

CASE FILE 69 / 237UAP00604

# 237UAP00604

Radar/correlation-focused public UAP report; score 52

HIGH-VALUE UNRESOLVED

REPORT NO.	UAP-OM-69-237UAP00604	DISPOSITION	HIGH-VALUE UNRESOLVED
PRIMARY CASE	237UAP00604	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2024-01-27T13:02:00+00:00	OBSERVER	37.33453, -130.55772
SOURCE CASE IDS	237UAP00604		

## 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

---

237UAP00604 was screened against historical public LEO catalog objects orbital elements at the extracted time and observer coordinate. The screen did not produce enough mundane evidence to close the case under the normal-object favored standard. Hard features retained for follow-up: radar/primary evidence.

## 1.1 Key Findings

- Source score 52 based on: radar/primary-return language, high-altitude report, UAP/UFO language.
- Report time used: 2024-01-27T13:02:00+00:00.
- External object layer used: public LEO catalog objects.
- 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: very dense orbital-object sky background; context only, not causation.
- Remaining hard features: radar/primary evidence.
- Objects above horizon: 1015; at/above 10 deg: 486.
- 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

**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
237UAP00604	1/27/2024 5:02:00 AM (-08 PST)	EVA008 UFO-UAP ACTIVITY 01-27-2024	text extract present	<a href="#">237UAP00604.pdf</a>

### 3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Washington Operations Center Date: 1/27/2024 5:02:00 AM (-08 PST) Title: EVA008 UFO-UAP ACTIVITY 01-27-2024 Latitude: 37.33452956 Latitude: -130.55771680000001 DESCRIPTION PRELIM INFO FROM FAA OPS: SAN FRANCISCO, CA/UFO-UAP ACTIVITY/0502P/OAKLAND ARTCC ADVISED CHINA REGISTERED EVA 008, B77W, TAIPEI, TAIWAN (RCTP) - SFO, REPORTED AN UNIDENTIFIED AERIAL PHENOMENON OF ACFT DOGFIGHTING AT FL500 FROM THE 12 O'CLOCK POSITION WHILE W BOUND AT FL370 450 NM WEST OF SFO. ATC REPORTED NO UAP OBSERVED ON RADAR. WOC 7-3333 RC/JA
REPORT TIME USED	2024-01-27T13:02:00+00:00
OBSERVER COORDINATE USED	37.33453, -130.55772
OBSERVER SOURCE BASIS	(public text extract 237UAP00604)

### 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	19046	HISTORICAL ELEMENT ROWS	19046
ABOVE HORIZON AT REPORT MINUTE	1015	AT/ABOVE 10 DEG	486
LARGEST SAME-SKY CLUSTER	486		

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 21165	260.0	79.19	1777.52	eastward, setting	91009AC
NORAD 33684	83.96	72.36	940.58	eastward, setting	99025DFV
NORAD 50840	303.63	71.57	568.93	westward, setting	22001AP
NORAD 13503	27.54	70.26	1155.82	eastward, setting	77121BA
NORAD 14471	248.44	68.31	1771.45	westward, setting	76077EN
NORAD 45429	93.51	67.81	1302.25	westward, setting	20020F
NORAD 9807	353.48	66.66	999.46	eastward, setting	76126AA
NORAD 12722	358.28	66.2	980.6	eastward, setting	81053BP
NORAD 56419	189.65	65.7	610.67	westward, setting	23061AX
NORAD 56389	5.92	65.37	613.11	eastward, setting	23061R
NORAD 14800	26.43	64.63	2393.53	eastward, rising	76126BS
NORAD 28042	291.14	64.4	995.81	westward, setting	92093JP

### 5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	486	1.36-358.85 deg	10.02-79.19 deg	eastward, level, eastward, rising, eastward, setting, nearly fixed azimuth, rising, nearly fixed azimuth, setting, 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	29
TOP OWNERS	CIS: 13, US: 13, PRC: 2, UK: 1		
OBJECT TYPES	DEBRIS: 19, PAYLOAD: 10		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
21165	SL-8 DEB	DEBRIS	CIS	1991-02-12	n/a
33684	FENGYUN 1C DEB	DEBRIS	PRC	1999-05-10	n/a
50840	STARLINK-3295	PAYLOAD	US	2022-01-06	n/a
13503	COSMOS 970 DEB	DEBRIS	CIS	1977-12-21	n/a
14471	DELTA 1 DEB	DEBRIS	US	1976-07-29	n/a
45429	ONEWEB-0081	PAYLOAD	UK	2020-03-21	n/a
9807	COSMOS 886 DEB	DEBRIS	CIS	1976-12-27	n/a
12722	COSMOS 1275 DEB	DEBRIS	CIS	1981-06-04	n/a
56419	STARLINK-5350	PAYLOAD	US	2023-05-04	n/a
56389	STARLINK-6145	PAYLOAD	US	2023-05-04	n/a
14800	COSMOS 886 DEB	DEBRIS	CIS	1976-12-27	n/a
28042	SL-16 DEB	DEBRIS	CIS	1992-12-25	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 1458.0 MiB; planes-readsb-prod-0 1453.0 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\_2024 for 2024-01-27, then filter +/-60 min and 250 nmi around 37.3345,-130.5577.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00604 at 2024-01-27T13:02:00+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	<a href="https://noaa-goes18.s3.amazonaws.com/ABI-L2-CMIPF/2024/027/13/">https://noaa-goes18.s3.amazonaws.com/ABI-L2-CMIPF/2024/027/13/</a>
GOES GLM LIGHTNING PREFIX	<a href="https://noaa-goes18.s3.amazonaws.com/GLM-L2-LCFA/2024/027/13/">https://noaa-goes18.s3.amazonaws.com/GLM-L2-LCFA/2024/027/13/</a>

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KUKI	Ukiah Municipal Airport	672.50	39.13, -123.20
KEKA	Murray Field	676.70	40.80, -124.11
KACV	California Redwood Coast-Humboldt County Airport	687.70	40.98, -124.11
KSTS	Charles M. Schulz Sonoma County Airport	691.60	38.51, -122.81
KSFO	San Francisco International Airport	722.60	37.62, -122.37

- KUKI: [IEM ASOS/METAR daily CSV query](#)
- KEKA: [IEM ASOS/METAR daily CSV query](#)
- KACV: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072493	OAKLAND/METROP. OAKLAND INT.;	736.00	37.74, -122.22
USM00072597	MEDFORD/MEDFORD-JACKSON COUNTY	861.70	42.38, -122.88
USM00072393	VANDENBERG AFB; CA. (72393-0)	942.60	34.75, -120.57
USM00072489	RENO; NV.	968.80	39.57, -119.80
USM00072694	SALEM/MCNARY; OR.	1052.20	44.91, -123.01

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
KUKI	672.50	2024-01-27T12:56:00 +00:00	10.00	BKN11000, M, M, M	0.00 / 0.00	KUKI 271256Z AUTO 00000KT 10SM BKN110 11/09 A3030 RMK AO2 RAE00B18E29 SLP257 P0000 T01060089
KEKA	676.70	2024-01-27T12:00:00 +00:00	10.00	M05741, M, M, M	140.00 / 8.00	METAR EKA 271200Z AUTO 14008KT 10SM 17/12 RMK AO2 SLP219 60001 70008 T01720122 IEM_GHCNH

STATION	DISTANCE KM	NEAREST OBS UTC	VIS SM	SKY	WIND DEG/KT	METAR
KACV	687.70	2024-01-27T12:53:00 +00:00	10.00	BKN04100, BKN04800, OVC10000, M	190.00 / 11.00	KACV 271253Z AUTO 19011KT 10SM BKN041 BKN048 OVC100 17/11 A3019 RMK AO2 SLP227 T01670106

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 233.0 deg at 19.49 m/s; a passive balloon could drift about 140.4 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
USM00072493	OAKLAND/ METROP. OAKLAND INT.;	736.00	2024-01-27T12:00 :00+00:00	233.00	19.49	140.40	35.70 at 1242.00 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	GOES18	BUCKET	noaa-goes18
ABI SAMPLE FILES	12	GLM SAMPLE FILES	12

ABI sample objects:

- [ABI-L2-CMIPF/2024/027/13/OR\\_ABI-L2-CMIPF-M6C01\\_G18\\_s20240271300212\\_e20240271309520\\_c20240271309583.nc](#)
- [ABI-L2-CMIPF/2024/027/13/OR\\_ABI-L2-CMIPF-M6C01\\_G18\\_s20240271310212\\_e20240271319520\\_c20240271319597.nc](#)
- [ABI-L2-CMIPF/2024/027/13/OR\\_ABI-L2-CMIPF-M6C01\\_G18\\_s20240271320212\\_e20240271329520\\_c20240271329594.nc](#)
- [ABI-L2-CMIPF/2024/027/13/OR\\_ABI-L2-CMIPF-M6C01\\_G18\\_s20240271330212\\_e20240271339520\\_c20240271339590.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2024/027/13/OR\\_GLM-L2-LCFA\\_G18\\_s20240271300000\\_e20240271300200\\_c20240271300215.nc](#)
- [GLM-L2-LCFA/2024/027/13/OR\\_GLM-L2-LCFA\\_G18\\_s20240271300200\\_e20240271300400\\_c20240271300415.nc](#)
- [GLM-L2-LCFA/2024/027/13/OR\\_GLM-L2-LCFA\\_G18\\_s20240271300400\\_e20240271301000\\_c20240271301014.nc](#)
- [GLM-L2-LCFA/2024/027/13/OR\\_GLM-L2-LCFA\\_G18\\_s20240271301000\\_e20240271301200\\_c20240271301214.nc](#)

5.18 ADSB.lol Historical Aircraft Track Extraction

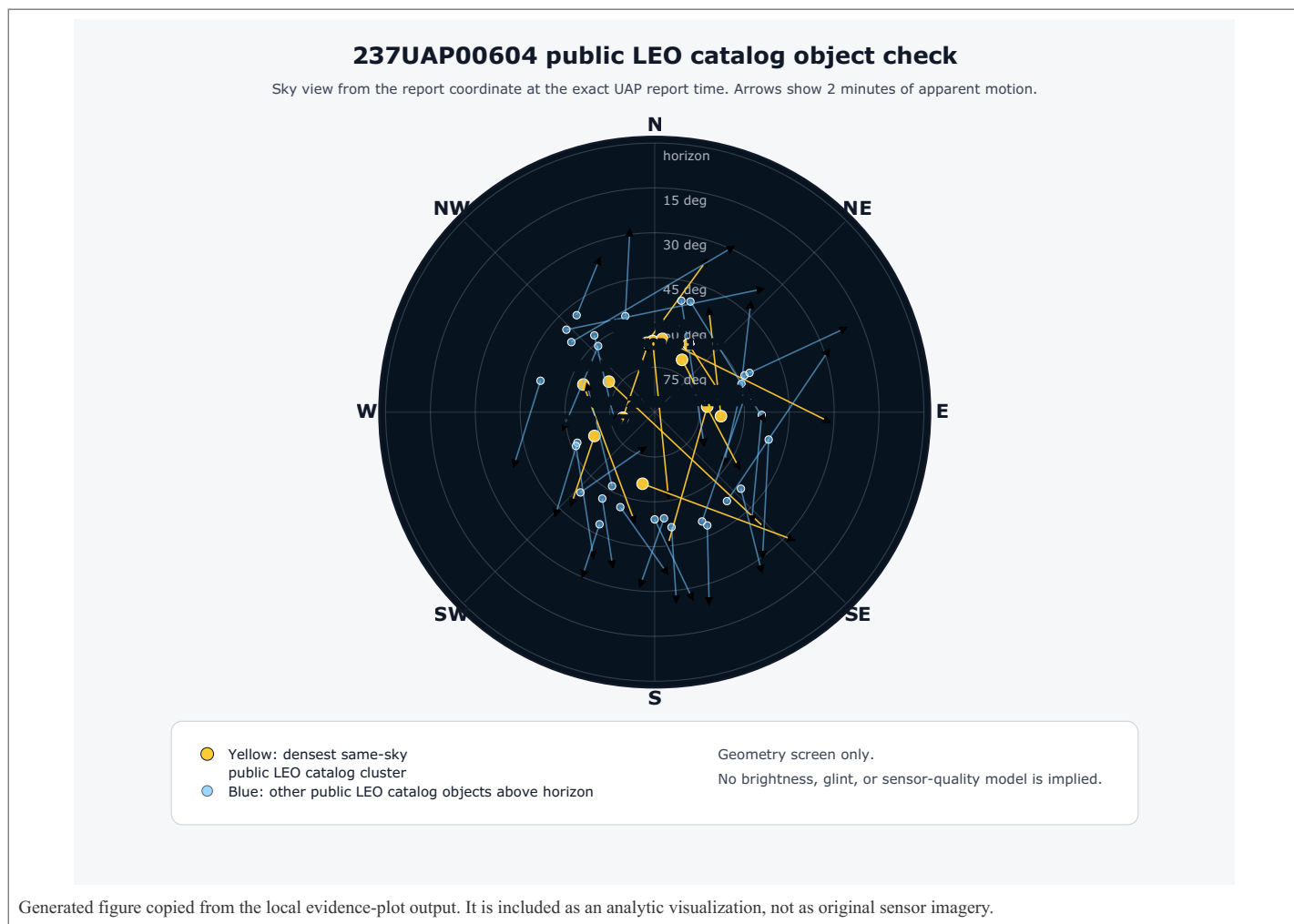
This layer uses the downloaded ADSB.lol daily history archive to test actual aircraft tracks near the report coordinate and minute. It is not treated as a primary-radar substitute; it is a transponder/receiver-derived aircraft screen.

ARCHIVE WINDOW	2024-01-27T12:02:00+00:00 to 2024-01-27T14:02:00+00:00	RADIUS	250.00 nmi
TRACE FILES SCANNED	43597	TRACKS RETAINED	7
SUPPORT STATUS	no specific aircraft candidate	BEST-CANDIDATE NOTE	ADS-B extraction does not support an aircraft explanation inside the selected window/radius.
STRONG CANDIDATES	0	PLAUSIBLE CANDIDATES	0
REPORTING-AIRCRAFT TRACKS EXCLUDED	0	WEAK CANDIDATES	0

### 5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
B-16713 B77W 8990dc	background	14.92	388.70	16.05	37000	88.50	-0.09
B-18722 B744 89911b	background	13.97	398.00	16.59	35000	89.70	-0.26
N2534U B77W a2659a	background	8.00	449.90	24.92	37000	110.50	-0.59
C-FNOI B789 c023c9	background	8.00	456.90	29.18	39000	109.50	-0.57
B-16716 B77W 8990de	background	8.00	401.70	31.08	37000	86.60	-0.20
N2135U B77W a1c7c1	background	8.00	421.90	43.90	36000	69.20	-0.41
N39415 B739 a4943e	background	8.00	454.10	48.36	35000	108.90	-0.70

## 6. Annotated Evidence Figure





## 7. Analytic Comparison

CRITERION	REPORT EVIDENCE	ANALYTIC TREATMENT
TIME CONSTRAINT	2024-01-27T13:02:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	37.33453, -130.55772	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	Reported motion remains only partly explained; this is a principal reason for high-value unresolved status.
RADAR / OFFICIAL CHECK	radar observation claimed	Radar or hard maneuvering language is treated as a conflict/collection gap, not hand-waved away.
ANALYTIC DISPOSITION	unresolved	237UAP00604 was screened against historical public LEO catalog objects orbital elements at the extracted time and observer coordinate. The screen did not produce enough mundane evidence to close the case under the normal-object favored standard. Hard features retained for follow-up: radar/primary evidence.

## 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.

Washington Operations Center

Date: 1/27/2024 5:02:00 AM (-08 PST)

Title: EVA008 UFO-UAP ACTIVITY 01-27-2024

Latitude: 37.33452956      Latitude: -130.55771680000001

Latitude: -130.55771680000001

DESCRIPTION
-------------

PRELIM INFO FROM FAA OPS: SAN FRANCISCO, CA/UFO-UAP ACTIVITY/0502P/OAKLAND ARTCC ADVISED CHINA REGISTERED EVA 008, B77W, TAIPEI, TAIWAN (RCTP) - SFO, REPORTED AN UNIDENTIFIED AERIAL PHENOMENON OF ACFT DOGFIGHTING AT FL500 FROM THE 12 O'CLOCK POSITION WHILE W BOUND AT FL370 450 NM WEST OF SFO. ATC REPORTED NO UAP OBSERVED ON RADAR. WOC 7-3333 RC/JA

## 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": "2024-01-27T13:02:00+00:00",
  "source_excerpt": "Washington Operations Center\n\n\n\n\nDate: 1/27/2024 5:02:00 AM (-08 PST)\nTitle: EVA008 UFO-UAP ACTIVITY\n01-27-2024\nLatitude: 37.33452956\nLongitude: -130.5577168\n\n\n\n\nDESCRIPTION\n\n\nPRELIM INFO FROM FAA OPS: SAN FRANCISCO, CA/UFO-UAP ACTIVITY/0502P/OAKLAND ARTCC\nADVISED CHINA\nREGISTERED EVA 008, B77W, TAIPEI, TAIWAN (RCTP) - SFO, REPORTED AN UNIDENTIFIED AERIAL PHENOMENON\nOF ACFT\nDOGFIGHTING AT FL500 FROM THE 12 O'CLOCK POSITION WHILE W BOUND AT FL370 450 NM WEST OF\nSFO. ATC REPORTED NO UAP OBSERVED ON\nRADAR. WOC 7-3333 RC/JA",
  "historical_starlink_element_rows": 19046,
  "observer": {
    "lat": 37.33452956,
    "lon": -130.5577168,
    "source": "(public text extract 237UAP00604)"
  },
  "case_id": "237UAP00604",
  "starlink_above_horizon_at_report_time": 1015,
  "starlink_catalog_ids_considered": 19046,
  "largest_same-sky_cluster_count": 486,
  "starlink_at_or_above_10_deg": 486,
  "top_starlinks": [
    {
      "azimuth_deg": 260.0,
      "azimuth_plus_2m_deg": 354.27,
      "azimuth_plus_5m_deg": 10.1,
      "element_age_hours": 1.87,
      "element_epoch": "2024-01-27T11:09:44.019648+00:00",
      "elevation_deg": 79.19,
      "elevation_plus_2m_deg": 67.24,
      "elevation_plus_5m_deg": 38.85,
      "epoch_altitude_km": 1505.81,
      "ground_track_bearing_deg": 16.42,
      "ground_track_label": "NNE",
      "launch_date": "91009AC",
      "launch_designator": "91009AC",
      "name": "NORAD 21165",
      "norad_id": "21165",
      "range_km": 1777.52,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 36.8903,
      "subpoint_lon": -133.4481
    },
    {
      "azimuth_deg": 83.96,
      "azimuth_plus_2m_deg": 174.69,
      "azimuth_plus_5m_deg": 186.69,
      "element_age_hours": 20.85,
      "element_epoch": "2024-01-28T09:52:47.993376+00:00",
      "elevation_deg": 72.36,
      "elevation_plus_2m_deg": 44.62,
      "elevation_plus_5m_deg": 13.65,
      "epoch_altitude_km": 470.64,
      "ground_track_bearing_deg": 194.89,
      "ground_track_label": "SSW",
      "launch_date": "99025DFV",
      "launch_designator": "99025DFV",
      "name": "NORAD 33684",
      "norad_id": "33684",
      "range_km": 940.58,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 37.5379,
      "subpoint_lon": -127.7467
    },
    {
      "azimuth_deg": 303.63,
      "azimuth_plus_2m_deg": 136.45,
      "azimuth_plus_5m_deg": 135.17,
      "element_age_hours": 2.16,
      "element_epoch": "2024-01-27T10:52:16.713408+00:00",
      "elevation_deg": 71.57,
      "elevation_plus_2m_deg": 35.91,
      "elevation_plus_5m_deg": 7.14,
      "epoch_altitude_km": 545.79,
      "ground_track_bearing_deg": 133.01,
      "ground_track_label": "SE",
      "launch_date": "22001AP",
      "launch_designator": "22001AP",
      "name": "NORAD 50840",
      "norad_id": "50840",
      "range_km": 568.93,
      "sky_motion_label": "westward, setting",
    }
  ]
}
```

```
"subpoint_lat": 38.1513,
"subpoint_lon": -132.1328
},
{
  "azimuth_deg": 27.54,
  "azimuth_plus_2m_deg": 123.71,
  "azimuth_plus_5m_deg": 141.78,
  "element_age_hours": 1.64,
  "element_epoch": "2024-01-27T11:23:53.505312+00:00",
  "elevation_deg": 70.26,
  "elevation_plus_2m_deg": 55.93,
  "elevation_plus_5m_deg": 23.34,
  "epoch_altitude_km": 1007.11,
  "ground_track_bearing_deg": 151.97,
  "ground_track_label": "SSE",
  "launch_date": "77121BA",
  "launch_designator": "77121BA",
  "name": "NORAD 13503",
  "norad_id": "13503",
  "range_km": 1155.82,
  "sky_motion_label": "eastward, setting",
  "subpoint_lat": 39.9814,
  "subpoint_lon": -128.7546
},
{
  "azimuth_deg": 248.44,
  "azimuth_plus_2m_deg": 222.06,
  "azimuth_plus_5m_deg": 212.68,
  "element_age_hours": 3.85,
  "element_epoch": "2024-01-27T09:10:58.799136+00:00",
  "elevation_deg": 68.31,
  "elevation_plus_2m_deg": 48.27,
  "elevation_plus_5m_deg": 25.67,
  "epoch_altitude_km": 1472.59,
  "ground_track_bearing_deg": 199.12,
  "ground_track_label": "SSW",
  "launch_date": "76077EN",
  "launch_designator": "76077EN",
  "name": "NORAD 14471",
  "norad_id": "14471",
  "range_km": 1771.45,
  "sky_motion_label": "westward, setting",
  "subpoint_lat": 35.4952,
  "subpoint_lon": -135.8819
},
{
  "azimuth_deg": 93.51,
  "azimuth_plus_2m_deg": 27.62,
  "azimuth_plus_5m_deg": 9.84,
  "element_age_hours": 2.02,
  "element_epoch": "2024-01-27T11:00:53.114112+00:00",
  "elevation_deg": 67.81,
  "elevation_plus_2m_deg": 50.99,
  "elevation_plus_5m_deg": 23.17,
  "epoch_altitude_km": 1223.39,
  "ground_track_bearing_deg": 359.44,
  "ground_track_label": "N",
  "launch_date": "20020F",
  "launch_designator": "20020F",
  "name": "NORAD 45429",
  "norad_id": "45429",
  "range_km": 1302.25,
  "sky_motion_label": "westward, setting",
  "subpoint_lat": 37.0158,
  "subpoint_lon": -125.9217
},
{
  "azimuth_deg": 353.48,
  "azimuth_plus_2m_deg": 18.93,
  "azimuth_plus_5m_deg": 25.42,
  "element_age_hours": 0.21,
  "element_epoch": "2024-01-27T12:49:24.989664+00:00",
  "elevation_deg": 66.66,
  "elevation_plus_2m_deg": 36.17,
  "elevation_plus_5m_deg": 14.34,
  "epoch_altitude_km": 506.16,
  "ground_track_bearing_deg": 30.02,
  "ground_track_label": "NNE",
  "launch_date": "76126AA",
  "launch_designator": "76126AA",
  "name": "NORAD 9807",
  "norad_id": "9807",
  "range_km": 999.46,
  "sky_motion_label": "eastward, setting",
  "subpoint_lat": 40.4277,
  "subpoint_lon": -131.0205
},
{
  "subpoint_lat": 38.1513,
  "subpoint_lon": -132.1328
}
```

```

"azimuth_deg": 358.28,
"azimuth_plus_2m_deg": 170.87,
"azimuth_plus_5m_deg": 173.79,
"element_age_hours": 2.4,
"element_epoch": "2024-01-27T10:37:50.737440+00:00",
"elevation_deg": 66.2,
"elevation_plus_2m_deg": 61.09,
"elevation_plus_5m_deg": 20.49,
"epoch_altitude_km": 898.12,
"ground_track_bearing_deg": 174.12,
"ground_track_label": "S",
"launch_date": "81053BP",
"launch_designator": "81053BP",
"name": "NORAD 12722",
"norad_id": "12722",
"range_km": 980.6,
"sky_motion_label": "eastward, setting",
"subpoint_lat": 40.4543,
"subpoint_lon": -130.6806
},
{
"azimuth_deg": 189.65,
"azimuth_plus_2m_deg": 132.61,
"azimuth_plus_5m_deg": 124.82,
"element_age_hours": 0.54,
"element_epoch": "2024-01-27T12:29:27.722400+00:00",
"elevation_deg": 65.7,
"elevation_plus_2m_deg": 26.79,
"elevation_plus_5m_deg": 4.99,
"epoch_altitude_km": 565.36,
"ground_track_bearing_deg": 118.46,
"ground_track_label": "ESE",
"launch_date": "23061AX",
"launch_designator": "23061AX",
"name": "NORAD 56419",
"norad_id": "56419",
"range_km": 610.67,
"sky_motion_label": "westward, setting",
"subpoint_lat": 35.2816,
"subpoint_lon": -130.9833
},
{
"azimuth_deg": 5.92,
"azimuth_plus_2m_deg": 93.23,
"azimuth_plus_5m_deg": 104.24,
"element_age_hours": 0.5,
"element_epoch": "2024-01-27T12:32:17.323008+00:00",
"elevation_deg": 65.37,
"elevation_plus_2m_deg": 31.37,
"elevation_plus_5m_deg": 6.61,
"epoch_altitude_km": 565.49,
"ground_track_bearing_deg": 110.54,
"ground_track_label": "ESE",
"launch_date": "23061R",
"launch_designator": "23061R",
"name": "NORAD 56389",
"norad_id": "56389",
"range_km": 613.11,
"sky_motion_label": "eastward, setting",
"subpoint_lat": 39.4384,
"subpoint_lon": -130.2763
},
{
"azimuth_deg": 26.43,
"azimuth_plus_2m_deg": 72.53,
"azimuth_plus_5m_deg": 115.04,
"element_age_hours": 11.95,
"element_epoch": "2024-01-28T00:58:53.981184+00:00",
"elevation_deg": 64.63,
"elevation_plus_2m_deg": 67.34,
"elevation_plus_5m_deg": 52.66,
"epoch_altitude_km": 1403.62,
"ground_track_bearing_deg": 149.47,
"ground_track_label": "SSE",
"launch_date": "76126BS",
"launch_designator": "76126BS",
"name": "NORAD 14800",
"norad_id": "14800",
"range_km": 2393.53,
"sky_motion_label": "eastward, rising",
"subpoint_lat": 43.4066,
"subpoint_lon": -126.3744
},
{
"azimuth_deg": 291.14,
"azimuth_plus_2m_deg": 190.25,
"azimuth_plus_5m_deg": 171.17,
"element_age_hours": 3.73,

```

```
"element_epoch": "2024-01-27T09:18:10.257408+00:00",  
"elevation_deg": 64.4,  
"elevation_plus_2m_deg": 52.55,  
"elevation_plus_5m_deg": 19.1,  
"epoch_altitude_km": 811.24,  
"ground_track_bearing_deg": 158.7,  
"ground_track_label": "SSE"
```

## 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: 237UAP00604
TIME AND OBSERVER COORDINATE	extracted	2024-01-27T13:02:00+00:00 at 37.33453, -130.55772
ORBITAL OBJECT PROPAGATION	screened	public LEO catalog objects
SPACE-TRACK SATCAT METADATA	screened	30 NORAD IDs checked; 29 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	43597 trace files scanned; 7 tracks retained; no specific aircraft candidate
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

## 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. *237UAP00604.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-615/493468575/237UAP00604.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/>