Occultation prediction for Nederland midden
E. Longitude 5 0 0.0, Latitude 52 0 0.0, Alt. 0m;

y	m	day d	h	m	s	P	Star No	Sp D	Mag v	Mag r V	% ill	Elon Sun Alt	Moon Alt	Moon Az	CA o	PA o	VA o	AA o	Libration L	Libration B	A m/o	B m/o	RV "/s	Cct durn o	Cct durn sec	R.A. (J2000) h	R.A. (J2000) m	R.A. (J2000) s	Dec o	Dec m	Dec s	Mdist Mm	SV m/s
26	Jan	5	23	27	24	Gr	1407	K0	7.7	7.1	91-	145	42	** GRAZE: CA 9.4S; Dist. 61km in az. 191deg. [Lat = 51.44-0.13(E.Long-5.00)]																			
	Distance of 1407 to Terminator = 10.3"; to 3km sunlit peak = 1.2"																															
26	Jan	5	23	36	29.9	R	1407	K0	7.7	7.1	91-	145	43	125	24S	221	253	204	+7.0	-1.8	+2.1	+8.0	.116	-104.5		9	31	39.0	15	46	12	369.2	827.7
26	Jan	6	3	3	34.7	r	98678	cF8	8.8		90-	144	52	199	33N	345	333	327	+6.7	-1.5	+0.4	-2.5	.336	138.0		9	37	38.8	15	27	30	369.3	809.1
	98678 is double: AB 9.23 9.87 0.28" 265.2, dT = -0.15sec																															
	98678 is a close double. Observations are highly desired																															
26	Jan	6	3	17	24.7	R	98676	F2	8.0	7.8S	90-	144	51	204	83N	294	279	277	+6.6	-1.4	+1.2	-1.2	.450	-171.4		9	37	17.3	15	15	9	369.4	814.8
	98676 = NSV 4550, 8.3,																															
26	Jan	6	5	46	51.3	r	98723	K0	8.8	8.2	90-	142	35	247	26N	352	316	334	+6.4	-1.1	-0.2	-2.5	.325	129.7		9	42	18.3	14	45	50	371.3	917.0
26	Jan	6	6	34	12.4	d	1434	wM2	5.4	4.5s	89-	142	-10	27	257	-10S	189	150	171	+6.4	-1.0	-0.9	-3.0	.198	-68.2	.02	9	43	43.9	14	1	18	372.2	959.9
	R1434 = psi Leonis																															
	1434 is double: AB 5.5 11.6 283" 138.9, dT = +922sec																															
	1434 = NSV 4594, 5.35 to 5.39, V, Type LB																															
26	Jan	6	6	55	54.2	R	1434	wM2	5.4	4.5s	89-	142	-7	24	262	33S	232	193	214	+6.4	-1.0	+1.3	-0.8	.202	-111.8	.02	9	43	43.9	14	1	18	372.7	982.9
	R1434 = psi Leonis																															
	1434 is double: AB 5.5 11.6 283" 138.9, dT = +73sec																															
	1434 = NSV 4594, 5.35 to 5.39, V, Type LB																															
26	Jan	7	0	51	52.9	r	99106	K0	8.2	7.4	83-	132	41	136	78N	303	329	283	+7.5	-0.2	+1.1	-0.1	.443	179.6		10	25	2.0	9	58	56	375.6	807.5
26	Jan	7	2	13	38.4	R	1531	wA0	6.0	6.0v	83-	131	47	162	37N	344	355	324	+7.3	+0.0	+0.6	-2.0	.333	140.7		10	27	39.0	9	45	45	375.5	784.8
	R1531 = 45 Leonis (CX)																															
	1531 is double: AB 6.0 12.4 34" 119.6, dT = +72sec																															
	1531 = CX Leo, 6.01 to 6.03, V, Type ACV, Period 3.0525 days, Phase 80%																															
26	Jan	7	3	2	29.0	r	118325	G5	8.4	7.9	83-	131	48	180	30N	351	352	331	+7.2	+0.1	+0.3	-2.4	.304	134.8		10	28	55.9	9	33	54	375.6	785.0
26	Jan	7	6	34	21.7	r	118359	F5	8.7	8.5	82-	130	-10	30	243	58N	324	290	304	+6.8	+0.5	+0.4	-2.0	.457	160.0		10	33	42.8	8	35	12	378.1	891.7
26	Jan	8	6	38	58.1	R	1642	KF2	7.6	7.4	73-	117	-10	29	230	66N	318	290	297	+6.8	+2.0	+0.7	-1.9	.436	167.4		11	20	56.0	2	25	21	384.2	833.1
26	Jan	9	4	37	40.1	R	138553	kK2	7.5	6.9	64-	106		35	182	52S	256	254	234	+6.7	+3.2	+2.4	+0.5	.243	-127.4		12	3	13.2	- 3	23	44	388.8	754.6
26	Jan	10	2	29	52.4	R	138948	pK0	7.6	7.0	55-	96		21	138	89S	292	317	271	+6.3	+4.3	+1.0	+0.6	.410	-166.2		12	44	59.7	- 8	31	55	394.7	808.8
	138948 is double: AB 7.7 11.2 7.6" 96.1, dT = +18sec																															
	138948 is a close double. Observations are highly desired																															
26	Jan	10	2	53	32.7	r	138954	kF8	8.9	8.6	55-	95		23	143	77S	280	302	258	+6.2	+4.3	+1.3	+0.9	.370	-153.1		12	45	28.3	- 8	40	59	394.5	792.8
26	Jan	10	3	55	50	M	1835	K2	7.6	6.9	54-	95		27	159	14S	217	230	196	+6.1	+4.4	+9.9	+9.9	.000	-90.0		12	47	6.3	- 9	12	52	394.3	759.6
26	Jan	10	4	52	4.6	r	138970	F0	8.7	8.5	54-	95		29	175	75S	278	282	257	+5.9	+4.5	+1.7	+0.0	.339	-150.9		12	48	0.1	- 9	10	3	394.3	741.7
26	Jan	10	4	52	14.2	r	138971	cF0	8.9	8.7	54-	95		29	175	81S	284	287	262	+5.9	+4.5	+1.6	-0.1	.355	-156.4		12	48	1.4	- 9	8	40	394.3	741.7
	138971 is double: ** 8.1 9.2																															

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      day  Time      P   Star  Sp  Mag  Mag    % Elon Sun  Moon   CA   PA  VA  AA Libration    A    B    RV    Cct durn  R.A. (J2000)  Dec   Mdist   SV
 y   m  d  h  m    s       No  D    v    r V  ill     Alt Alt Az   o    o   o   o   L    B    m/o m/o  "/s      o  sec  h  m    s    o  m  s   Mm   m/s

26 Jan 10  5 32 36.7 R  138978 K2  7.6  7.0   54-  94      29 186  79N 304 300 283 +5.8 +4.6 +1.3-0.8 .385 -177.2      12 49  0.6 - 9 13 13 394.4 736.8
26 Jan 12  5 58 30.4 R  158499 F2  7.7  7.5   35-  72      18 171  43N 334 340 316 +3.6 +6.6 +0.7-0.7 .309  146.8      14 20 50.3 -19 19 56 401.9 719.5
26 Jan 12  6  9 27.6 r X 37828 G0  8.8  8.6   35-  72      18 173  21N 356   1 338 +3.5 +6.6 +0.1-1.4 .207  124.4      14 21 28.4 -19 20 34 401.9 715.6
26 Jan 12  6 54  3.0 r  158509 A1  8.8  8.7   35-  72  -7  18 185  83S 280 278 263 +3.4 +6.6 +1.7-0.3 .342 -161.1      14 21 29.9 -19 40 49 402.0 705.3
26 Jan 13  3 52 32.9 r    2152kA0  7.5  7.5   27-  62      3 134  70N 303 331 287 +2.6 +7.0 +0.5+0.7 .421  174.5      15  5 16.8 -23  0 48 404.8 831.5
26 Jan 13  4  0 50.9 r  183164 K0  8.1  7.5   27-  62      4 136  48N 325 353 310 +2.6 +7.0 +0.2+0.1 .370  151.9      15  5 47.8 -22 58 14 404.7 823.5
26 Jan 13  4 32 11.9 R  183171kF3  7.2  7.0s  26-  62      7 142  65S 258 282 243 +2.6 +7.0 +1.5+1.7 .313 -140.6      15  6 11.4 -23 19 23 404.4 794.5
    183171 = NSV 6927, 7.1, range 0.01, V
26 Jan 14  6 12 41.1 R  183993pA2  8.1  8.0   18-  51      8 155  83S 269 287 258 +1.0 +7.5 +1.5+1.0 .352 -158.7      15 59 11.9 -26 35  1 404.5 742.0
    183993 is double: AB 7.7 10.1 0.70" 192.0, dT = -0.43sec
    183993 is a close double. Observations are highly desired
26 Jan 21 18 41 22.5 D  165118 G5  8.7  8.2    9+  34      5 247  29N   9 333  29 -6.1 +1.0 -0.2+1.3 .334   49.1      22 29 43.2 -10  2 38 385.1 952.4
26 Jan 22 17  1 37.2 D    3415pF2  8.3  8.1   15+  45  -8 27 218  89S  68  45  89 -6.0 -0.4 +1.1-0.4 .437  -14.3      23 15 20.0 - 4 32  3 379.7 830.5
     3415 is double: ** 8.9 9.4 0.027" 129.9, dT = +0.03sec
     3415 has been reported as non-instantaneous (OCc1802). Observations are highly desired
26 Jan 22 18 24 39.1 D  146615 K2  7.6  6.9   15+  46      18 238  24S 133 101 154 -6.1 -0.5 +2.7-7.8 .110  -76.8      23 17 15.0 - 4 26  7 380.4 890.8
26 Jan 22 18 32 45   Gr 146615 K2  7.6  6.9   15+  46      16 ** GRAZE: CA 10.6S; Dist. 51km in az. 157deg. [Lat = 51.50+0.27(E.Long-5.00)]
26 Jan 22 20  4 46.1 D    3431KF2  6.6  6.4   16+  47      4 258  41S 116  78 137 -6.2 -0.7 +0.5-3.2 .294  -56.4      23 20 15.8 - 3 55  9 381.7 984.7
26 Jan 23 17 26 34.2 D       1SG0  7.2     S  23+  58 -11 35 216  37N  13 352  35 -5.8 -2.0 +0.4+1.6 .339   41.0       0  2 47.2   2  7 49 375.6 817.6
       1 is triple: AB 7.40 9.36 1.52" 156.6, dT = -4sec : AC 7.4 12.4 47" 328.5, dT = +100sec
       1 is a close double. Observations are highly desired
       1 = NSV 3, 9. to 11., V
26 Jan 23 18 14 36.8 D  108994 K5  8.5  7.7   24+  58      30 228  70N  46  18  68 -5.9 -2.0 +0.8+0.2 .456    9.3       0  4 30.1   2 16  3 376.0 843.2
26 Jan 23 18 42  1.1 D  109001 G5  8.7  8.4   24+  59      27 235  67N  43  13  65 -5.9 -2.1 +0.7+0.2 .460   13.1       0  5 10.2   2 23 50 376.2 861.5
26 Jan 24 14 49 37.0 D     105wK5  4.4  3.7   33+  70   9  43 151  68S  89 106 110 -5.0 -3.1 +1.6+0.8 .371  -35.2 .01   0 48 40.9   7 35  6 372.2 819.8
   R105 = delta Piscium
     105 is double: AB 4.6 14.0 135"  11.4, dT = +80sec
26 Jan 24 15 47 57.8 R     105wK5  4.4  3.7   33+  70   3  46 171 -42S 198 204 220 -5.1 -3.2 +0.5+2.0 .362 -144.7 .01   0 48 40.9   7 35  6 371.8 799.9
   R105 = delta Piscium
     105 is double: AB 4.6 14.0 135"  11.4, dT = +372sec
26 Jan 24 16 23 24.4 d  109500 F8  8.1  7.9   33+  70  -2  46 183  77S  79  78 101 -5.2 -3.2 +1.6+0.3 .398  -25.6       0 50 55.6   8  2 45 371.7 795.4
26 Jan 24 16 48 38.3 d  109501kK5  9.0  8.4   33+  70  -6  46 192  54N  30  23  52 -5.2 -3.3 +0.8+1.5 .404   23.6       0 51  1.0   8 20 11 371.7 794.9
26 Jan 24 18  0 17.3 D     116kK0  8.7  8.1   34+  71      42 215  41N  18 357  39 -5.4 -3.4 +0.6+1.7 .352   38.1       0 52 32.9   8 39 56 371.8 808.3
26 Jan 24 20 22 38.2 D     124 K0  7.8  7.2   34+  72      25 252  50N  27 350  48 -5.6 -3.6 +0.5+0.7 .408   34.6       0 56 32.9   9 13 45 373.1 897.2
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      day  Time      P   Star  Sp  Mag  Mag    % Elon Sun  Moon   CA   PA  VA  AA Libration    A    B    RV    Cct durn  R.A. (J2000)  Dec   Mdist   SV
 y   m  d  h  m   s       No  D     v    r V  ill     Alt Alt Az   o    o   o   o   L    B   m/o m/o  "/s     o  sec  h  m   s    o  m  s   Mm   m/s

26 Jan 24 22 51 28.5 d  109610dG5  7.8  7.3   35+  73      4 281  72N  48  10  70 -5.6 -3.7 +0.0-0.4 .549   18.2      1  1 42.9   9 44 46 375.01050.7
    109610 is double: AB 7.3 11.5 1.0" 225.0, dT = -1.8sec
    109610 is a close double. Observations are highly desired
26 Jan 25 17 49 55.4 d   92598 A3  8.9  8.8   45+  84     52 198  42N  20   9  40 -4.6 -4.6 +0.7+2.0 .350   38.0      1 43 42.6  14 42  8 368.1 792.9
26 Jan 25 22 44 36.0 d     277DF5  8.2        46+  86     17 274  59S 100  60 120 -4.9 -4.9 +0.1-1.9 .474  -30.4      1 53 14.3  15 26  0 370.7 987.8
      277 is double: AB 8.75 8.97 1.07" 262.6, dT = -2.2sec
      277 is a close double. Observations are highly desired
26 Jan 26 17 18 46.7 D   93033SK0  7.2  6.4   56+  97  -9 57 164  69S  94 104 111 -3.4 -5.5 +1.7+0.2 .386  -31.7      2 38 37.3  19 43 40 365.2 803.6
    93033 is triple: **Aa,Ab 7.5 8.5 0.30"  70.0, dT = +0.7sec : AB 7.2 14.4 45"  57.7, dT = +94sec
    93033 has been reported as non-instantaneous (OCc 312). Observations are highly desired
26 Jan 26 17 29 23.3 d   93031cF0  8.8        56+  97 -11 58 168  25N   8  15  25 -3.5 -5.5 +0.2+3.4 .262   54.5      2 37 55.1  20  3 10 365.1 799.9
    93031 is double: AB 9.48 9.34 0.49" 145.0, dT = -1.4sec
    93031 is a close double. Observations are highly desired
26 Jan 26 18 39 37.0 D   93043 G5  8.7  8.2   56+  97     57 198  71N  54  42  71 -3.6 -5.6 +1.2+0.9 .438   10.6      2 40 41.6  20 10 53 365.0 789.2
26 Jan 26 18 45 26.5 d   93051c    9.0  8.4   56+  97     57 201  61S 101  88 119 -3.6 -5.6 +1.7-1.0 .357  -36.9      2 41  3.6  19 59  4 365.0 789.4
    93051 is double: ** 9.2 11.3 0.27" 118.0, dT = +0.7sec
    93051 has been reported as non-instantaneous (OCc 275). Observations are highly desired
26 Jan 26 19 43 31.0 D     399SA0  5.7  5.8   57+  98     52 223  24S 139 113 156 -3.7 -5.6 +2.2-6.4 .138  -72.2      2 42 21.9  20  0 41 365.2 800.9
  R399 = mu Arietis
      399 is multiple: Ba,Bb 12.4 14.5            : B     2.4 0.004" 189.0, dT = +0.02sec : Aa,Ab 5.7 6.2 0.038" 271.1, dT = -0.18sec : AB 5.7 12.2 18.6" 264.9, dT = -78sec
      399 is a close double. Observations are highly desired
26 Jan 26 19 52  0.6 D   75531DG5  7.7        57+  98     52 225  70S  92  65 109 -3.7 -5.6 +1.4-1.0 .411  -25.1      2 43  1.0  20 13 50 365.2 803.7
    75531 is double: AB 7.78 11.41 1.85" 224.0, dT = -3sec
    75531 is a close double. Observations are highly desired
26 Jan 26 19 54 50   Gr     399SA0  5.7  5.8   57+  98     51 ** GRAZE: CA  5.6S; Dist. 92km in az. 169deg. [Lat = 51.15+0.12(E.Long-5.00)]
26 Jan 26 20  6 10.8 r     399SA0  5.7  5.8   57+  98     50 230 -13S 176 146 193 -3.7 -5.7 +0.5+6.3 .140 -107.8      2 42 21.9  20  0 41 365.3 810.2
  R399 = mu Arietis
      399 is multiple: Ba,Bb 12.4 14.5            : B     2.4 0.004" 189.0, dT = -0.03sec : Aa,Ab 5.7 6.2 0.038" 271.1, dT = +0.03sec : AB 5.7 12.2 18.6" 264.9, dT = -1.9sec
      399 is a close double. Observations are highly desired
26 Jan 26 20 50 30.2 d   75545 K0  8.6  8.0   57+  98     45 243  65N  48  13  65 -3.8 -5.7 +1.0+0.3 .438   21.5      2 44 30.9  20 35 15 365.6 834.4
26 Jan 26 21 30 22.2 D   75558 A0  7.7  7.6   57+  98     39 252  65N  48   9  65 -3.8 -5.7 +0.9+0.1 .447   23.3      2 45 47.8  20 41 34 366.0 864.2
26 Jan 27 16 33 21.7 d X 66511p    8.7  8.3   67+ 110  -3 52 124  73S  95 129 108 -2.1 -6.0 +1.3+0.9 .431  -27.8      3 36 29.7  23 54 46 363.3 859.0
  X 66511 is double: AB 8.7 11.0 6.7" 113.1, dT = +15sec
  X 66511 is a close double. Observations are highly desired
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      day  Time      P   Star  Sp  Mag  Mag    % Elon Sun  Moon   CA   PA  VA  AA Libration    A    B   RV    Cct durn  R.A. (J2000)   Dec    Mdist   SV
 y   m  d  h  m    s       No  D     v    r V  ill     Alt Alt Az   o    o   o   o   L     B   m/o m/o  "/s     o  sec  h  m    s    o  m  s    Mm    m/s

26 Jan 27 16 39 38.3 d   76021kG0  8.6  8.3   67+ 110  -4 53 126  42S 126 159 139 -2.1 -6.0 +2.1-0.6 .255  -58.3      3 36 28.8  23 47 50 363.2 853.9
26 Jan 27 17 20 16.0 D     522 G5  7.8  7.1   67+ 110  -9 57 139  61N  49  76  62 -2.1 -6.0 +0.9+1.9 .445   18.6      3 37 43.5  24 15 33 362.9 826.1
26 Jan 27 20 31  1.0 D   76104KA7  8.3  8.1v  68+ 111     57 222  40S 129 102 142 -2.4 -6.2 +1.5-3.1 .265  -54.3      3 43 43.2  24 22 28 362.6 798.0
     76104 = V0624 Tau, 8.23 to 8.25, V, Type DSCTC, Period 0.0205 days
26 Jan 27 20 31 20.5 D   76113 A2  8.1  8.0v  68+ 111     57 223  80S  88  61 101 -2.4 -6.2 +1.4-0.7 .442  -13.3      3 44  0.3  24 33 25 362.6 797.9
     76113 = V1187 Tau, 8.28, range 0.02, B, Type DSCTC
26 Jan 27 20 56 23.7 D   76119pA5  8.1  8.0   68+ 112     54 231  31S 137 106 150 -2.5 -6.2 +1.3-4.2 .221  -61.2      3 44 25.7  24 23 41 362.8 808.7
     76119 is double: ** 9.3 9.3 0.10" 139.0, dT = +0.45sec
     76119 has been reported as non-instantaneous (OCc 776). Observations are highly desired
26 Jan 27 21  6 45.9 d   76117kK2  8.9  8.0   68+ 112     54 235  30N  19 345  31 -2.5 -6.2 +1.3+2.8 .245   57.9      3 44 20.2  24 52 30 362.8 813.9
26 Jan 27 21 15 27.9 D     539SB6  4.3  4.4s  69+ 112     52 237  42S 127  92 139 -2.5 -6.2 +1.1-3.0 .302  -49.5      3 45 12.5  24 28  2 362.9 818.7
   R539 = Taygeta = 19 Tauri
       539 is multiple: Aa,Ab 4.6 6.1           : AB          0.032" 259.1, dT = -0.07sec : AC 4.3 14.0 53"  53.4, dT = +50sec : AB 4.3 11.0 72" 328.8, dT = -222sec
       539 is a close double. Observations are highly desired
       539 = NSV 1264, 4.30, range 0.00, 1Kp, Type SPB, Period 1.5664 days
26 Jan 27 21 18 45.2 D     538pB8  5.7  5.7   69+ 112     52 238  53N  42   7  55 -2.5 -6.2 +1.2+0.8 .383   34.9      3 45  9.7  24 50 21 362.9 820.6
   R538 = 18 Tauri
       538 is quadruple: Aa,Ab 6.4 6.4 0.10"       : AB 5.6 14.0 72" 128.9, dT = +12sec : AC 5.6 14.8 151" 175.1, dT = -267sec
       538 is a close double. Observations are highly desired
26 Jan 27 21 29 29.9 d   76149PA2  8.9     s  69+ 112     50 241  35S 134  98 147 -2.5 -6.2 +1.0-3.7 .258  -56.7      3 45 34.5  24 27 48 363.0 827.4
     76149 = NSV 1273, 8.59, range 0.01, V, Type DSCT:
26 Jan 27 21 31 56.6 D     542pB8  5.8  5.8   69+ 112     50 242  57S 112  76 125 -2.5 -6.2 +1.0-2.1 .387  -34.6      3 45 54.5  24 33 16 363.0 828.8
   R542 = Asterope = 21 Tauri
       542 is triple: AB 5.8 6.4 150" 130.1, dT = +368sec : AD 5.8 12.7 170"  74.1, dT = +344sec
26 Jan 27 21 35 52.9 d   76142kF5  9.0  8.8   69+ 112     50 243  32N  21 343  33 -2.5 -6.2 +1.3+2.4 .255   57.3      3 45 20.9  24 55 19 363.0 831.6
26 Jan 27 21 38 31.9 D     543pA0  6.4  6.4   69+ 112     49 244  48S 121  84 134 -2.5 -6.2 +1.0-2.6 .345  -43.1      3 46  2.9  24 31 40 363.1 833.3
   R543 = 22 Tauri
       543 is triple: BC 6.4 15.1 52" 267.9, dT = -124sec : BA 6.4 5.8 150" 310.1, dT = -428sec
26 Jan 27 22  1 22.1 R     539SB6  4.3  4.4s  69+ 112     46 250 -40S 210 170 222 -2.6 -6.2 +1.2+1.4 .314 -130.5      3 45 12.5  24 28  2 363.3 851.2
   R539 = Taygeta = 19 Tauri
       539 is multiple: Aa,Ab 4.6 6.1           : AB          0.032" 259.1, dT = -0.07sec : AC 4.3 14.0 53"  53.4, dT = +154sec : AB 4.3 11.0 72" 328.8, dT = +113sec
       539 is a close double. Observations are highly desired
       539 = NSV 1264, 4.30, range 0.00, 1Kp, Type SPB, Period 1.5664 days
26 Jan 27 22  5 35.4 D   76184PA9  8.3  8.1v  69+ 112     46 251  78N  67  27  79 -2.6 -6.2 +1.0-0.5 .473   12.2      3 47  3.6  24 49 11 363.3 853.4
     76184 is double: AB 8.7 10.7 0.61" 220.8, dT = -1.2sec
     76184 is a close double. Observations are highly desired
     76184 = V0534 Tau, 8.26 to 8.3, V, Type DSCTC, Period 0.032 days
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      day  Time      P   Star  Sp  Mag  Mag     % Elon Sun  Moon   CA   PA  VA  AA Libration    A    B   RV    Cct durn  R.A. (J2000)  Dec    Mdist   SV
 y  m  d  h  m   s        No  D    v    r V  ill     Alt Alt Az   o    o   o   o   L    B    m/o m/o  "/s     o  sec  h  m   s    o  m  s   Mm    m/s

26 Jan 27 22 12  5.5 D     548pB9  6.8  6.8   69+ 112     45 252  32S 138  98 150 -2.6 -6.2 +0.6-4.0 .256  -58.3      3 46 59.4  24 31 12 363.4 859.1
       548 is quadruple: Aa,Ab 6.8 6.9 0.014" 245.9, dT = -0.02sec : AB 6.8 14.8 102" 299.3, dT = -375sec : AC 6.8 13.0 123" 190.1, dT = +293sec
       548 is a close double. Observations are highly desired
26 Jan 27 22 14 34.0 r     538pB8  5.7  5.7   69+ 112     44 253 -55N 295 254 307 -2.6 -6.2 +0.8-2.3 .401  145.1      3 45  9.7  24 50 21 363.4 862.1
   R538 = 18 Tauri
       538 is quadruple: Aa,Ab 6.4 6.4 0.10"       : AB 5.6 14.0 72" 128.9, dT = +174sec : AC 5.6 14.8 151" 175.1, dT = +185sec
       538 is a close double. Observations are highly desired
26 Jan 27 22 14 52.0 d X  4907pB8  8.8  8.6   69+ 112     44 253  65S 104  64 117 -2.6 -6.2 +0.8-1.8 .443  -24.9      3 47 26.5  24 39 30 363.4 861.0
   X  4907 is double: AB 8.8 11.3 6.8" 329.9, dT = -11sec
   X  4907 is a close double. Observations are highly desired
26 Jan 27 22 17 35.4 D   76194PA0  7.7  7.6v  69+ 112     44 253  48S 121  81 134 -2.6 -6.2 +0.7-2.6 .366  -41.7      3 47 24.1  24 35 19 363.4 863.5
     76194 is quadruple: ** 7.7      0.050" 298.0, dT = -0.14sec : AB 7.7 14.6 32"  94.3, dT = +79sec : AC 7.7 14.4 130"  62.8, dT = +185sec
     76194 has been reported as non-instantaneous (OCc1829). Observations are highly desired
     76194 = V1228 Tau, 7.71, range 0.02, v, Type DSCTC, Period 0.0603 days
26 Jan 27 22 28 41.1 r     542pB8  5.8  5.8   69+ 112     42 256 -56S 226 184 238 -2.6 -6.2 +1.1+0.2 .409 -145.5      3 45 54.5  24 33 16 363.6 874.5
   R542 = Asterope = 21 Tauri
       542 is triple: AB 5.8 6.4 150" 130.1, dT = +34sec : AD 5.8 12.7 170"  74.1, dT = +366sec
26 Jan 27 22 45 37.9 D     555 K5  6.4  5.6s  69+ 112     40 260  48N  37 355  50 -2.6 -6.2 +1.1+0.6 .366   43.3      3 48  6.5  24 59 18 363.7 888.8
       555 = NSV 1316, 6.44, range 0.02, 0V, Type VAR, Period 1.48987 days
26 Jan 28  0 24 56.5 D     571pA2  6.8  6.7   70+ 113     25 279  20N   9 327  21 -2.6 -6.1 +1.8+3.2 .156   73.9      3 51 25.3  25  9 47 364.9 997.1
       571 is double: ** 7.1 9.1
26 Jan 28  0 31 47   Gr    571pA2  6.8  6.7   70+ 113     24 ** GRAZE: CA  3.4N; Dist. 85km in az.  30deg. [Lat = 52.89-0.36(E.Long-5.00)]
26 Jan 28  0 37 35.4 D     574pG0  6.8  6.5   70+ 113     24 281  31N  21 339  33 -2.6 -6.1 +1.1+1.1 .267   62.2      3 52 11.4  25  9 47 365.1 1011.9
26 Jan 28 16 10 11.5 d     701SF2  6.6  6.4   77+ 123   1 42 100  46N  41  85  50 -0.6 -6.1 +0.2+2.4 .443   33.0      4 38 29.5  26 56 23 362.4 927.6
       701 is triple:  6.6 9.2 3.1" 169.4, dT = -4sec : AB 7.36 7.21 4.48" 187.8, dT = -8sec
       701 is a close double. Observations are highly desired
26 Jan 28 16 10 15.8 d X 70481p    7.3  7.2   77+ 123   1 43 100  46N  41  85  49 -0.6 -6.1 +0.2+2.4 .442   33.1      4 38 29.6  26 56 26 362.4 927.6
   X 70481 is triple:  7.3 9.2 5.8" 174.9, dT = -9sec : AC 7.4 12.9 92" 203.6, dT = -197sec
   X 70481 is a close double. Observations are highly desired
26 Jan 28 21  4 24.3 D   76764cG8  7.9  7.2   79+ 125     62 213  21S 156 133 163 -1.0 -6.3 +1.3-6.7 .143  -71.6      4 48 20.4  26 57 59 360.8 793.5
     76764 is double: ** 8.6 8.6 0.10" 160.0, dT = +0.7sec
     76764 has been reported as non-instantaneous (OCc 736). Observations are highly desired
26 Jan 28 21 16 31   Gr  76764cG8  7.9  7.2   79+ 125     61 ** GRAZE: CA  1.9S; Dist.100km in az. 185deg. [Lat = 51.10-0.05(E.Long-5.00)]
   Distance of 76764 to Terminator = 6.7"; to 3km sunlit peak = 0.0"
26 Jan 28 21 19  2.4 D   76770PF8  8.1  7.8   79+ 125     61 219  34S 142 116 149 -1.0 -6.3 +1.2-3.7 .245  -57.5      4 49  5.5  27  0 41 360.9 798.4
     76770 is double: ** 8.4 8.4 0.10" 324.0, dT = -0.41sec
     76770 has been reported as non-instantaneous (OCc 766). Observations are highly desired
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      day  Time      P   Star  Sp  Mag  Mag     % Elon Sun  Moon   CA   PA  VA  AA Libration    A    B    RV    Cct durn  R.A. (J2000)  Dec    Mdist    SV
 y   m  d  h  m   s        No  D     v    r V  ill     Alt Alt Az   o    o   o   o   L    B    m/o m/o  "/s     o  sec  h  m   s     o  m  s    Mm    m/s

26 Jan 28 22 53 38.7 d   76803 K5  9.0  8.2    79+ 126     50 250  85N  82  41  88 -1.1 -6.2 +1.0-0.9 .485    6.9      4 52 53.0  27 18 51 361.5 855.9
26 Jan 29  0  5 30.9 D   76841cK1  7.3  6.7    80+ 127     39 265  71S 106  63 113 -1.2 -6.2 +0.5-1.8 .506  -15.9      4 55 34.6  27 12  9 362.3 924.3
     76841 is double: ** 7.6 10.1 0.08"  82.0, dT = +0.15sec
     76841 has been reported as non-instantaneous (OCc 753). Observations are highly desired
26 Jan 29  1 48 19.5 D     746WB7  7.0  6.9    80+ 127     24 284  79N  76  34  82 -1.2 -6.0 +0.2-1.1 .570   15.7      4 59 53.7  27 19 32 363.61043.3
       746 is double: AB 7.0 8.7 20.4" 206.1, dT = -23sec
26 Jan 29 17 38  8.0 d   77563 A3  8.2  8.0    87+ 137 -12 46 104  43S 141 184 143 +0.9 -5.9 +1.6-0.9 .277  -56.9      5 47 45.2  27 38  9 361.3 889.6
26 Jan 29 18 53 47.0 D     885wG7  5.6  5.1    87+ 138     57 124  73N  77 112  78 +0.8 -5.9 +1.1+1.3 .467    9.6      5 50 58.1  27 58  4 360.5 828.8
       885 is double: AB 5.7 12.5 10.8" 233.1, dT = -21sec
26 Jan 29 19  2 32.5 D   77621 M3  7.5  6.6s   87+ 138     58 128  40S 144 178 145 +0.8 -5.9 +1.8-2.0 .256  -57.1      5 50 48.2  27 41  9 360.5 823.0
     77621 = NSV 16688, 7.47, range 0.02, 6V, Type VAR, Period 4.88496 days
26 Jan 29 19 13 54.5 D   77639 K0  8.3  7.7    87+ 138     59 131  79S 105 137 107 +0.8 -5.9 +1.4+0.2 .444  -18.0      5 51 40.2  27 50 31 360.4 816.7
26 Jan 29 19 17 30.2 D   77638 B8  8.2  8.1    87+ 138     60 132  46N  50  82  52 +0.8 -5.9 +1.0+2.3 .372   37.0      5 51 33.0  28  5 32 360.4 814.6
26 Jan 29 20  4  2.3 r     885wG7  5.6  5.1    87+ 139     64 153 -86N 279 297 280 +0.7 -5.9 +1.4+0.1 .449  170.5      5 50 58.1  27 58  4 360.1 794.7
       885 is double: AB 5.7 12.5 10.8" 233.1, dT = -17sec
26 Jan 29 20 37 19   M     890cA0  4.6  4.6s   88+ 139     65 169   4S 181 189 182 +0.7 -5.9 +9.9+9.9 .000  -90.0      5 53 19.6  27 36 44 360.1 788.5
   R890 = 136 Tauri
       890 is double: ** 4.8 6.3 0.050" 270.0
       890 has been reported as non-instantaneous (OCc 206). Observations are highly desired
       890 = NSV 2696, 4.50 to 4.61, V
   Distance of 890 to Terminator = 1.6"; to 3km sunlit peak = 0.0"
26 Jan 29 21 20 42.4 D   77724 B1  7.0  7.0    88+ 139     66 191  48S 137 130 138 +0.6 -5.9 +1.3-2.3 .323  -44.4      5 55 40.3  27 42 56 360.1 789.2
26 Jan 29 23  1  5.1 d   77798 B9  8.5  8.5    88+ 140     57 234  34S 151 117 152 +0.5 -5.8 +0.5-3.6 .278  -54.2      5 58 54.5  27 36 42 360.5 830.1
26 Jan 29 23 15 58.8 d   77806 A0  8.6  8.6    88+ 140     55 238  21S 164 128 164 +0.5 -5.8 +0.0-5.2 .191  -66.6      5 59 10.5  27 34 25 360.6 840.3
26 Jan 29 23 18 56.1 D   77804 A0  7.3  7.1    88+ 140     55 239  13S 173 136 173 +0.5 -5.8 -0.8-7.8 .122  -75.3      5 59  5.6  27 33 43 360.7 842.6
   Distance of 77804 to Terminator = 15.0"; to 3km sunlit peak = 3.5"
26 Jan 29 23 55 20.6 D     909SB9  6.0  5.9s   88+ 140     50 249  42S 144 103 144 +0.4 -5.8 +0.3-2.9 .350  -45.3      6  1  0.5  27 34 21 361.0 871.8
       909 is triple: Aa,Ab 6.1 9.2      194.0, dT = 0.00sec : AB 6.1 12.4 9.5" 242.3, dT = -4sec
       909 is a close double. Observations are highly desired
       909 = NSV 16751, 6.04, range 0.01, 2V, Type VAR, Period 9.26012 days
26 Jan 30  0 47 31.7 d   77894SF2  8.8  8.4    89+ 141     43 261  78S 108  64 108 +0.4 -5.7 +0.5-1.7 .520   -8.2      6  3 26.6  27 38 33 361.6 921.7
     77894 is triple: AB 8.9 9.6 11.5" 263.5, dT = -20sec : AC 8.9 11.1 25.6" 189.5, dT = +7sec
26 Jan 30  1  4 21.5 D   77909wA0  7.6  7.6    89+ 141     40 265  67S 119  75 119 +0.4 -5.7 +0.3-2.0 .507  -18.8      6  4  1.0  27 34 14 361.8 939.6
     77909 is double: AB 7.6 10.8 21.6" 132.5, dT = +41sec
26 Jan 30  2 38 35.3 d     927 G0  8.0  7.7    89+ 142     26 282  70S 116  73 116 +0.4 -5.5 -0.1-1.8 .572  -16.1      6  7 59.1  27 25 42 363.11048.2
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      day  Time      P   Star  Sp  Mag  Mag     % Elon Sun  Moon   CA   PA  VA  AA Libration    A    B   RV     Cct durn  R.A. (J2000)   Dec    Mdist    SV
 y   m  d  h  m   s       No  D    v    r V  ill     Alt Alt Az    o    o   o   o   L    B   m/o m/o  "/s      o  sec  h  m   s    o  m  s    Mm    m/s

26 Jan 30  3 28 54.6 d   78041cG5  7.8  7.3   89+ 142     19 290  19S 167 126 166 +0.4 -5.4 -1.2-2.9 .246  -66.9      6  9 26.6  27 11 38 363.91108.9
     78041 is double: ** 8.6 8.6 0.040" 237.0, dT = +0.06sec
     78041 has been reported as non-instantaneous (OCc1052). Observations are highly desired
26 Jan 30 17 58 37.0 D   78853 A0  7.7  7.7   94+ 151     39  96  45S 148 191 143 +2.5 -5.1 +1.3-0.9 .301  -54.8      6 54 29.2  26 31 51 362.3 918.2
26 Jan 30 19 17 55.2 d   78909 F8  8.9  8.6   94+ 152     51 114  43N  56  95  51 +2.4 -5.2 +0.8+2.5 .373   39.5      6 57 48.5  26 52 26 361.4 847.0
26 Jan 30 19 19 32.4 d   78914 K2  8.6  8.0   94+ 152     51 115  70S 123 162 118 +2.4 -5.2 +1.2-0.1 .429  -27.3      6 57 53.2  26 34  8 361.4 845.9
26 Jan 30 20 17 21.6 d   78940 K8  8.9  8.0   94+ 152     58 133  30S 164 194 159 +2.4 -5.1 +1.5-4.1 .189  -65.9      6 59 13.5  26 24  6 361.0 810.7
26 Jan 30 20 38 49.7 D   78957 G8  7.5  7.0   94+ 152     61 140  18N  32  58  27 +2.3 -5.1 +1.3+5.3 .178   67.1      7  0 14.8  26 52 42 360.9 802.2
   Distance of 78957 to Terminator = 12.1"; to 3km sunlit peak = 2.7"
26 Jan 30 21  2  0.8 d   78983DB9  8.7  8.7   94+ 153     62 150  85N  99 119  94 +2.3 -5.1 +1.4+0.2 .455    1.2      7  1 36.1  26 34 25 360.8 795.8
     78983 is double: AB 8.7 10.0 2.3" 272.1, dT = -5sec
     78983 is a close double. Observations are highly desired
26 Jan 30 21 14 16.5 d   78988dM0  8.8  8.1   94+ 153     63 155  77N  91 108  86 +2.3 -5.1 +1.4+0.4 .447    9.5      7  2  1.5  26 35 41 360.8 793.5
     78988 is double: AB 8.7 10.0 2.3" 272.1, dT = -5sec
     78988 is a close double. Observations are highly desired
26 Jan 30 22 27  5.4 d   79032 G5  8.4  7.9   95+ 153     64 191  74S 120 112 115 +2.2 -5.0 +1.3-1.3 .437  -16.5      7  4 15.8  26 20 52 360.8 796.9
26 Jan 31  2 30 40.8 D    1094 A0  7.1  7.1   95+ 155     36 267  70S 124  81 118 +1.9 -4.7 +0.2-1.9 .535  -16.3      7 12 49.4  25 44 55 363.0 981.6
   R1094 = 49 Geminorum
26 Jan 31 17  9  4.8 d   79804cG0  7.4        98+ 164  -7 21  78  69S 133 174 123 +3.9 -4.0 +0.4+0.4 .481  -34.0      7 56  2.8  23 41 33 365.61028.1
     79804 is double: AB 7.90 8.57 0.11" 101.2, dT = +0.2sec
     79804 is a close double. Observations are highly desired
26 Jan 31 17 18  9.9 D    1195 B8  6.8  6.9   98+ 164  -8 22  79  50S 152 194 142 +3.9 -4.0 +0.7-0.5 .348  -52.6      7 56  6.5  23 37 26 365.51017.2
26 Jan 31 19 10 49.5 D    1208DK1  6.4        98+ 165     38 101  88N 111 153 101 +3.9 -4.0 +0.8+0.7 .501   -8.7      8  1  0.8  23 34 59 364.1 895.3
     1208 is double: AB 6.48 9.95 1.95" 325.2, dT = -3sec
     1208 is a close double. Observations are highly desired
26 Jan 31 20 37 31.7 d   79906 K2  8.7  8.1   99+ 166     50 122  89N 113 148 102 +3.8 -4.0 +1.2+0.2 .466   -7.3      8  3 58.9  23 24 21 363.3 828.6
26 Feb  1  0 26  5.3 d   79997 K0  8.0  7.3   99+ 168     57 215  75S 130 107 119 +3.5 -3.7 +0.9-1.7 .453  -15.6      8 10 54.7  22 43 43 363.2 829.0
26 Feb  1  3  3 23.2 d   80054 F8  8.4  8.1   99+ 169     37 259  75S 131  90 119 +3.3 -3.4 +0.2-2.0 .522  -15.6      8 16  5.0  22 10 15 365.0 958.9
   Distance of 80054 to Terminator = 16.5"; to 3km sunlit peak = 6.2"
26 Feb  3  0 56 17.3 R   98906 K0  7.8  7.3   98- 165     50 182  47S 246 245 227 +5.5 -0.6 +2.5+1.3 .234 -121.9     10  1 55.9  12 14 45 371.1 799.6
   Distance of 98906 to Terminator = 16.7"; to 3km sunlit peak = 6.3"
26 Feb  3  2 10 46.2 r   98928 K5  7.9  7.1v  98- 165     47 209  89S 289 271 270 +5.4 -0.5 +1.3-1.2 .439 -163.9     10  3 46.5  12  7 20 371.6 823.7
     98928 = EP Leo, 8.01 to 8.08, Hp, Type SRD:
26 Feb  3 20 33 39.8 r  118479kK0  7.6  7.0   95- 154     15  98  46N 338  16 317 +6.4 +0.6 +0.3-0.8 .397  140.0     10 45 33.7   7 30 51 378.3 950.3
26 Feb  3 23 10 42.0 r  118517cG5  8.6  8.3   95- 153     36 134  89N 295 322 274 +6.2 +0.8 +1.1+0.3 .446 -171.2     10 49 22.1   6 44 27 376.8 824.0
    118517 is double: ** 8.9 9.5 0.060" 303.0, dT = -0.13sec
    118517 has been reported as non-instantaneous (OCc1422). Observations are highly desired
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      day  Time      P   Star  Sp  Mag  Mag    % Elon Sun  Moon   CA   PA  VA  AA Libration    A    B    RV    Cct durn  R.A. (J2000)  Dec   Mdist   SV
 y  m  d  h  m   s       No  D    v    r V  ill    Alt Alt Az   o    o   o   o   L    B   m/o m/o  "/s     o  sec  h  m   s    o  m  s   Mm   m/s

26 Feb  3 23 41  5.8 r    1579kA0  8.3  8.2   95- 153     39 142  18N   5  28 345 +6.2 +0.9 -0.1-3.4 .218  119.4     10 51 11.3   6 45 48 376.7 809.8
   Distance of 1579 to Terminator = 11.7"; to 3km sunlit peak = 2.5"
26 Feb  4  2 51 51.4 R  118571pK0  7.4  7.0s  94- 152     41 205  73N 312 297 291 +5.8 +1.2 +1.0-1.5 .439  175.5     10 54 45.6   5 50 52 377.2 806.4
    118571 is double: ** 8.0 8.8 0.034" 104.5, dT = +0.07sec
    118571 has been reported as non-instantaneous (OCc 585). Observations are highly desired
    118571 = NSV 5015, 8.9 to 9.27, pg, Type E:
26 Feb  4  4 15  6.6 r  118579kA2  7.8  7.7   94- 151     33 228  59S 264 237 243 +5.6 +1.4 +1.4-1.2 .347 -138.5     10 56 30.9   5 16 24 378.2 848.9
26 Feb  5 23 40 56   m  138754KF8  7.2  6.9   81- 129     18 127   9S 215 245 193 +6.0 +3.8 +9.9+9.9 .000  -90.0     12 23 27.6 - 6  7  8 389.2 856.4
   Distance of 138754 to Terminator = 17.8"; to 3km sunlit peak = 3.6"
26 Feb  5 23 40 59   Gr 138754KF8  7.2  6.9   81- 129     19 ** GRAZE: CA  9.3S; Dist. 16km in az.  29deg. [Lat = 52.17-0.34(E.Long-5.00)]
26 Feb  6  3  7 19.4 r  138811cK2  8.2  7.4   81- 128     32 181  17N   8   8 347 +5.5 +4.2 -0.4-2.6 .198  119.4     12 28 51.7 - 6 31 49 388.5 758.1
26 Feb  7  1 32 16.8 r  157777 K0  8.5  7.9   72- 117     20 145  69N 316 337 295 +5.1 +5.2 +0.7-0.1 .411  170.1     13 11 18.5 -11 55 40 394.0 797.2
26 Feb  7  1 57 45   Gr   1895pG5  8.6  8.2   72- 116     24 ** GRAZE: CA 12.4S; Dist.124km in az. 228deg. [Lat = 50.33-0.68(E.Long-5.00)]
26 Feb  7  2 10 27.4 r    1895pG5  8.6  8.2   72- 116     22 155  32S 236 252 215 +5.0 +5.3 +3.5+3.5 .140 -110.2     13 12  1.8 -12 24 10 393.9 774.2
      1895 is double: AB 8.7 13.0 0.9"  33.0, dT = +6sec
      1895 is a close double. Observations are highly desired
26 Feb  7  4 50  5.7 r  157826kK0  8.2  7.6   72- 115     24 197  31N 353 342 332 +4.6 +5.6 +0.4-1.7 .255  131.3     13 16 13.7 -12 37 16 394.2 737.5
26 Feb  7  6  3 25.0 r    1906pK0  7.8  7.2   71- 115 -11 19 215  59S 263 242 242 +4.4 +5.6 +1.6-1.2 .312 -142.0     13 16 58.4 -13  9 32 395.0 758.1
      1906 is double: AB 7.9 13.0 48" 101.4, dT = +148sec
26 Feb  8  5  1  8.0 r  158295cK0  8.5        62- 104     20 188  88N 293 288 274 +3.6 +6.5 +1.5-0.6 .368 -172.5     14  1 51.3 -17 53 37 398.4 716.2
    158295 is double: AB 8.59 11.16 0.30" 165.0, dT = +0.5sec
    158295 is a close double. Observations are highly desired
26 Feb 10  5 30 25.4 r    2238 F0  8.0  7.8   43-  82     12 173  47N 325 330 312 +1.3 +7.6 +1.0-0.4 .296  146.0     15 40 37.8 -25 35 33 403.1 698.9
26 Feb 11  4 14 10.2 R    2370pB8  6.9  6.9   34-  72      3 147  84N 282 305 274 +0.2 +7.6 +1.1+1.0 .389 -175.0     16 30 15.7 -27 54 59 404.0 764.6
      2370 is double: ** 7.6 7.6 0.25" 112.0, dT = +0.6sec
      2370 has been reported as non-instantaneous (OCc1132). Observations are highly desired
26 Feb 11  6  4 43.8 r  184457 G8  8.2  7.6   34-  71  -9  9 170  87N 279 286 271 -0.1 +7.7 +1.6+0.3 .354 -175.2     16 33 13.6 -28  6 55 403.3 695.1
26 Feb 11  6 21 45.1 D    2383cB0  2.8  2.9   34-  71  -7 10 173 -87S  99 104  91 -0.1 +7.7 +1.6+0.2 .352    3.5     16 35 53.0 -28 12 58 403.3 689.9
   R2383 = tau Scorpii
      2383 is double: AB 2.9 5.8       71.0, dT = 0.00sec
26 Feb 11  7 46 16.1 R    2383cB0  2.8  2.9   33-  71   5  9 192  84N 282 274 274 -0.4 +7.7 +1.6-0.6 .350  176.4     16 35 53.0 -28 12 58 403.3 686.4
   R2383 = tau Scorpii
      2383 is double: AB 2.9 5.8       71.0, dT = 0.00sec
```