

第 I 部分 輔助用表

[1]

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φ	$\lg V$	表差		φ	$\lg V$	表差	
		—	—			—	—
0° 0'	0.001 4541-798	0-123		8° 0'	0.001 4261-059	11-740	
10	4541-675	0-368	0-245	10	4249-319	11-974	0-234
20	4541-307	0-613	0-245	20	4237-343	12-210	0-236
30	4540-694	0-858	0-245	30	4225-133	12-446	0-236
40	4539-836	1-104	0-246	40	4212-687	12-679	0-233
50	4538-732	1-348	0-244	50	4200-008	12-913	0-234
			0-246				
1° 0'	0.001 4537-384	1-594	0-245	9° 0'	0.001 4187-095	13-147	0-234
10	4535-790	1-839	0-245	10	4173-948	13-379	0-232
20	4533-851	2-084	0-245	20	4160-569	13-612	0-233
30	4531-887	2-329	0-245	30	4146-957	13-844	0-232
40	4529-538	2-574	0-245	40	4133-113	14-076	0-232
50	4526-964	2-818	0-244	50	4119-037	14-307	0-231
			0-246				0-230
2° 0'	0.001 4524-146	3-064	0-243	10° 0'	0.001 4104-730	14-537	0-231
10	4521-082	3-307	0-243	10	4090-193	14-768	0-229
20	4517-775	3-553	0-246	20	4075-425	14-997	0-229
30	4514-222	3-796	0-243	30	4060-428	15-226	0-229
40	4510-426	4-041	0-245	40	4045-202	15-455	0-229
50	4506-385	4-285	0-244	50	4029-747	15-683	0-228
			0-244				0-228
3° 0'	0.001 4502-100	4-529	0-243	11° 0'	0.001 4014-064	15-911	0-226
10	4497-571	4-773	0-244	10	3998-153	16-137	0-228
20	4492-798	5-016	0-243	20	3982-016	16-365	0-225
30	4487-782	5-260	0-244	30	3965-651	16-590	0-225
40	4482-522	5-503	0-243	40	3949-061	16-815	0-225
50	4477-019	5-746	0-243	50	3932-246	17-041	0-223
			0-243				
4° 0'	0.001 4471-273	5-989	0-242	12° 0'	0.001 3915-205	17-264	0-224
10	4465-234	6-231	0-244	10	3897-941	17-488	0-224
20	4459-053	6-475	0-241	20	3880-453	17-712	0-222
30	4452-578	6-716	0-241	30	3862-741	17-934	0-222
40	4445-862	6-959	0-241	40	3844-807	18-156	0-221
50	4438-903	7-200	0-241	50	3826-651	18-377	0-221
			0-242				
5° 0'	0.001 4431-703	7-442	0-241	13° 0'	0.001 3808-274	18-598	0-219
10	4424-261	7-683	0-242	10	3789-876	18-817	0-221
20	4416-578	7-925	0-242	20	3770-859	19-038	0-218
30	4408-653	8-165	0-240	30	3751-821	19-256	0-218
40	4400-488	8-406	0-241	40	3732-565	19-474	0-218
50	4392-082	8-646	0-240	50	3713-091	19-692	0-218
			0-239				0-216
6° 0'	0.001 4383-436	8-885	0-241	14° 0'	0.001 3693-399	19-908	0-217
10	4374-551	9-126	0-239	10	3673-491	20-125	0-215
20	4365-425	9-365	0-239	20	3653-366	20-340	0-215
30	4356-060	9-604	0-239	30	3633-026	20-555	0-214
40	4346-456	9-843	0-239	40	3612-471	20-769	0-213
50	4336-613	10-081	0-238	50	3591-702	20-982	0-214
			0-238				
7° 0'	0.001 4326-532	10-319	0-238	15° 0'	0.001 3570-720	21-196	0-211
10	4316-213	10-557	0-237	10	3549-524	21-407	0-211
20	4305-656	10-794	0-237	20	3528-117	21-618	0-211
30	4294-862	11-031	0-237	30	3506-499	21-829	0-210
40	4283-831	11-268	0-236	40	3484-670	22-039	0-209
50	4272-563	11-504		50	3462-631	22-248	
8° 0'	0.001 4261-059			16° 0'	0.001 3440-383		

φ	$\lg V$	表差		φ	$\lg V$	表差	
16° 0'	0.001 3440-383	22-456	0-208	24° 0'	0.001 2142-793	31-447	0-164
10	3417-927	22-664	0-207	10	2111-346	31-611	0-163
20	3395-263	22-871	0-206	20	2079-735	31-774	0-161
30	3372-392	23-077	0-205	30	2047-961	31-935	0-160
40	3349-315	23-282	0-204	40	2016-026	32-095	0-158
50	3326-033	23-486	0-204	50	1983-931	32-255	0-158
17° 0'	0.001 3302-547	23-690	0-204	25° 0'	0.001 1951-676	32-413	0-158
10	3278-857	23-894	0-201	10	1919-263	32-571	0-155
20	3254-963	24-095	0-201	20	1886-692	32-726	0-156
30	3230-888	24-296	0-201	30	1853-966	32-882	0-154
40	3206-572	24-497	0-200	40	1821-084	33-036	0-152
50	3182-075	24-697	0-199	50	1788-048	33-188	0-152
18° 0'	0.001 3157-378	24-896	0-199	26° 0'	0.001 1754-860	33-340	0-151
10	3132-482	25-095	0-196	10	1721-520	33-491	0-149
20	3107-389	25-291	0-196	20	1688-029	33-640	0-149
30	3082-098	25-487	0-195	30	1654-389	33-789	0-146
40	3056-611	25-682	0-195	40	1620-600	33-935	0-147
50	3030-929	25-878	0-192	50	1586-665	34-082	0-145
19° 0'	0.001 3005-051	26-070	0-194	27° 0'	0.001 1552-583	34-227	0-143
10	2978-981	26-264	0-192	10	1518-356	34-370	0-143
20	2952-717	26-456	0-190	20	1483-986	34-513	0-141
30	2926-261	26-646	0-191	30	1449-473	34-654	0-141
40	2899-615	26-837	0-189	40	1414-819	34-795	0-139
50	2872-778	27-028	0-189	50	1380-024	34-934	0-138
20° 0'	0.001 2845-752	27-215	0-187	28° 0'	0.001 1345-090	35-072	0-136
10	2818-537	27-402	0-186	10	1310-018	35-208	0-136
20	2791-135	27-588	0-186	20	1274-810	35-344	0-134
30	2763-547	27-774	0-185	30	1239-466	35-478	0-134
40	2735-773	27-959	0-184	40	1203-988	35-612	0-131
50	2707-814	28-143	0-182	50	1168-376	35-743	0-132
21° 0'	0.001 2679-671	28-325	0-182	29° 0'	0.001 1132-633	35-875	0-128
10	2651-346	28-507	0-181	10	1096-758	36-003	0-130
20	2622-839	28-688	0-180	20	1060-755	36-133	0-126
30	2594-151	28-868	0-179	30	1024-622	36-259	0-126
40	2565-283	29-047	0-178	40	988-363	36-385	0-125
50	2536-236	29-225	0-177	50	951-978	36-510	0-123
22° 0'	0.001 2507-011	29-402	0-176	30° 0'	0.001 0915-468	36-633	0-123
10	2477-609	29-578	0-175	10	0878-835	36-756	0-121
20	2448-031	29-753	0-174	20	0842-079	36-877	0-119
30	2418-278	29-927	0-173	30	0805-202	36-996	0-119
40	2388-351	30-100	0-172	40	0768-206	37-115	0-117
50	2358-251	30-272	0-171	50	0731-091	37-232	0-116
23° 0'	0.001 2327-979	30-443	0-170	31° 0'	0.001 0693-859	37-348	0-115
10	2297-536	30-613	0-169	10	0656-511	37-463	0-113
20	2266-923	30-782	0-167	20	0619-048	37-576	0-112
30	2236-141	30-949	0-168	30	0581-472	37-688	0-112
40	2205-192	31-117	0-165	40	0543-784	37-800	0-109
50	2174-075	31-282		50	0505-984	37-909	
24° 0'	0.001 2142-793			32° 0'	0.001 0468-075		

[4]

基本函数 $lg V = lg \sqrt{1 + e'^2 \cos^2 \varphi}$ (白塞尔椭圆体)

φ	$lg V$	表差		φ	$lg V$	表差	
32° 0'	0.001 0468-075	38-017	0-108	40° 0'	0.000 8545-279	41-655	0-042
10	0430-058	38-125	0-105	10	8503-624	41-697	0-041
20	0391-933	38-230	0-105	20	8461-927	41-738	0-039
30	0353-703	38-335	0-103	30	8420-189	41-777	0-038
40	0315-368	38-438	0-102	40	8378-412	41-815	0-036
50	0276-930	38-540	0-101	50	8336-597	41-851	0-035
33° 0'	0.001 0238-390	38-641	0-099	41° 0'	0.000 8294-746	41-886	0-034
10	0199-749	38-740	0-098	10	8252-860	41-920	0-033
20	0161-009	38-838	0-097	20	8210-940	41-953	0-029
30	0122-171	38-935	0-095	30	8168-987	41-982	0-031
40	0083-236	39-030	0-094	40	8127-005	42-013	0-027
50	0044-206	39-124	0-094	50	8084-992	42-040	0-027
34° 0'	0.001 0005-082	39-218	0-090	42° 0'	0.000 8042-952	42-067	0-025
10	0.000 9965-864	39-308	0-091	10	8000-835	42-092	0-023
20	9926-556	39-399	0-088	20	7958-793	42-115	0-023
30	9887-157	39-487	0-088	30	7916-678	42-138	0-021
40	9847-670	39-573	0-086	40	7874-540	42-159	0-019
50	9808-095	39-661	0-085	50	7832-381	42-178	0-018
35° 0'	0.000 9768-434	39-746	0-084	43° 0'	0.000 7790-203	42-196	0-017
10	9728-688	39-830	0-081	10	7748-007	42-213	0-014
20	9688-858	39-911	0-081	20	7705-794	42-227	0-015
30	9648-947	39-992	0-080	30	7663-567	42-242	0-012
40	9608-955	40-072	0-078	40	7621-325	42-254	0-010
50	9568-883	40-150	0-076	50	7579-071	42-264	0-010
36° 0'	0.000 9528-733	40-226	0-076	44° 0'	0.000 7536-807	42-274	0-008
10	9488-507	40-302	0-074	10	7494-533	42-282	0-007
20	9448-205	40-376	0-072	20	7452-251	42-289	0-004
30	9407-829	40-448	0-072	30	7409-962	42-293	0-005
40	9367-381	40-520	0-070	40	7367-669	42-298	0-001
50	9326-861	40-590	0-068	50	7325-371	42-299	—
37° 0'	0.000 9286-271	40-658	0-067	45° 0'	0.000 7283-072	42-301	0-002
10	9245-613	40-725	0-066	10	7240-771	42-299	0-001
20	9204-888	40-791	0-064	20	7198-472	42-298	0-004
30	9164-097	40-855	0-064	30	7156-174	42-294	0-004
40	9123-242	40-919	0-061	40	7113-880	42-290	0-007
50	9082-323	40-980	0-061	50	7071-590	42-283	0-008
38° 0'	0.000 9041-343	41-041	0-058	46° 0'	0.000 7029-307	42-275	0-006
10	9000-302	41-099	0-058	10	6987-032	42-268	0-010
20	8959-203	41-157	0-055	20	6944-766	42-256	0-013
30	8918-046	41-212	0-056	30	6902-510	42-243	0-013
40	8876-834	41-268	0-053	40	6860-267	42-230	0-015
50	8835-566	41-321	0-052	50	6818-037	42-215	0-017
39° 0'	0.000 8794-245	41-373	0-050	47° 0'	0.000 6775-822	42-198	0-017
10	8752-872	41-423	0-049	10	6733-624	42-181	0-019
20	8711-449	41-472	0-048	20	6691-443	42-162	0-021
30	8669-977	41-521	0-045	30	6649-281	42-141	0-022
40	8628-456	41-566	0-045	40	6607-140	42-119	0-024
50	8586-890	41-611	—	50	6565-021	42-095	—
40° 0'	0.000 8545-279	—	—	48° 0'	0.000 6522-926	—	—

φ	$\lg V$	表差		φ	$\lg V$	表差	
		-	+			-	+
48° 0'	0.000 6522-926	42-071	0-027	56° 0'	0.000 4557-646	39-224	0-094
10	6480-855	42-044	0-028	10	4518-422	39-130	0-094
20	6438-811	42-016	0-028	20	4479-292	39-036	0-095
30	6396-795	41-988	0-032	30	4440-256	38-941	0-098
40	6354-807	41-956	0-031	40	4401-315	38-843	0-097
50	6312-851	41-925	0-034	50	4362-472	38-746	0-100
49° 0'	0.000 6270-926	41-891	0-035	57° 0'	0.000 4323-726	38-646	0-101
10	6229-035	41-856	0-036	10	4285-080	38-545	0-102
20	6187-179	41-820	0-038	20	4246-535	38-443	0-104
30	6145-359	41-782	0-039	30	4208-092	38-339	0-104
40	6103-577	41-743	0-040	40	4169-753	38-235	0-107
50	6061-834	41-703	0-042	50	4131-518	38-128	0-107
50° 0'	0.000 6020-131	41-661	0-044	58° 0'	0.000 4093-390	38-021	0-108
10	5978-470	41-617	0-045	10	4055-369	37-913	0-111
20	5936-853	41-572	0-045	20	4017-456	37-802	0-110
30	5895-281	41-527	0-048	30	3979-654	37-692	0-113
40	5853-754	41-478	0-051	40	3941-962	37-578	0-115
50	5812-276	41-430	0-051	50	3904-384	37-465	0-116
51° 0'	0.000 5770-846	41-379	0-054	59° 0'	0.000 3866-919	37-350	0-118
10	5729-467	41-328	0-055	10	3829-569	37-234	0-119
20	5688-139	41-274	0-055	20	3792-335	37-116	0-120
30	5646-865	41-219	0-058	30	3755-219	36-997	0-121
40	5605-646	41-164	0-059	40	3718-222	36-877	0-123
50	5564-482	41-106	0-059	50	3681-345	36-756	0-124
52° 0'	0.000 5523-376	41-047	0-063	60° 0'	0.000 3644-589	36-633	0-125
10	5482-329	40-988	0-063	10	3607-956	36-509	0-127
20	5441-341	40-925	0-066	20	3571-447	36-384	0-128
30	5400-416	40-863	0-066	30	3535-063	36-257	0-131
40	5359-553	40-798	0-069	40	3498-806	36-130	0-131
50	5318-755	40-732	0-069	50	3462-676	36-002	0-131
53° 0'	0.000 5278-623	40-666	0-070	61° 0'	0.000 3426-674	35-871	0-131
10	5237-357	40-597	0-072	10	3390-803	35-740	0-133
20	5196-760	40-527	0-072	20	3355-063	35-607	0-133
30	5156-233	40-455	0-074	30	3319-456	35-474	0-137
40	5115-778	40-383	0-075	40	3283-982	35-339	0-137
50	5075-395	40-309	0-077	50	3248-643	35-202	0-136
54° 0'	0.000 5035-086	40-234	0-077	62° 0'	0.000 3213-441	35-066	0-139
10	4994-852	40-157	0-078	10	3178-375	34-927	0-140
20	4954-695	40-079	0-080	20	3143-448	34-787	0-141
30	4914-616	39-999	0-080	30	3108-661	34-646	0-142
40	4874-617	39-919	0-083	40	3074-015	34-504	0-142
50	4834-698	39-836	0-083	50	3039-511	34-362	0-146
55° 0'	0.000 4794-862	39-753	0-085	63° 0'	0.000 3005-149	34-216	0-145
10	4755-109	39-668	0-087	10	2970-933	34-071	0-146
20	4715-441	39-581	0-087	20	2936-862	33-925	0-149
30	4675-860	39-494	0-089	30	2902-937	33-776	0-148
40	4636-366	39-405	0-090	40	2869-161	33-628	0-151
50	4596-961	39-315	0-090	50	2835-533	33-477	
56° 0'	0.000 4557-646			64° 0'	0.000 2802-056		

[6]

基本函数 $\lg V = \lg \sqrt{1 + e'^2 \cos^2 \varphi}$ (白塞尔椭圆体)

φ	$\lg V$	表差		φ	$\lg V$	表差	
		-	+			-	+
64° 0'	0.000 2802-056	33-326	0-152	72° 0'	0.000 1392-831	24-831	0-200
10	2768-730	33-174	0-154	10	1368-000	24-631	0-201
20	2735-558	33-020	0-155	20	1343-369	24-430	0-202
30	2702-536	32-865	0-155	30	1318-939	24-228	0-203
40	2669-671	32-710	0-158	40	1294-711	24-025	0-203
50	2636-961	32-552	0-157	50	1270-686	23-822	0-204
65° 0'	0.000 2604-400	32-395	0-160	73° 0'	0.000 1246-864	23-618	0-206
10	2572-014	32-235	0-160	10	1223-246	23-412	0-206
20	2539-779	32-075	0-161	20	1199-834	23-206	0-206
30	2507-704	31-914	0-162	30	1176-628	23-000	0-208
40	2475-790	31-752	0-165	40	1153-628	22-792	0-208
50	2444-038	31-587	0-163	50	1130-836	22-584	0-209
66° 0'	0.000 2412-451	31-424	0-167	74° 0'	0.000 1108-252	22-375	0-210
10	2381-027	31-257	0-166	10	1085-877	22-165	0-210
20	2349-770	31-091	0-168	20	1063-712	21-955	0-212
30	2318-679	30-923	0-168	30	1041-757	21-743	0-212
40	2287-756	30-755	0-171	40	1020-014	21-531	0-213
50	2257-001	30-584	0-170	50	0998-483	21-318	0-213
67° 0'	0.000 2226-417	30-414	0-173	75° 0'	0.000 0977-185	21-105	0-215
10	2196-003	30-241	0-172	10	0956-060	20-890	0-214
20	2165-762	30-069	0-174	20	0935-170	20-776	0-216
30	2135-693	29-895	0-176	30	0914-494	20-460	0-217
40	2105-798	29-719	0-175	40	0894-034	20-243	0-216
50	2076-079	29-544	0-178	50	0873-791	20-027	0-219
68° 0'	0.000 2046-535	29-366	0-178	76° 0'	0.000 0853-764	19-808	0-218
10	2017-169	29-188	0-178	10	833-956	19-590	0-218
20	1987-981	29-010	0-181	20	814-366	19-372	0-221
30	1958-971	28-829	0-181	30	794-994	19-151	0-220
40	1930-142	28-648	0-181	40	775-843	18-931	0-221
50	1901-494	28-467	0-184	50	756-912	18-710	0-222
69° 0'	0.000 1873-027	28-283	0-184	77° 0'	0.000 0738-202	18-488	0-222
10	1844-744	28-099	0-184	10	719-714	18-266	0-223
20	1816-645	27-915	0-186	20	701-448	18-043	0-224
30	1788-730	27-729	0-187	30	683-405	17-819	0-224
40	1761-001	27-542	0-188	40	665-586	17-595	0-224
50	1733-459	27-354	0-189	50	647-991	17-371	0-226
70° 0'	0.000 1706-105	27-165	0-189	78° 0'	0.000 0630-620	17-145	0-226
10	1678-940	26-976	0-191	10	613-475	16-919	0-226
20	1651-964	26-785	0-191	20	596-556	16-693	0-228
30	1625-179	26-594	0-192	30	579-863	16-465	0-227
40	1598-585	26-402	0-194	40	563-398	16-238	0-229
50	1572-183	26-208	0-193	50	547-160	16-009	0-228
71° 0'	0.000 1545-975	26-015	0-196	79° 0'	0.000 0531-151	15-781	0-229
10	1519-060	25-819	0-196	10	515-370	15-552	0-231
20	1494-141	25-623	0-196	20	499-818	15-321	0-229
30	1468-518	25-427	0-198	30	484-497	15-092	0-232
40	1443-091	25-229	0-198	40	469-405	14-860	0-231
50	1417-862	25-031	0-198	50	454-545	14-629	
72° 0'	0.000 1392-831			80° 0'	0.000 0439-916		

φ	$\lg V$	表差		φ	$\lg V$	表差	
		—	+			—	+
80° 0'	0.000 0439-916	14-397	0-232	88° 0'	0.000 0017-771	2-838	0-247
10	425-519	14-165	0-233	10	14-933	2-591	0-247
20	411-354	13-932	0-233	20	12-342	2-344	0-246
30	397-422	13-699	0-235	30	9-998	2-098	0-247
40	383-723	13-464	0-233	40	7-900	1-851	0-246
50	370-259	13-231	0-235	50	6-049	1-605	0-247
81° 0'	0.000 0357-028	12-996	0-236	89° 0'	0.000 0004-444	1-358	0-247
10	344-032	12-760	0-234	10	3-086	1-111	0-247
20	331-272	12-526	0-237	20	1-975	0-864	0-247
30	318-746	12-289	0-237	30	1-111	0-617	0-246
40	306-457	12-052	0-236	40	0-494	0-371	0-248
50	294-405	11-816	0-238	50	0-123	0-123	
82° 0'	0.000 0282-589	11-578	0-237	90° 0'	0.000 0000-000		
10	271-011	11-341	0-238				
20	259-670	11-103	0-239				
30	248-567	10-864	0-238				
40	237-703	10-626	0-240				
50	227-077	10-386	0-239				
83° 0'	0.000 0216-691	10-147	0-240				
10	206-544	9-907	0-240				
20	196-637	9-667	0-241				
30	186-970	9-426	0-240				
40	177-544	9-186	0-242				
50	168-358	8-944	0-241				
84° 0'	0.000 0159-414	8-703	0-242				
10	150-711	8-461	0-242				
20	142-250	8-219	0-242				
30	134-031	7-977	0-243				
40	126-054	7-734	0-243				
50	118-220	7-491	0-243				
85° 0'	0.000 0110-829	7-248	0-243				
10	103-581	7-005	0-244				
20	96-576	6-761	0-244				
30	89-815	6-517	0-244				
40	83-298	6-273	0-244				
50	77-025	6-029	0-245				
86° 0'	0.000 0070-996	5-784	0-244				
10	65-212	5-540	0-245				
20	59-672	5-295	0-246				
30	54-377	5-049	0-244				
40	49-328	4-805	0-246				
50	44-523	4-559	0-245				
87° 0'	0.000 0039-964	4-314	0-247				
10	35-650	4-067	0-245				
20	31-583	3-822	0-246				
30	27-761	3-576	0-246				
40	24-185	3-330	0-246				
50	20-855	3-084					
88° 0'	0.000 0017-771						

$\lg V$ 的计算公式:

$$\lg V = + [4.164\ 0730-989] \cos^2 \varphi \\ - [1.690\ 3618-9] \cos^4 \varphi \\ + [9.341\ 589] \cos^6 \varphi \\ - [7.043\ 97] \cos^8 \varphi \\ + [4.774] \cos^{10} \varphi.$$

当 φ 小于 45° 时, 用下式计算较为方便:

$$- \lg W = + [4.161\ 1647-393] \sin^2 \varphi \\ + [1.684\ 5451-6] \sin^4 \varphi \\ + [9.332\ 8643] \sin^6 \varphi \\ + [7.032\ 336] \sin^8 \varphi \\ + [4.7598] \sin^{10} \varphi$$

$$V = \frac{W}{\sqrt{1-e^2}} \quad \text{或} \quad V = W \sqrt{1+e^2}$$

$$\lg \frac{1}{\sqrt{1-e^2}} = \lg \sqrt{1+e^2} \\ = 0.001\ 4541-798002$$

$$\lg V = 7276-985\ 4166 \\ - [3.861\ 5877-062] \sin 2(\varphi-45^\circ) \\ + [0.784\ 3611-0] \cos 4(\varphi-45^\circ) \\ + [7.832\ 0728] \sin 6(\varphi-45^\circ) \\ - [4.93\ 069] \cos 8(\varphi-45^\circ).$$

φ	$\Delta lg V$	表差	φ	$\Delta lg V$	表差	φ	$\Delta lg V$	表差
	+	-		+	-		+	-
0° 0'	105-584	0-001	8° 0'	103-553	0-085	16° 0'	97-612	0-162
10	105-583	0-002	10	103-468	0-086	10	97-450	0-164
20	105-581	0-004	20	103-382	0-088	20	97-286	0-166
30	105-577	0-006	30	103-294	0-090	30	97-120	0-167
40	105-571	0-008	40	103-204	0-093	40	96-953	0-168
50	105-563	0-010	50	103-111	0-093	50	96-785	0-171
1° 0'	105-553	0-012	9° 0'	103-018	0-095	17° 0'	96-614	0-171
10	105-541	0-013	10	102-923	0-097	10	96-443	0-172
20	105-528	0-015	20	102-826	0-099	20	96-271	0-175
30	105-513	0-017	30	102-727	0-100	30	96-096	0-177
40	105-496	0-019	40	102-627	0-102	40	95-919	0-177
50	105-477	0-020	50	102-525	0-104	50	95-742	0-178
2° 0'	105-457	0-022	10° 0'	102-421	0-105	18° 0'	95-564	0-180
10	105-435	0-024	10	102-316	0-106	10	95-384	0-183
20	105-411	0-026	20	102-210	0-109	20	95-201	0-183
30	105-385	0-027	30	102-101	0-110	30	95-018	0-184
40	105-358	0-029	40	101-991	0-112	40	94-834	0-186
50	105-329	0-031	50	101-879	0-114	50	94-648	0-187
3° 0'	105-298	0-033	11° 0'	101-765	0-115	19° 0'	94-461	0-189
10	105-265	0-034	10	101-650	0-117	10	94-272	0-190
20	105-231	0-036	20	101-533	0-118	20	94-082	0-192
30	105-195	0-038	30	101-415	0-120	30	93-890	0-194
40	105-157	0-040	40	101-295	0-122	40	93-696	0-194
50	105-117	0-042	50	101-173	0-123	50	93-502	0-195
4° 0'	105-075	0-043	12° 0'	101-050	0-125	20° 0'	93-307	0-197
10	105-032	0-045	10	100-925	0-127	10	93-110	0-198
20	104-987	0-047	20	100-798	0-128	20	92-912	0-200
30	104-940	0-049	30	100-670	0-129	30	92-712	0-202
40	104-891	0-051	40	100-541	0-132	40	92-510	0-202
50	104-840	0-052	50	100-409	0-133	50	92-308	0-204
5° 0'	104-788	0-054	13° 0'	100-276	0-134	21° 0'	92-104	0-205
10	104-734	0-055	10	100-142	0-137	10	91-899	0-207
20	104-679	0-057	20	100-005	0-137	20	91-692	0-208
30	104-622	0-059	30	99-868	0-138	30	91-484	0-209
40	104-563	0-061	40	99-728	0-141	40	91-275	0-210
50	104-502	0-063	50	99-587	0-142	50	91-065	0-212
6° 0'	104-439	0-064	14° 0'	99-445	0-145	22° 0'	90-853	0-213
10	104-375	0-066	10	99-306	0-145	10	90-640	0-214
20	104-309	0-068	20	99-155	0-147	20	90-426	0-215
30	104-241	0-070	30	99-008	0-149	30	90-211	0-217
40	104-171	0-071	40	98-859	0-151	40	89-994	0-218
50	104-100	0-073	50	98-708	0-152	50	89-776	0-219
7° 0'	104-027	0-075	15° 0'	98-556	0-153	23° 0'	89-557	0-221
10	103-952	0-076	10	98-403	0-155	10	89-336	0-221
20	103-876	0-078	20	98-248	0-157	20	89-115	0-223
30	103-798	0-080	30	98-091	0-158	30	88-892	0-225
40	103-718	0-082	40	97-933	0-160	40	88-667	0-225
50	103-636	0-083	50	97-773	0-161	50	88-442	0-227
8° 0'	103-553		16° 0'	97-612		24° 0'	88-215	

φ	$\Delta lg V$	表差	φ	$\Delta lg V$	表差	φ	$\Delta lg V$	表差
	+	-		+	-		+	-
24° 0'	88-215	0-228	32° 0'	76-079	0-276	40° 0'	62-131	0-302
10	87-987	0-229	10	75-803	0-277	10	61-829	0-303
20	87-758	0-230	20	75-526	0-277	20	61-526	0-302
30	87-528	0-231	30	75-249	0-278	30	61-224	0-303
40	87-297	0-233	40	74-971	0-279	40	60-921	0-303
50	87-064	0-233	50	74-692	0-279	50	60-618	0-304
25° 0'	86-831	0-236	33° 0'	74-413	0-280	41° 0'	60-314	0-305
10	86-595	0-235	10	74-133	0-281	10	60-009	0-304
20	86-360	0-238	20	73-852	0-282	20	59-705	0-304
30	86-122	0-238	30	73-570	0-282	30	59-401	0-305
40	85-884	0-239	40	73-288	0-283	40	59-096	0-304
50	85-645	0-241	50	73-005	0-284	50	58-792	0-306
26° 0'	85-404	0-241	34° 0'	72-721	0-284	42° 0'	58-486	0-305
10	85-163	0-242	10	72-437	0-285	10	58-181	0-305
20	84-921	0-244	20	72-152	0-286	20	57-876	0-307
30	84-677	0-245	30	71-866	0-287	30	57-569	0-305
40	84-432	0-247	40	71-579	0-287	40	57-264	0-306
50	84-185	0-246	50	71-292	0-287	50	56-958	0-306
27° 0'	83-939	0-248	35° 0'	71-005	0-289	43° 0'	56-652	0-307
10	83-691	0-249	10	70-716	0-288	10	56-345	0-306
20	83-442	0-250	20	70-428	0-290	20	56-039	0-307
30	83-192	0-252	30	70-138	0-290	30	55-732	0-306
40	82-940	0-252	40	69-848	0-290	40	55-426	0-307
50	82-688	0-253	50	69-558	0-291	50	55-119	0-307
28° 0'	82-435	0-254	36° 0'	69-267	0-293	44° 0'	54-812	0-307
10	82-181	0-255	10	68-974	0-292	10	54-505	0-307
20	81-926	0-256	20	68-682	0-292	20	54-198	0-306
30	81-670	0-258	30	68-390	0-294	30	53-892	0-308
40	81-412	0-257	40	68-096	0-294	40	53-584	0-307
50	81-155	0-260	50	67-802	0-294	50	53-277	0-307
29° 0'	80-895	0-259	37° 0'	67-508	0-295	45° 0'	52-970	0-307
10	80-636	0-262	10	67-213	0-295	10	52-663	0-308
20	80-374	0-261	20	66-918	0-296	20	52-355	0-307
30	80-113	0-263	30	66-622	0-297	30	52-048	0-307
40	79-850	0-264	40	66-325	0-297	40	51-741	0-307
50	79-586	0-265	50	66-028	0-297	50	51-434	0-307
30° 0'	79-321	0-265	38° 0'	65-731	0-297	46° 0'	51-127	0-307
10	79-056	0-267	10	65-434	0-299	10	50-820	0-307
20	78-789	0-266	20	65-135	0-298	20	50-513	0-306
30	78-523	0-269	30	64-837	0-300	30	50-207	0-307
40	78-254	0-269	40	64-537	0-299	40	49-900	0-307
50	77-985	0-270	50	64-238	0-300	50	49-593	0-307
31° 0'	77-715	0-270	39° 0'	63-938	0-300	47° 0'	49-286	0-307
10	77-445	0-272	10	63-638	0-301	10	48-979	0-306
20	77-173	0-273	20	63-337	0-301	20	48-673	0-306
30	76-900	0-273	30	63-036	0-301	30	48-367	0-306
40	76-627	0-273	40	62-736	0-302	40	48-061	0-306
50	76-354	0-275	50	62-434	0-303	50	47-755	0-306
32° 0'	76-079		40° 0'	62-131		48° 0'	47-449	

φ	$\Delta lg V$	表差	φ	$\Delta lg V$	表差	φ	$\Delta lg V$	表差
	+	-		+	-		+	-
48° 0'	47-449	0-305	56° 0'	33-168	0-284	64° 0'	20-400	0-242
10	47-144	0-305	10	32-884	0-285	10	20-158	0-241
20	46-839	0-306	20	32-599	0-284	20	19-917	0-240
30	46-533	0-304	30	32-315	0-283	30	19-677	0-240
40	46-229	0-306	40	32-032	0-283	40	19-437	0-237
50	45-923	0-304	50	31-749	0-283	50	19-200	0-238
49° 0'	45-619	0-304	57° 0'	31-463	0-281	65° 0'	18-962	0-235
10	45-315	0-304	10	31-187	0-280	10	18-727	0-235
20	45-011	0-304	20	30-907	0-279	20	18-492	0-234
30	44-707	0-304	30	30-628	0-280	30	18-258	0-232
40	44-403	0-303	40	30-348	0-277	40	18-026	0-230
50	44-100	0-303	50	30-071	0-278	50	17-796	0-231
50° 0'	43-797	0-302	58° 0'	29-793	0-277	66° 0'	17-565	0-228
10	43-495	0-303	10	29-516	0-275	10	17-337	0-228
20	43-192	0-302	20	29-241	0-275	20	17-109	0-226
30	42-890	0-301	30	28-966	0-274	30	16-883	0-225
40	42-589	0-302	40	28-692	0-274	40	16-658	0-224
50	42-287	0-301	50	28-418	0-272	50	16-434	0-223
51° 0'	41-986	0-301	59° 0'	28-146	0-272	67° 0'	16-211	0-220
10	41-685	0-299	10	27-874	0-270	10	15-991	0-221
20	41-386	0-301	20	27-604	0-270	20	15-770	0-219
30	41-085	0-300	30	27-334	0-269	30	15-551	0-217
40	40-785	0-298	40	27-065	0-268	40	15-334	0-217
50	40-487	0-299	50	26-797	0-267	50	15-117	0-214
52° 0'	40-188	0-299	60° 0'	26-530	0-267	68° 0'	14-903	0-214
10	39-889	0-297	10	26-263	0-265	10	14-689	0-213
20	39-592	0-298	20	25-998	0-265	20	14-476	0-211
30	39-294	0-296	30	25-733	0-264	30	14-265	0-210
40	38-998	0-297	40	25-469	0-263	40	14-055	0-209
50	38-701	0-297	50	25-206	0-261	50	13-848	0-206
53° 0'	38-404	0-295	61° 0'	24-945	0-261	69° 0'	13-640	0-206
10	38-109	0-294	10	24-684	0-260	10	13-434	0-205
20	37-815	0-295	20	24-424	0-259	20	13-229	0-203
30	37-520	0-295	30	24-165	0-258	30	13-026	0-201
40	37-225	0-293	40	23-907	0-257	40	12-825	0-201
50	36-932	0-293	50	23-650	0-257	50	12-624	0-199
54° 0'	36-639	0-292	62° 0'	23-393	0-254	70° 0'	12-425	0-198
10	36-347	0-292	10	23-139	0-254	10	12-227	0-197
20	36-055	0-291	20	22-885	0-254	20	12-030	0-195
30	35-764	0-291	30	22-631	0-252	30	11-835	0-194
40	35-473	0-290	40	22-379	0-251	40	11-641	0-191
50	35-183	0-290	50	22-128	0-249	50	11-450	0-192
55° 0'	34-893	0-288	63° 0'	21-879	0-250	71° 0'	11-258	0-188
10	34-605	0-289	10	21-629	0-248	10	11-070	0-189
20	34-316	0-288	20	21-381	0-246	20	10-881	0-187
30	34-028	0-287	30	21-135	0-247	30	10-694	0-184
40	33-741	0-287	40	20-888	0-244	40	10-510	0-184
50	33-454	0-286	50	20-644	0-244	50	10-326	0-182
56° 0'	33-168		64° 0'	20-400		72° 0'	10-144	

φ	$\Delta \lg V$	表差	φ	$\Delta \lg V$	表差	φ	$\Delta \lg V$	表差
	+	-		+	-		+	-
72° 0'	10-144	0-181	80° 0'	3-204	0-105	88° 0'	0-129	0-020
10	9-963	0-179	10	3-099	0-103	10	0-109	0-019
20	9-784	0-178	20	2-996	0-101	20	0-090	0-017
30	9-606	0-176	30	2-895	0-099	30	0-073	0-015
40	9-430	0-176	40	2-796	0-099	40	0-058	0-014
50	9-254	0-173	50	2-697	0-096	50	0-044	0-012
73° 0'	9-081	0-171	81° 0'	2-601	0-095	89° 0'	0-032	0-009
10	8-910	0-171	10	2-506	0-093	10	0-023	0-008
20	8-739	0-170	20	2-413	0-091	20	0-015	0-007
30	8-569	0-167	30	2-322	0-089	30	0-008	0-005
40	8-402	0-166	40	2-233	0-088	40	0-003	0-002
50	8-236	0-164	50	2-145	0-086	50	0-001	0-001
74° 0'	8-072	0-163	82° 0'	2-059	0-085	90° 0'	0-000	
10	7-909	0-162	10	1-974	0-083			
20	7-747	0-159	20	1-891	0-080			
30	7-588	0-158	30	1-811	0-078			
40	7-430	0-157	40	1-731	0-077			
50	7-273	0-156	50	1-654	0-076			
75° 0'	7-117	0-153	83° 0'	1-578	0-073			
10	6-964	0-153	10	1-505	0-073			
20	6-811	0-150	20	1-432	0-070			
30	6-661	0-149	30	1-362	0-069			
40	6-512	0-148	40	1-293	0-066			
50	6-364	0-145	50	1-227	0-066			
76° 0'	6-219	0-145	84° 0'	1-161	0-063			
10	6-074	0-143	10	1-098	0-062			
20	5-931	0-143	20	1-036	0-060			
30	5-791	0-140	30	0-976	0-057			
40	5-651	0-138	40	0-919	0-057			
50	5-513	0-136	50	0-862	0-054			
77° 0'	5-377	0-135	85° 0'	0-808	0-053			
10	5-242	0-132	10	0-755	0-051			
20	5-110	0-132	20	0-704	0-049			
30	4-978	0-130	30	0-655	0-048			
40	4-848	0-128	40	0-607	0-046			
50	4-720	0-126	50	0-561	0-044			
78° 0'	4-594	0-125	86° 0'	0-517	0-042			
10	4-469	0-124	10	0-475	0-040			
20	4-345	0-121	20	0-435	0-038			
30	4-224	0-120	30	0-397	0-038			
40	4-104	0-118	40	0-359	0-034			
50	3-986	0-117	50	0-325	0-034			
79° 0'	3-869	0-115	87° 0'	0-291	0-031			
10	3-754	0-113	10	0-260	0-030			
20	3-641	0-112	20	0-230	0-028			
30	3-529	0-109	30	0-202	0-026			
40	3-420	0-109	40	0-176	0-024			
50	3-311	0-107	50	0-152	0-023			
80° 0'	3-204		88° 0'	0-129				

計算公式:

$$\lg V_i = \lg V + \Delta \lg V$$

$$\lg W_i = \lg W + \Delta \lg W$$

$$+ 9.999\ 9894\ 416$$

$$M_i = \frac{c_i}{V_i^3} \quad N_i = \frac{c_i}{V_i}$$

$$[1]_i = \frac{\rho}{M_i} \quad [2]_i = \frac{\rho}{N_i}$$

$$\lg M_i = \lg M - 3 \Delta \lg V$$

$$+ 0.000\ 0780\ 3$$

$$\lg N_i = \lg N - \Delta \lg V$$

$$+ 0.000\ 0780\ 3$$

$$\lg r_i = \lg r - 2 \Delta \lg V$$

$$+ 0.000\ 0780\ 3$$

$$\lg [1]_i = \lg [1] + 3 \Delta \lg V$$

$$+ 9.999\ 9219\ 7$$

$$\lg [2]_i = \lg [2] + \Delta \lg V$$

$$+ 9.999\ 9219\ 7$$

φ	$\lg M$	Δ	$\lg N$	Δ	$\lg r$	Δ	$\lg \frac{1}{r^2}$	Δ
	6.801	+	6.804	+	6.803	+	- 20	-
0° 0'	7351.0		6434.6		1892.8		6.393 621	0
10	7351.4	0.4	6434.8	0.2	1893.1	0.3	621	0
20	7352.5	1.1	6435.1	0.3	1893.8	0.7	621	0
30	7354.4	1.9	6435.7	0.6	1895.0	1.2	621	0
40	7356.9	2.5	6436.6	0.9	1896.8	1.8	621	0
50	7360.2	3.3	6437.7	1.1	1899.0	2.2	620	1
		4.1		1.4		2.7		0
1° 0'	7364.3		6439.1		1901.7		6.393 620	
10	7369.1	4.8	6440.6	1.5	1904.9	3.2	619	1
20	7374.6	5.5	6442.5	1.9	1908.5	3.6	618	1
30	7380.8	6.2	6444.6	2.1	1912.7	4.2	617	1
40	7387.8	7.0	6446.9	2.3	1917.4	4.7	617	0
50	7395.5	7.7	6449.5	2.6	1922.5	5.1	617	0
		8.5		2.8		5.6		2
2° 0'	7404.0		6452.3		1928.1		6.393 615	
10	7413.2	9.2	6455.4	3.1	1934.3	6.2	613	2
20	7423.1	9.9	6458.7	3.3	1940.9	6.6	612	1
30	7433.8	10.7	6462.2	3.5	1948.0	7.1	610	2
40	7445.2	11.4	6466.0	3.8	1955.6	7.6	609	2
50	7457.3	12.1	6470.1	4.1	1963.7	8.1	607	1
		12.8		4.2		8.5		1
3° 0'	7470.1		6474.3		1972.2		6.393 606	
10	7483.7	13.6	6478.9	4.6	1981.3	9.1	604	2
20	7498.0	14.3	6483.6	4.7	1990.8	9.5	602	2
30	7513.1	15.1	6488.7	5.1	2000.9	10.1	600	2
40	7528.9	15.8	6493.9	5.2	2011.4	10.5	598	2
50	7545.4	16.5	6499.4	5.5	2022.4	11.0	596	2
		17.2		5.8		11.5		3
4° 0'	7562.6		6505.2		2033.9		6.393 593	
10	7580.6	18.0	6511.2	6.0	2045.9	12.0	591	2
20	7599.3	18.7	6517.4	6.2	2058.3	12.4	588	3
30	7618.7	19.4	6523.9	6.5	2071.3	13.0	586	2
40	7638.8	20.1	6530.6	6.7	2084.7	13.4	583	3
50	7659.7	20.9	6537.5	6.9	2098.6	13.9	580	3
		21.6		7.2		14.4		3
5° 0'	7681.3		6544.7		2113.0		6.393 577	
10	7703.7	22.4	6552.2	7.5	2127.9	14.9	574	3
20	7726.7	23.0	6559.9	7.7	2143.3	15.4	571	3
30	7750.5	23.8	6567.8	7.9	2159.1	15.8	568	3
40	7775.0	24.5	6575.9	8.1	2175.5	16.4	565	3
50	7800.2	25.2	6584.4	8.5	2192.3	16.8	562	3
		25.9		8.6		17.3		4
6° 0'	7826.1		6593.0		2209.6		6.393 558	
10	7852.8	26.7	6601.9	8.9	2227.3	17.7	555	3
20	7880.2	27.4	6611.0	9.1	2245.6	18.3	551	4
30	7908.3	28.1	6620.4	9.4	2264.3	18.7	547	4
40	7937.1	28.8	6630.0	9.6	2283.5	19.2	543	4
50	7966.6	29.5	6639.8	9.8	2303.2	19.7	539	4
		30.2		10.1		20.2		4
7° 0'	7996.8		6649.9		2323.4		6.393 535	
10	8027.8	31.0	6660.2	10.3	2344.0	20.6	531	4
20	8059.5	31.7	6670.8	10.6	2365.1	21.1	527	4
30	8091.8	32.3	6681.6	10.8	2386.7	21.6	523	4
40	8124.9	33.1	6692.6	11.0	2408.8	22.1	518	5
50	8158.7	33.8	6703.9	11.3	2431.3	22.5	514	4
		34.5		11.5		23.0		5
8° 0'	8193.2		6715.4		2454.3		509	

φ	$\lg W$	A	$\lg [1]$	A	$\lg [2]$	A	$\lg V^2$	A
	9.999 —10	—	8.512 —10	—	8.509 —10	—	0.002	—
0° 0'	*0000-0	0-1	6900-3	0-4	7816-7	0-1	9083-6	0-2
10	9999-9	0-4	6899-9	1-1	7816-6	0-4	9083-4	0-8
20	9999-5	0-6	6898-8	1-8	7816-2	0-6	9082-6	1-2
30	9998-9	0-9	6897-0	2-6	7815-6	0-9	9081-4	1-7
40	9998-0	1-1	6894-4	3-3	7814-7	1-1	9079-7	2-2
50	9996-9	1-3	6891-1	4-0	7813-6	1-3	9077-5	2-7
1° 0'	9995-6	1-6	6887-1	4-8	7812-3	1-6	9074-8	3-2
10	9994-0	1-8	6882-3	5-6	7810-7	1-9	9071-6	3-7
20	9992-2	2-1	6876-7	6-2	7808-8	2-0	9067-9	4-2
30	9990-1	2-4	6870-5	7-0	7806-8	2-4	9063-7	4-6
40	9987-7	2-5	6863-5	7-7	7804-4	2-5	9059-1	5-2
50	9985-2	2-9	6855-8	8-5	7801-9	2-9	9053-9	5-6
2° 0'	9982-3	3-0	6847-3	9-2	7799-0	3-0	9048-3	6-1
10	9979-3	3-3	6838-1	9-9	7796-0	3-3	9042-2	6-7
20	9976-0	3-6	6828-2	10-6	7792-7	3-6	9035-5	7-1
30	9972-4	3-8	6817-6	11-4	7789-1	3-8	9028-4	7-5
40	9968-6	4-0	6806-2	12-1	7785-3	4-0	9020-9	8-1
50	9964-6	4-3	6794-1	12-9	7781-3	4-3	9012-8	8-6
3° 0'	9960-3	4-5	6781-2	13-6	7777-0	4-5	9004-2	9-1
10	9955-8	4-8	6767-6	14-3	7772-5	4-8	8995-1	9-5
20	9951-0	5-0	6753-3	15-1	7767-7	5-0	8985-6	10-0
30	9946-0	5-3	6738-2	15-7	7762-7	5-3	8975-6	10-5
40	9940-7	5-5	6722-5	16-5	7757-4	5-5	8965-1	11-0
50	9935-2	5-7	6706-0	17-3	7751-9	5-7	8954-1	11-5
4° 0'	9929-5	6-0	6688-7	18-0	7746-2	6-0	8942-6	11-9
10	9923-5	6-2	6670-7	18-6	7740-2	6-3	8930-7	12-5
20	9917-3	6-5	6652-1	19-5	7733-9	6-4	8918-2	12-9
30	9910-8	6-7	6632-6	20-1	7727-5	6-7	8905-3	13-5
40	9904-1	7-0	6612-5	20-9	7720-8	7-0	8891-8	13-9
50	9897-1	7-2	6591-6	21-6	7713-8	7-2	8877-9	14-4
5° 0'	9889-9	7-4	6570-0	22-3	7706-6	7-4	8863-5	14-9
10	9882-5	7-7	6547-7	23-1	7699-2	7-7	8848-6	15-3
20	9874-8	7-9	6524-6	23-7	7691-5	7-9	8833-3	15-9
30	9866-9	8-2	6500-9	24-5	7683-6	8-2	8817-4	16-3
40	9858-7	8-4	6476-4	25-3	7675-4	8-4	8801-1	16-8
50	9850-3	8-7	6451-1	25-9	7667-0	8-7	8784-3	17-3
6° 0'	9841-6	8-8	6425-2	26-7	7658-3	8-9	8766-9	17-8
10	9832-8	9-2	6398-5	27-3	7649-4	9-1	8749-1	18-3
20	9823-6	9-3	6371-2	28-1	7640-3	9-3	8730-8	18-7
30	9814-3	9-6	6343-1	28-8	7631-0	9-6	8712-1	19-2
40	9804-7	9-9	6314-3	29-6	7621-4	9-9	8692-9	19-7
50	9794-8	10-1	6284-7	30-2	7611-5	10-1	8673-2	20-1
7° 0'	9784-7	10-3	6254-5	31-0	7601-4	10-3	8653-1	20-7
10	9774-4	10-5	6223-5	31-6	7591-1	10-5	8632-4	21-1
20	9763-9	10-8	6191-9	32-4	7580-6	10-8	8611-3	21-6
30	9753-1	11-1	6159-5	33-1	7569-8	11-1	8589-2	22-0
40	9742-0	11-2	6126-4	33-8	7558-7	11-2	8567-7	22-6
50	9730-8	11-5	6092-6	34-5	7547-5	11-5	8545-1	23-0
8° 0'	9719-3	—	6058-1	—	7536-0	—	8522-1	—

φ	$\lg M$	Δ	$\lg N$	Δ	$\lg r$	Δ	$\lg \frac{1}{r^2}$	Δ
	6.801	+	6.804	+	6.803	+	- 20	-
8° 0'	8193.2		6715.4		2454.3		6.393 509	
10	8228.5	35.3	6727.1	11.7	2477.8	23.5	504	5
20	8264.4	35.9	6739.1	12.0	2501.7	23.9	500	4
30	8301.0	36.6	6751.3	12.2	2526.1	24.4	495	5
40	8338.4	37.4	6763.7	12.4	2551.1	25.0	490	5
50	8376.4	38.0	6776.4	12.7	2576.4	25.3	485	5
		38.7		12.9		25.8		
9° 0'	8415.1		6789.3		2602.2		6.393 480	
10	8454.6	39.5	6802.5	13.2	2628.5	26.3	474	6
20	8494.7	40.1	6815.9	13.4	2655.3	26.8	469	5
30	8535.6	40.9	6829.5	13.6	2682.5	27.2	463	5
40	8577.1	41.5	6843.3	13.8	2710.2	27.7	458	6
50	8619.3	42.2	6857.4	14.1	2738.4	28.2	452	5
		42.9		14.3		28.6		
10° 0'	8662.2		6871.7		2767.0		6.393 447	
10	8705.9	43.7	6886.2	14.5	2796.0	29.0	441	6
20	8750.2	44.3	6901.0	14.8	2825.6	29.6	435	6
30	8795.2	45.0	6916.0	15.0	2855.6	30.0	429	6
40	8840.8	45.6	6931.2	15.2	2886.0	30.4	423	6
50	8887.2	46.4	6946.7	15.5	2916.9	30.9	417	6
		47.0		15.7		31.4		
11° 0'	8934.2		6962.4		2948.3		6.393 410	
10	8982.0	47.8	6978.3	15.9	2980.1	31.8	404	6
20	9030.4	48.4	6994.4	16.1	3012.4	32.3	398	6
30	9079.5	49.1	7010.8	16.4	3045.1	32.7	391	7
40	9129.2	49.7	7027.4	16.6	3078.3	33.2	384	7
50	9179.7	50.5	7044.2	16.8	3111.9	33.6	378	6
		51.1		17.0		34.1		
12° 0'	9230.8		7061.2		3146.0		6.393 371	
10	9282.6	51.8	7078.5	17.3	3180.6	34.6	364	7
20	9335.1	52.5	7096.0	17.5	3215.5	34.9	357	7
30	9388.2	53.1	7113.7	17.7	3251.0	35.5	350	7
40	9442.0	53.8	7131.6	17.9	3286.8	35.8	343	7
50	9496.5	54.5	7149.8	18.2	3323.1	36.3	335	8
		55.1		18.4		36.8		
13° 0'	9551.6		7168.2		3359.9		6.393 328	
10	9607.4	55.8	7186.8	18.6	3397.1	37.2	321	7
20	9663.9	56.5	7205.6	18.8	3434.7	37.8	313	8
30	9721.0	57.1	7224.6	19.0	3472.8	38.1	305	8
40	9778.7	57.7	7243.9	19.3	3511.3	38.5	298	7
50	9837.2	58.5	7263.3	19.4	3550.3	39.0	290	8
		59.0		19.7		39.3		
14° 0'	9896.2		7283.0		3589.6		6.393 282	
10	9956.0	59.8	7302.9	19.9	3629.5	39.9	274	8
20	*0016.3	60.3	7323.1	20.2	3669.7	40.2	266	8
30	0077.4	61.1	7343.4	20.3	3710.4	40.7	258	8
40	0139.0	61.6	7364.0	20.6	3751.5	41.1	250	9
50	0201.3	62.3	7384.7	20.7	3793.0	41.5	241	8
		63.0		21.0		42.0		
15° 0'	0264.3		7405.7		3835.0		6.393 233	
10	0327.9	63.6	7426.9	21.2	3877.4	42.4	225	8
20	0392.1	64.2	7448.3	21.4	3920.2	42.8	216	9
30	0456.9	64.8	7469.9	21.6	3963.4	43.1	207	9
40	0522.4	65.5	7491.8	21.9	4007.1	43.7	199	8
50	0588.5	66.1	7513.8	22.0	4051.2	44.1	190	9
		66.8		22.3		44.5		
16° 0'	0655.3		7536.1		4095.7		181	

φ	$\lg W$	Δ	$\lg [1]$	Δ	$\lg [2]$	Δ	$\lg V^2$	Δ
	9.999—10	—	8.512—10	—	8.509—10	—	0.002	—
8° 0'	9719.3	11.8	6058.1	35.2	7536.0	11.8	8522.1	23.5
10	9707.5	12.0	6022.9	36.0	7524.2	12.0	8498.6	23.9
20	9695.5	12.2	5986.9	36.6	7512.2	12.2	8474.7	24.4
30	9683.3	12.4	5950.3	37.3	7500.0	12.4	8450.3	24.9
40	9670.9	12.7	5913.0	38.1	7487.6	12.7	8425.4	25.4
50	9658.2	12.9	5874.9	38.7	7474.9	12.9	8400.0	25.8
9° 0'	9645.3	13.2	5836.2	39.5	7462.0	13.2	8374.2	26.3
10	9632.1	13.3	5796.7	40.1	7448.8	13.3	8347.9	26.8
20	9618.8	13.6	5756.6	40.8	7435.5	13.6	8321.1	27.2
30	9605.2	13.9	5715.8	41.6	7421.9	13.9	8293.9	27.7
40	9591.3	14.1	5674.2	42.2	7408.0	14.1	8266.2	28.1
50	9577.2	14.3	5632.0	42.9	7393.9	14.3	8238.1	28.6
10° 0'	9562.9	14.5	5589.1	43.6	7379.6	14.5	8209.5	29.1
10	9548.4	14.6	5545.5	44.3	7365.1	14.8	8180.4	29.6
20	9533.6	15.0	5501.2	45.0	7350.3	15.0	8150.8	29.9
30	9518.6	15.2	5456.2	45.7	7335.3	15.2	8120.9	30.5
40	9503.4	15.5	5410.5	46.4	7320.1	15.5	8090.4	30.9
50	9487.9	15.6	5364.1	47.0	7304.6	15.6	8059.5	31.4
11° 0'	9472.3	15.9	5317.1	47.7	7289.0	15.9	8028.1	31.8
10	9456.4	16.2	5269.4	48.5	7273.1	16.2	7996.3	32.3
20	9440.2	16.3	5220.9	49.0	7256.9	16.4	7964.0	32.7
30	9423.9	16.6	5171.9	49.8	7240.5	16.5	7931.3	33.2
40	9407.3	16.8	5122.1	50.5	7224.0	16.9	7898.1	33.6
50	9390.4	17.1	5071.6	51.1	7207.1	17.0	7864.5	34.1
12° 0'	9373.4	17.3	5020.5	51.8	7190.1	17.3	7830.4	34.5
10	9356.1	17.4	4968.7	52.4	7172.8	17.5	7795.9	35.0
20	9338.7	17.8	4916.3	53.2	7155.3	17.7	7760.9	35.4
30	9320.9	17.9	4863.1	53.8	7137.6	17.9	7725.5	35.9
40	9303.0	18.1	4809.3	54.5	7119.7	18.2	7689.6	36.3
50	9284.9	18.4	4754.8	55.1	7101.5	18.3	7653.3	36.7
13° 0'	9266.5	18.6	4699.7	55.8	7083.2	18.6	7616.6	37.2
10	9247.9	18.8	4643.9	56.4	7064.6	18.8	7579.4	37.7
20	9229.1	19.1	4587.5	57.1	7045.8	19.1	7541.7	38.1
30	9210.0	19.2	4530.4	57.8	7026.7	19.2	7503.6	38.5
40	9190.8	19.5	4472.6	58.4	7007.5	19.5	7465.1	38.9
50	9171.3	19.7	4414.2	59.1	6988.0	19.7	7426.2	39.4
14° 0'	9151.6	19.9	4355.1	59.7	6968.3	19.9	7386.8	39.8
10	9131.7	20.1	4295.4	60.4	6948.4	20.1	7347.0	40.3
20	9111.6	20.4	4235.0	61.0	6928.3	20.4	7306.7	40.6
30	9091.2	20.5	4174.0	61.7	6907.9	20.5	7266.1	41.2
40	9070.7	20.8	4112.3	62.3	6887.4	20.8	7224.9	41.5
50	9049.9	21.0	4050.0	62.9	6866.6	21.0	7183.4	42.0
15° 0'	9028.9	21.2	3987.1	63.6	6845.6	21.2	7141.4	42.4
10	9007.7	21.4	3923.5	64.3	6824.4	21.4	7099.0	42.8
20	8986.3	21.6	3859.2	64.8	6803.0	21.6	7056.2	43.2
30	8964.7	21.8	3794.4	65.5	6781.4	21.8	7013.0	43.7
40	8942.9	22.1	3728.9	66.1	6759.6	22.1	6969.3	44.0
50	8920.8	22.2	3662.8	66.8	6737.5	22.2	6925.3	44.5
16° 0'	8898.6		3596.0		6715.3		6880.8	

φ	$\lg M$	Δ	$\lg N$	Δ	$\lg r$	Δ	$\lg \frac{1}{r^2}$	Δ
	6.802	+	6.804	+	6.803	+	-- 20	
16° 0'	0655.3	67.4	7536.1	22.4	4095.7	44.9	6.393 181	9
10	0722.7	67.9	7558.5	22.7	4140.6	45.3	172	9
20	0790.6	68.7	7581.2	22.8	4185.9	45.7	163	9
30	0859.3	69.2	7604.0	23.1	4231.6	46.2	154	10
40	0928.5	69.8	7627.1	23.3	4277.8	46.6	144	9
50	0998.3	70.5	7650.4	23.5	4324.4	46.9	135	9
17° 0'	1068.8	71.1	7673.9	23.7	4371.3	47.4	6.393 126	10
10	1139.9	71.6	7697.6	23.9	4418.7	47.8	116	9
20	1211.5	72.3	7721.5	24.1	4466.5	48.2	107	10
30	1283.8	72.9	7745.6	24.3	4514.7	48.6	097	10
40	1356.7	73.5	7769.9	24.5	4563.3	49.0	087	9
50	1430.2	74.1	7794.4	24.7	4612.3	49.4	078	10
18° 0'	1504.3	74.7	7819.1	24.9	4661.7	49.8	6.393 068	10
10	1579.0	75.3	7844.0	25.0	4711.5	50.2	058	10
20	1654.3	75.8	7869.0	25.3	4761.7	50.5	048	10
30	1730.1	76.5	7894.3	25.5	4812.2	51.0	038	11
40	1806.6	77.1	7919.8	25.7	4863.2	51.4	027	10
50	1883.7	77.6	7945.5	25.9	4914.6	51.7	017	10
19° 0'	1961.3	78.2	7971.4	26.1	4966.3	52.2	6.393 007	11
10	2039.5	78.8	7997.5	26.2	5018.5	52.5	6.392 996	10
20	2118.3	79.4	8023.7	26.5	5071.0	52.9	986	11
30	2197.7	79.9	8050.2	26.6	5123.9	53.3	975	10
40	2277.6	80.5	8076.8	26.9	5177.2	53.7	965	11
50	2358.1	81.1	8103.7	27.0	5230.9	54.0	954	11
20° 0'	2439.2	81.6	8130.7	27.2	5284.9	54.5	6.392 943	11
10	2520.8	82.2	8157.9	27.4	5339.4	54.8	932	11
20	2603.0	82.8	8185.3	27.6	5394.2	55.2	921	11
30	2685.8	83.3	8212.9	27.8	5449.4	55.5	910	11
40	2769.1	83.9	8240.7	27.9	5504.9	55.9	899	11
50	2853.0	84.4	8268.6	28.2	5560.8	56.3	888	11
21° 0'	2937.4	85.0	8296.8	28.3	5617.1	56.6	6.392 877	12
10	3022.4	85.5	8325.1	28.5	5673.7	57.1	865	11
20	3107.9	86.1	8353.6	28.7	5730.8	57.3	854	12
30	3194.0	86.6	8382.3	28.9	5788.1	57.8	842	11
40	3280.6	87.1	8411.2	29.0	5845.9	58.1	831	12
50	3367.7	87.7	8440.2	29.2	5904.0	58.4	819	11
22° 0'	3455.4	88.2	8469.4	29.4	5962.4	58.8	6.392 808	12
10	3543.6	88.8	8498.8	29.6	6021.2	59.2	796	12
20	3632.4	89.2	8528.4	29.8	6080.4	59.5	784	12
30	3721.6	89.8	8558.2	29.9	6139.9	59.8	772	12
40	3811.4	90.3	8588.1	30.1	6199.7	60.2	760	12
50	3901.7	90.8	8618.2	30.3	6259.9	60.6	748	12
23° 0'	3992.5	91.3	8648.5	30.4	6320.5	60.9	6.392 736	12
10	4083.8	91.9	8678.9	30.6	6381.4	61.2	724	13
20	4175.7	92.3	8709.5	30.8	6442.6	61.6	711	12
30	4268.0	92.9	8740.3	30.9	6504.2	61.9	699	12
40	4360.9	93.3	8771.2	31.2	6566.1	62.2	687	13
50	4454.2	93.9	8802.4	31.2	6628.3	62.5	674	12
24° 0'	4548.1		8833.6		6690.8		6.392 662	

白塞尔椭圆体的主曲率半径 M 和 N 及其函数

[17]

φ	$\lg W$	Δ	$\lg [1]$	Δ	$\lg [2]$	Δ	$\lg V^2$	Δ
	9.999—10	—	8.512—10	—	8.509—10	—	0.002	—
16° 0'	8898.6	22.5	3596.0	67.3	6715.3	22.5	6880.8	44.9
10	8878.1	22.6	3528.7	68.0	6692.8	22.6	6835.9	45.4
20	8853.5	22.9	3460.7	68.6	6670.2	22.9	6790.5	45.7
30	8830.6	23.1	3392.1	69.2	6647.3	23.1	6744.8	46.2
40	8807.5	23.3	3322.9	69.9	6624.2	23.3	6698.6	46.5
50	8784.2	23.5	3253.0	70.5	6600.9	23.5	6652.1	47.0
17° 0'	8760.7	23.6	3182.5	71.0	6577.4	23.6	6605.1	47.4
10	8737.1	23.9	3111.5	71.6	6553.8	23.9	6557.7	47.8
20	8713.2	24.1	3039.9	72.4	6529.9	24.1	6519.9	48.2
30	8689.1	24.3	2967.5	72.9	6505.8	24.3	6481.7	48.5
40	8664.8	24.5	2894.6	73.5	6481.5	24.5	6443.2	49.0
50	8640.3	24.7	2821.1	74.1	6457.0	24.7	6394.2	49.4
18° 0'	8615.6	24.9	2747.0	74.7	6432.3	24.9	6344.8	49.8
10	8590.7	25.1	2672.3	75.2	6407.4	25.1	6295.0	50.2
20	8565.6	25.3	2597.1	75.9	6382.3	25.3	6244.8	50.6
30	8540.3	25.5	2521.2	76.5	6357.0	25.5	6194.2	51.0
40	8514.8	25.7	2444.7	77.0	6331.5	25.7	6143.2	51.3
50	8489.1	25.8	2367.7	77.6	6305.8	25.9	6091.9	51.8
19° 0'	8463.3	26.1	2290.1	78.3	6279.9	26.0	6040.1	52.1
10	8437.2	26.3	2211.8	78.7	6253.9	26.3	5988.0	52.6
20	8410.9	26.4	2133.1	79.4	6227.6	26.4	5935.4	52.9
30	8384.5	26.7	2053.7	80.0	6201.2	26.7	5882.5	53.3
40	8357.8	26.8	1973.7	80.5	6174.5	26.8	5829.2	53.6
50	8331.0	27.0	1893.2	81.0	6147.7	27.1	5775.6	54.1
20° 0'	8304.0	27.3	1812.2	81.7	6120.6	27.1	5691.5	54.4
10	8276.7	27.4	1730.5	82.2	6093.4	27.4	5637.1	54.8
20	8249.3	27.6	1648.3	82.8	6066.0	27.6	5582.3	55.2
30	8221.7	27.7	1565.5	83.3	6038.4	27.7	5527.1	55.6
40	8194.0	28.0	1482.2	83.9	6010.7	28.0	5471.5	55.9
50	8166.0	28.1	1398.3	84.4	5982.7	28.1	5415.6	56.3
21° 0'	8137.9	28.4	1313.9	85.0	5954.6	28.4	5359.3	56.6
10	8109.5	28.5	1228.9	85.5	5926.2	28.5	5302.7	57.0
20	8081.0	28.6	1143.4	86.1	5897.7	28.7	5245.7	57.4
30	8052.4	28.9	1057.3	86.6	5869.0	28.8	5188.3	57.7
40	8023.5	29.1	970.7	87.1	5840.2	29.1	5130.6	58.1
50	7994.4	29.2	883.6	87.7	5811.1	29.2	5072.5	58.5
22° 0'	7965.2	29.4	795.9	88.2	5781.9	29.4	5014.0	58.8
10	7935.8	29.6	707.7	88.7	5752.5	29.6	4955.2	59.1
20	7906.2	29.7	619.0	89.3	5722.9	29.7	4896.1	59.5
30	7876.5	29.9	529.7	89.8	5693.2	30.0	4836.6	59.9
40	7846.6	30.1	439.9	90.3	5663.2	30.1	4776.7	60.2
50	7816.5	30.3	349.6	90.8	5633.1	30.2	4716.5	60.5
23° 0'	7786.2	30.5	258.8	91.3	5602.9	30.5	4656.0	60.9
10	7755.7	30.6	167.5	91.8	5572.4	30.6	4595.1	61.3
20	7725.1	30.8	70.7	92.4	5541.8	30.8	4533.8	61.5
30	7694.3	30.9	*9883.3	92.8	5511.0	30.9	4472.3	61.9
40	7663.4	31.1	9890.5	93.4	5480.1	31.1	4410.4	62.3
50	7632.3	31.3	9797.1	93.8	5449.0	31.3	4348.1	62.5
24° 0'	7601.0		9703.3		5417.7		4285.6	