

Symposium - Call for papers

**LESA / CERILAC / APC / PCCP / OSU-Pythéas (LAM)
Aix-Marseille Université / Université Paris Cité**

**The Universe on screen in the 21st century:
Visible and invisible - part 2**

**Making the Universe visible
May the 5th 2023 / Aix-Marseille Université**

The cycle of two symposium days aims to propose multidisciplinary approaches to consider the relationship between the new representations of the universe, the visual arts and the audiovisual arts, taking into account the recent transformation of imagery in general, particularly the digital shift. The cycle, centered on the contemporary image, will present three different articulations of cinema and sciences and their use of images.

This will happen over two separate days, January the 20th and May the 5th 2023.

Call for papers for May the 5th:

A. From the ontology of cinema to astrophysics: pages 2-3.

B. Exposing Space: pages 3-4.

Programme of the whole cycle: page 5

Organising Committee:

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How to participate

Proposals for the second day, May 5th, should be sent in .pdf format to the following address:
universalecranxxi@gmail.com

Proposals should include a short bio-bibliography of maximum 100 words and they should not exceed 500 words in total. Papers should be about 20 minutes in length. The deadline for submission of proposals for the second symposium day is Friday the 23rd of February 2023 (reply mid-March 2023).

As the day is intended to be multidisciplinary in its approaches and not only in its subject matter, contributions from the disciplines of visual/audiovisual arts as well as astrophysical and astronomical sciences or of the history and philosophy of science will be welcome.

The study day is also accessible by zoom. It is associated with an exhibition that will take place from the 5th until the 12th of May at the Turbulence space in Marseille. More information to come on our webpage.

Day 2: May the 5th 2023 - Making the Universe visible Aix-Marseille University

The first day of the cycle (20th of January 2023, Université Paris Cité) was devoted to the way in which contemporary fictional cinema seizes on the new images produced by the astronomical and astrophysical sciences, as they are produced for an audience; namely, images of the universe as it is made visible to the public by scientific imagery.

Following the first session, the second day will focus on the invisible. **How do screens, from exhibition halls to movie theaters allow us to see and conceive of objects and laws of the universe exceeding human perception?** The unprecedented presence of spatial imagery in transformation over the last twenty-five years, in the public space and in the arts, invites us to question other ways of making the Universe visible via the visual and audiovisual arts, as well as the actors and means of these representations. This day will in turn propose two declinations of the question:

1/ How can cinema, through its own means, give an account of new physical theories **beyond human perception** and imagination, before they are turned into images? How do the theories and perceptions formed by modern physics, on objects invisible to the eye and upsetting the categories of perception and imagination, question in return the capacities and categories of cinema, the art of space and time?

2/ **How do we present to the public today, in the case of scientific mediation as well as art exhibitions**, the cosmos that escapes human scales, in a **scenographic space** where the place of audiovisual devices are increasing?

Programme: May the 5th 2023 (morning)

A. From film ontology to astrophysics: representing new physical theories in films

The first part of the day will be devoted to the relationship between visual representation and the pre-existing perception of concepts and theories that examine the structure and composition of the universe, in contemporary cinema. More precisely, the proposed problematic is twofold: on the one hand, to study the way in which certain invisible properties of the universe are visually represented, encountering the different theories that have sought to define an ontology of cinema and the specific properties of this medium, but also calling for their reconsideration. On the other hand, we intend to highlight the tactics by which moving images perceive and incorporate theories of (astro)physics. Thus, the proposals will be able to fall under one of the two following axes:

- **The representation of the unrepresentable:** this will involve questioning the means and mechanisms used by moving images to enable them to **materialise concepts** which, by definition, cannot give rise to a visual representation. These concepts are often confused with the properties that we attribute to the universe such as space-time, infinity, emptiness, immateriality, which loads them with certain connotations¹. Sometimes these concepts coincide with scientific reality; on other occasions they are influenced by a more philosophical approach (for example, the philosophical-theological approaches that have long marked representations of the concept of infinity).

We will look at how their visualisation influences and redefines some of the **main issues that preoccupy cinema, such as the notions of space, time and movement**. To what extent could the evolution of these concepts, in relation to advances in (astro)physics, and as new images are captured

¹ On this subject, see Vincent Bontems et Roland Lehoucq, *Les Idées noires de la physique*, Paris, Les Belles lettres, 2016.

by space telescopes, constitute **a breakthrough in the way cinema perceives its own qualities**? For example, how might the color image of the SMACS 0723 galaxy — obtained by the James Webb Telescope², published on July 12th 2022, which allowed humanity to see the most distant part of the universe in terms of distance and time — affect the way we think about the relationship between time and space in moving images, and what questions might it raise about the cinematic scale? The filmmaker and film theorist Jean Epstein thought of cinema very early on by analogy and opposition to both observational instruments such as the telescope; we shall keep in mind his words, which question both his art and our conceptions of the universe: "This mixing of an infinite multiplicity of scales and dimensional angles constitutes the best preparatory experience for the criticism and relaxation of all the old notions that claimed to be absolute, for the formation of this relativistic mentality"³.

- **The representation in the cinema of the various recent hypotheses and theories of physics** that attempt to explain the functioning and evolution of the universe, whether they be modern theories (string theory, multiverse theory, etc.) or the evolution of certain common theories (gravitation). The aim is not to show to what extent their use in films converges or diverges from scientific reality. We **focus on the scientific and collective imaginary that the films convey**. With the aim of understanding how this is constructed and modified over time, and how the dynamic relationships that develop between society and scientific and technological progress in our time. Beyond the narrative aspect, we will mainly focus on the aesthetic choices with which these scientific hypotheses and theories are invested in order to become images that embody this imaginary, sometimes even exceeding the limits of the conventional image to go towards a more abstract image (for example, the representation of the tesseract in Christopher Nolan's *Interstellar*).

Programme: May the 5th 2023 (afternoon) **B. Exhibiting Space (arts and scientific mediation)**

The cosmos is the subject of a growing number of artistic and/or scientific mediation exhibitions in the 21st century, in private galleries as well as in public museums and research institutions, both in France and abroad. There are many personal exhibitions of artists and/or researchers working plastically with space, notably via video or installation, such as those of Félicie d'Estienne d'Orves⁴, but also thematic collective exhibitions, such as "Rêver l'Univers" (Musée de la Poste, December 2nd 2020 - February 8th 2021) or the exhibitions produced by the CNES Space Observatory,⁵ to cite only French examples⁶.

Space, as a matter of creation, is also an object of knowledge, without these two aspects being able to be thought of separately. Museums offering temporary or permanent exhibitions dedicated to the mediation and popularisation of space are also experimenting **innovative mediation devices**, at the crossroads with the arts⁷. Just as scientific and aesthetic research feeds each other, giving rise to a new arts/sciences paradigm⁸ and a new iconography, exhibition spaces propose **new narratives and new museographic languages** in order to reveal, make to understand, to show and, even more, to feel, this new material. Cosmos, its visual representations and the artistic productions it inspires cannot be an exhibition object like any other.

² To consult the image: <https://www.nasa.gov/image-feature/goddard/2022/nasa-s-webb-delivers-deepest-infrared-image-of-universe-yet>

³ Jean Epstein, *Le Cinéma du diable*, Paris, J. Melot, 1947.

⁴ For example, the exhibition *Soleils martiens* (Le Lieu Unique, Nantes, 20 mai-28 août 2022).

⁵ <https://cnes-observatoire.fr/ode-dossiers-expositions.html>

⁶ Examples of many international projects including : *Art in Orbit* (Museum of Contemporary Art, Quito, 2015), *Cosmos Archaeology* (EPFL Pavilions, Lausanne, 16 septembre-5 février 2023).

⁷ For example, the Cité de l'espace in Toulouse and its multiple multiform screens.

⁸ See bibliography.

Thus, the **question arises of how to create a spatial and scenic setting**, in the variable spaces of exhibition venues, for scales of distance and time that go far beyond human perception, stimulating scenographic innovations and varied mediation strategies. But beyond that, the scientific images of the universe themselves have a **status apart from other image regimes**. The question of the passage from the invisible to the visible is a common question for scientific mediation as well as for artists inspired by this cosmic material, such as Nanna Debois Buhl⁹. In addition to the admittedly hidden risks of manipulation, the question of the photographic realism of the image does not/anymore make sense for certain images of the cosmos: for example those which make visible objects measured by radio or gravitational waves, otherwise invisible to the human eye. Aesthetic work becomes necessary to the "realism" of the images; so many parameters that make representations of the cosmos a singular object, whose status – epistemic, aesthetic – is hybrid.

The discourse produced by the connections and spaces displayed by the various exhibitions, which shape the public's imagination and knowledge through new perceptions and new modes of transmission adds up to the creation of representations of space — already the product of a relationship between scientists, artists and the public. It will therefore be a matter of **studying the creation of specific devices and the implementation of new museographic languages** to give an account of the cosmos, to show and perceive the invisible. The proposals can work around the following themes:

- Exhibiting Space: a field of museography in its own right?

How does the cosmos - and the works inspired by it - require a specific relationship to museum spaces and scenography? How does curators and curatorial staff approach this subject ?

- How does art and/or science exhibitions reflect a new arts/sciences paradigm? With what media and means?

- How does contemporary museography, both in its methods and in its tools and places, show/perceive the cosmos? Attention might be given to the proliferation of audiovisual devices in museums and galleries and their relationship to other representations: the omnipresence of screens, videos, virtual and augmented reality devices, the development of the form of installation with video, etc. Does contemporary museography find in Space a particularly ideal object for deploying its current practices, or can we imagine exhibition languages and experiences that are better able to reflect this object?

⁹ In *Stellar Spectra* (2020, installation with video), for example, Nanna Debois Buhl uses astrophysical photography and spectroscopy « as a prism to reflect the mechanisms that make things visible or invisible, that make them remember or forget » (text presenting the work on the artist's website, <http://nannadeboisbuhl.net/stellar/>)

Programme of the cycle

The Universe on screen in the 21st century: Visible and invisible

Web page: <https://universalecranxxi.wordpress.com/>

Part 1: New astronomical images in 21st century fiction:

Replacement, modelling, creation

Date: January 20th 2023.

Location: Université Paris Cité

Part 2: Making the universe visible

A. From the ontology of cinema to astrophysics:

Representing new physical theories in cinema.

Date: May 5th 2023, morning.

Location: Aix-Marseille University.

B. Exposing Space (arts and scientific mediation)

Date: May 5th 2023, afternoon.

Location: Aix-Marseille University.

Exhibition from May 5th until May 12th at the Turbulence space (Marseille)

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