

ASTROCULTURE AND UFOLOGY

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(English version translated from Spanish)

Abstract

This article examines a new concept that has recently emerged from the contributions of the German historian Alexander C.T. Geppert, for whom a series of heterogeneous cultural elements, but related to the Space Age, can be grouped into a single field of historical study, which he calls Astroculture. After reviewing the traditional links between the Space Race and ufology, the paper analyzes how the latter can be inserted into Astroculture, and the consequences that would follow.

*Alegria,
Ses òrbites en sincronia,
I ets ovnis se pinyen i deixen un cràter
Per sempre dins sa meua vida...
Alegria!
—Antònia Font (Alegria, 2002)*

Munich, 4 August 2018. It was not long ago, in April of the same year, that the ESO Supernova was inaugurated on the outskirts of the Bavarian capital, on the enormous Garching campus. There, next to the headquarters of the European Southern Observatory and the Max-Planck-Institut für extraterrestrische Physik (the name alone makes one dizzy), stands a curious building, larger on the inside than on the outside, where —before the COVID-19 pandemic— one could visit the astronomical museum with the largest planetarium in the German-speaking countries. It goes without saying that those of us who like things from outer space have trouble finding attractive tourist destinations here on Earth, and so we don't usually miss out on such occasions. In addition, you can take advantage of the trip to also enjoy the Allianz Arena and the Bayern museum (something that no good football fan, no matter how much of a fan of Martians they are, can miss), and even the most nostalgic can then head to the Olympic Stadium and read the graffiti that fans from all over Europe wrote on its inhospitable metal surfaces.

In those hot days, the author of these lines, well accompanied by his brother and his family (and leaving aside the anomaly represented by some Mallorcan tourists strolling through the outgoing markets), was able to see how the ESO Supernova and its facilities more than fulfilled the previous expectations. We won't go into details, but it is worth mentioning that on one of the divisions of the spiral that structures the permanent exhibitions, stood out a *Sind wir allein?* (Are we alone?) as an introductory title to the space dedicated to exoplanets. If you think about it, these two concepts are not directly related, and the connection between the two seemed gratuitous to me. More surprising was that, after the basic notions, a poster was displayed as a tourist attraction to visit (when you can, and I'm not talking about the coronavirus...) the idyllic planet Kepler 186f, only 500 light years away from Earth, and where apparently the grass grows in a deep red colour [1]. It was not the only shocking thing, because from a computer you could play to configure an alien by altering the parameters of gravity, ozone, water, oxygen and temperature of its home world, which was very

much to the liking of my nephews. As well as another surreal gadget that consisted of a bicycle with which you could reach the speed of light pedaling through the streets of Munich...

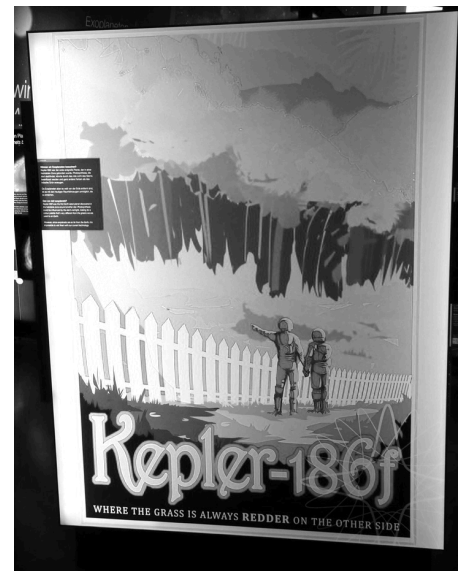
But let's not get off the subject. In short, in that Germanic temple of astronomy and space research I found, as a presentation of the extrasolar planets, a singular mixture of the scientific and the artistic, and between what was established by the most refined human technology and what was left to the purest imaginative speculation. Again, extraterrestrials and their mysteries seemed unable to be confined to a single field, and they leapt methodological boundaries to occupy both the scientific and the cultural, and even the ufological, realms. Indeed, although there were no flying saucers on display at the ESO Supernova (that was as far as we could go...), it was the eyes of a ufologist that contemplated those elements, even though it was not long before I disavowed that denomination, when in February 2020 I was introduced on Onda Cero, at my own request, as a “scholar of the cultural aspects of extraterrestrial life”, shortly before a rooster was heard crowing three times [2].

However, and leaving aside these egocentric biblical references, the coexistence of these three approaches to extraterrestrials, coinciding in time and space, must necessarily lead us to think that they must share something, that there must be some common denominator that unites them despite their disparities. The answer was not very evident until a few years ago; when, precisely in Germany, a new concept began to be talked about: astroculture.

The irruption of astroculture

Astroculture does not have very clear precedents. It can be understood that ideas such as astrofuturism (Kilgore, 2003) [3], astrosociology (Pass, 2004) or, in general, the impact of spaceflight on society (Dick & Launius, 2007; Dick, 2020) served as a basis for it; although these would be indirect influences rather than direct foundations, especially if we consider the already open and not very concrete character of these proposals.

Actually, astroculture owes its creation to the efforts of the German historian Alexander C.T. Geppert (Mülheim an der Ruhr, 1970), who began to outline this concept in a contribution to the collective work *Societal Impact of Spaceflight* (Dick & Launius, 2007), without naming it yet (Geppert, 2007). The following year the term appeared for the first time in a sketch of the European



Poster in ESO Supernova (photo by the author)



Make your own alien (photo by the author)

pioneers of spaceflight (Geppert, 2008a), although still confused with astrofuturism, in a work where there is a first mention of UFOs.

That same year, from February 6 to 9, Geppert brought together nearly seventy scholars from twelve countries at the German University of Bielefeld to discuss the relevance of outer space in the European cultural imagination of the twentieth century (Geppert, 2008b); among them Pierre Lagrange and James I. Miller, who in their contributions addressed aspects related to the UFO phenomenon. The symposium papers resulted in the book *Imagining Outer Space. European Astroculture in the Twentieth Century* (Geppert, 2012c), the first of a trilogy that the German historian would dedicate to this new field of study.

Between September and October 2011, the same year that the Íkaros Foundation decided to dissolve, Geppert organized a workshop in Berlin on the history of UFOs [4], in which various aspects of UFOs were discussed in depth, focusing on their socio-cultural consequences, but without explicitly linking them to the idea of astroculture.

In 2012 a new symposium also took place in Berlin, which continued the line initiated in Bielefeld, and whose contributions were compiled in the volume *Limiting Outer Space* (Geppert, 2018), focused on the crisis of the space program after the Apollo project. Shortly before, Geppert published in the journal *History and Technology* the article "Rethinking the Space Age: astroculture and technoscience" (2012a), where he provides for the first time a definition of astroculture:

Astroculture is defined as comprising a "heterogeneous array of images and artifacts, media and practices that all aim to ascribe meaning to outer space while stirring both the individual and collective imagination". Building on early forms of science fiction *avant la lettre* authored by Jules Verne, H.G. Wells, Kurd Lasswitz and numerous others, astroculture coalesced in the late 1920s together with the rise of the international spaceflight movement; saw a first peak during the so-called "Golden Age of Spaceflight" in the early 1950s, that is during the decade *before* Sputnik; and found its global apogee in December 1968, with the first photograph of a rising Earth seen from space taken by the astronauts of Apollo 8. (Ibid: 220)

In the same publication appeared another article of his, "Extraterrestrial encounters: UFOs, science and the quest for transcendence, 1947-1972" (2012b), in which for the first time ufology appears explicitly as part of astroculture. Indeed, Geppert states that

If the overall aim is to design a comprehensive, "alternative" state-of-the-art cultural history of the Space Age, then not only UFOs and contact claims, but the entire range of its supposedly obscure and sometimes-labelled "pseudo-scientific" features such as space mirrors, space stations and space colonies should be seen from the vantage of the historical actors, with all their varied beliefs, interests, and actions, and integrated into the analysis. (Ibid: 337)

In this regard, he goes on to say,

In other words, the UFO phenomenon arose at the very beginning of what has sometimes hailed as the "Golden Age of Spaceflight," and must be considered an integral element of a comprehensive, all-encompassing astroculture. Classifying UFOs and the heated, long-term and never-ending controversies they engendered as "pseudoscientific", peripheal or petty is to miss their historical import. (Ibid: 339)

Finally, Geppert brought his colleagues together again in Berlin in 2014 for a new symposium, the fruit of which was the third volume of the trilogy, *Militarizing Outer Space* (Geppert et al., eds.,

2019), devoted to the darker aspects of astroculture. In his final chapter, he congratulates himself that.

Fortunately this young, yet flourishing field of historical research now features long-forgotten space *personae* and amateur lobby groups, sounds of space and space toys, obscure TV shows and B movies, reports of UFO sightings and alien encounter narratives all previously considered fringe, if not entirely irrelevant to serious historiographical attention, let alone collectively understood as forming part of a larger historical undertaking. (Geppert 2019: 374)

In short, what Geppert proposes is to bring together a whole series of hitherto dispersed cultural elements (including UFOs, but also many other artistic, social and scientific manifestations) in a single field of historical study that he has baptized with the name of astroculture. The common denominator of all these parts integrated in the new concept is their link—more or less direct, more or less necessary—with the Space Age, understood in a broad sense [5]. In this way, they would take on a new meaning insofar as it would be possible to understand them no longer as separate or unconnected issues, but as particular expressions of a more extensive idea about the conquest of space and its multiple consequences. As Geppert himself points out (Radtko, 2016):

“Astroculture” has indeed proven an excellent conceptual tool as it allows us to overcome static and long overwrought dichotomies. Trying to discriminate between, say, "science" and "fiction", or "popular" and "elite", is not only bound to fail but also pointless. Outer space derives its continual fascination from being both at the same time.

UFOs in the Space Age

*As a result of our entrance into the Space Age,
the idea of UFOs has rapidly become plausible.*

— Hall, R.H. (ed.)(1964). *The UFO Evidence*. Washington: NICAP, p. 179.

UFOs, therefore, almost as a spice of astronautics? It is not an idea that, at first glance, can easily marry with the mentality of most ufologists, for whom there is certainly no major relationship between ufology and rockets; starting with the pointed observation that flying saucers preceded artificial satellites by more than a decade, if we consider June 24, 1947 (date of Kenneth Arnold's observation) and October 4, 1957 (launch of the first Sputnik), respectively, as the starting point of both disciplines. However, the development of space exploration does not have such a specific starting date, since its theoretical formulation goes back to much earlier moments in time (at the beginning of the twentieth century, especially in the twenties), as mentioned in note 5; and therefore this objection, unless reconsidered, acquires a very relative weight.

In addition, sometimes ufologists themselves have resorted to astronautics as a specific explanation for certain incidents. There is abundant literature that deals, for example, with the casuistry generated by rocket launches (Ballester Olmos & Campo, 2001), re-entries into the atmosphere (Ballester Olmos & Morey, 2000), or the artificial satellites themselves (Gohd, 2020). Special mention should be made of cases involving astronauts, or on the occasion of the launching, mission or landing of spacecraft. James Oberg has devoted a large part of his articles to analyzing these issues, with such a vast production that it is impossible to summarize [6].

But, apart from these interested references, ufologists have hardly used the astronomical achievements for reflections of a general, not particular, nature on casuistry. And they should have done so, because, if we stick to the strict historical sequence of the appearance of flying saucers in our world, long before the foundational sighting of Kenneth Arnold there had already been a first wave of cases of phantom *rockets*, especially in Scandinavia but also in other countries [7]. However, blurred by Cold War paranoia and the fear of possible Soviet secret weapons, this episode has never been contemplated from an astrocultural perspective, and has been equated to a hysteria similar to that of phantom planes (before and during World War I) and mysterious airships (late 19th century), as a mere precedent to the extraterrestrial fever that was about to break out.

When it happened, certain enthusiastic pioneers (rescued from oblivion in Maurizio Verga's exhaustive work *Flying Saucers in the Sky*) tried to make the most of the opportunity. Thus, in March 1947, a certain James R. Randolph (a major in the US Army and a notable mathematician and engineer) proposed establishing a permanent base on Mars in order to gain a strategic advantage when it came to launching missiles at the enemy. This could be achieved by means of rockets travelling at 26,000 miles per hour and conquering for American weapons the Red Planet, which was of course inhabited. As Verga (2020: 83) points out, all this was nothing but pure fantasy, but it suggested that interplanetary travel was just around the corner. The same author reports cases, in that same year, of recoveries in the USA and Canada of what seemed to be the remains of rockets of unknown origin, almost like local versions of H.G. Wells' *War of the Worlds*, or of the aforementioned Scandinavian ghost rockets (ibidem: 83-87).

Another example of this style is the figure of Robert Lee Farnsworth, a fortune teller who combined this circumstance with his fondness for astronomy and astronautics, and who was the founder (in 1942, or even earlier) of the United States Rocket Society. Before the end of the Second World War he had already been interested in the possibility of acquiring land on the Moon, and days after the end of the conflict he asked the US government for authorization to use atomic energy to propel rockets, which would allow (travelling at seven miles per second, a little faster than Randolph's) to easily visit the entire galaxy. In December 1945 he declared himself capable of sending a rocket to our satellite in two years for the modest budget of \$350,000. And already in July 1947 he made it clear that the trip to the Moon would serve to solve the mysteries of the lunar craters, which in his opinion were the result of a nuclear war between two opposing peoples who, not content with the damage caused, had also caused the collapse of Atlantis. Farnsworth was one of the first proponents of the extraterrestrial origin of UFOs, since also in July 1947 he had already pointed out that they could come from Venus, or be "electronic eyes" of Martian origin. As if this were not enough, in 1952 he apparently wrote a telegram to President Truman warning him not to attack flying saucers, because of the consequences that this could have (ibidem: 165-171).

Along with these previous examples of general links between astronautics and ufology, it should not be forgotten that specific episodes of the former have had an impact on the development of the latter. The most significant was the launching of the first Sputniks, which Martin Kottmeyer (1996) cites in support of his hypothesis of paranoia as the cause of the UFO waves [8], considering that the blow to the self-esteem of the Americans when they were overtaken by the Soviets spurred, among other things, the sightings of flying saucers. There are many works that have developed this idea of the impact suffered by the USA because of the putting into orbit of the first artificial satellite (it is said that Lyndon B. Johnson compared it to the Japanese attack on Pearl Harbor), even incorporating the ufological climate as one of its direct consequences (Dickson, 2001). In the words of Donald Menzel (1963: 172-173):

[...] on October 4, 1957, when Sputnik I went into orbit and opened the door to outer space, people once more began to watch the heavens uneasily. Uneasiness became alarm a month later when, with American satellites still sitting on the launching pad, Sputnik II roared into space. A ball of fire floating over a field in western Texas provided the small stimulus needed to turn alarm into hysteria, and for several weeks people tended to see spaceships in every cloud and every unfamiliar light in the sky.

Jacobs (1975: 138) credits Menzel with having suggested to the Air Force this explanation for the 1957 wave, which was picked up in the official reports. According to Peebles (1994: 126-127) it was characterized by the abruptness of both its beginning and its end, so that, for a total of 1,006 incidents recorded during the whole year, 406 corresponded to the period January-September, 103 to the month of October, 361 to November, and 136 to December [9].

Although more recent historiography (see, among others, McQuaid, 2007) has greatly relativized the real impact of Sputnik on US policies in the field of astronautics and the development of rockets or missiles, stripping it of both the supposed hysteria it would have provoked and its romantic vein, the truth is that this episode can be taken as a clear example of how the space race came to condition UFO sightings. Other later milestones, however, do not seem to have had the same influence on the casuistry.

Be that as it may, all these examples serve as a demonstration of the interrelations between ufology and the development of the so-called Space Age, as well as of the little attention they have received in general [10]. It remains to be seen how all this fits in with the concept of astroculture.

Facts and stories

If we have learned anything over the years, it is that ufology is not the exclusive patrimony of those who cultivate it, but, on the contrary, it is a collective expression of the whole community. Certainly, ufologists still find it hard to admit this, as if their discipline were a closed preserve that no one and nothing else can enter, impermeable to ideas and concepts from beyond its hermetic borders. But it is not necessary to travel to any planetarium in Munich to realize the existing intertwining between UFOs and the rest of the world, whether they are artistic creations, scientific postulates or philosophical approaches. And it is necessary to know how these external realities have contributed, surely more than the ufologists themselves, to the conformation of the ungrateful discipline that they seek to keep pure and away from any outside influence.

In this sense, it should be remembered that for decades it has been accepted that ufology does not really investigate UFOs, but—in Hynek's words (1977: 8-10)—reports of UFOs, which are not the same thing. As such, they are not properly *facts*, understood as events with an objective reality that would refer to inexplicable incidents caused by extraterrestrials or unknown entities; although traditionally they have been considered as such, and more than one continues to interpret them in the same way today. Therefore, they cannot be taken as arguments to support hypotheses of a physicalist type, since it is not possible to attribute to them an objectivity such as that possessed by the data obtained by means of the methods of the natural sciences.

Instead, it is more correct to understand them as *stories*, which would deal with phenomena beyond what is admitted by science, elaborated by the witnesses, alone or in complicity with the ufologists, and by all the cultural and social conditioning factors that influence both. These accounts do not need to be objective, and in fact they cannot be objective because of the way they originate, but they do need to have a culturally recognizable expression in order to be at least intersubjective and transmissible to other people. This expression will usually be oral, but it can also take the form of a literary work, artistic production, or any other form that can be communicated. However, in order for it to be conceptually delimited, both the one who generates it and the one who receives it must share a common background that allows it to be properly identified; that is to say, they must be situated in the same referential framework that structures and gives meaning to the story.

For a long time, this role has been played by the *belief* in extraterrestrial visits to Earth, and more than a few ufologists remain comfortable with this situation. At this point, however, a distinction must be made between this frame of reference and the explanatory role played by hypotheses that seek to clarify the causes of reported sightings. From this perspective, one should not confuse, for example, ETH as an explanation of recorded incidents with the belief in extraterrestrial visitation as a common cultural locus for the interpretation of casuistry. Often ufologists tend to confuse the two concepts, thinking that 20th century ETH also resolves historically earlier events; or that movies about Martians are funded, who knows why, by obscure government agencies. In other words, independently of the ETH (or any other hypothesis) created within ufology, there is a cultural tradition arising outside of it —albeit clearly interconnected— that does not properly serve any explanatory function, but acts as a repository of meaning for ideas about, in this case, extraterrestrials. But they are different things, and so it makes no sense to include within ETH the analysis of discourses on the plurality of inhabited worlds, theosophy, or pre-World War I science fiction; nor to present ETH as the common denominator of SETI research, alien advertisements, or chupacabra sightings. Needless to say, the cultural framework also offers no solutions for the origin of the sightings or their evaluation.

Well, if we refer specifically to this cultural tradition, the stories that ufology deals with have focused, as we said, on the belief in alien travels to our world. Even PSH, for example (and here the necessary separation between the explanatory aspects of the hypotheses and the associated cultural aspects will be better understood) has to refer to this idea in order to delimit what kind of phenomenologies it can try to explain. However, this is not the only possible option. If, on the other hand, leaving the narrow gorge through which ufology commonly passes, we raise our heads and look a little further, we could see that this same task could be carried out by astroculture. In such a case, the object of ufology would be the inexplicable stories (beyond what is known to science), with a culturally recognizable expression, which are inserted within the tradition of astroculture.

Towards a new paradigm for ufology

Although it could be thought that continuing to debate epistemological issues related to ufology is already overdone at this point, the truth is that anything that allows us to better understand both the discipline itself and the object of its concerns can be considered positive. Having said that, we think that, in the context of what we have been affirming, the substitution of the belief in extraterrestrial visits by astroculture (which entails a new definition of the object of study itself) as a frame of reference implies a series of advantages. The first of these is that it eliminates (or greatly

reduces) the ambiguity that currently exists between this cultural tradition and the ETH itself, which would avoid many of the confusions that can occur today. In fact, astroculture would operate better for these purposes, since it is not so tied to a specific explanatory hypothesis as the belief in visitors from outer space is now with ETH. At the same time, this allows us to have an object of study that is more detached from any hypothesis.

On the other hand, the connection with astroculture makes it possible to better delimit the temporal scope associated with ufology. Indeed, for most researchers, it all began on June 24, 1947 with Kenneth Arnold, although it is true that precedents to this first sighting are often mentioned. Among them, the ghost rockets of 1946, the observation of Nicholas Roerich in 1926, and the airships of the late nineteenth century, not to mention other older ones. Therefore, if the starting point of astroculture can be established in the decade of the 1920s, this would allow us to include, for example, the Scandinavian casuistry of 1946 clearly within the object of study of ufology, not as an antecedent, but as a full member of phenomenology. The cut in these dates, moreover, would categorically leave out the casuistry of nineteenth-century aircraft and phantom planes prior to and contemporaneous with the First World War, whose ascription to ufology has always been problematic and whose characteristics are different from those of later incidents.

Thirdly, it should be said that this temporal delimitation is at the same time a conceptual delimitation, insofar as it reflects the link between the events and the notion of astroculture. Thus, to return to the example of the 1946 casuistry, it is no longer a merely chronological ascription, but the very characteristics of its story (rockets, possible secret weapons, Cold War, government intervention, etc.) demand its insertion in an astroculturally inspired ufology. On the other hand, Roerich's vision, although dated in the 1920s, is still that of a theosophist, and therefore does not fit in well with the contents of astroculture, so it should not be considered properly ufological, without prejudice to its value as a precedent.

This delimiting function is also applicable to certain phenomenologies bordering on UFOs, whose belonging to ufology, despite their *post-Arnoldian* character, has also been discussed; and in fact, from the new point of view we are now examining, they are hardly related to the astrocultural heritage. Here we could mention all the anomalies of a Fortean type, such as cryptozoological anomalies (bigfoot, chupacabra), mysterious disappearances (triangles of death) or the fall of strange objects (meteorites with crew members, angel hair, blocks of ice), etc., which have sometimes been linked to UFOs. Another set of exclusions would affect the reinterpretations of the past, so to speak, carried out by astroarchaeology and clipeology, since they are based on taking the cultural framework of extraterrestrial visits back to moments prior to their origin, and outside of that they lose all virtuality if they are replaced by astroculture. Finally, there would be another series of incidents that only with many nuances could continue to be admitted in the bosom of an astrocultural ufology. These would be those with the absence of UFOs, in which the concurrence of presumed crew members (solitary beings, abductions) or presumed effects (crop circles, cattle mutilations) of the same are invoked, presumptions whose argumentation—to be accepted—should be more elaborated than the one offered so far by the traditional ufologists who defend them [11].

Finally, orienting ufology towards astroculture makes it possible to insert the former in a broader cultural framework than it had until now, since the contents of the latter are undoubtedly more numerous. But it is not only that the variety of topics is much greater, but also that, with the new definition of the object of ufology that we advocate, it is not necessary to limit oneself only to an

examination of alleged facts, since it allows to include at the same time that of the narratives that encompass them. In this way, if after all the narratives are the raw material on which ufologists would work, this goes far beyond the mere explanation of casuistry, and would allow us to include without ambiguity the cultural productions of all kinds based on UFOs as a legitimate part of ufological studies, in coherence also with the nature of many of the elements that constitute astroculture.

Coda

Munich, 4 August 2018. The visit to the ESO Supernova culminated with a screening in the planetarium of the film *Phantom of the Universe* (João Pequeno, 2016), specially adapted for the domes of this type of facility. It could have been any other, but we got to see this one, which examines the history of and research into dark matter, and which so reminded me of my visit to CERN in Geneva a year earlier. Needless to say, we still don't know what dark matter is, invisible to our eyes but capable of shaping the structures of entire galaxies. Perhaps we will never know, as happens with so many other things in life, and even —and above all— in ufology. But that doesn't stop us from investigating, and we keep asking questions and changing the answers with each new advance, only to then change the questions and continue looking for other answers. That's what we ufologists are experts at, even though we have it much worse when it comes to making progress. But they can't take away from us having tried, in better or worse ways, and that's what this article was about.

Far from pretending to fix immutable truths —God forbid— the proposals I have presented here should serve for reflection and debate on issues beyond the usual and almost domestic matters that usually occupy the ufological community. I don't think that this way we are going to discover the mysteries of dark matter, to say the least, although I have no doubt that it will be time well spent. And whether in heaven or on earth, all progress is always welcome, even in ufology.

Notes

1. The poster, in fact, is a commission from JPL (*Visions of the Future* series) to David Delgado's creative team, materialized by the artist Joby Harris: <<http://www.davidjdelgado.com/new-page-1/>> [accessed: 12/06/2021].
2. In the radio program *Más de uno* of February 21, 2020, dedicated to the efforts of science to communicate with hypothetical extraterrestrial civilizations, I intervened (or tried to do so) as an expert on the question, although it is not exactly my specialty... Available at: <<https://bit.ly/3uFzxLj>> [accessed: 12/06/2021]
3. Astrofuturism is the tradition of speculative fiction and science articles initiated by scientists and science popularizers during the space race of the 1950s (Kilgore, 2003: 2). It also incorporates the idea that space, as a utopian component, will be the cornerstone of humanity's future (Geppert, 2007: 599).
4. <<https://www.hsozkult.de/conferencereport/id/tagungsberichte-4144>> [in German, accessed: 12/06/2021]. This was an event of the Emmy Noether research group *Die Zukunft in der Sternen: Europäischer Astrofuturismus und außerirdisches Leben im 20. Jahrhundert* (The future in the stars: European astrofuturismus and extraterrestrial life in the 20th century). Further activities not cited in the text are

collected in Radtka (2016). This group is still active today and even has a presence on Facebook: <<https://www.facebook.com/groups/astroculture>> [accessed: 12/06/2021].

5. Although it is usually considered that this era began on 4 October 1957 with the launch of Sputnik 1, Geppert leaves this as an open question (2012d: 6), and in fact he does not fail to point out that the term dates back to 1946 and would not even be of American origin, but British (ibidem, note 6: 22). Be that as it may, the fact is that its beginning can be traced back to the 1920s, when the first theoretical developments on rockets (by Tsiolkovsky, Goddard and Oberth) took shape in more concrete ideas, and even in practical developments (by Goddard, 1926, onwards). In support of this thesis, see for example Andrews (2007) and Geppert himself (2012b: 339-340).
6. See the corresponding page of the English version of wikipedia: <https://en.wikipedia.org/wiki/James_Oberg> [accessed: 15/06/2021].
7. Precisely the contribution of Pierre Lagrange (2012) in the first volume of Geppert (2012c) deals with this issue, and certainly not by chance. For the French sociologist, an important difference between ghost rockets and flying saucers was that, at least initially, no one doubted the reality of the former, while skepticism was the first reaction to the latter.
8. Since Kottmeyer's production is enormous and difficult to cover, the author of these lines asked him expressly if he had written anything else linking in any way the space race with UFO sightings, either singular or in waves. The answer (16/02/2021) was negative: he had not published anything else about it. I would like to thank Luis R. González for his efforts to obtain this information.
9. The source of this data is a table included on page 514 of the Condon Report, which in the version available on the internet appears as "Table 1" on page 861, in section 2 of the second chapter (*UFOs: 1947-1957*): <<https://files.ncas.org/condon/text/s5chap02.htm#s2>> [accessed: 19/06/2021].
10. Both inside and outside ufology, where there is no Spanish bibliography on the subject either, except Moriente Díaz (2019), who at the end of his work (p. 255-256) regrets not having included UFOs in his analysis of the incidence of space travel in mass culture. But perhaps it is better this way, in view of the confusing ideas that he shows to have about the Spanish ufology...
11. It is quite impossible to develop these statements further here without falling into prolixity. They serve, therefore, only to point out the main lines of future debates to which they may give rise. Intentionally, moreover, I have left out of the article the examination of contactees in the light of astroculture, which would also deserve a separate chapter.

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