

Astrophilosophy: definition, object of study and utility

Astrophilosophy is a human and transhuman reflection capable of relate the existence and expansion of the life and human life with the Universe, acknowledge the cosmic identity of beings and persons, looks for the dialogue the wisdom and sciences, analyzes the produced impacts due to the cosmocentric vision of the Universe in the thought history and in the life of the subjects, reflects about new realities, inquires about the implications of the existence and absence of the human species in the scenery of the Universe.

This paper answers three basic questions about astrophilosophy: what kind of reflections it is and which is the context of its appearance?, which is the object and elements of study? and why is it necessary for the human species?

Let's start answering the first question. Astrophilosophy is a human and transhuman reflection (to act, to feel and to think) that comes from the cosmocentric vision of the universe. The reflection is done in one hand, by the human being whose constitution is purely organic, this is the result of millions of years of evolution, and in another hand, by the transhuman subject on which the organic and inorganic constituents are conjugated, it is, the subjects suffer artificial modifications to preserve and to extend its existence (Harari, 2015; Nicolescu, 2018; Mozgin, 2020). The astrophilosophy considers that both subjects have the faculty to analyze the presence of the human and transhuman species, and also the participation of its species in the different visions about the Universe that have been built. Now, what is the context where astrophilosophy comes from?

The context from which astrophilosophy comes is the cosmocentric vision of the Universe; it was preceded by the geocentric, heliocentric and galactocentric vision (Carr, 2009). The actual vision was started by Hubble in 1925 (Hawking, 1989), when he demonstrated the separation of the Milky Way from the closest galaxy, Andromeda. Subsequently he registered the distancing of some close galaxies from the Milky Way. Later other researchers have found the existence of hundreds of millions of galaxies (Carr, 2009). More knowledge of the universe for the human species is the result of scientific and technological advances, making it possible for the subject to analyze its relationship with the cosmos - galaxy - solar system - planet, to question its possible interactions with the Universe, and to analyze the first initiatives of the Universe's exploration. Then, what is the object and which are the study's elements for astrophilosophy?

The second question is about the object and the study's elements. The object of study for astrophilosophy are the understandings, these are perspectives through which the subject apprehends the cosmos. There are three basic comprehensions: one, of the evolutions. This allow to examine the existence of life and human life. Two, expansion of the species. It analyzes the actions of the subjects on Planet Earth as well as in the exploration, colonization and the sustainability of life on other places in the cosmos. And third, performance of the subjects. It investigates the established relationships by the subjects of planetary and exoplanetary origin. Once the study's object is defined for astrophilosophy, let's proceed to describe its five elements.

In the first element are the apprehensions done by subjects about the realities, existencies and lives in the context of the cosmocentric vision. Precedents are examined, as well as actual expressions, and the possible new manifestations of the relationship subject - cosmos. Aspects that make possible processes of evolution on Earth are recognized and aspects that can be related with the presence of dynamics of evolution or with aspects from which evolution processes in exoplanetary places are generated.

In the second element appears transversal and particular characteristics that take part in the emergence and propagation of evolutions. In this sense, from astrophilosophy a new look about the processes of: matter and energy irruption, planet Earth's configuration, appearance of the first organisms, evolution of the Homo gender in Africa, beginnings of the science (Harari, 2015; Sagan, 2004) in order to discuss contributions from the earthly process looking at the evolution dynamics in other places in the cosmos.

In the third element are group of actions, emotions, and reasons that lead humanity to preservations and destructions of evolution dynamics on the Earth planet are identified. In this element the human species is summoned to raise the learnings during the first cosmic year on Earth (13.700 millions of years¹) to rethink the existence of the human species this year, to project it to other planets, and to analyze the implications that it has for the human - transhuman species, the permanence on Earth and/or the settlement of evolution dynamics in other places in the cosmos.

¹ A cosmic year represents 13.700 millions of life from the big bang to its actual confirmation. From this convention, it's said that the first cosmic year ended recently. (Sagan, 1980).

The fourth element studies the humanity dimension that allowed to advance in the exploration of other places (planetary and exoplanetary), deepen on how the space flights is impacting the human species from creations such as: medical technology, (Sims, 2015), micro electromagnetic systems (Butrica, 2015), space nuclear energy (Launius, 2015), environment (Lambright, 2015), satellites of application (Whalen, 2015), relationship with the community with the society (Sadeh, 2015).

And the fifth element of the object for astrophilosophy has a critical stance, from one side around the human acting on Earth, and from another side, the exploration, colonization and sustainability of life in other places in the cosmos, which make part of the new objectives for the human species; particularly actions are examined that has started to: search for extraterrestrial intelligence (SETI, 2020), outer space recognition (Almaobservatory, 2020), and the colonization of the red planet (Marsociety.org, 2020). Is pertinent to indicate that both the study object for astrophilosophy and its elements contributes to the analysis about the presence, role and perspectives of humanity in a context of cosmic years. It is important to think deeply about this question: Why is astrophilosophy necessary?

Regarding the third question: Why is astrophilosophy necessary? Astrophilosophy is necessary for the human species because it analyzes:

- a. the development of the human being during the first cosmic year.
- b. human and transhuman problems during the second cosmic year, current year on which we are, and
- c. possibilities and characteristics of existence/absence for the species in other cosmic years. Now, what is analyzed in the first cosmic year?

The first cosmic year compares the carried out production by humanity, which has generated approaches that try to explain and transmit important matters for humans as cosmos and the different manifestations of life. From astrophilosophy is possible to reread theoretical productions from different perspectives, one of them are the philosophical accumulations: south - south perspective (UNESCO, 2014), Africa (UNESCO, 1984), Asia and the Pacific region (UNESCO, 1986), and the philosophy as cosmic responsibility (UNESCO, 2007). Now it deepens the astrophilosophy role in the second cosmic year.

About the need for astrophilosophy in the second cosmic year, new human and transhuman realities are acknowledged that have a diversity of problems and perspectives. Next the main issues of reflection are described. The possible existence of extraterrestrial civilizations and the recognition of common elements to

all civilizations, terrestrial is included, allowed the formulation of types of civilizations under some criterias: one of them is consumption of energy. Civilization type I consume the solar light that is projected to the planet, civilization type II consume all the energy that is emitted by the sun; civilization type III consume the energy of thousands of millions of stars (Braude, and others, 2012), and the civilization type IV obtains the energy from extragalactic sources (Kaku, 2011). In relation with the types of civilization another question is raised: What is the cosmic civilization?

Braudel (1989) talked about the end of the terrestrial civilizations and the entering to a new phase, a civilization capable of spreading to the whole universe and this named Cosmic Civilization (Télliez C., 2019). Another matter is related to the dark matter and dark energy (CNSA, 2020) that make up 95% of the Universe. Humanity has identified only 5%. Now a new question arises: Is there a relationship between astrophilosophy and the exoplanetary environments for life?

Astrophilosophy present a conceptual, methodological and operative proposal related with the constructions of environments that allow the existence and development of subjects in exoplanetary places through subsystems of family, health, maintenance, loyalty, recreation, communication and transport, education, patrimony, production, spirituality, security, political administration, judicial, and merit ranking of groups - communities - societies (Müller, 1957; Velandia, 2009). Along with the previous matters are the ones that are about limits of the knowledge from astrophilosophy, and the role of education.

As well as there are findings that show the majesty of the cosmos, it is necessary to establish the possibility of not being able to recognize nuances of the Universe from human and/or artificial intelligence. Also, at the end of the second year's matters it is necessary to mention education in the societies. Education recognizes the cosmic identity of beings and subjects, but also its job to create and transmit processes of teaching-learning to address present and future challenges for humanity according to the cosmocentric vision of the universe. The next are the astrophilosophy questions about the existence/absence of the subjects in other comic years.

What are the new required architectural characteristics of the beings in order to preserve the species in other cosmic years? What are the changes that take place in the analytical, emotional, and operative dimensions of the subjects? What could be the new people's mission in a cosmocentric environment? What are the new relationships that appear between the cosmic challenges and capacity of people to respond? Do the subjects represent a stage of the many stages of the cosmos?

In conclusion, astrophilosophy is a human and transhuman reflection that comes from the cosmocentric vision of the Universe. The objects of study for astrophilosophy are the understandings of the evolutions. It's necessary for the human and transhuman species because it addresses the subjects in the cosmos. The astrophilosophy findings lead to investigate new matters as: epistemological foundation; theoretical framework; dialogues with astrobiology, astrophysics, astrogeology, astrography, astrochemistry, astrosociology and astrotheology; exchanges with ancestral traditions; earth and exoplanetary astrophilosophy, and interplanetary contributions to astrophilosophy.

Bibliographic references

- Almaobservatory. (10 de diciembre de 2020). *alma observatory*. Obtenido de <https://www.almaobservatory.org/>
- Braude, S., Dubinskii, B., Kaidanovskii, N., Kardashev, N., Kobrin, M., Kuzmin, A., & Molchanov, A. (2012). *Una breve historia de la astronomía de radio en la URSS*. Londres, Gran Bretaña: Springer.
- Braudel, F. (1989). *Las civilizaciones actuales. Estudio de la historia económica y social*. Madrid, España: Tecnos.
- Bazaluk, O., & Balinchenko, S. (2020). The Ethics Laws as a Basis for Building a Cosmic Civilization. *The Sofia Republic. Philosophy & Cosmology*, Vol 24, págs. 131 - 139.
- Butrica, A. (2015). NASA`s Role in the Development of MEMS (Microelectromechanical Systems). En S. Dick, (Ed) *Historical studies in the societal impact of spaceflight* (págs. 251 - 330). Washington, DC, EUA: NASA.
- Butrica, A. (2015). NASA`s Role in the Manufacture of Integrated Circuits. En S. Dick, (Ed) *Historical studies in the societal impact of spaceflight* (págs. 77 - 148). Washington, DC, EUA: NASA.
- Carr, B. (2009). Cómo viajar por el universo. En S. y. Hawking, *El tesoro cósmico* (págs. 48 - 52). Bogotá, D.C., Colombia: Montena.
- CNSA. (3 de junio de 2020). [www.cnsa.gov.cn](http://www.cnsa.gov.cn/english). Obtenido de <http://www.cnsa.gov.cn/english>.
- Dick, S. (2015). (Ed) *Historical studies in the societal impact of spaceflight*. Washington, DC, EUA: NASA.
- Dobroskok, I. (2019). Errant Man: The importance of Cosmological Models in Culture. *Philosophy & Cosmology*, Vol. 23, págs. 90 - 97.

- Harari, Y. (2015). *De animales a dioses. Breve historia de la humanidad*. Bogotá, D.C., Colombia: Penguin Random House Grupo Editorial.
- Hawking, S. (1989). *Historia del tiempo*. Bogotá, D.C., Colombia: Crítica.
- Kaku, M. (2011). *La física del futuro. Cómo la ciencia determinará el destino de la humanidad y nuestra vida cotidiana en el siglo XXII*. Barcelona, España: Penguin Random House Grupo Editorial, S.A.U.
- Lambright, W. (2015). NASA and the Environment: An Evolving Relationship. En S. Dick, (Ed) *Historical studies in the societal impact of spaceflight* (págs. 383 - 426). Washington, DC, EUA: NASA.
- Launius, R. (2015). Powering Space Exploration: U.S. Space Nuclear Power, Public Perceptions, and Outer Planetary Probes. En S. Dick, (Ed) *Historical studies in the societal impact of spaceflight* (págs. 331 - 382). Washington, DC., EUA: NASA.
- Marsociety.org. (20 de noviembre de 2020). *Mars Society Colombia*. Obtenido de <https://www.marsociety.org/>
- McLean, P. (1970). The triadic brain in evolution: role in paleocerebral functions. New York, EUA: Plenum.
- Mozgin, W. (2020). An Anthropocentric Perspective in Posthumanist and Trashumanist Discourse. *Philosophy & Cosmology*, Vol. 25, 78 - 87.
- Müller, A. (1957). Elementos basilares da organizacao humana. *Estudios de antropología teórica e aplicada*, No. 5, 7-10.
- NASA. (3 de junio de 2020). www.nasa.gov. Obtenido de <https://www.nasa.gov/>
- Nicolescu, B. (11 de diciembre de 2018). (A. d. Pomposo, Entrevistador)
- Sadeh, E. (2015). Impacts of the Apollo Program on NASA, the Space Community, and Society. En S. Dick, (Ed) *Historical studies in the societal impact of spaceflight* (págs. 491 - 534). Washington, DC, EUA: NASA.
- Sagan, C. (1980). Los dragones del Edén. Especulaciones sobre la evolución de la inteligencia humana. Barcelona, España: Grijalbo.
- Sagan, C. (1995). *Un punto azul pálido. Una visión del futuro humano en el espacio*. Barcelona, España: Planeta.
- Sagan, C. (2004). *Cosmos*. Barcelona, España: Planeta.
- SETI. (23 de julio de 2020). www.seti.org. Obtenido de www.seti.org: <https://www.seti.org/articles/frontier-development-lab>
- Shevniuk, O., & Matviienko, O. (2019). Moral Values and Skills: The Challenges of Space Exploration Practices. *Philosophy & Cosmology*, Vol. 23, págs. 121 - 129.
- Sims, W. (2015). Societal Impact of NASA on Medical Technology. En S. Dick, (Ed) *Historical studies in the societal impact of spaceflight* (págs. 77 - 148). Washington, DC, EUA: NASA.

- Téllez, C. (2019). *Competencias cósmicas: ciencia y educación*. Bogotá, D.C., Colombia: INIS.
- Timashova, V., & Strohanova, H. (2020). The Politics of Education and its Impact on the Human Exploration of Mars. *Philosophy & Cosmology*, Vol. 24, págs. 122 - 130.
- UNESCO. (1984). *Teaching and research in philosophy: Africa*. Paris: UNESCO.
- UNESCO. (1986). *Teaching and research in philosophy: Asia and the Pacific*. París: Francia: UNESCO.
- UNESCO. (2007). Philosophy a cosmic responsibility. *The courier Unesco*; No. 9, 3 - 17.
- UNESCO. (2011). *Teaching Philosophy in Europe and North America*. París: Francia: UNESCO.
- UNESCO. (2014). *A South - South Perspective*. París. Francia: UNESCO.
- Whalen, D. (2015). Societal Impacts of Applications Satellites. En S. Dick, (Ed) *Historical studies in the societal impact of spaceflight* (págs. 427 490). Washington, DC, EUA: NASA.
- Velandia, C. (2009). Metodología interdisciplinaria centrada en equipos de aprendizaje MICEA. Bogotá, D.C., Colombia: ASIC-PRO.