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MPEC 2016-S94 : COMET P/2016 R4 (GIBBS)

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M.P.E.C. 2016-S94

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COMET P/2016 R4 (GIBBS)

Observations:

PK16R040	C2016 07	18.54940	00 02 08.45	+01 53 54.9	21.3	TtES094F51
PK16R040	C2016 07	18.56152	00 02 08.78	+01 53 54.7	21.1	TtES094F51
PK16R040	C2016 07	18.57360	00 02 09.11	+01 53 54.7	21.0	TtES094F51
PK16R040	C2016 07	18.58574	00 02 09.46	+01 53 54.7	21.4	TtES094F51
PK16R040	C2016 08	14.56649	00 08 38.281+00	48 09.51	20.6	TLES094F51
PK16R040	C2016 08	14.57864	00 08 38.239+00	48 06.09	20.6	TLES094F51
PK16R040	C2016 08	14.59080	00 08 38.193+00	48 02.70	20.7	TLES094F51
PK16R040	C2016 08	14.60295	00 08 38.161+00	47 59.24	20.6	TLES094F51
PK16R040	C2016 08	28.37766	00 06 32.37	-00 30 46.1	19.3	TqES094G96
PK16R040	C2016 08	28.38544	00 06 32.23	-00 30 48.5	19.2	TqES094G96
PK16R040	C2016 08	28.39333	00 06 32.07	-00 30 52.2	19.4	TqES094G96
PK16R040	C2016 08	28.40115	00 06 31.91	-00 30 55.3	19.2	TqES094G96
PK16R040	C2016 09	09.00755	00 02 30.03	-01 54 11.3	18.9	TrES094I06
PK16R040	C2016 09	09.02107	00 02 29.73	-01 54 16.3	19.2	TrES094I06
PK16R040	C2016 09	09.03461	00 02 29.36	-01 54 22.0	18.9	TrES094I06
PK16R040	C2016 09	09.04814	00 02 28.94	-01 54 28.7	19.2	TrES094I06
PK16R040	C2016 09	10.32267	00 01 57.22	-02 04 09.4	18.9	TqES094G96
PK16R040	C2016 09	10.32649	00 01 57.03	-02 04 11.2	18.5	TqES094G96
PK16R040	C2016 09	10.33031	00 01 57.00	-02 04 13.2	18.9	TqES094G96
PK16R040	C2016 09	10.33413	00 01 56.86	-02 04 14.7	18.7	TqES094G96
PK16R040	C2016 09	10.41949	00 01 54.61	-02 04 53.9	18.9	TqES094G96
PK16R040	C2016 09	10.44199	00 01 54.03	-02 05 04.1	18.5	TqES094G96
PK16R040	C2016 09	10.46392	00 01 53.44	-02 05 14.0	18.9	TqES094G96
PK16R040	C2016 09	10.47098	00 01 53.28	-02 05 17.2	18.8	TqES094G96
PK16R040	C2016 09	10.47572	00 01 53.08	-02 05 19.7	18.9	TqES094G96
PK16R040	C2016 09	10.48371	00 01 52.90	-02 05 23.5	18.9	TqES094G96
PK16R040	KC2016 09	10.71884	00 01 47.33	-02 07 11.9	19.4	TqES094C42
PK16R040	KC2016 09	10.72641	00 01 47.08	-02 07 15.2	19.4	TqES094C42
PK16R040	KC2016 09	10.73392	00 01 46.82	-02 07 17.6	19.4	TqES094C42
PK16R040	KC2016 09	10.74142	00 01 46.58	-02 07 21.4	18.9	TqES094C42
PK16R040	KC2016 09	10.75646	00 01 46.21	-02 07 29.5	19.3	TqES094C42
PK16R040	KC2016 09	10.89053	00 01 42.98	-02 08 31.3	18.8	TqES094A17
PK16R040	KC2016 09	10.92967	00 01 41.91	-02 08 48.5	18.8	TqES094A17
PK16R040	KC2016 09	10.94127	00 01 41.54	-02 08 54.1	18.8	TqES094A17
PK16R040	C2016 09	10.98188	00 01 40.43	-02 09 11.8		qES094246
PK16R040	C2016 09	10.98393	00 01 40.40	-02 09 12.7	19.2	TqES094246
PK16R040	C2016 09	10.98663	00 01 40.36	-02 09 14.8	19.0	TqES094246
PK16R040	#C2016 09	11.11937	00 01 36.81	-02 10 14.5		qES094G40
PK16R040	#C2016 09	11.12802	00 01 36.60	-02 10 18.1	19.2	TqES094G40
PK16R040	C2016 09	11.31088	00 01 32.01	-02 11 42.4	18.2	TqES094G96
PK16R040	C2016 09	11.32361	00 01 31.67	-02 11 48.4	18.6	TqES094G96
PK16R040	C2016 09	11.34775	00 01 31.00	-02 11 59.4	18.6	TqES094G96
PK16R040	C2016 09	11.52520	00 01 26.58	-02 13 14.1		uES094Q62
PK16R040	C2016 09	11.53667	00 01 26.29	-02 13 19.0		uES094Q62
PK16R040	2C2016 09	11.62354	00 01 24.09	-02 14 01.7	19.9	TtES094Q62
PK16R040	2C2016 09	11.63069	00 01 23.75	-02 14 05.1	19.9	TtES094Q62
PK16R040	KC2016 09	11.74529	00 01 20.75	-02 15 03.5	19.0	TqES094C42
PK16R040	KC2016 09	11.75292	00 01 20.60	-02 15 06.5	19.0	TqES094C42
PK16R040	KC2016 09	11.76039	00 01 20.41	-02 15 09.9	19.0	TqES094C42
PK16R040	KC2016 09	11.76896	00 01 20.15	-02 15 15.2	19.1	TqES094C42
PK16R040	KC2016 09	11.95000	00 01 15.49	-02 16 37.7	19.3	TqES094A71
PK16R040	"C2016 09	11.96229	00 01 15.32	-02 16 42.6	19.4	TqES094G40
PK16R040	"C2016 09	11.97797	00 01 14.87	-02 16 49.4	19.3	TqES094G40

0.28-m f/6.8 Schmidt-Cassegrain + CCD.
 204 Schiaparelli Observatory. Observers L. Buzzi, M. Lucchetta. 0.60-m f/4.64 reflector + CCD.
 215 Buchloe. Observer W. Hasubick. 0.44-m f/4.6 reflector + CCD.
 246 Klet Observatory-KLENOT. Observers M. Tichy, J. Ticha. Measurer M. Tichy. 1.06-m KLENOT Telescope + CCD.
 595 Farra d'Isonzo. Observers E. Pettarin, F. Piani. Measurer E. Pettarin. 0.61-m f/4.0 reflector + CCD.
 703 Catalina Sky Survey. Observer D. C. Fuls. 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. 0.68-m Schmidt + CCD.
 850 Cordell-Lorenz Observatory, Sewanee. Observer D. T. Durig. 0.3-m f/2.6 Schmidt-Cassegrain + CCD, 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.
 A17 Guidestar Observatory, Weinheim. Observers M. Emmerich, S. Melchert. 0.36-m f/6 Schmidt-Cassegrain + CCD.
 A71 Stixendorf. Observers M. Jaeger, E. Prosperi, S. Prosperi, W. Vollmann. Measurer M. Jaeger. 0.3-m f/4 reflector + CCD.
 C10 Maisoncelles. Observer J.-F. Soulier. 0.30-m f/3.8 Newtonian reflector + CCD.
 C42 Xingming Observatory, Mt. Nanshan. Observers Z. Xu, X. Gao. Measurer Z. Xu. 0.5-m f/4 reflector + CCD.
 F51 Pan-STARRS 1, Haleakala. Observers B. Gibson, T. Goggia, S. Kahale, A. Schultz, M. Willman, N. Primak. Measurers K. Chambers, S. Chastel, L. Denneau, H. Flewelling, M. Huber, E. Lilly, E. Magnier, R. Wainscoat, C. Waters, R. Weryk, P. Veres. 1.8-m Ritchey-Chretien + CCD.
 G40 Slooh.com Canary Islands Observatory. Observers K. Breedlove, G. Gasparovic, Y. Chen, B. Lutkenhoner, C. Feliciano. Measurers J. L. Tuten, G. Gasparovic, Y. Chen, B. Lutkenhoner. 0.43-m f/6.8 Corrected Dall-Kirkham + CCD, 0.5-m f/6.8 reflector + CCD.
 G96 Mt. Lemmon Survey. Observers R. A. Kowalski, A. R. Gibbs. 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.
 H21 Astronomical Research Observatory, Westfield. Observer R. Holmes. Measurers S. Foglia, L. Buzzi, T. Linder, R. Holmes. 0.61-m f/4.5 astrograph + CCD.
 J57 Centro Astronomico Alto Turia, Valencia. Observer G. Fornas. Measurers V. Mas, A. Carreno. 0.40-m f/10 Schmidt-Cassegrain + CCD.
 L04 ROASTERR-1 Observatory, Cluj-Napoca. Observer L. Hudin. 0.3-m f/5.0 reflector + CCD.
 Q62 iTelescope Observatory, Siding Spring. Observers L. Buzzi, P. Concari, S. Foglia, G. Galli, M. Tombelli, M. Urbanik, H. Sato. 0.15-m f/7 refractor + CCD, 0.43-m f/6.8 astrograph + CCD, 0.51-m f/6.8 astrograph + CCD + f/4.5 focal reducer.
 R57 Aorangi Iti Observatory, Lake Tekapo. Observers A. C. Gilmore, P. M. Kilmartin. Measurer P. M. Kilmartin. 0.35-m f/11 Schmidt-Cassegrain + CCD.
 U69 iTelescope SRO Observatory, Auberry. Observer H. Sato. 0.61-m f/6.5 astrograph + CCD.
 W96 CAO, San Pedro de Atacama (since 2013). Observers A. Maury, J.-B. de Vanssay, T. Noel. Measurer T. Noel. 0.4-m f/5.4 Ritchey-Chretien + CCD.
 Z99 Clixby Observatory, Cleethorpes. Observer A. Mickleburgh. 0.36-m f/8 Schmidt-Cassegrain + CCD.

Orbital elements:

P/2016 R4 (Gibbs)
 Epoch 2016 July 31.0 TT = JDT 2457600.5
 T 2016 July 20.52099 TT MPCW

q	(2000.0)	P	Q
2.8005952			
n 0.07999431	Peri. 174.06429	+0.95362448	+0.29858246
a 5.3345359	Node 168.34700	-0.28333361	+0.93313566
e 0.4750068	Incl. 10.86235	-0.10159929	+0.20026571

 P 12.32
 From 145 observations 2016 July 18-Sept. 28, mean residual 0".5.

P/2016 R4 (Gibbs)
 Epoch 2028 Nov. 5.0 TT = JDT 2462080.5
 T 2028 Nov. 19.09113 TT MPCW

q	(2000.0)	P	Q
2.8095809			
n 0.07965557	Peri. 173.96234	+0.95238203	+0.30246935
a 5.3496491	Node 168.21293	-0.28703719	+0.93196646
e 0.4748102	Incl. 10.85805	-0.10284997	+0.19987697

 P 12.37
 From 145 observations 2016 July 18-Sept. 28, mean residual 0".5.

Ephemeris:

P/2016 R4 (Gibbs)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2016 08 30	00 06 04.9	-00 41 37	1.8643	2.8152	155.7	8.5	18.3		
...									
2016 09 14	00 00 21.4	-02 32 21	1.8285	2.8279	172.0	2.9	18.3		
...									
2016 09 22	23 56 41.7	-03 33 49	1.8337	2.8363	176.8	1.1	18.3		
...									
2016 09 28	23 53 57.4	-04 18 17	1.8490	2.8433	171.2	3.1	18.4		
2016 09 29	23 53 30.8	-04 25 26	1.8525	2.8445	170.1	3.5	18.4		
2016 09 30	23 53 04.5	-04 32 29	1.8562	2.8457	169.0	3.8	18.4		
...									
2016 10 06	23 50 37.0	-05 12 37	1.8845	2.8535	162.4	6.1	18.4		
...									
2016 10 14	23 47 57.5	-05 58 45	1.9364	2.8648	153.7	8.9	18.5		
...									
2016 10 29	23 45 38.3	-06 57 03	2.0736	2.8887	137.9	13.3	18.7		

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