

CASE FILE 100 / 237UAP00525

237UAP00525

Multiple-witness public UAP report; score 8

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-100-237UAP00525	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00525	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2023-07-21T04:53:00+00:00	OBSERVER	34.12465, -119.35224
SOURCE CASE IDS	237UAP00525		

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

237UAP00525 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N417AN A21N a4ee2e at 7.4 km, azimuth 356.0 deg, elevation 28.81 deg, 0.73 min from report. Dense satellite presence alone is not treated as causation in this packet.

1.1 Key Findings

- Source score 8 based on: UAP/UFO language.
- Report time used: 2023-07-21T04:53:00+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 N417AN A21N a4ee2e at 7.4 km, azimuth 356.0 deg, elevation 28.81 deg, 0.73 min from report.
- Non-causal context / rejection screens: very dense orbital-object sky background; context only, not causation.
- Objects above horizon: 923; at/above 10 deg: 450.
- 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
237UAP00525	7/20/2023 9:53:00 PM (-07 PDT)	AAL266 UFO-UAP ACTIVITY 07-21-2023	text extract present	237UAP00525.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Washington Operations Center Date: 7/20/2023 9:53:00 PM (-07 PDT) Title: AAL266 UFO-UAP ACTIVITY 07-21-2023 Latitude: 34.124653369999997 Longitude: -119.352236 DESCRIPTION PRELIM INFO FROM FAA OPS: CAMARILLO, CA/UFO-UAP ACTIVITY/ 2153P/LOS ANGELES ARTCC ADVISED AMERICAN 266, A321, LIH - LAX, REPORTED AN UNIDENTIFIED AERIAL PHENOMENON WHILE E BOUND AT 14,000 FEET 16 WSW CMA. PHENOMENON DESCRIBED AS MULTIPLE LIGHTS APPEARING TO SEPARATE. NO EVASIVE ACTION TAKEN. WOC 7-3333 MO/JG
REPORT TIME USED	2023-07-21T04:53:00+00:00
OBSERVER COORDINATE USED	34.12465, -119.35224
OBSERVER SOURCE BASIS	(public text extract 237UAP00525)

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	17968	HISTORICAL ELEMENT ROWS	17968
ABOVE HORIZON AT REPORT MINUTE	923	AT/ABOVE 10 DEG	450
LARGEST SAME-SKY CLUSTER	450		

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 25679	309.03	83.54	1594.75	eastward, setting	99019D
NORAD 3583	272.06	81.11	1826.11	eastward, setting	68091R
NORAD 46979	23.91	80.19	812.08	eastward, setting	97051ACM
NORAD 27789	154.15	77.25	1963.02	westward, setting	65089F
NORAD 9799	7.2	74.33	2145.33	eastward, rising	76126Z
NORAD 12963	164.55	68.52	1010.62	westward, setting	81053EJ
NORAD 39699	234.08	67.61	1598.04	eastward, rising	91009DN
NORAD 10709	27.97	66.51	1576.14	westward, setting	76077AE
NORAD 52289	252.54	66.41	586.57	westward, setting	22041AE
NORAD 31738	7.76	66.34	1235.01	westward, setting	99025CEM
NORAD 26822	28.07	65.23	1681.77	eastward, rising	75052KC
NORAD 57147	201.4	62.86	397.95	westward, setting	23090AY

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	450	0.83-358.97 deg	10.01-83.54 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: 14, CIS: 6, PRC: 3, GLOB: 2, UK: 2, FR: 1		
OBJECT TYPES	DEBRIS: 15, PAYLOAD: 15		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
25679	GLOBALSTAR M042	PAYLOAD	GLOB	1999-04-15	n/a
3583	COSMOS 249 DEB	DEBRIS	CIS	1968-10-20	n/a
46979	IRIDIUM 33 DEB	DEBRIS	US	1997-09-14	n/a
27789	DELTA 1 DEB	DEBRIS	US	1965-11-06	n/a
9799	COSMOS 886 DEB *	DEBRIS	CIS	1976-12-27	n/a
12963	COSMOS 1275 DEB	DEBRIS	CIS	1981-06-04	n/a
39699	SL-8 DEB	DEBRIS	CIS	1991-02-12	n/a
10709	DELTA 1 DEB	DEBRIS	US	1976-07-29	n/a
52289	STARLINK-3751	PAYLOAD	US	2022-04-21	n/a
31738	FENGYUN 1C DEB	DEBRIS	PRC	1999-05-10	n/a
26822	DELTA 1 DEB	DEBRIS	US	1975-06-12	n/a
57147	STARLINK-5765	PAYLOAD	US	2023-06-23	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-0 1198.8 MiB; planes-readsb-prod-1 1199.7 MiB; planes-readsb-prod-0 1198.8 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 2023-07-21, then filter +/-60 min and 250 nmi around 34.1247,-119.3522.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00525 at 2023-07-21T04:53:00+00:00.
- NOAA GOES: pull nearest ABI/GLM products for the UTC hour and render cloud/lightning map.
- NOAA NEXRAD: select nearest radar stations and render Level-II/III weather radar sweep around event time.
- NOAA IGRA: find nearest radiosonde station launches bracketing the event and model wind drift for balloon-like descriptions.
- Space-Track gp_history/decay: fetch exact historical element rows and decay/reentry status for top candidate NORAD IDs.

5.12 Weather, Imagery, and Balloon Query Plan

This plan identifies the concrete free sources needed for the next case-specific weather and balloon checks. These are not treated as completed exclusions until the data are downloaded and plotted.

GOES SATELLITE	GOES18
GOES ABI PREFIX	https://noaa-goes18.s3.amazonaws.com/ABI-L2-CMIPF/2023/202/04/
GOES GLM LIGHTNING PREFIX	https://noaa-goes18.s3.amazonaws.com/GLM-L2-LCFA/2023/202/04/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KOXR	Oxnard Airport	15.80	34.20, -119.21
KNTD	Point Mugu Naval Air Station (Naval Base Ventura Co)	21.30	34.12, -119.12
KCMA	Camarillo International Airport	25.70	34.21, -119.09
KSBA	Santa Barbara Municipal Airport	56.00	34.43, -119.84
KVNY	Van Nuys Airport	79.90	34.21, -118.49

- KOXR: [IEM ASOS/METAR daily CSV query](#)
- KNTD: [IEM ASOS/METAR daily CSV query](#)
- KCMA: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072391	POINT MUGU/NAS	21.70	34.12, -119.12
USM00072393	VANDENBERG AFB; CA. (72393-0)	131.30	34.75, -120.57
USM00072381	EDWARDS AFB; CA.	159.60	34.92, -117.90
USM00074612	CHINA LAKE; NAF; CA.	230.60	35.68, -117.68
USM00072293	SAN DIEGO/MIRAMAR; NAS; CA.	252.20	32.83, -117.12

5.15 ASOS/METAR Surface Weather Observations

surface visibility ranged 6-10 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
KOXR	15.80	2023-07-21T04:51:00 +00:00	8.00	CLR, M, M, M	290.00 / 6.00	KOXR 210451Z AUTO 29006KT 8SM CLR 17/16 A2992 RMK AO2 SLP131 T01720156
KNTD	21.30	2023-07-21T04:55:00 +00:00	7.00	CLR, M, M, M	310.00 / 7.00	KNTD 210455Z 31007KT 7SM CLR 19/16 A2992 RMK AO2 SLP133 T01890156 CHINO S VISNO S \$
KCMA	25.70	2023-07-21T04:55:00 +00:00	8.00	CLR, M, M, M	290.00 / 5.00	KCMA 210455Z AUTO 29005KT 8SM CLR 18/16 A2992 RMK AO2 SLP138 T01830156 \$

5.16 NOAA IGRA Radiosonde Wind Profile

No nearby IGRA sounding was parsed within the +/-1 day window. 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
USM00072391	POINT MUGU/ NAS	21.70	no sounding	n/a	n/a	n/a	n/a at n/a 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	GOES18	BUCKET	noaa-goes18
ABI SAMPLE FILES	12	GLM SAMPLE FILES	12

ABI sample objects:

- [ABI-L2-CMIPF/2023/202/04/OR_ABI-L2-CMIPF-M6C01_G18_s20232020400226_e20232020409535_c20232020410000.nc](#)
- [ABI-L2-CMIPF/2023/202/04/OR_ABI-L2-CMIPF-M6C01_G18_s20232020410226_e20232020419534_c20232020420000.nc](#)
- [ABI-L2-CMIPF/2023/202/04/OR_ABI-L2-CMIPF-M6C01_G18_s20232020420226_e20232020429536_c20232020430001.nc](#)
- [ABI-L2-CMIPF/2023/202/04/OR_ABI-L2-CMIPF-M6C01_G18_s20232020430226_e20232020439534_c20232020440000.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2023/202/04/OR_GLM-L2-LCFA_G18_s20232020400000_e20232020400200_c20232020400214.nc](#)
- [GLM-L2-LCFA/2023/202/04/OR_GLM-L2-LCFA_G18_s20232020400200_e20232020400400_c20232020400415.nc](#)
- [GLM-L2-LCFA/2023/202/04/OR_GLM-L2-LCFA_G18_s20232020400400_e20232020401000_c20232020401017.nc](#)
- [GLM-L2-LCFA/2023/202/04/OR_GLM-L2-LCFA_G18_s20232020401000_e20232020401200_c20232020401218.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	2023-07-21T03:38:00+00:00 to 2023-07-21T06:08:00+00:00	RADIUS	300.00 nmi
TRACE FILES SCANNED	51842	TRACKS RETAINED	1130
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	51	PLAUSIBLE CANDIDATES	221
REPORTING-AIRCRAFT TRACKS EXCLUDED	0	WEAK CANDIDATES	149

5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
N417AN A21N a4ee2e	strong aircraft candidate	86.47	7.40	0.06	13975	356.00	28.81
N151FE B763 a0ce68	strong aircraft candidate	80.23	13.40	0.10	26550	41.90	24.86
N613FE MD11 a7fa65	strong aircraft candidate	78.52	5.10	0.05	9825	154.00	39.28
N724SP C172 a9b406	strong aircraft candidate	77.38	15.90	0.30	5600	1.70	5.92

7. Analytic Comparison

CRITERION	REPORT EVIDENCE	ANALYTIC TREATMENT
TIME CONSTRAINT	2023-07-21T04:53:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	34.12465, -119.35224	Directly used as observer point for azimuth/elevation/range computation.
COUNT / PATTERN	three-object/light language present	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 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	237UAP00525 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate N417AN A21N a4ee2e at 7.4 km, azimuth 356.0 deg, elevation 28.81 deg, 0.73 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

237UAP00525

Washington Operations Center

Date: 7/20/2023 9:53:00 PM (-07 PDT)
Title: AAL266 UFO-UAP ACTIVITY 07-21-2023
Latitude: 34.124653369999997 Latitude: -119.352236

DESCRIPTION

PRELIM INFO FROM FAA OPS: CAMARILLO, CA/UFO-UAP ACTIVITY/2153P/LOS ANGELES ARTCC ADVISED AMERICAN
266, A321, LIH - LAX, REPORTED AN UNIDENTIFIED AERIAL PHENOMENON WHILE E BOUND AT 14,000 FEET 16 WSW
CMA. PHENOMENON DESCRIBED AS MULTIPLE LIGHTS APPEARING TO SEPARATE. NO EVASIVE ACTION TAKEN.
WOC 7-3333 MO/JG

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": "2023-07-21T04:53:00+00:00",
  "source_excerpt": "Washington Operations Center\n\n\n\nDate: 7/20/2023 9:53:00 PM (-07 PDT)\nTitle: AAL266 UFO-UAP ACTIVITY\n07-21-2023\nLatitude: 34.124653369999997\nLatitude: -119.352236\n\n\n\nDESCRIPTION\n\nPRELIM INFO\nFROM FAA OPS: CAMARILLO, CA/UFO-UAP ACTIVITY/2153P/LOS ANGELES ARTCC ADVISED AMERICAN\n266, A321, LIH - LAX, REPORTED AN\nUNIDENTIFIED AERIAL PHENOMENON WHILE E BOUND AT 14,000 FEET 16 WSW\nCMA. PHENOMENON DESCRIBED AS MULTIPLE LIGHTS APPEARING TO\nSEPARATE. NO EVASIVE ACTION TAKEN.\nWOC 7-3333 MO/JG",
  "historical_starlink_element_rows": 17968,
  "observer": {
    "lat": 34.12465337,
    "lon": -119.352236,
    "source": "(public text extract 237UAP00525)"
  },
  "case_id": "237UAP00525",
  "starlink_above_horizon_at_report_time": 923,
  "starlink_catalog_ids_considered": 17968,
  "largest_same-sky_cluster_count": 450,
  "starlink_at_or_above_10_deg": 450,
  "top_starlinks": [
    {
      "azimuth_deg": 309.03,
      "azimuth_plus_2m_deg": 34.12,
      "azimuth_plus_5m_deg": 42.37,
      "element_age_hours": 6.44,
      "element_epoch": "2023-07-21T11:19:29.427168+00:00",
      "elevation_deg": 83.54,
      "elevation_plus_2m_deg": 62.62,
      "elevation_plus_5m_deg": 34.09,
      "epoch_altitude_km": 1588.35,
      "ground_track_bearing_deg": 46.08,
      "ground_track_label": "NE",
      "launch_date": "99019D",
      "launch_designator": "99019D",
      "name": "NORAD 25679",
      "norad_id": "25679",
      "range_km": 1594.75,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 34.9335,
      "subpoint_lon": -120.574
    },
    {
      "azimuth_deg": 272.06,
      "azimuth_plus_2m_deg": 11.45,
      "azimuth_plus_5m_deg": 25.32,
      "element_age_hours": 17.05,
      "element_epoch": "2023-07-20T11:50:09.848256+00:00",
      "elevation_deg": 81.11,
      "elevation_plus_2m_deg": 69.32,
      "elevation_plus_5m_deg": 42.52,
      "epoch_altitude_km": 806.38,
      "ground_track_bearing_deg": 30.99,
      "ground_track_label": "NNE",
      "launch_date": "68091R",
      "launch_designator": "68091R",
      "name": "NORAD 3583",
      "norad_id": "3583",
      "range_km": 1826.11,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 34.1726,
      "subpoint_lon": -121.7371
    },
    {
      "azimuth_deg": 23.91,
      "azimuth_plus_2m_deg": 174.44,
      "azimuth_plus_5m_deg": 177.62,
      "element_age_hours": 4.33,
      "element_epoch": "2023-07-21T09:12:32.797152+00:00",
      "elevation_deg": 80.19,
      "elevation_plus_2m_deg": 44.82,
      "elevation_plus_5m_deg": 13.43,
      "epoch_altitude_km": 712.98,
      "ground_track_bearing_deg": 179.13,
      "ground_track_label": "S",
      "launch_date": "97051ACM",
      "launch_designator": "97051ACM",
      "name": "NORAD 46979",
      "norad_id": "46979",
      "range_km": 812.08,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 35.1364,
```

```

    "subpoint_lon": -118.8055
  },
  {
    "azimuth_deg": 154.15,
    "azimuth_plus_2m_deg": 149.26,
    "azimuth_plus_5m_deg": 148.22,
    "element_age_hours": 22.06,
    "element_epoch": "2023-07-20T06:49:35.255712+00:00",
    "elevation_deg": 77.25,
    "elevation_plus_2m_deg": 57.27,
    "elevation_plus_5m_deg": 35.72,
    "epoch_altitude_km": 1107.28,
    "ground_track_bearing_deg": 147.48,
    "ground_track_label": "SSE",
    "launch_date": "65089F",
    "launch_designator": "65089F",
    "name": "NORAD 27789",
    "norad_id": "27789",
    "range_km": 1963.02,
    "sky_motion_label": "westward, setting",
    "subpoint_lat": 31.4154,
    "subpoint_lon": -117.8255
  },
  {
    "azimuth_deg": 7.2,
    "azimuth_plus_2m_deg": 102.06,
    "azimuth_plus_5m_deg": 139.53,
    "element_age_hours": 11.99,
    "element_epoch": "2023-07-20T16:53:49.183872+00:00",
    "elevation_deg": 74.33,
    "elevation_plus_2m_deg": 78.31,
    "elevation_plus_5m_deg": 54.43,
    "epoch_altitude_km": 573.09,
    "ground_track_bearing_deg": 152.62,
    "ground_track_label": "SSE",
    "launch_date": "76126Z",
    "launch_designator": "76126Z",
    "name": "NORAD 9799",
    "norad_id": "9799",
    "range_km": 2145.33,
    "sky_motion_label": "eastward, rising",
    "subpoint_lat": 38.0284,
    "subpoint_lon": -118.7284
  },
  {
    "azimuth_deg": 164.55,
    "azimuth_plus_2m_deg": 17.83,
    "azimuth_plus_5m_deg": 8.87,
    "element_age_hours": 13.45,
    "element_epoch": "2023-07-20T15:26:03.727680+00:00",
    "elevation_deg": 68.52,
    "elevation_plus_2m_deg": 59.64,
    "elevation_plus_5m_deg": 21.49,
    "epoch_altitude_km": 947.34,
    "ground_track_bearing_deg": 4.97,
    "ground_track_label": "N",
    "launch_date": "81053EJ",
    "launch_designator": "81053EJ",
    "name": "NORAD 12963",
    "norad_id": "12963",
    "range_km": 1010.62,
    "sky_motion_label": "westward, setting",
    "subpoint_lat": 31.3214,
    "subpoint_lon": -118.4503
  },
  {
    "azimuth_deg": 234.08,
    "azimuth_plus_2m_deg": 331.82,
    "azimuth_plus_5m_deg": 5.67,
    "element_age_hours": 13.63,
    "element_epoch": "2023-07-21T18:30:59.728896+00:00",
    "elevation_deg": 67.61,
    "elevation_plus_2m_deg": 71.14,
    "elevation_plus_5m_deg": 38.89,
    "epoch_altitude_km": 1497.31,
    "ground_track_bearing_deg": 15.14,
    "ground_track_label": "NNE",
    "launch_date": "91009DN",
    "launch_designator": "91009DN",
    "name": "NORAD 39699",
    "norad_id": "39699",
    "range_km": 1598.04,
    "sky_motion_label": "eastward, rising",
    "subpoint_lat": 31.4455,
    "subpoint_lon": -123.5543
  },
  {
    "azimuth_deg": 27.97,

```

```

    "azimuth_plus_2m_deg": 359.82,
    "azimuth_plus_5m_deg": 350.41,
    "element_age_hours": 10.27,
    "element_epoch": "2023-07-21T15:08:57.166944+00:00",
    "elevation_deg": 66.51,
    "elevation_plus_2m_deg": 44.65,
    "elevation_plus_5m_deg": 21.68,
    "epoch_altitude_km": 1472.83,
    "ground_track_bearing_deg": 341.76,
    "ground_track_label": "NNW",
    "launch_date": "76077AE",
    "launch_designator": "76077AE",
    "name": "NORAD 10709",
    "norad_id": "10709",
    "range_km": 1576.14,
    "sky_motion_label": "westward, setting",
    "subpoint_lat": 38.1608,
    "subpoint_lon": -116.6179
  },
  {
    "azimuth_deg": 252.54,
    "azimuth_plus_2m_deg": 153.27,
    "azimuth_plus_5m_deg": 144.0,
    "element_age_hours": 3.78,
    "element_epoch": "2023-07-21T01:06:04.776768+00:00",
    "elevation_deg": 66.41,
    "elevation_plus_2m_deg": 31.5,
    "elevation_plus_5m_deg": 6.1,
    "epoch_altitude_km": 545.94,
    "ground_track_bearing_deg": 136.9,
    "ground_track_label": "SE",
    "launch_date": "22041AE",
    "launch_designator": "22041AE",
    "name": "NORAD 52289",
    "norad_id": "52289",
    "range_km": 586.57,
    "sky_motion_label": "westward, setting",
    "subpoint_lat": 33.5194,
    "subpoint_lon": -121.5748
  },
  {
    "azimuth_deg": 7.76,
    "azimuth_plus_2m_deg": 352.93,
    "azimuth_plus_5m_deg": 349.18,
    "element_age_hours": 5.42,
    "element_epoch": "2023-07-20T23:27:56.818944+00:00",
    "elevation_deg": 66.34,
    "elevation_plus_2m_deg": 38.01,
    "elevation_plus_5m_deg": 15.67,
    "epoch_altitude_km": 738.38,
    "ground_track_bearing_deg": 345.07,
    "ground_track_label": "NNW",
    "launch_date": "99025CEM",
    "launch_designator": "99025CEM",
    "name": "NORAD 31738",
    "norad_id": "31738",
    "range_km": 1235.01,
    "sky_motion_label": "westward, setting",
    "subpoint_lat": 37.8743,
    "subpoint_lon": -118.7079
  },
  {
    "azimuth_deg": 28.07,
    "azimuth_plus_2m_deg": 149.37,
    "azimuth_plus_5m_deg": 188.57,
    "element_age_hours": 26.12,
    "element_epoch": "2023-07-20T02:45:52.269984+00:00",
    "elevation_deg": 65.23,
    "elevation_plus_2m_deg": 81.47,
    "elevation_plus_5m_deg": 44.91,
    "epoch_altitude_km": 1093.49,
    "ground_track_bearing_deg": 196.21,
    "ground_track_label": "SSW",
    "launch_date": "75052KC",
    "launch_designator": "75052KC",
    "name": "NORAD 26822",
    "norad_id": "26822",
    "range_km": 1681.77,
    "sky_motion_label": "eastward, rising",
    "subpoint_lat": 38.5935,
    "subpoint_lon": -116.292
  },
  {
    "azimuth_deg": 201.4,
    "azimuth_plus_2m_deg": 133.05,
    "azimuth_plus_5m_deg": 126.82,
    "element_age_hours": 2.07,
    "element_epoch": "2023-07-21T02:48:57.985056+00:00",

```

```
"elevation_deg": 62.86,  
"elevation_plus_2m_deg": 17.41,  
"elevation_plus_5m_deg": -0.43,  
"epoch_altitude_km": 361.19,  
"ground_track_bearing_deg": 121.84,  
"ground_track_label": "ESE",  
"launch_date": "23090AY",  
"launch_d
```

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: 237UAP00525
TIME AND OBSERVER COORDINATE	extracted	2023-07-21T04:53:00+00:00 at 34.12465, -119.35224
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	not exhausted	Hourly weather, sky geometry, and space-weather context where local JSON is present
AIRCRAFT/ADS-B LAYER	screened	51842 trace files scanned; 1130 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. *237UAP00525.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-615/493468575/237UAP00525.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. 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/>