

CASE FILE 17 / 237UAP00377

# 237UAP00377

Radar/correlation-focused public UAP report; score 70

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-17-237UAP00377	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00377	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2024-08-22T04:15:00+00:00	OBSERVER	29.78200, -90.96480
SOURCE CASE IDS	237UAP00377		

## 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 2024-03-19, spanning azimuth 190.15-197.16 deg and elevation 22.97-29.53 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

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237UAP00377 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N331TK B38M a39b39 at 46.2 km, azimuth 216.2 deg, elevation 12.43 deg, 3.04 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: 2024-08-22T04:15:00+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 N331TK B38M a39b39 at 46.2 km, azimuth 216.2 deg, elevation 12.43 deg, 3.04 min from report.
- Non-causal context / rejection screens: very dense orbital-object sky background; context only, not causation.
- Remaining hard features: hard maneuver language.
- Objects above horizon: 309; at/above 10 deg: 130.
- Top compact same-launch/designator group: 3 objects from 2024-03-19.
- 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

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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
237UAP00377	04:15 08/22/2024 Callsign: ENY3680 Origin: MIA	HQ DEN Operator: ENY Operator Type: Commercial	text extract present	<a href="#">237UAP00377.pdf</a>

### 3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon off the front side while NW bound at FL 340, 10 NM NW of TBD VOR. The unknown phenomenon was 4 or 5 lights maneuvering and traveling in all directions at approximately FL350-FL400. The UAP was not observed on ATC facility radar system.
REPORT TIME USED	2024-08-22T04:15:00+00:00
OBSERVER COORDINATE USED	29.78200, -90.96480
OBSERVER SOURCE BASIS	aviation_offset:10 NM NW of TBD VOR (public text extract 237UAP00377)

### 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	6342	HISTORICAL ELEMENT ROWS	6320
ABOVE HORIZON AT REPORT MINUTE	309	AT/ABOVE 10 DEG	130
LARGEST SAME-SKY CLUSTER	113		

### 5.2 Same-Launch / Same-Designator Candidate Groups

#	LAUNCH DATE	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS	MEMBERS
1	2024-03-19	3	190.15-197.16 deg	22.97-29.53 deg	westward, rising	STARLINK-31506, STARLINK-31627, STARLINK-31673

### 5.3 Primary Group Members

OBJECT	NORAD	LAUNCH	AZ	EL	RANGE KM	APPARENT MOTION	ELEMENT AGE H
STARLINK-31506	59259	2024-03-19	190.15	29.53	830.08	westward, rising	6.1
STARLINK-31627	59268	2024-03-19	195.06	26.51	946.98	westward, rising	6.14
STARLINK-31673	59262	2024-03-19	197.16	22.97	989.7	westward, rising	0.12

### 5.4 Bright-Sky Context: Top Starlink Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-3869	271.39	83.14	544.55	westward, setting	2022-05-13
STARLINK-31100	151.12	80.5	559.8	westward, setting	2024-01-03
STARLINK-1153	110.83	70.02	580.23	westward, setting	2020-01-29
STARLINK-5704	44.96	63.3	621.38	eastward, setting	2023-02-02
STARLINK-30141	92.32	60.71	634.16	westward, setting	2023-08-11
STARLINK-30570	67.72	58.29	648.98	westward, setting	2023-10-18
STARLINK-2191	254.17	57.7	624.9	westward, setting	2021-05-15
STARLINK-4452	273.9	50.9	710.86	westward, setting	2022-08-31
STARLINK-2219	287.0	47.22	723.39	westward, setting	2021-05-15
STARLINK-30150	214.59	46.53	744.92	westward, rising	2023-08-11
STARLINK-3984	79.69	41.14	783.68	westward, setting	2022-05-14
STARLINK-30252	7.92	40.56	819.81	eastward, setting	2023-08-11

### 5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	113	1.74-357.4 deg	10.09-46.53 deg	eastward, level, eastward, rising, eastward, setting, westward, rising, westward, setting
2	4	44.96-110.83 deg	58.29-70.02 deg	eastward, setting, westward, setting

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
3	3	254.17-287.0 deg	47.22-57.7 deg	westward, setting
4	3	153.42-159.43 deg	16.67-24.45 deg	westward, rising, westward, setting
5	2	130.35-131.54 deg	11.43-15.31 deg	eastward, setting, westward, rising

### 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	32	SATCAT ROWS MATCHED	32
TOP OWNERS	US: 32		
OBJECT TYPES	PAYLOAD: 32		

### 5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
52547	STARLINK-3869	PAYLOAD	US	2022-05-13	2025-04-23
58714	STARLINK-31100	PAYLOAD	US	2024-01-03	n/a
45080	STARLINK-1153	PAYLOAD	US	2020-01-29	n/a
55486	STARLINK-5704	PAYLOAD	US	2023-02-02	n/a
57620	STARLINK-30141	PAYLOAD	US	2023-08-11	n/a
58095	STARLINK-30570	PAYLOAD	US	2023-10-18	n/a
48565	STARLINK-2191	PAYLOAD	US	2021-05-15	2025-07-30
53658	STARLINK-4452	PAYLOAD	US	2022-08-31	n/a
48569	STARLINK-2219	PAYLOAD	US	2021-05-15	n/a
57621	STARLINK-30150	PAYLOAD	US	2023-08-11	n/a
52621	STARLINK-3984	PAYLOAD	US	2022-05-14	n/a
57607	STARLINK-30252	PAYLOAD	US	2023-08-11	n/a

### 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.

HOURL UTC	2024082204
CLOUD AMOUNT	43.67%
PRECIPITATION	0.0 mm/hr
10 M WIND	1.62 m/s
TEMPERATURE	26.69 C
RELATIVE HUMIDITY	72.61%
DONKI +/-1 DAY	CME: unavailable; FLR: unavailable; GST: unavailable; HSS: unavailable; IPS: unavailable; MPC: unavailable; RBE: unavailable; SEP: unavailable; WSAEnliiSimulations: unavailable

5.10 Horizons Sky Geometry Context

OBJECT	AZ	EL	APP MAG
Sun	322.82	-40.62	-26.72
Moon	105.49	25.88	-11.95
Venus	298.24	-32.17	-3.88
Mars	43.02	-23.07	0.85
Jupiter	46.54	-21.15	-2.21
Saturn	122.60	32.96	0.65

- Sun elevation was -40.6 deg, so this was a dark-sky/nighttime sighting.
- Moon was above horizon at azimuth 105.5 deg / elevation 25.9 deg.
- Planets above horizon: Saturn (33.0 deg).
- NASA POWER cloud amount for the hour was 43.67%, 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 2384.0 MiB; planes-readsb-prod-0 2384.0 MiB; planes-readsb-mlatonly-0 54.0 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 2024-08-22, then filter +/-60 min and 250 nmi around 29.7820,-90.9648.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00377 at 2024-08-22T04:15:00+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	<a href="https://noaa-goes16.s3.amazonaws.com/ABI-L2-CMIPF/2024/235/04/">https://noaa-goes16.s3.amazonaws.com/ABI-L2-CMIPF/2024/235/04/</a>
GOES GLM LIGHTNING PREFIX	<a href="https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2024/235/04/">https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2024/235/04/</a>

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KMSY	Louis Armstrong New Orleans International Airport	71.50	29.99, -90.26
KBTR	Baton Rouge Metropolitan Airport	85.40	30.53, -91.15
KNBG		89.80	29.83, -90.04

STATION	NAME	DISTANCE KM	COORDINATE
	New Orleans NAS JRB/Alvin Callender Field		
KARA	Acadiana Regional Airport	93.00	30.04, -91.88
KNEW	Lakefront Airport	94.80	30.04, -90.03

- KMSY: [IEM ASOS/METAR daily CSV query](#)
- KBTR: [IEM ASOS/METAR daily CSV query](#)
- KNBG: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072233	SLIDELL/MUN. LA	125.90	30.34, -89.83
USM00072240	LAKE CHARLES/MUN.; LA.	220.20	30.13, -93.22
USM00072235	JACKSON/ALLEN C. THOMPSON FIEL	294.40	32.32, -90.08
USM00072248	SHREVEPORT/REG.; LA.	403.80	32.45, -93.84
USM00072221	VALPARAISO/EGLIN AFB; FL.	434.80	30.48, -86.52

5.15 ASOS/METAR Surface Weather Observations

surface visibility ranged 10-10 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
KMSY	71.50	2024-08-22T03:53:00 +00:00	10.00	CLR, M, M, M	140.00 / 6.00	KMSY 220353Z 14006KT 10SM CLR 28/21 A3002 RMK AO2 SLP167 T02830206
KBTR	85.40	2024-08-22T03:53:00 +00:00	10.00	CLR, M, M, M	0.00 / 0.00	KBTR 220353Z 00000KT 10SM CLR 26/21 A3001 RMK AO2 SLP160 T02610211
KNBG	89.80	2024-08-22T03:55:00 +00:00	10.00	CLR, M, M, M	0.00 / 0.00	KNBG 220355Z 00000KT 10SM CLR 24/23 A3002 RMK AO2 SLP164 T02390228 \$

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 81.0 deg at 2.24 m/s; a passive balloon could drift about 16.1 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
USM00072233	SLIDELL/MUN. LA	125.90	2024-08-22T00:00 :00+00:00	81.00	2.24	16.10	36.00 at 3144.00 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.

<b>SATELLITE</b>	GOES16	<b>BUCKET</b>	noaa-goes16
<b>ABI SAMPLE FILES</b>	12	<b>GLM SAMPLE FILES</b>	12

**ABI sample objects:**

- [ABI-L2-CMIPF/2024/235/04/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20242350400203\\_e20242350409511\\_c20242350409578.nc](#)
- [ABI-L2-CMIPF/2024/235/04/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20242350410203\\_e20242350419511\\_c20242350419564.nc](#)
- [ABI-L2-CMIPF/2024/235/04/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20242350420203\\_e20242350429511\\_c20242350429572.nc](#)
- [ABI-L2-CMIPF/2024/235/04/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20242350430203\\_e20242350439511\\_c20242350439569.nc](#)

**GLM lightning sample objects:**

- [GLM-L2-LCFA/2024/235/04/OR\\_GLM-L2-LCFA\\_G16\\_s20242350400000\\_e20242350400200\\_c20242350400217.nc](#)
- [GLM-L2-LCFA/2024/235/04/OR\\_GLM-L2-LCFA\\_G16\\_s20242350400200\\_e20242350400400\\_c20242350400418.nc](#)
- [GLM-L2-LCFA/2024/235/04/OR\\_GLM-L2-LCFA\\_G16\\_s20242350400400\\_e20242350401000\\_c20242350401016.nc](#)
- [GLM-L2-LCFA/2024/235/04/OR\\_GLM-L2-LCFA\\_G16\\_s20242350401000\\_e20242350401200\\_c20242350401215.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.

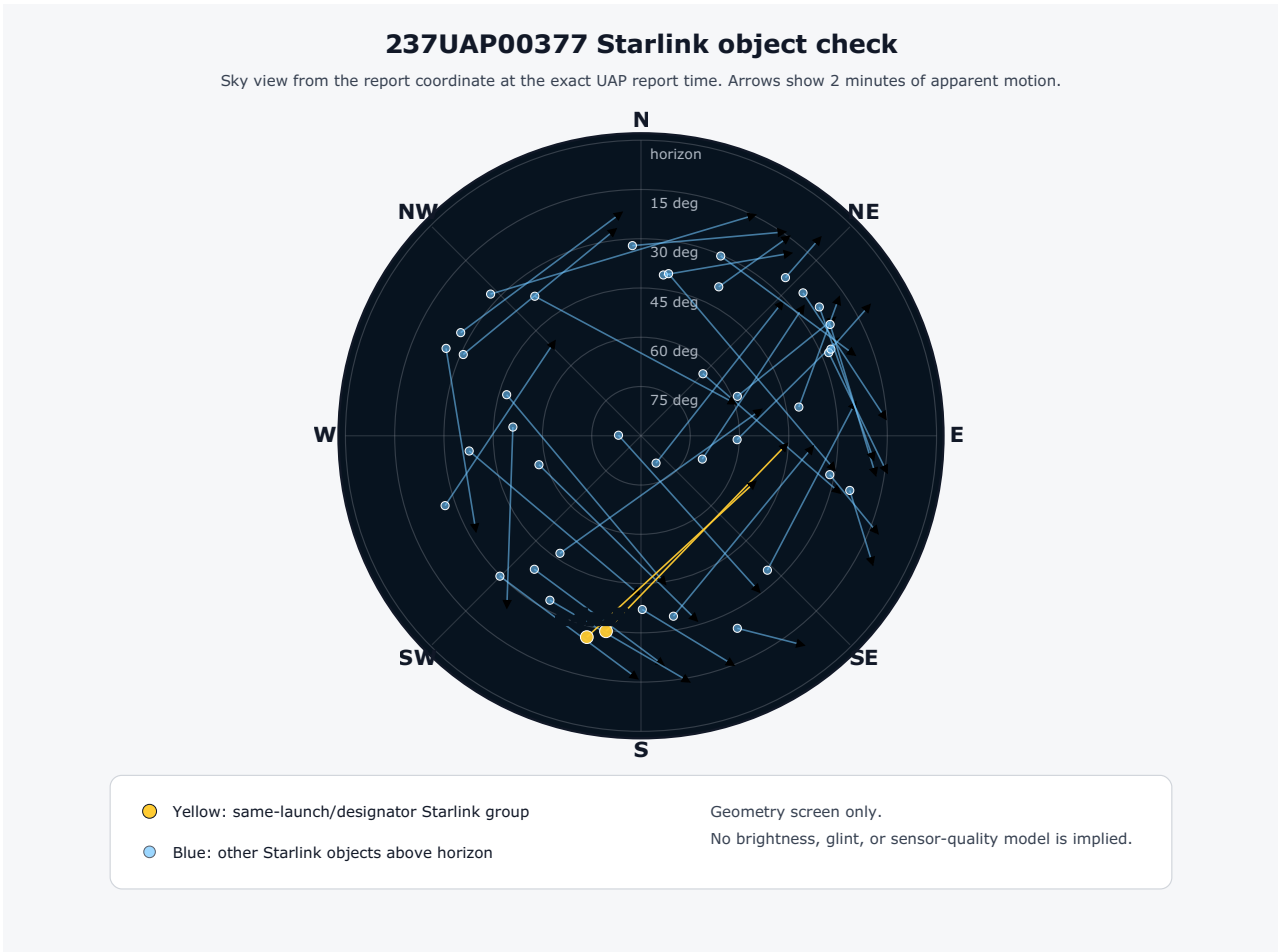
<b>ARCHIVE WINDOW</b>	2024-08-22T03:00:00+00:00 to 2024-08-22T05:30:00+00:00	<b>RADIUS</b>	300.00 nmi
<b>TRACE FILES SCANNED</b>	68466	<b>TRACKS RETAINED</b>	380
<b>SUPPORT STATUS</b>	aircraft strong candidate present	<b>BEST-CANDIDATE NOTE</b>	ordinary-object favored if the report's count, color, direction, and motion can be reconciled with the candidate track(s).
<b>STRONG CANDIDATES</b>	3	<b>PLAUSIBLE CANDIDATES</b>	13
<b>REPORTING-AIRCRAFT TRACKS EXCLUDED</b>	0	<b>WEAK CANDIDATES</b>	31

**5.19 Top ADS-B Candidate Tracks**

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
N331TK B38M a39b39	strong aircraft candidate	75.27	43.10	0.08	34000	216.20	12.43
N8756S B38M ac0c24	strong aircraft candidate	58.35	72.10	2.07	ground	71.00	-0.32
N6714Q B752 a8e262	strong aircraft candidate	56.46	72.50	3.09	ground	70.90	-0.33
N277NN E75L a2c1b6	plausible aircraft candidate	69.08	13.60	0.09	34000	37.60	37.30
N904AN B738 ac7e15	plausible aircraft candidate	63.93	92.90	0.14	34000	358.60	5.33
N395DZ A321 a495bf	plausible aircraft candidate	47.67	37.80	0.12	39000	305.10	3.86
PH-BQF B772 48436d	plausible aircraft candidate	47.52	53.00	0.13	35000	165.50	10.17
N1288H P28A a074e2	plausible aircraft candidate	45.68	83.30	5.93	600	34.30	-0.32



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	2024-08-22T04:15:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	29.78200, -90.96480	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	237UAP00377 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N331TK B38M a39b39 at 46.2 km, azimuth 216.2 deg, elevation 12.43 deg, 3.04 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

237UAP00377

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON

Date: 04:15 08/22/2024  
Status: Closed  
POD: DEN  
Reporting Facility: HQ DEN

Callsign: ENY3680  
Aircraft: E170  
Tail Number:  
Operator: ENY  
Paged: YES

Origin: MIA  
Destination: OKC  
New Destination:  
Operator Type: Commercial  
MOR Init: YES  
MOR ID: ZHU-M-2024/08/21-0005

REMARKS

Aircraft reported an unidentified aerial phenomenon off the front side while NW bound at FL 340, 10 NM NW of TBD VOR. The unknown phenomenon was 4 or 5 lights maneuvering and traveling in all directions at approximately FL350-FL400. 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": "2024-08-22T04:15:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon off the front side while NW bound at FL 340, 10 NM NW of TBD VOR. The unknown phenomenon was 4 or 5 lights maneuvering and traveling in all directions at approximately FL350-FL400. The UAP was not observed on ATC facility radar system.",
  "historical_starlink_element_rows": 6320,
  "observer": {
    "lat": 29.782003525914583,
    "lon": -90.96479546382983,
    "source": "aviation_offset:10 NM NW of TBD VOR (public text extract 237UAP00377)"
  },
  "case_id": "237UAP00377",
  "starlink_above_horizon_at_report_time": 309,
  "starlink_catalog_ids_considered": 6342,
  "largest_same-sky_cluster_count": 113,
  "starlink_at_or_above_10_deg": 130,
  "same_launch_sky_groups": [
    {
      "azimuth_range_deg": [
        190.15,
        197.16
      ],
      "count": 3,
      "elevation_range_deg": [
        22.97,
        29.53
      ],
      "ground_track_labels": [
        "NE"
      ],
      "launch_date": "2024-03-19",
      "members": [
        {
          "azimuth_deg": 190.15,
          "azimuth_plus_2m_deg": 93.29,
          "azimuth_plus_5m_deg": 51.57,
          "element_age_hours": 6.1,
          "element_epoch": "2024-08-22T10:21:06.210432+00:00",
          "elevation_deg": 29.53,
          "elevation_plus_2m_deg": 45.54,
          "elevation_plus_5m_deg": 9.25,
          "epoch_altitude_km": 453.71,
          "ground_track_bearing_deg": 38.26,
          "ground_track_label": "NE",
          "launch_date": "2024-03-19",
          "name": "STARLINK-31506",
          "norad_id": "59259",
          "range_km": 830.08,
          "sky_motion_label": "westward, rising",
          "subpoint_lat": 23.7719,
          "subpoint_lon": -92.1319
        },
        {
          "azimuth_deg": 195.06,
          "azimuth_plus_2m_deg": 112.0,
          "azimuth_plus_5m_deg": 52.64,
          "element_age_hours": 6.14,
          "element_epoch": "2024-08-22T10:23:39.909984+00:00",
          "elevation_deg": 26.51,
          "elevation_plus_2m_deg": 52.52,
          "elevation_plus_5m_deg": 12.42,
          "epoch_altitude_km": 481.51,
          "ground_track_bearing_deg": 37.88,
          "ground_track_label": "NE",
          "launch_date": "2024-03-19",
          "name": "STARLINK-31627",
          "norad_id": "59268",
          "range_km": 946.98,
          "sky_motion_label": "westward, rising",
          "subpoint_lat": 22.8781,
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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: 237UAP00377
TIME AND OBSERVER COORDINATE	extracted	2024-08-22T04:15:00+00:00 at 29.78200, -90.96480
ORBITAL OBJECT PROPAGATION	screened	Starlink
SPACE-TRACK SATCAT METADATA	screened	32 NORAD IDs checked; 32 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	68466 trace files scanned; 380 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

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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. *237UAP00377.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-615/493468575/237UAP00377.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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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 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/>
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15. OpenSky Network. *Historical data via Trino documentation*. <https://openskynetwork.github.io/opensky-api/trino.html>
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/>
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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/>