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# IAU Minor Planet Center

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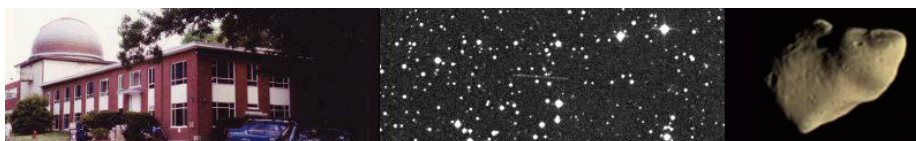
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## MPEC 2010-N19 : 2010 NL

The following [Minor Planet Electronic Circular](#) may be linked-to from your own Web pages, but must **not** otherwise be [redistributed electronically](#).  
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M.P.E.C. 2010-N19

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### 2010 NL

#### Observations:

K10N00L*	C2010	07	05.33022	20	03	06.08	-19	24	45.9	20.2	V	EN019G96
K10N00L	C2010	07	05.33677	20	03	10.54	-19	23	04.5	20.4	V	EN019G96
K10N00L	C2010	07	05.34340	20	03	15.08	-19	21	22.2	20.1	V	EN019G96
K10N00L	C2010	07	05.35006	20	03	19.58	-19	19	38.1	19.4	V	EN019G96
K10N00L	C2010	07	05.38517	20	03	43.56	-19	10	31.9	19.8	V	EN019G96
K10N00L	C2010	07	05.38566	20	03	43.88	-19	10	24.2	19.8	V	EN019G96
K10N00L	C2010	07	05.38613	20	03	44.20	-19	10	16.8	20.3	V	EN019G96
K10N00L	C2010	07	05.38663	20	03	44.56	-19	10	08.6	20.5	V	EN019G96
K10N00L	C2010	07	05.44096	20	04	22.11	-18	55	48.2	20.3	V	EN019G96
K10N00L	C2010	07	05.44146	20	04	22.44	-18	55	39.7	19.7	V	EN019G96
K10N00L	C2010	07	05.44196	20	04	22.76	-18	55	32.8	20.4	V	EN019G96
K10N00L	C2010	07	05.44244	20	04	23.12	-18	55	24.7	20.2	V	EN019G96
K10N00L	JC2010	07	06.30824	20	16	13.91	-14	45	47.6	20.0	C	EN019695
K10N00L	JC2010	07	06.30948	20	16	14.88	-14	45	24.3	20.0	C	EN019695
K10N00L	JC2010	07	06.31072	20	16	15.87	-14	45	00.9	19.9	C	EN019695
K10N00L	C2010	07	06.32679	20	16	28.30	-14	39	59.2	20.0	V	EN019G96
K10N00L	C2010	07	06.33612	20	16	35.68	-14	37	03.6	19.9	V	EN019G96
K10N00L	C2010	07	06.34081	20	16	39.39	-14	35	34.8	20.0	V	EN019G96
K10N00L	C2010	07	06.34550	20	16	43.06	-14	34	05.4	20.1	V	EN019G96

#### Observer details:

**695 Kitt Peak.** Observers M. Trueblood, R. Crawford. **Measurer R. Crawford.**  
0.9-m f/8 Ritchey-Chretien + CCD.

**G96 Mt. Lemmon Survey.** Observer A. Boattini. Measurers J. D. Ahern, E. C. Beshore, A. Boattini, G. J. Garradd, A. R. Gibbs, A. D. Grauer, R. E. Hill, R. A. Kowalski, S. M. Larson, R. H. McNaught. 1.5-m reflector + CCD.

#### Orbital elements:

2010 NL  
Epoch 2010 July 23.0 TT = JDT 2455400.5  
M 348.49788 (2000.0) P Q  
n 0.46052851 Peri. 50.89974 +0.89282244 +0.42655732  
Earth [MOID](#) = 0.0234 AU  
MPC

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- Central Bureau for Astro. Tel.
- International Comet Quarterly*
- Smithsonian Astro. Obs.

a	1.6607275	Node	283.41825	-0.44534967	+0.78805351						
e	0.4314520	Incl.	8.55077	-0.06731831	+0.44386993						
P	2.14	H	25.9	G	0.15	U	8				
<b>Residuals in seconds of arc</b>											
100705	G96	0.2-	0.4-	100705	G96	0.2+	0.0	100706	695	0.0	0.1+
100705	G96	0.1-	0.0	100705	G96	0.2+	0.2+	100706	G96	0.4-	0.5+
100705	G96	0.3+	0.1-	100705	G96	0.1-	0.7+	100706	G96	0.2+	0.3-
100705	G96	0.1-	0.9+	100705	G96	0.5-	0.4-	100706	G96	0.5+	0.3-
100705	G96	0.2+	0.3-	100705	G96	0.1-	0.0	100706	G96	0.2+	0.1+
100705	G96	0.0	0.3-	100706	695	0.1-	0.1-				
100705	G96	0.0	0.3-	100706	695	0.2-	0.1-				

**Ephemeris:**

2010 NL a, e, i = 1.66, 0.43, 9 q = 0.9442

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	V
2010 07 03		19 38.05	-27 20.1	0.0572	1.073	167.7	11.6	20.5
2010 07 05		19 59.02	-20 44.7	0.0474	1.063	165.1	14.3	20.2
2010 07 07		20 26.55	-10 50.3	0.0391	1.053	157.0	22.2	20.0
2010 07 09		21 02.95	+03 30.6	0.0333	1.043	142.5	36.4	20.1
2010 07 11		21 50.45	+21 14.9	0.0314	1.034	123.2	55.4	20.5
2010 07 13		22 49.03	+37 33.7	0.0340	1.025	104.1	74.1	21.2
2010 07 15		23 53.63	+48 28.9	0.0400	1.017	89.5	88.2	22.1
2010 07 17		00 55.17	+54 16.5	0.0483	1.009	79.7	97.6	22.9
2010 07 19		01 46.85	+56 52.6	0.0578	1.001	73.3	103.5	23.5
2010 07 21		02 27.28	+57 49.8	0.0680	0.994	69.2	107.2	24.1
2010 07 23		02 58.26	+57 59.8	0.0787	0.987	66.4	109.4	24.5

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