EPHEMERIS OF THE SUN[1]

All data are for 0^h Greenwich Civil Time in the year 1950. Variations of these data from year to year are negligible for most meteorological purposes, the largest variation occurs through the 4-year leap-year cycle. The year 1950 was selected to represent a mean condition in this cycle.

The *declination* of the sun is its angular distance north (+) or south (−) of the celestial equator.

The *longitude* of the sun is the angular distance of the meridian of sun from the vernal equinox (mean equinox of 1950.0) measured eastward along the ecliptic.

The *equation of time* (apparent − mean) is the correction to be applied to mean solar time in order to obtain apparent (true) solar time.

The *radius vector* of the earth is the distance from the center of the earth to the center of the sun expressed in terms of the length of the semimajor axis of the earth's orbit.

[1] U. S. Naval Observatory, The American ephemeris and nautical almanac for the year 1950, Washington, 1948.

EPHEMERIS OF THE SUN

Date	Declination		Longitude		Equation of time		Radius vector
	°	′	°	′	m.	s.	
Jan. 1	−23	4	280	1	− 3	14	0.98324
5	22	42	284	5	5	6	.98324
9	22	13	288	10	6	50	.98333
13	21	37	292	14	8	27	.98352
17	20	54	296	19	9	54	.98378
21	20	5	300	23	11	10	.98410
25	19	9	304	27	12	14	.98448
29	18	8	308	31	13	5	.98493
Mar. 1	− 7	53	339	51	−12	38	0.99084
5	6	21	343	51	11	48	.99182
9	4	48	347	51	10	51	.99287
13	3	14	351	51	9	49	.99396
17	1	39	355	50	8	42	.99508
21	− 0	5	359	49	7	32	.99619
25	+ 1	30	3	47	6	20	.99731
29	3	4	7	44	5	7	.99843
Feb. 1	−17	19	311	34	−13	34	0.98533
5	16	10	315	37	14	2	.98593
9	14	55	319	40	14	17	.98662
13	13	37	323	43	14	20	.98738
17	12	15	327	46	14	10	.98819
21	10	50	331	48	13	50	.98903
25	9	23	335	49	13	19	.98991
Apr. 1	+ 4	14	10	42	− 4	12	0.99928
5	5	46	14	39	3	1	1.00043
9	7	17	18	35	1	52	1.00160
13	8	46	22	30	− 0	47	1.00276
17	10	12	26	25	+ 0	13	1.00390
21	11	35	30	20	1	6	1.00500
25	12	56	34	14	1	53	1.00606
29	14	13	38	7	2	33	1.00708

(*continued*)

TABLE 169 (CONCLUDED)

EPHEMERIS OF THE SUN

Date	Declination	Longitude	Equation of time	Radius vector
	° ′	° ′	m. s.	
May 1	+14 50	40 4	+ 2 50	1.00759
5	16 2	43 56	3 17	1.00859
9	17 9	47 48	3 35	1.00957
13	18 11	51 40	3 44	1.01051
17	19 9	55 32	3 44	1.01138
21	20 2	59 23	3 34	1.01218
25	20 49	63 14	3 16	1.01291
29	21 30	67 4	2 51	1.01358
July 1	+23 10	98 36	− 3 31	1.01667
5	22 52	102 24	4 16	1.01671
9	22 28	106 13	4 56	1.01669
13	21 57	110 2	5 30	1.01659
17	21 21	113 51	5 57	1.01639
21	20 38	117 40	6 15	1.01610
25	19 50	121 29	6 24	1.01573
29	18 57	125 19	6 23	1.01530
Sept. 1	+ 8 35	157 59	− 0 15	1.00917
5	7 7	161 52	+ 1 2	1.00822
9	5 37	165 45	2 22	1.00723
13	4 6	169 38	3 45	1.00619
17	2 34	173 32	5 10	1.00510
21	+ 1 1	177 26	6 35	1.00397
25	− 0 32	181 21	8 0	1.00283
29	2 6	185 16	9 22	1.00170
Nov. 1	−14 11	217 59	+16 21	0.99249
5	15 27	222 0	16 23	.99150
9	16 38	226 1	16 12	.99054
13	17 45	230 2	15 47	.98960
17	18 48	234 4	15 10	.98869
21	19 45	238 6	14 18	.98784
25	20 36	242 8	13 15	.98706
29	21 21	246 11	11 59	.98636

Date	Declination	Longitude	Equation of time	Radius vector
	° ′	° ′	m. s.	
June 1	+21 57	69 56	+ 2 27	1.01405
5	22 28	73 46	1 49	1.01465
9	22 52	77 36	1 6	1.01518
13	23 10	81 25	+ 0 18	1.01564
17	23 22	85 15	− 0 33	1.01602
21	23 27	89 4	1 25	1.01630
25	23 25	92 53	2 17	1.01649
29	23 17	96 41	3 7	1.01662
Aug. 1	+18 14	128 11	− 6 17	1.01494
5	17 12	132 0	5 59	1.01442
9	16 6	135 50	5 33	1.01384
13	14 55	139 41	4 57	1.01318
17	13 41	143 31	4 12	1.01244
21	12 23	147 22	3 19	1.01163
25	11 2	151 14	2 18	1.01076
29	9 39	155 5	1 10	1.00986
Oct. 1	− 2 53	187 14	+10 1	1.00114
5	4 26	191 11	11 17	1.00001
9	5 58	195 7	12 27	0.99888
13	7 29	199 5	13 30	.99774
17	8 58	203 3	14 25	.99659
21	10 25	207 1	15 10	.99544
25	11 50	211 0	15 46	.99433
29	13 12	214 59	16 10	.99326
Dec. 1	−21 41	248 13	+11 16	0.98604
5	22 16	252 16	9 43	.98546
9	22 45	256 20	8 1	.98494
13	23 6	260 24	6 12	.98446
17	23 20	264 28	4 17	.98405
21	23 26	268 32	2 19	.98372
25	23 25	272 37	+ 0 20	.98348
29	23 17	276 41	− 1 39	.98334