

OBSERVERS

DATA

IAWN

BETA

STATUS

2019 MF3

First observed at Pan-STARRS 1, Haleakala on 2019-06-29.

(Discoverer will be defined when the object is numbered. See [this note](#) on how discoverers are determined.)

Orbit

Orbit type: Apollo

Near-Earth Object

Interactive Orbit Sketch

Note: WebGL enabled browser required.

epoch	2019-04-27.0	semimajor axis (AU)	1.3945051	<u>uncertainty</u>	6
epoch JD	2458600.5	mean anomaly (°)	262.30865	reference	MPO 473701
perihelion date	2019-10-07.22341	mean daily motion (°/day)	0.59851310	observations used	35
perihelion JD	2458763.72341	aphelion distance (AU)	1.905	oppositions	1
argument of perihelion (°)	126.83994	period (years)	1.65	arc length (days)	15
ascending node (°)	247.42547	P-vector [x]	0.93700741	first opposition used	2019
inclination (°)	16.96461	P-vector [y]	0.14545888	last opposition used	2019
eccentricity	0.3664149	P-vector [z]	0.31758280	residual rms (arc-secs)	0.21
perihelion distance (AU)	0.8835377	Q-vector [x]	-0.22232244	<u>perturbers coarse indicator</u>	M-v
Tisserand w.r.t. Jupiter	4.7	Q-vector [y]	0.94959157	<u>perturbers precise indicator</u>	003Eh
ΔV w.r.t. Earth (km/sec)	7.2	Q-vector [z]	0.22101716	first observation date used	2019-06-29.0
		absolute magnitude	22.8	last observation date used	2019-07-14.0
		phase slope	0.15	computer name	MPCLINUX

Minimum Orbit Intersection Distances (in AU)
for orbit epoch: 2458600.5, reference: E2019-NF9

Mercury	0.56821
Venus	0.2266
Earth	0.00285
Mars	0.03937
Jupiter	3.63214
Saturn	7.7072
Uranus	16.4364
Neptune	28.5522

Observations

35 total observations over interval: 2019 06 29.41878 – 2019 07 14.256367

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

Date (UT)	J2000 RA	J2000 Dec	Magn	<u>Location</u>	<u>Ref</u>
2019 06 29.41878	16 50 19.232	+04 54 36.27	21.9 w	F51 – Pan-STARRS 1, Haleakala	MPS 1001553
2019 06 29.43065	16 50 17.437	+04 55 09.07	21.9 w	F51 – Pan-STARRS 1, Haleakala	MPS 1001553
2019 06 29.45441	16 50 13.780	+04 56 15.27	21.9 w	F51 – Pan-STARRS 1, Haleakala	MPS 1001553
2019 07 01.295337	16 45 50.923	+06 20 50.46	22.29 G	568 – Mauna Kea	MPS 1001553
2019 07 01.296287	16 45 50.780	+06 20 52.98	22.25 G	568 – Mauna Kea	MPS 1001553
2019 07 01.297248	16 45 50.631	+06 20 55.67	22.30 G	568 – Mauna Kea	MPS 1001553
2019 07 02.11411	16 43 54.36	+06 58 15.1	22.2 G	807 – Cerro Tololo Observatory, La Serena	MPS 1001553
2019 07 02.12188	16 43 53.17	+06 58 36.1	22.2 G	807 – Cerro Tololo Observatory, La Serena	MPS 1001553
2019 07 02.12943	16 43 52.03	+06 58 56.5	22.2 G	807 – Cerro Tololo Observatory, La Serena	MPS 1001553
2019 07 02.145940	16 43 49.97	+06 59 12.6	22.0 V	H21 – Astronomical Research Observatory, Westfield	MPS 1001553
2019 07 02.152025	16 43 49.07	+06 59 28.9	22.4 V	H21 – Astronomical Research Observatory, Westfield	MPS 1001553
2019 07 02.158107	16 43 48.17	+06 59 45.3	22.1 V	H21 – Astronomical Research Observatory, Westfield	MPS 1001553
2019 07 02.26234	16 43 33.13	+07 04 29.2		691 – Steward Observatory, Kitt Peak-Spacewatch	MPS 1001553
2019 07 02.27319	16 43 31.48	+07 04 58.7		691 – Steward Observatory, Kitt Peak-Spacewatch	MPS 1001553
2019 07 02.28406	16 43 29.85	+07 05 28.0		691 – Steward Observatory, Kitt Peak-Spacewatch	MPS 1001553
2019 07 03.333603	16 41 03.734	+07 52 22.63	22.48 G	T12 – Mauna Kea-UH/Tholen NEO Follow-Up (2.24-m)	MPS 1001553
2019 07 03.336987	16 41 03.223	+07 52 31.70	22.48 G	T12 – Mauna Kea-UH/Tholen NEO Follow-Up (2.24-m)	MPS 1001553
2019 07 03.34913	16 41 00.43	+07 52 58.8	21.9 R	291 – LPL/Spacewatch II	MPS 1001553
2019 07 03.35887	16 40 59.03	+07 53 24.4	21.8 R	291 – LPL/Spacewatch II	MPS 1001553
2019 07 04.24545	16 38 57.59	+08 32 25.1	22.5 R	291 – LPL/Spacewatch II	MPS 1001553
2019 07 04.25294	16 38 56.50	+08 32 44.7	22.5 R	291 – LPL/Spacewatch II	MPS 1001553
2019 07 04.26043	16 38 55.41	+08 33 04.3	22.8 R	291 – LPL/Spacewatch II	MPS 1001553
2019 07 04.27840	16 38 52.80	+08 33 51.3	21.5 R	291 – LPL/Spacewatch II	MPS 1001553
2019 07 06.275306	16 34 24.956	+09 59 45.72	22.64 G	T12 – Mauna Kea-UH/Tholen NEO Follow-Up (2.24-m)	MPS 1001553
2019 07 06.277649	16 34 24.627	+09 59 51.70	22.61 G	T12 – Mauna Kea-UH/Tholen NEO Follow-Up (2.24-m)	MPS 1001553
2019 07 06.33154	16 34 15.95	+10 02 02.6	21.8 R	291 – LPL/Spacewatch II	MPS 1001553
2019 07 06.34058	16 34 14.66	+10 02 25.2	22.4 R	291 – LPL/Spacewatch II	MPS 1001553
2019 07 06.34970	16 34 13.44	+10 02 48.1	22.3 R	291 – LPL/Spacewatch II	MPS 1001553
2019 07 07.333799	16 32 05.706	+10 44 04.94	22.63 G	T12 – Mauna Kea-UH/Tholen NEO Follow-Up (2.24-m)	MPS 1001553
2019 07 07.336376	16 32 05.348	+10 44 11.34	22.45 G	T12 – Mauna Kea-UH/Tholen NEO Follow-Up (2.24-m)	MPS 1001553
2019 07 07.345443	16 32 04.075	+10 44 33.98	22.52 G	T12 – Mauna Kea-UH/Tholen NEO Follow-Up (2.24-m)	MPS 1001553
2019 07 07.347835	16 32 03.743	+10 44 39.84	22.44 G	T12 – Mauna Kea-UH/Tholen NEO Follow-Up (2.24-m)	MPS 1001553
2019 07 14.254001	16 18 19.554	+15 11 59.54	22.43 G	T14 – Mauna Kea-UH/Tholen NEO Follow-Up (CFHT)	MPS 1012809
2019 07 14.255183	16 18 19.409	+15 12 02.10	22.50 G	T14 – Mauna Kea-UH/Tholen NEO Follow-Up (CFHT)	MPS 1012809
2019 07 14.256367	16 18 19.270	+15 12 04.64	22.35 G	T14 – Mauna Kea-UH/Tholen NEO Follow-Up (CFHT)	MPS 1012809