

A RELATIVE SUNDIAL

Homage to Albert Einstein and his breakthroughs

In order to celebrate the visit of Albert Einstein to Spain to lecture on his theories of relativity, a special Memorial has been erected in the premises of the Expo Zaragoza 2008. The visit took place 100 years ago, and after a few days Einstein left on his 44th birthday; that very same day, a century later, the Memorial was inaugurated.

The monument falls into the fields of sustainability, art, culture and science. It has a deep inspiration fully related to Einstein. It has been made by the artists Teo and Antonio Ros (son and father, both sundialists).



The Einstein's Memorial. Zaragoza (Spain).



The Einstein's Memorial. At the entrance of the Zaha Hadid Bridge Pavillion over the Ebro River.

THE MEMORIAL

The Memorial is composed of a real size effigy of Einstein in cast bronze plus two accurate sundials made out of stainless steel and other lesser elements.

A few private sponsors have supported this initiative, which adds a new iconic point to the city and a cherished attraction for people of all ages and backgrounds, especially students and art lovers as well as the general public.

IT IS ALL ABOUT EINSTEIN

Albert Einstein won the Nobel Prize for Physics in 1921 for his explanation of the photoelectric effect. Einstein is generally considered the most influential physicist of the 20th century and maybe of all time too.

Nevertheless his most famous contributions to science and the understanding of the Universe and the Creation are his theories of Special Relativity and General Relativity, the later considered the most beautiful scientific theory ever. The Special Theory integrates **TIME** and space in a kind of 4 dimension fabric of the universe called '**SPACETIME**' and establishes counterintuitive and revolutionary principles about **LIGHT**. All have been proved right since then by a myriad of experiments and have been an essential contribution to the advancement of Humankind.

The authors have tried to incorporate all these concepts as the core inspiration of the sculpture: **LIGHT**, **SPACE** and **TIME**, and of course, **EINSTEIN** himself because of his values of pacifism, knowledge, hard work and critical thinking.

The General Theory of Relativity includes gravitational fields and the radical concept of the curvature of spacetime by mass. A reference to this critical theory is included in a side panel that completes the sculptural set.

THE INSPIRATION

The common thread of the inspiration, that links it all, is Einstein's **CURIOSITY**, his well known quest for knowledge and critical thinking.

Therefore on the floor it has been engraved in stainless steel letters: '**THE IMPORTANT THING IS NOT TO STOP QUESTIONING**', as said by Einstein.

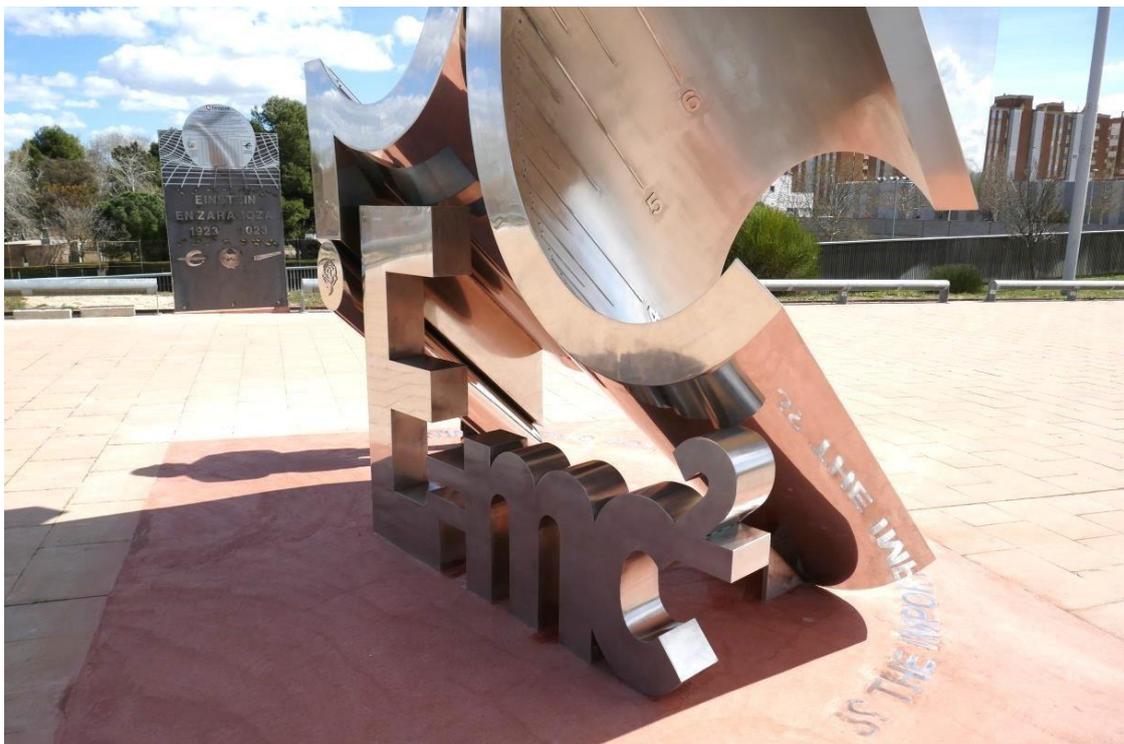
The **questioning and curiosity** are represented by means of a couple of special question marks, that in reality are **two sundials** that work consecutively. Einstein said that his **curiosity** was the driving force of all his discoveries. Hence the **QUESTION MARKS**. One sundial starts working at sunrise and later on it switches off to give way to the twin sundial until sunset. The sundials are very accurate.



Afternoon sundial. The dial is not a cylindrical shape.

In this way the Memorial incorporates the **LIGHT** of the Universe (Sun) and the **TIME** (the sundials tell time), into a very complex 3D geometry, blending all together in a sort of spacetime combination. With this metaphor the authors try to convey the **Special Theory of Relativity**.

To reinforce the Special Relativity recreation the very popular equation **$E=mc^2$** has been added explicitly.



The $E=mc^2$ equation

The effigy of Einstein himself was a must, at real size from anthropomorphic data obtained from his application for the USA citizenship.



Bronze effigy of Einstein in real size.

THE SIDE PANEL contains instructions to read the sundials, and other data and represents the **General Theory of Relativity** with the space-time curved by gravitational fields.



The by side panel. Stainless steel and corten steel

SUMMARY

A Memorial highlighting the main discoveries and values of Einstein and his contributions to the advancement of Humankind has been erected.

All is made out of stainless steel, corten steel and bronze with virtually very low-zero maintenance (no paints or materials that can degrade in the mid term). All is recyclable.



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About the authors:

Teo Ros

Artist, Sculptor, Painter, Designer
Master Mech. Engineering and Supply Chain. Basel, Switzerland
teo.ros@sunroses.eu

Antonio Ros

Artist, Sculptor, Painter, Designer
Masters Eng. Structural, Hydraulics, Road-Transport, Urban Planning
Professor Master Architecture and Master Engineering University of Zaragoza, Spain
antonio.ros@sunroses.eu

ANNEX 1: some more pictures

ANNEX 1. ADDITIONAL PICTURES

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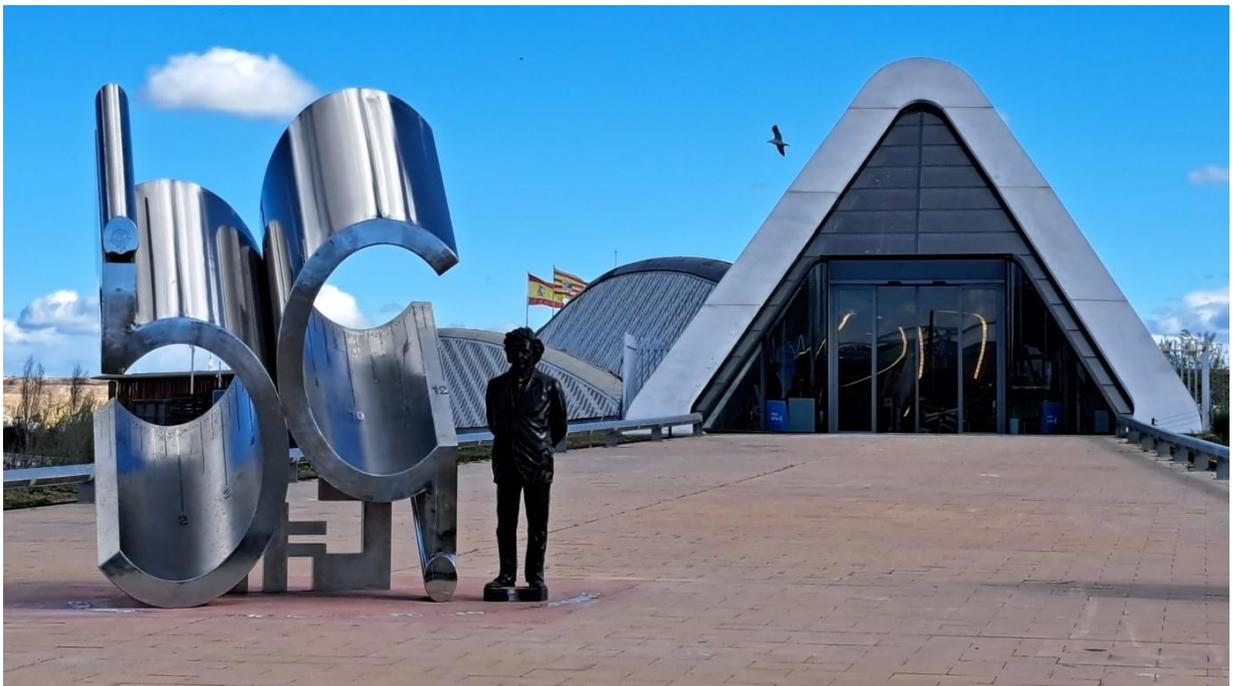
*The main inspiration theme is Einstein's curiosity
"THE IMPORTANT THING IS NOT TO STOP QUESTIONING"*



The effigy was modeled in clay before casting the bronze



High accuracy morning sundial



Landscaping setup.

The Bridge Pavilion of the background is the Museum of Sustainable Mobility, and the Einstein's Memorial conveys a message of sustainability of energies, recyclability and circular economy.



Inauguration by the Mayor and Sponsors with high media coverage



Author Teo Ros during the inauguration event



The whole set