

# RECENT NEWS ON 'UNIDENTIFIED AEROSPACE PHENOMENA'

Collective writing by the 3AF SIGMA2 Technical Committee



[3AF SIGMA2](#)  
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The year 2023 was rich in UAP (Unidentified Anomalous Phenomena) events, largely marked by American news, but also by repercussions elsewhere in the world, via various scientific conferences. These international topics were extensively covered in the [3AF Newsletter No. 1](#), published in January 2024.

Of course, the release of the Pentagon's AARO (All-domain Anomaly Resolution Office) report on March 6, 2024 is the subject of a short commentary at the

beginning of this article, as it provides little new information on current UAP events, and superficial comments on past cases and projects, including a few inaccuracies. Ultimately, this report affirms the official stance on the ordinariness of these phenomena, though this time it was not published by the ODNI (Office of The Director of National Intelligence). It contradicts not only the questioning of the astonishing and out-of-the-ordinary characteristics hitherto noted in successive reports since 2020, but also those reported since 2004 by the US Navy which were exposed by both NASA and AARO on May 31, 2023.

This, therefore, also seems to contradict the [GENADMIN](#) guidelines issued by the Pentagon on May 23, 2023, for US combat forces deployed around the planet to report their observations within hours of UAP events (space, air, water and transmedium) per a special procedure dedicated to UAP reports. Such unusual characteristics are unambiguously described in this procedure.

Finally, this also seems to contradict the questions raised since 2021 by Congress and acknowledged by the Pentagon, through the UAP Task Force and later by AARO, regarding unexplained cases that could have an unknown or even external, 'exo-terrestrial' origin. These cases exhibit characteristics outside the known performance range, with around eight such cases recorded annually in the USA since 1998. Hence, it seems that AARO is adopting a posture of retreat, or even denial, this time, by rejecting observations of unusual behavior in cases reported by other governmental bodies and claiming that no case shows behavior suggestive of an external origin, nor that any secret research program has shown interest in the matter. However, historical cases from the 1950s and 1960s include astonishing characteristics, which are still evident in recent cases.

In this article, on the French side, and at [SIGMA2](#), we prefer to focus on presenting an overview of the technical work carried out by our experts, bearing in mind that SIGMA2 has produced a number of technical papers in 2023 while continuing various studies (analysis of radar data on the Jersey case, analysis of materials, etc.). These presentations are also an opportunity to exchange ideas with foreign scientists.

## AARO SURPRISES: NEW YEAR 2024, NEW REPORT, OLD CASES

We had already summarized the international environment on UAPs in the 3AF newsletter published at the beginning of January 2024. However, the Congressional hearings held in early March 2024, including the testimony of a USAF F-16 pilot, and the publication of the new AARO report on March 6, 2024, require addressing these new elements, in light of the departure of AARO Director Dr. Kirkpatrick in early 2024, currently replaced by an interim director.

The first part of the AARO report is devoted to the past, in response to Congress' requests to study old cases from 1945 era and to add these to the knowledge database of present cases. At the same time, the aim is to shed light on the possible existence of hidden UFO research projects, allegedly carried out by the Pentagon or intelligence services, over the past 60 years, i.e. since the end of the Blue Book dossier investigating UAPs by the US Air Force.

In fact, the new AARO report is about 50 pages long, compared with the usual 17. It also appears to be an indirect response to questions raised by whistle-blowers' statements about hypothetical programs to recover biological devices or remains, and the possibility of an "extraterrestrial" origin for these objects or observed phenomena.

The provided answer is obviously negative, trivializing the topic, even though the UAP subject seems to be covered by secrecy clauses of the Special Access Projects type, which might seem paradoxical. In addition, historical space research programs (Gemini, Apollo, etc.) and black programs for reconnaissance vehicles (U2, SR71...) are recalled without any new information.

The same applies to UAP research projects from 1947 to 1969, such as Sign, Grudge and Blue Book. The report does not reveal any details of cases of UAPs with astonishing characteristics, linked to electromagnetic observations for example, such as that of the RB47 bomber (recording in 1957 of EM emissions from a UFO), or the case of the US Air Force's Malmstrom base<sup>1</sup>, mentioned in the Blue Book file in the open to public national archives (NARA). However, this case bears a strong resemblance to the RB47 case. Both are described in the SIGMA2 report of 2021, with full references to the American archives.

The cases on the North American border (Northern Tier) have still not been analyzed, even though they concern some of the American strategic bases (Malmstrom, Minot, etc.), which have been confronted with radar-recorded UAP observations, in the presence of EM emissions and even jamming.

The same applies to the Washington carousel, witnessed not only by Washington residents in 1952, but also by US Air Force pilots and radar controllers (visual observations, pursuit by fighters, radar observations).

Finally, we have to mention the Lakenheath case, with similar observations made this time by controllers and pilots at two Anglo-American NATO airbases in Great Britain (Lakenheath and Bentwaters) during an August night, in 1956. This famous case is not only referred to as a serious reference case in the Condon Report of the US Air Force but also in CIA archives, when the Blue Book Report was reluctant to confirm the strangeness of UFOs. It is still considered one of the most astonishing and unexplained cases, more than 70 years later.

It's a pity that none of these cases are mentioned in this 50-page AARO document, not necessarily to assert the existence or proof of an extraterrestrial presence, but at least to confirm the existence of these phenomena, and describe the anomalous nature of some of them. The objective is to continue the laudable effort of the 2023 ODNI and NASA report, and to compare these past cases with more recent ones that are recorded with current technologies. This would consolidate elements recorded over decades, and provide links to recent sightings by US Navy pilots. Where are the cases? What similarities? What differences?

Indeed, of the 900 or so cases recorded by the Pentagon between 1998 and 2023, 140 were unexplained. The ODNI had drawn up a list of observable characteristic, which we recalled in our previous article (electromagnetic emissions, luminosity, optical and radar signatures, unusual maneuverability with remarkable accelerations from zero speed to several thousand km/h). Moreover, a 'composite sketch'

summary had even been presented at NASA's AARO conference in May 2023, and subsequently included in the NASA report published in October 2023.

It would have been interesting to continue down this path. To us, the comparison of objective data from the past and recent recordings seems to be a regrettably forgotten yet very interesting subject because the phenomena may have evolved (different forms) or possess identical characteristics. For this reason, we won't comment further.

At the very most, we regret the absence of a few explanatory lines on the "Nimitz" case, which is as confidential as ever, without a single line from the ODNI.

Are we witnessing a sort of trend reversal, where the most astonishing cases would no longer be unidentified, but subject to wait some time until new measures finally reveal their origin?

What about flying over sensitive areas? What about kinematic behavior? What about the security risks associated with flying over sensitive areas and the risk of collision raised by the US Navy? Have they disappeared? What are the Russians doing? What are the Chinese doing?

It's not our place to criticize. In the absence of data, let's concentrate on our work and exchange on radar, optical and electromagnetic observations. We're refining our methods, which will pay off later. The comparison of older and more recent cases remains possible nonetheless, and we are continuing our efforts.

In addition, a Canadian government scientist announced that a report on UAPs will be published in autumn 2024. Similarly, Japan is concerned about the subject and invites the USA to further cooperate. There are undoubtedly subjects for investigation elsewhere.

The following is a brief summary of some of the SIGMA2 work areas presented by our experts at conferences. The work is meticulous and progress is slow but interesting, with unexpected observations at times.

Returning to the European continent, we note that Portuguese MP Francisco Guerreiro took action during a presentation on March 20, 2024, at the European Parliament to raise awareness on the subject of UAPs, particularly focusing on information sharing and aeronautical risk prevention.

He was accompanied by a dozen people, including Dr Villarroel (a Swedish astronomer whose work is presented in this article), pilots who have witnessed encounters with UFOs (Ryan Graves, ex-US Navy pilot, and Christian Van Heijst, long-haul civilian pilot) and representatives of ufological associations (the Dutch UFO coalition, the Italian CISU, the French UAP check, etc.). MP Guerreiro focused his speech and those of his companions on pleading the cause of UAPs in Europe, eliminating the stigma for witnesses and pilots, and promoting transparent data collection and sharing within the aeronautical network and its institutions. On this point, there were discussions on improving reporting procedures for civil aviation and pilots in the event of a collision risk, extending these procedures to encounters with UAPs. Additionally, there were talks about incorporating UAPs into the space domain of the European Space Agency (ESA). The example of GEIPAN was cited as a reference for collecting data on UAPs and building databases and public information.



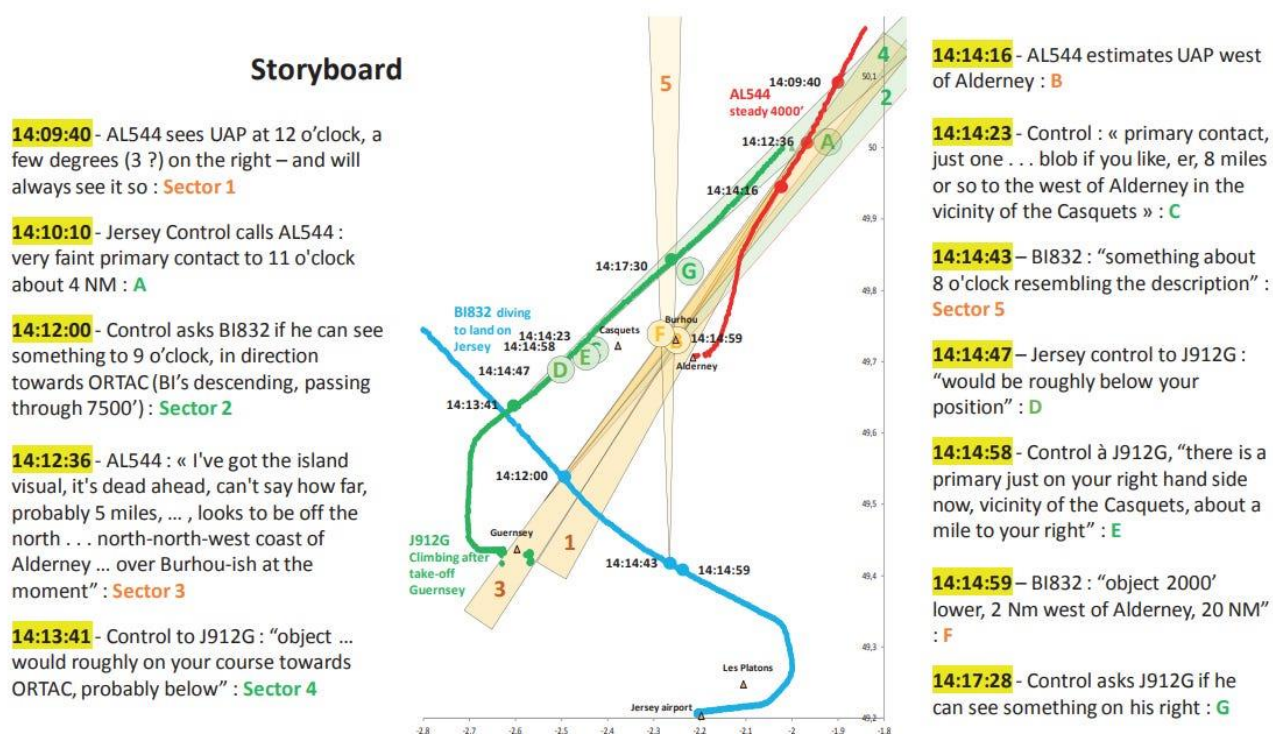
However, the imminence of the European elections will certainly delay any discussions on the subject until the autumn of 2024, when the international situation may be a cause for concern.

Together with SCU, SUAPS and other scientific ufology groups, we are also preparing a webinar on UAP observables in May 2024.

## RADAR CASE STUDY: ANALYSIS OF THE JERSEY CASE

On April 23, 2007, at 2:09 p.m., pilot Ray Bowyer was about to begin the descent to Alderney aboard his Trislander when he noticed a bright light, straight ahead and close to the horizon line over the Channel Islands. And so began a remarkable UFO hunt, full of opportunities in terms of data gathering - the kind of case that encourages further study, information sharing, and further testimony.

The sighting took place in broad daylight; it lasted about twelve minutes; the UFO had the good taste of remaining in the same position while the plane was travelling south at 130 knots, allowing the Trislander's passengers to share their captain's observation. Ray Bowyer contacted Jersey's air traffic controller Paul Kelly, who constantly exchanged radar detection information with him, cross-referencing it with the visual observations (Figure 1). What's more, Paul Kelly solicited other pilots in the air to join the hunt.



Storyboard of the UAP observation by the pilots of aircraft AL544 and B1832 (visual observation cones in yellow) - aircraft tracks are marked - possible UAP localization zones are indicated by letters - air traffic control-aircraft audio recordings are listed.

Circumstances were therefore favourable for an attempt to locate and even identify<sup>2</sup>the phenomenon, if such a thing were possible, given that it was not displaying any extravagant behaviour or extraordinary performance. But it has to be said that the research and studies carried out to date have failed to come up with a

resolution, or even to envisage a hypothesis worthy of interest that falls within the realm of possibilities.

15 years after the event, SIGMA2 has taken up the case again. What do we have today?

- oral testimonies from those involved (pilot, controller, passengers) - recordings, radar detections returned by the ELVIRA<sup>3</sup> system;
- no video or photographic recordings;
- no digital data or precise measurements, apart from the radar recordings.

SIGMA2 team's line of enquiry consists in attempting to establish a link between the recorded radar detections and the geometric elements reconstructed from the testimonies of the visual perception of the UAP, in order to come up with hypotheses.

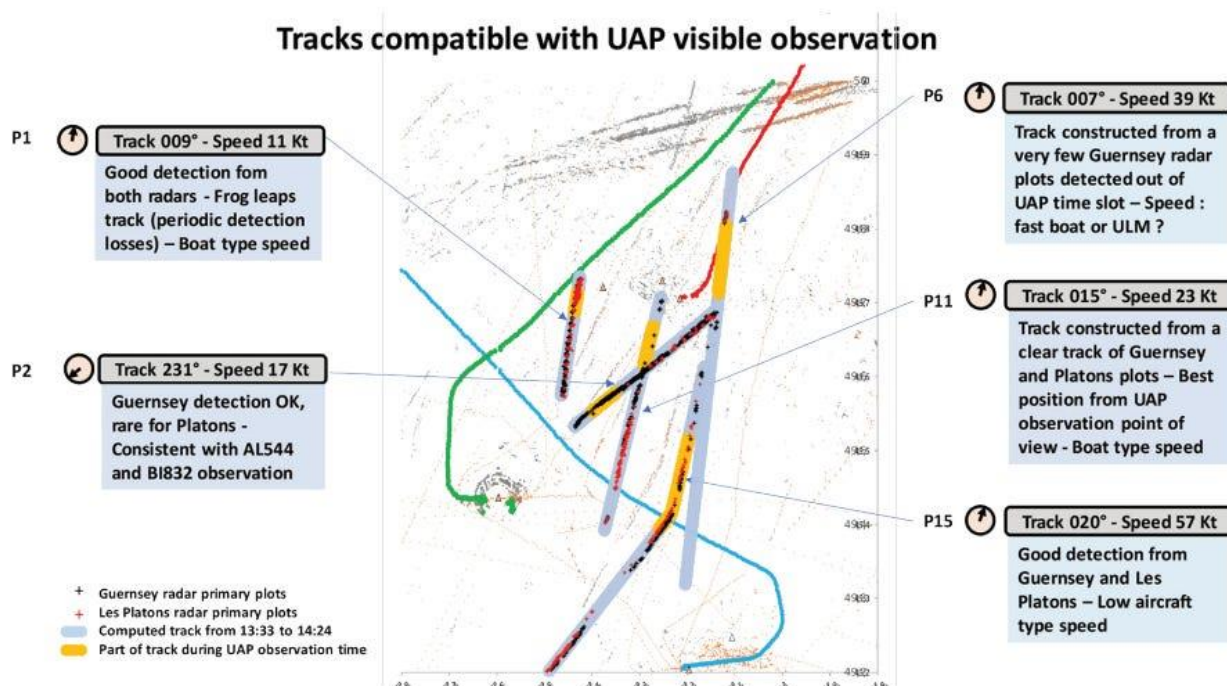


Figure 2: Grouping of radar tracks (sequence of dots) and visual observations. These are sequences of radar echoes from the primary radars of Jersey and Guernsey, corresponding to the visual observation zones envisaged by cross-referencing.

Based on the story of the event and the eyewitness accounts, we were able to identify (Figure 2) 5 groups of primary plots<sup>4</sup> whose positions and kinematics are consistent with the data collected, but whose UAP features merit closer analysis; in fact, for some of these clusters, it is not even possible to determine whether they are boats or aircraft, due to the low displacement velocity values measured, on the one hand, and the impossibility of determining the altitude of the primary clusters, on the other (as the primary radars are in 2D, without altitude measurement).

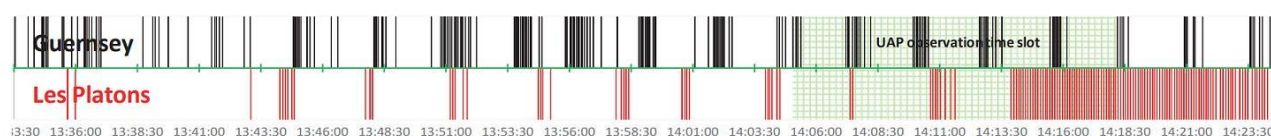


Figure 3: Jersey: chronogram of Runway 1 radar spots, as seen by the primary radar in Jersey (Les Platons) and by the one in Guernsey.



In addition, large discontinuities were observed in the detection of the points showing the trajectory of the objects, most often irregular, but also regularly spaced like "frog jumps" (Figure 3)<sup>5</sup>: the study of the operating characteristics of the radars involved in the meteorological and sea-state context on April 24, 2007 should make it possible to identify the origin of the disturbances and specify the nature and characteristics of the objects detected.



Figure 4: View of the Trislander cockpit from Google Earth.

A complementary approach is envisaged, which aims to virtually recreate (Figure 4) visual observation situations of the UAP, in order to clarify and explain the content of the testimonies, and to give substance to the study approach based on the image perceived by the witness: using a view that can be adapted in terms of luminosity, opacity of the fog layer, and size of the UAP, the witness can recreate or clarify his perception and share it in a better way. A dynamic reconstruction on an A320 simulator is also being studied.

## STUDY OF THE ELECTROMAGNETIC EFFECTS (EME) OF UAP ON ELECTRONICS

### *THE CASE OF THE TEHRAN F4S (1976)*

The physical characterization of UAP has always been a preoccupation, and their fugacity does not make measurements easy. One answer to this problem is to set up observation networks. Here, we propose another approach.

On many occasions, vehicles equipped with electronic devices (particularly aircraft) have malfunctioned during close encounters with UAP. These situations, often accurately described by pilots<sup>6</sup> (particularly in terms of distances), provide valuable information, as these aircraft behave like calibrated sensors.

Standards define levels of vulnerability (malfunction or destruction) for civilian equipment; classified specifications complete them when it comes to military equipment. It should be noted that these standards and specifications take into

account all potential threats attributable to attacks by man-made equipment at a given time; they therefore lead to a certain homogeneity across all high-tech nations. It then becomes tempting to determine, depending on the place and the time, whether, an on-board man-made source could have been the cause of the radiation found on the target (our sensor aircraft).

We began implementing the method on a very well-documented case, namely the famous Tehran case.

Indeed, on September 19, 1976, a UFO appeared over the Mehrabad air base in Iran. A first F-4 fighter jet took off to take a look. It suffered a radio failure 25 NM (45 km) from the object and returned to base. A second fighter took off with the same mission, but suffered the same failure. On its return, the pilot felt threatened and wanted to fire an AIM-9 Sidewinder missile, only for his weapon system to fail. Some hypothesize an electromagnetic attack by the UFO.

From the point of view of electromagnetic compatibility, the two coupling problems - the radio and the weapon system - are very different in nature. Let's start with the simplest: the radio.

Radio failure

Radio susceptibility is not defined by standards, but by the characteristics of the electronic components (we pick up everything we can in the band to improve range). Note that the band is easy to determine from the outside.

The question is therefore to define the characteristics of the emission source capable of saturating the radio reception chain at a given distance. The calculation is a little tedious. We'll use the usual indicator used by professionals, which summarizes the characteristics of the emission source leading to maximum coupling on the reception chain:  $Pf^2$  (the product of the source's peak power and the square of the frequency). To saturate a radio at 45 km, you need a  $Pf^2$  of around 0.1 W.Hz<sup>2</sup>.

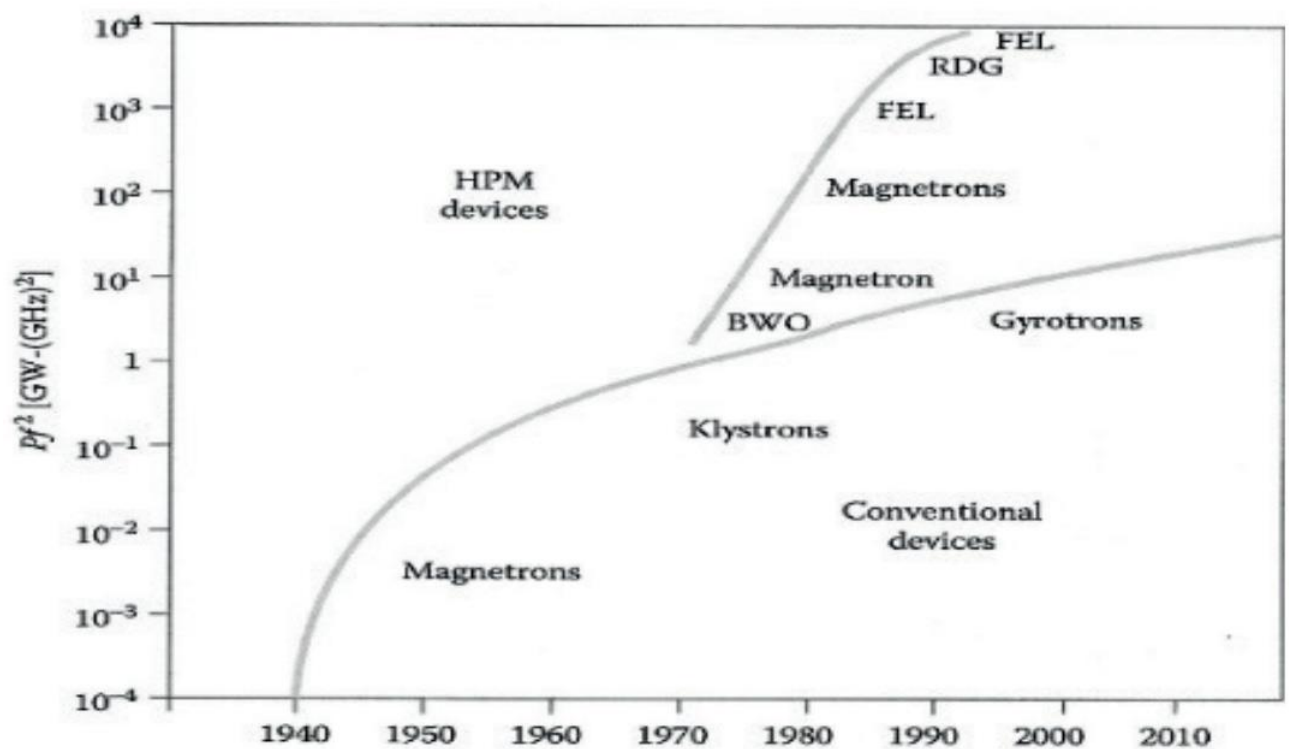


Figure 5: Plot of EM power sources and EM coupling coefficients ( $Pf^2$ ).



The table (Figure 5) summarizes the worldwide performance of microwave tubes over time.

So we can't draw any definitive conclusions, except to say that at the time, sources with a  $\text{pf}^2$  greater than 0.1 were very heavy, very bulky, very power-hungry laboratory instruments with a reputation for being "non-aircraftable" (at the time, in Europe, we weren't yet talking about electromagnetic weapons). However, we can't completely rule out the hypothesis of a secret experiment carried out over Iran, on a jumbo jet, by a high-tech nation.

The failure of the missile launch control electronics

As for the malfunction of the weapon system, the question is much more delicate. We know that the levels of aggression must be much higher than the previous ones (i.e., on-board technologies much more powerful than the one identified above, whose power level was already deemed unacceptable for aircraft). Indeed, we have a fairly precise idea of the levels of hardening that were specified at the time. However, we don't know the precise distance at which the interaction took place, but it seems that the object then maintained a safe distance of 25 NM (45 km) from the F-4, which recovered its electronic capabilities.

On the other hand, we now know that an attack against a weapon system of this type cannot be carried out a priori on a random frequency; it requires precise knowledge of the target's vulnerability frequencies. Acquiring them in situ, in real time, requires a level of electronic warfare far beyond what was being practiced in 1976 among the great technological nations, even the USA.

In short, even if we discard the hypotheses of the time, which included the incompetence of the crews, the overall picture does not allow us to draw any definitive conclusions, but remains very disturbing.

We will continue to use the method and look for other cases that might prove more likely to lead to clear conclusions.

## SAMPLE ANALYSIS

Understanding the UFO phenomenon (in the broadest sense) undoubtedly requires the analysis of samples taken after a UFO event. These samples fall into two broad categories, the first being that of samples emanating directly from the phenomenon (such as metallic samples - [G. Nolan et al, 2022](#)). We carried out investigations using samples provided by Dr. Jacques Vallée (Figure 6).

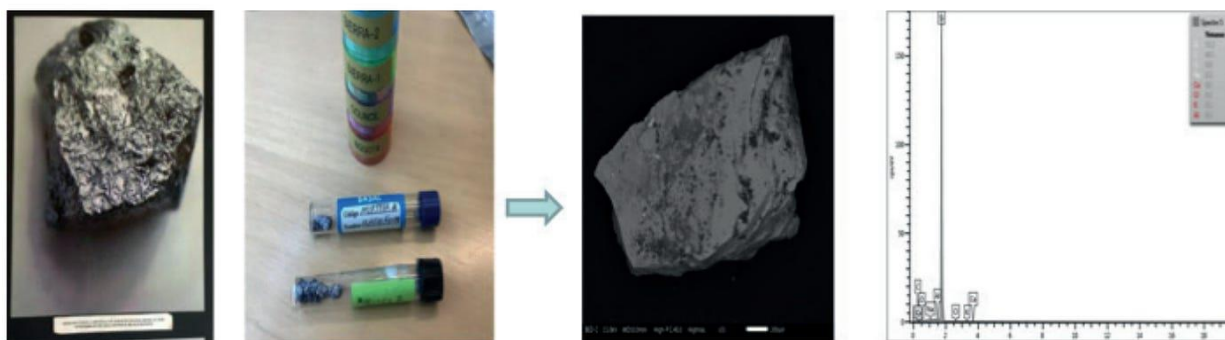
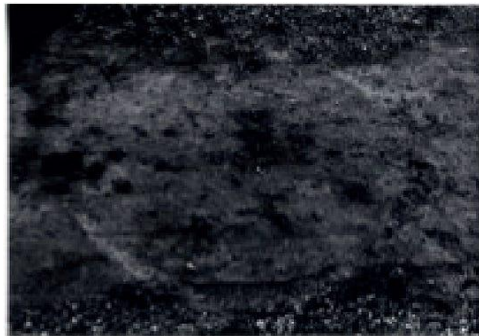


Figure 6

*Figure 6: Metallic samples provided by Dr. Jacques Vallée were analyzed using a scanning microscope for microstructures and a mass spectrograph for chemical*

*composition - these metallic samples, reputed to have a high magnesium content and recovered in Brazil in the 1960s, revealed pure silicon, which is neither a natural form of Si (widespread in the form of silica, SiO<sub>2</sub>) nor a form produced by industry in the 1960s.*

Other types of samples have also been analyzed, such as living matter that has interacted with a UAP event. In this 2nd case, it is most often vegetation, but soil samples may also have "recorded" an event with mechanical traces, as in the case of Valensole (1965), and Trans-en-Provence, in 1981 (Figure 7).



Les différences d'équipement pigmentaire inhérentes au vieillissement (abaissement des chlorophylles, augmentation des xanthophylles) déjà observés chez l'orge (BOUNIAS, Thèse 1972) se retrouvent ici sans équivoque dans les échantillons prélevés à 20 m.

Les échantillons provenant de la périphérie (à 1,5m) montrent un affaiblissement général des teneurs pigmentaires. Quel que soit l'âge des feuilles, les chlorophylles A sont abaissées de 33%, les chlorophylles B de 28% et la phéophytine de 31% : ces trois valeurs montrent une grande homogénéité.

Parmi les caroténoïdes, le plus affecté est le  $\beta$  carotène qui est abaissé de 50 à 57% au voisinage du "phénomène", ainsi que la violaxanthine (-80% chez les jeunes feuilles).

Figure 7: Mechanical and EM effects on the environment - Trans-en-Provence case - vegetation deterioration and aging (case investigated by GEIPAN)

In some cases, the vegetation itself, or human tissues, may have undergone temporary or permanent chemical alteration that appears to be the consequence of energy radiation (IR, microwave, gamma, X, etc.). This was the case at Trans-en-Provence (1981), Valensole (1965) and Landévennec in Brittany (1975). Analytical work has been carried out on vegetation samples taken at Trans-en-Provence, showing the alteration of chlorophyll.

Within the Sigma2 Commission, studies are underway to characterize electromagnetic effects based on recovered samples and the radiation(s) responsible for this deterioration. Ultimately, the radiation(s) could be of the same nature as those responsible for electronic malfunctions in aircraft or vehicles. More work needs to be done to find out more about the interaction mechanisms involved.

#### *OBSERVATION - THE FRIPON NETWORK*

IMCCE's Fripon network is based on a network of visible fish-eye cameras, spread across France, to detect and track meteorites, supplementing optical trajectory with Doppler measurements using passive radio frequency receivers.

A study is currently underway to improve camera image processing using artificial intelligence techniques, a domain where ONERA could help. Raw data might also be of use.

In addition to the Fripon network, a complementary observation loop could be set up, taking advantage of the Fripon network's detection alerts to target sensors such as cameras and spectroradiometers for more detailed study of poorly understood phenomena, such as certain types of ball lightning, transient thunderstorm phenomena (TLE), Farfadet and even UAP (Figure 8).

The Farfadet network could complement this observation loop.

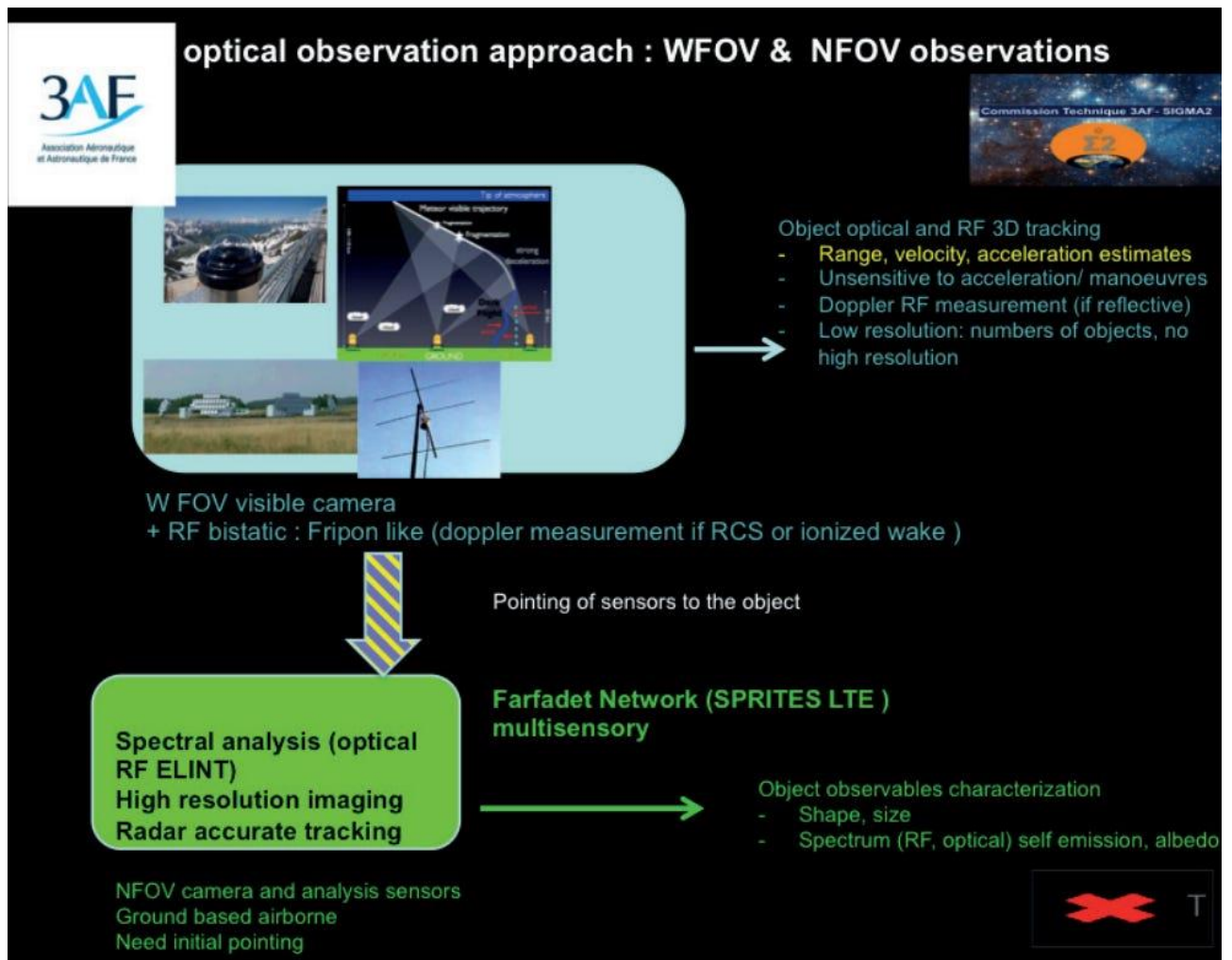


Figure 8: Fripon optical and RF network - Observation loop

### *OBSERVATION: THE FARFADET NETWORK*

Observing luminous storm phenomena in the upper atmosphere.

Unique in its field, the FARFADET network of stations forms the core of the eponymous research program initiated, operated and conducted by the Lightning Research Laboratory since 2019 to study lightning storm phenomena in the upper atmosphere.

The FARFADET network consists in setting up automated optical observation systems (cameras) for "sprites". In short, they are known as TLEs (Transient Luminous Events). These strange luminous phenomena that occur in the upper atmosphere during thunderstorms intrigue researchers. "Leprechauns", "sprites", "elves" and "blue jets" (Figure 9) are just some of the evanescent phenomena that illuminate the atmosphere between the tops of cumulonimbus clouds (thunderclouds) and the upper atmosphere, up to an altitude of around 200 km, at the edge of space. To date, hundreds of leprechauns have been captured, with the data helping to greatly improve the typology of these phenomena. The FARFADET network also records all other atmospheric phenomena in the visible range (bolides, clouds, aircraft, ISS passes, light activity, etc.).





Figure 9: Farfadet optical network, Farfadet image.

Six FARFADET stations (Figure 10) are currently in service in France (in Alpes de Haute-Provence, Alpes-Maritimes, Hautes-Alpes, Aisne, Ardèche and Cantal), providing invaluable scientific data on these largely unknown phenomena. Three new stations will be commissioned in 2024 (including two abroad), further extending the possibilities for researching and observing leprechauns.



Figure 10: Farfadet optical network, cameras.

### ***OBSERVATION: THE VASCO PROJECT***

Dr Beatriz Villarroel presented the projects she has been working on during Webinar 1 on UAP observables organized by 3AF and broadcast on June 14, 2023. One of them focuses on the disappearance and appearance of celestial light sources during a century of observations (VASCO) where astronomers, machine learning

experts and citizen scientists search for disappearing objects in the hope of discovering new physical phenomena or techno signatures.

To help them, scientists are using pre-Sputnik images from the Mount Palomar telescopes that were exposed between 1949 and 1956 and digitized more recently, as well as modern sky images from the PanSTARRS observatory (post-2015). The vast effort is carried out with both automated methods and citizen science efforts. The latter are carried out in collaboration with scientists, students and amateur astronomy associations in Africa, notably Algeria and Nigeria.

The citizen science project has now collected all the results from its first phase, and the document is currently being written up.

The project has led to the discovery of some interesting short-lived transients (Villarroel et al. 2020, *Astronomical Journal*), and in some cases you can see several transients appearing and disappearing in a small part of the sky in a short space of time. Several examples have been shown.

In one case, nine stars of a  $\sim 18$  to 19 magnitude visible in an April 12, 1950 image taken at Mount Palomar (see Villarroel et al. 2021, *Scientific Reports*), disappeared an hour later. The same is true of several aligned objects (Villarroel, Solano, Guergouri et al. 2022, arXiv), as well as three very bright stars (Figure 11) of a  $\sim 15$  to 16 magnitude from an image of April 19, 1952 (Solano et al. 2023, *MNRAS*). Various hypotheses have been put forward to support these results, including contamination of the plates by radioactive particles from unrecorded atomic bomb tests, gravitational lensing effects and the possibility of actually seeing artificial objects outside the Earth's atmosphere in the pre-Sputnik era.

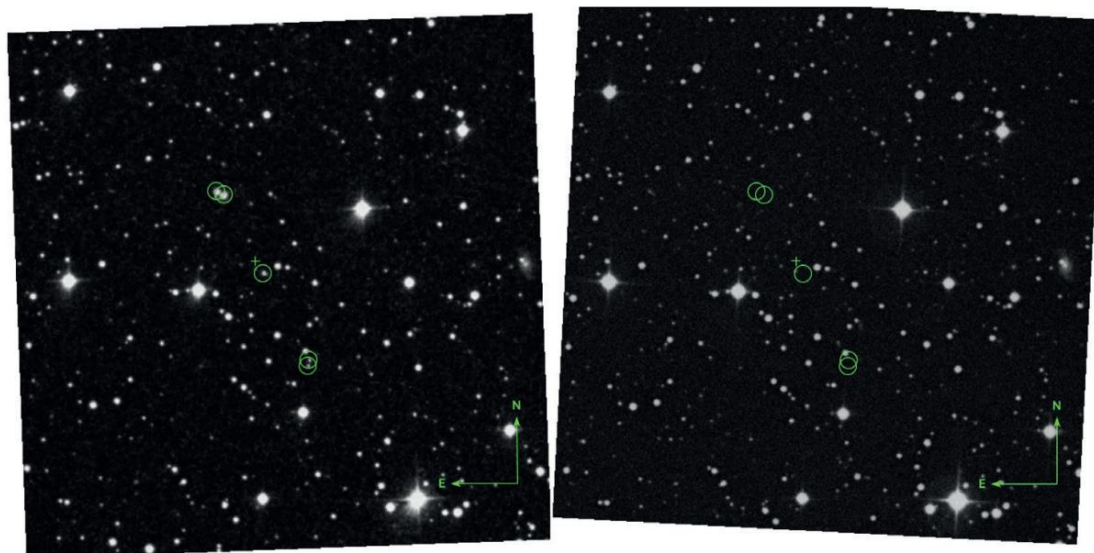


Figure 11: Photos of the photo plates exhibited by Dr Beatriz Villarroel of the Vasco project, Stockholm University, WE of July 27 1952, left at the time of the Washington events (3 fixed star dots?), right after the events. The points surrounded by a green circle have disappeared... neither stars, nor geostationary satellites that didn't exist. What are they?

The example of the triple transient of the three stars is curious, because of its astonishing coincidence and synchronicity with a famous UFO event (Washington UFO Flap 1952), i.e. the Washington carousel, a veritable aerial ballet of UFOs seen

visually and on radar, chased in vain by fighter planes overwhelmed by these elusive craft. It turned out that the paper's best candidate ("Candidate 5") with aligned transients (Villarroel, Solano, Guergouri et al. 2022, arXiv) also occurred during the Washington crisis, this time on July 27, 1952 (the paper mistakenly states "July 28"). Several members of the VASCO team have now joined forces to launch a new project, ExoProbe, which aims to search for such strange transients with carefully selected modern equipment in the modern sky, in the hope of verifying the phenomenon.

Dr. B. Villarroel was invited to present her work at the UAP hearing at the European Parliament on March 20.

[1](#)

In 1959, a UFO was observed from an F89 fighter following a B52, which made recordings of the UFO's electromagnetic emissions on frequencies similar to those recorded by the RB47 two years earlier.

[2](#)

First locate, then identify: in the context we're interested in, this means being able to establish an objective identity relationship between the observed phenomenon and a known phenomenon (identifying a UFO makes no sense!).

[3](#)

ELVIRA: radar data processing, transmission and merging system in service at the time of the incident on the Channel Islands for air traffic control; the data transmitted and recorded are not raw data: they have been extracted from the return signals received by the radars through an analog and computer processing process designed to eliminate what is not directly useful for the work of air traffic controllers.

[4](#)

Primary plot: graphic representation, on the air traffic controller's screen, of a raw radar detection of an object, retained at the end of the filtering process (see above). In contrast, a secondary plot is an aircraft plot that enhances the return radar signal with identification, position and flight parameter information transmitted via a transponder. In the case of Jersey, the primary plots come from 2 radars, one located on the Guernsey-Alderney aerodrome, the other on the island of Jersey (Les Platons).

[5](#)

The P1 track (Frog leaps track) is representative of the phenomenon of periodicity in the presence of leaps in figure 3. The plots from the Guernsey radar are concentrated in packets of 5 to 18 plots over periods of the order of a minute; the average interval between packets is 2 minutes. Plot packets from the Platons (Jersey) radar are less dense (4 to 8 plots per packet) for absence periods of 2 to 3 minutes, but the phenomenon ceases at 14:14, after which detection is observed on every antenna turn.

[6](#)

A Preliminary Study of Sixty Four Pilot Sighting Reports Involving Alleged Electro-Magnetic Effects on Aircraft Systems.