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Reliable Witnesses, Crackpot Science: Ufo Investigations In Cold War America, 1947-1977

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Abstract
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RELIABLE WITNESSES, CRACKPOT SCIENCE: UFO INVESTIGATIONS IN COLD WAR AMERICA, 1947-1977

Kate Dorsch

A DISSERTATION

in

History and Sociology of Science

Presented to the Faculties of the University of Pennsylvania

in

Partial Fulfillment of the Requirements for the

Degree of Doctor of Philosophy

2019

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Adelheid Voskuhl, Professor, Associate Professor, History and Sociology of Science
To Dave
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And finally, to Dave, my partner, best friend, and rock. He has made all of this possible, and there are no words for my gratitude.
ABSTRACT

RELIABLE WITNESSES, CRACKPOT SCIENCE:
UFO INVESTIGATIONS IN COLD WAR AMERICA, 1947-1977

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This dissertation explores efforts to design and execute scientific studies of unidentified flying objects (UFOs) in the United States in the midst of the Cold War as a means of examining knowledge creation and the construction of scientific authority and credibility around controversial subjects. I begin by placing officially-sanctioned, federally-funded UFO studies in their appropriate context as a Cold War national security project, specifically a project of surveillance and observation, built on traditional arrangements within the military-industrial-academic complex. I then show how non-traditional elements of the investigations – the reliance on non-expert witnesses to report transient phenomena – created space for dissent, both within the scientific establishment and among the broader American public. By placing this dissent within the larger social and political instability of the mid-20th century, this dissertation highlights the deep ties between scientific knowledge production and the social value and valence of professional expertise, as well as the power of experiential expertise in challenging formal, hegemonic institutions.
Table of Contents

Acknowledgements.................................................................................................................. iv

Abstract................................................................................................................................. Error! Bookmark not defined.

Table of Contents................................................................................................................... viii

List of Illustrations................................................................................................................... ix

Introduction: The Not-So-Strange History of Strangeness in the Sky........................................... 1


Chapter Two: Making Data, Identifying UFOs: The Infrastructure of Investigation................. 54

Chapter Three: The Milieu of Belief: Authority and Legitimacy in Unorthodox Science.......... 90

Chapter Four: The Condon Committee and the Scientific Study of UFOs, 1965-1968.............. 123

Chapter Five: Critique, Consensus, Controversy: Dissent and UFOs, 1947-1977..................... 159

Conclusion: “This is important. This means something.”......................................................... 213

Bibliography............................................................................................................................ 225
List of Illustrations

Figure 1. Kenneth Arnold with an artist's rendition of the objects he saw in June 1947. .................31
Figure 2. Vought XF5U-1. ........................................................................................................32
Figure 3. Frequency of Object Sightings and Unknown Object Evaluations by Months, 1947-1952. 74
Figure 4. Tentative Observers Questionnaire, pages 1 & 2. .........................................................78
Figure 5. Tentative Observers Questionnaire, pages 3 & 4. .............................................................78
Figure 6. Tentative Observers Questionnaire, pages 5 & 6. .............................................................79
Figure 7. Tentative Observers Questionnaire, pages 7 & 8. .............................................................79
Figure 8. Sample Coding Schema, from "Exhibit II. Codes" ............................................................80
Figure 9. U.S. Air Force Technical Information Sheet, pages 1 & 2 .............................................82
Figure 10. U.S. Air Force Technical Information Sheet, pages 3 & 4 ............................................82
Figure 11. U.S. Air Force Technical Information Sheet, pages 5 & 6 ............................................83
Figure 12. U.S. Air Force Technical Information Sheet, pages 7 & 8 ............................................83
Figure 13. Donald H. Menzel, 1901-1976. ..................................................................................97
Figure 14. "Figure 1. Shapes of various reported UFOs" ...............................................................102
Figure 15. "Figure 4. Shapes of various balloons." From Menzel, The World of Flying Saucers .....103
Figure 16. James E. McDonald, 1920-1971. .................................................................................106
Figure 17. J. Allen Hynek, 1910-1986. .......................................................................................112
Figure 18. Edward Uhler Condon, 1902-1974. ..........................................................................138
Figure 19. J. Allen Hynek, cameo, “Close Encounters of the Third Kind” .................................215
**Introduction: The Not-So-Strange History of Strangeness in the Sky**

In 1956, Edward J. Ruppelt, a captain in the United States Air Force (hereafter USAF), published a personal memoir of his time as director of Project Blue Book. Blue Book was at the time the latest iteration of USAF programs devoted to the investigation of unidentified flying objects (hereafter UFO/s) sightings.\(^1\) Drawing on his first-hand experience with the investigations, Ruppelt chronicled the early years of the military efforts to identify the UFOs. He claimed from the outset not to be offering any hard “proof” but instead was just reporting back what he had seen in his years of service. His service in the USAF and expressed reluctance to sensationalize his account gave him an image as a stable, reliable individual, adding further to his credibility. Don’t blindly take my word for it, Ruppelt advised his readers, hear my side and decide for yourself.

Ruppelt’s exposé, *The Report on Unidentified Flying Objects* (hereafter RUFOs), presented a history of the USAF’s investigatory projects as he understood them. His primary objective was to address charges of conspiracy and cover-up. By his account, years of USAF “brush-offs” were not intentional cover-ups or misdirections, but rather indicated a “lack of coordination” between on-the-ground officers doing the work and the higher-ups who were tasked with public relations. He described the first iteration of the program, Project Sign, as being committed to the goal of uncovering the source of the sightings, whatever it was. But right as investigators were coming to the conclusion that extraterrestrial visitors were the only reasonable explanation for the sightings, Air Force attitudes toward the project changed drastically. The Air Force then began trying to push the project “underground.” Describing his reaction as a project member, Ruppelt painted himself as innocently trusting, even naive;

his initial interpretation of this behavior was that the USAF was trying to prevent the mass panic that would inevitably follow a revelation of interplanetary visitors.

His initial read turned out to be quite wrong, according to RUFOS. Rather than accept the findings of their investigators, he claimed, the USAF instead turned to UFO denialism. (No one, he wrote, likes to be wrong, and rather than admit that they were wrong the USAF was eager to “disappear” the entire phenomenon.) The USAF UFO projects stopped being a project of investigation and became projects of “annihilation,” even in the face of mounting evidence that supported, in Ruppelt’s opinion, the initial finding of early investigators that the extra-terrestrial hypothesis (hereafter ETH) was the only possible explanation. When he later became director, Ruppelt did his best to undertake objective, straight-forward investigations of reports but was stymied at every turn. A general lack of interest at higher-up levels of leadership hindered Ruppelt’s efforts. Requests for more manpower and money to improve collection and analysis were rejected. He even floated a proposal for an instrumentation system that would require an initially sizeable investment of a quarter million dollars, but then cost only $25,000 a year to operate. In the atmosphere of military-industrial-complex spending, this seemed to Ruppelt like chump change. The Air Force, however, disagreed.

Ultimately, Ruppelt depicted an air force largely uninterested in UFO phenomena. Ruppelt’s account charged USAF officials of rejecting the opinions of established, professional scientists and experiences of trustworthy civilian witnesses. USAF officials claimed that there was not enough “conclusive evidence” to make any decisive statements about the sightings and their source(s), but according to Ruppelt, the USAF’s lack of

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2 These figures are in 1953 dollars; in 2018 dollars, the project would have run about $2.4 million to start and less than a quarter million dollars a year to sustain.
systematic investigation and conversely high standards of proof ensured there would never be enough such evidence. Despite the USAF’s efforts at ignoring the problem, however, people were still seeing things, and, Ruppelt argued, they would go on seeing things, and scientists and the military had an obligation to take those sightings seriously and investigate them appropriately. It was, after all, a matter of national security as well as national interest. Ruppelt’s credibility and comparative sanity on the matter all but guaranteed The Report on Unidentified Flying Objects would quickly become a cornerstone text of modern ufology and one of the most controversial books on the topic of its age.

Fast forward to December 16, 2017, and the New York Times story about a “mysterious U.F.O. program” under way at the Pentagon, the headquarters of the Department of Defense. Journalists Helene Cooper, Ralph Blumenthal, and Leslie Kean pulled the curtain back on a secretive Department of Defense program directed at investigating reports of unidentified flying objects. The “Advanced Aerospace Threat Identification Program” (hereafter AATIP) had allegedly begun in 2007 and, despite reports of its closure in 2012, still continued at the time of publication. Much like early iterations of the USAF’s cold war investigatory project, the program investigated reports made by service members at home and abroad. It had never before been publicly recognized by the DoD but was now out in the open.

Reporting described the AATIP as a bipartisan program sponsored by former Democratic Senate leader Harry Reid and supported by senators Ted Stevens (R-AK) and Daniel Inouye (D-HI). Most of the appropriated funding found its way to Robert Bigelow,

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billionaire entrepreneur and long-time friend of Reid’s. Bigelow had the good fortune of also owning an aerospace research company located in Reid’s home state of Nevada. Instead of pork, however, this barrel was full of aliens. Bigelow’s public comments that he was “absolutely convinced’ that aliens exist and that U.F.O.s have visited Earth” didn’t deter Senator Reid. Indeed, the support of Representative Stevens was instant; Stevens had previously told Reid his own story of a sighting he had made during his service in the USAF. Bigelow’s status as a “true believer” in the ETH seems to have been a feature, not a bug.

At the heart of the *New York Times* story was Luis Elizondo, a Defense Department intelligence official who had previously run the program. Elizondo had recently resigned in protest over what he described as “excessive secrecy and internal opposition.” Elizondo told reporters that the project itself had not actually ended in 2012 - only its official funding had. After that, he’d been working out of his office at the Pentagon and fulfilling his duties on the project without a budget to support it. 2017 became the year he had finally had enough, and in his resignation to Defense Secretary James Mattis, Elizondo declared a need for “more serious attention to ‘the many accounts from the Navy and other services of usual aerial systems interfering with military weapons platforms and displaying beyond-next-generation capabilities.’” While Elizondo felt confident saying that the sightings did not originate from any country, he could not say where they did come from himself. More investigation was needed to answer that pressing question.

A heated debate swirled around the subject. Elizondo, Bigelow, and Harold Puthoff, an engineer who worked on the program, made the argument that the U.S. was far behind the curve when it came to addressing the UFO sightings and that China and Russia had far

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4 Ibid.
5 Ibid.
surpassed the U.S. in knowledge regarding the phenomena. They went so far as to raise the alarm that, judging from what they had seen and studied, they had concluded that the U.S. was incapable of defending itself should these phenomena turn out to be a threat. In light of such a clear danger it was imperative that research be continued and that the government be forthright with its citizens about the phenomena in the skies. Undaunted by push back from scientific and military quarters, Elizondo, Bigelow, and colleagues were happy to announce the commencement of an independent private institute for UFO study, where interested researchers would be free of the oppressive yoke of government secrecy and cover-up.

There are striking similarities between the 2017 *New York Times* article and Ruppelt’s 1956 book. First, both Ruppelt and Elizondo rely on their proximity to and within the military programs for credibility, as it allowed them to claim particularly elite expertise. Second, they both describe resource-poor programs that could not be expected to fulfill their directives at the funding and manpower they currently received. Third, they both depict an American military brass uninterested and unwilling to engage with the larger meaning and consequences of the investigations. Fourth, their actual stories were shrouded in the language of intentional secrecy and obfuscation, as the Air Force and Pentagon sought to bury the projects. And finally, both pointed to an impossible to ignore cohort of rational citizens and respectable scientists who could attest to the reality of their sightings as an argument for continued study.

As Elizondo traveled the press circuit, giving interviews to newspapers and cable news outlets, over the 2017 holiday season, his comments eerily mirrored those made by Ruppelt so many decades before. Given that Ruppelt clearly framed the USAF projects in terms of a Cold War national security project, the narrative continuity between the two
project heads comes as a surprise. It raises questions not only about the staying power of the flying saucer and UFO as cultural artifact and cult icon, but about intersections between public, private, scientific and military interests across the 20th and 21st centuries. How, and why, has the language and narrative of UFO crisis and conspiracy remained largely static over the last sixty years of drastic social, political, and cultural movement in America? And why does it seem as compelling today, in 2019, as it was in 1956?

This dissertation offers a history of UFO investigation in the United States during the Cold War, focusing specifically on military and scientific studies of the phenomena. The long-term survival of the UFO as cultural touchstone comes from its ephemeral nature; never sufficiently “identified” in toto, the UFO persists as a cipher for sociocultural anxieties, fears, hopes, and discourse. The UFO was at times a domestic technology, at times a foreign threat, and sometimes an extraterrestrial technology capable of being both threat and salvation. The mystery of its origin(s) and intent gave it not only a discursive flexibility that made it effective metaphor and cold war boogieman but has enabled it to survive, much like Bigfoot, the Loch Ness Monster, chemtrails, and other modern conspiracy theories. There is a critical difference between UFOs and the above conspiracy-objects, however; the UFO-as-transient-mystery is rooted in 20th century technoscientific anxiety about the rapid and destructive advance of our greatest achievements. Whether or not we want to believe is not at issue. Amid the growing opacity of our scientific and technological artifacts, we have no choice but to believe.

**Resisting the Research Taboo**

For being so ubiquitous an object, the UFO has received surprisingly little attention in scholarly research. The academic study of unidentified aerial phenomena, of which UFOs
are a part, has long been subject to a research taboo. The reasons for the taboo echo the same critiques we will see be made by physicists in the 1960s and 1970s; mainly, prospective research does not promise enough significant discovery to justify ongoing scholarly effort. But at the root of the taboo is a belief that, in order to undertake a research project that centered UFOs, one would also have to center the phenomena’s witnesses - people who had been largely discredited and maligned by skeptical, critical experts throughout the controversy. Taking those witnesses and their experiences seriously requires the researcher to acknowledge and embrace the subjectivity of experience, threatening the foundation of “objectivity” upon which so much of science has been built.

The same research taboo that we will see cripple serious UFO research throughout the Cold War era has continued to prevent wide-spread, serious research on the topic in the social sciences and the humanities. Which the social sciences and the humanities can make more room for subjective human experience in their analyses, when it comes to UFO research (and indeed, many unorthodox sciences) the well has long been poisoned by the physical sciences. The depiction of witnesses as at best bad-faith hoaxers, at worst histrionic crackpots gives researchers pause as treating witnesses as serious subjects not only threatens their specific research project but their reputations as serious researchers. One needs only to look at the career of late Harvard psychologist John Mack to see what happens when a researcher starts taking the UFO crowd seriously; after announcing public support for the victims of alien abductions, Mack faced serious derision from colleagues and an internal investigation by the university to determine whether the abductee research violated the high standard of research expected from Harvard faculty.6

This is not to say there has been no work on unidentified flying objects undertaken in the social sciences and humanities. Political scientist Jodi Dean has argued that the phenomenon of abduction narratives undermines the idea of an “American public,” instead showing the weaknesses of “consensus” and rendering society into a series of discursive groups that sometimes overlap, or intersect, or compete. Similarly, Wendt and Duvall have used UFO anxiety to plumb the depths of anthropocentric sovereignty, suggesting UFOs may be compelling objects of analysis for a posthumanist critique of human dominance. Thurs has argued that heated debate over the legitimacy of UFO research in the mid-20th century demonstrates increasing impermeability in the boundaries between “science” and “non-science.” And Denzler has provided us with a compelling account of the intersections between belief in UFO visitation and the American religious experience in an effort to explore the linkages between experiences, belief, metaphysics and essentially scientific approaches. A few historical studies of the phenomena and their investigation have appeared, and a recent edited volume attempts a multidisciplinary survey of major issues in the study of UFO phenomena from a social science and humanities perspective.

7 Jodi Dean, Aliens in America: Conspiracy Cultures from Outer space to Cyberspace (Ithaca, NY: Cornell University Press, 1998). Dean also foresaw the post-2016 crisis in expertise, pointing to the rise of conspiratorial thinking in information-saturated societies.
9 Daniel Thurs, Science Talk: Changing Notions of Science in American Popular Culture (New Brunswick, NJ: Rutgers University Press, 2007), especially Chapter Four, “UFOs: In the Shadow of Science.” I disagree with Thurs’s basic argument, as will be shown in Chapter 4.
Despite the diversity of theme and argument in these works, however, they are united by one significant, over-arching shadow: They have all been grounded in the same handful of foundational UFO texts, namely Ruppelt’s *Report on Unidentified Flying Objects* and historian David Jacobs’ *The UFO Controversy in America* (1975). There are significant shortcomings to this approach. The first is a habit of uncritical acceptance regarding Ruppelt’s account in *RUFOS*. He is certainly a primary source, and reliable in some cases, but *Report* is not unimpeachable. And yet scholars - historians, sociologists, folklorists, and others - have often repeated his version of events as objective fact. This becomes dually problematic when citing Jacobs 1975. Jacobs wrote his history while still in the thick of the scientific debates about the legitimacy of UFO research and at a time when much of the archival sources were scattered, unprocessed, and in some cases, still classified. Where sources were thin, he too relied overmuch on Ruppelt for an account of investigative early days. Chasing citations in later literature often leads back to these two seminal works and a few well-circulated government documents, but rarely to actual archival research.

One look at the “archival holdings” on the subject offers some insight as to why. The archival sources for a full telling of the history of the Cold War American UFO are vast, both in content, sheer number of items, and geographic location. The work of locating collections alone is a daunting challenge. Jacobs 1975 offers an accessible, chronological, well-researched-for-its-day account, making it an acceptable jumping-off point for more specialized analysis (e.g. Denzler). The problem here is that in the decades since the publication of *The UFO Controversy*, certain stories and depictions from Jacobs account of the USAF’s UFO studies have been perpetuated throughout the literature, cementing a single interpretation of the period that was built on a limited set of sources. In the process, key
voices, organizations, actors, moments, perspectives, and so on have been absent from the record. In some places, these stories have been almost entirely lost.

This dissertation is an effort to correct the record. Reliable Witnesses, Crackpot Science integrates the most diverse collection of sources yet attempted in serious scholarly studies of UFO phenomena to try to set the record straight, telling a story free of judgment and in the process paints a more vibrant and more accurate portrait of the time. I have examined archival and printed material from the archives of the United States Air Force, the United States federal government, and numerous professional scientists who were involved in the federally-funded UFO investigations. These archives held everything from official government reports to handwritten letters from citizens, from photograph negatives to bags of dirt from alleged “UFO landing sites.” In addition, I have mined forty years of news media, from both national and local publications, as well as television and film documentaries from the thirty years covered in this dissertation.

I have treated these sources on equal ground while incorporating the widest array of voices and actors possible, in the hopes of generating a richly-textured history that balances the well-known voices with the long-marginalized and silenced voices of dissent and challenge from all directions. In doing so, I aim to show how scientific - and social - consensus is built, maintained, and challenged, and the role of scientific discourse and rhetoric in that consensus-building work. I explore the relationships between scientists, and also between science and the public, but also between the public and their politicians, celebrities, and so on. The work of gaining expertise and the practice of deploying that expertise in political and social projects does not happen in ivory towers or situation rooms alone but is rather a collaborative practice that requires the participation of diverse groups
who often have conflicting interests. It is my hope that the reader will come away with an appreciation for scholarly studies of so-called ‘pseudosciences’ and their analytic power to reveal deeper sociocultural patterns and norms while helping us understand why and how social, political, cultural, and scientific dissent is articulated.

Inspiration and Method

The story of the 20th century American unidentified flying object is one of boundaries - both their construction and their subversion. The UFO blurred boundaries between expert and nonexpert, between professional expertise and experiential expertise, between the interests of the state and those of science, between real and unreal objects, and between science and non-science. The analytic categories of boundary-work and boundary objects have been critical to my interpretation and analysis. First articulated by sociologist Thomas Gieryn, boundary-work captures the practical work done by scientists to defend their intellectual and ideological territory from encroachment by non-experts (who are not necessarily non-scientists). This work includes private and public lectures, publications, and other practices we might identify as “gate-keeping” - not rhetorical alone, later scholars have gone on to explore how this practice can expand, but also limit, who gets to participate in knowledge-making projects. I have drawn on Gieryn’s work, as well as its intellectual progeny, to frame the relationships between scientists and non-scientists, but also among scientists themselves. The work of David Hess has been particularly instructive as his research into “New Age” science explores the porosity of these boundaries in regards to

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unorthodox science; his method of describing different actors’ categories as divided by internal discursive boundaries which are at their core unfixed has been a particularly useful heuristic device for locating my own diverse groups of actors. This is to say, various groups within an unorthodox science are constantly setting and moving the boundaries that demarcate “us” from “them.”

Another outgrowth of Gieryn’s work that has been fruitful has come in the form of boundary objects. Boundary objects have found traction as analytic subjects in multiple disciplines, including the history of science, the philosophy of science, and science and technology studies. The literature on boundary objects - Susan Leigh Star and James Griesemer coined ‘boundary object’ to describe objects which enable cooperation across Gieryn-esque boundaries between professional scientists and participating non-scientists - has been useful in keeping me grounded among my actors. I have taken cues from interdisciplinary work on boundary objects when considering the development and use of reporting forms, popular publications on ufology, and on the effectiveness of the UFO itself as a boundary object. The UFO itself might be an ephemeral, fleeting object of questionable materiality, but its effects can be felt in the physical artifacts devoted to its investigation. In this vein,

scholarship in history of science and STS on scientific objects has also helped to guide my thinking on boundary objects and the material stuff in and around UFO studies. Whether they are Star and Griesemer’s boundary objects, Fujimura’s standardized packages, or Rheinberger’s epistemic things, scientific objects provide sites of communication across disciplinary and expertise boundaries, both within scientific practice and in a larger social context. Material, non-human objects have proven their usefulness in tracking the construction, destruction, and permeability of boundaries, scientific, institutional, expert, and otherwise.

Boundary-work and boundary objects also provide pathways to seeing, analyzing, and understanding working relationships between scientists and non-scientists. Given that the relationship between scientists and non-scientists rests at the crux of my own research, I have drawn upon research in citizen science, as well as Jasanoff’s concept of co-production, to frame my various actor groups in relation to one another in the Edwardsian knowledge infrastructure. (For more on this, see Chapter 2.) The bridges between groups were not perfect and flaws in these relationships sometimes enabled and sometimes crippled the UFO investigations, and insight into how non-expert actors understood their role is critical to a full understanding of these scientific successes and failures.

Finally, I have been encouraged and inspired by a recent outgrowth of literature in the history of unorthodox and alternative science, as well as histories of pseudoscience (though many historians working in the subdiscipline might balk at ‘pseudoscience’ as a

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descriptor for their subject). Greg Eghigian’s current work on the history of 20th century UFO phenomena has provided a global perspective much needed in the field and has suggested new areas of transnational comparison.\textsuperscript{19} Historians of science Michael Gordin and David Kaiser have explored intrascientific crises around heterodox sciences and their popular shockwaves, laying the groundwork for more serious historical work on the strange and taboo and ‘nonsensical.’\textsuperscript{20} And in his history of the cryptozoological Bigfoot, Joshua Blu Buhs has given a model of how to treat your actors with compassion, fairness, and generosity, no matter how strange their beliefs may seem, a lesson I have carried with me as I’ve grappled with the contentious positions of my own actors.\textsuperscript{21} If I accomplish nothing else with this work, I hope to have added more voices to the historical record with equal equanimity.

I have had the good fortune of discovering a story that unfolded thematically at the same time it was unfolding chronologically. The narrative is thus arranged chronologically, telling a story start to finish; however, chapter divisions occur along thematic breaks as much as temporal ones. What develops is a series of chapters which each makes a particular claim about what insight the events of that period can show us or help us understand about the intersections of American scientific, military, social, and political interests at that time, while providing insight into the broader relationships between science, the military, and the American public in the height of the Cold War.

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Chapter One, “A Matter of National Security: Early Air Force Investigations into UFO Phenomena, 1947-1952,” sets the stage with a close exploration of the earliest days of ‘flying saucer’ phenomena and the nation’s response to the strange sightings. While interest in UFO phenomena on the part of the United States Air Force was long assumed to be a reaction to postwar anxiety and national security, no such detailed account has been written previously confirming or denying the thesis. I argue that not only were the UFO investigations created and understood to be another routine part of postwar national security, the flying saucer or UFO itself was a direct product of the national security state and nuclear anxiety. Not yet presumed to be extraterrestrial in nature, the postwar UFO was cast as an existential threat of likely foreign, but terrestrial origin. This national security element shaped the USAF’s subsequent investigative programs and communications approach.

Chapter Two, “Making Data, Identifying UFOs: The Infrastructure of Investigation,” presents an examination of the USAF UFO projects Sign, Grudge, and Blue Book in their routine operation. It details the investigative methods and strategies employed by the USAF to analyze and identify the source (or sources) of the sightings. In framing the technical apparatus constructed by the USAF to achieve these ends, I draw on historian Paul Edwards’ concept of knowledge infrastructures to describe the arrangements of people, places, objects, theories, and practices organized for the purposes of “capturing” a UFO. I draw similarities between the UFO projects and other USAF surveillance projects, while arguing that the UFO projects presented unique challenges because of their reliance on non-expert civilian witnesses for much of the data generation. The chapter concludes with a close read of the reporting forms used for data collection. Reporting forms are framed as a location where all the elements of the knowledge infrastructure meet and challenges become most clear: forms must do multiple types of precarious work, namely collecting reliable data from
non-expert witnesses that can be used by a multidisciplinary cohort of scientist-contractors whose job it is to analyze that data for scientific conclusions. This is easier said than done, and I ultimately show that these difficulties helped to keep the UFO question alive over the years through its resistance to consistent identification.

Chapter Three, “The Milieu of Belief: Authority and Legitimacy in Unorthodox Science,” steps back from the USAF and shifts perspective to particular scientists involved with the USAF UFO investigations in the 1950s and 1960s. Deeply inspired by Gieryn, this chapter presents a close-up of three individual scientists and their practices, scientific and rhetorical, around UFO research and theory. In doing so, I deconstruct the binary of “orthodox” and “heterodox,” and of “skeptical” or “orthodox scientist” and “true believer crackpot.” Instead, I argue that scientists, all ufologists regardless of their pet theory, occupied a grid of belief, operating on multiple axes, rather than just being located on two clearly defined “points” of ideology, or even on a linear spectrum. Scientists’ attitudes toward UFO phenomena and the scientific study of it were complicated, complex, and fraught with questions that cut the core of the professional identity and fundamental philosophical principles. A deeper understanding of why and how establishment scientists invest in “pseudoscientific” ideas, and how they advocate for those ideas, can offer insight into how scientists understand their professional identity, both as individuals and as a community.

In Chapter Four, “The Condon Committee and the Scientific Study of UFOs, 1965-1968,” I shift focus from the “military” piece of the military-industrial-academic complex to the “academic” piece, exploring the final years of the USAF’s formal UFO investigations. In 1966, the USAF caved to public and political pressures and enlisted a multidisciplinary team
of physical and social scientists for an “independent” (i.e., university-based) scientific study of UFO phenomena. The argumentative thrust of Chapter Four aligns closely with that of Chapter One, once again showing how, when framed in their appropriate context, UFO investigations lose their “strange” and “exceptional” status and rather appear as routine and practical programs undertaken by the national security arm of the expertise state. In this case, rather than an aerial surveillance program executed by the USAF, we have a program of basic research, paid for by the military and organized and operated by a university - in this case, the University of Colorado-Boulder, in cooperation with other local scientific research centers.

While Chapter Four claims that the USAF hoped to finally bring an end to their UFO troubles by relying on the sociocultural authority and credibility of professional scientists, Chapter Five, “The After Years, 1969-1977” shows how drastically the USAF misread public attitudes toward the military-industrial-academic complex and the American expertise state. I argue that, in rejecting the establishment scientist consensus finding of the Condon Committee - that UFOs did not deserve further resources from the federal government and the extraterrestrial hypothesis was likely bunk - the American public was staking out yet another location to challenge state authority and critique the anti-democratic prominence of scientists as policy-makers. Dissenting scientists used the activist language of the late 1960s and early 1970s to argue for ongoing scientific research into UFO phenomena on the grounds of increased democratic participation in scientific knowledge making and freedom of inquiry, no longer restrained by the interests of the state. Mistrust and criticism reigned as dissenting scientists and the publics they rallied in their support used UFOs as a site to argue for a more-humanist, more open study of the strange aerial phenomena. Their
hope was that public interest and freedom from the intentions of the USAF would revitalize UFO research in the physical sciences. These plans would never come to fruition.

The dissertation concludes with a reading of the 1977 Spielberg film *Close Encounters of the Third Kind* as an epitaph for the Cold War projects. I examine the ways the film captured both the scientific and technological anxiety and promise of the early UFO studies while simultaneously heralding the arrival of the UFO’s pop culture future as ship of destruction and salvation. In my concluding remarks, I suggest further avenues for inquiry, and encourage ongoing engagement not just with the history of the science of UFOs but with unorthodox scientific practices and beliefs in general. I especially encourage studying the public histories of these topics; in the case of the UFO studies, the voices and experiences of average men and women have long been lost amid the personality disputes of establishment and celebrity scientists. Lurking in the experiences of our fellow citizens is greater insight into how the American public determines the quality of proof and evidence, who they determine to be a reliable expert, and how they interpret state-sanctioned expertise in relation to their own lived experiences. Ultimately, a better understanding how we as citizens respond to the unusual, the inexplicable, the controversial crises of our shared experience can make us better, more thoughtful citizens. Perhaps the UFO can save us, after all.

The weather was ideal for flying on June 24th, 1947, when Kenneth Arnold took off from the Chehalis airport and headed to Yakima, Washington state. A United States Marine corps transport had reportedly gone down on the southwest side of Mt. Rainier, and Arnold assisted in searching for the downed aircraft. He flew around the region, searching for any sign of the crashed plane. He was unable to spot the lost ship and turned his plane around over Mineral, Washington, just west of Mt. Rainier, to head back east toward Yakima. The air was smooth that afternoon and “as most pilots do when the air is smooth and they are flying at a higher altitude,” Arnold recounted, he “trimmed out [his] airplane… and simply sat… observing the sky and the terrain.” The sky was “as clear as crystal.”

The scene was idyllic, peaceful, almost boring in its perfection.

Minutes later, Arnold was startled by a bright flash reflected on his airplane. Worried that he was too close to another airplane, Arnold searched the skies for the source of the flash. It was then that he saw nine discrete objects which looked to Arnold like “peculiar looking aircraft” to the north of Mt. Rainier. Luckily, the pilot was mindful enough to check the on-board clock and note that the time was a minute before three in the afternoon. The aircraft were flying nearly at Arnold’s altitude and appeared to be on a definite heading. This was where the reflection had originated, as “two or three of them every few seconds would

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22 Special thanks to attendees at the 2016 3 Societies Meeting, who provided feedback on the paper that became the outline of this chapter.

dip or change their course slightly,” Arnold recalled, which would cause the sun to strike them at an angle that reflected brightly.

Initially the objects were too far away for Arnold to identify their shape, or whether they were flying in formation. Their outline then appeared against the snow of Mt. Rainier. Arnold initially assumed they were jet planes, despite a now-visible strange shape. After all, he objects appeared to fly in formation; they seemed to hold a definite direction while swerving around the mountain peaks. Their speed was quick but not impressively fast. Arnold speculated that the United States military had aircraft capable of greater speeds.

In his written statement later submitted to the Air Force, Arnold described the methods he used to gauge the objects’ speed and size, using a fastener he kept in his pocket for comparison, for instance, and taking note of the objects’ positions in front of or behind particular peaks. His data collection seemed fortuitously meticulous, given that he had taken off with no intention of seeing such phenomena. Arnold likewise dismissed the theory that he may have just been seeing reflections on the interior of the cockpit windshield: In addition to observing the objects through the glass, Arnold turned his plane and opened a window to observe them unobstructed. The whole sighting lasted no more than three minutes (remember, Arnold had made note of the time at the initial sighting). The objects then disappeared from view, and he returned to his search for the downed military plane. However, after twenty minutes or so, the pilot headed back to Yakima.24

24 As for the marine transport, its wreckage and crew were recovered by the US military. Air Force captain and Project Blue Book director writes about the event in his popular memoir, The Report on Unidentified Flying Objects (Garden City, NY: Doubleday & Co., 1956) (hereafter RUFOS). Ruppelt accuses “the writers of saucer lore” of “warping, twisting, and changing” the event, as they suggested that a flying saucer shot down the C-46 transport and abducted the bodies of the passengers and crew when no photographs of the wreckage were produced by the military. Ruppelt writes: “[The saucer-believing public thought that the] military never released photos of the bodies of the dead men, therefore there were no bodies. There were photographs and
The event had had a disturbing effect on Arnold. On landing at Yakima, Arnold described the event to a friend of his, who “listened patiently and was very courteous but in a joking way didn’t believe” the story. Later that day, Arnold flew to Pendleton, Oregon, where he told other pilots and friends, who did not laugh but instead offered explanations – the objects might have been guided missiles or a new type of aircraft. Former Army pilots told of how they had been warned in training to expect to see aircraft of such a make and maneuverability. A former Army Air Forces pilot told Arnold that what he had observed was likely some test aircraft, being operated by either the American military or a foreign government. Regardless, the story caught fire and spread rapidly - first through word of mouth, and then through press reports. Arnold later reported that, before the night was over, he was receiving telephone calls from “all parts of the world,” and none of them from disbelievers. Likewise, he chastised the Army and the FBI for their lack of interest when he made himself available – although at what point he made himself available is unclear. Arnold initially claimed that he had only gone to the press after his efforts at contacting his local Army Air Force base had failed. However, in his written testimony included in a formal Air Force investigative file, Arnold appeared to have done his newspaper and radio interviews first. Arnold proposed that if Military Intelligence did not know to what his reports to the newspapers and radio was referring, he should have expected them as his first visitor. The subtext of Arnold’s statements implied that military intelligence did indeed already know the identity of the source of his sighting.

Thus, the era of the modern unidentified flying object, colloquially known as “flying saucers” or “UFOs,” began. As early as June 26th, 1947, newspapers across the United States there were bodies. In consideration of the families of air crewmen and passengers, photos of air crashes showing dead bodies are never released” (RUFOS, Kindle edition, locations 347-358).

25 Ibid.
were carrying stories about Arnold’s unusual sighting. Articles had headlines like “Pilot Tells of Seeing Saucerlike Objects Flying at 1200 MPH” and “Pilot Sees Mystery Aerial ‘Train’ 5 Miles Long.”26 A June 27th article was already using the moniker “flying saucer.”27 Reports of sightings similar to Arnold’s began almost immediately. And while they were initially confined to the Pacific Northwest, by early July, reports of sightings were coming in from all corners of the United States and Canada. On July 7th, the Los Angeles Times ran an opinion piece titled “Flying ‘Whatsits’ Supplant Weather as Number 1 topic Anywhere People Meet,” gesturing toward the spread of the flying saucer as cultural phenomenon.28

A period of increased sighting activity is referred to in the UFO community as a “flap,” and by the 4th of July, the flap of summer 1947 was underway.29 Flying saucer stories were multiplying prolifically in the presses. By mid-July, flying saucers were being used to sell everything from records to coffee. A number of hoaxes had already been perpetrated. There was no public or scientific consensus on what the objects were, or what was even causing the sightings. The only certainty seemed to be that, in those early weeks of July, 1947, the unidentified flying object became indelibly lodged in American press coverage and news-related discourse. Its persistence there as threat, be it alien or foreign drove a national security concern that coalesced into a formal response from the United States Army Air Force in the fall of 1947.

The Second World War had seen science and technology mobilized in dramatic and decisive ways for warfare, culminating in the frightening shadow of the atomic bomb. That

29 The etymology of “flap” is hard to trace – by the summer of 1952, the national press was using the term to refer to the increased sightings occurring over Washington D.C. during May and June of that year.
these unidentified objects represented a technological threat, domestic or foreign, was possible to the extent that it could not be ignored, and in the fall of 1947, the newly formed United States Air Force launched the first of three official investigations into unidentified aerial phenomena. This chapter focuses on those early investigative efforts, on their goals and the people and organizations involved in effective investigative practice, and on the challenges constantly faced by the investigative projects. It also emphasizes the importance of understanding the early UFO as an object, firmly embedded in its time and place.

Lorraine Daston writes that “scientific objects can be both real and historical,” and while the ‘real-ness’ of UFOs is hard to fix, they are most certainly historical, constructed within a vibrant and complex context. 30

Indeed, the time and place of Arnold’s first sighting – the Pacific Northwest’s relative proximity to the Soviet Union in the early postwar years – reconfigured an event that might otherwise have been considered from a meteorological, atmospherical, astronomical, or ornithological point of view. Scholars have, at times, gestured toward a possible or probable connection between post-Arnold flying saucer phenomena and a general cultural attitude in the postwar and early Cold War years. 31 Michael D. Swords describes the early UFO years as a “story of a secretive phenomenon (UFOs) interfacing with a secretive

human activity (military intelligence) at a time of maximum concern and confusion.

...Strange phenomena in the skies... were portents of threat to the armed service personnel who grimly watched over a world of building tensions.” Swords argues that UFO phenomena “were never viewed benignly by those who first began studying them, nor by those who set the policies for handling information about [them].” 32  Greg Eghigian, in exploring UFO phenomena in cold war Germany, argues that flying saucers “functioned as cyphers for acknowledging, interpreting, and debating foreign... influences on postwar societies” who had recently surrendered their autonomy. 33

However, any connection between early UFO phenomena and the early Cold War has been cursory at best, an interesting aside and little more. 34  This chapter tracks the Air Force response to the UFO phenomena, exploring the general consensus that most were unremarkable natural events and others misidentified common objects, but any one could be a serious threat. By taking seriously the time and place in which they arrived, as well as the concerns and responsibilities of those tasked with their investigation, UFO phenomena can be understood as an articulation of postwar anxieties. The flying saucer was a national security object before it was a scientific one; it is a site where Cold War military and scientific interests collide. The early years of UFO investigation expose the confluence of scientific

32 Michael D. Swords, “UFOs, the Military, and the Early Cold War Era,” in UFOs & Abductions: Challenging the Borders of Knowledge, ed. David Jacobs (Lawrence, KS: University Press of Kansas, 2000), 82-83. His claim, a compelling one, is that cold war secrecy had a lasting impact on UFO research. But Swords hews closer to a narrative familiar in the historical ufology literature, that despite investigator conclusions that the phenomena represented extraterrestrial visition, and the secrecy he refers to skirts around traditional charges of Air Force conspiracy and cover-up; Swords does half the work, of positioning early Cold War investigations in the atmosphere of threat, but then retreats into reinforcing a largely unsubstantiated story regarding the extraterrestrial hypothesis (ETH) and the Air Force’s efforts to destroy any evidence of extraterrestrial visitation.


34 See Jacobs, The UFO Controversy in America; Jacobs, ed., UFOs & Abductions: Challenging the Borders of Knowledge; Robert P. Horstemeier, ”Flying saucers are real! The US Navy, unidentified flying objects, and the national security state,” Socialism and Democracy20(3) (Nov 2006): 187-216. A large majority of published scholarly works often point out the timing of the first UFO sightings, but then shift their attention to the personalities involved in the UFO investigations and the influence these persons had on the shape of the studies.
inquiry, politics domestic and international, and public interest in a period of heightened
tension and technoscientific anxiety.

The Postwar Air Force and National Security

New technologies and modes of warfare, like strategic bombing and the atomic
bomb, played a significant role in the Allied victory at the end of the Second World War.
These technologies fell under the executional control of the United States Army Air Force
(USAAF) during the war. As a result, the USAAF emerged from World War II with three
major take-aways. First, strategic bombing had won the war. The power of these technologies, and
the threat they represented in the hands of the Soviet Union, indicated that air power would
continue to be the primary, foremost means of waging war. Second, research and
development in science and technology was crucial to modern air power. And third, the
autonomy that the air arm of the military enjoyed during the war needed to be maintained,
moving forward. Immediate postwar demobilization and funding cuts, however, threatened
an expansive, expensive agenda. Faced with curtailed resources, the USAAF focused its
resources on the maintenance of its strategic bombing force and developing an extensive
R&D portfolio.

A postwar review of air power capabilities revealed a stark, troubling state of
American unreadiness for war. The strategic bombing force was in a state of disrepair and the
number of flight-ready wings was much lower than what strategic war planners
recommended for general readiness, to say nothing of combat-ready wings. Not only was the
fleet itself in need of maintenance, but USAAF personnel was found wanting, as well. Many
servicemen were found to have received inadequate training during the war and were
performing substandard. The establishment of the Strategic Air Command (hereafter SAC)
in 1946 was intended to streamline and focus reorganization and strategic deployment of Air Force resources; plagued by a deficiency in resources, SAC found itself unable to address basic concerns regarding combat readiness, to say nothing of defensive response.\(^{35}\) Perhaps most troubling was a glaring lack of intelligence regarding the Soviet threat. The sheer landmass of the Soviet Union rendered it opaque to traditional intelligence gathering practices and the United States was slow to develop intelligence and espionage assets. The Soviet Union existed largely as a dark spot in the vision of the United States military.

The weakness of SAC was not confined to the readiness of bomber wings or its intelligence on the Soviet threat. The USAAF was, between 1945 and 1947, aggressively lobbying for its independence from the United States Army and hoped to be designated as its own branch of the U.S. military. The Air Force hoped to cast itself as the foremost offensive power in the U.S. military service – but also as the foremost defensive power, as well. But a review of defense capability, including the number, location, and readiness status of U.S. air bases around the world painted a grim portrait of U.S. air defense. Both the Truman and the Eisenhower Administrations would choose to bank on nuclear weapons as the primary weapon of war in the postwar period, largely because their high efficacy rendered the weapons the cheapest offensive and defensive option. But a review of the nuclear stockpile revealed that the United States maintained only a small number of nuclear devices, a smaller number of production facilities, and did not have the manpower trained and ready to assemble more than two nuclear bombs a month once the parts had been manufactured – a number far too low to do even moderate damage to Soviet targets before retaliation could

be expected. Even the power of the almighty bomb came up short. The poverty of U.S. air defense, coupled to uncertainty and existential concern about largely-unknown Soviet intent and weapons capabilities, generated a cloud of high tension around the question of national security.

The coupling of cutting edge science and technology during World War II with the machine of war had produced results beyond expectation. To maintain its predominance in the service, the AAF had to remain on the bleeding edge of technoscientific advancement. General H. H. “Hap” Arnold, Chief of the Army Air Force, was a passionate advocate for Air Force R&D funding and felt it was a vital part of the AAF’s program of military superiority. Arnold understood that the perceived unreadiness of American air defense and the general state of ignorance regarding Soviet capabilities gave the enemy a drastic advantage in the element of surprise. What meager intel existed suggested that Soviet capabilities at least met American capabilities; strategic war planners were forced to operate under the assumption that Soviet intent was the wholesale destruction of the United States and “the West” and that the Soviets possessed the power to make good on that intent. The threat generated by rapid technological and scientific progress could not be ignored. Likewise, the threat of surprise could only be countered through a technologically-superior, global defense network. An aggressive research and development agenda offered solutions to the gaping holes in American air defense and national security.

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One of the most significant products of General Arnold’s, and by extension the USAAF’s, R&D agenda was the founding of the Rand Corporation. David Hounshell has described Rand as being the nation’s premier think tank in the 20th century and an “almost pure Cold War institution.”37 Martin Collins has argued that the establishment of Rand represented an effort to reorder the relationships between the military and institutions concerned with science and technology (meaning industry and academia), creating “a new political economy centered on war and preparedness.”38 Rand was a site of “scientific planning,” where researchers hoped to use the methods of system analysis to optimize not only the Air Force but wartime strategy at large. Rand’s earliest mission was the development of a generalized theory of warfare. When early projects directed toward this mission failed, Rand narrowed its scope and developed more focused projects.39 Rand and its researchers undertook projects in both the “hard” and “soft” sciences, including in nuclear physics, electronics, ballistic missiles, applied mathematics, economics, game theory, artificial intelligence, and more.

Rand also undertook studies and projects in the space sciences. One project was Rand Report No. SM-11827, “Preliminary Design of an Experimental, World-Circling Spaceship,” authored by James Lipp. The Navy had been exploring the potential usefulness of satellite technology in the immediate postwar years, and the 1946 “World-circling

Spaceship” was a response to those studies.\textsuperscript{40} The study focused on three potential uses for satellite technology: meteorology, communications, and reconnaissance. Satellite reconnaissance became the locus where intelligence anxiety and technoscience converged. Intelligence-gathering overflights risked angering the Soviets and frequently put pilots’ lives at risk; space satellites not only took the pilots out of the equation but might be able to avoid Soviet detection altogether.\textsuperscript{41} When the Navy abandoned their satellite projects, however, the Air Force did likewise, ending these early forays into space satellite research.

Thomas Mahnken argues that “although the culture of the U.S. armed services both shaped and was shaped by technology, the services molded technology to suit their purposes more often than technology shaped them.”\textsuperscript{42} The history of space satellite development certainly reflects this relationship. The spy satellite was an Air Force-friendly technology that represented cutting edge scientific and technological design. It also plugged a hole in gaping U.S. national security. Peacetime strategic reconnaissance was the most basic solution to the significant lack of intel on the was crucial both for preventing strategic surprise as well as effective war planning. An airborne technology that could be cast as core to American national defense and wartime offensive played nicely for the Army Air Force’s push for independence. The development of the reconnaissance also required collaboration between military, industrial,
and scientific interests; the satellite projects were an archetypical product of the military-industrial-academic complex typified by Rand, years before Eisenhower would give the constellation of interests and resources a name.\textsuperscript{43}

The USAF’s interest in flying saucer phenomena should not and truly cannot be understood apart from this context.\textsuperscript{44} When considered in light of postwar Air Force developments in national security concerns, air power, and air defense, Air Force interest in flying saucer phenomena becomes less strange and surprising, and more predictable, expected, even mundane.

Kenneth Arnold’s June 24\textsuperscript{th}, 1947, ur-sighting and the flap that followed played on all the Air Force’s anxieties. Air Force officials could not confirm nor deny the existence of the objects. The foremost goal was to determine whether they were piloted aircraft. If foreign, they could only come from one place. Was the Soviet Union flying experimental, high-speed aircraft over the Pacific Northwest in anticipation of some larger assault? Or where they domestic, indicating some advanced aircraft the Air Force higher ups had no knowledge of?

**Flap Into SIGN**

Arnold’s case was later described in the Air Force case file as “the prototype of many of the later flying saucer stories,” with the moniker ‘flying saucer’ itself originating from misrepresentations of Arnold’s description of the objects as “appearing like saucers skipping


\textsuperscript{44} The USAF achieved service independence in 1947 as part of the National Security Act, signed 26 July 1947.
on water”, “bright, saucerlike objects,” but not saucer-shaped, in the press.45 Stories about Arnold’s June 24th sighting began appearing in national presses on June 26th, and “flying saucers” had entered the American vocabulary by June 28th.46 Over the following months, the Arnold flap produced hundreds of sightings across America as the “flying saucer” crashed into the public imagination. And the United States Air Force found itself in the thick of it, as witnesses turned to the Air Force for explanations and reassurances.

Before there was an official reporting apparatus, there was the news media, and specifically, the newspapers. It was during these early days and within these first news articles that the image of the “flying saucer” coalesced. While Arnold had initially described the behavior of the objects as moving like saucers skipping over water, an erroneous article described the objects as “flying saucers.” The idea stuck. Descriptions of the objects hardened; witnesses most frequently reported bright metallic or silvery objects, round and flat in shape and moving at terrific speed.

Figure 1. Kenneth Arnold with an artist’s rendition of the objects he saw in June 1947.

The United States military was slow to respond to the reports of strange aircraft. Early official response was decentralized and directed at particular local cases. White Sands Proving Grounds commandant Lieutenant Colonel Harold Turner speculated that the objects might be misidentified jet airplanes. This mundane explanation was counteracted a few days later when an Army Air Force spokesman from Wright Field (later Wright-Patterson Air Force Base) responded to the mounting number of sightings by reportedly saying that if “some foreign power is sending flying discs over the United States, it is our responsibility to know about it and take the proper action.”

The Fourth of July holiday saw a spike in the number of sightings, as local festivities met excitable imaginations. Police in Portland, Oregon, issued an “all cars” broadcast after “scores of persons” reported seeing silver discs that turned out to be a flyover of B-29 bombers and P-80 fighters. Meanwhile, the Washington Post quoted the prestigious Science magazine, suggesting (and reinforcing) the idea that what people were seeing was the XF-5U-1, or “Flying Flapjack.” Simultaneously, both the Army Air Force and Navy emphatically denied any connection to the sightings.

50 Efforts to find the unnamed Science article have been unsuccessful thus far. Referred to in “Is it the Flapjack?”, Washington Post July 5, 1947, p. B10. See also the case file for Incident No. 29, “Bakersfield, California,” Roll 1, PBB-NARA-1, https://www.fold3.com/image/1/9668704, for the official USAF summary of the Richard Rankin case. The XF-5-U would return to prominence in the early 1950s, when rumors that the flying saucers were domestic military equipment once again caught traction. For more, see RUFOS, Chapter 5.
saying that no experiments or “gadgets” were being tested in the areas where sightings were occurring.51

The number of reports increased dramatically over the following two weeks. By the second week of July, 1947, the flap was in full swing and no meaningful explanations had been offered by the United States military or the scientific establishment. The Los Angeles Evening Herald and Express ruffled scientific feathers when it quoted an unnamed nuclear physicist from the California Institute of Technology who claimed that the disks were the result of experiments in “transmutation of atomic energy.”52 The quote drew rapid rebuttals from Caltech physicists C. C. Lauritsen, Thomas Lauritsen and William Fowler, University of Chicago physicist Harold Urey, and Atomic Energy Commission chairman David Lilienthal.53 But that the sightings did not represent atomic phenomena or atomic aircraft seemed to be the only point of agreement between scientists. Gordon Atwater, director of the Hayden Planetarium, suggested that the first reports were “entirely authentic,” possibly ice crystals or some other atmospheric phenomena, but that most subsequent sightings were brought on “by a ‘mild case of meteorological jitters’ with some ‘mass hypnosis’ thrown in.”54 Astronomer Girard Kieuper of University of Chicago’s Yerkes Observatory said that the objects couldn’t be meteors and were probably man-made; Dr. Oliver Lee of Northwestern’s Dearborn Observatory was quoted as saying “the Army and Navy are working on all sorts of things we know nothing about” despite their denials, likening flying

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54 “Scientists Scout Wide Reports,” M1, M3.
saucers to the transmission of radar signals to the moon, “one of the greatest technological achievements of the war and accomplished in absolute secrecy.”

As the summer 1947 flap wore on, journalists ramped up the demand for explanations. On 7 July, the Chicago Daily Tribune ran an article wherein Army Air Force public relations staff member Capt. Tom Brown acknowledged that the Army Air Force had decided there was “something to [the sightings]” and that official interest was no longer casual; in addition, psychiatrist Henry Steckel, consultant to the Department of Veterans’ Affairs, discounted the mass hysteria theory on the basis that far too many people were witnessing the phenomena. Steckel echoed Lee’s suggestion that it was possible the saucers represented some new military technology, heretofore kept secret from the general public. However, renowned psychiatrist Winfred Overholser compared the sightings to sea serpent stories and attributed the sightings to national hysteria. “After all,” Dr. Overholser was quoted as saying, “we are more or less an [sic] hysterical nation."

The most striking contradiction seemed to come, however, from the Air Force. Despite Captain Brown’s statements, Major General Curtis LeMay, Deputy Chief of Air Staff for Research and Development and future General and commander of the Strategic Air Command, was quoted on record as saying that as far as he was concerned, there was nothing to the sightings. Expert opinion was converging on mass hysteria, hallucination, or optical illusions as explanations, with only a small space for the activities of private or

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55 Ibid.  
foreign agencies. There was, however, a space for these different explanations to coalesce, and the war nerves/public hysteria explanation was not offered up only by psychiatrists like Overholser. Long before his famous confrontation with Adlai Stevenson over the 1962 Cuban Missile Crisis, Soviet diplomat Valerian Zorin accused the American press of making slanderous comments about the Soviet Union, including using the flying saucer sightings as a way of stoking war hysteria. Zorin charged that any connection of the flying saucers to Russia was the work of fanciful propagandists set on poisoning international relationships.

The Air Force ultimately felt it had no choice but to respond to the sighting reports. Even if ninety-nine out of one hundred sightings were bogus, hoaxes or misidentified jet planes, it only took one technologically-advanced Russian bomber to end the American way of life. The newly-formed Air Force saw its primary mission as one of national defense, and so this one in one hundred chance was deemed too high a risk to let pass unchecked. And so, the USAF took on UFO investigation as yet another piece of its larger national security project.

The UFO Takes Hold

Two months after the United States Air Force was established as a separate branch of the military, a letter dated 23 September 1947 from USAF General Nathan F. Twining to Brig. General George Schulgen of the Army Air Force articulated the Air Force's early position. Having reviewed early reports, the USAF Intelligence and Engineering divisions made the following conclusions: one, the phenomena was real, and not "visionary or fictitious"; two, there were probably disk-like objects of the right size to appear man-made;


three, some of the phenomena was possibly meteorological in nature; four, if witness reports were believable, evidence suggested that the objects were being controlled "manually, automatically or remotely"; and five, that the objects seemed to have a consistent disk-like shape, were soundless, and moved in a formation of three to nine individual objects. It was possible, Twining added, to construct a piloted aircraft that had the characteristics of the craft described (but that any project undertaken to do so would be exceedingly expensive and time-consuming). Taking under consideration the lack of wreckage or other physical artifacts to confirm the existence of these objects, or give any insight as to their manufacture, Twining suggested that they may be produced domestically and part of a high-security project, perhaps one being carried out by the U. S. Navy. More importantly, however, they may not be domestic, instead reflecting the "possibility that some foreign nation has a form of propulsion possibly nuclear, which is outside our domestic knowledge." The letter recommended that USAF headquarters establish a study, complete with classification, security priority, and code name for the continued study of the objects.

The USAF's true interest in the "flying object" reports as possible sightings of malicious, foreign technology was clear from the start. An undated letter from sometime between mid-November and late December referenced rumors involving the "flying discs" and German scientists developing war weapons in Spain. "The German scientists at this Hq," Colonel H. M. McCoy wrote, "indicate that no important scientists from Germany are working in Spain, and those mentioned in the article are not known to them... If possible, therefore, an effort should be made to obtain names, qualifications, or any information that

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might help to identify the alleged German scientists working in Spain." An earlier letter, dated 24 September 1947, also expressed concern over Soviet efforts to build aircraft modeled after German prototype fighters and bombers designed by the Horten brothers during World War II. In the right light, these "German Flying Wings" could be mistaken for metallic flying discs.

The first of the United States Air Force's official investigations of UFO phenomena was authorized under directive from the Air Force Chief of Staff, Major General L. C. Craigie, at the end of 1947. Craigie's unceremonious letter to the commanding general of Wright Field stated that it was not the Air Force's policy to ignore the building collection of reports of atmospheric phenomena, but rather, its mission to "collect, collate, evaluate and act" on this information. As such, it was "desired that the Air Material Command set up a project whose purpose [was] to collect, collate, evaluate and distribute to interested government agencies and contractors all information concerning sightings and phenomena in the atmosphere which can be construed to be of concern to the national security." The project was assigned a "restricted" security classification and the code name "SIGN."

That the project was given to the Air Materiel Command (hereafter referred to as the AMC) is noteworthy. The AMC came into being in 1946 and continues today as the branch of the USAF concerned with the research, development, testing, and evaluation of Air Force weapons systems, including acquisition and life cycle management of those systems. As described by Elliot Converse, the Air Force in the immediate post-war years positioned itself

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as the main body of national defense, riding the World War II successes of long-range bombers and the atomic bomb. The focus on creating a technologically advanced Air Force was seen as a way around calls for reduced military spending; General H. H. Arnold suspected that research and development would not face such a deep cut as acquisitions would. However, once positioned as the nation’s first and foremost preserver of national security, the Air Force had to balance the demands of being the “Air Force of the future” – one technologically and scientifically advanced – and the “Air Force-in-Being” – an Air Force capable of responding immediately to any threat. The possibility that these sightings represented a technologically-advanced type of aircraft, no matter how remote, spoke directly to both of these competing Air Force objectives.

Project SIGN officially began on 22 January 1948. Characterized in its final report as largely a collection effort, SIGN managed to analyze 243 domestic reports of unidentified aerial phenomena and 30 international ones (with an additional 192 still being investigated at the time of the report’s release). A majority of these reports were submitted by military personnel, mostly within the Air Force, and all reports, whether military or civilian, had been processed through Air Force intelligence channels. Report analysis was not restricted to those intelligence channels, however. While the Air Force initially tried to keep its investigations in-house, it quickly became apparent that no personnel could be adequately versed in all the scientific and technological fields necessary to fully investigate the reports as a whole. Thus, diverse groups were enlisted based on the investigative requirements of a given report. The Air Weather Service, responsible for most things weather balloon-related,

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worked closely with the SIGN group by providing detailed information about the launch and tracks of pertinent weather balloons. The Department of Commerce’s Weather Bureau Library similarly contributed weather data for the times and places sightings occurred. While there seemed to be no single dedicated psychologist yet attached to the project, certain reports went through the Aero-Medical Laboratory of the Air Materiel Command for comments on possible psychological factors at play. The Air Force’s nascent Rand Corporation contributed a statement regarding the likelihood of extraterrestrial intelligence being behind the sightings.

Individual scientists consulted as well. Nobel Prize-winning chemist and physicist Dr. Irving Langmuir provided scientific support, as did Dr. George E. Valley, a physicist on faculty at MIT and member of the Air Force’s Scientific Advisory Board, whose long relationship with the Air Force would develop in the years to come. Most notably, SIGN also brought on astronomer Dr. J. Allen Hynek, who was on faculty at the time with Ohio State University. Hynek’s early participation was fairly straightforward. The Air Force provided him with incident summary reports. He reviewed each one. Hynek then gave a succinct analysis of each report, from the perspective of an astronomer looking for astrophysical phenomena.

Between Hynek, the Air Weather Service, and the Weather Bureau Library, a number of the reports analyzed during that first year were conclusively identified as weather balloons, airplanes, astronomical phenomena, meteorological phenomena, and so on. SIGN’s final report, however, revolved primarily around the still-unidentified reports. Dr. Valley’s report, “Some Considerations Affecting the Interpretation of Reports of Unidentified Flying

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67 For more on George Valley’s relationship with the USAF and air defense, see Rebecca Slayton, “From a ‘Dead Albatross’ to Lincoln Labs: Applied Research and the Making of a Normal Cold War University,” Historical Studies in the Natural Sciences 42(4) (Sept 2012): 255-282.
“Objects,” took the unidentified object reports and categorized and analyzed them. Valley identified five types of reports: the typical “saucer”; groups of lights, usually observed at night; rocket-type objects; “various devices which, in the writers opinion, are sounding balloons of unusual shape,” such as skyhook balloons; and a fifth group, which included “reports of objects in which little credence can be placed.” Valley’s analysis, however, focused mainly the first two groups. It also reads like a debunking effort. The report scientifically surveyed the suggested means of propulsion for these objects, and found the explanations ranging from the simply misinterpreted (strangely enough, anti-gravity fields), to the unlikely (propulsion and support by means of corpuscular “rays” or “beams”), to the “obviously ridiculous” (using electricity to ride the Earth’s magnetic fields).

Having concluded that these unusual means of propulsion were at best impractical, Valley turned his attention to the possible stimuli responsible for the reports. Possible sources included animals, birds or insects, for example, or perhaps ball lightning. The phenomena might be meteoric in nature. Also possible was that the objects may have been hallucinatory or psychological in nature. Valley’s brief comments on this possibility are often overlooked in the UFO literature – at the time, he argued that it was of “prime importance” to continue study on this possibility, “because we can learn something of the character of the population: its response under attack,” and also “something about the reliability of visual observation.”

There were initially no social scientists or philosophers on-board at SIGN, despite project personnel acknowledging mass hysteria as a possible “source” of the sightings.

69 Valley professed no knowledge on ball lightning, but the topic would be taken up and discussed at considerable length during Project Grudge, as would the psychological perspective.
However, from the beginning, the prospective gains from UFO study were recognized to potentially lie in the epistemological, social, and psychological aspects of UFO sightings. The social position and standing of the observer does not ultimately guarantee the veracity of their observations, Valley argued, and even in the early days of USAF UFO study, scientists and investigators were noticing a correlation between publicity and sighting report frequency. It was therefore proposed that further study might offer insight into mass psychology. 70

Project SIGN’s first priority was always national security. Given that mission, neither Valley nor investigators could not ignore the possibility that the objects were man-made phenomena. They could very well be Russian. If that were the case, though, the presumably-scientifically-silly methods of propulsion debunked earlier in the report suddenly appeared much more worrisome and threatening. But, Valley reassured us, only an “accidental discovery of a degree of novelty never before achieved” could explain such craft, and if they were Russian, it seemed extremely unlikely that the Soviets would simply idle over American skies. Valley’s conclusions here echoed that of the Project SIGN report overall: While the USSR was positioned as the only country with the technical resources and rigid security to pull off a project of such scale – totally new flight technology under total secrecy – the possibility was “extremely remote.” “Most of the successful Soviet aeronautical developments have been produced by utilizing experience of other nations,” the report concluded, “so it is very unlikely that they have developed the… devices necessary to make

70 Valley went on to say that it was “probably necessary but not sufficient that the unidentified object curve and the crank letter curve should be similar in order for the flying disks [sic] to be classed as hallucinations” and suggested that a large-scale study undertaken in response to Orson Welles’ “Martian” broadcast be examined. See footnote 68.
these objects perform as described.”

Finally, Valley addressed the possibility of visitation by extraterrestrial intelligences. His brief comments suggested that any civilization would be greatly in advance of our own, but that given our own recent rapid advances in rocket technology and atomic bomb technology, such a civilization should be alarmed and that we should expect such visitations, and that we should also expect some relation between atom bomb detonation, the distance between our planet and the closest inhabited one, and the time of visitation. Valley made no comment on the plausibility of this position.

That was a job for Rand. Rand had a clear interest in the possibility that the sightings represented a new technology, with its early systems analysis research program’s focus on air defense, guided missiles and long-range bombers, as well as general military preparedness. Rand’s early efforts at mediating research relationships between the Air Force, industry, and universities, as well as what Martin Collins has described as a promise of the possibility of objectivity, of research free of political influence, may also have encouraged SIGN to seek out Rand’s cooperation. SIGN’s final report included as an appendix a long piece of correspondence from Rand about the likelihood of extraterrestrial visitation written by James Lipp of “World-Circling Spaceship” renown. Given that visitation from beyond our solar system would require systems of propulsion not yet conceived of, Lipp proceeded from the assumption that the UFOs represented Martian intelligence. The report broke down, to an exhaustive degree, the biological and climatic differences between lifeforms, the

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72 See Collins, Cold War Laboratory.
73 Peebles, The CORONA Project.
propulsion necessary to break Martian gravity, the fuel payloads required to make the trip to Earth and back again to Mars, while still accounting for fuel for UFO excursions, and the amount of time and energy required to make the trip at various speeds. The report was long and presented its science seriously. One could not accuse Rand of handling its subject in an irresponsible manner. At the end, Lipp concluded that, as a result of the restrictions and near impossibility of meeting the demands of spaceflight and persistence in orbit around Earth, it was far more likely that the flying objects were “of Earthly origin, whether physical or psychological.” Though possible, extraterrestrial vehicles were “very improbable.”

While the conclusions of Valley and Lipp were presented as fairly certain, Project SIGN’s final report maintained an overall agnostic position about the nature of unidentified aerial phenomena and flying objects. The conclusions were mixed. No definite evidence had yet been discovered that proved or disproved the existence of flying objects as new or unknown aircraft, and no evidence yet existed to even allow for the objective assessment of the possibility of a new technology. But no threat to national security had yet been discovered, and if further inquiry revealed that no threat existed, the special project status could be terminated. In the meantime, efforts should be placed toward accumulating better data. As always, fuzzy pictures, incomplete reports, and poor data collection plagued analysis and identification efforts. And while notions of Russians or aliens had been entertained, the chances that unidentified aerial phenomena reflected natural phenomena – physical or psychological – were much higher, and that continued study focus on these possibilities. These suggestions drove Project Grudge, the United States Air Force successor to Project SIGN.

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Grudge, the Black Sheep

Project SIGN concluded in February of 1949. Project Grudge, the second official Air Force investigatory project, began immediately thereafter. The project functioned to varying degrees of efficacy between 1949 and 1951. It was understood that Grudge would pick up where SIGN left off - hence, its shared mission statement in the collection, organization, and analysis of sightings of unidentified flying objects. That mission statement, however, also contained a new purpose: to control and distribute all objective information to interested governmental agencies and affiliated contractors. This addendum to the mission statement perhaps points to an effort on the part of the Air Materiel Command to organize and systematize the reporting, analysis, interpretation, and distribution of sighting reports to a routine affair, rather than serve as evidence as some conspiratorial effort at information control. (The extent to which Grudge operated effectively in this regard remains questionable.) Project Grudge did, however, develop and publish a massive, six hundred-plus page “final report” in August of 1949, a mere six months after the project began, wherein the motivations for further investigation and the recommendations for more efficient analysis were laid out. Grudge proved to be highly divisive, and its conclusions would haunt the USAF in subsequent decades as UFO research became increasingly contentious in both military and scientific circles.

Project Grudge personnel issued the project’s “final report” in late 1949, years before Grudge would actually close. Meant as a summary appraisal of the situation as it stood in 1949, the report closely mirrored the SIGN final report and is marked by two narrative threads. The first is concerned with evidence and proof. In this narrative thread, the Air Force fights against suggestions that the sighting analyses have been twisted to fit a pre-existing pattern that denies, for instance, the existence of extraterrestrial visitors. The report’s
summary states frequently in no uncertain terms that unexplained cases are only unexplained because of a lack of credible evidence. Grudge’s final report included 228 cases for analysis and found, after consulting with all interested parties and contractors, only thirty of those cases remained unexplained. The Air Weather Service, looking at 233 cases, confirmed with certainty 12% of the cases definitely being weather balloons. Contracted astronomer Hynek confirmed 32% of the cases as astronomical, another 35% as being misidentified common objects (birds, balloons, planes, sheets of paper thrown up into the air, et cetera), and concluded that 33% of the cases lacked the necessary evidence for a satisfactory identification. However, Hynek suggested, when correcting for (or making allowances for) inaccuracies in reporting, it was plausible that well over half of the cases might be explained astronomically. The Rand Corporation’s statement reinforced the position that there was nothing in the sightings to suggest “flying saucers” were anything more than misidentified objects, hallucinations, and the like; Air Force psychologist Dr. Paul Fitts, part of the AMC’s Aero-Medical Laboratory, expanded this position in his own analysis to suggest that whatever cases remained unexplained by physical means could be sufficiently explained.

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76 The report indicates that 375 incidents were on record. A significant number belonged to the class of “green fireball” sightings occurring over New Mexico. Those cases were spun off under the supervision of astronomer Dr. Lincoln LaPaz as Project Twinkle, a survey of which has been omitted here in the interest of space and clarity. In short, Project Twinkle concluded that the “green fireballs” were likely meteoric in nature. A further handful were eliminated from consideration due to being overly vague; the removal of duplicate cases brought the number down to 228. See Final Report, Project TWINKLE, 27 November 1951, Roll 85: Administrative Files: Box 1, PBB-N-AR-A.

77 Not mentioned but of equal importance was the development of new technologies in astronomy and meteorology. A 1948 Physics Today article recounts the new use of radio echoes to locate day-time meteor showers (where meteor showers had only been observable on the dark side of the earth). The method discovered a large series of showers, related to a large belt of meteoric activity, taking place during the daytime in May 1947; the showers continued all summer, but reached their peak in June – the approximate time of Arnold’s seminal sighting – and ended in September. It has been suggested that Arnold witnessed errant meteors, and nothing more. See A. C. B. Lovell, “Meteor Research in Great Britain,” Physics Today 1(8) (1948): 26, 34-35. Included in G. E. Valley’s authored appendices in Sign and Grudge final reports.
through psychological ones. In short, a diverse group of experts concluded that all sightings could be explained through physical or psychological phenomena, providing the consensus support laid out in the final report’s initial summary. There was nothing unusual to see here.

The position that unexplained sightings were classed as such only because of a lack of sufficient and reliable witness data and evidence was repeated throughout Grudge like a mantra. The authors of the Grudge report also highlighted the wide berth allowed for what counted as “evidence.” Summarizing Hynek’s findings, for instance, the report states that Hynek accepted “each case at face value, without discounting evidence that sometimes ‘verged on the ridiculous’.” Unexplained cases, the report implied, were the fault of the observer who reported the sighting, not the methods of the scientists and technicians mobilized to evaluate and analyze the case reports. Reliability and accuracy were the words of the day. The explanations of the experts did not constitute incontrovertible scientific proof, but neither did the observations they had been given to interpret. Unexplained cases remained unexplained only so long as one accepted the observational data as being accurate and reliable, and there being no influence of psychological or physiological factors at play – a combination of circumstances considered to be highly unlikely.

The second narrative thread woven through the report appealed directly to Cold War national security concerns. In the 1949 final report, Grudge authors repeated the Project Sign conclusion that the unidentified flying objects presented no direct threat to the national security of the United States. However, Grudge also concluded that flying saucer reports were the result of mass hysteria or “war nerves,” in addition to misidentified common

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78 For instance, Fitts suggested that had there been no publicity regarding a previous flying saucer sighting, many cases would have gone unreported, never seeming “unusual.”
objects, hoaxes, and psychopathological persons. Echoing Zorin’s 1947 critique, Grudge authors thought that a planned release of strange aerial objects, coupled to related psychological propaganda, could cause mass hysteria in a population. (“Employment of these methods by or against an enemy,” the report added, “would yield similar results.”)

This concern was serious enough that the report suggested in its recommendations that the Psychological Warfare Division be kept informed of the results of the unidentified flying object studies. The Grudge final report was also the first of the Air Force studies that began to track the relationship between reports that had received wide publicity – Arnold’s ur-sighting, for example – and the total number of reports.

Grudge has remained inflammatory in the ufology community in no small part because of its recommendations. The final report recommended that the project be reduced in scope, and that collection directives be revised to provide for the submission of reports that indicated a realistic technical explanation only. The recommendations further suggested that Conclusions 1 and 2 – that UFOs represented no immediate national security threat, and that reports were the result of misidentified common objects, hoaxes, et cetera –

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82 The Project Grudge 1949 Final Report refers to a pair of articles written by Sidney Shallet and published in parts over late April and early May. The Air Force had invited Shallet out to Wright-Patterson Air Force base and had permitted him access to Project Saucer (the public name for the UFO investigations prior to Bluebook) materials, as well as interviews with personnel. Shallet’s articles are agnostic about the phenomena, but generally support the Air Force’s conclusions and recommendations. See Shallet, “What You Can Believe About Flying Saucers,” Saturday Evening Post 30 April 1949, pp. 20-21, 136-139; Shallet, “What You Can Believe About Flying Saucers (Conclusion),” Saturday Evening Post 7 May 1949, pp. 36, 184-186. Appendix B of the 1949 Final Report goes on to question if any of the sightings would have been made, had it not been for Mr. Arnold’s observation.
and supporting material be declassified and made available to the general public as a press release.\textsuperscript{84} Declassifying Conclusion 3 (that which referred to propaganda and psychological warfare) was not recommended, however, nor was closing the investigation altogether.

The Grudge final report had a decisive effect. On December 27\textsuperscript{th}, 1949, the Department of Defense Office of Public Information released a statement announcing the discontinuation of the UFO studies. In accordance with the recommendations of the Grudge Final Report, the press release described sightings as misinterpretations of common objects, mass hysteria, and hoaxes. Continuance of the project was deemed unnecessary, as “additional reports now [were] simply confirming findings already reached.”\textsuperscript{85} Thus, Grudge entered something of a holding pattern. The Air Force remained tangentially involved in unidentified aerial phenomena sightings through 1949-1950, mainly through Project Twinkle, an investigation concerned with numerous sightings of “green fireballs,” quickly identified as natural phenomena, taking place over New Mexico. And despite the language of the December 1949 press release, memoranda from earlier in the year acknowledged that collection of reports on the part of the Air Force would be on-going, even if further investigation was not.\textsuperscript{86} According to future Project Blue Book director Captain Edward J. Ruppelt, the project had not been disbanded, but rather transferred and folded into normal

\textsuperscript{84} The Department of Defense Office of Information did in fact hereafter make available a series of press releases and “fact sheets” communicating the nature and findings of the unidentified flying object studies, and correspondence seems to suggest that demand frequently outpaced supply. Many documents were also declassified after 1950 and made readily available to the public at Wright-Patterson Air Force Base. This contradicts a narrative in the civilian ufology community that the Air Force kept the programs shrouded in mystery; as early as the 1950s, the USAF implored skeptical private citizens to visit Wright-Patterson Air Force Base and examine the records of the study themselves.


\textsuperscript{86} Boggs, “Memorandum for the Record.”
Air Force Intelligence operations. Grudge staff, never sizeable, was further reduced over the following years. Sighting reports dropped off and the flying saucer’s visibility in the national news media declined precipitously. And yet, report collection continued, albeit in a much less precise and cohesive way.

Thus, it seems Hynek’s point was taken, if not well-taken. 1950 remained a dark spot in the investigative efforts. By late 1951 Project Grudge began producing monthly status reports as part of normal intelligence operations, though only a single lieutenant was tasked with investigating reports. The status reports came as part of a reorganization effort. The first status report addressed the difficulty inherent in the belief that the Air Force was not interested in the project and thought it unimportant; “regardless of personal beliefs as to the origin of the objects,” the report retorted, “the task of determining, if possible, what these objects are has been assigned, and should be carried out.”

Status Report No. 2, dated December 1951, gestured at efforts to re-ignite relationships with outside scientific and technical consultants. By late January 1952, Grudge personnel had taken the first steps toward statistical analysis of the sightings, and had begun the process of working with

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87 RUFOS, 67–68. (Kindle edition, location 1293.)
88 The first Project Grudge Status Report following the 1949 Final Report was produced in November of 1951 and opens with its author complaining that the “cross-indexing and tabulation of the old files has been slow due to a lack of clerical help”. “Status of Project Grudge,” Status Report No. 1, Project Grudge, 30 November 1951.
89 A caveat: While some reports made it into the hands of investigators and survived the temporary suspension of Project Grudge, investigators in the early 1950s noted many “missing” or “lost” reports from between 1949 and early 1951, including details of those reports and photographs. Investigators would, over the following months, actively work toward recovering any data they could, so that the ATIC file could be rendered “complete.” See “Overall Status,” Project Grudge Status Report No. 2, 31 December 1951, page 2. Some of the missing files were located in early 1952 in Air Force libraries in Washington, DC, and further trips were planned to review and obtain missing sighting reports. See “Overall Status,” Project Grudge Status Report No. 3, 31 January 1952, page 1. Approximately 50 additional reports were located in Air Force libraries in Washington, DC, and by February of 1952, the ATIC file was regarded as generally complete.
consultants and revising reporting practices. The UFO studies were back underway. Grudge transitioned to Project Blue Book by late March of 1952.

**Alien Invasions**

“In the interests of the defense of the country, however, it would be highly inadvisable to ignore the accounts, even though the chance be remote that they contained anything iminical to the nation’s welfare.”


The early Cold War years saw the proliferation of flying saucer science fiction cinema, typified through entries like *The Thing from Another World* (1951), *Invasion of the Body Snatchers* (1956), and *The Day the Earth Stood Still* (1951). Scholars have written at length about the relationship of the genre to atomic anxieties, Christian apocalypse and religiosity, and changing social and cultural landscapes. The flying saucer has become easily recognizable in modern discourse as a metaphor for atomic anxieties and the threat of foreign invaders. But to reduce the flying saucer to a pop culture trope obscures its reality in the eyes and minds of postwar observers.

In December 1948, the Air Force Directorate of Intelligence and the Office of Naval Intelligence produced Air Intelligence Report No. 100-203-79, an “Analysis of Flying Object Incidents in the U. S.,” addressing the “pattern of tactics of ‘Flying Saucers’” and the possibility of their existence. The frequency of the reports suggested that a flying object had in fact been observed. Further, the report discusses a series of sightings similar to

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94 Jodi Dean has written an excellent monograph on the traditional use of extraterrestrial aliens as a metaphor for the inability of the state to protect its citizens, and while Dean’s focus is primarily on late 20th century abduction narratives, it is easily extendable back toward early Cold War UFO narratives. Dean, *Aliens in America: Conspiracy Cultures from Outer Space to Cyberspace* (Ithaca, NY: Cornell University Press, 1998).
95 Directorate of Intelligence, United States Air Force and Office of Naval Intelligence, United States Navy. Air Intelligence Report No. 100-203-79, “Analysis of Flying Object Incidents in the U. S.,” Air Intelligence Division Study No. 203, 10 December 1948.
Arnold’s initial sighting that *predates* the June 24th sighting by several months.6 This implied that not all sightings were the result of a popular mass hallucination propagating outward from the Arnold sighting.

Underlying the report’s problems, discussions, and conclusions was the assumption that a physical object lay behind the sightings, and that it represented a technology of either domestic or foreign manufacture. It was imperative that the objects be identified as quickly as possible; if they were not domestic, “the objects are a threat and warrant more active efforts of identification and interception.”97 Furthermore, German aeronautics engineer Günther Bock, who had been in charge of the flying-wing type aircraft in Germany at the end of World War II, was being utilized by the Soviet Union and reportedly was receiving personal recognition there – perhaps, the report implied, for developing this new aircraft. And why would the Soviets be flying this new technology over the United States? For photographic reconnaissance, or to test U.S. defenses and familiarize pilots with the landscape – but also, suggested the report, “to negate U.S. confidence” in the atom bomb as the most advanced and decisive weapon. If this were the case, that the objects represented a stunningly advanced Soviet technology, it would mean that Soviet scientists and engineers had overtaken their American counterparts. But rather than scoff at this possibility as the SIGN Final Report would do two months later, the Intelligence Report instead pointed at the preamble in the Fourth Five-year Plan (1946-1950), which expressed that the objective of Soviet science was to overtake the achievements of capitalist science. Coupled to the ability to take “shortcuts,” now that they had enlisted the aid of former German scientists

6 According to the report, during the spring of 1947, weather balloon observers at the Richmond U. S. Weather Bureau sighted, on multiple occasions, “strange metallic disks.” The sightings were never publicized. “Analysis of Flying Object Incidents,” 1.
97 Ibid, 2.
and engineers, the Soviet threat did not seem entirely implausible. That threat was two-fold: it came both from the technology itself, as well as the confirmation that America had fallen behind the Soviet Union in terms of scientific and technological process, expressing the fear of falling behind the Soviets long before the Sputnik crisis nearly ten years later. The danger was real in a material way.

This postwar period of atomic anxiety and fear of foreign threat drove the establishment and initial research agenda of the early Air Force UFO studies. The 20th century UFO cannot be abstracted away from the moment of its birth. Not only a sign, not only a symbol, the flying saucer represented the possibility of real, immediate existential threat to the United States. Files filled with reports of hoaxes, misidentified common objects, and Jupiter might make the study seem an uninteresting waste of time and resources. But as mentioned above, Air Force officials repeated the refrain that all that was required was one ignored report of a legitimate aircraft to forever alter American national security, and the nation itself. The language of investigative responsibility threaded through the Project SIGN final report comes as no surprise. The Air Force’s desire to possibly retrieve one of these aircraft reflects a service philosophy of better offense, better defense, through superior technology. Security through superior firepower.

In many ways, the USAF UFO investigations mirrored other post-war and early Cold War Air Force projects. The UFO projects were couched in the language of national security and monitoring the skies. They featured collaboration between Air Force personnel and elite academic scientists located at universities across the country. The UFO projects even entailed a research and development project with Eastman Kodak, to develop a special camera that could be affixed to jet airplanes, to snap photographs of the phenomena when

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98 Ibid., 3-4.
they were sighted by pilots – a relationship that would be revisited a few years later when development for reconnaissance satellites and high-altitude aircraft began.

There was, however, one significant way in which the UFO studies diverged from other early Air Force technoscientific national security projects. In the case of an Early Warning System, or anti-aircraft weaponry, or reconnaissance satellites, projects and policy were designed by specialists – scientists, engineers, technicians, trained Air Force personnel. Many, if not most, projects were classified and beyond the reach of the average citizen. Certainly, the average American did not find themselves embedded in the design of the CORONA satellite. But the UFO studies depended on witness testimony from the first. Data had to come from witnesses of phenomena, and the collection of that data became a core issue in the execution of the UFO studies throughout their collective lifespan.

The good news was that, armed with the techniques of modern science, the flying saucer could be rendered knowable. The unidentified flying object could be identified. In the following chapter, I will explore the methods of sighting report collection, critiques by establishment scientists and the Air Force of non-expert witnesses and their attempts to discipline them, and how scientific methods and lay practice clashed in the processes of knowledge creation, as the UFO studies attempted to render the unidentified flying object a scientific object.
Chapter Two: Making Data, Identifying UFOs: The Infrastructure of Investigation

“The officers and technical experts assigned to Project Saucer – a nickname for the top-secret Air Force investigative effort – sometimes get to feeling they’re living in a dream world, so utterly unfettered and mysterious are some of the reports they are assigned to evaluate. One of the most fanciful came from a Montana man who wrote in to tell of sighting a large, blue-white ball that had beamed a bright light at him. ‘I am perfectly sincere and do not drink,’ the Montanan said, ‘so the foregoing is absolutely the truth.’”


On a clear afternoon in the summer of 1952, two United States Air Force (hereafter USAF) colonels saw three objects flying in formation as they flew a B-25 from San Francisco to Colorado Springs. The men got close enough to the objects to describe them as silver, delta-wing craft with no tails or pilot’s canopies. But seconds later, the objects banked away at a terrific speed. Upon landing in Colorado Springs, the colonels made a report to Air Defense Command Headquarters, which was passed on to Project Blue Book, the latest iteration of the USAF’s official UFO investigatory project. Subsequent investigations turned up no evidence of weather balloons or other aircraft (test or otherwise) in the area at the time, and while both men in their interviews admitted to having friends who had “seen flying saucers,” they both had previously voiced open skepticism towards the reports. But now they changed their position. They too had seen flying saucers.

Maybe the colonels did see what they thought they saw – an aircraft they could not identify. Despite their inability to positively name what type of craft they had seen, the pilots reported clearly seeing aircraft and were able to describe them in detail. The colonels’ observations could not be repeated nor modeled, nor could future occurrences be predicted. This led to doubts about how likely a positive identification of the objects would ultimately be, not just in the case of the colonels’ sighting but for object sightings in general.

Ultimately, the colonels’ sighting ended up like hundreds of others and landed in the “Unknown”/“Unexplained” category. The United States Air Force wanted to trust its personnel; Air Force pilots were in a unique position to witness strange aerial phenomena, and their status as trained aviators within a newly-independent branch of the service gave them credibility as witnesses and their reports, legitimacy. And they had no obvious impetus to lie. As a result, early investigations proceeded as if a discrete, physical object was behind every sighting report. This position was (usually) unproblematic; it was even reinforced when the Air Weather Service could confirm a weather balloon launch, or astronomers could verify a meteor shower as occurring at the time of the sighting. But as “Unknown” cases accumulated, witness testimony and data collection practices created problems for investigators, scientists, and technicians charged with sighting analysis. Witness testimony was the primary source of sighting information, and when credible witnesses could not produce detailed, consistent descriptions regarding a potential threat to national security, the safety of the nation was jeopardized.

When viewed alongside other USAF postwar and Cold War projects of investigation, observation, and surveillance, the UFO investigation appears in many ways to be a traditional USAF Cold War project, with interests in advanced technology, national security, and demonstrating collaboration between public and private actors in the military-industrial-academic complex. The UFO investigations diverged, however, from other USAF surveillance projects in their dependence on untrained human witnesses. Though individual sighting reports might include radar returns, photographic evidence, and other material observational output, the UFO phenomenon on the whole was grounded in eyewitness observation. There was no way to predict or control sightings, and reports came from all manner of people, from airline pilots to blue collar workers to children. This meant the
perceived quality of each report likewise varied wildly, from “credible” to “straining credulity.”

During their official investigations, the USAF worked to define characteristics of trustworthiness so that they could be identified in witnesses and their sighting reports judged appropriately credible (or not). Credibility assessment was a leading component of UFO report investigations; who was looking mattered, as their status, professional, social, and otherwise, had a direct impact on how seriously their report would be taken. But Air Force investigators and personnel struggled to clarify who represented a reliable, credible, or even “expert” witness. These qualities were never universal, nor standardized, nor even agreed upon; and given that not everyone seeing and reporting UFOs could be labeled an “expert,” project personnel had to compensate and correct for varying degrees of uncertainty and error.

This chapter explores the methods and strategies developed and deployed by the USAF during Project Grudge (1949-1952) and Project Blue Book (1952-1968) to investigate, analyze, and identify the source of the unusual sightings taking place across the United States during the early and middle decades of the Cold War. The USAF attempted to address these challenges via technical means, specifically through the construction of a knowledge infrastructure built to address the unique challenges of UFO sighting investigation and analysis. Historian Paul Edwards describes a knowledge infrastructure as “[comprised of] robust networks of people, artifacts, and institutions that generate, share, and maintain specific knowledge about the human and natural worlds.”100 The connections within this network are crucial to creating and maintaining trust and authority so that scientific

knowledge can in turn be created and maintained. By linking professional scientists, military
and scientific institutions, average citizens, technologies of witnessing, and testimony into an
investigative infrastructure, the USAF hoped to generate not just objective, scientific data
out of the sightings, but to impress credibility onto the investigations as a whole. The
knowledge infrastructure supporting UFO investigation shines a light on the institutional, social,
and cultural construction of knowledge and authority during the Cold War by asking: In
whom, and in what, do we place our trust? Why?

Witness Character/Character Witness

The Air Force flying saucer studies grappled constantly with the question of witness
quality and reliability. A means of assessing witness credibility was a crucial element of the
investigatory knowledge infrastructure. Many, if not most, of early UFO reports came from
men imagined to be “qualified” observers of aerial phenomena – pilots flying both for
private companies and the military, air traffic controllers, radar technicians, Air Force
personnel, qualified scientists, and others. “Qualified” and “credible” initially indicated a
very specific set of characteristics. These witnesses were overwhelmingly male, familiar with
(if not directly trained in) aeronautics and flight, often employed by the military in some
capacity, and many had technical training or professional scientific education and degrees.
Their professions and training cast them as educated men of sound mind, not prone to
irrational speculation or outbursts of hysteria. They had experience with aerial phenomena
and could be trusted to “know” what they were looking at and offer accurate descriptions
after the fact. These early witnesses came to typify the ideal witness, and assumptions about
their underlying character gave credibility to the reports they made. That so many early
reports came from this type of witness became the fundamental grounds on which the UFO
investigations were established.
All parties could agree that few witnesses counted as “more reliable” than trained pilots, but what about scientists, doctors, lawyers, or even just your neighbor, people who you knew as responsible and not the type inclined toward hysteria or dishonesty? A sliding scale of reliability quickly developed as part of investigators’ analyses. Under the right or wrong circumstances, a witness’s credibility could improve or degrade. A respected but overworked airline pilot became an unreliable observer, while a housewife held in high regard by her community became a credible witness. In practice, there seemed to be no single essential quality that made someone a good or bad witness. Any small diversion from an imaginary model witness made a report questionable.

The “general qualifications” of witnesses became a metric along which incoming reports were grouped. “General qualifications” referred to the degree of training an observer had received and therefore the likelihood and degree to which their report could be considered accurate. An experienced aviator, for example, probably provided a more accurate report than a layman. Project Grudge focused its energy on investigating reports that came from high-quality witnesses - a group that included both military and private pilots, air traffic controllers, experienced high-altitude balloon observers, radar operators, and World War II veterans, a group that largely mirrored the witnesses of those very first reports which had instigated Project SIGN.

101 RUFOS, 59-60. (Kindle edition, location 1173-1188.)
102 Also classed as questionable were reports made by a single observer, for example, or by a small group of observers with no professional training or when a group of observers could not agree on the details of their sighting.
104 A large proportion of the earliest sighting reports came from Air Force personnel, a majority of whom were experienced pilots and other affiliated personnel. The Project SIGN final report characterized many early sighting witnesses as being “qualified and apparently reliable.” As discussed in an earlier chapter, Project SIGN’s foremost concern was determining whether the phenomena indicated domestic or foreign advanced
Despite the AMC’s insistence that they were not passing judgment on the character of the witness, persistent commentary on the reliability of the witness suggests that investigators and analysts were doing exactly that, and by extension discounting unexplained cases because of witness character rather than scientific analysis. A report compiled as an appendix to the Project Grudge final report, “Psychological Analysis of Reports of Unidentified Flying Objects,” repeats concerns about witnesses’ inability to properly judge speed, size, altitude, distance, and so on. Fitts’ report hinges on the reliable witness: considering the quality of the witness report qua witness. The report focused on identifying types of errors and failures, incidents of incorrect observation, and the types of people who committed these errors as a path to judging the reliability of the data. “All normal, intelligent people experience certain errors of observation” in identifying real stimuli, the report contended, while the error of mistaking imaginary events for real ones was “usually made by children, by individuals of low intelligence (people who are very suggestible), by those who see visions, or by the mentally ill.” These suggestible types could easily be led by sensationalist newspaper and radio accounts to believe that they were seeing things that they were not seeing. The effect was a “[dampening] of their critical judgment,” making them “more likely to overlook certain factors, and to find it easier to accept the suggested explanation uncritically.” Investigators and analysts needed to be able to identify different types of errors; the errors made by a pilot would be different from those made by schoolchildren or an intoxicated gentleman leaving a bar late at night. Mindfulness of typical technology and therefore an existential threat to the United States. To this end, SIGN treated almost every early sighting as serious and worthy of investigation. It was not until the transition of the project into Project Grudge that the conversation around the witness him- or herself began in earnest. See Technical Report No. F-TR-2274-IA, Unidentified Aerial Objects Project “SIGN”, Roll 85: Administrative Files: Box 1, PB-N-AR-A. https://www.fold3.com/image/1/11885416.


and atypical reports would expose hoaxes almost immediately. Once those differences in error were understood by investigators and analysts, suggestible types of people, along with those who knowingly gave false reports or concocted hoaxes, were described as “not difficult” for an expert to spot.\textsuperscript{107}

The expectation at the end of this character review was that sighting reports would be weeded through as they progressed through the system towards specialized analysts. Only reports from credible witnesses would ever make it to the desks of those analysts. Those reports would reflect the observations of “supposedly dependable people” like pilots and non-flying officers, professional men, government employees, housewives, and others.\textsuperscript{108} Projects Grudge and Blue Book personnel were tasked with making snap judgments about the reliability of witnesses, based on characteristics and descriptors of the witnesses attained via sighting reporting forms. Given that these observers were, however, the sole source of information about the sighting in a vast majority of cases, the Air Force UFO projects were caught in a seemingly endless discussion of how to adequately judge the reliability of a report – a problem that appeared to have no clear solution.

This problem was intensified when it concerned observers who might otherwise fall into the “reliable” category. Project investigators, analysts, and staff were frequently cautioned against the uncritical acceptance of witness testimony, even when those witnesses were previously classed as “reliable” or “credible”:

“Directly asking an observer about [the distance of the object from the observer, as well as its altitude, speed, and size] not only gets unreliable data but induces wild answers because the observer is led into making a statement about quantities for which he has no basis in fact. He will

\textsuperscript{107} Much as it was difficult to describe a phenotype for “qualified,” “credible” witnesses, the USAF likewise never supplied a clear description of “suggestible” or “unreliable” witnesses, either.

unconsciously assume knowledge of some one of these factors and so give incorrect information on all. That people (many of whom should know better) will arbitrarily give answers to two significant figures on these questions, which really cannot be answered at all, is proof of the unreliability of their information.”\(^{109}\)

Those “unconscious assumptions of knowledge” referred to in the above quote most frequently concerned altitude and speed. The observer would guess at what they suspected the altitude of the object was, or its apparent speed, and extrapolate from there the other variables. But because they had no way to accurately gauge those basic measurements, none of the subsequent descriptions of behavior could be taken for fact, either. Another common error came from jet pilots; they would see a large, silver disc ahead of their planes, and move to intercept. As they came up on the object, it would rapidly rise or fall above them, or move away, at incredible speeds. It later became clear, after field tests, that what the pilots had been seeing were weather, research, and reconnaissance balloons. The perceived “rapid maneuvers” of the balloons were a common, and easily reproducible, optical illusion.

This attention to the “reliable witness” played itself out in the presentation of those unexplained cases. Errors in observation sent many sightings to the “unknown/unexplained” collection. Project personnel adopted a general protocol of distrust. Grudge and Blue Book status reports nearly always included appendices of reports that remained unexplained after project analysis. While report authors claimed that it wasn’t their goal to discredit the witnesses, more often than not the cases had “undesirable

\(^{109}\) Capt. A. C. Trakowski, Jr., 3160th Electronics Station to Air Materiel Command, W-P AFB, dated 16 April 1949. Included as Appendix F in Project Grudge Final Report. Emphasis added. The editorial inclusion of “(many of whom should know better)” gestures to the large number of sightings that were taking place around, and being reported, from military bases and from trained military and commercial pilots. See also Fitts, “Psychological Analysis,” Appendix G includes the analysis of specific cases, targeting those that best demonstrate the inability to judge size, distance, speed, &c.
elements” that could not be disregarded – effectively discrediting the witnesses to some degree.\textsuperscript{110}

Case summaries read like an indictment of the witness’s failures in observation.\textsuperscript{111}

The very first case in Grudge’s records, Incident No. 1, illustrates investigators’ concern with witness credibility. Several witnesses at Muroc Air Force Base reported seeing two silver spherical objects in the sky. Superficially, the report looks good. Multiple supposedly credible witnesses gave reports consistent with one another about the sighting. However, their testimony began to crumble when details around the objects’ size and speed are explored. The credibility of the witnesses was truly undermined when the first witnesses describes himself as being engaged in a conversation, moments before the sighting, wherein he described his contribution thus: “Someone will have to show me one of those discs before I believe it.” We are then led to believe that such objects appeared to him immediately after. Furthermore, the investigators suspected that the subsequent testimony of the following three witnesses was seriously influenced by the testimony of the first.\textsuperscript{112} Incident No. 84 provides another example. An observer filed a report, complete with a replica model of what he had seen. The summary concludes, however, with a description of the man as excitable, talkative, “possessing an exaggerated imagination, and inclined to impress people” while also having a history of going AWOL from the Navy on two occasions, suggesting a less-than-
upstanding character. “This incident,” the AMC opinion went, “has all the aspects of a psychopathological report.”

Most damningly, Incident No. 17, the official record of Kenneth Arnold’s 1947 ur-sighting, did not hold up under scrutiny. The AMC’s opinion captured perhaps most explicitly the project’s attitude toward this notorious case (and many of its offspring) in the summary statement: “The entire report of this incident is replete with inconsistencies.” To wit, Arnold had reported seeing the objects twenty to twenty-five miles distant and had estimated them to be roughly forty-five to fifty feet in length. He claimed the objects traveled forty-seven miles in 102 seconds. Consulting astronomer Dr. J. Allen Hynek came back with calculations that argued that, for Arnold to have seen the objects with the amount of detail he described, the objects would need to be at least one hundred feet thick, and two thousand feet long. (Nearly half a mile.) If these measurements were correct, there would be six miles between each of the nine objects. They would have only traveled eleven miles in those 102 seconds, at a speed of roughly four hundred miles an hour. When subjected to this scrutiny, the account seems hardly believable. It could not, in Hynek’s words, “bear even superficial examination.” And if these mathematical calculations were not enough, Arnold’s credibility was further undermined by his profiting from the story. Hynek’s addendum that “[it] is to be noted that the observer has profited from this story by selling it to Fate magazine” was included in the case file’s concluding opinion.

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113 Ibid, 20.
115 “Project Grudge, Summary of AMC Evaluation,” 380. Incident No. 68 (page 14) follows the pattern of Incident No. 1, but related specifically to the Arnold case; quote, “…two possible psychological factors are readily apparent; one, the observer stated he submitted this report solely because he had read several days following his observation of another sighting. Therefore, he very likely either consciously or inadvertently may have attempted to conform his report to that recounted in the newspaper; and two, he colored his report with inference of huge magnetic fields, as to the implications of which he was obviously uninformed.”
report had identified a series of contradictory observations; Arnold’s move to monetize his report was the nail in the coffin of his credibility as witness.

The unreliability of these witnesses undermined the Air Force’s original position that these trained personnel constituted a body of expert, reliable observers. Investigators began to make judgments about the reliability of reports and therefore whether they should be aggressively investigated based on the characteristics and training of the witnesses themselves. Chasing poor results would result in a net loss for the project, both in time and funding. The USAF projects had very little of either to spare. Good witnesses needed to be separated from bad witnesses as rapidly as possible.

To complicate matters further, investigators found their efforts hampered by what was described in one status report as “adverse feelings” about making reports among those who passed the Air Force’s reliable-witness-smell-test. An investigation into the feelings of both Air Force and private pilots regarding the reporting of unidentified aerial objects turned up a strong reluctance to report those sightings. One individual was quoted directly as saying, “If a space ship flew wing-tip to wing-tip formation with me, I would not report it.” This feeling was reportedly shared widely across the group and was described as a “great handicap to the objective of getting reliable data.” As investigators became more adept at solving sightings, pilots and other trained observers became increasingly reluctant to report lest their observation turn out to be a mundane, common object, like an airplane, star, or cloud. Or perhaps, worse, their sighting could not be solved, and they would look the crackpots themselves.

So long as the objects went unidentified and the sightings unexplained, the possibility of the objects being unknown aircraft remained. The reluctance of witnesses to make reports was viewed as detrimental to the project. Hynek echoed these concerns when he criticized reliance on the general public for sighting data, but also pointed out that trained observers “might hesitate” to make reports for fear of ridicule. He advised Grudge personnel to extend its investigations to include questioning trained observers about anything they may have seen in the past, for it was from only that sort of observer that “accurate and meaningful descriptions [could] be obtained.”

A method needed to be developed that did three things: first, good witnesses needed to be separated from the bad; second, good, credible witnesses needed to be given the opportunity to report their sighting with the promise of anonymity, to the public and to their peers; and third, the data collected needed to be collected, and corrected for. To do that, the infrastructure needed to be expanded.

**Witness Testimony and Credibility in Law and Science**

The argument has been made by scholars and others sympathetic to UFO phenomena (and frequently the extraterrestrial hypothesis, or ETH) that witness testimony should be considered under a legal standard of proof rather than a scientific one. Throughout the official USAF investigations, collaborating scientists, forced to grapple with the imperious instability of witness testimony, often suggested developing interrogation methods more akin to that used in the courtroom. Procedurally, however, no concerted effort seems to be made to accomplish such a thing. This can be attributed to most

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117 Ibid, 9-10. This effort, coupled with allowing trained experts with scientific and technical ability to conduct investigations and interviews, could, as Hynek put it, “[lessen] the incompleteness and inexactness of evidence” which had so troubled the projects. Hynek’s critiques here are not directly only at the general public and the poverty of their reports, or the way those “crackpot” reports made experienced, trained observers less likely to report sightings; he also criticizes the Air Force investigators as not being adequately trained themselves, and advocates for scientists to undertake the interviews. For Hynek, the poor-data-quality problem is double-sided. Scientists were, in Hynek’s opinion, not only the best-qualified personnel to conduct such interviews, but were indeed the only party qualified to do so, as only physical scientists knew which questions were most important to the successful identification of the witnessed phenomenon.
participating scientists being physical scientists, and the behavioral and social scientists involved admitting that the development of such a process was outside of their intellectual wheelhouse. The legal approach remained an oft-made suggestion that never came to fruition.

The idea that legal fact-finding processes provided a better means of generating data continues to be popular among the UFO/ETH sympathetic crowd. Psychologist and UFO advocate Don C. Donderi describes the legal system as being “built on a foundation of alleged facts presented in evidence,” and argues that “the legal theory follows from the evidence”; “Legal reasoning,” he writes, “is largely inductive.”

118 To differentiate this presentation of ‘legal theory’ from ‘scientific theory,’ Donderi hews to a Kuhnian description of scientific theory (wherein facts have no meaning without a paradigm to frame them). Whether or not the evidence has grounding in scientific theory, he argues, is irrelevant to the legal theory that lawyers develop in arguing their case. Legal evidence succeeds or fails on the basis of its relevance, materiality, and admissibility in a court of law; its basis in scientific theory is of no import. Scientists, as Donderi presents it, start with a theory and try to fit phenomena into that theoretical framework; lawyers, judges, and juries have no preconceived theory and instead use facts to build a theory about the events.

Donderi is giving voice to a decades-long call to action focused on taking physical scientists out of the testimony analysis segment of UFO investigation. In this take, the courtroom would demand a full accounting of all of the relevant evidence, providing a fuller reading of it and thusly a more sympathetic attitude toward the possibility of the

extraterrestrial hypothesis as a potential explanatory theory.\footnote{Donderi, “Science, Law, and War,” 80-81.} If nothing else, advocates have argued, examination and cross-examination of a legal type would result in a fuller account from witnesses themselves.

Advocates for the injection of legal processes into witness interrogation and fact-finding have consistently neglected the historical and philosophical underpinnings of legal evidence and testimony and its connection to scientific fact-finding and theory-building, however. Historians and science and technology studies scholars have begun to explore the deep relationship between legal and scientific standards of proof. Barbara Shapiro has shown that legal standards predate scientific standards as we imagine them today, and argues that 17th century thinkers like Francis Bacon, Robert Boyle, and the Royal Society cohort at large took their philosophical cues from legal norms and processes, basing methods of proof on the legal notion of credible testimony.\footnote{Barbara Shapiro, “Testimony in seventeenth-century English natural philosophy: legal origins and early development,” Studies in the History and Philosophy of Science 33 (2002): 243-263. See also Ian Hacking, The Emergence of Probability: A Philosophical Study of Early Ideas About Probability Induction and Statistical Inference, Second Ed., specifically chapters 4, 5, and 9 (Cambridge: Cambridge University Press, 1975, 2006).} Shapiro thus builds on Shapin and Schaffer’s claim that “any institutionalized method for producing knowledge” (of which legal processes is one, scientific another) “has its foundations in social conventions… concerning how the knowledge is to be produced, about what may be questioned and what may not… and what is to be regarded as evidence and proof.”\footnote{Steven Shapin and Simon Schaffer, Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life (Princeton, NJ: Princeton University Press, 1985 (2011)), 225.} This included standards and criteria for whose testimony to trust, and how far.

Early scientific standards of credibility reflected legal standards. Just as the English Court understood that gentlemen, no matter how socially respectable, could have legal conflicts of interest when giving testimony, early scientific thinkers placed value in the skills
and expertise of tradesmen and craftsmen despite their lower class. The imagined break between legal and scientific standards in evidence, proof, and credibility arose around technologies of witnessing. Technologies meant to objectify the gaze and to produce material proof replaced credible witness testimony. Tools of virtual witnessing – replicable experiments, large audiences, circulated publications - overtook the hearsay of the trustworthy witness. Seeing became believing.

In the last hundred years, legal standards have begun to seek the same ‘objective’ reliability that scientific standards are thought to impart. In her history of fingerprint evidence, Jennifer Mnookin chronicles the rise of fingerprint evidence as a reliable, stable, “certain” form of evidence in legal proceedings. In fingerprints, able to be displayed first-hand in the courtroom, “jurors saw, or at least seemed to see, nature displayed directly”; Mnookin describes early fingerprint evidence as understood to be “a more objective form of proof that mere witness testimony or even expert ruminations.” The more-recent rise of DNA evidence reflects many of these same ideals. Through DNA evidence, we might gain access to unimpeachable, unique, individual evidence directly linking a person to a crime. Witnesses might misremember, polygraphs might be beaten, other evidence might be circumstantial, but biology can’t lie.

There are a few important points here that scholars investigating the ties between legal and scientific standards of proof and credibility often gesture at (and which contradicts Donderi and others). Firstly, fingerprint evidence and later DNA gained their superior status in the courtroom thanks primarily to their materiality. With fingerprints or DNA, the judge and jury did not have to rely on the uncertain testimony of witnesses who were only human

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122 Shapiro, “Testimony,” 251, 256.
and fallible. The long search in courtroom fact-finding missions has always been for clear evidence which may amount to incontrovertible proof. Donderi suggests that serious witnesses of UFO phenomena would receive a fairer hearing in a courtroom setting than they would in the laboratory; nothing about the last hundred years’ privileging of material, “objective,” “certain” evidence of the biological type should encourage us to accept his claim, whether in the 21st or 20th century or otherwise.

The physical and therefore scientifically-objective promise of fingerprints (and later DNA), as well as the explosive entrance of scientific and technological affairs into judicial courts in the 20th century, brought scientific norms back in full contact with the courts. Here we see the credibility ouroboros take its own tail. Throughout the course of UFO investigations, advocates have pressed for legal standards to be impressed on the scientific data gathering efforts. But it’s not entirely clear how distinct these two methods actually were from each other, by the time of the UFO debates. Mnookin, in recounting fingerprint evidence’s meteoric rise in credibility during the 1920s and 1930s, describes professional fingerprint experts engaging in practices of Gieryn-esque boundary work, meant to cement the certainty of fingerprint evidence (and thereby their own expertise and status) through concerted efforts at quashing analytic dissent in their own ranks. Sheila Jasanoff points to the same boundary construction and maintenance when discussing the involvement of ‘expert witnesses’ in courtroom proceedings. In a return to 17th century credibility criteria, Jasanoff writes that age-old social and cultural factors such as age, gender, personality, and “rhetorical skills,” in addition to the witness’s actual technical expertise, are opened to attack on the witness stand, and that these “nonepistemological determinants of credibility” may

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125 Mnookin, “Fingerprint Evidence,” 38-42.
126 Jasanoff, Science at the Bar, 53-55.
carry more weight with a jury than the expertise the witness actually has to offer.\textsuperscript{127} And lest we think the objective materiality of physical evidence, brought in the shape of the double helix, Michael Lynch has argued that even DNA evidence, like fingerprints before it, cannot be understood apart from its “administrative accountability.”\textsuperscript{128} To paraphrase Lynch, the probative value of DNA evidence is correlated to its method of collection, analysis, presentation, and its relationship to the case’s entire body of evidence. DNA is neither sufficient, nor necessary, to making or breaking a case.

This is all to say that in suggesting the use of a legal methodology for the interrogation and analysis of witness testimony, it’s not at all clear what scientists, technicians, and critics meant. By the mid-20\textsuperscript{th} century, the boundaries between legal and scientific modes of fact-finding, credibility, and expertise were more blurred than they ever had been. Physical scientists understood that witness credibility was a conflicted space, and having no expertise of their own, hoped to be rescued by legal experts. Even a cursory glance, however, at the issues and controversies plaguing credibility, evidence, and testimony in American courts of law suggests that such an appeal would fall on unhelpful ears. The desire for material, objective evidence and some universal criteria of credibility that characterized the UFO investigations was mirrored in 20\textsuperscript{th} century American courtrooms.

**Reporting Forms as Knowledge Infrastructure**

The USAF investigatory programs were faced with the challenges presented by unreliable witness reporting patterns, witness credibility, and reliable data collection after the fact. The investigations were further hampered by insufficient manpower and resources required for a large-scale data collection program. A technical apparatus needed to be

\textsuperscript{127} Jasanoff, *Science at the Bar*, 54.

developed that addressed the issues apparent in report collection and streamlined analysis. A mass-circulation reporting form seemed the logical, technological choice. These questionnaires, and the constant debate around their design, show the ways USAF personnel and contractor scientists imagined both observers and the objects they claimed to see, and the methods they developed and deployed to try to collect accurate data and discipline observers into being better scientific witnesses. Ultimately, Grudge and Blue Book sought to develop a technical apparatus for investigation that could correct for noise in the system, determine the credibility and legitimacy of witnesses and their reports, and create knowledge – scientific and defensive - out of ambiguous “flying saucer” reports.

The technology needed to be standardized so that it could be applied nation-wide and collect the same data in all corners of the country, regardless of witness or investigative personnel. In the case of the UFO, the hope was that systematic methods would demystify the phenomena via uniform collection practices and a routinization of the investigative process. Additionally, it seemed possible that a system could be designed around the form such that in addition to raw data collection on the phenomena itself (and perhaps more importantly) witnesses could be tested on their reliability and credibility. If unreliable witnesses could be caught in this initial phase of collection and study, man-hours and resources could be saved in the later stages of analysis. Ultimately, knowledge production could be made more efficient via the form.

In the earliest days of Project SIGN, much of the formal investigation was done (on-site at the location of the sighting) by official SIGN personnel. Investigators traveled to the scene of the sighting to interrogate witnesses in person. While this practice was initially satisfactory, it became clear early on that it would not suffice beyond the immediate short-
SIGN did not maintain a staff large enough to cover every report to satisfaction and complete a rigorous record and analysis of the collected material. Furthermore, project personnel could not be expected to be well-versed enough in all the fields required for complete analysis and identification of the sighting reports. Report analyses suffered from a deficiency of time and appropriate expertise, all driven by a lack of raw manpower.

Investigative procedures were revised toward the end of SIGN’s operation. The goal became successful analysis of as many incidents as possible in as short a time as possible. The successful completion of Project SIGN’s mission (later shared with Grudge and Blue Book) to identify, analyze, and demystify the unidentified aerial phenomena depended on timely data collection. Two significant changes to the investigatory process were made to this end. First, SIGN recommended that sighting analysis be essentially shopped out to “competent technical personnel in all branches of science and engineering” who were pertinent to the sighting investigations. Second and more important was the development and implementation of a consistent, standard method of making and collecting UFO reports at the national level.

In the service of this goal, a formal procedure was developed. Initial reports were received through some sort of personal contact like a letter or phone call, through stories in newspapers and on radio, or through more formal channels via military and naval installations which were then forwarded to a local air base. Investigations would then be carried out by the appropriate Air Force body: AMC, ATI, or project personnel would

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129 “Project Administration,” Project XS-304, Technical Report No. 102-AC 19/15-100, Unidentified Flying Objects, Project GRUDGE, August 1949, p. 12-13, Roll 85: Administrative Files: Box 1, PBB-N.4R.4, https://www.fold3.com/image/1/11885569. Astronomer Dr. J. Allen Hynek repeated this point in his appendix to the Grudge final report, suggesting that these experts, in addition to undertaking the analysis, should also be the personnel to conduct the investigations and interrogations, to ensure that the correct information was gathered from witnesses. See Hynek, “Report on Unidentified Aerial and Celestial Objects,” 35.
investigate where they were able, and local base intelligence officers would handle military base sightings. Most however would be investigated by the Air Force’s Office of Special Investigation (OSI). The investigation concluded in a report, detailing the incident for official records.

The data gathered by investigators was then distilled into “meaningful” data. Project SIGN kept maps plotting sighting locations and statistical graphs tracking incidence of reports over sighting hot-spots. Witnesses themselves would sometimes fill out card files and questionnaires; from those, “pertinent information [was] extracted, condensed, and compiled” onto summary sheets, and collated against known phenomena. These summary sheets ostensibly allowed expert analysts to access the important data quickly and efficiently.

The entire file was then microfilmed so that it could be easily shared among interested parties, both within the Air Force’s many divisions and diverse scientific disciplines.

The reporting forms, both as objects and in the practices built up around them, became a locus where diverse branches of the knowledge infrastructure came into contact. Through the forms, civilians shared their experiences and participated in the knowledge-making process. In the forms, experiential data was flattened and (ideally) standardized into a form that would be useable by a diverse group of scientists, including atmospheric physicists, astronomers, aeronautical engineers, psychologists, and others. This data-sharing was made possible by the USAF’s collection and distribution efforts. These internal practices resemble less Fujimura’s standardized practices and more a Galison-esque trading zone or even boundary objects in the style of Star and Griesemer, as professional experts across the interested

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130 “Project Administration,” 13-14.
131 Incident reports were collated against airline and blimp flight schedules, ball lightning, astronomical events, and so on.
institutions shared and collaborated in the project of object identification.\textsuperscript{132} The form enabled different elements of the infrastructure to communicate, collaborate, and cooperate.

In theory, this procedural, organized system of collection, summary, analysis, and distribution should have rendered the investigation of UFO reports routine. But significant challenges hampered these efforts. No concerted effort had been made to inform the public on how to report a strange sighting – who to contact, when, and what information was considered pertinent to the Air Force’s interests. Project personnel frequently complained that interesting cases would often come to their attention only through the newspaper clipping services employed during the early years of the investigations. These sightings would sometimes reach the official Project headquarters at Wright-Patterson weeks or months after they had occurred, which rendered reliable follow-up investigations nearly impossible.

The larger challenge was that the number of sightings being reported to the Air Force and appearing in the news media was quickly expanding beyond the projects’ ability to investigate through their normal means. The Projects did not employ enough investigators to send teams out to every sighting location, even with the on-site assistance of local base intelligence and local law enforcement. Inconsistencies over time in

the number of reports to expect also presented difficulties in securing sufficient resources. Some years had relatively few reports; other years saw spikes of activity around flaps, usually thanks to a strange sighting that found traction in national newspaper reporting. The ever-present lack of manpower stymied the best efforts to get a report analysis system off the ground.

The standardized reporting form carried the most promise and became the basis of the new national sighting report collection effort. Early efforts at designing a useful reporting form were made with the military witness in mind—an elite, expert witness with technical training, who could reliably attest to what they saw and make accurate estimations of what they had seen, without over-exaggerating the nature of their sighting. Original SIGN reporting checklists were focused on collecting data pertinent to identifying sightings as guided missiles, weather balloons, aircraft flights, migratory birds, and so on, and so early outreach was directed toward those who would be able to assist in those positive identifications.\textsuperscript{133} As the list of possible explanations and potential witnesses expanded, so too did the need for reliability tests.

**Stork and the Long Form Report**

Early reporting practices relied on these witnesses to answer honestly and rationally. This supposition quickly became untenable when applied to the public as a whole. Not only would forms asking for highly technical information be wasted on a largely non-expert public, but even those witnesses described and imagined as “reliable witnesses” often produced erroneous accounts of what they saw (see above). The UFO investigations carried out by the Air Force were a collaborative effort, requiring the participation of many different agencies.

\textsuperscript{133}“Agencies, Outside Air Materiel Command, Supplying Information and Analysis,” Technical Report No. F-TR-2274-1A, Unidentified Aerial Objects Project “SIGN”, pp. 13-14, Roll 85: Administrative Files: Box 1, PBB-N/4RA.
agencies and departments within and external to the USAF – and the design of the reporting form was no different. It was treated as a group project, requiring input from multiple interested analysis groups. As the Air Weather Service provided an account of which sightings could be explained by weather balloon launches, for example, it also offered recommendations for reporting form improvements. The reporting forms were not only focused on collecting more data. They were also designed and revised to collect better data.

Efforts were constantly being directed toward rendering the reports down to their purest, most objective data points and then tabulating those data points in ways that made the information accessible. Project Grudge personnel were not, however, the only group working on report processing. An independent coalition of external consultants was assembled at Battelle Institute in Ohio in early 1952 under the auspices of Project Stork.

Project Stork served as the Air Force’s first explicit “scientific study” of the phenomena. Experts in astronomy, applied psychology, physics, and others were recruited into the project, which was located primarily at Battelle Memorial Institute in Ohio.

Stork operated in parallel to Grudge and Blue Book over the course of 1952 and made the most significant impact on reporting form development during the lifetime of the project. Its major directives were to assist in the analysis of sighting reports, and to contribute to the overall improvement of witness reporting forms. Over the year that


135 James McDonald to Ted Bloecher, 24 June 1968, Box 2, Folder: “Bluebook, Grudge Reports – Preface ’68,” JEM. According to McDonald (who had heard it from Hynek) the project contract was for $400,000 – a tidy sum in 1952 dollars.

136 Project Stork was also initially subscribed to a clipping service, to aggregate reports of sightings, some which might have not been reported through official channels; this service was discontinued in October of 1952. In
Project Stork was in operation, it issued multiple drafts of reporting form improvements. Given the widespread reporting of sightings and the considerable lack of manpower available to investigate those sightings, Stork aimed to develop a reporting form that could be put in mass circulation and be used by average, non-expert observers. Early on, the Stork team began producing drafts of reporting forms that included questions aimed at all the technical details the Stork consultants thought essential. Consultants designed the forms to collect data as discrete, objective “facts,” in conjunction with a written description from the observer. The ideal form would produce positive data that could be used to evaluate and “solve” the puzzle presented by the UFO; sufficient reliable data would allow scientists to identify the phenomenon at the source of the sighting. The reporting form and its attention on discrete facts also operated as a means of evaluating the observer and the consistency and reliability of his or her report. Questions were included for the method of observation; the occupation of the observer; what branch of the service they were in, if they were military personnel; punch card tabulations revealed a place for evaluation of the observer’s reliability – “complete,” “quite,” “fair,” “doubtful,” “poor,” or “not.”

Following a series of revisions directed towards amending and improving questions of both technical detail and witness reliability, a form titled “Tentative Observers [sic] Questionnaire” was circulated. ATIC distributed nearly 800 copies of the revised draft;
Figure 4. Tentative Observers Questionnaire, pages 1 & 2. From Project Blue Book Special Report No. 14, Appendix B, Exhibit B2.

Figure 5. Tentative Observers Questionnaire, pages 3 & 4. From Project Blue Book Special Report No. 14, Appendix B, Exhibit B2.

Figure 7. Tentative Observers Questionnaire, pages 7 & 8. From Project Blue Book Special Report No. 14, Appendix B, Exhibit B2.
another round of revisions was made in response to issues raised by the batches of returned forms. These revisions resulted in the penultimate version of the reporting form, titled the “U. S. Air Force Technical Information Sheet.”  

The Technical Information Sheet reflected Stork’s goals in reporting form design. Questions were designed in such a way that the accuracy and reliability of the observer could be evaluated by analysts working with the completed questionnaires. “Accuracy and reliability,” “consistency and competence” – these were not the words of someone who believed their observers to be generally trustworthy, and the strong focus on evaluating witness reliability on the part of Project Stork reflects the broad skepticism with which the Air Force and some consultants approached phenomena reporters throughout the life of the USAF’s UFO investigations. The questions were designed to be easily understood by the general public, using “simple language and nontechnical terminology,” and answered “with minimum effort on the part of the observer,” so that in-person interviews would no longer be necessary. Witnesses were going to be expected to fill out the forms on their own, without any official oversight. The forms had to be designed with the understanding that there would be no

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investigator on site to answer questions or guide the witness’s answers. Multiple choice questions were popular, because they both easy to codify for the large-scale statistical study, but also because an objective, multiple-choice questionnaire could be easily corroborated against the witness’s written statement, to check for consistency across both responses, questionnaire and witness testimony. Discrepancies between the two would render the witness’s report “questionable.” Multiple choice questions often included a “Don’t Know” or “Don’t Remember” option, to offer the informant the opportunity to answer honestly, rather than asking them to guess and report inaccurately.

A series of questions were also included in the final report which were intended to identify any of these discrepancies or other “severely abnormal factors.” “Fanatical” and “over-imaginative” observers might possibly be weeded out based on their answers to questions like “Describe… a common object or objects which when placed up in the sky would give the same appearance as the object which you saw” and “In your opinion what do you think the object was and what might have caused it?” Over-anxious witnesses could possibly be identified through questions that asked for degree of certainty, as the normal observer would not normally describe himself as “certain” about the exact length of time they observed the phenomena. The questionnaire was riddled with items meant to evaluate the reliability of the witness’s report, at least as far as the likelihood that the witness actually

142 Ibid, 75. It was important, however, that the witness not suspect that his or her competence was being evaluated through the questionnaire.
143 Ibid, 76.
145 Questions 5.1 & 22, USAF Technical Information Sheet. See also “Interrogation Forms,” op. cit. 141.
observed an external, physical event was concerned. The final version of the Stork form was
determined to gather all the pertinent information of a sighting, of both the phenomenon and the observer, and was put into circulation in October 1952. It remained in circulation until the mid-1960s, when a new form was developed as part of the ramp up to the Condon Committee’s independent scientific study at the University of Colorado (1966-1968). (See Chapter 4.)

The glut of data rolling in through both official and unofficial channels threatened to overwhelm investigators. Thus, they worked toward organizing and simplifying the data, while building a framework in which new reports could be easily inserted. In addition to streamlining the reporting process via a standardized, national reporting form, project personnel hoped to use the forms to create a cross-indexed database that would allow for the derivation of statistical data. The mass indexing of received reports might, for instance, enable Grudge researchers to determine general characteristics of sightings.146 The sorting and filing of Project Sign and Grudge files went quickly, and project personnel turned their attention toward compiling summary cards on each incident.

These summary cards were intended to contain only what “descriptive” information could be derived from each report – the object’s perceived color, for instance, or the number of objects seen in the sighting, it’s course, any maneuvers the object(s) completed, and so on.147 The cards, like the reports, could be cross-indexed like the reports. Their brevity might, however, make them more accessible and more practically useful to investigators.

147 At the time of completion, reports had been cross-indexed under the following divisions: time of sighting, shape, size, course, number, sounds, date, location, occupation of source, color, apparent speed, apparent altitude, length of time observed, maneuvers, and conclusions. See “Overall Status,” in Status Report No. 4, Project Grudge, 29 February 1952, Roll 85: Administrative Files: Box 1, PBB-NARA. https://www.fold3.com/image/1/11884627.
According to records, investigators also began keeping a large map of the United States, updated to reflect sightings as they occurred and looking for regional patterns.\footnote{Investigators color-coded this effort, as well; colored tacks represented the year of the sighting, rather than any specific information about the sightings themselves. This effort resulted in investigators being able to locate concentrations of sightings around Dayton and Columbus, OH; White Sands and Albuquerque, NM; Oak Ridge, TN; and Camp Hood, TX. See “Map of Sightings, Overall Status,” in Status Report No. 3, Project Grudge, 31 January 1952, Roll 85: Administrative Files: Box 1, PBB-NARA. https://www.fold3.com/image/1/11884602.}


The intense focus on judging witness reliability and the tools for interacting with a nonexpert public reflect a new interest in the social and behavioral sciences on the part of the military, actively ramping up in the early days of the UFO investigations.\footnote{See Rebecca Lemos, “‘Hypothetical Machines’: The Science Fiction Dreams of Cold War Social Science,” Isis 101(2) (June 2012): 401-411; Joy Rohde, Armed with Expertise: The Militarization of American Social Research during the Cold War (Ithaca, NY: Cornell University Press, 2013); Mark Solovey, Shaky Foundations: The Politics-Patronage-Social Science Nexus in Cold War America (New Brunswick, NJ: Rutgers University Press, 2013).}

When understood in relation to other contemporary MIAC developments, the UFO investigations look practically routine. The knowledge infrastructure in the UFO case produced a technical apparatus for investigating the skies and the citizens, not unlike other projects at the time.
Dowsing Out Truth: A Comment on Sources and Witnesses

This chapter (and the larger project) relies in part on Air Force Captain Edward J. Ruppelt’s 1956 book, *The Report on Unidentified Flying Objects* (hereafter referred to as RUFO). Ruppelt served as the first director of Project Blue Book, the final and longest-lived investigative project undertaken by the Air Force, and his enthusiasm for the project deserves much of the credit for the sudden aggressive, well-documented, and professional rebirth of the USAF UFO investigations. Thanks to his proximity and his passion for the project, he accurately captures many of the fundamental challenges of the UFO investigations during the middle of the 20th century - from both operational and historical perspectives.

On one hand, Ruppelt was the director of Project Blue Book for a few years. He certainly had access to the daily operation of the project. Much of the text of RUFO is corroborated by a plethora of other documentation, not the least of which are the official Air Force records of the projects themselves. We can take Ruppelt at his word in many cases: for example, his description of how investigations were undertaken in the late 1940s and early 1950s, in the slap-dash way early sightings were reported, and in how he describes a lack of coordination between interested military and scientific parties is corroborated by other independent archival sources. His descriptions of how many sighting incidents were investigated and how day to day correspondence was conducted generally align with the situation as it was described in Air Force records of the project. When it comes to detailing these daily operations and the actual, practical work of carrying out the project, we can largely take Ruppelt at his word, and let him speak for at least his experience during his tenure as first director of Project Blue Book.
However, there is another side to RUFO that must need be acknowledged. There are places where Ruppelt’s account diverges. He writes for example that the authors of Project Grudge “thought that they were writing a final report on the UFO’s [sic].” The Grudge Final Report from 1949 however indicates no estimated conclusion date, makes suggestions about trends of future reports, and states clearly that the report pertains only to those sighting reports that were received through January of 1949, with work on future reports continuing. Furthermore, Ruppelt’s book is written for a popular audience and quite frequently hews off into an exploration of the extraterrestrial hypothesis (ETH), or the theory that “flying saucer sightings” marked visitations from other lifeforms from beyond our planet. Ruppelt frequently claims that the staff at the Air Technical Intelligence Command (ATIC) believed the objects were extraterrestrial in origin; he sometimes writes as if this is a consensus opinion, though other times he describes “some at ATIC” or “the intelligence specialists at ATIC.” The pervasive sense one gets, however, from Ruppelt’s descriptions is that ATIC, as a body, believed these objects to be spaceships. Ruppelt’s dogged insistence, combined with his position within the project, turned him into a credible historical source in the eyes of many. RUFO became the document undergirding decades of UFO lore, especially that lore concerned with the defense of the ETH. But the timing of the publication of RUFO cannot be ignored. Donald Keyhoe had published “The Flying Saucers Are Real,” a scathing take-down of the USAF studies, in the January 1950 volume of True magazine, and subsequently expanded the article and published it as a book shortly thereafter. The book sold well at a healthy half-million copies. His follow-up, Flying Saucers

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151 RUFO, 60. (Kindle edition, location 1195.)
152 “Abstract” and “Introduction,” Project XS-304, Technical Report No. 102-AC 19/15-100, Unidentified Flying Objects, Project GRUDGE, August 1949, pp. 4, 6, Roll 85: Administrative Files: Box 1, PBB-NARA.
from Outer Space (1953), also sold well. A popular literature was growing, and Ruppelt’s entry proved one of the most lasting and influential in the UFO lore.

For instance, it’s from RUFO that the legendary “ Estimate of the Situation” enters the UFO lore. The Estimate of the Situation, as described by Ruppelt, presented Project SIGN’s definitive conclusion that the objects being seen around the world were spaceships of some sort, controlled by an extraterrestrial intelligence. Upon receipt of this information, all copies of the Estimate were then allegedly destroyed according to an order from the higher-ups, resulting in most copies being burned. No other corroborating evidence suggesting even the existence of this document – let alone its contents – has ever been uncovered. No drafts, no mentions either before or immediately after from either military personnel or consulting scientists, not a single surviving copy (even though Ruppelt claims a few were saved “as mementos of the golden days”) of the many that were allegedly distributed. And yet the Estimate has taken on a life of its own. In the sixty years following the publication of Ruppelt’s book, ufologists and saucerians alike have latched onto Ruppelt’s account of the Estimate as proof positive of a massive military cover-up of extraterrestrial intelligence. (This group includes a number of historians and social scientists who have written about this period in various contexts.) I personally remain unconvinced of this document’s existence. It does, however, demonstrate how little evidence considerable parts of the UFO lore from their period is built on.

The matter is one of honesty. I would be remiss if I were to use Ruppelt here as an unimpeachable source, only to throw a critical light on RUFO in other chapters of this manuscript. Sometimes Ruppelt is a credible source who can be taken at his word. We cannot, however, accept all his conclusions at face value. This tension between the genuine
and the sensationalized is not unique to Ruppelt and RUFO, but rather characterizes the UFO literature broadly. It is difficult to trust your sources entirely. In this way, Ruppelt can be instructional. Where extant sources have corroborated his claims, I have taken RUFO to be legitimate and reliable. Where those claims are only supported by a closed circle of citations or openly refuted by a significant quantity of extant sources, I have taken a more critical approach. In this way, we are dealing with problems like those faced by Air Force investigators as they tried to gauge the relative reliability of their sources. When credibility isn’t as simple as “yes” or “no,” how do we design projects around that gray area that constitutes degrees of trust?
In June and July of 1952, astronomer J. Allen Hynek, under the authority of the United States Air Force (hereafter USAF), interviewed a number of his colleagues regarding unidentified flying objects (hereafter UFOs). Hynek found that 1 in 8 astronomers had made a sighting - a higher rate than among the general population. Despite this higher incidence among astronomers, however, he found a somewhat lackadaisical attitude toward the phenomena. Hynek chalked attitude up to two major factors: a lack of information on the subject, and an “overwhelming fear of [bad] publicity.” These kept scientists from engaging in a sincere scientific study of the sightings. Hynek recommended that the USAF give the UFO question “the status of a scientific problem,” and all the care, time, and resources associated with such a designation. Then the question would attract the scientific attention it deserved, and Hynek was optimistic that all the controversy could be put to rest.

The UFO question did attract scientific attention, but that attention did not put an end to the controversy around sightings. Hynek was right about the reluctance of most scientists to speak publicly about UFOs for fear of being thought of as taking a nonsense subject seriously. Only a few prominent scientists ever took the public stage to comment on the UFO question, and they came to represent poles diametrically opposed to one another. The battle over the scientific status of UFO investigations – legitimate or illegitimate – played out in public forums across the U.S., whether in the national press or in the halls of

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153 Sections of this chapter are currently under review under the title “Science on the Fringe: UFO Studies in Cold War America and the Contest for Scientific Legitimacy,” as part of a special issue in *Science as Culture* tentatively titled “Pariah Science.”

Washington, DC. At the heart of these battles was the definition of science, the myth of pure science, and an idealization of the characteristics of the scientist. Most interestingly, both sides of the debate leveraged similar tools and tactics to refute their opponents.

The contested status of the UFO investigations, as well as the scientists who took part in them, undermine a picture of Cold War American science as being monolithic, bounded, and characterized by institutional consensus about the content of science. Ideological battles within establishment science over UFO studies offer a glimpse into the practical work of boundary construction and destruction. Boundary formation between science and nonscience is well-studied, as concerns professional, expert scientists and the lay citizenry; the term has also come into vogue to describe cooperation and exchange between diverse and seemingly-incommensurable disciplinary actors. I hew toward Thomas Gieryn’s original description to suggest that boundary-work as boundary-making is not only useful in understanding expert-nonexpert interactions, but also has traction as a framing device for orthodox/unorthodox and consensus/non-consensus debates internal to establishment science.\(^{155}\)

Studies on the social and scientific dimensions of 20\(^{th}\) century unidentified flying objects and unidentified aerial phenomena are rare. Where UFOs have appeared in the humanities and social sciences, they have been largely relegated to discussions of pseudoscience, though this is currently changing, thanks to the work of historians, folklorists, and others.\(^{156}\) Daniel Thurs has used 20\(^{th}\) century UFO studies to demarcate the

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territory between ossified, stabilized, increasingly impermeable post-war ‘Science’ and outsider ‘nonscience,’ his example of which is ufology. While Thurs and others probe gently at the borders of professional controversy around UFO phenomena as it pertains to boundary-work, the literature has largely focused on popular depictions and interpretations of UFO phenomena and the tensions created between establishment science and the American public thereby. A serious exploration of how orthodox scientists faced the challenges of their dissenting colleagues within institutional science has been largely missing.

This chapter drives into this little-explored territory by paying attention to the ways professional scientists navigated the UFO controversy during the middle decades of the 20th century. The case study below addresses both issues by exploring the ways orthodox scientists engaged in Gieryn-esque boundary-work to protect the reputation and credibility of science against pointed heterodox challenges, ironically rooted in the persistent belief in essential qualities of science. In particular, I argue that boundary-work in these cases is multidirectional. I will do this through an examination of the rhetorical work of UFO-interested scientists, particularly as they expressed their views and positions through their writing, both published works and in correspondence with each other and associated colleagues. The expert actors in the case study below began with the same basic scientific training, indoctrinated in the same ideological principles. All three actors - Donald Menzel, James McDonald, and J. Allen Hynek - were white, male, highly-educated physical scientists, with histories of service during World War II, comfortable positions at respected universities, and positive attitudes towards public science education. Yet all three came to

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inhabit very different spaces in their interpretation of UFO phenomena. As such, a study of their beliefs and behaviors, as articulated through the archival sources of their papers, destabilize a traditional narrative of Cold War science as objective, impermeable, and settled. I conclude with a closer look at boundary-work, as well as boundary construction and maintenance. The means through which internal boundaries are policed affects directly the language used to mobilize the public in support of policy and politics; in the case of UFOs, the visibility of these three scientists, and their respective positions, had ramifications for the fate of UFO research, and offers lessons for understanding the role of discourses of boundary-work in our political lives.

**Boundary-Work, Scientific Authority, and Public Credibility**

Despite decades of searching for essential qualities of science, philosophers, historians, and sociologists of science have turned up nothing but debate, disagreement, and counterexamples that leave us depending on the adage that we simply know it when we see it. This difficulty in defining hard, fixed boundaries has left science long open to assault from heterodox belief systems which seek to reduce or undermine the social and cultural authority of science. Thus, understanding how the institutional boundaries of science are developed and maintained against challengers is crucial to the practical application of policy, as well as the policing of social norms, within and external to the institution.

‘Boundary-work,’ first deployed by Thomas Gieryn, has become the prevailing means of discussing how ‘science’ is identified and defined. Gieryn argues that ‘boundary-work’ is largely rhetorical, as scientists attempt to define the characteristics of institutional science to non-scientist audiences. The boundaries thus constructed are social in nature. Scientists police and protect those boundaries through *expulsion* (removing those deemed

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158 Gieryn, “Boundary-work and the demarcation of science.”
‘non-scientific’ from knowledge creation processes, *expansion* of the realm of their authority, and the *protection of scientists’ autonomy* against outside threats to their independence, credibility, and intellectual material and resources.\(^{159}\) Erica Morrell has recently argued for the inclusion of a fourth mode, *accommodation*, to reflect those instances when professional experts (usually scientists) include outside groups in some aspects of knowledge-making processes, thereby protecting their own identities and influence while reducing tension and hostility between competing groups.\(^{160}\) These modes of practical boundary construction are not only visible in social relations but can also be inscribed in objects as well.\(^{161}\) Throughout, the ideological authority of science is protected through the practical social negotiations of its practitioners.

‘Boundary-work’ as a concept has proven useful (if not surprisingly flexible) across intellectual schools and disciplines. A cursory search for ‘boundary-work’ in databases of academic publishing will return thousands of results, just from the last few years, across nearly every subject, from English literature to education to genetics to climatology. The term serves primarily two functions in its literature. In recent years, scholars have begun to use it in describing how scientists from different disciplines collaborate and exchange knowledge-forms across disciplinary boundaries. The concept also still enjoys usefulness in Gieryn’s original sense, to describe how scientists defend their ideological territory from outside incursion. These incursions are often characterized as coming from non-scientist outsider groups, be they religious, political, or otherwise. These groups often dissent from...

\(^{159}\) Gieryn, *Cultural Boundaries of Science*.


traditional or orthodox scientific categories, ontologies, and/or epistemologies in ways that are untenable to institutional science.\textsuperscript{162}

Less common in the literature are cases wherein the challenge to orthodox institutional science comes from within its own halls. One outlier is Gieryn’s exploration of Stanley Pons and Martin Fleishmann’s ‘discovery’ of cold fusion that rocked the world. For a time, these two scientists reshaped the boundaries of science both through a radical scientific claim and by inviting nontraditional participants (the media, the United States Congress) into the inner world of scientific knowledge creation. Orthodox scientists restored the boundaries of science through professional tools (professional conferences, careful use of ‘the experimental instruments of factmaking’).\textsuperscript{163} It was not only the claim for cold fusion that came under attack, but the characters of Pons and Fleishmann themselves; at the root of their ‘perversion’ of natural laws might be an unabashed, opportunistic hope for personal profit – or worse, just pure scientific incompetence.\textsuperscript{164}

Charges of ‘scientific incompetence’ likewise found a home in the battles over the legitimacy of UFO research. Critiques of UFO investigations as they were leveled by establishment scientists during the mid-20th century destabilize a narrative of mainstream Cold War science being largely impermeable to challenges from what Thurs has called the ‘nonscience’ of ufology. Professional scientists did not present a unified front against a pseudoscientific object and pursuit. The UFO investigations presented a space for dissenting scientists, who derived credibility from their training and cultural authority, to challenge consensus and orthodox ideologies. I have used boundary-work as an analytic frame to explore the beliefs and behaviors of three prominent early ufologists, demonstrating in the

\textsuperscript{162} For example, see Hess, \textit{Science in the New Age}.
\textsuperscript{163} Gieryn, \textit{Cultural Boundaries of Science}, 228.
\textsuperscript{164} Ibid, 228, 231.
process that boundary-work can be applied to more than interactions between expert and non-expert actors.

Donald Menzel, James McDonald, and J. Allen Hynek were each and all trained professional physical scientists who devoted a significant portion of their careers to the investigation of unidentified flying object phenomena, in addition to their more mainstream, traditional scientific interests. All three agreed that the phenomena were scientifically interesting and deserving of scientific investigation and response. The public nature of the sightings also demanded that scientists engage, cooperate, and communicate with the American public and witnesses in particular. Menzel came to represent scientific consensus on the UFO question and directed his outreach to the American public via a series of popular science books published over a twenty-year period. McDonald and Hynek, however, found in the UFO problem space to challenge scientific status quo, both publicly and in the halls of science. All three leveraged the language of science, arguing that their positions, however opposed, were each grounded in the basic philosophical tenants of science - objective, curious knowledge-making.

Studies of boundary-work in the humanities and social sciences have often focused on the relations between professional scientists and non-expert publics, and more recently, between legitimate and illegitimate objects of study. I argue here that boundary-work is also a useful analytic device for exploring credibility construction and boundary construction within the larger scientific institution as well. Gieryn’s three practices of boundary-making - expulsion, expansion, and protection of autonomy - are on display as scientists worked to control who was able to participate in the knowledge-making practices around UFOS, and how those groups were (or were not) able to participate. The protectionist behaviors implicit in
boundary-work become visible through Menzel’s, McDonald’s, and Hynek’s rhetorical practices as they debated one another in public and private spaces.

**Donald Menzel: Crusader for Popular Science, True Believer Antagonist**

A life-long lover of science, Donald H. Menzel discovered astronomy as a young man, but began his scientific career in other disciplines. He received his master’s degree in chemistry and mathematics in 1920, and subsequently spent the following few summers as a research assistant to Harlow Shapley at the Harvard College Observatory. He received a second master’s degree in Astronomy from Princeton University in 1923 and followed it up with a PhD in astrophysics in 1924. He moved to Harvard in 1932, where he would remain for the rest of his career. Menzel’s tenure at Harvard was interrupted only by his Navy service during World War II. While in the Navy, Menzel spent three years working on radar development and radar interpretation. Following the war, Menzel carried out an illustrious scientific career. He served as Vice President, and then President, of the American Astronomical Society (1946-1948, 1954-1956). Most notably, Menzel was director of the Harvard College Observatory from 1952 to 1966.

Over the years of USAF investigation, he became deeply involved in expert UFO investigations carried out by the United States Air Force. Menzel offered his expertise to Project Blue Book throughout the 1950s and 1960s; he often investigating sightings on his own and forwarding the results of his analyses to Blue Book personnel. When he caught wind of the 1965/1966

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165 Donald Menzel to Charles Maney, 8 March 1961, Box 8, Folder: “Maney, Charles A. #1,” *DHM*.

166 The exact date is somewhat unclear. Menzel described his interest to Edward Condon as beginning “in 1949 or 1950.” Menzel to Edward Condon, 8 February 1967, Box 3, Folder: “Condon, Edward U,” *DHM*. 

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murmurs of the broad, university-based study (which would later materialize as the University of Colorado Condon Committee, the United States Air Force’s independent, scientific study), Menzel made his experience available to the study. The volume of pro-interstellar visitor ufologists had been rising over the years, and Menzel worried about UFO-sympathetic scientists joining the USAF project and corrupting its findings. Menzel corresponded consistently with Condon Committee project directors Edward Condon and Robert Low during the project, sharing his own data with the scientists working at Boulder and helping to design yet another reporting form to more accurately capture data from witnesses. And when the time came for the National Academy of Sciences to conduct its independent review of the Condon Committee’s Final Report on the Scientific Study of Unidentified Flying Objects, Hugh Odishaw, executive secretary of the National Research Council, opined that the need to have members who had no public opinion on the UFO question had kept Menzel, the most prominent expert, off the panel.

Menzel was also the leading UFO debunker of the twentieth century. His debunking efforts were rooted in a concern for public science education and an understanding of science’s legacy. He once characterized the nearly 25 years spent debunking UFOs as a “responsibility toward mankind in general.” “I thought it would look pretty queer if, say 50 years from now,” Menzel wrote to colleague physicist William Markowitz, “someone delves into the past and wonders where the scientists were when the UFO’s were flying.”

Menzel’s public-facing debunking program consisted primarily of general audience books and magazine articles. He also made himself available to print and television journalists. This rendered Menzel the most visible scientific debunker for decades.

167 Menzel to William Markowitz, 4 April 1967, Box 9, Folder: “Markowitz, William,” DHM.
Menzel gave his first public comments on the phenomena when interviewed for an Edward R. Murrow special, *The Case for the Flying Saucer*, which aired on 7 April 1950. When asked by Murrow what the flying objects could possibly be, Menzel replied that they could be any manner of thing, from the sun reflecting off an airplane, to a weather balloon, to pieces of paper carried along by the wind. When objects reached a high enough altitude, Menzel explained, an observer couldn’t accurately judge the distance of the objects from themselves. When it came to interplanetary spacecraft, Menzel admitted that anything was possible – but that he considered it extremely unlikely.168

His comments to Murrow were expanded in his first book on the flying saucer phenomenon. In 1953, Menzel published the first of three books on the topic, aptly titled *Flying Saucers*.169 *Flying Saucers*’s argument mirrored Menzel’s earlier comments to Murrow, showing a consistency in messaging over time. The book’s explanations for flying saucer sightings depended on scientific explanations of natural phenomena. These explanations included those listed to Murrow and expanded to include other optical phenomena like mirages, reflections off ice crystals, and other misidentified astronomical or meteorological phenomena. Though he rejected the notion that they were seeing interstellar spacecraft, Menzel never denied that witnesses were seeing something. *Flying Saucers* was written for a general popular audience and served a dual purpose: in addition to providing critical analysis of flying saucer sightings, the reader would also (hopefully) learn something about atmospheric, astronomical, and psychological phenomena that would lead to such sightings.

*Flying Saucers* met with generally positive reviews. The book was praised for being accessible and effective, and Menzel, for providing a much-needed debunking service in the

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interest of good popular science. The *New York Times* praised Menzel for knowing “how to explain everyday phenomena and how to hold the interest,” and thought the book should be widely read “not only because it so effectively disposes of flying saucer myths but because it is good popular science.”

*Science* praised the book as one “which makes a sensible interpretation of the oft repeated stories.”

*The Scientific Monthly*, the publication for the American Association for the Advancement of Science (AAAS), thought that Menzel “should receive the gratitude of scientists and laymen alike for his ability and his willingness to shed light on a perplexing, even frightening subject, one that is only remotely allied to his real interest - astronomy.”

But not everyone looked so generously on Menzel’s effort. Lead USAF flying saucer sighting investigator, and lifelong friend of Menzel, astronomer Dr. J. Allen Hynek reviewed the book as well. Hynek critiqued Menzel for offering explanations to cases for which Menzel had incomplete or incorrect data. (Menzel had come to blows during the writing process with USAF Project Blue Book leadership, who refused Menzel unlimited access to their project files.) Without complete data, Hynek argued, *Flying Saucers* was not the serious, systematic study of the phenomena that Menzel claimed it was. These criticisms came from a fellow scientist, who was educated in the same practices and ideologies as Menzel. Because they were perceived as having equal scientific authority, Hynek’s review became an early breaking point between the ufologists and Menzel, the establishment scientist who became the debunker figurehead.

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173 Menzel to Leon Davidson, 20 May 1958, Box 4, Folder: “Davidson, Leon.” In his correspondence with Davidson, Menzel speculated that the USAF’s refusal to share files “might conceivably have been a trap to muzzle [him].”
174 While no copy of this review has been found, Menzel discussed it at length in correspondence with Charles Maney. See Menzel to Maney, 8 March 1961, Box 8, Folder: “Maney, Charles A. #1,” and Maney to Menzel, 8 May 1961, Box 8, Folder: “Maney, Charles A. #3,” DHM.
Menzel had the opportunity to correct the errors of the 1953 book when he published a second book in 1963 with co-author Lyle Boyd, titled *The World of Flying Saucers*. It presented new and previously-unreleased cases and data to the wider public. For this volume, the authors had access to the Project Blue Book files in a way Menzel had not back in the early 1950s. Menzel and Boyd made full, unfettered use of them. Using accessible language and simple illustrations, *World* was intended to both debunk classic ‘flying saucer’ cases while also engaging in public science education. In addition, *World* provided background on the official Air Force investigations, explaining how the official investigations were shaped, who participated, and how investigations were undertaken. Rather than treat the phenomena as a whole, *World* used its expanded access to USAF files to subject individual cases to intense scrutiny. This scrutiny focused specifically on cases that had received significant national coverage in the media, including the green fireballs of New Mexico, the Lubbock Lights, and the summer 1952 Washington, D.C. flap.

While Menzel took his public crusade seriously, he was also eager to put to rest any controversy about the phenomena in public as well as scientific circles. Menzel’s third and final book, *The UFO Enigma: The Definitive Explanation of the UFO Phenomenon*, co-authored with Ernest Taves and published post-mortem, was yet another effort at debunking and demystifying the phenomena for the American public. With an introduction written by Fred Whipple attesting to the eminent qualifications of its authors, *The UFO Enigma* used the

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Figure 1. Shapes of various reported UFOs. From Menzel, The World of Flying Saucers, page 8.
Figure 4. Shapes of various balloons. A, Skyhook at launching; B, Skyhook at high altitude; C, radiosonde or pibal; D, balloon cluster; E, blimp or sausage-shaped balloon.

Figure 15. "Figure 4. Shapes of various balloons." From Menzel, The World of Flying Saucers, page 32.
strongest language yet to delegitimize the ETH and flying saucer societies “who preyed upon the gullible public for years.” Its analysis was rigorous, but as one review put it, it was “doubtful it [would] have any effect on the views of the ‘believers.’”

Toward the end of his life, Menzel often reflected that he had devoted more time to the UFO question than any other working scientist, save possibly J. Allen Hynek, possibly at the cost of his own research. Menzel’s assessment that there was no one who could fill his shoes in late-1960s debates about UFO phenomena was not arrogance speaking. It was exactly that long history of research and debunking on the question and his efforts at public education that made Menzel so visible as Enemy Number One to the ufologists. To this day, Menzel is characterized as an ardent bulldog of the Air Force, ready to slander “true believer” scientists and engage in the cover-up of flying saucer phenomena while actively working against the scientific interests of those who felt that the phenomena deserved further scientific study. Ufologists of the twentieth century seemed to have no crueler insult than to call someone “Menzelian.”

Through his popular-science publications, Menzel was actively engaged in separating popular UFO literature from actual, professional science. His appearances in public media - the newspaper press, radio, and television specials - traded on his scientific training to give him an authoritative voice on the subject. In many ways, Menzel was practicing a traditional form of boundary-work: he excluded certain views, theories, and interpretations from serious consideration based on his expert knowledge of the relevant science. In doing so, he was simultaneously engaged with the protection of scientists’ autonomy by distinguishing

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180 Menzel to Markowitz, 8 October 1969, Box 8, Folder: “Markowitz, William,” *DHM*. 

104
professional scientists from the authors of much of the popular UFO literature. He accomplished this on many fronts but most significantly through the rigorous analytic work he undertook in his own publications. Through these practices, Menzel was engaged in the work of constructing and reinforcing the boundaries between science and non-science (ufology and ufo-belief) in terms of their relationship to experts (himself and other professional scientists) and non-experts (the lay citizenry).

**James E. McDonald: Challenger to Consensus**

In most respects, James E. McDonald fit the portrait of a 20th century American Cold War “establishment” – professional, elite – scientist. He served in the Navy during World War II and taught at the Naval Aerology School following the war. He completed his PhD in physics at Iowa State College in 1951 and specialized in cloud physics. He joined the University of Arizona in 1953 and helped establish the Institute of Atmospheric Physics (IAP) there before becoming a popular professor in that department in 1956. He also enjoyed the patronage of the Office of Naval Research (ONR) between 1958 and 1968; his work included the study of cloud formations and atmospheric conditions that might lead to anomalous refraction and thereby affect radar and communications systems. McDonald also participated in Project Stormfury and was a part of the Stormfury Presidential Scientific Advisory Committee through 1970. McDonald published prolifically and openly admitted to working 60- to 70-hour work weeks as a matter of course.\(^{181}\) In many ways, nothing about McDonald’s biography set him apart from his colleagues in the military-industrial-academic complex of the Cold War. Except, that is, for his passionate interest in ufology.

\(^{181}\) James E. McDonald to Jim Hughes, 4 October 1968, Box 9, Folder: “ONR Funds Controversy: Klass, JEM White Papers,” *JEM.*
McDonald’s prolonged engagement with the topic seems to have begun through correspondence with Richard Hall, executive secretary of the National Investigations Committee on Aerial Phenomena (NICAP), a Washington, DC-based private investigative group, in 1959. (He claimed later to have begun quietly investigating UFO sightings local to Tucson in the mid-1950s.) Hall contacted McDonald, seeking McDonald’s expertise in identifying an object sighted in Brazil when Menzel (whom, in a nod to Menzel’s visibility as a leading scientist on the UFO question, NICAP had contacted first) gave an unsatisfactory response. McDonald’s analysis did not differ from Menzel’s; despite this, Hall and McDonald maintained ongoing correspondence throughout the early 1960s regarding sighting analyses. McDonald’s interpretations rarely differed from those of his colleagues. When differences did arise, they were usually differences of phenomena interpretation. For example, astronomers often suggested astronomical explanations, while atmospheric physicist McDonald offered explanations grounded in natural phenomena he was most familiar with. And like other Cold War scientists apart from Menzel and J. Allen Hynek, McDonald worked to maintain a clear distance between himself and the stranger theories. For example, Hall asked McDonald in late 1959 to join other scientists in signing a joint statement meant to call attention to “the need for scientific methodology” to put the UFO question “in perspective,” and “encourage” the United States Air Force to release information pertaining to their own official investigations of the phenomena. Despite assisting in the drafting of it, McDonald ultimately asked to have his name struck from the

182 Richard Hall to James E. McDonald, 13 April 1960, Box 9, Folder: “NICAP: Correspondence: Hall, Lore, Nixon, etc.,” _JEM._
final version of the joint statement. He described himself at the time as being somewhat agnostic and characterized his own investigations into the matter as “extracurricular.” His interest in the UFO problem remained largely peripheral to his other interests through the early 1960s.\(^{183}\)

Though he had felt some concern in his early investigations about the general lack of scientific interest and attention being given to the UFO question, his own review of the cases had never produced what he considered decisive evidence regarding the nature of the phenomena. Through the early 1960s, McDonald by and large trusted and reinforced the analyses of his colleagues on the UFO problem.\(^{184}\) McDonald, as a scientific insider, had faith in the norms and processes of the scientific institution. As far as the USAF investigations were concerned, McDonald put his faith in J. Allen Hynek’s personal integrity as a scientist, trusting that if Hynek found something amiss, he would act on it. McDonald was advising against opening Congressional inquiries into the UFO program as late as May 1966.\(^{185}\) And as scientists regularly trust their colleagues to do research exhaustively and honestly, McDonald believed for a time that if anything were to be found amiss, Hynek would raise the scientific alarm. He also regularly characterized the involvement of the American public as *harmful* to UFO research. Science literacy among the public was passing at best and to bring members of the lay citizenry into the scientific UFO discourse would only produce more distracting ‘noise’ and draw resources away from serious investigation.

His position underwent a radical change in the summer of 1966. As McDonald familiarized himself with literature on the subject, he found that, while he doubted the

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\(^{183}\) McDonald to Hall, 1 October 1966, Box 5, Folder: “Hall, Richard H., ’65, ’66, ’67 Correspondence,” *JEM*.

\(^{184}\) Ibid.

\(^{185}\) Ibid; also, McDonald to Representative Morris K. Udall, 28 March 1966, Box 12, Folder: “Udall, Morris K., Congressman”; Box 10, Folder: “Panel, Scientists to Study UFOs: Proposal, NAS/Coleman, 1966,” *JEM*. 

107
credibility of many authors writing about UFO phenomena, his attention was repeatedly
drawn to the persistence of unexplained cases. He then immersed himself fully in the UFO
investigations. This immersion included trips to Maxwell Air Force Base, home of the USAF
investigations, NICAP headquarters in D.C., and J. Allen Hynek at Northwestern University.
Still, McDonald kept a relatively low profile among scientists addressing the UFO problem.
While he felt serious scientific attention was required to truly solve the mysterious UFO
phenomena (and thought himself a prime candidate for the job), he often lamented the
damage ‘crackpots’ and hoaxers did to what might otherwise be a respectable scientific
question.\(^{186}\) He was, at this time, an advocate among his peers for serious scientific
scholarship on the matter – and an opponent of a heightened public profile for the
phenomena and those scientists involved with it. It would take a scandal of galactic
proportions to bring McDonald to the forefront of the ufology debates.

McDonald’s “conversion event” coincided with the launch of the University of
Colorado/Condon Committee study (see next chapter). McDonald had little to no
involvement with the Colorado project. He made a few trips to Colorado in the project’s
early days but found himself somewhat rebuffed by project scientists and began to have
concerns about the integrity of the project. His respect for the project crumpled in 1967
when McDonald received a copy of an internal memo that described the presumed
philosophy of the Colorado scientific staff. Written in August 1966 on the eve of the launch
of the Colorado-based Condon Committee, assistant project director Robert Low stated in a
memo that “[the] trick [to the study] would be… to describe the project so that, to the
public, it would appear a totally objective study but, to the scientific community, would present

\(^{186}\) McDonald to Richard Hall, 1 October 1966, Box 6, Folder: “Hall, Richard H.: Correspondence, 1968-
1971,” JEM.
the image of a group of nonbelievers trying their best to be objective but having an almost zero expectation of finding a saucer.\textsuperscript{187} Low’s comments confirmed to McDonald that the project had never had any intention of taking a serious, scientific look at the phenomena, and his growing concerns now seemed validated.

The Low Memo could be \textit{and was} read as an admission of guilt wherein the Condon Committee scientists had accepted the project to kill a scientific study they saw as illegitimate. Believing the Condon Committee had discredited itself via the Low Memo, McDonald felt a responsibility to inform the public, the USAF, Congress, whoever would listen, of the project’s many shortcomings. Although his personal position on UFO phenomena was trending more and more toward the extraterrestrial hypothesis (the belief that UFO phenomena indicated visitation by an extraterrestrial intelligence, hereafter ETH) during this period, McDonald kept his public attacks focused on the ideological and philosophical failings of the Colorado project. Biases present at the inception of the project left it entirely unable to perform even its most basic scientific responsibility - open-minded, curious inquiry into a problem.

McDonald’s defense of the ETH was deeply entwined with what he characterized as the USAF’s “foul-up” of UFO investigations (as opposed to the evergreen “cover-up” allegations). In answering the question, “incompetence or malice?,” McDonald often came down on the opposite side of many of his ufologist counterparts in arguing that incompetence was largely to blame for the failure of the USAF studies. No evidence of a cover-up was visible. The USAF projects were so chronically understaffed by untrained, uninterested personnel that it seemed unlikely that a cover-up could have even been

\textsuperscript{187} Robert Low to E. James Archer and Thurston E. Manning, 9 August 1966. Emphasis added. See Chapter Five.
executed, had the Air Force desired one. Charging the Air Force with scientific incompetence was perhaps more damning than charging them with a concerted, premeditated cover-up of extraterrestrial visitation. Amid cold war anxieties regarding rapid scientific and technological progress, scientific ignorance was the greatest of sins.

Following the publication of the Condon Committee’s final report, McDonald began to argue vigorously for a follow-up scientific study, this one truly independent from the USAF by receiving its funding from a non-military agency. He exploited relationships with a handful of congressmen in the United States House of Representatives, and in July 1968, succeeded in agitating members of Congress into holding a symposium on unidentified flying objects. He was a leading participant in a highly-publicized and highly controversial symposium at the 1969 American Association for the Advancement of Science meeting. While he never published his research on UFO phenomena (a significant point of leverage for his detractors), McDonald remained an outspoken public advocate for continued UFO research until his death in 1971.

McDonald traded on his cultural cache as a professional scientist, building his arguments for continued study of the phenomena on accepted norms and philosophies within the scientific mainstream. By the end of his life, McDonald came to argue forcefully that otherwise-unexplainable UFO phenomena indicate the presence of extraterrestrial intelligences engaged in the surveillance of Planet Earth. But, although McDonald believed the likelihood of the ETH was not nearly so remote as other scientists suggested, he was quick to remark that it was only a theory, still a hypothesis which needed more scientific attention and analysis. He was also often careful to summon the history of science to his aid – quantum theory, the Copernican system, and (a ufologist favorite) meteorites were, at one
time, laughed out of the realm of acceptable science before becoming part of the accepted, orthodox scientific worldview. He criticized his colleagues for their arrogance and mishandling of information. Their bias against the problem - both at the level of individual case analysis and broad depiction of the whole affair as ‘crackpot’ - had hampered sincere investigation. At the end of twenty years of resource investment, the USAF and cooperating scientists had nothing to show for all their supposed work.

Despite his views aligning more with a perceived ‘crackpot fringe,’ McDonald’s efforts at boundary (re)formation were directed largely at his colleagues and institutional practices internal to professional science. He sought to expand the realm of scientific objects to include the transient phenomena and cast the difficulties of such study in terms of an exciting scientific challenge. Ironically, his position on non-expert witnesses aligned more with Menzel’s than perhaps either would have liked to admit; McDonald saw the inclusion of non-expert witnesses as damaging to the scientific process and undermining the credibility of those professional scientists who did think the UFO phenomena deserved scientific attention. McDonald was as concerned with protecting traditional institutional boundaries as his mainstream colleagues; his goal was to re-forge boundaries within the scientific enterprise, to allow for the possibility of radically new understandings of the universe, regardless of whether they aligned with the current scientific paradigm.

**J. Allen Hynek: A Man for All Seasons**

Josef Allen “J. Allen” Hynek is perhaps the most well-known of the UFO scientists of the twentieth century and not least because of his participation in Spielberg’s blockbuster 1977 film, *Close Encounters of the Third Kind*. He became the public face of the UFO

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188 McDonald to Edward Welsh, 21 September 1967, Box 8, Folder: “National Aeronautics and Space Council,” *JEM.*
phenomenon – first of the Air Force’s skeptical, explain-it-away method, then of cautious skepticism toward generalizing scientific explanations, and finally, for ETH belief in the post-Condon Committee years. As a young man, he had two great passions: astronomy, and a fascination with the metaphysical and the occult. He attended the University of Chicago as an undergraduate; during this time, Hynek became enamored with the idea of finding natural, scientific explanations for supernatural phenomena. He completed his PhD in astrophysics in 1935 at the University of Chicago’s Yerkes Observatory in Williams Bay, Wisconsin. (His “nontraditional interests” appear to have fallen by the wayside during his intensive graduate study at Yerkes.) Hynek joined Ohio State University in 1936. Like McDonald and Menzel, Hynek also served during World War II, working as a civilian scientist at the Johns Hopkins Applied Physics Laboratory, helping to develop the Navy’s radio proximity fuse. Hynek returned to OSU after the war. In 1956, he joined the Smithsonian Astrophysical Observatory (SAO) after getting to know Fred Whipple through his (Hynek’s) work on the uses of V-2 rockets in astronomical research. While at SAO, Hynek was a key player in the International Geophysical Year program, Operation Moonwatch. Finally, Hynek made the move to Northwestern University in 1960, where he remained until his retirement.

Hynek’s service to the U.S. military did not conclude with the end of World War II. The astronomer became the key scientific figure of the USAF’s official investigations of flying saucer phenomena. Hynek was brought on as a scientific consultant in 1948 largely because of his proximity via OSU to Wright Field where the investigations were housed. Hynek later wrote that he agreed to examine the files at Wright Field “almost in a sense of sport.”\textsuperscript{191} He remained the lead scientific figure of the projects through the conclusion of the official investigations in 1969.

Hynek largely did his early work for the United States Air Force projects without much publicity or fanfare. Apart from the occasional book review, comment for newspaper articles, and a single scientific article published in \textit{The Journal of the Optical Society of America} in 1953, Hynek did very little public-facing UFO work for most of his twenty-year involvement in the investigations.\textsuperscript{192} As late as 1961, Hynek stated that he didn’t really believe in flying saucers and had no evidence to support the argument that mankind was being visited from outer space. He did, however, strongly believe that the UFO phenomena provided scientists a rare opportunity to do real public science education. The UFO phenomena commanded public attention, as multiple flaps had demonstrated over the previous decade. Embracing the strange phenomena offered scientists a platform from which to teach an interested and attentive public about astronomy, meteorology, physics, but also larger themes and ideas, including what scientists actually “did” and how the scientific method worked.

For the first nearly twenty years of his involvement in UFO investigations, Hynek’s positions were largely in agreement with his orthodox colleagues regarding sources and analyses of sightings. He frequently expressed frustration at the ways private investigative


organizations fostered mistrust in the USAF investigations. Correspondence between Hynek and his peers reveal a man intrigued by the phenomena but devoted to higher scientific ideology and consensus. Somewhere in the mid-1960s, however, Hynek’s position began to soften. In a television interview in 1964 (and it’s notable that over the course of the 1960s Hynek accepted more and more opportunities to speak out publicly about UFO research), he still dodged the “visitors from space” questions, but maintained that he believed that witnesses were seeing things they could not explain. Not long after, however, he began publishing in publications from *Science* to *Playboy* letters and editorials that accused his more orthodox colleagues of temporal provincialism and arrogance and ignoring a significant scientific question because they disagreed with one hypothesis (the ETH, in this case) seemed highly unlikely. Where Hynek had once shared space with friend and colleague Menzel, his rhetoric now began to mirror that of McDonald. The arrogance and closed-mindedness of orthodox establishment scientists were preventing the UFO question and the ETH from receiving the proper scientific attention they deserved.

In the early 1970s, Hynek finally put pen to paper on the UFO question. *The UFO Experience: A Scientific Inquiry* remains a seminal, influential work in ufology. The book was written for a popular audience, in first-person and with an accessible and approachable tone, markedly different from the terse language used by skeptical scientists writing against the ETH. It is perhaps most famous for laying out Hynek’s *close encounter* classification system, which described four types of “close encounter” with UFO phenomena. (Cinema buffs will now recognize Hynek’s system as the source of the title for *Close Encounters of the Third Kind*).

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193 Hynek, transcript of an interview given to the Baxter-Ward Program on KABC TV, 1964, Box 6, Folder: “Hynek, J. Allen, Correspondence + JEM Notes,” JEM. See also Hynek to Menzel, 26 July 1961, Box 6, Folder: “Hynek, J. Allen,” DHM.

named for those encounters in which witnesses reported “UFO occupants.”) It explored the nature and character of UFO reports as they were received by the USAF, and of the people who made those reports. It also made bountiful references to the history of science and changing themes in the philosophy of science, while critiquing the divide between the behavioral sciences and the physical sciences. In this way, it may be a bit ahead of its time.

In its essence, *The UFO Experience* remained pure Hynek. “After more than twenty years’ association with the problem,” he declared, “I still have few answers and no viable hypothesis.” He could not say what UFOs were. He could only present the evidence as it stood and argue for continuing study of the phenomenon. The book relied heavily both on Hynek’s visibility within the UFO debate and his career as a “mainstream” professional science with a long history of cooperation and participation with the United States military. Hynek drew authority with a UFO-sympathetic readership from his biography. And his measured, high-minded-yet-accessible way of writing made him a calm, rational, even-tempered voice among his increasingly combative colleagues.

In the vast sea of UFO belief, Hynek was an island. Beset on all sides by criticism and hostility, his equivocating stance on the nature of UFO phenomena left him with few comrades. Many civilian groups saw him as being complicit in an Air Force cover-up conspiracy, or at least part of a misinformation campaign. His situation with his colleagues in establishment science was not much better. Though Menzel and Hynek remained lifelong friends and seem to have always had a warm and cordial relationship, in private, Menzel

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195 Ibid, 258. The book presented such an articulate and safe exploration of the topic that Menzel himself found the book “well-written” and that it “made as good a case for [Hynek’s] point of view as anyone could make.” Menzel’s major complaint was in Hynek’s inclusion of the “contact cases”: “I [Menzel] think you [Hynek] know as well as I do that these cases are, without exception, contrived by the report to gain notoriety. I find none the last bit convincing.” Menzel to Hynek, 20 June 1973, Box 6, Folder: “Hynek, J. Allen,” *DHM.*
lamented Hynek’s equivocating position on the ETH.\textsuperscript{196} He saw Hynek as feeding the fringe, encouraging the crackpots, and undermining the larger scientific community and their efforts at public science education.\textsuperscript{197} On the other end of the spectrum, James McDonald had openly stormy opinions about Hynek. As far as McDonald was concerned, Hynek’s long-time resistance to the ETH had done irreparable damage to the possibility of a serious scientific ufology, and Hynek’s softening position on the theory had come too late. He had been too much part of the problem and not enough part of the solution.\textsuperscript{198} McDonald also frequently characterized Hynek as an opportunist: Hynek was trying to exploit both sides of the debate for personal gain, rather than hold firm to the pure objectivity of a true scientist. According to McDonald and his true believer acolytes, Hynek carried most of the responsibility for twenty years of USAF investigative failings.

Hynek spent the last decade or so of his life sliding further and further towards, if not entirely into, the true believer camp. The Center for UFO Studies (hereafter CUFOS) was intended to be a scientific institution directed toward the serious study of UFO phenomena, but as the nature of interest in the phenomena changed from physical attributes to psychological ones, from sightings to abductions, so too did the focus of CUFOS (see Chapter Five). Early issues of its peer-reviewed journal, \textit{The Journal of UFO Studies} (hereafter \textit{JUFOS}) tried to hew close to the physical sciences, but following Hynek’s death in 1983, the journal sheared off in the direction of the contactees and abductees. This mirrored a trend in

\textsuperscript{196} Menzel’s UFO collection at the American Philosophical Society contains nearly two decades of correspondence between Menzel and Hynek. While their discourse about UFO studies grew increasingly polarized and tense over the course of the 1960s and early 1970s, the two constantly reiterated to one another their commitment to their life-long friendship, despite their disagreements. See Box 6, Folder(s): “Hynek, J. Allen,” \textit{DHM}.

\textsuperscript{197} Menzel frequently complained to Markowitz. See Menzel to Markowitz, 2 December 1967 and 4 April 1968, Box 8, Folder: “Markowitz, William,” \textit{DHM}.

\textsuperscript{198} See, for example, McDonald’s response to Hynek’s \textit{Playboy} article: McDonald to Editor, \textit{Playboy Magazine}, 11 December 1967, Box 6, Folder: “Hynek, J. Allen, Correspondence + JEM Notes,” \textit{JEM}.

116
ufology in the mid- to late-1970 wherein interest in the physical flying saucer waned, interest in the contactee/abductee phenomenon spiked.

Hynek spent his final years trying to maintain CUFOS while helping other groups focused on scientific investigation of the phenomena get off the ground. By the mid-1980s, however, most serious scientific interest from the physical sciences for the phenomena itself had disappeared. Hynek found himself increasingly engaged with the crackpot fringe and his reputation at risk. He died better known for his participation in the UFO problem than his other scientific contributions to society. And the UFO studies of the Cold War – focused on scientific method, physical and natural explanations for strange phenomena, and through those things, scientific legitimacy – died with Hynek. What makes his career with the UFO remarkable was his skill at threading the needle of scientific boundaries. Like Menzel and McDonald, Hynek spent much of his career advocating for the phenomena among his professional colleagues. But he also became an ardent advocate for non-expert witnesses and considered them a vibrant - and vital - part of the knowledge-making process. Through well-structured investigative efforts, no risk to scientific authority needed to be feared. Through an expansion of boundaries and cooperation with previously-excluded actors, Hynek imagined a UFO science that was at once traditional and objective and imaginative and inclusive.

Who-fology? Identifying the Ufologists

By 1966, Menzel, Hynek, and McDonald had all cemented their positions on the grid of UFO investigation and advocacy. All three would be visible, popular spokesmen for their respective positions among the American public; the latter two would be deeply divisive in their respective scientific communities. And rather than come to some sort of reconciliatory
position, all three would go to the end of their days deeply entrenched in their ideological positions - at least as far as UFOs were concerned.

The late 1960s saw the end of the Air Force-funded UFO studies via the Condon Committee, an ‘independent study’ operated out of the University of Colorado at Boulder. The arguments of our three case-study scientists would be drawn to the operations of the Colorado project with an irresistible magnetism, as the many controversies of the study would open doors for these outspoken scientists to argue their positions with real-time examples. The chapters that follow will detail the assaults both for and against the articulation of a scientific consensus position during and after the Condon Committee study. Menzel, McDonald, and Hynek will all figure prominently in critiques of the project.

It’s important, however, to remember that while in hindsight it seems unsurprising that there were a multitude of perspectives and opinions on the phenomena, these battles were neither obvious nor inevitable. The scientists were each superficially paradigmatic of the Cold War establishment scientist, and that any should hold a position sympathetic to UFO studies is worthy of consideration. For decades, ufology fought for scientific legitimacy, and ufologists embraced what they saw as the rigorous, objective qualities of science, via the scientific method and normalized scientific practice. And indeed, if ufology is the study of UFOs, and an ufologist is one who practices ufology, then McDonald, Menzel, and Hynek, despite their differing hypotheses and analyses, are all ufologists.

Ufologists at all points in the “milieu of belief” were leveraging these philosophical arguments to argue for the legitimacy of their scientific pursuits. Skeptics like Edward Condon and William Markowitz referred to Popper as an authority on telling science from pseudoscience. The ufologists like McDonald saw only evidence that the scientific
conundrum remained unsolved. You could present them with no evidence that would convince them of the falsity of the ETH on the whole – only evidence that “this particular sighting” was not evidence of ETH. In the purest sense of Popperian falsification, no test could be designed that would provide conclusive evidence that ETH was not true; therefore, the ufology practiced by the true believers was not scientifically legitimate. On the other hand, McDonald, Hynek, and others referred frequently to Kuhn and *Structure*. The unexplained UFOs were “anomalous” in the most classic sense. They were phenomena which, according to the true believers, most definitely occurred, but did not fit into the current scientific paradigm.

There were two faults along which professional scientists broke in terms of the legitimacy of ufology. The first was on the general value and meaning of unexplained cases. The number of cases that remained unexplained during the decades of USAF investigation never surpassed ten percent, and frequently sat as low as three percent. These cases sat in the evidence as quintessential Kuhnian anomalies. For the Menzelian cohort, this relative handful of cases were anomalous, outliers, and generally followed the traditional USAF line that they would be easily explained if sufficient accurate data could be collected on the sighting. The very small number of unexplained cases rendered them scientifically uninteresting. On the other hand, to the true believers, that this small number of cases *remained unsolved* was exactly what made them interesting. Didn’t science, they asked, have an obligation to continue to investigate these cases that confounded normal modes of inquiry? The two camps were fundamentally opposed to one another’s take on the importance of unsolved sightings.

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The second was witness credibility. Correspondence between scientists and researchers, lay and professional, reveals time and time again two starkly opposed attitudes about the reliability of witness reports. McDonald and Hynek were generous with observers, willing to trust the reports made by the average citizen. They preferred to proceed with the assumption that the average witness was reporting what they saw to the greatest accuracy they were capable of. The Menzelian skeptics were much more critical. Menzel himself was distrustful of witness reports. He distinguished between “facts of observation” and “deductions from these facts.” “When a person describes motions, number, and apparent location of various lights that he may see in the sky,” Menzel wrote, “I term these ‘facts of observation.’ But when he states that these were on a single, solid machine, that represents a conclusion drawn from the facts. And I do not necessarily have to accept it.”

Menzel’s critique of the true believers was that they were as willing to accept the witness’s interpretation of their own sighting as they were the basic “facts of observation.” Of course, if one took the witness reports completely at face value and literally, that they saw a space ship, then the only explanation is that they saw a space ship. The problem, and the divide, was in taking witnesses at their word, and accepting their interpretations, beyond the basic facts of their observation.

These elite ufologists did not disagree on the object of their inquiry. They all, from Menzel to McDonald, wished to solve the mystery behind the flying discs. They did, however, disagree on the content of that study. And as arguments became more polemical, that rift deepened, and the drive to classify “ufology” as a pseudoscience intensified. Historian Michael Gordin has argued that “historical actors identify doctrines as

200 Menzel to Maney, 1 August 1961, Box 7, Folder, “Maney, Charles A. #4,” DHM. Emphasis added.
201 Menzel frequently critiqued Hynek for his tendency to believe witnesses whole-heartedly. See particularly Menzel to Hynek, 8 April 1967, Box 6, Folder: “Hynek, J. Allen,” DHM.
pseudosciences only when they feel they, as scientists, are under substantial threat, as was the case during the Lysenko and Velikovsky affairs of the late 1940s and early 1950s.202 Gordin’s “possible reasons” for why Lysenkoism became a pseudoscience can be generalized outward for broader application. Those reasons include: one, the scientific claims of the theory/dogma are erroneous to the point of being pseudoscientific; two, the methods of the theory/dogma lay outside the bounds of ‘normal science’ (e.g. séance); three, the elaboration and/or justification of scientific findings in terms of a particular philosophy or ideology is non-scientific itself; and four, that outside, non-scientific intervention on behalf of the theory/dogma (e.g., by the state as in the case of Lysenkoism, or by a church) contaminates it fundamentally, rendering it pseudoscientific.203 There is a parallel here for the debates and controversies of the late 1960s, specifically the AAAS UFO Symposium and the 1968 House Hearings on UFOs. Establishment scientists who disavowed the ETH and UFO studies did feel under threat. They expressed growing concern that engagement with the true believers and the civilian investigation groups with besmirch the good names of their professional institutions. True believer scientists also maintained constant pressure on elected representatives as they sought more federally-funded investigations, supported on the already lean taxpayer dollar, threatening funding sources across disciplines.

But UFO research as it was carried out by establishment scientists, regardless of the hypothesis they argued for, was rooted in normal scientific practice. The methods of the ufologists did not lie outside the bounds of ‘normal science’ but rather derived directly from. They were not bent on the validation of a non-scientific ideology (at least not as far as our professional scientists in this chapter are concerned) and the state certainly did not intervene

on behalf of the true believers. Even Gordin’s first point, that the scientific claims of the
theory are so erroneous as to be pseudoscientific, is hard to make, where scientists like
Hynek are concerned. It is on the basis of the actual practices and professed beliefs of
McDonald, Menzel, and Hynek that at least in this one case, “pseudoscience” is an
inaccurate descriptor for ufology in the 1950s and 1960s. This debate over the legitimacy and
merit of scientific studies of unidentified flying objects would frame the organization,
operation, and conclusions of the Condon Committee in the final years of the 1960s.
Chapter Four: The Condon Committee and the Scientific Study of UFOs, 1965-1968

The earliest rumblings of an independent scientific study of UFO phenomena began in 1965 as the United States Air Force (USAF) faced a future of irrelevance in UFO studies. More cases were being reported to private investigative groups like the National Investigations Committee on Aerial Phenomena (hereafter NICAP) and the Aerial Phenomena Research Organization (hereafter APRO) than were being reported to the USAF proper. These gaps in coverage raised concerns about potential weaknesses in US air defense, once more hearkening back to the “it only takes one” concerns of the immediate postwar era (see Chapter One). In response, Major E. B. LeBailly, Secretary of the Air Force Office of Information, issued a memorandum to the USAF’s Scientific Advisory Board. Perhaps contrary to expectation, he declared Project Blue Book a “worthwhile program which deserve[d] all the support of all staff agencies and major commands” in its mission to ensure that UFOs did not present a threat to national security.204 LeBailly’s memo specifically addressed the fact that while many cases had been explained, a significant number, somewhere in the neighborhood of 8%, remained unsolved and that many of these unsolved reports came from technically-adept people. This pointed to deficiencies in USAF report collection and analysis. As a result, LeBailly requested the organization of a panel of scientists from both the physical and social sciences to review Project Blue Book – “its resources, methods, and findings” – and offer recommendations for improvement of the Blue Book process so that the USAF could continue fulfilling its duty to national security.205

205 Ibid.
A committee was organized by the Office of Scientific Research and Development (OSRD). The small group of scientists was led by physicist Brian O’Brien, a World War II veteran and Medal of Merit recipient who had worked with both the OSRD and private industry. O’Brien’s final panel included physicist Carl Sagan, psychologists Launor Carter and Jesse Orlansky, electrical engineer Richard Porter, and early computer scientist Willis Ware. The diversity of specialties reflected the hope for a comprehensive review.

The ad hoc committee, hereafter referred to as the O’Brien committee, met on 22 December 1965. The morning session consisted of briefings about the Air Force’s problems with the UFO question and a status summary of Project Blue Book straight from project director Major Hector Quintanilla. Neither briefing lasted more than thirty minutes. The committee then spent an hour and a half reviewing a number of Blue Book case studies largely drawn from those cases that remained unexplained and unsolved. The committee convened for a long lunch, and then spent the afternoon session producing a short report of their recommendations for the Air Force.

The O’Brien committee concurred with the long-held Air Force conclusion that the phenomena did not represent a national security threat. Given that consensus, how then should the Air Force, the committee asked, handle the scientific aspects of an investigatory program? Their answer was a surprising reversal of almost twenty years of USAF policy on the matter: expand the project. The committee commended the USAF UFO programs for being as well-organized and productive as they had been on limited resources but declared

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206 “Agenda,” Ad Hoc Committee on Unidentified Flying Objects (UFOs), Box Not Numbered, F: “U.S. Air Force Scientific Advisory Board, 1966 March,” DHM.

207 The O’Brien committee recognized the obvious, “unavoidable” public relations side of the USAF’s UFO investigations, but withheld comment on the grounds that none of the members of the committee were “expert” on the matter. Their final report did recommend, however, that the breadth and scope of project reports be expanded, and any language in those reports suggesting that information was being withheld, removed. Not only should these reports be circulated widely within Congress, the committee continued, but the reports should also be made available to the public at large upon request, in their entirety.
that an expansion of the project was required for a more detailed scientific investigation. But rather than increase the size of the USAF’s in-house project, the O’Brien committee recommended that universities be contracted with and brought into the investigations.

The “outsourcing” of the UFO project offered an enticing opportunity for cooperation. Together universities and the USAF could create “scientific teams” of at least two people – at least one physical scientist (preferably an astronomer or geophysicist), and one psychologist (preferably with clinical experience) – to carry out investigations. These teams would have an Air Force liason, preferably an officer with investigatory experience, at a nearby Air Force base. By choosing universities with a wide geographic distribution, a nation-wide network could be organized with hopes of achieving greater scientific success. Crucially, the entire effort would be coordinated and managed by a core team at a leading university, rather than through the USAF. Hopefully, sightings could be investigated in greater detail; if not, at least the Air Force would have a better basis from which to make decisions about the long-term life of the project.208 At this juncture, all parties seemed to agree that a staunchly scientific approach to the study was not only needed, but was the only way to determine a forward course of action for the Air Force studies.209

This chapter examines the university-based, USAF-funded final scientific study of UFOs within the frame of the late 1960s. Also known as the Condon Committee, the conditions under which the study came into being reflect a now-mature relationship between the Cold War institutions of military and academic institutions. Cooperation between the U.S. military and establishment science via the universities was common practice in the

1960s; the year of the O’Brien study marked the peak of federal science spending. The star of the heroic wartime scientist, though waning, had not yet set, and the USAF expected to cash in on the political and cultural capital of scientists to lay the UFO matter to rest, or at least legitimize USAF inquiry through their approval of it. Considered alongside the broader pattern of interactions between them, the study recommended by the O’Brien committee was yet another foray into military-industrial-academic-complexity.

While its organization and operation were routine in this regard, the results of the study however reveal a military and scientific establishment increasingly out of touch with the prevailing temper of the country. Military men and scientists expected the American public to trust them, to always trust them; the response they would receive would be an intense refutation Cold War technoscientific order.

**Bringing the UFO to the Cold War University**

The O’Brien committee’s recommendation to enlist universities in the scientific study of UFO phenomena followed a pattern developed during the postwar and early Cold War decades of joining military, industrial, and academic interests through civilian scientists and engineers who were located largely in universities and private research laboratories. While the joining of interests predates World War II, the mobilization of science in service of the wartime state profoundly changed the conditions under which science was done in America.\textsuperscript{210} The unprecedented expansion of facilities and the construction of new scientific

facilities both on campuses and at research laboratories was mirrored in the expansion of civilian faculty and technical personnel enlisted in military projects during World War II.  

Following the close of the war, the federal government and US military moved to curtail excess spending on scientific research and development - even where weapon development was concerned. Many scientists who had enjoyed the enthusiastic influx of support - political and fiduciary - were reluctant to let this new, deep-pocketed patron go. Money wasn’t the only commodity at risk; the invaluable political, social, and cultural capital and authority wartime scientists found themselves in possession of was also on the line. 

Engineer and astute political advisor Vannevar Bush penned what was perhaps the most famous pro-science tract of the postwar era in his oft-cited *Science - The Endless Frontier*. Hollinger argues that Bush managed to balance the competing needs of scientific autonomy and continued state patronage through an appeal to the “scientific community,” rather than the scientist as an individual, thus simultaneously justifying massive expenditures while effectively transferring the identity of ‘exceptional genius scientist engaging in free inquiry’ to an entire community. The exceptionalism of American scientists was a cornerstone of Bush’s argument. The state needed the skills and expertise of scientists, and while scientists needed support from the state to solve the state’s problems, they also needed freedom from the state to pursue and develop their work.  

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213 For more on the complex relationships between the government, politicians, physical scientists, the national security bureaucracy, and so on, see Sarah Bridger, *Scientists at War: The Ethics of Cold War Weapont Research* (Cambridge, Mass.: Harvard University Press, 2015); Patrick McCray, *Keep Watching the Skies!: The Story of...*
identify promising projects and distribute funds and manage those projects appropriately. In truth, scientists were the only actors who could be trusted with such a responsibility.

The relationship between scientists and the state had been productive beyond imagination during the war, and if Bush was to be believed, there was no reason that productivity would not continue in the postwar era. To this end, universities and private research institutions were the ideal intermediary between the state and the scientists themselves along two axes. One, research labs and universities housed the largest populations of civilian experts, while two, providing a bureaucratic distribution network that shifted the management of scientific projects away from the Pentagon and into campus-based laboratories. Academic departments and their experts became the beneficiaries of, and quickly, the dependents on a continual flow of money from D.C. to campus coffers.

Universities were one of, and then the largest, beneficiary of postwar military and governmental spending in the interest of national security, thanks in some cases but not all to wartime research laboratories organized on their campuses. In addition to funding directed at the universities themselves, a number of research institutions were organized with support from the federal government, usually through the National Academy of Sciences. These institutions were typically focused on specific sciences, and while independent from


direct university affiliation, were prized by university researchers for their ability to maintain “independent” research programmes and provide access to high-end technology and community collaboration, regardless of the researcher’s home institution.

The postwar and Cold War period in American history of science is often known as the time of “Big Science.” The “big” in “Big Science” refers to any number of different axes: bigness in terms of dollars spent, bigness in terms of experimental apparatus, in terms of the size of labs, of number of scientific personnel, even bigness in terms of geographic distribution or international/multinational cooperation or of student enrollments. Key examples of Big Science at this time include the Space Race and moon landing, accelerator/collider development, and the International Geophysical Year.

The only axis along which the UFO studies, previous or proposed, registered on the “bigness” scale was in their geographic broadness as national projects. A university-based scientific study as proposed by the O’Brien Committee in 1965 had much to gain, however, from these now institutionalized relationships and expectations. Participating universities could provide easy access to qualified investigators from across disciplines and bureaucratic infrastructure to manage the disbursement of funds; likewise, participating scientists had networks that stretched beyond campus maps (and often beyond academia) and were accustomed to collaborating across significant distance. The multidisciplinary, geographically-national demands of a broad scientific study seemed easily met by existing infrastructure in the military-industrial-academic complex.

Rising Swamp Gas, Rising Pressure

Almost three months to the day following the meeting of the O'Brien committee, a series of events spurred the USAF into action.

On March 20, 1966, a strange, glowing object was seen landing in a swamp near Ann Arbor, Michigan. More than forty witnesses described the object as shaped like a football, about the length of a car, grayish yellow in color and sitting on a base of fog. Some witnesses claimed it also had pulsating blue and white lights, while others reported a red glow. Still others saw the object “zip over their car[s]” or fly over their houses. And some witnesses saw even more additional objects hovering over the swamp, which vanished with the disappearance of the larger UFO. Two nights later, on March 22, a local “UFO watch” was arranged by scientists, police, civil defense authorities, local Project Blue Book investigators, and local volunteers hoping to catch sight of the strange lights. That night, 89 people in Hillsdale, Michigan, located roughly an hour and a half from Ann Arbor, reported seeing a glowing object zip past a college dormitory and then hover in a nearby swamp for hours.

The Michigan sightings were the most significant flap in years. The reports of tens - and by some accounts, hundreds - of witnesses were consistent with one another, and the second sighting two days later cemented the Ann Arbor area as a place of interest and caught the national imagination. National coverage of the sightings brought nearly five thousand people to the driveway of Frank Mannor, a local farmer who was one of the first to call the police about the March 20th sighting. He had claimed the original object had appeared over

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a swamp a mere thousand feet from his house. The attention from gawkers and reporters was not appreciated. In the following days, Mannor was seen stalking around his property with a shotgun, “not because he was afraid of UFOS but ‘mad at the curious.’” And Mannor wasn’t the only target of a sudden spike in ‘uforia’. D.C.-based Michigan representatives were deluged by letters from their constituents. Ann Arbor Representative Weston E. Vivian, pressed for comment, supposed that there was a human agent behind the sightings, and told a Chicago Tribune writer that he was contacting the Department of Defense, as he suspected army or air force training or technology behind the sighting.219

Following the second sighting, Blue Book investigator and astronomer J. Allen Hynek drove from Evanston, Illinois, to Selfridge Air Force Base in Michigan to take over the investigation himself.220 Hynek was late to the scene, and reported that over the next few days his investigations were hampered by strong thunderstorms and a lack of “tangible evidence.”221 Regardless, Hynek made his investigation as best he could, largely via interviews with local witnesses. Based on the testimony of the witnesses, and the unseasonably warm weather that had led to an early thaw in the nearby marshy swamp, Hynek held a press conference on March 25th to announce the cause of the sightings as “swamp gas.”222

For a moment, it looked like Hynek’s conclusions might hold. The phenomena had been well-reported and well-known over the years as “will’o’the’wisps.” As rotting leaves and other plant matter decayed, it gave off gases that could reflect light in strange ways. A

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219 Ibid.
221 “Storms Delay Probe of Dancing Lights,” Chicago Tribune, 24 March 1966, 12. Hynek also complained about the “high level of emotion” around the sightings that apparently prevented him from doing an unbiased, scientific investigation. He seems to be blaming the press, for inciting some of that.
Pennsylvanian gas company technician told a reporter that Hynek’s explanation was likely; in fact, the eerie lights had been a common sight when he was a boy.\textsuperscript{223} The early Michigan thaw resulted in an unusually large quantity of gas being released from the swamp at a point on the calendar when locals might not expect such spring-time phenomena.

The “swamp gas” theory quickly garnered scientific support and USAF and Blue Book personnel saw no reason to challenge Hynek’s conclusions. However, despite his expertise and well-known association with the USAF investigations into UFO phenomena, local witnesses remained unconvinced. Dexter, MI chief of police and witness Robert Taylor and Hillsdale County Civil Defense director William Vanhorn doubted Hynek’s explanation. A former congressman wrote his successor to complain about the quality of the investigation and the perceived absurdity of the explanation (and lamented what the whole affair had done to the Air Force’s reputation in his district). And in Washington, D.C. House Republican leader and future President Gerald Ford responded to the calls of his constituents in demanding a full congressional investigation of the UFO sightings.\textsuperscript{224}

Following the swamp gas sightings, Ford was metaphorically swamped with outrage from his UFO-sighting constituents. Eager to appease, Ford called for an official congressional probe into the USAF investigations. Ford’s public statements that the public was “entitled to a more thorough explanation than [had] been given by the [Air Force] up to now” encouraged lay witnesses and civilian investigation groups.\textsuperscript{225} While he drew high praise from former Navy Major Donald Keyhoe, director of NICAP, who found a refreshed audience for his claims that the Air Force was hiding the truth from citizens and unfairly

ridiculing witnesses, Ford had difficulties finding a committee location for his probe.226

Representative George Miller (D-CA), chairman of the House Committee on Science and Astronautics, argued that, as an Air Force project, the probe belonged in the Armed Services Committee. Equally wary of creating a bigger ruckus around the issue, Representative L. Mendel Rivers (D-SC), chairman of House Armed Services, side-stepped initial press interest.227 And when a hearing was announced a day later by Armed Services, the committee stressed to the press that their hearing wasn’t an investigation, but just a routine conversation between Air Force officials and the congressmen responsible for their oversight.228

The hearing before the House Armed Services Committee took place on 5 April 1966. Air Force Secretary Harold Brown, USAF Chief of Staff General John McConnell, and Project Blue Book chief officer Lt. Colonel Hector Quintanilla, Jr. were joined by Hynek for the eighty-minute-long hearing that morning. The hearing appears to have been a basic information session, as the Air Force gentlemen provided a breakdown and update of Project Blue Book’s current operational status, general conclusions, and expectations for future investigations. In his personal statement before the committee, Hynek made a surprising comment about the heretofore under-appreciated element of the UFO sightings - the deeply social nature of the sightings, their continued occurrence, and public interpretations of them. But beyond this comment, the topic was left largely unexplored. The proceedings were thick with submitted Air Force memos and documents, observer reports and press

accounts of significant recent sightings, and letters from sympathetic members of the general public urging continued investigation.  

It’s difficult to tell what the immediate value of the hearing was. A few congressmen in “interested” districts (places where sightings had occurred recently) pushed the Air Force men for more specifics on particular sightings or photographs. But other committee members used their time to make jokes at the subject’s expense. Ostensibly, the point of the hearing was to apprise the state of the study and to determine whether further independent study was necessary. But nothing discussed or made available during the hearing was classified. The press was permitted into the hearing. Much, if not most, of the documentation was readily available in public record, and what wasn’t could have been easily sent to the Hill. The necessity of calling USAF and Blue Book staff to the Hill for a question and answer session appears to have been largely just a matter of optics - and perhaps a favor to Ford.

Notably, the O’Brien committee and its recommendations came to the attention of the press during the hearing. Following the hearing, the USAF went on record that, while they weren’t concerned about the sightings, they would “probably arrange an independent study,” acting “favorably” on the recommendations of the O’Brien committee. The O’Brien committee was not the only scientific body suggesting an independent, scientific study of the strange aerial phenomena, however. Atmospheric physicist and extraterrestrial hypothesis (hereafter ETH) true believer James E. McDonald of the University of Arizona

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was also calling for an independent scientific study during this time (see Chapter Three, Chapter Five).

In the days following the swamp gas sightings, McDonald wrote to congressman Morris “Mo” Udall, to suggest that rather than hold a “major hearing,” they organize and support a small independent study. 231 He repeated the suggestion to geophysicist Thomas Malone at the National Academy of Sciences (hereafter NAS), pushing for what he described as a quiet, unpublicized study. McDonald was critical of the scientific community’s perceived negligence toward the phenomena and suggested that a small panel of scientists be assembled to hold “a new and independent evaluation of existing information on the UFO problem” (though he acknowledged that such a panel would still require broad support from numerous government agencies). 232 The benefit of a small panel, he explained was that, if done without publicity, it could easily be disbanded if no reasonable conclusions were reached. Likewise, if the panel did have findings of interest, it would be easy to spin up into a larger study. Two days later, McDonald followed up with Malone to add that, if a small panel organized by the NAS were not possible, then perhaps a one-man study, operating on “a shoestring budget,” could be organized. Such a study would certainly draw almost no attention, and could be easily ended at any time. Unsurprisingly, McDonald offered to take such a small study on himself. 233

McDonald’s hopes for his own independent study were dashed following the April 5th Armed Services hearing. Udall had forwarded McDonald’s suggestions on to Ford; Ford responded to McDonald thanking him for his interest, but laying out clearly that the Air

231 McDonald to Morris Udall, 28 March 1966, Box 12, Folder: “Udall, Morris K., Congressman,” JEM.
232 McDonald to Thomas Malone, 28 March 1966, Box 10, Folder: “Panel, Scientists to Study UFOs: Proposal, NAS/Coleman, 1966,” JEM.
233 McDonald to Malone, 30 March 1966, Box 10, Folder: “Panel, Scientists to Study UFOs: Proposal, NAS/Coleman, 1966,” JEM.
Force was moving forward with the NAS to put the O’Brien recommendations to action.\footnote{Gerald Ford to McDonald, 20 April 1966Box 10, Folder: “Panel, Scientists to Study UFOs: Proposal, NAS/Coleman, 1966,” JEM.}

Shortly thereafter, Ford announced that the USAF had reached a contract with a group of scientists, and a study was set to begin after the first of July of that year.\footnote{“Flying Objects to be Studied,” New York Times, 22 April 1966, 28; “UFO Sightings Study Ordered,” Washington Post Times Herald, 22 April 1966, A4.}

The Birth of the Colorado Project

Hynek would later draw a straight line between the Michigan swamp gas sightings and the creation of the Condon Committee.\footnote{In early outlining of his 1972 UFOs: A Scientific Inquiry, Hynek wrote that the Condon study was a direct outgrowth of earlier work and came out of the calls for a hearing on the Michigan swamp gas and the Secretary of the Air Force’s need to “assure [people] he would do something.” Hynek, “Notes on SSUFO,” undated, Box 3, Folder 5, JAH.} But it was not the swamp gas itself, or the attendant optical phenomena it sparked, that was the cause for this new scientific study. Rather, the vitriolic response of the Michigan voters to the brush-off they received from the scientific establishment, and the publicity that anger received, drove the Air Force to the creation of this new, independent, scientific study of the aerial phenomena.

Gerald Ford’s prediction that a university-based study would be underway by early July proved overly optimistic. In mid-July, the Air Force was still committed to the recommendations of the O’Brien panel, but how many, and which, universities would be participating was still an unknown.\footnote{“Air Force to Press Study of Unidentified Objects,” New York Times, 15 July 1966, 16.} Some progress was made by August, as the Air Force moved towards selecting the lead university. A New York Times article suggests that the USAF was finally becoming more adept at talking publicly about the purpose, problems, and goals of UFO study. Mindful that the university selected needed to be of “sufficient stature” to ensure that the public believed the study was impartial, USAF personnel acknowledged that some parts of the study would have to go unpublished, and not only for reasons of...
national security: to quote one Air Force officer, “We cannot publish the fact that we found a witness to be the village drunk.” In comments to the *Chicago Tribune*, Hynek advocated for the inclusion of psychologists and sociologists in the study and hinted that, while he and Northwestern University would not participate for being “too close to this thing,” the USAF would be contracting with at least twenty university departments, coast to coast.

The O'Brien Committee dovetailed with the Michigan swamp gas sightings in a way that prepared the field for the Condon Committee. Public discontent was mounting, spurred on by the negative press around the swamp gas sightings. Congress was caught in a balancing act between satisfying constituents and managing relationships with prickly Air Force representatives who resented being asked to speak yet again to perceived “failures” within the projects. Air Force Office of Scientific Research deputy executive director Colonel Ivan Atkinson, who had commissioned the O'Brien committee, took O'Brien’s recommendations to heart, seeing a way out for the Air Force. The Air Force began to shop for potential target universities to fulfill the university-based portion of O'Brien’s suggestions.

Speculation came to a close on 7 October 1966 when the USAF announced the University of Colorado as its lead university in the independent study. The USAF lauded Colorado’s highly-respected scientific faculty, as well as the university’s close proximity to other centers of physical research, including the National Center for Atmospheric Research (NCAR), the High Altitude Observatory, and the Environmental Science Services.

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Almost immediately, it became clear that managing a national network of air force base-university-partnered teams would prohibitively expensive. By October the USAF had also given up its search for affiliated universities; the project was scaled down, so that only one university would conduct the study. In the announcement press release, the USAF indicated that now Colorado would be responsible for selecting companion universities to assist in the study. The study was funded through the Air Force Office of Scientific Research to the tune of $313,000 for the 15-month study. In addition to funding, the USAF pledged that all its data and documentation would subsequently be made available to the study’s researchers. And to ensure the independence and reliability of the study, the results and conclusions of the study would be vetted by a panel organized by the National Academy of Sciences.

In addition to its geographic proximity to multiple research centers, the University of Colorado boasted renowned physicist Edward Uhler Condon as part of their faculty. Condon was a uniquely attractive candidate for director of the UFO study. He was a highly-accomplished Cold Warrior establishment scientist with a long history of public service whose credentials stood up to scrutiny. But as an early and high-profile target of 1950s McCarthyism, it was also widely known that

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242 Ibid.
Condon held no great personal love for or trust in the United States military or Congress. Condon himself was reluctant - resistant - to directing the study. Nearing retirement, he had begun working on a book on the theory of atomic spectra, which he saw as his last significant project and contribution to the field before he retired. The nature of the observational data on UFOs and how that complicated scientific study had turned Condon and many of his scientific colleagues off to the idea, and he was hard pressed to set aside interesting work for less-promising UFO studies. He also expressed concern about the University at large becoming involved in “so controversial an undertaking.” Despite this, his recommendations for other scientists to serve as director were denied, and he was eventually convinced to take up directorship on appeals to his patriotic duty and on promises that the study would be short and run no more than 15 months.

Press reports did not capture Condon’s reticence. In a *New York Times* profile, Condon was described as “an outspoken scientist” who had a “restless energy” and “a penchant for speaking out on vital national issues” for whom “remaining neutral… [was not] a typical Condon characteristic.” Despite this reputation, Condon described himself as being agnostic on the matter of UFOs, and while he found possibility of extraterrestrial explanations improbable he was keeping “an open mind.” Continued public statements reinforced the idea of Condon as the perfect UFO emissary. He was sympathetic toward witnesses, and confirmed that the Colorado project would accept reports from witnesses.

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247 Sullivan, “3 Aides Selected.”
uncomfortable with submitting their reports through USAF channels.\textsuperscript{248} Surprisingly, he thought the undiscriminating debunkers were as bad as the ETH extremists, and speculated publicly that the ridicule the subject had faced was problematic because it had prevented the serious investigation that it rightly deserved.\textsuperscript{249} Publicity on the Colorado project was overwhelmingly positive towards Condon in these early days, and his very presence seemed to promise rigorous and trustworthy objectivity.

Responses to the project from scientific faculty were mixed. A memo penned for university leadership by the project’s future assistant director Robert Low captures positions of the concerns of Colorado faculty. Some scientists were against the operation of such a study, arguing that it would be a “disaster” not just for the university but for the entire scientific community.\textsuperscript{250} Such a study, they argued, would require that one “approach it objectively,” which would then require that one admit that UFOs exist. Doing so would cost the scientific community far more prestige than they would - or even could - possibly gain from undertaking such a study. In opinions of some, there was not even a good ‘national security’ case to be made. The whole UFO study looked, to those against, too much like Rhine’s ESP studies at Duke.

Not all scientists and administrators were against the study, however. Others were interested and thought the university should take the study on, and thought the University could “gain a great deal in favor among the right circles by performing a critically needed

\textsuperscript{248} Ibid.
\textsuperscript{249} Chesly Many, “UFO Prober Keeps Open Mind and Door,” \textit{Chicago Tribune}, 16 October 1966, 1, 4.
\textsuperscript{250} Memorandum, “Some Thoughts on the UFO Project,” Low to E. James Archer and Thurston E. Manning, 9 August 1966. Available as Appendix A, pp. 242-244, in David Saunders, \textit{UFOs? Yes!} (New York, NY: Signet Books, 1968). Copies of the Low Memo can now be found in UFO archives across the country and widely on the Internet, including on NICAP’s website, and in the archival holdings of the Condon Committee, Donald Menzel, James E. McDonald, and so on.
service.’”251 Still important, though, was the need to do it “objectively and critically” and to avoid as much publicity as possible.252 Even those scientists opposed to the study against agreed that if the University of Colorado was to accept the study, it would be preferable to have the USAF give the contract to the National Academy of Sciences, and then to have the NAS “subcontract” Colorado, to add one more degree of remove between the University and the USAF.

Communicating scientific “purity” and the support of the scientific community were paramount in the run-up to the project.253 Condon was joined by Franklin Roach (astronomer/astrophysicist), Stuart Cook (psychologist), and Low (electrical engineer) in overseeing the project. Condon described the response to the project’s announcement as being “very, very good,” both from the general public and from the scientific community.254 Menzel wrote to Condon personally not long after the announcement, congratulating Condon (and the government) on his new assignment. “They could not have appointed a better man,” Menzel wrote, and he was sure that Condon would “find, as I did, much of interest in the Flying Saucers [sic] field.”255 Menzel also promised to make all of his files, publications, and related documents available to Condon at his request. And writing to Menzel, Project Bluebook Director Quintanilla expressed “delight” with the choice of university and its director.256

Even the wary private investigative groups had a generally positive impression of the project in these early days. Over the previous decades, NICAP had begun to pick up the

252 Ibid, 243.
256 Quintanilla to Menzel, 6 October 1966, Box unnumbered, Folder: “Quintanilla, Hector, Jr.,” DHM.
slack left by the USAF projects, continuing investigations on cases that the private group thought the USAF had mishandled or ignored as well as developing an impressive roster of their own cases that witnesses had originally reported to NICAP but not to USAF programs.

To describe the relationship between Keyhoe’s NICAP and the USAF programs as “tense” would be generous. So NICAP assistant director Dick Hall’s words of approval about the project came as something of a surprise. Following a meeting with Air Force Office of Science Research personnel Dr. J. Thomas Ratchford about the project, Hall praised the Condon Committee for its plans to include NICAP in its study, as well as the “equal partnership” of the ESSA and NCAR. Ratchford indicated that the OSR had pledged its full support and cooperation, and that Condon would likely be able to get any additional funding or assistance he would require with ease. And when it came to the NAS review, Hall reported that he was under the impression that only the methodology of the study, not its conclusions, would be of concern. Reading between the lines suggests that, to Hall, this meant that an ETH-positive result would not be altered or covered up by NAS - it would simply be confirmed further by their positive review of the project’s scientific methodology.

The Colorado project gradually picked up speed through the final months of 1966. Menzel stayed in close contact with Condon in November and December and provided copies of his books as summaries of his personal research to Condon before the end of the year. Additionally, during a trip to Denver, Menzel met with Condon to offer his insights into the UFO problem and offer his skills in sighting analysis. In an episode of ironic

257 Ratchford was the OSR representative who had gone to Boulder in July 1966 to evaluate and court the University of Colorado. Ratchford returned in August with William Price, executive director of OSR, and after deliberation, University officials agreed to take on the project.

258 Hall to McDonald, 12 December 1966, Box 5, Folder: “Hall, Richard H., ’65, ’66, ’67 Correspondence,” JEM.


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foreshadowing, Menzel also responded to Condon’s curiosity about NICAP’s Keyhoe by advising the senior physicist to maintain the healthiest distance from Keyhoe himself.260

**Operation of the Project, 1967-1968**

The Colorado project operated as a contract with the Air Force Office of Scientific Research (OSR), and finally got underway 1 November 1966. As agreed, the contract slated $313,000 for a 15-month study, to conclude on 31 January 1968. The project was always understood by its planners and directors to be an interdisciplinary one, requiring not only the participation of physical scientists but of sociologists, psychologists, psychiatrists, and others as well. The first order of business for project personnel was to acquaint themselves with the subject, which they did by reviewing major works of published literature, including those books by Menzel (sent by Menzel himself), Ruppelt’s *Report* (see Chapter Two), and Dick Hall’s *The UFO Evidence* (1964), a structured collection of significant case studies from the previous two decades.261 The project team also received in-person subject briefings from Quintanilla, Hynek, Keyhoe and Hall, and McDonald (though McDonald’s name was left out of the final report’s summary of this period, for reasons discussed below).262 All this, the project’s report details, was meant to help project staff determine salient points of study and develop questions for further investigation.

The most pressing problem at start-up was the execution of field investigations. The problems associated with field investigation of sightings had plagued investigators since the very first days of the summer 1947 flap, and they certainly hadn’t been resolved by the

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middle of 1966. It was quickly decided that field investigations of old cases would be a waste of resources. Efforts were made, however, to develop a system such that field investigations could be made of sightings occurring in the present, such that relevant data could be captured in real time. Such data could only be collected by properly equipped investigators during sustained or repetitive phenomena events; in the case of such events, the project attempted to send outfitted investigators as fast as possible. According to project scientist in charge of field investigations Ray Craig, another significant issue was that reports of sightings were making it to the project days or weeks after their occurrence, making adequate investigation nearly impossible. Private UFO investigators were also insisting that the Colorado investigators were missing upwards of 100 sightings a week as witnesses would not report to the USAF or the Colorado project. Project staff agreed that the best way to overcome these gaps in the record was to develop and deploy an Early Warning System.

The EarlyWarning System was imagined as a nation-wide “early notification network” that would sort ‘significant’ from ‘insignificant’ sightings, and forward the former on to an investigative team post-haste. Project personnel sought to organize official agencies (e.g., the Federal Aviation Agency, the U. S. Weather Bureau), ‘semi-official agencies (e.g., the Volunteer Flight Officer Network (VFON), an international organization of flight personnel), and private groups like NICAP and APRO. In addition to the official, professional participation of these organizations, the network also depended on local networks of civilian observers at select locations across the country. A large number of the volunteer observers, their supervising coordinators, and the locations where they would be established were drawn from NICAP, APRO, and other private groups. Described as

264 Craig, “Field Studies,” 58.
265 Craig, “Field Studies,” 58.
“technically trained” and serving “without compensation, sometimes at considerable personal sacrifice,” the civilian arm of Early Warning System was a vital source for sighting data and reports during the Colorado project’s operation.266

As always, the sorting and organization of data presented a problem. An expert panel of three to four people, drawn from Condon Committee senior staff, sat at the top of the Early Warning System as the final check on the sighting report. If working as intended, the larger network should have already done the initial work of sorting interesting cases from mundane misidentifications. The task of the final panel was to determine whether the report warranted deploying a field investigation team (and subsequent expenditure of finite resources). If panel decided to go ahead, field investigation would begin. This would include calling law enforcement, newspaper agencies, air bases, and so on, as well as witness interviews, all via telephone. If these conversations were fruitful, a field investigation team would then be dispatched to the site and on-location scientific data collection would begin.

This process was well-illustrated through the project’s case study summaries. The following was included as Case 39 in the project’s final report and occurred along the western coast of the United States in the fall of 1967. Locations, civilian names, and so on were redacted to protect the identity of the reluctant witness, who agreed to cooperate with NICAP and Colorado investigators only after his anonymity would be assured.

A man described in the report as a business executive was driving in a 1964 Chrysler convertible in a foggy, remote area of the South Pacific area (assumed by this author to indicate the California coast, as distinct from the ‘North Pacific,’ or the Pacific Northwest). At some time between 3:30 and 4 o’clock in the morning, while driving, the man reported

266 Ibid, 59.
that his car just suddenly stopped dead. The lights went out, and the radio stopped. He then felt “a strong pressure exerted from above, pressing down on his head and shoulders.” His eyes were drawn to a break in the fog. He could see an unidentified flying object pass over his car and hover over the road in front of him. The object was red-orange in color, about 30 feet in diameter, and lit up the road and surrounding area. The man described rotating lights and wobbly motion, and claimed he watched it for roughly a minute and a half before it continued down the road. Following its disappearance, his car came back on, lights, radio, and all. He found the experience extremely frightening, and rushed to the nearest all-night diner, where he told his story to a waitress he knew.

NICAP investigators were the first to interview the witness and take measure of his vehicle. They spoke with the gentleman, who recounted his story as recorded above. They then inspected his car. The NICAP investigators described a strange pitting in the glass and the paint and found that the paint on the hood of the car was ‘loose,’ rubbing off easily. Interestingly, the car was giving off slightly higher radiation readings than that of another car owned by the witness. The man had kept stereotapes (8-track cassettes) in the back of his car, and the investigators thought that the tape recordings had lost some fidelity. The back window of the car seemed to have a strange optical distortion, “as if damaged by its exposure to UFO effects,” and perhaps most notably, the car’s clock had stopped at 3:46 a.m. The NICAP investigators also spoke with the waitress who had served him at the diner, and a milkman who had also encountered the witness. The milkman claimed that he’d met the businessman between 3:30 and 3:45, and both described the witness as quite frightened but not intoxicated.

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268 Case 39, SSUFO, 381.
Following the NICAP report, Colorado project investigator Ray Craig was dispatched to the site to meet the witness and conduct his own investigation. Craig’s visit came five days after the man’s experience; in many ways, it mirrored the initial investigation done by local NICAP personnel. He spoke with the witness and recorded their conversation, noting places where the story remained consistent and places where details had already begun to change in the intervening period. For instance, when speaking to NICAP people, the witness described the UFO as passing over his car at an altitude of 160 feet, but when speaking to Craig, had revised that number to 50 or 75 feet. He then turned his attention to the car, which the witness had bought used in 1965.

It was true that the paint was thin and quite pitted. It appeared, however, to Craig that it was the result of long-term corrosion and not unusual for a four-year-old car. A car dealer pointed out that the thinness of the paint was also not unusual. At the time of Craig’s inspection, the car was giving off no radioactivity above normal levels. Craig did not comment on the 8-track cassettes but did notice the distortion in the rear window. The witness reported that the back window was only three months old; Craig found that the distortion was also found in the back window of another ‘64 Chrysler convertible examined later on a used car lot. He chalked it up to “summer use in an area where temperatures of 120° or more are common.” Craig was most interested in investigating the magnetic signature of the car, which should have (or may have been) altered by exposure to a strong magnetic field. He took readings from sample locations all over the car. Those readings were then repeated on a ‘64

\[^{269}\text{Ibid.}\]
Chrysler convertible back in Boulder, Colorado. A comparison of the readings indicated no marked alteration of the magnetic orientation of the witness’s car.

Finally, the NICAP investigators and Craig went with the witness to the location of his sighting. The man became dizzy and nauseous at the site and took some time to recover. Once again, in telling investigators what had happened that night, his story changed. Rather than pass over him from back to front, the witness now described the light as coming in from the right. His size estimates changed as he was asked to point to locations, and when asked to draw on his windshield the object as it appeared to him with wax pencil, the size estimates changed once more. His description of the object remained “extremely vague.”

Regardless, the witness described that in the days since his sighting, he had become both a UFO believer and religious.

On review of all the accumulated data, no further investigation was deemed necessary.

In theory, the Early Warning System was intended to streamline and expedite the investigation process, while reducing waste in the investigative system. Despite the best efforts and intentions of the project staff and investigative teams, however, the System ultimately failed. Sightings were too transient, too unpredictable, too short to ever retrieve meaningful information, even from on-location investigations. Reports still took weeks to reach the project team in Boulder. And there simply were not enough boots on the ground to adequately process sightings as they occurred. The network was difficult to expand while maintaining acceptable levels of technical training among volunteers, while reducing the degree of expertise deemed necessary for effective sighting analysis, even at basic levels.

\[270\] Ibid, 384.
would have resulted in an exponential increase in ‘insignificant’ cases making it through the sorting process. Even in the best possible circumstances, when the local team determined the sighting was truly an ‘unknown,’ and follow-up interviews proved compelling, field teams simply arrived on the scene too late.

Queries were not limited to field investigations. The project also engaged in other kinds of analysis. Scientists and industry specialists collaborated in analysis of photographic and motion picture evidence, while radar specialists contributed their expertise to interpreting and analyzing anomalous radar returns. Various university departments and the occasional industrial lab were contracted with to run materials analysis when witnesses sent in scraps of metal and bags of dirt which witnesses claimed had direct contact with low-flying or landing UFOs. Menzel was particularly close to the project during 1967, staying in contact with Condon throughout and making multiple trips to Colorado in late 1966 and 1967. In addition to contributing his materials and expertise to case study analysis, Menzel also participated in the design of a project-specific reporting form, drawing on his experience with the USAF reporting form. During this period, Project Bluebook still distributed its own USAF-sanctioned form to those who reported via official USAF channels (see Chapter 3), while Condon Committee personnel distributed their own reporting form to those who reported to the Colorado project but not the USAF/Project Bluebook.

The differences between the USAF’s official reporting form and that designed and implemented by the Condon Committee in regards to content are small but reflect a turn toward the witness as object of investigation, rather than the phenomena. The Project Bluebook reporting form asks for more data about location in the sky relative to the viewer, while the Condon form collects more data about the observer his- or herself, and what they
were doing at the time of the sighting. This focus on the observer is an artifact of the report’s author. Psychologist David Saunders took a leading role in the design and writing of the Condon form. Saunders wrote early drafts himself. Once he had what he described as “the first home-grown version of a UFO questionnaire… [that was] nominally complete,” he solicited feedback from project investigators, demonstrating the continued work-in-progress nature of the forms, as well as the importance of having real-time feedback in generating such a form.271 Whereas the Project Bluebook form was meant to collect data that would be useful across the physical sciences, Saunders seems to have been trying to develop a form that had multiple uses: an interview form that could be used via telephone, as a mail-in form, as a “file” form (representing standardized and concise data), and as a field interview form. Aiming for a jack-of-all-trades approach rather than a master-of-one, Saunders admitted that the form was not ideally suited to any one of these uses, but rather would produce a “common language” of data despite the method of interview.272 Saunders’ drafts reveal interesting points of interdisciplinary work; a psychologist himself, Saunders provided maps that tracked how answers to specific questions likely indicated the witnessing of a common event, and which series of responses indicated a genuine UFO.273

Saunders’ role in the creation of the Condon Committee reporting form, as well as the project’s focus on public opinion polls, suggests an increased focus on the psychological and social aspects of UFO sightings, despite long-running claims that the study was still primarily focused on aspects pertinent to the physical sciences. In the spring of 1968, the Colorado project, in conjunction with Gallup, conducted four separate opinion polls at the national level. Each poll focused on a different demographic group: adults, teenagers, college

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272 Ibid.
273 Ibid.
students, and people who reported that they had seen a UFO. The goals of these polls, conducted with cutting-edge social survey methodology, were to determine who was seeing UFOs, where, and their attitudes about reporting sightings and toward UFO belief in general. The surveys produced interesting results, not only to argue for the importance of social research on the sighting of UFO phenomena, but also suggested that such studies might have broader applications in understanding how beliefs change over time in the individual and in the demographic group. Though the Colorado project’s efforts in this direction were minimal, even this initial effort represented a departure from Project Bluebook’s focus (and provided further grounds for critics’ complaints that the Colorado project was too focused on who was doing the sighting, rather than on the sightings themselves).  

The Colorado project assembled a broad array of scientific and technological experts to bring their accumulated knowledge to bare on UFO phenomena, to the extent that they could. The abridged list of editors, staff, and acknowledged participatory institutions and specialists ran for eight pages at the end of the final report. No one could accuse the Condon Committee of shirking its scientific responsibility. Could they?

“The Report the world has been waiting for!”

The final report of the Condon Committee saw simultaneous release to the USAF, Congress, and the American public on 1 January 1969. Barring the redaction of names for security purposes, the version that was released to the public was identical word for word to the internal version of the report. Luckily for its readers, the massive, nearly thousand-page report was front-loaded. It opened with the project’s conclusions and recommendations, authored by Condon himself.

Section I, “Conclusions and Recommendations,” clearly laid out Condon’s positions regarding the conclusions of the project and what the next steps were. The task of the Colorado study, as it was understood by its leadership, was to determine whether the scientific study of UFO reports could add to scientific knowledge, and therefore whether the USAF should continue funding such an effort. The project’s conclusion was that in the past two decades, “nothing [had] come from the study of UFOs… that has added to scientific knowledge” and, following that, “that further extensive study… probably [could not] be justified in the expectation that science will be advanced thereby.”275 The “lack of contribution to scientific knowledge,” furthermore, was not a product of lack of interest on the part of establishment science, but rather indicated that professional scientists in closely-associated fields - physics, astronomy, chemists, et cetera - had determined early on that study of UFO phenomena presented little opportunity for fruitful discovery. In short, there simply was not enough to gain to justify long-term engagement in the problem.

Knowing his readership would largely not be other professional scientists, but rather congressmen and the interested lay public, Condon then sought to explain to his audience why that was the case. To do so, he would have to offer an account of how ‘science’ and scientists do work. Condon’s description of the scientist occupies a liminal space between the heroic “rugged individualist” scientist of the 19th century, and the “cog in the machine” nature of Cold War scientific workers by presenting an idealized version of the scientist.276 Characterized as male, the scientist is “motivated by an active curiosity about nature and by a personal desire to make a contribution to science”, “constantly probing for error and incompleteness” in his field of interest, and always innovating new ways to attack new

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At the same time, however, Condon described the scientist as part of a team, a larger field, collaborating with his colleagues and depending on them to police his work while he checked the work of others for error and appropriateness of inquiry. This communal work kept the larger field on the rails: “While individual errors of judgment may arise, it is generally not true that all of the scientists who are actively cultivating a given field of science are wrong for very long.” This combination of individual freedom of inquiry and collective accountability was what made positive scientific growth possible.

What this relationship between individual scientists and their broader community meant for the UFO problem was that Condon considered uncritical acceptance of the final report’s conclusions unlikely. In the course of the study the Colorado project identified a number of questions and problems needing further study ranging from anomalous radar propagation and atmospheric optics to potential new classes of meteorological phenomena. It was entirely possible that the Colorado project’s negative findings could produce new avenues of research. This possibility did not, as far as Condon was concerned, present a contradiction to his larger conclusion that scientific knowledge had not been advanced thus far. It would always be possible that an interested scientist would see something they, the project staff, did not.

Condon’s position on funding mirrored his position on on-going research projects. He clearly understood his project as being an undertaking of the military-industrial-academic complex. It represented the cooperation of military interests (namely Project Bluebook), professional scientists and scientific institutions, and industrial interests (including private airlines and Kodak Eastman). Despite the diverse public and private actors involved, the

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278 Ibid, 2.
project was still funded on federal military dollars. It was on this basis - should the United States Air Force continue funding UFO study - that the project had reached a negative conclusion. This did not, Condon argued, mean that other funding bodies, federal or otherwise, would not find reasons to support UFO-related research in the future, especially where behavioral and social sciences were interested. Nor did it mean the Department of Defense should entirely cease investigation, from a national defense perspective. Condon characterized the conclusions and subsequent recommendations of the project to be highly limited and case-specific.

Condon’s opening sections were followed by a massive report of the project’s various lines of inquiry. Condon also authored a summary history of the project from inception to conclusion. He also wrote a “recent history” of the phenomena itself, from the late 19th century forward, constructed around case studies and contradicting the claims of true believers that Condon himself had no familiarity with significant sighting cases. Summary sections clearly outlined methodology, practice, even basic term definitions, including what was meant by sighting,” “UFO report,” and “UFO” itself. In addition to these descriptive sections, the report also included long, highly-technical sections authored by project members, detailing investigations, methods, and conclusions, which read much more like scientific or technical papers than reports intended for a lay audience.

The report was ultimately Condon and staff ‘showing their work.’ In presenting their work down its very bones, Condon hoped to avoid critique and show non-expert readers exhaustive levels of practice, reinforcing the scientific nature of the project and the reliability of its conclusions. By doing so, it was hoped that not only would some questions about UFO phenomena be put to rest, but the American public learn something about science in
the process.\textsuperscript{279} The final report of the Condon Committee presented an opportunity to engage the public in a meaningful conversation about what 20th century professional science was and did on a daily basis.

Unfortunately, the final report seems not to have accomplished this admirable task. The report was planned for simultaneous release to all interested parties, from the USAF to Congress to the American public. To accomplish this, the Condon Committee contracted with a trade publisher to make the report available to a general audience while not overburdening federal publishing bodies with expected high demand. A hardcover version was published by boutique publisher Dutton Publishing, but Condon sarcastically called this a “closely-held secret” as the publishing went unannounced. Bantam Books held the rights for the paperback version but largely failed to get the book publicized and on shelves in a majority of the country.\textsuperscript{280} Menzel reported difficulty locating a copy in summer of 1969 as well, although, for what it’s worth, when he did find a copy he found it in “among the science books” (as opposed to ‘science fiction’ or ‘flying saucers’) which was, “at least… all to the good.”\textsuperscript{281} Treated as a serious scientific publication, the report offered the scientific mainstream’s last word on the UFO question.

**The Report to End All Reports**

The Condon Committee’s final report went to the National Academy of Science’s review panel on 15 November 1968. The panel was made up of scientists who, according to NAS president Frederick Seitz, were professional experts in scientific fields relevant to the UFO problem but who had expressed no public position on the possible explanations for

\textsuperscript{279} Condon closed his introductory “Conclusions and Recommendations” with a lament about the state of American science education, especially at the primary and secondary levels, and the persistence of science teachers treating UFO phenomena and true believers as if they were credible scientific professionals.

\textsuperscript{280} Condon to Menzel, 28 July 1969, Box 3, Folder: “Condon, Edward U.,” DHM.

the phenomena, though the names of participating scientists were kept secret, in Seitz’s words, to “protect them from the type of intrusion into their lives that might occur.”

Under the leadership of Yale professor Dr. Gerald Clemence, the NAS panel took as its primary mission the evaluations of the project methodology, rather than passing judgment on the findings of the Committee. If its methodology passed muster, then it followed that its conclusions and recommendations could be trusted as also sufficiently objective and reliable.

Though on paper the panel’s purpose was solely the evaluation of the Condon Committee’s final report, the members took the time to familiarize themselves not only with the broader history of the phenomenon but also with the various positions held by their colleagues, including Menzel, Markowitz, and McDonald. None of these scientists were invited to present to the panel or attend its hearings, however. Menzel offered his expertise and was polite when rebuffed, though expressed his concern at the panel’s lack of experience with the issue and worried that that ignorance might compel them to agree with the true believers’ arguments that more study was needed. McDonald, on the other hand, repeatedly petitioned Seitz to let him present to the panel and participate on it. Seitz repeatedly denied McDonald, and over the late months of 1968, his responses to McDonald grew increasingly curt and cold. Seitz stayed true to his word. None of the UFO’s ‘usual scientific suspects’ sat on the review panel.

The panel articulated its review focus as being scope, methodology, and findings. In terms of scope, the panel found that, over four volumes, twenty four appendices, fifty-nine case studies, 68 photographic plates, and an index that spanned twenty-seven pages, the study’s

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282 Frederick Seitz to McDonald, 4 December 1968, and Seitz to McDonald, 16 December 1968, Box 8, Folder: “National Academy of Sciences,” JEM. McDonald had been requesting (demanding?) that Seitz share with him the names of panelists so that McDonald might contact them personally to share his own materials and expertise with the panel - a move Seitz found entirely inappropriate.

283 Menzel to Seitz, 31 December 1968, Box unnumbered, Folder: “Seitz, Frederick,” DHM.
scope was “adequate to its purpose”. They described the project’s methodology - integrating on-site investigations and interviews, laboratory analyses, and the reliance on outside associated groups with technical expertise lacked at Colorado - as “well chosen” and “in accordance with accepted standards of scientific investigation.” And as far as the study’s findings, as laid out in Condon’s summary and conclusions, the review panel concurred with all of Condon’s evaluations.

The NAS review panel concluded that Condon’s recommendations also held, agreeing that no “high priority” effort was warranted for further UFO investigation. The Colorado study was “a very creditable effort to apply objectively the relevant techniques of science to the solution of the UFO problem.” Despite persistent unexplained cases, the project’s evaluations were scientific, were objective, and were conclusive. And finally, through its analysis, the authors of the Colorado report pointed to many different avenues down which a scientist might find explanations for UFO phenomena, but that none of those suggested an extraterrestrial source. ETI was, following the analysis and conclusions of the final study, the least likely hypothesis.

As the 1960s came to a close, it appeared the age of UFO study was also coming to a close. The Condon Committee had fulfilled its obligation and its products had withstood the methodological scrutiny of a well-credentialed panel of the National Academy of Sciences. The true believers had made their most organized attack with the most damning evidence they could muster. And yet, the internal momentum of establishment science appeared

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286 Ibid, 4-6.
287 Ibid, 6.
carried the day. The final report was truly that: final. The matter was soon to be closed, once and for all. The UFO problem, if not solved, finally shelved.

Or so it appeared.
Chapter Five: Critique, Consensus, Controversy: Dissent and UFOs, 1947-1977

On 12 December 1967, McDonald met with staff members of the Colorado project at what he described as a “bull session.” Staff members met to vent their frustrations and discuss some way of forestalling the effects of what was expected to be a negative finding from Condon Committee senior staff. They told McDonald of a memo Robert Low, assistant director of the study, had written in 1966 essentially confirming that the senior staff had never intended to develop a “positive” report (a report that looked favorably on the extraterrestrial hypothesis, or ETH) or even conduct a serious study. When he commented that he would like to see that memo, a member of the project staff produced a Xeroxed copy and handed it off to him.

The first half of the memo paraphrased the pro and con positions of scientific faculty toward the scientific study. Both sides articulated positions that had been established within the scientific community for nearly twenty years (see Chapter Four). The second half laid out Low’s advocacy for the study and his rationale behind his pro-study position. For one, he considered the Rhine ESP comparison “only partially valid.” While the Rhine study was “done by believers,” the Colorado study would be “conducted almost exclusively by nonbelievers who, although they couldn’t possibly prove a negative result, could and probably would add an impressive body of evidence that there is no reality to the observations.” The real “trick,” as Low put it, would be to convince the public that the study was truly objective while simultaneously communicating to the scientific community

288 McDonald to William Messing, 24 February 1968, Box 3, Folder: “Condon Committee: Correspondence, Levine, Norman,” JEM.
289 Ibid.
that, despite aiming for utmost objectivity, they had no intention or expectation of finding an actual saucer. The best way to do this would be to focus not on the physical phenomena themselves but instead on those people doing the sighting. Boosting the sociological and psychological aspects of the problem would also increase the chances that publishable research would come out of the project given that it seemed unlikely, at least to Low, that the physical sciences would be able to generate any publications. It could be a boon for the University if handled appropriately. This included securing “properly qualified people who will actually do the work.”

It was this second half of the memo - Low’s own thoughts - that caused a fractious uproar among some of the staff.

McDonald’s first instinct seems to have been to leak the document to the press, but electrical engineer and project member Norman Levine cautioned McDonald against it, arguing that it would carry more weight coming from someone inside the project rather than an outspoken, external opponent. McDonald, however, could not keep himself out of the project’s business with the memo. Following a phone call on 19 January 1968, McDonald penned a long letter to Low, laying out his positions and now open hostility toward the Colorado project.

McDonald characterized the UFO studies as being an extraordinary piece of scientific investigation, of unusual scientific importance, and the Condon Committee had become the hinge upon which all continued research efforts now swung. McDonald’s

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292 Ibid, 244. Criticism of the Low Memo, both then and now, focuses on Low’s use of the word “trick,” and his suggestions that ‘everyone always knew how the study would turn out,’ even before it began. Low’s closing opinion - that he is supportive of the study and sees many potential positives to undertaking it - is rarely mentioned, let alone seriously considered in repeated takedowns of Low’s character and moral fiber as a scientist.

293 Norman Levine to McDonald, 21 January 1968, Box 3, Folder: “Condon Committee: Correspondence, Levine, Norman,” JEM.

294 McDonald to Low, 31 January 1968, Box 3, Folder: “Condon Committee: Correspondence, Low & misc,” JEM.
criticisms swung around five main points. First, in recent months, Condon’s public remarks about the study and its conclusions had taken a turn toward negative results. Second, Condon had become overly preoccupied with crackpot cases. Third, Condon himself was not personally involved in the investigations and interviews with witnesses. Fourth, administrative communication with those who were carrying out the investigations was almost nonexistent. And fifth, a class of unknown/unexplained cases that McDonald “and others felt should constitute a cornerstone of the Project” seemed to be also nonexistent. Were the situation not so unusual and important he would never dream of criticizing the work-in-progress of his colleagues. But given that the situation was unusual, McDonald felt it his obligation to raise his concerns with project leadership before it was too late, if it wasn’t already. He concluded with a direct quote from the memo, about the “trick” of the study and responded: “I am rather puzzled by the viewpoints expressed there; but I gather that they seem entirely straightforward to you, else this part of the record would, presumably, not be available for inspection in the open Project files.”

Mention of the memo landed like a pile of bricks on project leadership. Low was not aware that anyone outside the intended recipients - let alone McDonald - had seen, let alone come into possession of, the memo. Even Condon himself was not aware of its existence prior to January 1968. Regardless, it set off a firestorm that threatened to consume not only the Condon Committee but any hope of scientific consensus at the end of the study.

Condon and Low moved quickly to address the memo’s leak. In what McDonald and others described as an “inquisition,” on 7 February 1968, Condon and Low called staff members one by one into Condon’s office to interrogate them as to their role in the memo’s

295 Ibid, 2.
296 Ibid, 5.
escape. The following day Levine and psychologist David Saunders were fired from the project after being identified as the guilty parties who took the memo from Low’s personal files and handed it off to McDonald. That same day, Condon called University of Arizona president Richard A. Harvill, as well as McDonald’s boss, UA Institute of Atmospheric Physics director Richard Kassander, to lodge a complaint and demand that McDonald return the memo and any other project files he had come into possession of. On 9 February 1968, Condon signed and released an official press release, stating that Levine and Saunders had been fired for incompetence. The guilty parties were gone, but the drama was just beginning.

Upon the firing of Saunders and Levine, McDonald began writing to NAS president Fred Seitz, articulating the true believers’ side of the story.298 Seitz responded somewhat critically, arguing that Condon’s public statements were not complete grounds to judge the competency of the study.299 In the meantime, Condon appeared to be out for blood, where McDonald was concerned. In a strongly-worded letter, Condon wrote to McDonald that the memo had been in Low’s personal files, not some nonexistent collection of “open” files. The memo was, bluntly, a stolen object. Condon found McDonald’s argument that, since other people now had copies of the memo as well he saw no point in returning it even though it constituted stolen property, understandably untenable.300 McDonald also accused Condon of telling colleagues that McDonald had coerced Project members into stealing documents from the project, and demanded an apology and public retraction from Condon.301 During the early weeks of March, McDonald had his lawyer contact Condon. If no retraction and

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298 McDonald to Donald Keyhoe, 11 February 1968, Box 3, Folder: “Condon Committee: Saunders, David: Correspondence,” JEM.
299 Seitz to McDonald, 15 February 1968, Box 3, Folder: “Condon Committee: Correspondence, Levine, Norman,” JEM.
300 Condon to McDonald, 15 February 1968; Kassander to Condon, 23 February 1968, Box 3, Folder: “Condon Committee: Correspondence Low & misc.,” JEM.
301 McDonald to Condon, 5 March 1968, Box 3, Folder: “Condon Committee: Condon, JEM correspondence,” JEM.
apology came, McDonald intended to sue Condon for libel. Condon subsequently ended his correspondence with McDonald.\(^{302}\)

Meanwhile, the support of the UFO community bled from the project. The National Investigations Committee on Aerial Phenomena (hereafter NICAP) and the Aerial Phenomena Research Organization (hereafter APRO) pulled their formal support before the summer. NICAP head Donald Keyhoe reluctantly agreed to keep quiet about the memo for the time being, while bringing NICAP into the crafting of the response from the true believer camp.\(^{303}\) Even the usually cooperative and congenial Project Blue Book astronomer J. Allen Hynek wrote to Condon expressing serious concern about the February developments. He’d heard about the firings from the Lorenzens, suggesting that news of the Low Memo had quickly leaked into the public organizations, likely through Keyhoe or Hall. Hynek now expressed great reluctance to send along his files to Colorado following Condon’s earlier request, considering the project now out of money, manpower, and time, wishing instead that Condon had shown more interest at the beginning of the project. Hynek ultimately did not send along his personal files but charitably included a list of “interesting cases.”\(^{304}\)

The most serious blow to Condon came in late February 1968, when his long-time personal secretary, Mary Louise Armstrong, tendered her resignation. In a letter dated 24 February 1968, Armstrong, put down in writing the content of a personal discussion from 22 February. In her letter, she blamed Low specifically for many of the conflicts and problems present in the project. She described his attitude as being “from the beginning… one of

\(^{302}\) Condon to McDonald, 11 March 1968, Box 3, Folder: “Condon Committee: Condon, JEM correspondence,” \textit{JEM}.

\(^{303}\) Hall to McDonald, 12 February 1968, Box 3, Folder: “Condon Committee: Correspondence, Levine, Norman,” \textit{JEM}.

negativism” which showed little interest in staying current on sightings.\textsuperscript{305} According to Armstrong, Low appeared to be authoring the final report on \textit{his conclusions} alone, rather than on those that reflected the perspectives of the group, and thereby misrepresented the positions of project personnel. She also claimed that, if Saunders and Levine had been fired for some inexcusable breach of project privacy, Low was equally guilty. She cited specifically the continued sharing of project data with Menzel and Menzel’s ongoing consulting and sighting analysis. Perhaps most important to Armstrong was her sense that the project was operating in service to something larger than its own internal mission statement. She described herself, Levine, Saunders, and “most of the others” as feeling “an allegiance to something more than the UFO project as it existed.”\textsuperscript{306} Here Armstrong, in fewer words, picked up the torch of other true believers and gestured outward to a more noble scientific purpose. Condon foresaw that various interested personalities would want a copy of her letter and encouraged her to resist the temptation to share it.\textsuperscript{307} Armstrong clearly failed to resist, as a copy of the letter was published as early as 1972, as Appendix 3 in Hynek’s \textit{The UFO Experience: A Scientific Inquiry}.\textsuperscript{308}

The controversy around the now-infamous Low Memo rocked the Colorado study and the UFO community alike. It provided the extraterrestrial hypothesis (hereafter ETH) true believers a powerful platform from which to critique and outright reject the findings of the supposedly objective Condon Committee. If the controversy of the memo lit a fire under a weakening ETH true believer community, though, the findings of the Condon Committee summariy rejecting the ETH and strongly recommending the USAF cease funding UFO

\begin{enumerate}
\item M. L. Armstrong to Condon, 24 February 1968, Box 3, Folder: “Condon Committee: Memo (Low),” JEM. 2.
\item Ibid, 9.
\item Condon to Armstrong, 26 February 1968, Box 3, Folder: “Condon Committee: Memo (Low),” JEM.
\end{enumerate}
studies united the UFO community behind a single mission. The goal? Make the case that the Condon Committee was at best poorly executed and at worst a farce, and that a new, truly independent, long-term scientific study of UFO phenomena was not only warranted but desperately needed.

This cause, maintaining and sustaining continued serious UFO science, was bolstered by the civil unrest of the late 1960s and early 1970s. Scientists were no more insulated against these upheavals than any other group and indeed the period saw scientists engaging with the hard ethical and moral quandaries of their work at an institutional level. The new scientific activism of the period included not only recognition of but open acknowledgment of the destructive trend in scientific and technological research largely directed at weapons development and the moral responsibility of scientists, engineers, and technicians for the consequences of that work. It also echoed other movements in its rejection of the expertise state and the technoscientific hierarchy of power, and in addition to that rejection, had scientists asking, what is the proper alignment of experts to state power? Part of the response to this question was a push for decentralization of power structures and increased democratic participation; for scientists, this included increasing their efforts in public science communication and science education. The tensions between these modes and resolving their challenges meant that scientists began to focus on the social and environmental applications (and consequences) of their research.

In articulating their arguments, true believer scientists reflected and refracted these critical questions as they drew on popular language of democratization and participation. They thereby rendered rejection of the UFO consensus yet another site of late sixties unrest and dissent. This chapter seeks to understand rejection of establishment consensus on the
UFO problem in the context of eroding faith in the expertise state that so defined the moment by exploring specific locations of dissent: a critical rebuttal of the Condon Committee’s final report, the organization and execution of a symposium on UFO science at the 1969 American Association for the Advancement of Science (AAAS) annual meeting, and in the creation of an independent scientific institute for UFO investigation in the mid-1970s. The shifting political identities of professional scientists and a growing chorus of demands for responsibility and transparency created a space where true believers could agitate for continued UFO research on the grounds of political and social conflicts - separation of science from the military-industrial complex, science for the good of all people, increased popular participation in governance and policy formation - in a way that was only possible in the atmosphere of the social movements of the day.

*Look* and the True Believers

In the weeks following the leak of the Low memo and the firings of David Saunders and Norman Levine, McDonald pushed his colleagues to handle the situation internally, hewing close to the standards and norms of the scientific establishment, as opposed to adjudicating it in the court of public opinion. This was a duplicitous position. Early on, McDonald was collaborating behind the scenes with author John Fuller on a tell-all exposé of the Condon Committee, to run in *Look* Magazine. McDonald was already familiar and friendly with Fuller. The two began corresponding such that by 5 March 1968, McDonald was writing to Fuller and providing dense amounts of information, paperwork, and testimony. McDonald spent considerable time rounding up quotes from involved actors, ranging from establishment scientists at the ESSA to undergraduate coeds, for Fuller. He

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309 McDonald to Fuller, 5 March 1968, Box 3, Folder: “Condon Committee: Saunders, NAS, etc. Correspondence,” *JEM*.
also began sending Fuller copies of his correspondence with Colorado project staff, dating from 15 October 1966 to the present - ostensibly without the consent of those on the other side of that correspondence. In exchange for his “generosity,” McDonald asked to be part of Look’s indemnification agreement with the growing list of people cooperating with Fuller in the writing of the piece.\textsuperscript{310}

Fuller had gained truck with the true believer crowd two years earlier. He cut his UFO-story teeth with \textit{Incident at Exeter: The Story of Unidentified Flying Objects Over America Now} (1966), which provided the reader with Fuller’s own investigations of a series of highly-publicized sightings that took place over Exeter, New Hampshire, in 1965.\textsuperscript{311} Fuller’s standing in the true believer community made him the ideal author of such an exposé, and Fuller’s article, “Flying Saucer Fiasco,” ran in the 14 May 1968 issue of \textit{Look} with the caption, “The extraordinary story of the half-million-dollar ‘trick’ to make Americans believe the Condon committee was conducting an objective investigation”.\textsuperscript{312} In the article, Fuller described a “near-mutiny” by staff scientists, the firing of Saunders and Levine, and the resignation of Armstrong. In his account, all parties were cautiously optimistic about the study, given Condon’s reputation and the fact that, despite the fact that four of the first five investigators appointed to the study were psychologists and Low’s graduate degree was in business administration.

\textsuperscript{310} McDonald to Fuller, 5 March 1968, 15 March 1968, Box 5, Folder: “Fuller, John,” \textit{JEM}.
\textsuperscript{311} Fuller acquired further reputation by claiming to have seen a UFO himself during the course of his investigations. He followed \textit{Incident} up with \textit{The Interrupted Journey: Two Lost Hours “Aboard a Flying Saucer”} (1966), a play-by-play account of the abduction of Betty and Barney Hill, also in New Hampshire (and one of the first abduction cases of the modern era). \textit{Interrupted Journey} was of a piece with \textit{Incident at Exeter} in that Fuller established himself as a sympathetic author to the true believer’s position. His books argued that average, reliable, serious people were having UFO experiences and likewise deserved to be taken seriously. Both books quickly became influential in the community. See Fuller, \textit{Incident at Exeter: Unidentified Flying Objects Over America Now} (New York, NY: G. P. Putnam, 1966) and \textit{The Interrupted Journey: Two Hours Lost “Aboard a Flying Saucer”} (New York, NY: Dell Publishing Co., 1966).
\textsuperscript{312} John Fuller, “Flying Saucer Fiasco,” \textit{Look Magazine}, 14 May 1968.
The bulk of the article focused on the Low memo and its fallout. Fuller also celebrated McDonald’s involvement and attitude - unsurprising, given that McDonald appears to have been Fuller’s main source for the story. If McDonald was the hero, “intense… bluntly articulate…” and devoted to scientific objectivity, then Low was the villain, who spoke “softly, smoothly and guardedly” and yet was Janus-faced, the progenitor of the memo that showed his true intent to deceive and source of confusion, strain, and mistrust among project staff. Condon, meanwhile, was painted as simultaneously misguided in his obsession with the crackpots (criticized as unscientific) and largely uninvolved in the execution of the project and therefore ignorant of its basic functions and conclusions despite being its director. UFO-sympathetic staff were cast as rational scientific actors with an eye toward public service and pursuit of pure science, while Low and Condon became complicit in a foul-up, or cover-up, of ETH, or at least, a failed scientific study.

Fuller’s *Look* article hit newsstands just as the Condon Committee was announcing the conclusion of field investigations. News reports paired the completion of field investigations with summaries of Fuller’s story. Condon and Low sent a telegram indicating their displeasure to the editorial team at *Look*, arguing that the piece “was filled with falsehoods and misrepresentations.”*Look* editors refused, however, to issue a retraction or corrections. The article stood as published.

High hopes surrounded the *Look* article. McDonald believed that the revelations contained in Fuller’s piece would put an end to any lingering faith in the Condon project to

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313 Fuller, “Flying Saucer Fiasco.”
do a sufficient, objective, scientific study of the matter. All interested parties hoped that Fuller’s article (hit piece?) would finally reveal the two decades of “official” UFO investigation to be a mucked-up farce. But “Flying Saucer Fiasco” did not produce these hoped-for effects. True believers thought the public revelation of Condon’s broad disinterest, Low’s memo, and the pair’s rage at the leak of said memo and the comments of dissenting staff members would be a “wake-up” call to colleagues, Congress, and the American public. Instead, the “big coordinated attack” by McDonald, Fuller, Keyhoe, and the true believer community at large had “pretty well fizzled out” by the summer of that year. Even commentors sympathetic to the true believers’ position had to admit that the article had “remarkably little impact.” Even Project Blue Book director Lt. Col. Hector Quintanilla, Jr. expressed surprise at the (lack of) public response; he reported to Menzel that as late as September 1968 he hadn’t “received one single irate letter”, either from the public or from NICAP members. The Look memo had had surprisingly little impact.

The Report Hits the Presses

Field investigations at Colorado had ended, the final report was being written and edited and was set to be published in January 1969, and Condon, after giving one final talk on the matter at the American Philosophical Society in Philadelphia in either winter 1968 or spring 1969, intended to spend as little time on the matter as possible, wishing instead to put the whole affair behind himself. The publication of the final report, it was hoped and believed, would put an end to the controversy and permit everyone to move on with their lives.

316 McDonald to Roush, 13 May 1968, Box 11, Folder: “Roush, J. Edward, Congressman, 1967-68,” JEM.
319 Quintanilla to Menzel, 28 May 1968, Box unnumbered, Folder: “Quintanilla, Hector, Jr.,” DHM.
The Condon Committee’s report, published as *The Final Report of the Scientific Study of Unidentified Flying Objects* (hereafter *SSUFO*), was scheduled for release on 8 January 1969. However, pieces of the report leaked prior to the release date. When the Associated Press (hereafter AP) made it clear that they had these “fragmentary conclusions” and intended to run the leaks, project personnel finally broke their vow of silence.321 The resulting article, because of the cooperation of project scientists with journalists, described the project as an outcome of *persistent mistrust* over the United States Air Force had mishandled UFO investigations over the years, and as an attempt to rectify that mistrust, rather than heighten it as a cover-up. The Colorado project represented sound science that had been largely supported by private UFO investigation organizations like NICAP. AP coverage even played a bit of “both sides” finger-pointing for earlier and persistent poor investigations; even “credible” witnesses frequently made egregious errors - but that the USAF had also committed some egregious errors over the decades as well.322

The Condon Committee’s final report received national press attention. Early press coverage was generous toward Condon and the Colorado crew. Most of the coverage included a neutral, factual accounting of the origin and make-up of the Colorado project and its team, the private organizations that cooperated, and rehashes of drama that afflicted the project throughout 1968. Journalists pointed to the endorsement of the report by the National Academy of Sciences as further verification of its validity.323 The *New York Times* ran selections of case studies, their analysis and conclusions, directly from the study itself.324

322 Ibid.
Not all coverage of Condon’s findings was positive. In a strange review from the *Los Angeles Times*, the author called the report a “secret report on an Air Force-financed investigation of flying saucers,” and described “tight security” at the project and an on-going effort to “guard against leaks.”325 This take is at odds with the press coverage of the previous three years and the fact that the Condon Committee was never intended to be a ‘secret’ project - quite the opposite, actually, as the Air Force worked hard to publicize their support of Condon and Colorado. But as journalists George Wilson and Rudy Abramson pointed out, the publication of the Condon Committee conclusions, no matter how exhaustive, well-researched, and approved by outside sources they were, couldn’t put to rest the controversy.326

Just two days after the AP ran the first summary review of *SSUFO*, the rebuttals from the true believers began to appear. As one article put it, “This new… [and] definitive study remained unchallenged for zero hours.”327 Within days of its release, Donald Keyhoe, D.C.-based director of NICAP, organized a press conference with McDonald in attendance at NICAP headquarters, where he called the Condon Committee a “waste of money” for so obviously missing the mark on the nature of UFO phenomena.328 Writing for the *Christian Science Monitor*, Neal Stanford correctly predicted that the “report obviously is not going to be accepted by the many persons - scientists and laymen - who have come to believe that UFOs exist and are actually extraterrestrial phenomena” and pointed out that while the report

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would sell well, it would also popularize other less credible UFO books. Reporters predicted that the Committee’s findings would be denounced as just another part of the cover-up; as if on cue, reporter Roscoe Drummond ran an editorial calling the report inconclusive and reminding the reader of early 1968 drama surrounding a bureaucratic memo and the importance of credible witnesses. The true believers were becoming quite adept at keeping the controversy alive, despite every effort to quash it.

*SSUFO* faced reviews in professional publications as well as popular print. Relations between Condon, the AAAS, and *Science* had been fraying throughout 1968. *Science*’s review of *SSUFO* likely did little to repair those relations. Written by up-and-coming science writer Philip Boffey rather than a professional physical scientist, the *Science* review also aligned *SSUFO* and contemporary true believer publications. While Boffey provides a summary of the report’s findings and its “undoubted contributions to an understanding of the UFO problem,” he also provided significant column inches to the views and arguments of the true believers, including Saunders and McDonald. For every finding in *SSUFO* he addressed, Boffey made sure to offer the true believer counterpoint. It served to reinforce his concluding argument that while it remained to be seen whether *SSUFO* would “ultimately quiet the UFO controversy,” the criticisms of the project “serve as a reminder that scientific

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330 “On UFO’s, you can’t win,” *Christian Science Monitor*, 25 January 1969, pg. 16; Roscoe Drummond, “UFOs are still around,” *Christian Science Monitor*, 1 February 1969, pg. 18. Drummond was openly sympathetic to the ETH true believers, a bias that showed in his reporting.
methods are not always able to resolve problems in fields where emotions run high and data are scarce.”

Up-and-coming cosmologist-cum-pop-scientist Carl Sagan invited both McDonald and Menzel to review the final report for Icarus, of which Sagan was the editor. McDonald agreed and wrote a lengthy review that slammed the project’s small sample size, its exclusion of what McDonald considered “many of the most outstanding UFO reports on record,” the analysis methodology, the argumentation, unnecessary padding in subsections of the report, and the NAS for endorsing the entire thing. Menzel, on the other hand, turned down the opportunity because he “[would] not engage in public debate” on the UFO issue, “especially with Jim McDonald” and encouraged Sagan to stand up against “pathological sciences” (knowingly quoting Nobelist Irving Langmuir).

The Case Against the Condon Committee

Conversations about the long-term effects of the Condon Committee on UFO research were happening against the backdrop of the most significant ETH-sympathetic publication yet. Former Colorado project member David R. Saunders’ exposé, UFOs? Yes! Where the Condon Committee Went Wrong hit shelves the same week as the Condon Committee final report. The timing of its release meant that many reviews and summaries of the Colorado report were offset by reviews and critiques from Saunders’ alleged “tell-all.”

332 Boffey, “UFO Study,” 262. Boffey is casting doubt on the efficacy of the scientific method as “objective practice of knowledge creation,” a significant statement in relation to a burgeoning construction of counter-expertise in service to the destruction of the Cold War Expertise State.
335 Menzel to Sagan, 6 March 1969, Box unnumbered, F: “Sagan, Carl,” DHM.
336 David R. Saunders, UFOs? Yes! Where the Condon Committee Went Wrong (New York: Signet Books, 1968). For more on Saunders and his role in the Condon Committee, see Chapter Four.
The credibility of Saunders and his account stemmed from his brief involvement with the Colorado project in 1967 (though his PhD and tenured faculty position certainly helped) and the conditions under which that had ended in early 1968. Saunders had been fired from the project with Norm Levine in February 1968 following their leak of a memo which cast doubts on the objectivity of the project as a whole.\footnote{See Chapter Four and above.} Whereas Levine as an early career scholar had faced significant potential damage to his career as a result of his dismissal, Saunders had the luxury of returning home to his tenured professorship in the psychology department. He laid low in the aftermath of the memo drama, arguing that any arbitration of the firings and attendant controversy should be handled by the traditional internal mechanisms of establishment science. He kept in touch with James McDonald, Levine, and other prominent true believers, but didn’t seem particularly eager to slap his name all over the presses.

That all changed in the beginning of 1969, when his book hit shelves beside the final report. From a marketing perspective, the timing of the release could not have been better. Juxtaposed beside the nearly thousand-page final report, Saunders’ book provided the coveted “other side” of the controversy. He was a notably credible person with scientific expertise and first-hand experience in the daily workings of the project. But more importantly, Saunders’ book was infinitely more readable than the dense, government report issued by the Colorado project. The text was additionally bolstered by an introduction by John Fuller (see above) and co-authored with journalist and UFO witness R. Roger Harkins.

Saunders’ book stands apart from earlier entries written by non-scientists; the text and argument are organized and presented with a scientist’s perspective. Fuller’s introductory critique captures the tenor of Saunders’ account: The Condon Committee was
“a flagrant example of the misuse of the taxpayers’ money and what has to be considered a
dereliction of scientific duty.” Harkins, meanwhile, described what he called “a credibility
gap” on the part of the Air Force while casting Saunders as a reluctant hero. Saunders had
“risked the long, perilous journey into the land of Uforia” and “emerged… covered with
mud” rather than “glory.” Repeating the charge that the Colorado project had been a drain
on taxpayer resources, Harkins described Saunders as in a “battle to protect” the public’s
financial investment by demanding a rigorous, unbiased study. Saunders was, according to
Harkins, a credible and competent scientist with only the public interest in mind.

Harkins’ work in establishing the reliability of Saunders as witness was not as simple
as reciting Saunders’ credentials as a physical and a social scientist. Condon, Harkins wrote,
as director had every right to hire and fire as he saw fit. It was Condon’s discrediting of
Saunders as “incompetent” that was the truly inexcusable piece. Harkins lamented: “The real
tragedy of this story is that Condon and Saunders are both legitimate scientists who have dedicated
their lives to the same principles, and yet they wound up at odds with each other. It is doubly
tragic in that Condon, nearing the end of his career, winds up supporting the very things that he
spent his lifetime fighting.” And in case the reader needed any clarity, Harkins made it clear
that he was referring explicitly to Condon’s battles with House Un-American Activities
Committee in the early 1950s. To go after Condon on this front was a low blow, even for
the true believers.

These two introductory sections were intended to reinforce Saunders’ position as a
credible observer. Likewise, Saunders’ version of the events at Colorado is notable for its

restrained language and conservative theorizing. A substantial portion, at least half, is devoted to a detailed account of the project’s organizational structure, the tasks assigned to members, and descriptions of individual attitudes towards the projects, its goals, how those goals should be met, and so on. In doing so, Saunders established himself as an impartial witness and objective narrator. This identity was further bolstered by a generous bibliographic chapter on Condon, lionizing Condon as a patriot and public servant. Knowing where the book was headed, these early chapters praising Condon for his service and describing the “best intentions” behind the project were meant to lend Saunders’ upcoming critique objectivity. Establishing clearly that Saunders’ complaints were not with the men themselves - in fact he respected project leadership - but with the way the project had been managed was crucial to creating a compelling argument.

Importantly, Saunders claimed that the breakdowns in the project pre-dated the Low memo controversy by at least six months. Saunders described the team atmosphere as being “Condon and Low” versus “the rest of the staff” as early as the summer of 1967. The Low memo was simply the last straw. This corroborated his argument that he and Levine were fired not for leaking the memo, nor for the incompetence that Condon cited in formal accounts, but for their position on the nature of the UFO phenomena and the ETH. They were fired, Saunders argued, for being true believers.

Saunders was of a different breed of believer than a hardliner like McDonald. He was certainly more careful about how he positioned himself. Saunders was a self-described skeptic who came to the project highly skeptical, even doubtful, about the likelihood of ETH. But once exposed to the evidence, his position changed. He argued that, while “unadulterated belief in ETI is not and may never be scientifically justifiable,” the firings said
more about Low and Condon and their fear of the opposing arguments than it did about the methods, competence, and sanity of Saunders, Levine, and their sympathizers.\textsuperscript{342}

Interestingly, in his telling the project had always had the extraterrestrial bend. It had always been about determining whether the phenomena represented extraterrestrial intelligence. This directive, he went on to claim, came directly from the top and originated from Bob Low himself via a project position paper.\textsuperscript{343} Hence, everyone’s surprise when Saunders and Levine were fired because of their approach, assumptions, and views.

The simultaneous release of Saunders’ book alongside the mass market publication of the Condon Committee not only guaranteed Saunders free publicity but also provided a tool for sowing doubt in national press coverage. Not all coverage treated the publications as equal; renowned science journalist Walter Sullivan called Saunders a “conspiracy theorist,” was openly critical of Saunders’ work, and accused Saunders and others of purposefully distorting the UFO issue to create and maintain controversy.\textsuperscript{344} But other reporters left the question of Saunders’ credibility open, treating \textit{UFOs? Yes!} as a legitimate challenger to \textit{SSUFO} and casting doubt on the trustworthiness of Condon’s account.\textsuperscript{345} The result was a “both sides”-ism that suppressed overwhelming scientific consensus and kept the controversy alive.

\textit{UFOs? Yes!} was a powerful counterweight to \textit{SSUFO}. As a senior member of the team who joined the project in its earlier days Saunders had a credibility that even prominent figures like Fuller, and even Hynek, lacked. Unlike McDonald, Keyhoe, and other true

\begin{itemize}
  \item \textsuperscript{342} Saunders, \textit{UFOs? Yes!}, 240-241.
  \item \textsuperscript{343} Saunders, \textit{UFOs? Yes!}, 77, 80.
\end{itemize}
believers, Saunders was *not* in the business of character assassination. As he worked to maintain his position as a nonpartisan scientist, Saunders had to express admiration for Condon as an elder statesman who was simply led astray by a narrow-mindedness born only of a traditional, old-fashioned view of the possible and misplaced loyalties to the military-industrial-academic complex and expertise state of which he had been such an important part, hopefully making Saunders’ claims that Condon was covering for the Air Force more believable. Saunders’ critique of Condon played on an ideological divide within the scientific community regarding the responsibility of the scientist to his patron and to society, those things not being one and the same. In the postwar and early Cold War years, scientists struggled with the consequences of weapons research, those concerns largely (but not only) focused on the atomic bomb. In this early period, scientists understood themselves to be civilian-scientists and *allies* of the state, rather than underlings or employees; as such, Schweber argues that scientists didn’t recognize “until much later” that their sciences, which had been *an end* to them as practitioners was understood by the state to be *a means*. And in their role as citizen-advisors, scientists in this period attempted to influence policy mainly through intragovernmental means.

The growing crisis in Vietnam, coupled to rising protests at universities across the nation, made this “cooperative advisor” position increasingly untenable. And it was on

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346 Menzel to Klass, 14 January 1969, Box 6, Folder: “Klass, Philip J,” DHM. Menzel is discussing a recent Saunders appearance on *The Today Show* where Saunders levels this claim, and cites ongoing tensions and competition between the U.S. and the Soviet Union as the basis for that cover-up. Unknown if Menzel’s description is vague, or if Saunders’ statements were vague.


these terms that Saunders came for Condon. Despite his diplomatic tone, Saunders was actively and aggressively lumping Condon in with the scientists who remained close to their military patrons despite the rising tide of protest. Saunders meanwhile placed himself in the opposite camp among those willing to criticize the government and military and advocate for more transparent, inclusive, representative practices from the state and its military. In doing so, he hooked his critique of the Committee’s findings into anti-Vietnam, anti-government, anti-military vein of social and political criticism. This push toward accountability, transparency, and democracy in militarily-funded science would be reflected elsewhere in the UFO debates, including at a major disciplinary meeting almost a year after the publication of UFOs? Yes!.

The AAAS Symposium

It’s hard to tell where the idea started. But by early 1968, Carl Sagan and astronomer Thornton Page were actively trying to organize a UFO symposium for the 1968 AAAS meeting in Dallas, Texas. Word of a potential panel reached Menzel in late March of that year. He had a “dim view of the idea” from the beginning, stating that it would be impossible to achieve the “balanced’ discussion” the organizers appeared to be promising. Regardless, he was willing to help Page identify participants for the proposed panel.³⁵⁰ He recommended people he considered most reputable and knowledgeable on the subject, including Quintanilla, Hynek, and astronomer William Markowitz. He also strongly warned Page to avoid inviting Saunders and McDonald, adding that Page would be unable to stop McDonald from running “his own publicity machine” and co-opting the panel into yet

³⁵⁰ Judging from Menzel’s comments to Page, it appears Menzel expected a single panel, taking up a small portion of the day and an even smaller portion of the AAAS meeting as a whole.
another publicity stunt. While Menzel himself was not committed, he made it clear that if Page took his recommendations and kept the “kooks” off the panel, he would likely agree to participate.

Menzel was not the only prominent ‘ufologist’ Page was attempting to recruit. His method of recruitment, however, led to drama in the summer of 1968. Page tried to hook Condon and Markowitz by telling them that Menzel, while initially cool, had since “come around.” He understood Condon’s reluctance, given the “difficulties” that Condon had had with “emotional critics” during his tenure as director of the Colorado project. Page pushed that it was important for Condon to come and speak. His goal was to have invited speakers refute each other’s points, thereby quashing any suggestion that professional scientists were biased against discussion of the topic; that would be difficult, Page insinuated, without a member of the Colorado team present. Markowitz meanwhile went on record in a long and detailed response to Page that he felt the entire symposium should be canceled. In his opinion, any debate Sagan and Page organized would produce nothing of value, nothing new, and it would not work to clarify the situation at all. Rather, it would help sustain public

351 Extended correspondence between Menzel and Page, Box unnumbered, Folder: “Page, Thornton L.,” DHM; also Menzel to Page, 22 August 1968, Box unnumbered, Folder: “Page, Thornton L.,” DHM.


interest where it should not be sustained. He criticized his true believer colleagues on the ground that they had no scientific publications backing up the arguments they were making publicly, once again pointing mainly to McDonald but also now to Hynek.\footnote{354}{This critique - if the true believers have proof positive, “let them publish it in professional journals” - was becoming a common refrain in the skeptical community.}

Page was undeterred by the cautionary words of his colleagues. He responded to Menzel’s superficial interest by expressing “delight” that Menzel was now taking “a responsible interest” in the panel and being a participant in it, while Menzel had yet to agree to participate.\footnote{355}{Page to Menzel, 6 June 1968, Box unnumbered, Folder: “Page, Thornton L.,” DHM.} In fact, Menzel was expressing serious doubts about the symposium, that it might “give aid and comfort to the enemy,” the true believers Page was intent on inviting.\footnote{356}{Menzel to Markowitz, 13 June 1968, Box 8, Folder: “Markowitz, William,” DHM.}


Menzel and Condon, for all their concerns, struggled with some truths in the foundations of Page’s argument. The AAAS did have a responsibility, even an obligation, to the public as a body devoted to public science education. Page, as Menzel put it, made “a good point about the responsibility of AAAS to the general public in helping them interpret science.”\footnote{358}{Menzel to Condon, 8 July 1968, page 2, Box 3, Folder: “Condon, Edward U.,” DHM. Emphasis mine.} This responsibility tugged at Menzel. It eventually led him to agree to participate in it in July 1968 despite his serious opposition to the very idea of the symposium.

Menzel’s participation further raised tensions in the small but elite community. The deluge of resistance came from two main positions: first, that the invitation of the true believer cohort would not, in fact, “balance” the symposium but rather only provide further credibility to their claims, and second, that the whole thing was a waste of time given the nature of true believers’ “dissenting” position. Markowitz continued to urge Page to cancel
the symposium, but if he wouldn’t, to not include the true believers like McDonald and Stanton Friedman as they would steal the show. Condon unequivocally refused to participate from the get-go.

Nonetheless, the true believers remained on the program and no revisions to the contrary were forthcoming. The situation was becoming quickly untenable for the high-profile skeptical scientists, while Sagan defended McDonald, “a highly-respected scientist” who “should be heard,” as well as Hynek’s public puff pieces on the grounds that everyone was entitled to try to make a little money. Page had pressured Menzel long and hard to join the panel; it was becoming clear that the symposium’s continued existence hung on Menzel’s participation.

As Menzel wavered, tensions rose between the elder statesman of the physics community and rising star Sagan. According to Menzel, Sagan at one point called to chastise him, accusing Menzel of being “too narrow-minded” and forgetting that “not everyone [agreed]” with him and his positions. Ultimately, Menzel formally withdrew his participation from the symposium in mid-August of 1968. He had played chicken with Page, hoping his threats of dropping out would push Page to revise the speaker list. When the list held, Menzel saw no other option but to withdraw. In his explanation to Page, Menzel accused the panel of being full of ‘kooks’ and criticized the panel’s participants on the grounds that, up to now, only he, Hynek, and Quintanilla had had access to the Air Force’s

359 Markowitz to Page, 12 July 1968, Box unnumbered, Folder: “Page, Thornton L.,” DHM.
360 Markowitz to Menzel, 10 July 1968, and Markowitz to Menzel, 17-18 July 1968, Folder: “Markowitz, William,” DHM. Correspondence indicates that Page was rather ambivalent about Markowitz’s refusal to participate; Sagan, on the other hand, was still attempting in the mid-summer to convince Markowitz to join them.
361 Menzel to Markowitz, 25 July 1968, Box 8, Folder: “Markowitz, William”; Menzel to Klass, 29 July 1968, Box 6 Folder: “Klass, Philip J.,” DHM.
362 Menzel to Markowitz, 16 August 1968, Box 8, Folder: “Markowitz, William,” DHM; also Menzel to Page, 22 August 1968, Box unnumbered, Folder: “Page, Thornton L.,” DHM.
files. The claims of anyone else would be baseless, built on pure conjecture.\textsuperscript{363} Page’s response was somewhat petulant. He accused Menzel and Markowitz of actively working to make it more difficult for him to get anyone else to participate on the anti-ETH side. Things grew increasingly heated as Menzel demanded to know how Page intended to control McDonald and the vocal true believers.\textsuperscript{364} Menzel became increasingly frustrated as Page became increasingly combative.

Sagan, always trying to be more diplomatic than his co-organizer, pushed back again the growing criticism in the wake of Menzel’s defection, responding to the endemic confusion and miscommunication. He also acknowledged what he considered “very large” difficulties he and Page were facing in “putting together a well-balanced and scientifically responsible symposium” because of the “strong emotions involved.”\textsuperscript{365} While Sagan didn’t name names, he was almost certainly referring to the heat he was taking from colleagues like Menzel, Markowitz, and Condon. Despite the drama, however, he remained convinced (or so he said) that a scientifically-responsible panel could be arranged.\textsuperscript{366}

Once Menzel was out, Sagan and Page could no longer defend the symposium against mounting criticism. And as scientists fled, so too did the Air Force representatives who had considered participating, including Blue Book director Quintanilla.\textsuperscript{367} As a result the 1968 AAAS symposium on unidentified flying objects was “postponed” in mid-September

\textsuperscript{363} Menzel to Page, 22 August 1968, Box unnumbered, Folder: “Page, Thornton L.,” \textit{DHM}.
\textsuperscript{364} Page to Menzel, 26 August 1968; Menzel to Page, 3 September 1968, Box unnumbered, Folder: “Page, Thornton L.,” \textit{DHM}.
\textsuperscript{365} Sagan to Menzel, 19 August 1968, Box unnumbered, F: “Sagan, Carl,” \textit{DHM}.
\textsuperscript{366} Ibid. The frosty relationship between Sagan and Menzel went both ways; while Menzel wasn’t willing to accuse Sagan outright of “intellectual dishonesty,” Sagan was already developing a reputation as a man who would stretch a story for a good headline. See Menzel to Klass, 20 August 1968, Box 6, Folder: “Klass, Philip J.”
\textsuperscript{367} Quintanilla to Menzel, 9 September 1968, and Quintanilla to Menzel, 12 September 1968, Box unnumbered, Folder: “Quintanilla, Hector, Jr.,” \textit{DHM}. For his part Quintanilla had never had a positive attitude about the symposium and expressed his pleasure with establishment scientists abandoning the symposium: “[Distinguished] men of science and academicians don’t participate in circuses with opportunists and charlatans.” Quintanilla also expressed disappointment with Sagan, whom he looked up to.
of that year. The primary reason, Sagan explained, was that the Condon Committee’s final report would not be available until the spring of 1969. Healthy debate about the report’s findings would be the backbone of the symposium, and Sagan considered any discussion prior to its publication premature. There was also another reason for the postponement: what Sagan described as “in some quarters, a degree of emotionalism directed at holding this symposium at all.” He hoped that postponing the symposium would allow for those hot tempers and high tension to burn off in the intervening months. In the meantime, he continued to hammer on the public education piece of his interest in the symposium, arguing that if nothing else, they as scientists had an opportunity, even an obligation, to undertake this mission.

Menzel, Sagan, and Page continued to correspond throughout the winter, with Sagan looking for Menzel’s feedback at making the symposium “useful.” His advice? Build on the foundations of the Condon review and the National Academy of Science’s positive review of it. Keep the true believers out. “The problem of dealing with this subject,” Menzel argued, “is that the believers do not subject themselves to any kind of scientific discipline. They live in a world of fantasy, peopled with superintelligent [sic] beings that are no longer bound by such old-fashioned principles as the laws of conservation, principles of inertia, the second law of thermodynamics, and the impossibility of perpetual motion.” Invite Quintanilla and other USAF professionals, he encouraged them. If they kept to all these tenants, it was even possible they might be able to convince Condon to participate.

368 Sagan to McDonald, 16 September 1968, Box 11, Folder: “Sagan, Carl,” JEM. See also Sagan to Grinspoon, 16 September 1968, Box unnumbered, Folder: “Sagan, Carl,” DHM.
369 Menzel to Klass, 14 January 1969. Box 6, Folder: “Klass, Philip J.,” DHM.
370 Menzel to Sagan, 1 October 1968 and 4 November 1968, Box unnumbered, Folder: “Sagan, Carl,” DHM.
371 Menzel to Page, 27 January 1969, Box unnumbered, Folder “Page, Thornton L.,” DHM. Condon had written to Menzel, Klass, and Markowitz following the cancellation of the 1968 symposium that he was glad for its having been canceled, had no interest in keeping involved with UFOs in any way, and was eager to move on.
None of this would come to pass. By August of 1969, Sagan and Page made it clear that they were intending to go forward with a symposium that looked very much like the one they had planned for 1968. Menzel decided to not participate and put his efforts to once again ending the conference symposium. Condon did likewise, writing a strongly worded letter to AAAS chairman Walter Orr Roberts. Like others, Condon had thought that “postponed” was just a polite way of saying “canceled” and was disappointed to find that the AAAS was still committed to this “most inappropriate activity.” Condon had resigned from the AAAS in protest over his treatment by Science over the Low Memo and that Science had not as of September 1969 run a review of the Condon Committee’s final report. He expressed to Roberts an overall concern about where the AAAS was headed, if this was how something as trivial as UFOs was being handled: [block quote] “The [UFO symposium] announcement… is headed, ‘The unique opportunity to bring before those who seek to understand, those who understand deeply.’ Ha! Ha! The UFO nonsense is then solemnly listed right along with some serious and important topics. This makes it seem as if the AAAS considers UFOs to be of comparable importance. The ignorant will be misled. The intelligent will think the AAAS is crazy.” Condon went so far as to say that he would boycott the ’69 conference as a whole, should the UFO symposium remain on the program. A few weeks later, he met with Roberts in person and discussed the symposium for more than an hour, repeating his concerns that the symposium would visit harm the AAAS.

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374 Ibid, 2.
375 Condon to Page, 19 September 1969, Box 3, Folder: “Condon, Edward U.” DHM.
Meanwhile, Sagan continued to court Menzel, appealing once again to the AAAS’s mission of public science education. Page argued to Condon that UFOs weren’t the first controversial topic that the AAAS had held symposiums on; be that as it may, Condon retorted, it did not justify this symposium. Condon wrote to Page that his impression from his conversation with Roberts had been that the AAAS was holding the symposium out of a commitment to Sagan and Page rather than commitment to its legitimacy or usefulness, and that he intended to work actively to organize opposition to the panel. He made similar comments to Sagan, arguing that such a symposium would not contribute to public understanding of science and in all likelihood would just muddle the situation even more by sanctioning true believers via the AAAS.

Condon’s active resistance raised warning bells for Sagan and Page. Page wrote to Menzel to combat Condon’s campaign at the source. Page adopted Sagan’s language to describe the symposium as “an educational effort of considerable importance, and worthy of the AAAS.” But Page’s postscript is telling: “I suspect that you agree with Condon - but please give us a chance to show we can run a dignified symposium.” It became clear that Sagan and Page intended to go forward with the symposium, with or without the support of Condon, Menzel, and their dissenting colleagues. At the moment that Condon was trying to get the symposium canceled, Menzel was reaching out to Page to discuss his terms. A repeat cancellation of the symposium seemed unlikely; Menzel agreed to participate on the grounds that it was crucial someone of his stature, with his familiarity with the subject, be

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377 Ibid.
380 Ibid.
381 Menzel to Page, 6 October 1969, Box unnumbered, Folder: “Page, Thornton L.,” DHM.
present. “I think,” Menzel wrote to Markowitz, “there is no one who can really take my place or fill my shoes.” He was, as he put it, “the fall guy.”

Pleased with Menzel’s response, Page initially sought to reassure Menzel that the symposium would be professional and restrained. He agreed to Menzel’s demands about time allotments and gave Menzel a full sixty minutes, as opposed to the thirty minutes given to everyone else. Page promised that the symposium’s chairmen would run a tight ship during the Q&A, avoiding the “kookier” questions and instead focusing on the interdisciplinary nature of the symposium and its topics, gesturing to the importance of speaking across traditional disciplinary boundaries. It was, Page hoped, an opportunity to “show the audience that scientists can discuss a controversial topic soberly and with benefit to understanding” of the topic at large. Page stressed the importance of decorum and good humor - on everyone’s parts.

These idealistic promises would not be kept. The speakers list revealed a panel tilted heavily in favor of some of the most ardent true believers, including McDonald and Hall. Non-scientific true believer contributions (e.g., Hynek’s Playboy article, not intended for a scientific audience) were dove-tailed with credible scientific literature, giving the appearance of equal scientific merit. Page also began signaling that the symposium would avoid discussion of the Condon Committee final report - despite that the postponement in ‘68 had been to wait for the report’s publication so that it might be a centerpiece. Menzel tried unsuccessfully to enlist back-up from colleagues, and expressed profound regret at having

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382 Menzel to Markowitz, 8 October 1969. Box 8, Folder: “Markowitz, William,” DHM.
384 Menzel to Page, 29 October 1969, Box unnumbered, Folder: “Page, Thornton L,” DHM.
committed to the symposium. Without backing out, he pressed Page to cancel the symposium.

Despite Markowitz’s pleas to Menzel to back out, and despite vocal criticism from scientific quarters that it “had nothing to do with preservation of freedom of scientific inquiry,” the symposium went forward. And many of the concerns of anti-symposium scientists seemed to come to pass. As the New York Times characterized the true believer cohort as “liberal” and the skeptics as “conservative,” the true believers marched out case after case, and McDonald spoke well beyond his time while distributing pamphlets of case studies. The very existence of the symposium was, in this telling, a triumph. On reflection, Menzel thought the symposium “went off fairly well,” as “[both] Hynek and McDonald… made fools of themselves.”

The symposium seems to have not had much of an effect in the following immediate period. It received only minor press coverage, and the AAAS did not burst into flames or crumble into dust at the symposium’s conclusion. The controversy, however, was not over. During the organization and execution of the symposium, Page and Sagan expressed an interest in publishing the proceedings as an edited volume. In the weeks following the symposium, correspondence indicates that Page began requesting participants’ contributions as if the volume were a done deal. Once again, it appeared that Page was taking expressions

385 Ibid. See also Menzel to Quintanilla, 17 October 1969, Box unnumbered, Folder: “Quintanilla, Hector, Jr.” DHM.
386 Markowitz to Menzel, 10 October 1969, 3 November 1969, Box 8, Folder: “Markowitz, William” and Condon to Page, 7 November 1969, Box 3, Folder: “Condon, Edward U.” DHM. Condon’s charge is powerful, given his history as a target of HUAC in the 1950s. NASA also filed dissent with the AAAS; see Urner Liddell to Condon, 9 November 1969, Box 10, Folder: “National Aeronautics and Space Administration,” DHM.
388 Menzel to Markowitz, 19 January 1970. Box 8, F: “Markowitz, William,” DHM. That said, Menzel didn’t stay for most of the symposium. Sick with a cold, he didn’t even deliver his own paper but had William Orr Roberts deliver it for him.
of interest - especially from Menzel - and treating them as commitments. Menzel pushed back against Page, reiterating that his interest was only interest, and expressed to Sagan that there would once again be terms to his participation. And that this time, he expected commitments on both ends to be upheld.389

Ultimately, those commitments were upheld, but only after infighting between Menzel, Page, and McDonald, mediated by Sagan. While McDonald’s contribution to the volume grew unchecked, Page took it upon himself to do a rather deep revision of Menzel’s contribution, without Menzel’s approval. When Menzel saw the edits done to his own piece while hearing about the ballooning size of McDonald’s, he threatened to withdraw from the volume unless his paper was restored to its full length: “the only reason that I first consented to join in the symposium and then to the publication was that I would have full opportunity to express my final, considered views.”390 This time Sagan and Page took Menzel seriously and restored his contribution to its original length.391 Regardless, when the piece went to press with Cornell University Press in 1973, Menzel complained that once again, Sagan and Page didn’t hold up their end of the deal - McDonald’s chapter far outpaced all others in length.

Strangely enough, for all his involvement in the UFO controversy between 1968 and 1972, following the 1973 publication of UFO’s A Scientific Debate, Sagan disentangled himself from the affair and walked away. While he would continue to muse about life in the galaxy, he never again involved himself directly in the debates, nor maintained contact with the true believer crowd that had grown so fond of his sympathetic ear.

390 Menzel to Sagan, 3 November 1970, Box unnumbered, Folder: “Sagan, Carl,” DHM. Emphasis in original. See also Menzel to Klass, 26 February 1971, Box 6, Folder: “Klass, Philip J.,” DHM.
391 Menzel to Klass, 26 February 1971, Box 6, Folder: “Klass, Philip J.,” DHM.
The grounds on which Page and Sagan staked their legitimacy claims reflects the earlier-referenced “humanist turn” in science activism in the late 1960s. Admittedly, the AAAS’s mission was public science education and science communication; Sagan had for three years previously been advocating for serious study of UFO phenomena as a public service on the educational front. Popularizing UFO study offered an opportunity to teach the public something about atmospheric physics, astronomy, ballistics, and so on. As scientists committed to public service and the overriding public good, Sagan and Page frequently articulated their defense of their symposium in terms of improving the scientific understanding of the citizenry.

It was hard for skeptics like Menzel to argue against the creation of a more scientifically-literate society. This was especially true given that so many scientists on both sides of the debate agreed that increased science literacy would cut down on or improve, depending on your position, the reports received annually. Engagement with the American public and shaping scientific practice to address social concerns was becoming a focal point of scientist activism in the late 1960s, as well. Meanwhile, the institutional reputation of the AAAS as a legitimate scientific organization boasting a cadre of professional scientists as its members bolstered the reputations and legitimacy of the arguments of the true believers. McDonald, for instance, was also active in the Civil Rights movement and understood the importance of maintaining institutional affiliation and respect when arguing from non-consensus positions. Finding shelter in the annual meeting of the AAAS, the true believer cohort had a space outside of their departments or specific disciplinary conferences to

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discuss their theories without having to sacrifice their scientific identity as well.\textsuperscript{393} The maintenance of the authority and cultural capital affixed to their title of “scientist” would be critical to the survival of any serious UFO science.

\textbf{The End of an Era}

Meanwhile, four ominous signs appeared over Blue Book during the course of 1969. First, after reading \textit{SSUFO} in its entirety, Blue Book director Quintanilla reportedly agreed with and was pleased by the conclusive findings.\textsuperscript{394} Second, despite the early bluster, interest in the Condon Committee’s final report fell off in the summer of 1969. Apart from a few small sightings and ads for new pulp UFO books, very little on the subject appeared in the papers throughout the summer and into the fall. Third, word got out in the late summer that the USAF had not renewed their contract with J. Allen Hynek.\textsuperscript{395} And fourth, correspondence between ONR researcher Urner Liddell and Condon revealed that NASA had received a proposal for a UFO study, but only one; that it had come from Hynek; and that given that NASA was facing a funding blockade, it seemed highly unlikely that they would lobby for a study.\textsuperscript{396} It also seemed that, despite push-back from some corners of


\textsuperscript{394} Quintanilla to Menzel, 29 January 1969, Box unnumbered, Folder: “Quintanilla, Hector, Jr.,” DHM.

\textsuperscript{395} Klass to Menzel, 3 August 1969, Box 6, F: “Klass, Philip J.,” DHM. The relationship between Hynek and the Air Force appears to have been deteriorating throughout 1968. In a memo from 4 September 1968, Colonel Raymond S. Sleeper wrote to Hynek calling him out for openly, publicly criticizing Blue Book, and demanded that Hynek respond quickly to the USAF with what he, as a scientist, would recommend \textit{specifically} they do differently. See Sleeper to Hynek, 4 September 1968, Box 12, Folder 10: “Correspondence, UFO Related, 1967-1971,” JAH.

\textsuperscript{396} Urner Liddell to Condon, 9 November 1969, Box 10, Folder: “National Aeronautics and Space Administration,” DHM.
D.C., Condon’s findings ensured that it would be difficult or nearly impossible to find further funding from any federal agencies.\(^{397}\)

Project Blue Book came to an end in the final weeks of 1969. The announcement reached the public via the national presses on 18 December 1969. Project closure was a direct outcome of the conclusions reached in Colorado by Condon and his team. Given the findings, the USAF could no longer justify the expense and man hours spent on UFO investigation. (One reporter expressed surprise that “the Air Force waited almost a year after the Condon Report punctured the UFO bubble before taking this action.”)\(^{398}\) Particularly striking was the sense of deja vu one got reading the coverage - in citing no significant national security threat, the USAF was still making the same argument they had been for two decades.\(^{399}\) The Air Force assured the public that they would continue to handle and investigate sightings when necessary. But investigation would be subsumed into normal intelligence procedure, and ongoing scientific studies would be shuttered.

While Condon was expressing regret over getting involved with the UFO study - he went on the record calling the study “a bunch of damned nonsense” - other true believers were greeting the closure of Blue Book with optimism.\(^{400}\) NICAP echoed Condon in considering the Colorado project “a waste of time and money,” although their reasons for doing so were diametrically opposed to Condon’s. NICAP Secretary-Treasurer Stuart Nixon promised that Blue Book’s closure “[opened] the way for a fresh look at the UFO

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\(^{397}\) Memo, from the office of Representative William F. Ryan, 9 January 1969, Box 3, Folder: “Condon Report: Cartoons, Correspondence, etc.” JEM.


It wasn’t only NICAP expressing this hope, either. On a Christmas-season postcard to McDonald, Hynek wrote, “Blue Book is dead - now Science may have a chance - if the scientists will permit!”

The closing of the project raised more concerns than just the politics of ongoing UFO studies. Scientists from all positions of belief raised a call for the preservation of the UFO files. The same day that news of Blue Book’s closure broke, McDonald composed a press release that might be better described as a desperate plea asking the USAF to archive the Blue Book reports rather than destroy them so that investigators could continue to have access to the reports. Menzel also felt that the files should all be saved, but also thought that the records should be “impounded” to prevent UFO buffs like McDonald, Hynek, NICAP and APRO personnel, and so on, from “misusing” the files. And indeed, following the AAAS symposium on the 26th and 27th of December, participants of all persuasions all agreed that the files should be saved and pressed the USAF to not destroy the records. Instead, they advocated that all material be preserved without alteration or loss, declassify everything declassifiable, and make those records freely available to scientists.

The files were ultimately transferred from Wright-Patterson Air Force Base to Maxwell Air Force Base, but from some reports, were not necessarily more easily accessible.

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401 Ibid.
402 Hynek to McDonald, 22 December 1969, Box 6, Folder: “Hynek, J. Allen: Articles, reviews, correspondence, memos from MAFB/BB case file, Playboy article, sequels, JAH statements, clippings,” JEM.
404 Menzel to Page, 9 January 1970, Box unnumbered, Folder: “Page, Thornton L.,” DHM.
406 McDonald attempted to visit the archives during the summer of 1970 and into 1971, but had great difficulty acquiring the clearances to do so. This led to an ongoing exchange wherein he accused Condon of purposefully stonewalling him. See Box 8, Folder: “Maxwell AFB I,” and Box 3, Folder: “Condon, Dr. E. U., Correspondence with J. E. McDonald,” JEM.
Regardless, the end of 1969 brought the end of Project Blue Book and USAF studies of UFO phenomena. It did not, however, bring an end to the controversy.

**The Father of Modern Ufology: J. Allen Hynek’s Star Rises**

It might have been expected that the redaction of his USAF contract and the closing of Project Blue Book would hail the end of J. Allen Hynek’s involvement with the UFO problem. Hynek was in some ways sidelined during the Condon Committee and subsequent drama as hard-liners took over debates in most circles and drifted somewhat from the UFO limelight. He had, however, maintained an academic career over the preceding decades and, nearing retirement, one might have expected him to take the same course as Condon - removing himself from the affair, finishing some projects, and retiring to a life of ease and relative obscurity.

That was not how he chose to play his hand. With tenure, prestige, and little to lose with retirement so close, Hynek went all in.⁴⁰⁷

Where once he had been the most prominent scientist in the UFO studies, the mid- to late 1960s saw Hynek become something of a background or periphery figure. His association with the USAF and Project Blue Book meant that he was excluded from taking part in the Condon Committee investigations (although he did provide support as Blue Book staff). He was not directly implicated in the controversy that overtook the project regarding the Low memo, nor was he particularly outspoken about it, simply registering his displeasure in private correspondence. He was most active as a *de facto* spokesman for the USAF’s position and an organizer and panelist. In addition to his participation at a 1968 congressional hearing on UFO phenomena, for example, he spent much of the year

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organizing small panels on UFO phenomena at various professional and industry conferences and meetings.\footnote{See, for example, “N.E.C. Meeting to Hear Panel Discuss U.F.O.’s,” Chicago Tribune, 6 September 1968, pg. 9; Walter Sullivan, “Scientists Consider World Cooperation on U.F.O.s,” New York Times, 16 October 1968, pg. 12. Hynek also held court at the IAA, IECC, and other conferences. It may be notable that already in ’68 the participants of these panels increasingly were staunch ETH supporters, including Saunders and William Powers.}

Hynek also did not join the chorus of criticism for the Condon Committee and SSUFO in the first weeks of 1969. When he did finally offer public statements, his criticisms were restrained to specific issues (despite reporter Ronald Kotulak’s description of Hynek’s comments as being “the severest yet directed at the two year study”).\footnote{Ronald Kotulak, “U.F.O. Report Rapped as ‘Waste of Time,’” Chicago Tribune, 18 May 1969, pg. 20.} Purportedly speaking for a community of dissatisfied scientists, Hynek described the project as having “[settled] nothing and [having left] us asking the same questions about UFOs that we asked before.”\footnote{Ibid.}

He criticized the Condon Committee on the basis of the case studies it chose to focus on, the lack of familiarity and expertise with the subject on the part of the investigators, and the presumption that all cases must have arisen as a result of natural phenomena, hoaxes, or hallucinations. Unlike some of his colleagues, Hynek did not, however, engage in the partisan warmongering between groups that characterized the efforts of James McDonald, David Saunders, and John Fuller, for instance. He closed 1969 by joining colleagues on the AAAS panel and lending his voice to the calls for record preservation of Blue Book.

He did, however, write a stronger condemnation of the Condon Committee’s findings in 1970. One may very much get the sense of Hynek ‘testing the waters,’ in the wake of the closure of Blue Book in December 1969. In an editorial for the Christian Science Monitor, Hynek expanded and strengthened the statements he had made to Kotulak and the
He accused Condon and the USAF of attempting to enforce a “UFO ban” and reiterated his defense of witnesses, calling back to his *Science* editorial of 1966. UFO sightings continued and would continue, wrote Hynek, regardless of how much the scientific establishment and the United States Air Force tried to will them away.

In many ways, little of the CSM editorial was new. It reflected and reiterated points Hynek had been making in various fora for years. The final paragraphs, however, cast light onto Hynek’s nascent plans for the future. Though Blue Book no longer existed, witnesses could make their reports to NICAP or APRO, or they could send them directly to Hynek himself. It was unlikely, Hynek continued, that the federal government would support any further study of UFO phenomena, but perhaps that was for the best; in order for UFOs truly receive the scientific attention they deserved, private funding for a small, sheltered study from private or foundation funds would be preferable. And such a study, Hynek concluded, “should be conducted by dedicated physical and behavioral scientists” who met the all-important criteria of being intellectually curious and open-minded.

Hynek had always been notorious in the UFO community for his ability to straddle proverbial fences. Both sides - the hard skeptics like Menzel and true believers like McDonald - lambasted Hynek for his endless equivocating. The early 1970s didn’t do much to move Hynek in either direction, and instead correspondence seems to indicate a deepening alienation. McDonald and Hynek met in Evanston in February of 1971 to talk about Condon’s alleged destruction of UFO files. According to McDonald, Hynek seemed to not really be listening to McDonald’s concerns and instead complained about difficulties

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412 Ibid.
with a publisher.\textsuperscript{413} The meeting ended with McDonald accusing Hynek face to face of being “the original Menzel” and doing as much damage to the UFO studies as any of the outspoken skeptics.\textsuperscript{414} Hynek’s relationship with long-time close friend and colleague Menzel also grew increasingly distant and strained as Menzel pled with Hynek to remember his scientific identity. The man was becoming an island, a situation increased throughout the early 1970s by the deaths of McDonald (1971), Condon (1974), and Menzel (1976).

Hynek’s identity as the leading scientifically-trained ufologist was solidified by the 1972 publication of \textit{The UFO Experience: A Scientific Inquiry}.\textsuperscript{415} \textit{The UFO Experience}, Hynek’s UFO \textit{magnum opus}, was built on the groundwork laid by the 1966 \textit{Science} piece and his publications in 1967 in \textit{Playboy} and \textit{The Saturday Evening Post}.\textsuperscript{416} In addition to reiterating the critique of his colleagues as being being guilty of “temporal provincialism” and arrogance, he double down on his defense of witnesses: “[They] are flesh and blood persons who, as far as they are concerned, have had experiences as real to them as seeing a car coming down the street is to others.”\textsuperscript{417} Taking his colleagues in the sciences to task for their dismissal of such honest citizens, Hynek once again sought to establish himself as a friend and confidant of the witness community.

\textit{The UFO Experience} is considered a foundational work in late 20th century ufology for being the source of the “close encounter” system of sighting classifications. A “close encounter of the first kind” occurs when a person reports seeing a UFO at close range, but

\textsuperscript{413} This is the first archival indication that Hynek was planning his own book.
\textsuperscript{414} McDonald to Richard Hall, 10 February 1971, Box 6, Folder: “Hynek, J. Allen: Articles, reviews, correspondence, memos from MAFB/BB case file, Playboy article, sequels, JAH statements, clippings,” JEM.
\textsuperscript{416} It’s worth noting that all of Hynek’s writing through the late 1960s until the end of his life, track back to the 1966 \textit{Science} letter and the 1967 \textit{Playboy} article. He does very little original writing beyond expansion and reiteration of these ideas when it comes to publications on UFO issues. And yet it seems to never get old for the community.
\textsuperscript{417} J. Allen Hynek, \textit{The UFO Experience}, viii.
no other environmental interaction takes place. The “second kind” is similar to the first, but includes environmental effects both organic and inorganic. These effects include frightened animals, scorched vegetation, and broken trees, as well as disabled engines and unusual radio static. “Close encounters of the third kind” are perhaps the most well-known, and not only because of the eponymous film; these are the cases in which witnesses reported seeing occupants of the UFO craft. Crucial here to Hynek’s position is that these cases do not involve direct contact between witnesses and occupants. He called for a “sharp distinction” between those cases where reliable people reported presumably intelligent life beings piloting craft and the contactee cases.\footnote{Ibid, 33.} Hynek’s generosity toward witnesses did not extend to the contactees, and he encouraged his reader to share his skepticism.

The articulation of the “close encounter” system of classification complicated Hynek’s position that he was agnostic on the nature of the phenomena. The UFO Experience did not represent a wild divergence from earlier views, but Hynek’s efforts to maintain distance between himself and more “unorthodox” positions - he could not explain all UFO sightings, and like Sagan, couldn’t prove nor disprove the ETH - were undermined by a “close encounter” system that was predicated on UFOs being otherworldly spacecraft.

Looking back, it’s little wonder The UFO Experience gained the reputation that it did. Hynek had always been a gifted public communicator. His prose is rare among scientists, being accessible and highly readable without undermining his credibility as a scientist. In the battles with his publisher, it was the editor who wanted more sensationalism in the text and Hynek who had resisted that impulse to maintain scientific integrity. The scientific rhetoric he used reinforced the credibility of the text. Scientific language was peppered into the otherwise an otherwise popular-science writing style meant for non-experts. The reader may
have come away with the sensation that Hynek was informing you about some very high-level science, thus building trust in the reader and securing his own authority.

*The UFO Experience* was the final piece in a sustained effort by Hynek to emerge from the late 1960s and early 1970s as the foremost UFO expert. He was once again helped along by a sympathetic press who liked Hynek’s affable nature and skill for public science communication as much as his scientific reputation. As his publications gained traction (and his competitors and challengers died), he claimed the authority required to chase his ultimate goal: a private, independent institution for the scientific investigation of UFO phenomena. Hynek had been working toward such an institution for years. His 1970 *CSM* suggestions on the necessity of a private organization for the study of UFO phenomena were not a response to the closing of Blue Book but instead reflect a long-term project.

The earliest records of his efforts to establish a private institute date back to at least late 1967. On 12 December 1967, following a meeting with the Colorado team at Boulder, Hynek, McDonald, Saunders, Levine, and Mary Lou Armstrong met at the Holiday Inn in Denver, Colorado. The meeting was spurred by concerns about potential negative results from the Condon Committee and concerned possible responses from the true believer camp. Saunders nearly confirmed at this meeting that a negative finding was forthcoming and that a minority report from dissenting team members would be called for. The group agreed, and their conversation proceeded to focus on how to keep UFO studies alive following the Colorado report.

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419 See, for example, Rich Koster, “Has anybody here seen an extraterrestrial humanoid?,” *Chicago Tribune*, 4 June 1972, pg. 58. Koster’s interview with Hynek is cast as a review of *UFO Experience*, but in truth is less a review and more a long-form advertisement for the book. Importantly, the review article establishes Hynek as a highly-respected, accomplished, credible scientist whose views appear quite reasonable in light of his explanation of them, while highlighting his “scientific mind” and “high intelligence.”


199
Afterward, conversations began about a new independent organization devoted to scientific study of UFO phenomena. Tentatively named the Committee for Research on UFOs (CRU), this early organization was understood to be somewhat informal and devoted largely to public communication and the publication of a scientific bulletin or journal, with membership restricted only to PhD scientists only. CRU was explicitly not the final form of the future of UFO studies, however; the Holiday Inn group described CRU as instead being fairly closed, with elite membership organization that was devoted to increasing the visibility and legitimacy of scientific studies of UFO phenomena. This small membership would be nimble, able to respond quickly to any issues or problems that arose, while maintaining the public reputation that such exclusive membership would garner. The somewhat informal nature of this committee would also render it able to absorb funding from many different sources and enable it to easily expand around increased membership, new initiatives, and a diversifying agenda.

The Holiday Inn group understood this early version of an independent center as being interdisciplinary in nature. Its publications (imagined first as a bulletin to which members and non-members both could subscribe) would reflect that interdisciplinary membership. It was important, however, that it be made clear that publication of such a bulletin (and later hopefully a peer-reviewed journal) would be contingent on the quality of case material available. There should be no publication schedule or deadline; it was felt that such obligations had led previously to the publication of many a hackneyed case, which had lowered the overall quality of many UFO publications in the past. The same requirements - high standing in the scientific community, established credentials, reputable case studies - would hold for the conferences and symposia CRU would organize.
The ideas were good ones, but CRU never came into existence, in Colorado or elsewhere. But it nonetheless gave Hynek the opportunity to organize his own thoughts about what the ideal UFO scientific organization would look like and how it would operate.

This thinking, coupled to the success of *The UFO Experience*, led to a renewed effort in 1973. Hynek began speaking publicly about his planned Center for UFO Studies, or CUFOS, in early fall of that year. Hynek went on record as predicting an early to mid-October UFO flap that year and appears to have been depending on such a flap to advocate for his newly-formed UFO institute.\(^\text{421}\) He imagined - and described - in early years the institute as being a well-publicized, well-known, national “clearinghouse” for UFO reports. Witnesses could call CUFOS could call or otherwise contact the Center and, if a credible report were made, expect professional experts to investigate their claims. With professional experts from many different scientific and technical backgrounds, the Center would also be capable of identifying hoaxes and cases of misidentified common objects and would also be a source of reliable information for interested civilians.\(^\text{422}\)

Not long after announcing his plans to the press, Hynek announced those plans to the administration of Northwestern University, where he was still teaching. University correspondence from late 1973 indicates that Hynek wanted to meet with Northwestern’s University Relations team, “to discuss further publicity on the ‘clearinghouse’ that is being set up for UFO information.\(^\text{423}\)” He was eager to have the university recognize CUFOS and allow it to be set up on campus. (Hynek made it clear he was not asking the university for

\(^{421}\) Enstad, “We need a UFO Central.”

\(^{422}\) Ibid.

\(^{423}\) Barbara Powell to Stewart Dyke, John Horton, and Northwestern University University Relations, Memo, 27 November 1973, Box 3, Folder 10: “Northwestern University: Internal Correspondence, 1964-1986,” JAH.
money.) 424 The scheduled meeting between Hynek and the UR team was subsequently canceled - but the University Relations had heard word on the street that Hynek was calling CUFOS “his Northwestern University UFO Center.”425

This was not the first time University Relations at Northwestern had come into contact with Hynek and his UFO projects. The previous year (1972), Hynek had worked for Northwestern’s approval to use a campus building for a press conference around the release of *The UFO Experience*. Initially the university was not necessarily opposed, and seemed to share Hynek’s assessment that “such a conference [would] do both Northwestern and the book some good.”426 Inter-office correspondence even shows the university weighing the potential benefits of a TV program.427 Things deteriorated rapidly, however, as Hynek’s press conference began to turn into what one official called a “party” and an informal “bash,” as opposed to a more straight-laced press conference.428 The publisher was guilty, not Hynek, but as the price tag for “lots of drinks, lots of press people, and their booksellers” continued to climb, the university began to find ways to disentangle itself from the affair, limiting its involvement to a small portion of the bill (rental of the Press Club and a teaser press release), and the publisher would pick up the rest.

These experiences in 1972 around *The UFO Experience* may have left a sour taste in Northwestern’s administrative mouth when it came time to request their blessing for CUFOS. Hynek spent most of 1974 working to raise the visibility of his pet project, and

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424 Ibid.
426 Hynek to Jack O’Dowd (Director of University Relations), 15 March 1972, Box 3, Folder 10: “Northwestern University: Internal Correspondence, 1964-1986,” *JAH*.
427 John Horton to Stewart Dyke, 5 April 1972, Box 3, Folder 10: “Northwestern University: Internal Correspondence, 1964-1986,” *JAH*. A local station was requesting permissions for an hour-long program on Hynek and his center.
must have continued to face opposition from Northwestern, when it came to affiliating the Center with the university. The university’s resistance resulted in rather petulant responses from Hynek in late 1974. Writing to Northwestern University Vice President John E. Fields in November, Hynek reported a list of CUFOS-affiliated scientists and about CUFOS’s upcoming participation in an hour-long TV documentary. He pointed to various magazine stories, a write-up in the FBI’s internal publication, and even an article about the Center that had just run in the prestigious professional journal *Nature.*

“So you see,” Hynek wrote, “all of these things are pointing up to the fact that the Center is being considered a serious scientific effort, and increasingly the question is asked where Northwestern University fits in to all of this. Frankly, I am quite embarrassed to have to say that the University has been so conservative as to not seen the potential here, both for science and for publicity.”

One needed no further evidence than that, while he had received invitations to give talks at other astronomy departments, Northwestern never had.

This battle was ongoing. It is difficult not to read a snide tone into Hynek’s subsequent apologies to Fields about the Center and Northwestern being associated in media reports. Eventually Northwestern University Provost Raymond W. Mack stepped in to clarify the matter. Northwestern never had any problem with CUFOS, or with Hynek’s position as director of it. It was also, Mack stated, quite clear that CUFOS was not a Northwestern center, as there appeared to be no interdisciplinary faculty participating in the Center’s administration or operation - this was, in fact, a prerequisite if the Center was to be

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affiliated with the university. And contrary to charges that were being lobbed across party lines, Hynek was free to list his Northwestern credentials on all CUFOS material and publications and could receive CUFOS mail at his university office. Mack claimed Northwestern had no problem with Hynek’s UFO work, and no one considered him a crackpot. Northwestern’s inability to absorb the Center were administratively-oriented, not content-oriented.\footnote{Raymond W. Mack to Hynek, 9 December 1974, Box 3, Folder 10: “Northwestern University: Internal Correspondence, 1964-1986,” \textit{JAH}.} Regardless of Mack’s position, however, later correspondence described the absence of affiliation between CUFOS and Northwestern “a success.”\footnote{O’Dowd to Fields, 8 August 1975, Box 3, Folder 10: “Northwestern University: Internal Correspondence, 1964-1986,” \textit{JAH}.} CUFOS went forward without affiliation with Northwestern University.

The Center was an embodiment of decades of Hynek’s theorizing and advocating on the issue of UFO study. CUFOS was designed to be an organization capable of bringing diverse technical and scientific professional experts together in conversation around UFO phenomena. “UFO phenomena” subscribed to Hynek’s characterization of a UFO being “the reported perception” which did “\textit{not} suggest a logical, conventional explanation” and remained unidentified after close scrutiny of available evidence by the appropriate experts.\footnote{CUFOS Bulletin, 27 February 1974, Box 3, Folder 6: “Center for UFO Studies, 1970s,” \textit{JAH}.} This was a hunt for the “essential nature of the phenomena.”\footnote{Ibid.}

As part of that hunt, CUFOS had five principle objectives. First, it would operate a clearinghouse for UFO reports, one where witnesses need not fear ridicule or “unwanted publicity” and be certain that their sightings received serious attention.\footnote{Ibid.} Second, CUFOS was an organizing body. Rather than accumulate experts, technology, facilities, and the like itself, CUFOS was a network, bringing diverse resources to bear on the sighting

\begin{flushleft}
\footnote{Ibid.}
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investigation. Third, CUFOS would maintain up-to-date documentation, via bulletins and technical reports, that would be available to all - from universities and professional societies to the general public. Fourth, CUFOS would organize and hold international symposia and conferences. And fifth, the Center would coordinate interdisciplinary studies.

In order to achieve success on these fronts, the Center sought to develop its research and network apparatus as fast as possible. This apparatus was broad and multi-focal. It began boots-on-the-ground mobile investigative units capable of rapid response.\footnote{CUFOS Bulletin, 27 February 1974, Box 3, Folder 6: “Center for UFO Studies, 1970s,” J.AH. See also Undated Bulletin, 1974, Box 3, Folder 6: “Center for UFO Studies, 1970s,” J.AH, for a map reporting the locations and contact information of sanctioned CUFOS investigators. The map boasts at least one investigator in almost every state.} CUFOS also sought a revival of the Project STORK statistical analysis program, using computers to collect, update, and use “modern methods of retrieval, pattern recognition,” and information theory to derive correlation between sighting parameters.\footnote{Undated Bulletin, 1974, Ibid.} This digitization project, referred to as UFOCAT, would allow for large-scale national and international analysis. The Center was also slated to maintain a library of relevant information and material, in addition to its planned publication duties involving bulletins, technical reports, and eventually, a peer-reviewed scientific journal. In addition to these practical efforts, Hynek also imagined CUFOS as being on the cutting edge of UFO research, helping to define and develop new methodology and new theories appropriate to the research, while enabling cooperation between diverse disciplines in the work of creating an interdisciplinary cohort.

Hynek took CUFOS public in late 1974. The Center received attention in the national press, though the articles read more often like advertisements. News coverage reiterated the five principles in compressed form and supplied the toll-free phone number Hynek had rented out to receive reports on. And somehow, amidst all the renewed vigor and
attention on UFO phenomena, Hynek managed to retain his identity as “converted debunker” hoping to bring “scientific respectability” to UFO studies, now via CUFOS.\textsuperscript{439} And by 1975, it seems Hynek and CUFOS were accomplishing that goal; the FBI began instructing police departments across the nation to make their reports to CUFOS, and the Library of Congress listed CUFOS as the go-to resource on the matter.\textsuperscript{440} It worked - the Center’s hotline received 443 reports in 1974 alone.\textsuperscript{441}

As a non-profit CUFOS was dependent on funding from private organizations and donations from the public. Hynek’s persistent efforts at raising CUFOS’s visibility seemed, however, to be paying off. Bulletins from the Center circulated regularly during its early years, and CUFOS held multiple symposia throughout 1974 and 1975, as well as monthly free-to-the-public meetings at Adler Planetarium in Chicago.\textsuperscript{442} The Center certainly appeared solvent. And indeed, the public visibility, press reports, magazine articles, TV appearances, and so on, continued through the late 1970s.\textsuperscript{443} CUFOS passed its greatest benchmark - the publication of the first issue of the peer-reviewed \textit{Journal of UFO Studies} - in 1979.

J. Allen Hynek spent decades working to bring UFO studies into the pantheon of respected and appropriate scientific studies. In the 1950s and early 1960s, Hynek’s methods were typical of scientists actively engaged with the military-industrial complex. He very much understood his relationship in terms of civilian advisor/citizen scientist, as Schweber and

\begin{itemize}
  \item \textsuperscript{441} Valentine, “FBI Alerts.”
  \item \textsuperscript{442} Undated Bulletin, 1974, Box 3, Folder 6: “Center for UFO Studies, 1970s,” J.\textit{AH}.
  \item \textsuperscript{443} Hynek to Fields or O’Dowd, 21 August 1977, Box 3, Folder 10: “Northwestern University: Internal Correspondence, 1964-1986,” J.\textit{AH}.
\end{itemize}
Bridger have explored. He published related research in a professional scientific journal (and was for decades the only establishment scientist to do so). He worked with Air Force officials to improve reporting methods and relations with civilian witnesses, while protecting his credibility and authority as impartial, objective scientist. (Hynek was certainly aided in these efforts by his participation in other cold war science projects beyond UFO research.) Even as he began to stake out new territory in the true believer camp, Hynek did so in ways that relied on the traditional infrastructure of the American scientific community.

In many ways, Hynek was the most ambitious of the true believers. His goals included increasing UFO-related research at campus laboratories as well as the establishment of an independent center for UFO studies, and he sought to bring more non-expert citizens into the conversation while he simultaneously worked to protect “scientific” UFO studies from that same public. Hynek actually managed this gate-keeping quite effectively, most likely due to his long and sustained engagement with the UFO problem. Wisnioski argues that scientists and engineers in this period “gained broader political credibility from their first-hand technical knowledge, i.e. their expertise,” and Hynek certainly had that in spades. Even hardline skeptic Menzel could not bring himself to deny Hynek’s expertise on the matter, no matter how far afield Hynek’s theories wandered.

Despite his best efforts, however, Hynek also deserves much of the blame for the decline of UFO studies in the physical sciences and current attitudes towards ufology (which largely class it as a pseudoscience). In advocating for the expansion of non-scientist participation in the knowledge-making processes of his proposed ufology, he also opened

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444 Schweber, Shadow; Bridger, Scientists at War.
446 Wisnioski, “Inside ‘the system’”, 327-328.
the door a full hearing of the theories and ideologies that accompanied those non-expert
witnesses. Hynek was arguing for increased democratization in the sciences. But in doing so,
Kelly Moore argues that “scientists’ own efforts to more closely link science with public
moral and political concerns” resulted in “scientific authority [becoming] ‘unbound’ from
scientists themselves, so that claims in the name of and about science are successfully made
by many other groups.”

Hynek wanted to invite more people into his science-making while simultaneously policing who was actually doing the knowledge production; but people
are not points of data, and an ufology for and by physical scientists could not co-exist with
the large, vibrant, diverse actors Hynek ultimately invited inside.

“What you are witnessing is based on fact. Some will find it fascinating, some will
find it frightening, but it is all true.”

If the organization and survival of CUFOS was our only data point, it would appear
that Hynek was set to succeed in his goals for the 1970s. CUFOS was solvent. Hynek had
managed to restrict CUFOS membership to trained scientists, engineers, and other
professional technical experts. At the same time, he appears to have maintained a healthy
subscriber list for CUFOS’s general release bulletin. CUFOS received broadly positive press,
and even Menzel gave up his efforts to bring his old friend over to the skeptic’s side of the
divide.

Polls taken throughout the 1970s indicated that Americans still thought UFOs
deserved further study, and a slim majority still believed UFOs referred to material,
technological objects; these percentages varied little between the general American public
and a more specialized poll given to members of the American Astronomical Society and the

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208
Hynek’s Center was gaining prominence as the go-to institution for all things UFO. It seemed like Hynek was set to restore - or perhaps for the first time bestow - some respectability and legitimacy on UFO studies, and generate renewed interest for those studies in the physical sciences. After three decades, it was possible that someone had finally done it. It was possible that Hynek would win his war.

The late 1960s to mid-1970s also saw a spike in UFO-related books being published by scientists. There was, of course, the mass market paperback version of the Condon Committee’s final report (1969). There were the retorts of Saunders (1969) and Hynek (1972). But in addition to these were UFO’s: A Scientific Debate, the edited volume of papers given at the 1969 AAAS UFO symposium, edited by Sagan and Page (1972); David Jacobs’ dissertation-turned-book, The UFO Controversy in America (1975); and Menzel’s final book on the topic, The UFO Enigma: The Definitive Explanation of the UFO Phenomenon, written with Ernest Taves and published posthumously (1977). To cap things off, the USAF declassified the PBB files, the National Archives opened them to the public, in July of 1976.450 Add the previous data points, and Hynek’s victory seemed all but confirmed.

But for every final report, every Scientific Debate, every Enigma explained, there was a rising tide of sensationalism that, now lacking the official voice of the USAF, true believer scientists seemed helpless to stop. Some signals were small, like a review of Condon’s final report that grouped it with books authored by true believers Jim and Coral Lorenzen, John Fuller’s Incident at Exeter, and perhaps most egregiously alongside the books of devoted


“contactees” Otto Binder and George Adamski. Other signs were more ominous - 1969 also saw the publication of the English translation of popular pseudoscience book, *Chariot of the Gods*, by Erich von Daniken, a book that was the progenitor of the “ancient aliens” theory of civilization that persists to this day. Von Daniken’s book would spawn numerous spin-offs, both on the page and on televisions across the country.

Some of the strongest indicators of the future of UFO phenomena appeared on the small screen. Actor and science fiction icon Leonard Nimoy took up the subject on the weekly television series *In Search Of…*, a program that “explored” mysterious phenomena ranging from Bigfoot, to ESP, to the Bermuda Triangle, to the disappearance of Jimmy Hoffa. UFOs were the feature topic of episode 21 of the first season, which aired on 13 July 1977 (Friday the 13th, no less). It’s worth noting that this episode aired after a number of episodes devoted to “ancient astronauts,” Martians, and communicating with other galaxies via space technology. The episode featured a number of witnesses from all over the U.S. recounting their sightings, interspersed with scientists applying “hard scientific methods” to investigation of those sightings. But before one mistakes *In Search of… UFOs* for Hynek’s CUFOS project, undergirding the presentation of the witness accounts was the persist messaging that UFOs were extraterrestrial.

Even Hynek himself fell victim to this thematic turn. He bragged to Northwestern in 1974 about his (and by extension, the Center’s) participation in a TV documentary, “UFOs, Past, Present, and Future.” The documentary ran in 1974, and then again in 1976 and 1979.

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453 For example, *In Search Of Ancient Astronauts*, made-for-tv special, directed by Harald Reinl, aired 5 January 1973; *Mysteries of the Gods*, ibid.
under the title, “UFO’s: It Has Begun.” The film ran at just over an hour and a half and featured some of the biggest names in ufology of a generation, including Hynek, former USAF Chief of Public Information Bill Coleman, and two former directors of Project Blue Book, Lt. Col. Robert Friend and Quintanilla himself in a rare TV appearance. The first half of the documentary offered a fairly straight-laced recounting of the history of the UFO phenomena, from Ezekiel to the Colorado study, despite some small sensationalizing and reliance on some of the most prominent sightings of the era. Hynek appeared in person and gave his comments on the 1953 CIA-organized Robertson Panel, as well as on his assessment of the 1965 Michigan ‘swamp gas’ sightings. Throughout, Hynek repeated once again that he left these occasions with the “distinct feeling” that the Robertson Panel, the Air Force, and others had “deliberately moved to debunk the whole subject, not to give it the serious scientific attention which it deserved.” His swamp gas explanation had been a result, for example, of his inability to do a truly rigorous scientific investigation of the sighting. Hynek repeated the need for serious scientific investigation every opportunity he had.

The rest of the documentary - the final forty-five minutes - focused entirely on cattle mutilations and UFO abductions and speculation on what the UFO occupants looked like, and when they would finally decide to greet us. In the end, even this documentary about which he had bragged turned on him. Hynek stayed true to CUFOS and held the line on the “junk” stories of abductees and the low probability that UFOs were interstellar spacecraft. But faced with ancient astronauts, abductees and contactees, Hynek saw late in his life his explanations swinging wider; unable to back down on the ETH, he began to theorize about parallel realities and “interlocking universes.”

454 “UFOs, Past, Present, and Future”; “In His Own Words,” see fn. XX.
As physical scientists backed away from UFO studies and the lions of early ufology died, Hynek disappeared into his niche at CUFOS. Meanwhile, UFO sightings, reports, and witnesses became material for the social sciences, fulfilling a trend predicted, and likely begun, back in the late 1960s by Condon and his project team. The late 1960s and early 1970s efforts of true believer scientists to make UFO studies another location from which to contest the unsanctioned authority of the expertise state and MIAC-employed scientists while democratizing science perhaps worked too well. Now the stuff of pop science and tripped out science fiction, UFOs would slip forever beyond reaching distance of scientific legitimacy, at least among the physical sciences.
Concluding: “This is important. This means something.”

So says Roy Neary, main character of Steven Spielberg’s 1977 science fiction epic Close Encounters of the Third Kind. Set in Indiana in the late 1970s, Close Encounters depicts a world where interstellar visitors have come to Earth, making themselves known (or not so known) in mysterious ways. A long-missing freighter ship suddenly reappears in the Gobi Desert. Airline pilots report to air traffic control strange lights in the sky that buzz airplanes at uncomfortably close distances. “[The sun came out,]” effuses one rural Mexican witness, “[and sang to me.]” A crowd in India is visited by the strange phenomena and repeat the now-iconic five-note tonal phrase like a mantra.

Meanwhile, in Muncie, Indiana, electrical technician Neary (played by Richard Dreyfus) has his own experience. While stopped at a railroad crossing, a UFO hovers over his truck, causing a number of significant disturbances. The engine dies, the radio dial goes wild, and the magnetic field within the truck is disrupted by the probing light, which gives Neary a sunburn, despite it being late at night. He proceeds to chase the UFO - which has now been joined by two more objects - across state lines, into Ohio, before the objects disappear into the night sky. Neary’s experience does not end there, however. Following the ‘close encounter,’ the responsible citizen and family man begins having persistent visions, which he can only ease through sculpture, building the object he sees in his visions out of anything he can find, using everything from mashed potatoes to his neighbors’ landscaping.

Neary’s encounter has a net negative impact on his life. It costs him his job, his marriage, his children. It’s only when he sees a news report about a chemical spill in

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456 Close Encounters, 6:50.
458 Close Encounters, 20:04.
Wyoming that he finds any release. There, on the television screen, is the object from his visions - Devils Tower, in the Bear Lodge Mountains. Neary and others who have had similar experiences head to Wyoming, following the impulse of their visions.

Once there, the witnesses find the United States military barring their path. It comes to light that the hazardous material spill had been a cover-up orchestrated by the military, meant to clear the region of civilians before the impending extraterrestrial visitation. As Neary and his traveling companion, Jillian Guiler, a rural mother whose child was abducted (played by Melinda Dillon), reach the top of Devils Tower, they find a military base constructed for the sole purpose of communicating with the interstellar travelers. Speaking in a tonal language via an Academy-Award-nominated soundtrack by John Williams, humans and the peaceable aliens learn to communicate. The film ends with the travelers returning many ‘abductees,’ including Guiler’s young son Barry, and Neary joins the multi-species crew of the mothership in the final scenes, leaving Earth behind for adventure beyond.

The movie was met with overwhelmingly positive reviews. The Washington Post’s ebullient review described the film as a “uniquely transporting filmgoing spectacle” in which Spielberg “transform[ed] the ongoing, somewhat forlorn mystery of UFOs into a transcendent fairy-tale vision of intergalactic communion and fraternity.”

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Close Encounters of the Third Kind has become a mainstay in American pop culture. Its most iconic elements - the five-note tonal phase, the mashed potato sculpture, and Devils Tower itself - have been referenced and parodied for forty years. The spoofs aren’t only for science fiction, either - Close Encounters has had cameos in everything from the James Bond film Moonraker (1979) to South Park to a 2018 episode of network TV sitcom The Goldbergs. A cursory glance at the film’s Internet Movie Database (IMDB) page for “Connections” shows hundreds of entries, attesting to the film’s persistent cultural relevance.\(^{460}\) Spielberg’s flick has stood the test of cinema time.

There is irony in the ubiquity of Close Encounters, especially as it aligns with the resilience of UFO lore in American pop culture. Close Encounters came at a time when the fundamental meaning of the UFO was in flux. Behind were the days of Soviet technology, enemy surveillance craft, hostile interstellar threats, and simply yet-undescribed natural

phenomena. Ahead of the UFO lay a boom in contactee and abductee interest, narratives, explorations, and yes, scientific studies. The film straddled these two periods in the UFO’s history deftly. It was at once both a funeral mass and a christening.

The influence of astronomer J. Allen Hynek and his familiarity is felt throughout the film and manifests in almost every element. Neary’s close encounter and the entire Indiana sighting scene, was developed (cribbed?) from two of the most famous sightings of the period: a mass sighting in 1957 in Levelland, Texas and the 17 April 1966 sighting in Portage County, Ohio. The scene in Neary’s truck includes details from the Levelland mass sightings, which account for some of the earliest accounts of UFO-related engine failure in automobiles. Throughout the evening of 2 November 1957, multiple witnesses reported seeing balls of light, varying in color from “greenish,” blue, and red. The objects floated and hovered, and in cases where witnesses came near in their vehicles, experienced total engine stoppage in close proximity to the object. (Function was restored to the cars when the object “flew away.”) In addition to the engine failure, witnesses reported their headlights and other electronics failing as well, and some reported erratic gauge malfunction or strange gauge behavior.461 All of these things are captured in Neary’s close encounter.

Included in Project Bluebook’s 1966 records, the file runs 90 pages and includes testimony from multiple witnesses, including police officers, newspaper articles about the sightings, and photographs taken by those officers of the object(s) they ostensibly saw. Witnesses reported a brilliant - almost blinding - silvery light moving west to east across Ohio and into Pennsylvania. Police officers gave chase and clocked the object in excess of 100 miles per hour at times, but also reported that it was capable of coming to a complete

stop and hovering, as it did over their car on occasion. Though some witnesses reported the object was just a bright, colorless light that emitted no sound, the officers who had made sightings “close up” reported a red light and a low humming sound, and in their reports drew the object as somewhat cone-shaped. The officers chased the object more than eighty miles, across the Ohio countryside and into Pennsylvania. Similarly, in the film, Neary and police officers gave chase across the Indiana countryside, blowing through the Indiana-Ohio tollbooths and chasing the objects at high speeds, before the objects disappeared into the night.

Dale Spaur, one of the principle witnesses of the Portage County sighting, was unwilling to give up his experience of what he saw and chased for the official USAF account, which claimed that Spaur and the other officers had been chasing Venus. Much like Neary a decade later, the stress of scrutiny, judgment, and publicity wore on Spaur, costing him his job, his marriage, and his family.

Hynck’s influence and familiarity with the subject manifested in visual design as well. All the UFOs seen by witnesses capture some fundamental UFO archetype that had developed over the decades, including a somewhat amorphous ball of light, the “ice cream cone” shape, the cigar shape, the black triangle, and so on. One also senses his sensitivity toward witnesses; the film’s witnesses are largely rational, calm, normal people, with respectable jobs, families, and so on - respectable citizens and responsible members of their

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462 While no number for the case file survives, it can be found via NARA digital archives at https://www.fold3.com/image/1/7104469. See also “This Saucer Had Large Red Light,” Dayton Daily News, 20 April 1966, pg. 14; “Saucer Flies from Ohio to Pa.,” Pittsburgh Post Gazette, 18 April 1966.

communities. They are hardly crackpots, but instead, average people who have had experiences that they cannot explain and are profoundly affected by it. In the opening scene of the film, multiple airline pilots and an air traffic controller experience their own close encounter. Despite multiple credible witnesses (including the film-viewing audience), the pilots and controller decide not to make an official report - quote, “We don’t want to report one of those either” - echoing Hynek’s own long-standing position that the negative attitudes about the phenomena prevented reputable witnesses from making reports. And as in the actual sightings, the events are taking place all over the globe, but occur most prominently in the United States.

Much of the film’s atmosphere is one of tension and fear, derived from postwar and early Cold War fears about the phenomena. The motifs of both physical and psychological harm resulting from advanced technology manifest throughout. The extraterrestrials abduct child Barry from his house, Roy Neary seems to be experiencing serious psychological harm, and these inexplicable visitations happening around the world increasingly indicate a source incomprehensibly more advanced. And it’s not just his own mind that Roy Neary must contend with; the United States Armed Forces also stand in his way. Over the film’s narrative arc, it becomes apparent that the U.S. military and the federal government know much more than they are letting on and willing to tell even those witnesses most profoundly expected. Further, the military is the force behind the hoaxed chemical spill, and is responsible for detaining, interrogating, and transporting encounter witnesses around the site. There is no greater indicator of this than when, upon reaching the peak of Devils Tower, Neary and Guiler find a highly-advanced military base already in operation, awaiting the arrival of the interstellar travelers.

The film can be read as a love letter from Hynek to thirty years of UFO study. In all of these points of contact, the film reinforced a narrative that had been taking shape for decades. Witnesses were rational, the government couldn’t be trusted, scientific interest was legitimate, and UFOs were real. Even as Close Encounters gestured back into the history of UFO, however, it also hinted at the future to come. This future was divorced entirely from the UFO’s origins as an object of inquiry for the physical sciences. Instead, it embraced fully the extraterrestrial hypothesis, and cast interstellar vehicles and visitors as the primary focus of narratives, lore, and even scientific study. One of most memorable scenes of the film is one of abduction, as the unseen alien threat kidnaps an innocent child. Encounter witnesses experience psychic communication with the more-advanced extraterrestrials. Most importantly, however, the film resolves the tension between human and extraterrestrial by revealing the aliens to not be a threat, but rather a path to salvation. The multispecies crew of the mothership points toward overcoming difference, the potentiality of a global community, and the promise of peace in our time.

Scientific study of UFOs began as a national security project. In the immediate postwar years, the specter of unbridled technological advance summoned by the achievements of the Second World War loomed over American society and culture. In order to investigate the strange aerial phenomena being reported around the country, the United States Air Force constructed a technical apparatus of investigation akin to other surveillance projects taking shape in the armed services at the time. In the process, the USAF organized a knowledge infrastructure that brought diverse actors, objects, networks, and disciplines into cooperation and collaboration around the questions and solutions of and for the UFO problem.
Cooperation and collaboration were not guaranteed, however. Scientific consensus - about both explanations of individual cases and about the legitimacy of UFO studies at large - was not easily achieved. Early ufologists like Donald Menzel, J. Allen Hynek, and James McDonald all occupied different positions on a grid of belief and expectation while advocating for similar or identical methods of traditional scientific investigation, theoretically and methodologically. Solutions to the UFO puzzle were not guaranteed by the data and evidence; the data by nature seemed infinitely open to interpretation.

The interpretive flexibility of the data and the methodology and background assumptions of the scientists working with it kept the UFO question alive throughout the 1950s and 1960s. Coupled to larger social and political trends, at home and abroad, UFO investigation at the national level stayed difficult to kill. Believing the American public would be more accepting of a scientific conclusion if it came from highly-respected professional scientists, the USAF contracted with cold warrior physicist Edward U. Condon and the University of Colorado to undertake an independent, scientific study of the phenomena.

The USAF drastically misinterpreted the sociocultural attitude and growing distrust directed toward the expertise state in the mid-1960s. Ultimately, it made no difference to the skeptical American audience where the conclusions were coming from; establishment scientists were no more trustworthy than the American military. Indeed, the reinforcement of the USAF’s conclusions about UFO phenomena that came from establishment scientists merely proved how compromised the autonomy of American physical scientists was. Scientists had become so indebted to and dependent on federal funding and the support of the military that they were no longer able to undertake free inquiry. In echoing the USAF’s position on ‘flying saucer phenomena,’ establishment scientists proved to those skeptical
members of the public that they were nothing more than a propaganda mouthpiece for the military.

Regardless of the drama surrounding the late 1960s UFO studies, the USAF took advantage of the conclusions from Condon and others to formally end its UFO investigation program. Despite the best efforts of true-believer physical scientists like McDonald and Hynek, the closure of Project Bluebook and the conclusion of the Condon Committee ensured that UFO projects would continue to be shunned in the physical sciences, eventually fading almost entirely from view. The scientific study of UFOs did not cease completely, however. Physical scientists had argued throughout the 1960s and 1970s that while the physical sciences had confirmed nothing of interest in UFO phenomena, there seemed to be in UFO sightings a broad array of possible lines of research for the social and behavioral sciences. The 1970s saw these projects develop in earnest, and throughout the 1970s and into the 1980s and 1990s, UFO research became the realm of the human sciences. Likewise, the extraterrestrial narrative took hold and has come to dominate all discussion of UFOs, flying saucers, and witness experiences.

I set out on this project under the assumption that I was telling a history of a pseudoscience. What I discovered instead was a story of an unusual scientific object that unfolded in strikingly routine ways. Buried beneath questions about alien visitation, science fiction narratives, and campy pop culture was a mostly-normal series of cold war military projects, enlisting many of the same names that were so prominent in so many other cold war military projects. Early UFO projects were no more “ridiculous” in content and character than early balloon and unmanned reconnaissance projects, no more “sci-fi” than early aerospace and aeronautics projects. Nor was the multidisciplinarity of the UFO

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465 Harvard psychologist John Mack is a quintessential example of this.
projects unique; it is reflected in early programs in the atmospheric sciences and in the space programs of the 1950s and 1960s.

All of these resources, military and civilian, were brought together to create a knowledge infrastructure devoted to solving the mystery of the UFO. Where the UFO projects diverged from other traditional cold war surveillance, reconnaissance, and technoscience projects was in the necessity of non-expert participation in the knowledge-making processes. This was where the project’s inherent strangeness lay for me. Not in the USAF’s scrambled-jet airborne searches or the pages of equations devoted to determining a UFO’s speed in flight - but in the endless struggle to generate reliable data from non-expert witnesses and the resistance of those witnesses to such discipline.

The heart of the UFO studies - really, the source of their vitality - was, is, this connection between expert and non-expert actors and the tension between “access” and “expertise.” This dissertation has shown how expert actors (scientists, technicians, Air Force personnel) organized and managed the investigation of a transient scientific object and their efforts at answering questions and achieving consensus. In focusing its attention on these particular groups, it has neglected the perspective and experience of private investigative organizations like the National Investigation Committee for Aerial Phenomena (NICAP) and the Aerial Phenomenon Research Organization (APRO), organizations which played a crucial role both in enabling the USAF investigative projects in the 1950s and 1960s and in establishing grounds for organized dissent in the 1960s and 1970s.

Also missing are the voices of the witnesses themselves. I have attempted to treat the witnesses on their own terms, referring to their experiences in the ways they themselves described them, as captured in Air Force reporting forms (while not relying overly much on press
reports, except where verified in reporting forms). How did witnesses interpret reporting forms? What on average were their experiences with USAF representatives? While much of this data may be lost to us, efforts to increase the historical visibility and the agency with which non-expert witnesses - in this case, and in others - contributed to the knowledge-making project can only benefit our histories. Exploring how non-expert citizens understood their responsibility to the scientific project and to the state can illuminate issues in public understanding of science, science policy, and science literacy both in the past and now.

Here lie only a few possible avenues for further research for the history of the UFO in America. There are also broader lessons that can be taken and applied to other case studies. As I said above, I came to this study thinking it would be a history of a pseudoscience, when it ultimately played out as anything but. When considering possible avenues for further research in the history of science, we should make more effort to run toward “taboo” subjects rather than from them. Many topics we might now label as “pseudoscience” have deep roots in traditional scientific theory and practice, and a close examination may reveal uncomfortable alignments between these “nonsense” sciences and those we consider to be “orthodox.”

Histories of the heterodox sciences also generate exciting potentialities for interdisciplinarity. This project has been since its inception interdisciplinary. Though primarily historical, this project demanded that I incorporate philosophical and sociological methods, as well as familiarizing myself with current practices in literary criticism and media studies. Heterodox sciences, in the same way that they resisted conformation with traditional assumptions about the world, resist and sometimes outright reject preconceived notions and
expectations about their origins and life cycles. Their histories demand analysis and interpretation from more than one direction, to ensure a fair examination from all sides.

As we face the early 21st century crisis of the expertise state and the erosion of traditional institutional norms, histories of heterodox sciences can provide, if nothing else, a space at once familiar enough to be analogous and different enough to feel “less risky.” They offer stories of how diverse actor categories interact, how expertise is understood as a resource available not only to “professional experts,” and how citizens can wield those interpretations of “expert” and “knowledge” to political ends. Also at stake are matters of trust. How do citizens decide who to trust, and when, and why? What expectations underlie their decision-making processes? How effective are appeals to reason, and to lived experience? All these questions shaped the UFO investigations explored in this dissertation. All these questions shape our current political moment. Our responses to them will shape the future we make for ourselves.
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