

CASE FILE 08 / 237UAP00343

237UAP00343

Radar/correlation-focused public UAP report; score 84

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-08-237UAP00343	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00343	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2024-01-21T13:18:00+00:00	OBSERVER	33.98769, -116.57204
SOURCE CASE IDS	237UAP00343		

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 2021-05-09, spanning azimuth 14.05-30.36 deg and elevation 10.71-18.64 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

237UAP00343 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N137FE B763 a095b4 at 17.9 km, azimuth 182.4 deg, elevation 30.7 deg, 5.26 min from report. Dense satellite presence alone is not treated as causation in this packet.

1.1 Key Findings

- Source score 84 based on: radar/primary-return language, negative official correlation, high-altitude report, maneuvering/motion anomaly, UAP/UFO language.
- Report time used: 2024-01-21T13:18:00+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 N137FE B763 a095b4 at 17.9 km, azimuth 182.4 deg, elevation 30.7 deg, 5.26 min from report.
- Non-causal context / rejection screens: very dense orbital-object sky background; context only, not causation.
- Objects above horizon: 265; at/above 10 deg: 119.
- Top compact same-launch/designator group: 3 objects from 2021-05-09.
- 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

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
237UAP00343	13:18 01/21/2024 Callsign: XLJ411 Origin: VNY	ZLA Operator: XLJ Operator Type: Commercial	text extract present	237UAP00343.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon from the 12 o'clock position while SE bound climbing to FL410, 10NM NW of PSP. The unknown phenomenon was a bright light turning and then stationary at times significantly higher than the aircraft. No evasive maneuvers required. The UAP was not observed on ATC facility radar system.
REPORT TIME USED	2024-01-21T13:18:00+00:00
OBSERVER COORDINATE USED	33.98769, -116.57204
OBSERVER SOURCE BASIS	aviation_offset:10NM NW of PSP (public text extract 237UAP00343)

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	5352	HISTORICAL ELEMENT ROWS	5329
ABOVE HORIZON AT REPORT MINUTE	265	AT/ABOVE 10 DEG	119
LARGEST SAME-SKY CLUSTER	105		

5.2 Same-Launch / Same-Designator Candidate Groups

#	LAUNCH DATE	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS	MEMBERS
1	2021-05-09	3	14.05-30.36 deg	10.71-18.64 deg	eastward, setting	STARLINK-2652, STARLINK-2640, STARLINK-2675

5.3 Primary Group Members

OBJECT	NORAD	LAUNCH	AZ	EL	RANGE KM	APPARENT MOTION	ELEMENT AGE H
STARLINK-2652	48451	2021-05-09	30.36	18.64	1349.49	eastward, setting	2.13
STARLINK-2640	48438	2021-05-09	16.78	18.54	1364.43	eastward, setting	5.3
STARLINK-2675	48470	2021-05-09	14.05	10.71	1770.58	eastward, setting	2.09

5.4 Bright-Sky Context: Top Starlink Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-30421	230.92	80.93	516.68	eastward, setting	2023-10-21
STARLINK-30182	51.13	80.29	568.56	eastward, setting	2023-07-20
STARLINK-30611	44.22	70.43	540.5	nearly fixed azimuth, setting	2023-10-21
STARLINK-1733	212.11	62.16	617.94	westward, setting	2020-10-06
STARLINK-1755	199.93	61.14	619.22	westward, setting	2020-10-06
STARLINK-4718	90.63	53.9	656.64	westward, setting	2022-09-11
STARLINK-2444	324.37	52.55	676.41	eastward, setting	2021-04-07
STARLINK-3936	233.33	50.14	686.4	westward, setting	2022-05-18
STARLINK-4000	187.0	49.58	691.79	westward, setting	2022-05-14
STARLINK-30310	45.85	48.6	726.34	eastward, setting	2023-09-01
STARLINK-4329	215.99	42.8	797.18	eastward, setting	2022-07-11
STARLINK-6032	358.42	42.62	793.64	eastward, setting	2023-07-16

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	105	1.02-358.45 deg	10.0-50.14 deg	eastward, rising, eastward, setting, nearly fixed azimuth, setting, westward, level, westward, rising, westward, setting

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
2	4	213.0-232.2 deg	12.32-16.46 deg	eastward, rising, westward, rising, westward, setting
3	3	187.0-212.11 deg	49.58-62.16 deg	westward, setting
4	2	44.22-51.13 deg	70.43-80.29 deg	eastward, setting, nearly fixed azimuth, setting
5	1	230.92-230.92 deg	80.93-80.93 deg	eastward, 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	33	SATCAT ROWS MATCHED	33
TOP OWNERS	US: 33		
OBJECT TYPES	PAYLOAD: 33		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
58107	STARLINK-30421	PAYLOAD	US	2023-10-21	n/a
57412	STARLINK-30182	PAYLOAD	US	2023-07-20	n/a
58108	STARLINK-30611	PAYLOAD	US	2023-10-21	n/a
46564	STARLINK-1733	PAYLOAD	US	2020-10-06	n/a
46591	STARLINK-1755	PAYLOAD	US	2020-10-06	2025-02-23
53773	STARLINK-4718	PAYLOAD	US	2022-09-11	n/a
48108	STARLINK-2444	PAYLOAD	US	2021-04-07	2024-06-24
52674	STARLINK-3936	PAYLOAD	US	2022-05-18	n/a
52605	STARLINK-4000	PAYLOAD	US	2022-05-14	n/a
57733	STARLINK-30310	PAYLOAD	US	2023-09-01	n/a
53087	STARLINK-4329	PAYLOAD	US	2022-07-11	2025-09-01
57371	STARLINK-6032	PAYLOAD	US	2023-07-16	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.

HOURLY UTC	2024012113
CLOUD AMOUNT	100.0%
PRECIPITATION	4.73 mm/hr
10 M WIND	2.08 m/s
TEMPERATURE	6.24 C
RELATIVE HUMIDITY	99.66%
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	101.75	-18.92	-26.78
Moon	317.05	-15.76	-11.43
Venus	122.89	6.97	-3.97
Mars	114.70	-5.66	1.36
Jupiter	345.35	-42.22	-2.42
Saturn	72.28	-42.56	0.98

- Sun elevation was -18.9 deg, so this was a dark-sky/nighttime sighting.
- Moon was below horizon at elevation -15.8 deg.
- Planets above horizon: Venus (7.0 deg).
- NASA POWER cloud amount for the hour was 100.0%, with precipitation 4.73 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 1410.0 MiB; planes-readsb-prod-0 1405.0 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 2024-01-21, then filter +/-60 min and 250 nmi around 33.9877,-116.5720.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00343 at 2024-01-21T13:18:00+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/2024/021/13/
GOES GLM LIGHTNING PREFIX	https://noaa-goes18.s3.amazonaws.com/GLM-L2-LCFA/2024/021/13/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KPSP	Palm Springs International Airport	18.60	33.83, -116.51
KNXP	Twentynine Palms Strategic Expeditionary Landing Field	51.00	34.30, -116.16
KTRM	Jacqueline Cochran Regional Airport	55.30	33.63, -116.16
KSBD	San Bernardino International Airport	62.40	34.10, -117.24

STATION	NAME	DISTANCE KM	COORDINATE
KRIV	March Air Reserve Base	64.50	33.88, -117.26

- KPSP: [IEM ASOS/METAR daily CSV query](#)
- KNPX: [IEM ASOS/METAR daily CSV query](#)
- KTRM: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072293	SAN DIEGO/MIRAMAR; NAS; CA.	138.00	32.83, -117.12
USM00072381	EDWARDS AFB; CA.	159.70	34.92, -117.90
USM00074612	CHINA LAKE; NAF; CA.	214.10	35.68, -117.68
USM00072391	POINT MUGU/NAS	234.90	34.12, -119.12
USM00074004	YUMA PROVING GROUNDS AZ	238.90	32.84, -114.40

5.15 ASOS/METAR Surface Weather Observations

surface visibility ranged 8-10 statute miles; precipitation was reported in at least one observation; 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
KPSP	18.60	2024-01-21T12:53:00 +00:00	10.00	FEW03600, BKN09500, M, M	240.00 / 4.00	KPSP 211253Z AUTO 24004KT 10SM FEW036 BKN095 12/11 A2986 RMK AO2 SLP111 T01220106
KNXP	51.00	2024-01-21T12:56:00 +00:00	10.00	FEW03600, SCT06000, BKN07500, M	240.00 / 8.00	KNXP 211256Z AUTO 24008KT 10SM FEW036 SCT060 BKN075 16/08 A2991 RMK AO2 SLP104 T01560083
KTRM	55.30	2024-01-21T12:52:00 +00:00	9.00	FEW12000, M, M, M	360.00 / 4.00	KTRM 211252Z AUTO 36004KT 9SM FEW120 12/11 A2985 RMK AO2 SLP107 T01170106

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 212.9 deg at 17.73 m/s; a passive balloon could drift about 127.6 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
USM00072293	SAN DIEGO/ MIRAMAR; NAS; CA.	138.00	2024-01-21T12:00 :00+00:00	212.90	17.73	127.60	36.00 at 21947.00 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/2024/021/13/OR_ABI-L2-CMIPF-M6C01_G18_s20240211300225_e20240211309533_c20240211309588.nc](#)
- [ABI-L2-CMIPF/2024/021/13/OR_ABI-L2-CMIPF-M6C01_G18_s20240211310225_e20240211319533_c20240211320003.nc](#)
- [ABI-L2-CMIPF/2024/021/13/OR_ABI-L2-CMIPF-M6C01_G18_s20240211320225_e20240211329533_c20240211329596.nc](#)
- [ABI-L2-CMIPF/2024/021/13/OR_ABI-L2-CMIPF-M6C01_G18_s20240211330225_e20240211339533_c20240211339590.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2024/021/13/OR_GLM-L2-LCFA_G18_s20240211300000_e20240211300200_c20240211300219.nc](#)
- [GLM-L2-LCFA/2024/021/13/OR_GLM-L2-LCFA_G18_s20240211300200_e20240211300400_c20240211300419.nc](#)
- [GLM-L2-LCFA/2024/021/13/OR_GLM-L2-LCFA_G18_s20240211300400_e20240211301000_c20240211301010.nc](#)
- [GLM-L2-LCFA/2024/021/13/OR_GLM-L2-LCFA_G18_s20240211301000_e20240211301200_c20240211301222.nc](#)

5.18 ADSB.lol Historical Aircraft Track Extraction

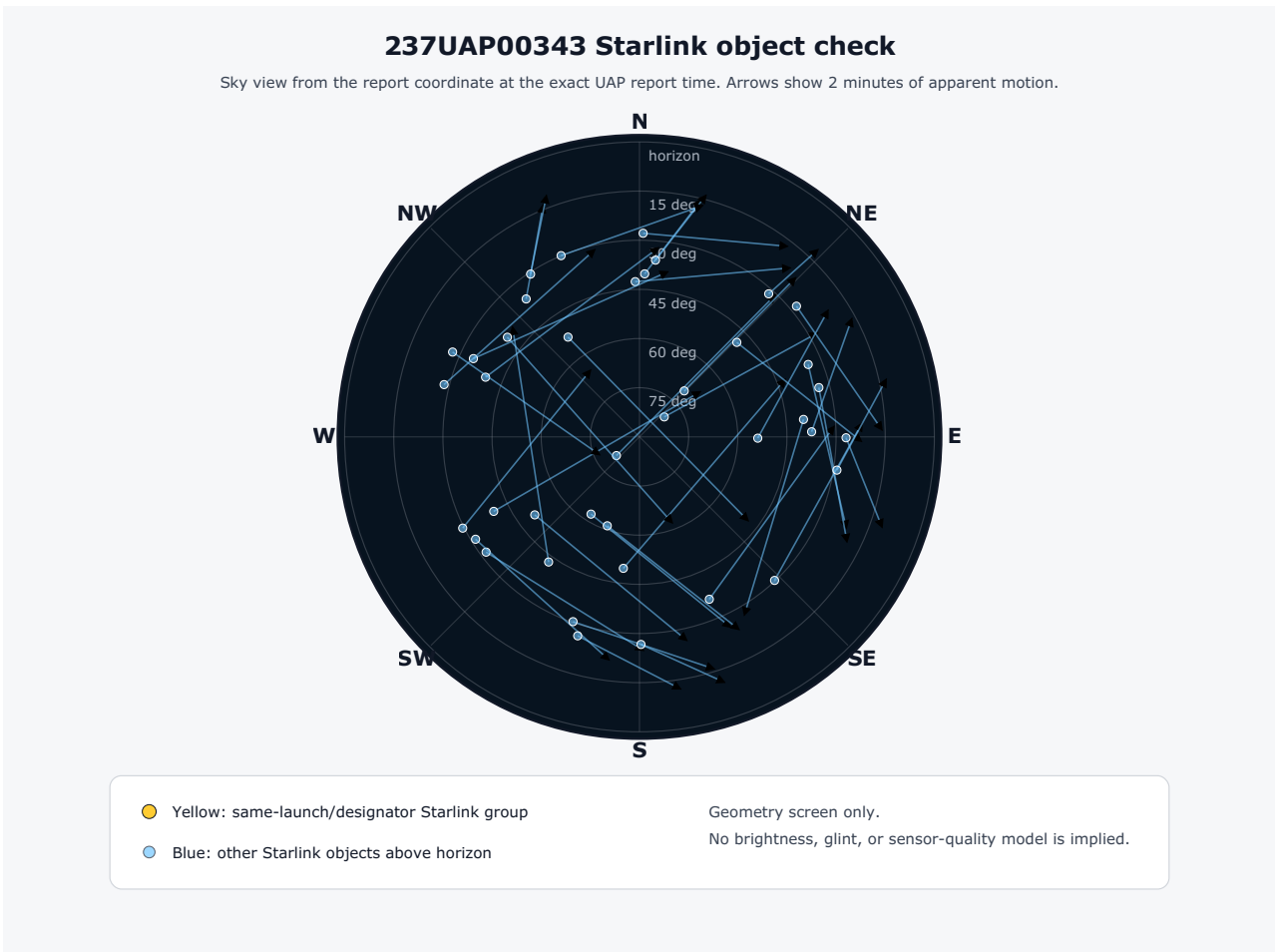
This layer uses the downloaded ADSB.lol daily history archive to test actual aircraft tracks near the report coordinate and minute. It is not treated as a primary-radar substitute; it is a transponder/receiver-derived aircraft screen.

ARCHIVE WINDOW	2024-01-21T12:03:00+00:00 to 2024-01-21T14:33:00+00:00	RADIUS	300.00 nmi
TRACE FILES SCANNED	38876	TRACKS RETAINED	381
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	7	PLAUSIBLE CANDIDATES	34
REPORTING-AIRCRAFT TRACKS EXCLUDED	1	WEAK CANDIDATES	36

5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
N137FE B763 a095b4	strong aircraft candidate	84.56	17.60	0.04	28000	182.40	30.70
N34137 B752 a3c3e6	strong aircraft candidate	69.89	15.50	0.10	37000	267.90	16.22
N839SY B738 ab7b70	strong aircraft candidate	68.12	9.70	0.04	30000	69.10	12.49
N170FE B763 a119af	strong aircraft candidate	64.02	27.30	0.02	8325	187.70	14.81
N953WN B737 ad41cd	strong aircraft candidate	62.61	78.50	0.02	29250	312.00	8.00
N508AS B738 a657b9	strong aircraft candidate	61.37	45.20	0.05	15050	247.10	5.24
N37474 B739 a44611	strong aircraft candidate	58.28	78.50	0.02	21625	311.90	6.50
N411AJ LJ45 a4d7e0	reporting aircraft track; excluded from support counts	97.95	2.60	0.15	41000	359.80	78.46

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	2024-01-21T13:18:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	33.98769, -116.57204	Directly used as observer point for azimuth/elevation/range computation.
COUNT / PATTERN	two-object/light language present	Primary same-launch group contains 3 propagated objects in a compact sky sector.
MOTION LANGUAGE	turning, stationary, climbing	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	237UAP00343 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N137FE B763 a095b4 at 17.9 km, azimuth 182.4 deg, elevation 30.7 deg, 5.26 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

237UAP00343

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON		
Date: 13:18 01/21/2024	Callsign: XLJ411	Origin: VNY
Status: Closed	Aircraft: LJ40	Destination: TUS
POD: DEN	Tail Number:	New Destination:
Reporting Facility: ZLA	Operator: XLJ	Operator Type: Commercial
	Paged: YES	MOR Init: YES
		MOR ID: ZLA-M-2024/01/21-0001

REMARKS

Aircraft reported an unidentified aerial phenomenon from the 12 o'clock position while SE bound climbing to FL410, 10NM NW of PSP. The unknown phenomenon was a bright light turning and then stationary at times significantly higher than the aircraft. No evasive maneuvers required. 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": "2024-01-21T13:18:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon from the 12 o'clock position while SE bound climbing to FL410, 10NM NW of PSP. The unknown phenomenon was a bright light turning and then stationary at times significantly higher than the aircraft. No evasive maneuvers required. The UAP was not observed on ATC facility radar system.",
  "historical_starlink_element_rows": 5329,
  "observer": {
    "lat": 33.98768920429411,
    "lon": -116.57203802079164,
    "source": "aviation_offset:10NM NW of PSP (public text extract 237UAP00343)"
  },
  "case_id": "237UAP00343",
  "starlink_above_horizon_at_report_time": 265,
  "starlink_catalog_ids_considered": 5352,
  "largest_same-sky_cluster_count": 105,
  "starlink_at_or_above_10_deg": 119,
  "same_launch_sky_groups": [
    {
      "azimuth_range_deg": [
        14.05,
        30.36
      ],
      "count": 3,
      "elevation_range_deg": [
        10.71,
        18.64
      ],
      "ground_track_labels": [
        "ESE",
        "SE"
      ],
      "launch_date": "2021-05-09",
      "members": [
        {
          "azimuth_deg": 30.36,
          "azimuth_plus_2m_deg": 65.53,
          "azimuth_plus_5m_deg": 92.79,
          "element_age_hours": 2.13,
          "element_epoch": "2024-01-21T11:10:11.830080+00:00",
          "elevation_deg": 18.64,
          "elevation_plus_2m_deg": 14.17,
          "elevation_plus_5m_deg": 2.61,
          "epoch_altitude_km": 553.38,
          "ground_track_bearing_deg": 127.08,
          "ground_track_label": "SE",
          "launch_date": "2021-05-09",
          "name": "STARLINK-2652",
          "norad_id": "48451",
          "range_km": 1349.49,
          "sky_motion_label": "eastward, setting",
          "subpoint_lat": 42.9806,
          "subpoint_lon": -109.2573
        },
        {
          "azimuth_deg": 16.78,
          "azimuth_plus_2m_deg": 55.38,
          "azimuth_plus_5m_deg": 89.48,
          "element_age_hours": 5.3,
          "element_epoch": "2024-01-21T08:00:01.999872+00:00",
          "elevation_deg": 18.54,
          "elevation_plus_2m_deg": 17.43,
          "elevation_plus_5m_deg": 5.47,
          "epoch_altitude_km": 558.24,
          "ground_track_bearing_deg": 125.22,
          "ground_track_label": "SE",
          "launch_date": "2021-05-09",
          "name": "STARLINK-2640",
          "norad_id": "48438",
          "range_km": 1364.43,
          "sky_motion_label": "eastward, setting",
          "subpoint_lat": 44.2369,
          "subpoint_lon": -112.2669
        },
        {
          "azimuth_deg": 14.05,
          "azimuth_plus_2m_deg": 42.66,
          "azimuth_plus_5m_deg": 73.27,
          "element_age_hours": 2.09,
          "element_epoch": "2024-01-21T11:12:48.279744+00:00",
          "elevation_deg": 10.71,
```

```

        "elevation_plus_2m_deg": 9.97,
        "elevation_plus_5m_deg": 2.31,
        "epoch_altitude_km": 553.3,
        "ground_track_bearing_deg": 118.0,
        "ground_track_label": "ESE",
        "launch_date": "2021-05-09",
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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: 237UAP00343
TIME AND OBSERVER COORDINATE	extracted	2024-01-21T13:18:00+00:00 at 33.98769, -116.57204
ORBITAL OBJECT PROPAGATION	screened	Starlink
SPACE-TRACK SATCAT METADATA	screened	33 NORAD IDs checked; 33 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	38876 trace files scanned; 381 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

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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. *237UAP00343.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-615/493468575/237UAP00343.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>
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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>
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22. Celestrak. *Spacetrack Report No. 3: Models for propagation of NORAD element sets*. <https://celestrak.org/NORAD/documentation/spacetrk.pdf>
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