

CASE FILE 95 / 237UAP00087

# 237UAP00087

Time/location anchored public UAP report; score 8

HIGH-VALUE UNRESOLVED

REPORT NO.	UAP-OM-95-237UAP00087	DISPOSITION	HIGH-VALUE UNRESOLVED
PRIMARY CASE	237UAP00087	GENERATED	2026-05-20 18:32 UTC
REPORT TIME	2022-04-09T08:15:00+00:00	OBSERVER	35.35791, -98.01765
SOURCE CASE IDS	237UAP00087		

## 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

---

237UAP00087 was screened against historical Starlink 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: hard maneuver language.

## 1.1 Key Findings

- Source score 8 based on: UAP/UFO language.
- Report time used: 2022-04-09T08:15:00+00:00.
- External object layer used: Starlink.
- Disposition standard: UNRESOLVED requires case-specific causal fit. Satellite density above the horizon is context only and cannot by itself resolve the report.
- Remaining hard features: hard maneuver language.
- Objects above horizon: 100; at/above 10 deg: 44.
- 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
237UAP00087	08:15 04/09/2022 Callsign: UAL2330 Origin: PHX	ZFW Operator: UAL Operator Type: Commercial	text extract present	<a href="#">237UAP00087.pdf</a>

### 3. Original Report Evidence

PRIMARY EXCERPT USED FOR MATCHING	The Flight Crew is reporting observing a set of lights very high in the distance maneuvering in the approximate vicinity of Stillwater, OK. A second aircraft, 56NM in trail of UAL2330 is DAL309, a B753 at FL350 in route from LAX to ATL is observing the same lights in the distance, very high above and in the approximate same vicinity as reported by the crew of UAL2330 operating at FL330. The DEN inquired of ZKC who have communication with NKS806, and passing within 20NM of SWO heading ESE bound at FL370. The flight crew had no reports of sighting any activity in the area. At the time of the observation, UAL2330 and NKS806 were on converging courses with 40NM route separation. At the time of the observation reporting by both DAL309 and UAL2330, the aircraft were 85NM and 20NM W of IRW tracking eastbound. AWO notified.
REPORT TIME USED	2022-04-09T08:15:00+00:00
OBSERVER COORDINATE USED	35.35791, -98.01765
OBSERVER SOURCE BASIS	aviation_offset:20NM W of IRW (public text extract 237UAP00087)

### 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	2105	HISTORICAL ELEMENT ROWS	2105
ABOVE HORIZON AT REPORT MINUTE	100	AT/ABOVE 10 DEG	44
LARGEST SAME-SKY CLUSTER	13		

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-2390	79.02	71.64	575.64	westward, setting	2021-03-11
STARLINK-2221	69.62	43.84	763.5	eastward, setting	2021-05-15
STARLINK-1828	176.76	40.65	800.14	westward, setting	2020-10-18
STARLINK-3256	325.49	35.67	867.72	eastward, setting	2021-12-18
STARLINK-1194	30.54	35.6	880.51	eastward, setting	2020-01-29
STARLINK-1582	270.35	35.01	890.46	westward, rising	2020-08-07
STARLINK-2406	53.91	33.8	913.14	westward, setting	2021-03-11
STARLINK-1292	18.18	32.31	943.57	eastward, setting	2020-03-18
STARLINK-1257	120.45	31.49	958.0	eastward, setting	2020-03-18
STARLINK-2148	162.98	30.74	854.19	westward, setting	2021-03-04
STARLINK-1483	319.18	30.56	979.51	eastward, setting	2020-06-13
STARLINK-2672	224.69	28.54	1024.71	westward, setting	2021-05-26

### 5.5 Largest Sky Clusters

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
1	13	0.71-356.95 deg	10.95-35.6 deg	eastward, rising, eastward, setting
2	8	304.8-329.9 deg	10.76-35.67 deg	eastward, level, eastward, rising, eastward, setting, westward, rising
3	4	53.91-72.33 deg	10.55-33.8 deg	eastward, setting, westward, setting

#	COUNT	AZIMUTH SPAN	ELEVATION SPAN	MOTION LABELS
4	3	252.02-262.64 deg	10.66-17.65 deg	eastward, rising, westward, level
5	2	224.69-232.59 deg	24.86-28.54 deg	eastward, 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: 30		
OBJECT TYPES	PAYLOAD: 30		

5.7 Space-Track Metadata for Top Propagated Objects

NORAD	OBJECT NAME	TYPE	OWNER	LAUNCH DATE	DECAY DATE
47809	STARLINK-2390	PAYLOAD	US	2021-03-11	2024-01-11
48571	STARLINK-2221	PAYLOAD	US	2021-05-15	n/a
46725	STARLINK-1828	PAYLOAD	US	2020-10-18	n/a
50202	STARLINK-3256	PAYLOAD	US	2021-12-18	n/a
45101	STARLINK-1194	PAYLOAD	US	2020-01-29	2024-07-30
46043	STARLINK-1582	PAYLOAD	US	2020-08-07	n/a
47821	STARLINK-2406	PAYLOAD	US	2021-03-11	n/a
45394	STARLINK-1292	PAYLOAD	US	2020-03-18	2025-11-19
45402	STARLINK-1257	PAYLOAD	US	2020-03-18	2024-08-24
47737	STARLINK-2148	PAYLOAD	US	2021-03-04	2024-07-27
45743	STARLINK-1483	PAYLOAD	US	2020-06-13	2024-12-21
48650	STARLINK-2672	PAYLOAD	US	2021-05-26	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	not yet exhausted	v2022-04-09-planes-readsb-prod-0, v2022-04-09-planes-readsb-prod-1, v2022-04-09-planes-readsb-staging-0, v2022-04-09-planes-readsb-mlatonly-0
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.

LAYER	STATUS	CASE-SPECIFIC NOTE
ASOS/METAR WEATHER OBSERVATIONS	screened/present	Nearest station surface observations around report time.

- ADSB.lol historical: extract aircraft traces from no public ADSB.lol annual repo found for 2022-04-09, then filter +/-60 min and 250 nmi around 35.3579,-98.0176.
- NASA POWER/Horizons/DONKI: batch context for 237UAP00087 at 2022-04-09T08:15:00+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	<a href="https://noaa-goes16.s3.amazonaws.com/ABI-L2-CMIPF/2022/099/08/">https://noaa-goes16.s3.amazonaws.com/ABI-L2-CMIPF/2022/099/08/</a>
GOES GLM LIGHTNING PREFIX	<a href="https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2022/099/08/">https://noaa-goes16.s3.amazonaws.com/GLM-L2-LCFA/2022/099/08/</a>

### 5.13 Nearest Weather-Airport Candidates

STATION	NAME	DISTANCE KM	COORDINATE
KOKC	OKC Will Rogers World Airport	38.20	35.39, -97.60
KTIK	Tinker Air Force Base	57.60	35.41, -97.39
KFSI	Henry Post Army Air Field	86.20	34.65, -98.40
KLAW	Lawton Fort Sill Regional Airport	95.10	34.57, -98.42
KHBR	Hobart Regional Airport	102.40	34.99, -99.05

- KOKC: [IEM ASOS/METAR daily CSV query](#)
- KTIK: [IEM ASOS/METAR daily CSV query](#)
- KFSI: [IEM ASOS/METAR daily CSV query](#)

### 5.14 Nearest Radiosonde Stations

STATION	NAME	DISTANCE KM	COORDINATE
USM00072357	NORMAN/MAX WESTHEIMER A; OK.	56.20	35.18, -97.44
USM00074646	LAMONT	145.80	36.60, -97.50
USM00072249	FORT WORTH; TX.	288.20	32.84, -97.30
USM00072451	DODGE CITY/MUN.; KS.	319.00	37.76, -99.97
USM00072363	AMARILLO/INTL.; TX.	335.30	35.23, -101.71

### 5.15 ASOS/METAR Surface Weather Observations

surface visibility ranged 10-10 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
KOKC	38.20	2022-04-09T07:52:00+00:00	10.00	CLR, M, M, M	0.00 / 0.00	KOKC 090752Z 00000KT 10SM CLR 03/M06 A3007 RMK

STATION	DISTANCE KM	NEAREST OBS UTC	VIS SM	SKY	WIND DEG/KT	METAR
						AO2 SLP182 T00281056
KTIK	57.60	2022-04-09T07:56:00 +00:00	10.00	CLR, M, M, M	230.00 / 6.00	KTIK 090756Z AUTO 23006KT 10SM CLR 07/M07 A3005 RMK AO2 SLP183 T00671066
KFSI	86.20	2022-04-09T07:56:00 +00:00	10.00	CLR, M, M, M	0.00 / 0.00	KFSI 090756Z AUTO 00000KT 10SM CLR 05/M03 A3007 RMK AO2 SLP181 T00481035 \$

### 5.16 NOAA IGRA Radiosonde Wind Profile

Nearest sounding implies mean 0-12 km wind drift toward 12.4 deg at 19.87 m/s; a passive balloon could drift about 143.0 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
USM00072357	NORMAN/MAX WESTHEIMER A; OK.	56.20	2022-04-09T12:00 :00+00:00	12.40	19.87	143.00	36.00 at 21112.00 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.

<b>SATELLITE</b>	GOES16	<b>BUCKET</b>	noaa-goes16
<b>ABI SAMPLE FILES</b>	12	<b>GLM SAMPLE FILES</b>	12

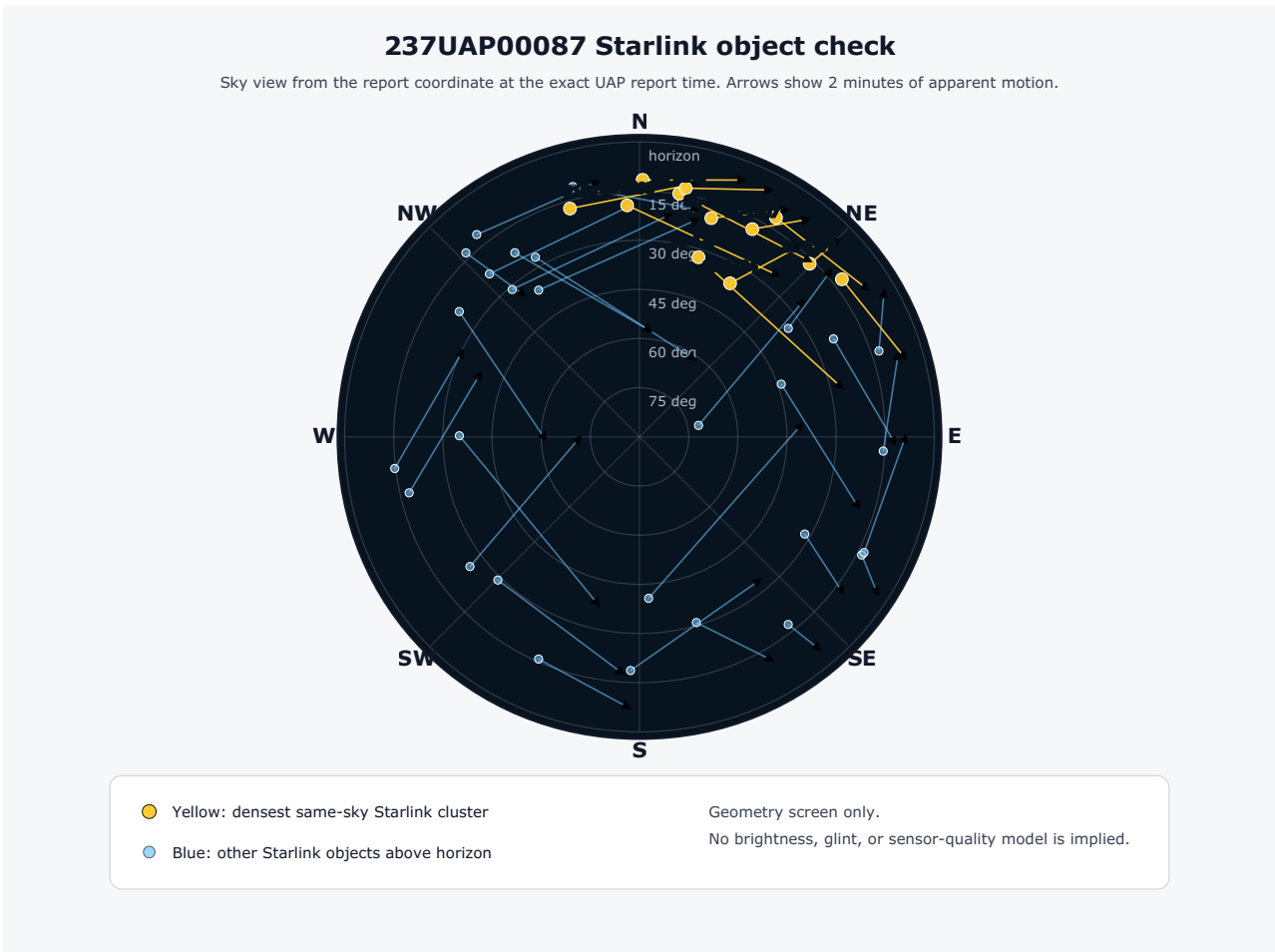
#### ABI sample objects:

- [ABI-L2-CMIPF/2022/099/08/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20220990800206\\_e20220990809514\\_c20220990809589.nc](#)
- [ABI-L2-CMIPF/2022/099/08/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20220990810206\\_e20220990819514\\_c20220990819593.nc](#)
- [ABI-L2-CMIPF/2022/099/08/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20220990820206\\_e20220990829514\\_c20220990829588.nc](#)
- [ABI-L2-CMIPF/2022/099/08/OR\\_ABI-L2-CMIPF-M6C01\\_G16\\_s20220990830206\\_e20220990839514\\_c20220990839591.nc](#)

#### GLM lightning sample objects:

- [GLM-L2-LCFA/2022/099/08/OR\\_GLM-L2-LCFA\\_G16\\_s20220990800000\\_e20220990800200\\_c20220990800224.nc](#)
- [GLM-L2-LCFA/2022/099/08/OR\\_GLM-L2-LCFA\\_G16\\_s20220990800200\\_e20220990800400\\_c20220990800427.nc](#)
- [GLM-L2-LCFA/2022/099/08/OR\\_GLM-L2-LCFA\\_G16\\_s20220990800400\\_e20220990801000\\_c20220990801024.nc](#)
- [GLM-L2-LCFA/2022/099/08/OR\\_GLM-L2-LCFA\\_G16\\_s20220990801000\\_e20220990801200\\_c20220990801227.nc](#)

## 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	2022-04-09T08:15:00+00:00	Directly used in propagation; this is a hard filter, not descriptive context.
LOCATION CONSTRAINT	35.35791, -98.01765	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	in trail	Reported motion remains only partly explained; this is a principal reason for high-value unresolved status.
RADAR / OFFICIAL CHECK	not specified	Radar or hard maneuvering language is treated as a conflict/collection gap, not hand-waved away.
ANALYTIC DISPOSITION	unresolved	237UAP00087 was screened against historical Starlink 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: hard maneuver language.

## 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.

Appendix A. Public Report Text Extracts

237UAP00087

SKYWATCH INCIDENT REPORT

PRIMARY CODE: UNIDENTIFIED AERIAL PHENOMENON		
Date: 08:15 04/09/2022	Callsign: UAL2330	Origin: PHX
Status: Closed	Aircraft: B739	Destination: EWR
POD: DEN	Tail Number:	New Destination:
Reporting Facility: ZFW	Operator: UAL	Operator Type: Commercial
	Paged: YES	MOR Init: YES
		MOR ID: ZFW-M-2022/04/09-0002

REMARKS

The Flight Crew is reporting observing a set of lights very high in the distance maneuvering in the approximate vicinity of Stillwater, OK. A second aircraft, 56NM in trail of UAL2330 is DAL309, a B753 at FL350 in route from LAX to ATL is observing the same lights in the distance, very high above and in the approximate same vicinity as reported by the crew of UAL2330 operating at FL330. The DEN inquired of ZKC who have communication with NKS806, and passing within 20NM of SWO heading ESE bound at FL370. The flight crew had no reports of sighting any activity in the area. At the time of the observation, UAL2330 and NKS806 were on converging courses with 40NM route separation. At the time of the observation reporting by both DAL309 and UAL2330, the aircraft were 85NM and 20NM W of IRW tracking eastbound. AWO notified.

## 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": "2022-04-09T08:15:00+00:00",
  "source_excerpt": "The Flight Crew is reporting observing a set of lights very high in the distance maneuvering in the
approximate vicinity of Stillwater, OK. A second aircraft, 56NM in trail of UAL2330 is DAL309, a B753 at FL350 in route from
LAX to ATL is observing the same lights in the distance, very high above and in the approximate same vicinity as reported by
the crew of UAL2330 operating at FL330. The DEN inquired of ZKC who have communication with NKS806, and passing within 20NM of
SWO heading ESE bound at FL370. The flight crew had no reports of sighting any activity in the area. At the time of the
observation, UAL2330 and NKS806 were on converging courses with 40NM route separation. At the time of the observation reporting
by both DAL309 and UAL2330, the aircraft were 85NM and 20NM W of IRW tracking eastbound. AWO notified.",
  "historical_starlink_element_rows": 2105,
  "observer": {
    "lat": 35.357913523915,
    "lon": -98.0176458332522,
    "source": "aviation_offset:20NM W of IRW (public text extract 237UAP00087)"
  },
  "case_id": "237UAP00087",
  "starlink_above_horizon_at_report_time": 100,
  "starlink_catalog_ids_considered": 2105,
  "largest_same-sky_cluster_count": 13,
  "starlink_at_or_above_10_deg": 44,
  "top_starlinks": [
    {
      "azimuth_deg": 79.02,
      "azimuth_plus_2m_deg": 50.31,
      "azimuth_plus_5m_deg": 47.53,
      "element_age_hours": 4.57,
      "element_epoch": "2022-04-09T12:49:16.526784+00:00",
      "elevation_deg": 71.64,
      "elevation_plus_2m_deg": 24.75,
      "elevation_plus_5m_deg": 3.97,
      "epoch_altitude_km": 553.15,
      "ground_track_bearing_deg": 45.57,
      "ground_track_label": "NE",
      "launch_date": "2021-03-11",
      "name": "STARLINK-2390",
      "norad_id": "47809",
      "range_km": 575.64,
      "sky_motion_label": "westward, setting",
      "subpoint_lat": 35.6309,
      "subpoint_lon": -96.2081
    },
    {
      "azimuth_deg": 69.62,
      "azimuth_plus_2m_deg": 107.94,
      "azimuth_plus_5m_deg": 120.33,
      "element_age_hours": 2.6,
      "element_epoch": "2022-04-09T10:51:11.097792+00:00",
      "elevation_deg": 43.84,
      "elevation_plus_2m_deg": 19.63,
      "elevation_plus_5m_deg": 2.42,
      "epoch_altitude_km": 553.22,
      "ground_track_bearing_deg": 133.99,
      "ground_track_label": "SE",
      "launch_date": "2021-05-15",
      "name": "STARLINK-2221",
      "norad_id": "48571",
      "range_km": 763.5,
      "sky_motion_label": "eastward, setting",
      "subpoint_lat": 36.8332,
      "subpoint_lon": -92.6824
    },
    {
      "azimuth_deg": 176.76,
      "azimuth_plus_2m_deg": 85.48,
      "azimuth_plus_5m_deg": 55.51,
      "element_age_hours": 4.6,
      "element_epoch": "2022-04-09T12:51:17.104032+00:00",
      "elevation_deg": 40.65,
      "elevation_plus_2m_deg": 40.22,
      "elevation_plus_5m_deg": 9.97,
      "epoch_altitude_km": 553.35,
      "ground_track_bearing_deg": 41.72,
      "ground_track_label": "NE",
      "launch_date": "2020-10-18",
      "name": "STARLINK-1828",
      "norad_id": "46725",
      "range_km": 800.14,
      "sky_motion_label": "westward, setting",
      "subpoint_lat": 30.3197,
      "subpoint_lon": -97.6891
    }
  ]
}
```

```

},
{
  "azimuth_deg": 325.49,
  "azimuth_plus_2m_deg": 14.97,
  "azimuth_plus_5m_deg": 35.95,
  "element_age_hours": 5.75,
  "element_epoch": "2022-04-09T14:00:01.000224+00:00",
  "elevation_deg": 35.67,
  "elevation_plus_2m_deg": 21.29,
  "elevation_plus_5m_deg": 3.93,
  "epoch_altitude_km": 545.53,
  "ground_track_bearing_deg": 49.7,
  "ground_track_label": "NE",
  "launch_date": "2021-12-18",
  "name": "STARLINK-3256",
  "norad_id": "50202",
  "range_km": 867.72,
  "sky_motion_label": "eastward, setting",
  "subpoint_lat": 40.1133,
  "subpoint_lon": -102.34
},
{
  "azimuth_deg": 30.54,
  "azimuth_plus_2m_deg": 40.2,
  "azimuth_plus_5m_deg": 44.3,
  "element_age_hours": 4.54,
  "element_epoch": "2022-04-09T12:47:18.879360+00:00",
  "elevation_deg": 35.6,
  "elevation_plus_2m_deg": 13.43,
  "elevation_plus_5m_deg": -0.77,
  "epoch_altitude_km": 553.22,
  "ground_track_bearing_deg": 50.34,
  "ground_track_label": "NE",
  "launch_date": "2020-01-29",
  "name": "STARLINK-1194",
  "norad_id": "45101",
  "range_km": 880.51,
  "sky_motion_label": "eastward, setting",
  "subpoint_lat": 40.4175,
  "subpoint_lon": -94.0681
},
{
  "azimuth_deg": 270.35,
  "azimuth_plus_2m_deg": 193.64,
  "azimuth_plus_5m_deg": 157.36,
  "element_age_hours": 1.0,
  "element_epoch": "2022-04-09T09:14:59.862048+00:00",
  "elevation_deg": 35.01,
  "elevation_plus_2m_deg": 37.18,
  "elevation_plus_5m_deg": 10.02,
  "epoch_altitude_km": 553.22,
  "ground_track_bearing_deg": 135.41,
  "ground_track_label": "SE",
  "launch_date": "2020-08-07",
  "name": "STARLINK-1582",
  "norad_id": "46043",
  "range_km": 890.46,
  "sky_motion_label": "westward, rising",
  "subpoint_lat": 35.1683,
  "subpoint_lon": -105.4091
},
{
  "azimuth_deg": 53.91,
  "azimuth_plus_2m_deg": 49.01,
  "azimuth_plus_5m_deg": 47.47,
  "element_age_hours": 4.55,
  "element_epoch": "2022-04-09T12:47:57.403392+00:00",
  "elevation_deg": 33.8,
  "elevation_plus_2m_deg": 12.55,
  "elevation_plus_5m_deg": -1.27,
  "epoch_altitude_km": 553.48,
  "ground_track_bearing_deg": 48.66,
  "ground_track_label": "NE",
  "launch_date": "2021-03-11",
  "name": "STARLINK-2406",
  "norad_id": "47821",
  "range_km": 913.14,
  "sky_motion_label": "westward, setting",
  "subpoint_lat": 38.8996,
  "subpoint_lon": -91.4956
},
{
  "azimuth_deg": 18.18,
  "azimuth_plus_2m_deg": 76.46,
  "azimuth_plus_5m_deg": 106.76,
  "element_age_hours": 1.04,
  "element_epoch": "2022-04-09T09:17:39.812640+00:00",
  "elevation_deg": 32.31,

```

```

    "elevation_plus_2m_deg": 26.37,
    "elevation_plus_5m_deg": 6.85,
    "epoch_altitude_km": 553.3,
    "ground_track_bearing_deg": 128.88,
    "ground_track_label": "SE",
    "launch_date": "2020-03-18",
    "name": "STARLINK-1292",
    "norad_id": "45394",
    "range_km": 943.57,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 41.6233,
    "subpoint_lon": -95.2679
  },
  {
    "azimuth_deg": 120.45,
    "azimuth_plus_2m_deg": 127.5,
    "azimuth_plus_5m_deg": 130.71,
    "element_age_hours": 2.21,
    "element_epoch": "2022-04-09T06:02:36.253536+00:00",
    "elevation_deg": 31.49,
    "elevation_plus_2m_deg": 11.69,
    "elevation_plus_5m_deg": -1.76,
    "epoch_altitude_km": 553.34,
    "ground_track_bearing_deg": 137.92,
    "ground_track_label": "SE",
    "launch_date": "2020-03-18",
    "name": "STARLINK-1257",
    "norad_id": "45402",
    "range_km": 958.0,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 31.7166,
    "subpoint_lon": -91.1599
  },
  {
    "azimuth_deg": 162.98,
    "azimuth_plus_2m_deg": 149.28,
    "azimuth_plus_5m_deg": 144.18,
    "element_age_hours": 0.62,
    "element_epoch": "2022-04-09T07:37:53.622336+00:00",
    "elevation_deg": 30.74,
    "elevation_plus_2m_deg": 10.65,
    "elevation_plus_5m_deg": -2.56,
    "epoch_altitude_km": 480.92,
    "ground_track_bearing_deg": 139.29,
    "ground_track_label": "SE",
    "launch_date": "2021-03-04",
    "name": "STARLINK-2148",
    "norad_id": "47737",
    "range_km": 854.19,
    "sky_motion_label": "westward, setting",
    "subpoint_lat": 29.4396,
    "subpoint_lon": -95.956
  },
  {
    "azimuth_deg": 319.18,
    "azimuth_plus_2m_deg": 8.0,
    "azimuth_plus_5m_deg": 33.68,
    "element_age_hours": 2.95,
    "element_epoch": "2022-04-09T11:11:44.073312+00:00",
    "elevation_deg": 30.56,
    "elevation_plus_2m_deg": 21.43,
    "elevation_plus_5m_deg": 4.77,
    "epoch_altitude_km": 552.93,
    "ground_track_bearing_deg": 50.44,
    "ground_track_label": "NE",
    "launch_date": "2020-06-13",
    "name": "STARLINK-1483",
    "norad_id": "45743",
    "range_km": 979.51,
    "sky_motion_label": "eastward, setting",
    "subpoint_lat": 40.5193,
    "subpoint_lon": -104.02
  },
  {
    "azimuth_deg": 224.69,
    "azimuth_plus_2m_deg": 183.98,
    "azimuth_plus_5m_deg": 162.93,
    "element_age_hours": 3.81,
    "element_epoch": "2022-04-09T04:26:23.148960+00:00",
    "elevation_deg": 28.54,
    "elevation_plus_2m_deg": 17.52,
    "elevation_plus_5m_deg": 2.57,
    "epoch_altitude_km": 553.29,
    "ground_track_bearing_deg": 139.07,
    "ground_track_label": "SE",
    "launch_date": "2021-05-26",
    "name": "STARLINK-2672",
    "norad_id": "48650",

```

"range\_km": 1024.71,

## 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: 237UAP00087
TIME AND OBSERVER COORDINATE	extracted	2022-04-09T08:15:00+00:00 at 35.35791, -98.01765
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	not exhausted	Hourly weather, sky geometry, and space-weather context where local JSON is present
AIRCRAFT/ADS-B LAYER	not exhausted	ADS-B historical release pattern is recorded separately; actual aircraft exhaustion requires targeted trace extraction
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. *237UAP00087.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-615/493468575/237UAP00087.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. 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/>