

CASE FILE 42 / 237UAP00322

237UAP00322

Radar/correlation-focused public UAP report; score 54

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-42-237UAP00322	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00322	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2023-11-24T16:15:00+00:00	OBSERVER	40.58300, -74.74170
SOURCE CASE IDS	237UAP00322		

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

237UAP00322 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N569FG C172 a748dd at 5.2 km, azimuth 214.7 deg, elevation 12.84 deg, 0.03 min from report. Dense satellite presence alone is not treated as causation in this packet.

1.1 Key Findings

- Source score 54 based on: radar/primary-return language, negative official correlation, UAP/UFO language.
- Report time used: 2023-11-24T16:15:00+00:00.
- External object layer used: public LEO catalog objects.
- Disposition standard: NORMAL-OBJECT requires case-specific causal fit. Satellite density above the horizon is context only and cannot by itself resolve the report.
- Case-specific ordinary-object evidence: strong ADS-B aircraft candidate N569FG C172 a748dd at 5.2 km, azimuth 214.7 deg, elevation 12.84 deg, 0.03 min from report.
- Non-causal context / rejection screens: very dense orbital-object sky background; context only, not causation.
- Objects above horizon: 1169; at/above 10 deg: 586.
- 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
237UAP00322	16:15 11/24/2023 Callsign: N197LL Origin: HPN	ZNY Operator: Operator Type: General Aviation	text extract present	237UAP00322.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon while SW bound at FL260, within 500 feet 1 NM in the vicinity of SBJ. The unknown phenomenon was described as contrail or object. The UAP was not observed on ATC facility radar system. No other aircraft in the vicinity to correlate the phenomenon.
REPORT TIME USED	2023-11-24T16:15:00+00:00
OBSERVER COORDINATE USED	40.58300, -74.74170
OBSERVER SOURCE BASIS	aviation_fix:vicinity of SBJ (public text extract 237UAP00322)

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 public LEO catalog objects element rows. The analytic mode for this case is historical public LEO catalog objects 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.

PUBLIC LEO CATALOG OBJECTS CATALOG IDS CONSIDERED	19595	HISTORICAL ELEMENT ROWS	19595
ABOVE HORIZON AT REPORT MINUTE	1169	AT/ABOVE 10 DEG	586
LARGEST SAME-SKY CLUSTER	586		

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 public LEO catalog objects Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
NORAD 48989	61.08	85.78	1205.61	eastward, setting	21060Y
NORAD 44509	124.99	83.5	1392.23	eastward, setting	92052G
NORAD 30445	52.23	81.35	721.53	westward, setting	99025AFG
NORAD 17177	298.4	76.89	1537.17	eastward, setting	86094A
NORAD 57451	358.3	76.82	576.71	eastward, setting	23105X
NORAD 41059	3.72	74.05	857.62	westward, setting	00055S
NORAD 46137	243.35	73.46	571.96	westward, setting	20057W
NORAD 3035	57.94	72.56	1474.11	eastward, setting	67114A
NORAD 45709	347.29	72.34	575.25	eastward, setting	20035BE
NORAD 54104	126.89	72.02	567.88	eastward, setting	22136BF
NORAD 29841	337.48	71.2	640.0	eastward, setting	99025EK
NORAD 9649	308.96	69.55	2184.9	westward, rising	76126F

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	586	0.15-359.46 deg	10.0-85.78 deg	eastward, level, eastward, rising, eastward, setting, nearly fixed azimuth, setting, westward, level, 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	30	SATCAT ROWS MATCHED	30
TOP OWNERS	CIS: 11, US: 10, PRC: 6, FR: 1, TBD: 1, UK: 1		
OBJECT TYPES	PAYLOAD: 15, DEBRIS: 14, UNKNOWN: 1		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
48989	ONEWEB-0271	PAYLOAD	UK	2021-07-01	n/a
44509	ARIANE 42P DEB	DEBRIS	FR	1992-08-10	n/a
30445	FENGYUN 1C DEB	DEBRIS	PRC	1999-05-10	n/a
17177	COSMOS 1803	PAYLOAD	CIS	1986-12-02	n/a
57451	STARLINK-30216	PAYLOAD	US	2023-07-24	n/a
41059	NOAA 16 DEB	DEBRIS	US	2000-09-21	n/a
46137	STARLINK-1586	PAYLOAD	US	2020-08-18	2025-09-26
3035	ESSA 6 (TOS-D)	PAYLOAD	US	1967-11-10	n/a
45709	STARLINK-1421	PAYLOAD	US	2020-06-04	2024-08-29
54104	STARLINK-5203	PAYLOAD	US	2022-10-20	n/a
29841	FENGYUN 1C DEB	DEBRIS	PRC	1999-05-10	n/a
9649	COSMOS 886 DEB	DEBRIS	CIS	1976-12-27	n/a

5.9 NASA / NOAA / ADS-B Expansion Layer

This source layer adds free NASA context that was previously missing from most packet cases. It is contextual evidence; it does not replace aircraft, satellite, balloon, or radar causation tests.

HOURLY UTC	2023112416
CLOUD AMOUNT	74.63%
PRECIPITATION	0.0 mm/hr
10 M WIND	2.26 m/s
TEMPERATURE	8.59 C
RELATIVE HUMIDITY	43.77%
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	171.85	28.42	-26.77
Moon	31.94	-33.68	-11.89
Venus	223.31	34.10	-4.23
Mars	174.01	28.83	1.40
Jupiter	19.64	-34.45	-2.85

OBJECT	AZ	EL	APP MAG
Saturn	92.67	-16.68	0.84

- Sun elevation was 28.4 deg, so this was daylight geometry, not a dark-sky sighting.
- Moon was below horizon at elevation -33.7 deg.
- Planets above horizon: Venus (34.1 deg), Mars (28.8 deg).
- NASA POWER cloud amount for the hour was 74.63%, 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-staging-0 1214.0 MiB; planes-readsb-prod-0 1215.0 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_2023 for 2023-11-24, then filter +/-60 min and 250 nmi around 40.5830,-74.7417.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00322 at 2023-11-24T16:15:00+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/2023/328/16/
GOES GLM LIGHTNING PREFIX	https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2023/328/16/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KTTN	Trenton Mercer Airport	34.60	40.28, -74.81
KMMU	Morristown Municipal Airport	36.60	40.80, -74.41
KEWR	Newark Liberty International Airport	49.60	40.69, -74.17
KABE	Lehigh Valley International Airport	59.70	40.65, -75.44
KPNE	Northeast Philadelphia Airport	60.10	40.08, -75.01

- KTTN: [IEM ASOS/METAR daily CSV query](#)
- KMMU: [IEM ASOS/METAR daily CSV query](#)
- KEWR: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072501	UPTON; NY.	161.40	40.87, -72.86
USM00072518	ALBANY COUNTY AIRPORT; NY.	253.30	42.75, -73.80
USM00072403	STERLING; VA.	294.70	38.98, -77.49
USM00072402	WALLOPS ISLAND; VA.	301.50	37.93, -75.48
USM00072528	BUFFALO/GREATER BUFFALO INT.;	421.30	42.94, -78.72

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
KTTN	34.60	2023-11-24T15:53:00 +00:00	10.00	SCT04000, M, M, M	n/a / 5.00	KTTN 241553Z VRB05KT 10SM SCT040 09/00 A3013 RMK AO2 SLP199 T00890000
KMMU	36.60	2023-11-24T15:45:00 +00:00	10.00	SCT04400, BKN25000, M, M	340.00 / 10.00	KMMU 241545Z 34010G17KT 10SM SCT044 BKN250 10/ M01 A3014
KEWR	49.60	2023-11-24T15:51:00 +00:00	10.00	SCT04500, BKN25000, M, M	310.00 / 9.00	KEWR 241551Z 31009KT 10SM SCT045 BKN250 11/ M01 A3012 RMK AO2 SLP199 T01061006

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 277.5 deg at 18.58 m/s; a passive balloon could drift about 133.8 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
USM00072501	UPTON; NY.	161.40	2023-11-24T12:00 :00+00:00	277.50	18.58	133.80	46.50 at 12109.00 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/2023/328/16/OR_ABI-L2-CMIPF-M6C01_G16_s20233281600211_e20233281609519_c20233281609572.nc](#)
- [ABI-L2-CMIPF/2023/328/16/OR_ABI-L2-CMIPF-M6C01_G16_s20233281610211_e20233281619519_c20233281619575.nc](#)
- [ABI-L2-CMIPF/2023/328/16/OR_ABI-L2-CMIPF-M6C01_G16_s20233281620211_e20233281629519_c20233281629567.nc](#)
- [ABI-L2-CMIPF/2023/328/16/OR_ABI-L2-CMIPF-M6C01_G16_s20233281630211_e20233281639519_c20233281639597.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2023/328/16/OR_GLM-L2-LCFA_G16_s20233281600000_e20233281600200_c20233281600220.nc](#)
- [GLM-L2-LCFA/2023/328/16/OR_GLM-L2-LCFA_G16_s20233281600200_e20233281600400_c20233281600421.nc](#)
- [GLM-L2-LCFA/2023/328/16/OR_GLM-L2-LCFA_G16_s20233281600400_e20233281601000_c20233281601015.nc](#)
- [GLM-L2-LCFA/2023/328/16/OR_GLM-L2-LCFA_G16_s20233281601000_e20233281601200_c20233281601220.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	2023-11-24T15:00:00+00:00 to 2023-11-24T17:30:00+00:00	RADIUS	300.00 nmi
TRACE FILES SCANNED	16434	TRACKS RETAINED	1200
SUPPORT STATUS	aircraft strong candidate present	BEST-CANDIDATE NOTE	ordinary-object favored if the report's count, color, direction, and motion can be reconciled with the candidate track(s).
STRONG CANDIDATES	98	PLAUSIBLE CANDIDATES	211
REPORTING-AIRCRAFT TRACKS EXCLUDED	1	WEAK CANDIDATES	198

5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
N569FG C172 a748dd	strong aircraft candidate	82.92	4.90	0.02	3925	214.70	12.84
N352DN A321 a3ec93	strong aircraft candidate	81.60	14.50	0.08	34000	342.60	33.57
N495PC TBM7 a623f3	strong aircraft candidate	81.05	0.50	2.32	300	97.60	38.85
N7319G C172 a9d25c	strong aircraft candidate	78.24	0.90	1.69	200	178.60	4.82
N512AF P28A a668e3	strong aircraft candidate	77.39	9.70	0.01	3100	11.50	3.53
N5331F P28A a6be13	strong aircraft candidate	75.03	2.00	0.07	3100	313.40	2.30
N8628A B738 abd9b6	strong aircraft candidate	74.82	49.10	0.08	32375	157.20	11.40
N20105 C172 a19830	strong aircraft candidate	73.04	1.00	0.05	2900	173.50	1.66

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	2023-11-24T16:15:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	40.58300, -74.74170	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	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	normal-object	237UAP00322 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N569FG C172 a748dd at 5.2 km, azimuth 214.7 deg, elevation 12.84 deg, 0.03 min from report. Dense satellite presence alone is not treated as causation in this packet.

8. Caveats, Limitations, and Collection Gaps

- No raw cockpit video, ATC replay, radar plot, or witness interview transcript was reviewed unless explicitly stated in the public source text.
- Aviation-derived coordinates can represent a nearby fix/radial or report point, not necessarily the actual line-of-sight intercept point.
- Starlink visibility depends on illumination, observer altitude, atmospheric conditions, and apparent brightness; this analysis tests geometry, not photometry. No brightness model is used unless explicitly stated elsewhere in the case file.
- TLE propagation is appropriate for screening and reconstruction but is not a substitute for authoritative operational ephemerides.
- When many satellites are above the horizon, generic presence is weak evidence and is not treated as causation. The report emphasizes named launch-object checks or compact same-launch trajectory groups.
- Normal-object favored is not the same as a perfect named-object identification; it requires a case-specific ordinary-object candidate stronger than simple object density.

Appendix A. Public Report Text Extracts

237UAP00322

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON		
Date: 16:15 11/24/2023	Callsign: N197LL	Origin: HPN
Status: Closed	Aircraft: SF50	Destination: CAE
POD: DEN	Tail Number:	New Destination:
Reporting Facility: ZNY	Operator:	Operator Type: General Aviation
		Paged: YES

REMARKS

Aircraft reported an unidentified aerial phenomenon while SW bound at FL260, within 500 feet 1 NM in the vicinity of SBJ. The unknown phenomenon was described as contrail or object. The UAP was not observed on ATC facility radar system. No other aircraft in the vicinity to correlate the phenomenon.

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": "2023-11-24T16:15:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon while SW bound at FL260, within 500 feet 1 NM in the vicinity of SBJ. The unknown phenomenon was described as contrail or object. The UAP was not observed on ATC facility radar system. No other aircraft in the vicinity to correlate the phenomenon.",
  "historical_starlink_element_rows": 19595,
  "observer": {
    "lat": 40.58300018310547,
    "lon": -74.74169921875,
    "source": "aviation_fix:vicinity of SBJ (public text extract 237UAP00322)"
  },
  "case_id": "237UAP00322",
  "starlink_above_horizon_at_report_time": 1169,
  "starlink_catalog_ids_considered": 19595,
  "largest_same-sky_cluster_count": 586,
  "starlink_at_or_above_10_deg": 586,
  "top_starlinks": [
    {
      "azimuth_deg": 61.08,
      "azimuth_plus_2m_deg": 175.02,
      "azimuth_plus_5m_deg": 178.75,
      "element_age_hours": 2.94,
      "element_epoch": "2023-11-24T19:11:36.892320+00:00",
      "elevation_deg": 85.78,
      "elevation_plus_2m_deg": 54.37,
      "elevation_plus_5m_deg": 23.19,
      "epoch_altitude_km": 1203.94,
      "ground_track_bearing_deg": 180.85,
      "ground_track_label": "S",
      "launch_date": "21060Y",
      "launch_designator": "21060Y",
      "name": "NORAD 48989",
      "norad_id": "48989",
      "range_km": 1205.61,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 40.9057,
      "subpoint_lon": -73.9652
    },
    {
      "azimuth_deg": 124.99,
      "azimuth_plus_2m_deg": 146.73,
      "azimuth_plus_5m_deg": 149.41,
      "element_age_hours": 1.17,
      "element_epoch": "2023-11-24T17:25:12.782496+00:00",
      "elevation_deg": 83.5,
      "elevation_plus_2m_deg": 53.69,
      "elevation_plus_5m_deg": 26.07,
      "epoch_altitude_km": 1292.77,
      "ground_track_bearing_deg": 151.62,
      "ground_track_label": "SSE",
      "launch_date": "92052G",
      "launch_designator": "92052G",
      "name": "NORAD 44509",
      "norad_id": "44509",
      "range_km": 1392.23,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 39.9075,
      "subpoint_lon": -73.4999
    },
    {
      "azimuth_deg": 52.23,
      "azimuth_plus_2m_deg": 351.13,
      "azimuth_plus_5m_deg": 348.14,
      "element_age_hours": 1.47,
      "element_epoch": "2023-11-24T17:43:24.618432+00:00",
      "elevation_deg": 81.35,
      "elevation_plus_2m_deg": 33.82,
      "elevation_plus_5m_deg": 7.9,
      "epoch_altitude_km": 673.84,
      "ground_track_bearing_deg": 345.85,
      "ground_track_label": "NNW",
      "launch_date": "99025AFG",
      "launch_designator": "99025AFG",
      "name": "NORAD 30445",
      "norad_id": "30445",
      "range_km": 721.53,
      "sky_motion_label": "westward, setting",
      "subpoint_lat": 41.1172,
      "subpoint_lon": -73.8234
    }
  ],
}
```

```

{
  "azimuth_deg": 298.4,
  "azimuth_plus_2m_deg": 350.03,
  "azimuth_plus_5m_deg": 1.15,
  "element_age_hours": 4.01,
  "element_epoch": "2023-11-24T20:15:25.303968+00:00",
  "elevation_deg": 76.89,
  "elevation_plus_2m_deg": 54.83,
  "elevation_plus_5m_deg": 28.14,
  "epoch_altitude_km": 1504.58,
  "ground_track_bearing_deg": 6.8,
  "ground_track_label": "N",
  "launch_date": "86094A",
  "launch_designator": "86094A",
  "name": "NORAD 17177",
  "norad_id": "17177",
  "range_km": 1537.17,
  "sky_motion_label": "eastward, setting",
  "subpoint_lat": 41.7533,
  "subpoint_lon": -77.7282
},
{
  "azimuth_deg": 358.3,
  "azimuth_plus_2m_deg": 94.77,
  "azimuth_plus_5m_deg": 100.6,
  "element_age_hours": 3.65,
  "element_epoch": "2023-11-24T12:36:00.378432+00:00",
  "elevation_deg": 76.82,
  "elevation_plus_2m_deg": 31.36,
  "elevation_plus_5m_deg": 6.42,
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"subpoint_lon": -80.3052  
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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: 237UAP00322
TIME AND OBSERVER COORDINATE	extracted	2023-11-24T16:15:00+00:00 at 40.58300, -74.74170
ORBITAL OBJECT PROPAGATION	screened	public LEO catalog objects
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	screened	Hourly weather, sky geometry, and space-weather context where local JSON is present
AIRCRAFT/ADS-B LAYER	screened	16434 trace files scanned; 1200 tracks retained; aircraft strong candidate present
NOAA GOES IMAGERY LAYER	not exhausted	Cloud/lightning imagery layer for the report hour
NOAA GOES ABI/GLM MANIFEST	screened	Public S3 object listing for the report hour
NOAA/NEXRAD WEATHER RADAR LAYER	not exhausted	Weather radar only; not ATC/primary radar
NOAA IGRA RADIOSONDE LAYER	screened	Balloon drift plausibility layer
ASOS/METAR SURFACE WEATHER	screened	Nearest station visibility, cloud, wind, precipitation, and METAR observations
WEATHER/BALLOON SOURCE PLAN	planned	Nearest weather-airport, GOES, and radiosonde queries are listed where local plan JSON is present
FINAL ANALYTIC DISPOSITION	normal-object favored	Presence-only satellite density is context only; a stronger case-specific fit is required for normal-object disposition

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2. National Archives and Records Administration. *Record Group 615: Unidentified Anomalous Phenomena Records Collection*. <https://www.archives.gov/research/topics/uaps/rg-615>
3. National Archives and Records Administration. *Bulk Downloads for Records Related to Unidentified Anomalous Phenomena (UAPs)*. <https://www.archives.gov/research/catalog/catalog-bulk-downloads/uap-bulk-download>
4. National Archives Catalog. *Records from the Federal Aviation Administration Relating to Unidentified Anomalous Phenomena, National Archives Identifier 493468575*. <https://catalog.archives.gov/id/493468575>
5. National Archives direct digital object. *237UAP00322.pdf, FAA UAP report record copied from RG 615 bulk digital objects*. <https://s3.dualstack.us-east-1.amazonaws.com/NARAprodstorage/lz/electronic-records/rg-615/493468575/237UAP00322.pdf>
6. Hugging Face dataset. *oxzoid/space-track-tle-history: historical TLE archive used for public LEO catalog objects screening*. <https://huggingface.co/datasets/oxzoid/space-track-tle-history>
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9. NASA POWER. *Hourly point API documentation for meteorological context*. <https://power.larc.nasa.gov/docs/services/api/temporal/hourly/>
10. NASA/JPL Solar System Dynamics. *Horizons API documentation for observer geometry and apparent magnitude queries*. <https://ssd-api.jpl.nasa.gov/doc/horizons.html>
11. NASA. *DONKI space weather API documentation*. <https://api.nasa.gov/>
12. ADSB.lol. *Interactive API documentation and OpenAPI definition*. <https://api.adsb.lol/docs>
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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/>
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18. NOAA / AWS Open Data. *GOES public dataset registry*. <https://registry.opendata.aws/noaa-goes/>
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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/>