

* NOVA *

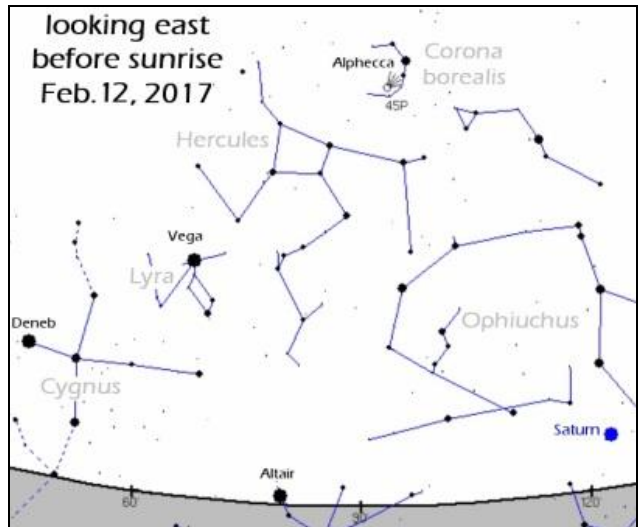
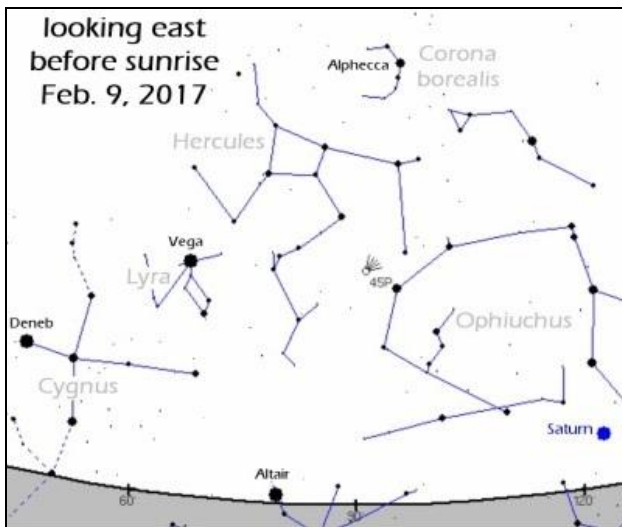
N. 1109 - 7 FEBBRAIO 2017

ASSOCIAZIONE ASTROFILI SEGUSINI

COMETA 45P/HONDA-MRKOS-PAJDUSAKOVA

La cometa 45P/Honda-Mrkos-Pajdusakova l'11 febbraio sarà alla minima distanza dalla Terra, a circa 31 volte la distanza Terra-Luna (era stata a 23 volte questa distanza nel predente passaggio). Tra quelle studiate dal 1950 ad oggi, è una delle otto comete che più si avvicina alla Terra.

Pur restando di bassa luminosità, potrebbe essere visibile con un binocolo o un piccolo telescopio in questa settimana – meglio tra il 9 e il 12 febbraio –, ad est, prima dell'alba. La magnitudine della cometa si ridurrà poi drasticamente e ci sarà anche la presenza della Luna a disturbare le osservazioni.



Posizione della cometa 45P/Honda-Mrkos-Pajdusakova il 9 e il 12 febbraio 2017 (da <http://www.spaceweather.com/>)

Ed ecco le effemeridi della cometa calcolate dal Jet Propulsion Laboratory per il nostro Grange Obs.

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*****
JPL/HORIZONS      45P/Honda-Mrkos-Pajdusakova      2017-Feb-06 23:56:28
Rec #:900515 (+COV)  Soln.date: 2017-Jan-19_13:27:38  # obs: 1372 (2011-2017)

IAU76/J2000 helio. ecliptic osc. elements (au, days, deg., period=Julian yrs):

EPOCH= 2457800.5 ! 2017-Feb-16.0000000 (TDB)      RMSW= n.a.
EC= .8239278451831263      QR= .5325036945396693      TP= 2457753.7653882909
OM= 88.97430861550461      W= 326.2865705458255      IN= 4.247902908605178
A= 3.024349279382122      MA= 8.7577953729887      ADIST= 5.516194864224574
PER= 5.2596413781701      N= .187394199      ANGOM= .016953001
DAN= .57628      DDN= 3.08689      L= 55.3336203
B= -2.3562577      MOID= .0602779      TP= 2016-Dec-31.2653882909

Comet physical (GM= km^3/s^2; RAD= km):
GM= n.a.      RAD= .800
M1= 14.      M2= 18.      k1= 26.      k2= 15.      PHCOF= n.a.

Comet non-gravitational force model (AMRAT=m^2/kg; A1-A3=au/d^2; DT=days; R0=au) :
AMRAT= 0.      DT= 0.
A1= 7.239533662796E-9      A2= -6.335094571114E-10      A3= 0.
Standard model:
ALN= .1112620426      NK= 4.6142      NM= 2.15      NN= 5.093      R0= 2.808

COMET comments
1: soln ref.= JPL#K162/3, data arc: 2011-06-05 to 2017-01-09
2: k1=26.0, k2=15.0; radar( 1 delay, 2 Dop.);
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*****
Ephemeris / WWW_USER Mon Feb 6 23:56:28 2017 Pasadena, USA / Horizons
*****
Target body name: 45P/Honda-Mrkos-Pajdusakova {source: JPL#K162/3}
Center body name: Earth (399) {source: DE431}
Center-site name: Grange Observatory, Bussoleno
*****
Start time : A.D. 2017-Feb-08 05:00:00.0000 UT
Stop time : A.D. 2017-Mar-15 05:00:00.0000 UT
Step-size : 1440 minutes
*****
Target pole/equ : No model available
Target radii : 0.8 km
Center geodetic : 7.14040000,45.1421553,0.4954905 {E-lon(deg),Lat(deg),Alt(km)}
Center cylindric : 7.14040000,4506.75553,4498.8568 {E-lon(deg),Dxy(km),Dz(km)}
Center pole/equ : High-precision EOP model {East-longitude +}
Center radii : 6378.1 x 6378.1 x 6356.8 km {Equator, meridian, pole}
Target primary : Sun
Vis. interferer : MOON (R_eq= 1737.400) km {source: DE431}
Rel. light bend : Sun, EARTH {source: DE431}
Rel. lght bnd GM: 1.3271E+11, 3.9860E+05 km^3/s^2
Small-body perts: Yes {source: SB431-BIG16}
Atmos refraction: NO (AIRLESS)
RA format : HMS
Time format : CAL
EOP file : eop.170206.p170430
EOP coverage : DATA-BASED 1962-JAN-20 TO 2017-FEB-06. PREDICTS-> 2017-APR-29
Units conversion: 1 au= 149597870.700 km, c= 299792.458 km/s, 1 day= 86400.0 s
Table cut-offs 1: Elevation (-90.0deg=NO),Airmass (>38.000=NO), Daylight (NO)
Table cut-offs 2: Solar Elongation ( 0.0,180.0=NO),Local Hour Angle( 0.0=NO)
*****
Initial IAU76/J2000 heliocentric ecliptic osculating elements (au, days, deg.):
EPOCH= 2457800.5 ! 2017-Feb-16.0000000 (TDB) RMSW= n.a.
EC= 8239278451831263 QR= .5325036945396693 TP= 2457753.7653882909
OM= 88.97430861550461 W= 326.2865705458255 IN= 4.247902908605178
Equivalent ICRF heliocentric equatorial cartesian coordinates (au, au/d):
X=-9.071014399410580E-01 Y= 4.487907652795317E-01 Z= 2.687501303490381E-01
VX=-2.040870406810373E-02 VY=-6.992785717815088E-03 VZ=-1.389892206420351E-03
Comet physical (GM= km^3/s^2; RAD= km):
GM= n.a. RAD= .800
M1= 14. M2= 18. k1= 26. k2= 15. PHCOF= n.a.
Comet non-gravitational force model (AMRAT=m^2/kg;A1-A3=au/d^2;DT=days;R0=au):
AMRAT= 0. DT= 0.
A1= 7.239533662796E-9 A2= -6.335094571114E-10 A3= 0.
Standard model:
ALN= .1112620426 NK= 4.6142 NM= 2.15 NN= 5.093 R0= 2.808

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*****
Date (UT) HR:MN R.A. (ICRF/J2000.0) DEC Azi (a-appr) Elev T-mag N-mag delta deldot S-O-T /r
*****
2017-Feb-08 05:00 18 20 56.43 +13 33 16.2 106.2787 34.1676 8. 12. 0.09288165824208 -10.4763258 54.2106 /L
2017-Feb-09 05:00 m 17 52 47.12 +17 23 29.8 109.9743 42.2987 8.13 12.38 0.08779040617584 -7.5677036 62.6852 /L
2017-Feb-10 05:00 m 16 20 32.96 +21 18 13.0 115.0632 51.0156 8.22 12.39 0.08448312278324 -4.2414307 71.9167 /L
2017-Feb-11 05:00 Am 16 44 45.29 +24 59 22.9 122.6897 59.8774 8.35 12.46 0.08315751338689 -0.6489830 81.6079 /L
2017-Feb-12 05:00 Am 16 06 41.15 +28 07 41.0 135.3721 68.1197 8.54 12.57 0.08389881811001 2.9754686 91.3466 /L
2017-Feb-13 05:00 Am 15 28 14.72 +30 29 23.2 158.1649 74.3861 8.77 12.73 0.08665161504969 6.3862356 100.7059 /L
2017-Feb-14 05:00 Am 14 51 26.90 +32 00 54.8 192.8908 76.5216 9.04 12.94 0.09123726517285 9.4051577 109.3530 /L
2017-Feb-15 05:00 Am 14 17 50.38 +32 48 00.0 223.1768 74.0748 9.34 13.17 0.09740523025785 11.9564338 117.1052 /L
2017-Feb-16 05:00 Am 13 48 12.48 +33 01 10.3 240.7021 69.5557 9.66 13.42 0.10488850902266 14.0501848 123.9179 /L
2017-Feb-17 05:00 Am 13 22 40.03 +32 51 17.9 250.6679 64.7102 9.98 13.68 0.11344181281125 15.7444703 129.8380 /L
2017-Feb-18 05:00 Am 13 00 54.64 +32 27 15.0 256.9379 60.1223 10.30 13.94 0.12285878770574 17.1126762 134.9568 /L
2017-Feb-19 05:00 Am 12 42 27.04 +31 55 20.9 261.2773 55.9399 10.62 14.20 0.13297462325895 18.2248025 139.3773 /L
2017-Feb-20 05:00 Am 12 26 46.14 +31 19 44.6 264.5113 52.1701 10.94 14.45 0.14366148198010 19.1399477 143.1965 /L
2017-Feb-21 05:00 Am 12 13 23.49 +30 42 59.8 267.0607 48.7762 11.24 14.70 0.15482167738656 19.9050185 146.4980 /L
2017-Feb-22 05:00 Am 12 01 54.81 +30 06 36.9 269.1591 45.7107 11.54 14.93 0.16638102037815 20.5660739 149.3504 /L
2017-Feb-23 05:00 Am 11 52 00.09 +29 31 25.7 270.9450 42.9274 11.83 15.16 0.17828321392504 21.1204018 151.8079 /L
2017-Feb-24 05:00 Am 11 43 23.13 +28 57 51.2 272.5056 40.3853 12.11 15.39 0.19048543778157 21.6185159 153.9130 /L
2017-Feb-25 05:00 A 11 35 50.91 +28 26 03.5 273.8984 38.0491 12.39 15.60 0.20295498193695 22.0658104 155.6983 /L
2017-Feb-26 05:00 A 11 29 12.94 +27 56 04.1 275.1625 35.8895 12.65 15.81 0.21566671720860 22.4738448 157.1889 /L
2017-Feb-27 05:00 A 11 23 20.81 +27 27 49.7 276.3257 33.8818 12.91 16.02 0.22860120499791 22.8513141 158.4052 /L
2017-Feb-28 05:00 A 11 18 07.69 +27 01 14.3 277.4082 32.0055 13.16 16.21 0.24174328673531 23.2047752 159.3646 /L
2017-Mar-01 05:00 A 11 13 28.02 +26 36 10.8 278.4251 30.2435 13.41 16.40 0.25508103275636 23.5391930 160.0834 /L
2017-Mar-02 05:00 A 11 09 17.24 +26 12 32.1 279.3877 28.5813 13.64 16.59 0.26860496183297 23.8583521 160.5783 /L
2017-Mar-03 05:00 A 11 05 31.60 +25 50 10.7 280.3049 27.0071 13.88 16.77 0.28230746497193 24.1651679 160.8671 /L
2017-Mar-04 05:00 A 11 02 07.95 +25 28 59.9 281.1837 25.5107 14.10 16.94 0.29618238229763 24.4619174 160.9692 /L
2017-Mar-05 05:00 N 10 59 03.68 +25 08 53.2 282.0297 24.0834 14.33 17.11 0.31022469277603 24.7504080 160.9046 /T
2017-Mar-06 05:00 N 10 56 16.57 +24 49 44.9 282.8475 22.7178 14.54 17.28 0.32443028546189 25.0320980 160.6940 /T
2017-Mar-07 05:00 N 10 53 44.74 +24 31 29.7 283.6408 21.4076 14.75 17.44 0.33879578870850 25.3081828 160.3575 /T
2017-Mar-08 05:00 N 10 51 26.59 +24 14 02.6 284.4128 20.1475 14.96 17.60 0.35331844020641 25.5796545 159.9139 /T
2017-Mar-09 05:00 N 10 49 20.72 +23 57 19.5 285.1661 18.9326 15.16 17.75 0.36799598550620 25.8473442 159.3804 /T
2017-Mar-10 05:00 N 10 47 25.96 +23 41 16.3 285.9029 17.7589 15.36 17.90 0.38282659594026 26.1119492 158.7724 /T
2017-Mar-11 05:00 Nm 10 45 41.27 +23 25 49.5 286.6251 16.6227 15.56 18.05 0.39780879913476 26.3740515 158.1031 /T
2017-Mar-12 05:00 Nm 10 44 05.75 +23 10 56.0 287.3343 15.5210 15.75 18.20 0.41294141723990 26.6341282 157.3837 /T
2017-Mar-13 05:00 Nm 10 42 38.61 +22 56 32.7 288.0319 14.4509 15.94 18.34 0.42822350996684 26.8925586 156.6238 /T
2017-Mar-14 05:00 Nm 10 41 19.16 +22 42 37.2 288.7192 13.4101 16.12 18.48 0.44365432142699 27.1496320 155.8314 /T
2017-Mar-15 05:00 Nm 10 40 06.79 +22 29 07.1 289.3973 12.3963 16.30 18.61 0.45923323125082 27.4055553 155.0129 /T

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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 solar system, regardless of where the observer is located. For example, if an observation from the surface of another body has an output time-tag of 12:31:00 UTC, an Earth-based time-scale, it refers to the instant on that body simultaneous to 12:31:00 UTC on Earth.

The Barycentric Dynamical Time scale (TDB) is used internally as defined by the planetary equations of motion. Conversion between TDB and the selected non-uniform UT output time-scale has not been determined for UTC times after the next July or January 1st. The last known leap-second is used as a constant over future intervals.

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

T-mag N-mag =

Comet's approximate apparent visual total magnitude ("T-mag") and nuclear magnitude ("N-mag") by following standard IAU definitions:

$$T\text{-mag} = M1 + 5 \cdot \log_{10}(\Delta) + k1 \cdot \log_{10}(r)$$

$$N\text{-mag} = M2 + 5 \cdot \log_{10}(\Delta) + k2 \cdot \log_{10}(r) + \text{phcof} \cdot \beta$$

Units: MAGNITUDES

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 the observer location at print-time. Angular units: DEGREES

The '/r' column indicates the target's apparent position relative to



the Sun in the observer's sky, as described below:

For an observing location on the surface of a rotating body
(considering its rotational sense):

/T indicates target TRAILS Sun (evening sky; rises and sets AFTER Sun)
/L indicates target LEADS Sun (morning sky; rises and sets BEFORE Sun)

For an observing point NOT on a rotating body (such as a spacecraft), the "leading" and "trailing" condition is defined by the observer's heliocentric orbital motion: if continuing in the observer's current direction of heliocentric motion would encounter the target's apparent longitude first, followed by the Sun's, the target LEADS the Sun as seen by the observer. If the Sun's apparent longitude would be encountered first, followed by the target's, the target TRAILS the Sun.

NOTE: The S-O-T solar elongation angle is numerically the minimum separation angle of the Sun and target in the sky in any direction. It does NOT indicate the amount of separation in the leading or trailing directions, which are defined in the equator of a spherical coordinate system.

Computations by ...

Solar System Dynamics Group, Horizons On-Line Ephemeris System

4800 Oak Grove Drive, Jet Propulsion Laboratory

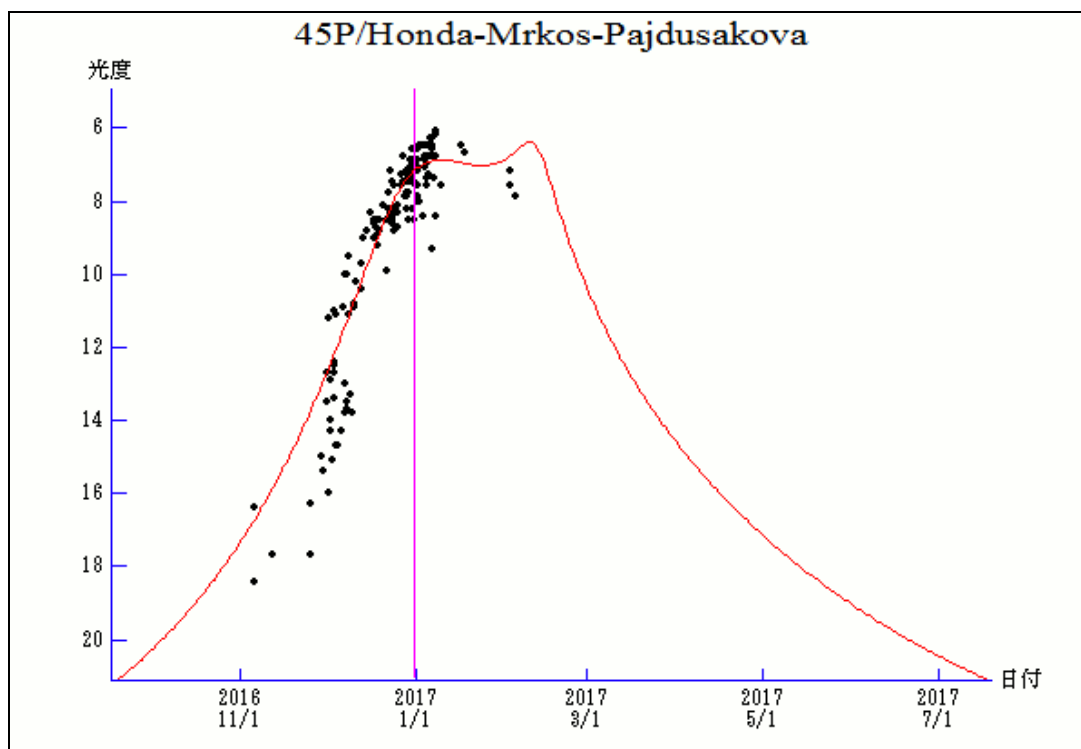
Pasadena, CA 91109 USA

Information: <http://ssd.jpl.nasa.gov/>

Connect : telnet://ssd.jpl.nasa.gov:6775 (via browser)

telnet ssd.jpl.nasa.gov 6775 (via command-line)

Author : Jon.Giorgini@jpl.nasa.gov



Curva di magnitudine della cometa 45P/Honda-Mrkos-Pajdusakova dal sito di Seiichi Yoshida
<http://www.aerith.net/comet/catalog/0045P/2016.html>