MPEC 2016-X29 : 2016 WM48

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M.P.E.C. 2016-X29 Issued 2016 Dec. 3, 00:34 UT

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2016 WM48

Observations:

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Observer details:

203 GiaGa Observatory. Observers S. Foglia, G. Galli. Measurer G. Galli. 0.28-m f/6.8 Schmidt-Cassegrain + CCD.

204 Schiaparelli Observatory. Observer L. Buzzi. 0.60-m f/4.64 reflector + CCD.

300 Bisei Spaceguard Center--BATTeRS. Observers T. Nimura, A. Asami. 1.0-m f/3.0 reflector + CCD.

511 Haute Provence. Observers W. Polycarpe, M. Dennefeld, W. Thuillot, B. Carry, P. David, S. Bouquillon, F. Taris, P. Tanga, M. Delbo. Measurers W. Thuillot, S. Bouquillon, F. Taris, T. Carlucci, C. Barache. 1.20-m f/6 reflector + CCD.

587 Sormano. Observers A. Fumagalli, I. Proserpio, P. Sicoli, A. Testa. Measurer P. Sicoli. 0.5-m f/6.8 reflector + CCD.

850 Cordell-Lorenz Observatory, Sewanee. Observers D. T. Durig, V. L. Hinshaw, A. T. Hupp. 0.3-m f/9.4 Schmidt-Cassegrain + CCD.

926 Tenagra II Observatory. Observers M. Schwartz, P. R. Holvorcem. Measurer M. Schwartz. 0.81-m f/7 Ritchey-Chretien + CCD.

958 Observatoire de Dax. Observers P. Dupouy, J. B. de Vanssay. Measurer P. Dupouy. 0.43-m f/2.7 reflector + CCD.

B74 Santa Maria de Montmagastrell. Observer J. M. Bosch. 0.40-m f/10 Schmidt-Cassegrain + CCD.

C43 Hoyerswerda. Observer P. Lindner. 0.30-m f/6.3 Schmidt-Cassegrain + CCD.

C77 Bernezzo Observatory. Observer A. Mantero. 0.25-m f/4 reflector + CCD.

G45 Space Surveillance Telescope, Atom Site. Observers M. Blythe, R. Brungard, P. Festler, T. McVey, J. Paige, G. Spitz. Measurers M. Cornell, A. Klein, J. Ruprecht, G. Ushomirsky, J. Varey, D. Woods. 3.5-m f/1 reflector + CCD.

G96 Mt. Lemmon Survey. Observer R. A. Kowalski. Measurers E. J. Christensen, D. C. Fuls, A. R. Gibbs, A. D. Grauer, J. A. Johnson, R. A. Kowalski, S. M. Larson, G. J. Leonard, R. G. Matheny, R. L. Seaman, F. C. Shelly. 1.5-m reflector + 10K CCD.

H36 Sandlot Observatory, Scranton. Observer G. Hug. 0.56-m reflector + CCD.

I52 Steward Observatory, Mt. Lemmon Station. Observer J. A. Johnson. Measurers E. J. Christensen, D. C. Fuls, A. R. Gibbs, A. D. Grauer, J. A. Johnson, R. A. Kowalski, S. M. Larson, G. J. Leonard, R. G. Matheny, R. L. Seaman, F. C. Shelly. 1.0-m reflector + CCD.

I67 Hartley Wintney. Observer G. Thurston. 0.36-m f/6 Schmidt-Cassegrain + CCD.

I93 St Pardon de Conques. Observer F. Losse. 0.40-m f/3.7 reflector + CCD.

J57 Centro Astronomico Alto Turia, Valencia. Observers V. Mas, G. Fornas. Measurer A. Carreno. 0.40-m f/10 Schmidt-Cassegrain + CCD.

J69 North Observatory, Clanfield. Observer D. Briggs. 0.41-m f/4.5 Newtonian reflector + CCD.

J95 Great Shefford. Observer P. Birtwhistle. 0.40-m f/6.0 Schmidt-Cassegrain + CCD.

K38 M57 Observatory, Saltrio. Observer G. Baj. 0.30-m f/8 Ritchey-Chretien + CCD.

K51 Osservatorio del Celado, Castello Tesino. Observers G. Favero, R. Furgoni. Measurer R. Furgoni. 0.80-m f/4 reflector + CCD.

K61 Rokycany Observatory. Observers M. Adamovsky, O. Trnka. 0.51-m f/6.8 reflector + CCD.

Q62 iTelescope Observatory, Siding Spring. Observers L. Buzzi, P. Concari, S. Foglia, G. Galli, M. Tombelli. 0.15-m f/7 refractor + CCD.

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Orbital elements:
2016 WM48
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M 359.43572             (2000.0)            P             Q
n   0.04748254     Peri.   36.37343     +0.63968770     +0.02329097
a   7.5528947      Node    59.91766     +0.30429606     -0.92554942
e   0.7691801      Incl.  117.39280     +0.70583536     +0.37790979
P  20.76           H   16.8           G   0.15           U   7
Residuals in seconds of arc
161130 G45  0.3-  0.1+    161130 203  0.3-  0.3+    161201 926  0.5+  0.2+
161130 G45  0.2-  0.3+    161130 J95  0.4+  0.1-    161201 Q62  1.3+  1.4+
161130 G45  0.2-  0.0     161130 203  0.2+  0.3-    161201 Q62  1.1+  1.4+
161130 G45  0.5-  0.2+    161130 J69  0.4-  0.0     161201 Q62  0.9+  1.7+
161130 G45  0.3-  0.3+    161130 J95  0.1+  0.2+    161201 C77  1.3+  0.5+
161130 G45  0.1-  0.0     161130 J95  0.6+  0.3-    161201 C77  0.4-  0.2+
161130 G96  0.0   0.1-    161130 J69  0.2-  0.2+    161201 C77  0.0   0.1+
161130 G96  0.3+  0.4-    161130 J69  0.3-  0.2+    161201 K38  0.5-  0.1-
161130 G96  0.1+  0.2+    161130 204  0.1+  0.2-    161201 K38  0.0   0.2+
161130 G96  0.1-  0.4+    161130 511  0.2-  0.1-    161201 K38  0.3-  0.1-
161130 I52  0.2-  0.3+    161130 511  0.1-  0.2-    161201 K38  0.3-  0.2+
161130 G96  0.3+  0.7+    161130 511  0.0   0.2-    161202 I52  0.6-  0.2-
161130 I52  0.1+  0.7+    161130 511  0.2-  0.1-    161202 I52  1.2-  0.2+
161130 I52  0.3-  0.2-    161130 511  0.2-  0.0     161202 I52  1.0-  0.8+
161130 G96  0.0   0.4-    161130 511  0.0   0.0     161202 I52  0.4-  0.2+
161130 I52  0.5+  0.2+    161130 204  0.1+  0.2-    161202 850  0.7-  0.2+
161130 G96  0.3-  0.2-    161130 511  0.1-  0.0     161202 850  0.0   0.2-
161130 G96  0.1+  0.0     161130 511  0.2-  0.1+    161202 300  0.2+  0.2+
161130 I52  0.1+  0.0     161130 511  0.0   0.1+    161202 300  0.1-  0.4+
161130 I52  0.1-  0.3+    161130 511  0.0   0.1-    161202 300  0.1-  0.0
161130 I52  0.4+  0.1+    161130 511  0.0   0.0     161202 300  0.5+  0.2+
161130 587  0.0   0.3-    161130 204  0.1+  0.0     161202 C43  0.1+  1.2-
161130 587  0.2-  0.3+    161130 511  0.3-  0.2-    161202 C43  1.0+  0.3+
161130 K51  0.0   0.1-    161201 B74  0.1-  0.3+    161202 C43  0.9-  0.4+
161130 I67  0.3+  0.1-    161201 B74  0.2+  0.0     161202 J57  0.1+  0.4-
161130 K51  0.1-  0.3-    161201 B74  0.0   0.2-    161202 J57  0.1-  0.5-
161130 I67  0.1+  0.2-    161201 I52  0.6-  0.1-    161202 J57  0.0   0.5-
161130 K51  0.1-  0.1-    161201 I52  0.3-  0.6-    161202 J57  0.8+  0.1+
161130 I67  0.5-  0.0     161201 I52  0.7-  0.1-    161202 J57  0.4+  0.4+
161130 I93  0.1-  0.5-    161201 I52  1.9-  0.1-    161202 J57  0.5+  0.1+
161130 I93  0.2-  0.2-    161201 H36  0.2+  0.0     161202 K61  0.2-  0.2-
161130 958  0.4-  0.1+    161201 H36  0.0   0.1-    161202 K61  0.3-  0.2-
161130 I93  0.3-  0.1-    161201 H36  0.6+  0.1+    161202 K61  0.5-  0.0
161130 958  0.5-  0.2+    161201 H36  0.5+  0.0     161202 K61  0.1-  0.1+
161130 203  0.2+  0.1+    161201 926  0.3-  0.2-    161202 K61  0.0   0.1+
161130 958  0.1-  0.6+    161201 926  0.7-  0.1-

Ephemeris:
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Date    TT    R. A. (2000) Decl.     Delta      r     Elong.  Phase     V
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...
2016 11 18    05 12 48.4 -00 59 39   1.1751  2.0827   148.4    14.4    19.6
...
2016 11 26    04 32 34.2 +01 55 59   1.0809  2.0367   160.1     9.5    19.1
...
2016 12 02    03 58 20.7 +04 33 05   1.0468  2.0038   160.6     9.4    19.0
2016 12 03    03 52 28.0 +05 00 29   1.0444  1.9984   159.7     9.9    19.0
2016 12 04    03 46 34.2 +05 28 03   1.0430  1.9931   158.5    10.4    19.1
...
2016 12 10    03 11 29.2 +08 12 51   1.0545  1.9621   148.4    15.3    19.2
...
2016 12 18    02 28 32.2 +11 34 39   1.1186  1.9233   132.2    22.3    19.5
...
2017 01 02    01 28 53.2 +16 23 14   1.3439  1.8590   105.0    30.7    20.1

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