

# Popular Conceptions of Unidentified Flying Objects Can Undermine Scientific Inquiry

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## Abstract

Unidentified Flying Objects (UFOs) appear frequently in science fiction and other public depictions of extraterrestrial technology. Recent interest in understanding UFOs, also known as Unidentified Aerial Phenomenon (UAP), has increased due to a recent report published by the U.S. Department of Defense that confirmed the detection of several UAP. However, actually identifying such objects remains challenging because “sociocultural stigmas and sensor limitations remain obstacles to collecting data on UAP” according to the report. In this presentation, we discuss the challenges posed by popular conceptions of UAP to genuine scientific inquiry using examples from Carl Sagan’s archives. This discussion is intended to engage astrobiologists in thinking critically about the differences between scientific inquiry of a genuinely unknown phenomenon and non-scientific popular speculations about the identity of UAP.



# CARL SAGAN AND UFOS

This poster provides a summary of Sagan's UFO files from the *Carl Sagan and Ann Druyan Collection* at the Library of Congress.

- Carl Sagan took skeptical interest in Unidentified Flying Objects (UFOs) as a scientist.
- Many letters Sagan received conflated paranormal concepts with UFOs or else assumed an extraterrestrial origin by default.
- Sagan had conversations with a few other scientists and engineers who focused on understanding UFOs as a physical problem.
- Sagan supported further study of the unexplained cases from Project Blue Book, regardless of any association with extraterrestrial activity.
- Scientists like Sagan who take interest in UFOs face the difficulty of sifting through the "noise" of popular opinion as they seek to find observations that might actually be anomalous.

## LETTERS FROM ENTHUSIASTS

The majority of content in the collection contains handwritten or typewritten letters to Sagan about personal or secondhand UFO sightings, a few of which include attached photographs. None seemed particularly reliable or useful for data. The reports contained in such letters range from sightings of aerial phenomenon to personal psychological experiences. Notes attached to these by Sagan's staff indicate that they usually did not reply to such letters but simply stored them in the "general UFO file."

Sagan's public statements about UFO sightings seem to focus on natural objects, light sources, classified military projects, and other conventional solutions. Many of the letters he receives from non-scientists and fans of his work are people who are upset with his dismissal of what they consider to be a subject worthy of scientific study. The demographics of these letters range from those invoking conspiracy theories, to inquisitive retirees, to average working people, to other scientists (but none from researchers, such as those with MS degrees). An example of such a letter is shown below.

216: 070's

170 response

- 2 - January 3, 1984

January 3, 1984  
3208 South Winona Circle  
Tucson, AZ 85730

Mr. Carl Sagan  
Department of Astronomy  
Cornell University  
Ithaca, New York 14853

Dear Carl:

I have been in the process of writing this letter for many years, and since I am getting older and may not have too many years left, I've decided to stop procrastinating and get on with it.

I decided to write to you because I have admired your work for a long time and feel that you are one of the few top scientists in this country who has the perception and vision to address this matter in the proper way.

Your "Cosmos" book and T.V. series confirmed this idea in my mind and I must speak now or keep my mouth shut forever.

Carl, the UFO phenomenon is real. This planet is being surveyed by several high technology civilizations from outside of our system, and this program has been going on for a long time.

I must explain that, technically, I have no recognized scientific credentials. I am not a PhD. All I have is over 30 years of detailed study and research, and enough first-hand experience to fill several books. During 27 years of active military service, I was involved in incidents and studies, and read highly-classified reports that will never see the light of day, regardless of the Freedom of Information Act, that fully confirms the reality of our visitations.

I have collected and analyzed data that is overwhelming in its implications, and I am sick of the cover up.

In your thoughtful and beautiful "Cosmos" you included a chapter that deeply moved me. "Who speaks for Earth?"

Mr. Carl Sagan

- 2 -

January 3, 1984

Carl! We speak for Earth! You and I and others who care about it. But, we must not only speak for Earth, we now must speak to Earth.

People must be told some truths. I feel that if they knew what is happening, it could expand their consciousness and awareness as human beings and children of Earth.

I understand that you know Allen Hynek and Jacques Vallee. Listen to them, Carl. "The Invisible College" exists. There are thousands of them who have data similar to mine and know.

Talk to Aime Michael in France, and Charles Bowen in England. They know. Gordon Cooper knows also, and has had the courage to speak out.

My concept is that if the people of Earth knew and understood, it would help create a human sense of brotherhood. It would help us grow into an expanded awareness of our place in the Universe.

I dream that someday, somehow, an audio visual presentation similar to your "Cosmos" would show the people of this planet that we can have an unlimited future of peace and cosmic growth and understanding. We have wasted so much time.

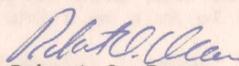
Someone like you, or Stephen Spielberg, could do this job.

The telling of truth must begin. As the walrus said in Alice, "The time has come to speak of many things."

Someone who is respected and has some "credentials" should begin.

Speak out, Carl. Examine the evidence and tap your vision. Use your creative dream again as you did in "Cosmos" and help us grow. Help us tell some truths!

Sincerely and respectfully,

  
Robert O. Dean

*Letter from Robert O. Dean (27 years military service) to Carl Sagan dated 3 January 1984 about taking the UFO problem seriously [2 pages, box 791, folder 6]*

## LETTERS FROM STANTON FRIEDMAN

The letters from Stanton Friedman in the collection provide the most articulate critique of Sagan's position on UFOs. Although some of Friedman's critiques are now outdated, other aspects of his arguments are mirrored in contemporary discussions about UFOs among non-scientists and enthusiasts.

The collection includes several articles by Stanton T. Friedman [*box 792, folder 6*] that discuss some of the reported sightings (such as MUFON reports) and critique the SETI community for ignoring such evidence. Friedman also seems to take the MJ-12 documents seriously (i.e., believes in the Roswell UFO cover-up). Friedman wrote Sagan on multiple occasions, although, as seen below, Sagan did not always reply.

*4 Sep 1988*

**STANTON T. FRIEDMAN  
NUCLEAR PHYSICIST - LECTURER**

79 PEMBROKE CRESCENT  
FREDERICTON, NEW BRUNSWICK E3B 2V1  
CANADA

(506) 457-0232

Dr. Carl Sagan  
Planetary Sciences Department  
Cornell University  
Ithaca, NY 14853 USA

Nov. 9, 1988

Subject: Another false statement about flying saucer sightings

Dear Carl:

It really saddens me, as a classmate of yours for 3 years, to have to once again, for the third time, write to correct a false and misleading statement by you concerning flying saucers. I should think you would take your professional status as a scientist and a science communicator more seriously and get your facts straight before speaking out. The latest example of misinformation (following on your COSMOS UFO piece and your CBC radio interview with V. Gberau appears in the TORONTO STAR, Sunday, October 16, 1988. I first checked with the writer Jack Miller who assured me that his coverage of your comments was accurate. Unfortunately, your statement "every flying saucer 'sighting' when given a genuinely tough scientific scrutiny has been judged either a mistake or a fraud" is itself a fraud. The exact opposite is true! Every large scale scientific study of flying saucers has produced a significant number of cases which not only cannot be identified, but which clearly indicate that some so called flying saucers are manufactured objects behaving in ways that we Earthlings cannot yet duplicate with our manufactured objects. Let me give some examples:

1. Project Blue Book Special Report Number 14 was completed by scientists and other professional personnel at the Battelle Memorial Institute in Columbus, Ohio, under contract to the USAF Project Blue Book. 21.5% of the 3201 sightings studied in detail had to eventually be listed as UNKNOWN "Those reports wherein the description of the object and its maneuvers could not be fitted to the pattern of ANY KNOWN OBJECT or phenomenon" completely separate from the 9.3% listed as Insufficient Information, the 1.5% listed as psychological manifestations and the other KNOWNs. Note that no sighting could be listed as an UNKNOWN unless all four of the professional final report evaluators agreed it was an UNKNOWN, though any 2 could categorize any sighting in one of the KNOWN groups. Furthermore, it was also found that the better the quality of the sighting, the more likely to be an UNKNOWN and that the duration of observation for the UNKNOWNs was greater than for the KNOWNs with more than 60% being observed for longer than 60 seconds. Mistakes or frauds????????

2. According to an 11-person professional UFO subcommittee of the American Institute of Aeronautics and Astronautics, 30% of the 117 sightings investigated by the professional scientists under Dr. Edward U. Condon at the University of Colorado could NOT be identified. Mistakes, Frauds????????

3. Dr. James E. McDonald, Professor of Physics at the University of Arizona, personally investigated hundreds of UFO sightings. Since these were generally prescreened cases, it is not surprising that many remained UNKNOWN after serious and competent professional investigation. Jim wrote many papers, as you know, and he presented a number of his cases at the Congressional Hearings, July 29, 1968, and the AAAS Conference in Boston, which proceedings you edited. You were present at the Hearings as well. Mistakes, Frauds????

4. Dr. Leonard Nikisin of the section on SETI of the Soviet Academy of Sciences stated on October 14 that 20% of the more than 20,000 UFO sightings investigated by a professional commission on Abnormal Atmospheric Phenomena (backed by the SAS and headed by a Cosmonaut) could not be identified. This is not surprising in view of the previous detailed study by Gindilis et al. Mistakes, frauds?????

copy in UFO

2 Friedman-Sagan Nov. 9, 1988

There are many other examples such as the 2500 Physical Trace cases from 65 countries collected by Ted Phillips, and the more than 3000 pilot sightings investigated by Dr. Richard Haines, and the many abduction cases investigated by Budd Hopkins and a team of psychiatrists and other professionals.

I find it quite extraordinary that you keep saying "extraordinary claims require extraordinary evidence" when you yourself keep making extraordinary claims about both the prevalence of ETI and the absence of good flying saucer sightings. You provide no evidence whatsoever to back up your claims, which unfortunately are demonstrably false.

I keep getting asked why you make such false statements. I suggest to the questioners that they ought to ask you, not me. When they push me, I do have to point out that obviously if alien spacecraft are visiting Earth, and not asking you for a meeting, that decreases your importance and throws the whole notion of the radio telescope SETI which you have backed so vigorously. I also acknowledge that you may have taken over from Donald Menzel as the UFO disinformation specialist, which may only show my naivete, since I express my doubts about it. I trust you have seen my article about Menzel and his double life??

I recognize that you have not replied to my previous letters re Cosmos and Gabereau. I would certainly like some explanation for your false statements and even a glimmer of evidence to support them.

Most cordially,

*Stanton T. Friedman*  
Stanton T. Friedman

CC J. Miller and others

January 30, 1989

Dear Carl:

Though I am still waiting for an answer to the above letter, I think you should be made aware of the continued incompetent efforts of your CSICOP cohort Phil Klass to attack the MJ-12 documents and to besmirch me and also of the work on Menzel with whom you had a good deal of correspondence. I wonder if you knew about his close ties with the NSA, CIA, etc and his loyalty hearings and close ties with Van Bush.

I have been waiting for an answer, but have decided to send copies of this letter around. It would have been easier to send the letter and your answer, but obviously I can't speak for you.

Hastily,

*Stan Friedman*  
Stan Friedman

12/5/88

No, I'm not going to answer this letter from Stanton Friedman.  
Let's just file it. Put a copy in Gifford.

File under S. Friedman?  
or UFO?

*Letter from Stanton T. Friedman to Carl Sagan dated 9 November 1988 about taking the UFO problem seriously [3 pages, box 791, folder 10]*

The collection also includes a document from Friedman from 1992 that presents a list of discussion topics for Sagan. The collection does not provide any evidence if a meeting between Friedman and Sagan actually took place. These questions are shown below:

STANTON T. FRIEDMAN  
NUCLEAR PHYSICIST - LECTURER

79 PEMBROKE CRESCENT  
FREDERICTON, NEW BRUNSWICK E3B 2V1  
CANADA

(506) 457-0232

Some Discussion topics for Carl Sagan, Preliminary, Nov. 26, 1992

1. Why is it that SETI Specialists make proclamations about how much energy it would take for Interstellar travel when they have no professional competence in this area, no training, no good experience, no awareness of the engineering literature, and apparently a total lack of awareness that the amount of energy is entirely dependent on the How and cannot be determined from basic physics? If one makes enough bad assumptions, as astronomers have done through history in their calculations of flight, of course the numbers come out ridiculous. But it is not necessary to limit oneself to 1 G, or to provide the energy for the entire trip, or to use a trip profile that involves accelerating at 1 G for half the trip, decelerating the second half, etc,etc, ad nauseum.

Cosmic free loading can be very helpful and has been used on all our deep space probes such as Voyager, Pioneer, Galileo etc. Remember that Dr. Campbell (an important astronomer in 1941) was off by a factor of 300,000,000 in his "scientific" calculation of the required initial launch weight of a rocket able to get a man to the moon and back; that a great astronomer proved in the 1920's that it would be impossible to give anything sufficient energy to get it to orbital velocity, that Simon Newcomb proved the only way man would ever fly would be with the help of a balloon. These three very bright gentlemen made a host of utterly ridiculous assumptions and therefore came to absurd conclusions. One also cannot build a pocket calculator with vacuum tubes nor go faster than the speed of sound with a propeller driven airplane...

2. Why is it that SETI Specialists make proclamations as to how aliens would behave when, as professionals, they have no training, experience, or special insights as to how earthlings, no less aliens would behave...One might consult psychiatrists, psychologists, social workers, lawyers, judges, secretaries.. but radio astronomers?? Why, for example, would an advanced civilization give its secrets to a primitive society whose major activity was tribal warfare?

3. Why is it that SETI Specialists take every opportunity to attack the notion of UFOs without referring to the evidence related to that problem and acting as though the tabloids were the only source of data when there are at least 5 large scale scientific studies, 8 PhD theses, and many dozens of published papers about flying saucers by professional scientists? It would appear as though the basic rules are: 1. Don't bother me with the facts, my mind is made up. 2. What the public doesn't know, we won't tell them and 3. If one can't attack the data, one ought to attack the people. Surely all scientists are supposed to draw

Science Consultant • Lecturer • Author • Broadcaster

their conclusions from the evidence rather than ignoring the evidence and making pronouncements...

4. It appears that the SETI Specialists don't understand that there are very clearcut national security aspects of the entire UFO problem including the possibility of duplicating the technology and the concerns with the impact of any public statement about UFO reality. Many extraordinary scientific investigations were conducted by Fermi et al in the Manhattan project.. in secrecy. There is overwhelming evidence of a Cosmic Watergate including covering up the recovery of at least two crashed saucers in 1947, and possibly encounters between aliens and political leaders. According to Pulitzer Prize winning journalist Tim Weiner, the annual Black Budget is running \$34 Billion.
5. If the SETI specialists were truly interested in the SETI, why don't they examine the best UFO data instead of ignoring it? They certainly have no evidence to support their many assumptions about ET life, without it. For example, it is assumed that there is life all over the place, that some of this life is more advanced than we are, and that ET life is stuck at the technology level represented by radio and is trying to attract our attention. Technological progress almost always comes from doing things differently in an unpredictable way. The future is NOT an extrapolation from the past any more than lasers are just better light bulbs or microintegrated circuits are just small vacuum tubes.
6. Why is the assumption so frequently made that aliens won't know we are here until they pick up our radio, TV, radar signals? A half solar system wide radio telescope could resolve the planets in nearby solar systems. They could have traveled here a million years ago. Why not assume that every library in the neighborhood lists Earth as a developing planet?
7. Why is it that SETI Specialists don't understand that at the end of the 2nd World War it was perfectly obvious to any visiting intelligence agent that soon (less than 100 years) earthlings (this primitive society whose major activity is tribal warfare -we only killed 50 million during the war) would be traipsing around to nearby stars. Three new technologies, rockets, atom bombs, radar... set the pace. During any one century because the process from no space travel to deep space travel takes such a short time, there is not very likely to be more than one civilization bursting forth. Of course, we would be of interest to them. Every new frontier for us has been a new place to do battle. Their purpose might well be to make sure we don't bother them out there until we get our act together and can qualify for admission to the Cosmic Kindergarten.
8. Why is it that SETI Specialists seem to assume that aliens would want to deal with them? They don't speak for the planet.. if their budget is even \$10 Million per year how does that stack up against \$1trillion for military purposes??

9. Why is it that SETI Specialists so often try to stress how big and old the universe is? After all the sphere centered at the Sun and having a radius of 54 light years includes 1000 stars of which 46 are quite similar to the sun. Some of these are at least a billion years older than the sun. If my car were stolen in Fredericton, it wouldn't make any sense to suggest that the thief might be any one of 5 billion earthlings when it is very likely one of less than 1 million New Brunswickers...Note, too, that for example, Zeta 1 and Zeta 2 Reticuli are only a few light weeks apart and that inhabitants on a planet around either could directly observe planets around the other.

10. Why is it that the Drake equation takes no account of the two processes most important for distributing intelligent life on earth, namely migration and colonization?

11. Why are proclamations made that aliens can't look like us when this is based upon the assumption that wherever there is life, it developed indigenously there, independent of all other life? Funny how the laws of physics and biology might even suggest that there are favored similarities for how things evolve. One notes there aren't many three legged mammals on earth or three eyed ones. There may well be advantages to some particular configurations. Colonization and migration would lead to spreading particular features. Proclamations without data are not science. The reports from all over planet earth indicate humanoids are visiting. This, of course, does NOT mean all aliens are humanoid. Presumably the ammonia breathers visit Jupiter.

12. Are the SETI Specialists really unaware that opinion polls have consistently shown that most people do believe that SOME UFOs are alien spacecraft and that the greater the education the more likely to so believe? Two polls of engineers and scientists involved in research and development activities showed that 2/3 of them believe some UFOs are alien spacecraft. The best reason for a large budget for a variety of SETI efforts would indeed be that the planet is being visited, or is there a difficulty in admitting that the SETI specialists have been way off base for decades and that they are not being sought by the alien visitors?

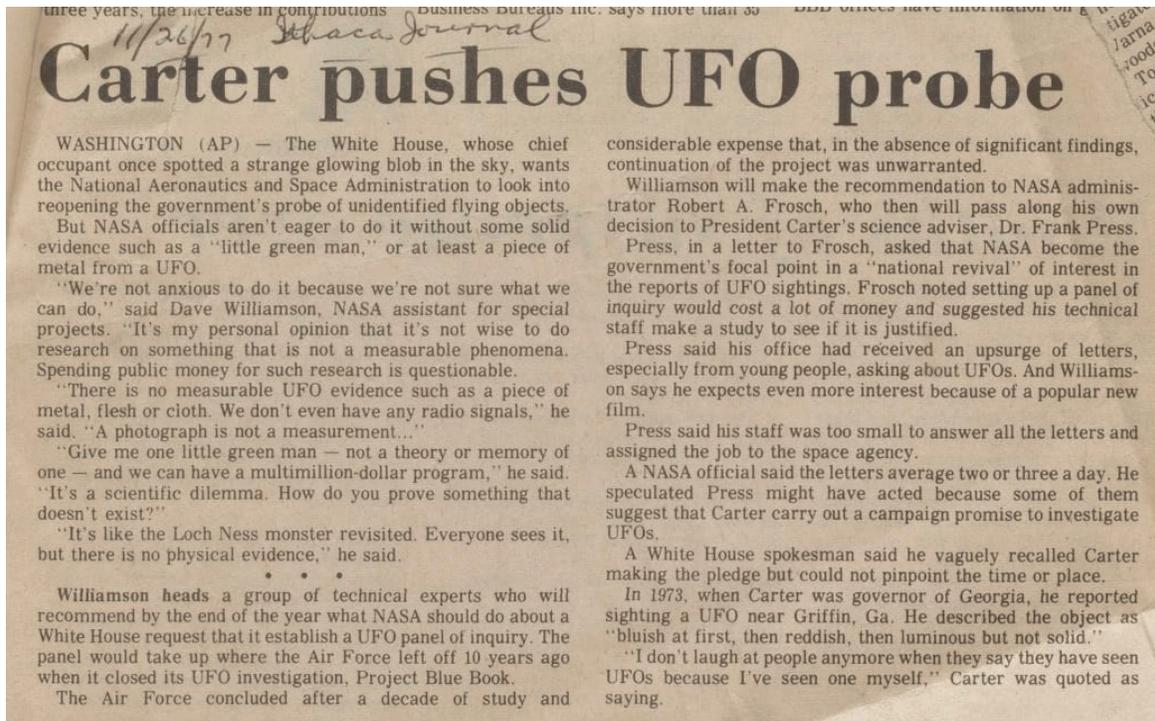
13. Too often people who should know better or at least should do their homework, pronounce that it would be impossible for anyone to withstand the enormous accelerations observed. They quote no data for the observations and seem blissfully unaware of the vast amount of data obtained showing that humans can withstand truly enormous accelerations under appropriate conditions such as 14Gs for 2 minutes or 30Gs for one second. Dr. Stapp's rocket sled got to over 600 miles per hour and he withstood 43 G's when slowing down. Data should take precedence over proclamations.

14. Finally there seem to be no signs that either SETI leaders or UFO debunkers are willing to note the false reasoning of their own kind which provides a scientifically unhealthy and dogmatic almost cultlike atmosphere with charismatic leadership and party lines. Ufologists are very critical of each other.

STF

## CLIPPINGS AND NOTES

The collection also includes numerous newspaper clippings about various UFO sightings. Sagan seemed to be interested in keeping current with cultural interest in the phenomenon, as he certainly received a lot of questions about UFOs from his fans. The collection also includes a few early copies of the *Journal of UFO Studies*, occasional MUFON proceedings, and a few assorted journal articles that relate to the UFO cultural phenomenon. Two examples are shown below.



Newspaper clipping from the Ithaca Journal on 26 November 1977, entitled "Carter pushes UFO probe" [box 790, folder 4]

Carl - From the Ithaca Journal, about Dec. 1.

[977]

Susan

## U.N. discusses UFOs and sees 'Encounters'

UNITED NATIONS (AP) — Prime Minister Eric Gairy of Grenada opened the first U.N. debate on UFOs, then led the diplomats to the movies Monday night to see "Close Encounters of the Third Kind."

"This is the fulfillment of my very high expectation ... The world is looking on," the leader of the 12-by 21-mile island in the Caribbean told the General Assembly's special political committee made up of delegates from all 149 U.N. members.

Gairy told a reporter of his own close encounter "2 1/2 years ago, when I was driving home at 2 or 3 in the morning."

"It was a big object, a brilliant light, golden bright, moving at tremendous speed," he continued. "It was off at a distance. I couldn't tell how far. It lasted perhaps three minutes. I'm not the only one. Other people on Grenada have seen them."

His speech to the political committee was brief, and then he and his party went off to dinner and an evening with Hollywood's latest foray into the world of unidentified flying objects.

The film's distributors provided 300 free tickets for U.N. diplomats in advance of the debate. The tickets were distributed through the Grenada delegation. The Grenadians also handed out 300 free copies of a paperback book on UFOs.

The solidly built, bespectacled Gairy, who intersperses religious thoughts in his UFO speeches, began his campaign two years ago. In an address to the General Assembly then, he called for a U.N. investigation of psychic phenomena. Last year, in another assembly speech, he proposed that UFOs be studied also.

Gairy is not the only head of government to have reported a UFO sighting.

President Carter says he saw one in Georgia in 1973. But Gairy is the only national leader who has made UFOs a key concern of his country's foreign policy.

Gairy has accused some nations — which he does not identify publicly — of stifling information they have collected about UFO sightings.

### Inside

SCHOOL board gets new member--Page 3.

THE Food Page features Puerto Rican recipes and Christmas candy--Page 14.

CU five in home opener Wednesday--Page 15.

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If, on occasion, you do not receive your Journal by 5:30 p.m., please call our circulation department at 272-2321.

Today's edition includes two advertising circulars.

#### The weather

Rain tonight; possibly preceded by a period of freezing precipitation; low, 32. Rain Wednesday; high in the 40s.

See details on Page 4.

Newspaper clipping from the Ithaca Journal on 1 November 1977, entitled "U.N. discusses UFOs and sees 'Encounters'" [box 790, folder 4]

## DISCUSSIONS WITH JAMES MCDONALD

James McDonald is the most notable scientist who investigated UFOs during his career, and he and Sagan seemed to agree that further study on the unexplained cases of Project Blue Book would be warranted. Sagan was involved in multiple events with McDonald that included at least one opportunity for private conversation.

The collection includes the full text of the Symposium on Unidentified Flying Objects, House Committee on Science and Astronautics, 29 July 1968 [*box 790, folder 4. Paperback copy available on Amazon*]. Sagan and McDonald both participated in this hearing.

The papers include a very lengthy statement by James McDonald as well as one by Carl Sagan. The collection [*box 790, folder 5*] includes a printed copy of McDonald's congressional statement with a penciled note at the top, "**Carl -- Regards, Jim,**" suggesting that Sagan had requested this copy personally from McDonald.

The collection includes assorted data from Project Blue Book but no original analysis [*box 793, folders 2-5*]. Sagan seems to have been involved in corresponding with various Blue Book officials, as the collection includes a draft report of Project Blue Book sent to Sagan on 4 March 1966 by Chairman Brian O'Brian [*box 793, folder 4*]. Letters written by Sagan with regard to Project Blue Book are preserved as carbon copies [*box 793, folder 5*].

In a letter dated 31 May 1967 to Brian O'Brian, Sagan writes: "**I have also spent a few hours with James McDonald of the University of Arizona. I think what is important is not so much McDonald's tendency to accept the statements of a few witnesses of undetermined reliability (I am not quite sure how such reliability is to be determined), but that in investigating the supposed identifications made by the Air Force he has uncovered a large number of extremely serious errors, all in the direction of classifying as known objects which are in fact unknown. I think it is quite important that future investigations sponsored by the Air Force should scrupulously avoid such misclassifications.**"

## CONVERSATIONS WITH SKEPTICS

The collection includes various pieces of correspondence between Carl Sagan and Philip J. Klass, indicating that they gradually became cordial and perhaps friends. Klass was a known UFO skeptic, and the letters involve various aspects of combating UFO pseudoscience in the public sphere. One folder is entirely dedicated to archived copies of the *Skeptics UFO Newsletter* by Philip J. Klass [box 793, folder 6].

The final folder in the collection is on the Condon Report [box 793, folder 7]. In a letter to Ed Condon dated 5 June 1968, Carl Sagan writes: **“Thanks for the ‘other side’ on the recent skirmish, although The Bryan Times is not going to get very far with me by drawing a parallel between the Warren Commission Report and your study. I think there are very grievous logical and methodological errors in the Warren Commission Report. But I know that your report (on an even more controversial subject) will admit a sufficient number of alternative hypotheses so it is not similarly vulnerable.”**

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## ABSTRACT

Unidentified Flying Objects (UFOs) appear frequently in science fiction and other public depictions of extraterrestrial technology. Recent interest in understanding UFOs, also known as Unidentified Aerial Phenomenon (UAP), has increased due to a recent report published by the U.S. Department of Defense that confirmed the detection of several UAP. However, actually identifying such objects remains challenging because "sociocultural stigmas and sensor limitations remain obstacles to collecting data on UAP," according to the report. In this presentation, we discuss the challenges posed by popular conceptions of UAP to genuine scientific inquiry using examples from Carl Sagan's archives. This discussion is intended to engage astrobiologists in thinking critically about the differences between scientific inquiry of a genuinely unknown phenomenon and non-scientific popular speculations about the identity of UAP.

