

"Pseudo-MPEC" for C/2018 A1Created 2018 Jan 27 11:54:40 UT using [Find_Orb](#)

- [Astrometry](#)
- [Astrometry \(from NEOCP, if available\)](#)
- [Observing stations](#)
- [Orbital elements](#)
- [Residuals](#)
- [Ephemeris](#)
- [Click here to search NEAT images for this object using Skymorph](#)
- [Click here to search DSS2 images for this object using Skymorph](#)
- [Click here to search Spacewatch images for this object using Skymorph](#)

Show Orbit in OrbitViewer

Astrometry:

CK18A010	C2018	01	06.57566	11	46	43.917+74	19	10.19	19.1	TUEA043	F51
CK18A010	C2018	01	06.58935	11	46	40.795+74	19	13.55	19.0	TUEA043	F51
CK18A010	C2018	01	06.60292	11	46	37.625+74	19	16.41	19.1	TUEA043	F51
CK18A010	C2018	01	06.61655	11	46	34.480+74	19	19.30	19.1	TUEA043	F51
CK18A010	KC2018	01	07.82879	11	41	54.70 +74	23	14.7		UEA043	J95
CK18A010	KC2018	01	07.83488	11	41	53.32 +74	23	15.7		UEA043	J95
CK18A010	KC2018	01	07.84188	11	41	51.54 +74	23	17.5	18.4	TUEA043	J95
CK18A010	KC2018	01	07.92984	11	41	30.99 +74	23	35.3		UEA043	J95
CK18A010	KC2018	01	07.93594	11	41	29.57 +74	23	36.7	19.2	TUEA043	J95
CK18A010	KC2018	01	08.38782	11	39	41.42 +74	25	00.4	18.9	TqEA043	H36
CK18A010	KC2018	01	08.39363	11	39	39.84 +74	25	01.7	18.5	TqEA043	H36
CK18A010	KC2018	01	08.40525	11	39	36.70 +74	25	04.2	18.5	TqEA043	H36
CK18A010	KC2018	01	08.81508	11	37	58.06 +74	26	07.8	19.2	TtEA043	L04
CK18A010	KC2018	01	08.82559	11	37	55.44 +74	26	09.7	19.3	TtEA043	L04
CK18A010	KC2018	01	08.83331	11	37	53.69 +74	26	10.7	19.2	TtEA043	L04
CK18A010	KC2018	01	08.95992	11	37	22.47 +74	26	33.1	18.8	ToEA043	K88
CK18A010	KC2018	01	08.96477	11	37	21.33 +74	26	34.3	19.0	ToEA043	K88
CK18A010	KC2018	01	08.97528	11	37	18.76 +74	26	36.1	19.2	ToEA043	K88
CK18A010	C2018	01	09.97517	11	33	09.51 +74	29	01.0	18.7	TSEA043	033
CK18A010	C2018	01	09.97586	11	33	09.36 +74	29	01.2	19.0	TSEA043	033
CK18A010	C2018	01	09.97653	11	33	09.19 +74	29	01.1	18.6	TSEA043	033
CK18A010	C2018	01	09.97813	11	33	08.77 +74	29	01.3	18.7	TSEA043	033
CK18A010	C2018	01	09.97972	11	33	08.38 +74	29	01.5	18.8	TSEA043	033
CK18A010	C2018	01	09.98133	11	33	07.99 +74	29	01.9	18.6	TSEA043	033
CK18A010	C2018	01	10.11963	11	32	32.31 +74	29	21.3	18.5	TSEA043	033
CK18A010	C2018	01	10.12124	11	32	31.95 +74	29	21.3	18.4	TSEA043	033
CK18A010	C2018	01	10.15112	11	32	24.25 +74	29	25.1	18.8	TSEA043	033
CK18A010	C2018	01	10.15272	11	32	23.79 +74	29	25.2	18.5	TSEA043	033
CK18A010	9C2018	01	10.17386	11	32	18.58 +74	29	29.2	18.6	TUEA043	G40
CK18A010	9C2018	01	10.25538	11	31	57.49 +74	29	40.0	18.6	TUEA043	G40
CK18A010	(C2018	01	11.06836	11	28	28.32 +74	31	09.5	18.4	TUEA043	G40
CK18A010	(C2018	01	11.07507	11	28	26.46 +74	31	10.3	18.4	TUEA043	G40
CK18A010	KC2018	01	19.05920	10	50	26.66 +74	26	02.7	18.7	N	K02
CK18A010	KC2018	01	19.06769	10	50	23.98 +74	26	00.4	18.6	N	K02
CK18A010	KC2018	01	25.87104	10	15	45.42 +73	45	58.9	17.4	N	970
CK18A010	KC2018	01	25.88017	10	15	42.95 +73	45	55.2	18.1	N	970

Station data:

- (033) [Karl Schwarzschild Observatory, Tautenburg \(N50.98019 E11.71124\)](#) Germany.
1.3-m Schmidt.
- (970) [Chelmsford \(N51.7448 E0.4954\)](#) UK. Observer N. James. 0.28-m f/10
Schmidt-Cassegrain + CCD.
- (F51) [Pan-STARRS 1, Haleakala \(N20.70733 W156.25591\)](#) US/Hawaii. Observers
N. [Primak](#), A. Schultz, S. [Watters](#), J. Thiel, T. Goggia. Measurer PS1

Science Consortium. 1.8-m Ritchey-Chrétien + CCD.
 (G40) Slooh.com Canary Islands Observatory ([N28.29982 W16.50826](#)) Canary Islands (Spain).
 (H36) [Sandlot Observatory, Scranton](#) ([N38.7977 W95.7064](#)) US/Kansas. Observer
 G. Hug. 0.56-m reflector + CCD.
 (J95) [Great Shefford](#) ([N51.47502 W1.44700](#)) UK. Observer P. [Birtwhistle](#).
 0.30-m f/6.3 Schmidt-Cassegrain + CCD.
 (K02) Eastwood Observatory, Leigh on Sea ([N51.56885 E0.66761](#)) UK.
 (K88) GINOP-KHK, Piszkesteto ([N47.9177 E19.8936](#)) Hungary.
 (L04) ROASTERR-1 Observatory, Cluj-Napoca ([N46.82101 E23.59640](#)) Romania.

Orbital elements: C/2018 A1

Perihelion 2017 Oct 20.904197 +/- 0.248 TT = 21:42:02 (JD 2458047.404197)
 Epoch 2018 Jan 25.0 TT = JDT 2458143.5 Ju: 0.2110 [Find_Orb](#)
 M 0.72604 +/- 0.012
 n 0.00755545 +/- 0.000109 Peri. 96.63286 +/- 0.12
 a 25.7214523 +/- 0.247 Node 336.54954 +/- 0.036
 e 0.9057729 +/- 0.000824 Incl. 53.62054 +/- 0.030
 P 130.45 M(N) 12.6 K 10.0 U 6.6
 q 2.42365645 +/- 0.00216 Q 49.0192481 +/- 0.48
 From 36 observations 2018 Jan. 6-25; mean residual 0".37

Residuals in arcseconds:

180106	F51	.49+	.46-	180108	L04	.17-	.12+	180110	033	.18+	.21+
180106	F51	.71+	.12-	180108	L04	.45-	.13+	180110	033	.41+	.01-
180106	F51	.62+	.22-	180108	L04	.06+	.27-	180110	033	.56+	.04-
180106	F51	.71+	.27-	180108	K88	.49-	.23-	180110	033	.38+	.15-
180107	J95	.08-	.17-	180108	K88	.24-	.12+	180110	G40	.27-	.11-
180107	J95	.08+	.38-	180108	K88	.10-	.09+	180110	G40	.58+	.38+
180107	J95	.51-	.02+	180109	033	.26+	.08+	180111	G40	.46+	.20-
180107	J95	.03-	.19+	180109	033	.36+	.17+	180111	G40	.14+	.20-
180107	J95	.07+	.37+	180109	033	.37+	.02-	180119	K02	.11+	.17+
180108	H36	.52+	.12+	180109	033	.32+	.06-	180119	K02	.18-	.52-
180108	H36	.09-	.36+	180109	033	.39+	.09-	180125	970	.65-	.37-
180108	H36	1.2-	.78+	180109	033	.48+	.07+	180125	970	.60+	.48+

Ephemerides for (970) Chelmsford:

Date (UTC)	RA	Dec	delta	r	elong	mag	'/hr	PA	" sig PA
2018 01 27	10 10 06.152	+73 35 50.67	1.9563	2.6308	123.5	18.3	0.97	246.4	0.3 152
2018 01 28	10 05 09.542	+73 25 59.23	1.9585	2.6349	123.6	18.3	0.98	244.5	0.4 148
2018 01 29	10 00 17.142	+73 15 20.31	1.9610	2.6389	123.8	18.3	0.99	242.7	0.5 144
2018 01 30	09 55 29.559	+73 03 54.39	1.9636	2.6430	123.9	18.3	1.00	240.8	0.6 141
2018 01 31	09 50 47.343	+72 51 42.11	1.9665	2.6471	124.0	18.3	1.01	239.1	0.7 138
2018 02 01	09 46 10.992	+72 38 44.24	1.9696	2.6512	124.1	18.3	1.02	237.3	0.9 135
2018 02 02	09 41 40.949	+72 25 01.67	1.9730	2.6554	124.2	18.3	1.03	235.5	1.0 132
2018 02 03	09 37 17.601	+72 10 35.41	1.9765	2.6596	124.3	18.4	1.04	233.8	1.2 130
2018 02 04	09 33 01.282	+71 55 26.56	1.9803	2.6638	124.3	18.4	1.05	232.1	1.4 127
2018 02 05	09 28 52.273	+71 39 36.29	1.9844	2.6681	124.4	18.4	1.06	230.5	1.5 125
2018 02 06	09 24 50.808	+71 23 05.88	1.9886	2.6724	124.4	18.4	1.06	228.9	1.7 123
2018 02 07	09 20 57.072	+71 05 56.65	1.9932	2.6767	124.4	18.4	1.07	227.3	1.9 120
2018 02 08	09 17 11.201	+70 48 10.00	1.9979	2.6811	124.3	18.4	1.08	225.7	2.1 118
2018 02 09	09 13 33.294	+70 29 47.37	2.0029	2.6855	124.3	18.4	1.08	224.2	2.3 116
2018 02 10	09 10 03.404	+70 10 50.24	2.0082	2.6899	124.2	18.4	1.09	222.7	2.6 114
2018 02 11	09 06 41.552	+69 51 20.13	2.0137	2.6943	124.1	18.5	1.10	221.2	2.8 113
2018 02 12	09 03 27.723	+69 31 18.58	2.0194	2.6988	124.0	18.5	1.10	219.7	3.1 111
2018 02 13	09 00 21.872	+69 10 47.14	2.0254	2.7033	123.9	18.5	1.10	218.3	3.3 109
2018 02 14	08 57 23.929	+68 49 47.36	2.0317	2.7078	123.7	18.5	1.11	216.9	3.6 107
2018 02 15	08 54 33.797	+68 28 20.81	2.0382	2.7124	123.6	18.5	1.11	215.6	3.9 106
2018 02 16	08 51 51.362	+68 06 29.04	2.0449	2.7170	123.4	18.5	1.12	214.2	4.2 104
2018 02 17	08 49 16.491	+67 44 13.58	2.0519	2.7216	123.2	18.5	1.12	212.9	4.5 102
2018 02 18	08 46 49.035	+67 21 35.97	2.0592	2.7262	123.0	18.6	1.12	211.7	4.8 101
2018 02 19	08 44 28.834	+66 58 37.71	2.0667	2.7309	122.7	18.6	1.12	210.4	5.1 100
2018 02 20	08 42 15.714	+66 35 20.27	2.0744	2.7356	122.5	18.6	1.12	209.2	5.5 98
2018 02 21	08 40 09.497	+66 11 45.12	2.0824	2.7403	122.2	18.6	1.12	208.0	5.8 97
2018 02 22	08 38 09.994	+65 47 53.68	2.0907	2.7451	121.9	18.6	1.12	206.8	6.2 96
2018 02 23	08 36 17.013	+65 23 47.32	2.0992	2.7498	121.6	18.6	1.12	205.6	6.5 94
2018 02 24	08 34 30.357	+64 59 27.40	2.1080	2.7546	121.3	18.6	1.12	204.5	6.9 93

2018 02 25	08 32	49.827	+64 34	55.21	2.1170	2.7595	120.9	18.7	1.12	203.4	7.3	92
2018 02 26	08 31	15.225	+64 10	12.03	2.1262	2.7643	120.6	18.7	1.12	202.3	7.7	91
2018 02 27	08 29	46.350	+63 45	19.05	2.1357	2.7692	120.2	18.7	1.12	201.2	8.1	90
2018 02 28	08 28	23.004	+63 20	17.43	2.1454	2.7741	119.8	18.7	1.12	200.2	8.5	89
2018 03 01	08 27	04.993	+62 55	08.29	2.1554	2.7791	119.4	18.7	1.12	199.2	8.9	88
2018 03 02	08 25	52.126	+62 29	52.68	2.1656	2.7840	119.0	18.8	1.12	198.2	9	87
2018 03 03	08 24	44.218	+62 04	31.60	2.1761	2.7890	118.5	18.8	1.11	197.2	9	86
2018 03 04	08 23	41.088	+61 39	06.01	2.1867	2.7940	118.1	18.8	1.11	196.2	10	85
2018 03 05	08 22	42.564	+61 13	36.82	2.1977	2.7990	117.6	18.8	1.11	195.2	10	84
2018 03 06	08 21	48.478	+60 48	04.91	2.2088	2.8041	117.2	18.8	1.10	194.3	11	83
2018 03 07	08 20	58.668	+60 22	31.10	2.2202	2.8092	116.7	18.8	1.10	193.3	11	82
2018 03 08	08 20	12.979	+59 56	56.21	2.2318	2.8143	116.2	18.9	1.10	192.4	11	82
2018 03 09	08 19	31.262	+59 31	20.97	2.2437	2.8194	115.7	18.9	1.09	191.5	12	81
2018 03 10	08 18	53.371	+59 05	46.14	2.2557	2.8246	115.1	18.9	1.09	190.6	12	80
2018 03 11	08 18	19.168	+58 40	12.39	2.2680	2.8298	114.6	18.9	1.09	189.7	13	80
2018 03 12	08 17	48.518	+58 14	40.39	2.2805	2.8350	114.1	18.9	1.08	188.8	13	79
2018 03 13	08 17	21.291	+57 49	10.78	2.2933	2.8402	113.5	19.0	1.08	187.9	14	78
2018 03 14	08 16	57.363	+57 23	44.14	2.3062	2.8454	113.0	19.0	1.07	187.1	14	78
2018 03 15	08 16	36.614	+56 58	21.05	2.3194	2.8507	112.4	19.0	1.07	186.2	15	77
2018 03 16	08 16	18.927	+56 33	02.05	2.3327	2.8560	111.8	19.0	1.06	185.4	15	76
2018 03 17	08 16	04.191	+56 07	47.64	2.3463	2.8613	111.2	19.0	1.06	184.5	16	76
2018 03 18	08 15	52.298	+55 42	38.32	2.3600	2.8667	110.7	19.1	1.06	183.7	16	75
2018 03 19	08 15	43.144	+55 17	34.54	2.3740	2.8720	110.1	19.1	1.05	182.9	17	75
2018 03 20	08 15	36.627	+54 52	36.74	2.3882	2.8774	109.5	19.1	1.05	182.0	17	74
2018 03 21	08 15	32.650	+54 27	45.32	2.4025	2.8828	108.8	19.1	1.04	181.2	18	74
2018 03 22	08 15	31.117	+54 03	00.66	2.4171	2.8882	108.2	19.2	1.04	180.4	18	73
2018 03 23	08 15	31.937	+53 38	23.12	2.4318	2.8937	107.6	19.2	1.03	179.6	19	73
2018 03 24	08 15	35.019	+53 13	53.02	2.4467	2.8991	107.0	19.2	1.03	178.8	19	73
2018 03 25	08 15	40.276	+52 49	30.67	2.4618	2.9046	106.4	19.2	1.02	178.0	20	72
2018 03 26	08 15	47.626	+52 25	16.34	2.4770	2.9101	105.7	19.2	1.01	177.3	20	72
2018 03 27	08 15	56.986	+52 01	10.28	2.4924	2.9157	105.1	19.3	1.01	176.5	21	71
2018 03 28	08 16	08.278	+51 37	12.71	2.5080	2.9212	104.4	19.3	1.00	175.7	21	71
2018 03 29	08 16	21.428	+51 13	23.83	2.5238	2.9268	103.8	19.3	1.00	175.0	22	71
2018 03 30	08 16	36.364	+50 49	43.81	2.5397	2.9324	103.1	19.3	0.99	174.2	22	70
2018 03 31	08 16	53.018	+50 26	12.81	2.5557	2.9380	102.5	19.3	0.99	173.5	23	70
2018 04 01	08 17	11.326	+50 02	50.95	2.5719	2.9436	101.8	19.4	0.98	172.8	23	70
2018 04 02	08 17	31.226	+49 39	38.35	2.5883	2.9493	101.1	19.4	0.98	172.0	24	69
2018 04 03	08 17	52.661	+49 16	35.11	2.6048	2.9549	100.5	19.4	0.97	171.3	24	69
2018 04 04	08 18	15.574	+48 53	41.32	2.6214	2.9606	99.8	19.4	0.97	170.6	25	69
2018 04 05	08 18	39.915	+48 30	57.03	2.6382	2.9663	99.1	19.5	0.97	169.9	26	68
2018 04 06	08 19	05.631	+48 08	22.32	2.6551	2.9721	98.5	19.5	0.96	169.2	26	68
2018 04 07	08 19	32.677	+47 45	57.24	2.6722	2.9778	97.8	19.5	0.96	168.5	27	68
2018 04 08	08 20	01.004	+47 23	41.82	2.6894	2.9836	97.1	19.5	0.95	167.8	27	68
2018 04 09	08 20	30.571	+47 01	36.10	2.7067	2.9893	96.4	19.5	0.95	167.1	28	67
2018 04 10	08 21	01.333	+46 39	40.10	2.7241	2.9951	95.7	19.6	0.94	166.4	28	67
2018 04 11	08 21	33.251	+46 17	53.82	2.7416	3.0010	95.1	19.6	0.94	165.7	29	67
2018 04 12	08 22	06.285	+45 56	17.28	2.7593	3.0068	94.4	19.6	0.93	165.1	29	67
2018 04 13	08 22	40.397	+45 34	50.48	2.7770	3.0126	93.7	19.6	0.93	164.4	29	67
2018 04 14	08 23	15.551	+45 13	33.39	2.7949	3.0185	93.0	19.7	0.93	163.7	30	66
2018 04 15	08 23	51.711	+44 52	26.02	2.8129	3.0244	92.3	19.7	0.92	163.1	30	66
2018 04 16	08 24	28.844	+44 31	28.33	2.8309	3.0303	91.6	19.7	0.92	162.4	31	66
2018 04 17	08 25	06.914	+44 10	40.31	2.8491	3.0362	90.9	19.7	0.92	161.8	31	66
2018 04 18	08 25	45.889	+43 50	01.91	2.8673	3.0422	90.3	19.7	0.91	161.1	32	66
2018 04 19	08 26	25.736	+43 29	33.11	2.8857	3.0481	89.6	19.8	0.91	160.5	32	65
2018 04 20	08 27	06.424	+43 09	13.86	2.9041	3.0541	88.9	19.8	0.90	159.9	33	65
2018 04 21	08 27	47.920	+42 49	04.10	2.9226	3.0601	88.2	19.8	0.90	159.3	33	65
2018 04 22	08 28	30.194	+42 29	03.79	2.9411	3.0661	87.5	19.8	0.90	158.6	34	65
2018 04 23	08 29	13.215	+42 09	12.85	2.9597	3.0721	86.8	19.9	0.89	158.0	34	65
2018 04 24	08 29	56.954	+41 49	31.23	2.9784	3.0781	86.1	19.9	0.89	157.5	35	65
2018 04 25	08 30	41.384	+41 29	58.82	2.9972	3.0842	85.4	19.9	0.89	156.9	35	65
2018 04 26	08 31	26.476	+41 10	35.56	3.0160	3.0902	84.7	19.9	0.88	156.3	36	64
2018 04 27	08 32	12.205	+40 51	21.36	3.0349	3.0963	84.0	19.9	0.88	155.7	36	64
2018 04 28	08 32	58.548	+40 32	16.11	3.0538	3.1024	83.3	20.0	0.88	155.2	37	64
2018 04 29	08 33	45.480	+40 13	19.72	3.0728	3.1085	82.6	20.0	0.88	154.6	37	64
2018 04 30	08 34	32.981	+39 54	32.08	3.0919	3.1146	81.9	20.0	0.87	154.1	37	64
2018 05 01	08 35	21.029	+39 35	53.10	3.1109	3.1208	81.3	20.0	0.87	153.5	38	64

2018 05 02	08 36 09.605	+39 17 22.67	3.1300	3.1269	80.6	20.1	0.87	153.0	38	64
2018 05 03	08 36 58.691	+38 59 00.68	3.1492	3.1331	79.9	20.1	0.87	152.5	39	64
2018 05 04	08 37 48.268	+38 40 47.03	3.1684	3.1393	79.2	20.1	0.86	152.0	39	64
2018 05 05	08 38 38.321	+38 22 41.60	3.1876	3.1455	78.5	20.1	0.86	151.5	40	64
2018 05 06	08 39 28.832	+38 04 44.30	3.2068	3.1517	77.8	20.1	0.86	150.9	40	63