

CASE FILE 06 / 237UAP00361

237UAP00361

Radar/correlation-focused public UAP report; score 90

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-06-237UAP00361	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00361	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2024-03-02T09:56:00+00:00	OBSERVER	40.20380, -100.59400
SOURCE CASE IDS	237UAP00361		

Abstract

This case file evaluates a reported UAP sighting against the available orbital-object layer. No compact same-launch group fully identifies the file by itself. The final disposition is assigned under a normal-object favored standard, where ordinary aerospace/orbital explanations are preferred when they reasonably fit the report.

This is a standalone independent analysis prepared from public-source records and public orbital datasets. It is not an official government determination, classification marking, or agency-authored report.

1. Executive Summary

237UAP00361 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate C-FLKO B38M c01e1f at 64.6 km, azimuth 251.8 deg, elevation 9.06 deg, 8.00 min from report. Dense satellite presence alone is not treated as causation in this packet.

1.1 Key Findings

- Source score 90 based on: radar/primary-return language, multiple aircraft/facility witnesses, negative official correlation, maneuvering/motion anomaly, UAP/UFO language.
- Report time used: 2024-03-02T09:56:00+00:00.
- External object layer used: Starlink.
- Disposition standard: NORMAL-OBJECT requires case-specific causal fit. Satellite density above the horizon is context only and cannot by itself resolve the report.
- Case-specific ordinary-object evidence: strong ADS-B aircraft candidate C-FLKO B38M c01e1f at 64.6 km, azimuth 251.8 deg, elevation 9.06 deg, 8.00 min from report.
- Non-causal context / rejection screens: very dense orbital-object sky background; context only, not causation; NASA/JPL known-small-body rejection screen present.
- Remaining hard features: multiple witnesses/facilities; hard maneuver language.
- Objects above horizon: 272; at/above 10 deg: 135.
- No compact same-launch/designator group survived the report threshold.
- No explicit Starlink/balloon wording was found in the source excerpt used for ranking.

1.2 Bottom Line

NORMAL-OBJECT FAVORED: A case-specific ordinary-object candidate exists from source language, orbital geometry, launch-object context, or compact trajectory grouping. Dense ordinary sky traffic alone is not treated as causation.

2. Source Control

The source-control table identifies the public report records reviewed for this case and lists public access links where available. The table is included so this PDF remains interpretable when distributed by itself.

CASE ID	REPORT DATE FIELD	FACILITY / TITLE	TEXT EXTRACT	PUBLIC PDF LINK
237UAP00361	09:56 03/02/2024 Callsign: EJA316 Origin: LAS	ZDV Operator: EJA Operator Type: Commercial	text extract present	237UAP00361.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon while E bound at FL 410, near MCK. The unknown phenomenon was bright lights then dim, rapid moving and wiggling around at approximately FL 410. Multiple aircraft reporting similar phenomena in vicinity of MCK. The UAP was not observed on ATC facility radar system.
REPORT TIME USED	2024-03-02T09:56:00+00:00
OBSERVER COORDINATE USED	40.20380, -100.59400
OBSERVER SOURCE BASIS	aviation_fix:near MCK (public text extract 237UAP00361)

4. Methodology

- Spacetime extraction.** The report time and observer coordinate were extracted from the public text report and normalized to UTC. Aviation fixes/radials were resolved during earlier preprocessing where applicable.
- External object dataset.** The object layer used historical Space-Track/TLE-derived Starlink element rows. The analytic mode for this case is historical Starlink element propagation and same-launch/designator sky grouping.
- Propagation.** Orbital elements were propagated to the report minute and observer location. For launch-object checks, samples around the report minute were retained. For Starlink group checks, objects above the horizon were clustered by sky position and filtered for same-launch groupings.
- Comparison.** The output was compared against the report's count of lights, direction cue, motion language, altitude/radar language, and whether the file itself already suggested a satellite explanation.
- Causation standard.** Mere object presence above the horizon is treated as background context only. A normal-object disposition requires a case-specific causal fit, such as a named launch object, a compact same-launch trajectory group, or source language that directly supports that object class.
- Disposition assignment.** *Identified* means a specific normal object fits the report spacetime and the hard reported features do not materially conflict. *Normal-object favored* means a case-specific ordinary aerospace/orbital candidate exists, but it is not a full named identification. *Insufficient* means the file is too thin to carry high anomaly value. *High-value unresolved* is used when radar, video, rapid maneuver, or multi-witness features remain after reasonable normal-object checks.

5. External Object Evidence

5.1 Search Volume and Density

This table is a screening layer only. Objects above the horizon show background opportunity; they do not establish causation unless a specific object or compact trajectory group matches the reported behavior.

STARLINK CATALOG IDS CONSIDERED	5527	HISTORICAL ELEMENT ROWS	5496
ABOVE HORIZON AT REPORT MINUTE	272	AT/ABOVE 10 DEG	135
LARGEST SAME-SKY CLUSTER	121		

No compact same-launch/designator group survived the report threshold. In this condition, satellite density remains context only and cannot by itself resolve a report with hard features.

5.2 Same-Launch / Same-Designator Candidate Groups

#	LAUNCH DATE	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS	MEMBERS
No same-launch group identified.						

5.3 Primary Group Members

OBJECT	NORAD	LAUNCH	AZ	EL	RANGE KM	APPARENT MOTION	ELEMENT AGE H
No members available.							

5.4 Bright-Sky Context: Top Starlink Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-30312	45.44	70.38	593.95	eastward, setting	2023-08-17
STARLINK-1568	299.53	70.1	582.15	eastward, setting	2020-08-07
STARLINK-6227	152.78	63.46	621.87	westward, setting	2023-06-22
STARLINK-1750	288.36	60.33	625.35	westward, setting	2020-09-03
STARLINK-31021	164.31	59.26	564.02	westward, setting	2023-12-07
STARLINK-5902	316.02	57.55	656.3	eastward, setting	2023-03-24
STARLINK-6216	34.35	53.17	688.04	eastward, setting	2023-06-12
STARLINK-30998	196.6	49.0	632.82	westward, setting	2023-12-07
STARLINK-2641	189.24	46.95	727.16	westward, setting	2021-05-04
STARLINK-30615	305.55	46.95	744.74	eastward, setting	2023-10-18
STARLINK-30525	314.97	46.45	750.27	eastward, setting	2023-10-05
STARLINK-30987	55.29	44.77	768.53	eastward, setting	2023-12-03

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	121	0.74-359.96 deg	10.02-57.55 deg	eastward, level, eastward, rising, eastward, setting, westward, rising, westward, setting
2	5	189.24-225.4 deg	34.31-49.0 deg	westward, rising, westward, setting
3	2	288.36-299.53 deg	60.33-70.1 deg	eastward, setting, westward, setting

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
4	2	152.78-164.31 deg	59.26-63.46 deg	westward, setting
5	2	118.48-122.68 deg	42.89-43.05 deg	westward, setting

5.6 Space-Track SATCAT Enrichment

Space-Track SATCAT metadata was pulled as a cached subset for NORAD catalog IDs appearing in this packet's evidence tables. This section adds owner/type/status context to the propagated object candidates.

PACKET SATCAT SUBSET ROWS	5370	FETCHED	2026-05-19T01:19:50+00:00
THIS CASE NORAD IDS CHECKED	30	SATCAT ROWS MATCHED	30
TOP OWNERS	US: 30		
OBJECT TYPES	PAYLOAD: 30		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
57641	STARLINK-30312	PAYLOAD	US	2023-08-17	n/a
46080	STARLINK-1568	PAYLOAD	US	2020-08-07	n/a
57060	STARLINK-6227	PAYLOAD	US	2023-06-22	n/a
46337	STARLINK-1750	PAYLOAD	US	2020-09-03	2026-03-03
58518	STARLINK-31021	PAYLOAD	US	2023-12-07	n/a
55998	STARLINK-5902	PAYLOAD	US	2023-03-24	n/a
56893	STARLINK-6216	PAYLOAD	US	2023-06-12	n/a
58513	STARLINK-30998	PAYLOAD	US	2023-12-07	n/a
48369	STARLINK-2641	PAYLOAD	US	2021-05-04	2025-04-07
58092	STARLINK-30615	PAYLOAD	US	2023-10-18	n/a
58012	STARLINK-30525	PAYLOAD	US	2023-10-05	n/a
58487	STARLINK-30987	PAYLOAD	US	2023-12-03	n/a

5.6 NASA/JPL Near-Earth Object Screen

This secondary object screen checks NASA/JPL close-approach objects near the report date and propagates their observer geometry through Horizons at the report coordinate. It is a known-object rejection layer, not a generic astronomy backdrop.

NASA/JPL CAD WINDOW	event date +/- 1 day, dist-max 0.2 au	COORDINATE USED	40.20, -100.59
CLOSE-APPROACH OBJECTS	21	ABOVE HORIZON	14
BRIGHT-ISH ABOVE HORIZON	0 using apparent magnitude <= 10 screen		

5.7 NASA/JPL Objects Above Horizon

OBJECT	CLOSE APPROACH UTC	DIST AU	H	AZ	EL	APP MAG
2024 EB	2024-Mar-01 20:41	0.0158798239291499	25.97	296.83	54.50	18.55
2024 ES1	2024-Mar-01 09:09	0.0176424869041439	26.40	224.90	56.23	18.77
539856	2024-Mar-02 22:49	0.12186732063134	20.92	7.84	42.48	19.11
2013 PA7	2024-Mar-01 04:29	0.159466741211241	22.67	220.85	40.50	19.81
2024 ES	2024-Mar-02 13:34	0.0915069405546532	25.05	242.29	47.61	20.64
2024 FA	2024-Mar-01 16:35	0.169168841120209	22.51	174.57	28.64	20.69
2024 FH1	2024-Mar-01 16:00	0.0382934027301964	25.72	160.90	34.31	20.88

OBJECT	CLOSE APPROACH UTC	DIST AU	H	AZ	EL	APP MAG
2024 EW1	2024-Mar-02 12:33	0.0540759836471684	26.77	243.13	46.68	21.12
2024 FE1	2024-Mar-01 02:53	0.0405829626253653	26.13	189.65	9.13	21.19
2025 ER1	2024-Mar-02 02:23	0.0659734242125574	25.04	337.65	14.32	21.97

5.8 NASA/JPL Bright-Candidate Result

OBJECT	AZ	EL	APP MAG
No above-horizon close-approach object met the apparent magnitude ≤ 10 screen.			

- NASA/JPL CAD listed 21 near-Earth close approaches in the event-date ± 1 day window within 0.2 au.
- Horizons placed 14 of those objects above the local horizon at the report coordinate/time.
- None of the above-horizon close-approach objects were remotely bright enough for naked-eye explanation using the $\text{mag} \leq 10$ screen.

5.9 NASA / NOAA / ADS-B Expansion Layer

This source layer adds free NASA context that was previously missing from most packet cases. It is contextual evidence; it does not replace aircraft, satellite, balloon, or radar causation tests.

HOUR UTC	2024030209
CLOUD AMOUNT	32.01%
PRECIPITATION	0.0 mm/hr
10 M WIND	3.67 m/s
TEMPERATURE	2.42 C
RELATIVE HUMIDITY	81.13%
DONKI ± 1 DAY	CME: 5; FLR: unavailable; GST: unavailable; HSS: unavailable; IPS: unavailable; MPC: unavailable; RBE: unavailable; SEP: unavailable; WSAEnlilSimulations: unavailable

5.10 Horizons Sky Geometry Context

OBJECT	AZ	EL	APP MAG
Sun	63.17	-37.62	-26.76
Moon	154.45	21.46	-10.60
Venus	88.77	-26.86	-3.89
Mars	92.80	-24.66	1.29
Jupiter	347.84	-34.53	-2.17
Saturn	66.55	-38.29	0.96

- Sun elevation was -37.6 deg, so this was a dark-sky/nighttime sighting.
- Moon was above horizon at azimuth 154.4 deg / elevation 21.5 deg.
- No checked bright planets were above the horizon at the primary coordinate/time.
- NASA POWER cloud amount for the hour was 32.01%, with precipitation 0.0 mm/hr.
- DONKI event counts in ± 1 day: CME=5.

5.11 Free Source Availability and Remaining Work

LAYER	STATUS	CASE-SPECIFIC NOTE
ADSB.LOL HISTORICAL RELEASE LISTING	screened/present	planes-readsb-staging-0 1522.0 MiB; planes-readsb-prod-0 1523.0 MiB
ADSB TRACKS DOWNLOADED	not yet exhausted	Requires targeted extraction from large daily history archives before claiming aircraft exhaustion.

LAYER	STATUS	CASE-SPECIFIC NOTE
NOAA GOES IMAGERY	not yet exhausted	Needed for cloud/lightning visual context.
NOAA GOES ABI/GLM MANIFEST	screened/present	Public S3 object availability for the report hour.
NOAA NEXRAD WEATHER RADAR	not yet exhausted	Weather radar only; not ATC radar.
NOAA IGRA RADIOSONDE	screened/present	Needed for balloon drift plausibility.
ASOS/METAR WEATHER OBSERVATIONS	screened/present	Nearest station surface observations around report time.

- ADSB.lol historical: extract aircraft traces from adsb lol/globe_history_2024 for 2024-03-02, then filter +/-60 min and 250 nmi around 40.2038,-100.5940.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00361 at 2024-03-02T09:56:00+00:00.
- NOAA GOES: pull nearest ABI/GLM products for the UTC hour and render cloud/lightning map.
- NOAA NEXRAD: select nearest radar stations and render Level-II/III weather radar sweep around event time.
- NOAA IGRA: find nearest radiosonde station launches bracketing the event and model wind drift for balloon-like descriptions.
- Space-Track gp_history/decay: fetch exact historical element rows and decay/reentry status for top candidate NORAD IDs.

5.12 Weather, Imagery, and Balloon Query Plan

This plan identifies the concrete free sources needed for the next case-specific weather and balloon checks. These are not treated as completed exclusions until the data are downloaded and plotted.

GOES SATELLITE	GOES16
GOES ABI PREFIX	https://noaa-goes16.s3.amazonaws.com/ABI-L2-CMIPF/2024/062/09/
GOES GLM LIGHTNING PREFIX	https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2024/062/09/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KMCK	McCook Ben Nelson Regional Airport	0.50	40.21, -100.59
KLBF	North Platte Regional Airport Lee Bird Field	102.80	41.13, -100.68
KGLD	Goodland Municipal Airport	132.30	39.37, -101.70
KEAR	Keamey Regional Airport	146.30	40.73, -99.01
KHYS	Hays Regional Airport	188.90	38.84, -99.27

- KMCK: [IEM ASOS/METAR daily CSV query](#)
- KLBF: [IEM ASOS/METAR daily CSV query](#)
- KGLD: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072562	NORTH PLATTE/LEE BIRD; NE.	103.70	41.13, -100.70
USM00072451	DODGE CITY/MUN.; KS.	276.90	37.76, -99.97
USM00072558	VALLEY; NE.	377.00	41.32, -96.37
USM00072456	TOPEKA/MUN.; KS.	443.20	39.07, -95.63
USM00072662	RAPID CITY WFO; SD.	481.20	44.07, -103.21

5.15 ASOS/METAR Surface Weather Observations

surface visibility ranged 2.5-10 statute miles; no precipitation was reported in the retained observations; no low broken/overcast cloud ceiling was evident in the retained station observations. Surface ASOS/METAR observations describe airport-level weather and visibility; they do not by themselves prove conditions at the sighting altitude or line of sight.

STATION	DISTANCE KM	NEAREST OBS UTC	VIS SM	SKY	WIND DEG/KT	METAR
KMCK	0.50	2024-03-02T09:53:00 +00:00	5.00	CLR, M, M, M	90.00 / 6.00	KMCK 020953Z AUTO 09006KT 5SM BR CLR M01/ M03 A2973 RMK AO2 SLP063 T10061028 \$
KLBF	102.80	2024-03-02T09:53:00 +00:00	8.00	CLR, M, M, M	100.00 / 6.00	KLBF 020953Z AUTO 10006KT 8SM CLR M01/M02 A2971 RMK AO2 SLP056 T10111022
KGLD	132.30	2024-03-02T09:53:00 +00:00	10.00	CLR, M, M, M	220.00 / 12.00	KGLD 020953Z AUTO 22012KT 10SM CLR 06/M06 A2972 RMK AO2 SLP040 T00561056

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 62.0 deg at 19.39 m/s; a passive balloon could drift about 139.6 km in two hours under this crude layer-average model. Radiosonde winds are sparse station soundings; balloon drift remains approximate without launch time, ascent rate, object altitude, and exact line-of-sight bearing.

STATION	NAME	DISTANCE KM	SOUNDING UTC	MEAN DRIFT BEARING	MEAN SPEED M/S	2H DRIFT KM	MAX WIND
USM00072562	NORTH PLATTE/ LEE BIRD; NE.	103.70	2024-03-02T12:00 :00+00:00	62.00	19.39	139.60	36.00 at 11780.00 m

5.17 NOAA GOES ABI/GLM Public File Manifest

GOES public S3 objects are listed for the report hour where available. This is an availability manifest, not yet a rendered satellite image.

SATELLITE	GOES16	BUCKET	noaa-goes16
ABI SAMPLE FILES	12	GLM SAMPLE FILES	12

ABI sample objects:

- [ABI-L2-CMIPF/2024/062/09/OR_ABI-L2-CMIPF-M6C01_G16_s20240620900210_e20240620909518_c20240620909575.nc](#)
- [ABI-L2-CMIPF/2024/062/09/OR_ABI-L2-CMIPF-M6C01_G16_s20240620910210_e20240620919518_c20240620919577.nc](#)
- [ABI-L2-CMIPF/2024/062/09/OR_ABI-L2-CMIPF-M6C01_G16_s20240620920210_e20240620929518_c20240620929576.nc](#)
- [ABI-L2-CMIPF/2024/062/09/OR_ABI-L2-CMIPF-M6C01_G16_s20240620930210_e20240620939518_c20240620939571.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2024/062/09/OR_GLM-L2-LCFA_G16_s20240620900000_e20240620900200_c20240620900221.nc](#)
- [GLM-L2-LCFA/2024/062/09/OR_GLM-L2-LCFA_G16_s20240620900200_e20240620900400_c20240620900422.nc](#)
- [GLM-L2-LCFA/2024/062/09/OR_GLM-L2-LCFA_G16_s20240620900400_e20240620901000_c20240620901021.nc](#)
- [GLM-L2-LCFA/2024/062/09/OR_GLM-L2-LCFA_G16_s20240620901000_e20240620901200_c20240620901219.nc](#)

5.18 ADSB.lol Historical Aircraft Track Extraction

This layer uses the downloaded ADSB.lol daily history archive to test actual aircraft tracks near the report coordinate and minute. It is not treated as a primary-radar substitute; it is a transponder/receiver-derived aircraft screen.

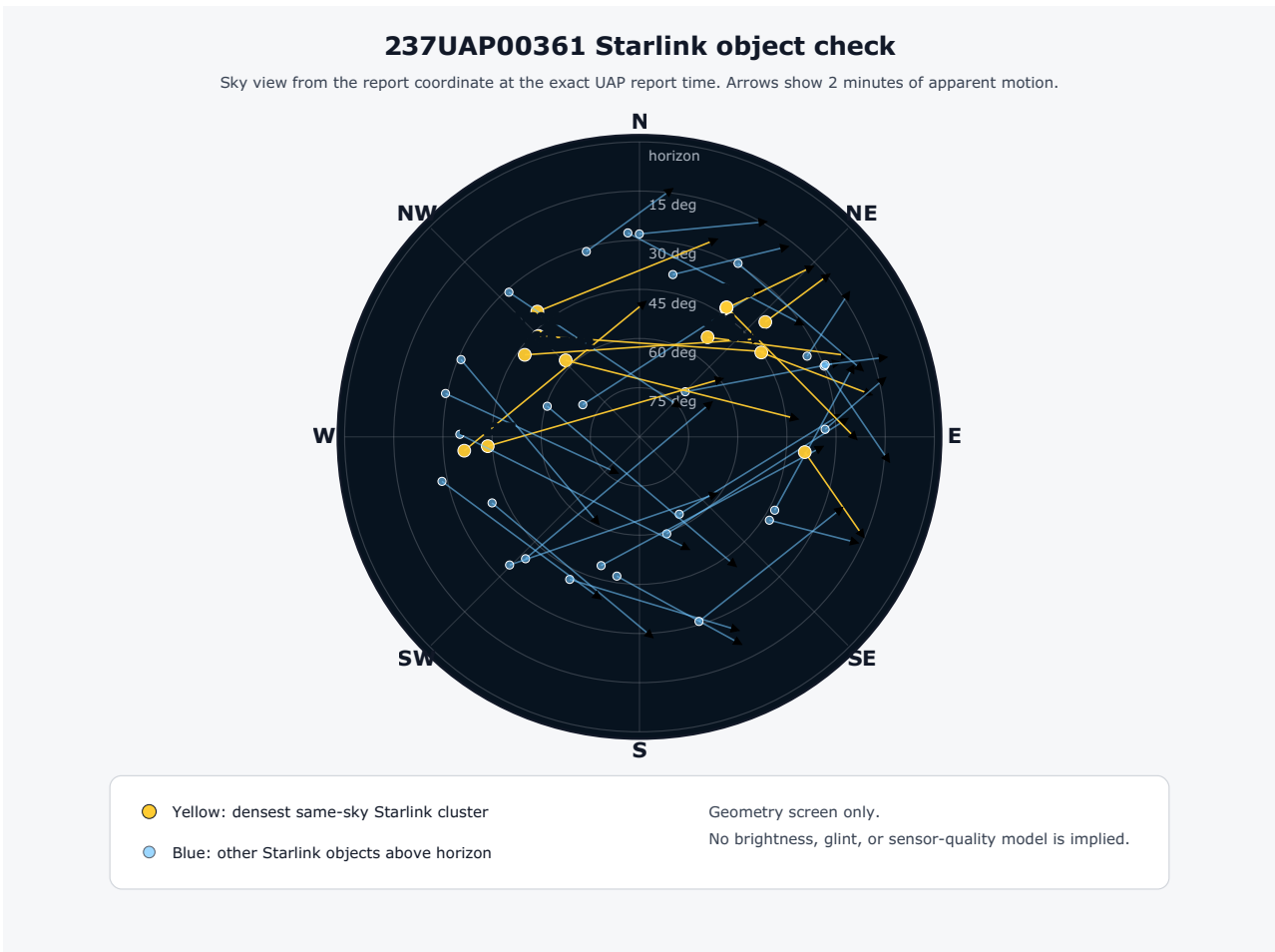
ARCHIVE WINDOW	2024-03-02T08:26:00+00:00 to 2024-03-02T11:26:00+00:00	RADIUS	300.00 nmi
TRACE FILES SCANNED	43919	TRACKS RETAINED	269
SUPPORT STATUS	aircraft strong candidate present	BEST-CANDIDATE NOTE	

			ordinary-object favored if the report's count, color, direction, and motion can be reconciled with the candidate track(s).
STRONG CANDIDATES	1	PLAUSIBLE CANDIDATES	22
REPORTING-AIRCRAFT TRACKS EXCLUDED	2	WEAK CANDIDATES	29

5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
C-FLKO B38M c01e1f	strong aircraft candidate	60.88	2.90	0.11	35000	251.80	9.06
N316QS E55P a35e8a	reporting aircraft track; excluded from support counts	59.30	34.50	0.04	41000	281.20	9.46
N342DN A321 a3c514	plausible aircraft candidate	67.50	23.80	0.05	37000	317.50	23.63
N846SY B738 ab97ca	plausible aircraft candidate	50.28	138.40	0.03	35025	348.50	3.30
N434AN A21N a53207	plausible aircraft candidate	49.90	137.80	2.33	31000	144.30	3.22
N536JB A320 a6c781	plausible aircraft candidate	46.76	66.00	0.01	23375	320.90	8.09
N284AK B739 a2dce1	plausible aircraft candidate	45.24	3.10	0.08	33000	294.40	11.74
N380DA B738 a45b96	plausible aircraft candidate	42.81	63.30	0.00	33000	197.10	7.66

6. Annotated Evidence Figure



Generated figure copied from the local evidence-plot output. It is included as an analytic visualization, not as original sensor imagery.

7. Analytic Comparison

CRITERION	REPORT EVIDENCE	ANALYTIC TREATMENT
TIME CONSTRAINT	2024-03-02T09:56:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	40.20380, -100.59400	Directly used as observer point for azimuth/elevation/range computation.
COUNT / PATTERN	multiple-object/light language present	No compact same-launch count match; retained for unresolved report features.
MOTION LANGUAGE	moving	Apparent motion labels in the object table provide a plausible but not definitive comparison.
RADAR / OFFICIAL CHECK	not observed on ATC radar	No ATC radar return can be consistent with distant orbital objects or visual aircraft-light hypotheses, but it does not prove the match.
ANALYTIC DISPOSITION	normal-object	237UAP00361 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate C-FLKO B38M c01e1f at 64.6 km, azimuth 251.8 deg, elevation 9.06 deg, 8.00 min from report. Dense satellite presence alone is not treated as causation in this packet.

8. Caveats, Limitations, and Collection Gaps

- No raw cockpit video, ATC replay, radar plot, or witness interview transcript was reviewed unless explicitly stated in the public source text.
- Aviation-derived coordinates can represent a nearby fix/radial or report point, not necessarily the actual line-of-sight intercept point.
- Starlink visibility depends on illumination, observer altitude, atmospheric conditions, and apparent brightness; this analysis tests geometry, not photometry. No brightness model is used unless explicitly stated elsewhere in the case file.
- TLE propagation is appropriate for screening and reconstruction but is not a substitute for authoritative operational ephemerides.
- When many satellites are above the horizon, generic presence is weak evidence and is not treated as causation. The report emphasizes named launch-object checks or compact same-launch trajectory groups.
- Normal-object favored is not the same as a perfect named-object identification; it requires a case-specific ordinary-object candidate stronger than simple object density.

Appendix A. Public Report Text Extracts

237UAP00361

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON

Date: 09:56 03/02/2024

Status: Closed

POD: DEN

Reporting Facility: ZDV

Callsign: EJA316

Aircraft: E55P

Tail Number:

Operator: EJA

Paged: YES

Origin: LAS

Destination: OMA

New Destination:

Operator Type: Commercial

MOR Init: YES

MOR ID: ZDV-M-2024/03/02-0002

REMARKS

Aircraft reported an unidentified aerial phenomenon while E bound at FL 410, near MCK. The unknown phenomenon was bright lights then dim, rapid moving and wiggling around at approximately FL 410. Multiple aircraft reporting similar phenomena in vicinity of MCK. The UAP was not observed on ATC facility radar system.

Appendix B. Computational Evidence Digest

This appendix preserves the principal computed values used in the assessment, shortened to the fields most relevant to audit and review.

```
{
  "report_time_utc": "2024-03-02T09:56:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon while E bound at FL 410, near MCK. The unknown phenomenon was bright lights then dim, rapid moving and wiggling around at approximately FL 410. Multiple aircraft reporting similar phenomena in vicinity of MCK. The UAP was not observed on ATC facility radar system.",
  "historical_starlink_element_rows": 5496,
  "observer": {
    "lat": 40.203800201416016,
    "lon": -100.59400177001953,
    "source": "aviation_fix:near MCK (public text extract 237UAP00361)"
  },
  "case_id": "237UAP00361",
  "starlink_above_horizon_at_report_time": 272,
  "starlink_catalog_ids_considered": 5527,
  "largest_same-sky_cluster_count": 121,
  "starlink_at_or_above_10_deg": 135,
  "top_starlinks": [
    {
      "azimuth_deg": 45.44,
      "azimuth_plus_2m_deg": 69.61,
      "azimuth_plus_5m_deg": 73.14,
      "element_age_hours": 17.88,
      "element_epoch": "2024-03-01T16:03:05.299776+00:00",
      "elevation_deg": 70.38,
      "elevation_plus_2m_deg": 24.97,
      "elevation_plus_5m_deg": 4.3,
      "epoch_altitude_km": 565.52,
      "ground_track_bearing_deg": 75.97,
      "ground_track_label": "ENE",
      "launch_date": "2023-08-17",
      "name": "STARLINK-30312",
      "norad_id": "57641",
      "range_km": 593.95,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 41.3515,
      "subpoint_lon": -99.0332
    },
    {
      "azimuth_deg": 299.53,
      "azimuth_plus_2m_deg": 39.52,
      "azimuth_plus_5m_deg": 48.13,
      "element_age_hours": 1.35,
      "element_epoch": "2024-03-02T11:16:58.908864+00:00",
      "elevation_deg": 70.1,
      "elevation_plus_2m_deg": 31.61,
      "elevation_plus_5m_deg": 6.34,
      "epoch_altitude_km": 553.29,
      "ground_track_bearing_deg": 51.03,
      "ground_track_label": "NE",
      "launch_date": "2020-08-07",
      "name": "STARLINK-1568",
      "norad_id": "46080",
      "range_km": 582.15,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 40.9982,
      "subpoint_lon": -102.4811
    },
    {
      "azimuth_deg": 152.78,
      "azimuth_plus_2m_deg": 83.76,
      "azimuth_plus_5m_deg": 73.91,
      "element_age_hours": 0.29,
      "element_epoch": "2024-03-02T09:38:51.614592+00:00",
      "elevation_deg": 63.46,
      "elevation_plus_2m_deg": 28.48,
      "elevation_plus_5m_deg": 5.72,
      "epoch_altitude_km": 565.37,
      "ground_track_bearing_deg": 67.19,
      "ground_track_label": "ENE",
      "launch_date": "2023-06-22",
      "name": "STARLINK-6227",
      "norad_id": "57060",
      "range_km": 621.87,
      "sky_motion_label": "westward, setting",
      "subpoint_lat": 38.1504,
      "subpoint_lon": -99.2614
    },
    {
      "azimuth_deg": 288.36,
      "azimuth_plus_2m_deg": 143.34,
```

```

"azimuth_plus_5m_deg": 135.74,
"element_age_hours": 3.74,
"element_epoch": "2024-03-02T06:11:45.292704+00:00",
"elevation_deg": 60.33,
"elevation_plus_2m_deg": 40.96,
"elevation_plus_5m_deg": 8.64,
"epoch_altitude_km": 553.42,
"ground_track_bearing_deg": 129.69,
"ground_track_label": "SE",
"launch_date": "2020-09-03",
"name": "STARLINK-1750",
"norad_id": "46337",
"range_km": 625.35,
"sky_motion_label": "westward, setting",
"subpoint_lat": 40.9678,
"subpoint_lon": -103.8093
},
{
"azimuth_deg": 164.31,
"azimuth_plus_2m_deg": 85.09,
"azimuth_plus_5m_deg": 74.07,
"element_age_hours": 1.29,
"element_epoch": "2024-03-02T11:13:34.044096+00:00",
"elevation_deg": 59.26,
"elevation_plus_2m_deg": 26.44,
"elevation_plus_5m_deg": 4.21,
"epoch_altitude_km": 494.28,
"ground_track_bearing_deg": 66.67,
"ground_track_label": "ENE",
"launch_date": "2023-12-07",
"name": "STARLINK-31021",
"norad_id": "58518",
"range_km": 564.02,
"sky_motion_label": "westward, setting",
"subpoint_lat": 37.879,
"subpoint_lon": -99.771
},
{
"azimuth_deg": 316.02,
"azimuth_plus_2m_deg": 83.51,
"azimuth_plus_5m_deg": 97.06,
"element_age_hours": 2.75,
"element_epoch": "2024-03-02T12:40:45.064704+00:00",
"elevation_deg": 57.55,
"elevation_plus_2m_deg": 41.56,
"elevation_plus_5m_deg": 9.44,
"epoch_altitude_km": 565.42,
"ground_track_bearing_deg": 100.53,
"ground_track_label": "E",
"launch_date": "2023-03-24",
"name": "STARLINK-5902",
"norad_id": "55998",
"range_km": 656.3,
"sky_motion_label": "eastward, setting",
"subpoint_lat": 42.2693,
"subpoint_lon": -103.3185
},
{
"azimuth_deg": 34.35,
"azimuth_plus_2m_deg": 68.73,
"azimuth_plus_5m_deg": 77.53,
"element_age_hours": 1.97,
"element_epoch": "2024-03-02T07:57:33.112800+00:00",
"elevation_deg": 53.17,
"elevation_plus_2m_deg": 21.64,
"elevation_plus_5m_deg": 3.25,
"epoch_altitude_km": 565.38,
"ground_track_bearing_deg": 85.95,
"ground_track_label": "E",
"launch_date": "2023-06-12",
"name": "STARLINK-6216",
"norad_id": "56893",
"range_km": 688.04,
"sky_motion_label": "eastward, setting",
"subpoint_lat": 42.9933,
"subpoint_lon": -97.9705
},
{
"azimuth_deg": 196.6,
"azimuth_plus_2m_deg": 93.14,
"azimuth_plus_5m_deg": 75.21,
"element_age_hours": 17.55,
"element_epoch": "2024-03-01T16:23:09.790080+00:00",
"elevation_deg": 49.0,
"elevation_plus_2m_deg": 34.16,
"elevation_plus_5m_deg": 6.62,
"epoch_altitude_km": 494.4,
"ground_track_bearing_deg": 64.76,

```

```

"ground_track_label": "ENE",
"launch_date": "2023-12-07",
"name": "STARLINK-30998",
"norad_id": "58513",
"range_km": 632.82,
"sky_motion_label": "westward, setting",
"subpoint_lat": 36.8671,
"subpoint_lon": -101.8295
},
{
"azimuth_deg": 189.24,
"azimuth_plus_2m_deg": 153.95,
"azimuth_plus_5m_deg": 144.22,
"element_age_hours": 3.77,
"element_epoch": "2024-03-02T06:09:45.563904+00:00",
"elevation_deg": 46.95,
"elevation_plus_2m_deg": 19.68,
"elevation_plus_5m_deg": 2.23,
"epoch_altitude_km": 553.31,
"ground_track_bearing_deg": 134.6,
"ground_track_label": "SE",
"launch_date": "2021-05-04",
"name": "STARLINK-2641",
"norad_id": "48369",
"range_km": 727.16,
"sky_motion_label": "westward, setting",
"subpoint_lat": 36.1342,
"subpoint_lon": -101.4095
},
{
"azimuth_deg": 305.55,
"azimuth_plus_2m_deg": 50.61,
"azimuth_plus_5m_deg": 75.48,
"element_age_hours": 17.19,
"element_epoch": "2024-03-03T03:07:22.158048+00:00",
"elevation_deg": 46.95,
"elevation_plus_2m_deg": 42.86,
"elevation_plus_5m_deg": 10.49,
"epoch_altitude_km": 565.47,
"ground_track_bearing_deg": 82.0,
"ground_track_label": "E",
"launch_date": "2023-10-18",
"name": "STARLINK-30615",
"norad_id": "58092",
"range_km": 744.74,
"sky_motion_label": "eastward, setting",
"subpoint_lat": 42.5603,
"subpoint_lon": -105.2285
},
{
"azimuth_deg": 314.97,
"azimuth_plus_2m_deg": 57.24,
"azimuth_plus_5m_deg": 82.76,
"element_age_hours": 18.75,
"element_epoch": "2024-03-03T04:40:53.245344+00:00",
"elevation_deg": 46.45,
"elevation_plus_2m_deg": 42.21,
"elevation_plus_5m_deg": 10.39,
"epoch_altitude_km": 565.42,
"ground_track_bearing_deg": 90.12,
"ground_track_label": "E",
"launch_date": "2023-10-05",
"name": "STARLINK-30525",
"norad_id": "58012",
"range_km": 750.27,
"sky_motion_label": "eastward, setting",
"subpoint_lat": 43.1565,
"subpoint_lon": -104.73
},
{
"azimuth_deg": 55.29,
"azimuth_plus_2m_deg": 79.63,
"azimuth_plus_5m_deg": 87.63,
"element_age_hours": 4.35,
"element_epoch": "2024-03-02T14:17:12.371712+00:00",
"elevation_deg": 44.77,
"elevation_plus_2m_deg": 18.15,
"elevation_plus_5m_deg": 1.76,
"epoch_altitude_km": 565.45,
"ground_track_bearing_deg": 97.92,
"ground_track_label": "E",
"launch_date": "2023-12-03",
"name": "STARLINK-30987",
"norad_id": "58487",
"range_km": 768.53,
"sky_motion_label": "eastward, setting",
"subpoint_lat": 42.6693,
"subpoint_lon": -95.559
}

```

```
}
],
"adsb_lol_analysis": {
  "classificationSupport": {
    "bestCandidate": {
      "bestScoredPoint": {
        "altitudeFt": 35000,
        "azimuthDeg": 251.8,
        "distanceKm": 64.6,
        "elevationDeg": 9.06,
        "groundSpeedKt": 512.0,
        "lat": 40.019394,
        "lon": -101.314392,
        "slantRangeKm": 65.7,
        "timeOffsetMin": 8.0
      }
    }
  }
}
```


Appendix C. Source Exhaustion Checklist

This checklist records which source layers were actually applied to this individual report. It separates checked evidence from unexhausted collection gaps so the disposition is auditable when the PDF is read alone.

SOURCE LAYER	STATUS	CASE-SPECIFIC NOTE
NARA PUBLIC UAP/FAA REPORT	reviewed	Source IDs: 237UAP00361
TIME AND OBSERVER COORDINATE	extracted	2024-03-02T09:56:00+00:00 at 40.20380, -100.59400
ORBITAL OBJECT PROPAGATION	screened	Starlink
SPACE-TRACK SATCAT METADATA	screened	30 NORAD IDs checked; 30 matched in local SATCAT subset
LAUNCH-OBJECT/SUPGP LAYER	not applicable	not a launch-object case
NASA/JPL KNOWN SMALL-BODY LAYER	screened	CAD/Horizons secondary screen included when this case had NEO-relevant timing/ geometry
NASA POWER/HORIZONS/DONKI CONTEXT	screened	Hourly weather, sky geometry, and space-weather context where local JSON is present
AIRCRAFT/ADS-B LAYER	screened	43919 trace files scanned; 269 tracks retained; aircraft strong candidate present
NOAA GOES IMAGERY LAYER	not exhausted	Cloud/lightning imagery layer for the report hour
NOAA GOES ABI/GLM MANIFEST	screened	Public S3 object listing for the report hour
NOAA/NEXRAD WEATHER RADAR LAYER	not exhausted	Weather radar only; not ATC/primary radar
NOAA IGRA RADIOSONDE LAYER	screened	Balloon drift plausibility layer
ASOS/METAR SURFACE WEATHER	screened	Nearest station visibility, cloud, wind, precipitation, and METAR observations
WEATHER/BALLOON SOURCE PLAN	planned	Nearest weather-airport, GOES, and radiosonde queries are listed where local plan JSON is present
FINAL ANALYTIC DISPOSITION	normal-object favored	Presence-only satellite density is context only; a stronger case-specific fit is required for normal-object disposition

References and Source Links

1. National Archives and Records Administration. *Records Related to Unidentified Flying Objects (UFOs) and Unidentified Anomalous Phenomena (UAPs) at the National Archives*. <https://www.archives.gov/research/topics/uaps>
2. National Archives and Records Administration. *Record Group 615: Unidentified Anomalous Phenomena Records Collection*. <https://www.archives.gov/research/topics/uaps/rg-615>
3. National Archives and Records Administration. *Bulk Downloads for Records Related to Unidentified Anomalous Phenomena (UAPs)*. <https://www.archives.gov/research/catalog/catalog-bulk-downloads/uap-bulk-download>
4. National Archives Catalog. *Records from the Federal Aviation Administration Relating to Unidentified Anomalous Phenomena, National Archives Identifier 493468575*. <https://catalog.archives.gov/id/493468575>
5. National Archives direct digital object. *237UAP00361.pdf, FAA UAP report record copied from RG 615 bulk digital objects*. <https://s3.dualstack.us-east-1.amazonaws.com/NARAprdstorage/lz/electronic-records/rg-615/493468575/237UAP00361.pdf>
6. Hugging Face dataset. *oxzoid/space-track-tle-history: historical TLE archive used for Starlink screening*. <https://huggingface.co/datasets/oxzoid/space-track-tle-history>
7. Space-Track.org. *Public source for the underlying U.S. Space Surveillance Network TLE distribution referenced by the historical TLE archive*. <https://www.space-track.org/>
8. Space-Track.org. *API documentation for SATCAT and catalog metadata classes used for local enrichment*. <https://www.space-track.org/documentation#/api>
9. NASA/JPL Solar System Dynamics. *Close-Approach Data API documentation for known small-body encounter screening*. <https://ssd-api.jpl.nasa.gov/doc/cad.html>
10. NASA/JPL Solar System Dynamics. *Horizons API documentation for observer geometry and apparent magnitude queries*. <https://ssd-api.jpl.nasa.gov/doc/horizons.html>
11. NASA POWER. *Hourly point API documentation for meteorological context*. <https://power.larc.nasa.gov/docs/services/api/temporal/hourly/>
12. NASA. *DONKI space weather API documentation*. <https://api.nasa.gov/>
13. ADSB.lol. *Interactive API documentation and OpenAPI definition*. <https://api.adsb.lol/docs>
14. ADSB.lol. *Historical open-data release documentation*. <https://www.adsb.lol/docs/open-data/historical/>
15. OpenSky Network. *REST API documentation*. <https://openskynetwork.github.io/opensky-api/rest.html>
16. OpenSky Network. *Historical data via Trino documentation*. <https://openskynetwork.github.io/opensky-api/trino.html>
17. NASA GIBS. *Global Imagery Browse Services API documentation*. <https://nasa-gibs.github.io/gibs-api-docs/>
18. NASA Earthdata. *Common Metadata Repository search API documentation*. <https://cmr.earthdata.nasa.gov/search/site/docs/search/api.html>
19. NOAA / AWS Open Data. *GOES public dataset registry*. <https://registry.opendata.aws/noaa-goes/>
20. NOAA / AWS Open Data. *NEXRAD public dataset registry*. <https://registry.opendata.aws/noaa-nexrad/>
21. NOAA NCEI. *Integrated Global Radiosonde Archive*. <https://www.ncei.noaa.gov/products/weather-balloon/integrated-global-radiosonde-archive>
22. Iowa Environmental Mesonet. *ASOS/AWOS/METAR data download service*. <https://mesonet.agron.iastate.edu/request/download.phtml>
23. CelesTrak. *Spacetrack Report No. 3: Models for propagation of NORAD element sets*. <https://celestrak.org/NORAD/documentation/spacetrk.pdf>
24. CelesTrak. *Supplemental GP element sets documentation and current endpoint index*. <https://celestrak.org/NORAD/elements/supplemental/>