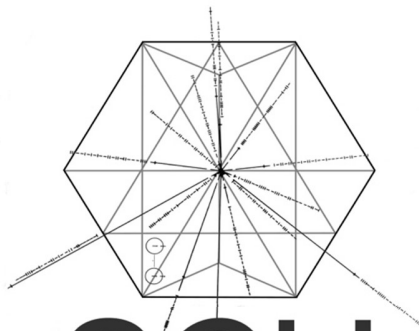


**UAP Pattern Recognition Study 1945-1975
US Military Atomic Warfare Complex**



SCU

Scientific Coalition for UAP Studies
Scientific Exploration of Anomalous Aerospace Phenomena

UAP Pattern Recognition Study 1945-1975 US Military Atomic Warfare Complex

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Date: March 21, 2023

Abstract

This paper provides a view of the pattern of reported Unidentified Aerospace Phenomena (UAP) in the United States associated with the military atomic weapons complex between 1945 and 1975. A set of 590 comprehensively documented UAP reports from this period were collected from select sources, including Project Blue Book. These were analyzed graphically for spatial and temporal differences between the number of incidents reported at sites within the atomic warfare complex, and control sites. Initial study site classes were: 1) radioactive materials production plants; 2) atomic weapons assembly facilities, and 3) atomic weapons stockpile sites. Control sites classes were 1) civilian population centers and 2) high-security, non-atomic weapons military bases. Elevated UAP activity was found at all three atomic site classes and was most noticeable in the earliest facility in each class. UAP activity began during the construction phase for some sites and escalated when the site became operational. Elevated activity at study sites occurred in a “window” between 1948-1951, continued through the national spike in UAP reporting in 1952, then dramatically decreased, never to repeat the “window” levels during the remainder of the study period. The second phase of the study compared additional atomic weapons deployment sites vs: 4) additional non-atomic military sites, and 5) major American rocket/missile and aerospace test and development facilities. Moderately elevated UAP activity was associated with bases where atomic weapons were operationally deployed (Air Force and Navy). Distinctive patterns of UAP activity were noted in conjunction with the deployment of Inter-Continental Ballistic Missiles (ICBM), and other individual and distinctive patterns of UAP incident reports were noted for different types of atomic weapons complex sites over the full period of this study.

1. Introduction

This paper provides a view of the pattern of UAP activity in the United States related to the military atomic weapons complex, which developed during World War II (1939 – 1945) and expanded dramatically from 1947 through 1952, and exponentially from 1953 onwards.

A common element of UFO/UAP reports both in the immediate post-war years and though much of the Cold War (collectively 1947 – 1991) were observations at sensitive atomic development and weapons installations. Those reports received special attention within the intelligence

community, including Air Force intelligence and the Federal Bureau of Investigation (FBI). At the core of that interest was the question of UFO activity as potentially linked to a focus on atomic weapons ([Ruppelt, 1956](#)). The Project used pattern analysis to explore a variety of questions related to UAP activity at the American atomic warfare complex during the period of 1945-1975. The study also included the American aerospace test and development facilities.

This study was undertaken to determine if there was an anomalous pattern of UAP activity (incident reports in terms of numbers and/or timing) associated with specific study sites within the American atomic warfare complex, as compared to non-atomic, complex military bases and civilian population centers. Study sites include weapons development and stockpile sites as well as the bases where strategic (megaton class) bombs and missile warheads were deployed. Anomalous activity is defined as an elevated level of UAP incidents at the study sites as compared to control sites or as a distinctive pattern in the timing of those incident reports.

If anomalous patterns of incidents (in terms of either numbers, timing, or both) were found, the project would then proceed to a second study which would examine whether any patterns associated with such activity were indicative of intelligence and intent. In support of such a follow-on indications study, a similar pattern analysis was carried out here to address the question of whether there was any correlation between anomalous activities at American aerospace facilities, including both missile and aircraft test centers as well as space launch facilities. This paper is limited to a presentation of the methodology and findings of the pattern recognition study and does not address either the “intent” or motives related to the anomalous UAP activity.

Findings of this paper include a window/burst of UAP activity at the earliest atomic complex sites occurred during 1948-1951 that was never repeated during the study period. This study also revealed a similar pattern between the atomic complex sites and missile/rocket testing at the White Sands test range during 1948-1951. Regarding the widespread deployment of atomic weapons from 1955 onwards, there appeared to be a lack of exceptional UAP activity at atomic weapons warfighting sites as compared to non-atomic, conventional military bases. An exception to that general observation was the increase in UAP activity at ICBM deployment sites as compared to all atomic deployment sites. Because of these anomalous findings, the subject of “intent” will be addressed in a follow-on study which uses separate tools and methodology to examine and rank alternative intentions scenarios (hypotheses). Neither this pattern recognition study nor the subsequent intentions study will deal with the nature of the “agents” involved in the UAP activity, however both explore the conclusion that focused, intelligent behavior is associated with anomalous patterns of activity.

There were five phases in this study:

- Phase 1 examined the radioactive materials production plants
- Phase 2 examined the atomic weapons assembly facilities
- Phase 3 examined the atomic weapons stockpile sites
- Phase 4 examined the broad deployment of strategic atomic weapons in the United States
- Phase 5 examined major American rocket/missile and aerospace test and development facilities

A summary of the methods and data used is provided in this introduction. Section 2 described UAP report collection guidelines, including control sites. Section 3 covers graphical results and conclusion from Phases 1- 3, which is the comparison of controls to sites in the U.S. Atomic warfare complex. Section 4 presents atomic weapons deployment sites compared to conventional military facilities. Section 5 examines reports at aerospace test and development facilities. Section 6 describes the data requirements needed for further study to connect the patterns discovered with possible behavioral intentions. Section 7 describes the methods used for graphical analysis. Section 8 presents graphs for Phase 1. Section 9 presents individual study site charts for phases 1-3. Section 10 presents results for Phase 4 atomic weapons deployment sites. Section 11 presents results for Phase 5 missile, aircraft testing, and spaceflight. Section 12 is a summary of the statistical analysis conducted for all phases. A summary of the key points is provided in Section 13, and conclusions are presented in Section 14.

Phase 1-5 Military Installations

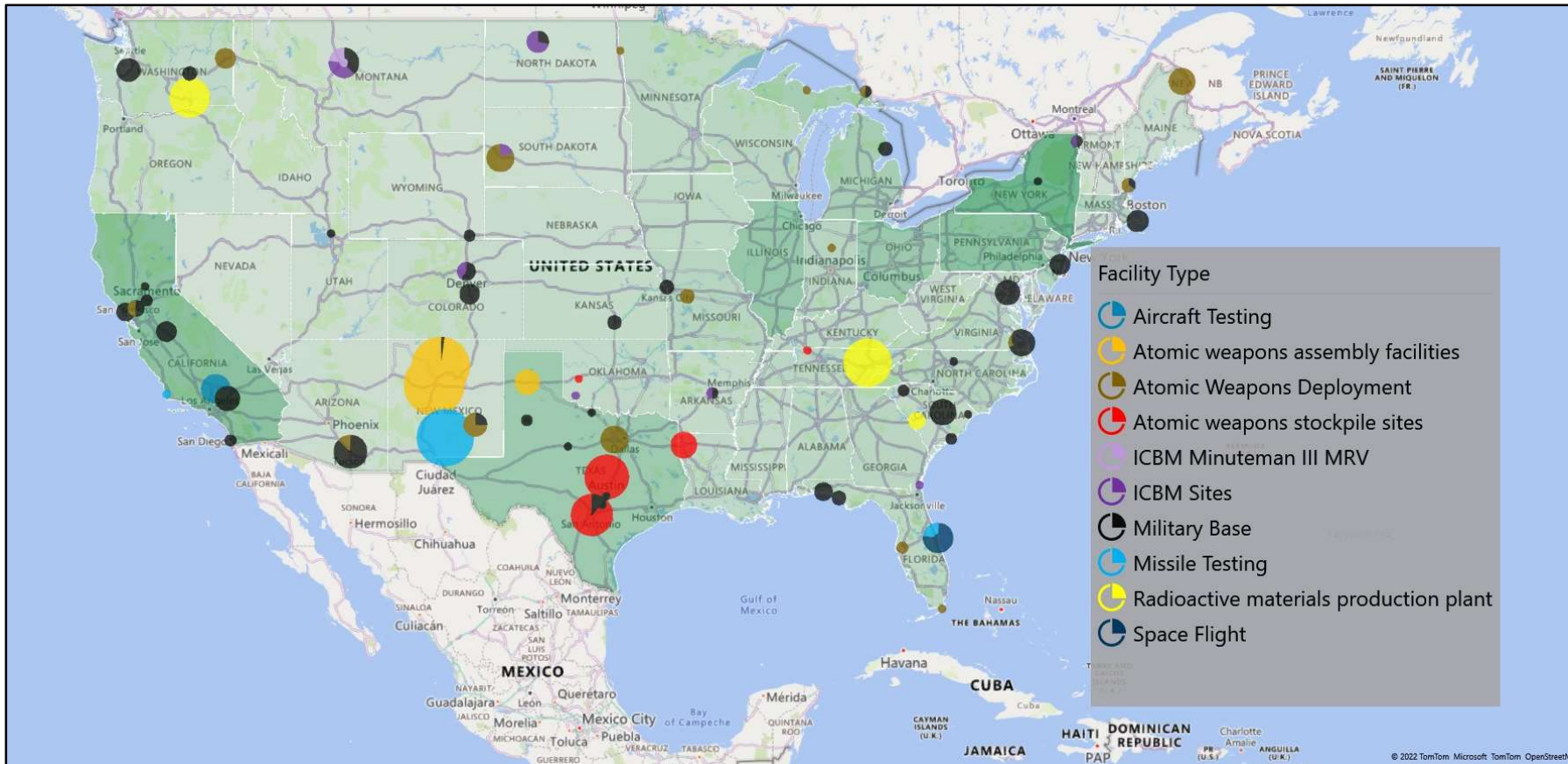


Figure 1. Phase 1-5 Military sites with numbers of sightings. The map shows the location of the military sites. Some facilities changed their facility type over the study period, as a visual aid the above map has the size of the pie marker denote the number of reports, and the color sections of the pie markers relate to the facility type at the time of the sighting. The State is color coded to the population in 1960 (darker color green corresponds to greater population for state). For all maps - North is top and East is right.

By examining the study sites at both the individual site level and the combined facility type level, patterns were identified at facilities specified for the development and deployment of United States atomic weapons as well as at bases operationally associated with atomic warfighting. UAP report data from bases across the continental United States, all of which were critical to the development of atomic weapons or to which weapons were deployed during the study period were examined.

To identify potential anomalies not just in terms of the timing of reports but also in overall level of UAP reporting, locations designated as control sites were identified and used for comparison. There were two types of control sites utilized for the study:

- Conventional military bases
- Civilian population centers

For pattern analysis, non-atomic weapons military control sites were selected to include facilities with a high degree of physical security/sensitivity to UAPs; these included air defense bases, Strategic Air Command bomber bases, and other high-security installations. Civilian controls included a mix of towns selected for general proximity to the related study site and larger metropolitan centers within the same general regional geography as the study site.

The selection of the controls was guided by the identification of military locations with comparable security measures at the atomic weapon's complex sites, or in the case of population centers, similar regional geography, or population size. Given the wide variations in geographic location of the atomic weapons study sites, the selection of control locations was driven by multiple factors to evaluate association with the target site. The actual process for selecting control sites as well as the guidelines for collecting UAP reports for both the study and control sites is discussed in further detail in Section 2 of this paper, under Collections Guidelines and Controls.

UAP reports were collected from select sources to create a database for all five phases of this study. The sources were selected based on witness credibility and comprehensive documentation for observation detail and measurement methods associated with the reports. Brad Sparks' Comprehensive Catalog of Blue Book (United States Air Force study) of UFO Unknowns (2020) (Sparks, 2020) was selected as the primary study resource, which documented incidents in which the reports were not explainable as misidentifications or atmospheric phenomena. In addition, the National Investigations Committee on Aerial Phenomena (NICAP) 2020 UFO Chronologies (NICAP, 2020) served as a supplemental source of reports, as did research on Strategic Air Command UFO incidents in the 1960s and 1970s by Lawrence Fawcett and Barry Greenwood (Clear Intent) (Fawcett and Greenwood, 1984) and Robert Salas and James Klotz (Faded Giant) (Salas and Klotz, 2005).

The analysis for Phase 1 – 3 involved a comparison for the number of reports from the study and control sites, for each year in the study. This comparison was compiled and presented in a series of charts that show study and control site activity relative to each other and to the total UAP incident reports in the database. Phases 4 and 5 were compared based on relation to atomic

versus non-atomic sites. For those sites which have sufficient data, a statistical analysis was also performed.

1.1 Report Sources

In building our database, we began with a manual review of incidents in the Sparks' list ([Sparks, 2020](#)), Clear Intent ([Fawcett and Greenwood, 1984](#)) and Faded Giant ([Salas and Klotz, 2005](#)) (based on our collections criteria for study and control sites), followed by automated searches using Optical Character Recognition for key words associated with the study and control locations. After compiling the incident data into an Excel database, we did manual reviews to remove duplicates and reconciled a final set of entries for analysis. A total of 590 incidents were included in the Intentions Study data set, including 107 for Phase 1, 138 for Phase 2, 131 for Phase 3, 297 for Phase 4 and 74 for Phase 5. It should be noted that some incidents were included for multiple phases based on facility type.

The Brad Sparks Catalog, served as our primary data source; this list contains reports which were officially reported to and investigated by the U.S. Air Force's various UFO (Unidentified Flying Objects) investigations programs (SIGN, GRUDGE, BLUEBOOK). The list includes reports from military personnel, law enforcement, pilots, and other observers, which received some level of investigation.

The National Investigations Committee on Aerial Phenomena (NICAP) yearly chronologies were used to access related case studies and reports and other sources are referenced within the NICAP reports themselves:

Only reports classified as unidentified from the various sources were used in the study.

2. UAP Incident Report Collections Guidelines

Atomic weapons study sites (both developmental facilities and actual warfighting bases) varied in both as to their primary function relating to nuclear materials, and the size and scope of their associated security zones, in particular the extent to which they were protected by surveillance radar systems and interceptor aircraft. That means that UAP reports would be generated not just by facility or base personnel physical observations but by personnel throughout an expanded security zone (sometimes using optical instruments), including air defense radar stations providing surveillance over a considerable range in air space associated with the base or facility. In addition to UAP radar reports, air defense interceptors were often dispatched and generated their own UAP reports.

In collecting UAP reports associated with a particular facility or base, it was necessary to establish guidelines for the association of UAP reports for each study location. UAP reports would be collected for each study location. Thus, both geographic distance and security zone (radar and interceptor) considerations were used in determining the relevance of a given UAP report. In some instances, security areas were found to involve 200 or more square miles. The Hanford atomic plant security zone was over 500 square miles and extended by radar sites which generated UAP reports related to that security zone which were located beyond the security zone

itself. Very large security areas were common for atomic sites, and was the case for Oak Ridge, Killeen Base, Sandia base, and several Air Force ICBM installations.

Air defense search radars providing defensive measures for facilities and bases were not normally located on the sites themselves but rather were located at air defense bases or standalone sites over a much wider area. Given that the early radars had a lateral scanning range of 80-120 miles it was necessary to examine UAP reports coming from an extended similar distance surrounding the study sites ([Winkler, 1997](#)). If a given UAP incident involved radar tracking or military aircraft, it was necessary to examine whether the UAP was moving towards, away from or tangential to the atomic study site. In instances where the UAP was traveling over or towards the study site, the report was included in the study. However, if a radar site was tracking an unknown in the opposite direction from the site – given that air defense radars operated with a 360-degree sweep – it was not included in the UAP activity for the study site.

In terms of collections tabulation, UAP incident numbers for the atomic facilities were consolidated with those of the security zone (including radar and interceptor aircraft activity) supporting the facility/base to form the total incident number for each atomic study site.

The issue of distance regarding selecting reports for a study or control site is challenging given that we face a mix of visual reports - in some instances aided by different types of optical aids or with multiple observers and triangulation calculations as well as reports that involve radar or the dispatch of interceptor aircraft with a combination of visual and radar elements. In addition, the size of the security area covered by radar and interceptors varies greatly in terms of the location of associated radar sites and interceptor operations. While UAP incidents within a site's immediate area are likely associated with a site (for example hovering over a base), there are incidents that fall into a gray area and require a judgement as to their inclusion or not and their association with a site.

With each UAP incident, multiple factors need to be balanced when determining if a UAP incident is associated with a particular site.

Understanding the sites Association Zone which is made up of the:

- Size of the physical security zone
- Size of the radar detection zone
- Size of the air defense zone

Understanding the individual factors of the UAP incident that may impact the likelihood of it being associated with a site such as:

- Location of the observer relative to the site
- Direction of travel of the UAP relative to the site
- Speed of the UAP
- Duration of the sighting

Sites Association Zone

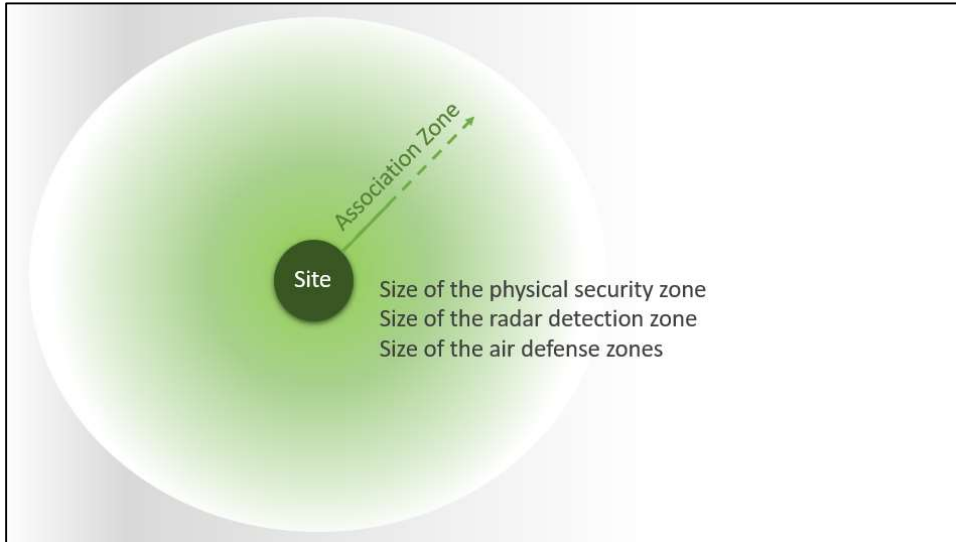


Figure 2. Association zone. Where multiple sites are near each other, the overlapping of zones needs to be considered. Due to the uniqueness of each site and the individual factors of each incident, it is necessary to review each incident to ensure the likelihood of the incident being associated with a site. If an incident cannot be determined to be associated with a study site, it was not included in the study. As an example, within New Mexico several of the bases are close to each other and UAP incidents that are observed around the wider site area need to be considered as potentially associated with another site.

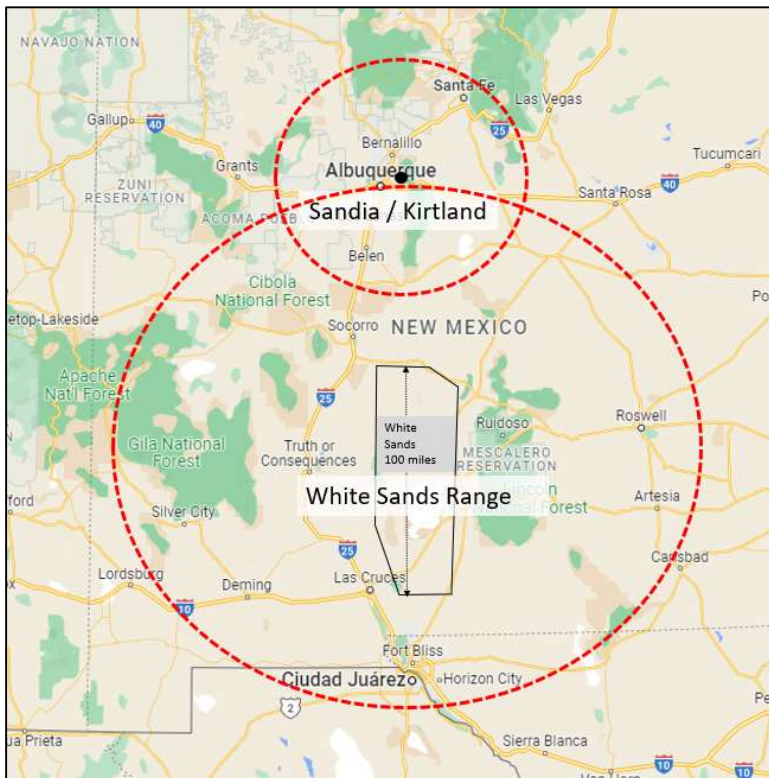


Figure 3 Examples of overlapping association zones

2.1. Controls

Control sites were selected to provide a reference for exploring anomalous patterns in UAP incident activity – both in terms of the number and timing of reports – at atomic warfare complex sites. The goal in selecting military control locations was to identify bases which did not have atomic weapons deployed during the time associated with the earliest period of the phase 1-3 study. Such controls included specific bomber bases as well as major transportation and logistics support bases. In some instances, strategic facilities such as international military air transport fields and major Navy yards/ports (home ports for Navy supercarrier groups or ICBM submarine bases) were used as controls.

Military bases selected as non-atomic controls were chosen as being of a comparable nature in terms of UAP security/sensitivity ([Longquest and Winkler, 2014](#); [Winkler, 1997](#); [Richelson, 2007](#)); [Morgan and Berhow, 2002](#)); [Polmar, 1979](#); [Peebles, 2001](#)) meaning that the bases were protected by air defense surveillance radars, and by interceptor aircraft. In the later phases of the study (Phase 4-5) non-atomic warfare bases were used as controls in comparison of the level and timing of UAP reports from bases where strategic thermonuclear weapons were deployed. Given the realities of base location, it was necessary to select controls from within regional geographies. That proved to also be desirable in ensuring that UAP reports from such locations would not be duplicates of the incidents reported from the study sites. The same UAP incident collections guidelines were applied to the military controls as to the atomic warfare complex study sites.

The identification of population centers to be used as controls was especially challenging. The first guideline used in that selection was that the civilian center should be in the same regional geography as the study site, but at a distance so that its UAP reports would not be duplicates of the study site. The second guideline was a judgement that the sheer population size should not be such that it would likely generate numbers of reports which would not be comparable. This led to the rejection of very large cities as controls, and a judgement that towns or mid-sized cities within the same regional geography - but at a suitable distance to prevent overlap in reports - would serve as the best civilian population controls.

Given the location of the study sites, several of which were intentionally in low population regions for security purposes, this sometimes led to selecting populations controls at some distance from the study site and in some instances led to the selection of a larger number of towns to provide a balance against low population densities – especially true regarding the study sites in the southwestern United States and across the northern tier military study sites on the Canadian border. Although the selection of civilian population controls involved subjective judgements for the geographic area, the data in the study is being provided so that additional studies could be performed with a selection of either type of control site – military or civilian.

3. Phase 1 to 3 the American Atomic Warfare Complex

Phase 1-3 are analyzed at a site level, a facility type level and combined as a total atomic warfare complex.

The early American atomic warfare complex is made up of 11 sites, which fall under 3 types of facilities.

1. Radioactive materials production facilities
2. Atomic weapons assembly facilities
3. Atomic national stockpile locations (Q Sites)

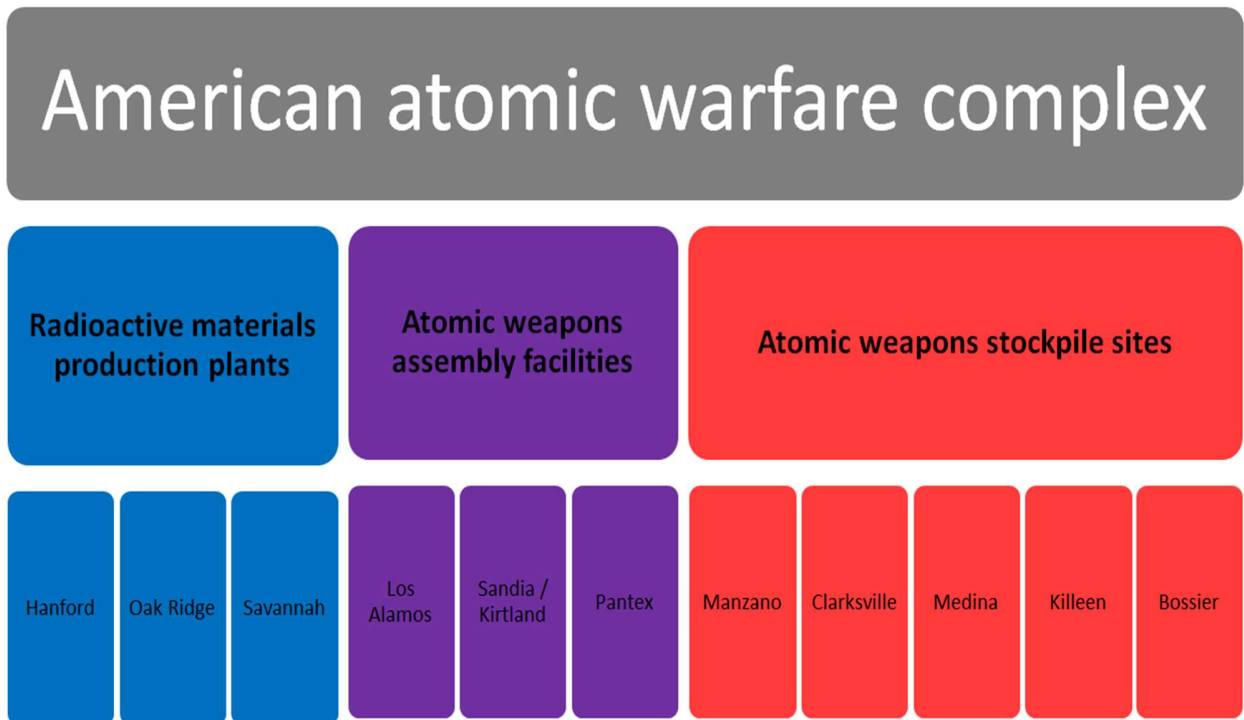


Figure 4. Early US American atomic warfare complex. The 11 atomic Phase1-3 study sites and how they relate to the 3 atomic facility types. If a control location is listed but does not appear on the map, it indicates there were no reports for that location. Military bases that were used as control sites based on security features were designated with an asterisk (*) at the end of the site name in sections 3.1 to 3.3.

3.1. Phase 1 - Radioactive Materials Production Facilities

Map showing the locations of the Radioactive Materials production facilities and the control sites.

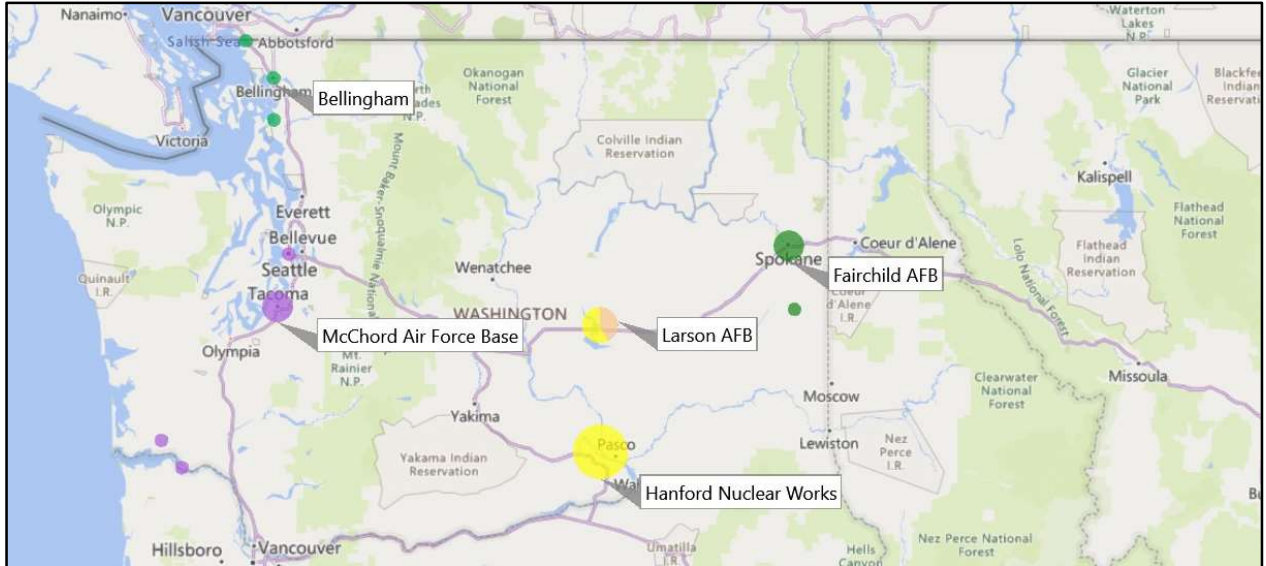


Figure 5 Radioactive Materials production facilities sites & controls (Hanford)

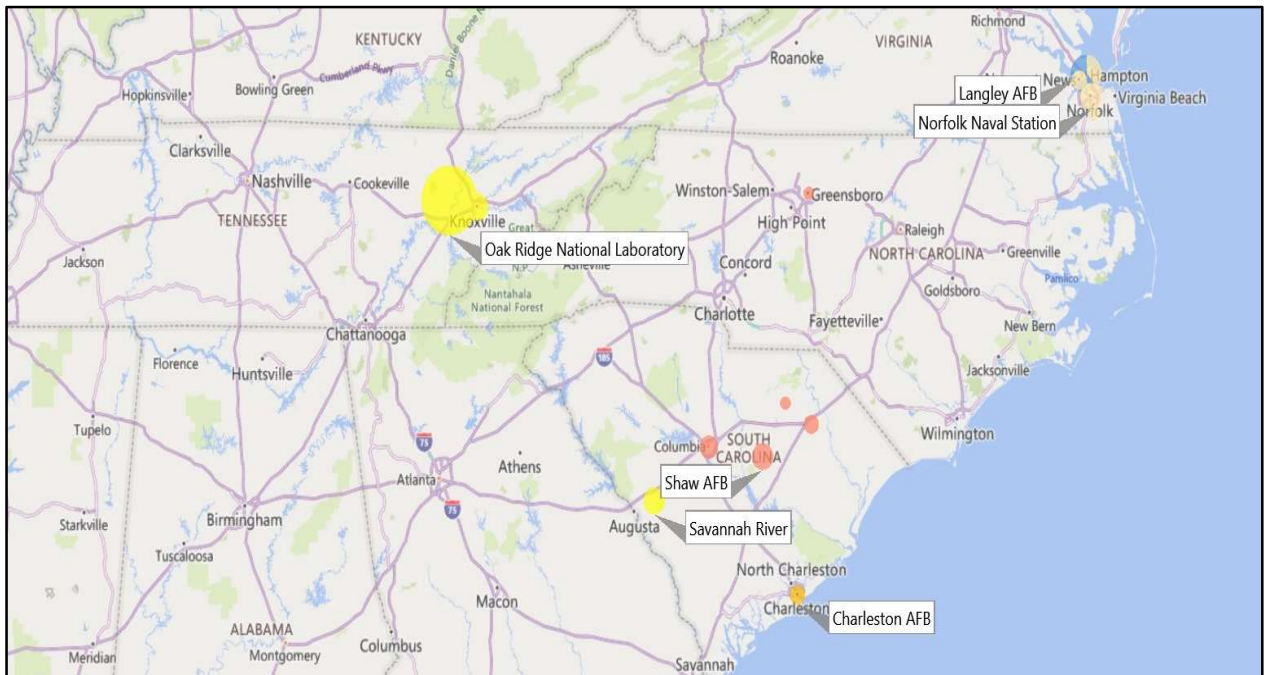


Figure 6 Radioactive Materials production facilities sites & controls (Oak Ridge and Savannah River)

3.1.1. Hanford Complex Study Site (Richland, Washington)

Controls:

- Bellingham population center (Bellingham, Washington)
- McChord AFB (Tacoma, Washington)
- Fairchild AFB (Spokane, Washington)
- Larson AFB (Moses Lake, Washington)

3.1.2. Oak Ridge complex (Oak Ridge, Tennessee)

Controls:

- Chattanooga population center (Chattanooga, Tennessee)
- Langley AFB (Hampton, Virginia)
- Norfolk Naval Station (Norfolk, Virginia)

3.1.3. Savannah River Complex Study Site (Aiken, South Carolina)

Controls:

- Shaw AFB (Sumter, South Carolina)
- Charleston AFB (Charleston, South Carolina)

3.2. Phase 2 Atomic Weapons Assembly Facilities

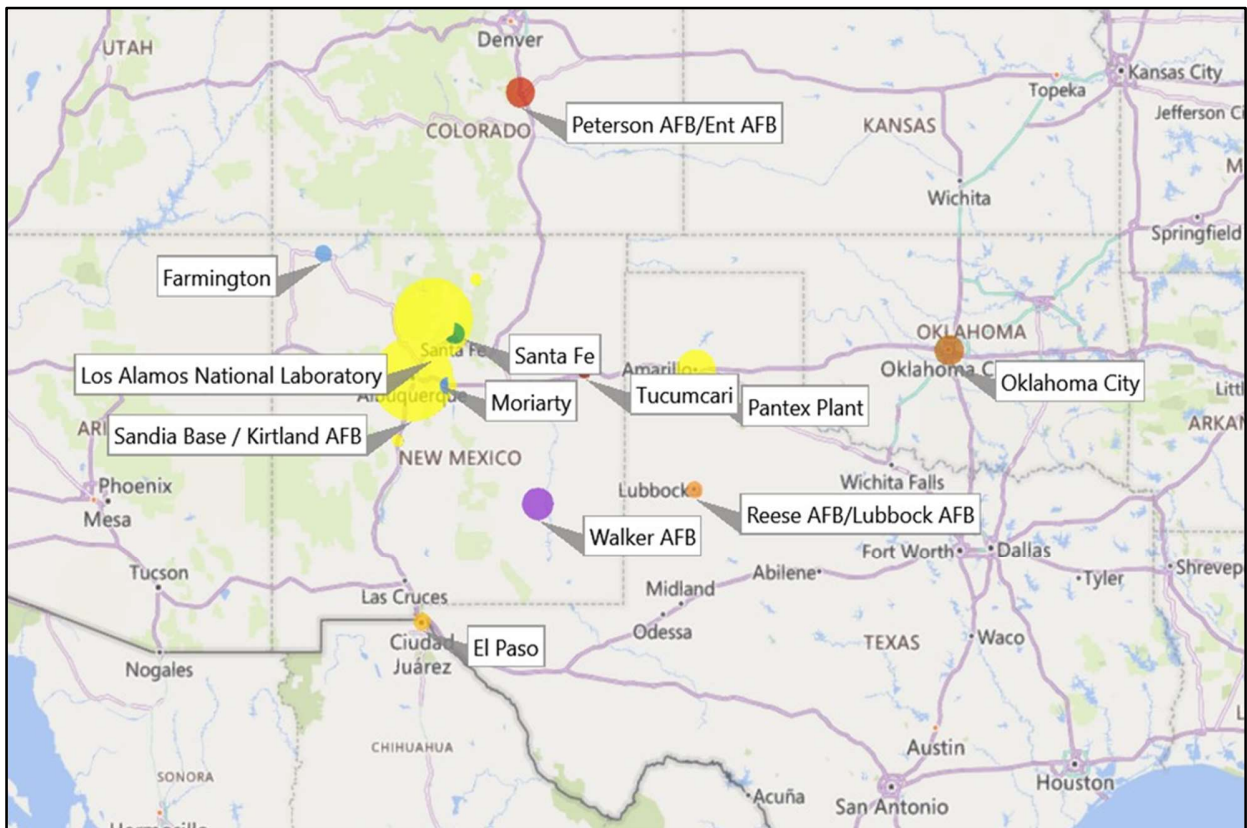


Figure 7 Atomic Weapons assembly facilities sites & controls. Map showing the locations of the atomic weapons assembly facilities and the control sites

3.2.1. Los Alamos Complex Study Site (Los Alamos, New Mexico)

Controls:

- Walker AFB* (Roswell, New Mexico)
- Santa Fe population center (Santa Fe, New Mexico)
- Peterson/Ent AFB* (Colorado Springs, Colorado)

3.2.2. Sandia Base / Kirtland AFB Study Site (Albuquerque, New Mexico)

Controls:

- Clinton Sherman AFB* (Burns Flat, Oklahoma)
- Moriarty population center (Moriarty, New Mexico)
- El Paso population center (El Paso, Texas)
- Bernalillo population center (Bernalillo, New Mexico)
- Farmington population center (Farmington, New Mexico)
- Tucumcari population center (Tucumcari, New Mexico)
- Oklahoma City population center (Oklahoma City, Oklahoma)

Note: Due to the lack of a large population center close enough to the Sandia base / Kirtland AFB to use as a control we have used a larger number of smaller population centers as the controls.

3.2.3. Pantex Plant Study Site (Amarillo, Texas)

Controls:

- Altus AFB* (Altus, Oklahoma)
- Pampa population center (Pampa, Texas)
- Dumas population center (Dumas, Texas)
- Reese AFB/Lubbock AFB (Lubbock, Texas)

3.3. Phase 3 Atomic National stockpile locations (Q Sites)

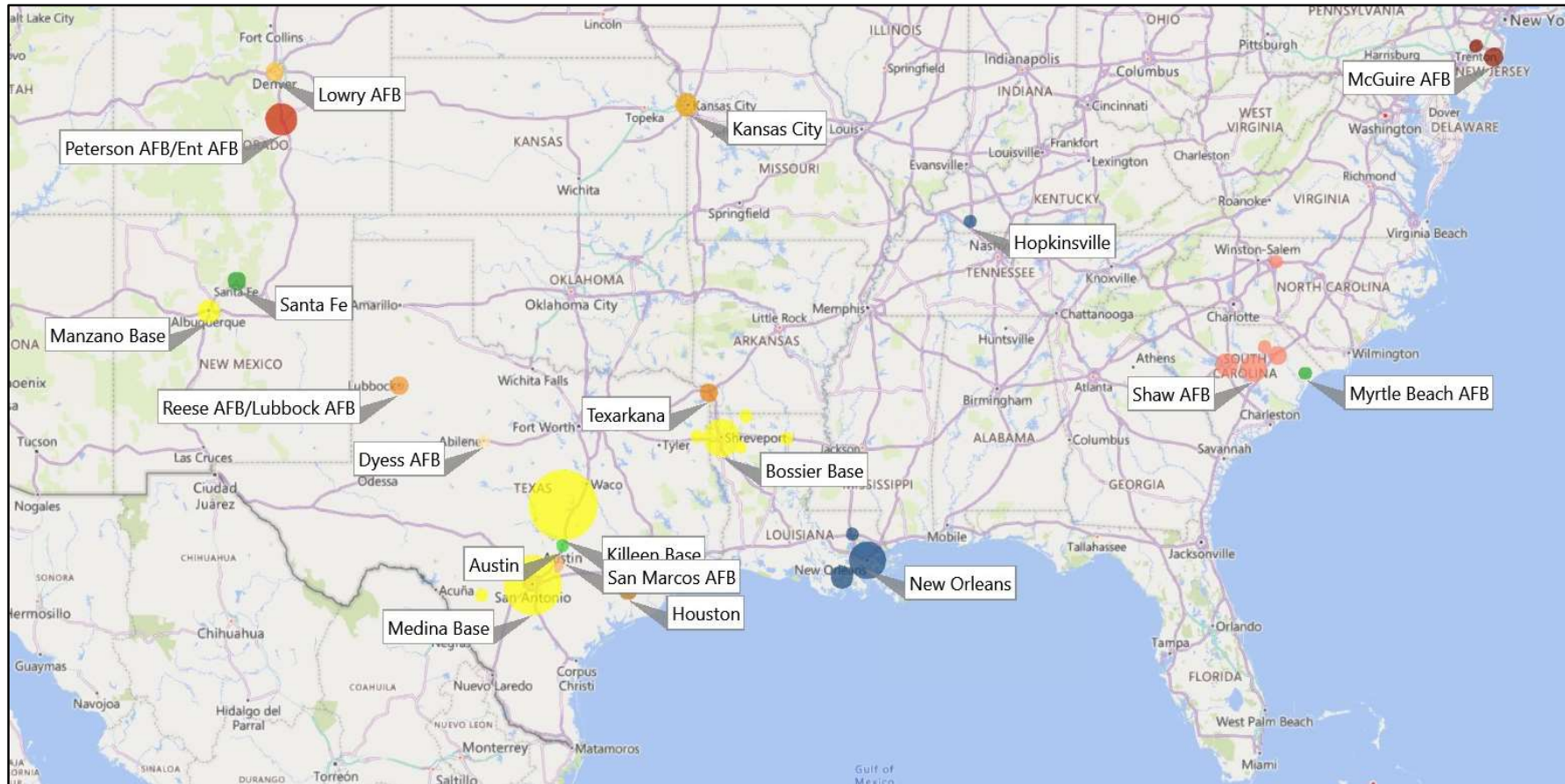


Figure 8 Atomic National stockpile locations (Q Sites) and Controls

3.3.1. Manzano Base Study site (Albuquerque, New Mexico)

Controls:

- Santa Fe population center (Santa Fe, New Mexico)
Also used as a control for Los Alamos complex in phase 2
- Grandview/Richards Gebaur AFB* (Kansas City, Missouri)
- Lowry AFB* (Denver, Colorado)
- Peterson/Ent AFB* (Colorado Springs, Colorado)
Also used as a control for Los Alamos complex in phase 2

3.3.2. Clarksville Base Study site / Fort Campbell (Clarksville, Tennessee / Oak Grove, Kentucky):

Controls:

- Nashville population center (Nashville, Tennessee)
- Hopkinsville population center (Hopkinsville, Kentucky)
- McGuire AFB* (Lakehurst New Jersey)

3.3.3. Killeen Base Study site / Gray Army Airfield (Killeen, Texas)

Controls:

- Austin population center (Austin, Texas)
- Waco population center (Waco, Texas)
- Reese AFB/Lubbock AFB (Lubbock Texas)
Also used as a control for the Pantex plant in phase 2

3.3.4. Medina Base / Kelly AFB (San Antonio, Texas)

Controls:

- Houston population center (Houston, Texas)
- Corpus Christi population center (Corpus Christi, Texas)
- Dyess AFB (Abilene, Texas)
- San Marcos AFB (San Marcos, Texas)

3.3.5. Bossier Base / Barksdale AFB (Shreveport, Louisiana)

Controls:

- New Orleans population center (New Orleans, Louisiana)
- Texarkana population center (Texarkana, Texas)
- Shaw AFB* (Sumter, South Carolina)
Also used as a control for the Savannah River complex in phase 1
- Myrtle Beach AFB (Myrtle Beach, South Carolina)

4. Phase 4 study Atomic Weapons deployment sites compared to conventional military facilities

Phase 4 is an evaluation of UAP activity at strategic atomic weapons deployment sites, both Air Force and Navy, as compared to a broad range of conventional military facilities including air defense bases, major logistics and transportation facilities, training centers and Navy facilities which supported atomic missile submarines and supercarrier groups which deployed nuclear weapons. Our pattern study of weapons deployment focuses on strategic (thermonuclear / megaton class fusion weapons) deployed by the Air Force and Navy on bombers and missiles at continental American military bases. It excludes the thousands of nuclear / kiloton class fission weapons deployed in artillery shells, anti-aircraft weapons, mines, and torpedoes widely deployed with military units. While extant histories and records are available regarding strategic weapons deployment, the breath of tactical weapons deployment (in the tens of thousands) and lack of detailed records puts that category beyond the scope of this study ([Key, 1978](#)).

This large-scale comparison allows the assessment of whether any long-term pattern of UAP activity continued during the general deployment of megaton class atomic weapons at Strategic Air Command (SAC) and Navy installations. We evaluated general patterns related to all major military facilities and whether those patterns were distinct from patterns identified at facilities specified as atomic sites. As well as a comparison between atomic and non-atomic sites the atomic sites were also broken down into different atomic facility types (general, weapons assembly, stockpile, and ICBM sites). Figure 9 shows the sites color coded to this atomic facility type.

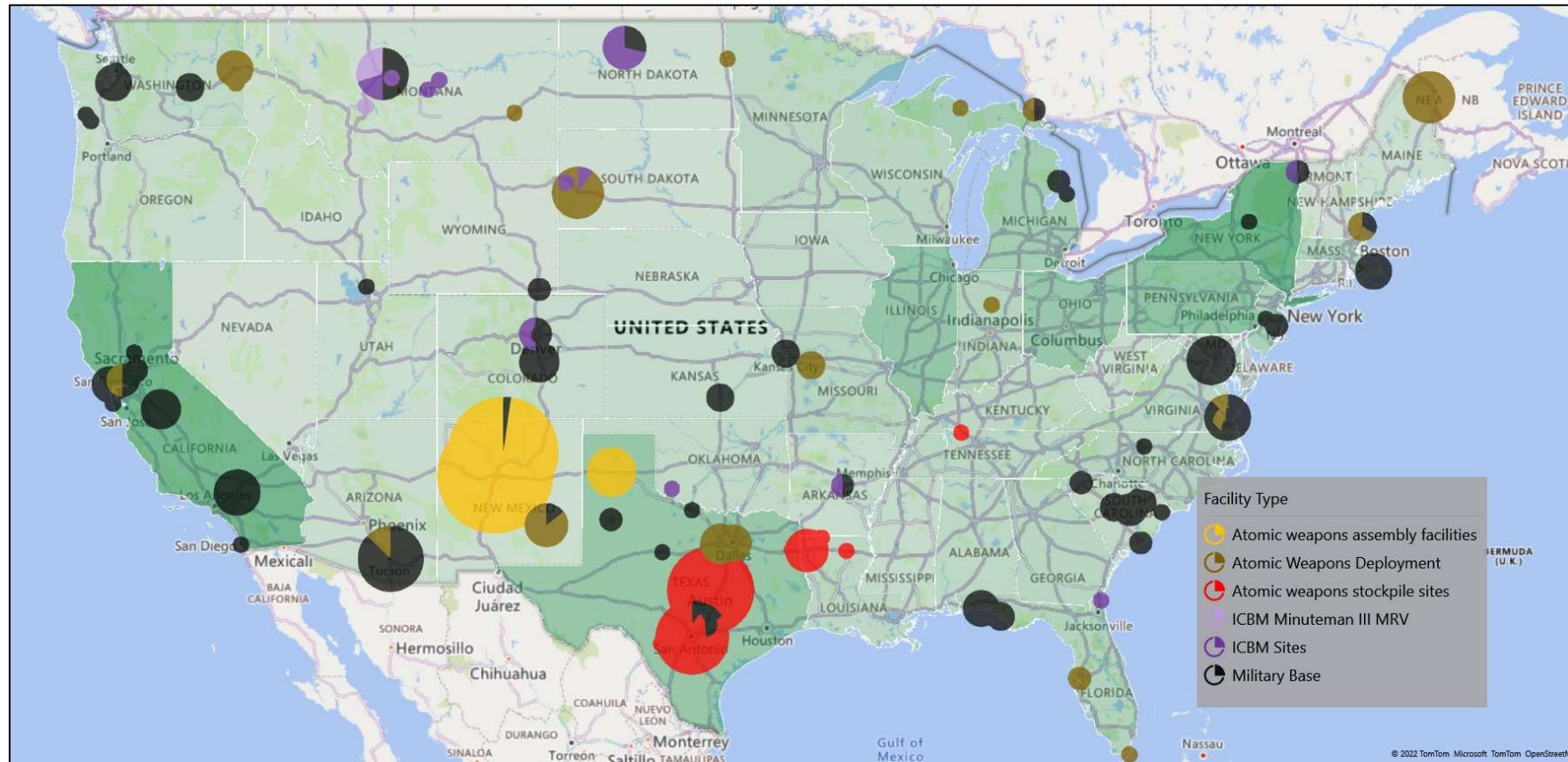


Figure 9 Phase 4 sites with UAP activity. Some facilities changed their facility type over the study period. Figure 9 Phase 4 sites with UAP activity is a color-coded map that illustrates the facilities during the study period. The size of the pie marker denotes the number of reports, and the color sections of the pie markers relates to the facility type at the time of the sighting.

Atomic Weapons Deployment Sites:

- Bangor Naval Submarine Base / Kitsap, Bremerton, Washington
- Barksdale AFB, Bossier City, Louisiana
- Beale AFB, Marysville, California
- Bergstrom AFB, Austin, Texas
- Bunker Hill / Grissom AFB, Peru, Indiana
- Carswell AFB, Fort Worth / Dallas metroplex, Texas
- Castle AFB, Merced, California
- Davis Monthan AFB, Tucson, Arizona
- Dyess AFB, Abilene, Texas
- Ellsworth AFB, Rapid City, South Dakota
- Fairchild AFB, Deep Creek, Washington
- Grand Forks AFB, Grand Forks, North Dakota
- Great Falls / Malmstrom AFB, Great Falls, Montana
- Griffiss AFB, Rome, New York
- Hamilton AFB, Novato, California
- Homestead AFB, Miami Dade, Florida
- Kings Bay Navy Base, St. Marys, Georgia
- Kinross / Kincheloe AFB, Sault St. Marie, Michigan
- Kirtland AFB, Albuquerque, New Mexico
- Little Rock AFB, Jacksonville / Little Rock, Arkansas
- Loring AFB / Limestone / Caribou Maine
- Lowry AFB, Denver, Colorado
- McConnell AFB, Wichita, Kansas
- McCoy AFB / Pinecastle / Orlando, Florida
- McDill AFB, Tampa, Florida
- Minot AFB, Minot, North Dakota
- Naval Station North / Coronado / Imperial Beach / Miramar, San Diego, Calif
- Pease AFB, Portsmouth / Newington / Greenland, New Hampshire
- Plattsburg AFB, Plattsburg, New York/Burlington, Vermont
- Sawyer AFB, Marquette/Guinn, Michigan
- Sheppard AFB, Wichita Falls, Texas
- Travis AFB, Fairfield/Sacramento, California
- Warren AFB, Cheyenne, Wyoming
- Walker AFB, Roswell, New Mexico
- Westover AFB, Stonybrook, Massachusetts
- Whiteman AFB, Nob Noster, Missouri
- Wurtsmouth AFB, Osconda, Michigan

Conventional Military Bases

- Andrews AFB, Washington DC
- Charleston AFB, Charleston, South Carolina
- Eglin AFB, Eglin, Florida
- Ent and Peterson AFB, Colorado Springs

- George AFB, Victorville, California
- Grandview / Richards Gebaur AFB, Kansas City, Missouri
- Greenville / Donaldson AFB, Greenville, South Carolina
- Hill AFB, Ogden, Utah
- Langley AFB, Hampton, Virginia
- Larson AFB, Moses Lake, Washington
- McClelland AFB, Sacramento, California
- McCord AFB, Lewis-McCord, Tacoma, Washington
- McGuire AFB, Dix-Lakehurst, Trenton, New Jersey
- Mitchell Field, Long Island, New York
- Myrtle Beach AFB, Myrtle Beach, South Carolina
- Norfolk Naval Air Station, Hampton Roads, Virginia
- Otis AFB / Joint Base Cape Cod, Massachusetts
- Reese AFB / Lubbock AFB, Lubbock, Texas
- San Marcos AFB, San Marcos, Texas
- Seymour Johnson AFB, Greensboro, North Carolina
- Shaw AFB, Sumter, South Carolina
- Tyndall AFB, Panama City, Florida

5. Phase 5 Aerospace Test / Development Facilities

Phase 5 is an examination of UAP activity patterns at advanced aerospace test facilities, including the Muroc/Edwards's flight test center, White Sands missile range, Vandenberg AFB, and the Cape Canaveral/Kennedy Space Center. If a similar pattern is found, comparable to the patterns identified during Phases 1 through 4 at the earliest atomic weapons facilities, it would suggest a broader based technology capabilities assessment. A broad-based technology assessment would include an effort to estimate the scientific knowledge, industrial capability for atomic weapons development, and advanced delivery systems (rockets and missiles), rather than merely the possession of atomic weapons. This phase of the study would also reveal any tightly focused attention on advanced air and space craft as compared to military type air-to-ground, ground-to-air missiles, and bombardment weapons such as intermediate and ballistic missiles (all types of these weapons having different and observable flight and altitude profiles).

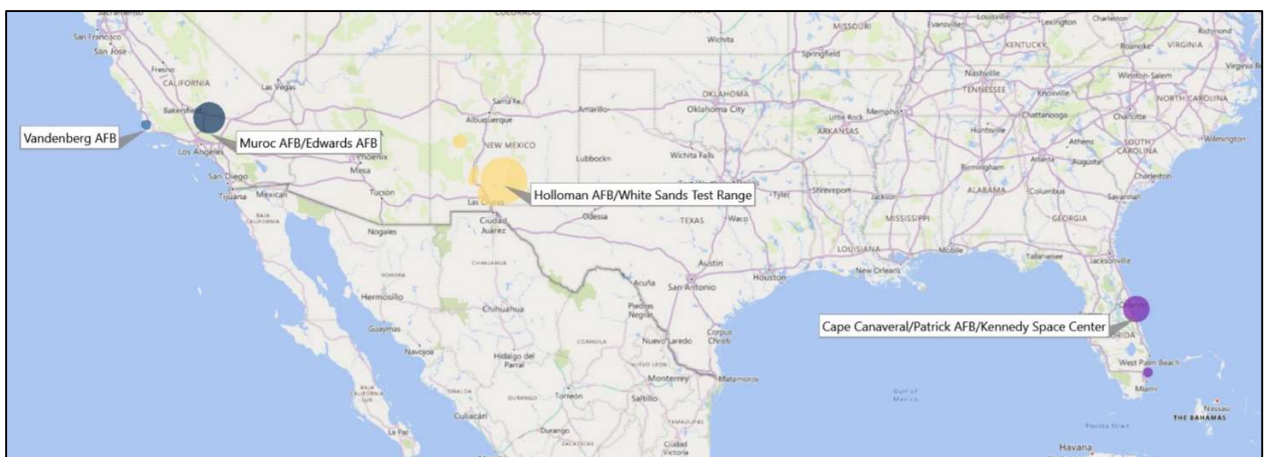


Figure 10 Aerospace test and development facilities

The four sites are:

Missile Testing

- Holloman AFB / White Sands test range, Holloman, New Mexico
- Vandenburg / Camp Cooke AFB, Santa Barbara, California

Aircraft Testing

- Muroc / Edwards AFB (Mojave Desert Station), San Bernadino/Kern/Los Angeles County, California

Space Center / Missile Testing

- Cape Canaveral (Air Force Missile Test Center) / Patrick AFB / Kennedy Space Center, Brevard County, Florida

This site is a combination of Missile testing and space flight center

6. UAP Intentions Database

6.1. Requirement for a new database

To combine various catalogs, avoid duplication and properly classify incidents in accordance with our Phases 1 - 5 study guidelines, additional criteria needed to be collected, which was not readily available across the various UAP catalogs. The complexity of the military facilities, with respect to tasking, their ability to identify UAP incidents (both at military bases and civilian population centers), and the physical co-location of multiple military bases and population centers, required the collection of data that was not previously organized to conduct data analysis, with the inclusion of control sites. This database identifies and classifies an incident as being associated with a particular site, allows a determination of whether atomic weapons were deployed at the time of the report, and enables all analysis to be traceable back to the original source incident reports.

To ensure comprehensive UAP report collection, “keywords” were identified for each study and control site. Those keywords cover the variety of names which were associated with a given facility, base, town, or city. That allowed for all potentially relevant reports in both the Sparks and NICAP lists to be evaluated. Date, time, and location were screened to identify duplicate entries. Entries that were determined to be duplicates, false reports, or were unrelated to established Study Sites or Control Sites were excluded.

The following guidelines were considered for quality in assessing entries for inclusion in the dataset:

- Sources of data must be vetted and agreed upon prior to the collection of data.
- Study Sites must have set criteria for which the study is being targeted.
- Control Site criteria must be identified and applied uniformly for the duration of the study. Any deviation must have a justification, as well as a footnote to articulate the reason for the exception.

6.2. Quality control

While applying our UAP Incident Report Collections Guidelines, incidents from the different UAP sources were individually reviewed, collated, and categorized into the atomic facilities, or controls for those atomic facilities. These incidents were then included in the SCU UAP Intentions Study database.

Due to the use of multiple sources, multiple reports were found to refer to the same UAP incident. To identify and remove duplicate incidents, entries were cross-referenced to each other, using date, time, and location, to ensure duplicates were identified and tagged to avoid double counting. Entries that were determined to be duplicates, false reports, or were unrelated to the study sites or the control sites were tagged and excluded from the analysis. Upon completion of the data collection for each phase, a final reconciliation was completed by the team to ensure all incidents included met our study guidelines.

7. Charting and Analysis:

An analysis code was assigned to each phase. Each incident that included characteristics for the respective phase was assigned the corresponding analysis code. The analysis codes were used to create pivot charts, which were then rendered into graphs and demonstrative maps. The frequency, interval and location of incidents revealed patterns that represented potential intelligent focus of UAP.

The pattern analysis for Phases 1 - 5 was developed to show the following:

- individual sites compared against their controls
- combined facility type compared against other facility types and controls
- atomic warfare complex and military test facilities compared against non-atomic military facilities.

8. Phase 1 Study Radioactive Materials production facilities

8.1.1. Hanford Complex Study Site

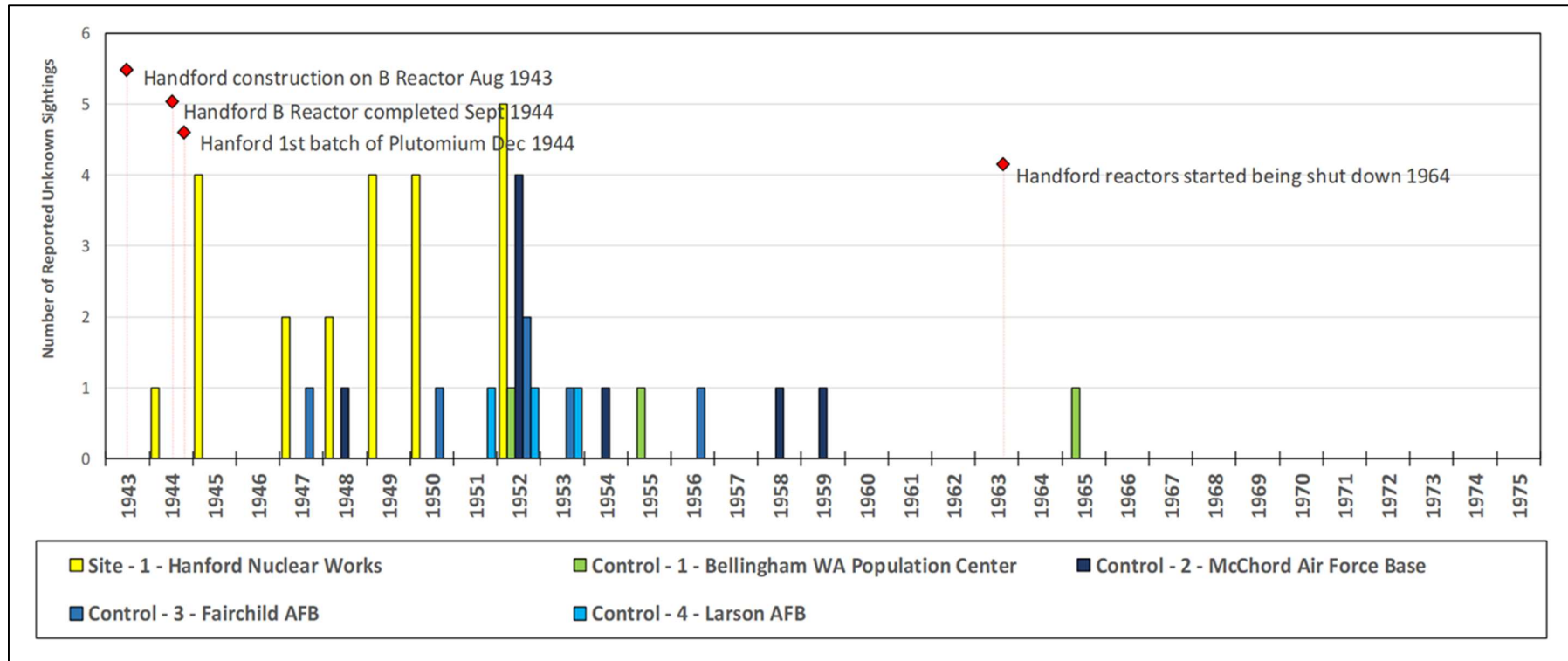


Figure 11 Hanford site & controls. The annual number of incidents reported at the Hanford radioactive materials production site compared to the number of incident reports at each of the four control sites associated with Hanford (Bellingham population center, and the three Air Force bases McChord, Fairchild and Larson). Note a distinct break in activity followed the year 1952.

The following chart combines the 4 controls (shown in gray) and compares these against the number of incidents at Hanford

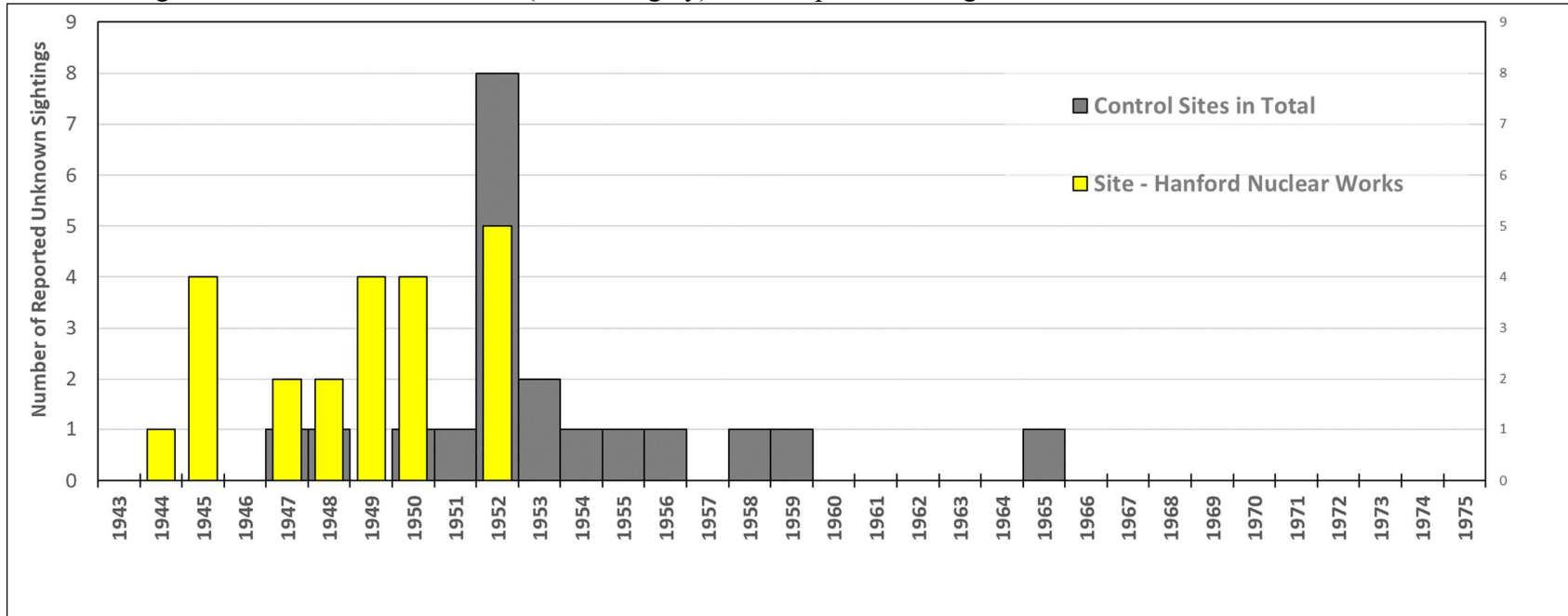


Figure 12 Hanford complex vs combined controls

Hanford pre 1952 reports are significantly higher than the combined controls. During 1952 the controls have a significant greater number of incidents than Hanford and after this 1952 peak we don't see reports at Hanford, but we do see a return to the small level of activity at the control sites.

All incidents used in this study are listed in the study database ([Hancock et al., 2023](#)) and the database provides a description and/or reference to the incident. An outline of a few of the incidents is provided for the phase1-3 sites.

Example incident at Hanford Nuclear Works

May 21, 1949, Hanford radioactive materials plant, Washington state. An unidentified object was reported “station keeping” (hovering) within Hanford restricted air space. The object was visually described as silvery, and disc shaped; radar confirmed a target at an altitude of 17,000 to 20,000 feet. The silvery, disc-shaped object was confirmed with visual observation by personnel from the

Hanford radar station. A call for an interceptor was relayed to Moses Lake airfield but before the F-82 fighter was even airborne the disc suddenly took off in a southerly direction at a speed “faster than a jet”.

The spot intelligence report states that the pilot of the F-82 was instructed to search for the object and "intercept it in hopes that it might be a disk." However, the object had quickly moved out of the range of ground radar and the pilot of the F-82 was not able to locate it. A short time later, another aircraft was observed on radar in the restricted air space and appeared to behave “evasively”, suggesting the possibility that the intruder had the ability to detect radar scanning or the approach of aircraft. Following that incident, neither Hanford nor Oak Ridge reported unknown object observations until 1950.

8.1.2. Oak Ridge Complex

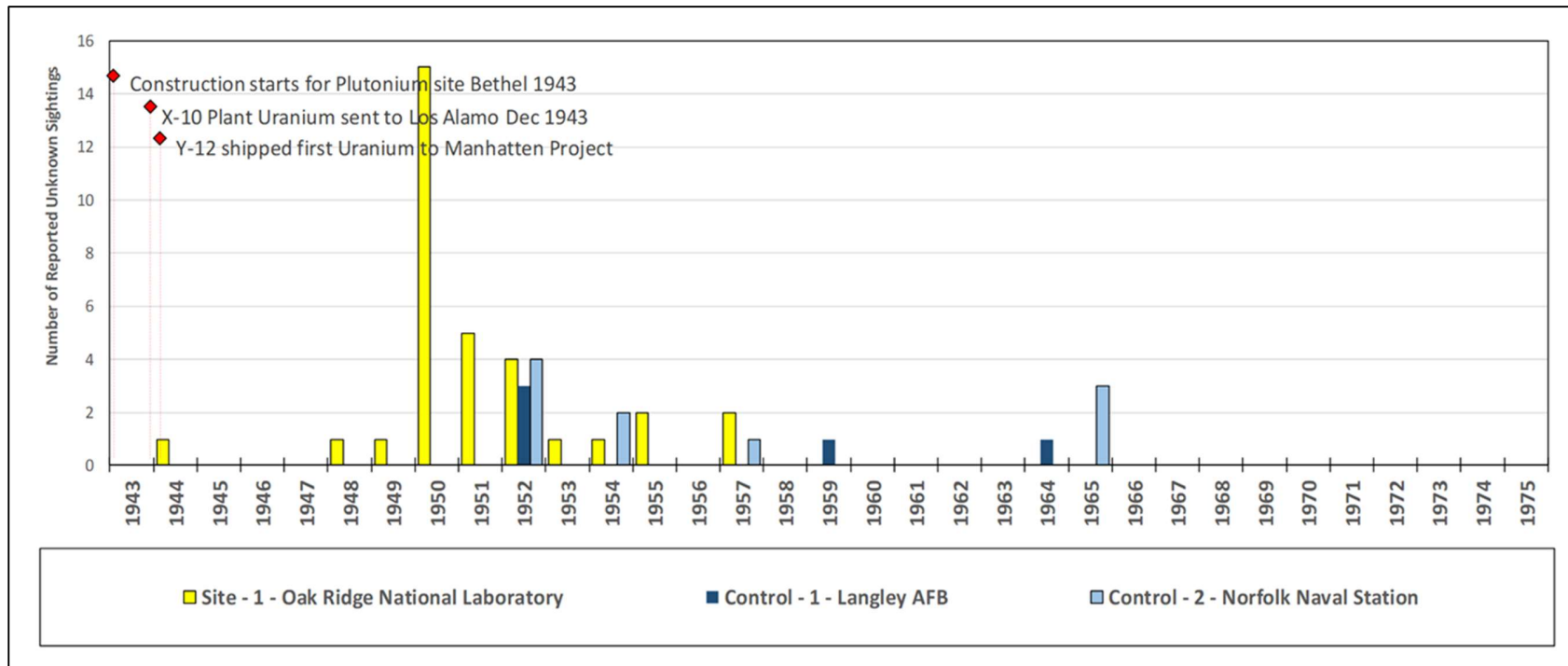


Figure 13 Oak Ridge site & controls

The annual number of incidents reported at the Oak Ridge radioactive materials production site compared to the number of incident reports at each of the three control sites associated with Oak Ridge (Langley AFB, Norfolk Naval Station, and Chattanooga population center). There were no reports at Chattanooga.

The following chart combines the 4 controls (shown in gray) and compares these against the number of incidents at Oak Ridge

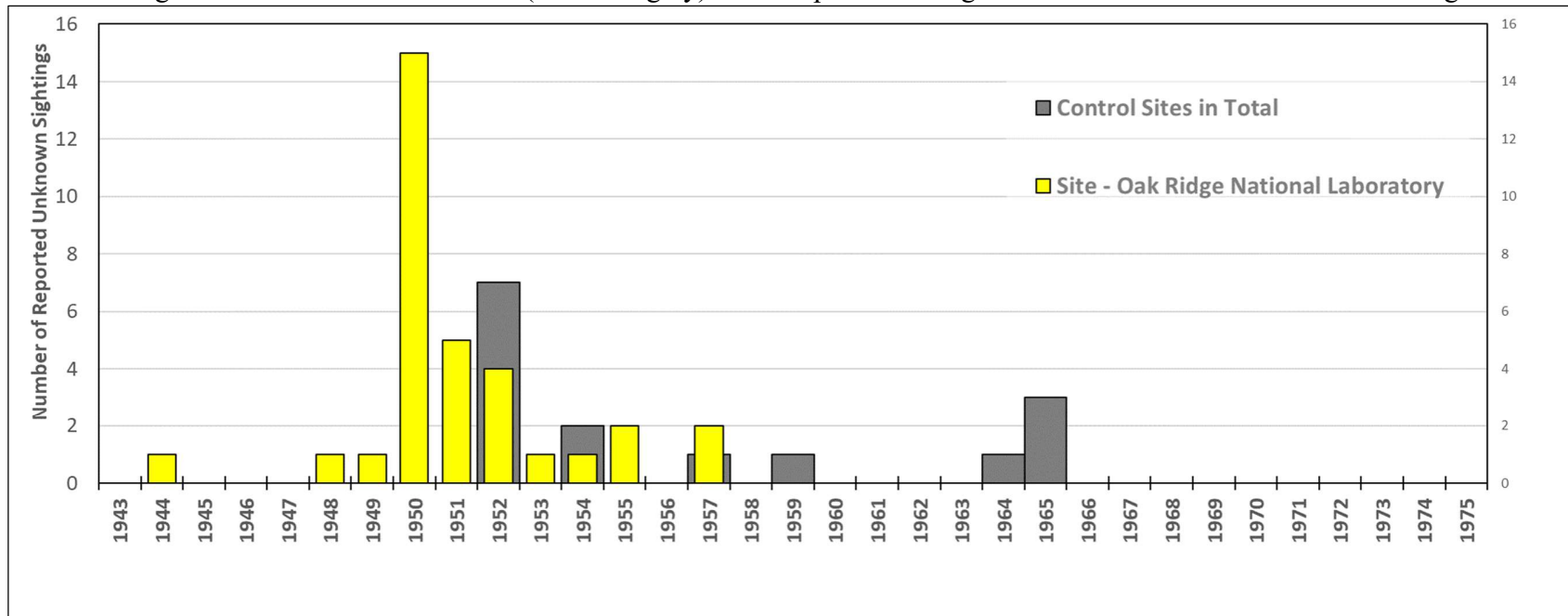


Figure 14 Oak Ridge National Laboratory v's the combined controls

Oak Ridge pre 1952 reports are significantly higher than the combined controls. During 1952 the controls have a greater number of incidents than Oak Ridge and after this 1952 peak while we have incidents post 1952 it is not at the same level of activity as pre-1952 levels.

Example incidents at Oak Ridge National Laboratory

October 15, 1950, at 1:30 in the afternoon, John Isabell, a security guard on the Oak Ridge Patrol Force, stationed within the security area of the Oak Ridge Tennessee radioactive materials plant, observed a silver-white spherical object traveling from the southwest to

the northeast and passing over the K-25 uranium enrichment area. It was white or silvery and round like a ball. The guard phoned the information on the sighting to his security headquarters; at the same time radar was picking up an indistinct target every third or fourth sweep over the K-25 area. An F-82 interceptor was scrambled. Observers on the ground reported that the fighter plane arrived about 15 minutes after the object had departed.

October 23, 1950, at 4:30 in the afternoon, an Oak Ridge laboratory employee observed a low altitude flash from what appeared to be a metallic object traveling over the restricted area. After this report, it was discovered that a nuclear radiation detection station in the vicinity of the sighting had registered a burst of both Alpha and Beta emissions. The normal purpose of the radiation detection network was to detect any leaks of radiation from the Oak Ridge Laboratory, but an investigation determined there had been no leak at the time of the incident; further studies provided no local explanation for the radiation spike. A note on a related FBI report of the incident states that no intentional or accidental radioactivity releases which would have explained the Geiger counter incident had occurred during the entire month of October.

8.1.3. Savannah River Complex Study Site

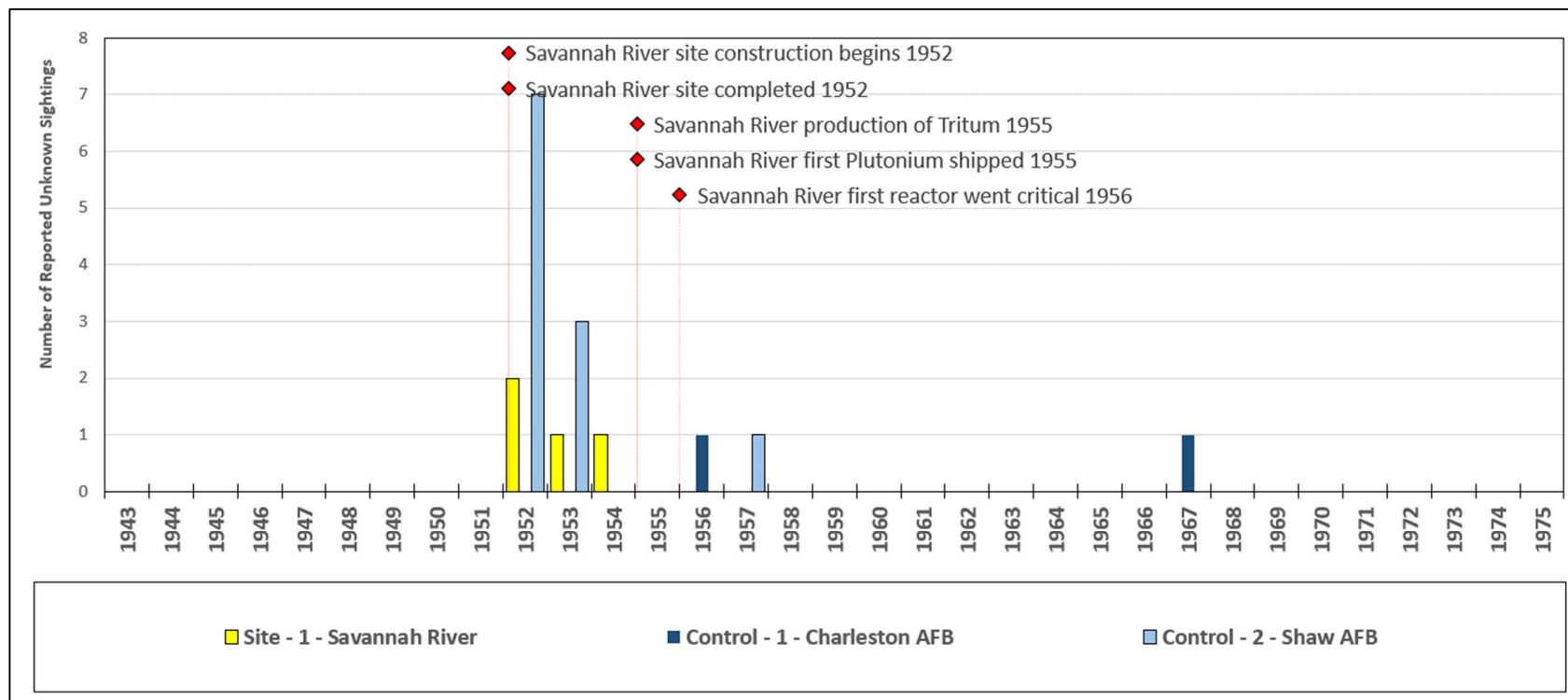


Figure 15 Savannah River Complex site & controls

The annual number of incidents reported at the Savannah River radioactive materials production site compared to the number of incident reports at each of the two control sites associated with Savannah River (Charleston AFB and Shaw AFB).

Savannah River, which was constructed later than the first two sites (Hanford and Oak Ridge), does not see the pre-1952 “incident spike” and does not have the same level of activity as it’s controls. We also don’t see the same increase in activity at Savannah River after completion that is seen at the first two radioactive materials production facilities (Hanford and Oak Ridge).

8.2. Phase 2 Study Atomic Weapons Assembly Facilities

8.2.1. Los Alamos Complex Study Site

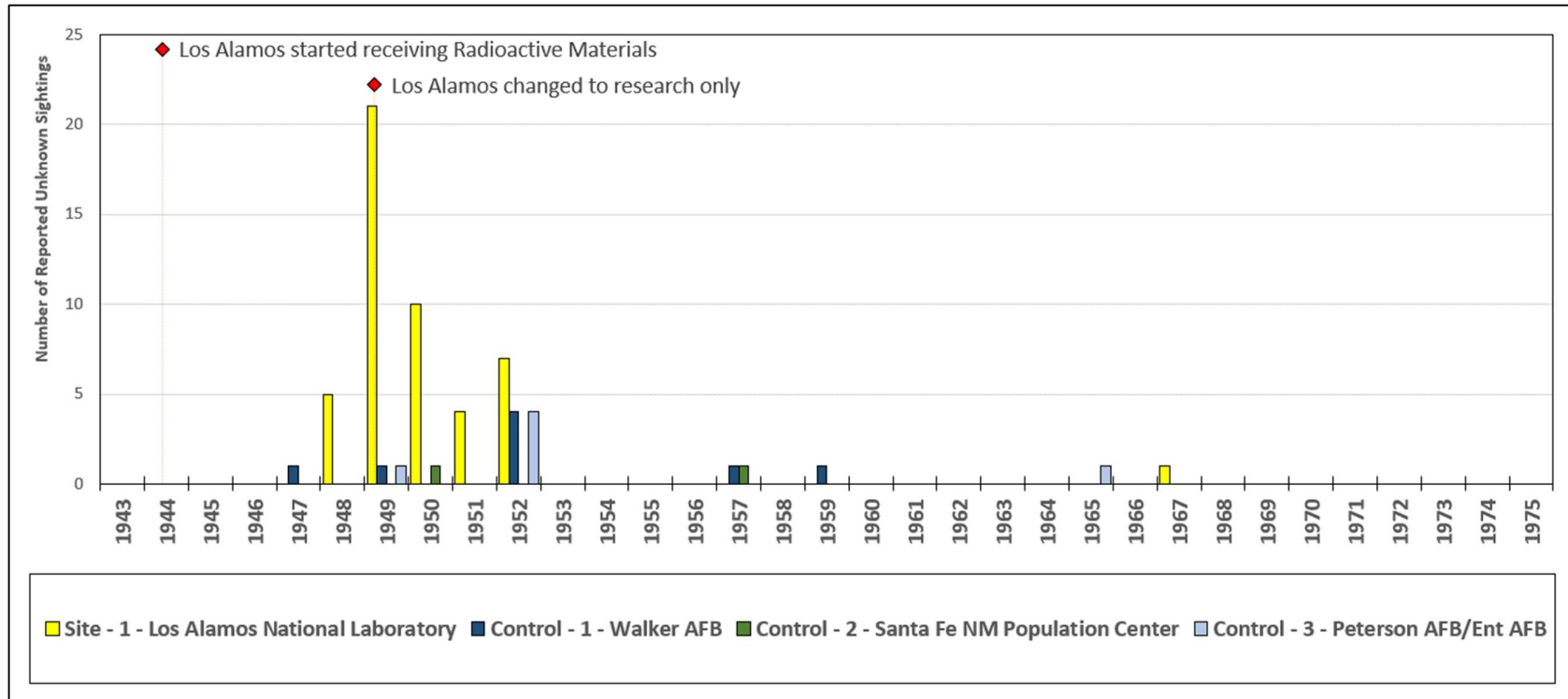


Figure 16 Los Alamos Complex site & controls

The annual number of incidents reported at the Los Alamos National Laboratory atomic weapons assembly facility compared to the number of incident reports at each of the three control sites associated with Los Alamos (Walker AFB, Peterson AFB/Ent AFB and Santa Fe Population Center).

The following chart combines the 4 controls (shown in gray) and compares these against the number of incidents at Los Alamos

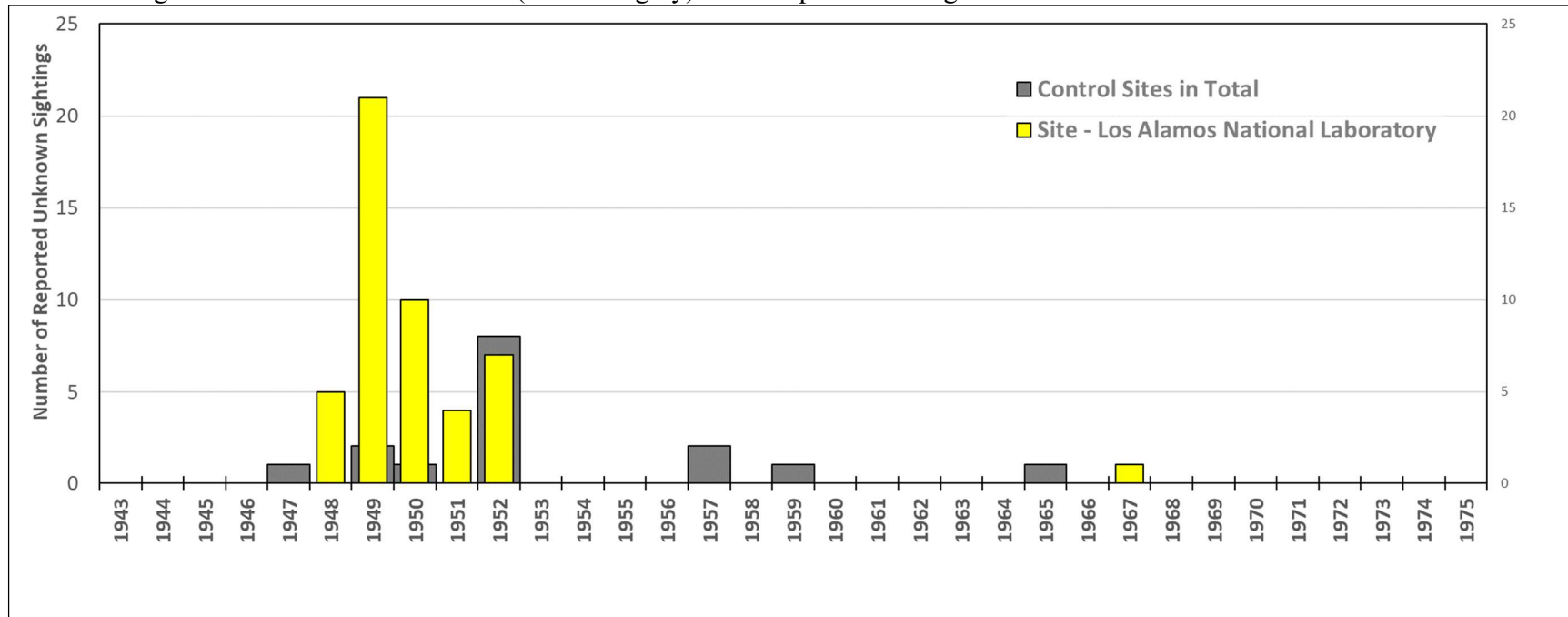


Figure 17 Los Alamos National Laboratory vs Combined Controls. Los Alamos pre 1952 reports are significantly higher than the combined controls. During 1952 the controls have a similar number of incidents to Los Alamos and after this 1952 peak there are few reports at both the site and the controls.

Example incident at Los Alamos

February 24, 1950, Los Alamos New Mexico. 1:15-2:00 p.m. At various locations around Los Alamos AESS security personnel including Philip C. Mackey AESS Inspector and another AESS inspector and 2 Los Alamos Lab chemical operators sighted shiny metallic or bright white silver white saucer or sphere hovering to the NW at azimuth 310° elevation about 30° estimated distance possibly 20000 to 30000 ft size estimated at about 100 ft if at 20000-30000 ft range then moving erratically flashing bright sunlight at times heading E or NE then suddenly climbing vertically at possibly supersonic speed straight up out of sight at about 70° elevation. One witness reported object dispersed nearby clouds as it passed and emitted an intermittent vapor trail no trail reported by others; no sound noted by anyone.

8.2.2. Sandia base / Kirtland AFB

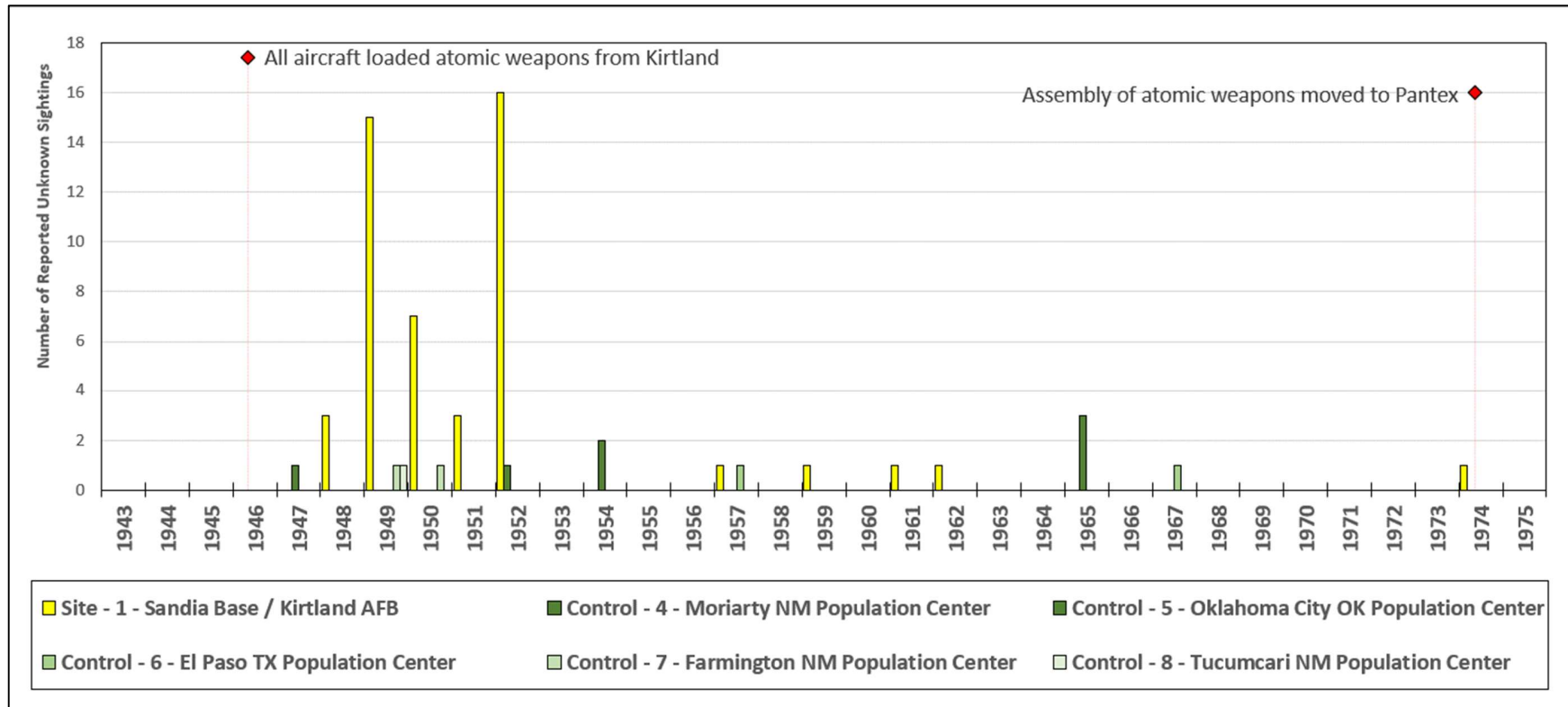


Figure 18 Sandia base site & controls. The annual number of incidents reported at the Sandia / Kirtland atomic weapons assembly facility compared to the number of incident reports at each of the seven control sites associated with Sandia / Kirtland (Clinton Sherman AFB, Moriarty population center, El Paso population center, Bernalillo population center, Farmington population center, Tucumcari population center and Oklahoma City population center). There were no reports for Clinton Sherman Air Force Base and Bernalillo Population center.

The following chart combines the 4 controls (shown in gray) and compares these against the number of incidents at Sandia / Kirtland

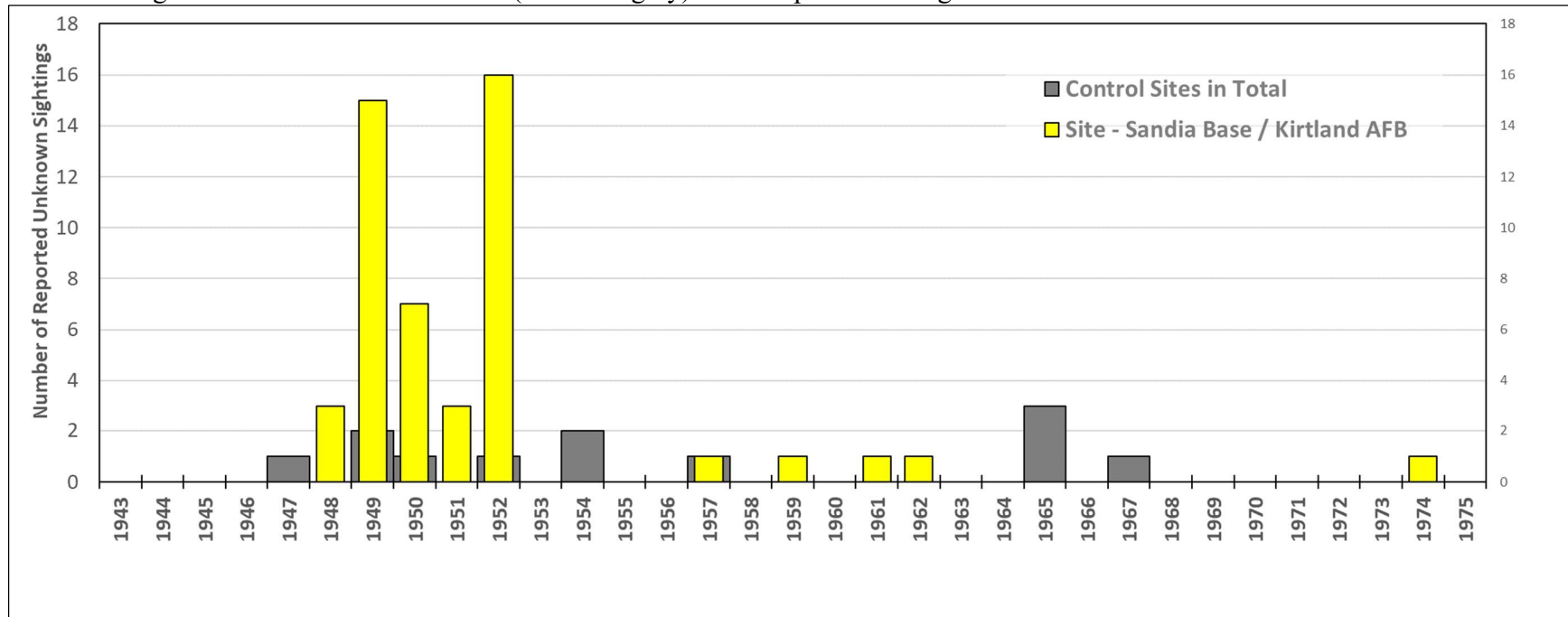


Figure 19 Sandia / Kirtland vs Combined Controls

Sandia / Kirtland pre 1953 reports are significantly higher than the combined controls and after 1952 there is a significant drop off of incidents at Sandia / Kirtland.

Example incidents at Sandia Base / Kirtland AFB

March 21, 1950, military personnel in the Sandia Base ordinance (weapons) area near Albuquerque, New Mexico observed several silver colored objects engaged a series of aerial maneuvers over the base. Their actions appeared like aircraft engaged in “dog fighting”. The objects were extraordinarily maneuverable, performing right angle turns as well as being able to immediately reverse their direction of flight.

November 4, 1957, air traffic controllers in the tower at Kirtland Air Force Base near Albuquerque, New Mexico first observed a white light traveling over the base runway at low altitude and called for radar verification. Radar confirmed the target, and the object

was observed to turn across a runway and rapidly descend. The controllers observed the object through binoculars and had an excellent view, at times looking down on it. They described it as automobile sized, egg shaped and displaying a single white light. It circled and began to descend almost as if it were approaching for a landing. The object's descent was tracked on an approach control radar. Instead of landing the UAP moved across the Air Force flight line runways and taxiways, heading towards the control tower at a very low speed of some twenty to thirty miles per hour. Descending even lower, still at very slow speed and demonstrating extreme maneuverability, the object disappeared behind a security fence at the perimeter of a floodlit high security area – an area used for atomic weapons storage. After hovering there for some twenty to thirty seconds, it moved slowly away, and then accelerated in a steep climb at very high speed.

The tower controllers were in communication with base approach radar control and radar tracked the object as it travelled east away from the base, only to circle a radio range signal station before heading north and disappearing off radar at approximately ten miles distance. Later in the evening another unknown target was picked up, hovering north of the base before disappearing. Some twenty minutes after that incident, an Air Force C-46 took off from Kirtland towards the west and radar painted an unknown object some four miles south of the runway. The object accelerated towards the runway and made a hard turn to move into formation with the C-46, maintaining proximity with the aircraft for fourteen miles before turning again and moving back towards the runway, where it remained stationary before fading off the radar.

8.2.3. Pantex Plant

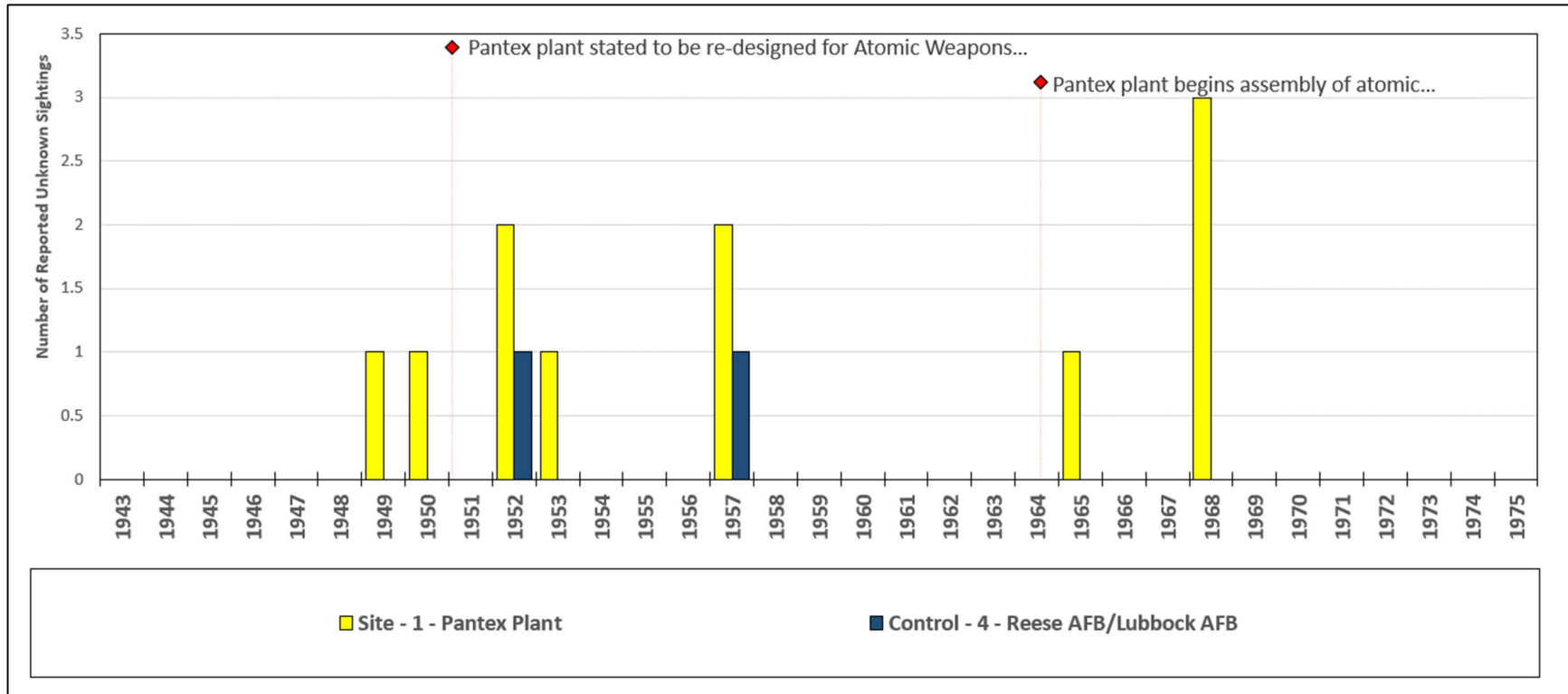


Figure 20 - Pantex Plant site & controls

The annual number of incidents reported at the Pantex atomic weapons assembly facility compared to the number of incident reports at each of the four control sites associated with Pantex (Altus AFB, Pampa population center, Dumas population center, and Reese AFB/Lubbock AFB). There were no reports for Altus AFB, Pampa population center and Dumas population center.

Example incident at the Pantex Plant

Three days after the Kirtland/Sandia Base incident in Albuquerque, another low altitude UAP intrusion was reported, at a new AEC weapons assembly facility. On November 7, 1957, several bright, flashing objects were observed hovering over the Pantex atomic assembly plant outside Amarillo, Texas. Private security personnel reported the objects to the Highway Patrol and a Highway Patrol

officer was dispatched to the plant, also observing the lights. Security guards described three objects which had been “floating” over the plant for some time.

8.3. Phase 3 Study Atomic National stockpile locations (Q Sites)

8.3.1. Manzano Base

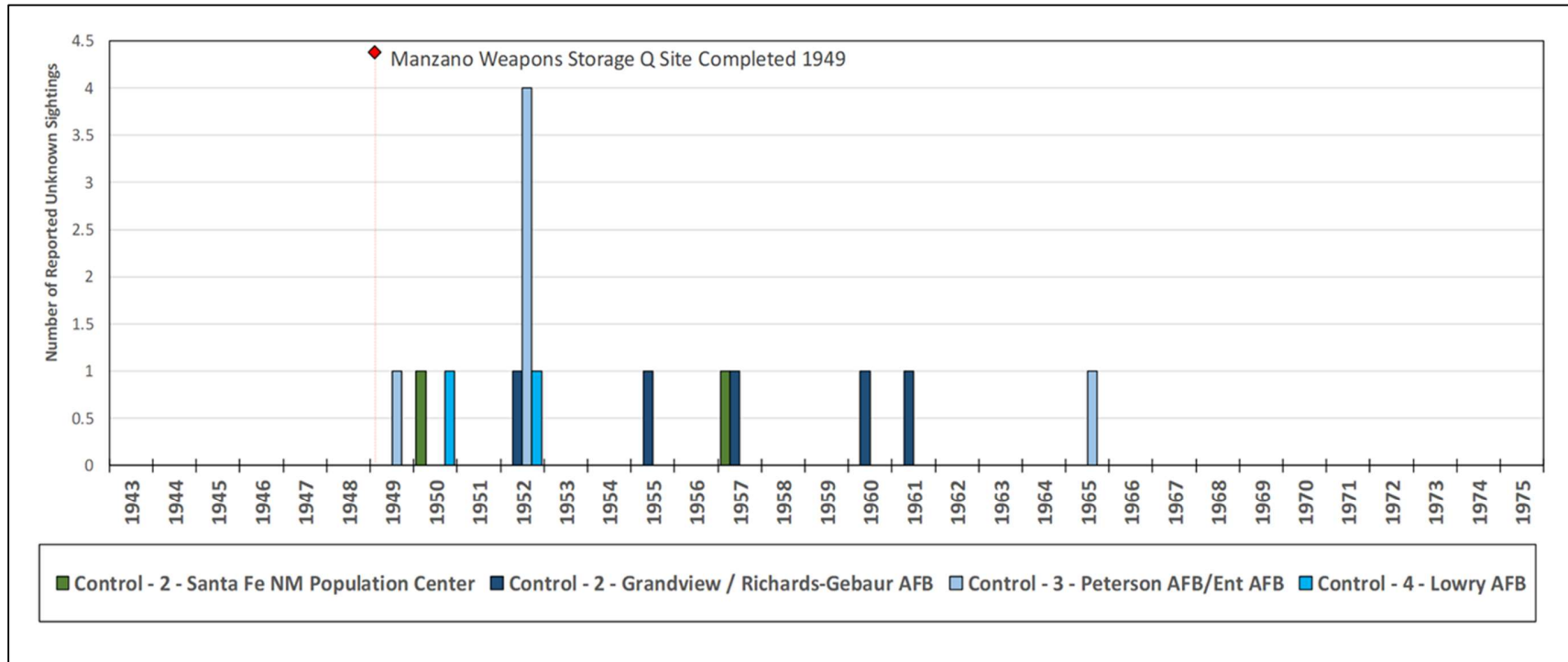


Figure 21 Manzano Base site & controls

The annual number of incidents reported at the Manzano atomic national stockpile (Q Sites) compared to the number of incident reports at each of the four control sites associated with Manzano (Santa Fe population center, Grandview/Richards Gebaur AFB, Lowry AFB and Peterson/Ent AFB). There were no incidents and the Manzano site. The 2 sighting reports from the Santa Fe

population center and the 6 sighting reports from the Peterson AFB controls were also used as controls for the Los Alamos Atomic Weapons Assembly Facilities Phase 2 site.

8.3.2. Clarksville Base

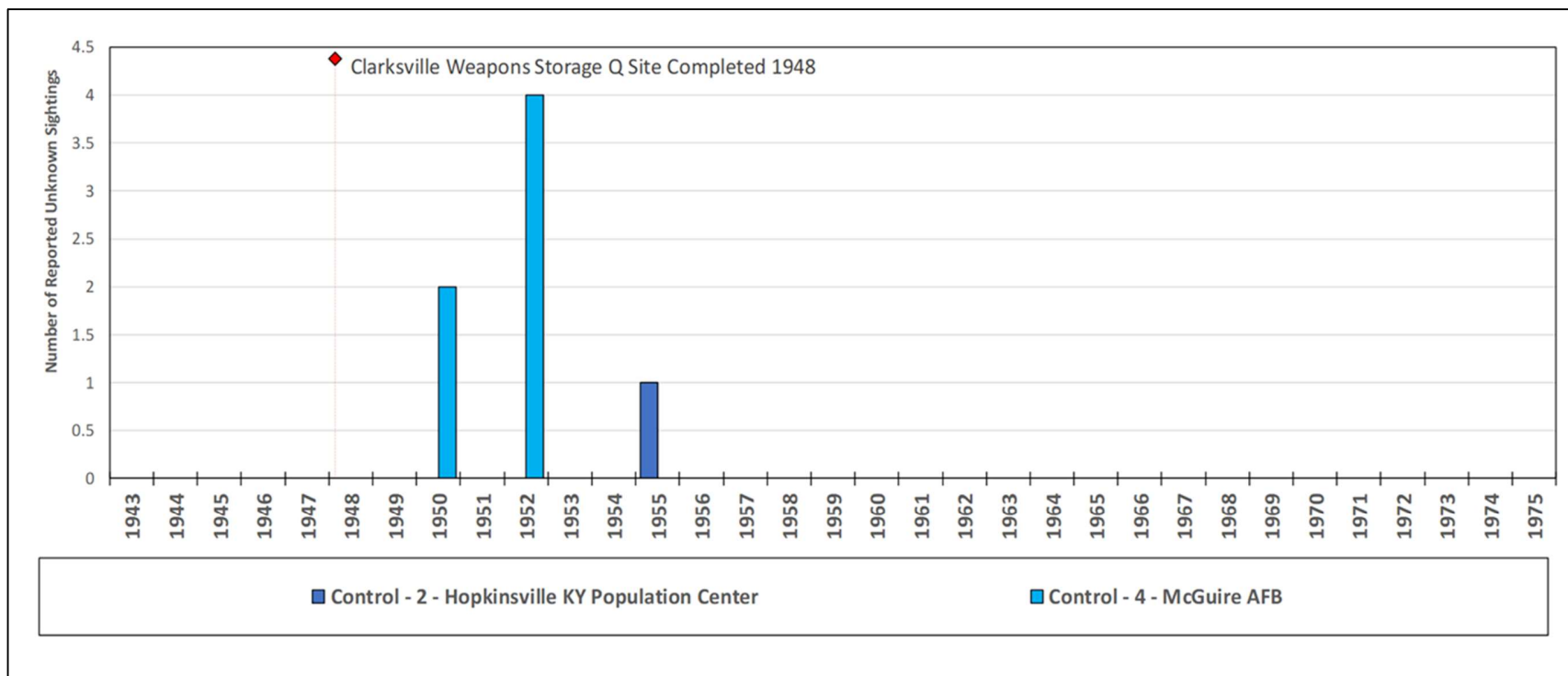


Figure 22 Clarksville Base site & controls

The annual number of incidents reported at the Clarksville atomic national stockpile (Q Sites) compared to the number of incident reports at each of the three control sites associated with Clarksville (Nashville population center, Hopkinsville population center and McGuire AFB). There were no reports for the Clarksville base or the Nashville population center.

8.3.3. Killeen Base Study site / Gray Army Airfield

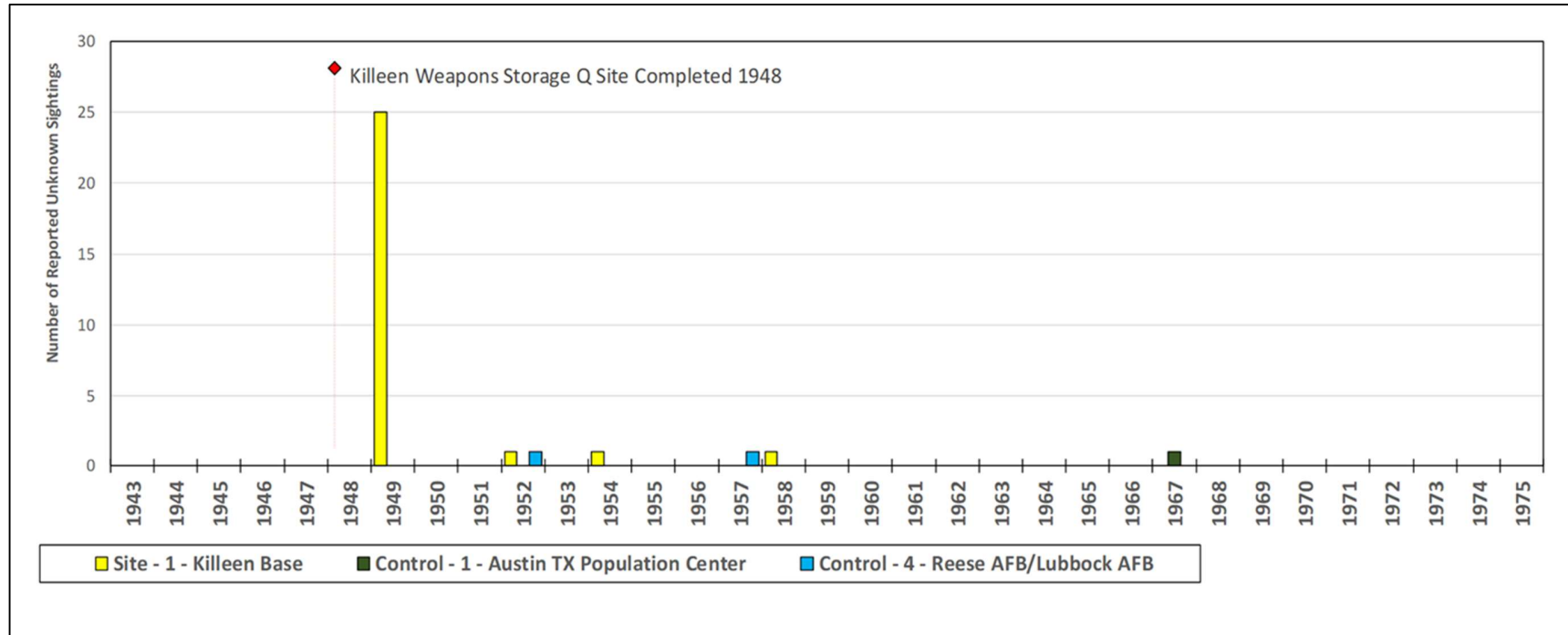


Figure 23 Killeen Base site & controls

The annual number of incidents reported at the Killeen atomic national stockpile (Q Sites) compared to the number of incident reports at each of the three control sites associated with Killeen (Austin population center, Waco population center and Reese AFB/Lubbock AFB). There were no reports at the Waco population center. The 2 sighting reports from the Reese AFB control was also used as controls for the Killeen Atomic Weapons Assembly Facilities Phase 2 site. There were significant incident reports during 1949 after which we only see a few reports of the period up to 1975.

Example incidents at Killen AFB

March 6, 1949, National Atomic Weapons Killeen Site. One of the first atomic stockpile sites experienced a burst of UAP over the period of some three months. The March 6 report came from a security patrol; the patrol observed in the Special a small, blue-white,

oblong object traveling above the site. Other Army patrols also observed unidentified lights/objects over the period of 8:30 pm to 2 am in the morning. The following day, at 1:30 PM in the afternoon, an Army private observed an orange teardrop-shaped object descend vertically, directly in front of him. At the end of March, an Army lieutenant on daylight patrol duty observed a reddish white ball of fire pass horizontally over the base airstrip; he also noted interference on his field telephone while he was reporting the sighting.

On April 27, 1949, southeast of Killeen Base, at 9:20 pm a two-man Army patrol reported a small, blinking, violet object only a dozen feet or so away from them, passing through the branches of a tree before disappearing. Only five minutes later, four soldiers sighted a small light which appeared to have a metallic cone trailing behind it. The object was several hundred feet from them and about six to seven feet off the ground. Approximately ten minutes later the same four men observed a small white light appear about one hundred feet from them and move away in zigzagging flight some six feet above the ground - before suddenly disappearing. Less than an hour later they saw another light to the west- southwest of them.

In early May 1949, at 11:30 in the morning two Army majors and a captain observed two oblong, highly reflective white discs, flying over the security area at an altitude of approximately 1,000 feet at an estimated speed of some 200-250 miles per hour. Both objects then made a coordinated, shallow turn. With Army concerns growing due to the frequency and quality of sightings, a network of artillery observers, with their ranging and plotting equipment, was organized, and put into place. In early May, multiple network stations began making coordinated, measured/triangulated observations.

On May 6, 1949, a brilliant light, changing from pinkish to green, was observed and calculated to have been at 4,000 yards distance. It maintained its position and was in view for almost an hour.

On May 7, 1949, two sites (the Army triangulation network plotting center command post and another observer at a second network site) observed a brilliant, white diamond-shaped light at a relatively low altitude. Their triangulation calculations placed the unidentified light at 1,000 feet in height and at 15,000 feet (2.8 miles). The light was tracked for 57 seconds and travelled approximately 3 and a half miles during the observation. No sound was heard.

The following day, May 8, 1949, three observation posts observed a similar brilliant diamond-shaped light at an altitude of 1,600 feet, slowly descending for some 9 minutes. Senior officers from the agencies involved in Killeen base security reviewed the progress on the observations and concluded "agencies were unanimous in agreeing that the new observation system instituted by Fourth Army provided precise results and definitely indicated that the unknown phenomena in the Camp Hood area could not be attributed to natural causes."

On May 19, 1949, an early morning daylight sighting described a round, silver, thin object seen for some 5 minutes. The object was stationery and rocking, giving an edgewise view. It continued an irregular motion as it traveled upwards and away at a slight angle.

The UAP incidents sightings continued into June 1949, with yet another triangulated/measured observation on the evening of June 6, 1949, with an aerial object moving within 4 miles of one observation post. Shortly after 9 pm that evening observers in the plotting network tracked a hovering orange object some 30-70 feet in diameter and one mile in altitude. After 2 minutes and 40 seconds of observation, it began moving in level flight and then appeared to explode in a shower of particles. That night three balls of light were observed and plotted, with distances ranging from 15 to 24 feet in diameter and at a height of some 1,000 to 1,600 feet. The lights were generally stationary although one moved some 120 yards over 40 minutes. Durations of the various observations ranged from 57 seconds to 40 minutes.

8.3.4. Medina Base / Kelly Air Force Base

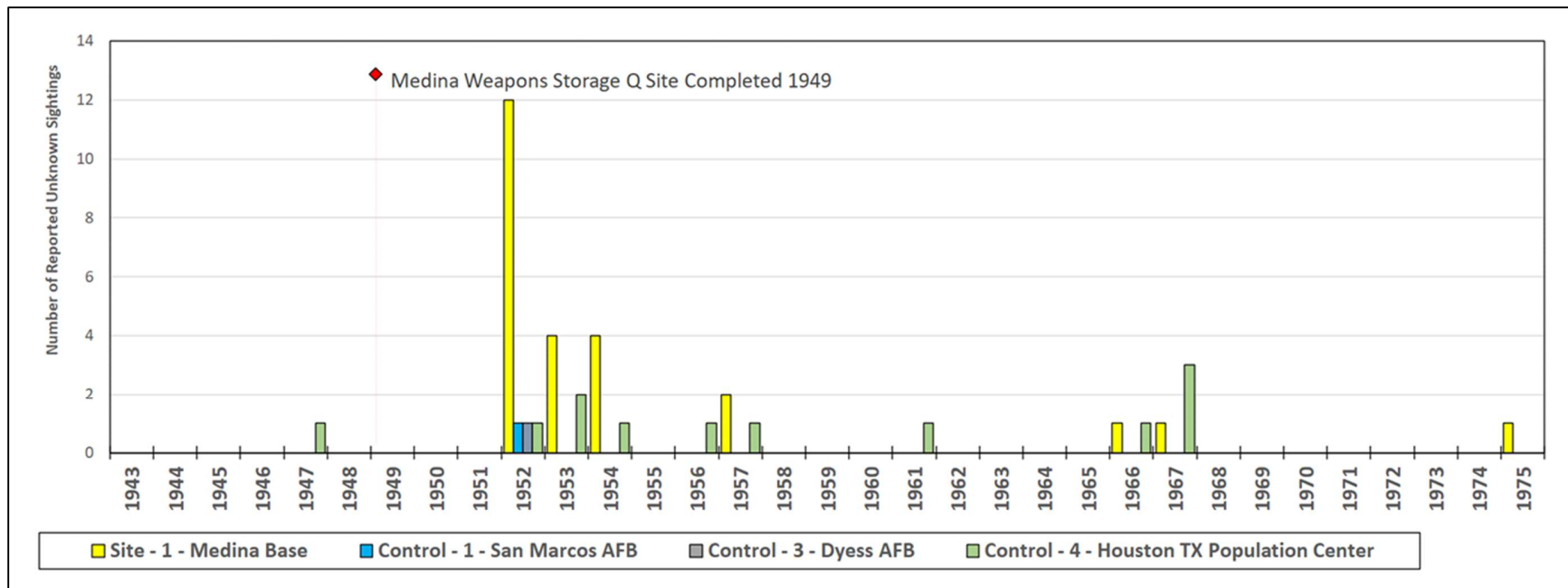


Figure 24 Medina Base / Kelly Air Force Base site & controls

The annual number of incidents reported at the Medina atomic national stockpile (Q Sites) compared to the number of incident reports at each of the four control sites associated with Medina (Houston population center, Corpus Christi population center, Dyess AFB and San Marcos AFB). There were no reports at Corpus Christi population center.

The following chart combines the 4 controls (shown in gray) and compares these against the number of incidents at Medina

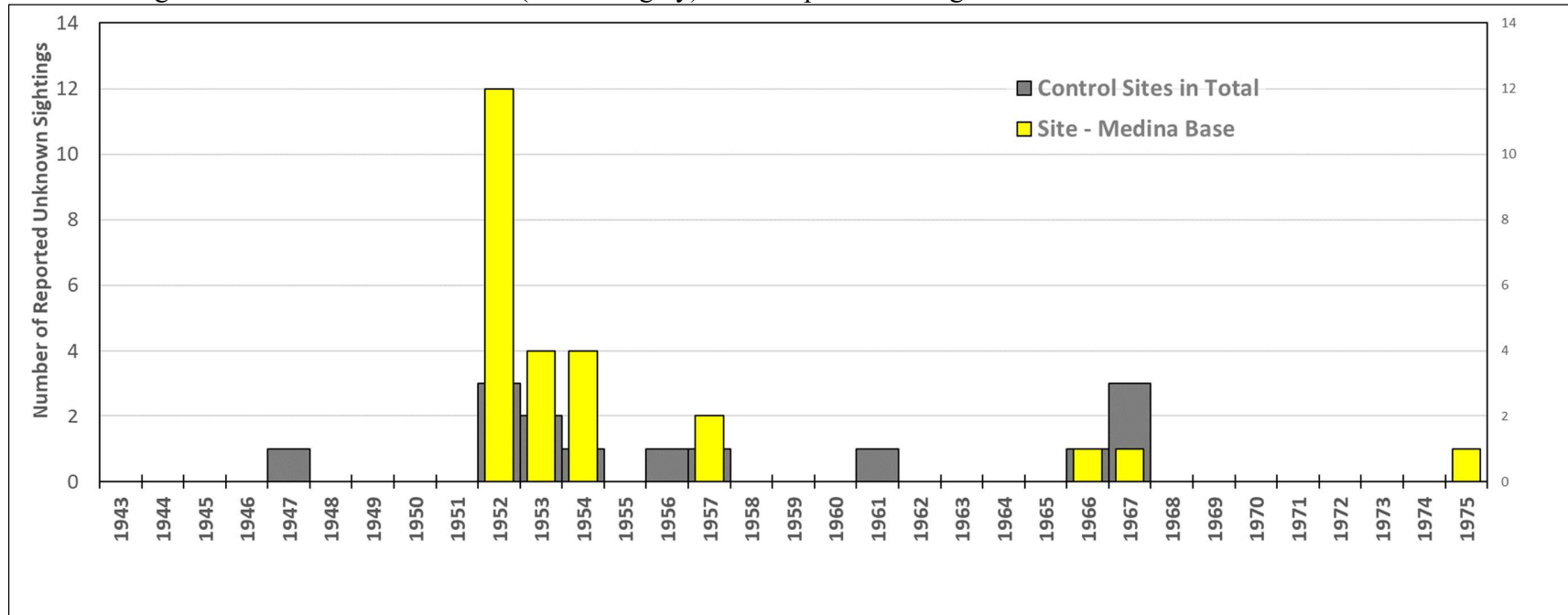


Figure 25 Medina vs Combined Controls

Example incident at Medina base

August 14, 1952, Seven Air Force employees observed a round object that appeared to be of aluminum construction flying over Kelly AFB. Maneuvers consisted of slow sweeping turns and reversing direction. The speed of the object was estimated at 1500 mph at an estimated altitude of 20,000 to 30,000 feet. The object was observed over a period of 30 minutes. The object appeared and disappeared at times.

8.3.5. Bossier Base / Barksdale AFB

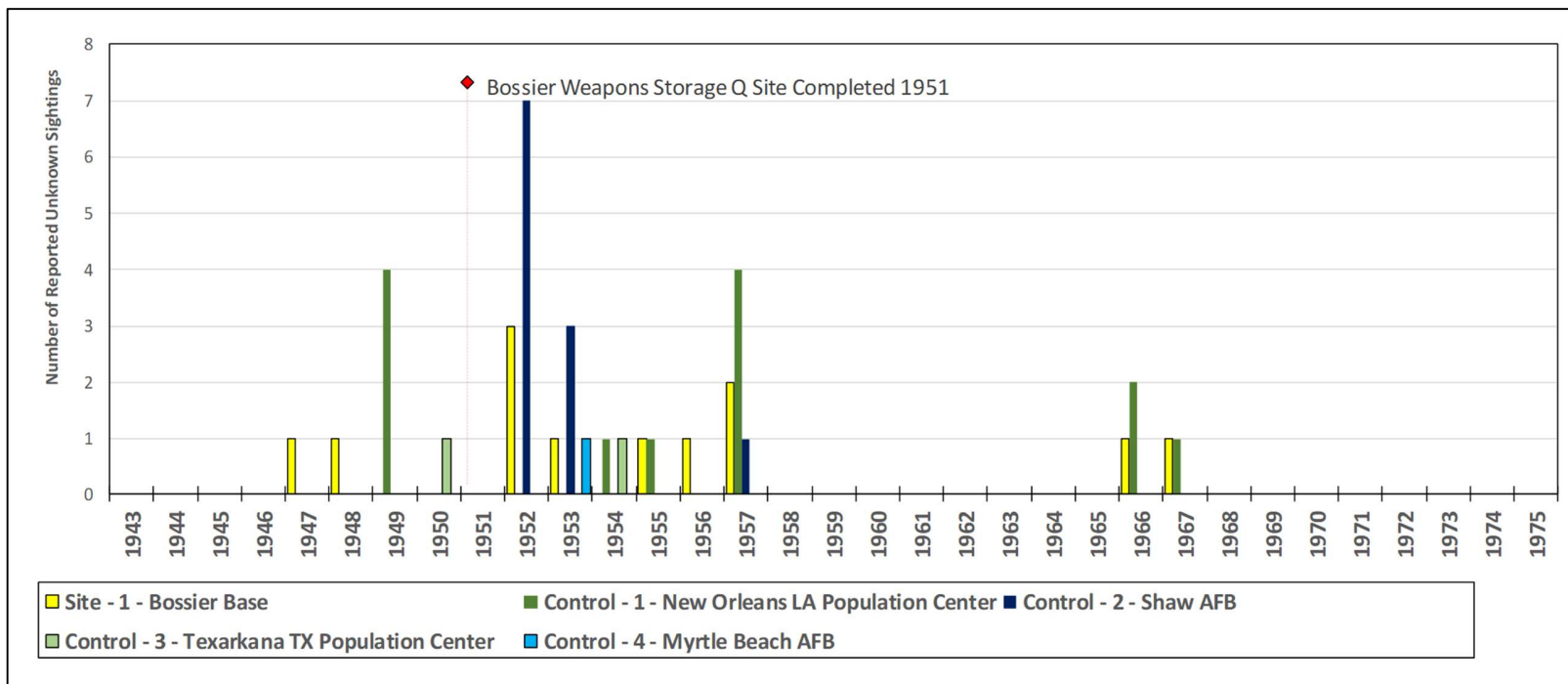


Figure 26 Bossier / Barksdale base site & controls

The annual number of incidents reported at the Bossier atomic national stockpile (Q Sites) compared to the number of incident reports at each of the four control sites associated with Bossier (New Orleans population center, Texarkana population center, Shaw AFB and Myrtle Beach AFB). The 11 sighting reports from the Shaw AFB control was also used as a control for the Savannah River complex in phase 1.

The following chart combines the 4 controls (shown in gray) and compares these against the number of incidents at Bossier

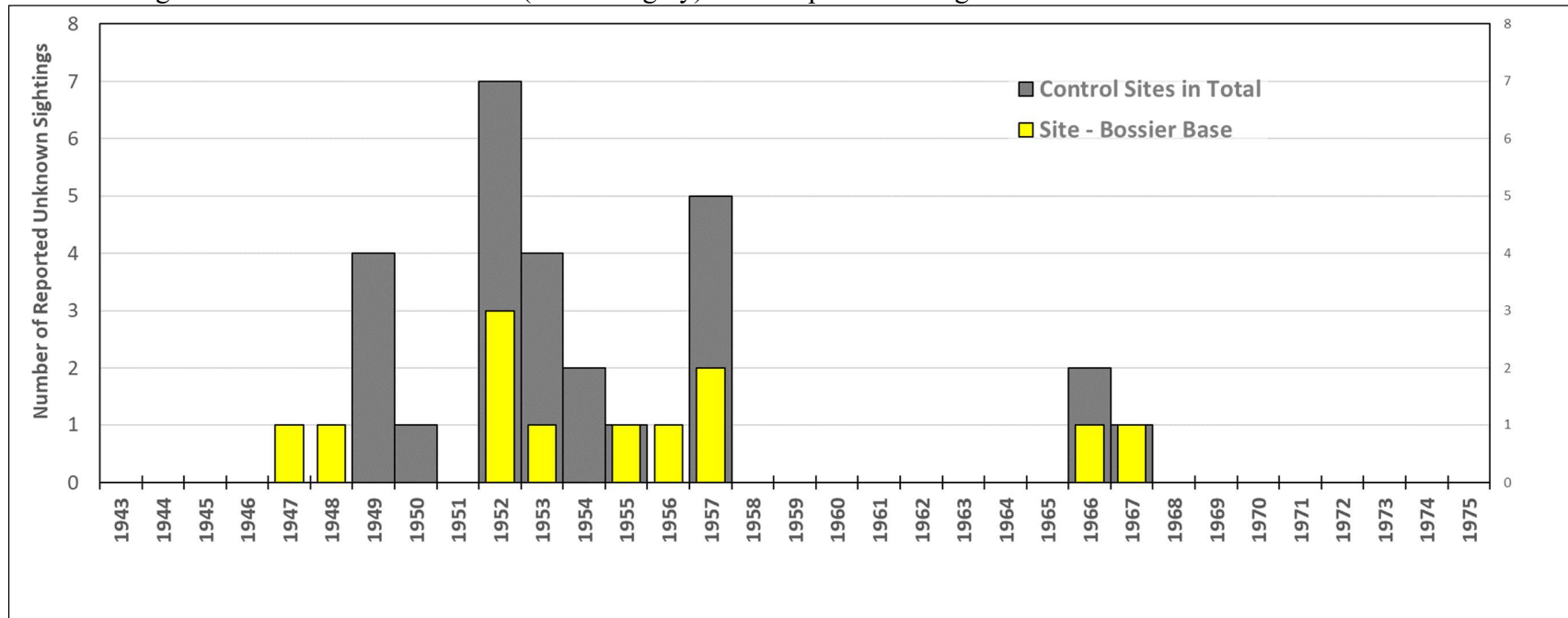


Figure 27 Bossier vs Combined Controls

The level of incidents at the controls is generally higher than the Bossier base.

Example incident from Bossier

April 16, 1952, Shreveport Louisiana (32.50° N 93.76° W). 9:28 p.m. (CST). Senior USAF pilot Capt. Eugene R. Mathis and Jack Touchstone saw a brilliant circular object flying overhead at high speed on a heading of 100°. Object suddenly made a 180° turn and passed over the entire city of Shreveport. Object appeared flat no sound no exhaust.

8.3.6. Atomic Energy Commission National Stockpile Sites

The Atomic Energy Commission (AEC) was responsible for the Q sites and the sites were overseen by the Armed Forces Special Weapons Project (AFSWP).

Within the data collections there are no reports from any AFSWP staff located at the AEC national stockpile sites and no reported UAP events recorded by the Air Force or Project Bluebook by the AFSWP or AEC. In fact, the existence and location of those sites (overseen by the AFSWP) is not mentioned in Air Force Intelligence UAP studies nor is it referenced in the Blue Book history.

The UAP events reported at the Q sites are from other personnel located at or near the Q sites. The Killen Q site which had 25 reports in 1949 (Figure 28 Facility Consolidated (Phases 1, 2 & 3) Annual Incident Reports) was co-located with a major artillery training center. The Manzano Q site which had no UAP incidents is within a few miles of the Sandia base, and both are supported by the same air defense and security forces. This makes the separation of reports between these two facilities difficult. There are no incidents directly attributable to Manzano within the collections time frame.

9. Individual Phase Charts for Phases 1 - 3

Each study site was examined for patterns of elevated UAP activity. In addition to a review of individual study and control locations, a wider examination was applied to the combined facilities within Phases 1 through 3, within the American atomic weapons program. By taking an expanded analysis for Phase 1 through 3, a pattern of elevated UAP activity was identified for the 3 different atomic facility types (radioactive materials production, atomic weapons assembly, and atomic national stockpile locations).

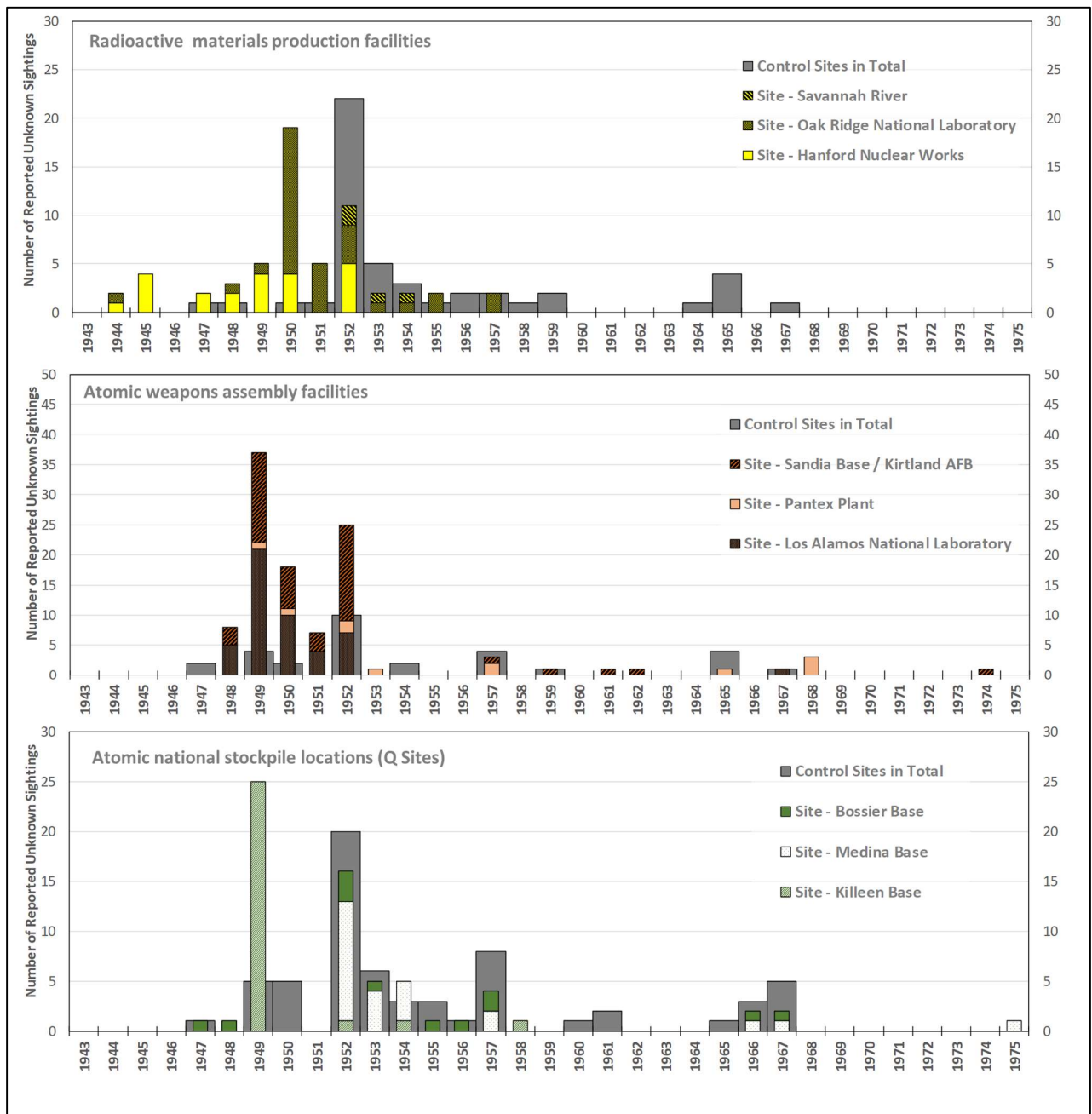


Figure 28 Facility Consolidated (Phases 1, 2 & 3) Annual Incident Reports

The stacked bar chart shows each phase shown separately, with the totals for the controls shown as a gray bar behind the totals for each site.

Figure 28 Facility Consolidated (Phases 1, 2 & 3) Annual Incident Reports shows that there was elevated UAP activity at each of the three atomic facility types up to 1951; however, for Phases 1 and 2, this elevated activity was only seen at the first two facilities that went operational prior to 1952. The study sites that went operational prior to 1952 were:

- Phase 1 - Hanford & Oak Ridge (radioactive materials production) and
- Phase 2 - Sandia Base / Kirtland AFB & Los Alamos (atomic weapons assembly)

This elevated activity was not repeated at the subsequent facilities which became operational later. The study sites that went operational during or after 1952 were:

- Phase 1 - Savannah River (radioactive materials production) and
- Phase 2 - Pantex (atomic weapons assembly)

For the Atomic national stockpile facilities one of the five sites (Killeen Base) shows elevated UAP activity in 1949.

There was a high level of UAP activity for all atomic facility types and controls during 1952. A distinctive diminishment and virtual cessation were observed for all atomic facility types following the 1952 UAP activity surge; however, the controls remained consistent.

9.1. Combined Phase 1 -3 Sites

By combining the Phase 1 - 3 sites and comparing them to the total number of incident reports for the controls, a window of elevated UAP activity is observed for the atomic sites during 1948 to 1951 (See Figure 29 US Atomic Weapons (Phase 1-3) v's Controls Incident Reports).

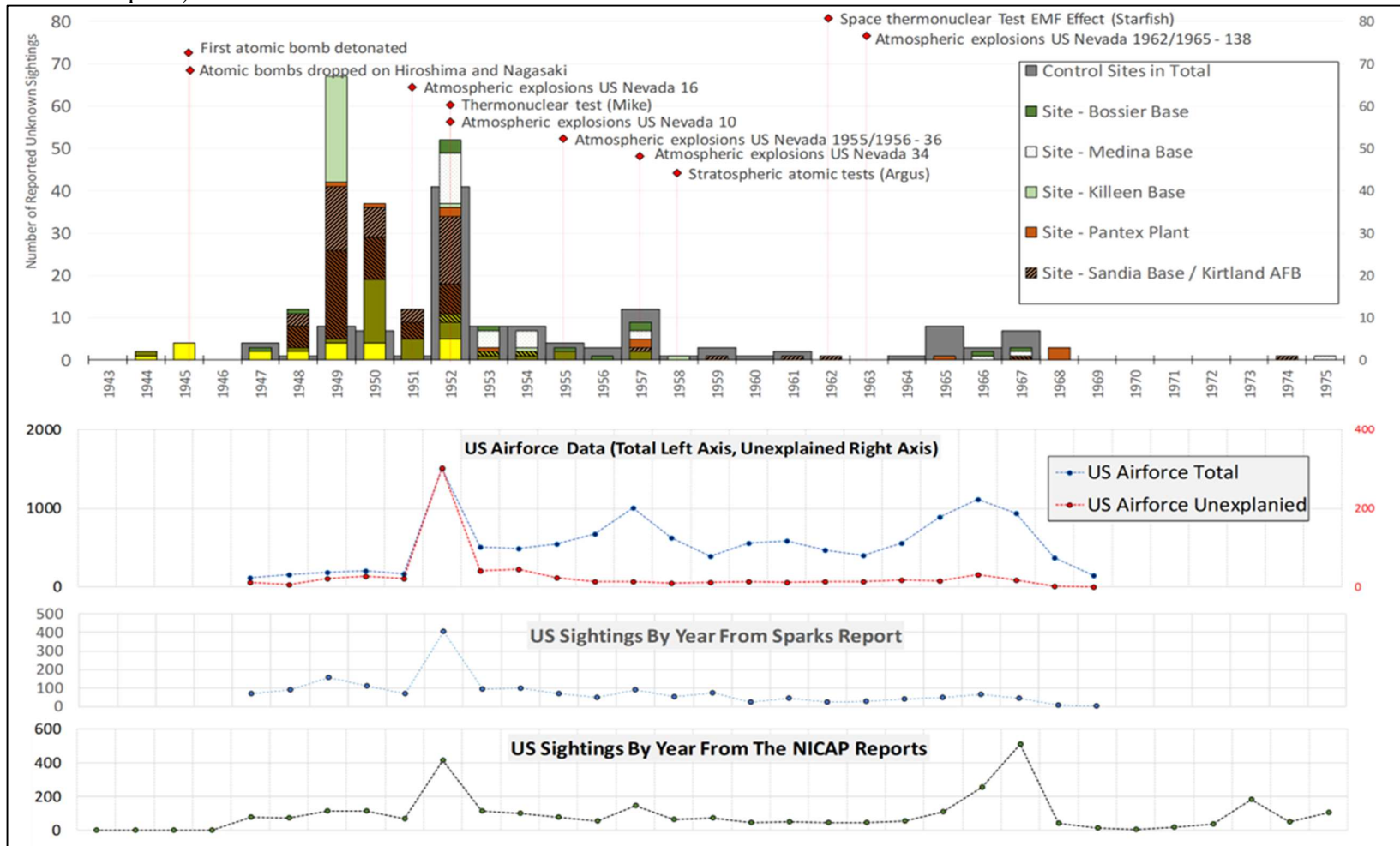


Figure 29 US Atomic Weapons (Phase 1-3) v's Controls Incident Reports

Atomic sites have been separated and stacked to show the elevation of UAP activity across the atomic sites, as compared to the controls which are shown as single gray bars. The atomic bars are superimposed on the control bars for visual comparison. When combining the control totals for phases 1-3 the four control sites that were used in phase 3 that were also used as controls in phases 1 or 2 were not double counted in the totals.

Below the bar chart in Figure 29 US Atomic Weapons (Phase 1-3) v's Controls Incident Reports is a series of line charts which show a comparison for frequency of UAP reports as cataloged by the US Airforce, Sparks and NICAP. These reports all show, except for the 1952 surge, the level of UAP activity remains generally consistent, except for the atomic facilities. The atomic facilities show an apparent drop after 1952, as compared to general UAP reports throughout the US.

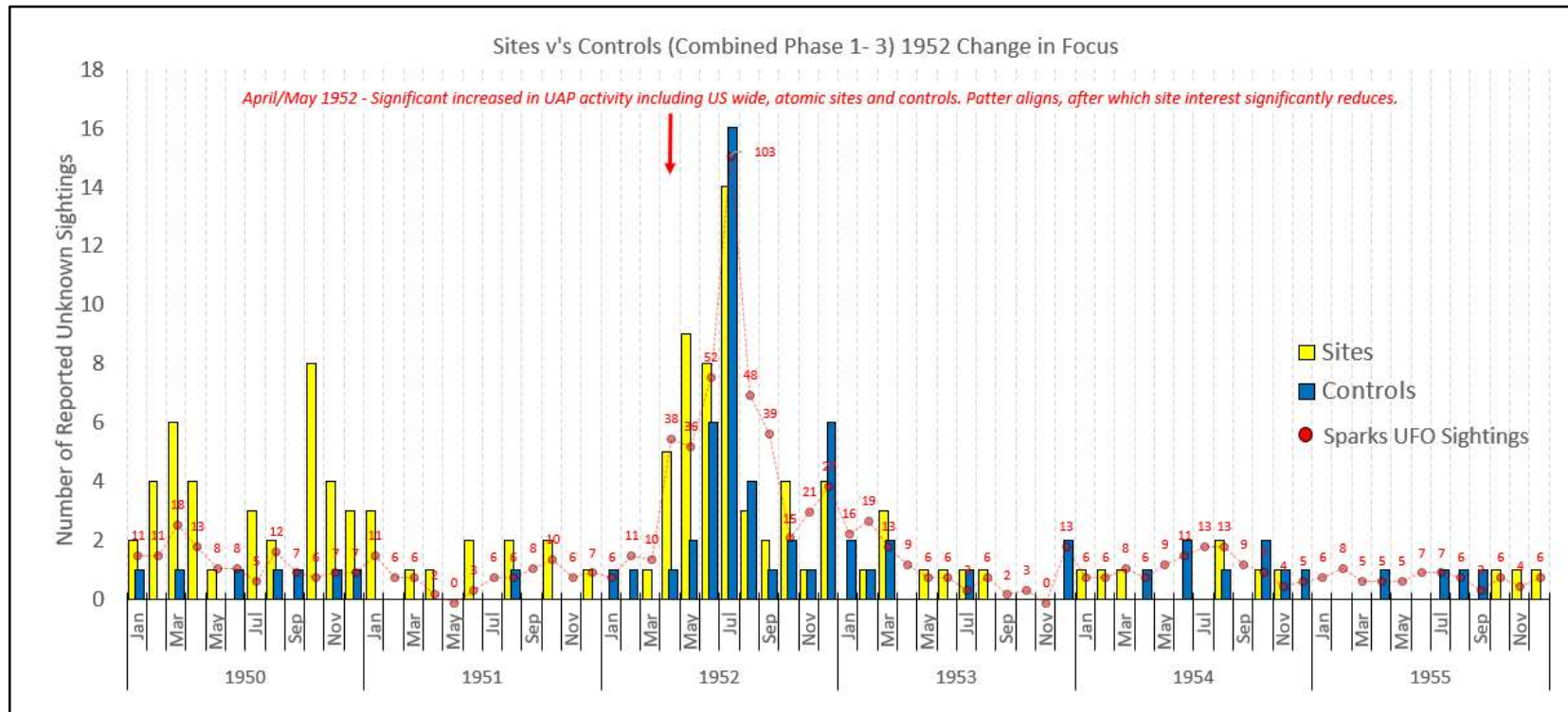


Figure 30 Monthly Atomic Sites V's Controls Change in 1952

Figure 30 Monthly Atomic Sites V's Controls Change in 1952 shows UAP activity at the atomic sites versus the controls at a monthly level between 1950 to 1955. This chart illustrates the buildup towards the 1952 peak and the degree of similarity between the atomic sites, the controls and the wider UAP activity. From April 1952 to early 1953, the atomic sites UAP activity (yellow bars) coincided with both an increase in the control sites UAP activity (blue bar) and an increase in general UAP activity (red line). From May/June 1952 onwards, the atomic site UAP activity also showed a similar month-to-month pattern of activity compared to the controls and general population. This pattern suggests that the driving factor behind the 1952 UAP activity across the atomic sites, control sites and the wider US appears to be the same.

9.2. Windows Of Activity

The analysis of data suggests that the elevated activity in the atomic Phase 1-3 sites was within a window of time, approximately between 1948-1951, and that a possible targeted interest may be indicated when compared to other time periods. There are 4 main windows of activity relating to the atomic Phase 1-3 sites. There is more UAP activity happening within this period (1943-1975) which may suggest other areas of interest, these 4 windows relate to the atomic Phase 1-3 areas of interest.

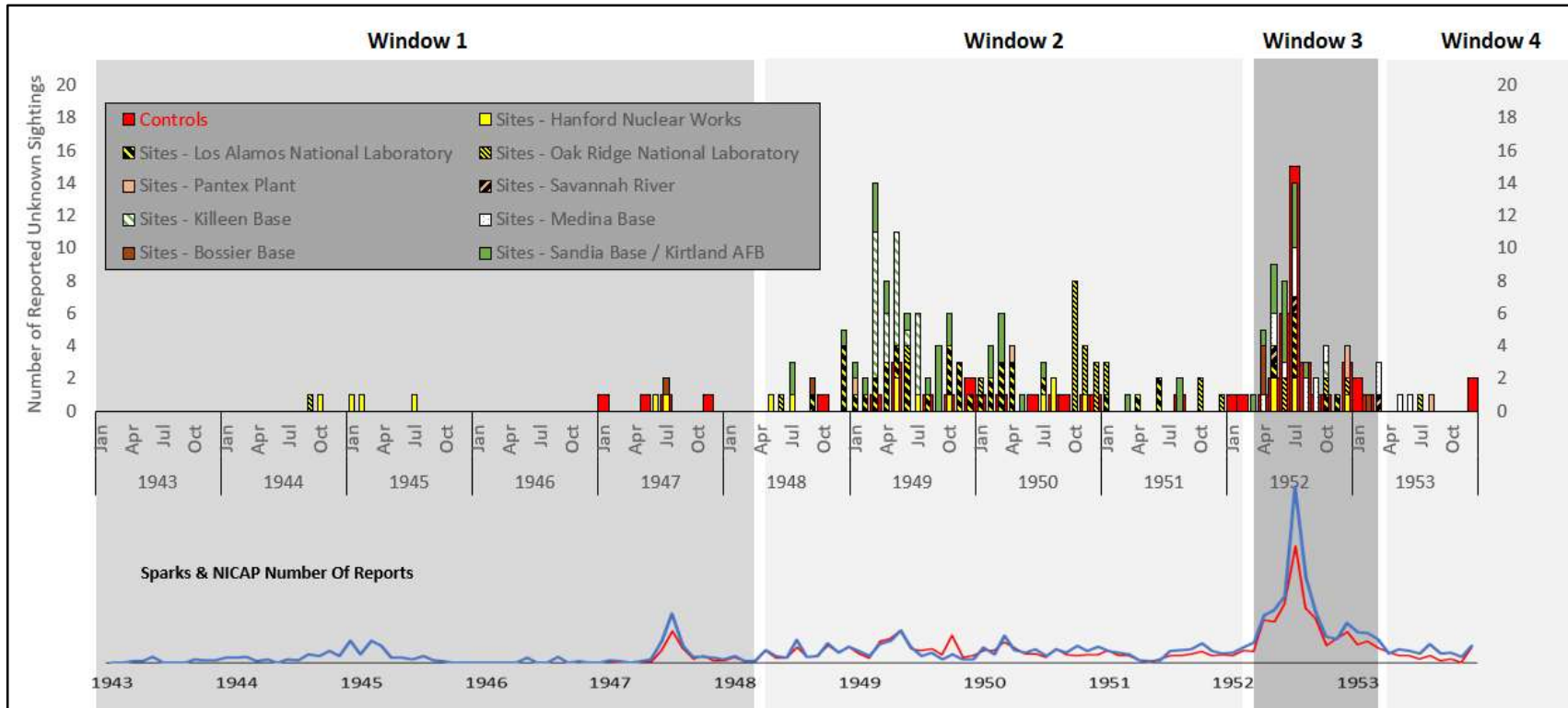


Figure 31 Windows of Activity

1. 1943 to 1947
 - a. Some activity in atomic sites - Hanford in particular
 - b. A peak in general UAP activity in July 1947
 - c. drop off in sightings late 1947 & early 1948
2. 1948 to 1951 - Atomic site interest
 - a. elevated activity in atomic sites (peak 1949), which was distinct from the level of UAP activity at the control sites
 - b. drop off in sightings 1951 to early 1952 at atomic sites and controls
3. April 1952 to March 1953 - Peak UAP activity across all areas
 - a. There was a general peak in activity during 1952, which was similar across the atomic sites and control sites.
4. April 1953 onwards

- a. The level of UAP activity decreased for control sites to a level that was seen prior to 1952. The Phase 1-3 atomic sites also decreased to a similar level and never repeated the activity that was seen during the period between 1948 to 1951.
- b. The frequency of activity, in combination with details provided for various reports, are anomalous and suggest intelligent and focused activity regarding atomic weapons development.

10. Phase 4 Atomic Weapons Deployment Bases

For each of the military sites studied in Phase 4, the facility was assigned as either an atomic deployment base or a standard military base. If a base was an atomic deployment site at any time during the study period, it was assigned as an atomic deployment base for this initial analysis in Figure 32 Phase 4 atomic deployment bases v's Standard military bases

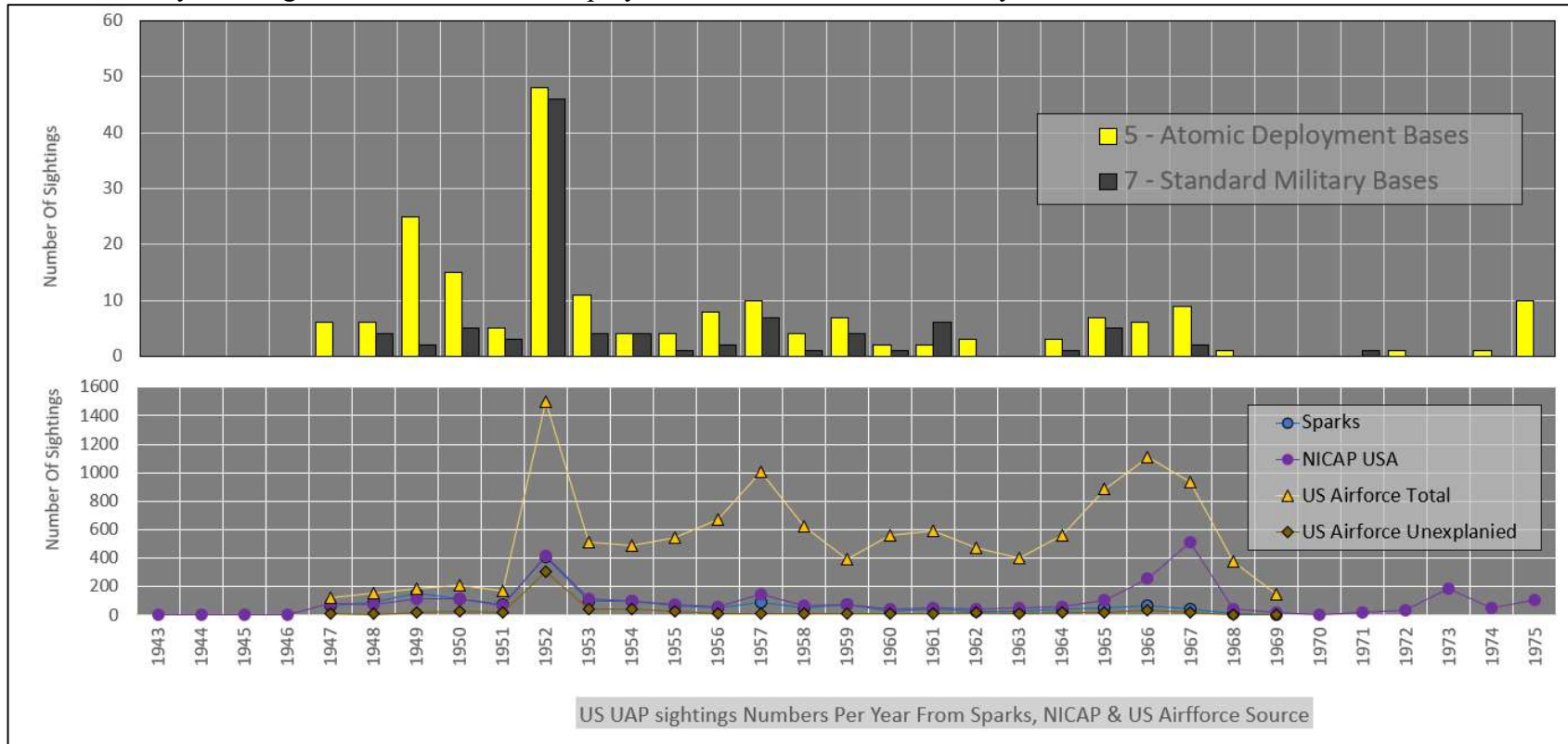


Figure 32 Phase 4 atomic deployment bases v's Standard military bases

Comparison of atomic deployment bases and standard military bases were determined by function of the base during the study period (1945-1975). Some bases during the study period did change the nature of their operation. For example, Davis Monthan changed from being a large conventional weapons base to an operational atomic (Strategic Air Command) base in 1953, and then added ICBMs in 1962. For each base, we tracked the facility type over time, which allowed for proper determination of facility type at the time of each sighting.

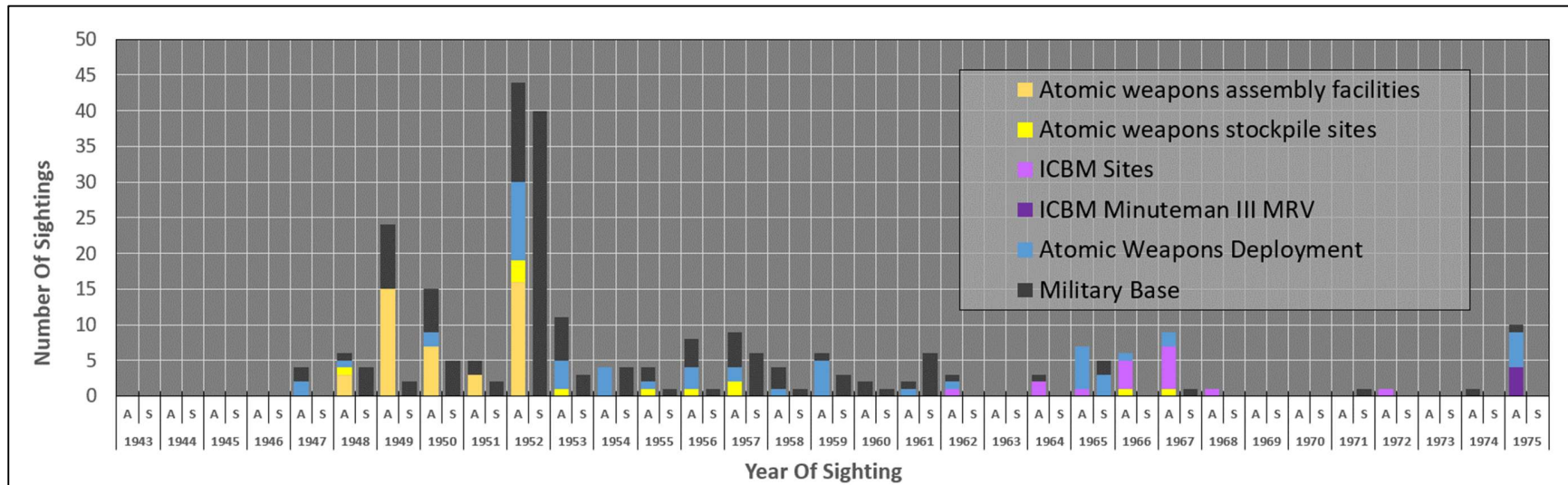


Figure 33 Phase 4 atomic deployment bases v's Standard military bases (based on facility type during the time of sighting)

Figure 33 Phase 4 atomic deployment bases v's Standard military bases (based on facility type during the time of sighting) shows a comparison of atomic deployment base and conventional military base UAP reporting, based on the facility type during at the time of the sighting. (A = atomic deployment base and S = standard, conventional military base). There are 5 periods of elevated UAP activity for atomic sites as compared to standard military sites. These periods are: 1949-1950, 1953, 1956, 1966-1967 and 1975. The “Military Base” black bars in the atomic deployment bases “A” columns are incidents that occurred at the facilities that were standard military bases at the time of the incident but would become or had been an atomic deployment base.

10.1. Elevated Atomic activity 1949-1950

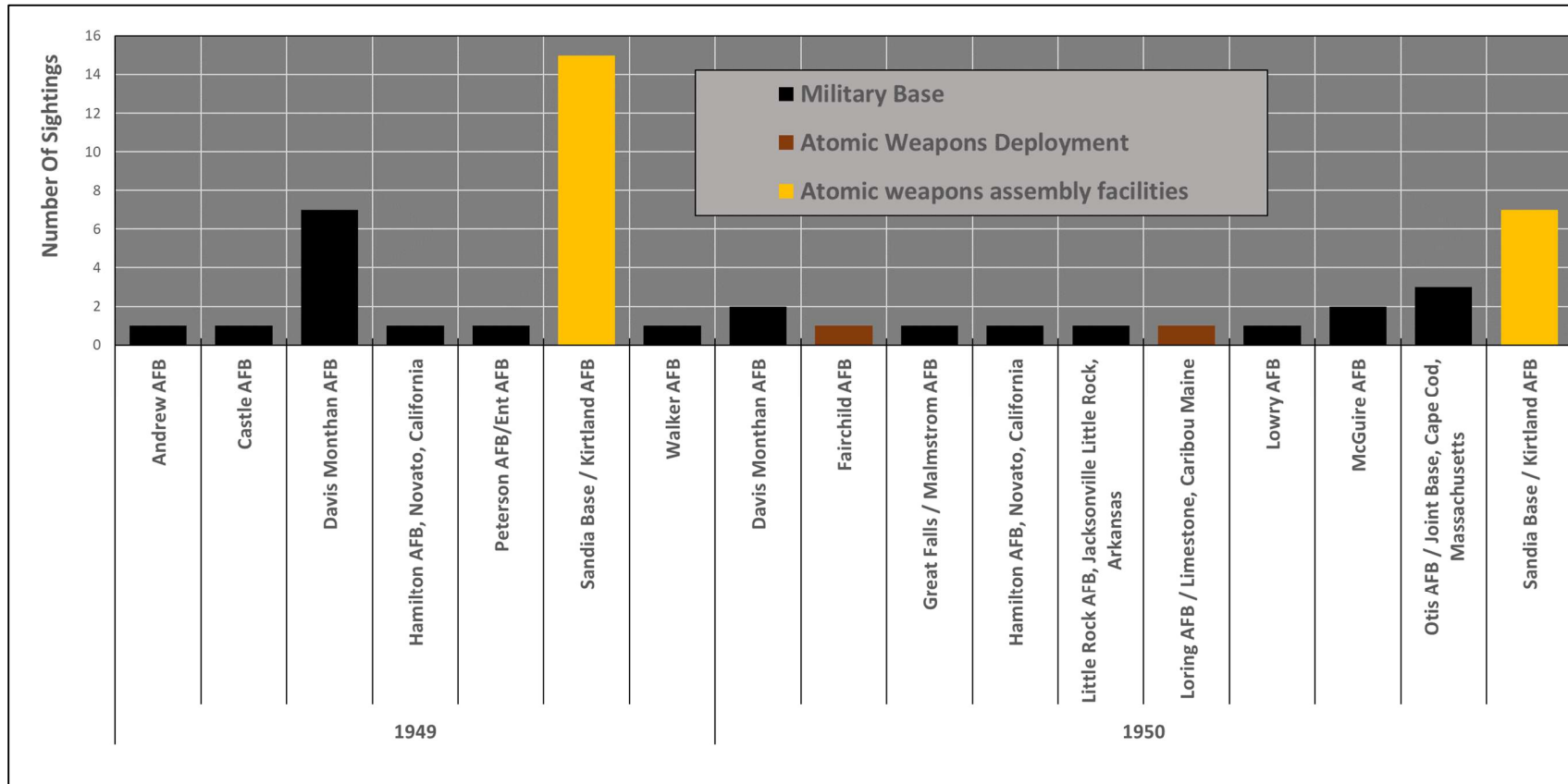


Figure 34 Examination of 1949 and 1950 peaks for atomic sites

Figure 34 Examination of 1949 and 1950 peaks for atomic sites illustrates the peak activity during 1949 to 1951 is predominantly at the atomic weapons assembly facility Sandia / Kirtland, which is part of the Phase 1-3 facilities. The other site of note is the Davis Monthan AFB, which was a conventional military base in 1949, and became a Strategic Air Command base in 1953. Due to the functional transition of Davis Monthan, it is unknown whether the observations were driven by interest in atomic weapons or other factors.

10.2. Elevated Atomic activity in 1953 and in 1956

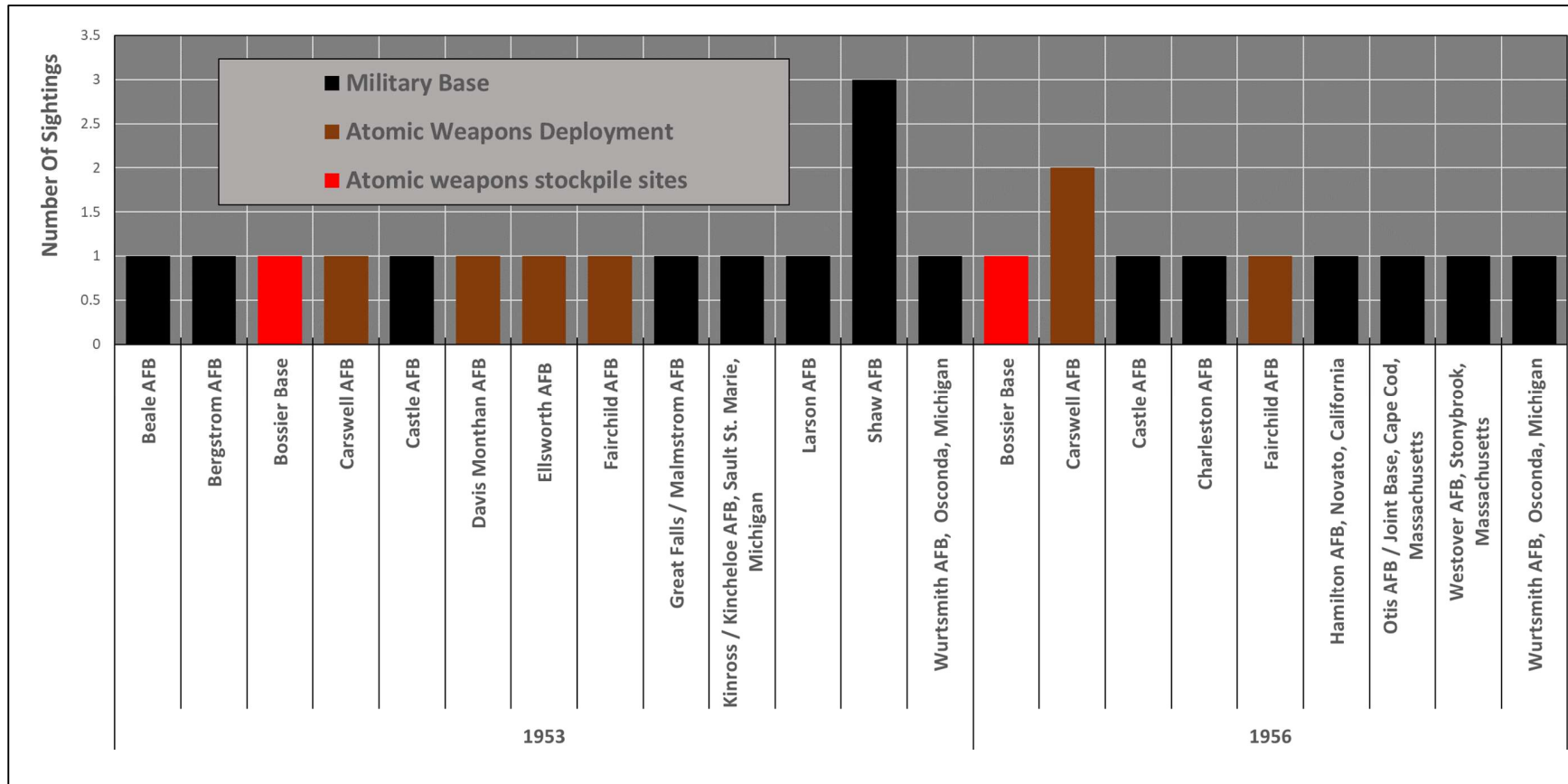


Figure 35 Examination of 1953 and 1956 peaks for atomic sites

UAP activity was generally consistent across the atomic and non-atomic facilities during this period; however, there were random observations made at various facilities. No clusters of activity or patterns were identified during this period.

10.3. Elevated Atomic activity in 1966, 1967 and 1975

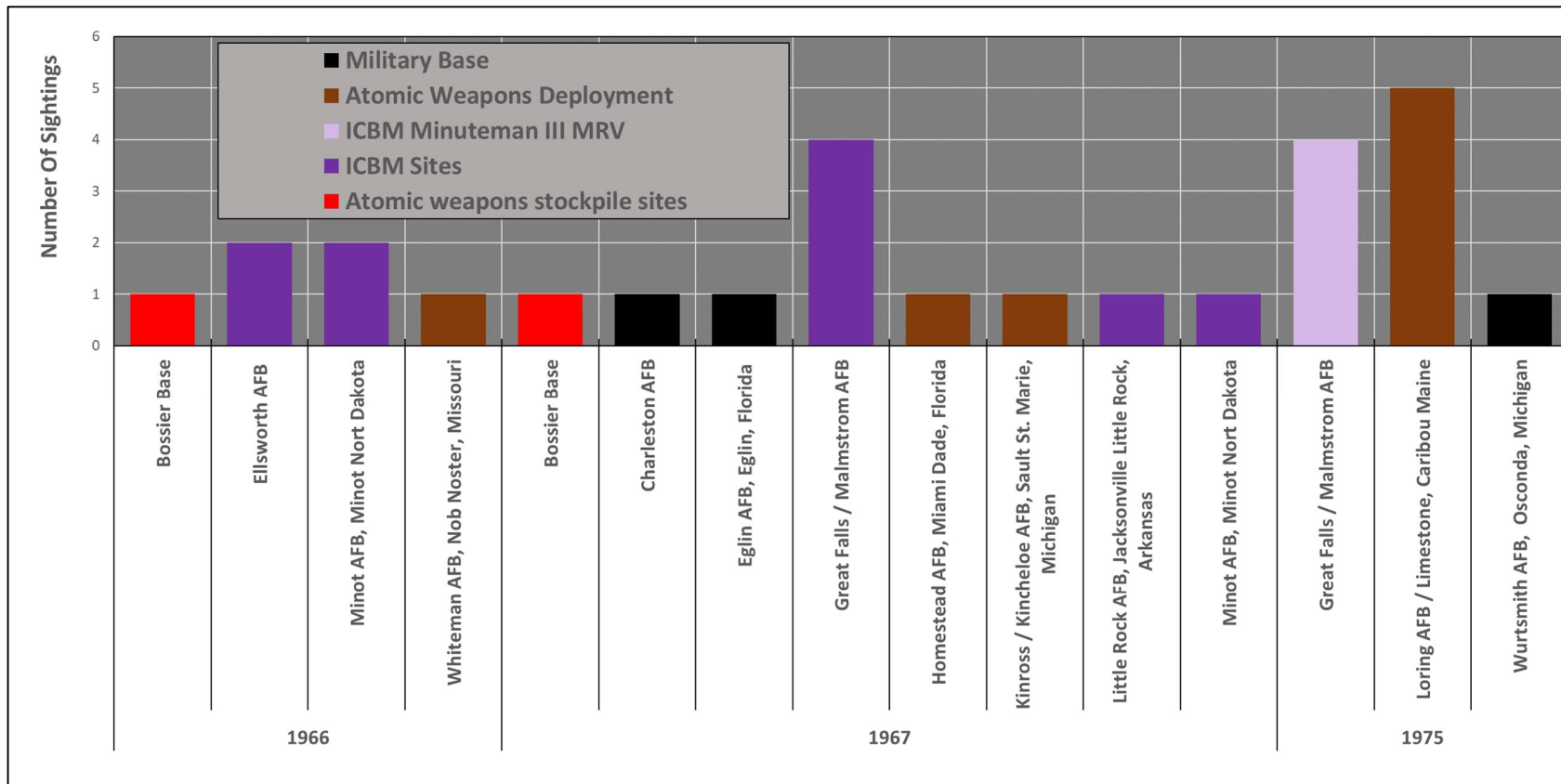


Figure 36 Examination of 1956, 1957 and 1975 peaks for atomic sites

Elevated UAP activity was observed during 1966-67 at newly established ICBM sites which went operational in the early 1960's. In 1975, the activity was at the newly established Minuteman III ICBM site at Great Falls / Malmstrom AFB and the Loring AFB. In both instances, the UAP activity was clustered together during late September / early October 1975. The data shows there was some level of elevated UAP activity for atomic weapons deployment facilities but not as much as what was seen in earlier years at the atomic weapons development facilities. For weapons deployment, there was a greater interest in ICBM as compared to other standard atomic weapons deployment sites. In military context, the newly developed missiles were equipped with multiple independent reentry vehicle type warheads, which dramatically increased the number of hydrogen weapons that could be launched at a single time.

11. Phase 5 Missile Testing, Aircraft Testing and Space Flight

Phase 5 examines the sightings relating to missile testing (Holloman AFB / White Sands test range and Vandenberg / Camp Cooke AFB), aircraft testing (Muroc / Edwards AFB), and space flight (Cape Canaveral / Patrick AFB / Kennedy Space Center).

Number of sighting reports at each of the three Phase 5 facility types

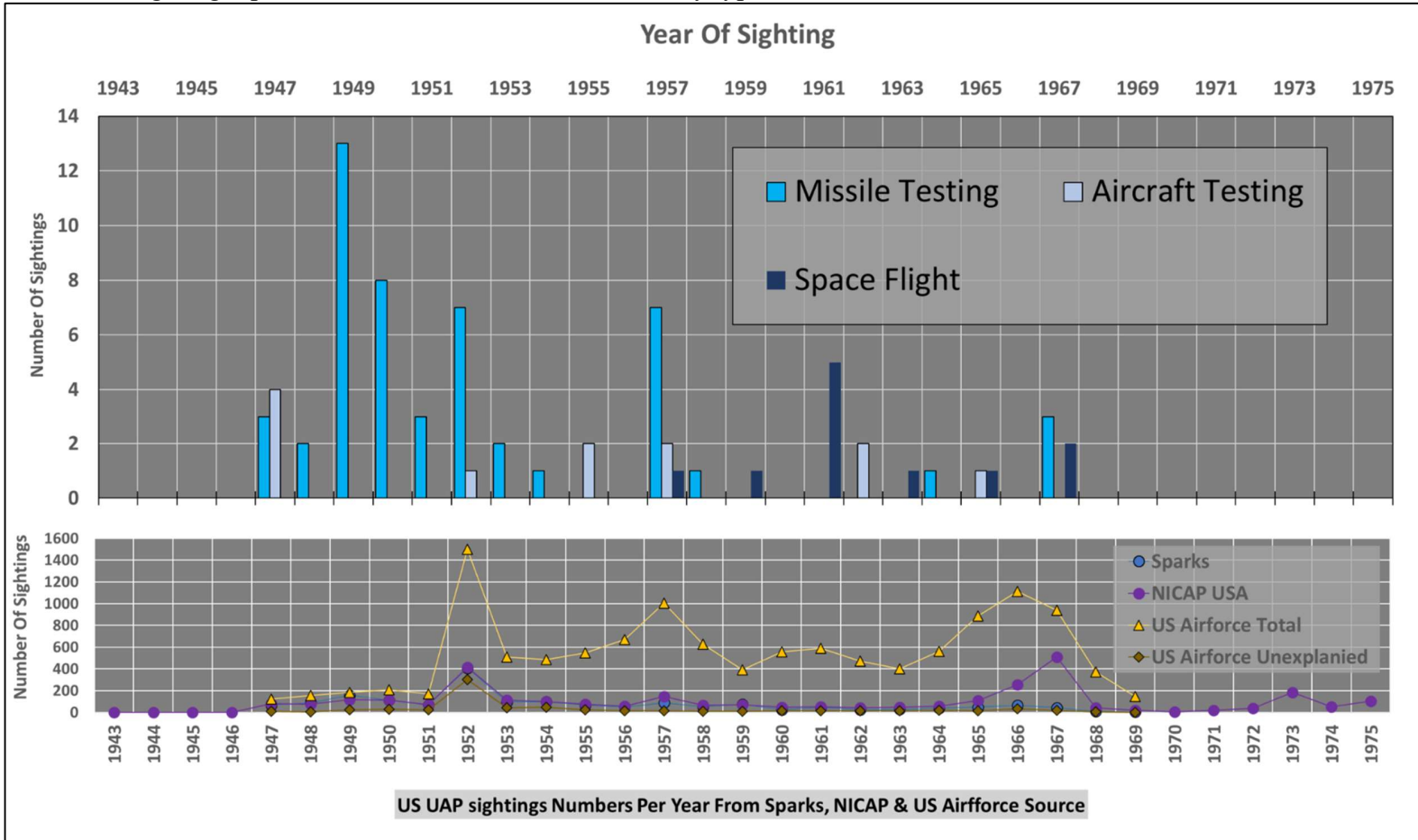


Figure 37 Missile Testing, Aircraft Testing, Space Flight

Figure 37 Missile Testing, Aircraft Testing, Space Flight shows UAP activity for Phase 5 facilities. To determine if there was elevated activity at these facilities, a comparison was made between the pattern of activity at the Phase 4 atomic sites and Phase 5 test sites.

Comparing the total Phase 5 site reports with the Phase 4 Atomic site reports

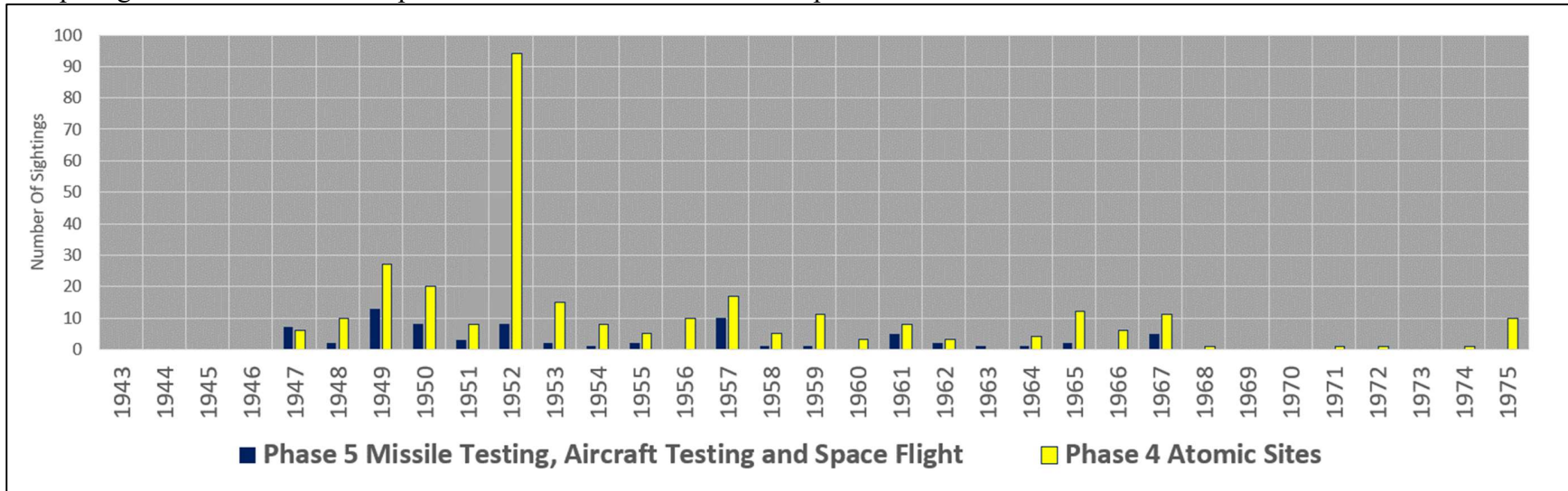


Figure 38 Phase 5 Test sightings compared to Phase 4 Atomic sighting

A comparison was also made between all the facility types for Phases 1 through 5 (Figure 39 Array of Phase 1-5 military facility types).

Combining All Military Phase 1-5 Sites (Based on known Facility Type at the Time)

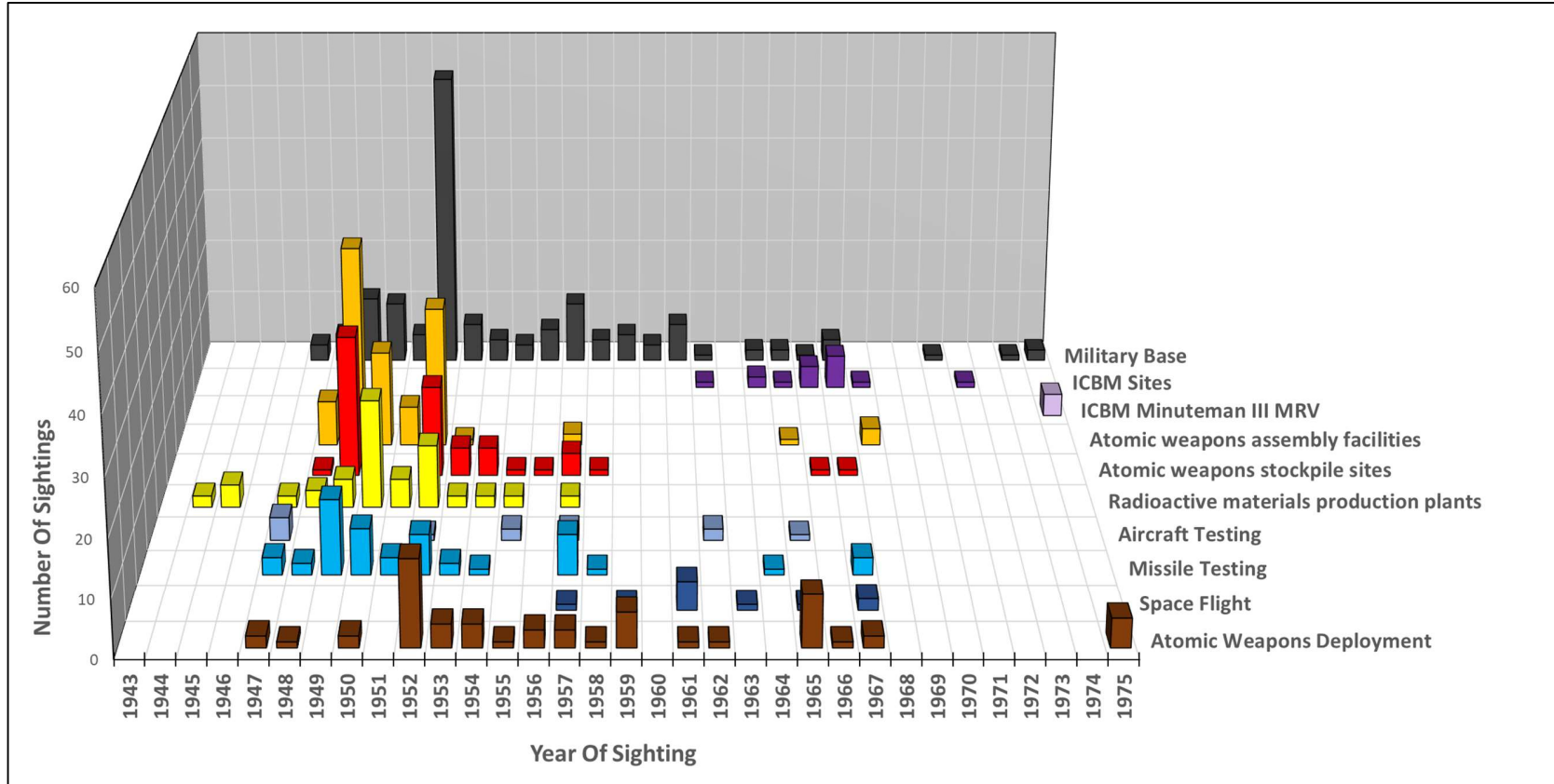


Figure 39 Array of Phase 1-5 military facility types

The UAP activity patterns associated with missile and advanced aircraft testing, supplemented by statistical analysis, allows for the comparison of Phase 5 sites to the activity at the Phase 4 atomic sites (refer Figure 29). The data indicates a focus on the development and capabilities of rockets and missiles, including ICBM systems.

There is an elevated level of activity at the early missile testing sites (1949 and 1950) especially given their small number of sites involved. There is also a relationship between these relatively high levels of UAP activity at the missile/rocket testing at the White

Sands test range and the atomic warfare complex sites 1948-1951. Individual pattern study of the overall aerospace launch and testing sites revealed no discrete, identifiable UAP activity patterns other than short bursts of activity at Vandenburg and Cape Canaveral Complex.

12. Statistical Analysis

Analysis Group	DF	P-Value	Cramer's V	Significant 0.05	Count	Interpretation
P1.1 Hanford Nuclear Works	2	< 0.01	0.54	Yes	43	High
P1.2 Oak Ridge National Laboratory	1	< 0.01	0.55	Yes	48	High
<i>P1.3 Savannah River</i>	<i>1</i>	<i>1.00</i>	<i>Fisher</i>	<i>No</i>	<i>17</i>	<i>NA</i>
2.1 Los Alamos National Laboratory	1	<0.01	0.54	Yes	64	High
<i>P2.2 Sandia Base / Kirkland AFB</i>	<i>1</i>	<i>0.16</i>	<i>0.22</i>	<i>No</i>	<i>62</i>	<i>High</i>
<i>P2.3 Pantex Plant</i>	<i>1</i>	<i>1.00</i>	<i>Fisher</i>	<i>No</i>	<i>13</i>	<i>Modest</i>
<i>P3.1 Manzano Base</i>	<i>1</i>	<i>0.20</i>	<i>Fisher</i>	<i>No</i>	<i>18</i>	<i>NA</i>
<i>P3.2 Clarksville Base</i>	<i>No Reports at Clarksville</i>				<i>7</i>	<i>NA</i>
<i>P3.3 Killeen Base</i>	<i>Insufficient Control Group Data</i>				<i>31</i>	<i>NA</i>
<i>P3.4 Medina Base</i>	<i>1</i>	<i>0.24</i>	<i>0.19</i>	<i>No</i>	<i>39</i>	<i>Small</i>
<i>P3.5 Bossier Base</i>	<i>1</i>	<i>0.87</i>	<i>0.03</i>	<i>No</i>	<i>39</i>	<i>NA</i>
<i>P4 Atomic and Standard</i>	<i>3</i>	<i>< 0.01</i>	<i>0.30</i>	<i>Yes</i>	<i>297</i>	<i>Modest</i>
P5 Aerospace Development / Testing	3	0.01	0.45	Yes	74	High

Table 1 Statistical Analysis for Phases 1 to 5

In Table 1 Statistical Analysis for Phases 1 to 5, all p-values greater than zero and less than 0.01, have been reported as < 0.01.

Summary of Relative Likelihood and Strength of Association in Phases 1-3

In all phases of this study, comparison groups are treated as separate groups differing by their categorization as Study/Control or Facility Type. This a “nominal” level variable. Accordingly, we selected the Chi-Square goodness of fit statistic for each phase and subphase to test the starting hypothesis that the two (sometimes three as in Phase 5) groups demonstrate different patterns. With the small sample sizes evident in some analysis groups, it was necessary to group several years of data together to meet the assumptions of a Chi-Square test.

A p-value of 0.05 is an “inferential” statistical benchmark commonly used in statistical analyses and we respect that tradition as reported above. However, we also report the exact p-values, and it is important to note that those values are in many cases far smaller than .05 level and therefore more “statistically significant”. In Analysis Groups P1.1, P1.2, P2.1, P4 and P5, the p-level rounds to zero to two decimal points. A statistical p-value is the probability of obtaining the pattern of results which we uncovered if, in fact the null hypothesis (i.e., there is no difference between the comparison groups) were true.

The measure of association we report is Cramer’s V which ranges from 0.00 indicating no association between year of sighting and site location in either study or control group to 1.00 in which the pattern of sightings over year would be able to completely predict the pattern difference between the two groups. Cramer’s V is appropriate for categorical data such as we have in this analysis where year is also treated as categorical to meet the requirements of this statistic.

The grouping used in Table 1 Statistical Analysis for Phases 1 to 5 for phase 1 to 3 are:

- P1.1 Hanford (1944-1948) (1949-1951) (1952-1987)
- P1.2 Oak Ridge (1944-1950) (1951-1965)
- P1.3 Savannah River (1952) (1953-1967)
- P2.1 Los Alamos (1947-1951) (1952-1967)
- P2.2 Sandia Base (1947-1951) (1952-1974)
- P2.3 Pantex Plant (1949-1953) (1957-1968)
- P3.1 Manzano (1949-1952) (1955-1980)
- P3.2 Clarksville No reports from the study group.
- P3.3 Killeen Insufficient control group counts.
- P3.4 Medina (1947-1952) (1953-1975)
- P3.5 Bossier (1947-1952) (1953-1967)

Note: Gaps in years occur when there are no counts for that year

The following chart displays the relative size of Cramer’s V from high too low to highlight which phases show the strongest association.

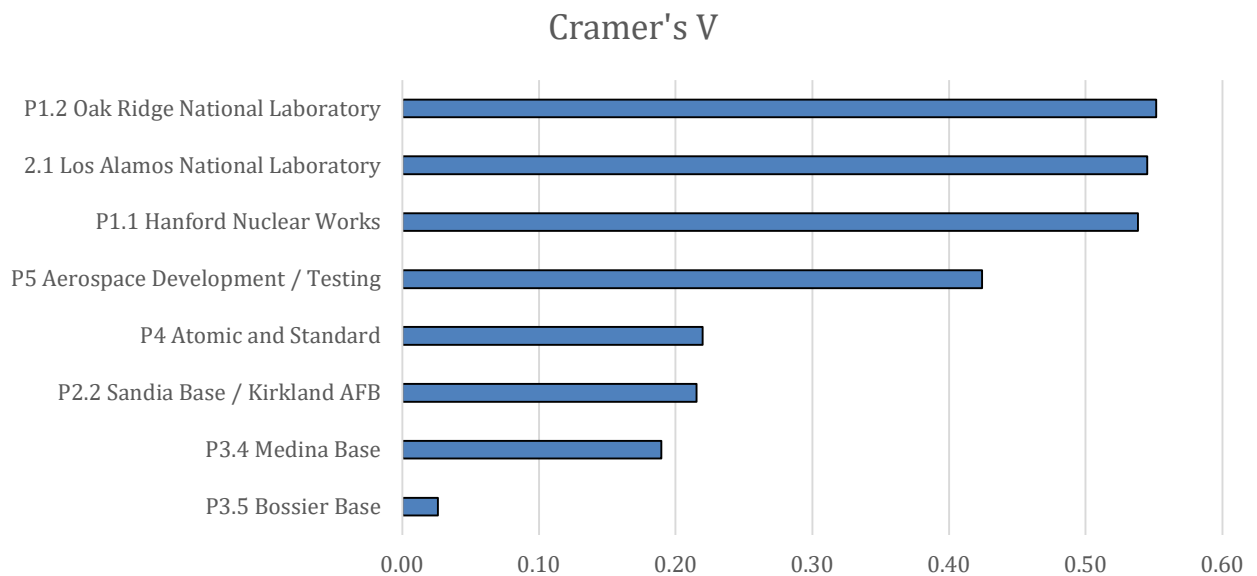


Figure 40 Relative size of Cramer’s V from high too low

13. Key Points Summary

- 1) Conclusion that there were elevated and anomalous levels of Unidentified Flying Object (UFO) / Unidentified Aerial Phenomena (UAP) activity at weapons grade radioactive materials production plants, weapons assembly facilities, and national weapons stockpile sites during the period of the study.

- 2) Anomalous levels of UAP activity were most noticeable at the earliest facilities in each class, including Hanford, Oak Ridge, Los Alamos, Sandia, and Killeen. UAP activity began during the construction phase for some sites and escalated at the time the site became operational.
- 3) Elevated UAP activity for the atomic warfare complex sites occurred during a “window” of time from 1948-1951, continued during the national spike in UAP reporting in 1952 and then dramatically decreased, never to repeat the “window” levels during the remainder of the study period. No comparable level of “window” activity is seen at the radioactive materials production and weapons assembly plants which came into service in later years – specifically at Savannah River and Pantex.
- 4) There was moderately elevated UAP activity associated with bases where atomic weapons were operationally deployed (Air Force and Navy) as compared to conventional military facilities where atomic weapons were not operationally deployed.
- 5) Distinctive patterns of UAP activity were noted at individual atomic weapons sites, primarily in conjunction with the deployment of Inter-Continental Ballistic Missiles (ICBM).
- 6) Distinctive patterns of UAP activity were noted at aerospace test sites, primarily in conjunction with missile/rocket testing and launches, that correlated with the “window” of distinctive UAP activity at the earliest atomic complex study sites.
- 7) Individual and distinctive patterns of UAP incident reports were noted for different types of atomic weapons complex sites over the full period of the study.

14. Conclusions

14.1. Was there elevated UAP activity at atomic warfare complex sites as compared to regional population centers and conventional military installations?

The Phase 1-3 pattern analysis indicated elevated UAP activity at atomic warfare complex sites and which occurred across all three atomic facility types (Figure 29 US Atomic Weapons (Phase 1-3) v's Controls Incident Reports), but this anomalous activity corresponds to a window of time (Figure 31 Windows of Activity). The highest degree of anomalous activity in Phase 1 and Phase 2 was at the earlier developmental sites (Hanford, Oak Ridge, Los Alamos and Sandia base / Kirtland AFB), while facilities developed later in time such as Savannah River and Pantex were not. Within Phase 3, Killen base (one of the five national atomic weapons stockpile sites), shows an elevated number of UAP incidents compared to its controls during this pre-1952 window, while the other four sites do not.

While we can offer no specific explanation for the very early activity at Hanford (Figure 11 Hanford site & controls), it should be noted that one well established technique for identifying atomic weapons development facilities involves profiling specific physical and security characteristics which allow their identification. Those characteristics include large-scale power requirements at isolated locations, large water supplies and extensive construction of special facilities for radioactive materials transportation and disposal (including large numbers of waste tank structures). Such profiles were routinely used in American high altitude and satellite

surveys to locate radioactive materials facilities in the Soviet Union, China, India, and Iran. The Hanford site would be especially visible in such surveys due to its location on the Columbia River in a flat, strictly agricultural area of Washington state.

Overall, the pattern analysis indicated an elevated and anomalous level of UAP activity at the atomic study sites as compared to both regional population controls and to military facilities with comparable levels of security and air defense sensitivity to the tracking of unknown aerial objects.

All sites showed the same overall diminishment and virtual cessation of activity following a national surge of UAP reports in 1952. The anomalous patterns during the years prior to 1952 was never repeated, despite the surge in air defense radar and interceptor deployment of the 1950's and 1960's. Activity at the atomic study sites almost completely ceased over time, while overall UAP reporting across the United States continued through the end of the study period circa 1975.

It is notable that the overall Phase 1-3 study demonstrated a discrete time frame associated with the initial pattern of UAP activity during 1947 to 1952. The first facilities in each phase clearly reported a level of activity quite different from the last facilities to be established in that class of atomic facility. That is seen in reports from the Hanford and Oak Ridge sites as compared to the Savannah River site, which went into operation several years later. It is also seen in the incidence of reports at the Los Alamos and Sandia weapons assembly facilities when compared to the Pantex installation which followed them some years later. In other words, the initial UAP activity appears time delimited, suggestive of an intelligence driven survey of atomic weapons development capability.

14.2. Was there elevated UAP activity at atomic deployment sites as compared to conventional military installations?

Pattern comparison of UAP activity associated with a broad sampling of bases where atomic weapons were deployed to conventional military facilities without atomic weapons does show a higher incidence of activity at atomic weapons bases. However, the levels and concentration of incidents at atomic deployment bases are not comparable to that seen at the earliest atomic weapons development facilities.

There were some individual anomalies related to the establishment of the ICBM sites in the early 1960's and again with the establishment of the newer Minuteman III sites in the early 1970's.

The pattern of significantly elevated UAP activity associated with atomic sites appears to be strictly related to the core facilities of the atomic warfare complex – weapons grade reductives production, atomic weapons assembly and to some extent, with the production and storage of atomic weapons during the years from 1945 to 1952. The most significant window of activity during that period occurred during the years 1948 to 1951 as numbers of first fission and then fusion weapons were tested and then produced for stockpiling.

14.3. Was there anomalous UAP activity at the missile testing, aircraft testing or space flight center?

There is an elevated level of UAP activity at the early missile/rocket testing site at the White Sands test range (1949 and 1950). This peak corresponded with the elevated level of UAP activity at the atomic warfare complex (Figure 29 Combined Phase 1-5 military sites). Pattern study of the overall aerospace launch and testing revealed no identifiable UAP activity patterns other than short bursts of activity at Vandenburg and Cape Canaveral complex.

14.4. UAP Incident Continuity

Another aspect of the overall pattern of UAP activity in the broader military domain involves the issue of “continuity”. As noted above, there is no repetition nor continuity of the high levels of activity found at the core atomic warfare complex sites. The early “bursts” at those facilities never reappeared following the year 1952. Only the White Sands missile test range has comparable elevated UAP activity as observed at the core atomic warfare complex sites. The anomalous activity was similar in both pattern and timing.

Regarding the widespread deployment of atomic weapons at Strategic Air Command bases and with Navy supercarriers and ballistic missile submarines, only the SAC ICBM sites show brief, follow-on mini bursts of UAP activity. The same mini bursts also appear at the missile and rocket launch complexes at Vandenburg and Cape Canaveral.

14.5. Intentions

While Phases 1-5 do not represent the full extent of our anticipated intentions study, these initial findings do suggest a structured and focused level of intelligent (intentional) activity at the earliest atomic facilities involved in building the American atomic weapons capability – an activity which followed the establishment of the first artificial, self-sustaining nuclear reaction as well as the first atomic weapons detonations. Both of those events constituted a very specific level of scientific and technological advancement, including a level of theoretical understanding in physics and chemistry, as well as advances in metallurgy and the development of the power infrastructure required for large scale production of weapons class radioactive materials ([Richelson, 2007](#)).

14.6. Surveillance

The Phase 1-5 findings do support the hypothesis that the reported UAP activities at atomic facilities were not random, but rather driven by intelligent surveillance. While admittedly anthropomorphic, an assessment can be made that the hypothesis of intelligent UAP activity with an intent to observe or collect data, and in some cases engage with civilian or military personnel, is supported by our studies. It should be noted that while some observations were reported as distant points of light, supportive of weather phenomena, meteors or conventional aircraft, several observations involved close observations of structure which displayed movement that was not consistent with weather phenomena or conventional aircraft.

We conclude that the Phase 1-5 findings of this pattern recognition study do support the hypothesis that the reported UAP activities at atomic facilities were not random, but rather focused and indicative of intelligent activity.

Acknowledgments

Statistical consultation and analysis provided by Robert E. Petersen, Ph.D.

Data Repository

The 590 incidents used in the study necessary to reproduce these reported findings is available at <https://doi.org/10.5281/zenodo.7295958>

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