

CASE FILE 13 / 237UAP00350

237UAP00350

Radar/correlation-focused public UAP report; score 70

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-13-237UAP00350	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00350	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2024-02-04T11:11:00+00:00	OBSERVER	39.43895, -109.21304
SOURCE CASE IDS	237UAP00350		

Abstract

This case file evaluates a reported UAP sighting against historical Starlink orbital elements. The primary external-object candidate is a 3-object same-launch group from 2021-03-11, spanning azimuth 0.06-342.65 deg and elevation 11.18-22.54 deg. The analysis distinguishes plausible geometric overlap from unresolved witness-language features.

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

237UAP00350 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: plausible ADS-B aircraft candidate N7901A B738 aaba81 at 100.2 km, azimuth 298.7 deg, elevation 6.64 deg, 5.01 min from report. Dense satellite presence alone is not treated as causation in this packet.

1.1 Key Findings

- Source score 70 based on: radar/primary-return language, negative official correlation, high-altitude report, UAP/UFO language.
- Report time used: 2024-02-04T11:11:00+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: plausible ADS-B aircraft candidate N7901A B738 aaba81 at 100.2 km, azimuth 298.7 deg, elevation 6.64 deg, 5.01 min from report.
- Non-causal context / rejection screens: substantial orbital-object sky background; context only, not causation.
- Objects above horizon: 285; at/above 10 deg: 133.
- Top compact same-launch/designator group: 3 objects from 2021-03-11.
- 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
237UAP00350	11:11 02/04/2024 Callsign: SCX3053 Origin: PDX	ZDV Operator: SCX Operator Type: Commercial	text extract present	237UAP00350.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon off the left side while SE bound at FL410, 60NM SE of MTU. The unknown phenomenon appeared to be 5 separate craft with white lights traveling sporadically between FL600 and FL800. The UAP was not observed on ATC facility radar system.
REPORT TIME USED	2024-02-04T11:11:00+00:00
OBSERVER COORDINATE USED	39.43895, -109.21304
OBSERVER SOURCE BASIS	aviation_offset:60NM SE of MTU (public text extract 237UAP00350)

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	5416	HISTORICAL ELEMENT ROWS	5416
ABOVE HORIZON AT REPORT MINUTE	285	AT/ABOVE 10 DEG	133
LARGEST SAME-SKY CLUSTER	49		

5.2 Same-Launch / Same-Designator Candidate Groups

#	LAUNCH DATE	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS	MEMBERS
1	2021-03-11	3	0.06-342.65 deg	11.18-22.54 deg	eastward, level, eastward, rising	STARLINK-2315, STARLINK-2446, STARLINK-2435
2	2022-09-05	3	338.86-359.36 deg	11.07-16.07 deg	eastward, rising	STARLINK-4685, STARLINK-4614, STARLINK-4699

5.3 Primary Group Members

OBJECT	NORAD	LAUNCH	AZ	EL	RANGE KM	APPARENT MOTION	ELEMENT AGE H
STARLINK-2315	47789	2021-03-11	335.48	22.54	1203.99	eastward, rising	0.5
STARLINK-2446	47844	2021-03-11	0.06	15.61	1491.99	eastward, level	0.45
STARLINK-2435	47843	2021-03-11	342.65	11.18	1743.59	eastward, rising	1.17

5.4 Bright-Sky Context: Top Starlink Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-30302	56.91	81.88	516.74	westward, setting	2023-08-22
STARLINK-5037	239.57	79.25	551.03	eastward, setting	2022-09-24
STARLINK-3141	143.79	77.01	555.26	westward, setting	2021-11-13
STARLINK-2198	88.2	74.02	570.17	eastward, setting	2021-03-04
STARLINK-30401	210.56	72.33	587.0	westward, setting	2023-09-09
STARLINK-1925	168.01	69.0	585.28	westward, setting	2020-10-24
STARLINK-5492	85.18	67.41	604.71	westward, setting	2023-01-26
STARLINK-5604	332.15	55.1	692.43	eastward, setting	2023-01-31
STARLINK-1894	37.18	49.3	705.78	eastward, setting	2020-10-24
STARLINK-4597	336.53	47.25	716.36	eastward, setting	2022-08-28
STARLINK-30129	321.41	45.4	761.61	eastward, setting	2023-05-19
STARLINK-3530	20.16	45.07	739.4	eastward, setting	2022-02-21

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	49	177.38-309.52 deg	10.1-40.83 deg	eastward, rising, eastward, setting, westward, rising, westward, setting

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
2	30	0.06-359.36 deg	10.37-25.6 deg	eastward, level, eastward, rising, eastward, setting
3	26	50.13-103.99 deg	10.13-40.03 deg	eastward, setting, nearly fixed azimuth, setting, westward, rising, westward, setting
4	11	145.01-164.39 deg	15.84-36.46 deg	eastward, setting, westward, rising, westward, setting
5	5	56.91-168.01 deg	67.41-81.88 deg	eastward, setting, 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	36	SATCAT ROWS MATCHED	36
TOP OWNERS	US: 36		
OBJECT TYPES	PAYLOAD: 36		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
57664	STARLINK-30302	PAYLOAD	US	2023-08-22	2025-02-27
53896	STARLINK-5037	PAYLOAD	US	2022-09-24	n/a
49459	STARLINK-3141	PAYLOAD	US	2021-11-13	n/a
47775	STARLINK-2198	PAYLOAD	US	2021-03-04	2025-01-20
57818	STARLINK-30401	PAYLOAD	US	2023-09-09	n/a
46756	STARLINK-1925	PAYLOAD	US	2020-10-24	2025-03-24
55331	STARLINK-5492	PAYLOAD	US	2023-01-26	n/a
55420	STARLINK-5604	PAYLOAD	US	2023-01-31	n/a
46744	STARLINK-1894	PAYLOAD	US	2020-10-24	2026-04-19
53640	STARLINK-4597	PAYLOAD	US	2022-08-28	n/a
56689	STARLINK-30129	PAYLOAD	US	2023-05-19	n/a
51730	STARLINK-3530	PAYLOAD	US	2022-02-21	2024-12-28

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.

HOURLY UTC	2024020411
CLOUD AMOUNT	0.71%
PRECIPITATION	0.0 mm/hr
10 M WIND	2.44 m/s
TEMPERATURE	-6.78 C
RELATIVE HUMIDITY	82.44%
DONKI +/-1 DAY	CME: unavailable; 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	80.46	-37.06	-26.77
Moon	136.81	11.78	-9.40
Venus	105.44	-16.43	-3.94
Mars	100.33	-23.39	1.30
Jupiter	332.96	-33.27	-2.32
Saturn	54.97	-48.51	0.99

- Sun elevation was -37.1 deg, so this was a dark-sky/nighttime sighting.
- Moon was above horizon at azimuth 136.8 deg / elevation 11.8 deg.
- No checked bright planets were above the horizon at the primary coordinate/time.
- NASA POWER cloud amount for the hour was 0.71%, with precipitation 0.0 mm/hr.

5.11 Free Source Availability and Remaining Work

LAYER	STATUS	CASE-SPECIFIC NOTE
ADSB.LOL HISTORICAL RELEASE LISTING	screened/present	planes-readsb-staging-0 1500.0 MiB; planes-readsb-prod-0 1494.0 MiB
ADSB TRACKS DOWNLOADED	not yet exhausted	Requires targeted extraction from large daily history archives before claiming aircraft exhaustion.
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 adsblol/globe_history_2024 for 2024-02-04, then filter +/-60 min and 250 nmi around 39.4389,-109.2130.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00350 at 2024-02-04T11:11:00+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	GOES18
GOES ABI PREFIX	https://noaa-goes18.s3.amazonaws.com/ABI-L2-CMIPF/2024/035/11/
GOES GLM LIGHTNING PREFIX	https://noaa-goes18.s3.amazonaws.com/GLM-L2-LCFA/2024/035/11/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KGJT	Grand Junction Regional Airport	68.30	39.13, -108.53
KCNV	Canyonlands Regional Airport	89.30	38.76, -109.75
KVEL	Vernal Regional Airport	113.80	40.44, -109.51
KRIL	Garfield County Regional Airport	127.90	39.53, -107.73

STATION	NAME	DISTANCE KM	COORDINATE
KMTJ	Montrose Regional Airport	153.90	38.51, -107.89

- KGJT: [IEM ASOS/METAR daily CSV query](#)
- KCNY: [IEM ASOS/METAR daily CSV query](#)
- KVEL: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072476	GRAND JUNCTION/WALKER FIELD; C	69.00	39.12, -108.53
USM00072572	SALT LAKE CITY/INTNL UT.	276.30	40.77, -111.96
USM00074003	DUGWAY PRVGR	327.90	40.17, -112.93
USM00072672	RIVERTON; WY.	407.80	43.06, -108.48
USM00072376	FLAGSTAFF; AZ	521.70	35.23, -111.82

5.15 ASOS/METAR Surface Weather Observations

surface visibility ranged 10-10 statute miles; no precipitation was reported in the retained observations; low/broken/overcast cloud layers were present in at least one observation. 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
KGJT	68.30	2024-02-04T10:53:00 +00:00	10.00	OVC07000, M, M, M	30.00 / 4.00	KGJT 041053Z AUTO 03004KT 10SM OVC070 00/ M04 A2996 RMK AO2 SLP136 T00001044
KCNY	89.30	2024-02-04T10:53:00 +00:00	10.00	CLR, M, M, M	210.00 / 4.00	KCNY 041053Z AUTO 21004KT 10SM CLR M02/M07 A2996 RMK AO2 SLP152 T10171067
KVEL	113.80	2024-02-04T10:53:00 +00:00	10.00	CLR, M, M, M	40.00 / 4.00	KVEL 041053Z AUTO 04004KT 10SM CLR M01/M05 A2992 RMK AO2 SLP139 T10111050

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 257.0 deg at 11.95 m/s; a passive balloon could drift about 86.1 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
USM00072476	GRAND JUNCTION/ WALKER FIELD; C	69.00	2024-02-04T12:00 :00+00:00	257.00	11.95	86.10	36.00 at 3595.00 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	GOES18	BUCKET	noaa-goes18
ABI SAMPLE FILES	12	GLM SAMPLE FILES	12

ABI sample objects:

- [ABI-L2-CMIPF/2024/035/11/OR_ABI-L2-CMIPF-M6C01_G18_s20240351100225_e20240351109533_c20240351109594.nc](#)
- [ABI-L2-CMIPF/2024/035/11/OR_ABI-L2-CMIPF-M6C01_G18_s20240351110225_e20240351119533_c20240351120003.nc](#)
- [ABI-L2-CMIPF/2024/035/11/OR_ABI-L2-CMIPF-M6C01_G18_s20240351120225_e20240351129533_c20240351129592.nc](#)
- [ABI-L2-CMIPF/2024/035/11/OR_ABI-L2-CMIPF-M6C01_G18_s20240351130225_e20240351139533_c20240351140012.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2024/035/11/OR_GLM-L2-LCFA_G18_s20240351100000_e20240351100200_c20240351100217.nc](#)
- [GLM-L2-LCFA/2024/035/11/OR_GLM-L2-LCFA_G18_s20240351100200_e20240351100400_c20240351100412.nc](#)
- [GLM-L2-LCFA/2024/035/11/OR_GLM-L2-LCFA_G18_s20240351100400_e20240351101000_c20240351101017.nc](#)
- [GLM-L2-LCFA/2024/035/11/OR_GLM-L2-LCFA_G18_s20240351101000_e20240351101200_c20240351101221.nc](#)

5.18 ADSB.lol Historical Aircraft Track Extraction

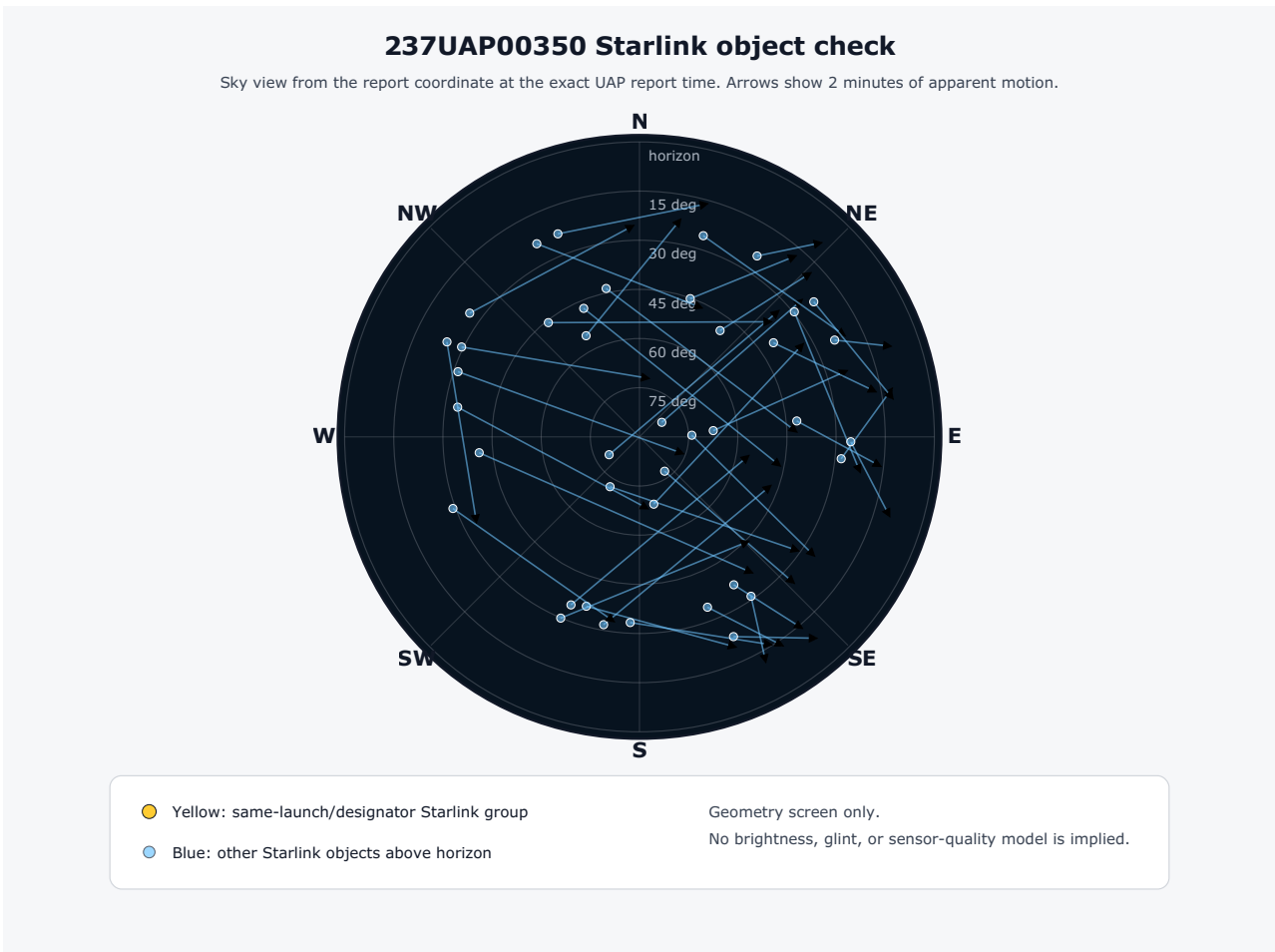
This layer uses the downloaded ADSB.lol daily history archive to test actual aircraft tracks near the report coordinate and minute. It is not treated as a primary-radar substitute; it is a transponder/receiver-derived aircraft screen.

ARCHIVE WINDOW	2024-02-04T09:56:00+00:00 to 2024-02-04T12:26:00+00:00	RADIUS	300.00 nmi
TRACE FILES SCANNED	45226	TRACKS RETAINED	84
SUPPORT STATUS	aircraft plausible candidate present	BEST-CANDIDATE NOTE	ordinary-object favored only if source wording is weak; high-value reports with radar/video/rapid maneuver language remain unresolved residuals.
STRONG CANDIDATES	0	PLAUSIBLE CANDIDATES	1
REPORTING-AIRCRAFT TRACKS EXCLUDED	1	WEAK CANDIDATES	8

5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
N7901A B738 aaba81	plausible aircraft candidate	56.40	100.20	5.01	41000	298.70	6.64
N382UP B763 a46488	weak aircraft candidate	42.48	199.20	0.02	39025	58.00	1.75
N397AZ B763 a49ce2	weak aircraft candidate	21.11	133.20	2.14	37000	59.00	4.23
N241AZ B763 a233ce	weak aircraft candidate	10.73	173.00	1.67	37000	314.70	2.95
N211UA B772 a1befc	weak aircraft candidate	8.71	198.10	6.04	39000	109.40	2.12
LX-SCV B744 4d0128	weak aircraft candidate	8.63	213.00	11.68	35000	52.50	1.90
N774UA B772 aa79a6	weak aircraft candidate	8.62	207.70	5.30	37000	106.90	1.86
N415AN A21N a4e6c0	weak aircraft candidate	8.53	143.50	13.76	34975	91.60	1.60

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	2024-02-04T11:11:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	39.43895, -109.21304	Directly used as observer point for azimuth/elevation/range computation.
COUNT / PATTERN	not explicit	Primary same-launch group contains 3 propagated objects in a compact sky sector.
MOTION LANGUAGE	not explicit	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	237UAP00350 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: plausible ADS-B aircraft candidate N7901A B738 aaba81 at 100.2 km, azimuth 298.7 deg, elevation 6.64 deg, 5.01 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

237UAP00350

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON

Date: 11:11 02/04/2024
Status: Closed
POD: DEN
Reporting Facility: ZDV

Callsign: SCX3053
Aircraft: B738
Tail Number:
Operator: SCX
Paged: YES

Origin: PDX
Destination: AFW
New Destination:
Operator Type: Commercial
MOR Init: YES
MOR ID: ZDV-M-2024/02/04-0001

REMARKS

Aircraft reported an unidentified aerial phenomenon off the left side while SE bound at FL410, 60NM SE of MTU. The unknown phenomenon appeared to be 5 separate craft with white lights traveling sporadically between FL600 and FL800. 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": "2024-02-04T11:11:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon off the left side while SE bound at FL410, 60NM SE of MTU. The unknown phenomenon appeared to be 5 separate craft with white lights traveling sporadically between FL600 and FL800. The UAP was not observed on ATC facility radar system.",
  "historical_starlink_element_rows": 5416,
  "observer": {
    "lat": 39.43894999679672,
    "lon": -109.21303948333582,
    "source": "aviation_offset:60NM SE of MTU (public text extract 237UAP00350)"
  },
  "case_id": "237UAP00350",
  "starlink_above_horizon_at_report_time": 285,
  "starlink_catalog_ids_considered": 5416,
  "largest_same-sky_cluster_count": 49,
  "starlink_at_or_above_10_deg": 133,
  "same_launch_sky_groups": [
    {
      "azimuth_range_deg": [
        0.06,
        342.65
      ],
      "count": 3,
      "elevation_range_deg": [
        11.18,
        22.54
      ],
      "ground_track_labels": [
        "E",
        "ESE"
      ],
      "launch_date": "2021-03-11",
      "members": [
        {
          "azimuth_deg": 335.48,
          "azimuth_plus_2m_deg": 26.77,
          "azimuth_plus_5m_deg": 98.0,
          "element_age_hours": 0.5,
          "element_epoch": "2024-02-04T10:41:10.273056+00:00",
          "elevation_deg": 22.54,
          "elevation_plus_2m_deg": 40.74,
          "elevation_plus_5m_deg": 16.8,
          "epoch_altitude_km": 553.21,
          "ground_track_bearing_deg": 118.68,
          "ground_track_label": "ESE",
          "launch_date": "2021-03-11",
          "name": "STARLINK-2315",
          "norad_id": "47789",
          "range_km": 1203.99,
          "sky_motion_label": "eastward, rising",
          "subpoint_lat": 47.7275,
          "subpoint_lon": -114.8864
        },
        {
          "azimuth_deg": 0.06,
          "azimuth_plus_2m_deg": 35.44,
          "azimuth_plus_5m_deg": 70.55,
          "element_age_hours": 0.45,
          "element_epoch": "2024-02-04T10:43:49.156608+00:00",
          "elevation_deg": 15.61,
          "elevation_plus_2m_deg": 15.54,
          "elevation_plus_5m_deg": 5.29,
          "epoch_altitude_km": 553.32,
          "ground_track_bearing_deg": 107.25,
          "ground_track_label": "ESE",
          "launch_date": "2021-03-11",
          "name": "STARLINK-2446",
          "norad_id": "47844",
          "range_km": 1491.99,
          "sky_motion_label": "eastward, level",
          "subpoint_lat": 51.4234,
          "subpoint_lon": -109.1923
        },
        {
          "azimuth_deg": 342.65,
          "azimuth_plus_2m_deg": 13.32,
          "azimuth_plus_5m_deg": 55.49,
          "element_age_hours": 1.17,
          "element_epoch": "2024-02-04T12:21:21.347424+00:00",
          "elevation_deg": 11.18,
```

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        "elevation_plus_2m_deg": 14.75,
        "elevation_plus_5m_deg": 8.02,
        "epoch_altitude_km": 553.28,
        "ground_track_bearing_deg": 97.34,
        "ground_track_label": "E",
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  "elevation_plus_2m_deg": 30.49,
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  "ground_track_bearing_deg": 113.42,
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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: 237UAP00350
TIME AND OBSERVER COORDINATE	extracted	2024-02-04T11:11:00+00:00 at 39.43895, -109.21304
ORBITAL OBJECT PROPAGATION	screened	Starlink
SPACE-TRACK SATCAT METADATA	screened	36 NORAD IDs checked; 36 matched in local SATCAT subset
LAUNCH-OBJECT/SUPGP LAYER	not applicable	not a launch-object case
NASA/JPL KNOWN SMALL-BODY LAYER	not selected	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	45226 trace files scanned; 84 tracks retained; aircraft plausible 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

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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. *237UAP00350.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-615/493468575/237UAP00350.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>
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9. NASA POWER. *Hourly point API documentation for meteorological context*. <https://power.larc.nasa.gov/docs/services/api/temporal/hourly/>
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. *DONKI space weather API documentation*. <https://api.nasa.gov/>
12. ADSB.lol. *Interactive API documentation and OpenAPI definition*. <https://api.adsb.lol/docs>
13. ADSB.lol. *Historical open-data release documentation*. <https://www.adsb.lol/docs/open-data/historical/>
14. OpenSky Network. *REST API documentation*. <https://openskynetwork.github.io/opensky-api/rest.html>
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16. NASA GIBS. *Global Imagery Browse Services API documentation*. <https://nasa-gibs.github.io/gibs-api-docs/>
17. NASA Earthdata. *Common Metadata Repository search API documentation*. <https://cmr.earthdata.nasa.gov/search/site/docs/search/api.html>
18. NOAA / AWS Open Data. *GOES public dataset registry*. <https://registry.opendata.aws/noaa-goes/>
19. NOAA / AWS Open Data. *NEXRAD public dataset registry*. <https://registry.opendata.aws/noaa-nexrad/>
20. NOAA NCEI. *Integrated Global Radiosonde Archive*. <https://www.ncei.noaa.gov/products/weather-balloon/integrated-global-radiosonde-archive>
21. Iowa Environmental Mesonet. *ASOS/AWOS/METAR data download service*. <https://mesonet.agron.iastate.edu/request/download.phtml>
22. Celestrak. *Spacetrack Report No. 3: Models for propagation of NORAD element sets*. <https://celestrak.org/NORAD/documentation/spacetrk.pdf>
23. Celestrak. *Supplemental GP element sets documentation and current endpoint index*. <https://celestrak.org/NORAD/elements/supplemental/>