

# Archetypes and Architecture of Time

An Artistic Inquiry  
into the Nature of Time,  
its Interpretations and  
its Visual Metaphors

by Olga Ast

The notion of Time has always mystified and attracted the speculation of humanity. What is its nature? Where is it going and where does it come from? Is it possible to fool it, to build a time machine? Scientists, philosophers and religious figures have all attempted to answer such questions - yet we are still left with few, if any, answers. Can Art help in our inquiry? If we combine the previous efforts toward a solution of the Time Conundrum with the application of artistic inquiry and art history, I propose that we will have a better picture of the way that humans have understood time, have visualized it, and have potentially misinterpreted it for generations.

My work as a conceptual artist investigates the connection between time, space and information, and the impact that they have on everything that we find around us.

Since mid 1980s, I have been working in a so-called "gray zone" between art and science. My main goal over those years has been to find a true symbiotic relationship between the two disciplines, and to begin to structure new ideas that can be developed only through the collaboration and conjunction of both.

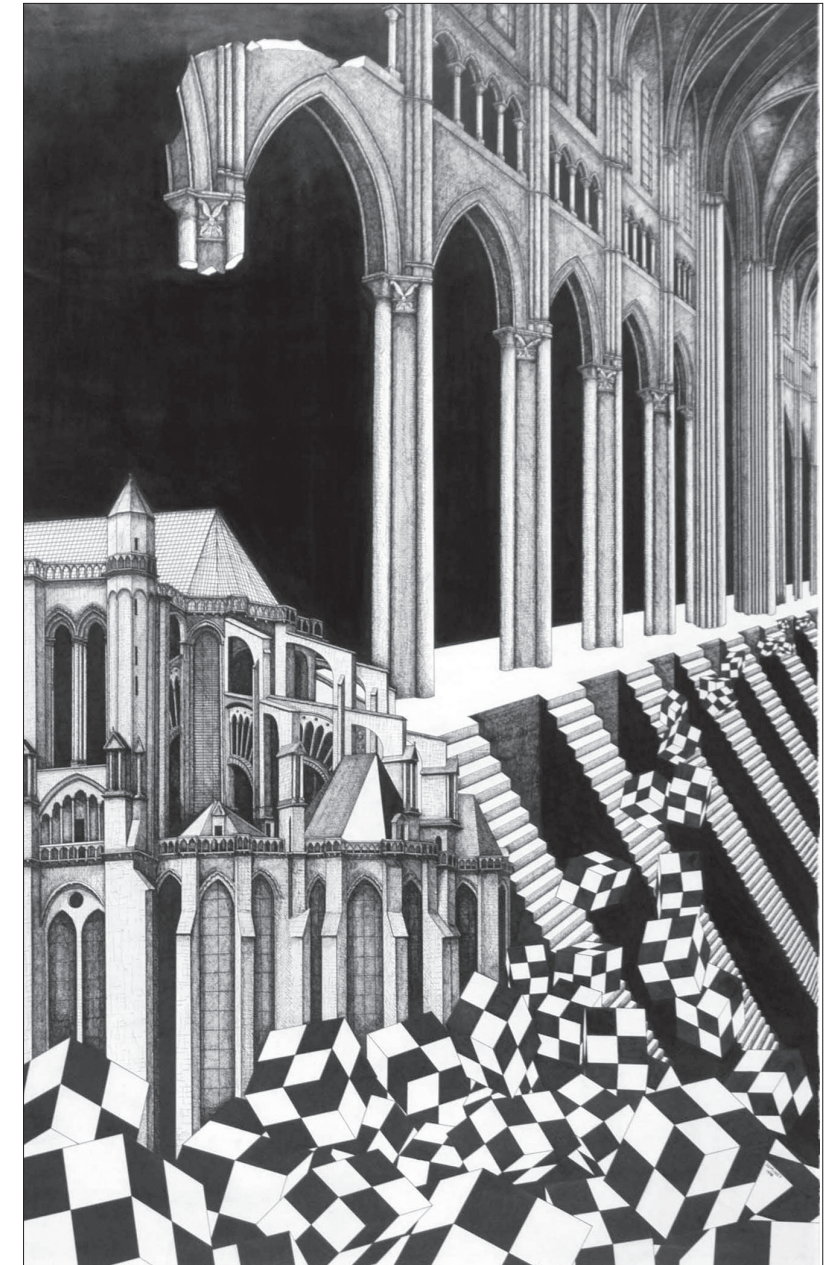


© Olga Ast. 1995





# TIME AS FEAR, DEATH AND DESTRUCTION



Kali, warrior goddess of fertility, time, mysteries, destruction and death. India. Replica of the ancient sculpture.

Philippe de Champaigne. Vanity. XVII c.

Jean-Pierre LUMINET. Chronos. 1993



# TIME AS A CLOCK

Illustration for Origins of Time's Arrow Conference. The New York Academy of Sciences, <http://www.nyas.org/>

Illustration for Wikipedia article about Time. <http://en.wikipedia.org/wiki/Time>

Magazine Advertisement. 2006



**Deadlines. Drop dates. Triggers. Versions... Help!!**

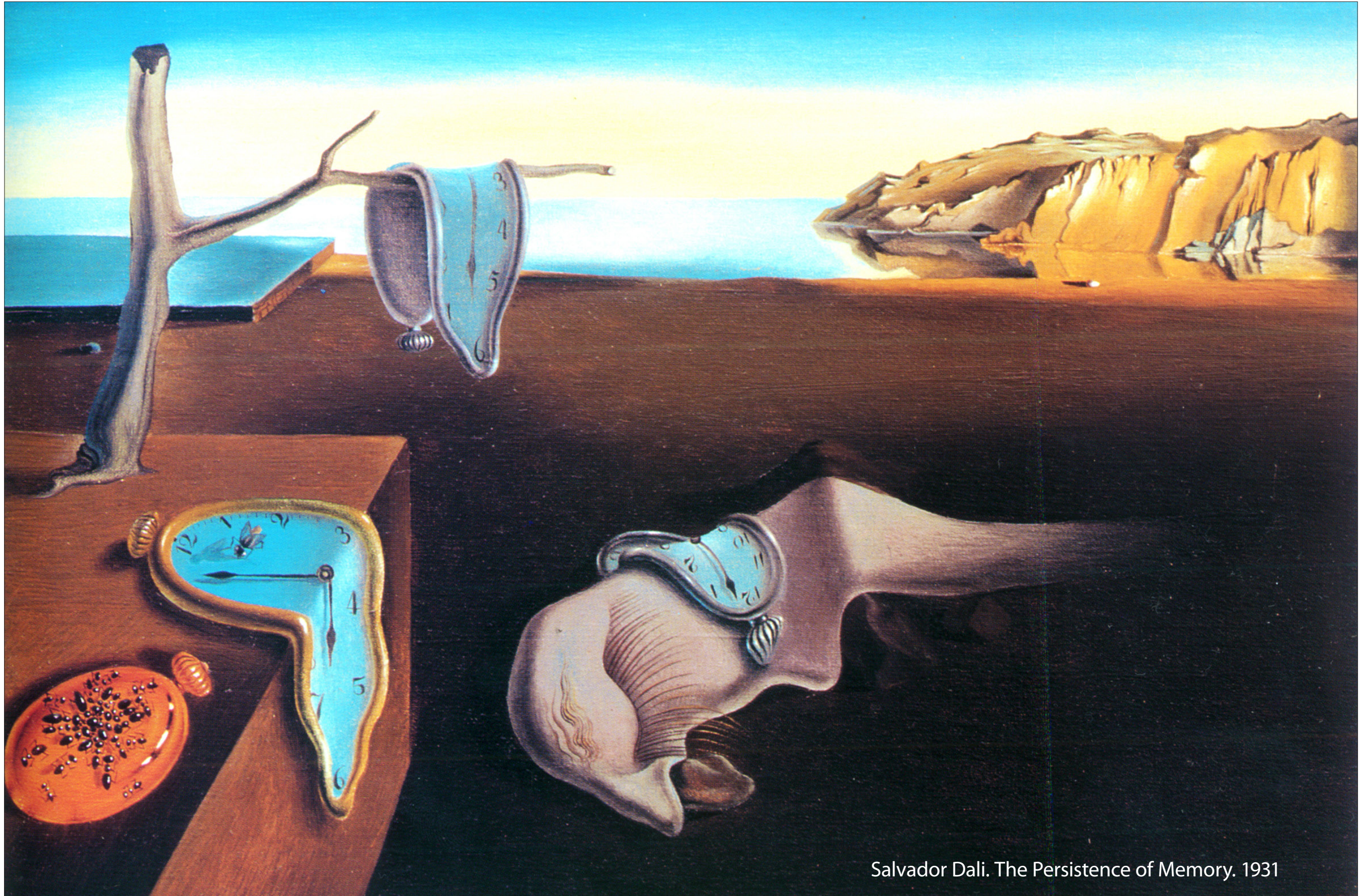
**We make complicated easy.** Overwhelmed? MultiChannel marketing can be hectic and complex. With daily triggers, highly versioned messages, customer preferences and multiple mediums.

**eMAIL**

**DIRECT MAIL**

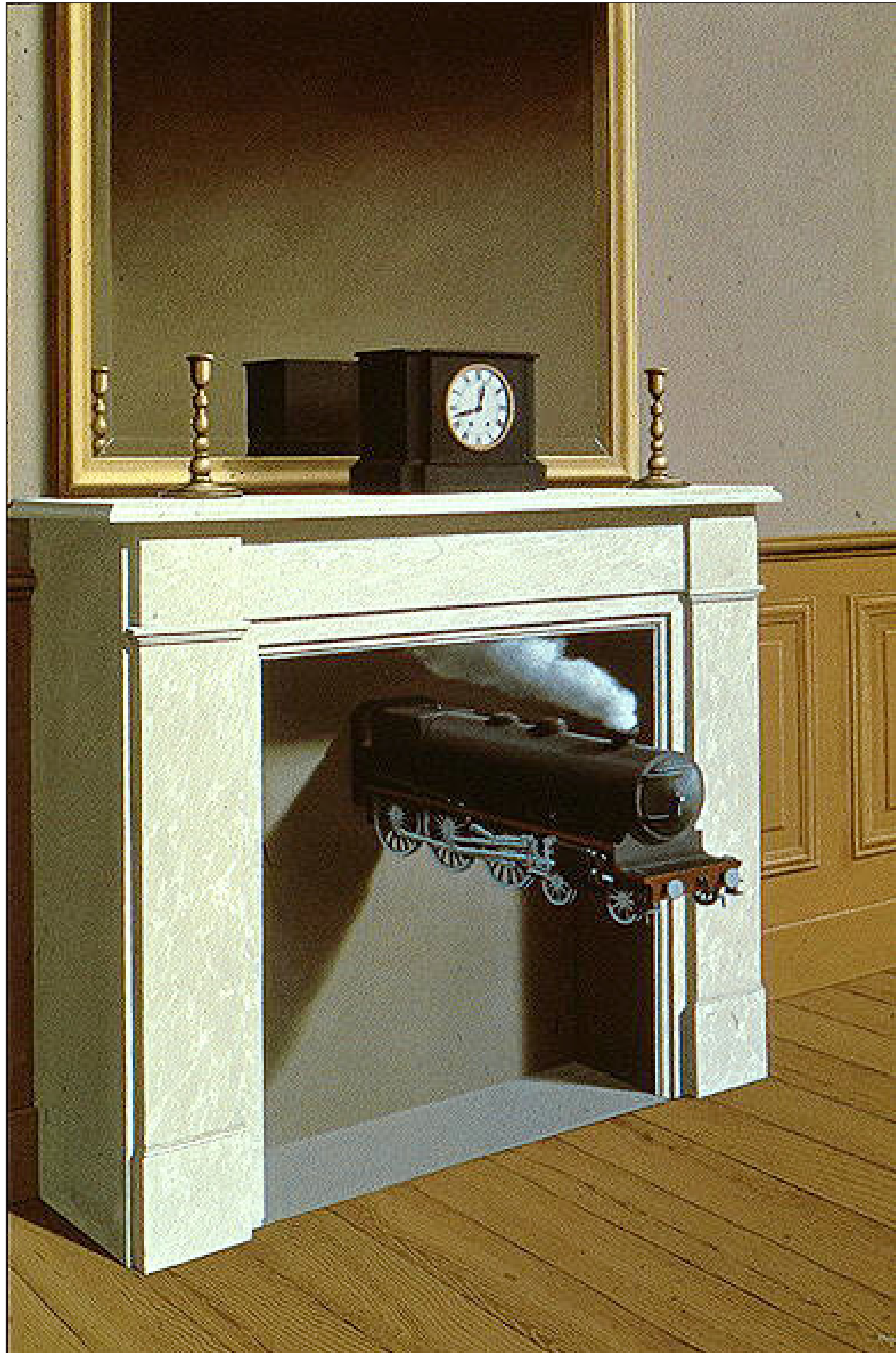
That's where Click Tactics comes in. We can make





Salvador Dalí. The Persistence of Memory. 1931

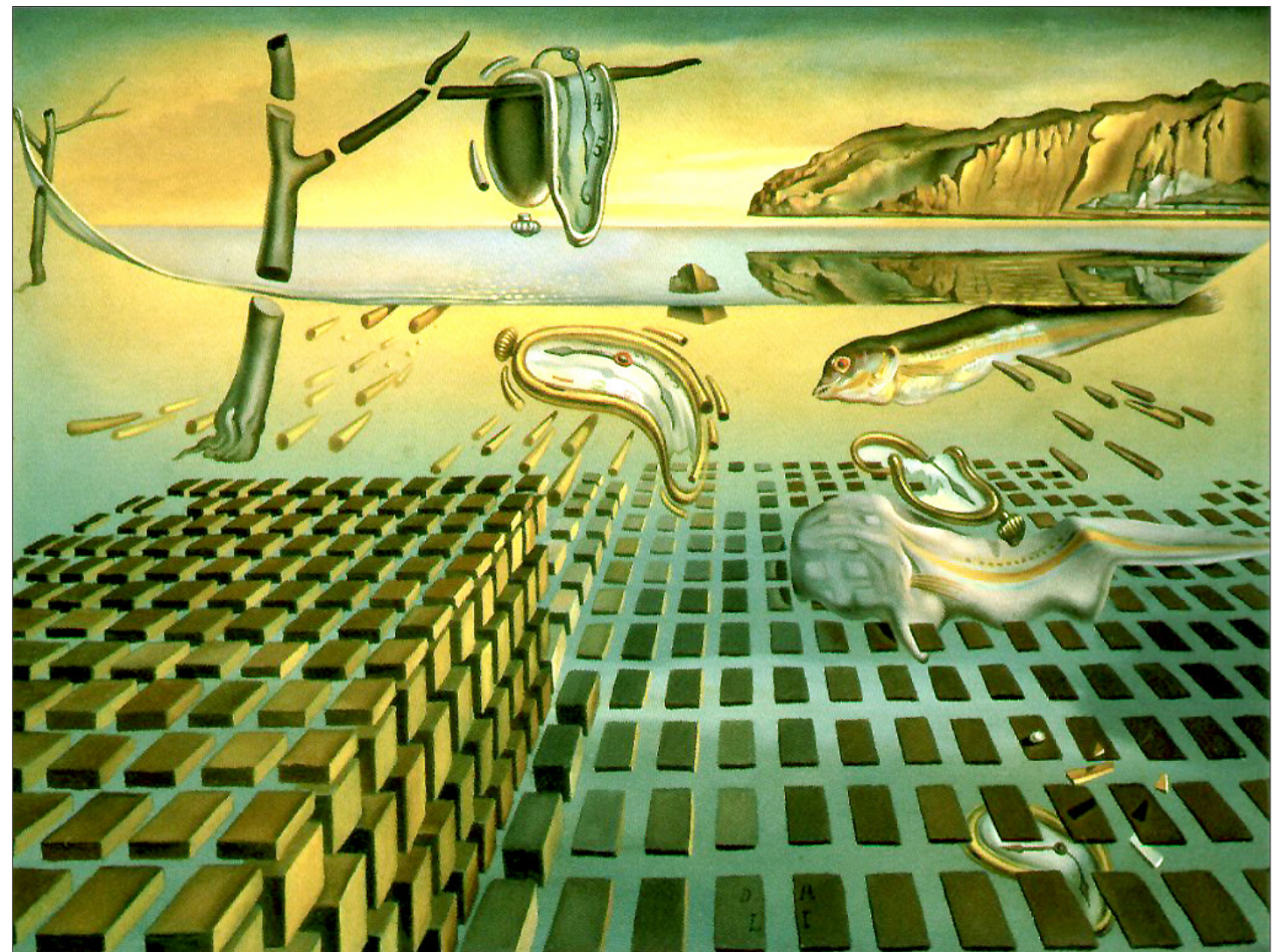




Rene Magritte. Time Transfixed. 1938

# TIME AS A CLOCK

Salvador Dali. The Disintegration of the Persistence of Memory. 1954







# TIME AS A SANDGLASS

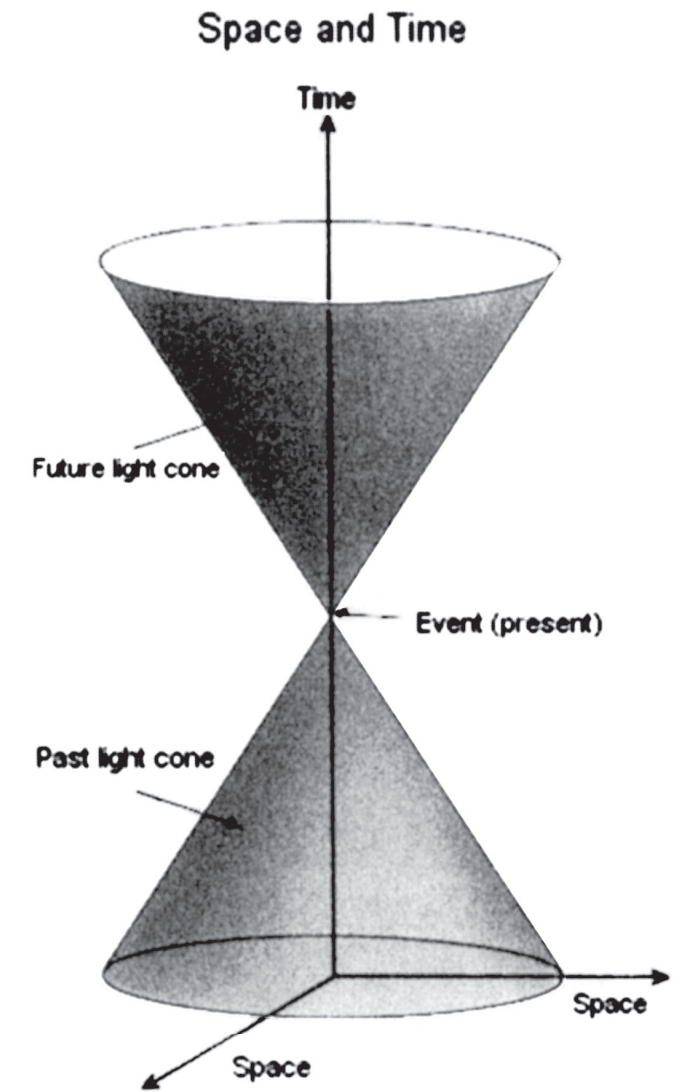


Chronos. Recoleta Cemetery. Buenos Aires. XIX c.

Philippe de Champaigne. Vanity. XVII c.

Stephen Hawkins. A Brief History of Time. XX c.

Figure of Time. The Henniker tombs in the North Aisle of Rochester Cathedral. Kent, England. XVIII c.





# TIME AS A RIVER

Tomb of Seti I, Son of Rameses I. The Valley of the Kings. XIX Dynasty. 1278 BC.



A. Zick: Psyche and Charon, c. 1892. Photo ©Maicar Förlag-GML

Zick. Psyche and Charon. 1892.  
Carlos Parada Greek Mythology  
Link Collection.





Joachim Patenier. Charon crossing the Styx. 1515-24.

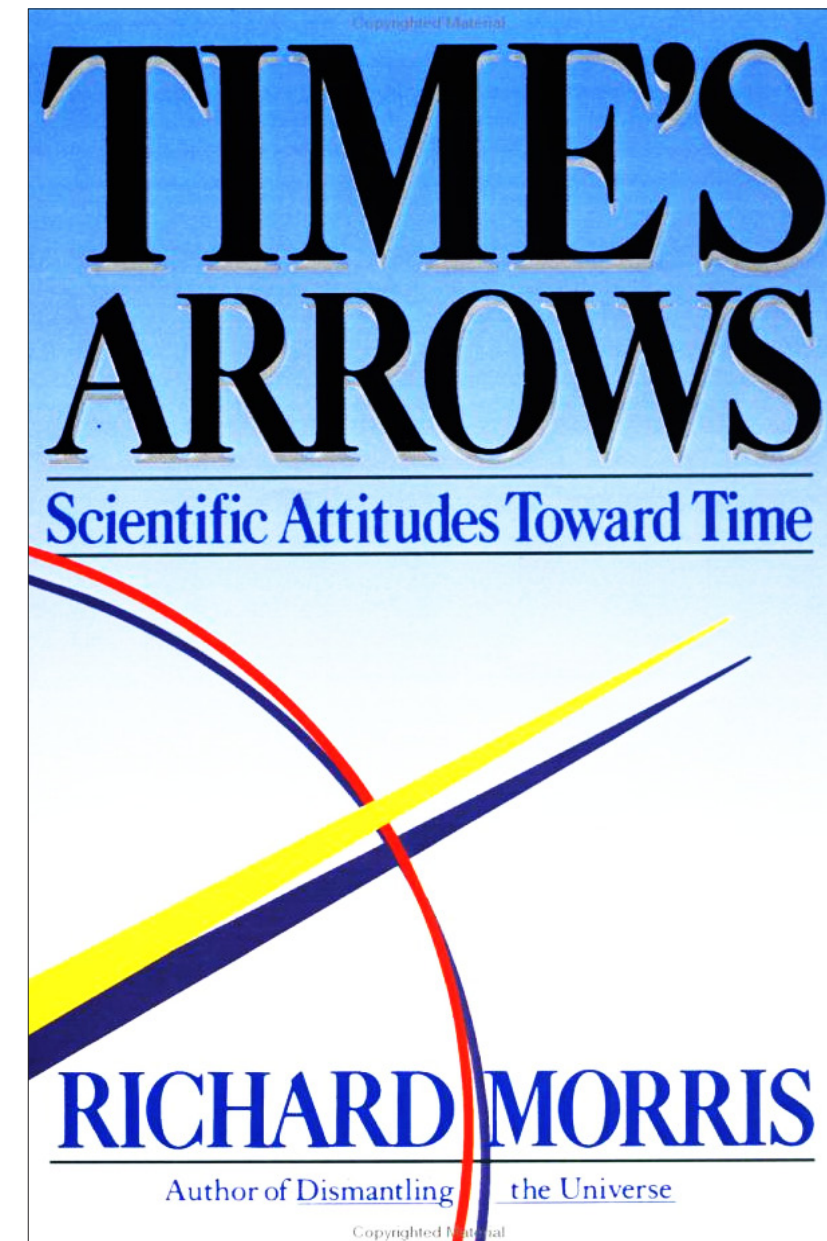
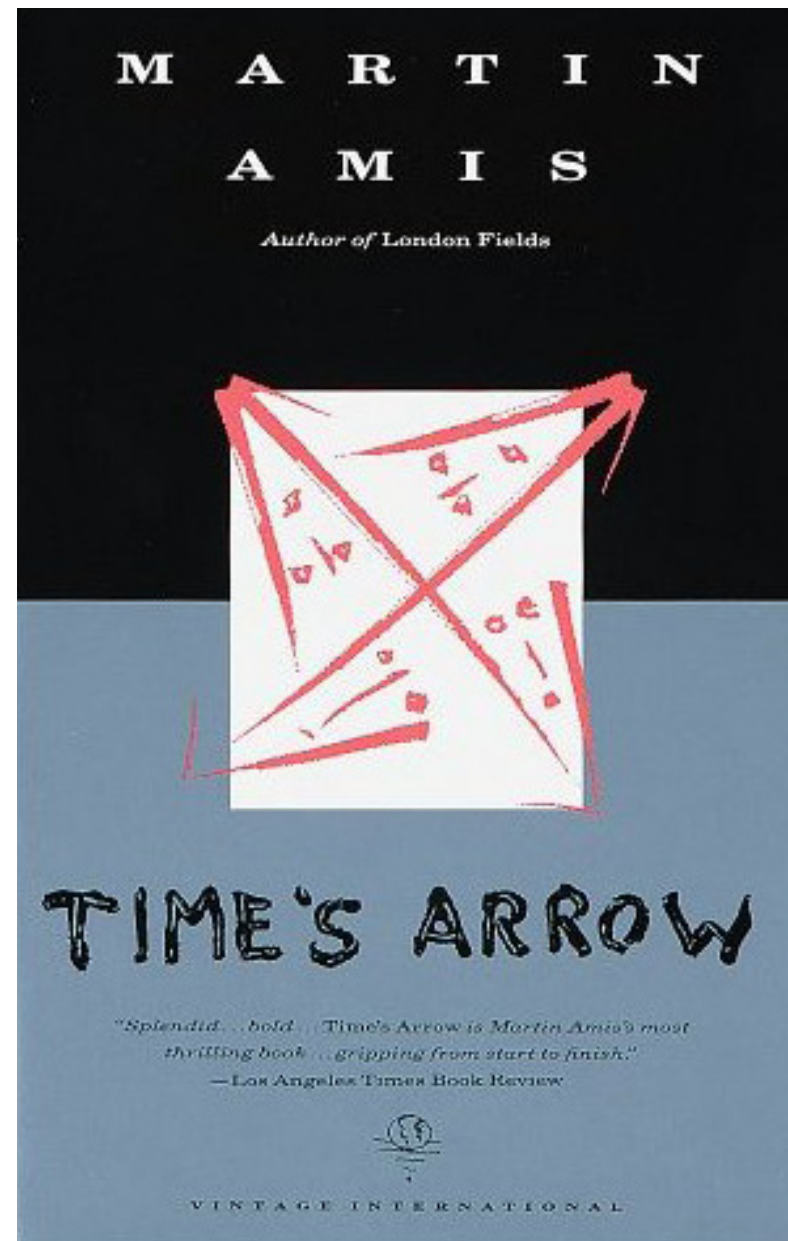
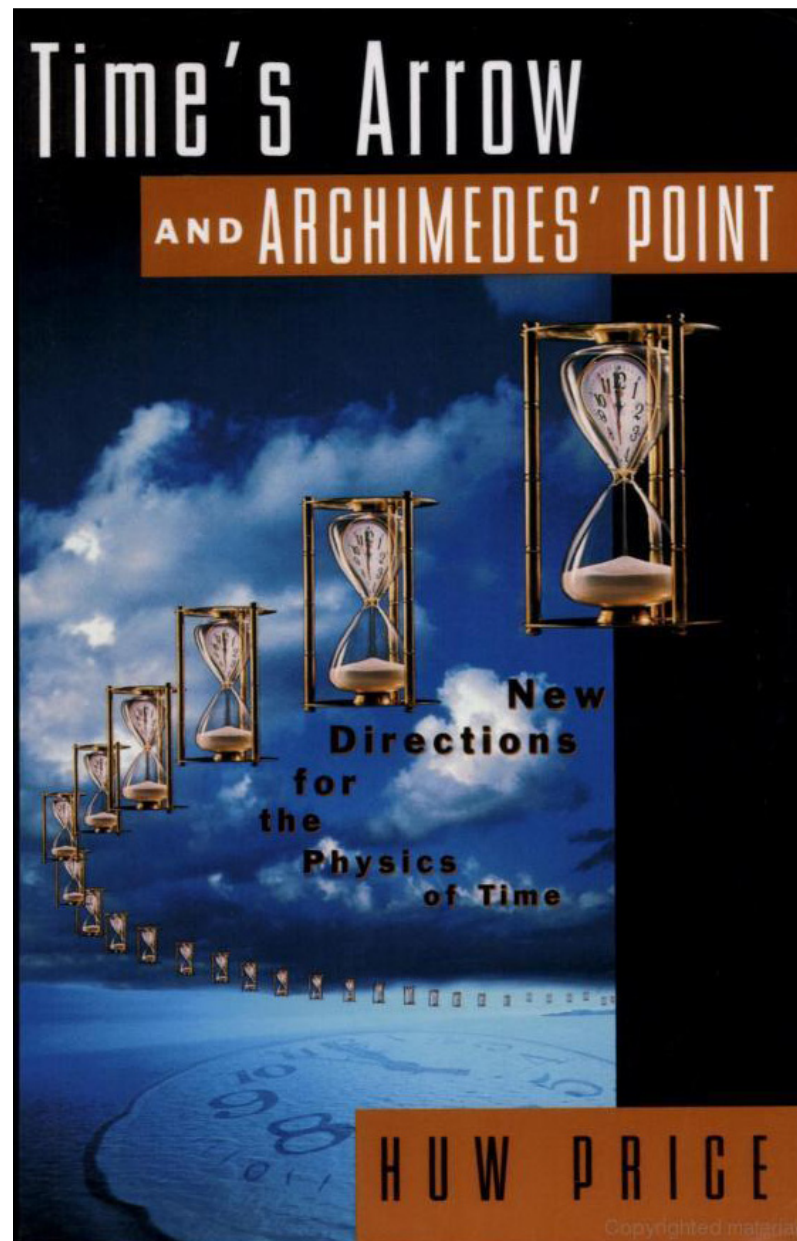


# TIME AS AN ARROW

Book Cover: "Time's Arrow and Archimedes' Point: New Directions for the Physics of Time" by Huw Price. 1997

Book Cover: "Time's Arrow" by Martin Amis. 1992

Book Cover: "Time's Arrows: Scientific Attitudes Toward Time" by Richard Morris. 1986

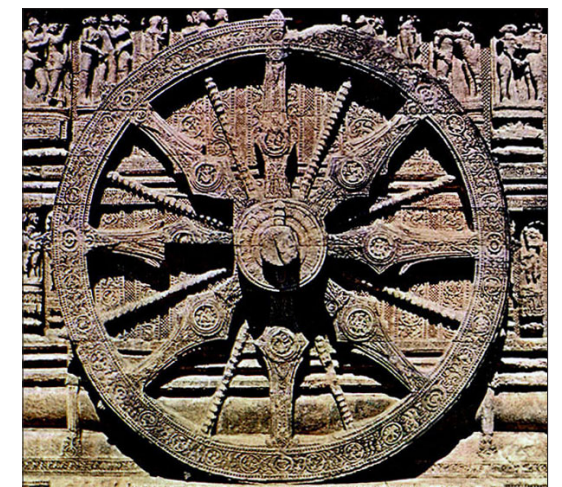
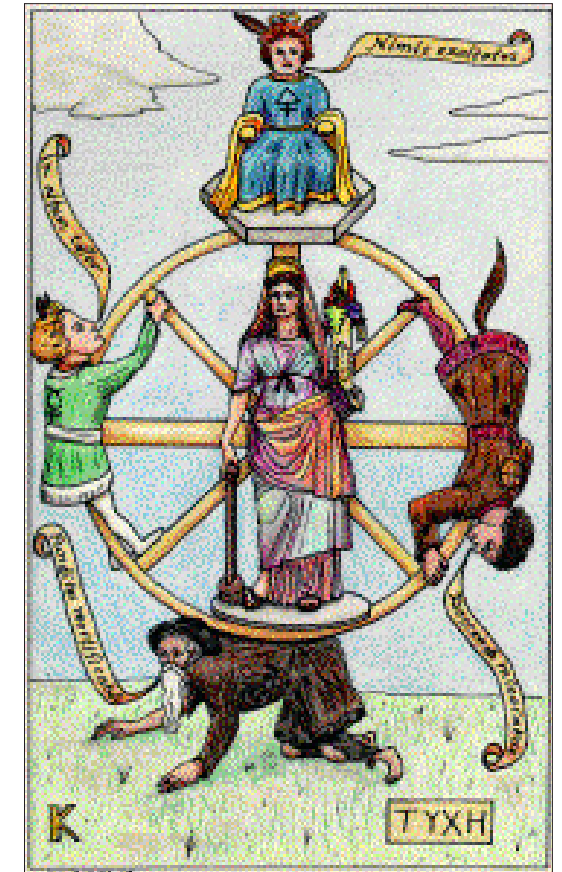






Tibetan  
mandala.  
XVIII c.

# TIME AS A CIRCLE



Kali, warrior goddess of time, destruction and death. India. XX c.

Wheel of Fortune. Miniature. France. XIV .c.

Tibetan mandala. XVIII c.

Wheel of Salvation. India. VIII c.





# UROBOROS

Brown Jade pig-dragon (Coiled Zhulong). Neolithic Hongshan culture. VI millennium BC. Private Collection.

Uroboros (ouroboros), Medieval Alchemy Manuscripts.

Ouroboros from papyrus of Dama Heroub. Egypt. XXI dynasty. X c. BC.

The Temple of the Feathered Serpent Quetzalcoatl, Xochicalco. VIII c.

Ouroboros as emblem of mortality. George Wither's Collection of Emblems, Ancient and Modern. 1635

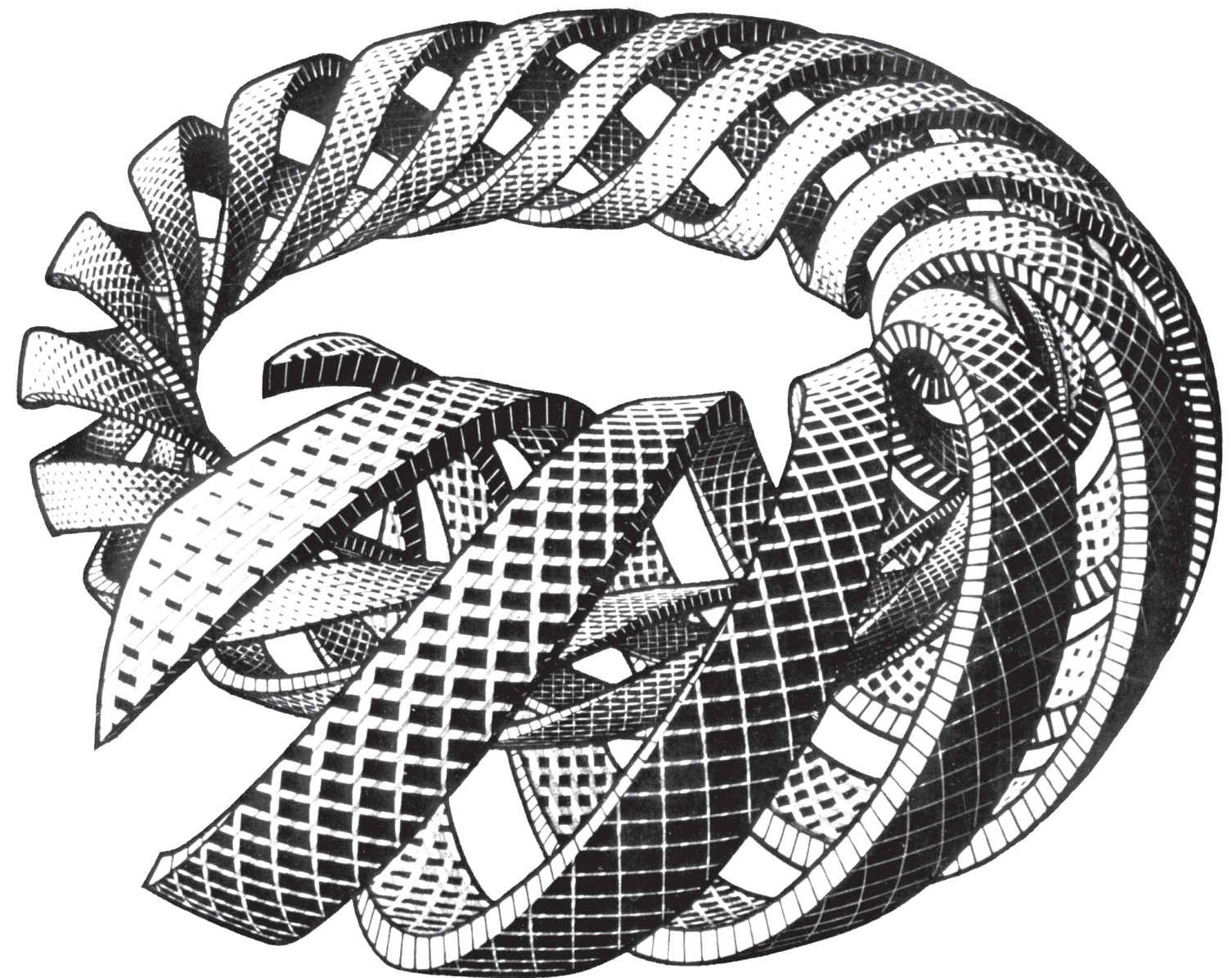
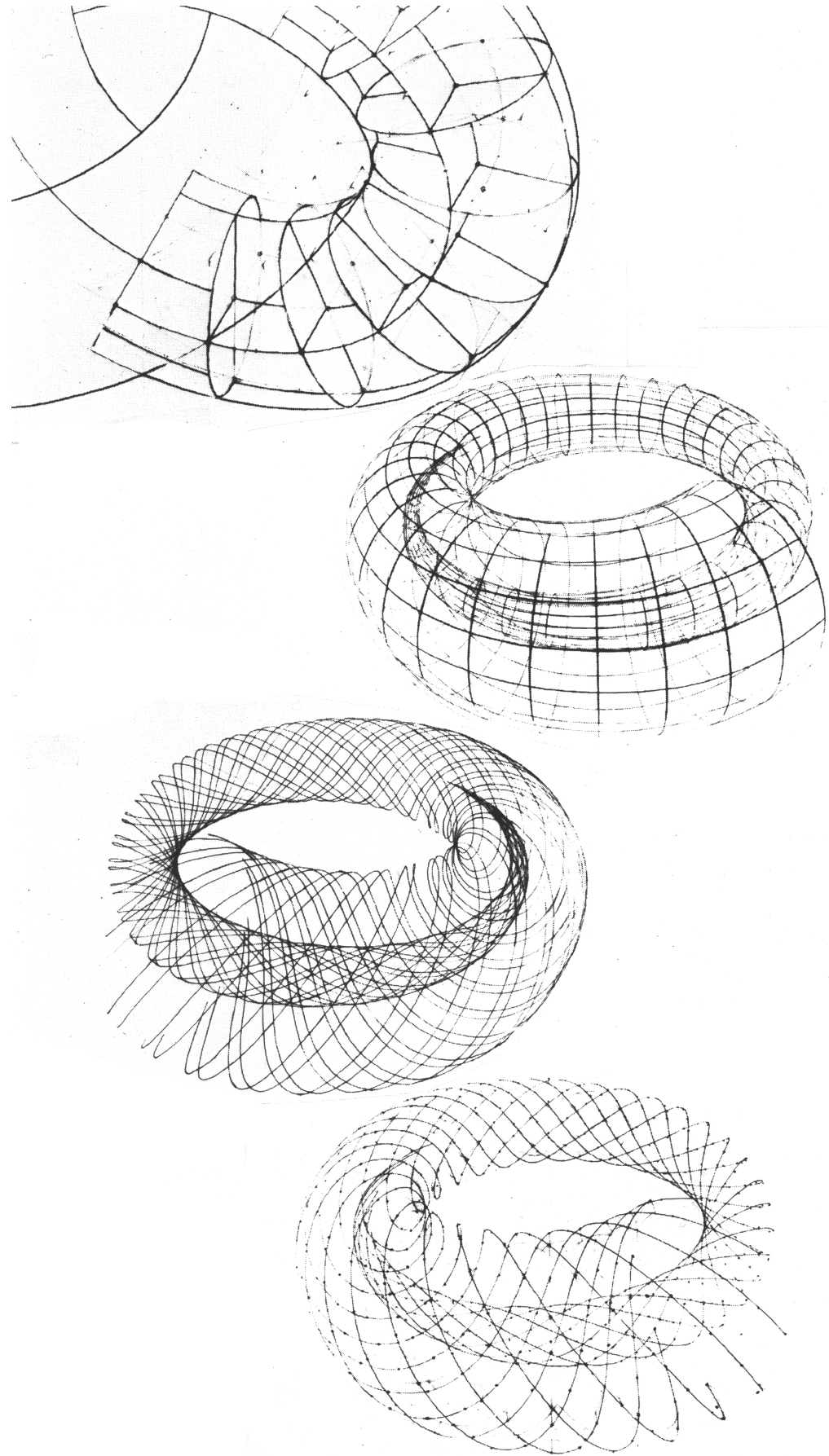




# ESCHER'S SPIRAL

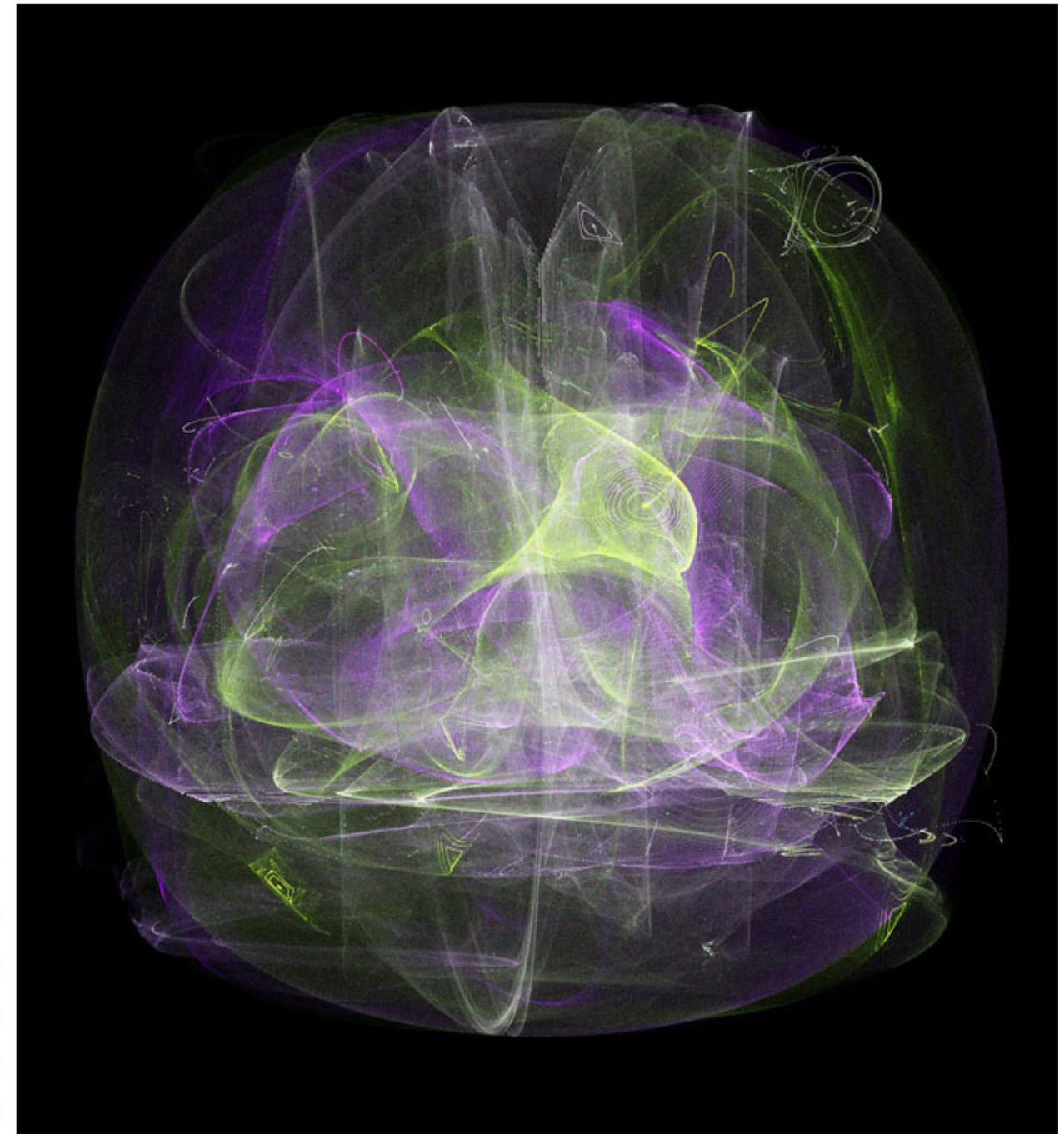
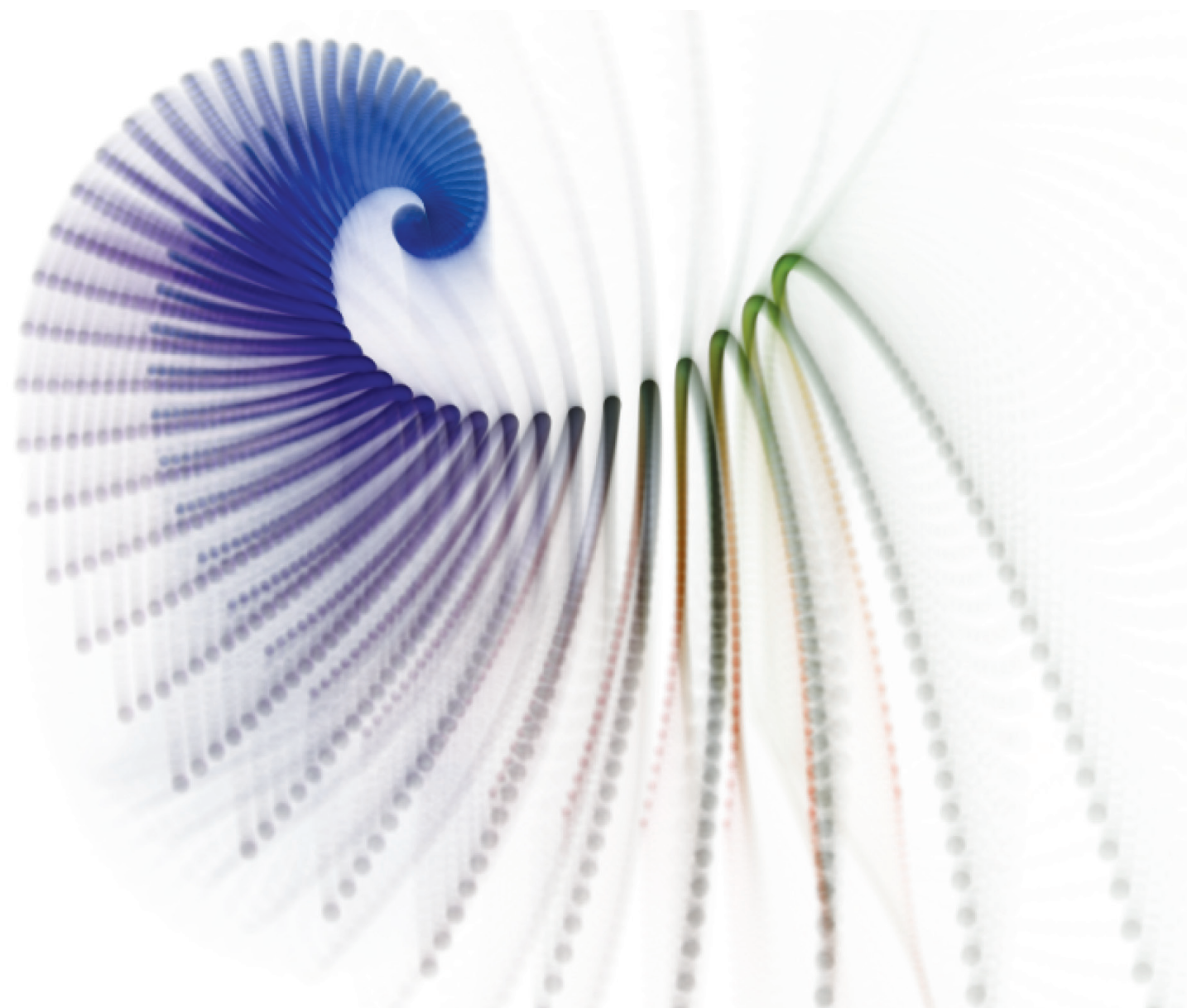
M.C. Escher. Spiral. Trial sketches.

M.C. Escher. Spiral. 1953





# TIME AS TRAJECTORY



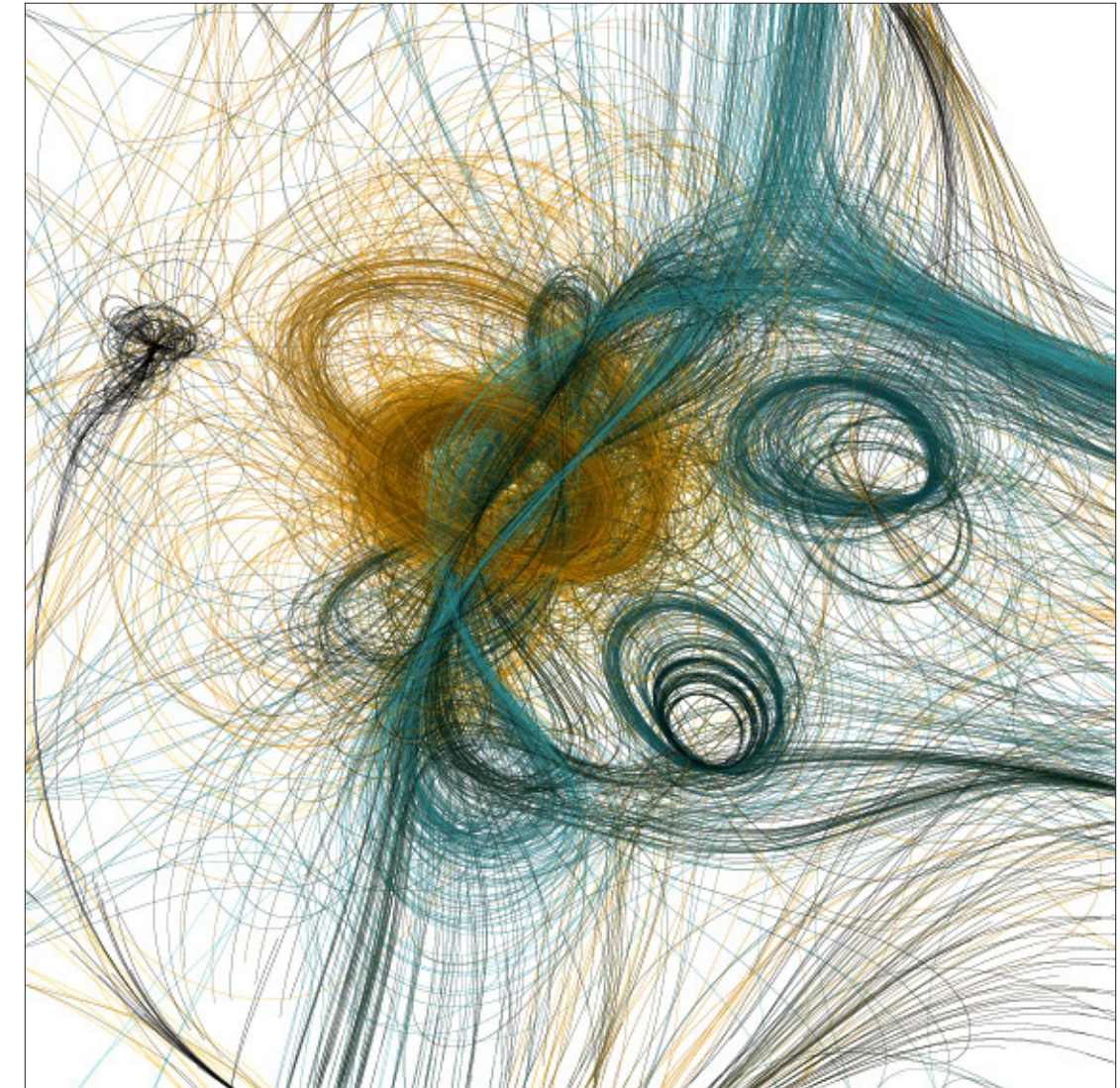
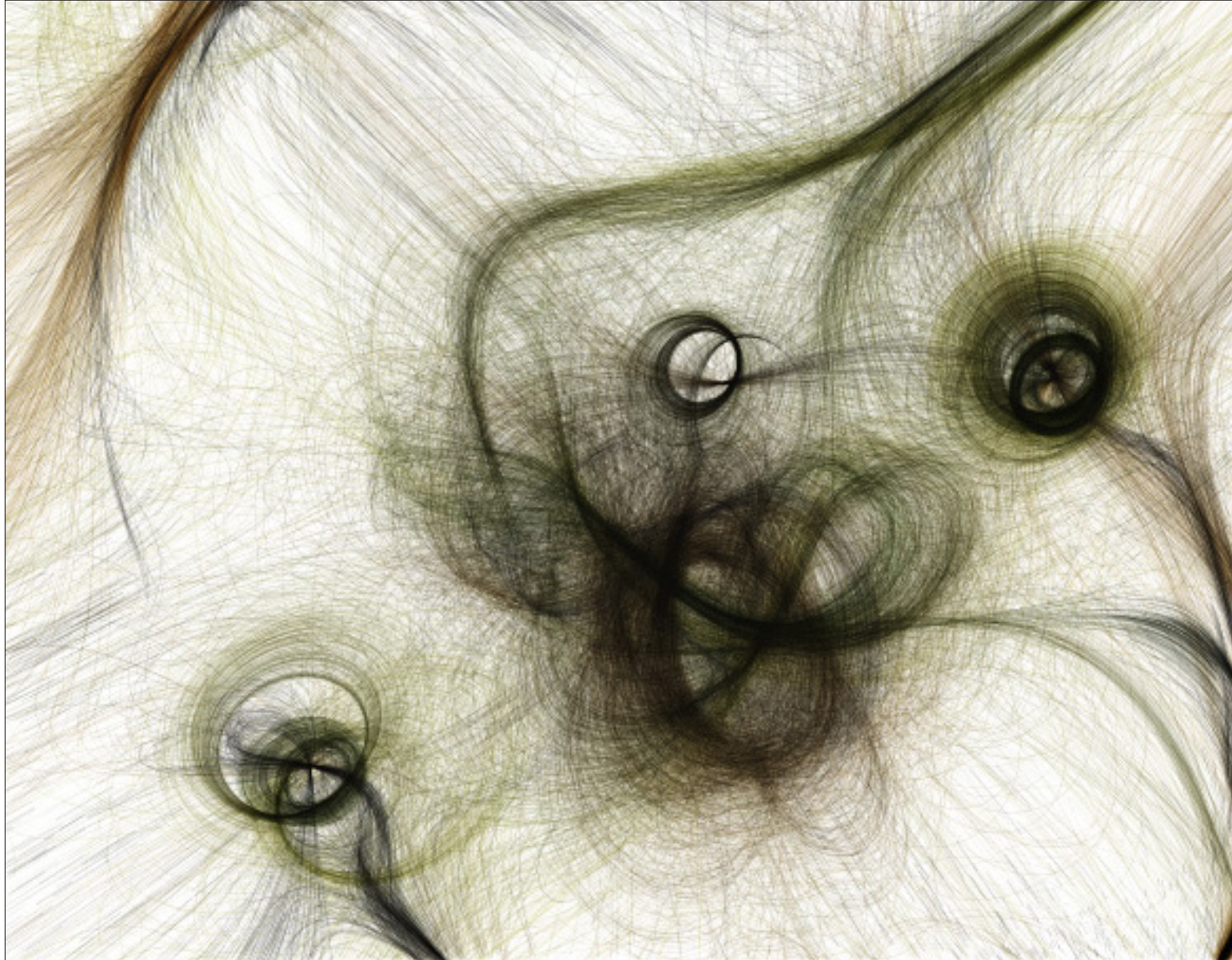
Jean-Francois Colonna.

An arbitrary surface (Jeener surface 2) in motion. A  
Virtual Space-Time Travel Machine. 1993-2006  
<http://www.lactamme.polytechnique.fr>

Clifford Attractor. Paul Richards. Paul Bourke. [http://  
local.wasp.uwa.edu.au/~pbourke/fractals/](http://local.wasp.uwa.edu.au/~pbourke/fractals/)



# TIME AS TRAJECTORY



Casey Reas.  
Tissue Type C-03. 2002  
Path 17. 2001

Lines in the image reveal paths of autonomous software machines' movement as they respond to stimuli in their environment. <http://reas.com>







# FLUID DYNAMICS

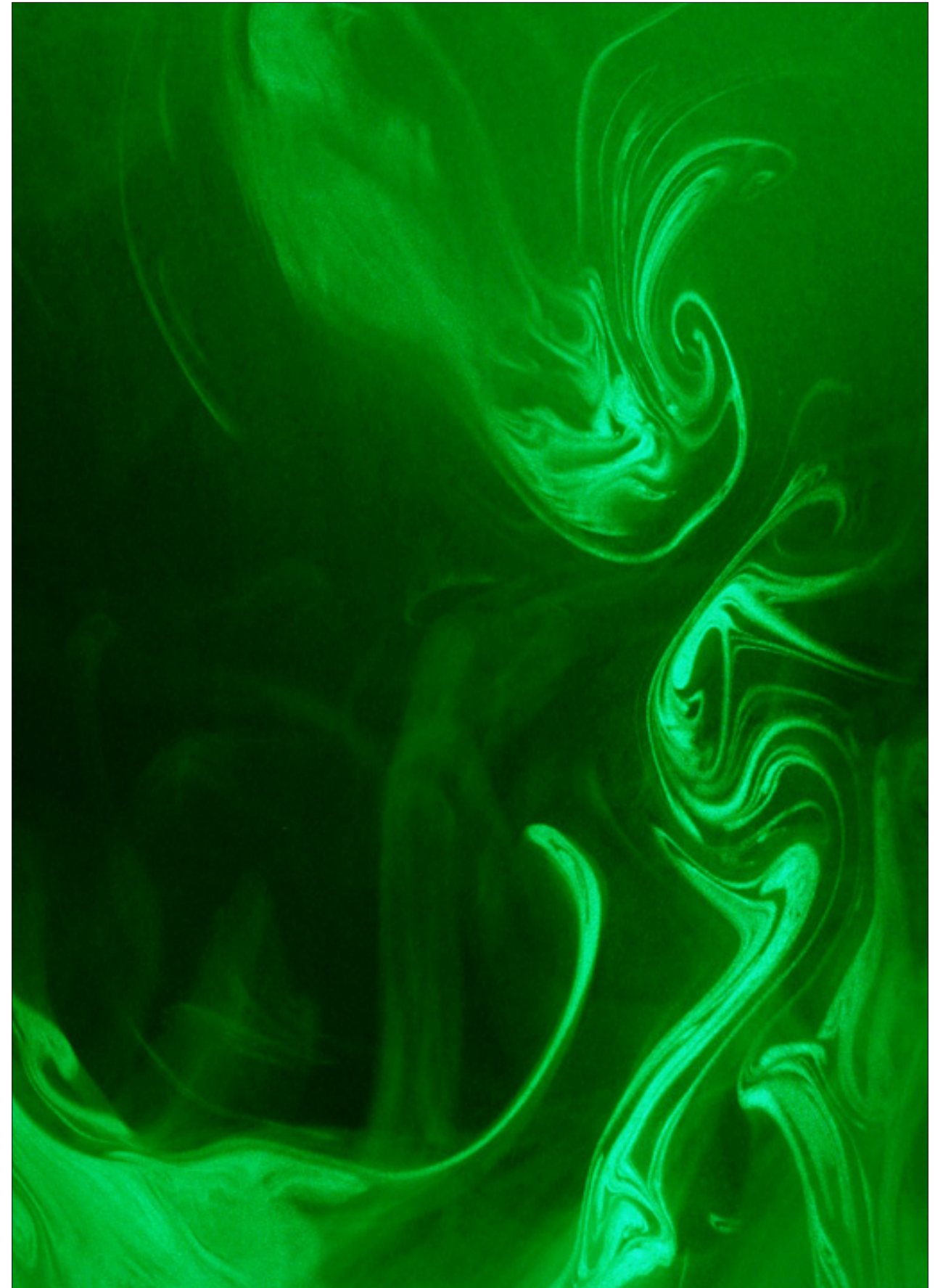
Fluid dynamics is the sub-discipline of fluid mechanics dealing with fluids (liquids & gases) in motion. It has several subdisciplines itself, including aerodynamics & hydrodynamics & a wide range of applications, including calculating forces on aircraft, determining the mass flow rate of petroleum through pipelines, predicting weather patterns, understanding nebulae in interstellar space & modelling fission weapon detonation. Some of its principles are used in traffic engineering, where traffic is treated as a continuous fluid.

Fluid dynamics offers a systematic structure that underlies practical disciplines & embraces empirical & semi-empirical laws, derived from flow measurement, used to solve practical problems. The solution of a fluid dynamics problem typically involves calculation of various properties of the fluid: velocity, pressure, density, & temperature, as functions of space & time.

Lindsey Wohlman, Rick Silva, Eric Larson

Room air currents are visualized with stage fog & illuminated with a sheet of laser light.

Instructors: Prof. Jean Hertzberg, Prof. Alex Sweetman  
University of Colorado at Boulder. Flow visualization.  
A Course in the Physics & Art of Fluid Flow





# PERCEPTION OF TIME

The Future = The Past + Our Desire.

Our fear that we will not exist in the Future pushes us, and transforms into our desire to go into that unknown, to prove to ourselves whether we will exist.

Our existence happens in the area of the subtle disbalance, slight asymmetry between the fear of our disappearance and the fear of our future.

The more Desire – the less Fear, more Fear – less Desire. The Fear has to be transformed into Desire to drive us to our existence.

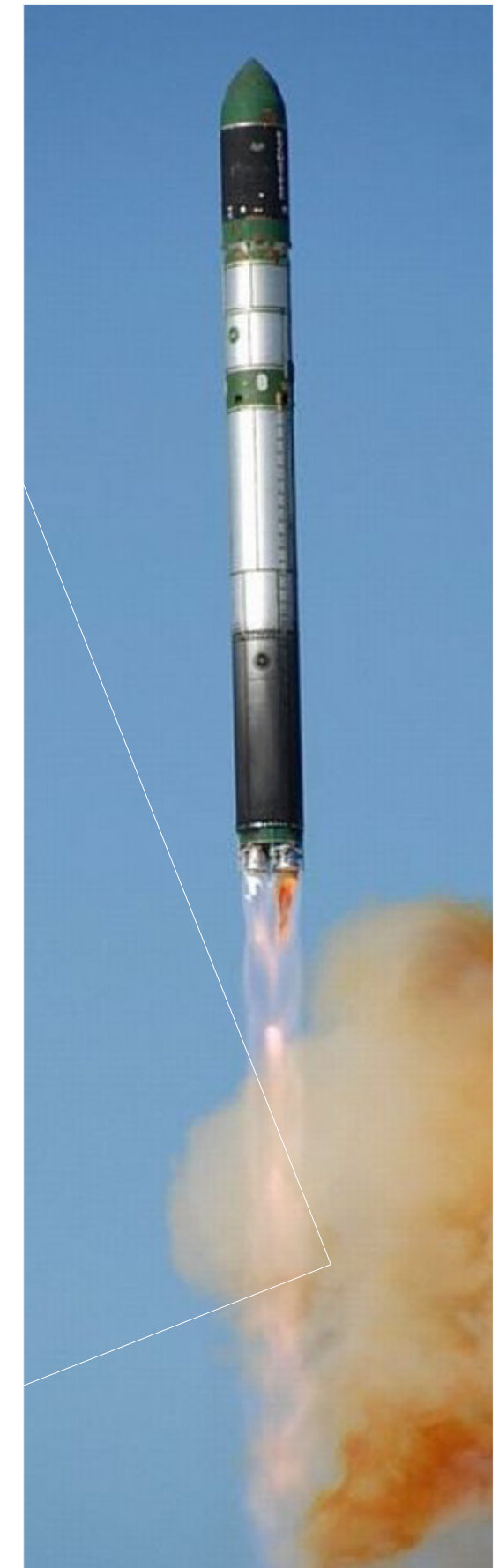
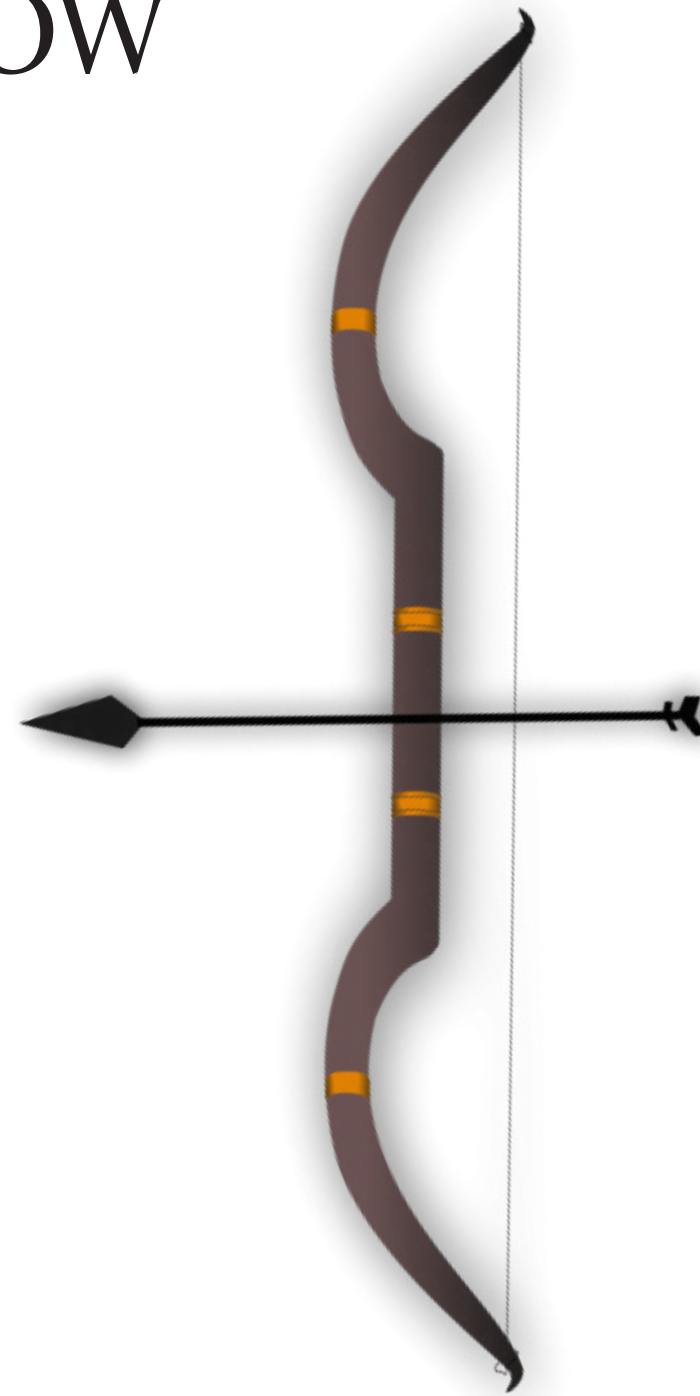
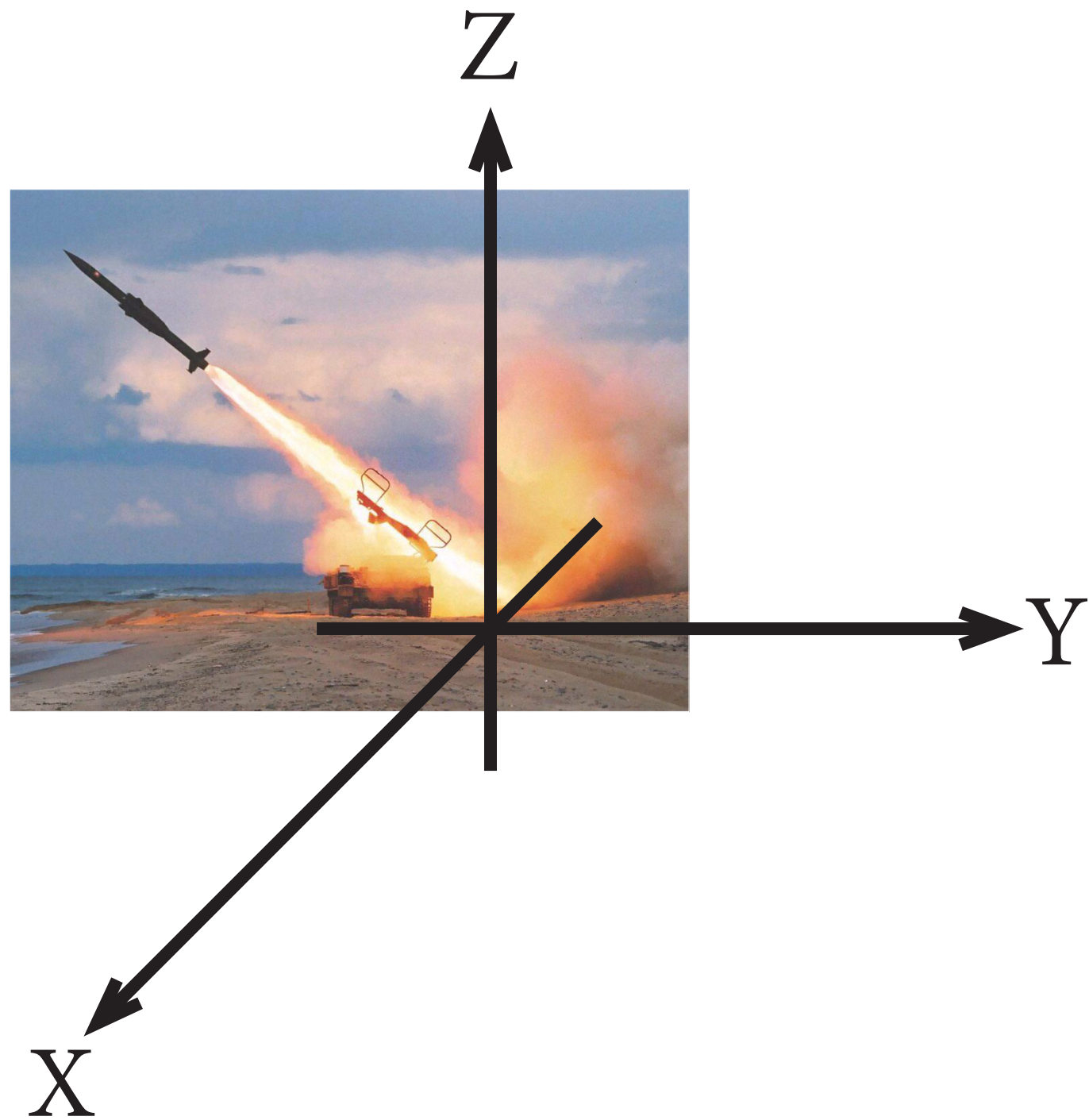
In his painting, Magritte also unwittingly captures the symmetry of time. It is not the simple mirror symmetry that reflects its viewer, but symmetry which, reversed in its own reflection, faces the same direction as the viewer.

René MAGRITTE.  
La Reproduction Interdite. 1937





# CARTESIAN COORDINATES AND SEMIOTICS OF THE ARROW





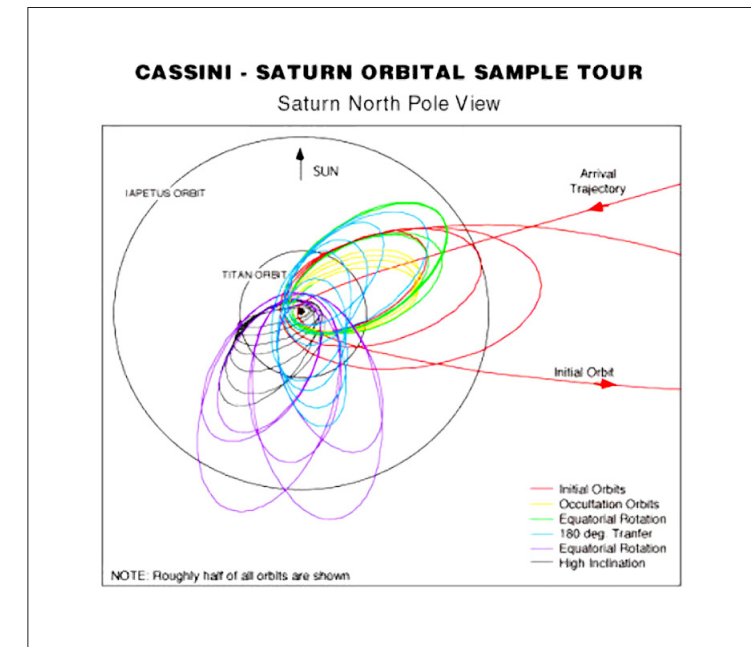
# NAVIGATION IN SPACE: CASSINI-HUYGENS ROBOTIC SPACECRAFT TRAJECTORY

Cassini-Huygens is a joint NASA/ESA/ASI robotic spacecraft mission for studying the planet Saturn and its moons.

The image displays the initial gravity-assist trajectory of Cassini-Huygens. This is the process whereby an insignificant mass approaches a significant mass 'from behind' and 'steals' some of its orbital energy. The significant mass, usually a planet, loses a very small proportion of its orbital energy to the insignificant mass, in this case, the probe. However, due to the spacecraft's small mass, this energy transfer gives it a relatively large energy increase in proportion to its orbital energy, speeding its travel through space.

Cassini-Huygens performed two gravity assists at Venus, one at Earth and one at Jupiter.

Hypothetical Trajectories from Wikipedia.



**VENUS 1 FLYBY**  
26 APR 1998

**VENUS 2 FLYBY**  
24 JUN 1999

**VENUS TARGETING MANEUVER**  
3 DEC 1998

**LAUNCH**  
15 OCT 1997

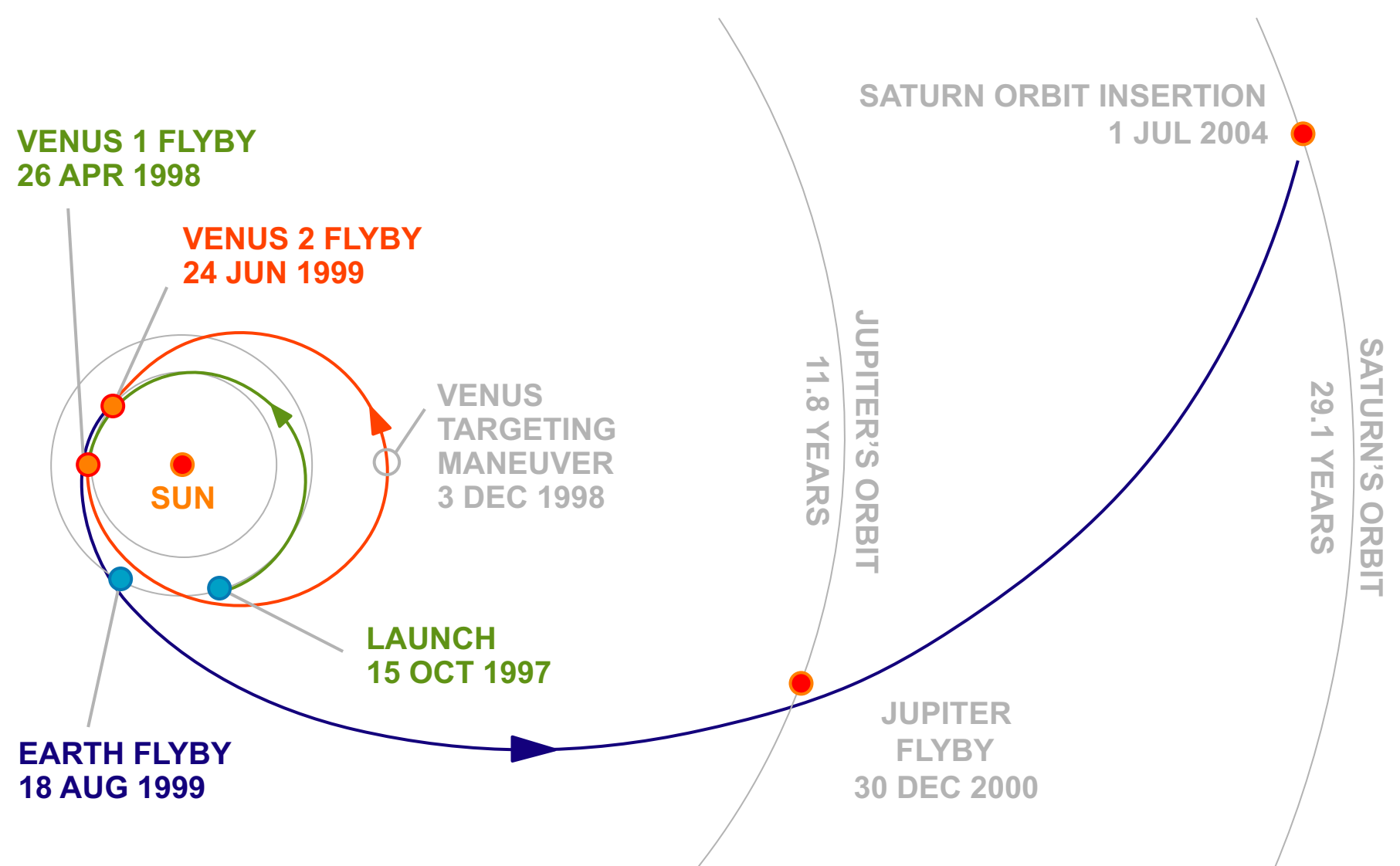
**EARTH FLYBY**  
18 AUG 1999

**SATURN ORBIT INSERTION**  
1 JUL 2004

JUPITER'S ORBIT  
11.8 YEARS

**JUPITER FLYBY**  
30 DEC 2000

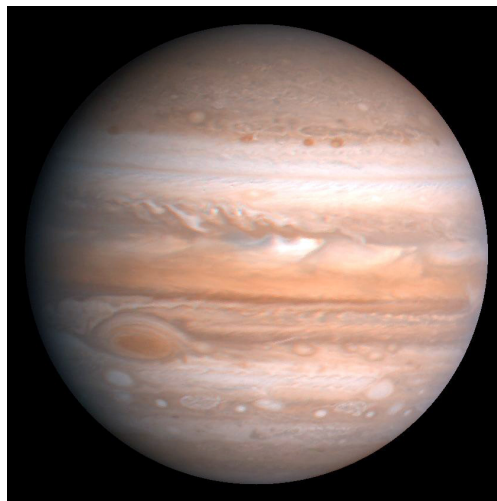
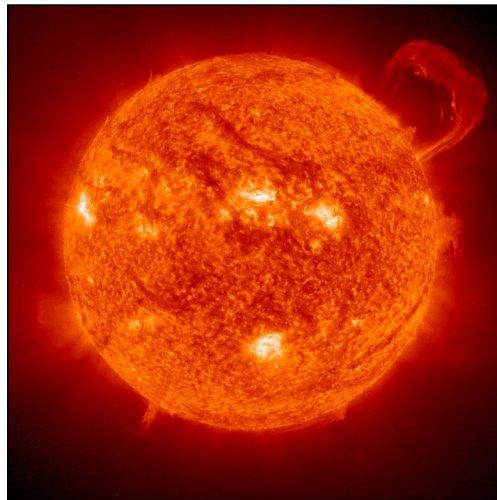
SATURN'S ORBIT  
29.1 YEARS





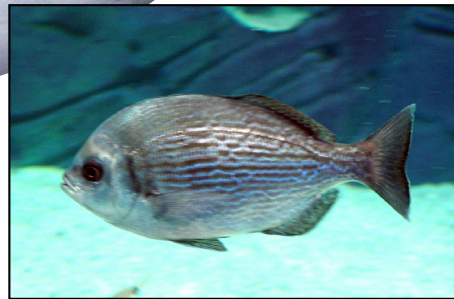
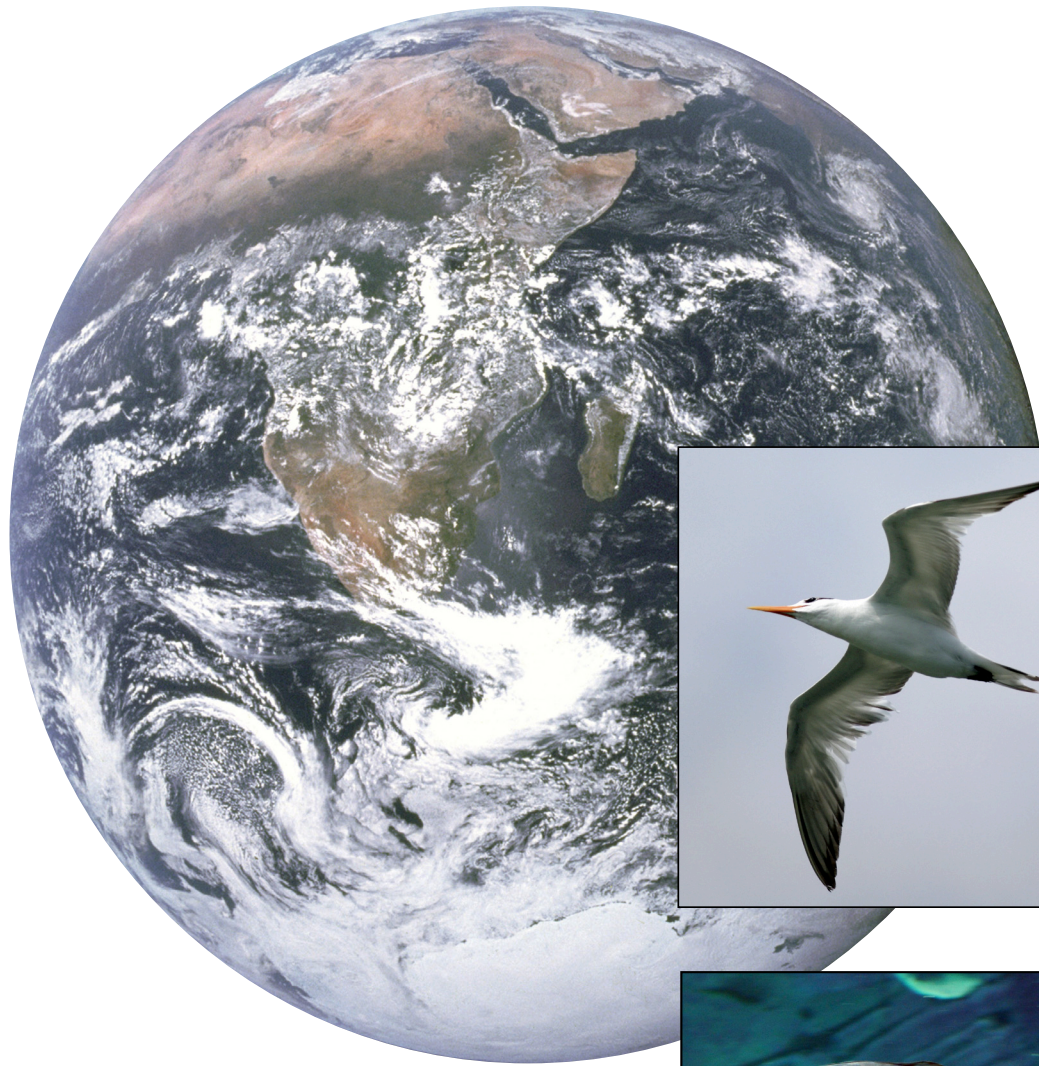
# MOST COMMON SHAPE IN OUR UNIVERSE

NASA PHOTOS of Sun, Earth and Jupiter, Helix Nebula and  
NGC 4414 galaxies



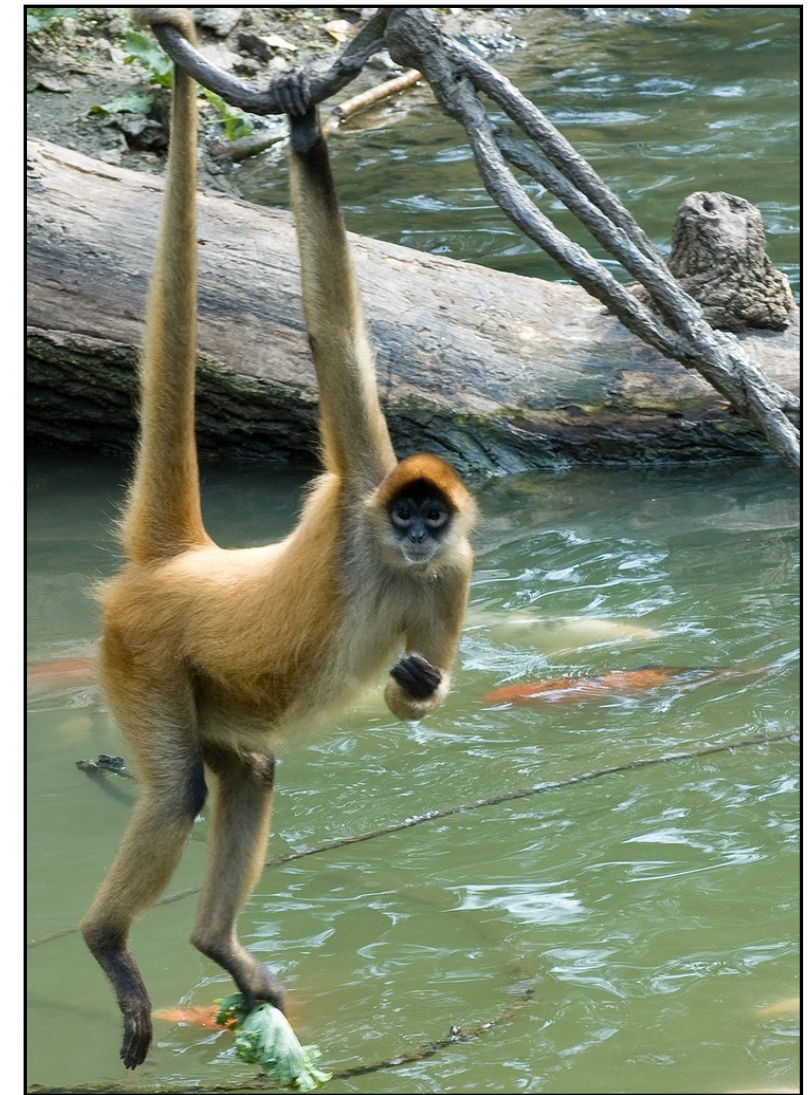
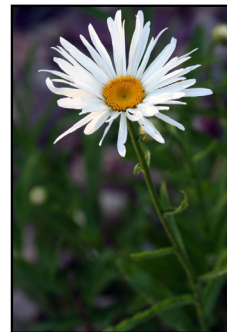
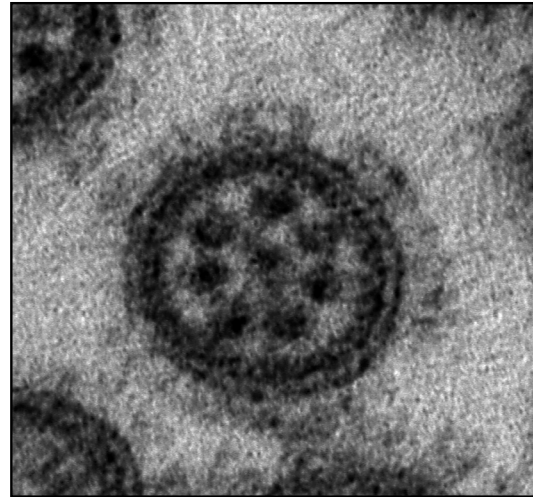


# WHAT IS THE DIFFERENCE?





# EVOLUTION OF FORMS

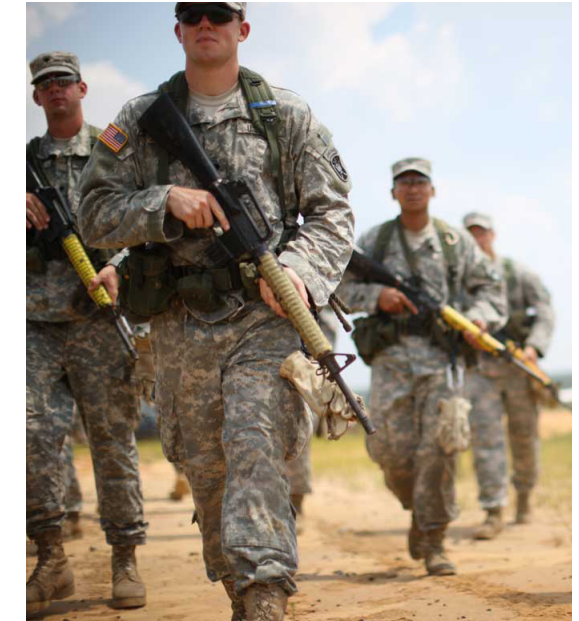
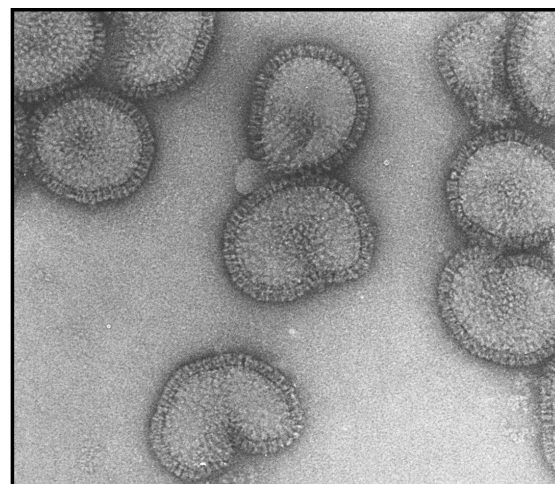




# REPLICATION OF INFORMATION



Courtesy of David Seidman. 1973 platinum micrograph, each dot is the image of an individual platinum atom.





# TWO TYPES OF INFORMATION: ENCODED AND ACTUALIZED



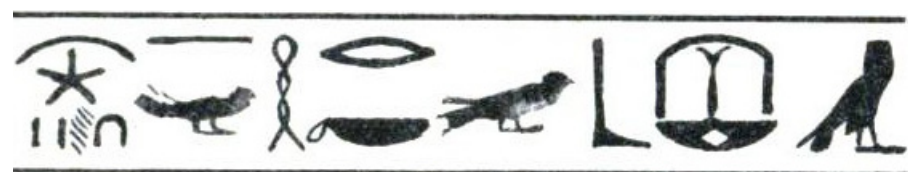
$$\times \sum_{p=0}^{k-1} \binom{k-1}{p} (k-p-1)! z^{p-k+1/2}$$

美国公民被捕或受到拘留时

ATT-AGA-GAT-ATT-TTA-ATT-CAA-AGA-GAA-AAT-ATT-AAT-TGG  
AAA-CAT-AAT-CAT-TTT-GCT-GTG-AAA-CAT-AGT-CGT-TTA-TCA-  
GAA-AAA-TGG-TTC-CAA-TTA-CCT-TCT-TCT-CAA-AAT-TAT-TGG-



بخورند. اب را براي درست کردن

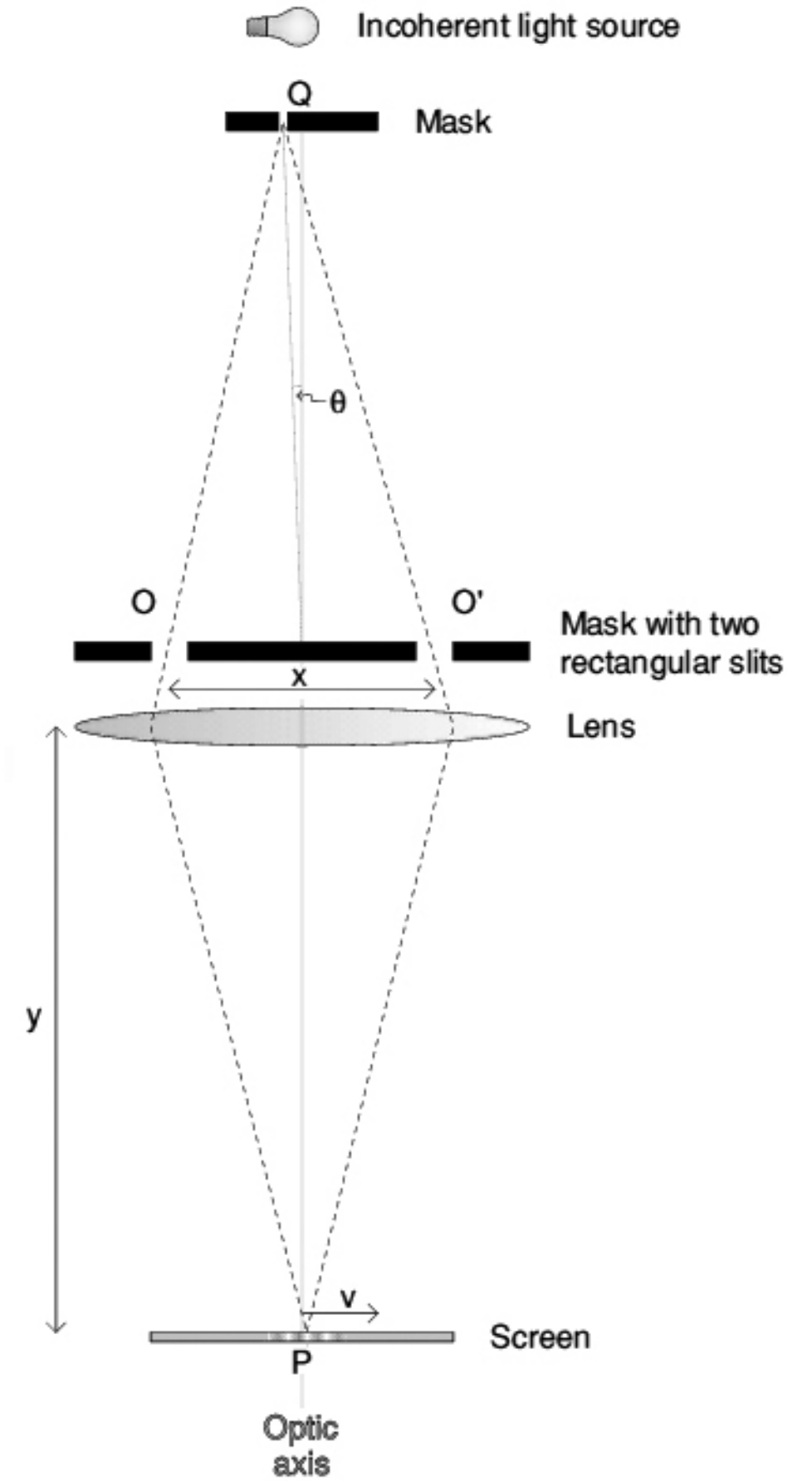
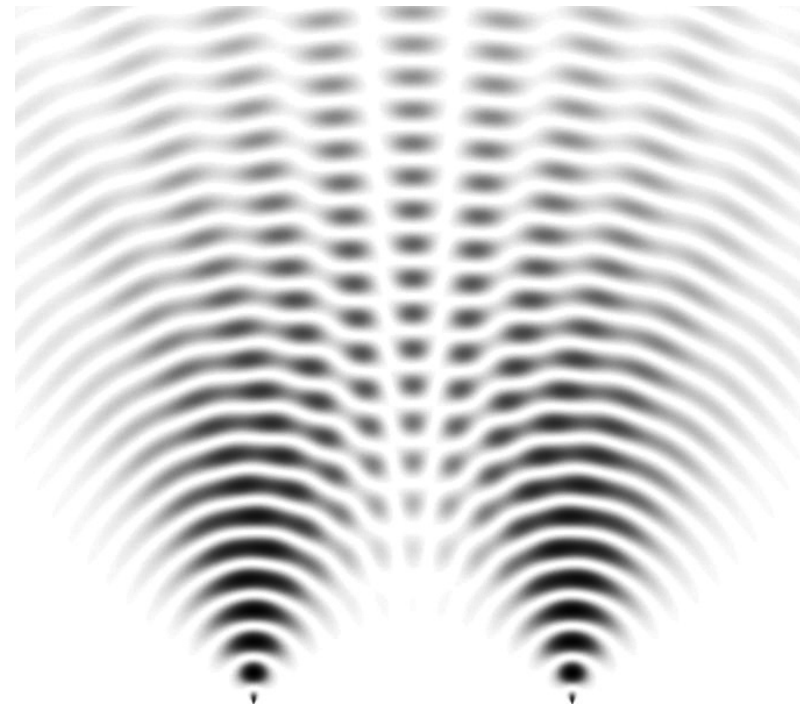
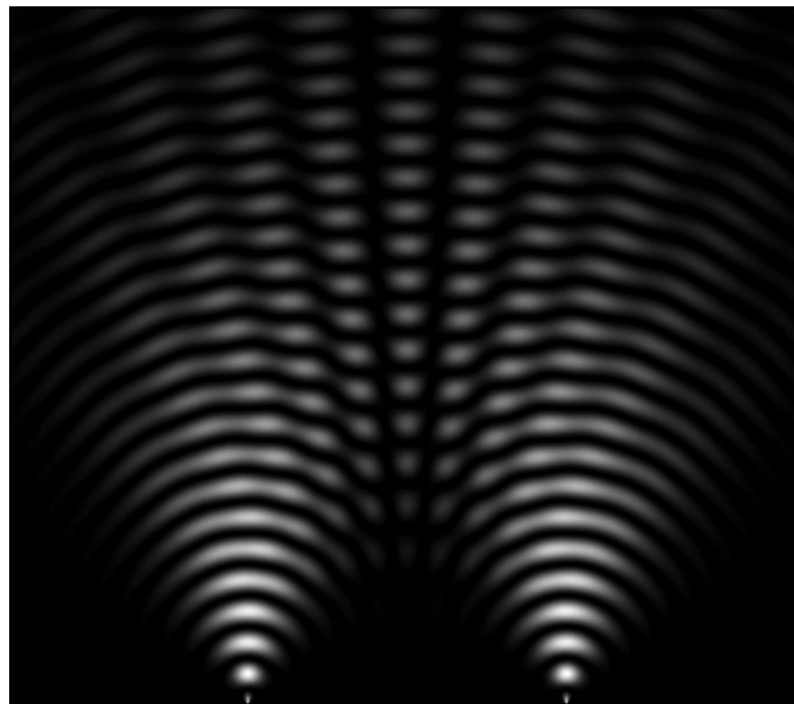
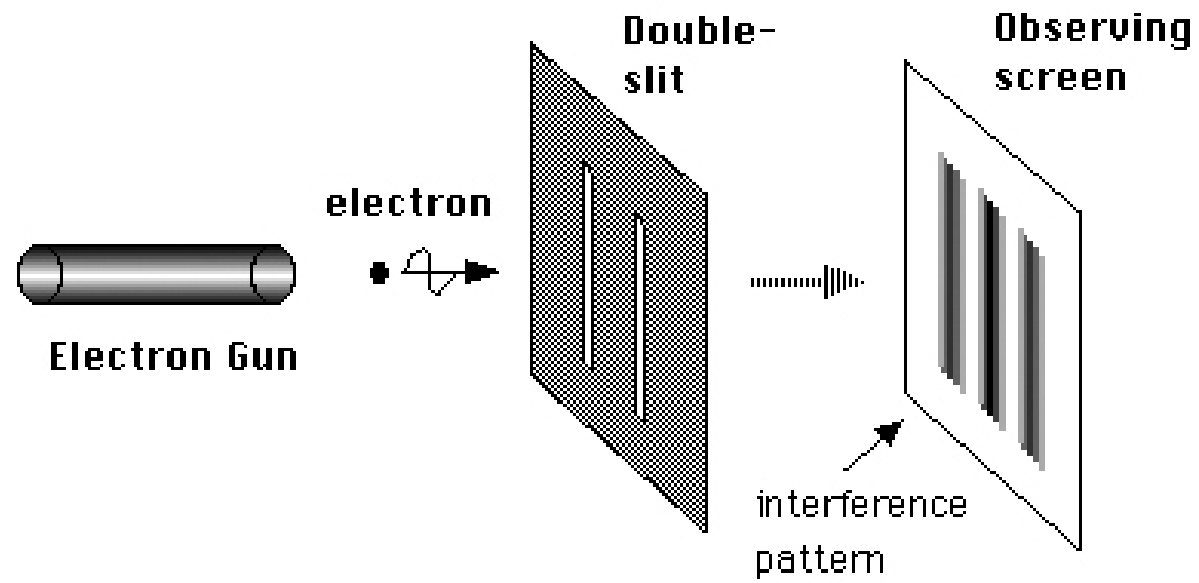






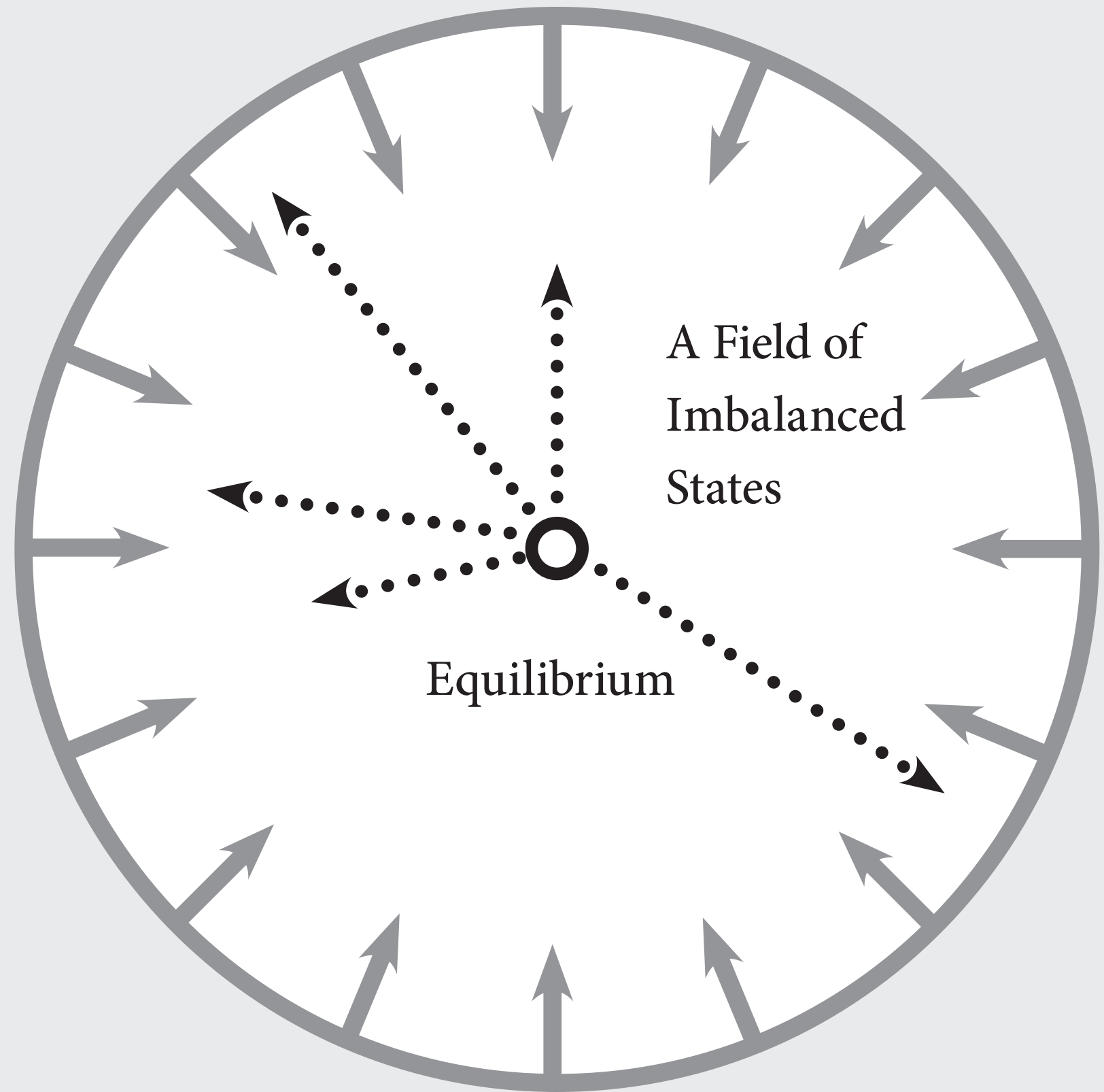
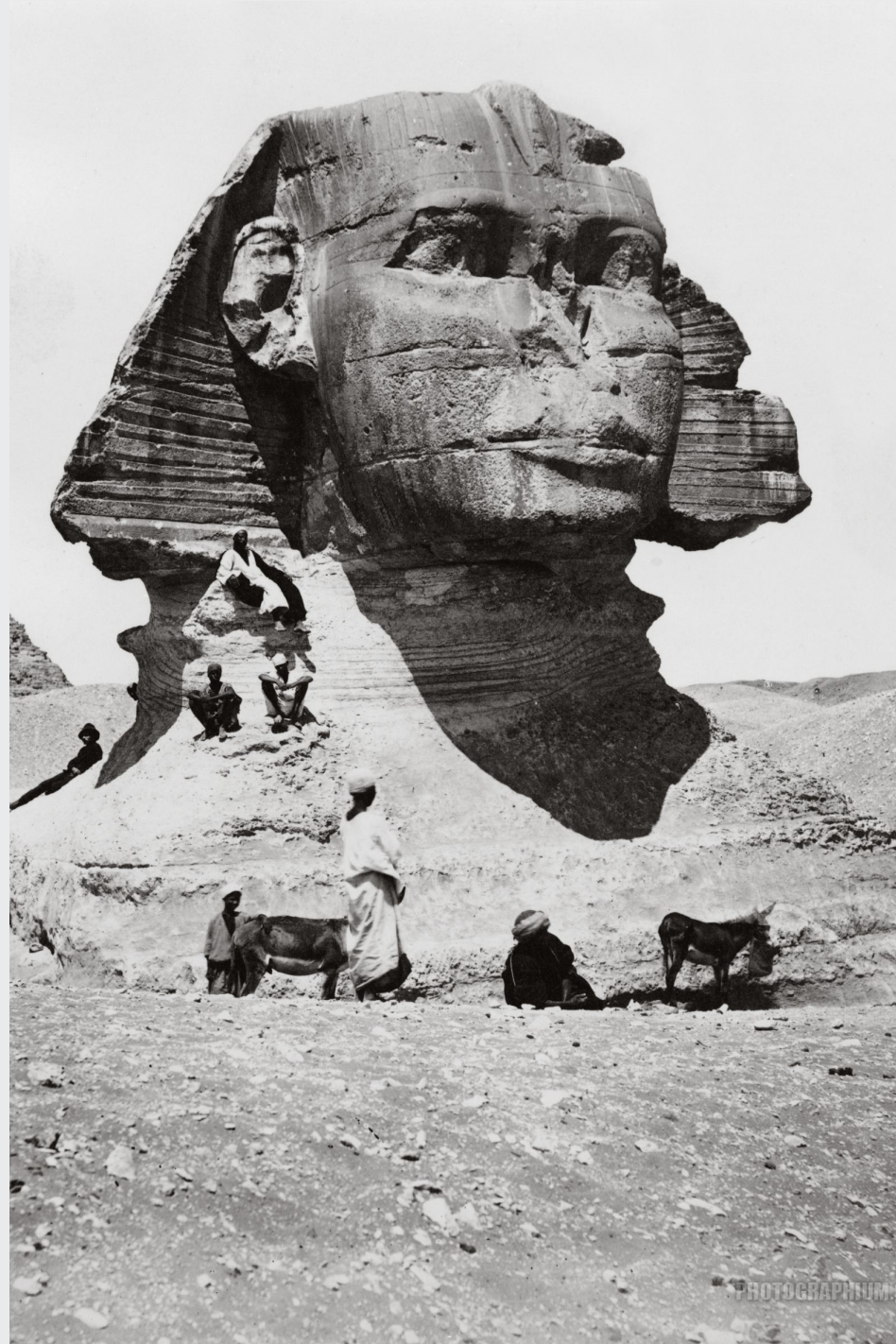


# DOUBLE SLIT EXPERIMENT



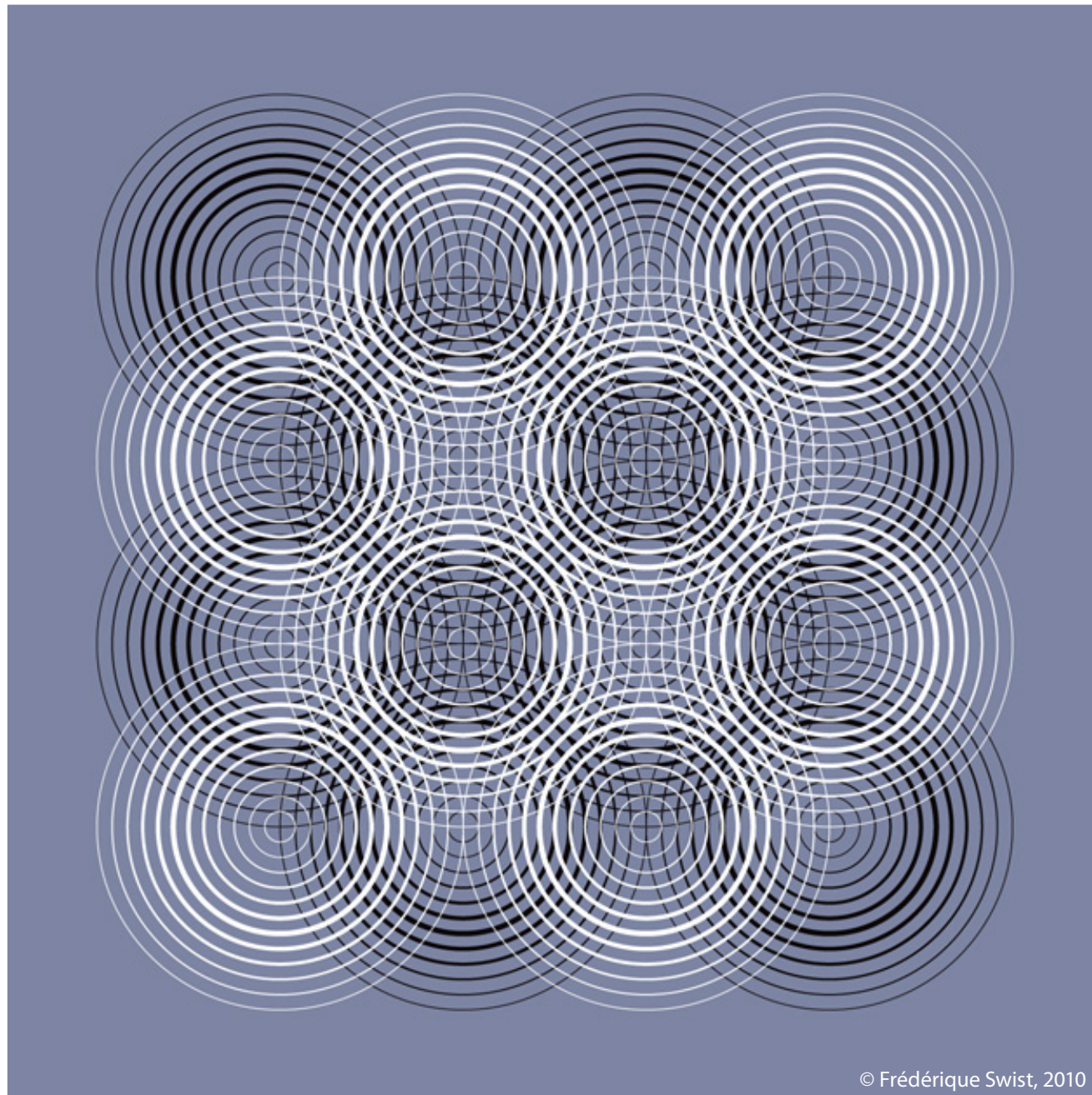


# VISUALIZATION OF ENTROPY

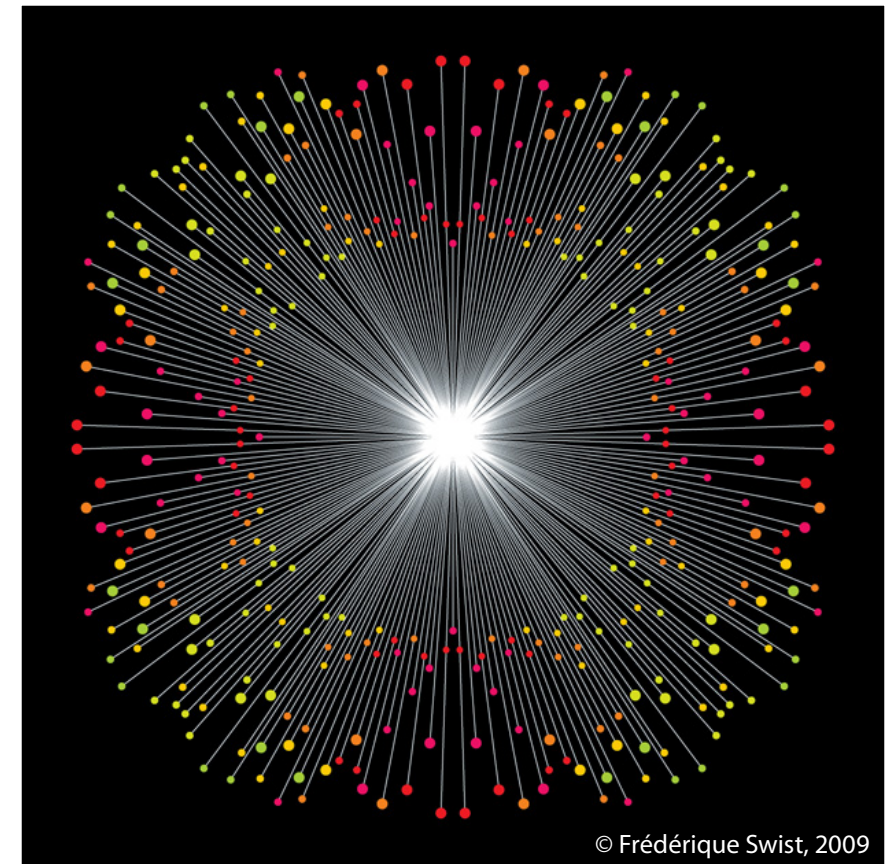




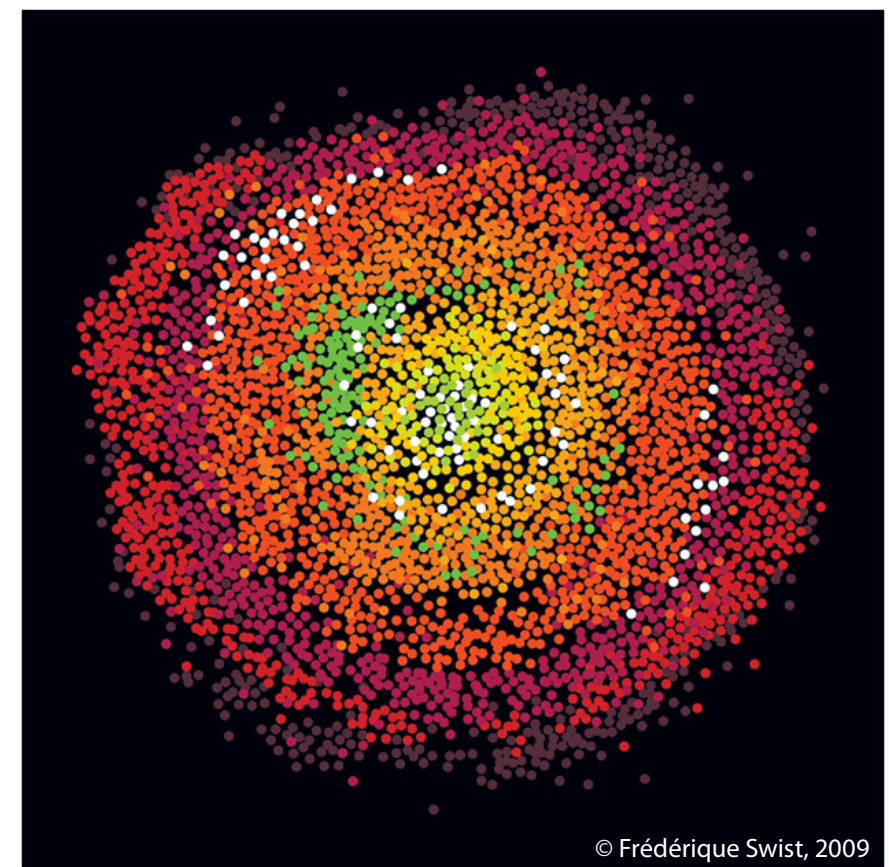
# VISUALIZATION OF ENTROPY



© Frédérique Swist, 2010



© Frédérique Swist, 2009



© Frédérique Swist, 2009

Frédérique Swist  
Good vibrations. 2010  
Neutrino trails. 2009  
Ultracold neutral plasma.  
2009