

#### an Art & Science permanent installation

to develop and promote the interaction between the world of art and the world of science for a new vision and understanding of our universe.

## ENRICO MAGNANI



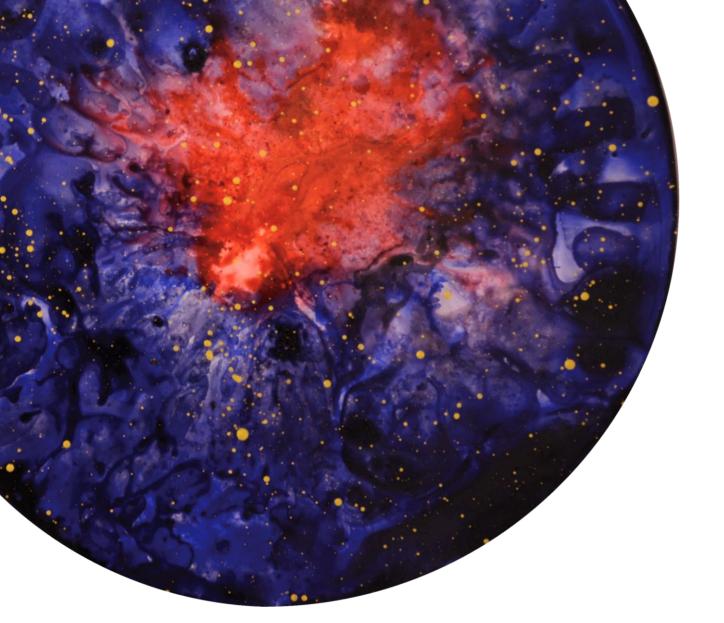




### **ENRICO MAGNANI**

# QUINTESSENCE

an Art & Science Permanent Installation at LNGS – Gran Sasso National Laboratory



A permanent installation created by ENRICO MAGNANI

#### at LNGS

Laboratori Nazionali del Gran Sasso Gran Sasso National Laboratory

> Via G. Acitelli, 22 67100 Assergi L'Aquila, Italy

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Istituto Nazionale di Fisica Nucleare LABORATORI NAZIONALI DEL GRAN SASSO

#### Shed light on the rules that govern our Universe

#### Art meets Science at Gran Sasso National Laboratory (LNGS)

A foreword by Ezio Previtali<sup>1</sup>, Stefano Ragazzi<sup>2</sup> and Alba Formicola<sup>3</sup>

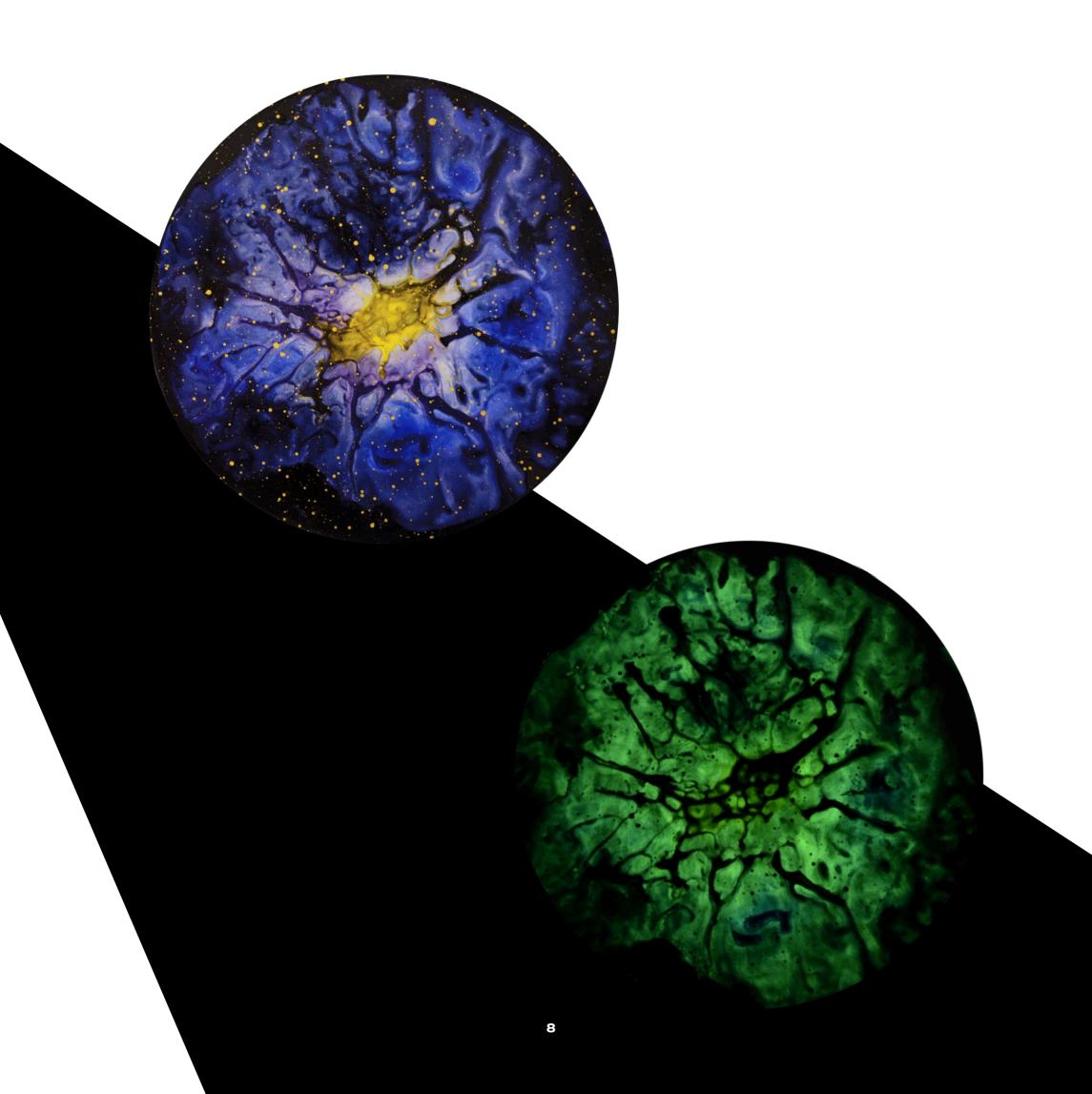
The investigation of very rare processes in particle, astroparticle and nuclear physics needs measurements of very rare and/or small (weak) signals. Some detectors have an active mass on the order of the ton to look for few signal events per year. At the ground level such experiments are impossible due to the background interferences induced by the cosmic-ray flux of 10 millions/m2/day. Then, to decrease this environmental background noise, extremely low radioactivity environments are required: this is only reachable in very deep underground sites, where the cosmic ray flux is suppressed by several orders of magnitude and by the use of low radioactive selected materials.

Gran Sasso National Laboratory (LNGS) was constructed as the world's first general purpose large underground research facility, and it is presently the world's largest operational underground research facility.

The LNGS underground laboratory consists of three large halls, which host the largest detectors, connected by access and ancillary tunnels, which host smaller experiments and service infrastructures. Access to the underground site is allowed through the Teramo-L'Aquila motorway.

> The 1400 metre-rock thickness above the underground halls represents a natural coverage that provides a cosmic ray flux reduction by one million times. The permeability of cosmic radiation provided by the rock coverage together with the huge dimensions and the impressive basic infrastructure make the Laboratory unmatched in the detection of weak or rare signals which are relevant for astroparticle, sub nuclear and nuclear physics.

> > Currently the scientific users of LNGS amount to about 1000 per year, one quarter of whom are working there daily, while many others are offsite analysing data or preparing new experiments.



The Mission of the Laboratory is to host experiments that require a low background environment. The main research topics of the present scientific programme are: Neutrino Physics with neutrinos naturally produced in Supernova explosion, search for neutrino mass in Neutrinoless Double Beta Decay, Dark Matter search and Nuclear Astrophysics. Discoveries in these areas would have tremendous impact on fundamental physics. The detailed understanding of the origin of the chemical elements combines astrophysics and nuclear physics, and forms what is called nuclear astrophysics. Nuclear fusion reactions are at the heart of nuclear astrophysics. They sensitively influence the nucleosynthesis of the elements in the earliest stages of the Universe and in all the objects formed thereafter, and control the associated energy generation, neutrino luminosity, and evolution of stars. A good knowledge of the rates of these reactions is thus essential for understanding the broad picture of most astrophysical and cosmological scenarios. In addition, the environments and support structures provided by the LNGS have been increasingly used by several studies from other scientific fields (beyond particle and astroparticle physics) such as environmental sciences, geosciences, biology and microelectronics. These studies have high potential impact in a range of global challenge areas both in terms of providing a platform for new scientific discoveries as well as a unique environment to test and develop new technologies related to radiation monitoring, geophysical, geological and environmental instrumentations. The research activities performed at LNGS will shed light on the rules that governed our Universe trying to understand the roles of the fundamental forces. It is a research adventure that induce the LNGS scientist at explore the unknown to explain all the aspects of our Universe since the primordial Big Bang: a very exiting adventure. Art and science are connected to each other: the creativity of artist and scientist is the main mechanism that allow the evolution of their ideas. Actually, the two figures seem to be separated, but if we look back in the past, the most important artists could be considered as scientists for their capability to observe and describe our world. Connecting art with science could today help in representing the scientific achievements in a more simple and suitable way: this approach could connect science with society.

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to develop and promote the interaction between the world of art and the world of science for a new vision and understanding of our universe

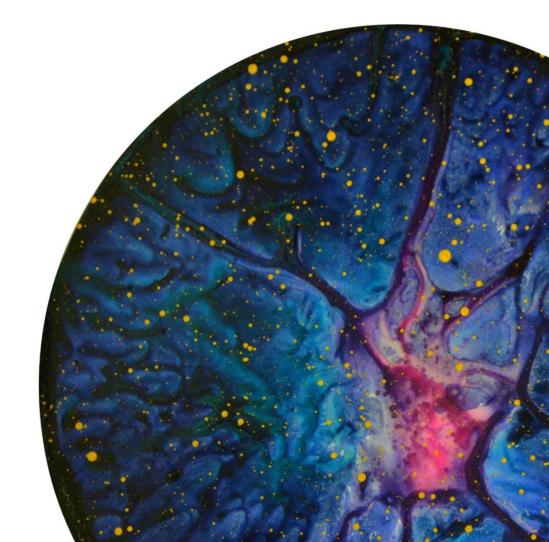
The permanent installation "Quintessence" by artist Enrico Magnani, promoted by and realized at the Gran Sasso National Laboratories (LNGS), was created to give an artistic representation to some of the most mysterious and fascinating themes of contemporary physics and cosmology, which see the LNGS as a world-class excellence. "Quintessence" is a way to bring the general public closer, through the language of art, to complex and difficult-to-understand issues about the origin of the universe and matter as well as human life and destiny.

An invitation, moreover, to consider science and art worlds that can and should interact and influence each other for the evolution of human knowledge and consciousness. The world is not made of watertight compartments like a submarine: art on one side and science on the other, the right brain on one side and the left brain on the other; harmonious man puts up no barriers and can benefit from everything.

#### Gran Sasso National Laboratories

#### A national excellence at the global level

The Gran Sasso National Laboratories (LNGS) are funded by the Istituto Nazionale di Fisica Nucleare (INFN), the body that coordinates and funds research in nuclear, subnuclear and elementary particle physics in Italy. The idea of endowing the INFN with a large underground laboratory dedicated to subnuclear physics was born in 1979 thanks to Prof. Antonino Zichichi, then president of the INFN. Situated between the cities of L'Aquila and Teramo, about 120 km from Rome, the Laboratories are used as a worldwide facility by scientists from 29 different countries; there are currently 1100 of them engaged in about 15 experiments in various stages of implementation. Main research topics of the current program are: the physics of neutrinos naturally produced in the Sun and in Supernova explosions, the search for dark matter particles, and the study of nuclear reactions of astrophysical interest and rare decays.



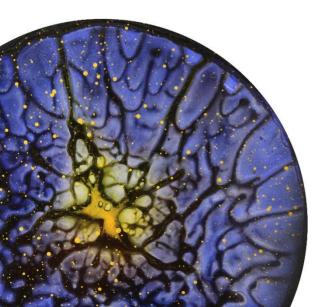


# In Aristo

#### The concept of the work

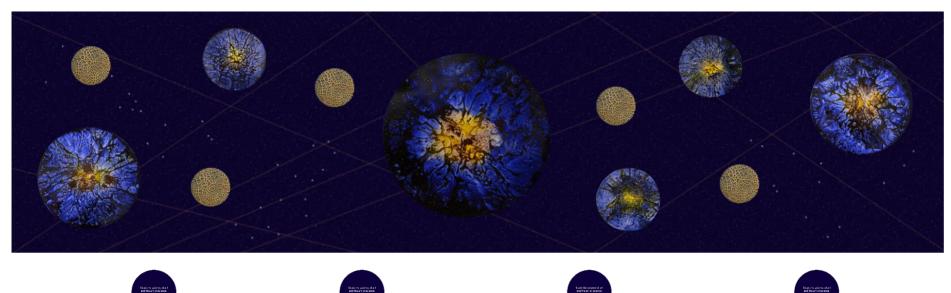
In Aristotle's physics the celestial bodies, above the sphere of the moon, are made up of a Quintessence of an eternal and incorruptible nature. It is undoubtedly something superior, which transcends, which goes beyond reality and earthly vision. It is the entity that synthesizes the four elements, the perfect synthesis, the original idea, the one, the god, the source. The four elements of Greek tradition cannot fail to remind us of the four states of matter of which the universe is composed and also the four fundamental forces of which man has long been seeking the unification, that primary force from which all the others originate: poetically we could say a "Quintessence". Perhaps we are not far off, three forces have already been unified,

but the great unification is not yet complete. I wanted to title my installation "Quintessence" as a message of hope for the achievement of one of the great scientific goals that humanity has awaited for a long time. The strength of art and science lies in the freedom and the ability to imagine something that may seem impossible to realize immediately, but the vision provides the energy and the motivation necessary to achieve the goal we set ourselves.

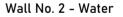


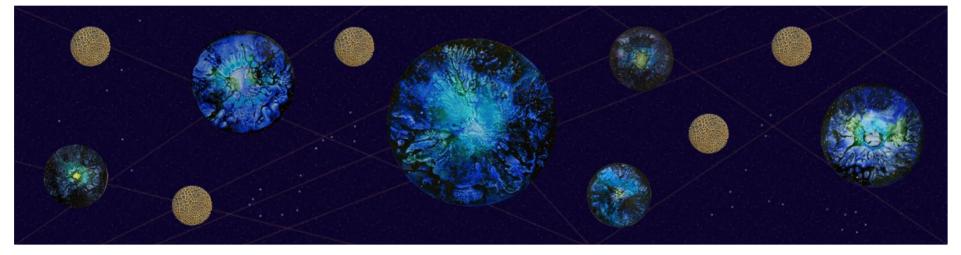
#### The composition of the work

The permanent installation *Quintessence* consists of five parts that find their location on five distinct walls of the LNGS Research Division. They represent portions of the universe with stars, supernovae and planets, The first four walls host rectangular works (5 x 1.35 meters) each associated with an element of the Hellenic tradition and one of the four fundamental forces (gravitational force - Earth, strong nuclear force - Water, weak nuclear force - Air, electromagnetic force - Fire). Each element is represented with the archetypal colors of tradition.



Wall No. 1 - Earth





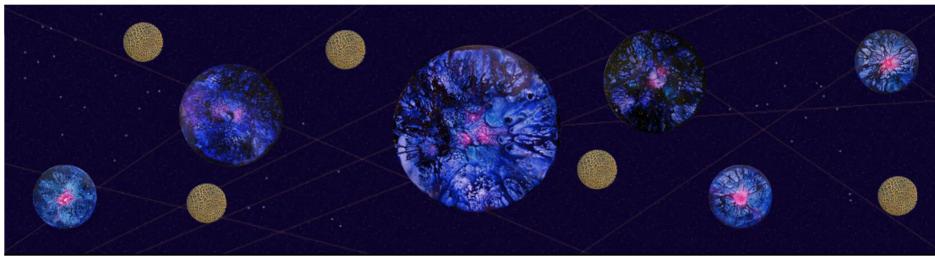








The fifth wall houses a circular work (3 meters in diameter). On this wall, an entity as mysterious as it is fascinating appears: dark matter, theorized but never detected and artistically represented here by phosphorescent works that shine in the dark, completely changing their appearance.Phosphorescence becomes a metaphor for dark matter: in ordinary conditions in which you look at a work you cannot see it, you have to change the conditions, remove the light, to reveal it.





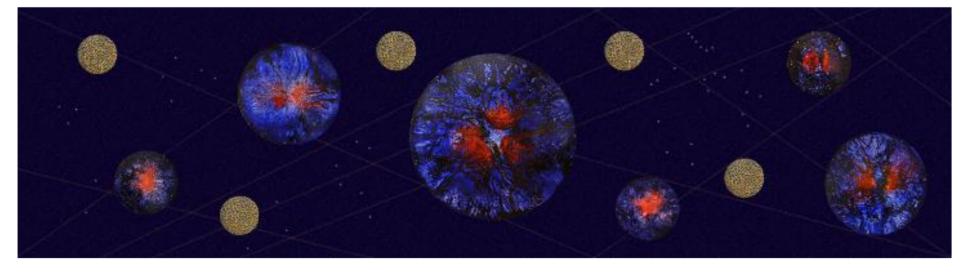






Wall No. 4 - Fire

Wall No. 3 - Air

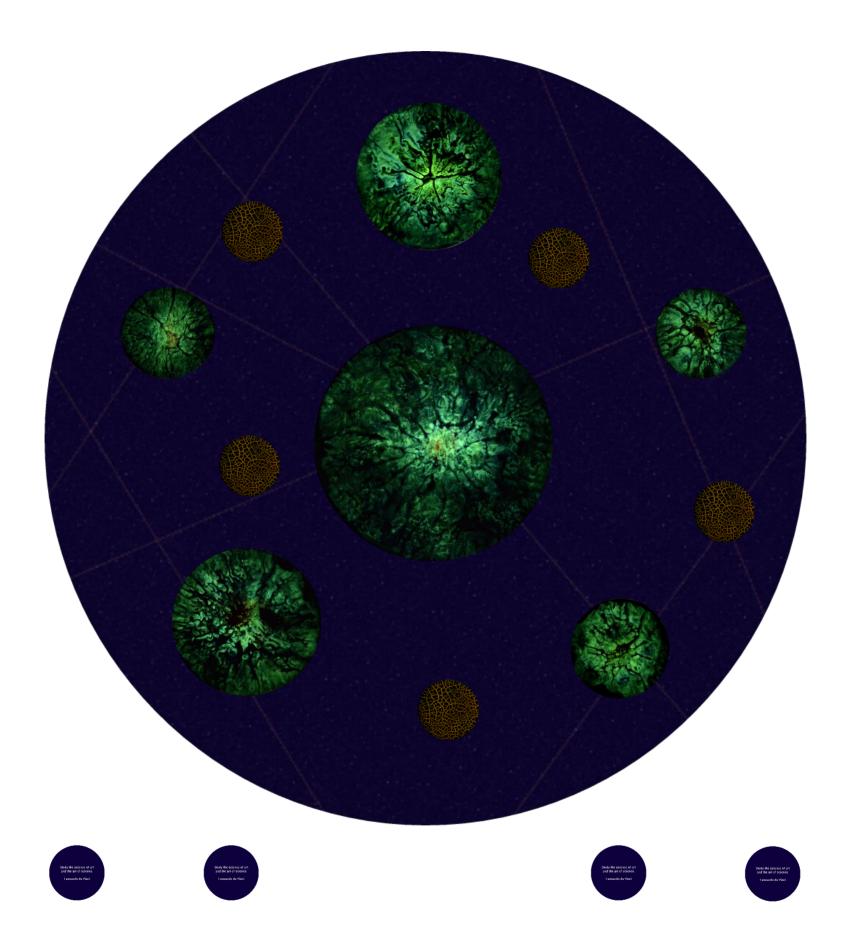




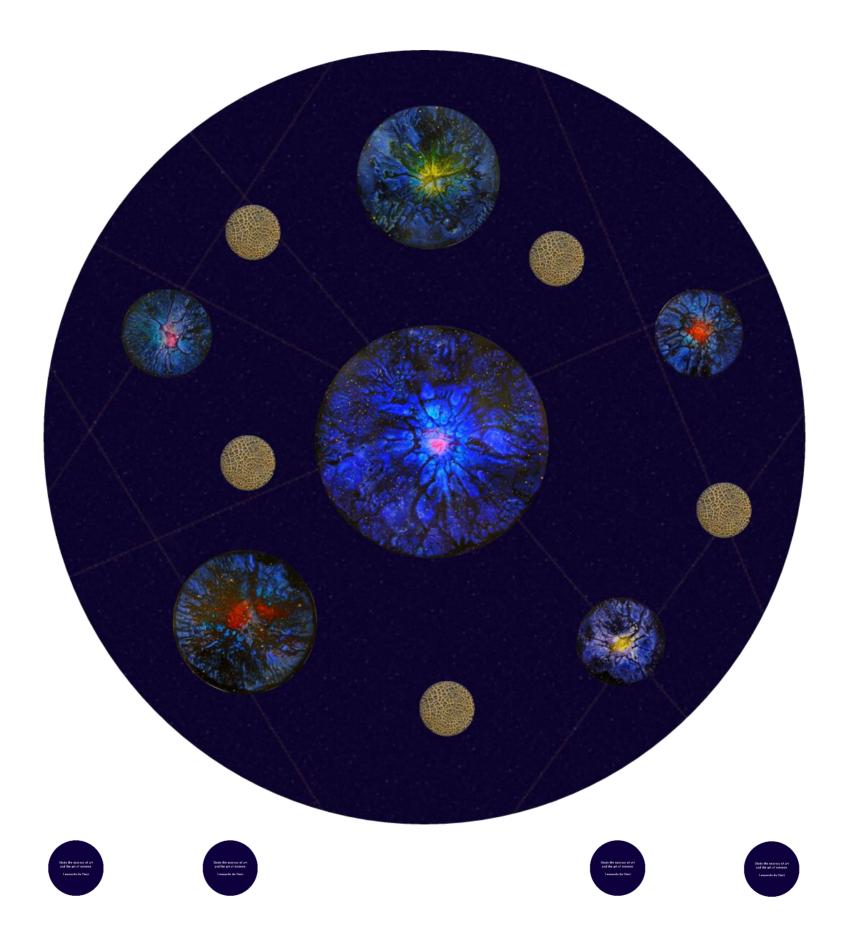








Wall No. 5 – Quintessence – View in the dark



Wall No. 5 - Quintessence

#### Supernovae Life, death and rebirth

The *Supernova* pictorial cycle, to which the works I created for the LNGS belong, draws attention to the spectacular phenomenon that can characterize the end of a star's life. The material released by the explosion is at the origin of the formation of new celestial bodies. The supernova thus becomes a symbol of death, rebirth and cyclicity of the universe. All the materials we are made of were produced within the collapsed stars: we are truly "stardust". Reminding us that everything is in everything, the supernova

links the macrocosm to the microcosm, the universe to man; all in a hymn to life, to its complexity and its magic.



#### The earth and the planets Challenging geo-neutrinos

The cosmos is not only populated with stars, but also with planets, like our Earth. The Earth is also a source of neutrinos, the geoneutrinos, created in the nuclear decays of some of the elements present in it. Moreover, the experiments studying neutrinos are located in the earth under the Gran Sasso mountain. Two good reasons for including these celestial bodies in my composition. The works representing the planets were made with clays which, when drying, spontaneously create a crack.



#### **Dark matter** Phosphorescence as a change in paradigm

The works on the fifth and last wall belong to the *Supernova Dark Matter* pictorial cycle and were created with the same technique as the *Supernova* series, but on a background of phosphorescent pigment whose pictorial effects, invisible with light, are revealed in the darkness. The aesthetics of the works in the dark changes unexpectedly with the appearance of new colors and new shapes. In this way the artist wants to introduce an

aspect that becomes a metaphor for dark matter, this entity that today has become one of the protagonists in the world of scientific research, but which no one has yet managed to capture. We use light to see things; phosphorescence, on the contrary, is seen by removing the light. The paradigm is reversed. Pictorial emblem of the complexity and relativity of the universe, an invitation to humility, to refine the tools of investigation and to always push knowledge beyond by overcoming the investigative barriers and prejudices that bind the thought.

#### The Fibonacci sequence

The numbers of the beauty of nature

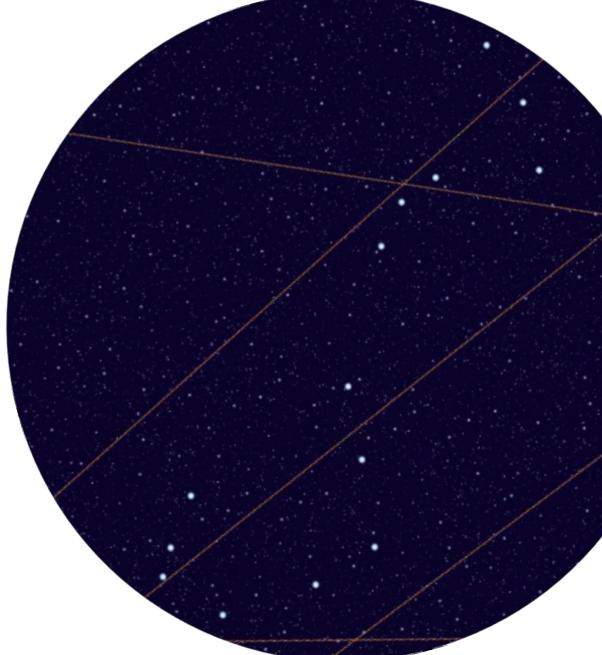
The Fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89... is probably the most famous number sequence. Why? Because if we observe nature, if we "measure" nature, we realize that it often hides this numerical sequence or something that originates from it in a very elegant way. Mathematics, biology, art and beauty find a perfect synthesis in the Fibonacci numbers. It also contains the equally famous *Golden Ratio* ( $\phi$ =1,618...) on the basis of which wonderful buildings and masterpieces were built. In the creation of *Quintessence*, the Fibonacci sequence is the basis of the size and the number of works that each wall contains. For reasons of composition and space, the choice was as follows: I decided to create a single work with a diameter of 89 cm, two works with a diameter of 55 cm, three works of 34 cm and 5 works of 21 cm. Furthermore, all the golden lines that cross the space, an artistic representation of neutrinos, originate from points that are all proportional to 1.618....

#### The constellations Astronomy and astrology – science and myth

The constellations can be seen in completely different ways by astronomy and astrology. They are not only the celestial bodies studied by physics and cosmology, but also mythological entities that leave room for imagination and the divination of the destiny of man. This is the reason that prompted me to integrate them into my installation which aims to make art dialogue with science. Each composition that appears on the first four walls of the installation is associated with an element: Earth, Water, Air and Fire. The twelve constellations of the zodiac are also traditionally associated with the four elements. On the first wall, dedicated to Earth, Taurus, Virgo and Capricorn appear; in the second, dedicated to Water, Cancer, Scorpio and Pisces appear; in the third, dedicated to Air, Gemini, Libra and Aquarius appear; in the fourth, dedicated to Fire, Aries, Leo and Sagittarius appear.

#### **Neutrinos** Elusive travellers of the universe

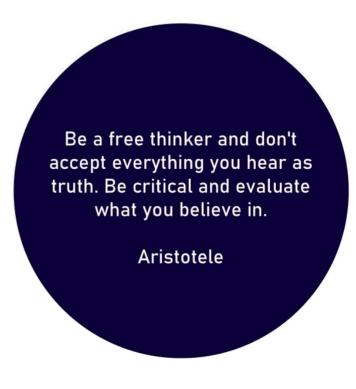
When I started thinking about setting up the LNGS spaces, one of the first challenges I had to face concerned the representation of neutrinos. These particles that pass through everything they encounter: space, stars and planets, are so light, elusive and ethereal that they led Pauli to say: "I did a terrible thing, I postulated the existence of a particle that cannot be detected". Gold is a precious color, a symbol of wealth, elevation and transcendence. Thin golden straight lines that originate from celestial bodies and let themselves be captured only in exceptional cases are the artistic representation that I have given to such a precious particle.





#### The quotes Words are part of the work

The five walls on which *Quintessence* develops are accompanied by a series of quotes by great men who have contributed to the evolution of mankind through their ideas and their research. I have selected these particular quotes not to forget how much the giants of science had a 360-degrees gaze on reality, without ever excluding mystery, intuition, art, beauty, freedom of thought, the feeling of a higher unity and the courage to break the old paradigms when faced with the truth.



#### **Technique of the Artworks**

The technique used for the realization of the "Supernova" collection has also been applied to realize the "Dark Matter" collection. The artist exploits the effects of fluid-dynamics without touching the work with his hands, or with brushes, or with other instruments; every phase of the creation takes place at a distance. The multi-layer paper and aluminum panel lies submerged horizontally under a film of water. Operating from the center and employing the centrifugal force, jets of water and air move the pigments previously dropped by the artist on the support. This original technique is inspired by and attempts to reproduce, with all the limits of the case, the dynamics of the stellar explosion: the work thus created is very similar to the images captured through large telescopes. The "Dark Matter" collection contains a background of phosphorescent pigment that glows in the dark, letting the emitted light filter through the darker colored spots of ordinary pigment and creating, at an optical level, a completely different, almost dual, new artwork.



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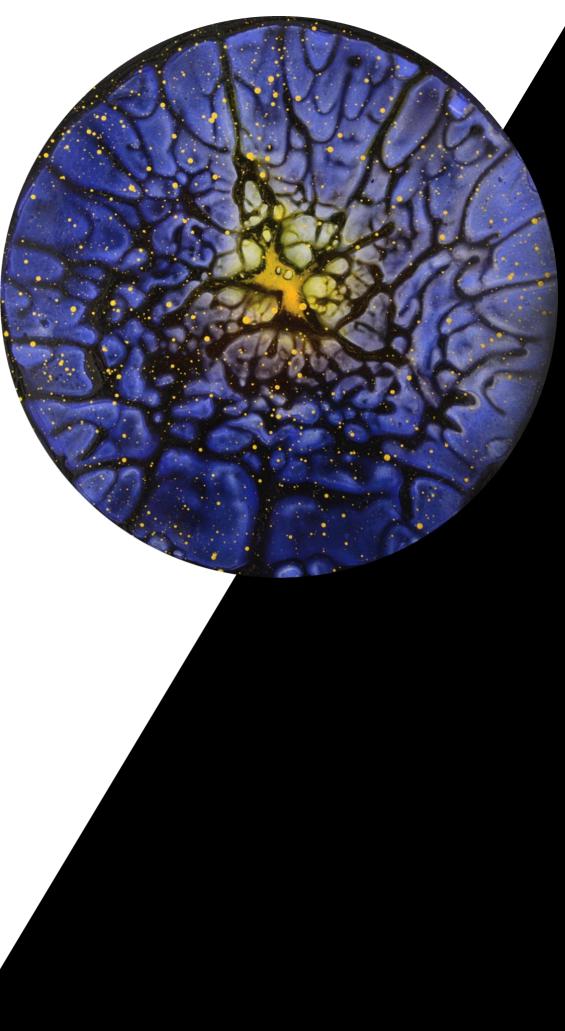
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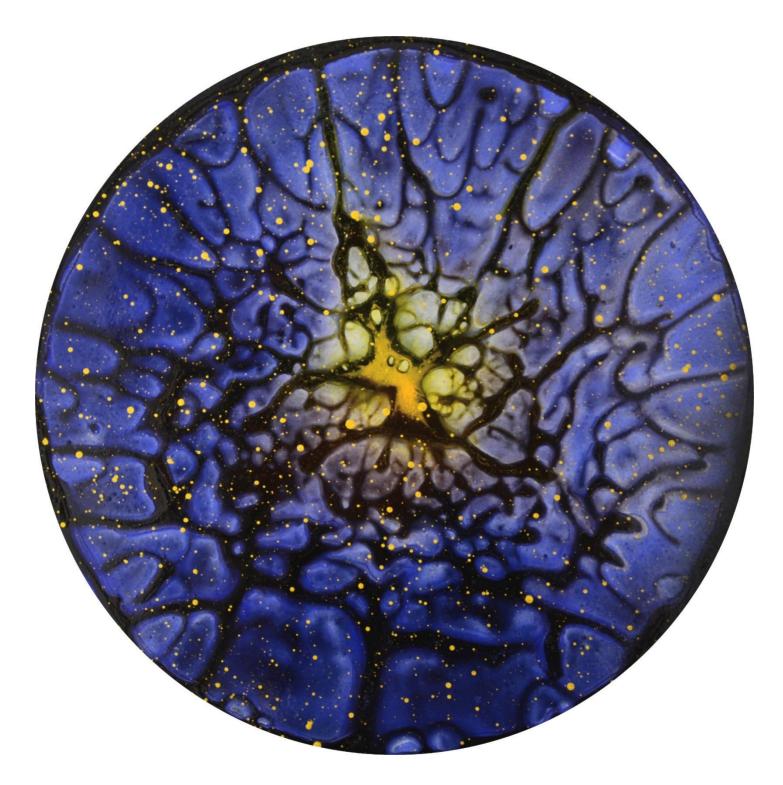
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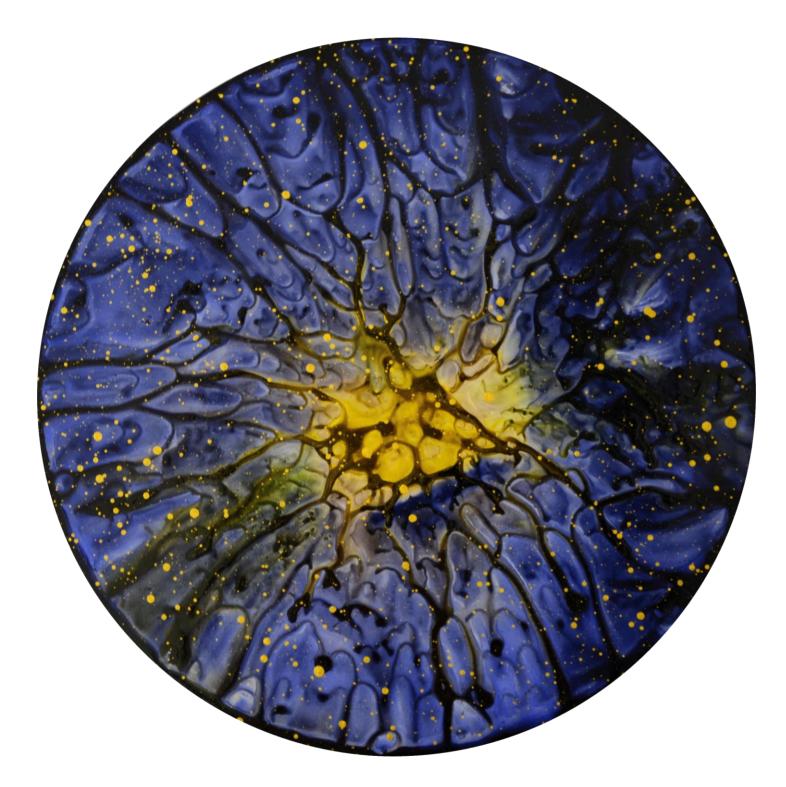
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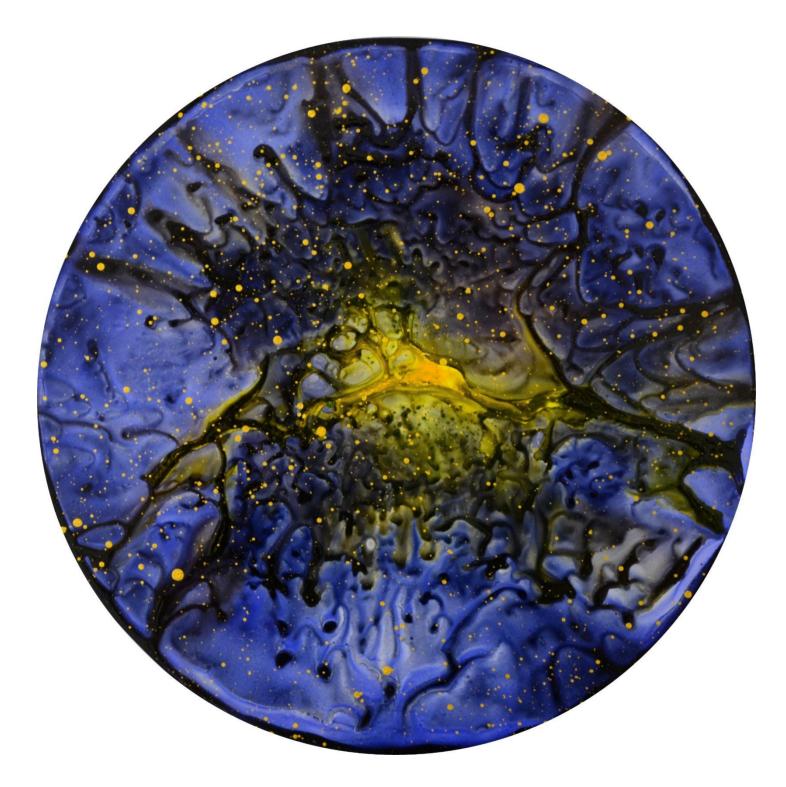
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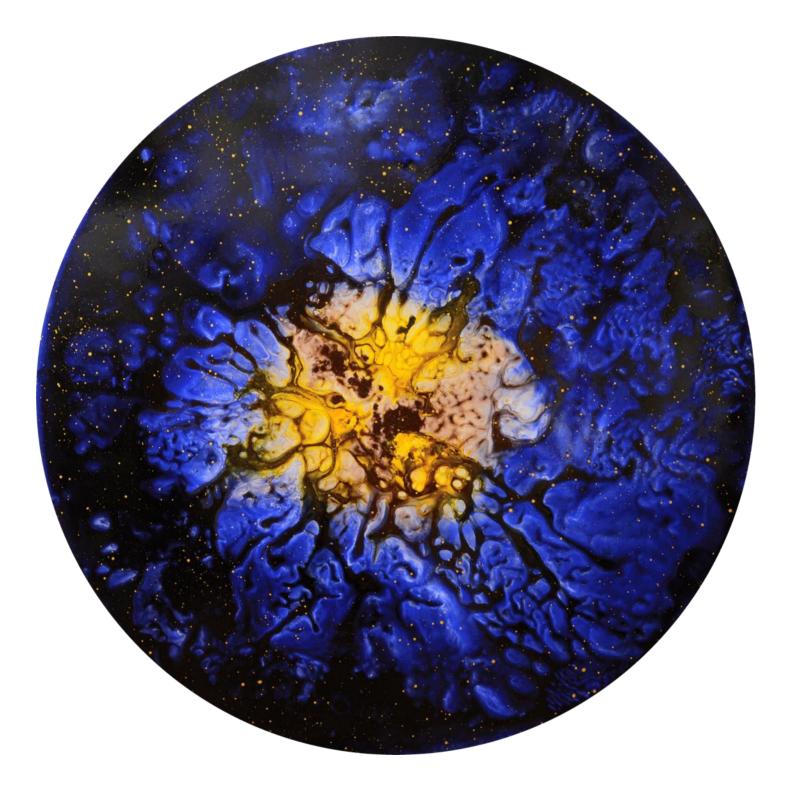






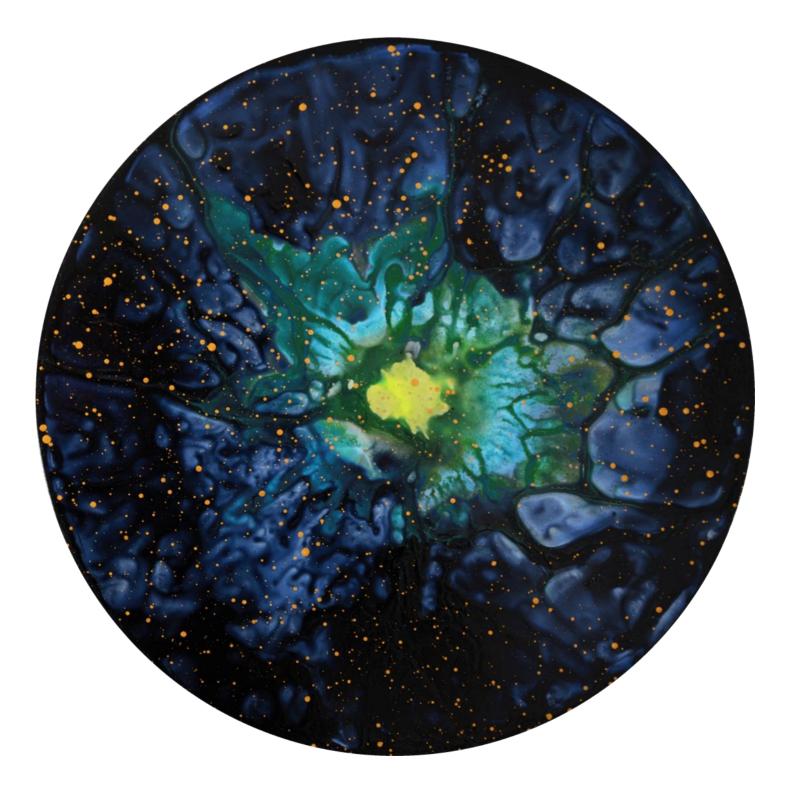






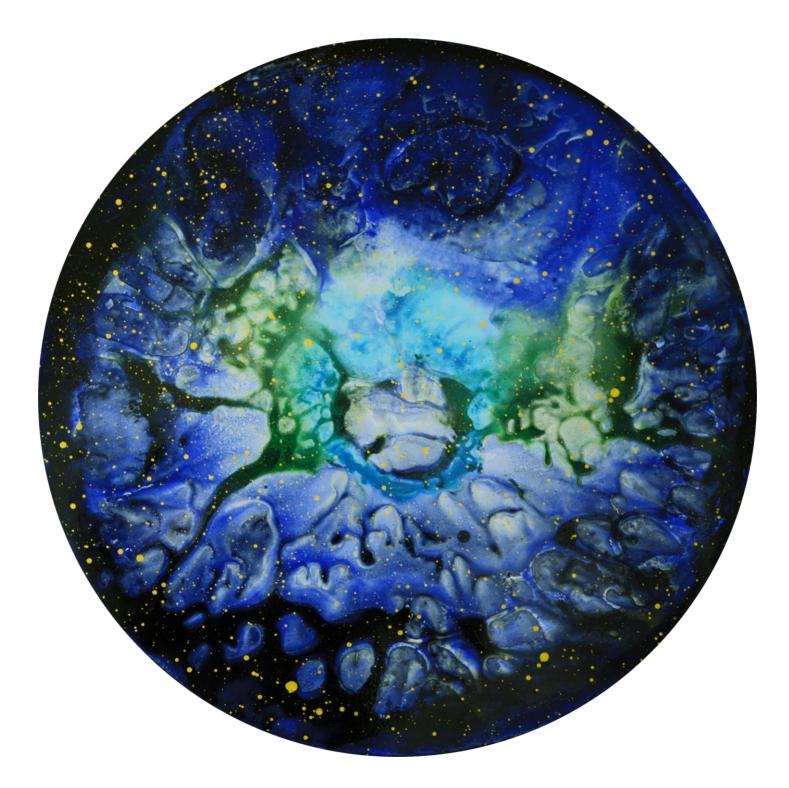












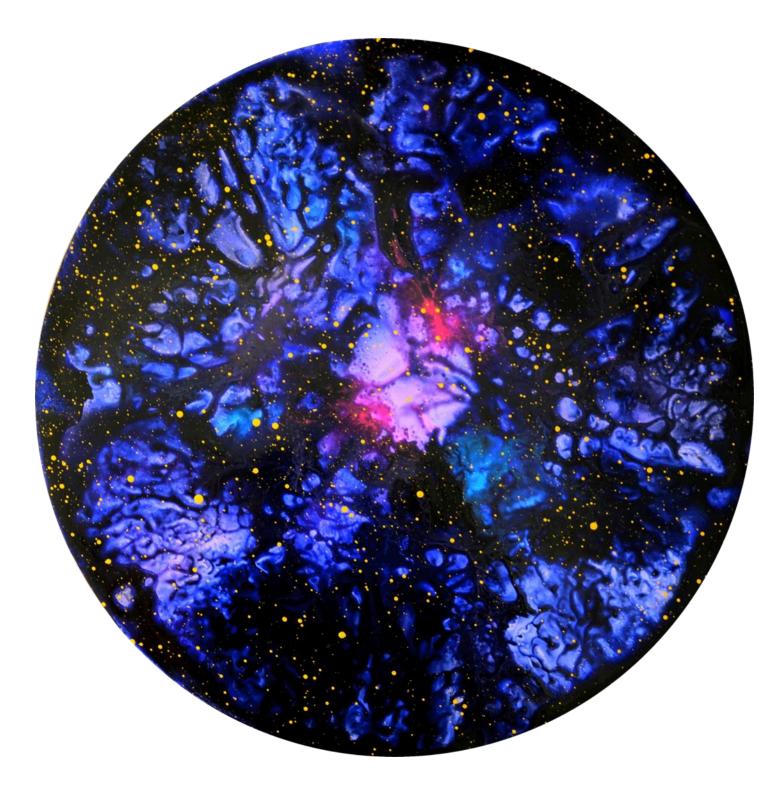


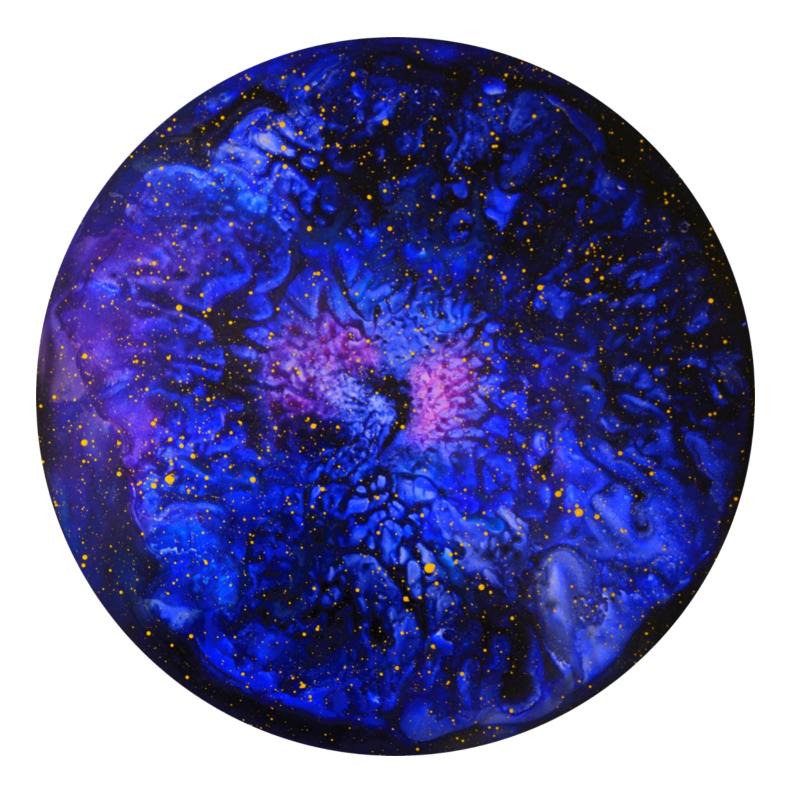


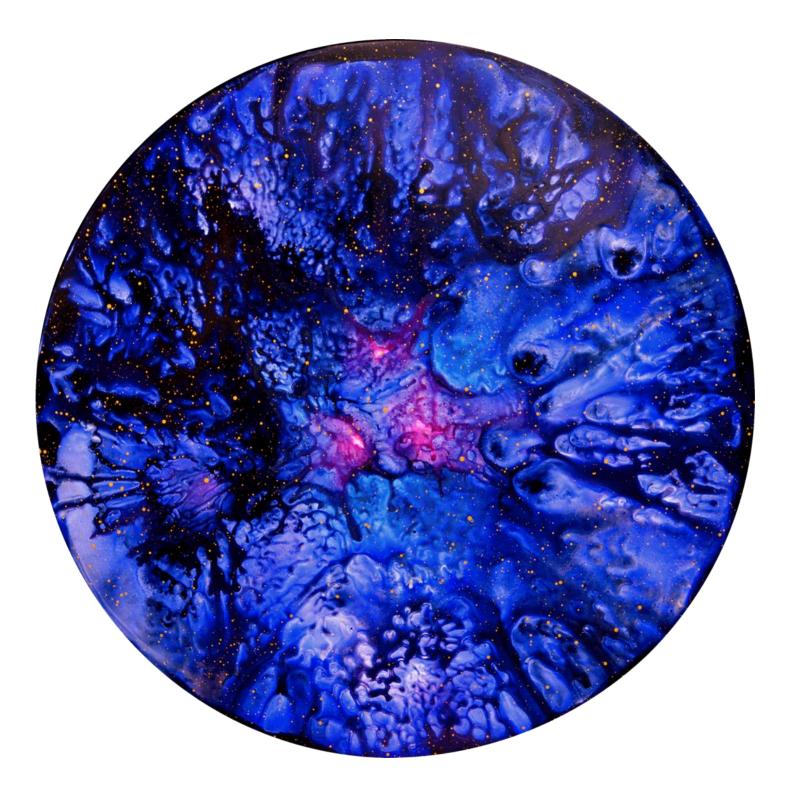










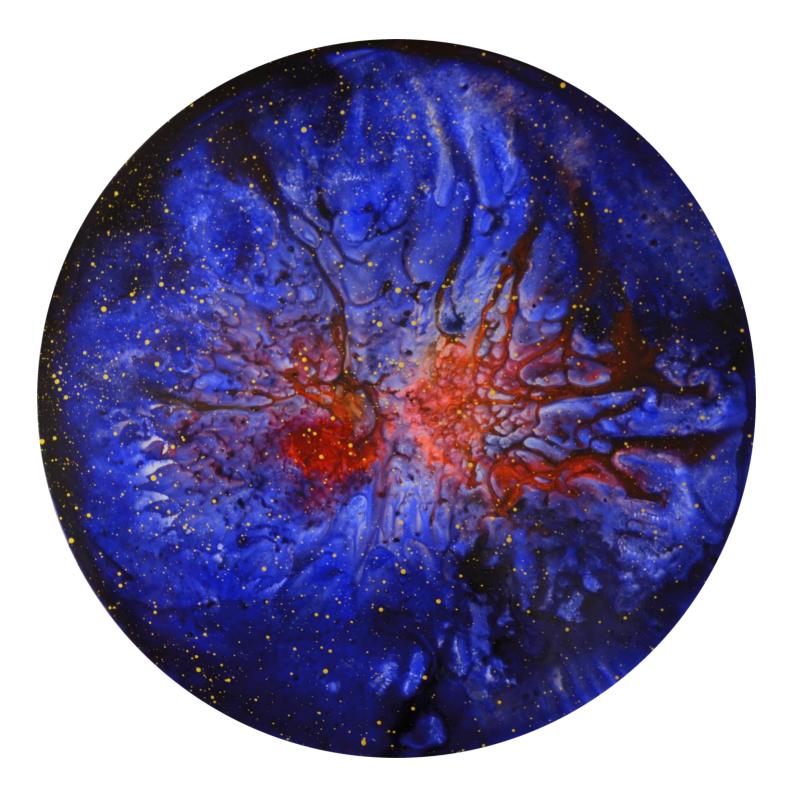












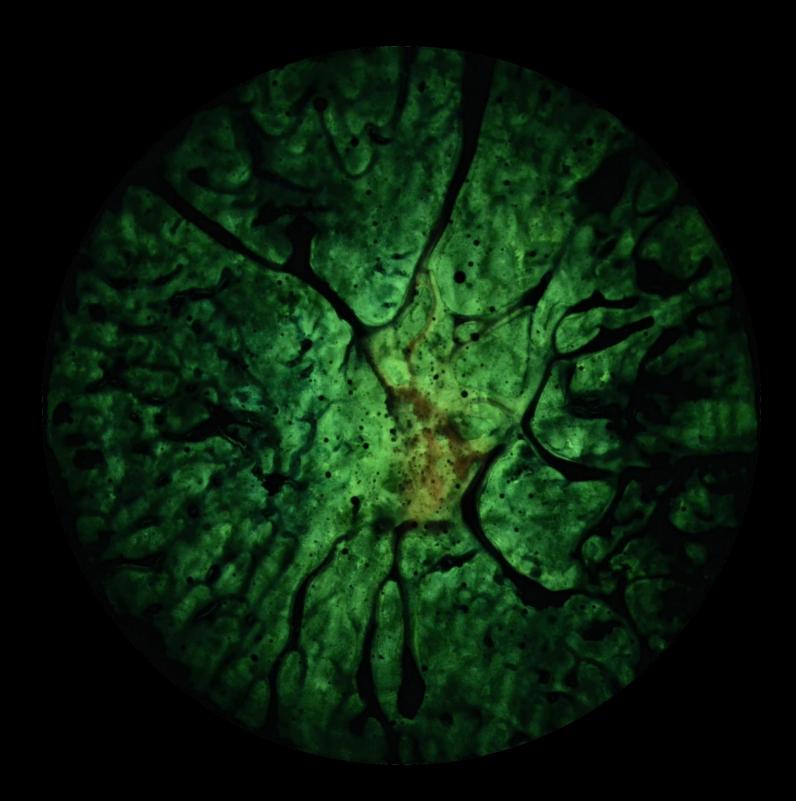




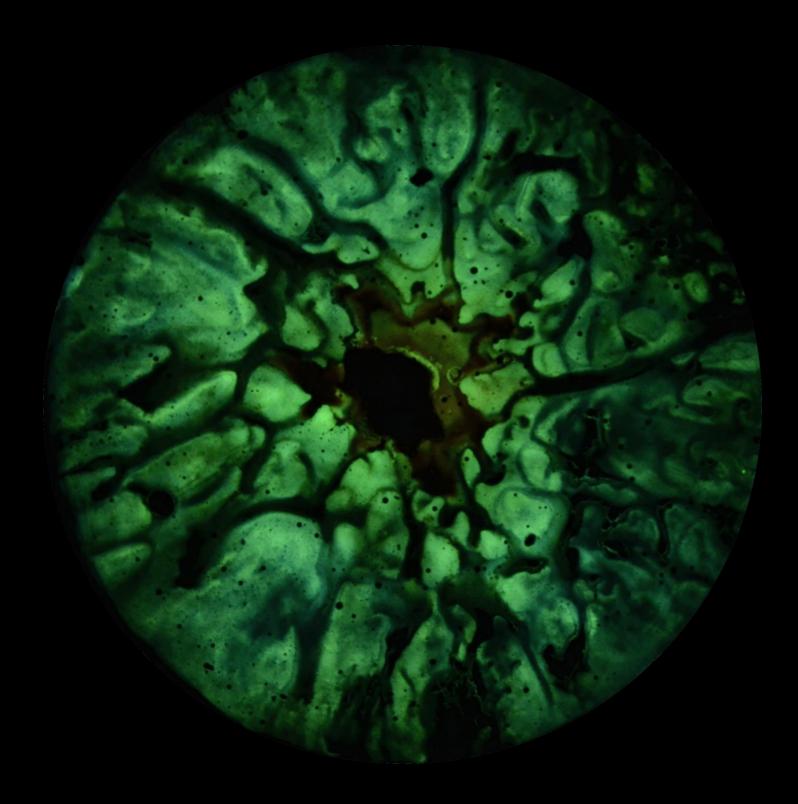
QUINTESSENCE

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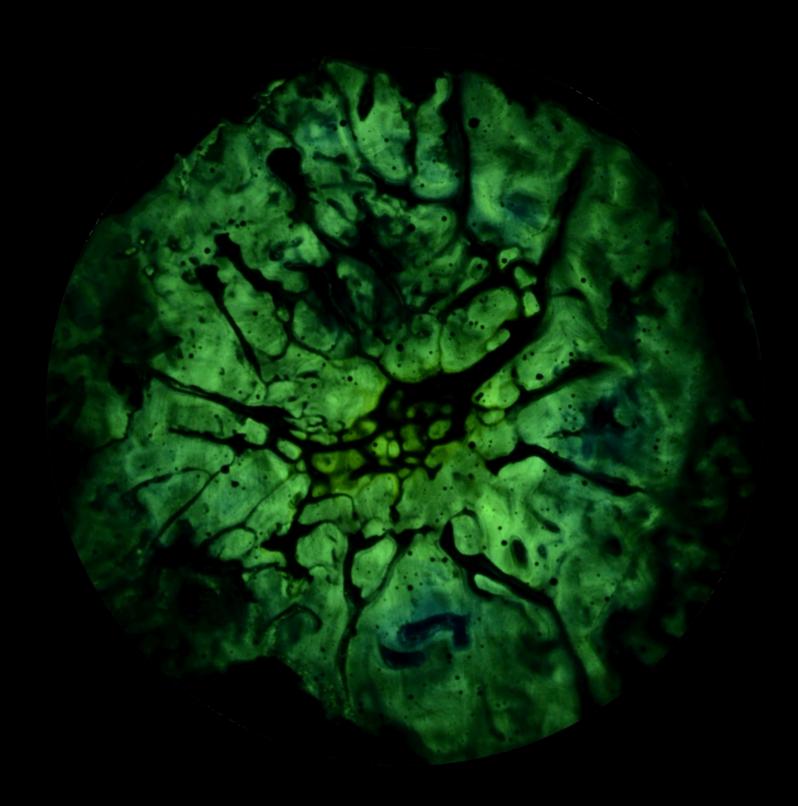
In the following: on the right page the artwork with daylight; on the left page the the artwork in the dark



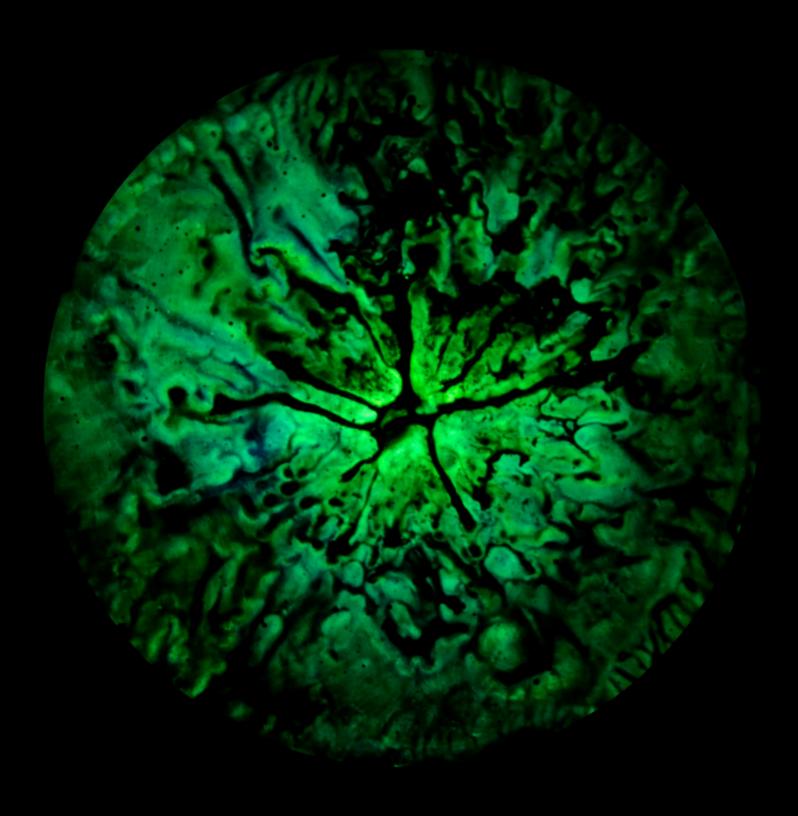




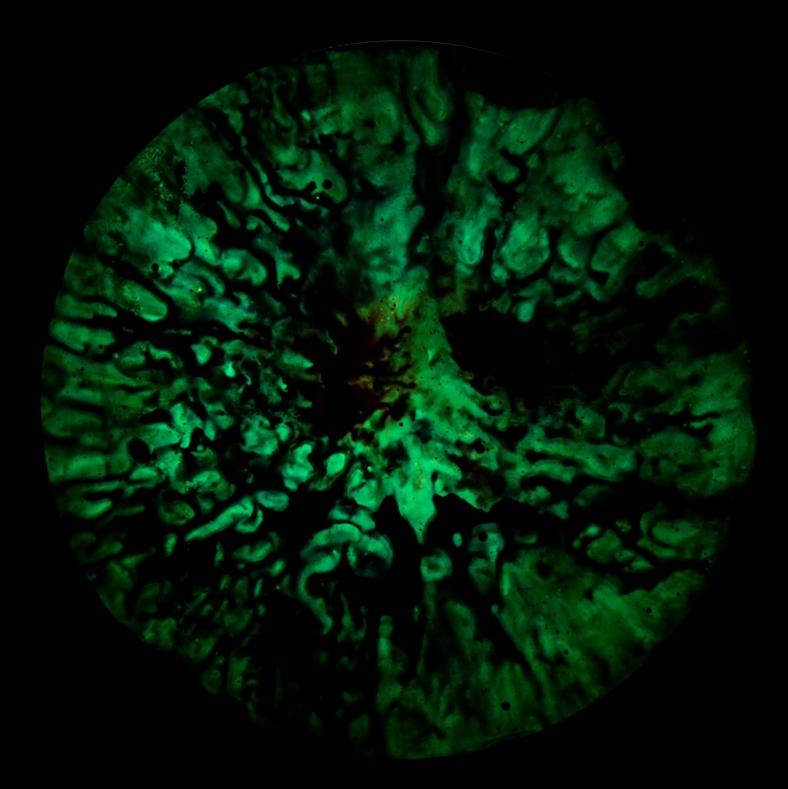




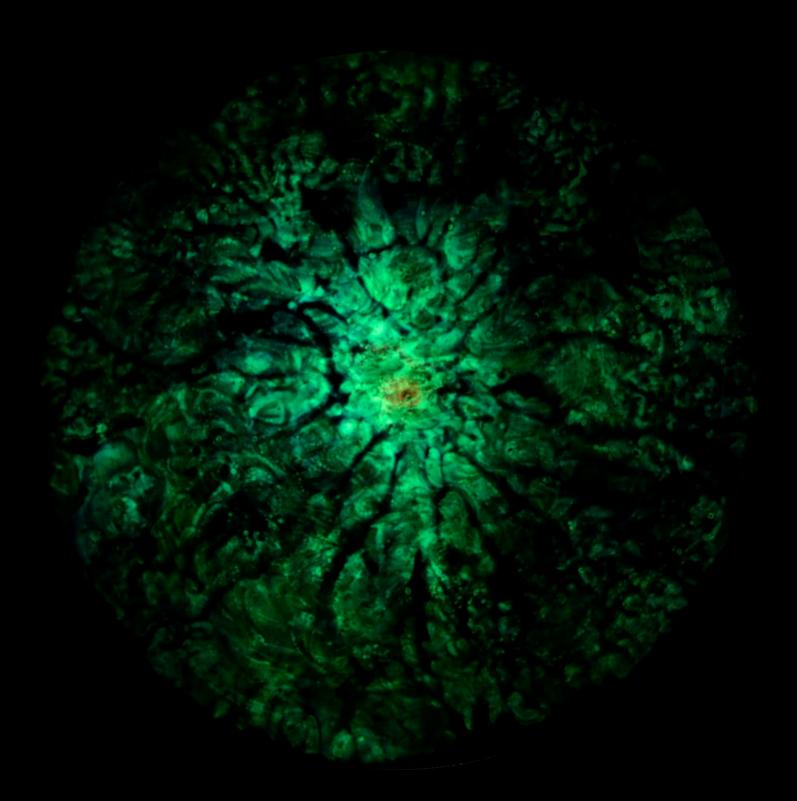










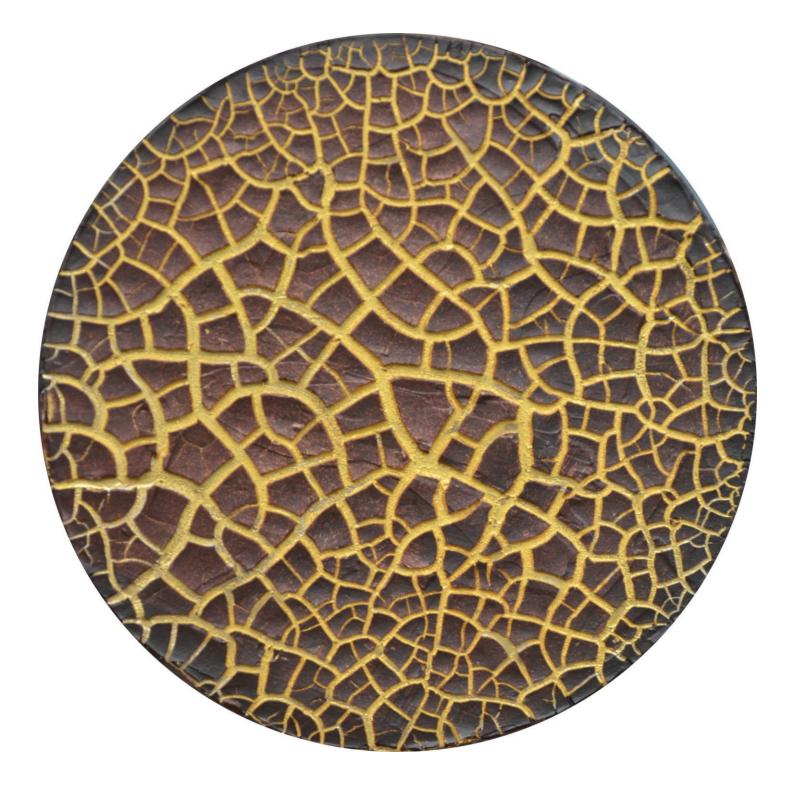






QUINTESSENCE





## **Artist biography**

Enrico Magnani is an Italian artist born in 1972. He definitively established his position in the art world after an eclectic journey through different fields for years, even scientific researcher in nuclear fusion. At some point in his career Magnani felt the need to make use of art in order to proceed along those narrow paths of knowledge where purely rational speculation is not enough, and the necessity to draw from the emotion and from that intuition that is not irrational, but "otherwise rational" that only art, at a certain level of development, can express.

After his first figurative period in which he painted bodies and faces only with the explicit intent to "amplify to shock", represented by the galleries in **Milan** and **Nice** (1997-2003) and in some collective exhibitions in Venice, Innsbruck, and Palmi, Magnani enters in a transition period that can be defined as "a blackout of meaning", namely a lack of faith in the message of his artworks that makes him lose the momentum for public exhibitions, but not the desire to seek and to paint.

He left Milan for **Paris** (2004-2006), where he continued to work on the human figure which is transformed, becoming more clean and symbolic. Only in Germany, **Karlsruhe** (2006-2011), did he definitively attain abstract painting, material and symbolic, with a higher message and, this time, "worthy of being conveyed".

In **2010**, in Germany, supported by Director Robert Walter, he presented his abstract creations for the first time at the Fondation Centre Culturel Franco-Allemand in **Karlsruhe**. In the same year, in **Turin**, he won the "Internazionale Italia Arte Prize" and began a long-lasting and fruitful collaboration with the MIIT Museum and its director Guido Folco. In subsequent years, under the curatorship of Guido Folco, his work was exhibited in important group exhibitions in various European capitals (Prague, Sofia, Copenhagen, Vienna, Cologne, Berlin, London, and Rome) alongside great names of the Italian art scene including Modigliani, Dova, Funi, Treccani, Boetti, Annigoni, Schifano, Scanavino, and Guttuso. In 2010 his book "Interview with Myself" was published; in the book Magnani explains the choice that led him to leave the world of scientific research to devote himself entirely to art, the abandonment of figurative painting, and the newly found message which aims to communicate with his abstract works.

In **2011**, he exhibited for the first time in the United States in a group exhibition at the 33 Contemporary Gallery in the Zhou Brothers Art Center of **Chicago** starting a still ongoing collaboration. In 2011, he also participated in the exhibition "Contemporary Italian Art" held at the Italian Cultural Institute of **Copenhagen** and "L'unità dell'Arte, l'arte dell'Unità", in **Rome**, at Complesso dei Dioscuri del Quirinale (Italian President Palace).



In **2012**, he realized a solo exhibition at the Altes Dampfbad of **Baden-Baden** (Germany) and two group exhibitions at the Italian Cultural Institute of **Sofia** and **Cologne**. In the same year he began a collaboration with the Akbaraly Foundation with the charity exhibition "Imagine" held at the AEM Foundation in Milan.

In **2013**, he made two important solo exhibitions: "Mystical Treasures" at the Italian Cultural Institute of **Stuttgart** and "Harmonices Mundi" at the Italian Cultural Institute of **Prague**; the latter inspired by the mystical themes of Johannes Kepler and especially creating a work dedicated and donated to the city of Prague in the presence of the mayor and the Italian diplomatic corps. Also in 2013, to remember his participation in the collective exhibition "Ad Aeternum" at the Palazzo Pontificio Maffei Marescotti in **Vatican City**.

In December **2014**, the MIIT, Museo Internazionale Italia Arte of **Turin**, realized a retrospective entitled "Mystical Treasures - Works 2007-2014" accompanied by a catalogue that collected for the first time the works of his abstract period. Again in 2014, in **Vienna**, at the Italian Cultural Institute, in the collective exhibition "Sentieri di Pensieri", Magnani exhibited for the first time a wearable artwork.

In **2015**, one of his works was part of the exhibition "From Picasso to contemporary artists" at the Oud Sint-Jan Museum in **Bruges**, Belgium. In October of the same year, he displayed his art project "Cosmic Hug - Connecting art and people together" at the Pinacoteca Ambrosiana in **Milan** with an event in favour of the Akbaraly Foundation presented by Alessandro Cecchi Paone and followed by *Vogue Italia*. His keenness for Charity projects has brought him to support associations like the Akbaraly Foundation (Madagascar), United Charity (Germany) and Ring14 (Italy).

In April **2016**, following the invitation of the director Giovanni Sciola, he came back to the Italian Cultural Institute of **Prague** with the "Magnum Opus" exhibition held on the occasion of the international academic conference "Greed of the Unknown". In May of 2016 in **Chicago**, at the Zhou Brothers Art Center, he created the collection "Universal Flag" displayed in the homonymous exhibition, curated by Sergio Gomez, at the ACS Gallery. In November of the same year the documentary film "Enrico Magnani - Mystical Treasures" was made and broadcast on national channels on January 10, 2017.

In February of **2017**, with "The Gold of the Earth", exhibition curated by Prof. Massimo Mussini at the Cloisters of San Domenico in **Reggio Emilia**, Magnani displayed more than a hundred artworks covering the last ten years of his abstract work. In September of the same year, following the invitation of the director of the Italian Cultural Institute of **Chicago**, Alberta Lai, presents his solo exhibition "Supernova - Birth to Life", beginning a new series of works totally different from everything done in the previous years.

In February **2018**, with the exhibition "Supernova - Figurazioni Cosmiche", curated by Francesca Barbi Marinetti and Simona Cigliana, Enrico Magnani shows in **Rome**, at Sala del Cenacolo of the Italian Chamber of Deputies, the Supernova collection exhibited the previous year in the United States. In July, he takes part in the exhibition curated by Guido Folco "Maestri Reali (Royal Masters)" held at the National Library of **Turin**. The same year Magnani begins the new series "Supernova - Dark Matter" working with phosphorescent pigments to highlight more and more the connection between Art and Science.

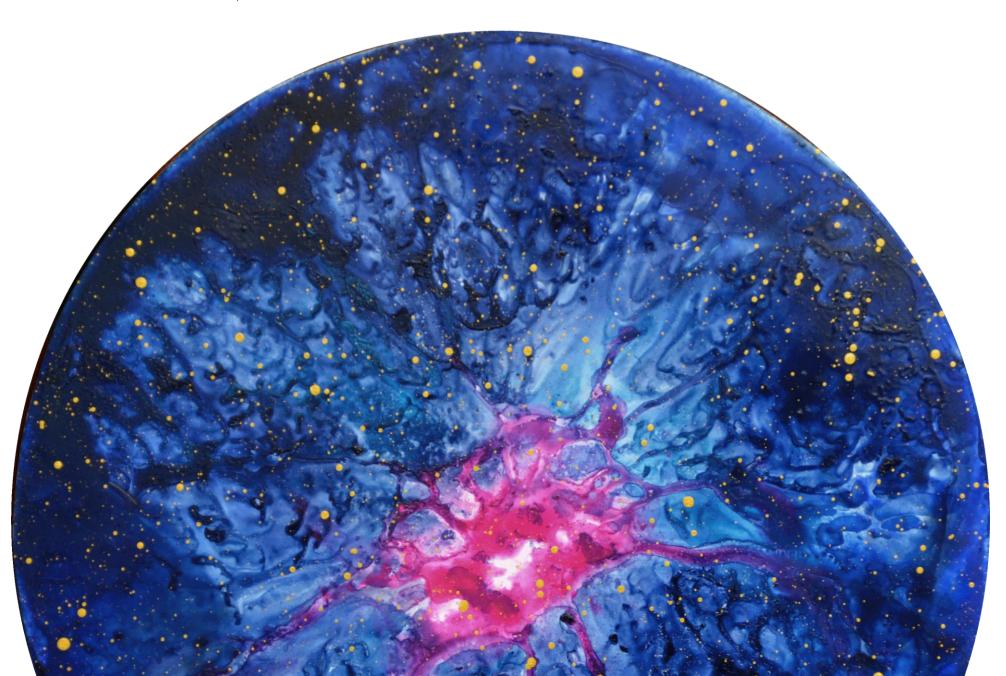
In July **2019**, Magnani brings his new collection "Supernova Dark Matter" to CERN (European Organization for Nuclear Research) in **Geneva** with the exhibition "Searching the Unknown" curated by Marilena Streit-Bianchi. The Art & Science project includes the publication of a catalogue that, in addition to artworks, collects texts by renown exponents of various disciplines from art to physics and cosmology.

In March **2020**, for the Gran Sasso National Laboratory (LNGS-INFN) in **L'Aquila**, Magnani begins the creation of the permanent installation "Quintessence", which is subsequently set up on five walls of the research division. The installation is completed in October. The work, inspired by astroparticle physics, aims to develop and promote the interaction between the world of art and the world of science for a new vision and understanding of our universe.

In July **2022**, in **Bologna**, on the occasion of ICHEP 2022 (International Conference on High Energy Particles), Magnani presents the interactive exhibition "Light in the Dark" curated by Marilena Streit-Bianchi and Kerstin Petrick. Fluorescent and phosphorescent works with a cosmological character that react to the ultraviolet light from flashlights used by the viewers. Part of this exhibition will then be mounted in September of the same year in **Cagliari** on the occasion of the "Gravitas Fest", organized by INFN (National Institute of Nuclear Physics).

## **SELECTED SOLO EXHIBITIONS**

- 2022 Cagliari, Italy | Centro comunale di arte e cultura Il Ghetto | Light in the Dark
- **Bologna**, Italy | Sala Borsa Auditorium Biagi | Light in the Dark
- 2020 L'Aquila, Italy | LNGS (Gran Sasso National Laboratory) | Quintessence Permanent Art & Science Installation
- 2019 L'Aquila, Italy | GSSI (Gran Sasso Science Institute) || Searching the Unknown The Dark Matter Collection
- Geneva, Switzerland | CERN (European Organization for Nuclear Research) | Searching the Unknown The Dark Matter Collection
- 2018 Rome, Italy | Rome Art Week Galleria D.d'Arte | Supernova
- Rome, Italy | Sala del Cenacolo, Chamber of Deputies (Italian Parliament) | Supernova Figurazioni Cosmiche
- 2017 Chicago, USA | Italian Cultural Institute | Supernova Birth to Life
- Reggio Emilia, Italy | Cloisters of San Domenico | The Gold of the Earth 100 artworks of the abstract period
- 2016 Chicago, USA | ACS Gallery, Zhou B Art Center | Universal Flag
- Prague, Czech Republic | Italian Cultural Institute | Magnum Opus
- 2015 Milan, Italy | Pinacoteca Ambrosiana | Cosmic Hug No.3
- 2014 Turin, Italy | MIIT Museo Internazionale Italia Arte | Mystical Treasures
- 2013 Prague, Czech Republic | Italian Cultural Institute | Harmonices Mundi
- Stuttgart, Germany | Italian Cultural Institute | Mystical Treasures
- 2012 Baden-Baden, Germany | Altes Dampfbad | Mystical Treasures
- 2011 **Karlsruhe**, Germany | Galerie Inken | Here and Beyond
- **Jockgrim**, Germany | Ziegelei Museum | Materia e Simbolo
  - Brussels, Belgium | Multicultural Space Piola.Libri | Materia e Simbolo
- 2010 Turin, Italy | Villa Gualino | Materia e Simbolo
- Karlsruhe, Germany | Fondation Centre Culturel Franco-Allemand | Materia e Simbolo
- 2001 **Nice**, France | Galerie Art



## SELECTED GROUP EXHIBITIONS

2021	- <b>Turin</b> , Italy   MIIT Museum   Moscow-Turin
	- Madrid, Spain   Andares   La Gran Via Cultural de Madrid
2020	- Trieste, Italy   Tivarnella Art Gallery
2019	- Madrid, Spain   Appa Gallery
	- <b>Rome</b> , Italy   Palazzo della Cancelleria del Vaticano   Rinascimento contemporaneo - Da Leonardo ai contemporanei
2018	- <b>New York</b> , USA   Saphira & Ventura Gallery   Art & Freedom
	- <b>Venice</b> , Italy  Palazzo Albrizzi-Capello   Venezia Contemporanea
	- Turin, Italy   National Library   Maestri Reali
2017	- <b>Stuttgart</b> , Germany   Rathaus Stuttgart   Italia Creativa
	- Chicago, USA   Zhou B Art Center   Geometric Complexions
	- Chicago, USA   33 Contemporary Gallery - Zhou B Art Center   International Biennial of Contemporary Art
2016	- Bruges, Belgium   Oud Sint Jan Museum   From Picasso and Mirò to contemporary artists
	- Chicago, USA   33 Contemporary Gallery - Zhou B Art Center
2015	- Bruges, Belgium   Oud Sint Jan Museum   From Picasso to contemporary artists
	- Berlin, Germany   Dali Museum   Dream Art
	- <b>Desio</b> - Milan, Italy   Museo Scalvini   La Realtà e la Materia
2014	- Vienna, Austria   Italian Cultural Institute   Sentieri di Pensieri
	- <b>Lipari</b> , Aeolian Islands, Italy   Museo della Memoria   Mediterranean Contemporary Art
	- Albenga, Italy   Fondazione Oddi - Palazzo Oddo   Dal 900 al contemporaneo
2013	- Vatican City   Palazzo Pontificio Maffei Marescotti   Ad Aeternum - Arte Immortale
	- Chicago, USA   Zhou Brothers Art Center Foundation   International Biennial of Contemporary Art
	- Milan, Italy   Fondazione AEM - Museo dell'energia   Planet Water
0010	- <b>Bonn</b> , Germany   Künstlerforum   Internazionale Italia Arte
2012	- <b>Sofia</b> , Bulgaria   Rayko Alexiev Community Center   L'Italia del Futuro
	- Turin, Italy   MRSN - Museo Regionale di Scienze Naturali   Network
	- Cologne, Germany   Italian Cultural Institute   Imagine - Immagina
2011	- Turin, Italy   Castello Reale del Valentino   I Contemporanei
2011	- <b>Prague</b> , Czech Republic   Italian Cultural Institute   150 anni dell'unità d'Italia
	- <b>Chicago</b> , USA   33 Contemporary Gallery, 2011   Network - <b>Rome</b> , Italy   Dioscuri del Quirinale (Italian President Palace)   L'unità dell'arte, l'arte dell'unità
	- <b>Copenhagen</b> , Denmark   Italian Cultural Institute   Arte Italiana Contemporanea
	- Copennagen, Denmark   Italian Cultural Institute   Arte Italiana Contemporanea - Paris, France   Galerie Menouar
	- Florence, Italy   Dante Alighieri's House   L'unità dell'arte, l'arte dell'unità
2010	- Paris, France   Palais des Congrès   Arte italiana contemporanea
1998	- Palmi, Italy   Leonida Repaci Museum - Contemporary Art Section
	- Innsbruck, Austria   Galerie Bertrand Kass
	- Venice, Italy   Galleria Studio Palazzi
1997	- Vence, Raly   Galleria Studio Falazzi - Milan, Italy   Galleria Giacobbe Spazio
1///	Tillai, Italy   Galeria Glacobe Spazio