

CASE FILE 43 / 237UAP00327

237UAP00327

Radar/correlation-focused public UAP report; score 54

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-43-237UAP00327	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00327	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2023-12-03T03:15:00+00:00	OBSERVER	41.99318, -98.95275
SOURCE CASE IDS	237UAP00327		

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

237UAP00327 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N8744B B38M ac0818 at 13.2 km, azimuth 8.5 deg, elevation 38.02 deg, 5.18 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: 2023-12-03T03:15:00+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 N8744B B38M ac0818 at 13.2 km, azimuth 8.5 deg, elevation 38.02 deg, 5.18 min from report.
- Non-causal context / rejection screens: very dense orbital-object sky background; context only, not causation.
- Objects above horizon: 1184; at/above 10 deg: 582.
- 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
237UAP00327	03:15 12/03/2023 Callsign: AAL1308 Origin: PHL	ZDV Operator: AAL Operator Type: Commercial	text extract present	237UAP00327.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon while W bound at FL320, 31NM SSW of ONL. The unknown phenomenon was spinning flashing lights above their altitude. The UAP was not observed on ATC facility radar system. AWO advised.
REPORT TIME USED	2023-12-03T03:15:00+00:00
OBSERVER COORDINATE USED	41.99318, -98.95275
OBSERVER SOURCE BASIS	aviation_offset:31NM SSW of ONL (public text extract 237UAP00327)

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	19367	HISTORICAL ELEMENT ROWS	19367
ABOVE HORIZON AT REPORT MINUTE	1184	AT/ABOVE 10 DEG	582
LARGEST SAME-SKY CLUSTER	582		

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 22198	144.62	86.88	1670.25	eastward, setting	91009CS
NORAD 39321	233.2	85.86	1194.17	westward, setting	94029AFG
NORAD 43358	265.76	85.4	1311.94	westward, setting	99025EYP
NORAD 7038	154.56	80.61	1641.83	eastward, setting	73086AE
NORAD 55176	44.18	78.28	1245.43	eastward, setting	23004AN
NORAD 32432	296.16	77.66	637.74	eastward, setting	99025DAU
NORAD 7437	99.39	77.24	1541.01	westward, setting	74072C
NORAD 13757	220.58	76.1	1002.94	eastward, setting	83001A
NORAD 43156	292.61	74.28	472.26	eastward, setting	18008B
NORAD 53	266.81	73.4	1734.96	eastward, rising	60009E
NORAD 30858	196.3	72.44	860.24	eastward, setting	99025AWU
NORAD 3752	304.28	72.08	1261.24	eastward, setting	61015JE

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	582	0.04-359.75 deg	10.0-86.88 deg	eastward, level, eastward, rising, eastward, setting, nearly fixed azimuth, rising, 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	US: 13, CIS: 7, PRC: 7, UK: 2, FR: 1		
OBJECT TYPES	DEBRIS: 19, PAYLOAD: 10, ROCKET BODY: 1		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
22198	SL-8 DEB	DEBRIS	CIS	1991-02-12	n/a
39321	PEGASUS DEB	DEBRIS	US	1994-05-19	n/a
43358	FENGYUN 1C DEB	DEBRIS	PRC	1999-05-10	n/a
7038	DELTA 1 DEB	DEBRIS	US	1973-11-06	n/a
55176	ONEWEB-0715	PAYLOAD	UK	2023-01-10	n/a
32432	FENGYUN 1C DEB	DEBRIS	PRC	1999-05-10	n/a
7437	COSMOS 679	PAYLOAD	CIS	1974-09-19	n/a
13757	COSMOS 1428	PAYLOAD	CIS	1983-01-12	n/a
43156	ZHOU ENLAI	PAYLOAD	PRC	2018-01-19	2024-07-16
53	ECHO 1 DEB (METAL OBJ)	DEBRIS	US	1960-08-12	n/a
30858	FENGYUN 1C DEB	DEBRIS	PRC	1999-05-10	n/a
3752	THOR ABLESTAR DEB	DEBRIS	US	1961-06-29	n/a

5.9 NASA / NOAA / ADS-B Expansion Layer

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

HOUR UTC	2023120303
CLOUD AMOUNT	83.36%
PRECIPITATION	0.03 mm/hr
10 M WIND	3.61 m/s
TEMPERATURE	-1.84 C
RELATIVE HUMIDITY	87.39%
DONKI +/-1 DAY	CME: unavailable; FLR: unavailable; GST: unavailable; HSS: unavailable; IPS: unavailable; MPC: unavailable; RBE: unavailable; SEP: unavailable; WSAEnlilSimulations: unavailable

5.10 Horizons Sky Geometry Context

OBJECT	AZ	EL	APP MAG
Sun	281.51	-45.71	-26.77
Moon	54.89	-8.00	-10.80
Venus	350.39	-56.41	-4.18
Mars	286.13	-48.88	1.40
Jupiter	154.27	58.31	-2.81

OBJECT	AZ	EL	APP MAG
Saturn	230.13	20.05	0.87

- Sun elevation was -45.7 deg, so this was a dark-sky/nighttime sighting.
- Moon was below horizon at elevation -8.0 deg.
- Planets above horizon: Jupiter (58.3 deg), Saturn (20.0 deg).
- NASA POWER cloud amount for the hour was 83.36%, with precipitation 0.03 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 1313.2 MiB; planes-readsb-prod-0 1313.2 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 adslol/globe_history_2023 for 2023-12-03, then filter +/-60 min and 250 nmi around 41.9932,-98.9527.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00327 at 2023-12-03T03:15:00+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/2023/337/03/
GOES GLM LIGHTNING PREFIX	https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2023/337/03/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KOFK	Karl Stefan Memorial Airport	125.40	41.99, -97.44
KGRI	Central Nebraska Regional Airport	126.00	40.97, -98.31
KEAR	Kearney Regional Airport	140.90	40.73, -99.01
KOLU	Columbus Municipal Airport	146.90	41.45, -97.34
KVTN	Miller Field	162.40	42.86, -100.55

- KOFK: [IEM ASOS/METAR daily CSV query](#)
- KGRI: [IEM ASOS/METAR daily CSV query](#)
- KEAR: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072562	NORTH PLATTE/LEE BIRD; NE.	174.00	41.13, -100.70
USM00072558	VALLEY; NE.	227.50	41.32, -96.37
USM00072659	ABERDEEN/REG.; SD.	387.40	45.46, -98.41
USM00072662	RAPID CITY WFO; SD.	416.10	44.07, -103.21
USM00072456	TOPEKA/MUN.; KS.	429.30	39.07, -95.63

5.15 ASOS/METAR Surface Weather Observations

surface visibility ranged 5-10 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
KOFK	125.40	2023-12-03T02:56:00 +00:00	10.00	CLR, M, M, M	180.00 / 9.00	KOFK 030256Z AUTO 18009KT 10SM CLR 00/M02 A2976 RMK AO2 SLP095 T00001022 58005
KGRI	126.00	2023-12-03T02:53:00 +00:00	5.00	OVC00300, M, M, M	190.00 / 8.00	KGRI 030253Z AUTO 19008KT 5SM BR OVC003 00/ M01 A2978 RMK AO2 SLP108 T00001011 58001
KEAR	140.90	2023-12-03T02:56:00 +00:00	9.00	BKN00200, M, M, M	220.00 / 9.00	KEAR 030256Z AUTO 22009KT 9SM BKN002 M01/ M02 A2977 RMK AO2 SLP098 T10111017 58003 FZRANO

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 303.8 deg at 14.61 m/s; a passive balloon could drift about 105.2 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
USM00072562	NORTH PLATTE/ LEE BIRD; NE.	174.00	2023-12-03T00:00 :00+00:00	303.80	14.61	105.20	33.70 at 28630.00 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/2023/337/03/OR_ABI-L2-CMIPF-M6C01_G16_s20233370300204_e20233370309512_c20233370309577.nc](#)
- [ABI-L2-CMIPF/2023/337/03/OR_ABI-L2-CMIPF-M6C01_G16_s20233370310204_e20233370319512_c20233370319573.nc](#)
- [ABI-L2-CMIPF/2023/337/03/OR_ABI-L2-CMIPF-M6C01_G16_s20233370320204_e20233370329512_c20233370329572.nc](#)

• [ABI-L2-CMIPF/2023/337/03/OR_ABI-L2-CMIPF-M6C01_G16_s20233370330204_e20233370339512_c20233370339576.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2023/337/03/OR_GLM-L2-LCFA_G16_s20233370300000_e20233370300200_c20233370300217.nc](#)
- [GLM-L2-LCFA/2023/337/03/OR_GLM-L2-LCFA_G16_s20233370300200_e20233370300400_c20233370300419.nc](#)
- [GLM-L2-LCFA/2023/337/03/OR_GLM-L2-LCFA_G16_s20233370300400_e20233370301000_c20233370301014.nc](#)
- [GLM-L2-LCFA/2023/337/03/OR_GLM-L2-LCFA_G16_s20233370301000_e20233370301200_c20233370301217.nc](#)

5.18 ADSB.lol Historical Aircraft Track Extraction

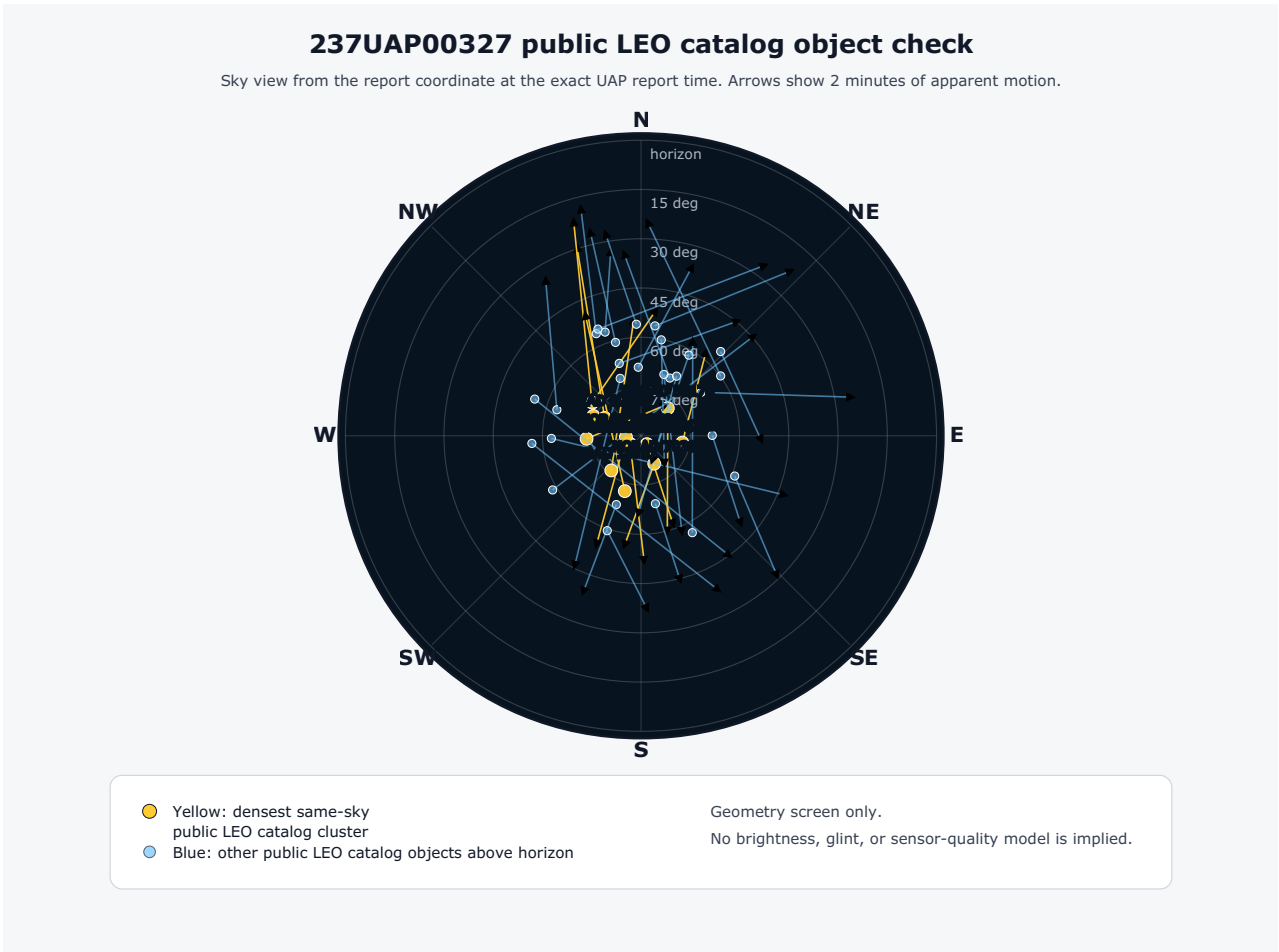
This layer uses the downloaded ADSB.lol daily history archive to test actual aircraft tracks near the report coordinate and minute. It is not treated as a primary-radar substitute; it is a transponder/receiver-derived aircraft screen.

ARCHIVE WINDOW	2023-12-03T02:00:00+00:00 to 2023-12-03T04:30:00+00:00	RADIUS	300.00 nmi
TRACE FILES SCANNED	39286	TRACKS RETAINED	754
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	7	PLAUSIBLE CANDIDATES	52
REPORTING-AIRCRAFT TRACKS EXCLUDED	2	WEAK CANDIDATES	59

5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
N8744B B38M ac0818	strong aircraft candidate	87.63	12.80	0.02	34000	8.50	38.02
N368FR A20N a42a91	strong aircraft candidate	79.13	33.50	0.09	38000	308.60	17.91
N971AK B39M ad8766	strong aircraft candidate	67.72	73.20	0.16	36000	182.60	7.61
N772UA B772 aa7238	strong aircraft candidate	66.61	47.50	0.07	36000	151.50	11.97
N590JB A320 a79e31	strong aircraft candidate	65.97	34.80	0.13	35975	124.50	12.13
N955JB A321 ad4804	strong aircraft candidate	61.80	34.70	0.07	34025	114.80	9.29
N424UA A320 a50c3e	strong aircraft candidate	59.42	20.50	0.80	34000	238.20	7.95
C-FCNW B738 c006b1	reporting aircraft track; excluded from support counts	89.32	2.40	0.07	36000	284.80	77.58

6. Annotated Evidence Figure



7. Analytic Comparison

CRITERION	REPORT EVIDENCE	ANALYTIC TREATMENT
TIME CONSTRAINT	2023-12-03T03:15:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	41.99318, -98.95275	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	237UAP00327 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N8744B B38M ac0818 at 13.2 km, azimuth 8.5 deg, elevation 38.02 deg, 5.18 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

237UAP00327

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON		
Date: 03:15 12/03/2023	Callsign: AAL1308	Origin: PHL
Status: Closed	Aircraft: A321	Destination: SFO
POD: DEN	Tail Number:	New Destination:
Reporting Facility: ZDV	Operator: AAL	Operator Type: Commercial
	Paged: YES	MOR Init: YES
		MOR ID: ZDV-M-2023/12/02-0004

REMARKS

Aircraft reported an unidentified aerial phenomenon while W bound at FL320, 31NM SSW of ONL. The unknown phenomenon was spinning flashing lights above their altitude. The UAP was not observed on ATC facility radar system. AWO advised.

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": "2023-12-03T03:15:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon while W bound at FL320, 31NM SSW of ONL. The unknown phenomenon was spinning flashing lights above their altitude. The UAP was not observed on ATC facility radar system. AWO advised.",
  "historical_starlink_element_rows": 19367,
  "observer": {
    "lat": 41.99317628806995,
    "lon": -98.95274503121664,
    "source": "aviation_offset:31NM SSW of ONL (public text extract 237UAP00327)"
  },
  "case_id": "237UAP00327",
  "starlink_above_horizon_at_report_time": 1184,
  "starlink_catalog_ids_considered": 19367,
  "largest_same-sky_cluster_count": 582,
  "starlink_at_or_above_10_deg": 582,
  "top_starlinks": [
    {
      "azimuth_deg": 144.62,
      "azimuth_plus_2m_deg": 160.09,
      "azimuth_plus_5m_deg": 161.49,
      "element_age_hours": 13.07,
      "element_epoch": "2023-12-03T16:19:21.123840+00:00",
      "elevation_deg": 86.88,
      "elevation_plus_2m_deg": 60.72,
      "elevation_plus_5m_deg": 33.14,
      "epoch_altitude_km": 1437.79,
      "ground_track_bearing_deg": 162.16,
      "ground_track_label": "SSE",
      "launch_date": "91009CS",
      "launch_designator": "91009CS",
      "name": "NORAD 22198",
      "norad_id": "22198",
      "range_km": 1670.25,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 41.4642,
      "subpoint_lon": -98.4539
    },
    {
      "azimuth_deg": 233.2,
      "azimuth_plus_2m_deg": 178.49,
      "azimuth_plus_5m_deg": 176.06,
      "element_age_hours": 28.34,
      "element_epoch": "2023-12-01T22:54:29.972448+00:00",
      "elevation_deg": 85.86,
      "elevation_plus_2m_deg": 51.23,
      "elevation_plus_5m_deg": 20.72,
      "epoch_altitude_km": 608.09,
      "ground_track_bearing_deg": 173.32,
      "ground_track_label": "S",
      "launch_date": "94029AFG",
      "launch_designator": "94029AFG",
      "name": "NORAD 39321",
      "norad_id": "39321",
      "range_km": 1194.17,
      "sky_motion_label": "westward, setting",
      "subpoint_lat": 41.599,
      "subpoint_lon": -99.6513
    },
    {
      "azimuth_deg": 265.76,
      "azimuth_plus_2m_deg": 202.12,
      "azimuth_plus_5m_deg": 198.8,
      "element_age_hours": 10.05,
      "element_epoch": "2023-12-03T13:18:10.655136+00:00",
      "elevation_deg": 85.4,
      "elevation_plus_2m_deg": 53.62,
      "elevation_plus_5m_deg": 22.98,
      "epoch_altitude_km": 846.32,
      "ground_track_bearing_deg": 195.17,
      "ground_track_label": "SSW",
      "launch_date": "99025EYP",
      "launch_designator": "99025EYP",
      "name": "NORAD 43358",
      "norad_id": "43358",
      "range_km": 1311.94,
      "sky_motion_label": "westward, setting",
      "subpoint_lat": 41.9304,
      "subpoint_lon": -100.0021
    }
  ],
}
```

```

{
  "azimuth_deg": 154.56,
  "azimuth_plus_2m_deg": 188.73,
  "azimuth_plus_5m_deg": 194.68,
  "element_age_hours": 11.1,
  "element_epoch": "2023-12-03T14:20:50.917920+00:00",
  "elevation_deg": 80.61,
  "elevation_plus_2m_deg": 55.66,
  "elevation_plus_5m_deg": 29.31,
  "epoch_altitude_km": 1478.8,
  "ground_track_bearing_deg": 199.39,
  "ground_track_label": "SSW",
  "launch_date": "73086AE",
  "launch_designator": "73086AE",
  "name": "NORAD 7038",
  "norad_id": "7038",
  "range_km": 1641.83,
  "sky_motion_label": "eastward, setting",
  "subpoint_lat": 40.2526,
  "subpoint_lon": -97.8746
},
{
  "azimuth_deg": 44.18,
  "azimuth_plus_2m_deg": 164.96,
  "azimuth_plus_5m_deg": 174.9,
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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: 237UAP00327
TIME AND OBSERVER COORDINATE	extracted	2023-12-03T03:15:00+00:00 at 41.99318, -98.95275
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	39286 trace files scanned; 754 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

References and Source Links

1. National Archives and Records Administration. *Records Related to Unidentified Flying Objects (UFOs) and Unidentified Anomalous Phenomena (UAPs) at the National Archives*. <https://www.archives.gov/research/topics/uaps>
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. *237UAP00327.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-615/493468575/237UAP00327.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>
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/>