



All-domain Anomaly Resolution Office

U.S. Department of Defense

(U) Case: “Atmospheric Wakes”

Case Resolution | 8 May 2023

(U) Case Overview

(U) AARO assesses that the UAP reported in these three cases almost certainly were not exhibiting anomalous propulsion or atmospheric wakes, rather the observed effect was the result of a sensor artifact in all cases, based on analyses by AARO’s Intelligence and Science and Technology (S&T) partners.

- (U) The object in Case One has not been identified, but AARO is certain that it was not exhibiting anomalous behaviors.
- (U) In Case Two, one object was almost certainly a known military aircraft. The second object appears oblong due to camera aberration and remains unidentified, but also was probably a prosaic aircraft as well.
- (U) In Case Three, the object was almost certainly a known and identified commercial aircraft, flying along a recognized travel corridor.

(U) Intelligence Assessment

(U) AARO’s Intelligence partners assess with high confidence that the “atmospheric wake” in each video is a sensor anomaly. AARO’s intelligence partners were not able to identify the object of Case One, but have high confidence that it is not displaying any anomalous characteristics and are almost certain it’s a prosaic object based on thorough review of the evidence.

(U) Case Essentials

(U) These reports were submitted after three different missions in the Middle East, and the Mediterranean Sea in 2022 and 2023. The reports were filed due to the potential hazard posed to the mission and because the videos depict a potentially anomalous propulsion signature

(U) **Location:** Middle East and the Mediterranean Sea

(U) **Date:** 2022 and 2023

(U) **Altitude:** N/A

(U) **Shape:** N/A

(U) **Reporter:** Theater UAV operators

(U) **Sensor:** Infrared (IR)

(U) **Behavior:** Exhibited potential anomalous propulsion

(U) **Case Status:** Resolved; prosaic aircraft; the “wake” is a sensor artifact in each case

(U) For the two UAP reported in Case Two, it is assessed that both objects are most likely aircraft, one military and the other a small but unidentified aircraft. Location data from aircraft in the vicinity were compared and it was determined that one of the UAP matched closely with a track of a military aircraft.

- (U) Although a similar match of the second object was not possible, it was assessed with medium confidence that it was a small aircraft. This assessment was based on line of sight analysis and comparing it to other known objects.

(U) AARO's intelligence partners have high confidence that they identified the UAP in Case Three as a specific Airbus A380 commercial aircraft based on commercial flight data.

- (U) Photogrammetry analysis of the object in Case Three was conducted, which resulted in a close size estimate to that of an Airbus A380.

(U) **Science & Technology Assessment**

(U) Two of AARO's S&T Partners also assessed that the "wakes" observed in these three cases were sensor artifacts, but did not identify the objects captured on the sensors.

- (U) S&T Partner One assessed the trails were camera artifacts resulting from the object rapidly traversing the camera's field of view. It was noted that other objects in the videos also leave a similar trail.

(U) S&T Partner Two conducted a detailed analysis of the full-motion video and the IR sensor, reaching the same high confidence conclusion that the wakes were sensor artifacts.

(U) Figure 1: "Atmospheric Wakes" Case Two

