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MPEC 2020-A99 : 2020 AV2

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M.P.E.C. 2020-A99

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The Minor Planet Electronic Circulars contain information on unusual minor planets and routine data on comets. They are published on behalf of Division F of the International Astronomical Union by the Minor Planet Center, Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.

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2020 AV2

Observations:

K20A02V*	C2020	01	04.07706921	24	49.90	-06	08	41.8	17.96rUEA099I41		
K20A02V	C2020	01	04.08206021	24	50.67	-06	08	31.5	17.95rUEA099I41		
K20A02V	C2020	01	04.08706021	24	51.46	-06	08	21.0	18.13rUEA099I41		
K20A02V	C2020	01	04.09204121	24	52.22	-06	08	10.7	18.01rUEA099I41		
K20A02V	KC2020	01	04.70706	21	26	27.96	-05	47	01.6	18.1	GVEA099595
K20A02V	KC2020	01	04.71111	21	26	28.61	-05	46	52.4	18.1	GVEA099595
K20A02V	KC2020	01	04.71515	21	26	29.20	-05	46	45.3	18.3	GVEA099595
K20A02V	KC2020	01	04.71919	21	26	29.78	-05	46	36.2	17.9	GVEA099595
K20A02V	KC2020	01	04.72324	21	26	30.42	-05	46	28.0	17.9	GVEA099595
K20A02V	KC2020	01	04.72728	21	26	31.03	-05	46	19.4	17.6	GVEA099595
K20A02V	KC2020	01	05.68737	21	28	55.98	-05	13	34.3	17.1	RoEA099K88
K20A02V	KC2020	01	05.69290	21	28	56.81	-05	13	22.7	17.1	RoEA099K88
K20A02V	KC2020	01	05.69567	21	28	57.21	-05	13	18.0	17.2	RoEA099K88
K20A02V	KC2020	01	05.71766	21	29	00.45	-05	12	33.0	18.1	GVEA099K38
K20A02V	KC2020	01	05.72785	21	29	01.90	-05	12	12.5	18.3	GVEA099104
K20A02V	KC2020	01	05.73082	21	29	02.34	-05	12	06.6	17.6	GVEA099104
K20A02V	KC2020	01	05.73273	21	29	02.73	-05	12	02.4	18.0	GVEA099K38
K20A02V	KC2020	01	05.73678	21	29	03.23	-05	11	54.5	18.0	GVEA099104
K20A02V	KC2020	01	05.74274	21	29	04.10	-05	11	42.4	17.9	GVEA099104
K20A02V	KC2020	01	05.74712	21	29	04.78	-05	11	33.3	18.1	GVEA099K38
K20A02V	KC2020	01	05.74871	21	29	05.00	-05	11	30.1	18.2	GVEA099104
K20A02V	KC2020	01	05.75070	21	29	05.29	-05	11	26.2	18.1	GVEA099104
K20A02V	KC2020	01	05.76029	21	29	06.69	-05	11	06.0		VEA099587
K20A02V	KC2020	01	05.76187	21	29	06.90	-05	11	03.1	17.7	GVEA099587
K20A02V	KC2020	01	05.76280	21	29	07.03	-05	11	01.0		VEA099587
K20A02V	.C2020	01	05.81762	21	29	15.07	-05	09	07.7	15.0	GVEA099950
K20A02V	.C2020	01	05.81826	21	29	15.16	-05	09	06.5	15.2	GVEA099950
K20A02V	.C2020	01	05.81892	21	29	15.26	-05	09	05.1	15.2	GVEA099950
K20A02V	.C2020	01	05.81957	21	29	15.36	-05	09	03.7	15.3	GVEA099950
K20A02V	.C2020	01	05.82023	21	29	15.45	-05	09	02.6	15.1	GVEA099950
K20A02V	.C2020	01	05.82089	21	29	15.56	-05	09	01.3	14.9	GVEA099950
K20A02V	KC2020	01	06.03203	21	29	46.61	-05	01	55.0	18.2	GVEA099734

K20A02V	KC2020	01	06.03601	21	29	47.19	-05	01	47.2	18.0	GVEA099734
K20A02V	KC2020	01	06.03899	21	29	47.64	-05	01	41.0	18.3	GVEA099734
K20A02V	C2020	01	06.06751	21	29	51.77	-05	00	42.3	17.6	GVEA099152
K20A02V	C2020	01	06.06951	21	29	52.05	-05	00	38.2	17.7	GVEA099152
K20A02V	C2020	01	06.07150	21	29	52.34	-05	00	34.2	17.8	GVEA099152
K20A02V	C2020	01	06.07351	21	29	52.63	-05	00	30.1	17.8	GVEA099152
K20A02V	2C2020	01	06.64405721	31	15.008-04	41	22.86			17.9	GVEA099119
K20A02V	2C2020	01	06.65329321	31	16.302-04	41	04.39			18.3	GVEA099119
K20A02V	2C2020	01	06.66381221	31	17.803-04	40	43.40			18.0	GVEA099119
K20A02V	KC2020	01	06.68999	21	31	21.63	-04	39	51.3	17.6	RoEA099K88
K20A02V	KC2020	01	06.69203	21	31	21.92	-04	39	48.1	17.2	RVEA099K61
K20A02V	KC2020	01	06.69276	21	31	22.00	-04	39	45.8	17.7	RoEA099K88
K20A02V	KC2020	01	06.69282	21	31	22.01	-04	39	46.1	17.2	RVEA099K61
K20A02V	KC2020	01	06.69378	21	31	22.15	-04	39	44.2	17.3	RVEA099K61
K20A02V	KC2020	01	06.69457	21	31	22.25	-04	39	42.7	17.1	RVEA099K61
K20A02V	KC2020	01	06.69552	21	31	22.40	-04	39	40.3		oEA099K88
K20A02V	KC2020	01	06.71974	21	31	25.84	-04	38	52.0		VEA099204
K20A02V	KC2020	01	06.72104	21	31	26.01	-04	38	49.0	17.0	GVEA099104
K20A02V	KC2020	01	06.72351521	31	26.33	-04	38	44.3		17.2	VqEA099C95
K20A02V	KC2020	01	06.72664	21	31	26.81	-04	38	38.2		VEA099204
K20A02V	KC2020	01	06.72701	21	31	26.88	-04	38	37.9	16.9	RqEA099215
K20A02V	KC2020	01	06.72702	21	31	26.83	-04	38	37.2	17.0	GVEA099104
K20A02V	KC2020	01	06.72736921	31	26.88	-04	38	36.7		17.0	VqEA099C95
K20A02V	KC2020	01	06.72894	21	31	27.15	-04	38	34.0	16.9	RqEA099215
K20A02V	KC2020	01	06.73086	21	31	27.41	-04	38	29.8	16.9	RqEA099215
K20A02V	KC2020	01	06.73116921	31	27.41	-04	38	29.3		17.4	VqEA099C95
K20A02V	KC2020	01	06.73300	21	31	27.66	-04	38	25.3	17.0	GVEA099104
K20A02V	KC2020	01	06.73319	21	31	27.72	-04	38	25.1	17.1	GVEA099204
K20A02V	KC2020	01	06.73500421	31	27.99	-04	38	21.6		17.5	VqEA099C95
K20A02V	KC2020	01	06.73940	21	31	28.59	-04	38	12.9		VEA099204
K20A02V	KC2020	01	06.74548	21	31	29.44	-04	38	00.3		VEA099204
K20A02V	C2020	01	07.06032	21	32	13.74	-04	27	30.2		VEA099H06
K20A02V	C2020	01	07.06132	21	32	13.90	-04	27	29.0		VEA099152
K20A02V	C2020	01	07.06257	21	32	14.09	-04	27	26.1	18.6	GVEA099152
K20A02V	C2020	01	07.06396	21	32	14.25	-04	27	23.2	17.8	GVEA099H06
K20A02V	C2020	01	07.06584	21	32	14.50	-04	27	19.0	18.1	GVEA099152
K20A02V	KC2020	01	07.52871	21	33	18.76	-04	12	02.9	18.1	RUEA099C42
K20A02V	KC2020	01	07.53471	21	33	19.48	-04	11	53.0	18.4	RUEA099C42
K20A02V	KC2020	01	07.54080	21	33	20.47	-04	11	38.4	18.3	RUEA099C42
K20A02V	KC2020	01	07.55290	21	33	22.04	-04	11	16.1	17.9	RUEA099C42
K20A02V	KC2020	01	07.68766	21	33	40.58	-04	06	50.5	17.8	RoEA099K88
K20A02V	KC2020	01	07.69043	21	33	40.98	-04	06	45.0	17.8	RoEA099K88
K20A02V	KC2020	01	07.69319	21	33	41.32	-04	06	39.8	18.1	RoEA099K88
K20A02V	KC2020	01	07.69596	21	33	41.73	-04	06	35.1	18.1	RoEA099K88
K20A02V	KC2020	01	07.69873	21	33	42.04	-04	06	29.0	18.1	RoEA099K88
K20A02V	KC2020	01	07.71157	21	33	43.83	-04	06	03.7	17.8	RVEA099160
K20A02V	KC2020	01	07.71657	21	33	44.46	-04	05	54.3	18.3	RVEA099160
K20A02V	KC2020	01	07.72134	21	33	45.13	-04	05	43.7		VEA099160
K20A02V	KC2020	01	07.74272	21	33	48.05	-04	05	02.1	18.1	VqEA099C77
K20A02V	KC2020	01	07.75249	21	33	49.28	-04	04	42.8	17.8	VqEA099C77
K20A02V	qC2020	01	08.05245	21	34	29.72	-03	54	52.7	17.9	G EA099H06
K20A02V	qC2020	01	08.06788	21	34	31.79	-03	54	22.5	17.8	G EA099H06
K20A02V	@C2020	01	08.09692	21	34	35.55	-03	53	27.7	16.3	rVEA099675
K20A02V	@C2020	01	08.09844	21	34	35.71	-03	53	24.2	16.2	rVEA099675
K20A02V	@C2020	01	08.09997	21	34	35.96	-03	53	19.5	16.2	rVEA099675
K20A02V	KC2020	01	08.70618	21	35	56.01	-03	33	44.9	17.5	RUEA099470
K20A02V	KC2020	01	08.70697	21	35	56.12	-03	33	44.0	17.0	RUEA099470
K20A02V	KC2020	01	08.70737	21	35	56.22	-03	33	42.5	17.2	RUEA099470
K20A02V	KC2020	01	08.71137	21	35	56.76	-03	33	35.1	17.5	RUEA099470
K20A02V	KC2020	01	08.71296	21	35	56.97	-03	33	31.9	16.8	RUEA099470
K20A02V	KC2020	01	08.71320	21	35	57.04	-03	33	32.1	17.2	RVEA099160
K20A02V	KC2020	01	08.71741	21	35	57.60	-03	33	24.1		VEA099160
K20A02V	KC2020	01	08.72164	21	35	58.10	-03	33	16.5		VEA099160
K20A02V	KC2020	01	08.72583	21	35	58.69	-03	33	07.7	17.9	GVEA099204
K20A02V	KC2020	01	08.73158	21	35	59.41	-03	32	56.6		VEA099204
K20A02V	KC2020	01	08.73733	21	36	00.17	-03	32	45.6		VEA099204

Observer details:

104 San Marcello Pistoiese. Observers P. Bacci, M. Maestripietri, M. Facchini, M. D. Grazia. Measurers P. Bacci, L. Tesi, G. Fagioli. 0.60-m reflector + CCD.

119 Abastuman. Observers R. Inasaridze, V. Ayzasian, G. Kapanadze. Measurers M. Micheli, Y. Krugly. 0.7-m f/3 reflector + CCD.

160 Castelmartini. Observers M. Jaeger, E. Prosperi, S. Prosperi. Measurer E. Prosperi. 0.35-m f/10 Schmidt-Cassegrain + CCD.

204 Schiaparelli Observatory. Observer L. Buzzi. 0.84-m f/3.5 reflector + CCD.

215 Buchloe. Observer W. Hasubick. 0.44-m f/4.6 reflector + CCD.

470 Ceccano. Observer G. Masi. 0.43-m f/6.8 astrograph + CCD.

587 Sormano. Observers A. Testa, G. Ventre. Measurer A. Testa. 0.5-m f/6.8 reflector + CCD.

595 Farra d'Isonzo. Observer E. Pettarin. 0.40-m f/5.15 reflector + CCD.

675 Palomar Mountain. Observers R. S. Walters, R. Riddle, D. Neill. Measurer B. T. Bolin.

734 Farpoint Observatory, Eskridge. Observers G. Hug, D. Cromer, D. Goodin. Measurer D. Cromer. 0.69-m reflector + CCD.

950 La Palma. Observers C. Cifuentes, J. Caballero, C. Benn, B. Gonzalez. Measurers O. Vaduvescu, C. de la Fuente Marcos. 4.2-m f/11 reflector.

C42 Xingming Observatory, Mt. Nanshan. Observers H.-J. Tan, X. Gao. Measurer H.-J. Tan. 0.6-m f/8 Ritchey-Chretien + CCD.

C77 Bernezzo Observatory. Observer A. Mantero. 0.25-m f/4.0 reflector + CCD.

C95 SATINO Remote Observatory, Haute Provence. Observer J. Jahn. 0.60-m f/3.2

Newtonian reflector + CCD.

H06 iTelescope Observatory, Mayhill. Observers H. Sato, F. D. Romanov. 0.43-m f/6.8 astrograph + CCD + f/4.5 focal reducer, 0.43-m f/6.8 reflector + CCD + f/4.5 focal reducer.

I41 Palomar Mountain--ZTF. Observer Z. T. F. Collaboration. Measurers B. T. Bolin, F. J. Masci, Q.-Z. Ye. 1.2-m f/2.4 Schmidt.

I52 Steward Observatory, Mt. Lemmon Station. Observer G. J. Leonard. 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, T. A. Pruyn, D. Rankin, R. L. Seaman, F. C. Shelly, K. W. Wierzbos. 1.0-m reflector + CCD.

K38 M57 Observatory, Saltrio. Observer G. Baj. 0.3-m f/5.5 Ritchey-Chretien + CCD.

K61 Rokycany Observatory. Observer M. Adamovsky. 0.51-m f/6.8 reflector + CCD.

K88 GINOP-KHK, Piszkesteto. Observer K. Sarneczky. 0.60-m Schmidt + CCD.

Orbital elements:

2020 AV2				Earth MOID = 0.3460 AU
Epoch 2020 May 31.0 TT = JDT 2459000.5				Veres
M 222.78472	(2000.0)	P	Q	
n 2.38316868	Peri. 187.33510	-0.97071094	+0.23811432	
a 0.5550936	Node 6.70148	-0.20416609	-0.74744818	
e 0.1779624	Incl. 15.89812	-0.12663525	-0.62017965	
P 0.41	H 16.5	G 0.15	U 9	

Residuals in seconds of arc

200104 I41	0.2+	0.2+	200106 734	0.4+	0.3-	200107 H06	0.1+	0.1-
200104 I41	0.1+	0.2+	200106 I52	0.1+	0.2-	200107 I52	0.5-	0.3+
200104 I41	0.3+	0.3+	200106 I52	0.0	0.2-	200107 C42	0.1+	0.7+
200104 I41	0.1+	0.2+	200106 I52	0.1+	0.2-	200107 C42	1.3-	1.3-
200104 595	0.2-	0.4-	200106 I52	0.1+	0.2-	200107 C42	1.2+	1.3+
200104 595	0.3+	0.4+	200106 119	0.3+	0.1+	200107 C42	0.1+	0.3-
200104 595	0.0	0.8-	200106 119	0.2+	0.0	200107 K88	0.1+	0.5+
200104 595	0.5-	0.0	200106 119	0.5+	0.1-	200107 K88	0.5+	0.5+
200104 595	0.2-	0.2-	200106 K88	0.3+	0.5+	200107 K88	0.1+	0.3+
200104 595	0.2-	0.1+	200106 K61	0.4-	0.1-	200107 K88	0.6+	0.5-
200105 K88	0.3-	0.8+	200106 K88	0.0	0.5+	200107 K88	0.3-	0.2+
200105 K88	0.0	1.1+	200106 K61	0.7-	0.3+	200107 160	0.4+	0.3-
200105 K88	0.0	0.2+	200106 K61	0.6-	0.3+	200107 160	0.2-	0.8-
200105 K38	0.3-	0.3+	200106 K61	0.8-	0.2+	200107 160	0.3+	0.4+
200105 104	0.5-	0.2-	200106 K88	0.2+	0.4+	200107 C77	0.8+	0.0
200105 104	0.4-	0.4-	200106 204	0.2+	0.0	200107 C77	0.4-	0.1+
200105 K38	0.9+	0.2+	200106 104	0.4+	0.2+	200108 H06	0.1-	0.5+
200105 104	0.1-	0.4-	200106 C95	0.5-	0.1-	200108 H06	0.4+	0.5+
200105 104	0.1-	0.4-	200106 204	0.2+	0.0	200108 675 (1.6-	1.3-	
200105 K38	0.1+	0.0	200106 215	0.4+	0.2-	200108 675 (2.2-	0.8-	
200105 104	0.3+	0.3-	200106 104	0.1+	0.0	200108 675	1.5-	0.9+
200105 104	0.3+	0.4-	200106 C95	0.3-	0.2-	200108 470	1.2-	0.2+
200105 587	0.1-	0.5+	200106 215	0.4+	0.2-	200108 470	1.1-	0.5-
200105 587	0.4-	0.2+	200106 215	0.3+	0.2+	200108 470	0.4-	0.3+
200105 587	0.5-	0.4+	200106 C95	0.3-	0.4-	200108 470	0.1+	0.1-
200105 950	0.0	0.1-	200106 104	0.0	0.1-	200108 470	0.2+	0.1+
200105 950	0.0	0.2-	200106 204	0.1+	0.0	200108 160	0.3+	0.3-
200105 950	0.0	0.1-	200106 C95	0.3+	0.4-	200108 160	0.6+	0.4-
200105 950	0.1+	0.0	200106 204	0.1+	0.3-	200108 160	0.0	1.0-
200105 950	0.0	0.3-	200106 204	0.1+	0.1+	200108 204	0.4+	0.0
200105 950	0.2+	0.3-	200107 H06	0.0	0.1+	200108 204	0.2+	0.0
200106 734	0.0	0.2-	200107 I52	0.1-	0.7-	200108 204	0.6+	0.1-
200106 734	0.1+	0.5-	200107 I52	0.1+	0.3-			

Ephemeris:

2020 AV2		a,e,i = 0.56, 0.18, 16		q = 0.4563				
Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	V
2019 12 09		19 47 54.0	-21 19 46	0.9854	0.6523	38.7	70.6	18.0
...								
2019 12 24		20 50 28.1	-12 45 28	0.8833	0.6477	40.2	78.3	18.0
...								
2020 01 01		21 16 20.5	-07 56 41	0.8227	0.6342	39.9	83.8	18.0
...								
2020 01 07		21 32 05.7	-04 29 26	0.7733	0.6193	39.0	89.1	18.0
2020 01 08		21 34 23.1	-03 56 31	0.7647	0.6164	38.8	90.1	18.1
2020 01 09		21 36 34.3	-03 24 14	0.7560	0.6135	38.6	91.2	18.1
...								
2020 01 15		21 47 19.4	-00 27 43	0.7022	0.5938	36.7	98.4	18.1
...								
2020 01 23		21 54 00.0	+02 14 26	0.6282	0.5634	32.2	111.3	18.5
...								
2020 02 07		21 35 17.4	-00 33 16	0.5233	0.5020	15.6	148.2	21.7

A. U. Tomatic

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