

CASE FILE 34 / 237UAP00129

237UAP00129

High-altitude public UAP report; score 60

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-34-237UAP00129	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00129	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2022-11-11T11:04:00+00:00	OBSERVER	39.28725, -116.44050
SOURCE CASE IDS	237UAP00129		

Abstract

This case file evaluates a reported UAP sighting against historical Starlink orbital elements. The primary external-object candidate is a 7-object same-launch group from 2022-10-20, spanning azimuth 7.4-353.85 deg and elevation 10.75-15.56 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

237UAP00129 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: compact same-launch/designator trajectory group of 7 objects. Dense satellite presence alone is not treated as causation in this packet.

1.1 Key Findings

- Source score 60 based on: multiple aircraft/facility witnesses, high-altitude report, maneuvering/motion anomaly, UAP/UFO language.
- Report time used: 2022-11-11T11:04:00+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: compact same-launch/designator trajectory group of 7 objects.
- Non-causal context / rejection screens: substantial orbital-object sky background; context only, not causation.
- Remaining hard features: hard maneuver language.
- Objects above horizon: 195; at/above 10 deg: 81.
- Top compact same-launch/designator group: 7 objects from 2022-10-20.
- 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
237UAP00129	11:04 11/11/2022 Callsign: UPS834 Origin: ONT	ZLC Operator: UPS Operator Type: Commercial	text extract present	237UAP00129.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported unidentified aerial phenomenon above while N bound at FL360, 74NM W of ELY. The unknown phenomenon was 2-3 white lights circling at approximately FL740. Additional aircraft reporting at same time from same location: FDX1879, B763, OAK-SLC, E bound at FL370.
REPORT TIME USED	2022-11-11T11:04:00+00:00
OBSERVER COORDINATE USED	39.28725, -116.44050
OBSERVER SOURCE BASIS	aviation_offset:74NM W of ELY (public text extract 237UAP00129)

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	3275	HISTORICAL ELEMENT ROWS	3275
ABOVE HORIZON AT REPORT MINUTE	195	AT/ABOVE 10 DEG	81
LARGEST SAME-SKY CLUSTER	55		

5.2 Same-Launch / Same-Designator Candidate Groups

#	LAUNCH DATE	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS	MEMBERS
1	2022-10-20	7	7.4-353.85 deg	10.75-15.56 deg	eastward, setting	STARLINK-5158, STARLINK-5176, STARLINK-5163, STARLINK-5195, STARLINK-5226, STARLINK-5173, STARLINK-5167

5.3 Primary Group Members

OBJECT	NORAD	LAUNCH	AZ	EL	RANGE KM	APPARENT MOTION	ELEMENT AGE H
STARLINK-5158	54055	2022-10-20	338.95	15.56	1129.78	eastward, setting	2.93
STARLINK-5176	54053	2022-10-20	327.29	15.31	1140.28	eastward, setting	2.93
STARLINK-5163	54054	2022-10-20	346.98	15.17	1146.27	eastward, setting	2.93
STARLINK-5195	54051	2022-10-20	320.14	14.69	1167.8	eastward, setting	2.93
STARLINK-5226	54056	2022-10-20	353.85	14.49	1177.16	eastward, setting	2.93
STARLINK-5173	54059	2022-10-20	7.4	12.12	1294.62	eastward, setting	2.93
STARLINK-5167	54058	2022-10-20	12.86	10.75	1370.71	eastward, setting	2.93

5.4 Bright-Sky Context: Top Starlink Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-2304	246.54	56.66	647.54	westward, setting	2021-03-14
STARLINK-1221	272.25	49.88	699.94	eastward, setting	2020-02-17
STARLINK-3271	212.82	47.47	713.4	westward, setting	2021-12-18
STARLINK-4637	292.56	45.88	730.48	westward, rising	2022-09-05
STARLINK-2674	344.21	42.85	775.64	eastward, setting	2021-05-04
STARLINK-2407	166.15	41.5	791.1	westward, setting	2021-03-11
STARLINK-4743	70.11	38.15	714.67	eastward, setting	2022-09-11
STARLINK-1132	307.63	36.85	861.47	westward, rising	2020-01-29
STARLINK-3503	245.29	36.53	852.37	eastward, rising	2022-03-03
STARLINK-4708	9.48	34.82	886.11	eastward, setting	2022-09-11
STARLINK-1987	102.47	34.17	906.32	westward, setting	2021-02-04
STARLINK-3167	58.93	33.56	909.0	eastward, setting	2022-02-03

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	55	0.45-357.62 deg	10.06-38.15 deg	eastward, rising, eastward, setting, westward, rising, westward, setting
2	10	95.94-159.5 deg	10.74-32.13 deg	eastward, setting, westward, rising, westward, setting
3	5	215.76-245.29 deg	14.75-36.53 deg	eastward, rising, westward, rising, westward, setting
4	2	181.89-182.28 deg	11.08-15.88 deg	westward, setting
5	1	246.54-246.54 deg	56.66-56.66 deg	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	37	SATCAT ROWS MATCHED	37
TOP OWNERS	US: 37		
OBJECT TYPES	PAYLOAD: 37		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
47864	STARLINK-2304	PAYLOAD	US	2021-03-14	2025-02-06
45227	STARLINK-1221	PAYLOAD	US	2020-02-17	n/a
50167	STARLINK-3271	PAYLOAD	US	2021-12-18	n/a
53742	STARLINK-4637	PAYLOAD	US	2022-09-05	n/a
48354	STARLINK-2674	PAYLOAD	US	2021-05-04	n/a
47822	STARLINK-2407	PAYLOAD	US	2021-03-11	n/a
53787	STARLINK-4743	PAYLOAD	US	2022-09-11	n/a
45044	STARLINK-1132	PAYLOAD	US	2020-01-29	n/a
51865	STARLINK-3503	PAYLOAD	US	2022-03-03	n/a
53776	STARLINK-4708	PAYLOAD	US	2022-09-11	2025-07-24
47583	STARLINK-1987	PAYLOAD	US	2021-02-04	2025-02-02
51460	STARLINK-3167	PAYLOAD	US	2022-02-03	2024-12-24

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	2022111111
CLOUD AMOUNT	32.8%
PRECIPITATION	0.0 mm/hr
10 M WIND	1.2 m/s
TEMPERATURE	-8.3 C
RELATIVE HUMIDITY	82.96%

DONKI +/-1 DAY	CME: unavailable; FLR: unavailable; GST: unavailable; HSS: unavailable; IPS: unavailable; MPC: unavailable; RBE: unavailable; SEP: unavailable; WSAEnliSimulations: unavailable
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5.10 Horizons Sky Geometry Context

OBJECT	AZ	EL	APP MAG
Sun	80.65	-38.95	-26.76
Moon	234.62	70.32	-11.79
Venus	77.70	-43.40	-3.91
Mars	227.00	69.82	-1.47
Jupiter	275.25	-9.14	-2.73
Saturn	290.33	-47.20	0.72

- Sun elevation was -39.0 deg, so this was a dark-sky/nighttime sighting.
- Moon was above horizon at azimuth 234.6 deg / elevation 70.3 deg.
- Planets above horizon: Mars (69.8 deg).
- NASA POWER cloud amount for the hour was 32.8%, with precipitation 0.0 mm/hr.

5.11 Free Source Availability and Remaining Work

LAYER	STATUS	CASE-SPECIFIC NOTE
ADSB.LOL HISTORICAL RELEASE LISTING	not yet exhausted	v2022-11-11-planes-readsb-prod-0, v2022-11-11-planes-readsb-prod-1, v2022-11-11-planes-readsb-staging-0, v2022-11-11-planes-readsb-mlatonly-0
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 no public ADSB.lol annual repo found for 2022-11-11, then filter +/-60 min and 250 nmi around 39.2873,-116.4405.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00129 at 2022-11-11T11:04:00+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/2022/315/11/
GOES GLM LIGHTNING PREFIX	https://noaa-goes18.s3.amazonaws.com/GLM-L2-LCFA/2022/315/11/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KELY	Ely Airport Yelland Field	137.60	39.30, -114.84

STATION	NAME	DISTANCE KM	COORDINATE
KTPH	Tonopah Airport	147.50	38.06, -117.09
KEKO	Elko Regional Airport	179.70	40.82, -115.79
KNFL	Fallon Naval Air Station	194.90	39.42, -118.70
KLOL	Derby Field	201.40	40.07, -118.57

- KELY: [IEM ASOS/METAR daily CSV query](#)
- KTPH: [IEM ASOS/METAR daily CSV query](#)
- KEKO: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072582	ELKO; NV.	184.70	40.86, -115.74
USM00072489	RENO; NV.	289.90	39.57, -119.80
USM00074003	DUGWAY PRVGR	315.40	40.17, -112.93
USM00072388	LAS VEGAS	376.90	36.05, -115.18
USM00074612	CHINA LAKE; NAF; CA.	415.50	35.68, -117.68

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
KELY	137.60	2022-11-11T10:53:00 +00:00	10.00	CLR, M, M, M	190.00 / 9.00	KELY 111053Z AUTO 19009KT 10SM CLR M13/M14 A3024 RMK AO2 SLP275 T11281144
KTPH	147.50	2022-11-11T10:56:00 +00:00	10.00	CLR, M, M, M	350.00 / 9.00	KTPH 111056Z AUTO 35009KT 10SM CLR M06/M10 A3022 RMK AO2 SLP246 T10561100
KEKO	179.70	2022-11-11T10:56:00 +00:00	10.00	CLR, M, M, M	0.00 / 0.00	KEKO 111056Z AUTO 00000KT 10SM CLR M17/M18 A3029 RMK AO2 SLP318 T11721183

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 137.7 deg at 21.9 m/s; a passive balloon could drift about 157.6 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
USM00072582	ELKO; NV.	184.70	2022-11-11T12:00 :00+00:00	137.70	21.90	157.60	35.00 at 10480.00 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.

7. Analytic Comparison

CRITERION	REPORT EVIDENCE	ANALYTIC TREATMENT
TIME CONSTRAINT	2022-11-11T11:04:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	39.28725, -116.44050	Directly used as observer point for azimuth/elevation/range computation.
COUNT / PATTERN	three-object/light language present	Primary same-launch group contains 7 propagated objects in a compact sky sector.
MOTION LANGUAGE	circling	Apparent motion labels in the object table provide a plausible but not definitive comparison.
RADAR / OFFICIAL CHECK	not specified	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	237UAP00129 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: compact same-launch/designator trajectory group of 7 objects. 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

237UAP00129

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON
Date: 11:04 11/11/2022
Status: Closed
POD: DEN
Reporting Facility: ZLC

Callsign: UPS834
Aircraft: B752
Tail Number:
Operator: UPS
Paged: YES

Origin: ONT
Destination: BOI
New Destination:
Operator Type: Commercial
MOR Init: YES
MOR ID: ZLC-M-2022/11/11-0001

REMARKS

Aircraft reported unidentified aerial phenomenon above while N bound at FL360, 74NM W of ELY. The unknown phenomenon was 2-3 white lights circling at approximately FL740. Additional aircraft reporting at same time from same location: FDX1879, B763, OAK-SLC, E bound at FL370.

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": "2022-11-11T11:04:00+00:00",
  "source_excerpt": "Aircraft reported unidentified aerial phenomenon above while N bound at FL360, 74NM W of ELY. The unknown phenomenon was 2-3 white lights circling at approximately FL740. Additional aircraft reporting at same time from same location: FDX1879, B763, OAK-SLC, E bound at FL370.",
  "historical_starlink_element_rows": 3275,
  "observer": {
    "lat": 39.28725134369427,
    "lon": -116.4405007436921,
    "source": "aviation_offset:74NM W of ELY (public text extract 237UAP00129)"
  },
  "case_id": "237UAP00129",
  "starlink_above_horizon_at_report_time": 195,
  "starlink_catalog_ids_considered": 3275,
  "largest_same-sky_cluster_count": 55,
  "starlink_at_or_above_10_deg": 81,
  "same_launch_sky_groups": [
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        7.4,
        353.85
      ],
      "count": 7,
      "elevation_range_deg": [
        10.75,
        15.56
      ],
      "ground_track_labels": [
        "ENE"
      ],
      "launch_date": "2022-10-20",
      "members": [
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          "azimuth_plus_2m_deg": 16.85,
          "azimuth_plus_5m_deg": 41.25,
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          "element_epoch": "2022-11-11T14:00:01.000224+00:00",
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          "elevation_plus_2m_deg": 9.4,
          "elevation_plus_5m_deg": -1.59,
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          "norad_id": "54055",
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          "subpoint_lon": -121.3681
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          "azimuth_plus_2m_deg": 9.33,
          "azimuth_plus_5m_deg": 38.66,
          "element_age_hours": 2.93,
          "element_epoch": "2022-11-11T14:00:01.000224+00:00",
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          "elevation_plus_2m_deg": 11.42,
          "elevation_plus_5m_deg": -0.0,
          "epoch_altitude_km": 393.98,
          "ground_track_bearing_deg": 60.03,
          "ground_track_label": "ENE",
          "launch_date": "2022-10-20",
          "name": "STARLINK-5176",
          "norad_id": "54053",
          "range_km": 1140.28,
          "sky_motion_label": "eastward, setting",
          "subpoint_lat": 46.9518,
          "subpoint_lon": -123.819
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          "azimuth_plus_2m_deg": 21.3,
          "azimuth_plus_5m_deg": 42.83,
          "element_age_hours": 2.93,
          "element_epoch": "2022-11-11T14:00:01.000224+00:00",
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          "elevation_plus_2m_deg": 7.96,
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```

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    "launch_date": "2022-10-20",
    "name": "STARLINK-5163",
    "norad_id": "54054",
    "range_km": 1146.27,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 48.4283,
    "subpoint_lon": -119.617
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  {
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    "azimuth_plus_2m_deg": 3.77,
    "azimuth_plus_5m_deg": 36.78,
    "element_age_hours": 2.93,
    "element_epoch": "2022-11-11T14:00:01.000224+00:00",
    "elevation_deg": 14.69,
    "elevation_plus_2m_deg": 12.62,
    "elevation_plus_5m_deg": 1.06,
    "epoch_altitude_km": 394.04,
    "ground_track_bearing_deg": 58.86,
    "ground_track_label": "ENE",
    "launch_date": "2022-10-20",
    "name": "STARLINK-5195",
    "norad_id": "54051",
    "range_km": 1167.8,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 46.3571,
    "subpoint_lon": -125.34
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    "azimuth_plus_2m_deg": 24.8,
    "azimuth_plus_5m_deg": 44.12,
    "element_age_hours": 2.93,
    "element_epoch": "2022-11-11T14:00:01.000224+00:00",
    "elevation_deg": 14.49,
    "elevation_plus_2m_deg": 6.69,
    "elevation_plus_5m_deg": -3.58,
    "epoch_altitude_km": 393.74,
    "ground_track_bearing_deg": 64.58,
    "ground_track_label": "ENE",
    "launch_date": "2022-10-20",
    "name": "STARLINK-5226",
    "norad_id": "54056",
    "range_km": 1177.16,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 48.9317,
    "subpoint_lon": -118.0099
  },
  {
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    "azimuth_plus_2m_deg": 31.27,
    "azimuth_plus_5m_deg": 46.65,
    "element_age_hours": 2.93,
    "element_epoch": "2022-11-11T14:00:01.000224+00:00",
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    "elevation_plus_2m_deg": 3.97,
    "elevation_plus_5m_deg": -5.56,
    "epoch_altitude_km": 393.69,
    "ground_track_bearing_deg": 67.55,
    "ground_track_label": "ENE",
    "launch_date": "2022-10-20",
    "name": "STARLINK-5173",
    "norad_id": "54059",
    "range_km": 1294.62,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 49.9742,
    "subpoint_lon": -114.2986
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  {
    "azimuth_deg": 12.86,
    "azimuth_plus_2m_deg": 33.83,
    "azimuth_plus_5m_deg": 47.71,
    "element_age_hours": 2.93,
    "element_epoch": "2022-11-11T14:00:01.000224+00:00",
    "elevation_deg": 10.75,
    "elevation_plus_2m_deg": 2.73,
    "elevation_plus_5m_deg": -6.47,
    "epoch_altitude_km": 393.3,
    "ground_track_bearing_deg": 69.03,
    "ground_track_label": "ENE",
    "launch_date": "2022-10-20",
    "name": "STARLINK-5167",
    "norad_id": "54058",
    "range_km": 1370.71,

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        "sky_motion_label": "eastward, setting",
        "subpoint_lat": 50.4315,
        "subpoint_lon": -112.4619
    }
],
    "motion_labels": [
        "eastward, setting"
    ]
}
],
"top_starlinks": [
    {
        "azimuth_deg": 246.54,
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        "elevation_deg": 56.66,
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        "elevation_plus_5m_deg": 6.57,
        "epoch_altitude_km": 553.09,
        "ground_track_bearing_deg": 132.83,
        "ground_track_label": "SE",
        "launch_date": "2021-03-14",
        "name": "STARLINK-2304",
        "norad_id": "47864",
        "range_km": 647.54,
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        "subpoint_lon": -119.8677
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        "azimuth_plus_2m_deg": 23.67,
        "azimuth_plus_5m_deg": 44.21,
        "element_age_hours": 1.36,
        "element_epoch": "2022-11-11T12:25:41.613600+00:00",
        "elevation_deg": 49.88,
        "elevation_plus_2m_deg": 41.05,
        "elevation_plus_5m_deg": 9.38,
        "epoch_altitude_km": 553.42,
        "ground_track_bearing_deg": 49.12,
        "ground_track_label": "NE",
        "launch_date": "2020-02-17",
        "name": "STARLINK-1221",
        "norad_id": "45227",
        "range_km": 699.94,
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        "subpoint_lon": -121.2587
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        "azimuth_plus_2m_deg": 161.74,
        "azimuth_plus_5m_deg": 148.0,
        "element_age_hours": 2.18,
        "element_epoch": "2022-11-11T08:53:22.814016+00:00",
        "elevation_deg": 47.47,
        "elevation_plus_2m_deg": 22.65,
        "elevation_plus_5m_deg": 3.57,
        "epoch_altitude_km": 545.33,
        "ground_track_bearing_deg": 135.05,
        "ground_track_label": "SE",
        "launch_date": "2021-12-18",
        "name": "STARLINK-3271",
        "norad_id": "50167",
        "range_km": 713.4,
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        "subpoint_lon": -119.1101
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    {
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        "azimuth_plus_2m_deg": 157.62,
        "azimuth_plus_5m_deg": 139.77,
        "element_age_hours": 2.93,
        "element_epoch": "2022-11-11T14:00:01.000224+00:00",
        "elevation_deg": 45.88,
        "elevation_plus_2m_deg": 50.3,
        "elevation_plus_5m_deg": 10.84,
        "epoch_altitude_km": 545.95,
        "ground_track_bearing_deg": 130.18,
        "ground_track_label": "SE",
        "launch_date": "2022-09-05",
        "name": "STARLINK-4637",
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        "range_km": 730.48,
        "sky_motion_label": "westward, rising",
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"subpoint_lat": 40.7957,  
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,  
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  "azimuth_plus_2m_deg": 29.04,  
  "azimuth_plus_5m_deg": 44.16,  
  "element_age_hours": 1
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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: 237UAP00129
TIME AND OBSERVER COORDINATE	extracted	2022-11-11T11:04:00+00:00 at 39.28725, -116.44050
ORBITAL OBJECT PROPAGATION	screened	Starlink
SPACE-TRACK SATCAT METADATA	screened	37 NORAD IDs checked; 37 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	not exhausted	ADS-B historical release pattern is recorded separately; actual aircraft exhaustion requires targeted trace extraction
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. *237UAP00129.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-615/493468575/237UAP00129.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/>