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M.P.E.C. 2022-B09

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2022 BA

Observations:

K22B00A*	C2022 01	19.21269600	50	25.37	+34	34	23.5	18.37o	VEB009T08
K22B00A	C2022 01	19.21641400	50	28.29	+34	35	25.0	18.49o	VEB009T08
K22B00A	C2022 01	19.22289000	50	33.22	+34	37	17.2	18.61o	VEB009T08
K22B00A	C2022 01	19.24286000	50	48.78	+34	42	55.6	18.55o	VEB009T08
K22B00A	KC2022 01	19.72544 00	57	20.83	+36	53	10.8	18.7	GXEB009G02
K22B00A	KC2022 01	19.72833 00	57	23.03	+36	53	55.0	18.4	GXEB009G02
K22B00A	hC2022 01	19.73905000	57	33.16	+36	56	40.0	18.7	GVEB009J95
K22B00A	KC2022 01	19.74087300	57	33.31	+36	57	16.2		VEB009204
K22B00A	hC2022 01	19.74443600	57	37.25	+36	58	02.8	18.3	GVEB009J95
K22B00A	hC2022 01	19.75001700	57	41.42	+36	59	28.2	18.8	GVEB009J95
K22B00A	KC2022 01	19.75061000	57	40.63	+36	59	44.9		VEB009204
K22B00A	hC2022 01	19.75434200	57	44.68	+37	00	34.3	18.2	GVEB009J95
K22B00A	KC2022 01	19.75930800	57	47.18	+37	01	57.4	18.7	GVEB009204
K22B00A	KC2022 01	19.77394 00	57	58.94	+37	05	54.7	18.3	GXEB009J57
K22B00A	KC2022 01	19.78110700	58	04.35	+37	07	46.1	18.5	GVEB009Z33
K22B00A	KC2022 01	19.78382 00	58	06.32	+37	08	24.1	18.5	GXEB009J57
K22B00A	KC2022 01	19.78516800	58	07.35	+37	08	47.9	18.6	GVEB009Z33
K22B00A	KC2022 01	19.78820 00	58	08.35	+37	09	03.7	18.6	GXEB009G02
K22B00A	KC2022 01	19.78922100	58	10.31	+37	09	49.3	18.6	GVEB009Z33
K22B00A	KC2022 01	19.79362 00	58	13.61	+37	10	51.7	18.3	GXEB009J57
K22B00A	KC2022 01	19.88717900	59	25.02	+37	33	43.9	18.5	VqEB009J69
K22B00A	KC2022 01	19.89411900	59	30.36	+37	35	26.0	18.6	VqEB009J69
K22B00A	KC2022 01	19.90106000	59	35.69	+37	37	07.8	18.5	VqEB009J69
K22B00A	KC2022 01	19.90827800	59	40.33	+37	38	51.8	18.2	GVEB009L06
K22B00A	KC2022 01	19.91036000	59	41.94	+37	39	22.1	18.0	GVEB009L06
K22B00A	KC2022 01	19.91125300	59	42.65	+37	39	34.8	18.4	GVEB009L06
K22B00A	KC2022 01	19.93078800	59	58.49	+37	44	19.9	18.4	GVEB009Z80
K22B00A	KC2022 01	19.94183601	00	07.01	+37	46	59.7		VEB009Z80
K22B00A	C2022 01	20.14459601	02	44.00	+38	36	39.4	19.0	GVEB009G54
K22B00A	C2022 01	20.16585701	02	59.46	+38	41	33.7	18.8	GVEB009G54
K22B00A	C2022 01	20.18732701	03	15.13	+38	46	28.7	18.8	GVEB009G54
K22B00A	KC2022 01	20.74981 01	10	16.06	+40	49	50.5	18.5	GVEB009G14
K22B00A	KC2022 01	20.75522001	10	20.85	+40	50	42.6	18.6	GVEB009Z99
K22B00A	KC2022 01	20.75727201	10	22.27	+40	51	07.9	18.6	GVEB009Z99
K22B00A	KC2022 01	20.75762 01	10	21.52	+40	51	27.1	19.4	GVEB009G14
K22B00A	KC2022 01	20.75926601	10	23.64	+40	51	32.4	18.8	GVEB009Z99
K22B00A	KC2022 01	20.76254 01	10	24.64	+40	52	24.3	19.2	GXEB009G15
K22B00A	KC2022 01	20.76465101	10	27.46	+40	52	42.4	19.0	GVEB009J95
K22B00A	KC2022 01	20.76549 01	10	26.92	+40	53	02.9	17.1	GVEB009G14
K22B00A	KC2022 01	20.76668901	10	28.84	+40	53	07.4	18.8	GVEB009J95
K22B00A	KC2022 01	20.76791401	10	29.68	+40	53	22.4	18.6	GVEB009J95
K22B00A	KC2022 01	20.76830 01	10	28.74	+40	53	35.7		XEB009G15
K22B00A	KC2022 01	20.76911401	10	30.51	+40	53	36.9	18.8	GVEB009J95
K22B00A	KC2022 01	20.77404 01	10	32.61	+40	54	44.8	19.0	GXEB009G15
K22B00A	KC2022 01	20.90524201	12	03.96	+41	20	47.9	19.2	GVEB009Z03
K22B00A	KC2022 01	20.91670501	12	12.14	+41	23	01.8	18.6	GVEB009Z03
K22B00A	KC2022 01	20.92703201	12	19.41	+41	25	02.2	19.1	GVEB009Z03
K22B00A	KC2022 01	20.93466 01	12	24.66	+41	26	31.0	18.4	RqEB009I04
K22B00A	KC2022 01	20.93852 01	12	27.43	+41	27	15.9	18.5	RqEB009I04
K22B00A	KC2022 01	20.94239 01	12	30.15	+41	28	00.2	18.2	RqEB009I04
K22B00A	KC2022 01	20.95066101	12	36.18	+41	29	48.3	18.8	GXEB009G15

K22B00A	KC2022	01	20.95824201	12	41.54	+41	31	15.2	18.9	GXEB009958	
K22B00A	KC2022	01	20.96580701	12	46.85	+41	32	41.8	18.5	GXEB009958	
K22B00A	KC2022	01	21.02404	01	13	32.71	+41	44	58.9	19.5	GVEB009H36
K22B00A	KC2022	01	21.02644	01	13	34.33	+41	45	26.4	19.1	GVEB009H36
K22B00A	KC2022	01	21.02884	01	13	35.92	+41	45	54.0	19.5	GVEB009H36
K22B00A	KC2022	01	21.04503	01	13	46.70	+41	49	00.6	18.8	RqEB009734
K22B00A	KC2022	01	21.04647	01	13	47.62	+41	49	16.7	19.0	RqEB009734
K22B00A	KC2022	01	21.04789	01	13	48.68	+41	49	34.4	18.9	RqEB009734
K22B00A	KC2022	01	21.05171	01	13	51.18	+41	50	17.1	19.0	RqEB009734
K22B00A	KC2022	01	21.05314	01	13	52.13	+41	50	33.9	18.8	RqEB009734
K22B00A	KC2022	01	21.05456	01	13	53.10	+41	50	50.3	19.0	RqEB009734
K22B00A	KC2022	01	21.08342901	14	13.25	+41	56	30.1	18.4	GXEB009858	
K22B00A	KC2022	01	21.09831601	14	23.14	+41	59	19.5	18.6	GXEB009858	
K22B00A	KC2022	01	21.11320301	14	33.08	+42	02	07.6	18.4	GXEB009858	
K22B00A	C2022	01	21.14413801	14	53.96	+42	08	01.0	18.93	GVEB009G96	
K22B00A	C2022	01	21.14929401	14	57.40	+42	08	58.1	19.15	GVEB009G96	

Observer details:

- 104 San Marcello Pistoiese. Observers P. Bacci, M. Maestripietri. Measurers P. Bacci, L. Tesi, G. Fagioli. 0.60-m reflector + CCD.
- 203 GiaGa Observatory. Observers S. Foglia, G. Galli. Measurer G. Galli. 0.36-m f/5.76 Schmidt-Cassegrain + CCD.
- 204 Schiaparelli Observatory. Observer L. Buzzi. 0.84-m f/3.5 reflector + CCD.
- 654 Table Mountain Observatory, Wrightwood-PHMC. Observers N. Evans, P. Choi, N. Saini, C. Zhai, R. Trahan, M. Shao. 1.0-m reflector + CCD.
- 734 Farpoint Observatory, Eskridge. Observers G. Hug, D. Cromer, D. Goodin, R. Valentine. Measurer D. Cromer. 0.7-m reflector + CCD.
- 858 Tebbutt Observatory, Edgewood. Observer F. B. Zoltowski. 0.16-m refractor + CCD.
- 958 Observatoire de Dax. Observer P. Dupouy. 0.50-m f/6 reflector + CCD.
- G02 KYSUCE Observatory, Kysucke Nove Mesto. Observer M. Urbanik. 0.40-m f/5.5 Corrected Dall-Kirkham + CCD.
- G14 Novaloop Observatory, Mougins. Observer G. Attard. 0.28-m f/1.9 reflector + CCD.
- G15 Magroforte Observatory, Alessandria. Observer A. De Pieri. 0.25-m f/6.7 Schmidt-Cassegrain + CCD.
- 996 Mt. Lemmon Survey. Observer H. Groeller. Measurers E. J. Christensen, G. A. Farneth, D. C. Fuls, A. R. Gibbs, A. D. Grauer, H. Groeller, R. A. Kowalski, S. M. Larson, G. J. Leonard, D. Rankin, R. L. Seaman, A. Serrano, F. C. Shelly, K. W. Wierzbos. 1.5-m reflector + 10K CCD.
- H36 Sandlot Observatory, Scranton. Observer G. Hug. 0.56-m reflector + CCD.
- J57 Centro Astronomico Alto Turia, Valencia. Observer A. Fornas. Measurers A. Fornas, G. Fornas, E. Arce, V. Mas. 0.43-m f/6.8 reflector + CCD.
- J69 North Observatory, Clanfield. Observer D. Briggs. 0.3-m f/5.4 Newtonian reflector + CCD.
- J95 Great Shefford. Observer P. Birtwhistle. 0.41-m f/6.3 Schmidt-Cassegrain + CCD.
- L06 Sormano 2 Observatory, Bellagio Via Lattea. Observer G. Ventre. Measurer P. Sicoli. 0.36-m Schmidt-Cassegrain + CCD.
- T08 ATLAS-MLO, Mauna Loa. Observers L. Denneau, R. Siverd, J. Tonry, H. Weiland. Measurers L. Denneau, N. Erasmus, A. Fitzsimmons, A. Lawrence, J. Robinson, R. Siverd, J. Tonry, H. Weiland. 0.5-m reflector + CCD.
- Z33 6ROADS Observatory 2, Nerpio. Observers R. Reszelewski, M. Zolnowski, M. Gedek, K. Zukowski, T. Santana-Ros. Measurer R. Reszelewski. 0.4-m f/8 reflector + CCD.
- Z80 Northolt Branch Observatory. Observer G. Wells. Measurers G. Wells, D. Bamberger. 0.25-m f/8.0 Ritchey-Chretien + CCD.
- Z99 Clixby Observatory, Cleethorpes. Observer A. Mickelburgh. 0.36-m f/8 Schmidt-Cassegrain + CCD.

Orbital elements:

2022 BA		PHA, Earth MOID = 0.0209 AU	
Epoch 2022 Jan. 21.0 TT = JDT 2459600.5		Veres	
M 105.75223	(2000.0)	P	Q
n 1.35736377	Peri. 223.40870	+0.82615014	+0.34695864
a 0.8078645	Node 111.20736	-0.29065771	+0.93742080
e 0.4021005	Incl. 28.43780	-0.48269457	+0.02935882
P 0.73	H 21.37	G 0.15	U 7

Residuals in seconds of arc

220119 T08	0.3+ 0.7+	220119 L06	0.3- 0.3+	220120 203	0.2- 0.1+
220119 T08	0.7+ 1.3-	220119 L06	0.2- 0.3+	220120 104	0.1- 0.1+
220119 T08	0.5- 0.4+	220119 L06	0.0 0.0	220120 104	0.1+ 0.3+
220119 T08	0.2- 0.5-	220119 Z80	0.6- 0.2+	220120 104	0.4- 0.3-
220119 G02	0.0 0.1+	220119 Z80	0.5- 0.1-	220120 958	1.1+ 2.0+
220119 G02	0.2+ 0.1+	220120 654	0.1+ 0.0	220120 958	1.0+ 1.3+
220119 J95	0.0 0.1+	220120 654	0.0 0.0	220120 958	0.4+ 0.6+
220119 Z04	0.0 0.1-	220120 654	0.1+ 0.0	220121 H36	0.0 0.6+
220119 J95	0.3+ 0.2+	220120 G14	0.7- 0.9-	220121 H36	0.3+ 0.3+
220119 J95	0.0 0.1+	220120 Z99	0.2- 0.1-	220121 H36	0.2+ 0.1+
220119 Z04	0.0 0.1-	220120 Z99	0.1- 0.0	220121 734	0.2- 0.2-
220119 J95	0.0 0.0	220120 G14	0.5+ 0.1-	220121 734	0.7- 0.7-
220119 Z04	0.2+ 0.1-	220120 Z99	0.2- 0.0	220121 734	0.6+ 0.7+
220119 J57	0.3+ 0.7+	220120 G15	0.6- 0.4-	220121 734	0.1+ 0.5-
220119 Z33	0.2+ 0.3-	220120 J95	0.2+ 0.1+	220121 734	0.0 0.1-
220119 J57	0.3+ 0.5+	220120 G14	0.4+ 0.5-	220121 734	0.3+ 0.1+
220119 Z33	0.1- 0.1+	220120 J95	0.0 0.1+	220121 858	0.1- 0.1-
220119 G02	0.4- 0.1-	220120 J95	0.1- 0.1+	220121 858	0.0 0.2+
220119 Z33	0.8- 0.3+	220120 G15	0.9+ 0.7+	220121 858	0.4+ 0.1+
220119 J57	0.0 0.1+	220120 J95	0.1- 0.1-	220121 G96	0.1+ 0.0
220119 J69	0.7- 0.4-	220120 G15	0.0 0.2-	220121 G96	0.1+ 0.4-
220119 J69	0.2- 0.1-	220120 203	0.5- 0.0		
220119 J69	0.1+ 0.1+	220120 203	0.4+ 0.0		

Ephemeris:

2022 BA		a,e,i = 0.81, 0.40, 28		q = 0.4830	
Date	TT	R. A. (2000) Decl.	Delta	r	Elong. Phase V
2021 12 22		18 21 13.8 -61 18 57	0.2576	0.7968	38.1 130.5 23.7
...					
2022 01 06		20 41 06.3 -55 22 35	0.1011	0.9049	37.2 138.9 22.9
...					
2022 01 14		23 22 29.3 -07 20 25	0.05263	0.9544	55.1 122.3 19.9
...					
2022 01 20		01 00 57.1 +38 02 01	0.08164	0.9876	90.2 85.1 18.9
2022 01 21		01 13 16.8 +41 40 04	0.08988	0.9928	93.0 81.8 19.0
2022 01 22		01 24 36.2 +44 36 37	0.09853	0.9979	95.2 79.2 19.1

```

...
2022 01 28   02 16 18.6 +54 13 26   0.1546  1.0265  101.3   70.2   19.8
...
2022 02 05   03 00 12.8 +58 51 05   0.2327  1.0592  102.1   65.5   20.6
...
2022 02 20   03 55 28.1 +61 42 51   0.3759  1.1044   97.8   62.5   21.7

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M. P. C. Staff

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