



# Unidentified Aerial Phenomena (UAP): An Examination

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**This white paper is designed to provide analysis of relevant, publicly available information on threat and hazard events/trends and their potential impacts to the interests of the United States, both at home and abroad. This product is not intended to be an all-encompassing assessment of the subject.**

### Introduction

*Once more commonly known as UFOs (unidentified flying objects), the current technical term for observed events in the sky that cannot be identified is now unidentified aerial phenomena (UAP). Though mysterious airborne objections have been observed and recorded for thousands of years, recent technical, logistical, and scientific developments have shed new light on UAP events and their potential sources. Of late, the U.S. government has undertaken a more detailed examination of UAP. New avenues of reporting, task forces, and independent studies aim to systematically record, organize, and identify these events and their sources. Sometime such identification is done retroactively, showing us the many forms a UAP may take. UAP could have a wide array of sources, from benign weather events to foreign adversary surveillance. For this reason, the study of UAP is vital for both national security and scientific advancement.*

### Recent UAP History

*Over the past three (3) years, the U.S. Department of Defense (DoD) has worked more thoroughly to gather documentation and assess the threat and hazards associated with airborne objects not immediately identifiable (which the DoD refers to as unmanned aerial phenomena, or UAP). From 2007 to 2012, the Pentagon confirmed that the U.S. military investigated reports of unidentified flying objects through the Advanced Aviation Threat Identification program. While the DoD stated that they ended the program due to “higher priority issues that merited funding” at the time, a provision in the Intelligence Authorization Act for Fiscal Year 2021 required the Office of the Director of National Intelligence (ODNI), in consultation with the Secretary of Defense, to submit an intelligence assessment of the threat posed by UAP. In August 2020, the Unidentified Aerial Phenomena Task Force (UAPTF) was established to improve its understanding of, and gain insight into, the nature and origins of UAP. About ten (10) months later, the ODNI submitted a preliminary report to the Congressional Intelligence and Armed Services Committees that offered an overview of the challenges associated with characterizing the potential threat posed by UAP. The report also provided a means to develop relevant processes, policies, technologies, and training for the U.S. military and other government personnel for handling possible encounters with UAP.<sup>1,2,3,4</sup>*

*Based on UAPTF’s review of 144 UAP reports between 2004 and 2021, the ODNI conveyed that UAP reportedly appeared to exhibit unusual flight characteristics, which could result from sensor errors, spoofing, or observer misperception. Furthermore, the preliminary report indicated that multiple types of UAP require different explanations based on the range of appearances and behaviors described in the available reporting. According to the ODNI, analysis of the data suggests that resolved UAP incidents cases would fall into one (1) of five (5) categories: airborne clutter, natural atmospheric phenomena, USG or industry developmental programs, foreign adversary systems, and a catchall “other” bin. Ultimately, the preliminary report concluded that UAP pose a safety of flight issue and may present a challenge to U.S. national security.<sup>4</sup>*

*In July 2022, the All-Domain Anomaly Resolution Office (AARO) was established as a central office for all UAP matters and UAPTF's successor, fulfilling Congress' requirement in the National Defense Authorization Act for Fiscal Year 2022. According to the DoD, anomalous, unidentified space, airborne, submerged, and transmedium objects are included within the AARO's mission to detect, identify and attribute objects of interest in, on or near military installations, operating areas, training areas, special use airspace and other areas of interest, and, as necessary, to mitigate any associated threats to safety of operations and national security.<sup>5</sup>*

*Building off the 144 UAP reports covered in the 2021 preliminary assessment, the ODNI's 2022 Annual Report on Unidentified Aerial Phenomena incorporated the review of 247 new reports and another 119 that were either discovered or reported after the preliminary assessment's time period. As of 30 August 2022, there have been 510 total UAP reports. The ODNI assessed that the increase in UAP reporting is due to the coordinated efforts between the DoD, Intelligence Community (IC), and other government agencies, as well as a "concentrated effort to destigmatize the topic of UAP." Of the 366 newly-identified reports, the AARO initially judged more than half as demonstrating the following characteristics: Unmanned Aircraft System (UAS) or UAS-like entities (26 cases), balloon or balloon-like entities (163 cases), and clutter (six (6) cases). While there have been no reported collisions between U.S. aircraft and UAP, or encounters that lead to adverse health-related effects to the observer, the ODNI affirms that UAP continue to represent a hazard to flight safety and pose a possible adversary collection threat.<sup>6</sup>*

### **UAP Case Studies**

*It is frequently challenging to identify and categorize a UAP as a clear threat or hazard – inherent to the definition of unidentified aerial phenomena. However, there have been situations in which UAP were later identified. These cases provide insight in the numerous form a UAP may take.*

#### ***Foreign Adversary Systems***

*In late January 2023, a Chinese surveillance balloon was identified over the continental United State as it entered Idaho from Western Canada. The balloon the drifted across the country for several days, until it was shot down off the coast of South Carolina on 04 February. Following this event, previously unknown events were identified regarding similar, past events in which surveillance balloons from China entered U.S. airspace. Per the newly released details, at least three similar balloons were detected by the U.S. military in national airspace between January 2017 and January 2021. Some of these incidents were initially classified as UAP at the time. Later investigations of these events were able to identify the UAP as Chinese spy balloons. This highlights the recent increased focus on identifying UAP reports. Many of the recent UAP reported to the Unidentified Aerial Phenomena Task Force (UAPTF) have later been identified as balloons of varying types. Per the UAPTF 2022 report, of 510 sightings, 163 were identified as balloons or balloon-like.<sup>6,7,8</sup>*

### ***Airborne Clutter***

*Previous UAP reports have been later attributed to airborne clutter. Airborne clutter includes birds, balloons, recreational unmanned aerial vehicles (UAV), or airborne debris like plastic bags. The combination of benign human causes and naturally occurring events shows how cluttered airspace can become. Should the item in question be only briefly viewed (due to factors such as speed or course), the observer may not be able to accurately identify it. Per the UAPTF 2022 report, 6 of the examined reports were able to be attributed to clutter.*

*Additionally, it is possible debris from space craft could be reported as UAP. The various materials used to create and launch satellites and rockets have the potential to break up and re-enter the atmosphere, creating unusual forms of airborne clutter.* <sup>4,6,9,10</sup>

### ***Natural Atmospheric Phenomena***

*This category of UAP spans a wide array of weather events that may be visually observed or detected by some infrared and radar systems. Ice crystals, moisture, thermal fluctuations, and lightning have all been identified as potential causes of UAP reports. These weather phenomena may be unusual and attention grabbing, though challenging for the lay person to identify. For example, lightning generated by thunderstorms can produce a flash of light called a sprite. These are quick bursts of electricity, traveling rapidly upwards, as high as 20 miles. Events can be quite bright, theoretically visible in daylight, and size estimates vary between the size of a small house to the size of a football field. However, much is still unknown about this specific phenomenon. As scientific advancements enable more detailed data gathering, understanding of these types of events will grow. In the future, previous UAP reports may be able to be attributed to newly understood natural atmospheric phenomena.* <sup>6,11</sup>

### **Outlook**

*Further information on the historical UAP reports, assessed sources of events, and scientific data on the nature of UAP will be released in the future. Among other government efforts, in June 2022 NASA commissioned an independent study to examine UAP. Additionally, the creation of AARO provides a clear, consistent channel for reporting such events. Scientific advancements over time are very likely to provide increased accuracy in real time or retroactive identification. However, these same advancements may also result in an increase in UAP reports. Stronger, more accurate, observation and detection equipment inherently enable the detection of UAP than may have previous gone undetected. Additionally, as manmade airborne clutter increases over time, so to does the chance of observation. Finally, as technological advances enable new forms of information gathering by adversaries, these events may necessitate UAP classification until data on those potential new capabilities and developments are available. In summary, UAP are an important and growing field of study. Efforts to track and identify UAP events aim to educate, secure airspace, and provide insights into adversarial goals.*

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<sup>1</sup> Bruggeman, L. (2017, December 17). *Once secret, now closed UFO program confirmed by Pentagon*. ABC News. Retrieved January 24, 2023, from <https://abcnews.go.com/US/secret-now-closed-ufo-program-confirmed-pentagon/story?id=51843013>.

<sup>2</sup> 116<sup>th</sup> Congress. (2020, June 8). S.3905 - Intelligence Authorization Act for Fiscal Year 2021. Congress.gov. Retrieved January 24, 2023, from <https://www.congress.gov/bill/116th-congress/senate-bill/3905/text>.

<sup>3</sup> U.S. Department of Defense. (2020, August 14). *Establishment of Unidentified Aerial Phenomena Task Force*. U.S. Department of Defense. Retrieved January 24, 2023, from <https://www.defense.gov/News/Releases/Release/Article/2314065/establishment-of-unidentified-aerial-phenomena-task-force/>.

<sup>4</sup> Office of the Director of National Intelligence. (2021, June 25). *Preliminary Assessment: Unidentified Aerial Phenomena*. Office of the Director of National Intelligence. Retrieved January 24, 2023, from <https://www.dni.gov/files/ODNI/documents/assessments/Preliminary-Assessment-UAP-20210625.pdf>.

<sup>5</sup> U.S. Department of Defense. (2022, July 20). *DoD Announces the Establishment of the All-domain Anomaly Resolution Office*. U.S. Department of Defense. Retrieved January 24, 2023, from <https://www.defense.gov/News/Releases/Release/Article/3100053/dod-announces-the-establishment-of-the-all-domain-anomaly-resolution-office/>.

<sup>6</sup> Office of the Director of National Intelligence. (2023, January 12). *2022 Annual Report on Unidentified Aerial Phenomena*. Office of the Director of National Intelligence. Retrieved January 24, 2023, from <https://www.dni.gov/files/ODNI/documents/assessments/Unclassified-2022-Annual-Report-UAP.pdf>.

<sup>7</sup> Wall, M. (2023, February 8). *Previous Chinese spy balloons over US were classified as UFOs: report*. Space.com. Retrieved February 8, 2023, from <https://www.space.com/chinese-spy-balloons-classified-ufos-us-military>.

<sup>8</sup> Barnes, J. E., Cooper, H., Wong, E. (2023, February 6). *Previous Chinese Balloon Incursions Initially Went Undetected*. New York Times. Retrieved February 8, 2023, from <https://www.nytimes.com/2023/02/06/us/politics/china-spy-balloon-trump-administration.html>.

<sup>9</sup> McConnell, R. (2021, July 13). *UAPs and the limits of our technology*. PSU Vanguard. Retrieved February 8, 2023, from <https://psuvanguard.com/uaps-and-the-limits-of-our-technology/>.

<sup>10</sup> Harris, R. (2021, June 29). *UAP's or Space Junk?* Radio IQ. Retrieved February 8, 2023, from <https://www.wvtf.org/news/2021-06-29/uaps-or-space-junk>.

<sup>11</sup> Meline, R., Carey, B. (2022, March 22). *7 Things Most Often Mistaken for UFOs*. Live Science. Retrieved February 8, 2023, from <https://www.livescience.com/32849-7-ways-to-generate-a-great-space-hoax.html>.