

## 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° from  $\alpha$  if it exceeds 360°. In order to obtain the full precision of the polynomial ephemeris the interpolating factor  $p$  must be evaluated to 8 decimal places (10<sup>-3</sup> s); estimates of the precision of unrounded interpolated values are:

RA	Dec	HP
±0°0003	±0'003	±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 2008 January 21<sup>d</sup> 13<sup>h</sup> 23<sup>m</sup> 48<sup>s</sup> 32 UT1, using an assumed value of  $\Delta T = 66^s$ .

$$\text{TT} = 13^h 24^m 54^s 32, \text{ hence } p = 0.558\ 962\ 04$$

	right ascension	declination	horizontal parallax
$b_1$	+0.000 4477	-0.001 1679	+0.000 017 43
$b_2$	+0.013 0553	+0.008 4794	+0.000 036 12
$b_3$	-0.084 8134	+0.050 8625	-0.001 578 00
$b_4$	-0.396 4107	-0.869 2692	-0.006 041 07
$b_5$	+15.798 7167	-2.422 0939	$\pi = +0.989\ 800\ 38$
$b_6$	$\alpha = 109.570\ 8989$ $= 7^h 18^m 17.016$	$\delta = +25.627\ 5301$ $= +25^\circ 37' 39.11''$	$= 59' 23.281''$

## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
		January 0			January 8	
$a_0$	183.6292 320+	4.8814 079-	0.9169 9471+	282.8532 644+	26.6849 366-	0.9227 6607+
$a_1$	10.8272 470+	5.6317 391-	0.0093 3445-	13.7950 879+	1.8652 032+	0.0075 2364+
$a_2$	209 004-	1447 564+	13 6987+	1104 929-	6835 239+	3 1020+
$a_3$	455 508+	257 019+	4267+	478 499-	139 051-	6378-
$a_4$	11 509-	5 960-	913-	45 311+	44 996-	383+
$a_5$	608-	1 821+		4 651+	2 698+	
		January 1			January 9	
$a_0$	194.4799 177+	10.3431 025-	0.9090 6367+	296.4950 058+	24.1543 443-	0.9305 3997+
$a_1$	10.9171 898+	5.2665 949-	0.0065 0323-	13.4509 966+	3.1738 871+	0.0079 6805+
$a_2$	1082 403+	2201 094+	14 4368+	2222 168-	6175 204+	1 4204+
$a_3$	402 804+	250 963+	623+	253 821-	291 788-	4811-
$a_4$	14 368-	3 275+	719-	67 757+	30 722-	442+
$a_5$	1 632-	1 095+		793-	3 125+	
		January 2			January 10	
$a_0$	205.5440 282+	15.3640 548-	0.9040 0316+	309.7050 998+	20.3948 753-	0.9386 0636+
$a_1$	11.2479 468+	4.7492 312-	0.0036 2593-	12.9571 199+	4.3106 640+	0.0081 2548+
$a_2$	2188 262+	2984 615+	14 1975+	2585 238-	5146 807+	2403+
$a_3$	328 264+	274 385+	2244-	7 774+	384 009-	3003-
$a_4$	22 616-	8 953+	555-	62 349+	14 746-	383+
$a_5$	2 947-	19+		3 336-	2 071+	
		January 3			January 11	
$a_0$	217.0410 711+	19.7864 888-	0.9017 6899+	322.4103 745+	15.6091 990-	0.9467 2968+
$a_1$	11.7735 575+	4.0664 038-	0.0008 7595-	12.4656 756+	5.2199 582+	0.0080 9881+
$a_2$	3007 773+	3861 708+	13 1958+	2221 310-	3927 007+	4363-
$a_3$	208 031+	309 505+	4460-	223 829+	423 125-	1433-
$a_4$	38 028-	9 235+	411-	44 887+	4 423-	200+
$a_5$	3 525-	1 509-		3 237-	592+	
		January 4			January 12	
$a_0$	229.1320 537+	23.4349 987-	0.9021 6390+	334.6804 670+	10.0392 356-	0.9547 7253+
$a_1$	12.4205 499+	3.1982 729-	0.0016 1294+	12.1048 998+	5.8769 479+	0.0079 7658+
$a_2$	3368 237+	4830 532+	11 6154+	1312 880-	2636 992+	7547-
$a_3$	21 770+	330 434+	6109-	371 520+	435 616-	611-
$a_4$	57 030-	1 585+	269-	28 674+	1 639-	78-
$a_5$	1 675-	3 145-		2 321-	664-	
		January 5			January 13	
$a_0$	241.8857 338+	26.1173 309-	0.9048 7461+	346.6938 661+	3.9423 803-	0.9626 6674+
$a_1$	13.0770 845+	2.1339 754-	0.0037 4201+	11.9640 891+	6.2726 732+	0.0078 0419+
$a_2$	3074 447+	5799 803+	9 6265+	49 435-	1313 633+	9942-
$a_3$	220 257-	304 966+	7190-	463 138+	449 271-	925-
$a_4$	66 515-	14 791-	111-	17 486+	5 207-	385-
$a_5$	3 350+	3 826-		2 054-	1 463-	
		January 6			January 14	
$a_0$	255.2419 209+	27.6426 912-	0.9095 0627+	358.7008 687+	2.4160 621+	0.9703 5841+
$a_1$	13.6009 721+	0.8903 530-	0.0054 4719+	12.0991 094+	6.3978 041+	0.0075 6217+
$a_2$	2048 206+	6587 568+	7 4087+	1424 452+	80 117-	1 5106-
$a_3$	449 880-	208 318+	7637-	511 764+	484 769-	2501-
$a_4$	48 877-	34 803-	66+	7 932+	12 931-	637-
$a_5$	8 699+	2 487-		3 365-	1 556-	
		January 7			January 15	
$a_0$	268.9987 079+	27.8571 846-	0.9156 1861+	10.9940 564+	8.7559 289+	0.9777 3815+
$a_1$	13.8604 490+	0.4744 945+	0.0067 0245+	12.5390 154+	6.2304 010+	0.0071 5954+
$a_2$	492 644+	6978 799+	5 1626+	2973 780+	1627 686-	2 6456-
$a_3$	558 063-	45 850+	7369-	507 918+	551 316-	5112-
$a_4$	2 873-	47 487-	243+	8 174-	21 454-	733-
$a_5$	9 367+	373+		6 704-	334-	

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.

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	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
		January 16	°		January 24	°
$a_0$	23.8797 539+	14.7662 508+	0.9845 7468+	144.2571 145+	14.8006 053+	0.9653 7367+
$a_1$	13.2795 212+	5.7307 242+	0.0064 4769+	12.8599 956+	5.5464 328-	0.0123 0068-
$a_2$	4381 358+	3413 855-	4 6144-	5006 532-	2834 584-	5 5256-
$a_3$	405 977+	638 485-	8133-	377 476+	647 076+	1 7787+
$a_4$	42 242-	24 159-	587-	39 412+	33 688-	29-
$a_5$	10 728-	3 065+		6 360-	168-	
		January 17	°		January 25	°
$a_0$	37.6327 114+	20.0896 315+	0.9904 7374+	156.6575 096+	9.0320 362+	0.9526 9801+
$a_1$	14.2553 268+	4.8482 821+	0.0052 5730+	11.9845 206+	5.9327 839-	0.0128 7339-
$a_2$	5237 945+	5443 663-	7 3931-	3701 152-	1097 058-	2231-
$a_3$	130 710+	701 500-	1 0570-	473 602+	511 674+	1 7598+
$a_4$	99 960-	9 148-	157-	8 276+	33 834-	549-
$a_5$	9 476-	8 332+		2 749-	1 560+	
		January 18	°		January 26	°
$a_0$	52.4139 601+	24.3233 159+	0.9948 8446+	168.3198 278+	3.0374 864+	0.9399 7280+
$a_1$	15.2974 232+	3.5496 098+	0.0034 5528+	11.3883 088+	6.0114 467-	0.0124 1205-
$a_2$	4934 724+	7519 381-	10 6378-	2258 098-	250 612+	4 7182+
$a_3$	355 689-	653 263-	1 1248-	480 256+	392 239+	1 5329+
$a_4$	153 147-	34 874+	502+	4 841-	25 661-	831-
$a_5$	4 821+	11 258+		963-	2 051+	
		January 19	°		January 27	°
$a_0$	68.1544 543+	27.0602 747+	0.9971 6851+	179.5297 721+	2.9120 360-	0.9281 7754+
$a_1$	16.1188 345+	1.8693 272+	0.0010 1040+	11.0783 488+	5.8528 913-	0.0110 4184-
$a_2$	2997 398+	9156 775-	13 6892-	855 953-	1293 911+	8 8152+
$a_3$	909 615-	404 390-	9212-	451 483+	310 052+	1 1952+
$a_4$	126 198-	95 159+	1206+	9 257-	15 208-	917-
$a_5$	24 155+	5 685+		601-	1 941+	
		January 20	°		January 28	°
$a_0$	84.4718 631+	27.9835 698+	0.9967 2993+	190.5666 881+	8.6058 577-	0.9181 2757+
$a_1$	16.4070 279+	0.0424 511-	0.0019 5551-	11.0385 993+	5.5062 068-	0.0089 5692-
$a_2$	245 498-	9742 122-	15 7145-	436 973+	2152 253+	11 8517+
$a_3$	1172 973-	26 824+	4277-	408 127+	268 371+	8261+
$a_4$	5 799+	123 690+	1690+	12 023-	5 360-	885-
$a_5$	23 921+	5 693-		1 159-	1 499+	
		January 21	°		January 29	°
$a_0$	100.7400 160+	26.9813 886+	0.9931 7711+	201.6884 793+	13.8703 882-	0.9104 2958+
$a_1$	16.0202 953+	1.9362 054-	0.0051 5903-	11.2430 425+	4.9966 402-	0.0063 7416-
$a_2$	3490 033-	8976 994-	15 9819-	1577 629+	2940 225+	13 8012+
$a_3$	921 108-	461 228+	2638+	347 845+	261 473+	4716+
$a_4$	128 051+	91 322+	1743+	17 776-	2 308+	810-
$a_5$	4 477+	11 679-		2 215-	735+	
		January 22	°		January 30	°
$a_0$	116.3324 499+	24.2015 709+	0.9864 6370+	213.1220 700+	18.5465 543-	0.9054 7460+
$a_1$	15.0994 000+	3.5625 438-	0.0082 0645-	11.6547 029+	4.3288 641-	0.0035 0484-
$a_2$	5441 122-	7162 523-	14 1566-	2492 297+	3745 871+	14 7322+
$a_3$	372 227-	711 018+	9738+	254 123+	277 369+	1481+
$a_4$	144 568+	30 462+	1343+	29 210-	6 180+	738-
$a_5$	9 550-	9 146-		3 074-	438-	
		January 23	°		January 31	°
$a_0$	130.8640 168+	19.9960 083+	0.9769 5239+	225.0481 865+	22.4725 203-	0.9034 5041+
$a_1$	13.9525 581+	4.7741 252-	0.0106 9190-	12.2161 790+	3.4942 282-	0.0005 4351-
$a_2$	5786 497-	4938 132-	10 4503-	3048 514+	4610 685+	14 7350+
$a_3$	109 684+	744 372+	1 5156+	106 944+	296 849+	1467-
$a_4$	92 768+	15 119-	666+	45 555-	4 059+	686-
$a_5$	10 560-	3 899-		2 452-	1 929-	

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						
$a_0$	237.5751 106+	25.4757 820-	0.9043 5887+	343.4110 674+	5.5873 015-	0.9693 8618+
$a_1$	12.8385 210+	2.4823 785-	0.0023 3206+	12.2374 230+	6.3449 285+	0.0074 6160+
$a_2$	3071 314+	5506 256+	13 8849+	470 654-	1713 343+	7 7175-
$a_3$	97 880-	293 128+	4211-	403 407+	513 133-	3571-
$a_4$	59 031-	5 890-	643-	20 194+	6 598-	839+
$a_5$	867+	3 131-		2 434-	145-	
February 2						
$a_0$	250.7051 586+	27.3791 243-	0.9080 3090+	355.6435 417+	0.8769 736+	0.9760 4871+
$a_1$	13.4002 466+	1.2971 104-	0.0049 5702+	12.2711 742+	6.5309 451+	0.0058 4456+
$a_2$	2432 133+	6318 889+	12 2382+	836 460+	132 864+	8 2936-
$a_3$	322 504-	238 325+	6793-	459 413+	541 120-	158-
$a_4$	54 825-	22 238-	580-	8 543+	7 579-	574+
$a_5$	5 921+	3 044-		3 154-	412-	
February 3						
$a_0$	264.3114 777+	28.0230 415-	0.9141 3799+	8.0448 421+	7.3662 940+	0.9810 6807+
$a_1$	13.7709 557+	0.0277 494+	0.0071 7762+	12.5781 279+	6.3919 450+	0.0042 0410+
$a_2$	1195 119+	6869 911+	9 8557+	2234 483+	1540 165-	8 0080-
$a_3$	481 025-	119 914-	9140-	460 757+	575 222-	2158+
$a_4$	23 494-	38 010-	461-	6 707-	10 120-	191+
$a_5$	8 772+	1 306-		5 369-	141+	
February 4						
$a_0$	278.1523 706+	27.3002 413-	0.9222 0517+	20.8912 864+	13.5457 025+	0.9844 9485+
$a_1$	13.8606 580+	1.4218 513+	0.0088 5610+	13.1578 813+	5.9073 703+	0.0026 7483+
$a_2$	300 939-	6988 550+	6 8437+	3522 760+	3325 246-	7 2578-
$a_3$	488 504-	43 897-	1 1016-	378 683+	613 146-	2894+
$a_4$	22 279+	44 409-	252-	33 888-	10 111-	179-
$a_5$	6 593+	977+		8 175-	2 103+	
February 5						
$a_0$	291.9369 714+	25.1882 679-	0.9316 3297+	34.4351 056+	19.0584 327+	0.9864 7105+
$a_1$	13.6661 214+	2.7891 184+	0.0098 8430+	13.9583 964+	5.0553 881+	0.0013 0289+
$a_2$	1566 838-	6600 252+	3 3975+	4373 338+	5204 370-	6 5045-
$a_3$	336 295-	211 021-	1 2049-	161 816+	630 680-	2119+
$a_4$	55 397+	38 945-	52+	77 370-	67+	415-
$a_5$	1 585+	2 272+		7 714-	5 418+	
February 6						
$a_0$	305.4184 777+	21.7638 937-	0.9417 3706+	48.8385 089+	23.5308 643+	0.9871 4052+
$a_1$	13.2748 127+	4.0314 205+	0.0102 0443+	14.8468 142+	3.8280 483+	0.0000 4892+
$a_2$	2227 663-	5756 301+	1746-	4316 819+	7041 656-	6 1187-
$a_3$	101 033-	344 106-	1 1843-	219 475-	574 981-	389+
$a_4$	62 176+	27 145-	408+	120 121-	28 356+	446-
$a_5$	2 145-	2 202+		1 468+	7 774+	
February 7						
$a_0$	318.4664 239+	17.1937 480-	0.9518 0969+	64.0831 921+	26.6008 619+	0.9865 7700+
$a_1$	12.8227 668+	5.0696 910+	0.0098 3056+	15.5970 372+	2.2624 492+	0.0011 8102-
$a_2$	2179 314-	4583 144+	3 4729-	2952 407+	8518 354-	6 2639-
$a_3$	125 542+	431 117-	1 0179-	677 179-	385 349-	1456-
$a_4$	50 427+	16 029-	725+	112 359-	69 796+	265-
$a_5$	3 221-	1 405+		16 205+	5 170+	
February 8						
$a_0$	331.0885 342+	11.7103 168-	0.9611 9842+	79.8981 368+	27.9804 376+	0.9847 5238+
$a_1$	12.4431 276+	5.8512 744+	0.0088 5965+	15.9475 282+	0.4736 692+	0.0024 8811-
$a_2$	1532 388-	3207 652+	6 0865-	409 806+	9203 800-	6 8495-
$a_3$	295 247+	481 691-	7216-	962 315-	58 550-	2551-
$a_4$	34 000+	9 078-	893+	23 973-	96 498+	70+
$a_5$	2 803-	526+		20 367+	2 191-	

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.

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	Apparent Right Ascension	Apparent Declination	Horizontal Parallax	Apparent Right Ascension	Apparent Declination	Horizontal Parallax
February 17						
$a_0$	95.7900 536+	27.5373 024+	0.9815 5450+	197.6180 218+	12.0406 676-	0.9160 0863+
$a_1$	15.7413 759+	1.3471 585-	0.0039 3175-	11.2726 791+	5.2598 082-	0.0075 4210-
$a_2$	2416 710-	8822 672-	7 5611-	1159 672+	2753 933+	9 0038+
$a_3$	861 003-	302 393+	2265-	332 398+	290 567+	9512+
$a_4$	82 072+	83 430+	452+	15 560-	4 245-	533-
$a_5$	8 358+	7 760-		1 721-	772+	
February 18						
$a_0$	111.2127 010+	25.3456 829+	0.9768 4851+	209.0381 798+	16.9963 731-	0.9094 5670+
$a_1$	15.0367 260+	2.9914 831-	0.0054 9384-	11.5972 474+	4.6231 645-	0.0054 7730-
$a_2$	4424 145-	7492 818-	7 9605-	2046 247+	3607 909+	11 5352+
$a_3$	456 493-	558 496+	412-	252 572+	280 865+	7365+
$a_4$	120 833+	42 537+	750+	24 394-	220-	611-
$a_5$	4 732-	7 614-		2 390-	14+	
February 19						
$a_0$	125.7729 732+	21.6642 598+	0.9705 6200+	220.8626 305+	21.2306 808-	0.9052 0046+
$a_1$	14.0609 114+	4.3092 869-	0.0070 6826-	12.0713 158+	3.8174 054-	0.0029 7374-
$a_2$	5116 504-	5638 308-	7 6306-	2633 586+	4449 339+	13 3767+
$a_3$	22 876-	654 291+	2658+	131 283+	279 523+	4920+
$a_4$	93 403+	4 092+	863+	37 024-	59-	660-
$a_5$	8 629-	4 383-		2 113-	1 032-	
February 20						
$a_0$	139.3284 240+	16.8565 421+	0.9627 6590+	233.2065 195+	24.5753 093-	0.9036 0699+
$a_1$	13.0637 962+	5.2412 127-	0.0084 8008-	12.6215 541+	2.8442 219-	0.0001 7722-
$a_2$	4711 209-	3694 641-	6 3186-	2784 013+	5277 209+	14 4547+
$a_3$	265 597+	628 523+	6175+	36 662-	268 413+	2282+
$a_4$	48 983+	17 319-	759+	48 532-	5 358-	714-
$a_5$	6 462-	1 428-		77+	2 006-	
February 21						
$a_0$	151.9519 112+	11.3068 429+	0.9537 2329+	246.0979 631+	26.8657 054-	0.9048 9092+
$a_1$	12.2175 989+	5.7992 236-	0.0095 2817-	13.1479 881+	1.7114 026-	0.0027 5364+
$a_2$	3685 120-	1927 191-	4 0190-	2383 542+	6030 181+	14 7090+
$a_3$	398 681+	545 958+	9250+	227 855-	226 787+	566-
$a_4$	16 892+	23 955-	488+	48 524-	15 802-	785-
$a_5$	3 409-	278+		3 900+	2 261-	
February 22						
$a_0$	163.8422 145+	5.3671 283+	0.9438 9059+	259.4570 575+	27.9532 174-	0.9091 0194+
$a_1$	11.6052 337+	6.0303 165-	0.0100 3495-	13.5388 837+	0.4447 806-	0.0056 4704+
$a_2$	2421 751-	430 217-	9616-	1447 961+	6593 060+	14 0655+
$a_3$	433 291+	453 371+	1 1207+	381 295-	141 450+	3708-
$a_4$	355+	22 256-	149+	28 070-	27 525-	866-
$a_5$	1 489-	1 043+		6 879+	1 417-	
February 23						
$a_0$	175.2484 889+	0.6629 942-	0.9338 7304+	273.1004 888+	27.7274 412-	0.9161 0979+
$a_1$	11.2502 692+	5.9887 297-	0.0098 8508-	13.7062 984+	0.9045 496+	0.0083 1423+
$a_2$	1134 593-	806 816+	2 4806+	204 661+	6838 088+	12 4316+
$a_3$	420 228+	374 913+	1 1785+	425 074-	17 989+	7192-
$a_4$	6 717-	16 853-	162-	7 882+	34 636-	920-
$a_5$	812-	1 279+		6 365+	12+	
February 24						
$a_0$	186.4265 687+	6.5351 085-	0.9243 5225+	286.7861 706+	26.1407 462-	0.9255 8606+
$a_1$	11.1463 261+	5.7209 947-	0.0090 4192-	13.6260 397+	2.2637 166+	0.0105 4797+
$a_2$	77 697+	1843 251+	5 9116+	959 545-	6684 405+	9 7236+
$a_3$	385 136+	320 233+	1 1106+	331 856-	119 872-	1 0915-
$a_4$	10 548-	10 308-	392-	40 288+	34 240-	878-
$a_5$	1 015-	1 181+		2 858+	994+	

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 4						
$a_0$	300.2873 848+	23.2239 010-	0.9369 8846+	45.2398 721+	22.5039 138+	0.9960 4835+
$a_1$	13.3521 139+	3.5514 366+	0.0121 3011+	14.9246 437+	4.2388 086+	0.0029 1485-
$a_2$	1684 907-	6129 325+	5 9296+	4017 165+	7036 827-	11 6822-
$a_3$	144 134-	246 828-	1 4494-	220 137-	598 404-	1 0894+
$a_4$	53 945+	28 963-	658-	114 806-	38 488+	21+
$a_5$	701-	1 079+		1 766+	6 844+	
March 5						
$a_0$	313.4619 189+	19.0870 031-	0.9495 6002+	60.5329 146+	25.9837 325+	0.9920 7442+
$a_1$	12.9931 173+	4.6922 069+	0.0128 5485+	15.6170 115+	2.6707 355+	0.0049 2368-
$a_2$	1800 791-	5225 854+	1 2009+	2685 664+	8532 369-	8 4170-
$a_3$	63 637+	352 114-	1 7202-	654 186-	377 891-	1 0893+
$a_4$	49 568+	23 522-	202-	105 390-	74 829+	476-
$a_5$	2 430-	660+		15 421+	3 613+	
March 6						
$a_0$	326.2860 347+	13.9097 085-	0.9623 6091+	76.3440 773+	27.7712 861+	0.9864 1322+
$a_1$	12.6706 621+	5.6226 641+	0.0125 7084+	15.9234 475+	0.8826 247+	0.0062 9938-
$a_2$	1336 841-	4034 955+	4 0607-	245 940+	9180 892-	5 4416-
$a_3$	237 476-	439 788-	1 8060-	919 568-	46 209-	8898+
$a_4$	36 982+	20 366-	459+	21 496-	93 270+	695-
$a_5$	2 654-	315+		19 073+	3 136-	
March 7						
$a_0$	338.8501 930+	7.9295 328-	0.9743 4968+	92.1999 199+	27.7402 141+	0.9796 5170+
$a_1$	12.4880 021+	6.2897 297+	0.0112 3527+	15.6976 911+	0.9316 815-	0.0071 4861-
$a_2$	429 062-	2596 513+	9 1815-	2450 467-	8791 560-	3 1883-
$a_3$	358 885+	518 096-	1 6201-	820 867-	293 017+	6047+
$a_4$	23 793+	18 972-	1168+	77 708+	75 504+	658-
$a_5$	2 625-	306+		7 922+	7 532-	
March 8						
$a_0$	351.3332 942+	1.4338 280-	0.9845 1647+	107.5790 405+	25.9654 755+	0.9722 3815+
$a_1$	12.5180 588+	6.6461 680+	0.0089 5972+	14.9963 684+	2.5756 519-	0.0076 3121-
$a_2$	764 153+	931 418+	13 3256-	4367 993-	7535 059-	1 7626-
$a_3$	427 356+	590 707-	1 1421-	437 694-	520 100+	3374+
$a_4$	11 106+	17 626-	1671+	114 578+	36 059+	448-
$a_5$	3 399-	670+		4 287-	6 706-	
March 9						
$a_0$	3.9712 747+	5.2447 154+	0.9920 4613+	122.1058 692+	22.6912 629+	0.9644 5994+
$a_1$	12.8018 370+	6.6485 251+	0.0060 1887+	14.0351 443+	3.9155 597-	0.0079 0043-
$a_2$	2078 923+	939 808-	15 7471-	5037 001-	5825 490-	1 0103-
$a_3$	436 617+	653 993-	4584-	24 590-	599 084+	1573+
$a_4$	5 471-	14 581-	1751+	89 641+	2 367+	161-
$a_5$	5 461-	1 538+		8 102-	3 465-	
March 10						
$a_0$	17.0235 724+	11.7325 562+	0.9964 6195+	135.6430 083+	18.2529 528+	0.9564 7261+
$a_1$	13.3436 848+	6.2593 044+	0.0028 2023+	13.0521 744+	4.9017 153-	0.0080 6173-
$a_2$	3301 263+	2973 957-	16 0833-	4654 135-	4048 601-	6265-
$a_3$	358 795+	695 920-	2551+	253 953+	575 409+	945+
$a_4$	33 180-	7 326-	1374+	47 899+	14 380-	114+
$a_5$	7 931-	3 255+		6 209-	853-	
March 11						
$a_0$	30.7291 519+	17.6244 658+	0.9976 9489+	148.2593 336+	13.0023 951+	0.9483 5882+
$a_1$	14.0943 395+	5.4544 368+	0.0002 8313-	12.2135 918+	5.5449 894-	0.0081 5408-
$a_2$	4098 878+	5073 139-	14 5144-	3666 953-	2417 101-	2683-
$a_3$	147 398+	691 294-	8095+	385 092+	510 114+	1435+
$a_4$	75 330-	8 855+	708+	17 024+	18 141-	312+
$a_5$	7 137-	5 689+		3 366-	418+	

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 20						
$a_0$	160.1461 051+	7.2649 348+	0.9401 9538+	255.0270 929+	27.6087 076-	0.9038 8727+
$a_1$	11.6008 575+	5.8824 223-	0.0081 5219-	13.3311 811+	0.8607 369-	0.0030 4748+
$a_2$	2443 135-	991 382-	3522+	1401 287+	6351 390+	13 7564+
$a_3$	420 606+	441 964+	2722+	344 055-	134 709+	2654+
$a_4$	640+	15 783-	398+	26 056-	25 454-	662-
$a_5$	1 529-	806+		6 064+	761-	
March 21						
$a_0$	171.5446 208+	1.3260 730+	0.9321 0961+	268.4619 980+	27.8234 560-	0.9083 3030+
$a_1$	11.2379 046+	5.9540 197-	0.0079 8419-	13.5008 311+	0.4393 931+	0.0058 5189+
$a_2$	1192 724-	247 893+	1 4064+	273 599+	6595 189+	14 1495+
$a_3$	408 300+	386 887+	4345+	387 799-	25 931+	14+
$a_4$	6 665-	11 627-	370+	5 558+	29 214-	848-
$a_5$	850-	806+		5 792+	394+	
March 22						
$a_0$	182.7033 316+	4.5655 508-	0.9243 1321+	281.9525 440+	26.7248 328-	0.9155 8880+
$a_1$	11.1187 588+	5.7926 229-	0.0075 5775-	13.4443 271+	1.7547 226+	0.0086 4827+
$a_2$	16 289-	1346 871+	2 9284+	798 459-	6501 692+	13 6384+
$a_3$	373 073+	348 340+	5846+	309 270-	86 633-	3378-
$a_4$	10 689-	7 519-	257+	35 083+	26 891-	1052-
$a_5$	987-	633+		2 898+	1 004+	
March 23						
$a_0$	193.8566 013+	10.1893 411-	0.9171 0932+	295.2898 964+	24.3311 929-	0.9255 5660+
$a_1$	11.2226 534+	5.4214 384-	0.0067 8640-	13.2073 333+	3.0188 166+	0.0112 3249+
$a_2$	1028 923+	2353 122+	4 8316+	1486 862-	6090 535+	11 9881+
$a_3$	320 100+	324 399+	6882+	141 739-	184 318-	7611-
$a_4$	15 583-	4 253-	99+	49 116+	21 546-	1226-
$a_5$	1 566-	294+		225-	701+	
March 24						
$a_0$	205.2124 421+	15.3434 233-	0.9108 7590+	308.3392 587+	20.7238 390-	0.9378 9954+
$a_1$	11.5174 513+	4.8550 489-	0.0056 0963-	12.8869 711+	4.1733 595+	0.0133 5272+
$a_2$	1880 022+	3303 767+	6 9507+	1619 756-	5415 324+	8 9680+
$a_3$	241 819+	310 012+	7278+	51 495+	263 962-	1 2579-
$a_4$	23 656-	2 656-	67-	47 227+	17 973-	1269-
$a_5$	2 096-	258-		1 877-	142-	
March 25						
$a_0$	216.9395 022+	19.8373 857-	0.9060 3345+	321.0739 387+	16.0371 548-	0.9520 1057+
$a_1$	11.9554 909+	4.1024 841-	0.0040 0383-	12.5964 202+	5.1699 749+	0.0147 1811+
$a_2$	2442 481+	4215 298+	9 0891+	1200 752-	4514 155+	4 4400+
$a_3$	126 457+	296 387+	7005+	221 431+	337 690-	1 7769-
$a_4$	34 736-	3 891-	222-	37 410+	18 864-	1038-
$a_5$	1 789-	983-		2 188-	892-	
March 26						
$a_0$	229.1482 343+	23.4891 888-	0.9030 0636+	333.5759 489+	10.4515 090-	0.9669 8462+
$a_1$	12.4671 371+	3.1725 573-	0.0019 8474-	12.4365 685+	5.9635 069+	0.0150 3145+
$a_2$	2595 417+	5071 262+	11 0530+	333 885-	3378 925+	1 4937-
$a_3$	29 234-	270 646+	6115+	349 166+	422 154-	2 2060-
$a_4$	44 470-	8 939-	363-	26 521+	23 661-	405-
$a_5$	148+	1 590-		2 225-	1 069-	
March 27						
$a_0$	241.8675 575+	26.1286 080-	0.9021 8443+	346.0164 752+	4.1947 981-	0.9816 4206+
$a_1$	12.9597 400+	2.0814 813-	0.0003 9476+	12.4840 360+	6.5026 472+	0.0140 5465+
$a_2$	2242 319+	5813 623+	12 6649+	850 547+	1959 736+	8 3231-
$a_3$	203 759-	218 999+	4664+	432 503+	527 083-	2 3780-
$a_4$	44 051-	17 215-	504-	15 865+	29 423-	620+
$a_5$	3 445+	1 590-		3 086-	393-	

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 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 5						
$a_0$	358-6300 942+	2-4481 328+	0-9946 3280+	118-8592 701+	23-3779 159+	0-9702 9425+
$a_1$	12-7886 964+	6-7245 058+	0-0117 0144+	14-3284 849+	3-6505 580-	0-0116 2939-
$a_2$	2212 465+	197 943+	15 0496-	5649 827-	6090 796-	9708+
$a_3$	463 707+	647 687-	2 1276-	37 913-	649 119+	1 0397+
$a_4$	1 057+	31 881-	1778+	105 705+	4 478-	1078-
$a_5$	5 523-	1 325+		10 110-	3 925-	
April 6						
$a_0$	11-6859 612+	9-1246 087+	1-0046 3431+	132-6285 404+	19-1823 498+	0-9588 5513+
$a_1$	13-3679 589+	6-5577 021+	0-0081 2447+	13-2243 752+	4-6777 314-	0-0111 6644-
$a_2$	3554 678+	1923 228-	20 3401-	5230 668-	4209 428-	3 4508+
$a_3$	410 752+	760 260-	1 3978-	285 205+	594 042+	6048+
$a_4$	26 605-	25 766-	2606+	53 665+	23 189-	836-
$a_5$	9 068-	4 224+		7 431-	322-	
April 7						
$a_0$	25-4468 956+	15-4118 078+	1-0106 1107+	145-3629 928+	14-1407 288+	0-9480 8590+
$a_1$	14-1869 432+	5-9367 883+	0-0037 4153+	12-2815 579+	5-3508 389-	0-0103 2827-
$a_2$	4536 228+	4316 368-	22 9667-	4127 336-	2569 542-	4 7735+
$a_3$	213 418+	818 999-	3282-	427 647+	498 986+	2698+
$a_4$	74 507-	4 686-	2700+	16 826+	24 064-	525-
$a_5$	9 837-	7 880+		3 768-	1 213+	
April 8						
$a_0$	40-1003 688+	20-8353 788+	1-0120 5009+	157-2758 876+	8-5805 491+	0-9382 5672+
$a_1$	15-1235 029+	4-8298 825+	0-0008 4217-	11-5892 339+	5-7240 706-	0-0093 1360-
$a_2$	4630 305+	6722 447-	22 3524-	2781 041-	1204 785-	5 2776+
$a_3$	177 623-	757 987-	7728+	458 578+	415 027+	611+
$a_4$	128 904-	36 311+	2015+	1 412-	17 638-	221-
$a_5$	735-	9 738+		1 527-	1 473+	
April 9						
$a_0$	55-6561 760+	24-9218 229+	1-0090 7010+	168-6325 813+	2-7758 862+	0-9294 7478+
$a_1$	15-9443 674+	3-2773 856+	0-0050 0019-	11-1692 719+	5-8468 387-	0-0082 4859-
$a_2$	3316 563+	8680 727-	18 8592-	1428 996-	50 779-	5 3358+
$a_3$	690 823-	517 839-	1 5845+	438 126+	359 059+	253-
$a_4$	133 302-	88 042+	902+	8 611-	10 131-	29+
$a_5$	16 990+	5 506+		719-	1 201+	
April 10						
$a_0$	71-8514 865+	27-2887 066+	1-0023 5146+	179-7018 331+	3-0410 176-	0-9217 5753+
$a_1$	16-3556 155+	1-4238 473+	0-0082 6064-	11-0111 065+	5-7527 296-	0-0071 8786-
$a_2$	615 413+	9650 844-	13 5974-	173 449-	977 631+	5 2827+
$a_3$	1050 322-	115 899-	1 9371+	396 394+	330 283+	111-
$a_4$	39 672-	116 257+	161-	11 970-	4 051-	203+
$a_5$	24 118+	4 009-		857-	738+	
April 11						
$a_0$	88-1620 557+	27-7471 044+	0-9929 2317+	190-7339 514+	8-6632 871-	0-9150 9886+
$a_1$	16-1597 768+	0-4965 995-	0-0104 0553-	11-0901 177+	5-4593 708-	0-0061 2650-
$a_2$	2531 568-	9341 522-	7 9048-	935 340+	1951 568+	5 3742+
$a_3$	975 023-	305 534+	1 8585+	339 547+	321 129+	729+
$a_4$	86 837+	93 135+	861-	16 196-	281-	292+
$a_5$	10 714+	10 233-		1 518-	162+	
April 12						
$a_0$	103-9809 285+	26-3551 963+	0-9819 0439+	201-9497 865+	13-8954 001-	0-9095 1999+
$a_1$	15-4010 306+	2-2411 048-	0-0114 6347-	11-3718 121+	4-9727 506-	0-0050 1808-
$a_2$	4828 973-	7968 820-	2 8547-	1841 593+	2914 909+	5 7687+
$a_3$	529 517-	576 454+	1 5014+	259 202+	321 218+	1924+
$a_4$	136 906+	39 354+	1133-	23 976-	613+	301+
$a_5$	5 305-	8 744-		2 171-	559-	

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 21						
$a_0$	213.5290 632+	18.5445 325-	0.9051 0103+	316.5334 095+	17.5946 755-	0.9362 4822+
$a_1$	11.8072 153+	4.2934 383-	0.0037 9458-	12.3674 541+	4.7027 969+	0.0132 1009+
$a_2$	2453 528+	3876 663+	6 5245+	1454 153-	4515 412+	10 5576+
$a_3$	141 683+	317 631+	3146+	212 504+	279 121-	8292-
$a_4$	35 440-	2 160-	242+	39 023-	9 227-	1434-
$a_5$	1 993-	1 368-		2 060-	974-	
April 22						
$a_0$	225.5920 563+	22.4188 941-	0.9019 9277+	328.7803 950+	12.4692 696-	0.9504 1681+
$a_1$	12.3252 554+	3.4243 651-	0.0023 8564-	12.1549 540+	5.5179 640+	0.0150 1544+
$a_2$	2645 867+	4802 893+	7 6098+	603 116-	3612 906+	7 2075+
$a_3$	18 917-	294 993+	4125+	348 157+	326 312-	1 4112-
$a_4$	46 287-	9 173-	133+	28 709+	14 326-	1513-
$a_5$	95-	1 948-		1 734-	1 916-	
April 23						
$a_0$	238.1753 684+	25.3345 828-	0.9004 1069+	340.9125 505+	6.6242 705-	0.9659 9675+
$a_1$	12.8301 956+	2.3799 318-	0.0007 3462-	12.1493 936+	6.1359 630+	0.0159 7298+
$a_2$	2310 379+	5613 295+	8 9224+	596 317+	2528 794+	2 0754+
$a_3$	203 046-	238 928+	4665+	445 428+	402 910-	2 0317-
$a_4$	47 181-	19 305-	11-	20 458+	24 300-	1222-
$a_5$	3 386+	1 776-		2 084-	2 178-	
April 24						
$a_0$	251.2119 178+	27.1314 003-	0.9006 1486+	353.1679 561+	0.2783 669-	0.9819 6188+
$a_1$	13.2141 816+	1.1942 029-	0.0011 8939+	12.4094 244+	6.5100 409+	0.0157 2957+
$a_2$	1452 115+	6196 445+	10 3102+	2034 627+	1152 383+	4 7269-
$a_3$	356 287-	144 608+	4630+	505 211+	521 319-	2 5393-
$a_4$	29 484-	28 518-	180-	10 865+	35 847-	389-
$a_5$	6 331+	625-		4 164-	1 248-	
April 25						
$a_0$	264.5333 669+	27.6944 122-	0.9028 7977+	5.8320 343+	6.2910 710+	0.9969 6095+
$a_1$	13.3890 902+	0.0767 504+	0.0033 8314+	12.9701 720+	6.5691 628+	0.0140 0678+
$a_2$	269 851+	6452 917+	11 5850+	3573 915+	639 279-	12 5365-
$a_3$	410 991-	25 137+	3920+	504 522+	675 474-	2 7074-
$a_4$	3 584+	31 572-	378-	9 159-	43 070-	959+
$a_5$	6 220+	889+		8 548-	1 642+	
April 26						
$a_0$	277.9093 234+	26.9729 248-	0.9074 5683+	19.2082 794+	12.7246 157+	1.0094 5294+
$a_1$	13.3243 032+	1.3626 915+	0.0058 0264+	13.8283 694+	6.2222 638+	0.0107 2565+
$a_2$	879 332-	6347 849+	12 5271+	4946 857+	2907 843-	20 0384-
$a_3$	336 153-	91 788-	2422+	379 959+	828 257-	2 3180-
$a_4$	35 349+	26 683-	611-	53 056-	35 800-	2430+
$a_5$	3 182+	1 716+		13 097-	6 974+	
April 27						
$a_0$	291.1159 312+	24.9871 239-	0.9145 3028+	33.5627 150+	18.5703 869+	1.0179 6727+
$a_1$	13.0633 179+	2.5949 096+	0.0083 5628+	14.9039 628+	5.3813 912+	0.0061 1994+
$a_2$	1643 954-	5929 612+	12 8786+	5636 558+	5537 566-	25 5057-
$a_3$	164 847-	181 534-	10-	39 319+	898 473-	1 3182-
$a_4$	50 774+	17 674-	884-	124 477-	184-	3366+
$a_5$	175-	1 389+		9 278-	12 832+	
April 28						
$a_0$	304.0034 288+	21.8190 349-	0.9241 6548+	49.0208 898+	23.3094 391+	1.0214 3848+
$a_1$	12.7052 928+	3.7199 957+	0.0108 9635+	15.9886 623+	4.0106 777+	0.0007 5818+
$a_2$	1835 739-	5292 883+	12 3363+	4913 995+	8105 168-	27 4438-
$a_3$	35 475+	238 965-	3544-	539 890-	771 257-	645+
$a_4$	49 046+	10 564-	1179-	177 034-	68 177+	3262+
$a_5$	1 903-	282+		11 049+	12 536+	

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 7</b>			<b>May 15</b>	
$a_0$	65.4303 641+	26.4405 456+	1.0194 9134+	177.0680 753+	1.8545 749-	0.9236 9772+
$a_1$	16.7442 269+	2.1917 930+	0.0045 8063-	10.9959 253+	5.7363 828-	0.0091 8687-
$a_2$	2343 648+	9883 980-	25 3262-	631 795-	870 304+	9 4354+
$a_3$	1126 847-	379 551-	1 3932+	444 393+	304 054+	324-
$a_4$	114 460-	134 684+	2181+	13 353-	6 401-	370-
$a_5$	31 122+	1 164+		630-	1 384+	
		<b>May 8</b>			<b>May 16</b>	
$a_0$	82.2879 375+	27.6195 703+	1.0125 3920+	188.0438 621+	7.4740 234-	0.9154 4745+
$a_1$	16.8446 694+	0.1555 730+	0.0091 4068-	10.9972 276+	5.4729 746-	0.0073 2429-
$a_2$	1410 618-	1.0203 284-	19 8837-	614 984+	1757 924+	9 1243+
$a_3$	1278 024-	163 683+	2 2671+	384 282+	291 871+	1786-
$a_4$	54 054+	137 698+	697+	16 353-	609+	113-
$a_5$	22 438+	11 781-		1 312-	645+	
		<b>May 9</b>			<b>May 17</b>	
$a_0$	98.8713 919+	26.7837 747+	1.0016 4381+	199.1392 498+	12.7418 933-	0.9090 1659+
$a_1$	16.2119 526+	1.7867 926-	0.0124 0952-	11.2283 108+	5.0332 640-	0.0055 5753-
$a_2$	4696 156-	9004 592-	12 7033-	1656 564+	2643 654+	8 5269+
$a_3$	850 690-	595 426+	2 5311+	305 237+	300 220+	2218-
$a_4$	164 990+	73 684+	559-	23 034-	3 945+	86+
$a_5$	1 827-	13 652-		2 201-	278-	
		<b>May 10</b>			<b>May 18</b>	
$a_0$	114.5449 762+	24.1620 686+	0.9882 1148+	210.5612 171+	17.4804 032-	0.9042 9044+
$a_1$	15.0825 843+	3.3864 290-	0.0142 1332-	11.6408 804+	4.4130 295-	0.0039 1523-
$a_2$	6277 642-	6912 922-	5 4679-	2411 974+	3565 214+	7 9174+
$a_3$	215 678-	757 100+	2 2887+	190 965+	312 592+	1854-
$a_4$	148 343+	4 134+	1272-	34 577-	2 615+	222+
$a_5$	13 063-	7 303-		2 469-	1 366-	
		<b>May 11</b>			<b>May 19</b>	
$a_0$	128.9917 564+	20.1597 406+	0.9736 6751+	222.4586 869+	21.5055 273-	0.9011 5062+
$a_1$	13.8151 600+	4.5438 742-	0.0146 7125-	12.1655 013+	3.6058 474-	0.0023 7849-
$a_2$	6165 725-	4689 668-	6286+	2752 567+	4504 995+	7 4965+
$a_3$	248 103+	704 073+	1 7656+	28 834+	308 853+	945-
$a_4$	79 869+	31 171-	1464-	47 881-	4 372-	292+
$a_5$	10 777-	1 280-		985-	2 319-	
		<b>May 12</b>			<b>May 20</b>	
$a_0$	142.2220 634+	15.2140 618+	0.9592 2105+	234.8974 417+	24.6306 591-	0.8995 1525+
$a_1$	12.6830 108+	5.2836 909-	0.0140 7444-	12.7050 243+	2.6151 011-	0.0008 9585-
$a_2$	5049 951-	2777 093-	5 0515+	2541 816+	5382 067+	7 3883+
$a_3$	462 779+	568 292+	1 1725+	170 508-	268 109+	244+
$a_4$	26 207+	36 354-	1316-	53 551-	16 426-	296+
$a_5$	5 525-	1 581+		2 631+	2 475-	
		<b>May 13</b>			<b>May 21</b>	
$a_0$	154.4484 251+	9.7060 135+	0.9457 5584+	247.8345 047+	26.6826 327-	0.8993 6363+
$a_1$	11.8195 783+	5.6823 721-	0.0127 6508-	13.1421 345+	1.4660 616-	0.0006 0099+
$a_2$	3559 507-	1274 436-	7 7883+	1735 358+	6063 015+	7 6374+
$a_3$	514 372+	439 103+	6433+	356 285-	178 323+	1449+
$a_4$	537-	27 829-	1014-	39 882-	29 321-	236+
$a_5$	2 074-	2 247+		6 481+	1 324-	
		<b>May 14</b>			<b>May 22</b>	
$a_0$	165.9632 288+	3.9375 499+	0.9338 2377+	261.1112 064+	27.5276 250-	0.9007 4522+
$a_1$	11.2607 383+	5.8155 370-	0.0110 5502-	13.3696 092+	0.2123 499-	0.0021 8141+
$a_2$	2040 271-	101 596-	9 1199+	492 243+	6408 804+	8 2102+
$a_3$	492 309+	350 108+	2377+	450 552-	48 918+	2412+
$a_4$	10 271-	16 362-	679-	5 853-	36 029-	117+
$a_5$	687-	1 973+		7 316+	655+	

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 23						
$a_0$	274.4851 310+	27.0977 400-	0.9037 7294+	13.5604 136+	10.2893 580+	0.9929 1157+
$a_1$	13.3342 055+	1.0700 041+	0.0039 0050+	13.1135 550+	6.2106 679+	0.0144 3560+
$a_2$	821 226-	6346 003+	8 9985+	4599 062+	1695 450-	8 1596-
$a_3$	402 440-	87 805-	2896+	512 299+	684 580-	2 5711-
$a_4$	31 806+	32 291-	58-	21 731-	46 280-	81-
$a_5$	4 338+	2 131+		11 508-	2 218+	
May 24						
$a_0$	287.7005 843+	25.4049 321-	0.9086 0168+	27.1817 806+	16.2576 167+	1.0062 7330+
$a_1$	13.0641 153+	2.3010 127+	0.0057 8481+	14.1726 073+	5.6488 088+	0.0120 2906+
$a_2$	1794 384-	5910 237+	9 8258+	5890 032+	4004 860-	15 8763-
$a_3$	234 089-	195 581-	2683+	308 458+	843 473-	2 6130-
$a_4$	53 151+	21 067-	284-	82 255-	36 352-	1387+
$a_5$	309+	2 235+		15 209-	9 294+	
May 25						
$a_0$	300.5671 982+	22.5343 371-	0.9153 9304+	41.9644 904+	21.4188 864+	1.0164 6731+
$a_1$	12.6564 240+	3.4170 751+	0.0078 1908+	15.4026 574+	4.5849 081+	0.0081 2546+
$a_2$	2174 806-	5219 478+	10 4513+	6168 520+	6660 165-	22 8388-
$a_3$	19 745-	258 064-	1561+	166 024-	892 393-	2 0460-
$a_4$	53 700+	9 609-	562-	167 050-	12 052+	2830+
$a_5$	2 030-	1 228+		4 261-	15 880+	
May 26						
$a_0$	313.0093 341+	18.6219 587-	0.9242 6724+	57.9502 661+	25.2513 321+	1.0221 3261+
$a_1$	12.2360 039+	4.3803 203+	0.0099 3371+	16.5176 338+	2.9979 136+	0.0030 5729+
$a_2$	1932 252-	4399 910+	10 5726+	4625 144+	9105 344-	27 2567-
$a_3$	174 549+	285 011-	675-	861 494-	687 811-	8809-
$a_4$	42 852+	3 467-	882-	191 207-	97 645+	3550+
$a_5$	2 330-	152-		23 761+	11 943+	
May 27						
$a_0$	325.0736 199+	13.8305 104-	0.9352 4264+	74.8275 206+	27.2808 891+	1.0224 1164+
$a_1$	11.9178 946+	5.1733 349+	0.0119 9269+	17.1196 256+	1.0155 132+	0.0025 1612-
$a_2$	1174 828-	3522 535+	9 8306+	1133 136+	1.0463 126-	27 7816-
$a_3$	322 987+	301 125-	4210-	1382 375-	186 736-	5756+
$a_4$	31 032+	4 358-	1212-	57 458-	159 840+	3143+
$a_5$	1 706-	1 406-		35 912+	4 322-	
May 28						
$a_0$	336.9092 630+	8.3356 109-	0.9481 6418+	91.9200 678+	27.2469 677+	1.0172 0633+
$a_1$	11.7913 854+	5.7850 573+	0.0137 8402+	16.9264 878+	1.0713 709-	0.0077 7397-
$a_2$	36 701-	2578 919+	7 8328+	2998 283-	1.0108 317-	24 2092-
$a_3$	430 233+	333 140-	9101-	1265 117-	402 861+	1 8517+
$a_4$	22 767+	11 597-	1467-	131 512+	132 558+	1838+
$a_5$	1 363-	2 315-		13 161+	16 011-	
May 29						
$a_0$	348.7421 418+	2.3273 668-	0.9626 2581+	108.4346 828+	25.2167 058+	1.0072 1499+
$a_1$	11.9215 386+	6.1951 028+	0.0150 1884+	16.0064 557+	2.9271 557-	0.0119 8677-
$a_2$	1377 052+	1486 710+	4 2221+	5873 987-	8265 181-	17 5981-
$a_3$	507 071+	402 818-	1 5073-	620 888-	774 190+	2 5830+
$a_4$	16 631+	23 559-	1491-	189 957+	47 766+	305+
$a_5$	2 338-	2 593-		10 680-	13 391-	
May 30						
$a_0$	0.8535 220+	3.9735 099+	0.9779 0122+	123.8095 786+	21.5438 885+	0.9937 2975+
$a_1$	12.3545 497+	6.3608 805+	0.0153 5133+	14.7160 291+	4.3355 151-	0.0147 1939-
$a_2$	2974 817+	110 846+	1 1813-	6704 747-	5789 917-	9 7023-
$a_3$	548 251+	522 325-	2 1209-	29 367+	835 902+	2 6873+
$a_4$	6 020+	37 331-	1078-	129 527+	19 095-	862-
$a_5$	5 670-	1 513-		14 744-	5 235-	

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 8						
$a_0$	137.8695 478+	16.7105 389+	0.9783 0023+	231.7173 947+	24.0140 610-	0.9000 9938+
$a_1$	13.4283 338+	5.2529 770-	0.0158 8824-	12.5682 907+	2.8325 869-	0.0013 0181-
$a_2$	5987 131-	3448 891-	2 1758-	2700 787+	5155 034+	9 3002+
$a_3$	403 081+	710 416+	2 3240+	95 256-	279 606+	3826-
$a_4$	54 581+	43 635-	1442-	55 932-	9 626-	124+
$a_5$	9 099-	325+		1 112+	2 828-	
June 9						
$a_0$	150.7440 248+	11.1793 834+	0.9624 1239+	244.5407 564+	26.3044 292-	0.8996 9057+
$a_1$	12.3691 205+	5.7469 194-	0.0156 8395-	13.0580 591+	1.7229 617-	0.0004 4840+
$a_2$	4541 269-	1576 034-	3 9278+	2090 528+	5907 731+	8 2299+
$a_3$	533 451+	540 391+	1 7346+	305 375-	213 152+	3317-
$a_4$	10 035+	40 882-	1529-	50 430-	24 399-	231+
$a_5$	3 832-	2 417+		5 530+	2 279-	
June 10						
$a_0$	162.7129 838+	5.3250 533+	0.9472 7939+	257.7728 409+	27.4179 704-	0.9009 3110+
$a_1$	11.6230 030+	5.9151 525-	0.0144 3922-	13.3671 477+	0.4883 668-	0.0020 0412+
$a_2$	2918 902-	175 900-	8 2198+	927 327+	6377 947+	7 3752+
$a_3$	536 824+	401 187+	1 1169+	450 445-	93 850+	2374-
$a_4$	8 195-	28 302-	1332-	21 291-	36 183-	286+
$a_5$	1 208-	2 625+		7 919+	361-	
June 11						
$a_0$	174.0968 387+	0.5701 381-	0.9337 6052+	271.1863 395+	27.2628 120-	0.9036 5186+
$a_1$	11.1963 886+	5.8399 851-	0.0125 1348-	13.4129 201+	0.8007 260+	0.0034 1940+
$a_2$	1369 609-	884 131+	10 7807+	472 345-	6438 824+	6 8346+
$a_3$	492 377+	313 947+	5827+	457 463-	53 319-	1206-
$a_4$	13 694-	14 995-	1027-	19 924+	37 724-	278+
$a_5$	539-	2 124+		5 977+	1 717+	
June 12						
$a_0$	185.2040 808+	6.2916 026-	0.9223 7311+	284.5088 690+	25.8271 361-	0.9077 4543+
$a_1$	11.0644 326+	5.5739 119-	0.0102 2362-	13.1921 655+	2.0582 653+	0.0047 6127+
$a_2$	20 004+	1757 257+	11 9221+	1665 404-	6069 786+	6 6371+
$a_3$	431 972+	274 765+	1726+	320 430-	186 535-	69-
$a_4$	16 123-	4 275-	717-	49 966+	28 511-	198+
$a_5$	984-	1 372+		1 617+	2 592+	
June 13						
$a_0$	196.3120 004+	11.6626 026-	0.9133 5180+	297.5076 094+	23.1831 376-	0.9131 7170+
$a_1$	11.1910 828+	5.1410 562-	0.0078 1609-	12.7837 469+	3.2061 532+	0.0060 9456+
$a_2$	1209 337+	2569 643+	12 0183+	2310 880-	5365 100+	6 7305+
$a_3$	357 104+	270 829+	1128-	106 300-	274 950-	748+
$a_4$	21 019-	2 705+	444-	57 065+	15 107-	43+
$a_5$	1 935-	423+		1 672-	2 056+	
June 14						
$a_0$	207.6574 318+	16.5192 986-	0.9067 2182+	310.0551 775+	19.4692 745-	0.9199 4722+
$a_1$	11.5307 055+	4.5445 865-	0.0054 6400-	12.3116 695+	4.1916 722+	0.0074 6480+
$a_2$	2135 123+	3402 613+	11 4209+	2304 261-	4470 182+	6 9733+
$a_3$	253 301+	285 184+	2888-	104 653+	315 525-	940+
$a_4$	31 062-	4 939+	215-	47 762+	4 728-	184-
$a_5$	2 641-	774-		2 607-	814+	
June 15						
$a_0$	219.4236 094+	20.6946 890-	0.9023 6888+	322.1514 018+	14.8625 279-	0.9281 1689+
$a_1$	12.0199 761+	3.7769 217-	0.0032 7505-	11.9000 151+	4.9895 655+	0.0088 8028+
$a_2$	2682 108+	4280 055+	10 4315+	1729 863-	3503 362+	7 1356+
$a_3$	103 090+	296 462+	3734-	269 924+	327 037-	218+
$a_4$	45 160-	1 038+	26-	34 337+	753-	471-
$a_5$	1 947-	2 058-		2 068-	470-	

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 24						
$a_0$	333.9086 499+	9.5554 523-	0.9377 0820+	84.4148 054+	27.5286 718+	1.0165 1209+
$a_1$	11.6477 211+	5.5915 892+	0.0102 9510+	16.9971 941+	0.2117 266-	0.0005 2397-
$a_2$	734 747-	2513 005+	6 9086+	342 813-	1.0345 225-	24 9099-
$a_3$	387 000+	335 356-	1662-	1367 589-	45 657+	2873-
$a_4$	24 092+	3 247-	790-	20 220+	152 724+	3036+
$a_5$	1 349-	1 519-		28 439+	8 593-	
June 25						
$a_0$	345.5238 706+	3.7465 747-	0.9486 6964+	101.2458 252+	26.3014 013+	1.0134 9875+
$a_1$	11.6258 338+	5.9915 244+	0.0115 9537+	16.5406 337+	2.2102 890-	0.0054 7057-
$a_2$	557 372+	1472 232+	5 9271+	4039 606-	9378 667-	23 9679-
$a_3$	469 810+	363 933-	4841-	1016 414-	566 686+	9543+
$a_4$	17 798+	11 046-	1086-	164 168+	103 957+	2461+
$a_5$	1 438-	2 220-		2 300+	15 371-	
June 26						
$a_0$	357.2540 585+	2.3544 530+	0.9607 9845+	117.2975 036+	23.2187 728+	1.0057 5143+
$a_1$	11.8846 492+	6.1712 626+	0.0125 9207+	15.4945 882+	3.8821 142-	0.0098 7937-
$a_2$	2059 324+	291 890+	3 8178+	6082 032-	7208 999-	19 6651-
$a_3$	525 555+	430 312-	9247-	345 820-	831 295+	1 9497+
$a_4$	11 429+	22 577-	1262-	167 337+	24 213+	1269+
$a_5$	3 238-	2 251-		13 317-	10 590-	
June 27						
$a_0$	9.3980 149+	8.5093 906+	0.9736 6721+	132.1647 084+	18.7002 505+	0.9941 1320+
$a_1$	12.4571 287+	6.0903 928+	0.0130 2769+	14.2347 120+	5.0701 273-	0.0131 7676-
$a_2$	3672 324+	1157 154-	2898+	6249 300-	4675 635-	13 0935-
$a_3$	536 412+	542 198-	1 4408-	190 545+	826 294+	2 4509+
$a_4$	3 773-	34 755-	1168-	96 372+	28 043-	11+
$a_5$	7 524-	726-		12 388-	3 463-	
June 28						
$a_0$	22.2748 874+	14.4263 000+	0.9865 6814+	145.8019 433+	13.2420 385+	0.9798 7228+
$a_1$	13.3472 398+	5.6820 425+	0.0126 0665+	13.0743 764+	5.7703 098-	0.0150 5982-
$a_2$	5183 602+	2999 756-	4 7166-	5223 338-	2399 437-	5 7620-
$a_3$	442 988+	685 879-	1 9233-	455 356+	682 018+	2 4403+
$a_4$	41 799-	39 825-	647-	34 369+	43 984-	890-
$a_5$	13 102-	3 716+		6 676-	842+	
June 29						
$a_0$	36.1792 960+	19.7361 681+	0.9985 0433+	158.4022 910+	7.2956 726+	0.9644 7139+
$a_1$	14.4935 877+	4.8622 638+	0.0110 6036+	12.1767 304+	6.0627 625-	0.0155 1581-
$a_2$	6129 982+	5259 261-	10 8441-	3717 675-	608 735-	1 0117+
$a_3$	145 542+	803 927-	2 1962-	528 440+	515 443+	2 0699+
$a_4$	112 492-	21 817-	349+	1 978+	38 904-	1312-
$a_5$	12 416-	10 964+		2 633-	2 400+	
June 30						
$a_0$	51.2879 450+	23.9910 279+	1.0082 6417+	170.2600 324+	1.2199 305+	0.9492 5062+
$a_1$	15.7120 618+	3.5659 931+	0.0082 4666+	11.5912 041+	6.0442 381-	0.0147 4504-
$a_2$	5766 343+	7691 816-	17 1839-	2146 714-	728 232+	6 4325+
$a_3$	418 110-	779 424-	2 0589-	511 030+	383 901+	1 5356+
$a_4$	182 630-	36 336+	1623+	10 437-	26 502-	1356-
$a_5$	5 791+	15 126+		953-	2 498+	
July 1						
$a_0$	67.5171 462+	26.7150 432+	1.0146 0278+	181.6865 291+	4.7154 948-	0.9352 8883+
$a_1$	16.6697 682+	1.8158 910+	0.0042 5720+	11.3105 193+	5.7927 738-	0.0130 5212-
$a_2$	3474 755+	9659 997-	22 3543-	685 723-	1745 933+	10 2308+
$a_3$	1077 300-	487 418-	1 3940-	459 844+	302 575+	9891+
$a_4$	149 414-	117 704+	2693+	14 793-	13 829-	1190-
$a_5$	30 866+	7 086+		830-	1 978+	

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 10						
$a_0$	192.9728 982+	10.3046 030-	0.9233 4680+	294.1647 545+	23.9627 867-	0.9146 1432+
$a_1$	11.3049 947+	5.3573 585-	0.0107 5684-	12.9948 304+	2.9732 512+	0.0061 3993+
$a_2$	596 761+	2590 484+	12 4914+	2109 376-	5681 052+	5 0413+
$a_3$	391 975+	266 556+	5123+	191 352-	256 819-	4390-
$a_4$	18 795-	3 808-	951-	54 711+	23 034-	292+
$a_5$	1 531-	1 152+		574-	2 256+	
July 11						
$a_0$	204.3747 339+	15.3765 231-	0.9138 8084+	306.9349 258+	20.4491 901-	0.9212 1740+
$a_1$	11.5336 552+	4.7602 433-	0.0081 4288-	12.5371 450+	4.0243 295+	0.0070 2819+
$a_2$	1644 575+	3378 850+	13 4652+	2361 057-	4794 985+	3 8995+
$a_3$	301 022+	262 212+	1328+	20 667+	326 829-	3195-
$a_4$	26 620-	2 087+	715-	50 848+	11 522-	290+
$a_5$	2 363-	55+		2 417-	1 475+	
July 12						
$a_0$	216.1000 506+	19.7724 460-	0.9070 9060+	319.2428 749+	15.9790 497-	0.9286 0647+
$a_1$	11.9410 475+	4.0049 490-	0.0054 3862-	12.0902 646+	4.8814 052+	0.0077 2383+
$a_2$	2364 184+	4178 570+	13 4407+	2018 231-	3760 109+	3 1119+
$a_3$	170 954+	270 359+	1523-	199 869+	358 789-	2006-
$a_4$	39 097-	2 428+	511-	38 170+	4 164-	196+
$a_5$	2 331-	1 257-		2 382-	399+	
July 13						
$a_0$	228.2904 690+	23.3323 850-	0.9029 7571+	331.1548 822+	10.7578 890-	0.9366 2340+
$a_1$	12.4483 685+	3.0877 862-	0.0028 1660-	11.7606 569+	5.5243 232+	0.0082 9390+
$a_2$	2618 993+	4991 614+	12 6828+	1213 444-	2662 731+	2 6222+
$a_3$	7 558-	266 853+	3558-	329 112+	372 017-	1193-
$a_4$	51 787-	4 047-	336-	26 167+	2 279-	11+
$a_5$	295-	2 402-		1 692-	575-	
July 14						
$a_0$	240.9947 729+	25.8949 694-	0.9013 8845+	342.8295 533+	5.0047 797-	0.9451 6769+
$a_1$	12.9490 423+	2.0122 275-	0.0004 0022-	11.6263 225+	5.9440 644+	0.0087 8299+
$a_2$	2282 564+	5743 795+	11 4188+	86 000-	1527 231+	2 2629+
$a_3$	215 383-	226 534+	4898-	417 027+	387 303-	1132-
$a_4$	53 812-	16 581-	179-	17 966+	5 303-	246-
$a_5$	3 706+	2 622-		1 394-	1 309-	
July 15						
$a_0$	254.1455 226+	27.3120 843-	0.9020 7935+	354.4906 358+	1.0526 162+	0.9541 6319+
$a_1$	13.3212 719+	0.8034 503-	0.0017 2944+	11.7407 191+	6.1305 435+	0.0091 9178+
$a_2$	1350 718+	6297 613+	9 8465+	1259 014+	320 371+	1 7671+
$a_3$	391 646-	134 679+	5613-	474 449+	421 782-	2118-
$a_4$	34 382-	30 241-	32-	11 553+	12 103-	528-
$a_5$	7 162+	1 418-		2 268-	1 643-	
July 16						
$a_0$	267.5599 797+	27.4754 712-	0.9047 3699+	6.4056 298+	7.1716 441+	0.9635 0522+
$a_1$	13.4637 496+	0.4836 730+	0.0035 2910+	12.1383 409+	6.0624 212+	0.0094 6053+
$a_2$	41 344+	6506 019+	8 1481+	2729 108+	1034 106-	8080+
$a_3$	457 657-	681+	5735-	496 436+	486 281-	4258-
$a_4$	3 154+	37 393-	107+	976+	20 855-	762-
$a_5$	6 970+	603+		4 952-	1 102-	
July 17						
$a_0$	280.9831 104+	26.3448 073-	0.9090 2462+	18.8661 274+	13.0798 309+	0.9729 9635+
$a_1$	13.3394 637+	1.7704 270+	0.0049 9094+	12.8310 027+	5.7008 254+	0.0094 6387+
$a_2$	1242 904-	6289 798+	6 4951+	4174 767+	2629 245-	9294-
$a_3$	377 371-	142 018-	5298-	448 416+	579 341-	7370-
$a_4$	38 761+	33 921-	222+	23 561-	27 328-	852-
$a_5$	3 317+	2 076+		9 212-	1 226+	

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 26				August 3	
$a_0$	32.1561 710+	18.4571 874+	0.9822 8506+		153.3026 079+	9.7295 848+	0.9755 7344+
$a_1$	13.7864 484+	4.9908 612+	0.0090 2276+		12.6715 458+	6.0805 132-	0.0127 9678-
$a_2$	5286 162+	4519 113-	3 6465-		4043 130-	1503 663-	7 7984-
$a_3$	261 031+	673 660-	1 0874-		450 857+	623 324+	1 9976+
$a_4$	72 002-	22 121-	691-		17 831+	35 809-	64-
$a_5$	11 359-	5 982+			4 259-	728+	
		July 27				August 4	
$a_0$	46.4890 025+	22.9271 574+	0.9908 2752+		165.6162 836+	3.5575 297+	0.9621 9593+
$a_1$	14.8875 193+	3.8790 886+	0.0079 3955+		12.0031 827+	6.2082 064-	0.0137 5980-
$a_2$	5522 774+	6612 860-	7 3081-		2626 067-	158 826+	1 8632-
$a_3$	135 573-	699 559-	1 3744-		481 019+	488 016+	1 9623+
$a_4$	134 803-	8 714+	206-		2 753-	31 622-	678-
$a_5$	3 036-	11 024+			1 814-	1 797+	
		July 28				August 5	
$a_0$	61.9014 579+	26.0769 779+	0.9978 9676+		177.4045 047+	2.5889 750-	0.9484 3926+
$a_1$	15.8959 846+	2.3556 449+	0.0060 5731+		11.6202 672+	6.0417 864-	0.0135 7091-
$a_2$	4276 569+	8548 460-	11 5313-		1217 614-	1451 165+	3 6073+
$a_3$	694 071-	555 221-	1 4639-		452 338+	379 573+	1 6819+
$a_4$	152 158-	67 711+	565+		11 346-	22 320-	987-
$a_5$	16 993+	9 936+			1 046-	1 912+	
		July 29				August 6	
$a_0$	78.1421 760+	27.5300 195+	1.0026 6021+		188.9470 050+	8.4497 283-	0.9353 8740+
$a_1$	16.4907 220+	0.5114 278+	0.0033 3448+		11.5073 837+	5.6456 538-	0.0123 8439-
$a_2$	1452 681+	9708 129-	15 5579-		60 883+	2475 120+	8 0588+
$a_3$	1127 169-	190 599-	1 2358-		396 367+	309 162+	1 2809+
$a_4$	57 681-	119 985+	1419+		16 343-	12 559-	1050-
$a_5$	27 537+	122-			1 307-	1 480+	
		July 30				August 7	
$a_0$	94.6624 350+	27.0635 607+	1.0043 2951+		200.4983 488+	13.8180 618-	0.9239 2649+
$a_1$	16.4337 883+	1.4394 560-	0.0000 9101-		11.6312 793+	5.0621 658-	0.0104 3037-
$a_2$	1998 424-	9561 614-	18 3953-		1138 846+	3342 076+	11 2738+
$a_3$	1090 026-	282 588+	6548-		317 584+	273 252+	8580+
$a_4$	87 890+	116 723+	2028+		22 921-	5 000-	971-
$a_5$	13 470+	10 048-			1 943-	670+	
		July 31				August 8	
$a_0$	110.7975 142+	24.7068 696+	1.0023 5377+		212.2727 846+	18.5191 278-	0.9146 9958+
$a_1$	15.7489 661+	3.2253 386-	0.0038 8528-		11.9441 836+	4.3134 413-	0.0079 5707-
$a_2$	4606 985-	8114 514-	19 1403-		1934 568+	4138 549+	13 2690+
$a_3$	614 352-	648 177+	1759+		206 385+	259 322+	4689+
$a_4$	151 530+	62 832+	2110+		33 079-	1 546-	840-
$a_5$	5 474-	11 247-			2 136-	419-	
		August 1				August 9	
$a_0$	126.0389 521+	20.7400 558+	0.9965 9314+		224.4275 419+	22.3929 784-	0.9081 0790+
$a_1$	14.7011 313+	4.6342 740-	0.0075 7611-		12.3787 143+	3.4087 641-	0.0051 9621-
$a_2$	5596 424-	5905 599-	17 3619-		2333 756+	4903 039+	14 1755+
$a_3$	66 667-	789 570+	1 0357+		53 450+	248 309+	1333+
$a_4$	118 550+	5 663+	1619+		44 586-	3 705-	710-
$a_5$	11 450-	6 631-			890-	1 532-	
		August 2				August 10	
$a_0$	140.1844 843+	15.5940 820+	0.9874 0060+		237.0404 293+	25.2871 314-	0.9043 3546+
$a_1$	13.6035 443+	5.5795 681-	0.0106 7298-		12.8432 246+	2.3559 121-	0.0023 4954-
$a_2$	5199 902-	3569 122-	13 3090-		2217 583+	5610 371+	14 1527+
$a_3$	294 585+	748 590+	1 6890+		132 038-	217 841+	1501-
$a_4$	59 530+	26 790-	783+		49 712-	11 698-	600-
$a_5$	8 421-	1 969-			2 174+	2 123-	

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 11			August 19	
$a_0$	250.0874 545+	27.0616 044-	0.9033 8018+	351.5579 359+	0.4701 560-	0.9574 1130+
$a_1$	13.2283 358+	1.1742 255-	0.0004 1196+	11.8671 148+	6.2032 784+	0.0081 4226+
$a_2$	1544 979+	6172 414+	13 3453+	820 166+	581 557+	3 4632-
$a_3$	307 224-	150 093+	3899-	425 783+	460 861-	3266-
$a_4$	38 500-	22 780-	504-	11 083-	10 454-	428+
$a_5$	5 590+	1 657-		2 187-	669-	
		August 12			August 20	
$a_0$	263.4362 750+	27.6060 230-	0.9050 8264+	3.5505 353+	5.7440 796+	0.9651 7886+
$a_1$	13.4325 608+	0.0953 458+	0.0029 4390+	12.1622 209+	6.1768 158+	0.0073 6878+
$a_2$	448 395+	6469 404+	11 8766+	2142 214+	870 498-	4 1928-
$a_3$	404 736-	43 177+	5919-	447 117+	509 176-	1520-
$a_4$	9 200-	31 289-	402-	677+	14 155-	210+
$a_5$	6 623+	276-		4 067-	342-	
		August 13			August 21	
$a_0$	276.8729 441+	26.8625 757-	0.9091 5098+	15.9713 503+	11.7814 784+	0.9721 1527+
$a_1$	13.4004 483+	1.3895 274+	0.0051 2555+	12.7230 329+	5.8441 323+	0.0064 9306+
$a_2$	754 636-	6408 466+	9 8637+	3446 968+	2486 469-	4 5311-
$a_3$	376 572-	83 964-	7539-	407 417+	568 353-	672-
$a_4$	24 959+	32 457-	272-	19 510-	16 493-	70-
$a_5$	4 310+	1 095+		7 107-	1 117+	
		August 14			August 22	
$a_0$	290.1631 984+	24.8437 344-	0.9151 8478+	29.0771 600+	17.3185 909+	0.9781 4778+
$a_1$	13.1486 837+	2.6335 965+	0.0068 6121+	13.5232 924+	5.1702 975+	0.0055 6384+
$a_2$	1691 534-	5972 833+	7 4439+	4480 846+	4279 411-	4 7827-
$a_3$	235 661-	202 525-	8642-	257 419+	621 403-	979-
$a_4$	46 363+	26 592-	101-	56 581-	11 542-	321-
$a_5$	716+	1 638+		8 853-	4 160+	
		August 15			August 23	
$a_0$	303.1238 705+	21.6356 025-	0.9227 0296+	43.0677 354+	21.9980 687+	0.9832 2035+
$a_1$	12.7585 791+	3.7575 876+	0.0080 8670+	14.4696 346+	4.1254 609+	0.0045 6504+
$a_2$	2113 306-	5222 120+	4 7972+	4824 487+	6171 221-	5 2730-
$a_3$	44 438-	292 671-	9053-	54 351-	624 052-	2318-
$a_4$	49 118+	18 165-	106+	104 916-	9 656+	446-
$a_5$	1 674-	1 341+		3 733-	7 641+	
		August 16			August 24	
$a_0$	315.6714 195+	17.3867 524-	0.9311 7991+	58.0035 187+	25.4457 321+	0.9872 3045+
$a_1$	12.3413 955+	4.7076 140+	0.0087 7880+	15.3744 094+	2.7116 840+	0.0034 2302+
$a_2$	1968 767-	4248 529+	2 1515+	3994 248+	7908 698-	6 2338-
$a_3$	134 910+	352 294-	8621-	503 440-	509 074-	4172-
$a_4$	40 062+	11 436-	316+	126 090-	50 167+	374-
$a_5$	2 284-	678+		10 398+	7 715+	
		August 17			August 25	
$a_0$	327.8332 070+	12.2905 907-	0.9400 9082+	73.7154 398+	27.3214 272+	0.9899 8463+
$a_1$	12.0029 981+	5.4473 953+	0.0089 6314+	15.9770 020+	1.0011 398+	0.0020 3611+
$a_2$	1346 545-	3129 795-	2403-	1832 115+	9057 461-	7 7007-
$a_3$	272 503+	391 628-	7331-	897 994-	234 629-	5732-
$a_4$	28 423+	8 120-	473+	68 819-	90 897+	85-
$a_5$	1 934-	34+		21 218+	1 711+	
		August 18			August 26	
$a_0$	339.7314 499+	6.5701 873-	0.9489 6136+	89.7810 939+	27.4026 187+	0.9911 9251+
$a_1$	11.8258 428+	5.9526 345+	0.0087 1411+	16.0571 007+	0.8435 352-	0.0003 2062+
$a_2$	377 822-	1906 514+	2 1542-	1061 612-	9198 998-	9 4573-
$a_3$	367 000+	424 046-	5396-	964 577-	141 853+	6104-
$a_4$	18 900+	8 054-	521+	44 336+	98 435+	363+
$a_5$	1 647-	447-		14 742+	5 864-	

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 27			September 4	
$a_0$	105.6414 835+	25.6626 260+	0.9905 0999+	208.0621 895+	16.8916 941-	0.9220 2570+
$a_1$	15.5804 943+	2.6043 403-	0.0017 3943-	11.9715 707+	4.6510 996-	0.0092 1419-
$a_2$	3541 990-	8241 842-	11 0562-	1639 054+	3993 283+	8 9828+
$a_3$	648 154-	475 412+	4632-	208 979+	285 488+	1 0337+
$a_4$	117 452+	66 546+	835+	29 690-	7 560-	709-
$a_5$	346-	8 447-		1 829-	99-	
		August 28			September 5	
$a_0$	120.8146 740+	22.2874 525+	0.9876 2698+	220.2154 116+	21.1156 825-	0.9138 0606+
$a_1$	14.7244 491+	4.0876 880-	0.0040 5618-	12.3492 859+	3.7698 711-	0.0071 3591-
$a_2$	4785 830-	6500 971-	11 9349-	2069 456+	4803 398+	11 6576+
$a_3$	186 498-	658 328+	1219-	72 512+	253 802+	7481+
$a_4$	111 371+	23 163+	1157+	39 495-	8 066-	732-
$a_5$	8 349-	6 180-		850-	905-	
		August 29			September 6	
$a_0$	135.0521 923+	17.6171 986+	0.9823 7669+	232.7748 598+	24.3807 306-	0.9079 0341+
$a_1$	13.7517 071+	5.1842 049-	0.0064 3338-	12.7687 105+	2.7367 299-	0.0046 0922-
$a_2$	4760 946-	4448 773-	11 6049-	2041 427+	5507 335+	13 4634+
$a_3$	175 581+	691 047+	3510+	92 559-	212 223+	4551+
$a_4$	67 305+	7 502-	1200+	44 340-	12 805-	719-
$a_5$	7 923-	2 895-		1 600+	1 391-	
		August 30			September 7	
$a_0$	148.3513 011+	12.0561 815+	0.9748 2993+	245.7341 831+	26.5469 243-	0.9046 7885+
$a_1$	12.8751 561+	5.8710 907-	0.0086 0101-	13.1322 954+	1.5774 133-	0.0018 0877-
$a_2$	3909 640-	2449 507-	9 8396-	1513 723+	6053 215+	14 3976+
$a_3$	367 307+	633 423+	8394+	252 267-	147 233+	1679+
$a_4$	27 532+	21 447-	947+	36 190-	20 091-	707-
$a_5$	4 803-	625-		4 527+	1 148-	
		August 31			September 8	
$a_0$	160.8744 968+	6.0012 752+	0.9653 3837+	258.9894 578+	27.5064 167-	0.9043 1957+
$a_1$	12.2120 344+	6.1798 550-	0.0102 7920-	13.3471 487+	0.3312 095-	0.0010 9285+
$a_2$	2690 494-	684 104-	6 7667-	585 184+	6362 867+	14 4770+
$a_3$	430 772+	542 093+	1 2220+	351 054-	55 909+	1145-
$a_4$	4 008+	24 178-	503+	12 547-	26 001-	710-
$a_5$	2 402-	548+		5 791+	231-	
		September 1			September 9	
$a_0$	172.8607 195+	0.1951 439-	0.9545 0974+	272.3593 438+	27.1983 719-	0.9068 4157+
$a_1$	11.8035 703+	6.1634 446-	0.0112 4580-	13.3567 440+	0.9476 214+	0.0039 2551+
$a_2$	1398 103-	802 630+	2 8135-	485 226-	6372 293+	13 7073+
$a_3$	423 387+	451 140+	1 4220+	344 173-	49 877-	3987-
$a_4$	7 584-	21 174-	24+	17 364+	27 011-	719-
$a_5$	1 364-	1 012+		4 289+	711+	
		September 2			September 10	
$a_0$	184.5659 233+	6.2352 277-	0.9431 2503+	285.6353 133+	25.6211 390-	0.9120 9074+
$a_1$	11.6472 500+	5.8755 402-	0.0113 8094-	13.1655 338+	2.1966 680+	0.0065 1856+
$a_2$	187 064-	2039 159+	1 4552+	1370 672-	6067 743+	12 0801+
$a_3$	379 460+	376 555+	1 4275+	233 511-	150 623-	6879-
$a_4$	14 176-	15 915-	362-	38 874+	23 157-	704-
$a_5$	1 323-	1 004+		1 320+	1 040+	
		September 3			September 11	
$a_0$	196.2308 629+	11.8706 875-	0.9320 2875+	298.6444 482+	22.8349 707-	0.9197 4148+
$a_1$	11.7173 426+	5.3606 061-	0.0106 7614-	12.8375 533+	3.3562 865+	0.0087 0003+
$a_2$	853 019+	3083 406+	5 5131+	1824 857-	5487 354+	9 5969+
$a_3$	309 327+	322 705+	1 2780+	66 179-	233 039-	9725-
$a_4$	20 793-	10 724-	602-	44 862+	17 773-	616-
$a_5$	1 713-	609+		1 018-	708+	

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 12							
$a_0$	311.2972 824+	18.9549 593-	0.9292 9779+		54.5249 704+	24.6732 770+	0.9906 8922+
$a_1$	12.4701 632+	4.3770 894+	0.0103 0299+		15.3318 833+	3.0858 220+	0.0002 7470+
$a_2$	1764 499-	4688 669+	6 3162+		3721 864+	7802 558-	9 6301-
$a_3$	102 547+	297 386-	1 2234-		484 511-	507 265-	5755+
$a_4$	39 139+	14 253-	409-		118 087-	55 456+	10-
$a_5$	1 905-	121+			9 844+	6 390+	
September 13							
$a_0$	323.6049 738+	14.1401 548-	0.9401 0597+		70.1697 649+	26.9343 013+	0.9900 5837+
$a_1$	12.1627 303+	5.2199 662+	0.0111 8283+		15.8886 013+	1.3985 018+	0.0014 7908-
$a_2$	1241 127-	3712 181+	2 4116+		1658 931+	8927 484-	7 9196-
$a_3$	240 075+	353 435-	1 3913-		853 118-	224 830-	5656+
$a_4$	29 333+	13 787-	59-		64 079-	89 027+	340-
$a_5$	1 848-	325-			19 675+	526+	
September 14							
$a_0$	335.6703 474+	8.5857 252-	0.9513 9025+		86.1345 074+	27.4265 270+	0.9878 4048+
$a_1$	11.9973 366+	5.8506 944+	0.0112 4541+		15.9486 522+	0.4185 773-	0.0029 0697-
$a_2$	363 379-	2565 876+	1 7833-		1087 238-	9062 716-	6 4307-
$a_3$	338 998+	411 897-	1 4168-		915 797-	132 921+	4224+
$a_4$	20 185+	15 580-	397+		40 676+	90 470+	461-
$a_5$	1 728-	451-			13 878+	5 968-	
September 15							
$a_0$	347.6670 915+	2.5212 361-	0.9623 1962+		101.8883 116+	26.1234 204+	0.9843 2808+
$a_1$	12.0335 692+	6.2338 431+	0.0104 7959+		15.4796 600+	2.1580 420-	0.0040 8486-
$a_2$	757 485+	1232 160+	5 7818-		3451 844-	8181 143-	5 4374-
$a_3$	402 114+	478 581-	1 2556-		621 939-	434 119+	2320+
$a_4$	11 899+	18 026-	848+		109 685+	58 311+	371-
$a_5$	2 302-	206-			67+	7 624-	
September 16							
$a_0$	359.8175 804+	3.7861 417+	0.9721 0395+		116.9715 684+	23.1957 447+	0.9797 1897+
$a_1$	12.3093 071+	6.3293 884+	0.0089 8051+		14.6466 084+	3.6445 195-	0.0051 1760-
$a_2$	2012 259+	313 843-	9 0306-		4659 450-	6605 284-	4 9568-
$a_3$	425 659+	552 297-	9090-		187 011-	592 496+	800+
$a_4$	850+	19 343-	1144+		106 115+	19 297+	130-
$a_5$	4 081-	538+			7 598-	5 097-	
September 17							
$a_0$	12.3703 562+	10.0270 357+	0.9801 0194+		131.1433 824+	18.9513 664+	0.9741 1239+
$a_1$	12.8377 531+	6.0934 644+	0.0069 4752+		13.6972 620+	4.7826 540-	0.0060 9016-
$a_2$	3253 527+	2081 483-	11 0702-		4660 108-	4762 930-	4 7857-
$a_3$	386 703+	623 358-	4414-		161 365+	620 465+	277+
$a_4$	19 469-	17 103-	1166+		65 920+	5 820-	167+
$a_5$	6 838-	2 114+			7 489-	2 037-	
September 18							
$a_0$	25.5695 016+	15.8485 171+	0.9859 0995+		144.3966 132+	13.7536 802+	0.9675 4810+
$a_1$	13.5932 617+	5.4843 794+	0.0046 4773+		12.8362 767+	5.5524 450-	0.0070 3230-
$a_2$	4228 210+	4033 086-	11 7031-		3855 428-	2956 737-	4 5944-
$a_3$	239 774+	669 123-	331+		351 692+	577 888+	975+
$a_4$	55 152-	6 904-	900+		28 228+	15 419-	422+
$a_5$	8 218-	4 728+			4 685-	223-	
September 19							
$a_0$	39.6032 246+	20.8624 579+	0.9893 9968+		156.8848 705+	7.9617 861+	0.9600 7033+
$a_1$	14.4846 722+	4.4766 301+	0.0023 5308+		12.1796 500+	5.9767 043-	0.0079 0504-
$a_2$	4533 893+	6034 524-	11 0772-		2677 784-	1317 756-	4 0447-
$a_3$	60 003-	648 099-	3966+		419 040+	514 402+	2709+
$a_4$	99 956-	17 290+	453+		5 215+	16 157-	555+
$a_5$	3 197-	7 223+			2 435-	461+	

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 28						
$a_0$	168.8389 242+	1.9031 768+	0.9517 9346+	267.8830 243+	27.2619 475-	0.9034 1807+
$a_1$	11.7706 752+	6.0921 670-	0.0086 1048-	13.2894 990+	0.5211 129+	0.0015 6841+
$a_2$	1413 668-	133 151+	2 8995-	463 149-	6286 563+	14 2435+
$a_3$	416 145+	454 451+	4977+	340 822-	46 107-	2200+
$a_4$	6 544-	13 670-	536+	16 527+	25 358-	695-
$a_5$	1 429-	556+		4 269+	1 152+	
September 29						
$a_0$	180.5090 498+	4.1315 413-	0.9429 4818+	281.0942 058+	26.1192 097-	0.9064 2588+
$a_1$	11.6094 530+	5.9343 917-	0.0090 1957-	13.1033 647+	1.7550 259+	0.0044 5529+
$a_2$	218 764-	1420 062+	1 0889-	1343 759-	6007 656+	14 4824+
$a_3$	375 711+	405 234+	7157+	233 641-	135 939-	574-
$a_4$	13 452-	10 788-	389+	37 949+	19 254-	820-
$a_5$	1 365-	380+		1 388+	1 293+	
September 30						
$a_0$	192.1327 158+	9.8844 443-	0.9338 9517+	294.0437 641+	23.7788 082-	0.9123 1547+
$a_1$	11.6723 502+	5.5329 349-	0.0090 0709-	12.7803 913+	2.9087 197+	0.0073 0176+
$a_2$	814 000+	2574 853+	1 2846+	1803 211-	5497 276+	13 8142+
$a_3$	308 049+	365 676+	8723+	69 288-	200 366-	3854-
$a_4$	20 300-	8 784-	170+	44 281+	12 572-	955-
$a_5$	1 722-	19+		905-	683+	
October 1						
$a_0$	203.9150 688+	15.1242 028-	0.9251 0546+	306.6412 430+	20.3415 866-	0.9209 5055+
$a_1$	11.9185 842+	4.9117 660-	0.0084 8170-	12.4162 214+	3.9433 761+	0.0099 1075+
$a_2$	1599 073+	3619 387+	3 9963+	1754 538-	4827 566+	12 0818+
$a_3$	209 594+	330 436+	9396+	98 276+	244 357-	7696-
$a_4$	29 244-	8 608-	57-	39 135+	9 153-	1056-
$a_5$	1 823-	502-		1 770-	246-	
October 2						
$a_0$	216.0114 131+	19.6418 974-	0.9171 1678+	318.8955 747+	15.9408 296-	0.9319 8196+
$a_1$	12.2886 695+	4.0924 523-	0.0074 0288-	12.1095 654+	4.8317 968+	0.0120 5396+
$a_2$	2034 066+	4554 030+	6 7745+	1242 651-	4037 092+	9 1400+
$a_3$	74 958+	290 688+	9151+	237 164+	283 888-	1 1975-
$a_4$	38 981-	11 151-	249-	30 011+	10 522-	1040-
$a_5$	857-	1 038-		1 671-	1 053-	
October 3						
$a_0$	228.5070 012+	23.2510 970-	0.9104 8036+	330.9074 255+	10.7348 698-	0.9448 1977+
$a_1$	12.7019 520+	3.0994 198-	0.0057 8344-	11.9433 539+	5.5493 134+	0.0134 8105+
$a_2$	2016 391+	5348 778+	9 3656+	367 795-	3111 732+	4 9310+
$a_3$	88 177-	235 604+	8139+	340 597+	336 734-	1 6225-
$a_4$	43 846-	16 549-	393-	21 740+	16 017-	800-
$a_5$	1 549+	1 235-		1 481-	1 458-	
October 4						
$a_0$	241.3975 450+	25.7938 570-	0.9057 1094+	342.8500 856+	4.9098 040-	0.9586 2367+
$a_1$	13.0620 167+	1.9662 196-	0.0036 8187-	11.9799 293+	6.0635 042+	0.0139 4844+
$a_2$	1504 286+	5943 907+	11 5681+	769 680+	1990 798+	3993-
$a_3$	246 454-	157 340+	6559+	412 429+	415 253-	1 9526-
$a_4$	35 984-	23 010-	499-	14 713+	23 632-	252-
$a_5$	4 424+	756-		2 010-	1 252-	
October 5						
$a_0$	254.5821 890+	27.1523 286-	0.9032 4648+	354.9494 962+	1.3087 663+	0.9723 3441+
$a_1$	13.2767 577+	0.7398 172-	0.0011 9145-	12.2624 722+	6.3270 105+	0.0132 7268+
$a_2$	593 395+	6270 292+	13 2334+	2075 229+	590 657+	6 3829-
$a_3$	345 423-	58 321+	4562+	450 053+	521 657-	2 0601-
$a_4$	12 892-	26 895-	592-	5 278+	30 346-	572+
$a_5$	5 695+	265+		3 927-	162-	

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 14							
$a_0$	7.4646 316+	7.6396 260+	0.9847 6851+		127.9976 297+	19.7932 913+	0.9752 2674+
$a_1$	12.8126 778+	6.2764 283+	0.0114 0098+		13.8497 044+	4.5255 931-	0.0093 8323-
$a_2$	3417 825+	1158 104-	12 1923-		5240 395-	4905 257-	1 2495-
$a_3$	429 928+	643 290-	1 8283-		177 269+	641 152+	8127+
$a_4$	13 990-	31 773-	1467+		74 992+	15 087-	853-
$a_5$	7 334-	2 192+			8 945-	1 762-	
October 15							
$a_0$	20.6599 523+	13.7329 569+	0.9947 8211+		141.3476 262+	14.8396 027+	0.9657 9131+
$a_1$	13.6159 554+	5.8402 116+	0.0084 7279+		12.8803 345+	5.3212 122-	0.0094 2344-
$a_2$	4550 119+	3256 767-	16 7780-		4348 124-	3089 815-	6838+
$a_3$	299 180+	746 313-	1 2274-		389 828+	564 595+	4676+
$a_4$	51 971-	21 308-	2091+		30 081+	23 024-	632-
$a_5$	10 070-	5 931+			5 287-	634+	
October 16							
$a_0$	34.7546 334+	19.1713 228+	1.0014 7527+		153.8346 104+	9.2636 295+	0.9564 7670+
$a_1$	14.5899 149+	4.9594 105+	0.0048 3273+		12.1370 503+	5.7786 887-	0.0091 7169-
$a_2$	5034 477+	5564 143-	19 2032-		3050 947-	1527 756-	1 7164+
$a_3$	6 804-	770 223-	3707-		458 889+	479 271+	2137+
$a_4$	106 753-	9 039+	2161+		4 237+	19 323-	336-
$a_5$	5 899-	9 577+			2 496-	1 335+	
October 17							
$a_0$	49.8360 502+	23.4991 585+	1.0043 7222+		165.7126 289+	3.3782 934+	0.9474 9466+
$a_1$	15.5491 353+	3.6239 184+	0.0009 6739+		11.6649 756+	5.9475 206-	0.0087 7773-
$a_2$	4314 016+	7724 404-	19 0347-		1673 756-	192 491-	2 1650+
$a_3$	484 191-	638 828-	5098+		451 589+	415 246+	806+
$a_4$	140 017-	59 710+	1644+		7 741-	12 392-	45-
$a_5$	9 441+	8 855+			1 290-	1 172+	
October 18							
$a_0$	65.7551 104+	26.2936 102+	1.0035 0354+		177.2544 849+	2.5480 736-	0.9389 4105+
$a_1$	16.2154 103+	1.9156 916+	0.0026 2084-		11.4619 601+	5.8658 164-	0.0083 2234-
$a_2$	2116 487+	9193 743-	16 5454-		378 298-	990 637+	2 3868+
$a_3$	942 297-	315 857-	1 1725+		407 788+	377 090+	652+
$a_4$	87 608-	106 398+	787+		13 905-	6 408-	183+
$a_5$	23 509+	1 008+			1 240-	651+	
October 19							
$a_0$	82.0815 301+	27.2690 823+	0.9993 5328+		188.7178 795+	8.2776 929-	0.9308 6574+
$a_1$	16.3327 239+	0.0252 390+	0.0055 4672-		11.5024 543+	5.5567 999-	0.0078 1808-
$a_2$	999 712-	9493 082-	12 5820-		749 235+	2089 994+	2 6962+
$a_3$	1060 641-	114 811+	1 4818+		339 502+	357 563+	1416+
$a_4$	38 754+	109 791+	61-		20 057-	3 070-	316+
$a_5$	17 832+	7 997-			1 752-	45-	
October 20							
$a_0$	98.2138 772+	26.3666 736+	0.9926 9592+		200.3270 266+	13.5900 486-	0.9233 3460+
$a_1$	15.8389 874+	1.7990 187-	0.0076 2107-		11.7452 527+	5.0327 833-	0.0072 2371-
$a_2$	3770 801-	8570 359-	8 1914-		1629 826+	3143 830+	3 3114+
$a_3$	736 866-	472 744+	1 4467+		241 583+	344 369+	2710+
$a_4$	127 834+	66 425+	647-		29 121-	3 243-	347+
$a_5$	374+	10 045-			2 112-	846-	
October 21							
$a_0$	113.6149 187+	23.7635 314+	0.9843 9391+		212.2562 968+	18.2744 209-	0.9164 7260+
$a_1$	14.9150 771+	3.3497 156-	0.0088 5127-		12.1309 892+	4.3024 276-	0.0064 6626-
$a_2$	5211 399-	6854 203-	4 2472-		2158 620+	4149 010+	4 3306+
$a_3$	227 473-	640 106+	1 1774+		104 440+	322 511+	4120+
$a_4$	124 569+	14 996+	893-		40 371-	7 547-	290+
$a_5$	9 357-	6 144-			1 391-	1 580-	

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 30			November 7	
$a_0$	224.6094 159+	22.1306 091-	0.9104 8349+	326.3618 757+	12.5274 527-	0.9305 2851+
$a_1$	12.5772 044+	3.3796 813-	0.0054 6492-	11.7039 809+	5.1586 688+	0.0125 4480+
$a_2$	2215 691+	5055 423+	5 7373+	722 759-	3240 593+	11 6067-
$a_3$	69 524-	276 381+	5296+	342 849+	271 192-	8231-
$a_4$	48 076-	15 732-	175+	23 871+	7 059-	1376-
$a_5$	1 072+	1 842-		1 221-	1 820-	
		October 31			November 8	
$a_0$	237.3965 366+	24.9788 673-	0.9056 4700+	338.0301 306+	7.0727 317-	0.9441 3790+
$a_1$	12.9807 950+	2.2928 951-	0.0041 5161-	11.6712 215+	5.7216 956+	0.0145 6413+
$a_2$	1729 373+	5771 703+	7 4262+	436 841+	2366 423+	8 3101+
$a_3$	249 181-	195 415+	6000+	426 084+	317 933-	1 3811-
$a_4$	42 754-	25 339-	29+	18 091+	16 397-	1441-
$a_5$	4 483+	1 195-		1 255-	2 357-	
		November 1			November 9	
$a_0$	250.5215 238+	26.6777 040-	0.9022 9830+	349.7893 282+	1.1480 626-	0.9593 8051+
$a_1$	13.2370 575+	1.0906 617-	0.0024 8522-	11.8930 221+	6.0918 633+	0.0157 5409+
$a_2$	770 284+	6193 935+	9 2384+	1811 179+	1290 603+	3 3108+
$a_3$	374 276-	82 927+	6115+	485 059+	406 946-	1 9713-
$a_4$	19 280-	31 499-	128-	12 485+	28 633-	1170-
$a_5$	6 409+	249+		2 672-	2 150-	
		November 2			November 10	
$a_0$	263.7968 951+	27.1438 044-	0.9007 9680+	1.9129 554+	5.0290 883+	0.9752 5686+
$a_1$	13.2743 226+	0.1605 302+	0.0004 5918-	12.4044 291+	6.2153 743+	0.0157 7797+
$a_2$	403 967-	6256 253+	10 9914+	3314 663+	123 658-	3 2812-
$a_3$	387 992-	39 796-	5606+	506 200+	541 954-	2 4565-
$a_4$	13 984+	30 003-	289-	22+	40 223-	405-
$a_5$	5 138+	1 622+		6 249-	450-	
		November 3			November 11	
$a_0$	276.9939 340+	26.3644 667-	0.9014 8993+	14.6988 481+	11.1738 341+	0.9904 5703+
$a_1$	13.0852 904+	1.3886 518+	0.0018 9574+	13.2161 002+	6.0117 474+	0.0143 6854+
$a_2$	1432 638-	5973 126+	12 4947+	4770 886+	1995 532-	10 8551-
$a_3$	282 515-	143 348-	4458+	440 913+	704 886-	2 6302-
$a_4$	39 895+	21 427-	462-	31 231-	43 666-	836+
$a_5$	1 839+	2 042+		11 412-	3 744+	
		November 4			November 12	
$a_0$	289.9118 825+	24.3947 757-	0.9046 7510+	28.4318 638+	16.9115 476+	1.0034 8540+
$a_1$	12.7308 826+	2.5327 218+	0.0045 0995+	14.2843 525+	5.3855 881+	0.0114 4191+
$a_2$	2022 530-	5434 980+	13 5488+	5791 558+	4334 811-	18 2022-
$a_3$	106 131-	208 988-	2622+	201 511+	838 422-	2 2913-
$a_4$	48 412+	10 894-	661-	92 035-	25 425-	2210+
$a_5$	940-	1 418+		12 586-	10 230+	
		November 5			November 13	
$a_0$	302.4346 461+	21.3404 024-	0.9105 5954+	43.3050 609+	21.7782 928+	1.0129 0007+
$a_1$	12.3134 309+	3.5533 713+	0.0072 7194+	15.4600 253+	4.2620 482+	0.0072 0260+
$a_2$	2059 968-	4756 838+	13 9315+	5716 932+	6899 949-	23 7225-
$a_3$	77 495+	239 040-	10-	284 656-	835 675-	1 3830-
$a_4$	42 956+	3 732-	896-	162 499-	28 358+	3122+
$a_5$	1 988-	272+		798+	14 351+	
		November 6			November 14	
$a_0$	314.5539 265+	17.3355 973-	0.9192 1556+	59.2921 437+	25.2710 496+	1.0176 2334+
$a_1$	11.9408 745+	4.4316 686+	0.0100 2210+	16.4534 408+	2.6498 675+	0.0021 6828+
$a_2$	1589 688-	4020 029+	13 3830+	3896 038+	9092 579-	25 9987-
$a_3$	229 552+	251 923-	3592-	913 575-	582 364-	1007-
$a_4$	32 637+	2 456-	1153-	157 952-	105 297+	3097+
$a_5$	1 754-	891-		24 957+	8 113+	

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 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 15						
$a_0$	76°03'05.317+	26.9647 639+	1.0172 1266+	185°93'61.216+	7.1105 054-	0.9303 8248+
$a_1$	16.9078 794+	0.7028 018+	0.0029 3763-	11.3812 143+	5.5572 411-	0.0093 1313-
$a_2$	459 083+	1.0126 678-	24 4709-	358 313+	1900 800+	7 5067+
$a_3$	1293 270-	88 002-	1 1618+	394 487+	318 987+	286-
$a_4$	19 634-	146 439+	2152+	19 408-	2 650-	297-
$a_5$	29 810+	6 353-		1 516-	674+	
November 16						
$a_0$	92.8560 101+	26.6601 061+	1.0119 6563+	197.3905 234+	12.4459 655-	0.9218 1419+
$a_1$	16.6187 423+	1.2935 445-	0.0073 9717-	11.5627 007+	5.0821 094-	0.0078 3224-
$a_2$	3239 662-	9576 323-	19 7361-	1410 128+	2848 617+	7 2511+
$a_3$	1085 386-	429 717+	2 0261+	301 311+	314 511+	1455-
$a_4$	134 780+	109 484+	783+	27 148-	813+	25-
$a_5$	7 941+	14 264-		2 214-	384-	
November 17						
$a_0$	109.0565 196+	24.4614 229+	1.0028 0529+	209.1214 318+	17.2117 193-	0.9146 9226+
$a_1$	15.7030 564+	3.0432 290-	0.0107 0529-	11.9231 537+	4.4179 011-	0.0064 2665-
$a_2$	5608 702-	7773 394-	13 2251-	2128 933+	3793 188+	6 8059+
$a_3$	477 357-	726 814+	2 3270+	170 676+	313 269+	1531-
$a_4$	167 663+	34 844+	425-	38 847-	1 108-	177+
$a_5$	10 512-	10 698-		2 101-	1 521-	
November 18						
$a_0$	124.1666 850+	20.7159 504+	0.9910 0594+	221.2704 515+	21.2192 375-	0.9089 3267+
$a_1$	14.4999 147+	4.3712 678-	0.0126 6928-	12.3835 558+	3.5664 872-	0.0051 0430-
$a_2$	6140 709-	5490 817-	6 5214-	2386 720+	4711 107+	6 4567+
$a_3$	86 595+	763 092+	2 1399+	4 565-	293 179+	797-
$a_4$	109 778+	18 237-	1148-	50 305-	8 957-	301+
$a_5$	12 639-	3 805-		143-	2 320-	
November 19						
$a_0$	138.0709 023+	15.8697 059+	0.9778 8703+	233.8871 781+	24.2864 238-	0.9044 6908+
$a_1$	13.3353 484+	5.2496 961-	0.0133 7758-	12.8393 412+	2.5410 546-	0.0038 2481-
$a_2$	5348 779-	3348 814-	7976-	2069 692+	5513 628+	6 3997+
$a_3$	402 005+	654 647+	1 6669+	205 086-	234 266+	433+
$a_4$	45 791+	35 886-	1373-	51 496-	21 069-	345+
$a_5$	7 716-	561+		3 574+	2 129-	
November 20						
$a_0$	150.9153 807+	10.3470 607+	0.9645 8264+	246.9081 877+	26.2550 087-	0.9012 9202+
$a_1$	12.4006 573+	5.7371 367-	0.0130 9201-	13.1729 456+	1.3775 394-	0.0025 1806-
$a_2$	3945 070-	1594 440-	3 3826+	1181 307+	6068 663+	6 7357+
$a_3$	510 493+	517 649+	1 1095+	373 566-	129 529+	1835+
$a_4$	8 031+	32 173-	1255-	32 776-	32 151-	314+
$a_5$	3 415-	2 102+		6 740+	675-	
November 21						
$a_0$	162.9730 420+	4.4992 378+	0.9519 2731+	260.1593 040+	27.0160 115-	0.8994 6902+
$a_1$	11.7662 986+	5.9125 481-	0.0121 3282-	13.2873 972+	0.1381 440-	0.0011 0329-
$a_2$	2399 451-	213 448-	5 9674+	68 425-	6257 599+	7 4718+
$a_3$	509 678+	410 010+	6044+	437 373-	4 727-	3110+
$a_4$	8 265-	21 254-	963-	2 493+	35 457-	220+
$a_5$	1 365-	2 126+		6 569+	1 274+	
November 22						
$a_0$	174.5494 003+	1.3955 668-	0.9404 4205+	273.3970 276+	26.5322 864-	0.8991 4622+
$a_1$	11.4353 238+	5.8396 739-	0.0107 9655-	13.1467 782+	1.0984 137+	0.0004 9318+
$a_2$	933 602-	910 348+	7 2132+	1299 805-	6043 497+	8 5324+
$a_3$	463 205+	345 916+	2188+	363 581-	133 144-	4004+
$a_4$	14 642-	10 446-	621-	36 034+	28 565-	77+
$a_5$	986-	1 536+		3 219+	2 434+	
November 23						
November 24						
November 25						
November 26						
November 27						
November 28						
November 29						
November 30						

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 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 1						
$a_0$	286.3813 925+	24.8454 505-	0.9005 3345+	22.1603 179+	14.6017 605+	0.9875 0039+
$a_1$	12.7937 619+	2.2569 608+	0.0023 2286+	13.4702 902+	5.5375 067+	0.0159 1656+
$a_2$	2142 245-	5497 086+	9 7739+	5690 245+	2931 461-	5 9330-
$a_3$	189 293-	223 148-	4323+	424 234+	721 000-	2 6985-
$a_4$	51 554+	15 903-	107-	48 579-	47 224-	400-
$a_5$	398-	2 255+		14 341-	4 931+	
December 2						
$a_0$	298.9471 161+	22.0624 605-	0.9038 7587+	36.2357 639+	19.7697 918+	1.0025 4981+
$a_1$	12.3289 455+	3.2841 992+	0.0044 0307+	14.7090 106+	4.7184 996+	0.0139 0435+
$a_2$	2404 924-	4754 806+	10 9996+	6527 128+	5328 525-	14 2216-
$a_3$	11 929+	264 802-	3907+	88 203+	855 992-	2 8724-
$a_4$	48 628+	4 437-	330-	126 585-	22 837-	1115+
$a_5$	2 156-	1 193+		12 119-	13 118+	
December 3						
$a_0$	311.0414 093+	18.3295 854-	0.9094 1466+	51.5924 371+	23.8688 679+	1.0147 5592+
$a_1$	11.8699 125+	4.1545 397+	0.0067 0700+	15.9842 278+	3.3934 245+	0.0102 4294+
$a_2$	2099 022-	3945 695+	11 9653+	5909 876-	7901 701-	22 1197-
$a_3$	184 880+	271 349-	2602+	526 917-	814 563-	2 4186-
$a_4$	37 271+	1 487+	596-	195 396-	47 186+	2754+
$a_5$	2 122-	70-		9 689+	16 428+	
December 4						
$a_0$	322.7234 225+	13.8074 694-	0.9173 3824+	68.0963 903+	26.3970 275+	1.0225 7258+
$a_1$	11.5194 206+	4.8628 324+	0.0091 5427+	16.9348 415+	1.5957 912+	0.0052 0375+
$a_2$	1342 000-	3139 851+	12 3783+	3254 665+	9897 146-	27 6929-
$a_3$	313 171+	266 747-	230+	1198 287-	467 735-	1 2842-
$a_4$	26 527+	1 028+	909-	139 781-	135 360+	3748+
$a_5$	1 361-	1 182-		34 758+	5 439+	
December 5						
$a_0$	334.1424 767+	8.6573 420-	0.9277 2355+	85.2263 675+	26.9704 105+	1.0249 1611+
$a_1$	11.3549 026+	5.4105 976+	0.0116 0047+	17.1877 460+	0.4671 137-	0.0005 6991-
$a_2$	256 919-	2333 935+	11 8915+	829 048-	1.0434 068-	29 3027-
$a_3$	405 967+	274 976-	3404-	1413 951-	118 810+	2565+
$a_4$	19 908+	5 001-	1248-	49 998+	160 640+	3538+
$a_5$	819-	2 077-		26 818+	11 505-	
December 6						
$a_0$	345.5141 930+	3.0415 564-	0.9404 6665+	102.1974 953+	25.4866 845+	1.0214 7695+
$a_1$	11.4328 618+	5.7918 522+	0.0138 2674+	16.6311 284+	2.4597 861-	0.0062 1186-
$a_2$	1072 298+	1458 197+	10 1128+	4502 837-	9229 775-	26 4500-
$a_3$	477 136+	316 084-	8427-	961 207-	643 367+	1 6969+
$a_4$	16 299+	15 589-	1543-	183 221+	96 595+	2247+
$a_5$	1 245-	2 670-		1 605-	16 414-	
December 7						
$a_0$	357.1035 037+	2.8626 812+	0.9552 0497+	118.3003 808+	22.1762 755+	1.0128 1223+
$a_1$	11.7963 565+	5.9810 962+	0.0155 3471+	15.5146 700+	4.0822 933-	0.0109 0293-
$a_2$	2589 168+	389 637+	6 6560+	6304 479-	6884 587-	20 0626-
$a_3$	528 535+	405 015-	1 4694-	252 332-	869 150+	2 5948+
$a_4$	10 959+	29 440-	1645-	166 186+	12 222+	574+
$a_5$	3 520-	2 517-		14 964-	9 792-	
December 8						
$a_0$	9.2123 746+	8.8390 440+	0.9712 4190+	133.1744 919+	17.4926 815+	1.0001 6825+
$a_1$	12.4753 688+	5.9244 876+	0.0163 5919+	14.2370 694+	5.1984 648-	0.0141 1417-
$a_2$	4205 469+	1027 376-	1 2708+	6214 554-	4301 557-	11 9759-
$a_3$	534 329+	546 714-	2 1448-	264 015+	824 398+	2 8060+
$a_4$	5 612-	43 124-	1331-	87 688+	35 543-	775-
$a_5$	8 441-	496-		12 189-	2 306-	

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## DAILY POLYNOMIAL COEFFICIENTS

	Apparent Right Ascension	Apparent Declination	Horizontal Parallax		Apparent Right Ascension	Apparent Declination	Horizontal Parallax
December 17							
$a_0$	146.8240 574+	11.9427 160+	0.9851 2934+		243.5866 246+	25.9264 456-	0.9011 0331+
$a_1$	13.1023 507+	5.8268 221-	0.0156 9863-		13.0616 453+	1.6336 511-	0.0027 1949-
$a_2$	5018 231-	2064 455-	4 0450-		1538 694+	5900 915+	8 5701+
$a_3$	496 287+	661 484+	2 4753+		307 673-	162 877+	3422-
$a_4$	27 113+	45 576-	1488-		43 730-	25 808-	206+
$a_5$	6 149-	1 606+			5 663+	1 686-	
December 18							
$a_0$	159.4763 100+	5.9711 998+	0.9692 5887+		256.7675 655+	26.9564 670-	0.8992 0867+
$a_1$	12.2553 654+	6.0586 938-	0.0158 2462-		13.2624 236+	0.4157 693-	0.0010 9987-
$a_2$	3428 039-	337 268-	2 4835+		410 126+	6217 800+	7 6705+
$a_3$	545 448+	495 913+	1 8655+		425 164-	43 815+	2579-
$a_4$	2 562-	36 707-	1634-		13 980-	34 485-	314+
$a_5$	2 393-	2 692+			7 107+	139+	
December 19							
$a_0$	171.4429 208+	0.0750 310-	0.9538 5280+		270.0277 979+	26.7495 094-	0.8988 5320+
$a_1$	11.7311 723+	5.9907 104-	0.0148 3370-		13.2148 583+	0.8272 126+	0.0003 6943+
$a_2$	1830 901-	957 211+	7 1050+		878 013-	6143 767+	7 0865+
$a_3$	512 074+	375 872+	1 2044+		411 277-	91 756-	1301-
$a_4$	13 803-	22 884-	1440-		22 780+	33 481-	356+
$a_5$	1 059-	2 427+			4 847+	1 870+	
December 20							
$a_0$	183.0407 243+	5.9344 787-	0.9398 3565+		283.1164 898+	25.3202 567-	0.8999 2183+
$a_1$	11.5125 636+	5.6944 475-	0.0131 0897-		12.9274 036+	2.0159 829+	0.0017 6197+
$a_2$	388 045-	1971 824+	9 8646+		1926 718-	5686 397+	6 9092+
$a_3$	446 224+	308 144+	6265+		273 874-	206 627-	149+
$a_4$	18 754-	10 582-	1107-		46 930+	23 588-	327+
$a_5$	1 177-	1 625+			970+	2 460+	
December 21							
$a_0$	194.5571 127+	11.4018 252-	0.9277 6472+		295.8286 242+	22.7584 097-	0.9023 7947+
$a_1$	11.5607 312+	5.2110 611-	0.0109 9237-		12.4791 520+	3.0830 681+	0.0031 6135+
$a_2$	826 331+	2849 036+	11 0910+		2457 195-	4949 633+	7 1467+
$a_3$	359 053+	281 441+	1845+		77 997-	276 695-	1480+
$a_4$	24 626-	2 338-	756-		50 885+	10 946-	224+
$a_5$	1 883-	551+			1 690-	1 892+	
December 22							
$a_0$	206.2337 315+	16.3000 171-	0.9178 9233+		308.0591 766+	19.2089 532-	0.9062 7252+
$a_1$	11.8229 213+	4.5574 822-	0.0087 4909-		11.9838 225+	3.9865 525+	0.0046 4404+
$a_2$	1736 838+	3684 862+	11 2004+		2402 892-	4072 797+	7 7195+
$a_3$	241 529+	276 876+	1166-		108 236+	302 186-	2397+
$a_4$	34 450-	490+	441-		41 661+	1 427-	50+
$a_5$	2 263-	709-			2 322-	802+	
December 23							
$a_0$	218.2508 182+	20.4613 474-	0.9102 4721+		319.8174 673+	14.8454 021-	0.9117 1297+
$a_1$	12.2278 375+	3.7376 067-	0.0065 6163-		11.5512 188+	4.7102 851+	0.0062 6184+
$a_2$	2231 962+	4511 332+	10 5941+		1851 497-	3165 683+	8 4609+
$a_3$	81 736+	271 071+	2915-		251 960+	300 507-	2616+
$a_4$	46 623-	3 158-	176-		29 718+	2 499+	189-
$a_5$	1 200-	1 904-			1 743-	288-	
December 24							
$a_0$	230.7052 430+	23.7212 200-	0.9047 1409+		331.2115 299+	9.8483 783-	0.9188 4516+
$a_1$	12.6795 046+	2.7562 348-	0.0045 3728-		11.2675 237+	5.2541 242+	0.0080 2493+
$a_2$	2185 301+	5286 499+	9 6210+		934 748-	2276 258+	9 1228+
$a_3$	114 993-	239 112+	3601-		353 831+	293 922-	1876+
$a_4$	53 432-	13 086-	41+		21 026+	955+	487-
$a_5$	1 894+	2 433-			984-	1 205-	

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