ	13.72 ㄢ	9.06 ㄢ	26.08 ㄥ	16.73 ㄥ	8.26 ㄣ	24.14 ㄣ	13.72 ㄥ	17.19 ㄥ	7.76 ㄢ
350	5.01 ㄥ	37.40 Z	20.52 ㄣ	4.71 ㄥ	21.21 ㄥ	19.12 ㄢ	15.41 ㄢ	0.43 ㄥ	20.52 ㄥ	11.90 ㄣ	28.36 ㄣ	19.12 ㄥ	24.33 ㄥ	13.65 ㄢ
355	9.14 ㄥ	35.44 Z	24.21 ㄣ	8.48 ㄥ	25.41 ㄥ	24.55 ㄢ	21.33 ㄢ	4.51 ㄥ	24.21 ㄥ	15.52 ㄣ	2.58 ㄥ	24.55 ㄥ	1.29 ㄥ	19.14 ㄢ
360	13.31 ㄥ	33.51 Z	27.83 ㄣ	12.24 ㄥ	29.66 ㄥ	0.00 ㊄	26.85 ㄢ	8.40 ㄥ	27.83 ㄥ	19.12 ㄣ	6.81 ㄥ	0.00 ㄥ	8.02 ㄥ	24.32 ㄢ

54° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	13.88 𐆏	32.63 Z	28.70 𐆏	12.69 𐆏	29.73 𐆏	0.00 𐆏	28.27 𐆎	9.78 𐆏	28.70 𐆏	19.64 𐆎	7.01 𐆏	0.00 𐆏	8.38 𐆏	25.32 𐆎
5	18.15 𐆏	30.75 Z	2.20 𐆏	16.42 𐆏	4.00 𐆎	5.45 𐆏	3.37 𐆏	13.41 𐆏	2.20 𐆎	23.19 𐆎	11.22 𐆏	5.45 𐆏	14.92 𐆏	0.18 𐆏
10	22.50 𐆏	28.91 Z	5.67 𐆏	20.16 𐆏	8.31 𐆎	10.88 𐆏	8.18 𐆏	16.92 𐆏	5.67 𐆎	26.72 𐆎	15.43 𐆏	10.88 𐆏	21.21 𐆏	4.82 𐆏
15	26.95 𐆏	27.13 Z	9.10 𐆏	23.90 𐆏	12.66 𐆎	16.28 𐆏	12.75 𐆏	20.33 𐆏	9.10 𐆎	0.24 𐆏	19.64 𐆏	16.28 𐆏	27.25 𐆏	9.28 𐆏
20	1.51 𐆏	25.42 Z	12.51 𐆏	27.66 𐆏	17.05 𐆎	21.64 𐆏	17.11 𐆏	23.66 𐆏	12.51 𐆎	3.75 𐆏	23.84 𐆏	21.64 𐆏	3.04 𐆎	13.59 𐆏
25	6.22 𐆏	23.78 Z	15.90 𐆏	1.44 𐆎	21.48 𐆎	26.94 𐆏	21.31 𐆏	26.93 𐆏	15.90 𐆎	7.25 𐆏	28.03 𐆏	26.94 𐆏	8.62 𐆎	17.78 𐆏
30	11.09 𐆏	22.23 Z	19.28 𐆏	5.23 𐆎	25.93 𐆎	2.18 𐆎	25.37 𐆏	0.17 𐆎	19.28 𐆎	10.74 𐆏	2.20 𐆏	2.18 𐆏	13.99 𐆎	21.87 𐆏
35	16.15 𐆏	20.78 Z	22.66 𐆏	9.03 𐆎	0.40 𐆏	7.35 𐆎	29.33 𐆏	3.36 𐆎	22.66 𐆎	14.23 𐆏	6.35 𐆏	7.35 𐆏	19.19 𐆎	25.89 𐆏
40	21.43 𐆏	19.42 Z	26.04 𐆏	12.85 𐆎	4.89 𐆏	12.45 𐆎	3.19 𐆏	6.54 𐆎	26.04 𐆎	17.70 𐆏	10.48 𐆏	12.45 𐆏	24.23 𐆎	29.86 𐆏
45	26.97 𐆏	18.16 Z	29.41 𐆏	16.69 𐆎	9.40 𐆏	17.46 𐆎	6.98 𐆏	9.71 𐆎	29.41 𐆎	21.16 𐆏	14.58 𐆏	17.46 𐆏	29.14 𐆎	3.78 𐆏
50	2.77 𐆏	17.02 Z	2.79 𐆎	20.54 𐆎	13.90 𐆏	22.41 𐆎	10.72 𐆏	12.86 𐆎	2.79 𐆏	24.60 𐆏	18.64 𐆏	22.41 𐆏	3.94 𐆏	7.67 𐆏
55	8.88 𐆏	16.00 Z	6.18 𐆎	24.40 𐆎	18.41 𐆏	27.28 𐆎	14.43 𐆏	16.02 𐆎	6.18 𐆏	28.03 𐆏	22.67 𐆏	27.28 𐆏	8.64 𐆏	11.53 𐆏
60	15.32 𐆏	15.10 Z	9.57 𐆎	28.27 𐆎	22.92 𐆏	2.09 𐆏	18.11 𐆏	19.19 𐆎	9.57 𐆏	1.45 𐆏	26.66 𐆏	2.09 𐆎	13.27 𐆏	15.39 𐆏
65	22.08 𐆏	14.34 Z	12.96 𐆎	2.14 𐆏	27.42 𐆏	6.84 𐆏	21.78 𐆏	22.36 𐆎	12.96 𐆏	4.84 𐆏	0.61 𐆏	6.84 𐆎	17.83 𐆏	19.23 𐆏
70	29.17 𐆏	13.70 Z	16.36 𐆎	6.02 𐆏	1.91 𐆎	11.53 𐆏	25.44 𐆏	25.55 𐆎	16.36 𐆏	8.22 𐆏	4.52 𐆏	11.53 𐆎	22.36 𐆏	23.08 𐆏
75	6.57 𐆎	13.21 Z	19.77 𐆎	9.89 𐆏	6.39 𐆎	16.19 𐆏	29.11 𐆏	28.76 𐆎	19.77 𐆏	11.58 𐆏	8.39 𐆏	16.19 𐆎	26.85 𐆏	26.92 𐆏
80	14.22 𐆎	12.85 Z	23.18 𐆎	13.77 𐆏	10.86 𐆎	20.81 𐆏	2.79 𐆎	1.98 𐆏	23.18 𐆏	14.91 𐆏	12.22 𐆏	20.81 𐆎	1.32 𐆏	0.77 𐆎
85	22.06 𐆎	12.63 Z	26.59 𐆎	17.64 𐆏	15.32 𐆎	25.41 𐆏	6.50 𐆎	5.22 𐆏	26.59 𐆏	18.22 𐆏	16.02 𐆏	25.41 𐆎	5.77 𐆏	4.63 𐆎
90	0.00 𐆏	12.56 Z	0.00 𐆏	21.51 𐆏	19.78 𐆎	0.00 𐆏	10.22 𐆎	8.49 𐆏	0.00 𐆏	21.51 𐆏	19.78 𐆏	0.00 𐆏	10.22 𐆏	8.49 𐆎
95	7.94 𐆏	12.63 Z	3.41 𐆏	25.37 𐆏	24.23 𐆎	4.59 𐆏	13.98 𐆎	11.78 𐆏	3.41 𐆏	24.78 𐆏	23.50 𐆏	4.59 𐆏	14.68 𐆏	12.36 𐆎
100	15.78 𐆏	12.85 Z	6.82 𐆏	29.23 𐆏	28.68 𐆎	9.19 𐆏	17.78 𐆎	15.09 𐆏	6.82 𐆏	28.02 𐆏	27.21 𐆏	9.19 𐆏	19.14 𐆏	16.23 𐆎
105	23.43 𐆏	13.21 Z	10.23 𐆏	3.08 𐆎	3.15 𐆏	13.81 𐆏	21.61 𐆎	18.42 𐆏	10.23 𐆏	1.24 𐆏	0.89 𐆎	13.81 𐆏	23.61 𐆏	20.11 𐆎
110	0.83 𐆏	13.70 Z	13.64 𐆏	6.92 𐆎	7.64 𐆏	18.47 𐆏	25.48 𐆎	21.78 𐆏	13.64 𐆏	4.45 𐆏	4.56 𐆎	18.47 𐆏	28.09 𐆏	23.98 𐆎
115	7.92 𐆏	14.34 Z	17.04 𐆏	10.77 𐆎	12.17 𐆏	23.16 𐆏	29.39 𐆎	25.16 𐆏	17.04 𐆏	7.64 𐆏	8.22 𐆎	23.16 𐆏	2.58 𐆎	27.86 𐆎
120	14.68 𐆏	15.10 Z	20.43 𐆏	14.61 𐆎	16.73 𐆏	27.91 𐆏	3.34 𐆏	28.55 𐆏	20.43 𐆏	10.81 𐆏	11.89 𐆎	27.91 𐆏	7.08 𐆎	1.73 𐆏
125	21.12 𐆏	16.00 Z	23.82 𐆏	18.47 𐆎	21.36 𐆏	2.72 𐆎	7.33 𐆏	1.97 𐆏	23.82 𐆏	13.98 𐆏	15.57 𐆎	2.72 𐆏	11.59 𐆎	5.60 𐆏
130	27.23 𐆏	17.02 Z	27.21 𐆏	22.33 𐆎	26.06 𐆏	7.59 𐆎	11.36 𐆏	5.40 𐆏	27.21 𐆏	17.14 𐆏	19.28 𐆎	7.59 𐆏	16.10 𐆎	9.46 𐆏
135	3.03 𐆎	18.16 Z	0.59 𐆎	26.22 𐆎	0.86 𐆏	12.54 𐆎	15.42 𐆏	8.84 𐆏	0.59 𐆏	20.29 𐆏	23.02 𐆎	12.54 𐆏	20.60 𐆎	13.31 𐆏
140	8.57 𐆎	19.42 Z	3.96 𐆎	0.14 𐆏	5.77 𐆏	17.55 𐆎	19.52 𐆏	12.30 𐆏	3.96 𐆏	23.46 𐆏	26.81 𐆎	17.55 𐆏	25.11 𐆎	17.15 𐆏
145	13.85 𐆎	20.78 Z	7.34 𐆎	4.11 𐆏	10.81 𐆏	22.65 𐆎	23.65 𐆏	15.77 𐆏	7.34 𐆏	26.64 𐆏	0.67 𐆏	22.65 𐆏	29.60 𐆎	20.97 𐆏
150	18.91 𐆎	22.23 Z	10.72 𐆎	8.13 𐆏	16.01 𐆏	27.82 𐆎	27.80 𐆏	19.26 𐆏	10.72 𐆏	29.83 𐆏	4.63 𐆏	27.82 𐆏	4.07 𐆏	24.77 𐆏
155	23.78 𐆎	23.78 Z	14.10 𐆎	12.22 𐆏	21.38 𐆏	3.06 𐆏	1.97 𐆏	22.75 𐆏	14.10 𐆏	3.07 𐆎	8.69 𐆏	3.06 𐆎	8.52 𐆏	28.56 𐆏
160	28.49 𐆎	25.42 Z	17.49 𐆎	16.41 𐆏	26.96 𐆏	8.36 𐆏	6.16 𐆏	26.25 𐆏	17.49 𐆏	6.34 𐆎	12.89 𐆏	8.36 𐆎	12.95 𐆏	2.34 𐆎
165	3.05 𐆏	27.13 Z	20.90 𐆎	20.72 𐆏	2.75 𐆎	13.72 𐆏	10.36 𐆏	29.76 𐆏	20.90 𐆏	9.67 𐆎	17.25 𐆏	13.72 𐆎	17.34 𐆏	6.10 𐆎
170	7.50 𐆏	28.91 Z	24.33 𐆎	25.18 𐆏	8.79 𐆎	19.12 𐆏	14.57 𐆏	3.28 𐆏	24.33 𐆏	13.08 𐆎	21.82 𐆏	19.12 𐆎	21.69 𐆏	9.84 𐆎
175	11.85 𐆏	30.75 Z	27.80 𐆎	29.82 𐆏	15.08 𐆎	24.55 𐆏	18.78 𐆏	6.81 𐆏	27.80 𐆏	16.59 𐆎	26.63 𐆏	24.55 𐆎	26.00 𐆏	13.58 𐆎
180	16.12 𐆏	32.63 Z	1.30 𐆏	4.68 𐆏	21.62 𐆎	0.00 𐆏	22.99 𐆏	10.36 𐆏	1.30 𐆎	20.22 𐆎	1.73 𐆏	0.00 𐆏	0.27 𐆎	17.31 𐆎

## 54° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	20.32 ♄	34.56 Z	4.86 ♁	9.81 ☾	28.41 ☿	5.45 ♀	27.19 ♀	13.92 ♂	4.86 ♀	24.00 ♀	7.18 ♀	5.45 ♄	4.49 ♀	21.03 ♀
190	24.48 ♄	36.52 Z	8.49 ♁	15.28 ☾	5.44 ♁	10.88 ♀	1.38 ♂	17.49 ♂	8.49 ♀	27.97 ♀	13.02 ♀	10.88 ♄	8.67 ♀	24.76 ♀
195	28.59 ♄	38.50 Z	12.21 ♁	21.14 ☾	12.66 ♁	16.28 ♀	5.57 ♂	21.10 ♂	12.21 ♀	2.19 ☽	19.32 ♀	16.28 ♄	12.81 ♀	28.50 ♀
200	2.68 ♀	40.49 Z	16.03 ♁	27.48 ☾	20.03 ♁	21.64 ♀	9.75 ♂	24.73 ♂	16.03 ♀	6.72 ☽	26.14 ♀	21.64 ♄	16.90 ♀	2.26 ♁
205	6.75 ♀	42.48 Z	20.00 ♁	4.38 ☿	27.48 ♁	26.94 ♀	13.93 ♂	28.40 ♂	20.00 ♀	11.64 ☽	3.51 ♀	26.94 ♄	20.95 ♀	6.05 ♁
210	10.81 ♀	44.44 Z	24.15 ♁	11.93 ☿	4.94 ♀	2.18 ♂	18.10 ♂	2.12 ♀	24.15 ♀	17.06 ☽	11.45 ♀	2.18 ♀	24.95 ♀	9.87 ♁
215	14.86 ♀	46.37 Z	28.51 ♁	20.17 ☿	12.34 ♀	7.35 ♂	22.27 ♂	5.90 ♀	28.51 ♀	23.13 ☽	19.93 ♀	7.35 ♀	28.92 ♀	13.74 ♁
220	18.92 ♀	48.26 Z	3.16 ☾	29.14 ☿	19.61 ♀	12.45 ♂	26.45 ♂	9.76 ♀	3.16 ☽	0.03 ♀	28.86 ♀	12.45 ♀	2.86 ♁	17.67 ♁
225	22.98 ♀	50.07 Z	8.15 ☾	8.78 ♁	26.68 ♀	17.46 ♂	0.64 ♀	13.71 ♀	8.15 ☽	8.00 ♀	8.08 ♄	17.46 ♀	6.76 ♁	21.67 ♁
230	27.05 ♀	51.79 Z	13.59 ☾	18.93 ♁	3.53 ♂	22.41 ♂	4.85 ♀	17.78 ♀	13.59 ☽	17.30 ♀	17.40 ♄	22.41 ♀	10.63 ♁	25.75 ♁
235	1.14 ♁	53.41 Z	19.58 ☾	29.33 ♁	10.11 ♂	27.28 ♂	9.10 ♀	22.01 ♀	19.58 ☽	28.20 ♀	26.61 ♄	27.28 ♀	14.48 ♁	29.92 ♁
240	5.23 ♁	54.88 Z	26.30 ☾	9.65 ♀	16.40 ♂	2.09 ♀	13.39 ♀	26.42 ♀	26.30 ☽	10.79 ♀	5.50 ♀	2.09 ♁	18.30 ♁	4.17 ☾
245	9.34 ♁	56.20 Z	3.90 ☿	19.56 ♀	22.40 ♂	6.84 ♀	17.77 ♀	1.10 ☽	3.90 ♀	24.80 ♀	13.94 ♀	6.84 ♁	22.11 ♁	8.53 ☾
250	13.45 ♁	57.32 Z	12.61 ☿	28.79 ♀	28.10 ♂	11.53 ♀	22.24 ♀	6.11 ☽	12.61 ♀	9.47 ♄	21.84 ♀	11.53 ♁	25.92 ♁	12.98 ☾
255	17.58 ♁	58.23 Z	22.62 ☿	7.19 ♂	3.50 ♀	16.19 ♀	26.84 ♀	11.57 ☽	22.62 ♀	23.71 ♄	29.16 ♀	16.19 ♁	29.77 ♁	17.55 ☾
260	21.72 ♁	58.89 Z	4.00 ♁	14.71 ♂	8.61 ♀	20.81 ♀	1.64 ☽	17.66 ☽	4.00 ♀	6.64 ♀	5.93 ♁	20.81 ♁	3.71 ☾	22.28 ☾
265	25.86 ♁	59.30 Z	16.62 ♁	21.39 ♂	13.41 ♀	25.41 ♀	6.69 ☽	24.59 ☽	16.62 ♀	17.84 ♀	12.17 ♁	25.41 ♁	7.78 ☾	27.27 ☾
270	0.00 ☾	59.44 Z	0.00 ♀	27.35 ♂	17.94 ♀	0.00 ☽	12.06 ☽	2.65 ♀	0.00 ♄	27.35 ♀	17.94 ♁	0.00 ☾	12.06 ☾	2.65 ☿
275	4.14 ☾	59.30 Z	13.38 ♀	2.73 ♀	22.22 ♀	4.59 ☽	17.83 ☽	12.16 ♀	13.38 ♄	5.41 ♁	23.31 ♁	4.59 ☾	16.59 ☾	8.61 ☿
280	8.28 ☾	58.89 Z	26.00 ♀	7.72 ♀	26.29 ♀	9.19 ☽	24.07 ☽	23.36 ♀	26.00 ♄	12.34 ♁	28.36 ♁	9.19 ☾	21.39 ☾	15.29 ☿
285	12.42 ☾	58.23 Z	7.38 ♂	12.45 ♀	0.23 ☽	13.81 ☽	0.84 ♀	6.29 ♀	7.38 ♀	18.43 ♁	3.16 ☾	13.81 ☾	26.50 ☾	22.81 ☿
290	16.55 ☾	57.32 Z	17.39 ♂	17.02 ♀	4.08 ☽	18.47 ☽	8.16 ♀	20.53 ♀	17.39 ♀	23.89 ♁	7.76 ☾	18.47 ☾	1.90 ☿	1.21 ♁
295	20.66 ☾	56.20 Z	26.10 ♂	21.47 ♀	7.89 ☽	23.16 ☽	16.06 ♀	5.20 ♄	26.10 ♀	28.90 ♁	12.23 ☾	23.16 ☾	7.60 ☿	10.44 ♁
300	24.77 ☾	54.88 Z	3.70 ♀	25.83 ♀	11.70 ☽	27.91 ☽	24.50 ♀	19.21 ♄	3.70 ♁	3.58 ☾	16.61 ☾	27.91 ☾	13.60 ☿	20.35 ♁
305	28.86 ☾	53.41 Z	10.42 ♀	0.08 ☽	15.52 ☽	2.72 ♀	3.39 ♀	1.80 ♀	10.42 ♁	7.99 ☾	20.90 ☾	2.72 ☿	19.89 ☿	0.67 ♀
310	2.95 ☿	51.79 Z	16.41 ♀	4.25 ☽	19.37 ☽	7.59 ♀	12.60 ♀	12.70 ♀	16.41 ♁	12.22 ☾	25.15 ☾	7.59 ☿	26.47 ☿	11.07 ♀
315	7.02 ☿	50.07 Z	21.85 ♀	8.33 ☽	23.24 ☽	12.54 ♀	21.92 ♀	22.00 ♀	21.85 ♁	16.29 ☾	29.36 ☾	12.54 ☿	3.32 ♁	21.22 ♀
320	11.08 ☿	48.26 Z	26.84 ♀	12.33 ☽	27.14 ☽	17.55 ♀	1.14 ♄	29.97 ♀	26.84 ♁	20.24 ☾	3.55 ☿	17.55 ☿	10.39 ♁	0.86 ♂
325	15.14 ☿	46.37 Z	1.49 ☽	16.26 ☽	1.08 ♀	22.65 ♀	10.07 ♄	6.87 ♁	1.49 ☾	24.10 ☾	7.73 ☿	22.65 ☿	17.66 ♁	9.83 ♂
330	19.19 ☿	44.44 Z	5.85 ☽	20.13 ☽	5.05 ♀	27.82 ♀	18.55 ♄	12.94 ♁	5.85 ☾	27.88 ☾	11.90 ☿	27.82 ☿	25.06 ♁	18.07 ♂
335	23.25 ☿	42.48 Z	10.00 ☽	23.95 ☽	9.05 ♀	3.06 ♀	26.49 ♄	18.36 ♁	10.00 ☾	1.60 ☿	16.07 ☿	3.06 ♁	2.52 ♀	25.62 ♂
340	27.32 ☿	40.49 Z	13.97 ☽	27.74 ☽	13.10 ♀	8.36 ♀	3.86 ♀	23.28 ♁	13.97 ☾	5.27 ☿	20.25 ☿	8.36 ♁	9.97 ♀	2.52 ♀
345	1.41 ♁	38.50 Z	17.79 ☽	1.50 ♀	17.19 ♀	13.72 ♀	10.68 ♀	27.81 ♁	17.79 ☾	8.90 ☿	24.43 ☿	13.72 ♁	17.34 ♀	8.86 ♀
350	5.52 ♁	36.52 Z	21.51 ☽	5.24 ♀	21.33 ♀	19.12 ♀	16.98 ♀	2.03 ☾	21.51 ☾	12.51 ☿	28.62 ☿	19.12 ♁	24.56 ♀	14.72 ♀
355	9.68 ♁	34.56 Z	25.14 ☽	8.97 ♀	25.51 ♀	24.55 ♀	22.82 ♀	6.00 ☾	25.14 ☾	16.08 ☿	2.81 ♁	24.55 ♁	1.59 ♂	20.19 ♀
360	13.88 ♁	32.63 Z	28.70 ☽	12.69 ♀	29.73 ♀	0.00 ♄	28.27 ♀	9.78 ☾	28.70 ☾	19.64 ☿	7.01 ♁	0.00 ♀	8.38 ♂	25.32 ♀

55° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	14.44 𐄂	31.75 Z	29.60 𐄂	13.16 𐄂	29.80 𐄂	0.00 𐄂	29.79 𐄂	11.22 𐄂	29.60 𐄂	20.18 𐄂	7.22 𐄂	0.00 𐄂	8.77 𐄂	26.39 𐄂
5	18.73 𐄂	29.86 Z	3.04 𐄂	16.85 𐄂	4.05 𐄂	5.45 𐄂	4.79 𐄂	14.75 𐄂	3.04 𐄂	23.68 𐄂	11.40 𐄂	5.45 𐄂	15.36 𐄂	1.20 𐄂
10	23.10 𐄂	28.01 Z	6.45 𐄂	20.55 𐄂	8.33 𐄂	10.88 𐄂	9.51 𐄂	18.16 𐄂	6.45 𐄂	27.17 𐄂	15.58 𐄂	10.88 𐄂	21.68 𐄂	5.79 𐄂
15	27.57 𐄂	26.23 Z	9.83 𐄂	24.25 𐄂	12.65 𐄂	16.28 𐄂	13.99 𐄂	21.48 𐄂	9.83 𐄂	0.65 𐄂	19.75 𐄂	16.28 𐄂	27.75 𐄂	10.19 𐄂
20	2.15 𐄂	24.51 Z	13.18 𐄂	27.97 𐄂	17.01 𐄂	21.64 𐄂	18.27 𐄂	24.74 𐄂	13.18 𐄂	4.12 𐄂	23.92 𐄂	21.64 𐄂	3.56 𐄂	14.45 𐄂
25	6.87 𐄂	22.86 Z	16.52 𐄂	1.70 𐄂	21.41 𐄂	26.94 𐄂	22.38 𐄂	27.94 𐄂	16.52 𐄂	7.58 𐄂	28.08 𐄂	26.94 𐄂	9.14 𐄂	18.60 𐄂
30	11.76 𐄂	21.30 Z	19.86 𐄂	5.45 𐄂	25.83 𐄂	2.18 𐄂	26.37 𐄂	1.10 𐄂	19.86 𐄂	11.03 𐄂	2.22 𐄂	2.18 𐄂	14.52 𐄂	22.65 𐄂
35	16.83 𐄂	19.84 Z	23.18 𐄂	9.22 𐄂	0.28 𐄂	7.35 𐄂	0.25 𐄂	4.23 𐄂	23.18 𐄂	14.46 𐄂	6.34 𐄂	7.35 𐄂	19.72 𐄂	26.62 𐄂
40	22.11 𐄂	18.47 Z	26.51 𐄂	13.00 𐄂	4.74 𐄂	12.45 𐄂	4.05 𐄂	7.35 𐄂	26.51 𐄂	17.89 𐄂	10.43 𐄂	12.45 𐄂	24.76 𐄂	0.54 𐄂
45	27.64 𐄂	17.21 Z	29.84 𐄂	16.79 𐄂	9.21 𐄂	17.46 𐄂	7.78 𐄂	10.45 𐄂	29.84 𐄂	21.31 𐄂	14.50 𐄂	17.46 𐄂	29.66 𐄂	4.42 𐄂
50	3.43 𐄂	16.06 Z	3.17 𐄂	20.60 𐄂	13.69 𐄂	22.41 𐄂	11.47 𐄂	13.55 𐄂	3.17 𐄂	24.71 𐄂	18.53 𐄂	22.41 𐄂	4.45 𐄂	8.27 𐄂
55	9.51 𐄂	15.03 Z	6.51 𐄂	24.42 𐄂	18.18 𐄂	27.28 𐄂	15.12 𐄂	16.65 𐄂	6.51 𐄂	28.09 𐄂	22.52 𐄂	27.28 𐄂	9.14 𐄂	12.09 𐄂
60	15.90 𐄂	14.13 Z	9.85 𐄂	28.24 𐄂	22.66 𐄂	2.09 𐄂	18.75 𐄂	19.76 𐄂	9.85 𐄂	1.46 𐄂	26.48 𐄂	2.09 𐄂	13.76 𐄂	15.90 𐄂
65	22.61 𐄂	13.35 Z	13.20 𐄂	2.08 𐄂	27.13 𐄂	6.84 𐄂	22.37 𐄂	22.89 𐄂	13.20 𐄂	4.81 𐄂	0.40 𐄂	6.84 𐄂	18.31 𐄂	19.71 𐄂
70	29.63 𐄂	12.71 Z	16.55 𐄂	5.91 𐄂	1.60 𐄂	11.53 𐄂	25.99 𐄂	26.02 𐄂	16.55 𐄂	8.14 𐄂	4.27 𐄂	11.53 𐄂	22.82 𐄂	23.51 𐄂
75	6.93 𐄂	12.21 Z	19.91 𐄂	9.75 𐄂	6.06 𐄂	16.19 𐄂	29.62 𐄂	29.18 𐄂	19.91 𐄂	11.45 𐄂	8.11 𐄂	16.19 𐄂	27.29 𐄂	27.32 𐄂
80	14.47 𐄂	11.85 Z	23.27 𐄂	13.58 𐄂	10.51 𐄂	20.81 𐄂	3.26 𐄂	2.35 𐄂	23.27 𐄂	14.73 𐄂	11.90 𐄂	20.81 𐄂	1.75 𐄂	1.13 𐄂
85	22.19 𐄂	11.63 Z	26.63 𐄂	17.41 𐄂	14.95 𐄂	25.41 𐄂	6.93 𐄂	5.54 𐄂	26.63 𐄂	18.00 𐄂	15.66 𐄂	25.41 𐄂	6.19 𐄂	4.94 𐄂
90	0.00 𐄂	11.56 Z	0.00 𐄂	21.24 𐄂	19.38 𐄂	0.00 𐄂	10.62 𐄂	8.76 𐄂	0.00 𐄂	21.24 𐄂	19.38 𐄂	0.00 𐄂	10.62 𐄂	8.76 𐄂
95	7.81 𐄂	11.63 Z	3.37 𐄂	25.06 𐄂	23.81 𐄂	4.59 𐄂	14.34 𐄂	12.00 𐄂	3.37 𐄂	24.46 𐄂	23.07 𐄂	4.59 𐄂	15.05 𐄂	12.59 𐄂
100	15.53 𐄂	11.85 Z	6.73 𐄂	28.87 𐄂	28.25 𐄂	9.19 𐄂	18.10 𐄂	15.27 𐄂	6.73 𐄂	27.65 𐄂	26.74 𐄂	9.19 𐄂	19.49 𐄂	16.42 𐄂
105	23.07 𐄂	12.21 Z	10.09 𐄂	2.68 𐄂	2.71 𐄂	13.81 𐄂	21.89 𐄂	18.55 𐄂	10.09 𐄂	0.82 𐄂	0.38 𐄂	13.81 𐄂	23.94 𐄂	20.25 𐄂
110	0.37 𐄂	12.71 Z	13.45 𐄂	6.49 𐄂	7.18 𐄂	18.47 𐄂	25.73 𐄂	21.86 𐄂	13.45 𐄂	3.98 𐄂	4.01 𐄂	18.47 𐄂	28.40 𐄂	24.09 𐄂
115	7.39 𐄂	13.35 Z	16.80 𐄂	10.29 𐄂	11.69 𐄂	23.16 𐄂	29.60 𐄂	25.19 𐄂	16.80 𐄂	7.11 𐄂	7.63 𐄂	23.16 𐄂	2.87 𐄂	27.92 𐄂
120	14.10 𐄂	14.13 Z	20.15 𐄂	14.10 𐄂	16.24 𐄂	27.91 𐄂	3.52 𐄂	28.54 𐄂	20.15 𐄂	10.24 𐄂	11.25 𐄂	27.91 𐄂	7.34 𐄂	1.76 𐄂
125	20.49 𐄂	15.03 Z	23.49 𐄂	17.91 𐄂	20.86 𐄂	2.72 𐄂	7.48 𐄂	1.91 𐄂	23.49 𐄂	13.35 𐄂	14.88 𐄂	2.72 𐄂	11.82 𐄂	5.58 𐄂
130	26.57 𐄂	16.06 Z	26.83 𐄂	21.73 𐄂	25.55 𐄂	7.59 𐄂	11.47 𐄂	5.29 𐄂	26.83 𐄂	16.45 𐄂	18.53 𐄂	7.59 𐄂	16.31 𐄂	9.40 𐄂
135	2.36 𐄂	17.21 Z	0.16 𐄂	25.58 𐄂	0.34 𐄂	12.54 𐄂	15.50 𐄂	8.69 𐄂	0.16 𐄂	19.55 𐄂	22.22 𐄂	12.54 𐄂	20.79 𐄂	13.21 𐄂
140	7.89 𐄂	18.47 Z	3.49 𐄂	29.46 𐄂	5.24 𐄂	17.55 𐄂	19.57 𐄂	12.11 𐄂	3.49 𐄂	22.65 𐄂	25.95 𐄂	17.55 𐄂	25.26 𐄂	17.00 𐄂
145	13.17 𐄂	19.84 Z	6.82 𐄂	3.38 𐄂	10.28 𐄂	22.65 𐄂	23.66 𐄂	15.54 𐄂	6.82 𐄂	25.77 𐄂	29.75 𐄂	22.65 𐄂	29.72 𐄂	20.78 𐄂
150	18.24 𐄂	21.30 Z	10.14 𐄂	7.35 𐄂	15.48 𐄂	27.82 𐄂	27.78 𐄂	18.97 𐄂	10.14 𐄂	28.90 𐄂	3.63 𐄂	27.82 𐄂	4.17 𐄂	24.55 𐄂
155	23.13 𐄂	22.86 Z	13.48 𐄂	11.40 𐄂	20.86 𐄂	3.06 𐄂	1.92 𐄂	22.42 𐄂	13.48 𐄂	2.06 𐄂	7.62 𐄂	3.06 𐄂	8.59 𐄂	28.30 𐄂
160	27.85 𐄂	24.51 Z	16.82 𐄂	15.55 𐄂	26.44 𐄂	8.36 𐄂	6.08 𐄂	25.88 𐄂	16.82 𐄂	5.26 𐄂	11.73 𐄂	8.36 𐄂	12.99 𐄂	2.03 𐄂
165	2.43 𐄂	26.23 Z	20.17 𐄂	19.81 𐄂	2.25 𐄂	13.72 𐄂	10.25 𐄂	29.35 𐄂	20.17 𐄂	8.52 𐄂	16.01 𐄂	13.72 𐄂	17.35 𐄂	5.75 𐄂
170	6.90 𐄂	28.01 Z	23.55 𐄂	24.21 𐄂	8.32 𐄂	19.12 𐄂	14.42 𐄂	2.83 𐄂	23.55 𐄂	11.84 𐄂	20.49 𐄂	19.12 𐄂	21.67 𐄂	9.45 𐄂
175	11.27 𐄂	29.86 Z	26.96 𐄂	28.80 𐄂	14.64 𐄂	24.55 𐄂	18.60 𐄂	6.32 𐄂	26.96 𐄂	15.25 𐄂	25.21 𐄂	24.55 𐄂	25.95 𐄂	13.15 𐄂
180	15.56 𐄂	31.75 Z	0.40 𐄂	3.61 𐄂	21.23 𐄂	0.00 𐄂	22.78 𐄂	9.82 𐄂	0.40 𐄂	18.78 𐄂	0.21 𐄂	0.00 𐄂	0.20 𐄂	16.84 𐄂

55° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	19.79 ♁	33.69 Z	3.90 ♀	8.70 ♂	28.09 ≍	5.45 ♀	26.95 ♀	13.34 ♂	3.90 II	22.45 II	5.56 ♀	5.45 ♁	4.39 ♀	20.52 ♀
190	23.97 ♁	35.65 Z	7.46 ♀	14.12 ♂	5.18 ♀	10.88 ♀	1.12 ♂	16.88 ♂	7.46 II	26.31 II	11.31 ♀	10.88 ♁	8.55 ♀	24.21 ♀
195	28.11 ♁	37.63 Z	11.10 ♀	19.96 ♂	12.49 ♀	16.28 ♀	5.28 ♂	20.44 ♂	11.10 II	0.39 ☽	17.54 ♀	16.28 ♁	12.66 ♀	27.91 ♀
200	2.22 ♀	39.62 Z	14.86 ♀	26.29 ♂	19.95 ♀	21.64 ♀	9.44 ♂	24.03 ♂	14.86 II	4.78 ☽	24.30 ♀	21.64 ♁	16.72 ♀	1.63 ♀
205	6.32 ♀	41.60 Z	18.75 ♀	3.21 ≍	27.50 ♀	26.94 ♀	13.59 ♂	27.65 ♂	18.75 II	9.53 ☽	1.66 ♀	26.94 ♁	20.75 ♀	5.38 ♀
210	10.41 ♀	43.56 Z	22.80 ♀	10.82 ≍	5.06 ♀	2.18 ♂	17.73 ♂	1.33 II	22.80 II	14.78 ☽	9.65 ♀	2.18 ♀	24.73 ♀	9.16 ♀
215	14.49 ♀	45.49 Z	27.08 ♀	19.19 ≍	12.56 ♀	7.35 ♂	21.88 ♂	5.06 II	27.08 II	20.66 ☽	18.24 ♀	7.35 ♀	28.68 ♀	12.99 ♀
220	18.58 ♀	47.37 Z	1.62 ♂	28.36 ≍	19.92 ♀	12.45 ♂	26.03 ♂	8.86 II	1.62 ☽	27.38 ☽	27.36 ♀	12.45 ♀	2.60 ♀	16.88 ♀
225	22.67 ♀	49.17 Z	6.51 ♂	8.29 ♀	27.08 ♀	17.46 ♂	0.19 II	12.76 II	6.51 ☽	5.18 ♀	6.85 ♁	17.46 ♀	6.48 ♀	20.84 ♀
230	26.78 ♀	50.88 Z	11.84 ♂	18.81 ♀	3.99 ♂	22.41 ♂	4.38 II	16.77 II	11.84 ☽	14.40 ♀	16.49 ♁	22.41 ♀	10.33 ♀	24.88 ♀
235	0.89 ♀	52.48 Z	17.74 ♂	29.62 ♀	10.63 ♂	27.28 ♂	8.60 II	20.92 II	17.74 ☽	25.36 ♀	26.03 ♁	27.28 ♀	14.15 ♀	29.01 ♀
240	5.02 ♀	53.94 Z	24.37 ♂	10.34 ♀	16.97 ♂	2.09 II	12.88 II	25.27 II	24.37 ☽	8.28 ♀	5.24 ♀	2.09 ♀	17.94 ♀	3.22 ♂
245	9.16 ♀	55.24 Z	1.94 ≍	20.60 ♀	23.01 ♂	6.84 II	17.22 II	29.86 II	1.94 ♀	22.97 ♀	13.96 ♀	6.84 ♀	21.71 ♀	7.53 ♂
250	13.31 ♀	56.35 Z	10.69 ≍	0.10 ♂	28.75 ♂	11.53 II	21.66 II	4.79 ☽	10.69 ♀	8.58 ♁	22.09 ♀	11.53 ♀	25.48 ♀	11.93 ♂
255	17.47 ♀	57.24 Z	20.87 ≍	8.68 ♂	4.17 II	16.19 II	26.24 II	10.16 ☽	20.87 ♀	23.78 ♁	29.59 ♀	16.19 ♀	29.28 ♀	16.42 ♂
260	21.64 ♀	57.90 Z	2.63 ♀	16.27 ♂	9.29 II	20.81 II	1.00 ☽	16.17 ☽	2.63 ♀	7.45 ♀	6.48 ♀	20.81 ♀	3.15 ♂	21.05 ♂
265	25.82 ♀	58.30 Z	15.86 ♀	22.94 ♂	14.09 II	25.41 II	6.03 ☽	23.07 ☽	15.86 ♀	19.10 ♀	12.79 ♀	25.41 ♀	7.17 ♂	25.91 ♂
270	0.00 ♂	58.44 Z	0.00 ♀	28.82 ♂	18.60 II	0.00 ☽	11.40 ☽	1.18 ♀	0.00 ♁	28.82 ♀	18.60 ♀	0.00 ♂	11.40 ♂	1.18 ≍
275	4.18 ♂	58.30 Z	14.14 ♀	4.09 II	22.83 II	4.59 ☽	17.21 ☽	10.90 ♀	14.14 ♁	6.93 ♀	23.97 ♀	4.59 ♂	15.91 ♂	7.06 ≍
280	8.36 ♂	57.90 Z	27.37 ♀	8.95 II	26.85 II	9.19 ☽	23.52 ☽	22.55 ♀	27.37 ♁	13.83 ♀	29.00 ♀	9.19 ♂	20.71 ♂	13.73 ≍
285	12.53 ♂	57.24 Z	9.13 ♂	13.58 II	0.72 ☽	13.81 ☽	0.41 ♀	6.22 ♀	9.13 ♀	19.84 ♀	3.76 ♂	13.81 ♂	25.83 ♂	21.32 ≍
290	16.69 ♂	56.35 Z	19.31 ♂	18.07 II	4.52 ☽	18.47 ☽	7.91 ♀	21.42 ♀	19.31 ♀	25.21 ♀	8.34 ♂	18.47 ♂	1.25 ≍	29.90 ≍
295	20.84 ♂	55.24 Z	28.06 ♂	22.47 II	8.29 ☽	23.16 ☽	16.04 ♀	7.03 ♁	28.06 ♀	0.14 ♂	12.78 ♂	23.16 ♂	6.99 ≍	9.40 ♀
300	24.98 ♂	53.94 Z	5.63 II	26.78 II	12.06 ☽	27.91 ☽	24.76 ♀	21.72 ♁	5.63 ♀	4.73 ♂	17.12 ♂	27.91 ♂	13.03 ≍	19.66 ♀
305	29.11 ♂	52.48 Z	12.26 II	0.99 ☽	15.85 ☽	2.72 ♀	3.97 ♀	4.64 ♀	12.26 ♀	9.08 ♂	21.40 ♂	2.72 ≍	19.37 ≍	0.38 ♀
310	3.22 ≍	50.88 Z	18.16 II	5.12 ☽	19.67 ☽	7.59 ♀	13.51 ♀	15.60 ♀	18.16 ♀	13.23 ♂	25.62 ♂	7.59 ≍	26.01 ≍	11.19 ♀
315	7.33 ≍	49.17 Z	23.49 II	9.16 ☽	23.52 ☽	12.54 ♀	23.15 ♀	24.82 ♀	23.49 ♀	17.24 ♂	29.81 ♂	12.54 ≍	2.92 ♀	21.71 ♀
320	11.42 ≍	47.37 Z	28.38 II	13.12 ☽	27.40 ☽	17.55 ♀	2.64 ♁	2.62 ♀	28.38 ♀	21.14 ♂	3.97 ≍	17.55 ≍	10.08 ♀	1.64 ♂
325	15.51 ≍	45.49 Z	2.92 ☽	17.01 ☽	1.32 ♀	22.65 ♀	11.76 ♁	9.34 ♀	2.92 ♂	24.94 ♂	8.12 ≍	22.65 ≍	17.44 ♀	10.81 ♂
330	19.59 ≍	43.56 Z	7.20 ☽	20.84 ☽	5.27 ♀	27.82 ♀	20.35 ♁	15.22 ♀	7.20 ♂	28.67 ♂	12.27 ≍	27.82 ≍	24.94 ♀	19.18 ♂
335	23.68 ≍	41.60 Z	11.25 ☽	24.62 ☽	9.25 ♀	3.06 ♀	28.34 ♁	20.47 ♀	11.25 ♂	2.35 ≍	16.41 ≍	3.06 ♀	2.50 ♀	26.79 ♂
340	27.78 ≍	39.62 Z	15.14 ☽	28.37 ☽	13.28 ♀	8.36 ♀	5.70 ♀	25.22 ♀	15.14 ♂	5.97 ≍	20.56 ≍	8.36 ♀	10.05 ♀	3.71 II
345	1.89 ♀	37.63 Z	18.90 ☽	2.09 ♀	17.34 ♀	13.72 ♀	12.46 ♀	29.61 ♀	18.90 ♂	9.56 ≍	24.72 ≍	13.72 ♀	17.51 ♀	10.04 II
350	6.03 ♀	35.65 Z	22.54 ☽	5.79 ♀	21.45 ♀	19.12 ♀	18.69 ♀	3.69 ♂	22.54 ♂	13.12 ≍	28.88 ≍	19.12 ♀	24.82 ♀	15.88 II
355	10.21 ♀	33.69 Z	26.10 ☽	9.48 ♀	25.61 ♀	24.55 ♀	24.44 ♀	7.55 ♂	26.10 ♂	16.66 ≍	3.05 ♀	24.55 ♀	1.91 ♂	21.30 II
360	14.44 ♀	31.75 Z	29.60 ☽	13.16 ♀	29.80 ♀	0.00 ♁	29.79 ♀	11.22 ♂	29.60 ♂	20.18 ≍	7.22 ♀	0.00 ♀	8.77 ♂	26.39 II

60° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	17.07 𠄎	27.31 Z	4.57 𠄎	15.82 𠄎	0.28 𠄎	0.00 𠄎	9.50 𠄎	19.24 𠄎	4.57 𠄎	23.04 𠄎	8.32 𠄎	0.00 𠄎	11.31 𠄎	2.80 𠄎
5	21.45 𠄎	25.39 Z	7.66 𠄎	19.27 𠄎	4.36 𠄎	5.45 𠄎	13.71 𠄎	22.17 𠄎	7.66 𠄎	26.31 𠄎	12.34 𠄎	5.45 𠄎	18.16 𠄎	7.24 𠄎
10	25.91 𠄎	23.51 Z	10.74 𠄎	22.73 𠄎	8.49 𠄎	10.88 𠄎	17.71 𠄎	25.05 𠄎	10.74 𠄎	29.57 𠄎	16.35 𠄎	10.88 𠄎	24.67 𠄎	11.46 𠄎
15	0.46 𠄎	21.69 Z	13.80 𠄎	26.21 𠄎	12.65 𠄎	16.28 𠄎	21.52 𠄎	27.88 𠄎	13.80 𠄎	2.82 𠄎	20.35 𠄎	16.28 𠄎	0.86 𠄎	15.52 𠄎
20	5.12 𠄎	19.93 Z	16.86 𠄎	29.70 𠄎	16.85 𠄎	21.64 𠄎	25.20 𠄎	0.68 𠄎	16.86 𠄎	6.06 𠄎	24.35 𠄎	21.64 𠄎	6.75 𠄎	19.46 𠄎
25	9.89 𠄎	18.25 Z	19.91 𠄎	3.20 𠄎	21.08 𠄎	26.94 𠄎	28.77 𠄎	3.46 𠄎	19.91 𠄎	9.29 𠄎	28.33 𠄎	26.94 𠄎	12.36 𠄎	23.29 𠄎
30	14.82 𠄎	16.65 Z	22.96 𠄎	6.72 𠄎	25.33 𠄎	2.18 𠄎	2.27 𠄎	6.22 𠄎	22.96 𠄎	12.51 𠄎	2.29 𠄎	2.18 𠄎	17.74 𠄎	27.04 𠄎
35	19.90 𠄎	15.14 Z	26.02 𠄎	10.26 𠄎	29.61 𠄎	7.35 𠄎	5.69 𠄎	8.98 𠄎	26.02 𠄎	15.72 𠄎	6.23 𠄎	7.35 𠄎	22.91 𠄎	0.74 𠄎
40	25.18 𠄎	13.73 Z	29.08 𠄎	13.81 𠄎	3.92 𠄎	12.45 𠄎	9.08 𠄎	11.74 𠄎	29.08 𠄎	18.91 𠄎	10.14 𠄎	12.45 𠄎	27.90 𠄎	4.39 𠄎
45	0.66 𠄎	12.42 Z	2.14 𠄎	17.38 𠄎	8.23 𠄎	17.46 𠄎	12.44 𠄎	14.51 𠄎	2.14 𠄎	22.08 𠄎	14.02 𠄎	17.46 𠄎	2.74 𠄎	8.01 𠄎
50	6.36 𠄎	11.24 Z	5.21 𠄎	20.96 𠄎	12.56 𠄎	22.41 𠄎	15.78 𠄎	17.29 𠄎	5.21 𠄎	25.24 𠄎	17.87 𠄎	22.41 𠄎	7.46 𠄎	11.60 𠄎
55	12.30 𠄎	10.17 Z	8.29 𠄎	24.55 𠄎	16.89 𠄎	27.28 𠄎	19.11 𠄎	20.08 𠄎	8.29 𠄎	28.39 𠄎	21.67 𠄎	27.28 𠄎	12.07 𠄎	15.18 𠄎
60	18.49 𠄎	9.23 Z	11.37 𠄎	28.15 𠄎	21.22 𠄎	2.09 𠄎	22.44 𠄎	22.89 𠄎	11.37 𠄎	1.51 𠄎	25.44 𠄎	2.09 𠄎	16.60 𠄎	18.76 𠄎
65	24.92 𠄎	8.43 Z	14.47 𠄎	1.75 𠄎	25.55 𠄎	6.84 𠄎	25.78 𠄎	25.72 𠄎	14.47 𠄎	4.61 𠄎	29.17 𠄎	6.84 𠄎	21.06 𠄎	22.33 𠄎
70	1.60 𠄎	7.76 Z	17.57 𠄎	5.35 𠄎	29.88 𠄎	11.53 𠄎	29.14 𠄎	28.57 𠄎	17.57 𠄎	7.69 𠄎	2.85 𠄎	11.53 𠄎	25.47 𠄎	25.90 𠄎
75	8.49 𠄎	7.24 Z	20.67 𠄎	8.96 𠄎	4.20 𠄎	16.19 𠄎	2.52 𠄎	1.45 𠄎	20.67 𠄎	10.75 𠄎	6.49 𠄎	16.19 𠄎	29.85 𠄎	29.47 𠄎
80	15.55 𠄎	6.86 Z	23.78 𠄎	12.57 𠄎	8.52 𠄎	20.81 𠄎	5.93 𠄎	4.35 𠄎	23.78 𠄎	13.78 𠄎	10.09 𠄎	20.81 𠄎	4.20 𠄎	3.05 𠄎
85	22.74 𠄎	6.64 Z	26.89 𠄎	16.17 𠄎	12.84 𠄎	25.41 𠄎	9.37 𠄎	7.28 𠄎	26.89 𠄎	16.79 𠄎	13.64 𠄎	25.41 𠄎	8.53 𠄎	6.64 𠄎
90	0.00 𠄎	6.56 Z	0.00 𠄎	19.77 𠄎	17.15 𠄎	0.00 𠄎	12.85 𠄎	10.23 𠄎	0.00 𠄎	19.77 𠄎	17.15 𠄎	0.00 𠄎	12.85 𠄎	10.23 𠄎
95	7.26 𠄎	6.64 Z	3.11 𠄎	23.36 𠄎	21.47 𠄎	4.59 𠄎	16.36 𠄎	13.21 𠄎	3.11 𠄎	22.72 𠄎	20.63 𠄎	4.59 𠄎	17.16 𠄎	13.83 𠄎
100	14.45 𠄎	6.86 Z	6.22 𠄎	26.95 𠄎	25.80 𠄎	9.19 𠄎	19.91 𠄎	16.22 𠄎	6.22 𠄎	25.65 𠄎	24.07 𠄎	9.19 𠄎	21.48 𠄎	17.43 𠄎
105	21.51 𠄎	7.24 Z	9.33 𠄎	0.53 𠄎	0.15 𠄎	13.81 𠄎	23.51 𠄎	19.25 𠄎	9.33 𠄎	28.55 𠄎	27.48 𠄎	13.81 𠄎	25.80 𠄎	21.04 𠄎
110	28.40 𠄎	7.76 Z	12.43 𠄎	4.10 𠄎	4.53 𠄎	18.47 𠄎	27.15 𠄎	22.31 𠄎	12.43 𠄎	1.43 𠄎	0.86 𠄎	18.47 𠄎	0.12 𠄎	24.65 𠄎
115	5.08 𠄎	8.43 Z	15.53 𠄎	7.67 𠄎	8.94 𠄎	23.16 𠄎	0.83 𠄎	25.39 𠄎	15.53 𠄎	4.28 𠄎	4.22 𠄎	23.16 𠄎	4.45 𠄎	28.25 𠄎
120	11.51 𠄎	9.23 Z	18.63 𠄎	11.24 𠄎	13.40 𠄎	27.91 𠄎	4.56 𠄎	28.49 𠄎	18.63 𠄎	7.11 𠄎	7.56 𠄎	27.91 𠄎	8.78 𠄎	1.85 𠄎
125	17.70 𠄎	10.17 Z	21.71 𠄎	14.82 𠄎	17.93 𠄎	2.72 𠄎	8.33 𠄎	1.61 𠄎	21.71 𠄎	9.92 𠄎	10.89 𠄎	2.72 𠄎	13.11 𠄎	5.45 𠄎
130	23.64 𠄎	11.24 Z	24.79 𠄎	18.40 𠄎	22.54 𠄎	7.59 𠄎	12.13 𠄎	4.76 𠄎	24.79 𠄎	12.71 𠄎	14.22 𠄎	7.59 𠄎	17.44 𠄎	9.04 𠄎
135	29.34 𠄎	12.42 Z	27.86 𠄎	21.99 𠄎	27.26 𠄎	12.54 𠄎	15.98 𠄎	7.92 𠄎	27.86 𠄎	15.49 𠄎	17.56 𠄎	12.54 𠄎	21.77 𠄎	12.62 𠄎
140	4.82 𠄎	13.73 Z	0.92 𠄎	25.61 𠄎	2.10 𠄎	17.55 𠄎	19.86 𠄎	11.09 𠄎	0.92 𠄎	18.26 𠄎	20.92 𠄎	17.55 𠄎	26.08 𠄎	16.19 𠄎
145	10.10 𠄎	15.14 Z	3.98 𠄎	29.26 𠄎	7.09 𠄎	22.65 𠄎	23.77 𠄎	14.28 𠄎	3.98 𠄎	21.02 𠄎	24.31 𠄎	22.65 𠄎	0.39 𠄎	19.74 𠄎
150	15.18 𠄎	16.65 Z	7.04 𠄎	2.96 𠄎	12.26 𠄎	27.82 𠄎	27.71 𠄎	17.49 𠄎	7.04 𠄎	23.78 𠄎	27.73 𠄎	27.82 𠄎	4.67 𠄎	23.28 𠄎
155	20.11 𠄎	18.25 Z	10.09 𠄎	6.71 𠄎	17.64 𠄎	3.06 𠄎	1.67 𠄎	20.71 𠄎	10.09 𠄎	26.54 𠄎	1.23 𠄎	3.06 𠄎	8.92 𠄎	26.80 𠄎
160	24.88 𠄎	19.93 Z	13.14 𠄎	10.54 𠄎	23.25 𠄎	8.36 𠄎	5.65 𠄎	23.94 𠄎	13.14 𠄎	29.32 𠄎	4.80 𠄎	8.36 𠄎	13.15 𠄎	0.30 𠄎
165	29.54 𠄎	21.69 Z	16.20 𠄎	14.48 𠄎	29.14 𠄎	13.72 𠄎	9.65 𠄎	27.18 𠄎	16.20 𠄎	2.12 𠄎	8.48 𠄎	13.72 𠄎	17.35 𠄎	3.79 𠄎
170	4.09 𠄎	23.51 Z	19.26 𠄎	18.54 𠄎	5.33 𠄎	19.12 𠄎	13.65 𠄎	0.43 𠄎	19.26 𠄎	4.95 𠄎	12.29 𠄎	19.12 𠄎	21.51 𠄎	7.27 𠄎
175	8.55 𠄎	25.39 Z	22.34 𠄎	22.76 𠄎	11.84 𠄎	24.55 𠄎	17.66 𠄎	3.69 𠄎	22.34 𠄎	7.83 𠄎	16.29 𠄎	24.55 𠄎	25.64 𠄎	10.73 𠄎
180	12.93 𠄎	27.31 Z	25.43 𠄎	27.20 𠄎	18.69 𠄎	0.00 𠄎	21.68 𠄎	6.96 𠄎	25.43 𠄎	10.76 𠄎	20.50 𠄎	0.00 𠄎	29.72 𠄎	14.18 𠄎

60° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	17.27 ♁	29.26 Z	28.56 ♀	1.90 ♂	25.89 ≍	5.45 ♀	25.69 ♀	10.24 ♂	28.56 ♂	13.78 ♀	25.00 ♁	5.45 ♁	3.76 ♀	17.63 ♀
190	21.55 ♁	31.24 Z	1.73 ♂	6.95 ♂	3.41 ♀	10.88 ♀	29.70 ♀	13.55 ♂	1.73 ♀	16.90 ♀	29.87 ♁	10.88 ♁	7.76 ♀	21.07 ♀
195	25.81 ♁	33.22 Z	4.95 ♂	12.44 ♂	11.23 ♀	16.28 ♀	3.71 ♂	16.87 ♂	4.95 ♀	20.17 ♀	5.19 ♀	16.28 ♁	11.72 ♀	24.52 ♀
200	0.04 ♀	35.21 Z	8.24 ♂	18.49 ♂	19.26 ♀	21.64 ♀	7.72 ♂	20.21 ♂	8.24 ♀	23.61 ♀	11.11 ♀	21.64 ♁	15.65 ♀	27.98 ♀
205	4.26 ♀	37.18 Z	11.61 ♂	25.26 ♂	27.43 ♀	26.94 ♀	11.72 ♂	23.58 ♂	11.61 ♀	27.30 ♀	17.75 ♀	26.94 ♁	19.54 ♀	1.46 ♂
210	8.48 ♀	39.12 Z	15.11 ♂	2.97 ≍	5.63 ♀	2.18 ♂	15.73 ♂	26.99 ♂	15.11 ♀	1.30 ♁	25.31 ♀	2.18 ♀	23.39 ♀	4.98 ♂
215	12.70 ♀	41.02 Z	18.76 ♂	11.84 ≍	13.74 ♀	7.35 ♂	19.73 ♂	0.44 ♀	18.76 ♀	5.75 ♁	3.94 ♀	7.35 ♀	27.21 ♀	8.53 ♂
220	16.93 ♀	42.86 Z	22.62 ♂	22.10 ≍	21.67 ♀	12.45 ♂	23.74 ♂	3.94 ♀	22.62 ♀	10.82 ♁	13.78 ♀	12.45 ♀	1.01 ♂	12.15 ♂
225	21.17 ♀	44.61 Z	26.75 ♂	3.87 ♀	29.33 ♀	17.46 ♂	27.77 ♂	7.52 ♀	26.75 ♀	16.79 ♁	24.80 ♀	17.46 ♀	4.78 ♂	15.83 ♂
230	25.42 ♀	46.27 Z	1.24 ♂	16.99 ♀	6.68 ♂	22.41 ♂	1.82 ♀	11.18 ♀	1.24 ♁	24.09 ♁	6.74 ♁	22.41 ♀	8.52 ♂	19.60 ♂
235	29.69 ♀	47.81 Z	6.23 ♂	0.92 ♀	13.66 ♂	27.28 ♂	5.89 ♀	14.95 ♀	6.23 ♁	3.45 ♀	19.09 ♁	27.28 ♀	12.23 ♂	23.48 ♂
240	3.98 ♂	49.21 Z	11.92 ♂	14.76 ♀	20.29 ♂	2.09 ♀	10.01 ♀	18.86 ♀	11.92 ♁	16.03 ♀	1.20 ♀	2.09 ♂	15.90 ♂	27.45 ♂
245	8.28 ♂	50.44 Z	18.64 ♂	27.63 ♀	26.56 ♂	6.84 ♀	14.19 ♀	22.95 ♀	18.64 ♁	3.38 ♀	12.49 ♀	6.84 ♂	19.51 ♂	1.52 ♂
250	12.61 ♂	51.49 Z	26.86 ♂	9.00 ♂	2.48 ♀	11.53 ♀	18.45 ♀	27.29 ♀	26.86 ♁	26.08 ♀	22.67 ♀	11.53 ♂	23.06 ♂	5.62 ♂
255	16.94 ♂	52.32 Z	7.31 ≍	18.70 ♂	8.05 ♀	16.19 ♀	22.81 ♀	1.99 ♁	7.31 ♀	20.77 ♁	1.67 ♂	16.19 ♂	26.54 ♂	9.67 ♂
260	21.29 ♂	52.94 Z	21.02 ≍	26.76 ♂	13.28 ♀	20.81 ♀	27.36 ♀	7.26 ♁	21.02 ♀	11.86 ♀	9.57 ♂	20.81 ♂	0.01 ♂	13.58 ♂
265	25.64 ♂	53.31 Z	8.83 ♀	3.28 ♀	18.11 ♀	25.41 ♀	2.20 ♁	13.54 ♁	8.83 ♀	27.38 ♀	16.46 ♂	25.41 ♂	3.60 ♂	17.42 ♂
270	0.00 ♂	53.44 Z	0.00 ♀	8.41 ♀	22.48 ♀	0.00 ♁	7.52 ♁	21.59 ♁	0.00 ♁	8.41 ♂	22.48 ♂	0.00 ♂	7.52 ♂	21.59 ♂
275	4.36 ♂	53.31 Z	21.17 ♀	12.58 ♀	26.40 ♀	4.59 ♁	13.54 ♁	2.62 ♀	21.17 ♁	16.46 ♂	27.80 ♂	4.59 ♂	11.89 ♂	26.72 ♂
280	8.71 ♂	52.94 Z	8.98 ♂	16.42 ♀	29.99 ♀	9.19 ♁	20.43 ♁	18.14 ♀	8.98 ♀	22.74 ♂	2.64 ♂	9.19 ♂	16.72 ♂	3.24 ≍
285	13.06 ♂	52.32 Z	22.69 ♂	20.33 ♀	3.46 ♁	13.81 ♁	28.33 ♁	9.23 ♀	22.69 ♀	28.01 ♂	7.19 ♂	13.81 ♂	21.95 ♂	11.30 ≍
290	17.39 ♂	51.49 Z	3.14 ♀	24.38 ♀	6.94 ♁	18.47 ♁	7.33 ♀	3.92 ♁	3.14 ♂	2.71 ♂	11.55 ♂	18.47 ♂	27.52 ♂	21.00 ≍
295	21.72 ♂	50.44 Z	11.36 ♀	28.48 ♀	10.49 ♁	23.16 ♁	17.51 ♀	26.62 ♁	11.36 ♂	7.05 ♂	15.81 ♂	23.16 ♂	3.44 ≍	2.37 ♀
300	26.02 ♂	49.21 Z	18.08 ♀	2.55 ♁	14.10 ♁	27.91 ♁	28.80 ♀	13.97 ♀	18.08 ♂	11.14 ♂	19.99 ♂	27.91 ♂	9.71 ≍	15.24 ♀
305	0.31 ≍	47.81 Z	23.77 ♀	6.52 ♁	17.77 ♁	2.72 ♀	10.91 ♀	26.55 ♀	23.77 ♂	15.05 ♂	24.11 ♂	2.72 ≍	16.34 ≍	29.08 ♀
310	4.58 ≍	46.27 Z	28.76 ♀	10.40 ♁	21.48 ♁	7.59 ♀	23.26 ♀	5.91 ♂	28.76 ♂	18.82 ♂	28.18 ♂	7.59 ≍	23.32 ≍	13.01 ♀
315	8.83 ≍	44.61 Z	3.25 ♁	14.17 ♁	25.22 ♁	12.54 ♀	5.20 ♁	13.21 ♂	3.25 ♂	22.48 ♂	2.23 ≍	12.54 ≍	0.67 ♀	26.13 ♀
320	13.07 ≍	42.86 Z	7.38 ♁	17.85 ♁	28.99 ♁	17.55 ♀	16.22 ♁	19.18 ♂	7.38 ♂	26.06 ♂	6.26 ≍	17.55 ≍	8.33 ♀	7.90 ♂
325	17.30 ≍	41.02 Z	11.24 ♁	21.47 ♁	2.79 ♀	22.65 ♀	26.06 ♁	24.25 ♂	11.24 ♂	29.56 ♂	10.27 ≍	22.65 ≍	16.26 ♀	18.16 ♂
330	21.52 ≍	39.12 Z	14.89 ♁	25.02 ♁	6.61 ♀	27.82 ♀	4.69 ♀	28.70 ♂	14.89 ♂	3.01 ≍	14.27 ≍	27.82 ≍	24.37 ♀	27.03 ♂
335	25.74 ≍	37.18 Z	18.39 ♁	28.54 ♁	10.46 ♀	3.06 ♀	12.25 ♀	2.70 ♂	18.39 ♂	6.42 ≍	18.28 ≍	3.06 ♀	2.57 ♀	4.74 ♀
340	29.96 ≍	35.21 Z	21.76 ♁	2.02 ♀	14.35 ♀	8.36 ♀	18.89 ♀	6.39 ♂	21.76 ♂	9.79 ≍	22.28 ≍	8.36 ♀	10.74 ♀	11.51 ♀
345	4.19 ♀	33.22 Z	25.05 ♁	5.48 ♀	18.28 ♀	13.72 ♀	24.81 ♀	9.83 ♂	25.05 ♂	13.13 ≍	26.29 ≍	13.72 ♀	18.77 ♀	17.56 ♀
350	8.45 ♀	31.24 Z	28.27 ♁	8.93 ♀	22.24 ♀	19.12 ♀	0.13 ♂	13.10 ♂	28.27 ♂	16.45 ≍	0.30 ♀	19.12 ♀	26.59 ♀	23.05 ♀
355	12.73 ♀	29.26 Z	1.44 ♀	12.37 ♀	26.24 ♀	24.55 ♀	5.00 ♂	16.22 ♂	1.44 ≍	19.76 ≍	4.31 ♀	24.55 ♀	4.11 ♂	28.10 ♀
360	17.07 ♀	27.31 Z	4.57 ♀	15.82 ♀	0.28 ♀	0.00 ♁	9.50 ♂	19.24 ♂	4.57 ≍	23.04 ≍	8.32 ♀	0.00 ♀	11.31 ♂	2.80 ♁

65° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	19.49 𠄎	22.81 Z	10.47 𠄎	19.17 𠄎	1.06 𠄎	0.00 𠄎	24.14 𠄎	28.76 𠄎	10.47 𠄎	26.31 𠄎	9.59 𠄎	0.00 𠄎	15.54 𠄎	11.63 𠄎
5	23.95 𠄎	20.87 Z	13.12 𠄎	22.30 𠄎	4.93 𠄎	5.45 𠄎	26.80 𠄎	0.97 𠄎	13.12 𠄎	29.31 𠄎	13.40 𠄎	5.45 𠄎	22.67 𠄎	15.37 𠄎
10	28.48 𠄎	18.97 Z	15.79 𠄎	25.46 𠄎	8.84 𠄎	10.88 𠄎	29.46 𠄎	3.19 𠄎	15.79 𠄎	2.30 𠄎	17.21 𠄎	10.88 𠄎	29.34 𠄎	18.96 𠄎
15	3.08 𠄎	17.12 Z	18.47 𠄎	28.64 𠄎	12.79 𠄎	16.28 𠄎	2.12 𠄎	5.42 𠄎	18.47 𠄎	5.28 𠄎	21.01 𠄎	16.28 𠄎	5.59 𠄎	22.46 𠄎
20	7.78 𠄎	15.33 Z	21.15 𠄎	1.83 𠄎	16.77 𠄎	21.64 𠄎	4.79 𠄎	7.67 𠄎	21.15 𠄎	8.26 𠄎	24.80 𠄎	21.64 𠄎	11.47 𠄎	25.88 𠄎
25	12.58 𠄎	13.61 Z	23.85 𠄎	5.05 𠄎	20.79 𠄎	26.94 𠄎	7.48 𠄎	9.94 𠄎	23.85 𠄎	11.22 𠄎	28.57 𠄎	26.94 𠄎	17.03 𠄎	29.24 𠄎
30	17.51 𠄎	11.98 Z	26.57 𠄎	8.29 𠄎	24.83 𠄎	2.18 𠄎	10.20 𠄎	12.22 𠄎	26.57 𠄎	14.17 𠄎	2.32 𠄎	2.18 𠄎	22.32 𠄎	2.56 𠄎
35	22.59 𠄎	10.43 Z	29.29 𠄎	11.55 𠄎	28.90 𠄎	7.35 𠄎	12.94 𠄎	14.54 𠄎	29.29 𠄎	17.11 𠄎	6.04 𠄎	7.35 𠄎	27.38 𠄎	5.86 𠄎
40	27.82 𠄎	8.98 Z	2.03 𠄎	14.83 𠄎	3.00 𠄎	12.45 𠄎	15.71 𠄎	16.87 𠄎	2.03 𠄎	20.03 𠄎	9.73 𠄎	12.45 𠄎	2.24 𠄎	9.13 𠄎
45	3.23 𠄎	7.63 Z	4.79 𠄎	18.12 𠄎	7.11 𠄎	17.46 𠄎	18.52 𠄎	19.24 𠄎	4.79 𠄎	22.93 𠄎	13.39 𠄎	17.46 𠄎	6.94 𠄎	12.40 𠄎
50	8.83 𠄎	6.41 Z	7.55 𠄎	21.43 𠄎	11.23 𠄎	22.41 𠄎	21.36 𠄎	21.64 𠄎	7.55 𠄎	25.82 𠄎	17.02 𠄎	22.41 𠄎	11.51 𠄎	15.66 𠄎
55	14.62 𠄎	5.30 Z	10.33 𠄎	24.75 𠄎	15.37 𠄎	27.28 𠄎	24.24 𠄎	24.06 𠄎	10.33 𠄎	28.69 𠄎	20.60 𠄎	27.28 𠄎	15.97 𠄎	18.92 𠄎
60	20.62 𠄎	4.33 Z	13.12 𠄎	28.07 𠄎	19.51 𠄎	2.09 𠄎	27.16 𠄎	26.52 𠄎	13.12 𠄎	1.53 𠄎	24.14 𠄎	2.09 𠄎	20.35 𠄎	22.18 𠄎
65	26.81 𠄎	3.50 Z	15.92 𠄎	1.40 𠄎	23.65 𠄎	6.84 𠄎	0.12 𠄎	29.01 𠄎	15.92 𠄎	4.36 𠄎	27.63 𠄎	6.84 𠄎	24.65 𠄎	25.45 𠄎
70	3.19 𠄎	2.81 Z	18.72 𠄎	4.74 𠄎	27.79 𠄎	11.53 𠄎	3.13 𠄎	1.53 𠄎	18.72 𠄎	7.15 𠄎	1.08 𠄎	11.53 𠄎	28.91 𠄎	28.73 𠄎
75	9.73 𠄎	2.26 Z	21.54 𠄎	8.07 𠄎	1.94 𠄎	16.19 𠄎	6.18 𠄎	4.08 𠄎	21.54 𠄎	9.92 𠄎	4.48 𠄎	16.19 𠄎	3.12 𠄎	2.02 𠄎
80	16.41 𠄎	1.87 Z	24.35 𠄎	11.41 𠄎	6.08 𠄎	20.81 𠄎	9.28 𠄎	6.67 𠄎	24.35 𠄎	12.67 𠄎	7.82 𠄎	20.81 𠄎	7.31 𠄎	5.32 𠄎
85	23.18 𠄎	1.64 Z	27.18 𠄎	14.74 𠄎	10.22 𠄎	25.41 𠄎	12.43 𠄎	9.29 𠄎	27.18 𠄎	15.38 𠄎	11.12 𠄎	25.41 𠄎	11.48 𠄎	8.62 𠄎
90	0.00 𠄎	1.56 Z	0.00 𠄎	18.06 𠄎	14.37 𠄎	0.00 𠄎	15.63 𠄎	11.94 𠄎	0.00 𠄎	18.06 𠄎	14.37 𠄎	0.00 𠄎	15.63 𠄎	11.94 𠄎
95	6.82 𠄎	1.64 Z	2.82 𠄎	21.38 𠄎	18.52 𠄎	4.59 𠄎	18.88 𠄎	14.62 𠄎	2.82 𠄎	20.71 𠄎	17.57 𠄎	4.59 𠄎	19.78 𠄎	15.26 𠄎
100	13.59 𠄎	1.87 Z	5.65 𠄎	24.68 𠄎	22.69 𠄎	9.19 𠄎	22.18 𠄎	17.33 𠄎	5.65 𠄎	23.33 𠄎	20.72 𠄎	9.19 𠄎	23.92 𠄎	18.59 𠄎
105	20.27 𠄎	2.26 Z	8.46 𠄎	27.98 𠄎	26.88 𠄎	13.81 𠄎	25.52 𠄎	20.08 𠄎	8.46 𠄎	25.92 𠄎	23.82 𠄎	13.81 𠄎	28.06 𠄎	21.93 𠄎
110	26.81 𠄎	2.81 Z	11.28 𠄎	1.27 𠄎	1.09 𠄎	18.47 𠄎	28.92 𠄎	22.85 𠄎	11.28 𠄎	28.47 𠄎	26.87 𠄎	18.47 𠄎	2.21 𠄎	25.26 𠄎
115	3.19 𠄎	3.50 Z	14.08 𠄎	4.55 𠄎	5.35 𠄎	23.16 𠄎	2.37 𠄎	25.64 𠄎	14.08 𠄎	0.99 𠄎	29.88 𠄎	23.16 𠄎	6.35 𠄎	28.60 𠄎
120	9.38 𠄎	4.33 Z	16.88 𠄎	7.82 𠄎	9.65 𠄎	27.91 𠄎	5.86 𠄎	28.47 𠄎	16.88 𠄎	3.48 𠄎	2.84 𠄎	27.91 𠄎	10.49 𠄎	1.93 𠄎
125	15.38 𠄎	5.30 Z	19.67 𠄎	11.08 𠄎	14.03 𠄎	2.72 𠄎	9.40 𠄎	1.31 𠄎	19.67 𠄎	5.94 𠄎	5.76 𠄎	2.72 𠄎	14.63 𠄎	5.25 𠄎
130	21.17 𠄎	6.41 Z	22.45 𠄎	14.34 𠄎	18.49 𠄎	7.59 𠄎	12.98 𠄎	4.18 𠄎	22.45 𠄎	8.36 𠄎	8.64 𠄎	7.59 𠄎	18.77 𠄎	8.57 𠄎
135	26.77 𠄎	7.63 Z	25.21 𠄎	17.60 𠄎	23.06 𠄎	12.54 𠄎	16.61 𠄎	7.07 𠄎	25.21 𠄎	10.76 𠄎	11.48 𠄎	12.54 𠄎	22.89 𠄎	11.88 𠄎
140	2.18 𠄎	8.98 Z	27.97 𠄎	20.87 𠄎	27.76 𠄎	17.55 𠄎	20.27 𠄎	9.97 𠄎	27.97 𠄎	13.13 𠄎	14.29 𠄎	17.55 𠄎	27.00 𠄎	15.17 𠄎
145	7.41 𠄎	10.43 Z	0.71 𠄎	24.14 𠄎	2.62 𠄎	22.65 𠄎	23.96 𠄎	12.89 𠄎	0.71 𠄎	15.46 𠄎	17.06 𠄎	22.65 𠄎	1.10 𠄎	18.45 𠄎
150	12.49 𠄎	11.98 Z	3.43 𠄎	27.44 𠄎	7.68 𠄎	27.82 𠄎	27.68 𠄎	15.83 𠄎	3.43 𠄎	17.78 𠄎	19.80 𠄎	27.82 𠄎	5.17 𠄎	21.71 𠄎
155	17.42 𠄎	13.61 Z	6.15 𠄎	0.76 𠄎	12.97 𠄎	3.06 𠄎	1.43 𠄎	18.78 𠄎	6.15 𠄎	20.06 𠄎	22.52 𠄎	3.06 𠄎	9.21 𠄎	24.95 𠄎
160	22.22 𠄎	15.33 Z	8.85 𠄎	4.12 𠄎	18.53 𠄎	8.36 𠄎	5.20 𠄎	21.74 𠄎	8.85 𠄎	22.33 𠄎	25.21 𠄎	8.36 𠄎	13.23 𠄎	28.17 𠄎
165	26.92 𠄎	17.12 Z	11.53 𠄎	7.54 𠄎	24.41 𠄎	13.72 𠄎	8.99 𠄎	24.72 𠄎	11.53 𠄎	24.58 𠄎	27.88 𠄎	13.72 𠄎	17.21 𠄎	1.36 𠄎
170	1.52 𠄎	18.97 Z	14.21 𠄎	11.04 𠄎	0.66 𠄎	19.12 𠄎	12.79 𠄎	27.70 𠄎	14.21 𠄎	26.81 𠄎	0.54 𠄎	19.12 𠄎	21.16 𠄎	4.54 𠄎
175	6.05 𠄎	20.87 Z	16.88 𠄎	14.63 𠄎	7.33 𠄎	24.55 𠄎	16.60 𠄎	0.69 𠄎	16.88 𠄎	29.03 𠄎	3.20 𠄎	24.55 𠄎	25.07 𠄎	7.70 𠄎
180	10.51 𠄎	22.81 Z	19.53 𠄎	18.37 𠄎	14.46 𠄎	0.00 𠄎	20.41 𠄎	3.69 𠄎	19.53 𠄎	1.24 𠄎	5.86 𠄎	0.00 𠄎	28.94 𠄎	10.83 𠄎

65° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	14.92 ♄	24.78 Z	22.19 ♍	22.28 ♁	22.08 ♃	5.45 ♀	24.23 ♀	6.69 ♂	22.19 ♂	3.45 ♀	8.55 ☽	5.45 ♄	2.76 ♍	13.94 ♍
190	19.30 ♄	26.77 Z	24.84 ♍	26.44 ♁	0.18 ♁	10.88 ♀	28.05 ♀	9.71 ♂	24.84 ♂	5.67 ♀	11.28 ☽	10.88 ♄	6.54 ♍	17.04 ♍
195	23.65 ♄	28.75 Z	27.49 ♍	0.94 ☾	8.74 ♁	16.28 ♀	1.87 ♂	12.74 ♂	27.49 ♂	7.89 ♀	14.09 ☽	16.28 ♄	10.29 ♍	20.12 ♍
200	27.98 ♄	30.73 Z	0.15 ♁	5.90 ☾	17.66 ♁	21.64 ♀	5.68 ♂	15.78 ♂	0.15 ♀	10.14 ♀	17.02 ☽	21.64 ♄	13.99 ♍	23.19 ♍
205	2.31 ♍	32.69 Z	2.82 ♁	11.51 ☾	26.82 ♁	26.94 ♀	9.50 ♂	18.83 ♂	2.82 ♀	12.42 ♀	20.14 ☽	26.94 ♄	17.65 ♍	26.25 ♍
210	6.65 ♍	34.61 Z	5.52 ♁	18.08 ☾	6.05 ♀	2.18 ♂	13.32 ♂	21.91 ♂	5.52 ♀	14.76 ♀	23.56 ☽	2.18 ♍	21.28 ♍	29.31 ♍
215	10.99 ♍	36.48 Z	8.25 ♁	26.07 ☾	15.17 ♀	7.35 ♂	17.14 ♂	25.00 ♂	8.25 ♀	17.17 ♀	27.44 ☽	7.35 ♍	24.87 ♍	2.37 ♁
220	15.34 ♍	38.28 Z	11.03 ♁	6.21 ♃	24.01 ♀	12.45 ♂	20.97 ♂	28.13 ♂	11.03 ♀	19.70 ♀	2.07 ♀	12.45 ♍	28.45 ♍	5.45 ♁
225	19.72 ♍	39.99 Z	13.89 ♁	19.55 ♃	2.44 ♂	17.46 ♂	24.81 ♂	1.30 ♀	13.89 ♀	22.38 ♀	7.94 ♀	17.46 ♍	2.00 ♁	8.56 ♁
230	24.11 ♍	41.60 Z	16.85 ♁	7.14 ♁	10.40 ♂	22.41 ♂	28.68 ♂	4.51 ♀	16.85 ♀	25.32 ♀	15.91 ♀	22.41 ♍	5.54 ♁	11.70 ♁
235	28.53 ♍	43.08 Z	19.97 ♁	28.60 ♁	17.85 ♂	27.28 ♂	2.57 ♀	7.79 ♀	19.97 ♀	28.66 ♀	27.58 ♀	27.28 ♍	9.07 ♁	14.92 ♁
240	2.97 ♁	44.42 Z	23.33 ♁	20.59 ♀	24.80 ♂	2.09 ♀	6.50 ♀	11.14 ♀	23.33 ♀	2.69 ☽	15.44 ♁	2.09 ♁	12.61 ♁	18.23 ♁
245	7.43 ♁	45.60 Z	27.09 ♁	9.22 ♂	1.27 ♀	6.84 ♀	10.49 ♀	14.60 ♀	27.09 ♀	8.06 ☽	10.70 ♄	6.84 ♁	16.16 ♁	21.69 ♁
250	11.92 ♁	46.59 Z	1.53 ☾	23.46 ♂	7.32 ♀	11.53 ♀	14.54 ♀	18.20 ♀	1.53 ☽	16.63 ☽	7.42 ♍	11.53 ♁	19.69 ♁	25.33 ♁
255	16.42 ♁	47.39 Z	7.31 ☾	4.20 ♀	12.99 ♀	16.19 ♀	18.67 ♀	21.96 ♀	7.31 ☽	6.29 ♀	27.73 ♍	16.19 ♁	23.16 ♁	29.16 ♁
260	20.94 ♁	47.97 Z	16.22 ☾	12.55 ♀	18.33 ♀	20.81 ♀	22.91 ♀	25.96 ♀	16.22 ☽	14.88 ♄	11.36 ♁	20.81 ♁	26.40 ♁	2.93 ☾
265	25.47 ♁	48.32 Z	4.97 ♃	19.24 ♀	23.39 ♀	25.41 ♀	27.28 ♀	0.31 ☽	4.97 ♀	8.13 ♁	20.92 ♁	25.41 ♁	29.18 ♁	5.47 ☾
270	0.00 ☾	48.44 Z	0.00 ♀	23.63 ♀	27.87 ♀	0.00 ☽	2.13 ☽	6.37 ☽	0.00 ♄	23.63 ♁	27.87 ♁	0.00 ☾	2.13 ☾	6.37 ☾
275	4.53 ☾	48.32 Z	25.03 ♂	24.53 ♀	0.82 ☽	4.59 ☽	9.08 ☽	21.87 ☽	25.03 ♍	29.69 ♁	2.72 ☾	4.59 ☾	6.61 ☾	10.76 ☾
280	9.06 ☾	47.97 Z	13.78 ♀	27.07 ♀	3.60 ☽	9.19 ☽	18.64 ☽	15.12 ♁	13.78 ♁	4.04 ☾	7.09 ☾	9.19 ☾	11.67 ☾	17.45 ☾
285	13.58 ☾	47.39 Z	22.69 ♀	0.84 ☽	6.84 ☽	13.81 ☽	2.27 ♀	23.71 ♍	22.69 ♁	8.04 ☾	11.33 ☾	13.81 ☾	17.01 ☾	25.80 ☾
290	18.08 ☾	46.59 Z	28.47 ♀	4.67 ☽	10.31 ☽	18.47 ☽	22.58 ♀	13.37 ♁	28.47 ♁	11.80 ☾	15.46 ☾	18.47 ☾	22.68 ☾	6.54 ♃
295	22.57 ☾	45.60 Z	2.91 ☽	8.31 ☽	13.84 ☽	23.16 ☽	19.30 ♁	21.94 ♁	2.91 ☾	15.40 ☾	19.51 ☾	23.16 ☾	28.73 ☾	20.78 ♃
300	27.03 ☾	44.42 Z	6.67 ☽	11.77 ☽	17.39 ☽	27.91 ☽	14.56 ♄	27.31 ♁	6.67 ☾	18.86 ☾	23.50 ☾	27.91 ☾	5.20 ♃	9.41 ♁
305	1.47 ♃	43.08 Z	10.03 ☽	15.08 ☽	20.93 ☽	2.72 ♀	2.42 ♍	1.34 ☾	10.03 ☾	22.21 ☾	27.43 ☾	2.72 ♃	12.15 ♃	1.40 ♀
310	5.89 ♃	41.60 Z	13.15 ☽	18.30 ☽	24.46 ☽	7.59 ♀	14.09 ♍	4.68 ☾	13.15 ☾	25.49 ☾	1.32 ♃	7.59 ♃	19.60 ♃	22.86 ♀
315	10.28 ♃	39.99 Z	16.11 ☽	21.44 ☽	28.00 ☽	12.54 ♀	22.06 ♍	7.62 ☾	16.11 ☾	28.70 ☾	5.19 ♃	12.54 ♃	27.56 ♃	10.45 ♂
320	14.66 ♃	38.28 Z	18.97 ☽	24.55 ☽	1.55 ♀	17.55 ♀	27.93 ♍	10.30 ☾	18.97 ☾	1.87 ♃	9.03 ♃	17.55 ♃	5.99 ♁	23.79 ♂
325	19.01 ♃	36.48 Z	21.75 ☽	27.63 ☽	5.13 ♀	22.65 ♀	2.56 ♁	12.83 ☾	21.75 ☾	5.00 ♃	12.86 ♃	22.65 ♃	14.83 ♁	3.93 ♀
330	23.35 ♃	34.61 Z	24.48 ☽	0.69 ♀	8.72 ♀	27.82 ♀	6.44 ♁	15.24 ☾	24.48 ☾	8.09 ♃	16.68 ♃	27.82 ♃	23.95 ♁	11.92 ♀
335	27.69 ♃	32.69 Z	27.18 ☽	3.75 ♀	12.35 ♀	3.06 ♁	9.86 ♁	17.58 ☾	27.18 ☾	11.17 ♃	20.50 ♃	3.06 ♁	3.18 ♀	18.49 ♀
340	2.02 ♁	30.73 Z	29.85 ☽	6.81 ♀	16.01 ♀	8.36 ♁	12.98 ♁	19.86 ☾	29.85 ☾	14.22 ♃	24.32 ♃	8.36 ♁	12.34 ♀	24.10 ♀
345	6.35 ♁	28.75 Z	2.51 ♀	9.88 ♀	19.71 ♀	13.72 ♁	15.91 ♁	22.11 ☾	2.51 ♃	17.26 ♃	28.13 ♃	13.72 ♁	21.26 ♀	29.06 ♀
350	10.70 ♁	26.77 Z	5.16 ♀	12.96 ♀	23.46 ♀	19.12 ♁	18.72 ♁	24.33 ☾	5.16 ♃	20.29 ♃	1.95 ♁	19.12 ♁	29.82 ♀	3.56 ☽
355	15.08 ♁	24.78 Z	7.81 ♀	16.06 ♀	27.24 ♀	24.55 ♁	21.45 ♁	26.55 ☾	7.81 ♃	23.31 ♃	5.77 ♁	24.55 ♁	7.92 ♂	7.72 ☽
360	19.49 ♁	22.81 Z	10.47 ♀	19.17 ♀	1.06 ♁	0.00 ♄	24.14 ♁	28.76 ☾	10.47 ♃	26.31 ♃	9.59 ♁	0.00 ♀	15.54 ♂	11.63 ☽

70° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
0	21.76 𐄀	18.29 Z	17.54 𐄀	23.55 𐄀	2.45 𐄀	0.00 𐄀	15.06 𐄀	9.76 𐄀	17.54 𐄀	0.16 𐄀	11.12 𐄀	0.00 𐄀	23.54 𐄀	23.86 𐄀
5	26.28 𐄀	16.33 Z	19.66 𐄀	26.24 𐄀	5.98 𐄀	5.45 𐄀	15.39 𐄀	11.19 𐄀	19.66 𐄀	2.83 𐄀	14.68 𐄀	5.45 𐄀	0.78 𐄀	26.41 𐄀
10	0.85 𐄀	14.41 Z	21.82 𐄀	28.98 𐄀	9.57 𐄀	10.88 𐄀	16.04 𐄀	12.69 𐄀	21.82 𐄀	5.49 𐄀	18.23 𐄀	10.88 𐄀	7.39 𐄀	29.00 𐄀
15	5.48 𐄀	12.54 Z	24.02 𐄀	1.76 𐄀	13.21 𐄀	16.28 𐄀	16.97 𐄀	14.25 𐄀	24.02 𐄀	8.14 𐄀	21.77 𐄀	16.28 𐄀	13.46 𐄀	1.61 𐄀
20	10.20 𐄀	10.72 Z	26.26 𐄀	4.57 𐄀	16.90 𐄀	21.64 𐄀	18.13 𐄀	15.88 𐄀	26.26 𐄀	10.79 𐄀	25.29 𐄀	21.64 𐄀	19.09 𐄀	4.26 𐄀
25	15.01 𐄀	8.96 Z	28.53 𐄀	7.42 𐄀	20.62 𐄀	26.94 𐄀	19.51 𐄀	17.56 𐄀	28.53 𐄀	13.44 𐄀	28.79 𐄀	26.94 𐄀	24.35 𐄀	6.93 𐄀
30	19.93 𐄀	7.29 Z	0.83 𐄀	10.31 𐄀	24.38 𐄀	2.18 𐄀	21.08 𐄀	19.30 𐄀	0.83 𐄀	16.07 𐄀	2.27 𐄀	2.18 𐄀	29.33 𐄀	9.63 𐄀
35	24.97 𐄀	5.70 Z	3.16 𐄀	13.21 𐄀	28.16 𐄀	7.35 𐄀	22.81 𐄀	21.09 𐄀	3.16 𐄀	18.69 𐄀	5.73 𐄀	7.35 𐄀	4.07 𐄀	12.36 𐄀
40	0.15 𐄀	4.22 Z	5.52 𐄀	16.15 𐄀	1.98 𐄀	12.45 𐄀	24.69 𐄀	22.94 𐄀	5.52 𐄀	21.30 𐄀	9.15 𐄀	12.45 𐄀	8.61 𐄀	15.12 𐄀
45	5.48 𐄀	2.84 Z	7.90 𐄀	19.10 𐄀	5.81 𐄀	17.46 𐄀	26.71 𐄀	24.83 𐄀	7.90 𐄀	23.88 𐄀	12.53 𐄀	17.46 𐄀	13.00 𐄀	17.90 𐄀
50	10.96 𐄀	1.57 Z	10.30 𐄀	22.07 𐄀	9.67 𐄀	22.41 𐄀	28.84 𐄀	26.78 𐄀	10.30 𐄀	26.45 𐄀	15.87 𐄀	22.41 𐄀	17.27 𐄀	20.71 𐄀
55	16.61 𐄀	0.44 Z	12.73 𐄀	25.05 𐄀	13.53 𐄀	27.28 𐄀	1.08 𐄀	28.77 𐄀	12.73 𐄀	29.00 𐄀	19.17 𐄀	27.28 𐄀	21.44 𐄀	23.54 𐄀
60	22.42 𐄀	0.57 N	15.16 𐄀	28.04 𐄀	17.41 𐄀	2.09 𐄀	3.42 𐄀	0.81 𐄀	15.16 𐄀	1.52 𐄀	22.42 𐄀	2.09 𐄀	25.53 𐄀	26.40 𐄀
65	28.39 𐄀	1.43 N	17.61 𐄀	1.04 𐄀	21.29 𐄀	6.84 𐄀	5.85 𐄀	2.90 𐄀	17.61 𐄀	4.01 𐄀	25.62 𐄀	6.84 𐄀	29.56 𐄀	29.28 𐄀
70	4.51 𐄀	2.15 N	20.08 𐄀	4.04 𐄀	25.18 𐄀	11.53 𐄀	8.38 𐄀	5.03 𐄀	20.08 𐄀	6.48 𐄀	28.77 𐄀	11.53 𐄀	3.55 𐄀	2.18 𐄀
75	10.76 𐄀	2.71 N	22.55 𐄀	7.05 𐄀	29.07 𐄀	16.19 𐄀	10.98 𐄀	7.21 𐄀	22.55 𐄀	8.92 𐄀	1.86 𐄀	16.19 𐄀	7.51 𐄀	5.10 𐄀
80	17.11 𐄀	3.11 N	25.03 𐄀	10.05 𐄀	2.96 𐄀	20.81 𐄀	13.67 𐄀	9.42 𐄀	25.03 𐄀	11.32 𐄀	4.88 𐄀	20.81 𐄀	11.44 𐄀	8.05 𐄀
85	23.54 𐄀	3.36 N	27.51 𐄀	13.04 𐄀	6.85 𐄀	25.41 𐄀	16.42 𐄀	11.68 𐄀	27.51 𐄀	13.69 𐄀	7.85 𐄀	25.41 𐄀	15.35 𐄀	11.00 𐄀
90	0.00 𐄀	3.44 N	0.00 𐄀	16.02 𐄀	10.75 𐄀	0.00 𐄀	19.25 𐄀	13.98 𐄀	0.00 𐄀	16.02 𐄀	10.75 𐄀	0.00 𐄀	19.25 𐄀	13.98 𐄀
95	6.46 𐄀	3.36 N	2.49 𐄀	19.00 𐄀	14.65 𐄀	4.59 𐄀	22.15 𐄀	16.31 𐄀	2.49 𐄀	18.32 𐄀	13.58 𐄀	4.59 𐄀	23.15 𐄀	16.96 𐄀
100	12.89 𐄀	3.11 N	4.97 𐄀	21.95 𐄀	18.56 𐄀	9.19 𐄀	25.12 𐄀	18.68 𐄀	4.97 𐄀	20.58 𐄀	16.33 𐄀	9.19 𐄀	27.04 𐄀	19.95 𐄀
105	19.24 𐄀	2.71 N	7.45 𐄀	24.90 𐄀	22.49 𐄀	13.81 𐄀	28.14 𐄀	21.08 𐄀	7.45 𐄀	22.79 𐄀	19.02 𐄀	13.81 𐄀	0.93 𐄀	22.95 𐄀
110	25.49 𐄀	2.15 N	9.92 𐄀	27.82 𐄀	26.45 𐄀	18.47 𐄀	1.23 𐄀	23.52 𐄀	9.92 𐄀	24.97 𐄀	21.62 𐄀	18.47 𐄀	4.82 𐄀	25.96 𐄀
115	1.61 𐄀	1.43 N	12.39 𐄀	0.72 𐄀	0.44 𐄀	23.16 𐄀	4.38 𐄀	25.99 𐄀	12.39 𐄀	27.10 𐄀	24.15 𐄀	23.16 𐄀	8.71 𐄀	28.96 𐄀
120	7.58 𐄀	0.57 N	14.84 𐄀	3.60 𐄀	4.47 𐄀	27.91 𐄀	7.58 𐄀	28.48 𐄀	14.84 𐄀	29.19 𐄀	26.58 𐄀	27.91 𐄀	12.59 𐄀	1.96 𐄀
125	13.39 𐄀	0.44 Z	17.27 𐄀	6.46 𐄀	8.56 𐄀	2.72 𐄀	10.83 𐄀	1.00 𐄀	17.27 𐄀	1.23 𐄀	28.92 𐄀	2.72 𐄀	16.47 𐄀	4.95 𐄀
130	19.04 𐄀	1.57 Z	19.70 𐄀	9.29 𐄀	12.73 𐄀	7.59 𐄀	14.13 𐄀	3.55 𐄀	19.70 𐄀	3.22 𐄀	1.16 𐄀	7.59 𐄀	20.33 𐄀	7.93 𐄀
135	24.52 𐄀	2.84 Z	22.10 𐄀	12.10 𐄀	17.00 𐄀	12.54 𐄀	17.47 𐄀	6.12 𐄀	22.10 𐄀	5.17 𐄀	3.29 𐄀	12.54 𐄀	24.19 𐄀	10.90 𐄀
140	29.85 𐄀	4.22 Z	24.48 𐄀	14.88 𐄀	21.39 𐄀	17.55 𐄀	20.85 𐄀	8.70 𐄀	24.48 𐄀	7.06 𐄀	5.31 𐄀	17.55 𐄀	28.02 𐄀	13.85 𐄀
145	5.03 𐄀	5.70 Z	26.84 𐄀	17.64 𐄀	25.93 𐄀	22.65 𐄀	24.27 𐄀	11.31 𐄀	26.84 𐄀	8.91 𐄀	7.19 𐄀	22.65 𐄀	1.84 𐄀	16.79 𐄀
150	10.07 𐄀	7.29 Z	29.17 𐄀	20.37 𐄀	0.67 𐄀	27.82 𐄀	27.73 𐄀	13.93 𐄀	29.17 𐄀	10.70 𐄀	8.92 𐄀	27.82 𐄀	5.62 𐄀	19.69 𐄀
155	14.99 𐄀	8.96 Z	1.47 𐄀	23.07 𐄀	5.65 𐄀	3.06 𐄀	1.21 𐄀	16.56 𐄀	1.47 𐄀	12.44 𐄀	10.49 𐄀	3.06 𐄀	9.38 𐄀	22.58 𐄀
160	19.80 𐄀	10.72 Z	3.74 𐄀	25.74 𐄀	10.91 𐄀	8.36 𐄀	4.71 𐄀	19.21 𐄀	3.74 𐄀	14.12 𐄀	11.87 𐄀	8.36 𐄀	13.10 𐄀	25.43 𐄀
165	24.52 𐄀	12.54 Z	5.98 𐄀	28.39 𐄀	16.54 𐄀	13.72 𐄀	8.23 𐄀	21.86 𐄀	5.98 𐄀	15.75 𐄀	13.03 𐄀	13.72 𐄀	16.79 𐄀	28.24 𐄀
170	29.15 𐄀	14.41 Z	8.18 𐄀	1.00 𐄀	22.61 𐄀	19.12 𐄀	11.77 𐄀	24.51 𐄀	8.18 𐄀	17.31 𐄀	13.96 𐄀	19.12 𐄀	20.43 𐄀	1.02 𐄀
175	3.72 𐄀	16.33 Z	10.34 𐄀	3.59 𐄀	29.22 𐄀	24.55 𐄀	15.32 𐄀	27.17 𐄀	10.34 𐄀	18.81 𐄀	14.61 𐄀	24.55 𐄀	24.02 𐄀	3.76 𐄀
180	8.24 𐄀	18.29 Z	12.46 𐄀	6.14 𐄀	6.46 𐄀	0.00 𐄀	18.88 𐄀	29.84 𐄀	12.46 𐄀	20.24 𐄀	14.94 𐄀	0.00 𐄀	27.55 𐄀	6.45 𐄀

70° NB

$\alpha_z$	$\lambda_z$	$\beta_z$	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
185	12.71 $\underline{\text{a}}$	20.27 Z	14.52 $\text{m}$	8.66 $\text{a}$	14.46 $\text{a}$	5.45 $\text{Y}$	22.44 $\text{Y}$	2.50 $\text{Y}$	14.52 $\text{Y}$	21.60 $\text{Y}$	14.92 II	5.45 $\underline{\text{a}}$	1.03 $\text{m}$	9.09 $\text{m}$
190	17.16 $\underline{\text{a}}$	22.25 Z	16.53 $\text{m}$	11.13 $\text{a}$	23.30 $\text{a}$	10.88 $\text{Y}$	26.00 $\text{Y}$	5.16 $\text{Y}$	16.53 $\text{Y}$	22.88 $\text{Y}$	14.50 II	10.88 $\underline{\text{a}}$	4.45 $\text{m}$	11.68 $\text{m}$
195	21.59 $\underline{\text{a}}$	24.24 Z	18.47 $\text{m}$	13.56 $\text{a}$	3.01 $\text{H}$	16.28 $\text{Y}$	29.55 $\text{Y}$	7.81 $\text{Y}$	18.47 $\text{Y}$	24.07 $\text{Y}$	13.66 II	16.28 $\underline{\text{a}}$	7.79 $\text{m}$	14.20 $\text{m}$
200	26.01 $\underline{\text{a}}$	26.21 Z	20.34 $\text{m}$	15.92 $\text{a}$	13.54 $\text{H}$	21.64 $\text{Y}$	3.11 $\text{Y}$	10.46 $\text{Y}$	20.34 $\text{Y}$	25.17 $\text{Y}$	12.38 II	21.64 $\underline{\text{a}}$	11.06 $\text{m}$	16.64 $\text{m}$
205	0.44 $\text{m}$	28.15 Z	22.12 $\text{m}$	18.18 $\text{a}$	24.70 $\text{H}$	26.94 $\text{Y}$	6.66 $\text{Y}$	13.10 $\text{Y}$	22.12 $\text{Y}$	26.17 $\text{Y}$	10.68 II	26.94 $\underline{\text{a}}$	14.24 $\text{m}$	19.00 $\text{m}$
210	4.87 $\text{m}$	30.05 Z	23.79 $\text{m}$	20.30 $\text{a}$	6.15 $\text{Y}$	2.18 $\text{Y}$	10.20 $\text{Y}$	15.72 $\text{Y}$	23.79 $\text{Y}$	27.05 $\text{Y}$	8.63 II	2.18 $\text{m}$	17.32 $\text{m}$	21.25 $\text{m}$
215	9.32 $\text{m}$	31.88 Z	25.33 $\text{m}$	22.18 $\text{a}$	17.48 $\text{Y}$	7.35 $\text{Y}$	13.74 $\text{Y}$	18.32 $\text{Y}$	25.33 $\text{Y}$	27.80 $\text{Y}$	6.35 II	7.35 $\text{m}$	20.27 $\text{m}$	23.37 $\text{m}$
220	13.80 $\text{m}$	33.65 Z	26.70 $\text{m}$	23.60 $\text{a}$	28.32 $\text{Y}$	12.45 $\text{Y}$	17.27 $\text{Y}$	20.90 $\text{Y}$	26.70 $\text{Y}$	28.41 $\text{Y}$	4.03 II	12.45 $\text{m}$	23.05 $\text{m}$	25.32 $\text{m}$
225	18.30 $\text{m}$	35.32 Z	27.87 $\text{m}$	24.06 $\text{a}$	8.41 $\text{Y}$	17.46 $\text{Y}$	20.80 $\text{Y}$	23.44 $\text{Y}$	27.87 $\text{Y}$	28.87 $\text{Y}$	1.92 II	17.46 $\text{m}$	25.58 $\text{m}$	27.03 $\text{m}$
230	22.83 $\text{m}$	36.88 Z	28.75 $\text{m}$	22.03 $\text{a}$	17.64 $\text{Y}$	22.41 $\text{Y}$	24.32 $\text{Y}$	25.93 $\text{Y}$	28.75 $\text{Y}$	29.16 $\text{Y}$	0.28 II	22.41 $\text{m}$	27.72 $\text{m}$	28.39 $\text{m}$
235	27.38 $\text{m}$	38.32 Z	29.24 $\text{m}$	11.50 $\text{a}$	26.03 $\text{Y}$	27.28 $\text{Y}$	27.83 $\text{Y}$	28.33 $\text{Y}$	29.24 $\text{Y}$	29.29 $\text{Y}$	29.39 $\text{Y}$	27.28 $\text{m}$	29.12 $\text{m}$	29.20 $\text{m}$
240	1.97 $\text{a}$	39.61 Z	29.18 $\text{m}$	29.07 $\text{m}$	28.79 $\text{m}$	2.09 II	29.49 $\text{Y}$	29.28 $\text{Y}$	29.18 $\text{Y}$	20.44 $\text{a}$	3.56 $\text{a}$	2.09 $\text{a}$	1.36 $\text{a}$	0.64 $\text{a}$
245	6.59 $\text{a}$	40.74 Z	28.27 $\text{m}$	27.00 $\text{m}$	22.30 $\text{m}$	6.84 II	0.77 II	29.25 $\text{Y}$	28.27 $\text{Y}$	5.51 $\text{a}$	10.07 $\text{a}$	6.84 $\text{a}$	4.99 $\text{a}$	3.05 $\text{a}$
250	11.24 $\text{a}$	41.69 Z	26.00 $\text{m}$	20.02 $\text{m}$	23.46 $\text{m}$	11.53 II	3.38 II	29.41 $\text{Y}$	26.00 $\text{Y}$	4.14 $\text{a}$	15.82 $\text{a}$	11.53 $\text{a}$	8.75 $\text{a}$	5.58 $\text{a}$
255	15.91 $\text{a}$	42.44 Z	21.39 $\text{m}$	25.61 $\underline{\text{a}}$	11.57 $\text{a}$	16.19 II	7.36 II	0.27 II	21.39 $\text{Y}$	5.69 $\text{a}$	21.03 $\text{a}$	16.19 $\text{a}$	12.64 $\text{a}$	8.23 $\text{a}$
260	20.59 $\text{a}$	42.99 Z	12.52 $\text{m}$	23.72 $\text{a}$	3.76 $\text{a}$	20.81 II	12.54 II	2.63 II	12.52 $\text{Y}$	8.28 $\text{a}$	25.89 $\text{a}$	20.81 $\text{a}$	16.66 $\text{a}$	10.88 $\text{a}$
265	25.29 $\text{a}$	43.33 Z	25.98 $\underline{\text{a}}$	23.72 $\text{a}$	3.54 $\text{a}$	25.41 II	18.44 II	7.19 II	25.98 $\text{Y}$	11.86 $\text{a}$	0.66 $\text{a}$	25.41 $\text{a}$	20.67 $\text{a}$	13.06 $\text{a}$
270	0.00 $\text{a}$	43.44 Z	0.00 $\underline{\text{a}}$	16.90 $\text{a}$	5.78 $\text{a}$	0.00 $\text{a}$	24.22 II	13.10 II	0.00 $\text{Y}$	16.90 $\text{a}$	5.78 $\text{a}$	0.00 $\text{a}$	24.22 $\text{a}$	13.10 $\text{a}$
275	4.71 $\text{a}$	43.33 Z	4.02 $\text{m}$	16.94 $\text{a}$	9.33 $\text{a}$	4.59 $\text{a}$	29.34 II	18.14 II	4.02 $\text{H}$	22.81 $\text{a}$	11.56 $\text{a}$	4.59 $\text{a}$	26.46 $\text{a}$	6.28 $\text{a}$
280	9.41 $\text{a}$	42.99 Z	17.48 $\text{a}$	19.12 $\text{a}$	13.34 $\text{a}$	9.19 $\text{a}$	4.11 $\text{a}$	21.72 II	17.48 $\text{a}$	27.37 $\text{a}$	17.46 $\text{a}$	9.19 $\text{a}$	26.24 $\text{a}$	6.28 $\text{m}$
285	14.09 $\text{a}$	42.44 Z	8.61 $\text{a}$	21.77 $\text{a}$	17.36 $\text{a}$	13.81 $\text{a}$	8.97 $\text{a}$	24.31 II	8.61 $\text{a}$	29.73 $\text{a}$	22.64 $\text{a}$	13.81 $\text{a}$	18.43 $\text{a}$	4.39 $\text{m}$
290	18.76 $\text{a}$	41.69 Z	4.00 $\text{a}$	24.42 $\text{a}$	21.25 $\text{a}$	18.47 $\text{a}$	14.18 $\text{a}$	25.86 II	4.00 $\text{a}$	0.59 $\text{a}$	26.62 $\text{a}$	18.47 $\text{a}$	6.54 $\underline{\text{a}}$	9.98 $\text{a}$
295	23.41 $\text{a}$	40.74 Z	1.73 $\text{a}$	26.95 $\text{a}$	25.01 $\text{a}$	23.16 $\text{a}$	19.93 $\text{a}$	24.49 II	1.73 $\text{a}$	0.75 $\text{a}$	29.23 $\text{a}$	23.16 $\text{a}$	7.70 $\text{a}$	3.00 $\text{a}$
300	28.03 $\text{a}$	39.61 Z	0.82 $\text{a}$	29.36 $\text{a}$	28.64 $\text{a}$	27.91 $\text{a}$	26.44 $\text{a}$	9.56 $\text{Y}$	0.82 $\text{a}$	0.72 $\text{a}$	0.51 $\text{a}$	27.91 $\text{a}$	1.21 $\text{a}$	0.93 $\text{a}$
305	2.62 $\text{a}$	38.32 Z	0.76 $\text{a}$	0.80 $\text{a}$	0.88 $\text{a}$	2.72 $\text{a}$	0.61 $\text{a}$	0.71 $\text{a}$	0.76 $\text{a}$	1.67 $\text{a}$	2.17 $\text{a}$	2.72 $\text{a}$	3.97 $\text{a}$	18.50 $\text{a}$
310	7.17 $\text{a}$	36.88 Z	1.25 $\text{a}$	1.61 $\text{a}$	2.28 $\text{a}$	7.59 $\text{a}$	29.72 $\text{a}$	0.84 $\text{a}$	1.25 $\text{a}$	4.07 $\text{a}$	5.68 $\text{a}$	7.59 $\text{a}$	12.36 $\text{a}$	7.97 $\text{a}$
315	11.70 $\text{a}$	35.32 Z	2.13 $\text{a}$	2.97 $\text{a}$	4.42 $\text{a}$	12.54 $\text{a}$	28.08 $\text{a}$	1.13 $\text{a}$	2.13 $\text{a}$	6.56 $\text{a}$	9.20 $\text{a}$	12.54 $\text{a}$	21.59 $\text{a}$	5.94 $\text{a}$
320	16.20 $\text{a}$	33.65 Z	3.30 $\text{a}$	4.68 $\text{a}$	6.95 $\text{a}$	17.55 $\text{a}$	25.97 $\text{a}$	1.59 $\text{a}$	3.30 $\text{a}$	9.10 $\text{a}$	12.73 $\text{a}$	17.55 $\text{a}$	1.68 $\text{H}$	6.40 $\text{a}$
325	20.68 $\text{a}$	31.88 Z	4.67 $\text{a}$	6.63 $\text{a}$	9.73 $\text{a}$	22.65 $\text{a}$	23.65 $\text{a}$	2.20 $\text{a}$	4.67 $\text{a}$	11.68 $\text{a}$	16.26 $\text{a}$	22.65 $\text{a}$	12.52 $\text{H}$	7.82 $\text{a}$
330	25.13 $\text{a}$	30.05 Z	6.21 $\text{a}$	8.75 $\text{a}$	12.68 $\text{a}$	27.82 $\text{a}$	21.37 $\text{a}$	2.95 $\text{a}$	6.21 $\text{a}$	14.28 $\text{a}$	19.80 $\text{a}$	27.82 $\text{a}$	23.85 $\text{H}$	9.70 $\text{a}$
335	29.56 $\text{a}$	28.15 Z	7.88 $\text{a}$	11.00 $\text{a}$	15.76 $\text{a}$	3.06 $\text{m}$	19.32 $\text{a}$	3.83 $\text{a}$	7.88 $\text{a}$	16.90 $\text{a}$	23.34 $\text{a}$	3.06 $\text{H}$	5.30 $\text{Y}$	11.82 $\text{a}$
340	3.99 $\text{H}$	26.21 Z	9.66 $\text{a}$	13.36 $\text{a}$	18.94 $\text{a}$	8.36 $\text{m}$	17.62 $\text{a}$	4.83 $\text{a}$	9.66 $\text{a}$	19.54 $\text{a}$	26.89 $\text{a}$	8.36 $\text{H}$	16.46 $\text{Y}$	14.08 $\text{a}$
345	8.41 $\text{H}$	24.24 Z	11.53 $\text{a}$	15.80 $\text{a}$	22.21 $\text{a}$	13.72 $\text{m}$	16.34 $\text{a}$	5.93 $\text{a}$	11.53 $\text{a}$	22.19 $\text{a}$	0.45 $\text{H}$	13.72 $\text{H}$	26.99 $\text{Y}$	16.44 $\text{a}$
350	12.84 $\text{H}$	22.25 Z	13.47 $\text{a}$	18.32 $\text{a}$	25.55 $\text{a}$	19.12 $\text{m}$	15.50 $\text{a}$	7.12 $\text{a}$	13.47 $\text{a}$	24.84 $\text{a}$	4.00 $\text{H}$	19.12 $\text{H}$	6.70 $\text{Y}$	18.87 $\text{a}$
355	17.29 $\text{H}$	20.27 Z	15.48 $\text{a}$	20.91 $\text{a}$	28.97 $\text{a}$	24.55 $\text{m}$	15.08 $\text{a}$	8.40 $\text{a}$	15.48 $\text{a}$	27.50 $\text{a}$	7.56 $\text{H}$	24.55 $\text{H}$	15.54 $\text{Y}$	21.34 $\text{a}$
360	21.76 $\text{H}$	18.29 Z	17.54 $\text{a}$	23.55 $\text{a}$	2.45 $\text{m}$	0.00 $\underline{\text{a}}$	15.06 $\text{a}$	9.76 $\text{a}$	17.54 $\text{a}$	0.16 $\text{H}$	11.12 $\text{H}$	0.00 $\text{Y}$	23.54 $\text{Y}$	23.86 $\text{a}$