



(/DURHAM/)
DURHAM | 14 - 17 NOVEMBER 2013

21. SOLAR EQUATION (Durham University Science Site)

Rafael Lozano-Hemmer (Mexico/Québec)

A large-scale public art installation, Solar Equation is a faithful simulation of the Sun, 100 million times smaller than the real thing.

Solar Equation by Rafael Lozano-Hemmer



Image: Solar Equation, Rafael Lozano Hemmer, LUMIERE 2013, produced by Artichoke in Durham, Photo Matthew Andrews

An uncanny and spectacular flying landmark, it was commissioned by Federation Square for Light in Winter, in Melbourne, and features the world's largest spherical helium balloon, custom-made for the project. For Lumiere it is tethered over Durham University Science Site and animated using ten projectors.

The solar animation on the balloon is generated by live mathematical equations that simulate the turbulence, flares and sunspots that can be seen on the surface of the sun. This produces a constantly changing display that never repeats itself, giving viewers a glimpse of the majestic phenomena that are observable on the solar surface, and that only relatively recent advances in astronomy have discovered. The project uses the latest SOHO and SDO solar observatory imaging available from NASA, overlaid with live animations derived from NavierStokes, reaction diffusion, perlin and fractal flame equations.

An onboard camera allows the piece to react to the people in public space: the more people detected, the more turbulence is created.

Supported by Durham University, Québec Government Office, London and BOC.

Commissioned by Federation Square, Melbourne, for the Light in Winter.

What the artist says

“While pertinent environmental questions of global warming, drought, or UV radiation arise from the contemplation of Solar Equation, the piece also evokes romantic environments of ephemerality, mystery and paradox, such as those from Blake or Goethe. Every culture has a unique set of solar mythologies and this project seeks to be a platform for both the expression of traditional symbolism and the emergence of new stories.

Some people may experience the work as a traditional son-et-lumière spectacle, others as a visualisation of natural forces, while others as a call to action to harness the sustainability of solar power. Coincidentally, the sun generates its own energy by nuclear fusion of hydrogen

About the artist

Born in Mexico, but resident in Québec, Rafael Lozano-Hemmer is an Electronic Artist who develops interactive installations that are at the intersection of architecture and performance art. His main interest is in creating platforms for public participation, by perverting technologies such as robotics, computerised surveillance or telematic networks.

His large-scale interactive installations have been commissioned for events across the world. His solo exhibitions have ranged from the San Francisco Museum of Modern Art and the Fundación Telefónica in Buenos Aires to the Museum of Contemporary Art in Sydney. He was the first artist to officially represent Mexico at the Venice Biennale with a solo exhibition at Palazzo Soranzo Van Axel in 2007. He has also shown at Art Biennials and Triennials in Havana, Istanbul, Liverpool, Montréal, Moscow, New Orleans, Panama, Seville, Seoul, Shanghai, Singapore and Sydney.

He has received two BAFTA British Academy Awards for Interactive Art in London, a Golden Nica at the Prix Ars Electronica in Austria, 'Artist of the year', Rave Award from Wired Magazine, a Rockefeller fellowship, the Trophée des Lumières in Lyon and an International Bauhaus Award in Dessau.

Some people may experience the work as a traditional son-et-lumière spectacle, others as a visualisation of natural forces, while others as a call to action to harness the sustainability of solar power. Coincidentally, the sun generates its own energy by nuclear fusion of hydrogen nuclei into helium, the inert gas that is used to fly the maquette.”