

CASE FILE 40 / 237UAP00227

237UAP00227

Radar/correlation-focused public UAP report; score 54

HIGH-VALUE UNRESOLVED

REPORT NO.	UAP-OM-40-237UAP00227	DISPOSITION	HIGH-VALUE UNRESOLVED
PRIMARY CASE	237UAP00227	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2023-02-24T16:10:00+00:00	OBSERVER	38.75641, -77.39766
SOURCE CASE IDS	237UAP00227		

Abstract

This case file evaluates a reported UAP sighting against historical Starlink orbital elements. The primary external-object candidate is a 14-object same-launch group from 2023-02-02, spanning azimuth 262.05-287.94 deg and elevation 10.67-45.99 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

237UAP00227 remains high-value unresolved after screening against historical Starlink orbital elements. The strongest compact object grouping contains 14 objects from 2023-02-02; however, this does not close the case because hard report features remain: radar/primary evidence. Context noted but not treated as causation: substantial orbital-object sky background; context only, not causation.

1.1 Key Findings

- Source score 54 based on: radar/primary-return language, NORAD/AMOC/EADS/CONR check, UAP/UFO language.
- Report time used: 2023-02-24T16:10:00+00:00.
- External object layer used: Starlink.
- Disposition standard: UNRESOLVED 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.
- Remaining hard features: radar/primary evidence.
- Objects above horizon: 207; at/above 10 deg: 100.
- Top compact same-launch/designator group: 14 objects from 2023-02-02.
- No explicit Starlink/balloon wording was found in the source excerpt used for ranking.

1.2 Bottom Line

HIGH-VALUE UNRESOLVED: Hard report features remain after the normal-object screens, such as primary/radar evidence, multiple witnesses, footage references, or motion language that still conflicts with the available object layer.

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
237UAP00227	16:10 02/24/2023 Paged: YES	NCRCC	text extract present	237UAP00227.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	DCA1: DCA250018, primary target, heading 100 degree, 100 knots. 1615 PCT, HEF, and DAA no communication with target.1616 BLKJK scrambled, ADW Battle Stations. WADS radar was displayed target at 16000ft. 1617 ONEC convened. 1618 Sparkle at DCA210011. BLKJK held in FRZ. since target was outbound from FRZ. 1635 Aircraft exited SFRA at the DCA130030. ADW canceled all tactical actions. BLKJK RTB. 1640 NCR condition clear. ONEC terminated. WADS continued to track. No visual verification. PCT will file the MOR. JH notified.
REPORT TIME USED	2023-02-24T16:10:00+00:00
OBSERVER COORDINATE USED	38.75641, -77.39766
OBSERVER SOURCE BASIS	aviation_radial:DCA250018 (public text extract 237UAP00227)

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	3683	HISTORICAL ELEMENT ROWS	3683
ABOVE HORIZON AT REPORT MINUTE	207	AT/ABOVE 10 DEG	100
LARGEST SAME-SKY CLUSTER	67		

5.2 Same-Launch / Same-Designator Candidate Groups

#	LAUNCH DATE	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS	MEMBERS
1	2023-02-02	14	262.05-287.94 deg	10.67-45.99 deg	eastward, rising, eastward, setting	STARLINK-5366, STARLINK-5367, STARLINK-5365, STARLINK-5139, STARLINK-5141, STARLINK-5363, STARLINK-5344, STARLINK-5373
2	2021-05-04	3	178.91-194.37 deg	10.34-27.5 deg	westward, rising	STARLINK-2599, STARLINK-2608, STARLINK-2636
3	2020-08-18	3	13.5-355.62 deg	10.92-17.29 deg	eastward, setting	STARLINK-1615, STARLINK-1627, STARLINK-1636
4	2022-09-19	3	11.06-355.76 deg	10.25-10.74 deg	eastward, setting	STARLINK-4788, STARLINK-4750, STARLINK-4797

5.3 Primary Group Members

OBJECT	NORAD	LAUNCH	AZ	EL	RANGE KM	APPARENT MOTION	ELEMENT AGE H
STARLINK-5366	55499	2023-02-02	287.94	45.99	486.85	eastward, setting	1.82
STARLINK-5367	55501	2023-02-02	282.23	41.1	527.7	eastward, setting	1.81
STARLINK-5365	55498	2023-02-02	277.99	36.66	574.54	eastward, setting	1.81
STARLINK-5139	55496	2023-02-02	274.87	32.83	623.47	eastward, rising	1.81
STARLINK-5141	55500	2023-02-02	273.49	30.98	651.01	eastward, rising	1.81
STARLINK-5363	55497	2023-02-02	270.4	26.49	732.29	eastward, rising	1.8
STARLINK-5344	55494	2023-02-02	268.84	23.96	787.51	eastward, rising	1.8
STARLINK-5373	55490	2023-02-02	267.45	21.59	848.35	eastward, rising	1.8
STARLINK-5362	55493	2023-02-02	266.3	19.51	909.92	eastward, rising	2.17
STARLINK-5706	55488	2023-02-02	265.34	17.7	970.08	eastward, rising	5.83
STARLINK-5013	55492	2023-02-02	264.55	16.1	1028.48	eastward, rising	1.79
STARLINK-5100	55495	2023-02-02	263.84	14.63	1089.05	eastward, rising	1.79

5.4 Bright-Sky Context: Top Starlink Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-5223	36.56	79.56	551.18	eastward, setting	2022-10-20

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-3266	103.62	66.71	586.1	eastward, setting	2021-12-18
STARLINK-1807	13.56	65.35	599.47	eastward, setting	2020-10-18
STARLINK-1098	193.6	61.97	615.7	westward, setting	2020-01-07
STARLINK-2592	28.16	57.97	639.65	eastward, setting	2021-05-04
STARLINK-1466	139.22	50.96	689.92	westward, setting	2020-06-13
STARLINK-1194	34.33	46.61	732.09	eastward, setting	2020-01-29
STARLINK-5366	287.94	45.99	486.85	eastward, setting	2023-02-02
STARLINK-4717	355.55	45.36	736.29	eastward, setting	2022-09-05
STARLINK-3638	193.4	42.95	761.22	westward, rising	2022-02-25
STARLINK-5367	282.23	41.1	527.7	eastward, setting	2023-02-02
STARLINK-5365	277.99	36.66	574.54	eastward, setting	2023-02-02

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	67	3.58-355.97 deg	10.02-65.35 deg	eastward, level, eastward, rising, eastward, setting, westward, rising, westward, setting
2	15	53.87-139.76 deg	10.17-19.13 deg	eastward, setting, westward, rising, westward, setting
3	4	149.39-160.61 deg	11.29-31.99 deg	westward, setting
4	4	178.91-194.37 deg	10.34-27.5 deg	westward, rising
5	3	209.57-226.97 deg	10.67-19.38 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	40	SATCAT ROWS MATCHED	40
TOP OWNERS	US: 40		
OBJECT TYPES	PAYLOAD: 40		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
54069	STARLINK-5223	PAYLOAD	US	2022-10-20	2024-08-28
50195	STARLINK-3266	PAYLOAD	US	2021-12-18	n/a
46706	STARLINK-1807	PAYLOAD	US	2020-10-18	n/a
44917	STARLINK-1098	PAYLOAD	US	2020-01-07	2025-09-14
48408	STARLINK-2592	PAYLOAD	US	2021-05-04	n/a
45732	STARLINK-1466	PAYLOAD	US	2020-06-13	2024-09-02
45101	STARLINK-1194	PAYLOAD	US	2020-01-29	2024-07-30
55499	STARLINK-5366	PAYLOAD	US	2023-02-02	n/a
53705	STARLINK-4717	PAYLOAD	US	2022-09-05	n/a
51786	STARLINK-3638	PAYLOAD	US	2022-02-25	n/a

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
55501	STARLINK-5367	PAYLOAD	US	2023-02-02	n/a
55498	STARLINK-5365	PAYLOAD	US	2023-02-02	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.

HOURL UTC	2023022416
CLOUD AMOUNT	37.93%
PRECIPITATION	0.0 mm/hr
10 M WIND	9.26 m/s
TEMPERATURE	8.66 C
RELATIVE HUMIDITY	43.18%
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	156.67	38.96	-26.77
Moon	90.51	20.50	-8.79
Venus	120.21	33.88	-3.93
Mars	53.97	-2.84	0.33
Jupiter	114.12	31.66	-2.11
Saturn	165.42	36.95	0.87

- Sun elevation was 39.0 deg, so this was daylight geometry, not a dark-sky sighting.
- Moon was above horizon at azimuth 90.5 deg / elevation 20.5 deg.
- Planets above horizon: Venus (33.9 deg), Jupiter (31.7 deg), Saturn (36.9 deg).
- NASA POWER cloud amount for the hour was 37.93%, with precipitation 0.0 mm/hr.

5.11 Free Source Availability and Remaining Work

LAYER	STATUS	CASE-SPECIFIC NOTE
ADSB.LOL HISTORICAL RELEASE LISTING	screened/present	planes-readsb-test-1 968.0 MiB; planes-readsb-test-0 971.8 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 2023-02-24, then filter +/-60 min and 250 nmi around 38.7564,-77.3977.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00227 at 2023-02-24T16:10:00+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/2023/055/16/
GOES GLM LIGHTNING PREFIX	https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2023/055/16/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KHEF	Manassas Regional Airport/Harry P. Davis Field	10.90	38.72, -77.52
KDAA	Davison Army Air Field	19.30	38.72, -77.18
KIAD	Washington Dulles International Airport	21.50	38.94, -77.46
KNYG	Quantico Marine Corps Airfield / Turner Field	29.40	38.50, -77.31
KDCA	Ronald Reagan Washington National Airport	33.00	38.85, -77.04

- KHEF: [IEM ASOS/METAR daily CSV query](#)
- KDAA: [IEM ASOS/METAR daily CSV query](#)
- KIAD: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072403	STERLING; VA.	25.70	38.98, -77.49
USM00072402	WALLOPS ISLAND; VA.	190.40	37.93, -75.48
USM00072520	PITTSBURGH; PA.	311.80	40.53, -80.22
USM00072318	BLACKSBURG; VA.	315.70	37.20, -80.41
USM00072317	GREENSBORO/G.-HIGH PT.; NC.	371.30	36.10, -79.94

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
KHEF	10.90	2023-02-24T15:56:00 +00:00	10.00	CLR, M, M, M	300.00 / 15.00	KHEF 241556Z 30015G26KT 10SM CLR 12/M05 A3032 RMK AO2 PK WND 32028/1521 SLP272 T01221050
KDAA	19.30	2023-02-24T15:55:00 +00:00	10.00	CLR, M, M, M	310.00 / 16.00	KDAA 241555Z AUTO 31016G24KT 10SM CLR 12/M04 A3028 RMK AO2 PK WND 28026/14 SLP257 T01221044 \$

STATION	DISTANCE KM	NEAREST OBS UTC	VIS SM	SKY	WIND DEG/KT	METAR
KIAD	21.50	2023-02-24T15:52:00 +00:00	10.00	FEW05000, FEW25000, M, M	310.00 / 16.00	KIAD 241552Z 31016G23KT 10SM FEW050 FEW250 12/ M03 A3031 RMK AO2 SLP261 T01171028

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 307.7 deg at 8.43 m/s; a passive balloon could drift about 60.7 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
USM00072403	STERLING; VA.	25.70	2023-02-24T12:00 :00+00:00	307.70	8.43	60.70	36.00 at 23421.00 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

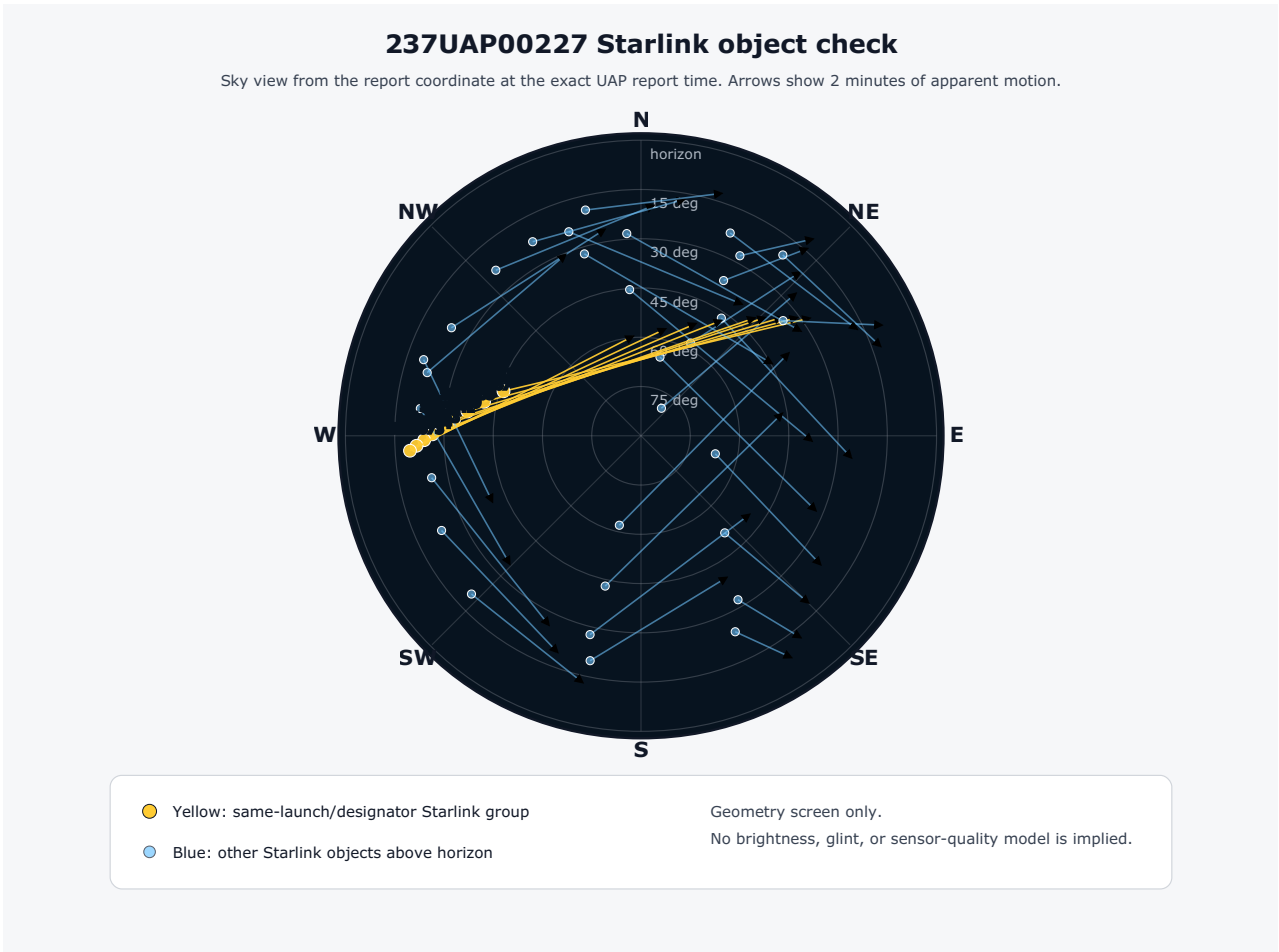
ABI sample objects:

- [ABI-L2-CMIPF/2023/055/16/OR_ABI-L2-CMIPF-M6C01_G16_s20230551600207_e20230551609515_c20230551609595.nc](#)
- [ABI-L2-CMIPF/2023/055/16/OR_ABI-L2-CMIPF-M6C01_G16_s20230551610207_e20230551619515_c20230551619581.nc](#)
- [ABI-L2-CMIPF/2023/055/16/OR_ABI-L2-CMIPF-M6C01_G16_s20230551620207_e20230551629515_c20230551629587.nc](#)
- [ABI-L2-CMIPF/2023/055/16/OR_ABI-L2-CMIPF-M6C01_G16_s20230551630207_e20230551639515_c20230551639583.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2023/055/16/OR_GLM-L2-LCFA_G16_s20230551600000_e20230551600200_c20230551600223.nc](#)
- [GLM-L2-LCFA/2023/055/16/OR_GLM-L2-LCFA_G16_s20230551600200_e20230551600400_c20230551600418.nc](#)
- [GLM-L2-LCFA/2023/055/16/OR_GLM-L2-LCFA_G16_s20230551600400_e20230551601000_c20230551601024.nc](#)
- [GLM-L2-LCFA/2023/055/16/OR_GLM-L2-LCFA_G16_s20230551601000_e20230551601200_c20230551601223.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	2023-02-24T16:10:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	38.75641, -77.39766	Directly used as observer point for azimuth/elevation/range computation.
COUNT / PATTERN	not explicit	Primary same-launch group contains 14 propagated objects in a compact sky sector.
MOTION LANGUAGE	not explicit	Reported motion remains only partly explained; this is a principal reason for high-value unresolved status.
RADAR / OFFICIAL CHECK	not specified	Radar or hard maneuvering language is treated as a conflict/collection gap, not hand-waved away.
ANALYTIC DISPOSITION	unresolved	237UAP00227 remains high-value unresolved after screening against historical Starlink orbital elements. The strongest compact object grouping contains 14 objects from 2023-02-02; however, this does not close the case because hard report features remain: radar/primary evidence. Context noted but not treated as causation: substantial orbital-object sky background; context only, not causation.

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.
- This case is retained as high-value unresolved because the hardest reported behavior is not resolved by the current normal-object layers.

Appendix A. Public Report Text Extracts

237UAP00227

SKYWATCH INCIDENT REPORT

PRIMARY CODE: TOI-NCR FRZ
Date: 16:10 02/24/2023 Paged: YES
Status: Closed
POD: NCRCC
Reporting Facility: NCRCC

Secondary Codes: TOI-NCR SFRA, UNIDENTIFIED AERIAL PHENOMENON

REMARKS

DCA1: DCA250018, primary target, heading 100 degree, 100 knots. 1615 PCT, HEF, and DAA no communication with target.1616 BLKJK scrambled, ADW Battle Stations. WADS radar was displayed target at 16000ft. 1617 ONEC convened. 1618 Sparkle at DCA210011. BLKJK held in FRZ. since target was outbound from FRZ. 1635 Aircraft exited SFRA at the DCA130030. ADW canceled all tactical actions. BLKJK RTB. 1640 NCR condition clear. ONEC terminated. WADS continued to track. No visual verification. PCT will file the MOR. JH 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": "2023-02-24T16:10:00+00:00",
  "source_excerpt": "DCA1: DCA250018, primary target, heading 100 degree, 100 knots. 1615 PCT, HEF, and DAA no communication with target.1616 BLKJK scrambled, ADW Battle Stations. WADS radar was displayed target at 16000ft. 1617 ONEC convened. 1618 Sparkle at DCA210011. BLKJK held in FRZ. since target was outbound from FRZ. 1635 Aircraft exited SFRA at the DCA130030. ADW canceled all tactical actions. BLKJK RTB. 1640 NCR condition clear. ONEC terminated. WADS continued to track. No visual verification. PCT will file the MOR. JH notified.",
  "historical_starlink_element_rows": 3683,
  "observer": {
    "lat": 38.75640716453089,
    "lon": -77.39766319067746,
    "source": "aviation_radial:DCA250018 (public text extract 237UAP00227)"
  },
  "case_id": "237UAP00227",
  "starlink_above_horizon_at_report_time": 207,
  "starlink_catalog_ids_considered": 3683,
  "largest_same-sky_cluster_count": 67,
  "starlink_at_or_above_10_deg": 100,
  "same_launch_sky_groups": [
    {
      "azimuth_range_deg": [
        262.05,
        287.94
      ],
      "count": 14,
      "elevation_range_deg": [
        10.67,
        45.99
      ],
      "ground_track_labels": [
        "ENE"
      ],
      "launch_date": "2023-02-02",
      "members": [
        {
          "azimuth_deg": 287.94,
          "azimuth_plus_2m_deg": 55.09,
          "azimuth_plus_5m_deg": 67.86,
          "element_age_hours": 1.82,
          "element_epoch": "2023-02-24T14:21:01.544256+00:00",
          "elevation_deg": 45.99,
          "elevation_plus_2m_deg": 27.46,
          "elevation_plus_5m_deg": 2.53,
          "epoch_altitude_km": 361.06,
          "ground_track_bearing_deg": 70.56,
          "ground_track_label": "ENE",
          "launch_date": "2023-02-02",
          "name": "STARLINK-5366",
          "norad_id": "55499",
          "range_km": 486.85,
          "sky_motion_label": "eastward, setting",
          "subpoint_lat": 39.5914,
          "subpoint_lon": -80.9472
        },
        {
          "azimuth_deg": 282.23,
          "azimuth_plus_2m_deg": 52.82,
          "azimuth_plus_5m_deg": 67.6,
          "element_age_hours": 1.81,
          "element_epoch": "2023-02-24T14:21:10.643040+00:00",
          "elevation_deg": 41.1,
          "elevation_plus_2m_deg": 30.53,
          "elevation_plus_5m_deg": 3.22,
          "epoch_altitude_km": 361.05,
          "ground_track_bearing_deg": 70.07,
          "ground_track_label": "ENE",
          "launch_date": "2023-02-02",
          "name": "STARLINK-5367",
          "norad_id": "55501",
          "range_km": 527.7,
          "sky_motion_label": "eastward, setting",
          "subpoint_lat": 39.3973,
          "subpoint_lon": -81.6737
        },
        {
          "azimuth_deg": 277.99,
          "azimuth_plus_2m_deg": 49.91,
          "azimuth_plus_5m_deg": 67.32,
          "element_age_hours": 1.81,
          "element_epoch": "2023-02-24T14:21:19.893024+00:00",

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    "elevation_deg": 36.66,
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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: 237UAP00227
TIME AND OBSERVER COORDINATE	extracted	2023-02-24T16:10:00+00:00 at 38.75641, -77.39766
ORBITAL OBJECT PROPAGATION	screened	Starlink
SPACE-TRACK SATCAT METADATA	screened	40 NORAD IDs checked; 40 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	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	high-value unresolved	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. *237UAP00227.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-615/493468575/237UAP00227.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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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>
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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>
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