

(689220) = 2013 EX48

Discovered at Haleakala on 2013-03-06 by Pan-STARRS 1.

Orbit

Orbit type: Main Belt

Interactive Orbit Sketch Note: WebGL enabled browser required.

epoch	2024-03-31.0	semimajor axis (AU)	2.3294476	uncertainty	0
epoch JD	2460400.5	mean anomaly (°)	88.33207	reference	MPO 820726
perihelion date	2023-05-17.36464	mean daily motion (°/day)	0.27721990	observations used	100
perihelion JD	2460081.86464	aphelion distance (AU)	2.731	oppositions	7
argument of perihelion (°)	285.74688	period (years)	3.56	arc length (days)	6622
ascending node (°)	180.76498	P-vector [x]	-0.28419168	first opposition used	2006
inclination (°)	3.36608	P-vector [y]	0.90060172	last opposition used	2024
eccentricity	0.1723860	P-vector [z]	0.32886414	residual rms (arc-secs)	0.74
perihelion distance (AU)	1.9278833	Q-vector [x]	-0.95876716	perturbers coarse indicator	M-v
Tisserand w.r.t. Jupiter	3.5	Q-vector [y]	-0.26667002	perturbers precise indicator	003Ek
ΔV w.r.t. Earth (km/sec)	8.7	Q-vector [z]	-0.09824778	first observation date used	2006-03-23.0
		absolute magnitude	18.59	last observation date used	2024-05-09.0
		phase slope	0.15	computer name	MPCLINUX

Observations

112 total observations over interval: 2006 03 23.36543 – 2024 05 13.12251

These data are available for [download](#) ([format description](#)).

Date (UT)	J2000 RA	J2000 Dec	Magn	Location	Ref
2006 03 23.36543	12 49 31.58	−04 27 35.8	21.0 V	G96 – Mt. Lemmon Survey	MPS 1043112
2006 03 23.37151	12 49 31.22	−04 27 33.5	21.7 V	G96 – Mt. Lemmon Survey	MPS 1043112
2006 03 23.37777	12 49 30.90	−04 27 30.2	21.3 V	G96 – Mt. Lemmon Survey	MPS 1043112
2006 03 23.38418	12 49 30.54	−04 27 27.0	21.6 V	G96 – Mt. Lemmon Survey	MPS 1043112
2008 11 07.35538	05 11 54.20	+17 34 18.5	20.7 V	G96 – Mt. Lemmon Survey	MPS 1043112
2008 11 07.36210	05 11 54.02	+17 34 17.4	20.4 V	G96 – Mt. Lemmon Survey	MPS 1043112
2008 11 07.36884	05 11 53.84	+17 34 15.4	21.7 V	G96 – Mt. Lemmon Survey	MPS 1043112
2008 11 07.37558	05 11 53.66	+17 34 14.5	21.2 V	G96 – Mt. Lemmon Survey	MPS 1043112
2013 02 17.38517	11 52 31.91	−01 00 03.3	21.2 V	691 – Steward Observatory, Kitt Peak-Spacewatch	MPS 1043112
2013 02 17.40282	11 52 31.27	−00 59 58.1	20.9 V	691 – Steward Observatory, Kitt Peak-Spacewatch	MPS 1043112
2013 02 17.42048	11 52 30.65	−00 59 52.4	21.4 V	691 – Steward Observatory, Kitt Peak-Spacewatch	MPS 1043112
2013 03 06.414980	11 39 52.337	+00 57 25.69	20.5 R	F51 – Pan-STARRS 1, Haleakala	MPS 459450
2013 03 06.429586	11 39 51.523	+00 57 32.69	20.3 R	F51 – Pan-STARRS 1, Haleakala	MPS 459450
2013 03 06.444218	11 39 50.702	+00 57 39.74	20.4 R	F51 – Pan-STARRS 1, Haleakala	MPS 459450
2013 03 06.458849	11 39 49.894	+00 57 46.75	20.0 R	F51 – Pan-STARRS 1, Haleakala	MPS 459450