

CASE FILE 88 / 237UAP00286

237UAP00286

Time/location anchored public UAP report; score 40

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-88-237UAP00286	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00286	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2023-08-11T06:39:00+00:00	OBSERVER	35.58486, -79.28659
SOURCE CASE IDS	237UAP00286		

Abstract

This case file evaluates a reported UAP sighting against the available orbital-object layer. No compact same-launch group fully identifies the file by itself. The final disposition is assigned under a normal-object favored standard, where ordinary aerospace/orbital explanations are preferred when they reasonably fit the report.

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

237UAP00286 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: historical Starlink object traffic at the report spacetime. Dense satellite presence alone is not treated as causation in this packet.

1.1 Key Findings

- Source score 40 based on: NORAD/AMOC/EADS/CONR check, maneuvering/motion anomaly, UAP/UFO language.
- Report time used: 2023-08-11T06:39:00+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.
- Non-causal context / rejection screens: source language itself invokes satellite/space/launch context; substantial orbital-object sky background; context only, not causation.
- Remaining hard features: hard maneuver language.
- Objects above horizon: 213; at/above 10 deg: 90.
- No compact same-launch/designator group survived the report threshold.
- 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
237UAP00286	06:39 08/11/2023 Callsign: TAI580 Origin: MSLP	ZDC Operator: TAI Operator Type: Commercial	text extract present	237UAP00286.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon on the RDU235030 while N bound at 31,000 feet. The unknown phenomenon was flashing white lights rapidly climbing and descending. No description or distance reported. PIC said they see this object every time they pass this area of the US. The PIC did not believe it was LEO Satellites. EADS/NORAD/NCRCC notified.
REPORT TIME USED	2023-08-11T06:39:00+00:00
OBSERVER COORDINATE USED	35.58486, -79.28659
OBSERVER SOURCE BASIS	aviation_radial:RDU235030 (public text extract 237UAP00286)

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	4597	HISTORICAL ELEMENT ROWS	4354
ABOVE HORIZON AT REPORT MINUTE	213	AT/ABOVE 10 DEG	90
LARGEST SAME-SKY CLUSTER	34		

No compact same-launch/designator group survived the report threshold. In this condition, satellite density remains context only and cannot by itself resolve a report with hard features.

5.2 Same-Launch / Same-Designator Candidate Groups

#	LAUNCH DATE	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS	MEMBERS
No same-launch group identified.						

5.3 Primary Group Members

OBJECT	NORAD	LAUNCH	AZ	EL	RANGE KM	APPARENT MOTION	ELEMENT AGE H
No members available.							

5.4 Bright-Sky Context: Top Starlink Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-2008	213.65	84.15	551.91	westward, setting	2021-02-04
STARLINK-5368	263.95	78.84	571.4	westward, setting	2022-12-28
STARLINK-4434	247.63	71.76	594.72	eastward, setting	2022-08-12
STARLINK-4443	293.78	69.21	603.4	eastward, setting	2022-08-12
STARLINK-6333	276.82	54.44	676.11	eastward, setting	2023-05-14
STARLINK-2581	55.67	53.63	668.88	eastward, setting	2021-05-04
STARLINK-30104	39.18	51.42	701.31	eastward, setting	2023-04-19
STARLINK-6124	354.97	47.96	733.62	eastward, setting	2023-03-29
STARLINK-4013	235.0	47.9	707.67	westward, setting	2022-05-14
STARLINK-3651	28.89	47.44	713.39	eastward, setting	2022-03-09
STARLINK-3900	135.64	45.18	735.85	westward, setting	2022-05-06
STARLINK-5220	64.37	42.53	767.74	westward, setting	2022-12-17

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	34	8.53-359.65 deg	10.04-38.9 deg	eastward, rising, eastward, setting, westward, rising
2	20	5.11-64.37 deg	10.76-53.63 deg	eastward, setting, westward, setting
3	13	171.61-235.02 deg	10.06-36.77 deg	eastward, rising, westward, rising, westward, setting
4	9	71.19-104.88 deg	10.2-28.49 deg	

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
				eastward, setting, westward, setting
5	4	213.65-293.78 deg	69.21-84.15 deg	eastward, setting, 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	30	SATCAT ROWS MATCHED	30
TOP OWNERS	US: 30		
OBJECT TYPES	PAYLOAD: 30		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
47603	STARLINK-2008	PAYLOAD	US	2021-02-04	2025-03-02
54840	STARLINK-5368	PAYLOAD	US	2022-12-28	n/a
53501	STARLINK-4434	PAYLOAD	US	2022-08-12	n/a
53508	STARLINK-4443	PAYLOAD	US	2022-08-12	n/a
56521	STARLINK-6333	PAYLOAD	US	2023-05-14	n/a
48412	STARLINK-2581	PAYLOAD	US	2021-05-04	n/a
56300	STARLINK-30104	PAYLOAD	US	2023-04-19	n/a
56126	STARLINK-6124	PAYLOAD	US	2023-03-29	n/a
52604	STARLINK-4013	PAYLOAD	US	2022-05-14	n/a
51985	STARLINK-3651	PAYLOAD	US	2022-03-09	n/a
52461	STARLINK-3900	PAYLOAD	US	2022-05-06	n/a
54760	STARLINK-5220	PAYLOAD	US	2022-12-17	n/a

5.9 NASA / NOAA / ADS-B Expansion Layer

NASA POWER/Horizons/DONKI batch context had not yet been written for this case at packet build time.

5.11 Free Source Availability and Remaining Work

LAYER	STATUS	CASE-SPECIFIC NOTE
ADSB.LOL HISTORICAL RELEASE LISTING	screened/present	planes-readsb-staging-1 1166.3 MiB; planes-readsb-staging-0 1762.4 MiB; planes-readsb-prod-1 1764.3 MiB; planes-readsb-prod-0 1764.3 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_2023 for 2023-08-11, then filter +/-60 min and 250 nmi around 35.5849,-79.2866.

- NASA POWER/Horizons/DONKI: batch context for 237UAP00286 at 2023-08-11T06:39:00+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	https://noaa-goes16.s3.amazonaws.com/ABI-L2-CMIPF/2023/223/06/
GOES GLM LIGHTNING PREFIX	https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2023/223/06/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KPOB	Pope Field	52.20	35.17, -79.01
KRDU	Raleigh-Durham International Airport	55.70	35.88, -78.79
KFBG	Simmons Army Air Field	59.50	35.13, -78.94
KFAY	Fayetteville Regional Airport - Grannis Field	75.60	34.99, -78.88
KJNX	Johnston Regional Airport	81.20	35.54, -78.39

- KPOB: [IEM ASOS/METAR daily CSV query](#)
- KRDU: [IEM ASOS/METAR daily CSV query](#)
- KFBG: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072317	GREENSBORO/G.-HIGH PT.; NC.	82.20	36.10, -79.94
USM00072318	BLACKSBURG; VA.	206.40	37.20, -80.41
USM00072305	NEWPORT; NC.	236.80	34.78, -76.88
USM00072208	CHARLESTON/MUN.; SC.	306.80	32.90, -80.03
USM00072403	STERLING; VA.	409.40	38.98, -77.49

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
KPOB	52.20	2023-08-11T06:55:00+00:00	10.00	BKN09000, M, M, M	270.00 / 3.00	KPOB 110655Z AUTO 27003KT 10SM BKN090 24/22 A2985 RMK AO2 SLP109 T02360217 \$
KRDU	55.70	2023-08-11T06:51:00+00:00	10.00	FEW08500, M, M, M	240.00 / 3.00	KRDU 110651Z 24003KT 10SM FEW085 22/20 A2986 RMK AO2 SLP106 T02170200

STATION	DISTANCE KM	NEAREST OBS UTC	VIS SM	SKY	WIND DEG/KT	METAR
KFBG	59.50	2023-08-11T06:55:00 +00:00	10.00	SCT08000, BKN09500, M, M	0.00 / 0.00	KFBG 110655Z 00000KT 10SM SCT080 BKN095 24/22 A2983 RMK AO2A SLP102 T02410221 RVRNO S

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 69.5 deg at 2.51 m/s; a passive balloon could drift about 18.1 km in two hours under this crude layer-average model. Radiosonde winds are sparse station soundings; balloon drift remains approximate without launch time, ascent rate, object altitude, and exact line-of-sight bearing.

STATION	NAME	DISTANCE KM	SOUNDING UTC	MEAN DRIFT BEARING	MEAN SPEED M/S	2H DRIFT KM	MAX WIND
USM00072317	GREENSBORO/ G.-HIGH PT.; NC.	82.20	2023-08-11T12:00 :00+00:00	69.50	2.51	18.10	36.00 at 275.00 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

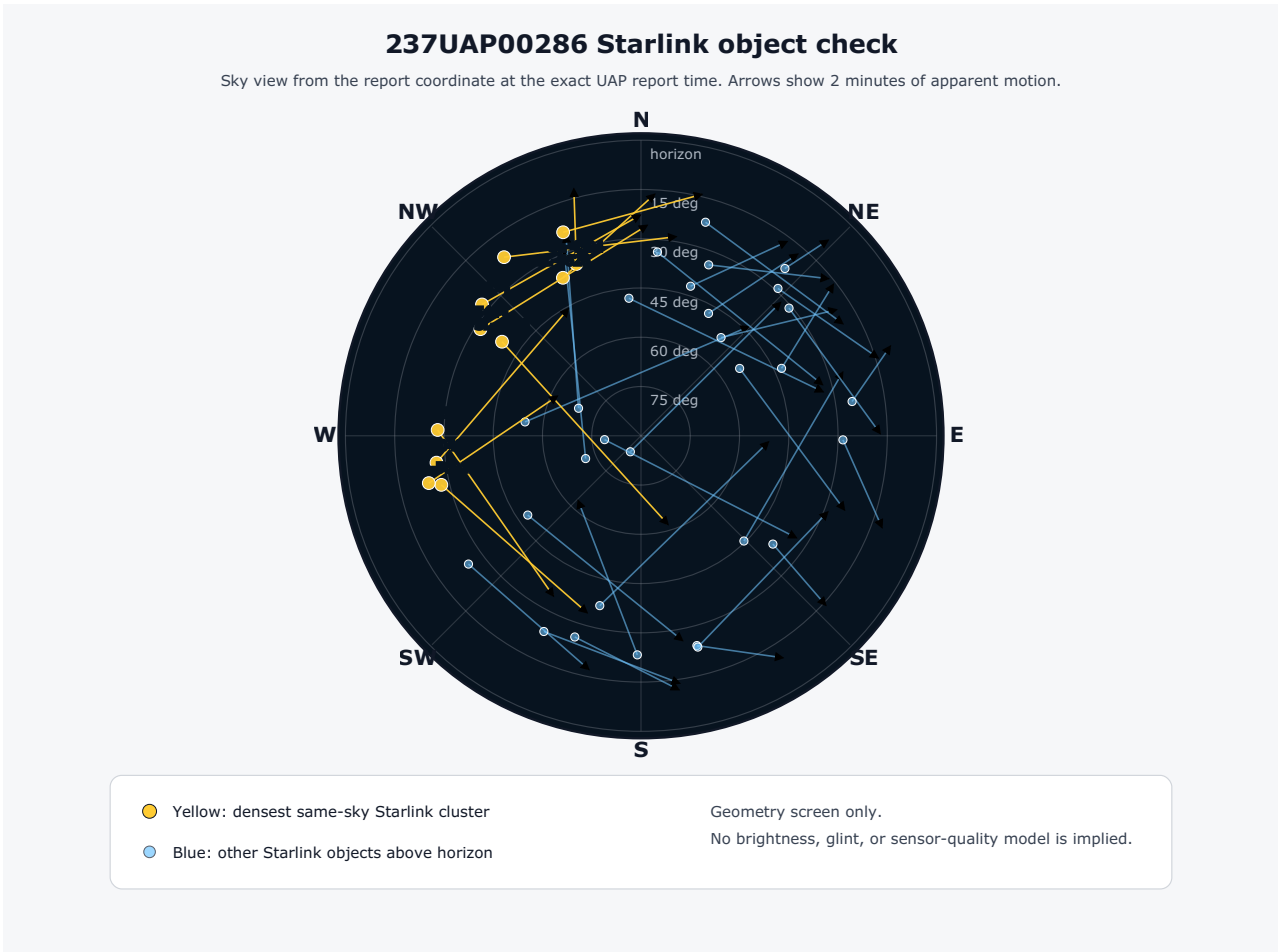
ABI sample objects:

- [ABI-L2-CMIPF/2023/223/06/OR_ABI-L2-CMIPF-M6C01_G16_s20232230600206_e20232230609514_c20232230609590.nc](#)
- [ABI-L2-CMIPF/2023/223/06/OR_ABI-L2-CMIPF-M6C01_G16_s20232230610206_e20232230619514_c20232230619590.nc](#)
- [ABI-L2-CMIPF/2023/223/06/OR_ABI-L2-CMIPF-M6C01_G16_s20232230620206_e20232230629514_c20232230629571.nc](#)
- [ABI-L2-CMIPF/2023/223/06/OR_ABI-L2-CMIPF-M6C01_G16_s20232230630206_e20232230639514_c20232230639577.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2023/223/06/OR_GLM-L2-LCFA_G16_s20232230600000_e20232230600200_c20232230600216.nc](#)
- [GLM-L2-LCFA/2023/223/06/OR_GLM-L2-LCFA_G16_s20232230600200_e20232230600400_c20232230600420.nc](#)
- [GLM-L2-LCFA/2023/223/06/OR_GLM-L2-LCFA_G16_s20232230600400_e20232230601000_c20232230601019.nc](#)
- [GLM-L2-LCFA/2023/223/06/OR_GLM-L2-LCFA_G16_s20232230601000_e20232230601200_c20232230601217.nc](#)

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	2023-08-11T06:39:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	35.58486, -79.28659	Directly used as observer point for azimuth/elevation/range computation.
COUNT / PATTERN	not explicit	No compact same-launch count match; retained for unresolved report features.
MOTION LANGUAGE	climbing, descending	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	237UAP00286 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: historical Starlink object traffic at the report spacetime. 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

237UAP00286

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON

Date: 06:39 08/11/2023

Status: Closed

POD: DEN

Reporting Facility: ZDC

Callsign: TAI580

Aircraft: A320

Tail Number:

Operator: TAI

Origin: MSLP

Destination: IAD

New Destination:

Operator Type: Commercial

Paged: YES

REMARKS

Aircraft reported an unidentified aerial phenomenon on the RDU235030 while N bound at 31,000 feet. The unknown phenomenon was flashing white lights rapidly climbing and descending. No description or distance reported. PIC said they see this object every time they pass this area of the US. The PIC did not believe it was LEO Satellites. EADS/NORAD/NCRCC notified.

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": "2023-08-11T06:39:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon on the RDU235030 while N bound at 31,000 feet. The
unknown phenomenon was flashing white lights rapidly climbing and descending. No description or distance reported. PIC said
they see this object every time they pass this area of the US. The PIC did not believe it was LEO Satellites. EADS/NORAD/NCRCC
notified.",
  "historical_starlink_element_rows": 4354,
  "observer": {
    "lat": 35.58485545850682,
    "lon": -79.28658883967864,
    "source": "aviation_radial:RDU235030 (public text extract 237UAP00286)"
  },
  "case_id": "237UAP00286",
  "starlink_above_horizon_at_report_time": 213,
  "starlink_catalog_ids_considered": 4597,
  "largest_same-sky_cluster_count": 34,
  "starlink_at_or_above_10_deg": 90,
  "top_starlinks": [
    {
      "azimuth_deg": 213.65,
      "azimuth_plus_2m_deg": 46.31,
      "azimuth_plus_5m_deg": 46.32,
      "element_age_hours": 8.16,
      "element_epoch": "2023-08-10T22:29:07.156032+00:00",
      "elevation_deg": 84.15,
      "elevation_plus_2m_deg": 31.51,
      "elevation_plus_5m_deg": 6.13,
      "epoch_altitude_km": 553.58,
      "ground_track_bearing_deg": 45.21,
      "ground_track_label": "NE",
      "launch_date": "2021-02-04",
      "name": "STARLINK-2008",
      "norad_id": "47603",
      "range_km": 551.91,
      "sky_motion_label": "westward, setting",
      "subpoint_lat": 35.1963,
      "subpoint_lon": -79.6015
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      "azimuth_deg": 263.95,
      "azimuth_plus_2m_deg": 123.32,
      "azimuth_plus_5m_deg": 120.79,
      "element_age_hours": 0.54,
      "element_epoch": "2023-08-11T06:06:34.922304+00:00",
      "elevation_deg": 78.84,
      "elevation_plus_2m_deg": 33.67,
      "elevation_plus_5m_deg": 7.0,
      "epoch_altitude_km": 565.25,
      "ground_track_bearing_deg": 118.16,
      "ground_track_label": "ESE",
      "launch_date": "2022-12-28",
      "name": "STARLINK-5368",
      "norad_id": "54840",
      "range_km": 571.4,
      "sky_motion_label": "westward, setting",
      "subpoint_lat": 35.4831,
      "subpoint_lon": -80.4008
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      "azimuth_deg": 247.63,
      "azimuth_plus_2m_deg": 337.28,
      "azimuth_plus_5m_deg": 344.98,
      "element_age_hours": 1.44,
      "element_epoch": "2023-08-11T08:05:36.469824+00:00",
      "elevation_deg": 71.76,
      "elevation_plus_2m_deg": 29.58,
      "elevation_plus_5m_deg": 5.24,
      "epoch_altitude_km": 569.06,
      "ground_track_bearing_deg": 347.95,
      "ground_track_label": "NNW",
      "launch_date": "2022-08-12",
      "name": "STARLINK-4434",
      "norad_id": "53501",
      "range_km": 594.72,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 34.9859,
      "subpoint_lon": -81.0187
    },
    {
      "azimuth_deg": 293.78,
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```

    "azimuth_plus_2m_deg": 339.45,
    "azimuth_plus_5m_deg": 345.48,
    "element_age_hours": 4.96,
    "element_epoch": "2023-08-11T01:41:20.481216+00:00",
    "elevation_deg": 69.21,
    "elevation_plus_2m_deg": 24.91,
    "elevation_plus_5m_deg": 3.66,
    "epoch_altitude_km": 568.91,
    "ground_track_bearing_deg": 347.85,
    "ground_track_label": "NNW",
    "launch_date": "2022-08-12",
    "name": "STARLINK-4443",
    "norad_id": "53508",
    "range_km": 603.4,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 36.2829,
    "subpoint_lon": -81.2907
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  {
    "azimuth_deg": 276.82,
    "azimuth_plus_2m_deg": 44.53,
    "azimuth_plus_5m_deg": 59.91,
    "element_age_hours": 16.22,
    "element_epoch": "2023-08-10T14:26:02.865984+00:00",
    "elevation_deg": 54.44,
    "elevation_plus_2m_deg": 43.52,
    "elevation_plus_5m_deg": 10.01,
    "epoch_altitude_km": 565.84,
    "ground_track_bearing_deg": 63.12,
    "ground_track_label": "ENE",
    "launch_date": "2023-05-14",
    "name": "STARLINK-6333",
    "norad_id": "56521",
    "range_km": 676.11,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 35.906,
    "subpoint_lon": -83.2652
  },
  {
    "azimuth_deg": 55.67,
    "azimuth_plus_2m_deg": 109.89,
    "azimuth_plus_5m_deg": 122.47,
    "element_age_hours": 8.98,
    "element_epoch": "2023-08-11T15:37:34.629600+00:00",
    "elevation_deg": 53.63,
    "elevation_plus_2m_deg": 24.28,
    "elevation_plus_5m_deg": 4.13,
    "epoch_altitude_km": 554.01,
    "ground_track_bearing_deg": 133.47,
    "ground_track_label": "SE",
    "launch_date": "2021-05-04",
    "name": "STARLINK-2581",
    "norad_id": "48412",
    "range_km": 668.88,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 37.3935,
    "subpoint_lon": -75.8784
  },
  {
    "azimuth_deg": 39.18,
    "azimuth_plus_2m_deg": 57.1,
    "azimuth_plus_5m_deg": 62.13,
    "element_age_hours": 0.65,
    "element_epoch": "2023-08-11T06:00:00.999648+00:00",
    "elevation_deg": 51.42,
    "elevation_plus_2m_deg": 19.44,
    "elevation_plus_5m_deg": 2.2,
    "epoch_altitude_km": 565.39,
    "ground_track_bearing_deg": 67.64,
    "ground_track_label": "ENE",
    "launch_date": "2023-04-19",
    "name": "STARLINK-30104",
    "norad_id": "56300",
    "range_km": 701.31,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 38.359,
    "subpoint_lon": -76.3802
  },
  {
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    "azimuth_plus_2m_deg": 76.25,
    "azimuth_plus_5m_deg": 98.29,
    "element_age_hours": 10.68,
    "element_epoch": "2023-08-11T17:19:33.214944+00:00",
    "elevation_deg": 47.96,
    "elevation_plus_2m_deg": 33.17,
    "elevation_plus_5m_deg": 7.93,
    "epoch_altitude_km": 565.4,

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"ground_track_label": "ESE",
"launch_date": "2023-03-29",
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"norad_id": "56126",
"range_km": 733.62,
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"subpoint_lat": 39.6388,
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  "element_age_hours": 2.19,
  "element_epoch": "2023-08-11T04:27:21.933792+00:00",
  "elevation_deg": 47.9,
  "elevation_plus_2m_deg": 26.58,
  "elevation_plus_5m_deg": 5.13,
  "epoch_altitude_km": 546.01,
  "ground_track_bearing_deg": 137.09,
  "ground_track_label": "SE",
  "launch_date": "2022-05-14",
  "name": "STARLINK-4013",
  "norad_id": "52604",
  "range_km": 707.67,
  "sky_motion_label": "westward, setting",
  "subpoint_lat": 33.2605,
  "subpoint_lon": -83.1338
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  "azimuth_plus_2m_deg": 40.73,
  "azimuth_plus_5m_deg": 44.45,
  "element_age_hours": 2.95,
  "element_epoch": "2023-08-11T09:36:06.044544+00:00",
  "elevation_deg": 47.44,
  "elevation_plus_2m_deg": 17.21,
  "elevation_plus_5m_deg": 0.95,
  "epoch_altitude_km": 545.99,
  "ground_track_bearing_deg": 48.57,
  "ground_track_label": "NE",
  "launch_date": "2022-03-09",
  "name": "STARLINK-3651",
  "norad_id": "51985",
  "range_km": 713.39,
  "sky_motion_label": "eastward, setting",
  "subpoint_lat": 39.0698,
  "subpoint_lon": -76.8031
},
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  "azimuth_deg": 135.64,
  "azimuth_plus_2m_deg": 72.68,
  "azimuth_plus_5m_deg": 54.58,
  "element_age_hours": 2.99,
  "element_epoch": "2023-08-11T09:38:41.476416+00:00",
  "elevation_deg": 45.18,
  "elevation_plus_2m_deg": 25.82,
  "elevation_plus_5m_deg": 5.08,
  "epoch_altitude_km": 546.24,
  "ground_track_bearing_deg": 42.9,
  "ground_track_label": "NE",
  "launch_date": "2022-05-06",
  "name": "STARLINK-3900",
  "norad_id": "52461",
  "range_km": 735.85,
  "sky_motion_label": "westward, setting",
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  "subpoint_lon": -75.729
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  "azimuth_plus_5m_deg": 48.36,
  "element_age_hours": 2.96,
  "element_epoch": "2023-08-11T09:36:44.305920+00:00",
  "elevation_deg": 42.53,
  "elevation_plus_2m_deg": 15.75,
  "elevation_plus_5m_deg": 0.29,
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  "ground_track_bearing_deg": 47.0,
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  "name": "STARLINK-5220",
  "norad_id": "54760",
  "range_km": 767.74,
  "sky_motion_label": "westward, setting",
  "subpoint_lat": 37.5023,

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    "subpoint_lon": -73.9613  
  }  
]  
}
```

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: 237UAP00286
TIME AND OBSERVER COORDINATE	extracted	2023-08-11T06:39:00+00:00 at 35.58486, -79.28659
ORBITAL OBJECT PROPAGATION	screened	Starlink
SPACE-TRACK SATCAT METADATA	screened	30 NORAD IDs checked; 30 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	not exhausted	Hourly weather, sky geometry, and space-weather context where local JSON is present
AIRCRAFT/ADS-B LAYER	not exhausted	ADSB.lol 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. *237UAP00286.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-615/493468575/237UAP00286.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. ADSB.lol. *Interactive API documentation and OpenAPI definition*. <https://api.adsb.lol/docs>
10. ADSB.lol. *Historical open-data release documentation*. <https://www.adsb.lol/docs/open-data/historical/>
11. OpenSky Network. *REST API documentation*. <https://openskynetwork.github.io/opensky-api/rest.html>
12. OpenSky Network. *Historical data via Trino documentation*. <https://openskynetwork.github.io/opensky-api/trino.html>
13. NASA GIBS. *Global Imagery Browse Services API documentation*. <https://nasa-gibs.github.io/gibs-api-docs/>
14. NASA Earthdata. *Common Metadata Repository search API documentation*. <https://cmr.earthdata.nasa.gov/search/site/docs/search/api.html>
15. NOAA / AWS Open Data. *GOES public dataset registry*. <https://registry.opendata.aws/noaa-goes/>
16. NOAA / AWS Open Data. *NEXRAD public dataset registry*. <https://registry.opendata.aws/noaa-nexrad/>
17. NOAA NCEI. *Integrated Global Radiosonde Archive*. <https://www.ncei.noaa.gov/products/weather-balloon/integrated-global-radiosonde-archive>
18. Iowa Environmental Mesonet. *ASOS/AWOS/METAR data download service*. <https://mesonet.agron.iastate.edu/request/download.phtml>
19. CelesTrak. *Spacetrack Report No. 3: Models for propagation of NORAD element sets*. <https://celestrak.org/NORAD/documentation/spacetrk.pdf>
20. CelesTrak. *Supplemental GP element sets documentation and current endpoint index*. <https://celestrak.org/NORAD/elements/supplemental/>