

CASE FILE 14 / 237UAP00356

# 237UAP00356

Radar/correlation-focused public UAP report; score 70

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-14-237UAP00356	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00356	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2024-02-18T10:49:00+00:00	OBSERVER	37.87436, -103.51534
SOURCE CASE IDS	237UAP00356		

## 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 2022-03-09, spanning azimuth 9.39-29.64 deg and elevation 14.47-37.14 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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237UAP00356 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N613NK A320 a7fb19 at 59.7 km, azimuth 197.0 deg, elevation 11.0 deg, 0.55 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: 2024-02-18T10:49:00+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 N613NK A320 a7fb19 at 59.7 km, azimuth 197.0 deg, elevation 11.0 deg, 0.55 min from report.
- Non-causal context / rejection screens: very dense orbital-object sky background; context only, not causation.
- Objects above horizon: 273; at/above 10 deg: 128.
- Top compact same-launch/designator group: 3 objects from 2022-03-09.
- 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
237UAP00356	10:49 02/18/2024 Callsign: N151SD Origin: LAS	ZDV Operator: Operator Type: General Aviation	text extract present	<a href="#">237UAP00356.pdf</a>

### 3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon at their 12 O'clock while E bound at FL410, PUB120050. The unknown phenomenon was described as three lights traveling ahead of the flight moving erratically at approximately FL510 or higher. The UAP was not observed on TCAS. The UAP was observed on ATC facility radar system. AAL2514 (A21N, SFO..CLT) reported same lights.
REPORT TIME USED	2024-02-18T10:49:00+00:00
OBSERVER COORDINATE USED	37.87436, -103.51534
OBSERVER SOURCE BASIS	aviation_radial:PUB120050 (public text extract 237UAP00356)

### 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	5459	HISTORICAL ELEMENT ROWS	5415
ABOVE HORIZON AT REPORT MINUTE	273	AT/ABOVE 10 DEG	128
LARGEST SAME-SKY CLUSTER	102		

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

#	LAUNCH DATE	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS	MEMBERS
1	2022-03-09	3	9.39-29.64 deg	14.47-37.14 deg	eastward, setting	STARLINK-3666, STARLINK-3696, STARLINK-3589
2	2022-03-09	3	244.23-257.14 deg	15.25-20.34 deg	eastward, rising	STARLINK-3655, STARLINK-3691, STARLINK-3694

### 5.3 Primary Group Members

OBJECT	NORAD	LAUNCH	AZ	EL	RANGE KM	APPARENT MOTION	ELEMENT AGE H
STARLINK-3666	51978	2022-03-09	29.64	37.14	844.52	eastward, setting	2.93
STARLINK-3696	51965	2022-03-09	17.73	30.12	999.74	eastward, setting	2.92
STARLINK-3589	51997	2022-03-09	9.39	14.47	1533.29	eastward, setting	1.27

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

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-30573	18.86	73.79	583.4	eastward, setting	2023-10-13
STARLINK-31117	11.22	62.52	615.64	eastward, setting	2024-01-14
STARLINK-3857	112.97	52.74	666.07	westward, setting	2022-05-06
STARLINK-5669	112.17	51.17	702.74	eastward, setting	2023-02-02
STARLINK-3253	91.75	44.71	736.27	eastward, setting	2022-01-19
STARLINK-5694	329.33	44.46	772.2	eastward, setting	2023-02-02
STARLINK-5588	222.34	43.65	779.44	westward, setting	2023-01-26
STARLINK-2014	147.49	42.73	774.27	westward, setting	2021-02-16
STARLINK-1846	80.31	40.73	801.57	eastward, setting	2020-11-25
STARLINK-2344	260.93	40.52	803.89	westward, setting	2021-03-14
STARLINK-5189	51.85	40.46	795.19	eastward, setting	2022-10-20
STARLINK-3835	186.26	40.16	797.43	westward, rising	2022-05-06

### 5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	102	0.68-357.8 deg	10.0-44.71 deg	eastward, level, eastward, rising, eastward, setting,

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
				westward, rising, westward, setting
2	19	146.92-230.71 deg	12.01-43.65 deg	westward, level, westward, rising, westward, setting
3	2	11.22-18.86 deg	62.52-73.79 deg	eastward, setting
4	2	112.17-112.97 deg	51.17-52.74 deg	eastward, setting, westward, setting
5	2	260.93-262.64 deg	39.97-40.52 deg	eastward, rising, 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.

<b>PACKET SATCAT SUBSET ROWS</b>	5370	<b>FETCHED</b>	2026-05-19T01:19:50+00:00
<b>THIS CASE NORAD IDS CHECKED</b>	35	<b>SATCAT ROWS MATCHED</b>	35
<b>TOP OWNERS</b>	US: 35		
<b>OBJECT TYPES</b>	PAYLOAD: 35		

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

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
58058	STARLINK-30573	PAYLOAD	US	2023-10-13	n/a
58776	STARLINK-31117	PAYLOAD	US	2024-01-14	n/a
52494	STARLINK-3857	PAYLOAD	US	2022-05-06	n/a
55459	STARLINK-5669	PAYLOAD	US	2023-02-02	n/a
51136	STARLINK-3253	PAYLOAD	US	2022-01-19	n/a
55481	STARLINK-5694	PAYLOAD	US	2023-02-02	n/a
55375	STARLINK-5588	PAYLOAD	US	2023-01-26	n/a
47637	STARLINK-2014	PAYLOAD	US	2021-02-16	2025-02-10
47136	STARLINK-1846	PAYLOAD	US	2020-11-25	2025-02-22
47885	STARLINK-2344	PAYLOAD	US	2021-03-14	2025-03-03
54052	STARLINK-5189	PAYLOAD	US	2022-10-20	n/a
52476	STARLINK-3835	PAYLOAD	US	2022-05-06	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.

<b>HOURLY UTC</b>	2024021810
<b>CLOUD AMOUNT</b>	9.17%
<b>PRECIPITATION</b>	0.0 mm/hr
<b>10 M WIND</b>	2.98 m/s
<b>TEMPERATURE</b>	-4.44 C
<b>RELATIVE HUMIDITY</b>	60.4%
<b>DONKI +/-1 DAY</b>	CME: unavailable; FLR: unavailable; GST: unavailable; HSS: unavailable; IPS: unavailable; MPC: unavailable; RBE: unavailable; SEP: unavailable; WSAEnliSimulations: unavailable

5.10 Horizons Sky Geometry Context

OBJECT	AZ	EL	APP MAG
Sun	77.24	-34.43	-26.77
Moon	314.19	-8.38	-10.84
Venus	101.48	-18.09	-3.91
Mars	100.62	-19.86	1.24
Jupiter	346.82	-37.41	-2.24
Saturn	68.02	-40.28	0.98

- Sun elevation was -34.4 deg, so this was a dark-sky/nighttime sighting.
- Moon was below horizon at elevation -8.4 deg.
- No checked bright planets were above the horizon at the primary coordinate/time.
- NASA POWER cloud amount for the hour was 9.17%, 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 1590.0 MiB; planes-readsb-prod-0 1591.0 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 2024-02-18, then filter +/-60 min and 250 nmi around 37.8744,-103.5153.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00356 at 2024-02-18T10:49:00+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/2024/049/10/">https://noaa-goes16.s3.amazonaws.com/ABI-L2-CMIPF/2024/049/10/</a>
GOES GLM LIGHTNING PREFIX	<a href="https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2024/049/10/">https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2024/049/10/</a>

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KLAA	Southeast Colorado Regional Airport	75.30	38.07, -102.69
KPUB	Pueblo Memorial Airport	97.50	38.29, -104.50
KFCS	Butts AAF (Fort Carson) Air Field	140.50	38.68, -104.76
KCOS	City of Colorado Springs Municipal Airport	146.40	38.81, -104.70

STATION	NAME	DISTANCE KM	COORDINATE
KALS	San Luis Valley Regional Airport/ Bergman Field	212.70	37.43, -105.87

- KLAA: [IEM ASOS/METAR daily CSV query](#)
- KPUB: [IEM ASOS/METAR daily CSV query](#)
- KFCS: [IEM ASOS/METAR daily CSV query](#)

### 5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072451	DODGE CITY/MUN.; KS.	311.80	37.76, -99.97
USM00072363	AMARILLO/INTL.; TX.	335.10	35.23, -101.71
USM00072365	ALBUQUERQUE/INT.; NM.	420.30	35.04, -106.62
USM00072562	NORTH PLATTE/LEE BIRD; NE.	435.40	41.13, -100.70
USM00072476	GRAND JUNCTION/WALKER FIELD; C	457.40	39.12, -108.53

### 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
KLAA	75.30	2024-02-18T10:53:00 +00:00	10.00	CLR, M, M, M	220.00 / 7.00	KLAA 181053Z AUTO 22007KT 10SM CLR M08/M10 A3009 RMK AO2 SLP216 T10831100
KPUB	97.50	2024-02-18T10:53:00 +00:00	10.00	CLR, M, M, M	310.00 / 4.00	KPUB 181053Z 31004KT 10SM CLR M08/M11 A3007 RMK AO2 SLP213 I1000 T10831106
KFCS	140.50	2024-02-18T10:55:00 +00:00	10.00	CLR, M, M, M	350.00 / 3.00	KFCS 181055Z AUTO 35003KT 10SM CLR M10/M12 A3001 RMK AO2 SLP226 T10961118 S

### 5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 130.7 deg at 9.89 m/s; a passive balloon could drift about 71.2 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
USM00072451	DODGE CITY/ MUN.; KS.	311.80	2024-02-18T12:00 :00+00:00	130.70	9.89	71.20	26.80 at 16180.00 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/2024/049/10/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20240491000210\\_e20240491009518\\_c20240491009583.nc](#)
- [ABI-L2-CMIPF/2024/049/10/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20240491010210\\_e20240491019518\\_c20240491019593.nc](#)
- [ABI-L2-CMIPF/2024/049/10/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20240491020210\\_e20240491029518\\_c20240491029585.nc](#)
- [ABI-L2-CMIPF/2024/049/10/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20240491030210\\_e20240491039518\\_c20240491039591.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2024/049/10/OR\\_GLM-L2-LCFA\\_G16\\_s20240491000000\\_e20240491000200\\_c20240491000219.nc](#)
- [GLM-L2-LCFA/2024/049/10/OR\\_GLM-L2-LCFA\\_G16\\_s20240491000200\\_e20240491000400\\_c20240491000417.nc](#)
- [GLM-L2-LCFA/2024/049/10/OR\\_GLM-L2-LCFA\\_G16\\_s20240491000400\\_e20240491001000\\_c20240491001017.nc](#)
- [GLM-L2-LCFA/2024/049/10/OR\\_GLM-L2-LCFA\\_G16\\_s20240491001000\\_e20240491001200\\_c20240491001219.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.

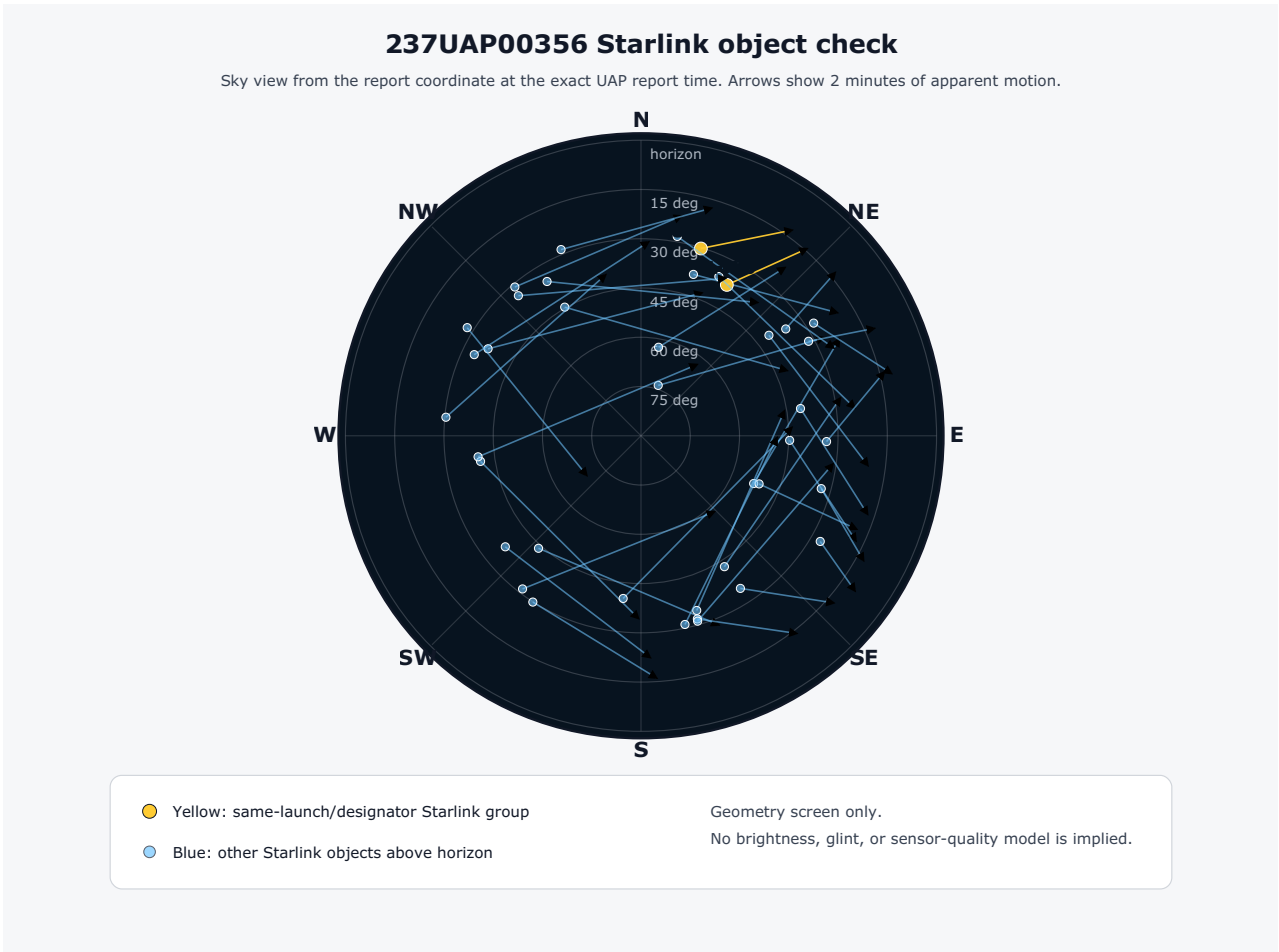
ARCHIVE WINDOW	2024-02-18T09:34:00+00:00 to 2024-02-18T12:04:00+00:00	RADIUS	300.00 nmi
TRACE FILES SCANNED	45012	TRACKS RETAINED	151
SUPPORT STATUS	aircraft strong candidate present	BEST-CANDIDATE NOTE	ordinary-object favored if the report's count, color, direction, and motion can be reconciled with the candidate track(s).
STRONG CANDIDATES	1	PLAUSIBLE CANDIDATES	9
REPORTING-AIRCRAFT TRACKS EXCLUDED	1	WEAK CANDIDATES	21

5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
N613NK A320 a7fb19	strong aircraft candidate	75.78	54.90	0.10	38950	197.00	11.00
N267AK B739 a29908	plausible aircraft candidate	55.24	105.60	0.09	36000	197.40	4.87
N260UP MD11 a280cd	plausible aircraft candidate	45.87	169.00	0.01	37000	13.30	2.97
N433AN A21N a52e50	plausible aircraft candidate	45.27	71.50	0.07	35000	158.90	7.32
N866MB AS50 abe636	plausible aircraft candidate	40.77	133.60	0.00	7550	318.00	0.13
N969JT A321 ad7e6f	plausible aircraft candidate	39.82	109.20	0.10	35025	170.10	4.49
N922NK A20N acc6ce	plausible aircraft candidate	30.49	103.80	0.88	37025	15.10	5.02
C-FLEJ B38M c01d7e	plausible aircraft candidate	14.85	42.70	0.02	37000	159.80	3.35



6. Annotated Evidence Figure



## 7. Analytic Comparison

CRITERION	REPORT EVIDENCE	ANALYTIC TREATMENT
TIME CONSTRAINT	2024-02-18T10:49:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	37.87436, -103.51534	Directly used as observer point for azimuth/elevation/range computation.
COUNT / PATTERN	three-object/light language present	Primary same-launch group contains 3 propagated objects in a compact sky sector.
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	237UAP00356 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N613NK A320 a7fb19 at 59.7 km, azimuth 197.0 deg, elevation 11.0 deg, 0.55 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

237UAP00356

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON		
Date: 10:49 02/18/2024	Callsign: N151SD	Origin: LAS
Status: Closed	Aircraft: GLF4	Destination: TEB
POD: DEN	Tail Number:	New Destination:
Reporting Facility: ZDV	Operator:	Operator Type: General Aviation
	Paged: YES	MOR Init: YES
		MOR ID: ZDV-M-2024/02/18-0001

REMARKS

Aircraft reported an unidentified aerial phenomenon at their 12 O'clock while E bound at FL410, PUB120050. The unknown phenomenon was described as three lights traveling ahead of the flight moving erratically at approximately FL510 or higher. The UAP was not observed on TCAS. The UAP was observed on ATC facility radar system. AAL2514 (A21N, SFO..CLT) reported same lights.

## 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": "2024-02-18T10:49:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon at their 12 O'clock while E bound at FL410, PUB120050. The unknown phenomenon was described as three lights traveling ahead of the flight moving erratically at approximately FL510 or higher. The UAP was not observed on TCAS. The UAP was observed on ATC facility radar system. AAL2514 (A21N, SFO..CLT) reported same lights.",
  "historical_starlink_element_rows": 5415,
  "observer": {
    "lat": 37.8743616953384,
    "lon": -103.51533954430772,
    "source": "aviation_radial:PUB120050 (public text extract 237UAP00356)"
  },
  "case_id": "237UAP00356",
  "starlink_above_horizon_at_report_time": 273,
  "starlink_catalog_ids_considered": 5459,
  "largest_same-sky_cluster_count": 102,
  "starlink_at_or_above_10_deg": 128,
  "same_launch_sky_groups": [
    {
      "azimuth_range_deg": [
        9.39,
        29.64
      ],
      "count": 3,
      "elevation_range_deg": [
        14.47,
        37.14
      ],
      "ground_track_labels": [
        "ENE",
        "NE"
      ],
      "launch_date": "2022-03-09",
      "members": [
        {
          "azimuth_deg": 29.64,
          "azimuth_plus_2m_deg": 41.54,
          "azimuth_plus_5m_deg": 46.3,
          "element_age_hours": 2.93,
          "element_epoch": "2024-02-18T13:44:32.432640+00:00",
          "elevation_deg": 37.14,
          "elevation_plus_2m_deg": 13.97,
          "elevation_plus_5m_deg": -0.51,
          "epoch_altitude_km": 545.67,
          "ground_track_bearing_deg": 52.89,
          "ground_track_label": "NE",
          "launch_date": "2022-03-09",
          "name": "STARLINK-3666",
          "norad_id": "51978",
          "range_km": 844.52,
          "sky_motion_label": "eastward, setting",
          "subpoint_lat": 42.6799,
          "subpoint_lon": -99.7688
        },
        {
          "azimuth_deg": 17.73,
          "azimuth_plus_2m_deg": 36.22,
          "azimuth_plus_5m_deg": 44.94,
          "element_age_hours": 2.92,
          "element_epoch": "2024-02-18T13:44:00.809376+00:00",
          "elevation_deg": 30.12,
          "elevation_plus_2m_deg": 12.41,
          "elevation_plus_5m_deg": -1.0,
          "epoch_altitude_km": 558.39,
          "ground_track_bearing_deg": 56.21,
          "ground_track_label": "NE",
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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: 237UAP00356
TIME AND OBSERVER COORDINATE	extracted	2024-02-18T10:49:00+00:00 at 37.87436, -103.51534
ORBITAL OBJECT PROPAGATION	screened	Starlink
SPACE-TRACK SATCAT METADATA	screened	35 NORAD IDs checked; 35 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	45012 trace files scanned; 151 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. *237UAP00356.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-615/493468575/237UAP00356.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 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>
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/>
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/>