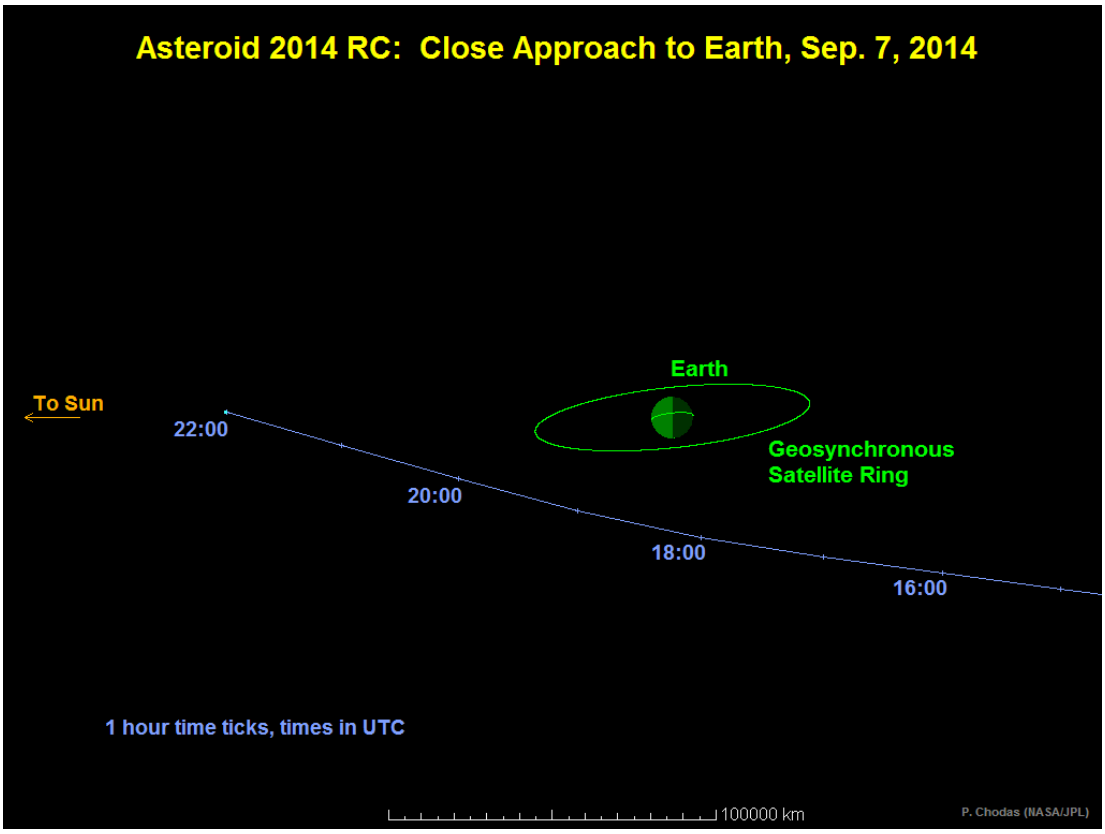
* NOVA *

N. 700 - 6 SETTEMBRE 2014

ASSOCIAZIONE ASTROFILI SEGUSINI

ASTEROIDE 2014 RC

Domenica 7 settembre un piccolo asteroide di 21 m di diametro (le dimensioni di una casa), denominato "2014 RC", transiterà a 1/10 della distanza Terra-Luna, quasi all'interno dell'orbita dei satelliti geostazionari, posizionati a 36.000 km dalla superficie terrestre. Il massimo avvicinamento sarà alle 18.18 UTC a soli 40.000 km sopra la nuova Zelanda. L'asteroide sarà di 11.5 magnitudini nella costellazione dei Pesci. Non c'è nessun pericolo di collisione con la Terra.



Transito dell'asteroide 2014 RC il 7 settembre 2014. Ore in Tempo Universale (UTC). Credit: NASA/JPL-Caltech

L'asteroide 2014 RC è stato scoperto nella notte del 31 agosto da Catalina Sky Survey (Tucson, Arizona) e rilevato indipendentemente la notte successiva dal telescopio Pan-STARRS 1, situato sulla sommità dell'Haleakala (Maui, Hawaii). Le prime osservazioni confermano che 2014 RC proviene da poco oltre l'orbita di Marte.

Lo stretto avvicinamento offre ai ricercatori l'opportunità per studiare un asteroide near-Earth (sono 1498 quelli attualmente potenzialmente pericolosi per la Terra).

L'orbita di 2014 RC continuerà ad essere strettamente monitorata, anche se non sono stati identificati futuri incontri minacciosi per la Terra.

http://www.nasa.gov/jpl/asteroid/small-asteroid-to-safely-pass-close-to-earth-sunday/index.html

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*******************************************************************************
JPL/HORIZONS                      (2014 RC)               2014-Sep-05 05:25:35
Rec #:750141 (+COV)   Soln.date: 2014-Sep-04_05:45:43        # obs: 39 (3 days)

FK5/J2000.0 helio. ecliptic osc. elements (au, days, deg., period=Julian yrs):

  EPOCH=  2456903.5 ! 2014-Sep-03.00 (CT)          Residual RMS= .17865
   EC= .4004395156588871   QR= .8343953653773063   TP= 2456957.9247826445
   OM= 345.4759763598694   W=  65.88238007373822   IN= 1.439774298811399
   A= 1.391678383031306    MA= 327.326741023814    ADIST= 1.948961400685305
   PER= 1.64179            N= .6003378700000001    ANGMOM= .018595145
   DAN= 1.00421            DDN= 1.39712            L= 51.3516085
   B= 1.3140713            MOID= .00027348         TP= 2014-Oct-27.4247826445

Asteroid physical parameters (km, seconds, rotational period in hours):
   GM= n.a.                RAD= n.a.               ROTPER= n.a.
   H= 26.766               G= .150                 B-V= n.a.
                           ALBEDO= n.a.            STYP= n.a.
*******************************************************************************
Ephemeris / WWW_USER Fri Sep  5 05:25:35 2014 Pasadena, USA      / Horizons
*******************************************************************************
Target body name: (2014 RC)                      {source: JPL#4}
Center body name: Earth (399)                    {source: DE-0431LE-0431}
Center-site name: Grange Observatory, Bussoleno
*******************************************************************************
Start time      : A.D. 2014-Sep-05 21:00:00.0000 UT
Stop  time      : A.D. 2014-Sep-11 21:00:00.0000 UT
Step-size       : 60 minutes
*******************************************************************************
*******************************************************************************************************************
 Date__(UT)__HR:MN     R.A._(ICRF/J2000.0)_DEC Azi_(a-appr)_Elev  APmag           delta      deldot    S-O-T /r
*******************************************************************************************************************

 2014-Sep-05 21:00  m  22 23 08.39 -16 49 39.1 149.8138  22.7473  17.76 0.01090111061596 -10.1716305 166.8464 /T
 2014-Sep-05 22:00  m  22 23 04.47 -16 51 47.1 165.0625  26.7952  17.71 0.01065722806544 -10.0950132 166.7736 /T
 2014-Sep-05 23:00  m  22 22 59.69 -16 53 49.5 181.2527  28.0299  17.66 0.01041526217214 -10.0132647 166.6996 /T
 2014-Sep-06 00:00  m  22 22 54.74 -16 55 45.6 197.3426  26.2771  17.61 0.01017526892668  -9.9320223 166.6266 /T
 2014-Sep-06 01:00  m  22 22 50.40 -16 57 35.3 212.3419  21.7783  17.56 0.00993716824162  -9.8568907 166.5564 /T
 2014-Sep-06 02:00     22 22 47.43 -16 59 19.4 225.7788  15.0581  17.51 0.00970074952859  -9.7930464 166.4911 /T
 2014-Sep-06 03:00     22 22 46.59 -17 00 59.7 237.7220   6.7042  17.46 0.00946568647723  -9.7448735 166.4321 /T
 2014-Sep-06 04:00 N   22 22 48.54 -17 02 38.6 248.5555  -2.7678  17.41 0.00923155994318  -9.7156582 166.3808 /T
 2014-Sep-06 05:00 *   22 22 53.80 -17 04 19.3 258.8011 -12.9421  17.35 0.00899788723851  -9.7073657 166.3377 /T
 2014-Sep-06 06:00 *   22 23 02.74 -17 06 05.7 269.0761 -23.4713  17.30 0.00876415565595  -9.7205133 166.3030 /T
 2014-Sep-06 07:00 *   22 23 15.52 -17 08 02.0 280.1715 -34.0157  17.24 0.00852985778631  -9.7541484 166.2762 /T
 2014-Sep-06 08:00 *   22 23 32.09 -17 10 12.7 293.2516 -44.1462  17.18 0.00829452612315  -9.8059289 166.2559 /T
 2014-Sep-06 09:00 *   22 23 52.18 -17 12 42.1 310.1579 -53.1620  17.12 0.00805776457903  -9.8722977 166.2405 /T
 2014-Sep-06 10:00 *   22 24 15.34 -17 15 34.5 333.2706 -59.7770  17.05 0.00781927483490  -9.9487345 166.2276 /T
 2014-Sep-06 11:00 *   22 24 40.90 -17 18 53.7   2.5016 -62.0756  16.98 0.00757887586584 -10.0300673 166.2144 /T
 2014-Sep-06 12:00 *   22 25 08.09 -17 22 43.0  31.1021 -59.0537  16.91 0.00733651548716 -10.1108206 166.1981 /T
 2014-Sep-06 13:00 *   22 25 35.99 -17 27 04.7  53.1821 -52.0178  16.84 0.00709227330112 -10.1855781 166.1755 /T
 2014-Sep-06 14:00 *   22 26 03.69 -17 32 00.8  69.3872 -42.8440  16.76 0.00684635496234 -10.2493379 166.1439 /T
 2014-Sep-06 15:00 *   22 26 30.24 -17 37 32.2  82.0971 -32.7129  16.69 0.00659907819331 -10.2978394 166.1006 /T
 2014-Sep-06 16:00 *   22 26 54.80 -17 43 39.0  93.0344 -22.2692  16.60 0.00635085145482 -10.3278442 166.0435 /T
 2014-Sep-06 17:00 *m  22 27 16.65 -17 50 20.5 103.2863 -11.9215  16.52 0.00610214659859 -10.3373526 165.9712 /T
 2014-Sep-06 18:00 Cm  22 27 35.31 -17 57 35.5 113.6004  -2.0070  16.43 0.00585346719230 -10.3257448 165.8829 /T
 2014-Sep-06 19:00 Nm  22 27 50.52 -18 05 22.6 124.5613   7.1194  16.34 0.00560531450086 -10.2938332 165.7785 /T
 2014-Sep-06 20:00  m  22 28 02.39 -18 13 40.2 136.6468  15.0318  16.25 0.00535815331476 -10.2438216 165.6587 /T
 2014-Sep-06 21:00  m  22 28 11.34 -18 22 27.1 150.1659  21.2132  16.15 0.00511237991710 -10.1791691 165.5250 /T
 2014-Sep-06 22:00  m  22 28 18.21 -18 31 42.9 165.0804  25.1024  16.05 0.00486829444853 -10.1043617 165.3795 /T
 2014-Sep-06 23:00  m  22 28 24.23 -18 41 28.8 180.8326  26.2413  15.94 0.00462607973931 -10.0246055 165.2245 /T
 2014-Sep-07 00:00  m  22 28 31.03 -18 51 48.2 196.4535  24.4745  15.83 0.00438578831594  -9.9454584 165.0631 /T
 2014-Sep-07 01:00  m  22 28 40.61 -19 02 47.2 211.0276  20.0327  15.72 0.00414733875674  -9.8724258 164.8977 /T
 2014-Sep-07 02:00  m  22 28 55.31 -19 14 35.9 224.1026  13.4115  15.59 0.00391052189660  -9.8105517 164.7309 /T
 2014-Sep-07 03:00     22 29 17.81 -19 27 29.0 235.7159   5.1709  15.46 0.00367501662344  -9.7640358 164.5640 /T
 2014-Sep-07 04:00 N   22 29 51.09 -19 41 47.4 246.1967  -4.1926  15.33 0.00344041425610  -9.7359079 164.3970 /T
 2014-Sep-07 05:00 C   22 30 38.46 -19 57 59.6 256.0017 -14.2782  15.18 0.00320624985806  -9.7277796 164.2276 /T
 2014-Sep-07 06:00 *   22 31 43.64 -20 16 44.2 265.6652 -24.7599  15.02 0.00297203846093  -9.7396846 164.0498 /T
 2014-Sep-07 07:00 *   22 33 10.96 -20 38 53.1 275.8565 -35.3416  14.85 0.00273731419212  -9.7699939 163.8530 /T
 2014-Sep-07 08:00 *   22 35 05.69 -21 05 37.3 287.5586 -45.6901  14.66 0.00250167071396  -9.8153894 163.6193 /T
 2014-Sep-07 09:00 *   22 37 34.77 -21 38 35.7 302.4389 -55.3106  14.45 0.00226480151120  -9.8709093 163.3197 /T
 2014-Sep-07 10:00 *   22 40 48.04 -22 20 10.9 323.3441 -63.2807  14.22 0.00202653834584  -9.9300243 162.9078 /T
 2014-Sep-07 11:00 *   22 45 00.67 -23 13 57.8 352.9721 -67.8855  13.97 0.00178689144392  -9.9843094 162.3085 /T
 2014-Sep-07 12:00 *   22 50 37.96 -24 25 36.1  26.3404 -67.4487  13.69 0.00154610908706 -10.0220453 161.3947 /T
 2014-Sep-07 13:00 *   22 58 25.95 -26 04 38.2  53.0378 -62.9380  13.36 0.00130479426147 -10.0245208 159.9404 /T
 2014-Sep-07 14:00 *   23 09 58.10 -28 28 23.5  71.9027 -57.0307  13.00 0.00106417734589  -9.9554226 157.5113 /L
 2014-Sep-07 15:00 *   23 28 54.43 -32 10 59.3  86.2752 -52.1219  12.58 0.00082687585665  -9.7256563 153.1822 /L
 2014-Sep-07 16:00 *   00 06 00.80 -38 22 30.3  98.7451 -51.2005  12.12 0.00059944786829  -9.0538388 144.6928 /L
 2014-Sep-07 17:00 *m  01 44 01.99 -48 16 31.8 111.5489 -60.9385  11.79 0.00040284089381  -6.8273436 125.7887 /L
 2014-Sep-07 18:00 Cm  05 54 50.16 -45 24 39.8 263.8997 -86.5152  12.61 0.00030917947830  -0.0456039  85.4610 /L
 2014-Sep-07 19:00 Nm  08 30 02.62 -18 26 16.5 308.7098 -54.2141    16. 0.00040080335349   6.7487666  45.1716 /L
 2014-Sep-07 20:00  m  09 23 29.90 -02 49 05.6 322.5859 -41.5100    20. 0.00059534098112   8.9574231  26.6804 /L
 2014-Sep-07 21:00  m  09 48 27.87 +04 47 03.2 336.7522 -37.5251    23. 0.00082007844603   9.6003540  18.9832 /L
 2014-Sep-07 22:00  m  10 02 51.01 +09 02 57.6 351.6593 -35.5273    25. 0.00105402793358   9.8053935  15.6587 /L
 2014-Sep-07 23:00  m  10 12 11.68 +11 45 05.1   6.8178 -32.9341    26. 0.00129079555543   9.8583933  14.2722 /L
 2014-Sep-08 00:00  m  10 18 42.72 +13 37 06.4  21.4499 -28.7751    27. 0.00152799667851   9.8502611  13.7870 /L
 2014-Sep-08 01:00  m  10 23 27.16 +14 59 29.8  34.9432 -22.8584    27. 0.00176466251092   9.8179998  13.7296 /L
 2014-Sep-08 02:00  m  10 26 58.85 +16 02 55.7  47.0829 -15.3727    27. 0.00200045807532   9.7801998  13.8770 /L
 2014-Sep-08 03:00  m  10 29 37.83 +16 53 26.1  58.0022  -6.6396    27. 0.00223539143037   9.7477423  14.1209 /L
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Date__(UT)__HR:MN		R.A._(ICRF/J2000.0)_DEC	Azi_(a-appr)_Elev	APmag	delta	deldot	S-O-T /r
2014-Sep-08 04:00	Nm	10 31 37.06 +17 34 38.7	68.0346 3.0138	27.	0.00246967966900	9.7274672	14.4065 /L
2014-Sep-08 05:00	C	10 33 05.61 +18 08 50.7	77.6171 13.2942	27.	0.00270367060940	9.7235332	14.7048 /L
2014-Sep-08 06:00	*	10 34 10.32 +18 37 33.1	87.2830 23.9340	27.	0.00293778572786	9.7379607	14.9994 /L
2014-Sep-08 07:00	*	10 34 56.65 +19 01 48.2	97.7510 34.6535	27.	0.00317247217092	9.7708973	15.2810 /L
2014-Sep-08 08:00	*	10 35 29.16 +19 22 21.2	110.1432 45.0831	27.	0.00340816013965	9.8208214	15.5436 /L
2014-Sep-08 09:00	*	10 35 51.76 +19 39 46.4	126.4004 54.5921	27.	0.00364522539755	9.8847727	15.7839 /L
2014-Sep-08 10:00	*	10 36 07.82 +19 54 31.3	149.5360 61.9220	27.	0.00388395801447	9.9586421	15.9996 /L
2014-Sep-08 11:00	*	10 36 20.20 +20 06 59.3	180.6517 64.8971	27.	0.00412453879492	10.0375190	16.1900 /L
2014-Sep-08 12:00	*	10 36 31.28 +20 17 31.0	211.8761 62.0582	27.	0.00436702461438	10.1160804	16.3550 /L
2014-Sep-08 13:00	*	10 36 42.94 +20 26 25.1	235.2106 54.8566	27.	0.00461134335641	10.1889951	16.4955 /L
2014-Sep-08 14:00	*	10 36 56.60 +20 33 58.7	251.6715 45.4930	27.	0.00485729847524	10.2513149	16.6130 /L
2014-Sep-08 15:00	*	10 37 13.17 +20 40 27.8	264.2913 35.2496	28.	0.00510458252941	10.2988247	16.7099 /L
2014-Sep-08 16:00	*	10 37 33.16 +20 46 06.8	275.0417 24.7766	28.	0.00535279843201	10.3283303	16.7887 /L
2014-Sep-08 17:00	*	10 37 56.64 +20 51 08.6	285.0732 14.4685	28.	0.00560148669734	10.3378673	16.8529 /L
2014-Sep-08 18:00	Cm	10 38 23.35 +20 55 44.5	295.1311 4.6442	28.	0.00585015665672	10.3268209	16.9057 /L
2014-Sep-08 19:00	Nm	10 38 52.72 +21 00 04.1	305.7701 -4.3660	28.	0.00609831946676	10.2959548	16.9506 /L
2014-Sep-08 20:00	m	10 39 23.98 +21 04 14.9	317.4255 -12.1723	28.	0.00634552072518	10.2473507	16.9910 /L
2014-Sep-08 21:00	m	10 39 56.20 +21 08 22.9	330.3719 -18.3096	28.	0.00659137061956	10.1842652	17.0300 /L
2014-Sep-08 22:00	m	10 40 28.38 +21 12 31.9	344.5871 -22.2763	28.	0.00683556973999	10.1109144	17.0702 /L
2014-Sep-08 23:00	m	10 40 59.51 +21 16 44.3	359.6168 -23.6546	28.	0.00707792897000	10.0321995	17.1138 /L
2014-Sep-09 00:00	m	10 41 28.65 +21 21 00.7	14.6472 -22.2741	28.	0.00731838221806	9.9533888	17.1622 /L
2014-Sep-09 01:00	m	10 41 54.95 +21 25 20.2	28.8609 -18.2954	28.	0.00755699115715	9.8797749	17.2165 /L
2014-Sep-09 02:00	m	10 42 17.75 +21 29 40.9	41.7949 -12.1301	28.	0.00779394159453	9.8163252	17.2769 /L
2014-Sep-09 03:00	m	10 42 36.58 +21 33 59.7	53.4179 -4.2769	28.	0.00802953158884	9.7673489	17.3431 /L
2014-Sep-09 04:00	Nm	10 42 51.17 +21 38 13.2	63.9962 4.8000	28.	0.00826415195003	9.7362007	17.4145 /L
2014-Sep-09 05:00	Cm	10 43 01.51 +21 42 17.5	73.9556 14.7122	28.	0.00849826027424	9.7250430	17.4899 /L
2014-Sep-09 06:00	*	10 43 07.81 +21 46 08.8	83.8382 25.1341	28.	0.00873235014611	9.7346849	17.5679 /L
2014-Sep-09 07:00	*	10 43 10.49 +21 49 43.4	94.3728 35.7578	28.	0.00896691754161	9.7645127	17.6470 /L
2014-Sep-09 08:00	*	10 43 10.14 +21 52 58.6	106.7009 46.2124	28.	0.00920242674056	9.8125190	17.7254 /L
2014-Sep-09 09:00	*	10 43 07.49 +21 55 52.1	122.8641 55.8886	28.	0.00943927817056	9.8754338	17.8017 /L
2014-Sep-09 10:00	*	10 43 03.37 +21 58 22.9	146.3369 63.5336	28.	0.00967778052344	9.9489468	17.8742 /L
2014-Sep-09 11:00	*	10 42 58.64 +22 00 30.8	179.1049 66.7875	28.	0.00991812920699	10.0280079	17.9419 /L
2014-Sep-09 12:00	*	10 42 54.10 +22 02 16.9	212.2720 63.8851	28.	0.01016039273354	10.1071826	18.0037 /L
2014-Sep-09 13:00	*	10 42 50.53 +22 03 43.1	236.3030 56.4400	28.	0.01040450804422	10.1810345	18.0591 /L
2014-Sep-09 14:00	*	10 42 48.55 +22 04 52.3	252.7991 46.8657	28.	0.01065028508252	10.2445064	18.1078 /L
2014-Sep-09 15:00	*	10 42 48.65 +22 05 47.8	265.3027 36.4729	29.	0.01089742022851	10.2932711	18.1500 /L
2014-Sep-09 16:00	*	10 42 51.12 +22 06 33.6	275.9301 25.8951	29.	0.01114551755483	10.3240271	18.1861 /L
2014-Sep-09 17:00	*	10 42 56.08 +22 07 13.6	285.8588 15.5126	29.	0.01139411631980	10.3347185	18.2171 /L
2014-Sep-09 18:00	Cm	10 43 03.47 +22 07 51.8	295.8327 5.6361	29.	0.01164272271164	10.3246668	18.2439 /L
2014-Sep-09 19:00	Am	10 43 13.05 +22 08 31.8	306.3975 -3.4081	29.	0.01189084361886	10.2946067	18.2680 /L
2014-Sep-09 20:00	m	10 43 24.42 +22 09 16.5	317.9769 -11.2330	29.	0.01213802012687	10.2466283	18.2906 /L
2014-Sep-09 21:00	m	10 43 37.11 +22 10 08.4	330.8335 -17.3772	29.	0.01238385851805	10.1840290	18.3131 /L
2014-Sep-09 22:00	m	10 43 50.52 +22 11 09.1	344.9375 -21.3459	29.	0.01262805676149	10.1110888	18.3369 /L
2014-Sep-09 23:00	m	10 44 04.06 +22 12 19.4	359.8394 -22.7293	29.	0.01287042479715	10.0327819	18.3629 /L
2014-Sep-10 00:00	m	10 44 17.11 +22 13 39.1	14.7438 -21.3628	29.	0.01311089732330	9.9544453	18.3922 /L
2014-Sep-10 01:00	m	10 44 29.12 +22 15 07.4	28.8531 -17.4069	29.	0.01334953826581	9.8814227	18.4252 /L
2014-Sep-10 02:00	m	10 44 39.59 +22 16 42.8	41.7128 -11.2689	29.	0.01358653662103	9.8187072	18.4624 /L
2014-Sep-10 03:00	m	10 44 48.14 +22 18 22.9	53.2884 -3.4432	29.	0.01382219390118	9.7706042	18.5035 /L
2014-Sep-10 04:00	Nm	10 44 54.53 +22 20 05.4	63.8389 5.6084	29.	0.01405690394779	9.7404378	18.5484 /L
2014-Sep-10 05:00	Cm	10 44 58.64 +22 21 47.3	73.7840 15.4987	29.	0.01429112638766	9.7303194	18.5965 /L
2014-Sep-10 06:00	*m	10 45 00.51 +22 23 25.8	83.6645 25.9023	29.	0.01452535545461	9.7409961	18.6470 /L
2014-Sep-10 07:00	*	10 45 00.32 +22 24 58.3	94.2156 36.5116	29.	0.01476008625487	9.7717915	18.6989 /L
2014-Sep-10 08:00	*	10 44 58.36 +22 26 22.4	106.6038 46.9544	29.	0.01499578077920	9.8206443	18.7512 /L
2014-Sep-10 09:00	*	10 44 55.04 +22 27 36.2	122.9450 56.6135	29.	0.01523283603284	9.8842450	18.8030 /L
2014-Sep-10 10:00	*	10 44 50.83 +22 28 38.5	146.8842 64.2001	29.	0.01547155654663	9.9582614	18.8531 /L
2014-Sep-10 11:00	*	10 44 46.25 +22 29 28.9	180.3755 67.2718	29.	0.01571213324742	10.0376386	18.9009 /L
2014-Sep-10 12:00	*	10 44 41.82 +22 30 07.4	213.7423 64.1008	29.	0.01595463021863	10.1169507	18.9455 /L
2014-Sep-10 13:00	*	10 44 38.02 +22 30 35.0	237.5135 56.4667	29.	0.01619898030801	10.1907798	18.9864 /L
2014-Sep-10 14:00	*	10 44 35.29 +22 30 53.2	253.7618 46.7966	29.	0.01644498988703	10.2540929	19.0234 /L
2014-Sep-10 15:00	*	10 44 33.94 +22 31 03.8	266.1092 36.3618	29.	0.01669235239397	10.3025908	19.0564 /L
2014-Sep-10 16:00	*	10 44 34.22 +22 31 09.3	276.6482 25.7728	29.	0.01694066965788	10.3330021	19.0858 /L
2014-Sep-10 17:00	*	10 44 36.22 +22 31 12.2	286.5341 15.3998	29.	0.01718947945596	10.3433043	19.1119 /L
2014-Sep-10 18:00	C	10 44 39.94 +22 31 15.0	296.4964 5.5508	29.	0.01743828734254	10.3328560	19.1354 /L
2014-Sep-10 19:00	Am	10 44 45.22 +22 31 20.0	307.0715 -3.4473	29.	0.01768660052674	10.3024341	19.1571 /L
2014-Sep-10 20:00	m	10 44 51.84 +22 31 29.4	318.6735 -11.2054	29.	0.01793396147828	10.2541747	19.1779 /L
2014-Sep-10 21:00	m	10 44 59.47 +22 31 44.8	331.5511 -17.2608	29.	0.01817997900100	10.1914232	19.1987 /L
2014-Sep-10 22:00	m	10 45 07.73 +22 32 07.3	345.6566 -21.1220	29.	0.01842435471673	10.1185047	19.2204 /L
2014-Sep-10 23:00	m	10 45 16.18 +22 32 37.6	0.5249 -22.3895	29.	0.01866690322722	10.0404312	19.2438 /L
2014-Sep-11 00:00	m	10 45 24.41 +22 33 15.5	15.3601 -20.9134	29.	0.01890756464436	9.9625636	19.2694 /L
2014-Sep-11 01:00	m	10 45 32.00 +22 34 00.6	29.3813 -16.8663	29.	0.01914640867312	9.8902513	19.2978 /L
2014-Sep-11 02:00	m	10 45 38.61 +22 34 51.6	42.1553 -10.6601	29.	0.01938362997184	9.8284717	19.3293 /L
2014-Sep-11 03:00	m	10 45 43.95 +22 35 47.2	53.6615 -2.7873	29.	0.01961953507309	9.7814927	19.3638 /L
2014-Sep-11 04:00	Nm	10 45 47.82 +22 36 45.3	64.1641 6.2945	29.	0.01985452169766	9.7525817	19.4012 /L
2014-Sep-11 05:00	Cm	10 45 50.12 +22 37 43.9	74.0855 16.2019	29.	0.02008905180308	9.7437792	19.4411 /L
2014-Sep-11 06:00	*m	10 45 50.85 +22 38 41.0	83.9704 26.6119	29.	0.02032362014491	9.7557541	19.4830 /L
2014-Sep-11 07:00	*m	10 45 50.14 +22 39 34.6	94.5672 37.2166	29.	0.02055872046157	9.7877523	19.5262 /L
2014-Sep-11 08:00	*	10 45 48.17 +22 40 22.8	107.0762 47.6390	29.	0.02079481159149	9.8376432	19.5700 /L
2014-Sep-11 09:00	*	10 45 45.23 +22 41 04.2	123.6952 57.2439	29.	0.02103228587286	9.9020617	19.6136 /L
2014-Sep-11 10:00	*	10 45 41.66 +22 41 37.9	148.1904 64.6905	29.	0.02127144204746	9.9766383	19.6563 /L
2014-Sep-11 11:00	*	10 45 37.82 +22 42 03.3	182.2352 67.4688	29.	0.02151246459378	10.0563007	19.6974 /L
2014-Sep-11 12:00	*	10 45 34.09 +22 42 20.5	215.4040 63.9769	29.	0.02175541096676	10.1356252	19.7363 /L
2014-Sep-11 13:00	*	10 45 30.84 +22 42 30.1	238.7161 56.1593	29.	0.02200020765659	10.2092137	19.7726 /L
2014-Sep-11 14:00	*	10 45 28.37 +22 42 33.0	254.6666 46.4094	29.	0.02224665534104	10.2720683	19.8060 /L
2014-Sep-11 15:00	*	10 45 26.95 +22 42 30.7	266.8555 35.9468	29.	0.02249444274900	10.3199360	19.8366 /L
2014-Sep-11 16:00	*	10 45 26.75 +22 42 24.9	277.3179 25.3583	29.	0.02274316823067	10.3496008	19.8644 /L
2014-Sep-11 17:00	*	10 45 27.86 +22 42 17.4	287.1773 15.0057	29.	0.02299236749216	10.3591014	19.8898 /L
2014-Sep-11 18:00	C	10 45 30.27 +22 42 10.2	297.1477 5.1955	29.	0.02324154553763	10.3478612	19.9132 /L
2014-Sep-11 19:00	A	10 45 33.89 +22 42 04.9	307.7563 -3.7436	29.	0.02349021059692	10.3167224	19.9352 /L

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*****************************************************************************************************************
 Date__(UT)__HR:MN     R.A._(ICRF/J2000.0)_DEC Azi_(a-appr)_Elev  APmag            delta      deldot    S-O-T /r
*****************************************************************************************************************

 2014-Sep-11 20:00  m  10 45 38.55 +22 42 03.2 319.4083 -11.4188    29. 0.02373790771230  10.2678843  19.9565 /L
 2014-Sep-11 21:00  m  10 45 44.00 +22 42 06.4 332.3385 -17.3652    29. 0.02398424971290  10.2047492  19.9777 /L
$$EOE
*****************************************************************************************************************
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Column meaning:

TIME

Prior to 1962, times are UT1. Dates thereafter are UTC. Any 'b' symbol in the 1st-column denotes a B.C. date. First-column blank (" ") denotes an A.D. date. Calendar dates prior to 1582-Oct-15 are in the Julian calendar system. Later calendar dates are in the Gregorian system.

Time tags refer to the same instant throughout the universe, regardless of where the observer is located.

The dynamical Coordinate Time scale is used internally. It is equivalent to the current IAU definition of "TDB". Conversion between CT and the selected non-uniform UT output scale has not been determined for UTC times after the next July or January 1st. The last known leap-second is used over any future interval.

NOTE: "n.a." in output means quantity "not available" at the print-time.

SOLAR PRESENCE (OBSERVING SITE)

Time tag is followed by a blank, then a solar-presence symbol:

- '*' Daylight (refracted solar upper-limb on or above apparent horizon)
- 'C' Civil twilight/dawn
- 'N' Nautical twilight/dawn
- 'A' Astronomical twilight/dawn
- ' ' Night OR geocentric ephemeris

LUNAR PRESENCE (OBSERVING SITE)

The solar-presence symbol is immediately followed by a lunar-presence symbol:

- 'm' Refracted upper-limb of Moon on or above apparent horizon
- ' ' Refracted upper-limb of Moon below apparent horizon OR geocentric ephemeris

R.A._(ICRF/J2000.0)_DEC =

J2000.0 astrometric right ascension and declination of target center. Adjusted for light-time. Units: HMS (HH MM SS.ff) and DMS (DD MM SS.f)

Azi_(a-appr)_Elev =

Airless apparent azimuth and elevation of target center. Adjusted for light-time, the gravitational deflection of light, stellar aberration, precession and nutation. Azimuth measured North(0) -> East(90) -> South(180) -> West(270) -> North (360). Elevation is with respect to plane perpendicular to local zenith direction. TOPOCENTRIC ONLY. Units: DEGREES

APmag =

Asteroid's approximate apparent visual magnitude from the standard IAU H-G magnitude relationship:

APmag = H + 5*log10(delta) + 5*log10(r) - 2.5*log10((1-G)*phi1 + G*phi2).

For solar phase angles > 90 deg, the error could exceed 1 magnitude. For phase angles > 120 degrees, output values are rounded to the nearest integer to indicate error could be large and unknown.

Units: MAGNITUDE

delta deldot =

Range ("delta") and range-rate ("delta-dot") of target center with respect to the observer at the instant light seen by the observer at print-time would have left the target center (print-time minus down-leg light-time); the distance traveled by a light ray emanating from the center of the target and recorded by the observer at print-time. "deldot" is a projection of the velocity vector along this ray, the light-time-corrected line-of-sight from the coordinate center, and indicates relative motion. A positive "deldot" means the target center is moving away from the observer (coordinate center). A negative "deldot" means the target center is moving toward the observer.

Units: AU and KM/S

S-O-T /r =

Sun-Observer-Target angle; target's apparent solar elongation seen from observer location at print-time. If negative, the target center is behind the Sun. Angular units: DEGREES.

The '/r' column is a Sun-relative code, output for observing sites with defined rotation models only.

- /T indicates target trails Sun (evening sky)
- /L indicates target leads Sun (morning sky)

NOTE: The S-O-T solar elongation angle is the total separation in any direction. It does not indicate the angle of Sun leading or trailing.

```
 Computations by ...
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*****************************************************************************************************************
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