

## DAILY POLYNOMIAL COEFFICIENTS FOR LUNAR COORDINATES

**Notes and formulae**

On the following pages, for each day of the year, the apparent right ascension ( $\alpha$ ) and declination ( $\delta$ ) of the Moon are represented by economised polynomials of the fifth degree, and the horizontal parallax ( $\pi$ ) is represented by an economised polynomial of the fourth degree.

The formulae to be evaluated are of the form:

$$a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$$

where  $a_5$  is zero for the parallax.

The time-interval from 0<sup>h</sup> TT is expressed as a fraction of a day to form the interpolation factor  $p$ , where  $0 \leq p < 1$ , and the polynomial is evaluated directly, or by re-expressing it in the nested form:

$$((((a_5 p + a_4) p + a_3) p + a_2) p + a_1) p + a_0$$

to avoid the separate formation of the powers of  $p$ . Alternatively this nested form for  $\alpha$  and  $\delta$  may be written as:

$$b_{n+1} = b_n p + a_{5-n}, \text{ for } n = 1 \text{ to } 5,$$

where  $b_1 = a_5$  and  $b_6$  is the required value. For the parallax  $a_5$  is zero, so that:

$$b_{n+1} = b_n p + a_{4-n}, \text{ for } n = 1 \text{ to } 4,$$

where  $b_1 = a_4$  and  $b_5$  is the required value.

The polynomial coefficients are expressed in decimals of a degree, even for  $\alpha$ , and the signs are given on the right-hand sides of the coefficients to facilitate their use with small calculators. Subtract  $360^\circ$  from  $\alpha$  if it exceeds  $360^\circ$ . In order to obtain the full precision of the polynomial ephemeris the interpolating factor  $p$  must be evaluated to 8 decimal places ( $10^{-3}$  s); estimates of the precision of unrounded interpolated values are:

RA	Dec	HP
$\pm 0^s 0003$	$\pm 0'' 003$	$\pm 0'' 0003$

Particular care must be taken to ensure that the coefficients are entered with the correct signs.

*Example.* To calculate the apparent right ascension ( $\alpha$ ) the declination ( $\delta$ ) and the horizontal parallax ( $\pi$ ) for the Moon on 2021 January 21<sup>d</sup> 13<sup>h</sup> 23<sup>m</sup> 48<sup>s</sup> 32 UT1, using an assumed value of  $\Delta T = 71^s$ .

$$\text{TT} = 13^{\text{h}} 24^{\text{m}} 59^{\text{s}} 32, \text{ hence } p = 0.559\ 019\ 91$$

	right ascension	declination	horizontal parallax
$b_1$	$-0.000\ 1561$	$-0.000\ 1010$	$-0.000\ 007\ 19$
$b_2$	$-0.000\ 9681$	$-0.000\ 5613$	$-0.000\ 002\ 24$
$b_3$	$+0.035\ 8301$	$-0.024\ 2071$	$+0.001\ 480\ 52$
$b_4$	$+0.140\ 4016$	$-0.181\ 0475$	$-0.000\ 799\ 13$
$b_5$	$+11.068\ 9733$	$+4.599\ 5202$	$\pi = +0.903\ 787\ 86$
$b_6$	$\alpha = 37.793\ 9711$	$\delta = +11.366\ 2964$	
	$= 2^{\text{h}} 31^{\text{m}} 10^{\text{s}} 553$	$= +11^\circ 21' 58'' 67$	$= 54' 13'' 636$

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
	January 0			January 8		
$a_0$	111-8124 241+	24-5707 518+	0-9374 3794+	217-6782 821+	11-2358 738-	0-9915 8040+
$a_1$	14-1093 044+	0-8870 674-	0-0082 1174+	13-4641 622+	5-4290 371-	0-0035 8763+
$a_2$	185 886+	6652 011-	322+	3107 469+	2797 113+	8 5199-
$a_3$	508 660-	10 464+	4573-	316 077+	588 212+	9781-
$a_4$	14 027+	49 093+	475+	39 489-	13 359+	94+
$a_5$	7 437+	1 386-		7 200-	3 032-	
	January 1			January 9		
$a_0$	125-8915 975+	23-0243 003+	0-9456 1192+	231-4801 298+	16-3253 458-	0-9942 1918+
$a_1$	14-0032 074+	2-1953 884-	0-0081 0002+	14-1610 860+	4-6893 269-	0-0015 9397+
$a_2$	1181 472-	6340 039-	1 0577-	3746 412+	4611 561+	11 3779-
$a_3$	380 917-	192 036+	2630-	87 346+	609 502+	9425-
$a_4$	51 833+	41 382+	379+	77 929-	1 958-	744+
$a_5$	2 538+	3 020-		5 292-	6 289-	
	January 2			January 10		
$a_0$	139-7440 031+	20-2179 479+	0-9535 8367+	246-0162 694+	20-4933 911-	0-9945 8855+
$a_1$	13-6746 354+	3-3907 419-	0-0078 2477+	14-9027 648+	3-5880 928-	0-0009 3459-
$a_2$	1987 978-	5545 929-	1 6260-	3487 550+	6365 193+	13 7412-
$a_3$	150 658-	327 505+	1078-	272 155-	538 233+	6391-
$a_4$	63 579+	25 609+	160+	107 214-	35 045-	1332+
$a_5$	1 758-	2 748-		3 695+	7 387-	
	January 3			January 11		
$a_0$	153-2109 570+	16-3076 495+	0-9612 3665+	261-2302 218+	23-3953 845-	0-9922 2925+
$a_1$	13-2563 931+	4-3928 055-	0-0074 7362+	15-4776 022+	2-1712 910-	0-0038 2120-
$a_2$	2076 208-	4437 275-	1 8629-	2064 982+	7695 438+	14 8501-
$a_3$	85 097+	403 225+	426-	657 854-	326 487+	936-
$a_4$	53 747+	11 663+	138-	87 162-	74 186-	1624+
$a_5$	3 390-	1 386-		14 969+	3 366-	
	January 4			January 12		
$a_0$	166-2732 747+	11-5124 668+	0-9685 1834+	276-8413 176+	24-7722 383-	0-9869 2992+
$a_1$	12-8864 845+	5-1553 190-	0-0070 8273+	15-6658 633+	0-5656 069-	0-0067 5425-
$a_2$	1532 388-	3171 460-	2 0826-	281 013-	8196 114+	14 1602-
$a_3$	266 226+	436 824+	993-	856 175-	105+	5700+
$a_4$	36 428+	4 872+	435-	6 423-	91 081-	1492+
$a_5$	3 249-	20+		16 144+	3 836+	
	January 5			January 13		
$a_0$	179-0364 608+	6-0841 735+	0-9753 7852+	292-3944 343+	24-5269 477-	0-9788 3157+
$a_1$	12-6728 214+	5-6566 039-	0-0066 1899+	15-3582 999+	1-0391 377+	0-0093 5555-
$a_2$	547 604-	1831 513-	2 6477-	2726 262-	7688 622+	11 5701-
$a_3$	379 584+	456 999+	2780-	726 133-	323 471-	1 1757+
$a_4$	20 399+	5 269+	637-	76 870+	69 676-	996+
$a_5$	2 966-	868+		5 734+	8 037+	
	January 6			January 14		
$a_0$	191-6942 235+	0-2907 321+	0-9816 9857+	307-4157 550+	22-7574 587-	0-9684 4653+
$a_1$	12-6838 513+	5-8832 649-	0-0059 8054+	14-6288 113+	2-4559 680+	0-0112 7701-
$a_2$	683 949+	420 156-	3 8640-	4386 458-	6380 784+	7 4654-
$a_3$	431 125+	486 735+	5401-	366 961-	522 377-	1 5754+
$a_4$	6 069+	10 028+	649-	103 069+	27 715-	343+
$a_5$	3 622-	840+		4 231-	6 895+	
	January 7			January 15		
$a_0$	204-4898 270+	5-5847 882-	0-9872 3222+	321-5791 082+	19-7177 321-	0-9565 8395+
$a_1$	12-9505 936+	5-8168 461-	0-0050 1971+	13-6805 400+	3-5677 690+	0-0122 8376-
$a_2$	1977 579+	1108 694+	5 8662-	4911 638-	4716 339+	2 5515-
$a_3$	418 148+	534 517+	8086-	1 275+	566 269-	1 7079+
$a_4$	11 663-	14 785+	406-	79 150+	6 957+	246-
$a_5$	5 449-	392-		7 037-	3 370+	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
January 16						
$a_0$	334.7758 232+	15.7339 234-	0.9442 1336+	66.5294 483+	20.6820 319+	0.9121 6211+
$a_1$	12.7267 382+	4.3456 205+	0.0122 9157-	12.5258 789+	2.9626 122+	0.0065 4774+
$a_2$	4503 420-	3092 893+	2 4122+	3473 857+	4290 600-	11 1954+
$a_3$	248 419+	506 435-	1 6025+	62 508+	343 222-	8089-
$a_4$	43 041+	23 259+	643-	48 843-	5 349-	582-
$a_5$	5 296-	446+		2 306-	2 934+	
January 17						
$a_0$	347.0808 358+	11.1272 866-	0.9323 1684+	79.4038 488+	23.1810 203+	0.9197 4267+
$a_1$	11.9151 512+	4.8217 935+	0.0113 5411-	13.2187 171+	2.0008 541+	0.0085 2083+
$a_2$	3552 848-	1717 529+	6 8281+	3345 096+	5322 947-	8 4240+
$a_3$	369 031+	409 849-	1 3394+	153 583-	334 628-	1 0451-
$a_4$	16 746+	24 972+	832-	61 519-	9 822+	429-
$a_5$	2 828-	1 096-		1 777+	4 106+	
January 18						
$a_0$	358.6789 970+	6.1723 374-	0.9217 7116+	92.9357 430+	24.6175 096+	0.9289 9709+
$a_1$	11.3205 770+	5.0517 850+	0.0096 1996-	13.8179 482+	0.8418 569+	0.0098 7490+
$a_2$	2373 499-	626 814+	10 3460+	2533 053+	6226 714-	5 0394+
$a_3$	408 679+	321 250-	1 0031+	378 911-	254 672-	1 2204-
$a_4$	3 034+	19 200+	868-	52 292-	31 267+	166-
$a_5$	1 206-	1 641-		7 100+	3 455+	
January 19						
$a_0$	9.8032 748+	1.0882 401-	0.9132 7743+	106.9645 862+	24.8147 001+	0.9392 5223+
$a_1$	10.9690 922+	5.0876 320+	0.0072 8457-	14.1935 209+	0.4656 563-	0.0105 1001+
$a_2$	1141 266-	238 169-	12 8356+	1153 885+	6768 499-	1 2899+
$a_3$	409 124+	260 890-	6544+	515 958-	96 537-	1 2891-
$a_4$	2 629-	10 859+	827-	14 604-	49 103+	197+
$a_5$	580-	1 678-		9 129+	834+	
January 20						
$a_0$	20.6988 319+	3.9504 040+	0.9073 3360+	121.2213 523+	23.6675 339+	0.9497 6429+
$a_1$	10.8622 343+	4.9652 359+	0.0045 5419-	14.2682 298+	1.8282 621-	0.0103 8913+
$a_2$	64 574+	972 480-	14 3047+	390 059-	6755 201-	2 4473-
$a_3$	392 709+	234 111-	3238+	484 945-	106 585+	1 2097-
$a_4$	5 241-	2 384+	766-	32 862+	52 919+	590+
$a_5$	757-	1 463-		5 770+	2 049-	
January 21						
$a_0$	31.6061 947+	8.7950 730+	0.9042 3459+	135.4059 448+	21.1794 972+	0.9597 9362+
$a_1$	10.9904 860+	4.7007 294+	0.0016 2677-	14.0607 580+	3.1271 853-	0.0095 6039+
$a_2$	1203 718+	1675 153-	14 8177+	1590 052-	6138 542-	5 7130-
$a_3$	363 713+	238 933-	178+	298 838-	297 006+	9690-
$a_4$	8 808-	5 048-	719-	61 522+	41 859+	898+
$a_5$	1 561-	1 010-		370+	3 360-	
January 22						
$a_0$	42.7523 870+	13.3037 881+	0.9040 8418+	149.2840 030+	17.4720 081+	0.9686 9479+
$a_1$	11.3360 386+	4.2914 960+	0.0013 1336+	13.6778 861+	4.2507 280-	0.0081 6305+
$a_2$	2226 406+	2432 364-	14 4409+	2113 908-	5030 054-	8 0780-
$a_3$	312 220+	268 727-	2693-	51 016-	431 076+	6021-
$a_4$	16 574-	10 293-	688-	62 160+	24 501+	1005+
$a_5$	2 711-	171-		3 020-	2 907-	
January 23						
$a_0$	54.3403 597+	17.3241 286+	0.9068 0782+	162.7513 107+	12.7635 418+	0.9759 9988+
$a_1$	11.8670 000+	3.7202 042+	0.0040 9322+	13.2631 528+	5.1190 677-	0.0064 0707+
$a_2$	3036 452+	3302 042-	13 2212+	1924 312-	3618 910-	9 2857-
$a_3$	218 427+	310 805-	5451-	166 950+	500 727+	1922-
$a_4$	30 551-	11 369-	655-	46 242+	9 842+	861+
$a_5$	3 441-	1 207+		3 761-	1 635-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
	February 1			February 9		
$a_0$	175.8429 753+	7.3334 766+	0.9814 6776+	287.2087 328+	24.8551 941-	0.9707 9438+
$a_1$	12.9449 918+	5.6895 104-	0.0045 2672+	15.1455 428+	0.5427 689+	0.0065 1904-
$a_2$	1183 639-	2073 999-	9 3566-	1545 674-	7619 897+	6 7072-
$a_3$	314 482+	524 444+	1569+	688 184-	175 288-	876+
$a_4$	27 336+	1 819+	513+	35 346+	67 751-	717+
$a_5$	3 395-	426-		8 885+	4 782+	
	February 2			February 10		
$a_0$	188.7034 455+	1.4891 500+	0.9850 7964+	302.1353 128+	23.5742 611-	0.9636 2054+
$a_1$	12.8118 457+	5.9464 615-	0.0027 2298+	14.6485 241+	1.9894 541+	0.0078 0548-
$a_2$	110 075-	493 967-	8 5913-	3309 342-	6735 568+	6 0127-
$a_3$	389 878+	527 837+	3622+	462 813-	397 756-	3810+
$a_4$	10 692+	15-	87+	79 466+	42 332-	762+
$a_5$	3 373-	227+		178+	5 979+	
	February 3			February 11		
$a_0$	201.5440 034+	4.4539 033-	0.9869 8058+	316.4145 858+	20.9546 611-	0.9552 5952+
$a_1$	12.9093 834+	5.8867 966-	0.0011 1685+	13.8796 813+	3.2032 959+	0.0088 6320-
$a_2$	1090 032+	1091 783+	7 4634-	4219 527-	5348 207+	4 4168-
$a_3$	398 401+	529 914+	3930+	146 088-	508 213-	6912+
$a_4$	5 814-	1 531+	272-	78 132+	11 705-	618+
$a_5$	4 272-	10+		4 842-	4 297+	
	February 4			February 12		
$a_0$	214.6012 214+	10.1783 762-	0.9873 8767+	329.8650 345+	17.2681 067-	0.9460 2994+
$a_1$	13.2424 470+	5.5088 502-	0.0002 6884-	13.0207 805+	4.1179 368+	0.0095 1446-
$a_2$	2207 605+	2690 874+	6 4533-	4237 631-	3796 289+	1 9807-
$a_3$	331 742+	535 373+	2776+	117 768+	513 434-	9410+
$a_4$	27 332-	2 039+	457-	52 497+	9 691+	348+
$a_5$	5 531-	1 302-		5 131-	1 902+	
	February 5			February 13		
$a_0$	228.0943 168+	15.3645 281-	0.9864 9668+	342.4785 653+	12.8207 251-	0.9364 1499+
$a_1$	13.7697 931+	4.8099 015-	0.0014 9455-	12.2270 200+	4.7279 898+	0.0096 1439-
$a_2$	2983 332+	4296 230+	5 8940-	3620 692-	2333 104+	1 0414+
$a_3$	167 482+	529 269+	876+	277 397+	456 685-	1 0797+
$a_4$	56 333-	4 293-	426-	26 574+	18 854+	42+
$a_5$	5 023-	3 481-		3 419-	122+	
	February 6			February 14		
$a_0$	242.1730 557+	19.6926 572-	0.9844 1724+	354.3735 714+	7.9031 958-	0.9270 1313+
$a_1$	14.3916 653+	3.7953 347-	0.0026 6414-	11.5950 229+	5.0652 064+	0.0090 8052-
$a_2$	3097 234+	5823 366+	5 8799-	2663 209-	1077 348+	4 2977+
$a_3$	105 112-	476 380+	882-	350 454+	380 626-	1 0945+
$a_4$	83 634-	22 371-	201-	9 721+	19 175+	223-
$a_5$	77+	5 138-		1 772-	851-	
	February 7			February 15		
$a_0$	256.8555 775+	22.8607 683-	0.9811 5429+	5.7381 138+	2.7664 846-	0.9184 6960+
$a_1$	14.9461 730+	2.4992 638-	0.0038 7461-	11.1705 210+	5.1737 327+	0.0079 0154-
$a_2$	2280 820+	7066 677+	6 2542-	1571 191-	41 991+	7 4417+
$a_3$	433 993-	336 191+	1704-	372 158+	312 675-	1 0029+
$a_4$	83 557-	49 562-	141+	1 179+	14 747+	413-
$a_5$	8 822+	4 003-		852-	1 257-	
	February 8			February 16		
$a_0$	271.9789 598+	24.6251 018-	0.9766 3863+	16.7887 642+	2.3815 286+	0.9114 0839+
$a_1$	15.2431 324+	1.0068 925-	0.0051 7091-	10.9679 763+	5.0935 983+	0.0061 2887-
$a_2$	566 219+	7737 721+	6 6700-	456 119-	820 142-	10 1988+
$a_3$	677 394-	100 373+	1120-	368 471+	266 303-	8358+
$a_4$	35 996-	70 463-	486+	2 807-	8 353+	532-
$a_5$	13 576+	371+		663-	1 326-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
	February 17			February 25		
$a_0$	27-7476 287+	7-3671 851+	0-9063 7766+	129-8529 963+	22-3865 435+	0-9583 9321+
$a_1$	10-9858 389+	4-8523 575+	0-0038 5962-	14-1944 804+	2-6871 758-	0-0132 2102+
$a_2$	625 853+	1582 208-	12 3850+	669 067-	6603 883-	1 6296-
$a_3$	350 375+	246 049-	6224+	363 917-	175 368+	1 8748-
$a_4$	5 904-	1 622+	607-	42 683+	49 286+	54+
$a_5$	1 077-	1 150-		3 124+	1 651-	
	February 18			February 26		
$a_0$	38-8303 924+	12-0367 641+	0-9038 1271+	143-9487 591+	19-0612 797+	0-9712 6435+
$a_1$	11-2132 211+	4-4621 756+	0-0012 2018-	13-9701 224+	3-9364 538-	0-0123 3484+
$a_2$	1630 802+	2322 142-	13 8861+	1473 567-	5798 638-	7 1975-
$a_3$	315 506+	250 782-	3799+	164 351-	355 466+	1 8557-
$a_4$	11 171-	4 270-	670-	57 709+	40 545+	825+
$a_5$	1 920-	681-		1 097-	2 566-	
	February 19			February 27		
$a_0$	50-2369 353+	16-2411 523+	0-9040 1243+	157-7607 508+	14-5843 066+	0-9827 0212+
$a_1$	11-6286 043+	3-9204 655+	0-0016 4420+	13-6486 362+	4-9746 066-	0-0103 7165+
$a_2$	2491 077+	3106 940-	14 6211+	1631 468-	4514 672-	12 2479-
$a_3$	251 153+	274 148-	1124+	54 243+	492 008+	1 5194-
$a_4$	20 914-	7 866-	747-	51 305+	27 427+	1542+
$a_5$	2 768-	206+		3 253-	2 504-	
	February 20			February 28		
$a_0$	62-1373 945+	19-8227 430+	0-9071 2251+	171-2564 696+	9-2099 259+	0-9917 1246+
$a_1$	12-1924 164+	3-2137 915+	0-0045 7226+	13-3575 100+	5-7202 191-	0-0075 2800+
$a_2$	3091 281+	3974 536-	14 5071+	1193 506-	2899 137-	15 8695-
$a_3$	139 897+	302 776-	1860-	226 630+	576 964+	8878-
$a_4$	35 388-	6 983-	842-	34 617+	14 823+	1919+
$a_5$	2 687-	1 542+		3 703-	1 996-	
	February 21			March 1		
$a_0$	74-6491 211+	22-6082 592+	0-9131 1845+	184-5203 834+	3-2587 722+	0-9975 8390+
$a_1$	12-8371 453+	2-3260 311+	0-0073 8418+	13-1987 930+	6-1220 255-	0-0041 6458+
$a_2$	3271 621+	4909 321-	13 4409+	342 932-	1099 259-	17 3858-
$a_3$	27 244-	314 483-	5236-	328 001+	616 604+	1034-
$a_4$	49 847-	846+	935-	16 187+	4 900+	1784+
$a_5$	492-	2 958+		3 783-	1 455-	
	February 22			March 2		
$a_0$	87-8056 702+	24-4122 903+	0-9217 8501+	197-7189 237+	2-9111 743-	1-0000 1740+
$a_1$	13-4631 163+	1-2516 401+	0-0098 7786+	13-2331 899+	6-1556 635-	0-0007 2783+
$a_2$	2885 816+	5818 035-	11 3080+	700 399+	765 429+	16 6433-
$a_3$	229 132-	281 189-	9007-	354 622+	621 771+	6213+
$a_4$	52 802-	16 176+	972-	2 509-	2 173-	1202+
$a_5$	3 780+	3 562+		4 309-	1 232-	
	February 23			March 3		
$a_0$	101-5295 527+	25-0559 818+	0-9326 9388+	211-0569 340+	8-9284 583-	0-9991 5504+
$a_1$	13-9523 131+	0-0119 268+	0-0118 3035+	13-4764 977+	5-8175 320-	0-0023 6637-
$a_2$	1919 563+	6528 825-	8 0262+	1706 097+	2605 429+	14 0821-
$a_3$	400 507-	181 430-	1 2954-	301 148+	600 507+	1 1032+
$a_4$	32 840-	34 669+	869-	24 231-	8 026-	428+
$a_5$	7 429+	2 573+		4 980-	1 661-	
	February 24			March 4		
$a_0$	115-6312 303+	24-4006 072+	0-9451 8863+	224-7312 351+	14-4263 654-	0-9954 9506+
$a_1$	14-2066 514+	1-3331 160-	0-0130 1218+	13-8958 805+	5-1203 361-	0-0048 3472-
$a_2$	595 562+	6839 344-	3 6292+	2414 203+	4342 206+	10 5364-
$a_3$	457 756-	18 274-	1 6513-	154 973+	551 203+	1 2680+
$a_4$	6 221+	47 767+	539-	50 212-	16 183-	253-
$a_5$	7 119+	373+		4 150-	2 713-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
March 5			March 13			
$a_0$	238.8785 970+	19.0592 502-	0.9897 3096+	350.6000 538+	9.4791 574-	0.9257 6116+
$a_1$	14.4030 581+	4.0943 644-	0.0065 7177-	11.6673 342+	4.9955 392+	0.0074 8232-
$a_2$	2536 108+	5871 525+	6 8970-	2629 513-	1555 461+	2 5828+
$a_3$	84 839-	458 938+	1 1572+	311 516+	391 414-	4296+
$a_4$	72 603-	30 175-	668-	10 835+	13 456+	340+
$a_5$	226+	3 476-		1 814-	306-	
March 6			March 14			
$a_0$	253.5195 444+	22.5239 334-	0.9825 7853+	2.0364 905+	4.3658 984-	0.9185 8347+
$a_1$	14.8559 078+	2.7961 850-	0.0076 3077-	11.2383 148+	5.1944 366+	0.0068 2328-
$a_2$	1848 210+	7032 384+	3 8300-	1648 052-	458 885+	4 0720+
$a_3$	369 050-	304 088+	8811+	337 231+	340 860-	5674+
$a_4$	71 654-	48 523-	786-	2 017+	11 812+	223+
$a_5$	7 254+	2 442-		941-	668-	
March 7			March 15			
$a_0$	268.5169 283+	24.5915 677-	0.9746 4502+	13.1438 309+	0.8414 552+	0.9122 2636+
$a_1$	15.0898 046+	1.3191 083-	0.0081 6390-	11.0102 105+	5.1883 465+	0.0058 2974-
$a_2$	384 054+	7629 015+	1 6547-	633 632-	499 508-	5 9031+
$a_3$	580 944-	87 332+	5607+	336 058+	300 370-	6572+
$a_4$	32 780-	61 285-	669-	2 461-	8 402+	68+
$a_5$	11 215+	661+		660-	807-	
March 8			March 16			
$a_0$	283.5848 875+	25.1451 037-	0.9663 6503+	24.1239 718+	5.9505 734+	0.9070 5333+
$a_1$	14.9848 245+	0.2087 142+	0.0083 5341-	10.9829 866+	5.0012 911+	0.0044 4922-
$a_2$	1442 899-	7529 994+	3662-	353 198+	1358 288-	7 9108+
$a_3$	601 741-	149 471-	2903+	319 489+	274 814-	6845+
$a_4$	26 075+	57 395-	414-	5 587-	4 296+	93-
$a_5$	7 883+	3 730+		875-	778-	
March 9			March 17			
$a_0$	298.3686 439+	24.2037 038-	0.9579 9990+	35.1735 809+	10.7889 062+	0.9034 6270+
$a_1$	14.5300 864+	1.6487 794+	0.0083 5610-	11.1468 001+	4.6485 193+	0.0026 6546-
$a_2$	3012 830-	6774 657+	2656+	1269 408+	2164 743-	9 9033+
$a_3$	422 498-	341 238-	1248+	288 074+	265 266-	6468+
$a_4$	65 533+	37 706-	116-	9 866-	309+	248-
$a_5$	922+	4 601+		1 432-	543-	
March 10			March 18			
$a_0$	312.5618 430+	21.9148 930-	0.9496 8168+	46.4749 994+	15.1944 012+	0.9018 4976+
$a_1$	13.8274 402+	2.8885 564+	0.0082 7018-	11.4824 408+	4.1358 438+	0.0005 0070-
$a_2$	3878 141-	5570 796+	5784+	2060 101+	2964 134-	11 6900+
$a_3$	153 779-	446 684-	805+	233 957+	269 154-	5475+
$a_4$	68 483+	14 168-	146+	17 107-	2 536-	398-
$a_5$	3 645-	3 445+		2 028-	23-	
March 11			March 19			
$a_0$	325.9925 752+	18.5149 977-	0.9414 7885+	58.1849 325+	19.0066 602+	0.9025 6884+
$a_1$	13.0312 484+	3.8647 636+	0.0081 2450-	11.9567 912+	3.4612 457+	0.0019 8565+
$a_2$	3965 207-	4180 178+	9128+	2638 991+	3787 062-	13 0887+
$a_3$	83 215+	469 881-	1423+	145 254+	279 051-	3888+
$a_4$	49 003+	3 012+	320+	27 644-	2 765-	557-
$a_5$	4 393-	1 738+		2 055-	808+	
March 12			March 20			
$a_0$	338.6400 853+	14.2787 294-	0.9334 6306+	70.4171 781+	22.0610 989+	0.9058 9667+
$a_1$	12.2805 774+	4.5619 073+	0.0078 8645-	12.5160 819+	2.6194 170+	0.0046 9775+
$a_2$	3465 527-	2805 954+	1 5334+	2888 239+	4632 722-	13 9150+
$a_3$	235 949+	441 208-	2738+	14 919+	281 482-	1668+
$a_4$	26 686+	11 463+	382+	38 603-	1 299+	741-
$a_5$	3 197-	438+		715-	1 770+	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
March 21			March 29			
$a_0$	83.2196 440+	24.1894 025+	0.9119 9519+	192.3325 550+	0.4705 694-	1.0104 7503+
$a_1$	13.0824 100+	1.6098 333+	0.0075 0116+	13.4709 946+	6.3854 909-	0.0060 1568+
$a_2$	2694 162+	5451 636-	13 9642+	905 465+	262 863-	22 9329-
$a_3$	144 987-	258 239-	1289-	338 182+	694 312+	9668-
$a_4$	42 656-	10 409+	954-	1 939+	14 376+	2909+
$a_5$	2 180+	2 388+		4 847-	2 812-	
March 22			March 30			
$a_0$	96.5529 239+	25.2295 280+	0.9208 7034+	205.9276 234+	6.8117 589-	1.0141 2983+
$a_1$	13.5617 772+	0.4473 919+	0.0102 1716+	13.7518 934+	6.2254 262-	0.0012 5557+
$a_2$	2025 130+	6139 959-	12 9984+	1883 139+	1878 215+	24 0969-
$a_3$	292 114-	192 850-	5112-	296 951+	723 203+	2248+
$a_4$	31 311-	22 741+	1171-	22 549-	331+	2616+
$a_5$	5 204+	2 166+		5 818-	3 666-	
March 23			March 31			
$a_0$	110.2853 920+	25.0461 296+	0.9323 2451+	219.8946 891+	12.7773 768-	1.0130 2434+
$a_1$	13.8692 472+	0.8282 769-	0.0126 1662+	14.2056 793+	5.6345 237-	0.0033 9164-
$a_2$	1013 141+	6560 377-	10 7578+	2580 329+	4013 129+	21 8833-
$a_3$	364 888-	80 805-	9835-	149 176+	687 442+	1 2871+
$a_4$	4 019-	33 781+	1319-	52 961-	18 131-	1617+
$a_5$	5 985+	1 149+		4 918-	4 424-	
March 24			April 1			
$a_0$	124.2196 611+	23.5572 276+	0.9459 0538+	234.3675 311+	17.9440 990-	1.0075 8923+
$a_1$	13.9637 915+	2.1505 079-	0.0144 2033+	14.7428 607+	4.6351 296-	0.0073 1753-
$a_2$	45 645-	6588 628-	7 0175+	2660 628+	5922 337+	17 0895-
$a_3$	322 337-	65 169+	1 5202-	108 824-	570 795+	1 9323+
$a_4$	26 878+	39 416+	1271-	79 530-	40 885-	397+
$a_5$	3 797+	18+		293+	4 291-	
March 25			April 2			
$a_0$	138.1497 219+	20.7583 173+	0.9608 6274+	249.3576 486+	21.9344 330-	0.9987 5995+
$a_1$	13.8706 076+	3.4329 079-	0.0153 1688+	15.2106 831+	3.2979 205-	0.0101 3990-
$a_2$	813 417-	6156 470-	1 7075+	1859 901+	7346 355+	11 0844-
$a_3$	178 746-	222 620+	2 0421-	419 384-	365 674+	2 0784+
$a_4$	45 829+	39 295+	865-	78 154-	63 360-	581-
$a_5$	450+	659-		8 569+	2 008-	
March 26			April 3			
$a_0$	151.9257 411+	16.7358 880+	0.9761 3752+	264.7054 251+	24.4676 874-	0.9877 1364+
$a_1$	13.6728 540+	4.5820 279-	0.0150 1108+	15.4298 757+	1.7452 908-	0.0117 5659-
$a_2$	1070 268-	5259 439-	4 9112-	218 992+	8043 093+	5 2144-
$a_3$	7 641+	373 012+	2 4024-	644 018-	94 462+	1 8311+
$a_4$	47 500+	35 944+	8-	32 015-	73 684-	1109-
$a_5$	2 008-	979-		12 741+	2 092+	
March 27			April 4			
$a_0$	165.4968 816+	11.6687 139+	0.9904 1716+	280.0908 708+	25.4063 818-	0.9756 0763+
$a_1$	13.4790 875+	5.5081 246-	0.0133 0776+	15.2740 284+	0.1367 575-	0.0122 9455-
$a_2$	782 481-	3934 518-	12 0864-	1777 287-	7905 448+	3902-
$a_3$	176 854+	506 764+	2 4117-	647 174-	177 598-	1 3762+
$a_4$	37 062+	31 143+	1189+	34 817+	62 185-	1220-
$a_5$	3 181-	1 367-		8 167+	5 199+	
March 28			April 5			
$a_0$	178.9187 946+	5.8207 915+	1.0022 8701+	295.1267 515+	24.7760 528-	0.9633 9948+
$a_1$	13.3888 810+	6.1312 261-	0.0102 1458+	14.7424 202+	1.3687 786+	0.0120 0857-
$a_2$	61 356-	2241 027-	18 5731-	3428 284-	7051 716+	3 0112+
$a_3$	292 866+	617 290+	1 9259-	430 770-	374 280-	8818+
$a_4$	21 162+	24 401+	2334+	75 319+	34 955-	1057-
$a_5$	3 877-	2 012-		64+	5 258+	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
	April 6			April 14		
$a_0$	309.4908 045+	22.7425 003-	0.9517 6963+	43.1971 184+	14.1229 146+	0.9003 4995+
$a_1$	13.9576 863+	2.6554 826+	0.0111 8410-	11.3719 464+	4.3363 017+	0.0012 6400-
$a_2$	4268 341-	5771 782+	5 0312+	1920 716+	2747 123-	8 0649+
$a_3$	131 566-	462 643-	4566+	217 593+	285 830-	4073+
$a_4$	73 589+	8 266-	763-	17 932-	1 069-	109+
$a_5$	4 592-	3 245+		1 758-	289+	
	April 7			April 15		
$a_0$	323.0154 000+	19.5566 058-	0.9411 2668+	54.7809 266+	18.1558 429+	0.8999 3425+
$a_1$	13.0916 878+	3.6693 601+	0.0100 7140-	11.8133 156+	3.7008 455+	0.0004 7551+
$a_2$	4267 610-	4366 676+	5 9532+	2448 265+	3608 147-	9 3470+
$a_3$	116 631+	464 459-	1516+	128 365+	286 872-	4518+
$a_4$	49 315+	7 710+	438-	27 093-	328+	50-
$a_5$	4 888-	1 141+		1 644-	891+	
	April 8			April 16		
$a_0$	335.6964 327+	15.4961 389-	0.9316 6138+	66.8490 313+	21.4673 084+	0.9013 8914+
$a_1$	12.2904 390+	4.4070 109+	0.0088 5282-	12.3298 201+	2.8937 321+	0.0024 7846+
$a_2$	3670 743-	3030 920+	6 1540+	2654 274+	4457 870-	10 6666+
$a_3$	265 885+	422 952-	222-	4 315+	276 311-	4329+
$a_4$	24 614+	13 048+	143-	35 884-	4 855+	238-
$a_5$	3 315-	133-		336-	1 480+	
	April 9			April 17		
$a_0$	347.6485 157+	10.8270 397-	0.9234 2030+	79.4410 883+	23.8882 559+	0.9049 7517+
$a_1$	11.6442 457+	4.8914 616+	0.0076 3441-	12.8474 504+	1.9219 471+	0.0047 3215+
$a_2$	2758 524-	1838 991+	6 0086+	2448 501+	5242 837-	11 8157+
$a_3$	332 079+	372 391-	772-	141 145-	241 969-	3389+
$a_4$	8 250+	12 143+	90+	37 905-	12 487+	460-
$a_5$	1 772-	641-		2 188+	1 697+	
	April 10			April 18		
$a_0$	359.0507 647+	5.7877 679-	0.9163 7993+	92.5157 025+	25.2631 409+	0.9109 1819+
$a_1$	11.1945 795+	5.1520 791+	0.0064 5226-	13.2807 417+	0.8066 320+	0.0071 7859+
$a_2$	1730 469-	788 252+	5 8355+	1819 575+	5876 812-	12 5485+
$a_3$	347 882+	330 279-	387-	269 495-	175 293-	1564+
$a_4$	330-	8 828+	244+	26 541-	21 238+	721-
$a_5$	873-	722-		4 663+	1 270+	
	April 11			April 19		
$a_0$	10.1069 651+	0.5890 810-	0.9105 0978+	105.9492 644+	25.4668 132+	0.9193 6006+
$a_1$	10.9522 816+	5.2138 162+	0.0052 8700-	13.5555 239+	0.4121 890-	0.0097 0638+
$a_2$	697 508-	156 840-	5 8680+	898 625+	6262 553-	12 5759+
$a_3$	337 986+	302 128-	615+	328 716-	78 123-	1311-
$a_4$	4 471-	5 176+	314+	2 184-	27 646+	1019-
$a_5$	606-	623-		5 225+	413+	
	April 12			April 20		
$a_0$	21.0227 868+	4.5792 937+	0.9058 1888+	119.5620 834+	24.4233 625+	0.9303 0072+
$a_1$	10.9120 841+	5.0935 691+	0.0040 8238-	13.6383 712+	1.6768 726-	0.0121 4144+
$a_2$	283 587+	1038 401-	6 2406+	48 262-	6326 954-	11 5617+
$a_3$	313 928+	287 546-	1894+	286 222-	36 222+	5398-
$a_4$	7 343-	2 029+	305+	24 713+	29 490+	1320-
$a_5$	811-	439-		3 400+	231-	
	April 13			April 21		
$a_0$	31.9938 070+	9.5404 271+	0.9023 8255+	133.1698 175+	22.1203 426+	0.9435 3114+
$a_1$	11.0596 365+	4.8002 174+	0.0027 6522-	13.5544 345+	2.9197 163-	0.0142 3900+
$a_2$	1173 212+	1893 267-	6 9897+	724 650-	6043 699-	9 1440+
$a_3$	276 168+	283 657-	3134+	154 925-	151 873+	1 0729-
$a_4$	11 332-	221-	231+	41 688+	28 060+	1529-
$a_5$	1 299-	155-		654+	219-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
April 22			April 30			
$a_0$	146.6405 287+	18.6142 278+	0.9585 6197+	259.1448 926+	23.8904 325-	1.0083 0916+
$a_1$	13.3800 267+	4.0717 793-	0.0156 8473+	15.9583 148+	2.4298 000-	0.0112 3725-
$a_2$	932 826-	5421 921-	5 0100+	1085 800+	8510 777+	16 9502-
$a_3$	17 179+	262 183+	1 6961-	768 673-	249 595+	2 5380-
$a_4$	44 499+	26 891+	1478-	64 853-	97 398-	76+
$a_5$	1 390-	253+		17 516+	1 074+	
April 23			May 1			
$a_0$	159.9333 016+	14.0291 891+	0.9745 6332+	275.1301 866+	25.4538 275-	0.9956 3144+
$a_1$	13.2157 186+	5.0666 253-	0.0161 1870+	15.9276 858+	0.6911 810-	0.0138 6295-
$a_2$	628 238-	4471 463-	9484-	1433 331-	8686 137+	9 3235-
$a_3$	180 649+	372 448+	2 3051-	855 102-	125 777-	2 5500+
$a_4$	37 247+	28 361+	958-	28 561+	90 521-	984-
$a_5$	2 425-	565+		13 494+	7 272+	
April 24			May 2			
$a_0$	173.1077 435+	8.5555 549+	0.9903 4709+	290.8332 345+	25.2972 974-	0.9810 8130+
$a_1$	13.1579 510+	5.8375 572-	0.0151 9905+	15.4026 470+	0.9757 422+	0.0150 0209-
$a_2$	112 955+	3178 246-	8 4044-	3692 277-	7838 741+	2 2787-
$a_3$	304 907+	491 276+	2 7066-	612 666-	414 552-	2 1388+
$a_4$	25 222+	31 581+	146+	96 387+	51 808-	1459-
$a_5$	3 206-	121+		1 290+	8 209+	
April 25			May 3			
$a_0$	186.3096 822+	2.4524 708+	1.0044 3651+	305.8151 549+	23.5834 960-	0.9660 5062+
$a_1$	13.2804 981+	6.3131 327-	0.0127 1200+	14.5195 826+	2.4025 032+	0.0148 7463-
$a_2$	1147 002+	1513 664-	16 3901-	4939 524-	6366 459+	3 2613+
$a_3$	372 902+	617 938+	2 6543-	218 665-	541 441-	1 5437+
$a_4$	9 571+	32 617+	1658+	99 572+	9 906-	1475-
$a_5$	4 624-	1 371-		6 406-	5 024+	
April 26			May 4			
$a_0$	199.7426 655+	3.9471 098-	1.0152 6065+	319.8282 351+	20.5989 792-	0.9516 4174+
$a_1$	13.6232 830+	6.4181 252-	0.0087 0408+	13.5027 030+	3.5119 084+	0.0138 1829-
$a_2$	2276 907+	522 192+	23 3169-	5062 467-	4732 879+	7 0148+
$a_3$	363 724+	733 302+	1 9748-	115 117+	532 838-	9487+
$a_4$	13 433-	26 065+	3019+	65 365+	14 782+	1235-
$a_5$	6 787-	3 795-		6 951-	1 500+	
April 27			May 5			
$a_0$	213.6279 896+	10.2374 587-	1.0214 6576+	332.8420 444+	16.6654 386-	0.9386 0745+
$a_1$	14.1790 142+	6.0851 710-	0.0035 6923+	12.5474 176+	4.3052 931+	0.0121 8012-
$a_2$	3219 435+	2840 518+	27 4135-	4394 496-	3237 963+	9 1302+
$a_3$	241 657+	798 055+	7320-	308 417+	459 915-	4537+
$a_4$	48 590-	6 984+	3551+	30 235+	21 633+	903-
$a_5$	7 789-	6 523-		4 497-	555-	
April 28			May 6			
$a_0$	228.1474 750+	15.9587 263-	1.0222 5593+	344.9834 279+	12.0802 329-	0.9273 7669+
$a_1$	14.8720 728+	5.2781 202-	0.0019 9088-	11.7708 915+	4.8232 858+	0.0102 5408-
$a_2$	3574 520+	5211 209+	27 4974-	3332 754-	1982 403+	9 9600+
$a_3$	27 943-	759 996+	7225+	385 711+	379 376-	935+
$a_4$	90 637-	26 650-	2953+	8 112+	18 447+	571-
$a_5$	3 359-	7 957-		2 197-	1 283-	
April 29			May 7			
$a_0$	243.3648 059+	20.6431 867-	1.0176 1708+	356.4602 066+	7.0949 279-	0.9181 2225+
$a_1$	15.5406 723+	4.0225 151-	0.0071 5541-	11.2222 020+	5.1126 908+	0.0082 5687-
$a_2$	2913 002+	7251 441+	23 6003-	2148 855-	942 098+	9 9070+
$a_3$	417 629-	575 244+	1 9186+	396 946+	318 442-	1333-
$a_4$	109 353-	68 420-	1567+	2 454-	11 849+	279-
$a_5$	8 124+	5 571-		914-	1 301-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
May 8						
$a_0$	7.5068 810+	1.9188 167-	0.9108 3996+	102.4830 906+	25.6379 100+	0.9122 2443+
$a_1$	10.9100 768+	5.2096 672+	0.0063 2661-	13.4343 255+	0.0821 280-	0.0068 2309+
$a_2$	981 835-	44 844+	9 3471+	775 721+	6144 792-	9 7710+
$a_3$	378 226+	283 904-	2432-	363 223-	70 387-	2283+
$a_4$	6 722-	5 275+	41-	2 736-	30 293+	380-
$a_5$	522-	1 030-		5 732+	185-	
May 9						
$a_0$	18.3558 724+	3.2673 691+	0.9054 2335+	115.9589 655+	24.9372 749+	0.9200 4366+
$a_1$	10.8242 274+	5.1350 605+	0.0045 3175-	13.4822 722+	1.3201 790-	0.0088 3060+
$a_2$	107 317+	785 519-	8 5988+	272 917-	6176 095-	10 2185+
$a_3$	345 994+	272 871-	2576-	318 025-	48 404+	777+
$a_4$	9 137-	89+	140+	26 773+	29 040+	684-
$a_5$	741-	638-		3 617+	1 120-	
May 10						
$a_0$	29.2244 431+	8.2965 357+	0.9017 2712+	129.3851 826+	23.0071 187+	0.9298 9704+
$a_1$	10.9454 630+	4.8958 124+	0.0028 8365-	13.3447 958+	2.5298 209-	0.0108 7027+
$a_2$	1083 082+	1609 987-	7 9139+	1030 195-	5867 904-	10 0310+
$a_3$	301 713+	278 603-	1995-	176 472-	153 381+	1954-
$a_4$	12 752-	3 151-	259+	44 753+	23 025+	1019-
$a_5$	1 314-	140-		594+	1 082-	
May 11						
$a_0$	40.3069 790+	13.0031 600+	0.8996 1750+	142.6138 464+	19.9080 399+	0.9417 4068+
$a_1$	11.2468 348+	4.4889 045+	0.0013 5034-	13.1040 111+	3.6487 171-	0.0127 7709+
$a_2$	1898 552+	2466 113-	7 4727+	1285 239-	5280 457-	8 8240+
$a_3$	237 243+	292 237-	936-	7 298+	235 144+	6050-
$a_4$	19 424-	3 914-	313+	47 128+	17 398+	1332-
$a_5$	1 889-	499+		1 441-	234-	
May 12						
$a_0$	51.7652 620+	17.2158 880+	0.8990 0820+	155.5946 322+	15.7565 079+	0.9553 2635+
$a_1$	11.6890 042+	3.9066 958+	0.0001 2867+	12.8672 827+	4.6274 220-	0.0143 0707+
$a_2$	2474 788+	3361 316-	7 3794+	995 045-	4472 972-	6 2045+
$a_3$	140 699+	302 467-	339+	180 956+	302 993+	1 1447-
$a_4$	29 278-	1 433-	299+	39 515+	16 275+	1510-
$a_5$	1 851-	1 250+		2 162-	820+	
May 13						
$a_0$	63.7127 021+	20.7561 871+	0.8998 8119+	168.3842 413+	10.7137 975+	0.9701 2430+
$a_1$	12.2135 370+	3.1437 448+	0.0016 2668+	12.7372 850+	5.4241 979-	0.0151 4408+
$a_2$	2702 621+	4264 799-	7 6578+	236 701-	3458 104-	1 8691+
$a_3$	5 899+	295 350-	1555+	317 213+	376 656+	1 7623-
$a_4$	39 186-	4 948+	218+	28 754+	20 652+	1369-
$a_5$	462-	1 874+		2 429-	1 467+	
May 14						
$a_0$	76.1931 264+	23.4445 992+	0.9022 9138+	181.1322 101+	4.9836 667+	0.9852 6537+
$a_1$	12.7399 290+	2.2050 960+	0.0032 1364+	12.7953 950+	5.9938 280-	0.0149 3435+
$a_2$	2480 527+	5102 379-	8 2509+	863 246+	2189 482-	4 2186-
$a_3$	153 856-	256 798-	2447+	407 381+	473 744+	2 3289-
$a_4$	41 902-	14 639+	75+	17 084+	28 482+	713-
$a_5$	2 353+	1 930+		3 357-	1 164+	
May 15						
$a_0$	89.1617 676+	25.1154 343+	0.9063 5534+	194.0560 404+	1.1787 705-	0.9995 3784+
$a_1$	13.1742 963+	1.1144 003+	0.0049 4027+	13.0954 108+	6.2776 286-	0.0133 6335+
$a_2$	1791 146+	5765 593-	9 0241+	2154 413+	585 619-	11 5950-
$a_3$	296 369-	179 404-	2767+	440 770+	598 258+	2 6305-
$a_4$	29 655-	24 625+	125-	934+	35 002+	517+
$a_5$	5 144+	1 126+		5 726-	622-	
May 16						
May 17						
May 18						
May 19						
May 20						
May 21						
May 22						
May 23						

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
<b>May 24</b>						
$a_0$	207.4104 903+	7.4516 972-	1.0114 8382+	329.0559 684+	17.9907 981-	0.9546 0312+
$a_1$	13.6560 315+	6.2015 893-	0.0102 7585+	13.1583 302+	4.2097 818+	0.0153 1127-
$a_2$	3425 050+	1413 051+	19 1296-	5313 748-	3743 313+	6 2520+
$a_3$	385 434+	729 978+	2 4249-	279 930+	561 211-	1 4781+
$a_4$	27 795-	32 594+	2046+	51 467+	28 944+	1472-
$a_5$	8 987-	4 199-		7 088-	105+	
<b>May 25</b>						
$a_0$	221.4438 920+	13.4361 440-	1.0196 2468+	341.7153 547+	13.4599 011-	0.9400 5014+
$a_1$	14.4410 604+	5.6890 526-	0.0058 0441+	12.1966 064+	4.8017 095+	0.0136 7634-
$a_2$	4324 336+	3756 548+	25 1400-	4235 987-	2234 289+	9 8108+
$a_3$	184 428+	815 802+	1 5844-	416 917+	445 379-	8857+
$a_4$	75 305-	11 526+	3250+	16 370+	28 722+	1217-
$a_5$	9 242-	8 736-		3 582-	1 561-	
<b>May 26</b>						
$a_0$	236.3273 739+	18.6676 827-	1.0227 8915+	353.5313 330+	8.4765 845-	0.9274 3127+
$a_1$	15.3265 236+	4.6927 624-	0.0004 3128+	11.4792 438+	5.1256 614+	0.0114 9719-
$a_2$	4332 674+	6185 444+	27 9357-	2922 745-	1054 822+	11 7468+
$a_3$	203 774-	773 477+	2474-	447 859+	346 309-	3984+
$a_4$	126 306-	34 222-	3499+	924-	20 563+	908-
$a_5$	95+	10 796-		1 393-	1 886-	
<b>May 27</b>						
$a_0$	252.0541 663+	22.6690 549-	1.0204 3709+	4.7628 564+	3.2782 041-	0.9171 3953+
$a_1$	16.0814 693+	3.2427 114-	0.0050 8997-	11.0279 872+	5.2400 157+	0.0090 6460-
$a_2$	2964 456+	8192 100+	26 6044-	1598 577-	120 396+	12 4065+
$a_3$	698 750-	531 546+	1 1829+	430 743+	282 786-	364+
$a_4$	125 929-	91 543-	2649+	7 435-	11 005+	616-
$a_5$	16 970+	5 743-		538-	1 648-	
<b>May 28</b>						
$a_0$	268.3513 105+	25.0491 303-	1.0128 3144+	15.6732 630+	1.9465 083+	0.9093 1306+
$a_1$	16.4228 548+	1.4843 050-	0.0099 5000-	10.8342 520+	5.1828 376+	0.0065 9703-
$a_2$	283 534+	9179 981+	21 5119-	356 292-	678 421-	12 1537+
$a_3$	1029 582-	113 750+	2 2512+	395 604+	254 989-	2087-
$a_4$	32 703-	120 721-	1167+	9 836-	2 709+	365-
$a_5$	22 898+	4 697+		588-	1 203-	
<b>May 29</b>						
$a_0$	284.6985 800+	25.6156 645-	1.0009 6702+	26.5104 039+	7.0361 555+	0.9039 0688+
$a_1$	16.1690 409+	0.3398 837+	0.0135 3042-	10.8774 460+	4.9711 395+	0.0042 4351-
$a_2$	2771 681-	8844 368+	14 1022-	765 653+	1439 175-	11 3150+
$a_3$	938 575-	318 562-	2 7065+	350 039+	255 841-	3536-
$a_4$	87 089+	93 846-	257-	12 609-	3 373-	154-
$a_5$	9 670+	11 056+		1 194-	617-	
<b>May 30</b>						
$a_0$	300.5062 711+	24.4314 791-	0.9862 9446+	37.4980 387+	11.8373 942+	0.9007 5797+
$a_1$	15.3727 859+	1.9811 766+	0.0155 4927-	11.1299 466+	4.6048 951+	0.0020 9275-
$a_2$	4968 651-	7436 559+	6 1652-	1728 170+	2233 123-	10 1670+
$a_3$	501 949-	584 328-	2 5847+	287 204+	275 043-	4143-
$a_4$	132 122+	35 864-	1176-	18 598-	6 554-	21+
$a_5$	5 328-	9 174+		2 001-	172+	
<b>May 31</b>						
$a_0$	315.3446 763+	21.7677 484-	0.9703 7538+	48.8274 626+	16.1908 345+	0.8996 4070+
$a_1$	14.2786 500+	3.2834 257+	0.0160 5402-	11.5533 012+	4.0732 231+	0.0001 8279-
$a_2$	5735 671-	5560 149+	8722+	2458 125+	3095 869-	8 9412+
$a_3$	29 426-	638 961-	2 0980+	192 606+	298 957-	4047-
$a_4$	101 197+	10 099+	1526-	28 963-	5 768-	161+
$a_5$	9 679-	3 959+		2 374-	1 184+	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
<b>June 9</b>						
$a_0$	60.6427 032+	19.9241 165+	0.9003 1318+	164.9595 111+	12.1292 946+	0.9549 6380+
$a_1$	12.0899 370+	3.3626 479+	0.0014 9051+	12.4749 614+	5.1187 154-	0.0118 1678+
$a_2$	2838 313+	4015 497-	7 8270+	907 644-	3401 968-	4 7020+
$a_3$	53 630+	309 616-	3386-	295 074+	349 116+	6394-
$a_4$	41 594-	244+	258+	32 342+	9 354+	1149-
$a_5$	1 349-	2 196+		2 265-	1 063+	
<b>June 10</b>						
$a_0$	73.0175 402+	22.8544 971+	0.9025 5511+	177.3762 232+	6.7063 358+	0.9671 7535+
$a_1$	12.6563 798+	2.4678 598+	0.0029 6467+	12.3937 587+	5.6901 005-	0.0125 1934+
$a_2$	2736 047+	4920 864-	6 9676+	149 025+	2287 829-	2 0922+
$a_3$	124 527-	286 443-	2332-	401 692+	397 515+	1 1072-
$a_4$	49 055-	11 608+	300+	21 345+	14 953+	1222-
$a_5$	1 627+	2 630+		2 388-	1 693+	
<b>June 11</b>						
$a_0$	85.9303 292+	24.8030 499+	0.9061 9622+	189.8269 493+	0.8288 684+	0.9797 8096+
$a_1$	13.1474 268+	1.4037 110+	0.0043 0024+	12.5514 135+	6.0215 846-	0.0125 5666+
$a_2$	2084 444+	5684 174-	6 4470+	1458 387+	988 563-	1 9543-
$a_3$	302 397-	214 149-	1109-	462 368+	474 052+	1 6091-
$a_4$	40 672-	25 287+	272+	10 078+	23 920+	961-
$a_5$	5 325+	1 883+		3 774-	1 371+	
<b>June 12</b>						
$a_0$	99.2524 259+	25.6196 454+	0.9111 3280+	202.5710 687+	5.2416 381-	0.9919 7167+
$a_1$	13.4599 916+	0.2136 854+	0.0055 6727+	12.9839 421+	6.0668 302-	0.0116 4455+
$a_2$	986 669+	6156 041-	6 2742+	2868 312+	590 943+	7 3359-
$a_3$	410 967-	95 174-	4+	463 153+	582 302+	2 0086-
$a_4$	12 648-	34 933+	166+	8 156-	31 582+	249-
$a_5$	6 893+	118+		6 885-	558-	
<b>June 13</b>						
$a_0$	112.7694 122+	25.2117 145+	0.9173 2918+	215.8866 533+	11.1880 414-	1.0026 7929+
$a_1$	13.5324 201+	1.0320 444-	0.0068 2886+	13.6898 423+	5.7616 019-	0.0095 6477+
$a_2$	253 010-	6230 827-	6 3690+	4139 888+	2521 888+	13 4766-
$a_3$	393 749-	44 802+	691+	359 865+	700 690+	2 1177-
$a_4$	23 098+	35 208+	19-	43 269-	29 660+	869+
$a_5$	4 890+	1 539-		10 244-	4 642-	
<b>June 14</b>						
$a_0$	126.2399 550+	23.5644 345+	0.9248 0165+	230.0211 195+	16.6248 838-	1.0106 9332+
$a_1$	13.3753 731+	2.2514 560-	0.0081 2263+	14.6033 527+	5.0374 803-	0.0062 6891+
$a_2$	1246 765-	5900 643-	6 5568+	4856 859+	4755 453+	19 2717-
$a_3$	254 553-	169 953+	634+	85 773+	770 039+	1 7653-
$a_4$	47 608+	26 951+	274-	98 390-	6 194+	2073+
$a_5$	1 175+	2 037-		8 155-	9 764-	
<b>June 15</b>						
$a_0$	139.4700 748+	20.7424 008+	0.9335 8356+	245.1080 809+	21.1101 720-	1.0148 7926+
$a_1$	13.0692 822+	3.3708 362-	0.0094 4206+	15.5570 391+	3.8577 838-	0.0019 6800+
$a_2$	1713 129-	5249 505-	6 5730+	4441 605+	7004 673+	23 3003-
$a_3$	53 925-	257 777+	452-	381 415-	696 526+	9142-
$a_4$	52 731+	16 390+	580-	143 968-	45 502-	2849+
$a_5$	1 529-	1 333-		5 743+	11 144-	
<b>June 16</b>						
$a_0$	152.3677 719+	16.8738 976+	0.9436 7260+	261.0573 166+	24.2035 006-	1.0144 5431+
$a_1$	12.7308 060+	4.3375 132-	0.0107 1992+	16.2762 380+	2.2716 562-	0.0028 5218-
$a_2$	1573 899-	4391 177-	6 0799+	2491 468+	8709 281+	24 3347-
$a_3$	141 182+	310 715+	2776-	890 568-	407 221+	2547+
$a_4$	44 440+	9 652+	896-	111 910-	104 787-	2799+
$a_5$	2 391-	87-		22 826+	3 827-	
<b>June 17</b>						
<b>June 18</b>						
<b>June 19</b>						
<b>June 20</b>						
<b>June 21</b>						
<b>June 22</b>						
<b>June 23</b>						
<b>June 24</b>						

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
June 25			July 3			
$a_0$	277-4847 364+	25-5743 680-	1-0092 2211+	23-4232 883+	5-6865 553+	0-9102 0225+
$a_1$	16-4740 088+	0-4514 495-	0-0075 3065-	10-9272 178+	5-0814 884+	0-0067 7154-
$a_2$	622 006-	9264 070+	21 9175-	199 357+	1386 218-	13 6946+
$a_3$	1110 669-	43 922-	1 3947+	392 780+	242 415-	138+
$a_4$	12 158+	123 129-	1943+	11 267-	1 090+	640-
$a_5$	21 481+	7 483+		923-	1 225-	
June 26			July 4			
$a_0$	293-7888 416+	25-1153 672-	0-9996 5860+	34-4085 009+	10-6051 668+	0-9047 9515+
$a_1$	16-0319 917+	1-3426 829+	0-0114 1801-	11-0799 542+	4-7313 443+	0-0040 5406-
$a_2$	3665 948-	8468 942+	16 6055-	1300 885+	2119 193-	13 3578+
$a_3$	856 955-	459 019-	2 1751+	338 000+	249 878-	2412-
$a_4$	121 639+	81 662-	710+	15 774-	5 142-	458-
$a_5$	3 653+	11 958+		1 776-	492-	
June 27			July 5			
$a_0$	309-3810 722+	22-9786 623-	0-9868 0465+	45-6505 886+	15-0990 405+	0-9020 4817+
$a_1$	15-0921 837+	2-8720 763+	0-0140 5823-	11-4343 329+	4-2302 405+	0-0014 7320-
$a_2$	5471 181-	6721 806+	9 6882-	2202 458+	2904 620-	12 3642+
$a_3$	341 038-	668 042-	2 4485+	256 712+	274 761-	4240-
$a_4$	134 779+	19 758-	392-	24 838-	7 735-	299-
$a_5$	8 848-	8 273+		2 564-	546+	
June 28			July 6			
$a_0$	323-9046 270+	19-5023 580-	0-9720 1853+	57-3280 981+	19-0106 239+	0-9017 6601+
$a_1$	13-9451 220+	4-0122 523+	0-0152 7708-	11-9406 208+	3-5640 684+	0-0008 6051+
$a_2$	5774 615-	4681 806+	2 5993-	2797 823+	3769 864-	10 9178+
$a_3$	108 846+	667 447-	2 2767+	131 884+	299 508-	5433-
$a_4$	86 999+	21 183+	1075-	38 322-	5 049-	149-
$a_5$	9 773-	2 792+		2 327-	1 829+	
June 29			July 7			
$a_0$	337-2908 946+	15-0862 723-	0-9566 9843+	69-5576 246+	22-1674 331+	0-9036 6249+
$a_1$	12-8527 695+	4-7582 446+	0-0151 5701-	12-5232 609+	2-7191 394+	0-0028 7515+
$a_2$	5023 893-	2834 336+	3 5776+	2940 134+	4680 353-	9 2034+
$a_3$	361 184+	556 800-	1 8344+	43 317-	300 822-	6027-
$a_4$	37 643+	34 119+	1324-	50 918-	4 350+	1-
$a_5$	5 998-	635-		0-	2 883+	
June 30			July 8			
$a_0$	349-6805 576+	10-0969 257-	0-9420 6938+	82-3654 753+	24-3891 783+	0-9073 9770+
$a_1$	11-9684 078+	5-1714 004+	0-0139 4417-	13-0779 296+	1-6960 036+	0-0045 3501+
$a_2$	3774 379-	1362 204+	8 2877+	2504 619+	5527 804-	7 3993+
$a_3$	453 692+	427 454-	1 2979+	244 661-	254 621-	6025-
$a_4$	8 273+	30 276+	1274-	51 261-	19 362+	140+
$a_5$	2 673-	1 928-		4 127+	2 862+	
July 1			July 9			
$a_0$	1-3174 567+	4-8292 154-	0-9290 7101+	95-6646 874+	25-5091 618+	0-9126 1379+
$a_1$	11-3516 142+	5-3267 515+	0-0119 4826-	13-4870 177+	0-5232 304+	0-0058 3971+
$a_2$	2390 309-	242 181+	11 4227+	1504 502+	6146 798-	5 6791+
$a_3$	461 058+	325 724-	7857+	406 662-	149 428-	5454-
$a_4$	4 472-	20 347+	1081-	29 498-	34 220+	254+
$a_5$	963-	2 068-		7 316+	1 329+	
July 2			July 10			
$a_0$	12-4756 023+	0-4910 096+	0-9183 3279+	109-2592 709+	25-4063 246+	0-9189 6941+
$a_1$	11-0096 000+	5-2845 753+	0-0094 7123-	13-6577 774+	0-7366 073-	0-0068 2207+
$a_2$	1043 538-	633 609-	13 1385+	180 937+	6376 472-	4 1968+
$a_3$	433 801+	264 838-	3535+	451 863-	512-	4417-
$a_4$	8 873-	9 898+	852-	8 840+	40 835+	312+
$a_5$	531-	1 748-		6 660+	897-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
July 11						
$a_0$	122.8915 058+	24.0360 128+	0.9261 7012+	225.4455 051+	15.1107 761-	0.9936 8983+
$a_1$	13.5652 677+	1.9961 713-	0.0075 4144+	13.8677 549+	5.1337 770-	0.0066 0680+
$a_2$	1054 916-	6142 048-	3 0584+	4356 867+	3859 277+	9 0137-
$a_3$	352 053-	153 045+	3137-	248 922+	655 371+	1 3389-
$a_4$	42 804+	35 787+	289+	63 067-	16 636+	104+
$a_5$	2 814+	2 323-		9 233-	5 501-	
July 12						
$a_0$	136.3206 385+	21.4442 875+	0.9339 8890+	239.7666 089+	19.7919 749-	0.9992 6242+
$a_1$	13.2671 932+	3.1655 142-	0.0080 7055+	14.7839 696+	4.1614 108-	0.0044 0654+
$a_2$	1826 202-	5491 503-	2 2865+	4632 276+	5870 057+	12 9438-
$a_3$	154 826-	272 973+	1951-	91 901-	664 761+	1 3003-
$a_4$	56 224+	23 611+	167+	113 586-	11 795-	887+
$a_5$	924-	2 279-		2 908-	9 404-	
July 13						
$a_0$	149.3952 588+	17.7590 535+	0.9422 7025+	254.9929 666+	23.3020 238-	1.0022 5342+
$a_1$	12.8775 304+	4.1736 169-	0.0084 7598+	15.6359 832+	2.7973 893-	0.0014 6320+
$a_2$	1962 708-	4553 743-	1 7944+	3645 707+	7699 091+	16 2900-
$a_3$	59 845+	345 210+	1260-	566 737-	524 301+	9388-
$a_4$	50 712+	11 981+	47-	130 050-	61 880-	1619+
$a_5$	2 583-	1 242-		12 506+	8 243-	
July 14						
$a_0$	162.0873 158+	13.1656 572+	0.9509 1260+	270.9250 925+	25.2840 862-	1.0020 0993+
$a_1$	12.5219 355+	4.9766 297-	0.0087 9520+	16.1493 470+	1.1291 450-	0.0020 1159-
$a_2$	1504 788-	3458 643-	1 3802+	1291 186+	8817 983+	18 1233-
$a_3$	236 827+	381 433+	1436-	956 513-	198 996+	2756-
$a_4$	37 390+	5 809+	317-	61 071-	105 199-	1996+
$a_5$	2 591-	12+		22 434+	62+	
July 15						
$a_0$	174.4859 352+	7.8818 886+	0.9598 2829+	287.1040 433+	25.5220 470-	0.9981 7842+
$a_1$	12.3056 871+	5.5515 978-	0.0090 1548+	16.1074 098+	0.6521 112+	0.0056 3897-
$a_2$	595 855-	2279 346-	7511+	1719 440-	8784 680+	17 7569-
$a_3$	360 642+	405 348+	2717-	981 202-	216 425-	5405+
$a_4$	24 559+	6 047+	585-	58 008+	102 928-	1841+
$a_5$	2 268-	984+		13 637+	8 578+	
July 16						
$a_0$	186.7703 300+	2.1435 941+	0.9688 8587+	302.9485 532+	24.0225 453-	0.9908 3622+
$a_1$	12.3033 976+	5.8829 514-	0.0090 6078+	15.4991 657+	2.3072 391+	0.0089 5451-
$a_2$	610 814+	1017 136-	4204-	4178 832-	7604 070+	15 0499-
$a_3$	435 910+	439 593+	5100-	621 486-	541 461-	1 2880+
$a_4$	13 711+	11 268+	766-	124 744+	56 879-	1222+
$a_5$	2 729-	1 373+		2 007-	10 003+	
July 17						
$a_0$	199.1794 982+	3.7958 474-	0.9778 4595+	317.9799 607+	21.0137 330-	0.9805 1773+
$a_1$	12.5604 510+	5.9493 077-	0.0087 9303+	14.5258 391+	3.6478 602+	0.0115 2921-
$a_2$	1973 614+	383 057+	2 4097-	5315 543-	5738 595+	10 4776-
$a_3$	462 341+	498 026+	8240-	146 718-	671 116-	1 7781+
$a_4$	721+	18 652+	761-	110 254+	5 809-	409+
$a_5$	4 655-	770+		8 997-	6 048+	
July 18						
$a_0$	211.9831 514+	9.6551 045-	0.9863 0800+	331.9696 994+	16.8591 011-	0.9681 2265+
$a_1$	13.0918 336+	5.7154 451-	0.0080 3339+	13.4583 190+	4.5949 396+	0.0130 7498-
$a_2$	3318 439+	1996 865+	5 3295-	5184 442-	3750 790+	4 9202-
$a_3$	416 916+	579 033+	1 1382-	204 893+	636 349-	1 9352+
$a_4$	22 372-	23 285+	479-	63 255+	23 881+	311-
$a_5$	7 783-	1 448-		7 730-	1 727+	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
July 27						
$a_0$	344.9356 159+	11.9501 565-	0.9547 4607+	78.3358 484+	23.9337 554+	0.9073 6017+
$a_1$	12.5043 390+	5.1646 060+	0.0134 9092-	12.9125 667+	2.0007 436+	0.0042 3585+
$a_2$	4267 533-	2002 189+	6845+	2732 378+	5293 812-	11 1795+
$a_3$	382 524+	525 043-	1 8018+	141 721-	269 860-	6715-
$a_4$	24 648+	31 746+	776-	52 349-	10 319+	394-
$a_5$	4 325-	809-		1 997+	3 007+	
July 28						
$a_0$	357.0534 864+	6.6347 423-	0.9414 9602+	91.5024 455+	25.3794 645+	0.9126 4287+
$a_1$	11.7732 892+	5.4198 235+	0.0128 4457-	13.3965 893+	0.8666 539+	0.0062 5450+
$a_2$	3015 237-	609 373+	5 6179+	2013 147+	6011 312-	8 9328+
$a_3$	439 291+	406 734-	1 4837+	328 919-	198 842-	8309-
$a_4$	3 611+	27 215+	975-	41 978-	25 983+	250-
$a_5$	1 876-	1 778-		5 972+	2 438+	
July 29						
$a_0$	8.5693 544+	1.1921 112-	0.9293 5185+	105.0638 571+	25.6279 451+	0.9197 0506+
$a_1$	11.3025 365+	5.4296 748+	0.0113 1491-	13.6867 394+	0.3836 509-	0.0077 8177+
$a_2$	1694 389-	465 351-	9 4836+	834 478+	6427 510-	6 2961+
$a_3$	435 606+	315 728-	1 0892+	436 354-	71 582-	9326-
$a_4$	5 271-	18 096+	982-	10 495-	38 517+	54-
$a_5$	807-	1 888-		7 332+	580+	
July 30						
$a_0$	19.7454 049+	4.1610 765+	0.9190 8440+	118.7900 925+	24.5982 947+	0.9280 2265+
$a_1$	11.0918 290+	5.2481 808+	0.0091 3072-	13.7221 938+	1.6749 329-	0.0087 5905+
$a_2$	427 211-	1322 859-	12 1647+	464 045-	6405 390-	3 4731+
$a_3$	406 494+	262 061-	6946+	406 438-	87 171+	9548-
$a_4$	8 967-	8 541+	892-	27 482+	41 166+	178+
$a_5$	761-	1 597-		4 774+	1 390-	
July 31						
$a_0$	30.8341 892+	9.2514 598+	0.9112 3069+	132.4284 636+	22.2955 174+	0.9370 3532+
$a_1$	11.1243 666+	4.9076 095+	0.0065 2509-	13.5208 286+	2.9140 894-	0.0091 7438+
$a_2$	730 883+	2073 776-	13 7168+	1470 739-	5910 861-	7225+
$a_3$	362 667+	243 545-	3377+	251 081-	237 410+	8822-
$a_4$	12 578-	455+	776-	51 265+	33 670+	400+
$a_5$	1 370-	1 053-		675+	2 292-	
August 1						
$a_0$	42.0665 160+	13.9272 773+	0.9061 0328+	145.7823 041+	18.8172 206+	0.9461 9773+
$a_1$	11.3736 262+	4.4194 470+	0.0037 1146-	13.1721 969+	4.0127 166-	0.0090 7024+
$a_2$	1729 716+	2812 235-	14 2677+	1909 765-	5019 592-	1 6795-
$a_3$	298 178+	251 769-	280+	40 848-	349 324+	7186-
$a_4$	19 442-	4 947-	669-	53 770+	21 819+	548+
$a_5$	2 222-	218-		2 054-	1 993-	
August 2						
$a_0$	53.6407 652+	18.0398 074+	0.9038 1471+	158.7646 113+	14.3394 599+	0.9550 3364+
$a_1$	11.8001 345+	3.7793 826+	0.0008 7627-	12.7984 695+	4.9041 055-	0.0085 4071+
$a_2$	2485 315+	3599 427-	13 9531+	1730 325-	3860 651-	3 5061-
$a_3$	198 004+	273 062-	2392-	153 232+	417 185+	4946-
$a_4$	30 961-	6 163-	581-	42 843+	11 744+	562+
$a_5$	2 586-	954+		2 789-	1 087-	
August 3						
$a_0$	65.7058 769+	21.4314 201+	0.9043 0401+	171.4093 769+	9.0920 734+	0.9631 7989+
$a_1$	12.3429 228+	2.9755 918+	0.0018 1934+	12.5141 168+	5.5469 252-	0.0077 1361+
$a_2$	2867 576+	4446 043-	12 8896+	1041 481-	2549 494-	4 6569-
$a_3$	49 029+	287 433-	4717-	296 805+	453 827+	2651-
$a_4$	44 749-	1 341-	497-	28 782+	6 379+	425+
$a_5$	1 368-	2 252+		2 576-	151-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
August 12			August 20			
$a_0$	183.8516 466+	3.3362 044+	0.9704 0555+	297.4744 778+	24.8059 172-	0.9833 5284+
$a_1$	12.4050 865+	5.9181 989-	0.0067 1972+	15.4218 646+	1.7672 373+	0.0053 4778-
$a_2$	4 095-	1151 221-	5 2050-	2919 045-	7839 373+	10 9643-
$a_3$	386 121+	478 186+	925-	683 019-	375 234-	927+
$a_4$	16 203+	5 809+	171+	87 669+	67 592-	1087+
$a_5$	2 627-	467+		3 628+	7 689+	
August 13			August 21			
$a_0$	196.2962 934+	2.6486 704-	0.9765 9724+	312.5452 656+	22.2982 563-	0.9769 2877+
$a_1$	12.5252 704+	6.0024 303-	0.0056 5783+	14.6700 211+	3.1993 480+	0.0074 6929-
$a_2$	1225 290+	322 910+	5 3886-	4406 234-	6385 225+	10 0357-
$a_3$	424 033+	506 075+	245-	301 235-	569 321-	5364+
$a_4$	3 566+	8 478+	117-	102 856+	27 633-	1023+
$a_5$	3 704-	457+		5 422-	6 501+	
August 14			August 22			
$a_0$	208.9864 823+	8.5673 086-	0.9817 1259+	326.7542 832+	18.5194 310-	0.9685 1979+
$a_1$	12.8971 103+	5.7824 074-	0.0045 6808+	13.7368 330+	4.2977 908+	0.0092 7455-
$a_2$	2481 783+	1896 648+	5 5389-	4747 387-	4576 499+	7 8221-
$a_3$	400 049+	543 917+	749-	54 866+	616 612-	9516+
$a_4$	14 681-	11 291+	338-	73 224+	5 008+	721+
$a_5$	5 833-	617-		7 123-	3 353+	
August 15			August 23			
$a_0$	222.1697 245+	14.1045 922-	0.9857 1591+	340.0284 741+	13.8248 154-	0.9585 6539+
$a_1$	13.5046 914+	5.2356 980-	0.0034 2428+	12.8295 454+	5.0317 836+	0.0105 2466-
$a_2$	3535 388+	3590 049+	5 9683-	4214 774-	2790 175+	4 5479-
$a_3$	282 176+	581 489+	2161-	277 677+	564 561-	1 2415-
$a_4$	44 719-	8 746+	403-	36 965+	21 319+	298+
$a_5$	7 415-	3 076-		4 999-	744+	
August 16			August 24			
$a_0$	236.0509 588+	18.9225 695-	0.9885 1772+	352.4675 064+	8.5682 641-	0.9477 1306+
$a_1$	14.2748 302+	4.3412 846-	0.0021 4962+	12.0821 828+	5.4293 482+	0.0110 4988-
$a_2$	4039 042+	5356 205+	6 8542-	3209 901-	1231 782+	6571-
$a_3$	30 959+	583 996+	3841-	376 907+	472 711-	1 3586+
$a_4$	84 592-	6 812-	265-	12 265+	24 606+	112-
$a_5$	4 475-	6 146-		2 626-	721-	
August 17			August 25			
$a_0$	250.7238 824+	22.6711 298-	0.9899 4085+	4.2673 537+	3.0606 203-	0.9367 3221+
$a_1$	15.0558 636+	3.1006 432-	0.0006 5291+	11.5568 696+	5.5433 726+	0.0107 7822-
$a_2$	3579 254+	7005 620+	8 1555-	2031 780-	45 964-	3 3420+
$a_3$	346 359-	494 893+	4952-	400 527+	381 858-	1 3099+
$a_4$	109 498-	39 217-	64+	109 498-	20 730+	419-
$a_5$	5 762+	6 973-		1 234-	1 323-	
August 18			August 26			
$a_0$	266.0926 620+	25.0263 407-	0.9897 2933+	15.6609 324+	2.4419 108+	0.9264 1500+
$a_1$	15.6268 998+	1.5702 195-	0.0011 2422-	11.2698 866+	5.4272 528+	0.0097 3361-
$a_2$	1941 192+	8184 976+	9 5898-	845 016-	1080 412-	7 0149+
$a_3$	720 886-	270 679+	4710-	386 754+	312 224-	1 1386+
$a_4$	78 031-	76 142-	495+	6 247-	13 956+	598-
$a_5$	16 438+	2 792-		818-	1 410-	
August 19			August 27			
$a_0$	281.8354 331+	25.7588 881-	0.9876 0398+	26.8842 864+	7.7311 547+	0.9174 9075+
$a_1$	15.7758 774+	0.1161 340+	0.0031 6367-	11.2140 018+	5.1223 811+	0.0080 1301-
$a_2$	524 404-	8512 262+	10 6940-	269 620+	1947 461-	10 0691+
$a_3$	869 316-	57 994-	2692-	353 436+	270 355-	8966+
$a_4$	10 213+	89 943-	885+	10 116-	6 790+	675-
$a_5$	15 180+	4 045+		1 093-	1 167-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
August 28						
$a_0$	38.1594 729+	12.6323 164+	0.9105 6755+	141.1794 190+	20.2083 658+	0.9468 0856+
$a_1$	11.3693 630+	4.6539 156+	0.0057 5723-	13.3699 385+	3.7226 430-	0.0115 7705+
$a_2$	1258 309+	2729 472-	12 3531+	1470 728-	5557 933-	4262+
$a_3$	301 683+	254 548-	6254+	110 075-	287 006+	1 4844-
$a_4$	15 521-	833+	694-	49 297+	30 238+	99+
$a_5$	1 726-	630-		833-	1 462-	
August 29						
$a_0$	49.6831 103+	16.9878 504+	0.9061 0123+	154.3961 236+	15.9615 075+	0.9582 8078+
$a_1$	11.7044 577+	4.0316 760+	0.0031 2677-	13.0620 708+	4.7367 638-	0.0112 2092+
$a_2$	2052 941+	3494 437-	13 8127+	1513 597-	4530 131-	3 9519-
$a_3$	222 088+	257 023-	3478+	77 883+	393 445+	1 4456-
$a_4$	24 365-	2 443-	696-	44 473+	22 796+	611+
$a_5$	2 194-	220+		2 351-	1 254-	
August 30						
$a_0$	61.6124 150+	20.6441 581+	0.9043 8355+	167.3188 351+	10.8132 294+	0.9689 6806+
$a_1$	12.1708 295+	3.2548 157+	0.0002 8772-	12.7993 292+	5.5162 644-	0.0100 2131+
$a_2$	2550 981+	4277 973-	14 4381+	1036 667-	3225 553-	7 9084-
$a_3$	103 007+	263 979-	699+	232 042+	472 291+	1 1965-
$a_4$	35 928-	1 386-	707-	32 437+	16 535+	1062+
$a_5$	1 672-	1 297+		2 676-	908-	
August 31						
$a_0$	74.0448 831+	23.4447 696+	0.9055 3955+	180.0406 778+	5.0232 014+	0.9780 8949+
$a_1$	12.6967 227+	2.3201 221+	0.0025 9258+	12.6732 448+	6.0135 276-	0.0081 2320+
$a_2$	2627 601+	5065 236-	14 2228+	172 659-	1718 540-	10 8539-
$a_3$	56 142-	256 035-	2127-	334 906+	529 489+	7622-
$a_4$	45 015-	5 278+	732-	19 199+	12 070+	1286+
$a_5$	555+	2 222+		2 852-	665-	
September 1						
$a_0$	86.9943 057+	25.2335 146+	0.9095 2583+	192.7317 820+	1.1080 907-	0.9850 6394+
$a_1$	13.1876 757+	1.2334 866+	0.0053 4407+	12.7454 370+	6.1938 931-	0.0057 7527+
$a_2$	2194 620+	5779 393-	13 1452+	918 778+	64 275-	12 3716-
$a_3$	228 731-	212 618-	5060-	382 682+	571 084+	2371-
$a_4$	42 351-	16 812+	751-	5 297+	8 915+	1189+
$a_5$	3 953+	2 384+		3 692-	713-	
September 2						
$a_0$	100.3747 306+	25.8697 198+	0.9161 2630+	205.6075 255+	7.2504 826-	0.9895 9023+
$a_1$	13.5430 192+	0.0217 388+	0.0077 9122+	13.0442 684+	6.0322 139-	0.0032 7741+
$a_2$	1294 000+	6292 470-	11 1771+	2061 716+	1695 389+	12 3811-
$a_3$	357 320-	122 043-	8089-	366 052+	599 230+	2456+
$a_4$	21 582-	29 132+	726-	12 982-	5 674+	810+
$a_5$	6 247+	1 472+		5 287-	1 364-	
September 3						
$a_0$	114.0098 843+	25.2530 676+	0.9249 4708+	218.8927 438+	13.0528 036-	0.9916 6218+
$a_1$	13.6891 130+	1.2609 813-	0.0097 5490+	13.5585 899+	5.5117 809-	0.0009 0727+
$a_2$	155 216+	6469 086-	8 3187+	3029 001+	3513 541+	11 1740-
$a_3$	381 631-	8 364+	1 1034-	260 723+	607 412+	5707+
$a_4$	11 004+	36 527+	601-	40 160-	795-	302+
$a_5$	5 428+	8-		6 335-	2 889-	
September 4						
$a_0$	127.6779 989+	23.3496 659+	0.9354 1751+	232.7756 565+	18.1528 576-	0.9915 1214+
$a_1$	13.6127 788+	2.5376 842-	0.0110 6356+	14.2233 786+	4.6286 140-	0.0011 4427-
$a_2$	869 307-	6224 962-	4 6565+	3506 538+	5302 090+	9 2950-
$a_3$	285 129-	153 742+	1 3489-	38 312+	574 286+	6871+
$a_4$	38 614+	36 190+	328-	74 034-	15 387-	154-
$a_5$	2 235+	1 130-		3 747-	4 779-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
September 13						
$a_0$	247.3457 420+	22.1958 507-	0.9895 0554+	0.2449 156+	4.9096 858-	0.9370 7172+
$a_1$	14.9047 020+	3.4044 550-	0.0028 0334-	11.6316 039+	5.5517 809+	0.0087 7635-
$a_2$	3139 512+	6884 662+	7 3348-	2065 652-	505 156+	3612+
$a_3$	290 589-	464 822+	6183+	369 520+	410 532-	7183+
$a_4$	94 761-	40 445-	429-	1 484+	15 967+	301+
$a_5$	4 539+	5 086-		1 396-	644-	
September 14						
$a_0$	262.5263 141+	24.8699 105-	0.9860 2626+	11.7069 153+	0.6530 899+	0.9284 0633+
$a_1$	15.4098 025+	1.9067 935-	0.0041 0200-	11.3292 262+	5.5357 174+	0.0084 7657-
$a_2$	1744 841+	7985 393+	5 7389-	962 096-	637 089-	2 6905+
$a_3$	619 341-	253 979+	4396+	361 804+	353 202-	8393+
$a_4$	70 197-	67 302-	479-	5 192-	12 641+	100+
$a_5$	13 437+	1 939-		889-	813-	
September 15						
$a_0$	278.0429 906+	25.9596 908-	0.9813 8954+	22.9755 042+	6.0909 611+	0.9202 8374+
$a_1$	15.5516 079+	0.2614 058-	0.0051 3710-	11.2428 268+	5.3069 891+	0.0076 8268-
$a_2$	399 307-	8324 141+	4 7033-	83 304+	1628 992-	5 2622+
$a_3$	765 808-	31 796-	2427+	332 092+	310 733-	8786+
$a_4$	1 759+	76 924-	336-	9 440-	8 488+	99-
$a_5$	13 347+	3 098+		997-	751-	
September 16						
$a_0$	293.4795 976+	25.3992 447-	0.9758 0302+	34.2588 269+	11.2047 514+	0.9132 1415+
$a_1$	15.2493 713+	1.3646 663+	0.0060 1841-	11.3548 401+	4.8909 910+	0.0063 7064-
$a_2$	2552 454-	7798 408+	4 1689-	1012 976+	2517 784-	7 8332+
$a_3$	630 235-	306 879-	1060+	284 118+	284 119-	8376+
$a_4$	70 267+	59 927-	77-	14 367-	4 637+	266-
$a_5$	4 403+	5 953+		1 428-	463-	
September 17						
$a_0$	308.4181 670+	23.2908 229-	0.9693 7756+	45.7417 968+	15.8159 695+	0.9077 0792+
$a_1$	14.5801 094+	2.8112 893+	0.0068 2346-	11.6362 091+	4.3038 224+	0.0045 6339-
$a_2$	3977 819-	6577 910+	3 8885-	1764 817+	3346 961-	10 1820+
$a_3$	309 756-	487 400-	761+	212 188+	269 888-	7300+
$a_4$	90 234+	28 996-	202+	21 666-	2 226+	397-
$a_5$	3 726-	5 260+		1 756-	71+	
September 18						
$a_0$	322.5781 696+	19.8728 563-	0.9621 7488+	57.5733 642+	19.7583 367+	0.9042 3176+
$a_1$	13.7258 463+	3.9716 802+	0.0075 7022-	12.0432 852+	3.5543 903+	0.0023 2387-
$a_2$	4403 265-	4994 355+	3 5323-	2253 765+	4142 569-	12 1304+
$a_3$	12 480+	552 067-	1603+	108 217+	259 867-	5708+
$a_4$	69 390+	2 543-	414+	30 880-	2 541+	505-
$a_5$	6 071-	2 977+		1 354-	786+	
September 19						
$a_0$	335.8712 693+	15.4569 040-	0.9542 7160+	69.8496 242+	22.8728 160+	0.9031 7296+
$a_1$	12.8736 591+	4.8054 001+	0.0082 1200-	12.5134 762+	2.6493 263+	0.0002 5325+
$a_2$	4010 310-	3352 620+	2 8002-	2379 517+	4899 052-	13 5362+
$a_3$	230 033+	533 605-	3304+	27 870-	241 481-	3690+
$a_4$	38 260+	12 019+	501+	38 201-	6 576+	613-
$a_5$	4 725-	1 013+		321+	1 429+	
September 20						
$a_0$	348.3702 542+	10.3682 992-	0.9458 1761+	82.5944 770+	25.0088 895+	0.9048 1060+
$a_1$	12.1535 507+	5.3211 554+	0.0086 5289-	12.9659 013+	1.6004 167+	0.0030 4667+
$a_2$	3137 885-	1834 003+	1 5101-	2069 882+	5569 709-	14 2713+
$a_3$	336 956+	476 069-	5348+	175 966-	200 786-	1244+
$a_4$	14 762+	16 770+	453+	36 755-	13 985+	740-
$a_5$	2 726-	123-		2 968+	1 608+	
September 21						
September 21						
September 22						
September 23						
September 24						
September 25						
September 26						
September 27						
September 28						

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
September 29			October 7			
$a_0$	95.7463 911+	26.0338 159+	0.9092 8944+	200.8930 430+	5.1243 176-	0.9997 7632+
$a_1$	13.3138 719+	0.4326 363+	0.0059 0867+	13.2100 458+	6.3316 835-	0.0068 2919+
$a_2$	1351 224+	6072 043-	14 1962+	2176 087+	920 494+	18 7965-
$a_3$	292 157-	129 046-	1709-	367 746+	674 315+	8998-
$a_4$	21 268-	22 276+	887-	10 656-	16 696+	2304+
$a_5$	5 023+	1 116+		5 786-	2 673-	
September 30			October 8			
$a_0$	109.1645 452+	25.8486 824+	0.9165 9175+	214.3558 279+	11.2951 179-	1.0046 5893+
$a_1$	13.4904 737+	0.8110 189-	0.0086 6112+	13.7484 305+	5.9399 504-	0.0028 9224+
$a_2$	397 528+	6314 365-	13 1465+	3157 413+	3016 903+	20 1196-
$a_3$	327 093-	29 261-	5267-	266 588+	713 322+	428+
$a_4$	4 894+	27 876+	1032-	40 397-	3 459+	2098+
$a_5$	4 851+	267+		7 106-	4 491-	
October 1			October 9			
$a_0$	122.6630 369+	24.4061 152+	0.9265 0453+	228.4419 081+	16.8621 491-	1.0055 6447+
$a_1$	13.4762 320+	2.0713 871-	0.0110 9111+	14.4401 810+	5.1234 368-	0.0010 3483-
$a_2$	505 797-	6232 254-	10 9448+	3643 366+	5132 653+	18 7549-
$a_3$	260 270-	84 574+	9431-	35 646+	681 375+	8947+
$a_4$	29 694+	29 004+	1112-	78 443-	19 399-	1353+
$a_5$	2 600+	325-		4 324-	6 077-	
October 2			October 10			
$a_0$	136.0658 916+	21.7228 281+	0.9385 8470+	243.2417 135+	21.4067 308-	1.0027 5714+
$a_1$	13.3101 662+	3.2810 266-	0.0129 5264+	15.1460 193+	3.9032 912-	0.0044 6329-
$a_2$	1082 476-	5807 788-	7 4514+	3236 073+	6999 407+	15 2882-
$a_3$	116 983-	197 306+	1 3951-	316 055-	543 421+	1 4358+
$a_4$	42 471+	27 175+	1023-	102 369-	51 181-	410+
$a_5$	10-	368-		5 035+	5 454-	
October 3			October 11			
$a_0$	149.2603 580+	17.8834 338+	0.9521 3275+	258.6700 013+	24.5614 028-	0.9969 1271+
$a_1$	13.0755 579+	4.3727 065-	0.0139 8342+	15.6599 983+	2.3635 780-	0.0070 7383-
$a_2$	1178 765-	5056 509-	2 6640+	1724 376+	8267 843+	10 7592-
$a_3$	51 851+	302 454+	1 8149-	669 698-	286 655+	1 5908+
$a_4$	41 932+	25 310+	653-	74 940-	79 852-	381-
$a_5$	1 640-	120-		15 006+	1 064-	
October 4			October 12			
$a_0$	162.2272 537+	13.0378 408+	0.9661 9456+	274.4294 741+	26.0776 224-	0.9889 1823+
$a_1$	12.8713 122+	5.2832 080-	0.0139 4558+	15.7814 904+	0.6564 791-	0.0087 6373-
$a_2$	788 056-	3998 464-	3 1505-	583 506-	8638 133+	6 2296-
$a_3$	202 776+	402 536+	2 0863-	819 710-	40 205-	1 4267+
$a_4$	33 474+	24 859+	53+	5 583+	84 663-	837-
$a_5$	2 296-	40-		14 430+	4 628+	
October 5			October 13			
$a_0$	175.0431 557+	7.3975 219+	0.9796 1699+	290.0726 443+	25.8823 122-	0.9796 6585+
$a_1$	12.7867 747+	5.9522 169-	0.0126 9167+	15.4283 132+	1.0275 374+	0.0096 1515-
$a_2$	1 829-	2642 071-	9 3490-	2864 589-	8056 094+	2 4551-
$a_3$	313 408+	501 353+	2 0689-	658 777-	331 211-	1 0823+
$a_4$	22 108+	24 868+	990+	79 459+	59 608-	951-
$a_5$	2 779-	416-		4 080+	6 997+	
October 6			October 14			
$a_0$	187.8630 213+	1.2336 784+	0.9911 7677+	305.1569 747+	24.0875 476-	0.9699 0391+
$a_1$	12.8878 835+	6.3204 869-	0.0102 4085+	14.6915 759+	2.5190 466+	0.0098 1955-
$a_2$	1043 301+	992 933-	14 9348-	4323 730-	6774 954+	2252+
$a_3$	373 394+	596 152+	1 6646-	305 112-	500 572-	6958+
$a_4$	8 573+	22 988+	1865+	97 330+	23 463-	818-
$a_5$	3 886-	1 299-		4 646-	5 313+	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
October 15						
$a_0$	319.3949 347+	20.9428 778-	0.9601 6828+	53.8709 699+	18.7497 037+	0.9036 8919+
$a_1$	13.7719 023+	3.7171 335+	0.0095 9851-	11.9294 279+	3.8360 784+	0.0031 2644-
$a_2$	4701 901-	5185 573+	1 8299+	2193 347+	3934 839-	8 0888+
$a_3$	36 449+	542 957-	3659+	101 349+	282 013-	5762+
$a_4$	71 687+	3 023+	552-	31 316-	4 735+	6-
$a_5$	6 705-	2 382+		1 214-	981+	
October 16						
$a_0$	332.7067 899+	16.7609 422-	0.9507 8383+	66.0266 144+	22.1646 685+	0.9014 2919+
$a_1$	12.8677 807+	4.5937 589+	0.0091 4485-	12.3853 708+	2.9668 915+	0.0013 3607-
$a_2$	4229 589-	3598 588+	2 6057+	2297 287+	4742 639-	9 8087+
$a_3$	257 090+	508 249-	1451+	35 066-	253 059-	5740+
$a_4$	37 444+	14 423+	249-	37 904-	9 781+	164-
$a_5$	4 940-	309+		487+	1 347+	
October 17						
$a_0$	345.1805 712+	11.8566 763-	0.9419 1156+	78.6344 656+	24.6331 028+	0.9011 2975+
$a_1$	12.1115 002+	5.1669 241+	0.0085 9016-	12.8193 934+	1.9470 314+	0.0007 9130+
$a_2$	3283 020-	2163 408+	2 8997+	1969 524+	5429 627-	11 4268+
$a_3$	358 738+	448 014-	472+	180 356-	200 551-	5087+
$a_4$	12 962+	15 571+	22+	35 573-	16 769+	334-
$a_5$	2 719-	604-		3 050+	1 209+	
October 18						
$a_0$	357.0006 674+	6.5167 161-	0.9336 1631+	91.6295 236+	26.0189 142+	0.9031 1126+
$a_1$	11.5663 444+	5.4711 277+	0.0079 9517-	13.1464 892+	0.8082 518+	0.0032 1594+
$a_2$	2156 168-	906 723+	3 0607+	1245 613+	5918 552-	12 7468+
$a_3$	384 205+	391 893-	590+	291 094-	121 798-	3762+
$a_4$	236-	12 355+	219+	19 662-	22 999+	524-
$a_5$	1 332-	796-		4 931+	488+	
October 19						
$a_0$	8.3896 588+	0.9929 494-	0.9259 3530+	104.8699 916+	26.2254 797+	0.9076 3426+
$a_1$	11.2496 126+	5.5394 486+	0.0073 5653-	13.3028 839+	0.4025 556-	0.0058 5720+
$a_2$	1018 242-	202 796-	3 3725+	303 812+	6141 088-	13 5540+
$a_3$	370 237+	350 363-	1499+	320 590-	25 420-	1678+
$a_4$	6 582-	8 299+	321+	5 981+	25 362+	748-
$a_5$	837-	669-		4 646+	389-	
October 20						
$a_0$	19.5737 290+	4.4919 463+	0.9189 3422+	118.1722 604+	25.2087 706+	0.9148 5617+
$a_1$	11.1539 838+	5.3967 660+	0.0066 2420-	13.2721 823+	1.6284 492-	0.0085 8845+
$a_2$	44 634+	1210 786-	4 0152+	575 543-	6069 104-	13 6008+
$a_3$	335 472+	323 706-	2812+	251 436-	71 920+	1303-
$a_4$	10 576-	4 914+	329+	29 683+	23 125+	1007-
$a_5$	965-	410-		2 456+	782-	
October 21						
$a_0$	30.7645 693+	9.7357 136+	0.9127 4296+	131.3649 586+	22.9828 373+	0.9247 8160+
$a_1$	11.2588 390+	5.0592 582+	0.0057 2363-	13.0947 411+	2.8118 345-	0.0112 2925+
$a_2$	977 954+	2156 524-	5 0540+	1127 230-	5722 452-	12 5977+
$a_3$	283 282+	307 935-	4148+	109 525-	156 800+	5338-
$a_4$	15 354-	2 818+	259+	41 715+	18 939+	1271-
$a_5$	1 392-	47-		34+	431-	
October 22						
$a_0$	42.1478 573+	14.5488 030+	0.9075 6880+	144.3401 991+	19.6162 884+	0.9372 0454+
$a_1$	11.5325 765+	4.5366 774+	0.0045 7801-	12.8531 391+	3.9019 240-	0.0135 3781+
$a_2$	1721 731+	3063 894-	6 4503+	1205 243-	5142 743-	10 2284+
$a_3$	207 794+	296 848-	5197+	56 845+	228 706+	1 0467-
$a_4$	22 486-	2 537+	140+	41 402+	16 695+	1455-
$a_5$	1 679-	438+		1 388-	384+	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
October 31			November 8			
$a_0$	157.0824 998+	15.2246 686+	0.9516 4597+	269.2664 953+	25.8872 618-	1.0081 2199+
$a_1$	12.6450 102+	4.8549 899-	0.0152 1122+	16.3722 277+	1.2811 626-	0.0093 1780-
$a_2$	800 212-	4352 595-	6 2172+	118 569+	9312 369+	16 9799-
$a_3$	208 279+	299 759+	1 6392-	1018 672-	71 863+	2 2803+
$a_4$	34 213+	18 745+	1404-	21 018-	115 603-	185+
$a_5$	1 856-	1 146+		21 737+	5 243+	
November 1			November 9			
$a_0$	169.6715 524+	9.9663 841+	0.9673 0096+	285.5487 846+	26.2410 371-	0.9973 3607+
$a_1$	12.5602 083+	5.6275 102-	0.0159 0666+	16.0927 867+	0.5592 563+	0.0120 2237-
$a_2$	11 364+	3329 346-	4723+	2845 551-	8887 233+	10 0597-
$a_3$	326 355+	386 307+	2 2172-	892 814-	335 195-	2 3380+
$a_4$	25 074+	24 788+	928-	92 034+	86 181-	842-
$a_5$	2 185-	1 355+		8 032+	10 383+	
November 2			November 10			
$a_0$	182.2678 216+	4.0471 844+	0.9830 2386+	301.2777 414+	24.8341 567-	0.9845 3311+
$a_1$	12.6693 235+	6.1668 952-	0.0152 9876+	15.2966 465+	2.2068 616+	0.0133 6668-
$a_2$	1119 096+	2008 071-	6 7045-	4891 974-	7468 726+	3 5664-
$a_3$	404 123+	498 561+	2 6050-	452 191-	577 227-	1 9844+
$a_4$	14 643+	32 038+	83+	128 652+	31 998-	1333-
$a_5$	3 316-	591+		5 853-	8 172+	
November 3			November 11			
$a_0$	195.0905 997+	2.2673 989-	0.9973 9250+	316.0522 511+	21.9405 278-	0.9709 9489+
$a_1$	13.0185 759+	6.4058 327-	0.0131 7964+	14.2311 240+	3.5187 201+	0.0135 3804-
$a_2$	2386 248+	314 163-	14 4270-	5535 738-	5626 767+	1 5853+
$a_3$	428 071+	631 416+	2 5780-	1 681+	626 197-	1 4398+
$a_4$	1 355-	35 572+	1476+	95 444+	8 803+	1377-
$a_5$	5 851-	1 478-		9 375-	3 378+	
November 4			November 12			
$a_0$	208.3898 868+	8.6380 968-	1.0088 8641+	329.7385 763+	17.9205 326-	0.9577 4559+
$a_1$	13.6207 756+	6.2657 547-	0.0095 7994+	13.1579 737+	4.4614 207+	0.0128 4416-
$a_2$	3603 774+	1778 805+	21 2365-	5051 945-	3834 647+	5 0849+
$a_3$	362 404+	756 941+	1 9736-	291 124+	559 163-	8832+
$a_4$	30 890-	28 660+	2755+	47 449+	24 808+	1158-
$a_5$	8 995-	4 906-		6 699-	9+	
November 5			November 13			
$a_0$	222.4032 917+	14.6479 016-	1.0161 7290+	342.4245 430+	13.1290 816-	0.9454 8667+
$a_1$	14.4333 990+	5.6739 048-	0.0048 5094+	12.2505 559+	5.0705 277+	0.0116 0851-
$a_2$	4415 286+	4172 482+	25 4875-	3960 813-	2306 006+	7 0502+
$a_3$	149 313+	820 362+	8400-	415 818+	460 665-	4186+
$a_4$	78 666-	3 843+	3302+	14 333+	24 188+	830-
$a_5$	8 591-	8 736-		3 398-	1 372-	
November 6			November 14			
$a_0$	237.2844 250+	19.8230 113-	1.0184 2412+	354.3216 929+	7.8717 382-	0.9346 1675+
$a_1$	15.3255 004+	4.5961 314-	0.0003 6627-	11.5871 754+	5.4025 184+	0.0101 0607-
$a_2$	4304 669+	6568 971+	26 0406-	2661 252-	1055 372+	7 8188+
$a_3$	245 421-	747 864+	5130+	440 333+	377 763-	874+
$a_4$	126 174-	41 878-	2818+	2 062-	17 011+	490-
$a_5$	1 501+	9 811-		1 417-	1 564-	
November 7			November 15			
$a_0$	253.0033 829+	23.6926 282-	1.0155 3326+	5.6864 286+	2.3999 141-	0.9252 9640+
$a_1$	16.0631 065+	3.0796 288-	0.0053 0769-	11.1854 928+	5.5062 869+	0.0085 3569-
$a_2$	2826 485+	8462 763+	22 8486-	1366 726-	8 498+	7 7963+
$a_3$	726 195-	485 369+	1 6555+	418 343+	325 177-	1070-
$a_4$	117 946-	93 826-	1575+	8 715-	9 077+	188-
$a_5$	17 714+	4 355-		713-	1 250-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
November 16			November 24			
$a_0$	16.7761 403+	3.0754 875+	0.9175 2776+	114.4768 084+	25.6692 746+	0.9070 5833+
$a_1$	11.0338 081+	5.4134 397+	0.0070 1604-	13.1982 500+	1.2768 859-	0.0055 1595+
$a_2$	171 074-	925 080-	7 3702+	753 960-	5998 778-	11 1336+
$a_3$	376 290+	301 075-	1799-	303 777-	84 929+	3369+
$a_4$	12 022-	2 777+	55+	31 521+	25 340+	423-
$a_5$	846-	745-		2 942+	1 613-	
November 17			November 25			
$a_0$	27.8291 831+	8.3665 149+	0.9112 3131+	127.5727 310+	23.8033 766+	0.9137 1709+
$a_1$	11.1072 478+	5.1388 400+	0.0055 9375-	12.9704 007+	2.4418 330-	0.0078 2680+
$a_2$	877 218+	1819 102-	6 8690+	1446 794-	5608 139-	11 8812+
$a_3$	319 426+	297 055-	1554-	149 933-	170 297+	1691+
$a_4$	16 161-	996-	227+	45 919+	16 873+	714-
$a_5$	1 408-	123-		28+	1 364-	
November 18			November 26			
$a_0$	39.0543 383+	13.2936 273+	0.9063 1120+	140.3880 537+	20.8193 103+	0.9227 4179+
$a_1$	11.3713 501+	4.6854 442+	0.0042 5747-	12.6544 419+	3.5063 033-	0.0102 2524+
$a_2$	1724 425+	2717 477-	6 5419+	1620 889-	5009 677-	11 9501+
$a_3$	240 420+	301 838-	621-	33 088+	224 717+	1153-
$a_4$	23 354-	1 654-	322+	45 412+	9 861+	1046-
$a_5$	1 916-	617+		1 578-	368-	
November 19			November 27			
$a_0$	50.6196 459+	17.6770 364+	0.9027 0492+	152.8880 989+	16.8354 604+	0.9341 4004+
$a_1$	11.7780 620+	4.0510 453+	0.0029 5483-	12.3575 657+	4.4370 614-	0.0125 3882+
$a_2$	2286 335+	3626 742-	6 5493+	1264 994-	4280 033-	10 9663+
$a_3$	128 023+	301 844-	690+	198 774+	261 179+	5347-
$a_4$	33 417-	1 459+	341+	37 128+	8 034+	1381-
$a_5$	1 648-	1 389+		1 844-	839+	
November 20			November 28			
$a_0$	62.6356 373+	21.3355 079+	0.9004 1533+	165.1425 711+	11.9974 008+	0.9477 0820+
$a_1$	12.2595 473+	3.2364 222+	0.0016 1062-	12.1781 285+	5.2110 802-	0.0145 1641+
$a_2$	2453 326+	4509 604-	6 9591+	464 337-	3439 882-	8 5268+
$a_3$	21 108-	281 842-	2073+	328 927+	302 278+	1 0927-
$a_4$	42 327-	8 605+	289+	27 944+	12 382+	1615-
$a_5$	100+	1 889+		1 665-	1 838+	
November 21			November 29			
$a_0$	75.1341 836+	24.0938 349+	0.8995 2425+	177.3097 865+	6.4739 822+	0.9629 5187+
$a_1$	12.7270 025+	2.2543 349+	0.0001 4502-	12.1942 838+	5.8025 012-	0.0158 2930+
$a_2$	2137 002+	5284 561-	7 7512+	673 525+	2440 334-	4 2818+
$a_3$	187 706-	228 671-	3247+	423 790+	370 417+	1 7516-
$a_4$	42 082-	18 416+	179+	20 067+	21 893+	1562-
$a_5$	3 112+	1 667+		2 080-	2 264+	
November 22			November 30			
$a_0$	88.0522 186+	25.7988 550+	0.9001 8861+	189.6156 005+	0.4669 050+	0.9790 1858+
$a_1$	13.0828 170+	1.1370 203+	0.0015 0981+	12.4631 103+	6.1695 546-	0.0160 9759+
$a_2$	1352 616+	5843 362-	8 8278+	2044 618+	1174 996-	1 8922-
$a_3$	323 524-	138 956-	3977+	482 086+	480 192+	2 3964-
$a_4$	25 807-	27 047+	21+	10 484+	33 831+	990-
$a_5$	5 591+	575+		4 063-	1 555+	
November 23			December 1			
$a_0$	101.2359 233+	26.3404 058+	0.9026 2117+	202.3320 233+	5.7685 914-	0.9946 7742+
$a_1$	13.2487 558+	0.0622 337-	0.0033 9552+	13.0188 171+	6.2461 894-	0.0149 6053+
$a_2$	283 294+	6092 201-	10 0271+	3513 257+	484 265+	9 6377-
$a_3$	370 889-	25 804-	4073+	481 054+	629 471+	2 8124-
$a_4$	3 388+	29 856+	180-	9 074-	42 610+	225+
$a_5$	5 499+	824-		8 130-	1 152-	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
December 2			December 10			
$a_0$	215.7485 512+	11.8992 614-	1.0083 9520+	338.9432 602+	14.5279 575-	0.9612 0809+
$a_1$	13.8580 859+	5.9440 333-	0.0121 9824+	12.7977 307+	5.0580 270+	0.0154 3252-
$a_2$	4820 521+	2616 957+	17 8893-	5038 580-	2638 382+	4 9994+
$a_3$	361 234+	785 338+	2 7282-	435 950+	560 360-	1 5598+
$a_4$	50 768-	37 827+	1872+	28 703+	37 174+	1571-
$a_5$	12 277-	6 443-		5 656-	1 451-	
December 3			December 11			
$a_0$	230.1185 080+	17.4999 268-	1.0185 5042+	351.2830 325+	9.2585 560-	0.9464 1577+
$a_1$	14.9041 194+	5.1731 377-	0.0078 7689+	11.9294 567+	5.4317 385+	0.0140 2757-
$a_2$	5476 070+	5135 400+	24 9071-	3614 951-	1165 743+	8 7447+
$a_3$	37 675+	868 871+	1 9598-	496 180+	426 685-	9270+
$a_4$	117 470-	4 922+	3311+	1 287+	29 284+	1295-
$a_5$	8 805-	12 469-		2 254-	2 270-	
December 4			December 12			
$a_0$	245.5613 744+	22.0733 921-	1.0237 7373+	2.9005 155+	3.7502 103-	0.9333 4243+
$a_1$	15.9592 665+	3.8896 617-	0.0024 4017+	11.3547 103+	5.5474 605+	0.0120 5232-
$a_2$	4795 436+	7646 272+	28 7853-	2141 127-	38 660+	10 7597+
$a_3$	509 781-	763 915+	5959-	479 661+	332 142-	4086+
$a_4$	167 054-	61 464-	3794+	9 312-	17 700+	947-
$a_5$	9 751+	12 697-		794-	2 065-	
December 5			December 13			
$a_0$	261.9334 762+	25.1294 512-	1.0233 1370+	14.0880 685+	1.7694 654+	0.9223 9747+
$a_1$	16.7034 933+	2.1621 549-	0.0033 4374-	11.0662 614+	5.4615 978+	0.0098 1568-
$a_2$	2362 195+	9441 707+	28 3200-	765 902-	872 230-	11 4275+
$a_3$	1070 203-	397 084+	9580+	434 577+	281 668-	308+
$a_4$	111 988-	128 827-	3038+	12 888-	7 294+	615-
$a_5$	28 850+	2 011-		634-	1 502-	
December 6			December 14			
$a_0$	278.7578 552+	26.3208 107-	1.0172 6414+	25.1198 452+	7.1162 526+	0.9137 2148+
$a_1$	16.8244 945+	0.2072 103-	0.0085 9875-	11.0379 815+	5.2048 188+	0.0075 4551-
$a_2$	1230 108-	9840 226+	23 6710-	454 196+	1688 502-	11 1602+
$a_3$	1233 302-	131 147-	2 1865+	376 374+	267 091-	2134-
$a_4$	44 271+	136 534-	1479+	15 858-	280-	327-
$a_5$	21 994+	10 965+		1 196-	776-	
December 7			December 15			
$a_0$	295.3426 351+	25.5696 699-	1.0065 3171+	36.2391 782+	12.1254 064+	0.9072 6738+
$a_1$	16.2371 634+	1.6723 631+	0.0126 1789-	11.2347 905+	4.7864 920+	0.0053 9056-
$a_2$	4444 483-	8737 954+	16 2729-	1476 200+	2499 230-	10 3314+
$a_3$	848 622-	566 019-	2 7677+	300 540+	275 447-	3426-
$a_4$	153 952+	76 714-	109-	21 874-	4 243-	87-
$a_5$	536-	13 577+		1 976-	128+	
December 8			December 16			
$a_0$	311.0658 294+	23.0864 270-	0.9925 6220+	47.6492 575+	16.6340 193+	0.9028 7483+
$a_1$	15.1549 791+	3.2262 449+	0.0150 4665-	11.6104 542+	4.2023 800+	0.0034 3054-
$a_2$	6072 982-	6715 616+	8 0686-	2226 749+	3349 754-	9 2572+
$a_3$	244 903-	740 294-	2 7031+	193 151+	290 518-	3760-
$a_4$	144 485+	7 250-	1176-	32 162-	3 644-	104+
$a_5$	12 009-	7 703+		2 240-	1 201+	
December 9			December 17			
$a_0$	325.6022 675+	19.2626 046-	0.9769 6723+	59.4982 616+	20.4721 278+	0.9003 3346+
$a_1$	13.9187 024+	4.3482 242+	0.0158 9659-	12.0997 663+	3.4444 177+	0.0016 8771-
$a_2$	6061 340-	4528 112+	6788-	2590 721+	4231 143-	8 1963+
$a_3$	213 540+	695 745-	2 2139+	42 842+	292 531-	3326-
$a_4$	81 225+	30 234+	1607-	44 145-	2 501+	246+
$a_5$	10 522-	1 627+		1 006-	2 178+	

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
December 18			December 26			
$a_0$	71-8568 691+	23-4646 461+	0-8994 3459+	173-7133 138+	8-0549 840+	0-9453 3149+
$a_1$	12-6126 057+	2-5125 198+	0-0001 3836-	11-8395 920+	5-5030 873-	0-0122 4708+
$a_2$	2444 226+	5071 886-	7 3489+	131 957-	2387 327-	7 7646+
$a_3$	142 009-	260 596-	2321-	399 048+	325 639+	5235-
$a_4$	49 813-	13 813+	331+	22 511+	8 434+	1291-
$a_5$	2 122+	2 462+		1 455-	1 943+	
December 19			December 27			
$a_0$	84-6949 275+	25-4455 451+	0-9000 1121+	185-5817 205+	2-3467 655+	0-9582 8977+
$a_1$	13-0399 881+	1-4267 187+	0-0012 7503+	11-9411 907+	5-8785 157-	0-0135 9128+
$a_2$	1740 602+	5746 105-	6 8517+	1185 790+	1340 335-	5 4137+
$a_3$	318 059-	181 263-	975-	474 066+	379 029+	1 0465-
$a_4$	38 797-	26 635+	349+	15 858+	18 443+	1487-
$a_5$	5 656+	1 532+		2 226-	2 354+	
December 20			December 28			
$a_0$	97-8738 558+	26-2823 437+	0-9019 6515+	197-6902 600+	3-6258 011-	0-9723 0289+
$a_1$	13-2800 014+	0-2345 366+	0-0026 3008+	12-3257 956+	6-0243 208-	0-0143 0051+
$a_2$	610 416+	6114 744-	6 7668+	2681 017+	68 957-	1 3857+
$a_3$	416 067-	60 440-	445+	513 636+	475 896+	1 6548-
$a_4$	9 063-	34 454+	295+	5 677+	30 862+	1373-
$a_5$	6 766+	297-		4 957-	1 643+	
December 21			December 29			
$a_0$	111-1730 624+	25-9027 775+	0-9052 7930+	210-3355 929+	9-6061 775-	0-9865 6276+
$a_1$	13-2770 198+	0-9929 132-	0-0040 0859+	13-0158 763+	5-8821 809-	0-0140 2617+
$a_2$	624 336-	6092 369-	7 0731+	4206 493+	1560 499+	4 3831-
$a_3$	385 962-	73 520+	1647+	484 015+	614 020+	2 2228-
$a_4$	25 912+	32 601+	167+	18 525-	40 248+	752-
$a_5$	4 425+	1 852-		9 799-	1 310-	
December 22			December 30			
$a_0$	124-3520 861+	24-3110 544+	0-9100 1334+	223-8176 876+	15-2670 127-	0-9999 2084+
$a_1$	13-0489 372+	2-1772 169-	0-0054 7932+	13-9900 667+	5-3704 381-	0-0124 5256+
$a_2$	1582 513-	5694 802-	7 6613+	5449 083+	3631 102+	11 4655-
$a_3$	240 127-	185 193+	2337+	310 172+	758 462+	2 5402-
$a_4$	47 945+	22 796+	31-	69 662-	34 819+	445+
$a_5$	769+	2 207-		13 255-	7 304-	
December 23			December 31			
$a_0$	137-2236 307+	21-5849 355+	0-9162 8185+	238-3753 879+	20-1957 429-	1-0109 7729+
$a_1$	12-6799 563+	3-2526 034-	0-0070 8045+	15-1384 521+	4-4064 103-	0-0094 1518+
$a_2$	2007 648-	5024 562-	8 3354+	5828 087+	6042 185+	18 7728-
$a_3$	42 049-	254 739+	2231+	96 328-	821 198+	2 3644-
$a_4$	50 996+	11 428+	294-	142 759-	2 898-	1960+
$a_5$	1 637-	1 442-		5 535-	13 695-	
December 24			December 32			
$a_0$	149-7035 532+	17-8563 484+	0-9242 1522+	254-0721 865+	23-9174 744-	1-0182 9836+
$a_1$	12-2853 909+	4-1772 425-	0-0088 0274+	16-2153 251+	2-9596 187-	0-0050 2982+
$a_2$	1844 286-	4206 206-	8 8186+	4626 691+	8350 711+	24 6525-
$a_3$	145 212+	286 744+	1071+	709 972-	673 661+	1 5594-
$a_4$	42 178+	4 152+	611-	174 046-	76 400-	3186+
$a_5$	2 190-	199-		17 446+	12 226-	
December 25			December 33			
$a_0$	161-8230 355+	13-2875 551+	0-9339 0441+			
$a_1$	11-9758 740+	4-9308 977-	0-0105 7415+			
$a_2$	1177 506-	3323 040-	8 7624+			
$a_3$	292 245+	302 063+	1369-			
$a_4$	31 064+	3 233+	961-			
$a_5$	1 761-	1 010+				

Formula: Quantity in degrees =  $a_0 + a_1 p + a_2 p^2 + a_3 p^3 + a_4 p^4 + a_5 p^5$   
 where  $p$  is the fraction of a day from 0<sup>h</sup> TT.