

CASE FILE 12 / 237UAP00347

237UAP00347

Radar/correlation-focused public UAP report; score 70

INSUFFICIENT / LOW ANOMALY VALUE

REPORT NO.	UAP-OM-12-237UAP00347	DISPOSITION	INSUFFICIENT / LOW ANOMALY VALUE
PRIMARY CASE	237UAP00347	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2024-01-27T13:02:00+00:00	OBSERVER	37.24321, -131.80459
SOURCE CASE IDS	237UAP00347		

Abstract

This case file evaluates a reported UAP sighting against historical Starlink orbital elements. The primary external-object candidate is a 9-object same-launch group from 2024-01-07, spanning azimuth 22.95-58.51 deg and elevation 10.73-25.76 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

237UAP00347 has too little discriminating evidence for a named identification. It is not treated as evidence of exotic activity; it is classified as insufficient/low-value until better sensor, aircraft, or weather data is available.

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: 2024-01-27T13:02:00+00:00.
- External object layer used: Starlink.
- Disposition standard: INSUFFICIENT requires case-specific causal fit. Satellite density above the horizon is context only and cannot by itself resolve the report.
- Non-causal context / rejection screens: substantial orbital-object sky background; context only, not causation.
- Objects above horizon: 276; at/above 10 deg: 128.
- Top compact same-launch/designator group: 9 objects from 2024-01-07.
- No explicit Starlink/balloon wording was found in the source excerpt used for ranking.

1.2 Bottom Line

INSUFFICIENT / LOW ANOMALY VALUE: The report does not contain enough discriminating evidence for a named identification. It is not treated as evidence of exotic activity; it is a low-value insufficient case unless stronger sensor data appears.

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
237UAP00347	13:02 01/27/2024 Callsign: EVA008 Origin: RCTP	ZOA Operator: EVA Operator Type: Commercial	text extract present	237UAP00347.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon off the 12 o'clock while E bound at FL370, 450 NM W of SFO. The unknown phenomenon appeared to be dogfighting at approximately FL500. The UAP was not observed on ATC facility radar system.
REPORT TIME USED	2024-01-27T13:02:00+00:00
OBSERVER COORDINATE USED	37.24321, -131.80459
OBSERVER SOURCE BASIS	aviation_offset:450 NM W of SFO (public text extract 237UAP00347)

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	5374	HISTORICAL ELEMENT ROWS	5352
ABOVE HORIZON AT REPORT MINUTE	276	AT/ABOVE 10 DEG	128
LARGEST SAME-SKY CLUSTER	59		

5.2 Same-Launch / Same-Designator Candidate Groups

#	LAUNCH DATE	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS	MEMBERS
1	2024-01-07	9	22.95-58.51 deg	10.73-25.76 deg	eastward, setting	STARLINK-31155, STARLINK-31115, STARLINK-31204, STARLINK-31180, STARLINK-31164, STARLINK-31152, STARLINK-31157, STARLINK-31076

5.3 Primary Group Members

OBJECT	NORAD	LAUNCH	AZ	EL	RANGE KM	APPARENT MOTION	ELEMENT AGE H
STARLINK-31155	58728	2024-01-07	22.95	25.76	848.49	eastward, setting	0.97
STARLINK-31115	58729	2024-01-07	29.34	24.11	889.09	eastward, setting	0.97
STARLINK-31204	58731	2024-01-07	39.88	20.48	993.89	eastward, setting	0.97
STARLINK-31180	58732	2024-01-07	44.21	18.63	1056.87	eastward, setting	0.97
STARLINK-31164	58733	2024-01-07	47.9	16.87	1123.82	eastward, setting	0.97
STARLINK-31152	58734	2024-01-07	51.03	15.24	1193.18	eastward, setting	0.97
STARLINK-31157	58735	2024-01-07	53.91	13.61	1269.82	eastward, setting	0.97
STARLINK-31076	58736	2024-01-07	56.36	12.13	1347.1	eastward, setting	0.97
STARLINK-31108	58738	2024-01-07	58.51	10.73	1426.68	eastward, setting	0.97

5.4 Bright-Sky Context: Top Starlink Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-3295	344.08	78.12	552.98	eastward, setting	2022-01-06
STARLINK-5350	161.03	65.81	610.19	westward, setting	2023-05-04
STARLINK-6145	28.26	61.44	632.39	eastward, setting	2023-05-04
STARLINK-4019	324.72	59.25	622.81	eastward, setting	2022-05-14
STARLINK-30172	325.34	54.37	677.88	eastward, setting	2023-07-20
STARLINK-6137	70.99	47.85	734.37	westward, setting	2023-06-23
STARLINK-2563	128.74	46.63	730.56	westward, setting	2021-05-04
STARLINK-2466	258.58	45.94	737.93	westward, setting	2021-04-07
STARLINK-4797	230.41	44.91	738.71	eastward, rising	2022-09-19
STARLINK-4152	162.75	44.14	746.75	westward, setting	2022-07-17

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-5136	278.41	42.99	788.83	westward, rising	2023-05-04
STARLINK-30103	8.58	42.04	801.91	eastward, setting	2023-04-19

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	59	3.72-359.03 deg	10.06-42.04 deg	eastward, rising, eastward, setting, westward, level, westward, setting
2	33	181.11-300.36 deg	10.13-45.94 deg	eastward, rising, nearly fixed azimuth, rising, westward, rising, westward, setting
3	12	304.65-317.99 deg	10.22-39.78 deg	eastward, rising, eastward, setting, westward, rising
4	10	118.13-144.26 deg	12.83-46.63 deg	eastward, setting, westward, rising, westward, setting
5	5	163.48-172.01 deg	10.46-25.57 deg	westward, 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.

PACKET SATCAT SUBSET ROWS	5370	FETCHED	2026-05-19T01:19:50+00:00
THIS CASE NORAD IDS CHECKED	39	SATCAT ROWS MATCHED	39
TOP OWNERS	US: 39		
OBJECT TYPES	PAYLOAD: 39		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
50840	STARLINK-3295	PAYLOAD	US	2022-01-06	n/a
56419	STARLINK-5350	PAYLOAD	US	2023-05-04	n/a
56389	STARLINK-6145	PAYLOAD	US	2023-05-04	n/a
52598	STARLINK-4019	PAYLOAD	US	2022-05-14	n/a
57410	STARLINK-30172	PAYLOAD	US	2023-07-20	n/a
57156	STARLINK-6137	PAYLOAD	US	2023-06-23	n/a
48410	STARLINK-2563	PAYLOAD	US	2021-05-04	n/a
48125	STARLINK-2466	PAYLOAD	US	2021-04-07	n/a
53852	STARLINK-4797	PAYLOAD	US	2022-09-19	n/a
53136	STARLINK-4152	PAYLOAD	US	2022-07-17	n/a
56414	STARLINK-5136	PAYLOAD	US	2023-05-04	n/a
56290	STARLINK-30103	PAYLOAD	US	2023-04-19	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.

HOUR UTC	2024012713
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CLOUD AMOUNT	100.0%
PRECIPITATION	1.82 mm/hr
10 M WIND	8.74 m/s
TEMPERATURE	15.8 C
RELATIVE HUMIDITY	96.2%
DONKI +/-1 DAY	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	87.95	-34.29	-26.78
Moon	249.66	48.80	-12.15
Venus	110.68	-10.05	-3.95
Mars	104.06	-20.45	1.35
Jupiter	330.07	-34.77	-2.38
Saturn	55.38	-51.18	0.99

- Sun elevation was -34.3 deg, so this was a dark-sky/nighttime sighting.
- Moon was above horizon at azimuth 249.7 deg / elevation 48.8 deg.
- No checked bright planets were above the horizon at the primary coordinate/time.
- NASA POWER cloud amount for the hour was 100.0%, with precipitation 1.82 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 1458.0 MiB; planes-readsb-prod-0 1453.0 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 2024-01-27, then filter +/-60 min and 250 nmi around 37.2432,-131.8046.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00347 at 2024-01-27T13:02:00+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/2024/027/13/

GOES GLM LIGHTNING PREFIX	https://noaa-goes18.s3.amazonaws.com/GLM-L2-LCFA/2024/027/13/
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5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KEKA	Murray Field	773.00	40.80, -124.11
KUKI	Ukiah Municipal Airport	780.20	39.13, -123.20
KACV	California Redwood Coast-Humboldt County Airport	782.70	40.98, -124.11
KSTS	Charles M. Schulz Sonoma County Airport	801.30	38.51, -122.81
KCEC	Jack Mc Namara Field Airport	821.60	41.78, -124.24

- KEKA: [IEM ASOS/METAR daily CSV query](#)
- KUKI: [IEM ASOS/METAR daily CSV query](#)
- KACV: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072493	OAKLAND/METROP. OAKLAND INT.;	846.70	37.74, -122.22
USM00072597	MEDFORD/MEDFORD-JACKSON COUNTY	951.30	42.38, -122.88
USM00072393	VANDENBERG AFB; CA. (72393-0)	1047.60	34.75, -120.57
USM00072489	RENO; NV.	1076.90	39.57, -119.80
USM00072694	SALEM/MCNARY; OR.	1125.70	44.91, -123.01

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
KEKA	773.00	2024-01-27T12:00:00 +00:00	10.00	M05741, M, M, M	140.00 / 8.00	METAR EKA 271200Z AUTO 14008KT 10SM 17/12 RMK AO2 SLP219 60001 70008 T01720122 IEM_GHCNH
KUKI	780.20	2024-01-27T12:56:00 +00:00	10.00	BKN11000, M, M, M	0.00 / 0.00	KUKI 271256Z AUTO 00000KT 10SM BKN110 11/09 A3030 RMK AO2 RAE00B18E29 SLP257 P0000 T01060089
KACV	782.70	2024-01-27T12:53:00 +00:00	10.00	BKN04100, BKN04800, OVC10000, M	190.00 / 11.00	KACV 271253Z AUTO 19011KT 10SM BKN041 BKN048 OVC100 17/11 A3019 RMK AO2 SLP227 T01670106

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 233.0 deg at 19.49 m/s; a passive balloon could drift about 140.4 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
USM00072493	OAKLAND/ METROP. OAKLAND INT.;	846.70	2024-01-27T12:00:00+00:00	233.00	19.49	140.40	35.70 at 1242.00 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/2024/027/13/OR_ABI-L2-CMIPF-M6C01_G18_s20240271300212_e20240271309520_c20240271309583.nc](#)
- [ABI-L2-CMIPF/2024/027/13/OR_ABI-L2-CMIPF-M6C01_G18_s20240271310212_e20240271319520_c20240271319597.nc](#)
- [ABI-L2-CMIPF/2024/027/13/OR_ABI-L2-CMIPF-M6C01_G18_s20240271320212_e20240271329520_c20240271329594.nc](#)
- [ABI-L2-CMIPF/2024/027/13/OR_ABI-L2-CMIPF-M6C01_G18_s20240271330212_e20240271339520_c20240271339590.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2024/027/13/OR_GLM-L2-LCFA_G18_s20240271300000_e20240271300200_c20240271300215.nc](#)
- [GLM-L2-LCFA/2024/027/13/OR_GLM-L2-LCFA_G18_s20240271300200_e20240271300400_c20240271300415.nc](#)
- [GLM-L2-LCFA/2024/027/13/OR_GLM-L2-LCFA_G18_s20240271300400_e20240271301000_c20240271301014.nc](#)
- [GLM-L2-LCFA/2024/027/13/OR_GLM-L2-LCFA_G18_s20240271301000_e20240271301200_c20240271301214.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	2024-01-27T11:47:00+00:00 to 2024-01-27T14:17:00+00:00	RADIUS	300.00 nmi
TRACE FILES SCANNED	43597	TRACKS RETAINED	6
SUPPORT STATUS	no specific aircraft candidate	BEST-CANDIDATE NOTE	ADS-B extraction does not support an aircraft explanation inside the selected window/radius.
STRONG CANDIDATES	0	PLAUSIBLE CANDIDATES	0
REPORTING-AIRCRAFT TRACKS EXCLUDED	0	WEAK CANDIDATES	0

5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
B-16713 B77W 8990dc	background	14.92	499.30	16.05	37000	87.00	-0.96
B-18722 B744 89911b	background	13.97	508.50	16.59	35000	87.90	-1.09
N2534U B77W a2659a	background	8.00	551.90	24.92	37000	104.80	-1.32

7. Analytic Comparison

CRITERION	REPORT EVIDENCE	ANALYTIC TREATMENT
TIME CONSTRAINT	2024-01-27T13:02:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	37.24321, -131.80459	Directly used as observer point for azimuth/elevation/range computation.
COUNT / PATTERN	two-object/light language present	Primary same-launch group contains 9 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	insufficient	237UAP00347 has too little discriminating evidence for a named identification. It is not treated as evidence of exotic activity; it is classified as insufficient/low-value until better sensor, aircraft, or weather data is available.

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.

Appendix A. Public Report Text Extracts

237UAP00347

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON

Date: 13:02 01/27/2024
Status: Closed
POD: DEN
Reporting Facility: ZOA

Callsign: EVA008
Aircraft: B777
Tail Number:
Operator: EVA

Origin: RCTP
Destination: SFO
New Destination:
Operator Type: Commercial
Paged: YES

REMARKS

Aircraft reported an unidentified aerial phenomenon off the 12 o'clock while E bound at FL370, 450 NM W of SFO. The unknown phenomenon appeared to be dogfighting at approximately FL500. 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": "2024-01-27T13:02:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon off the 12 o'clock while E bound at FL370, 450 NM W of SFO. The unknown phenomenon appeared to be dogfighting at approximately FL500. The UAP was not observed on ATC facility radar system.",
  "historical_starlink_element_rows": 5352,
  "observer": {
    "lat": 37.24320687207405,
    "lon": -131.8045851447289,
    "source": "aviation_offset:450 NM W of SFO (public text extract 237UAP00347)"
  },
  "case_id": "237UAP00347",
  "starlink_above_horizon_at_report_time": 276,
  "starlink_catalog_ids_considered": 5374,
  "largest_same-sky_cluster_count": 59,
  "starlink_at_or_above_10_deg": 128,
  "same_launch_sky_groups": [
    {
      "azimuth_range_deg": [
        22.95,
        58.51
      ],
      "count": 9,
      "elevation_range_deg": [
        10.73,
        25.76
      ],
      "ground_track_labels": [
        "E"
      ],
      "launch_date": "2024-01-07",
      "members": [
        {
          "azimuth_deg": 22.95,
          "azimuth_plus_2m_deg": 58.14,
          "azimuth_plus_5m_deg": 73.56,
          "element_age_hours": 0.97,
          "element_epoch": "2024-01-27T14:00:01.000224+00:00",
          "elevation_deg": 25.76,
          "elevation_plus_2m_deg": 11.14,
          "elevation_plus_5m_deg": -1.81,
          "epoch_altitude_km": 414.55,
          "ground_track_bearing_deg": 90.23,
          "ground_track_label": "E",
          "launch_date": "2024-01-07",
          "name": "STARLINK-31155",
          "norad_id": "58728",
          "range_km": 848.49,
          "sky_motion_label": "eastward, setting",
          "subpoint_lat": 43.1599,
          "subpoint_lon": -128.3607
        },
        {
          "azimuth_deg": 29.34,
          "azimuth_plus_2m_deg": 60.11,
          "azimuth_plus_5m_deg": 74.16,
          "element_age_hours": 0.97,
          "element_epoch": "2024-01-27T14:00:01.000224+00:00",
          "elevation_deg": 24.11,
          "elevation_plus_2m_deg": 9.81,
          "elevation_plus_5m_deg": -2.55,
          "epoch_altitude_km": 414.6,
          "ground_track_bearing_deg": 91.06,
          "ground_track_label": "E",
          "launch_date": "2024-01-07",
          "name": "STARLINK-31115",
          "norad_id": "58729",
          "range_km": 889.09,
          "sky_motion_label": "eastward, setting",
          "subpoint_lat": 43.1558,
          "subpoint_lon": -127.2066
        },
        {
          "azimuth_deg": 39.88,
          "azimuth_plus_2m_deg": 63.43,
          "azimuth_plus_5m_deg": 75.24,
          "element_age_hours": 0.97,
          "element_epoch": "2024-01-27T14:00:01.000224+00:00",
          "elevation_deg": 20.48,
          "elevation_plus_2m_deg": 7.39,
```

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    "elevation_plus_5m_deg": -3.96,
    "epoch_altitude_km": 414.46,
    "ground_track_bearing_deg": 92.72,
    "ground_track_label": "E",
    "launch_date": "2024-01-07",
    "name": "STARLINK-31204",
    "norad_id": "58731",
    "range_km": 993.89,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 43.1128,
    "subpoint_lon": -124.8981
  },
  {
    "azimuth_deg": 44.21,
    "azimuth_plus_2m_deg": 64.87,
    "azimuth_plus_5m_deg": 75.74,
    "element_age_hours": 0.97,
    "element_epoch": "2024-01-27T14:00:01.000224+00:00",
    "elevation_deg": 18.63,
    "elevation_plus_2m_deg": 6.26,
    "elevation_plus_5m_deg": -4.65,
    "epoch_altitude_km": 414.55,
    "ground_track_bearing_deg": 93.56,
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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: 237UAP00347
TIME AND OBSERVER COORDINATE	extracted	2024-01-27T13:02:00+00:00 at 37.24321, -131.80459
ORBITAL OBJECT PROPAGATION	screened	Starlink
SPACE-TRACK SATCAT METADATA	screened	39 NORAD IDs checked; 39 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	43597 trace files scanned; 6 tracks retained; no specific aircraft candidate
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	insufficient / low anomaly value	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. *237UAP00347.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-615/493468575/237UAP00347.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/>
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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/>
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15. OpenSky Network. *Historical data via Trino documentation*. <https://openskynetwork.github.io/opensky-api/trino.html>
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17. NASA Earthdata. *Common Metadata Repository search API documentation*. <https://cmr.earthdata.nasa.gov/search/site/docs/search/api.html>
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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/>