

CASE FILE 16 / 237UAP00371

237UAP00371

Radar/correlation-focused public UAP report; score 70

NORMAL-OBJECT FAVORED

REPORT NO.	UAP-OM-16-237UAP00371	DISPOSITION	NORMAL-OBJECT FAVORED
PRIMARY CASE	237UAP00371	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2024-05-26T04:19:00+00:00	OBSERVER	2.48730, 102.82917
SOURCE CASE IDS	237UAP00371		

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

237UAP00371 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate 9M-RAO A320 7504aa at 18.5 km, azimuth 204.1 deg, elevation 26.68 deg, 1.76 min from report. Dense satellite presence alone is not treated as causation in this packet.

1.1 Key Findings

- Source score 70 based on: radar/primary-return language, negative official correlation, high-altitude report, UAP/UFO language.
- Report time used: 2024-05-26T04:19:00+00:00.
- External object layer used: Starlink.
- 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 9M-RAO A320 7504aa at 18.5 km, azimuth 204.1 deg, elevation 26.68 deg, 1.76 min from report.
- Non-causal context / rejection screens: substantial orbital-object sky background; context only, not causation.
- Objects above horizon: 186; at/above 10 deg: 67.
- 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
237UAP00371	04:19 05/26/2024 Callsign: N513MA Origin: TTPP	ZMA Operator: Operator Type: General Aviation	text extract present	237UAP00371.pdf

3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	Aircraft reported an unidentified aerial phenomenon off the front side while NW bound at FL430, 10NM SSW of GTK. The unknown phenomenon was a group of hovering lights approximately 20 NM NNW of GTK. Similar reports were received from FFT1745 / A20N and JBU2054 / A320. The UAP was not observed on ATC facility radar system.
REPORT TIME USED	2024-05-26T04:19:00+00:00
OBSERVER COORDINATE USED	2.48730, 102.82917
OBSERVER SOURCE BASIS	aviation_offset:10NM SSW of GTK (public text extract 237UAP00371)

4. Methodology

- Spacetime extraction.** The report time and observer coordinate were extracted from the public text report and normalized to UTC. Aviation fixes/radials were resolved during earlier preprocessing where applicable.
- External object dataset.** The object layer used historical Space-Track/TLE-derived Starlink element rows. The analytic mode for this case is historical Starlink element propagation and same-launch/designator sky grouping.
- Propagation.** Orbital elements were propagated to the report minute and observer location. For launch-object checks, samples around the report minute were retained. For Starlink group checks, objects above the horizon were clustered by sky position and filtered for same-launch groupings.
- Comparison.** The output was compared against the report's count of lights, direction cue, motion language, altitude/radar language, and whether the file itself already suggested a satellite explanation.
- Causation standard.** Mere object presence above the horizon is treated as background context only. A normal-object disposition requires a case-specific causal fit, such as a named launch object, a compact same-launch trajectory group, or source language that directly supports that object class.
- Disposition assignment.** *Identified* means a specific normal object fits the report spacetime and the hard reported features do not materially conflict. *Normal-object favored* means a case-specific ordinary aerospace/orbital candidate exists, but it is not a full named identification. *Insufficient* means the file is too thin to carry high anomaly value. *High-value unresolved* is used when radar, video, rapid maneuver, or multi-witness features remain after reasonable normal-object checks.

5. External Object Evidence

5.1 Search Volume and Density

This table is a screening layer only. Objects above the horizon show background opportunity; they do not establish causation unless a specific object or compact trajectory group matches the reported behavior.

STARLINK CATALOG IDS CONSIDERED	6056	HISTORICAL ELEMENT ROWS	6009
ABOVE HORIZON AT REPORT MINUTE	186	AT/ABOVE 10 DEG	67
LARGEST SAME-SKY CLUSTER	16		

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 Starlink Objects by Elevation

OBJECT	AZ	EL	RANGE KM	APPARENT MOTION	LAUNCH DATE
STARLINK-5266	241.85	58.48	663.49	westward, setting	2023-01-19
STARLINK-1670	336.7	49.58	699.46	eastward, setting	2020-09-03
STARLINK-3767	53.26	49.33	692.29	eastward, setting	2022-04-29
STARLINK-30808	142.1	45.04	760.29	westward, setting	2023-11-08
STARLINK-30078	78.33	44.62	764.96	westward, setting	2023-06-04
STARLINK-4172	146.3	43.66	751.77	nearly fixed azimuth, setting	2022-07-24
STARLINK-31454	205.48	39.08	728.65	westward, setting	2024-02-23
STARLINK-30437	345.07	38.62	732.89	eastward, rising	2023-10-09
STARLINK-3577	230.92	38.49	820.77	eastward, rising	2022-03-03
STARLINK-5247	300.02	37.63	832.77	eastward, setting	2022-10-28
STARLINK-6247	307.99	34.7	909.71	eastward, setting	2023-06-22
STARLINK-2755	76.12	34.0	905.72	eastward, setting	2021-05-09

5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	16	39.59-123.13 deg	11.42-44.62 deg	eastward, setting, westward, setting
2	15	142.41-213.44 deg	10.49-39.08 deg	westward, level, westward, rising, westward, setting
3	12	291.45-336.57 deg	10.38-37.63 deg	eastward, rising, eastward, setting, westward, rising

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
4	9	230.97-271.59 deg	10.17-28.53 deg	eastward, rising, westward, rising, westward, setting
5	4	11.29-22.19 deg	10.26-31.82 deg	eastward, rising, eastward, 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: 30		
OBJECT TYPES	PAYLOAD: 30		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
55290	STARLINK-5266	PAYLOAD	US	2023-01-19	n/a
46370	STARLINK-1670	PAYLOAD	US	2020-09-03	2025-02-08
52376	STARLINK-3767	PAYLOAD	US	2022-04-29	2026-03-17
58250	STARLINK-30808	PAYLOAD	US	2023-11-08	n/a
56841	STARLINK-30078	PAYLOAD	US	2023-06-04	n/a
53284	STARLINK-4172	PAYLOAD	US	2022-07-24	2024-12-28
59014	STARLINK-31454	PAYLOAD	US	2024-02-23	n/a
58036	STARLINK-30437	PAYLOAD	US	2023-10-09	n/a
51884	STARLINK-3577	PAYLOAD	US	2022-03-03	n/a
54203	STARLINK-5247	PAYLOAD	US	2022-10-28	n/a
57086	STARLINK-6247	PAYLOAD	US	2023-06-22	n/a
48479	STARLINK-2755	PAYLOAD	US	2021-05-09	n/a

5.9 NASA / NOAA / ADS-B Expansion Layer

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

HOURL UTC	2024052604
CLOUD AMOUNT	69.99%
PRECIPITATION	0.58 mm/hr
10 M WIND	1.18 m/s
TEMPERATURE	34.25 C
RELATIVE HUMIDITY	57.92%
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	30.41	68.09	-26.71

OBJECT	AZ	EL	APP MAG
Moon	234.86	-39.73	-11.87
Venus	25.78	70.10	-3.90
Mars	278.06	56.51	1.03
Jupiter	19.28	71.98	-1.99
Saturn	261.60	27.77	1.03

- Sun elevation was 68.1 deg, so this was daylight geometry, not a dark-sky sighting.
- Moon was below horizon at elevation -39.7 deg.
- Planets above horizon: Venus (70.1 deg), Mars (56.5 deg), Jupiter (72.0 deg), Saturn (27.8 deg).
- NASA POWER cloud amount for the hour was 69.99%, with precipitation 0.58 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 1844.0 MiB; planes-readsb-prod-0 1844.0 MiB; planes-readsb-mlatonly-0 105.0 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 2024-05-26, then filter +/-60 min and 250 nmi around 2.4873,102.8292.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00371 at 2024-05-26T04:19:00+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/2024/147/04/
GOES GLM LIGHTNING PREFIX	https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2024/147/04/

5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
WMKM	Malacca International Airport	68.60	2.27, 102.25
WMAP	Kluang Airport	72.60	2.04, 103.31
WMKK	Kuala Lumpur International Airport	127.60	2.75, 101.71
WMKJ	Senai International Airport	132.60	1.64, 103.67

STATION	NAME	DISTANCE KM	COORDINATE
WMKD	Kuantan Airport	149.30	3.78, 103.21

- WMKM: [IEM ASOS/METAR daily CSV query](#)
- WMAP: [IEM ASOS/METAR daily CSV query](#)
- WMKK: [IEM ASOS/METAR daily CSV query](#)

5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
MYM00048650	KUALA LUMPUR INTERNATIONAL AIR	128.00	2.73, 101.70
MYM00048657	KUANTAN	149.10	3.77, 103.21
SNM00048698	SINGAPORE/CHANGI AIRPORT	178.70	1.37, 103.98
IDM00096091	TANJUNG PINANG/KIJANG	257.20	0.92, 104.53
IDM00096109	PEKAN BARU/SIMPANGTIGA	272.00	0.47, 101.45

5.15 ASOS/METAR Surface Weather Observations

surface visibility ranged 6.21-6.21 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
WMKM	68.60	2024-05-26T04:00:00 +00:00	6.21	FEW02000, M, M, M	n/a / 4.00	WMKM 260400Z VRB04KT 9999 FEW020 30/23 Q1010
WMAP	72.60	no retained observation	n/a	n/a	n/a / n/a	
WMKK	127.60	2024-05-26T04:00:00 +00:00	6.21	FEW01800, M, M, M	n/a / 3.00	WMKK 260400Z VRB03KT 9999 FEW018 30/25 Q1009 NOSIG

5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 268.7 deg at 6.48 m/s; a passive balloon could drift about 46.7 km in two hours under this crude layer-average model. Radiosonde winds are sparse station soundings; balloon drift remains approximate without launch time, ascent rate, object altitude, and exact line-of-sight bearing.

STATION	NAME	DISTANCE KM	SOUNDING UTC	MEAN DRIFT BEARING	MEAN SPEED M/S	2H DRIFT KM	MAX WIND
MYM00048650	KUALA LUMPUR INTERNATIONAL AIR	128.00	2024-05-26T00:00:00+00:00	268.70	6.48	46.70	26.80 at 20750.00 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/2024/147/04/OR_ABI-L2-CMIPF-M6C01_G16_s20241470400211_e20241470409519_c20241470409579.nc](#)
- [ABI-L2-CMIPF/2024/147/04/OR_ABI-L2-CMIPF-M6C01_G16_s20241470410211_e20241470419519_c20241470419582.nc](#)
- [ABI-L2-CMIPF/2024/147/04/OR_ABI-L2-CMIPF-M6C01_G16_s20241470420211_e20241470429519_c20241470429572.nc](#)
- [ABI-L2-CMIPF/2024/147/04/OR_ABI-L2-CMIPF-M6C01_G16_s20241470430211_e20241470439519_c20241470439581.nc](#)

GLM lightning sample objects:

- [GLM-L2-LCFA/2024/147/04/OR_GLM-L2-LCFA_G16_s20241470400000_e20241470400200_c20241470400213.nc](#)
- [GLM-L2-LCFA/2024/147/04/OR_GLM-L2-LCFA_G16_s20241470400200_e20241470400400_c20241470400534.nc](#)
- [GLM-L2-LCFA/2024/147/04/OR_GLM-L2-LCFA_G16_s20241470400400_e20241470401000_c20241470401014.nc](#)
- [GLM-L2-LCFA/2024/147/04/OR_GLM-L2-LCFA_G16_s20241470401000_e20241470401200_c20241470401216.nc](#)

5.18 ADSB.lol Historical Aircraft Track Extraction

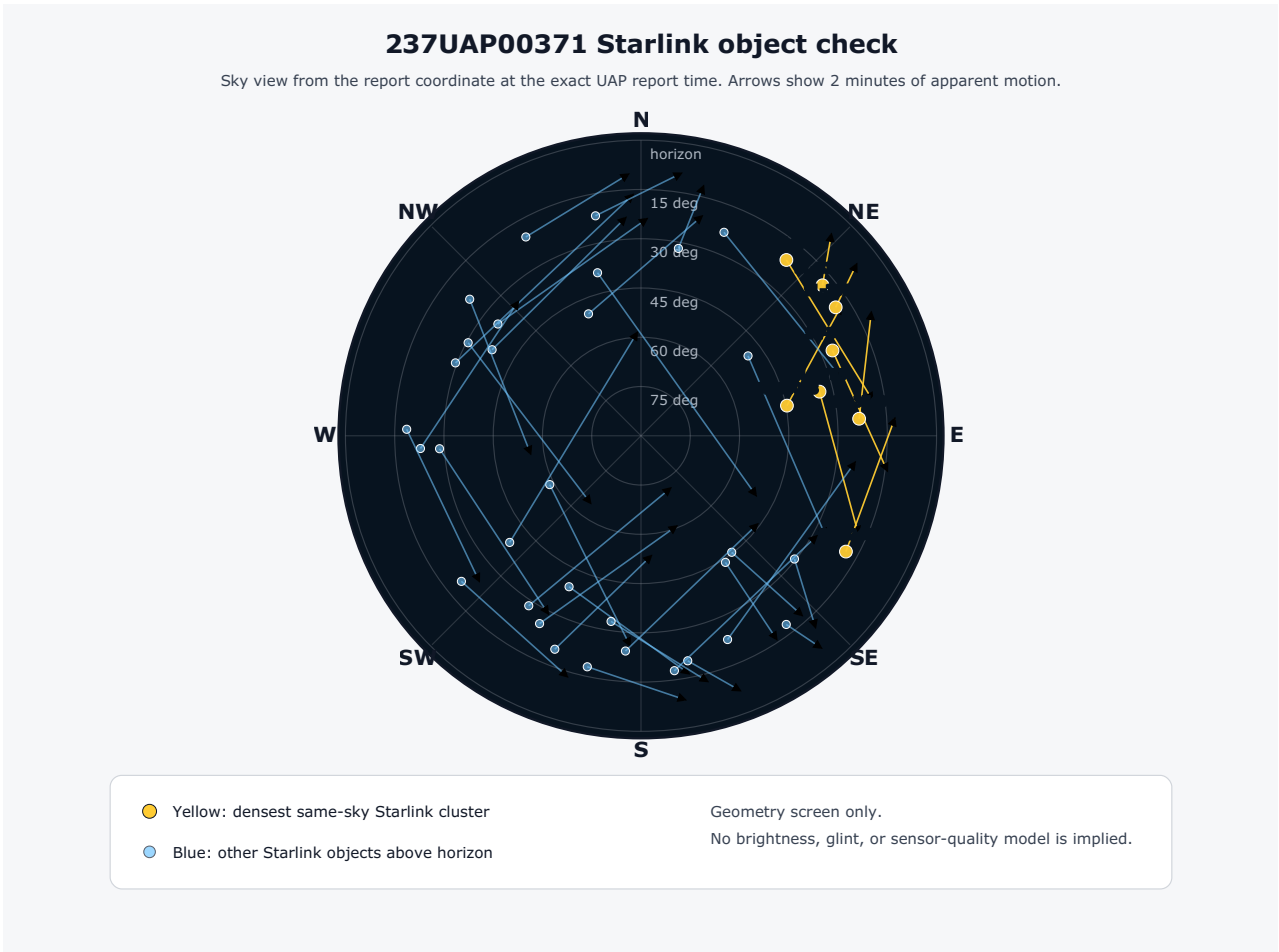
This layer uses the downloaded ADSB.lol daily history archive to test actual aircraft tracks near the report coordinate and minute. It is not treated as a primary-radar substitute; it is a transponder/receiver-derived aircraft screen.

ARCHIVE WINDOW	2024-05-26T03:04:00+00:00 to 2024-05-26T05:34:00+00:00	RADIUS	300.00 nmi
TRACE FILES SCANNED	51409	TRACKS RETAINED	254
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	16	PLAUSIBLE CANDIDATES	62
REPORTING-AIRCRAFT TRACKS EXCLUDED	0	WEAK CANDIDATES	65

5.19 Top ADS-B Candidate Tracks

AIRCRAFT	STATUS	SCORE	MIN DIST KM	NEAREST DT MIN	ALT FT	AZ	EL
9M-RAO A320 7504aa	strong aircraft candidate	89.19	18.40	0.11	31950	204.10	26.68
VT-AYA B738 80044b	strong aircraft candidate	80.83	18.50	0.26	34000	233.90	21.50
F-GSPF B772 3949e5	strong aircraft candidate	79.55	18.40	0.59	22350	186.30	20.74
9M-AJA A320 750333	strong aircraft candidate	71.29	22.80	5.45	26750	232.90	19.57
9M-AQE A320 750272	strong aircraft candidate	70.70	41.00	1.03	19900	314.30	8.23
9V-MGN B738 76b4ee	strong aircraft candidate	67.64	59.00	1.40	32450	190.60	8.97
A7-ALE A359 06a0f9	strong aircraft candidate	65.14	18.50	0.12	36000	271.30	11.50
VT-TVI A21N 8015c1	strong aircraft candidate	65.00	18.40	0.12	29975	268.80	9.36

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	2024-05-26T04:19:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	2.48730, 102.82917	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	237UAP00371 is assessed as normal-object favored because the available public evidence gives a case-specific ordinary-object candidate: strong ADS-B aircraft candidate 9M-RAO A320 7504aa at 18.5 km, azimuth 204.1 deg, elevation 26.68 deg, 1.76 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

237UAP00371

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON

Date: 04:19 05/26/2024
Status: Closed
POD: DEN
Reporting Facility: ZMA

Callsign: N513MA
Aircraft: GLF5
Tail Number:
Operator:

Origin: TTPP
Destination: MIA
New Destination:
Operator Type: General Aviation
Paged: YES

REMARKS

Aircraft reported an unidentified aerial phenomenon off the front side while NW bound at FL430, 10NM SSW of GTK. The unknown phenomenon was a group of hovering lights approximately 20 NM NNW of GTK. Similar reports were received from FFT1745 / A20N and JBU2054 / A320. The UAP was not observed on ATC facility radar system.

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": "2024-05-26T04:19:00+00:00",
  "source_excerpt": "Aircraft reported an unidentified aerial phenomenon off the front side while NW bound at FL430, 10NM SSW of GTK. The unknown phenomenon was a group of hovering lights approximately 20 NM NNW of GTK. Similar reports were received from FFT1745 / A20N and JBU2054 / A320. The UAP was not observed on ATC facility radar system.",
  "historical_starlink_element_rows": 6009,
  "observer": {
    "lat": 2.4873022401553713,
    "lon": 102.82917237965194,
    "source": "aviation_offset:10NM SSW of GTK (public text extract 237UAP00371)"
  },
  "case_id": "237UAP00371",
  "starlink_above_horizon_at_report_time": 186,
  "starlink_catalog_ids_considered": 6056,
  "largest_same-sky_cluster_count": 16,
  "starlink_at_or_above_10_deg": 67,
  "top_starlinks": [
    {
      "azimuth_deg": 241.85,
      "azimuth_plus_2m_deg": 183.1,
      "azimuth_plus_5m_deg": 171.79,
      "element_age_hours": 5.6,
      "element_epoch": "2024-05-25T22:42:53.558208+00:00",
      "elevation_deg": 58.48,
      "elevation_plus_2m_deg": 26.21,
      "elevation_plus_5m_deg": 4.81,
      "epoch_altitude_km": 577.21,
      "ground_track_bearing_deg": 163.78,
      "ground_track_label": "SSE",
      "launch_date": "2023-01-19",
      "name": "STARLINK-5266",
      "norad_id": "55290",
      "range_km": 663.49,
      "sky_motion_label": "westward, setting",
      "subpoint_lat": 1.1279,
      "subpoint_lon": 100.3072
    },
    {
      "azimuth_deg": 336.7,
      "azimuth_plus_2m_deg": 15.44,
      "azimuth_plus_5m_deg": 25.73,
      "element_age_hours": 4.81,
      "element_epoch": "2024-05-25T23:30:24.953472+00:00",
      "elevation_deg": 49.58,
      "elevation_plus_2m_deg": 20.74,
      "elevation_plus_5m_deg": 2.68,
      "epoch_altitude_km": 553.47,
      "ground_track_bearing_deg": 33.92,
      "ground_track_label": "NE",
      "launch_date": "2020-09-03",
      "name": "STARLINK-1670",
      "norad_id": "46370",
      "range_km": 699.46,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 5.956,
      "subpoint_lon": 101.3369
    },
    {
      "azimuth_deg": 53.26,
      "azimuth_plus_2m_deg": 118.39,
      "azimuth_plus_5m_deg": 134.69,
      "element_age_hours": 7.18,
      "element_epoch": "2024-05-26T11:29:51.014688+00:00",
      "elevation_deg": 49.33,
      "elevation_plus_2m_deg": 26.19,
      "elevation_plus_5m_deg": 5.0,
      "epoch_altitude_km": 545.92,
      "ground_track_bearing_deg": 146.43,
      "ground_track_label": "SSE",
      "launch_date": "2022-04-29",
      "name": "STARLINK-3767",
      "norad_id": "52376",
      "range_km": 692.29,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 4.7333,
      "subpoint_lon": 105.835
    },
    {
      "azimuth_deg": 142.1,
      "azimuth_plus_2m_deg": 138.13,
```

```

"azimuth_plus_5m_deg": 136.84,
"element_age_hours": 2.39,
"element_epoch": "2024-05-26T06:42:13.451040+00:00",
"elevation_deg": 45.04,
"elevation_plus_2m_deg": 16.7,
"elevation_plus_5m_deg": 0.87,
"epoch_altitude_km": 565.19,
"ground_track_bearing_deg": 135.9,
"ground_track_label": "SE",
"launch_date": "2023-11-08",
"name": "STARLINK-30808",
"norad_id": "58250",
"range_km": 760.29,
"sky_motion_label": "westward, setting",
"subpoint_lat": -1.041,
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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: 237UAP00371
TIME AND OBSERVER COORDINATE	extracted	2024-05-26T04:19:00+00:00 at 2.48730, 102.82917
ORBITAL OBJECT PROPAGATION	screened	Starlink
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	51409 trace files scanned; 254 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. *237UAP00371.pdf, FAA UAP report record copied from RG 615 bulk digital objects*. <https://s3.dualstack.us-east-1.amazonaws.com/NARAprdstorage/lz/electronic-records/rg-615/493468575/237UAP00371.pdf>
6. Hugging Face dataset. *oxzoid/space-track-tle-history: historical TLE archive used for Starlink screening*. <https://huggingface.co/datasets/oxzoid/space-track-tle-history>
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/>
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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/>