

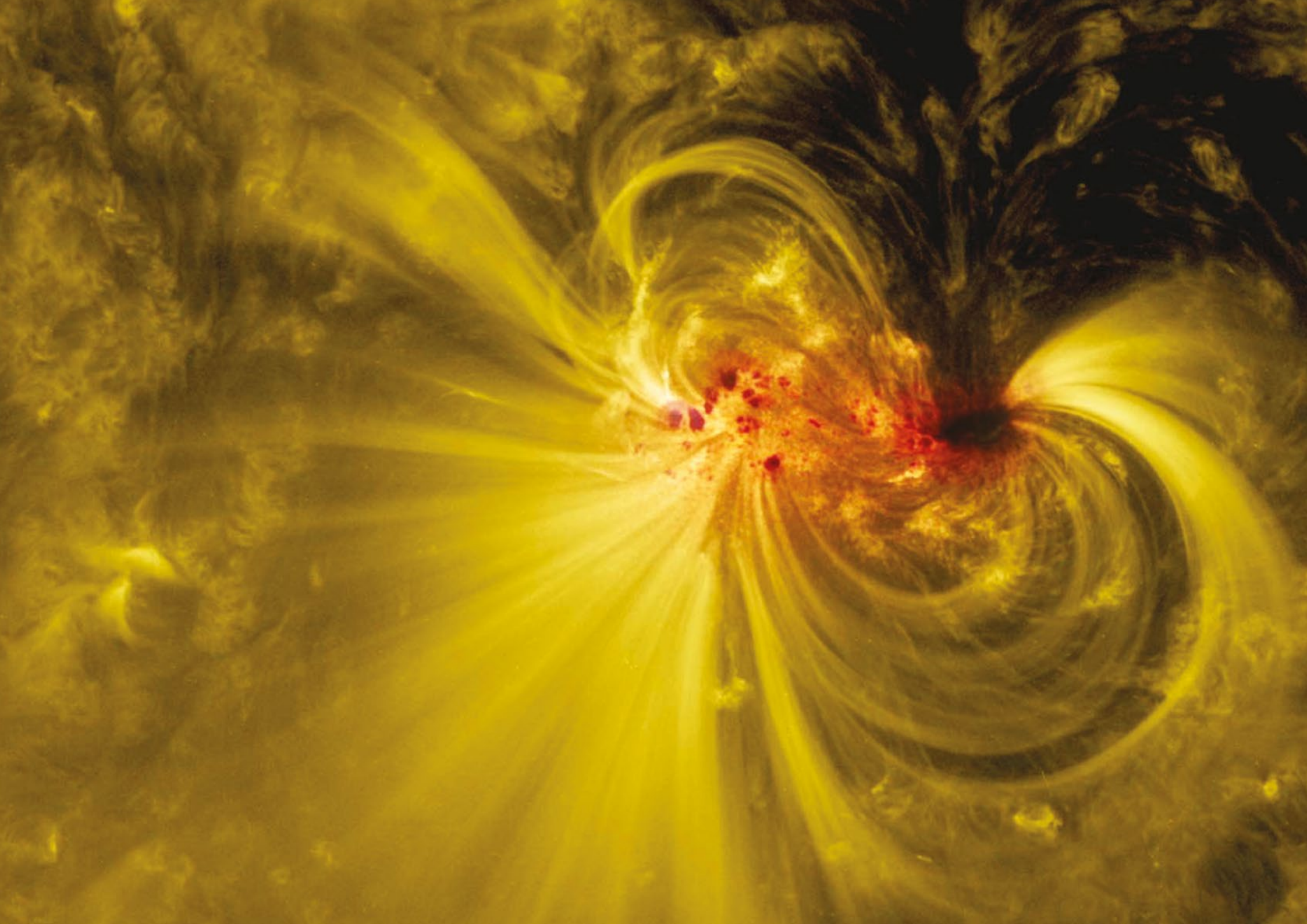
**SCIENCE
MUSEUM**



THE SUN

LIVING WITH OUR STAR

A touring exhibition from the Science Museum





INTRODUCTION

LIFE, CULTURE AND SCIENCE

COVER IMAGE

Image © NASA's Goddard
Space Flight Center SDOS.
Wiessinger

INSIDE COVER

Blended view of a sunspot
in visible and extreme
ultraviolet light, 2017
Image © NASA/Goddard/SDO

The Sun is a constant of human existence, but the way we see it has changed profoundly over the centuries. Early cultures had an intimate relationship with the Sun, using it to organise their days, chart their travels and often worshipping it as a deity of fire, life and rebirth. Modern technologies may have made the Sun appear less relevant to our lives, while science has relegated it to a mere star; yet the Sun remains fundamental to our existence and continues to influence human activity in new and unexpected ways.

The Sun may not be at the forefront of most people's concerns, but understanding and harnessing the Sun is becoming increasingly important in the modern world. Dwindling fossil fuel reserves and climate change are driving a revolution in solar energy, while solar storms threaten to severely disrupt the communications and electricity networks on which we all rely. Re-examining humanity's connection with the Sun may once again be key to our collective future.

A TOURING EXHIBITION FROM THE SCIENCE MUSEUM IN LONDON

The Sun is a fascinating turnkey exhibition that will tour nationally and internationally. The four sections tell the story of how humanity's relationship with the Sun has changed through history, with a narrative that spans from early to modern societies.

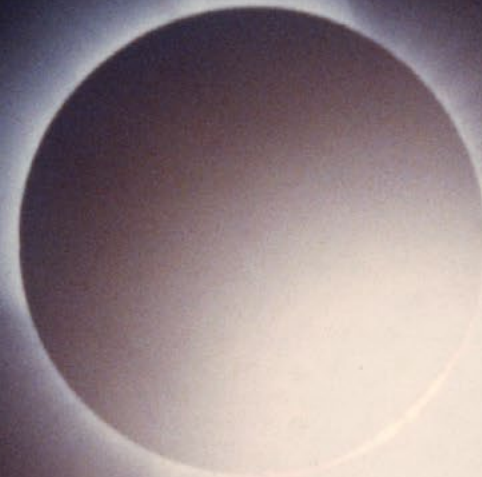
This exhibition charts our ever-changing relationship with the Sun. It reveals how our ancestors used the Sun to define time and plan their lives, how modern beach culture has roots in medical sunlight therapy, and how pioneers during the Industrial Revolution dreamed of a world powered by sunlight.

Bringing together a unique collection of scientific instruments, technological innovations and beautiful artefacts from a wide range of cultures and periods, the exhibition brings the Sun to life and communicates its many qualities and immense power. The content is enhanced by digital interpretation and spectacular immersive elements, including an opportunity to experience the latest solar imagery on a massive scale.

The Sun includes the following features:

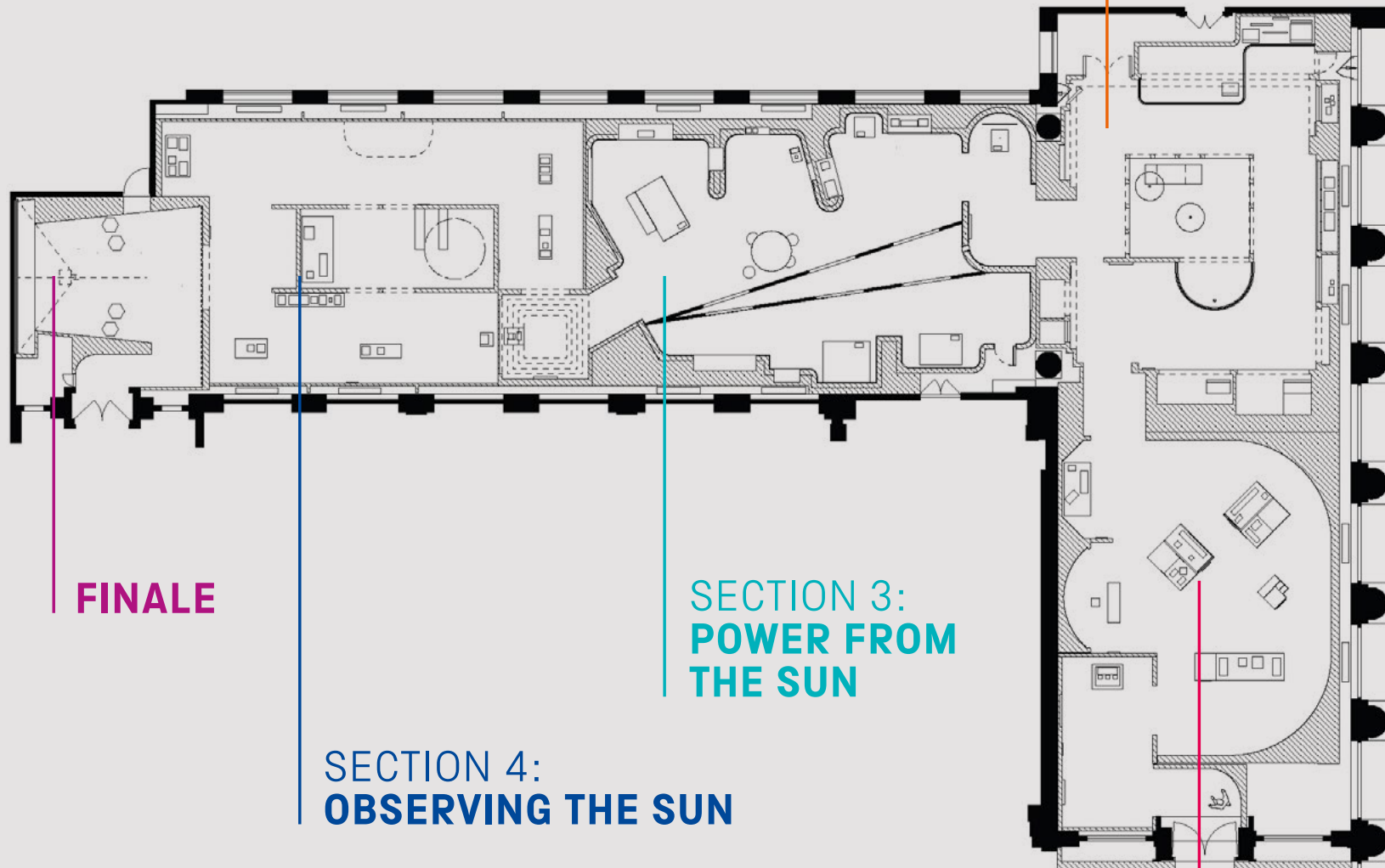
- Partial set structures, lighting and coordinated sound creating 5 distinct environments
- Over 100 historical and contemporary objects
- 5 interactive and 3 immersive experiences
- 7 videos and 5 animations
- Beautiful images and audiovisual projections

Diamond ring effect at the second stage of a total solar eclipse. Image: Kevin Johnson/Science & Society Picture Library



LAYOUT

This is a linear exhibition of 750m²/8,000ft² composed of four sections and a finale. It is reconfigurable to fit different gallery spaces.



SECTION 2:
**SUNSHINE
AND HEALTH**

FINALE

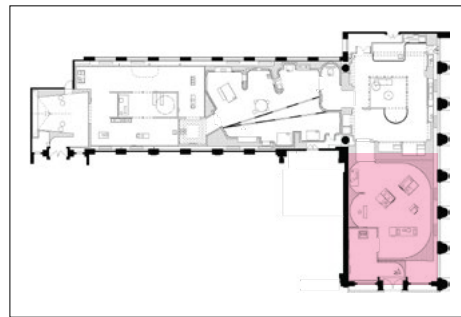
SECTION 3:
**POWER FROM
THE SUN**

SECTION 4:
OBSERVING THE SUN

SECTION 1:
DAYS AND YEARS

SECTION 1

DAYS AND YEARS



The Sun once played a significant role in people's lives. Before the invention of artificial light and heat, the rising and setting of the Sun dictated the hours of human activity. The Sun's position indicated the time of day, travellers navigated based on its place in the sky, and seasons and calendars were defined by the shortening and lengthening of daylight hours.

In many ancient cultures the Sun was a mysterious and supernatural phenomenon, worshipped as a deity that brought light, warmth and life. Many of the holidays and festivals celebrated around the world today have roots in solar worship. Attempts to predict the fortunes of rulers and realms by the movements of the Sun, Moon and planets led to the first accurate observations of celestial bodies, which laid the foundations for modern astronomy.

Using a rich array of intricate objects, this section explores how people have made sense of the motion of the Sun across the sky – including stories from the Norse Bronze Age to the Enlightenment, and how we have used that motion to define and measure time.

HIGHLIGHTS

- 1 video and 1 animation
- Large-scale interactive experience that simulates the movement of the Sun in the sky at various locations and times of the year
- Interactive physical and digital exhibit enabling visitors to discover how sundials work
- Approximately 25 historic objects including a 16th-century brass armillary sphere and Islamic astrolabe

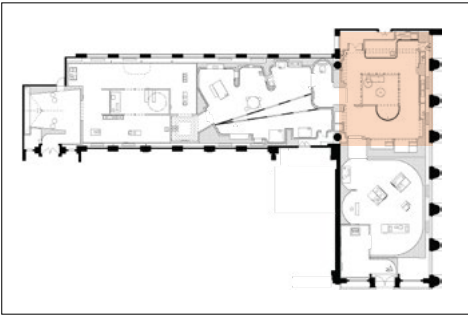
Below left:
© Jody Kingzett



Orrery clock
About 1830

SECTION 2

SUNSHINE AND HEALTH



HIGHLIGHTS

- Interactive allowing visitors to 'try on' digital versions of historic sunglasses on display
- 1 video
- Over 35 historic objects including an electric light bath by John Harvey Kellogg
- Solarium that allows visitors the experience of basking in the Sun

For centuries the Sun has been associated with good health and wellbeing, but since the late 19th century, our understanding of sunlight's effects on our bodies has changed significantly. This section explores how the bactericidal properties of sunlight were used to treat illnesses such as tuberculosis in clinics and sanatoriums, and how exposure to the Sun changed health and beauty standards in the 20th century.

This section will also show how the dangers of overexposure to sunlight have become more apparent and the ways in which we protect ourselves from the threats of skin cancer, heatstroke and eye damage. Through an immersive sun-basking experience, visitors will be encouraged to reflect on their own relationship with the Sun.





SUNSHINE AND



The healing power
of the sun

The sun is a powerful
source of light and
heat, and it has been
used for centuries to
treat various ailments.

The art of medicine is the discovery and use
of natural forces to bring about the cure.



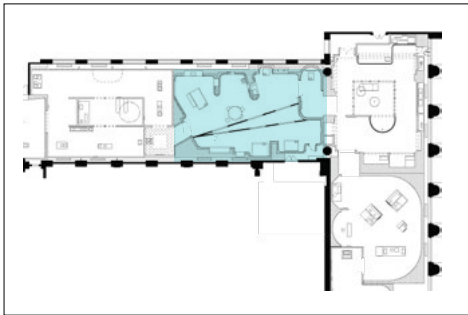
EXIT

How much light can
your balloon carry
the water pump?

How do the lights in
the house change?

SECTION 3

POWER FROM THE SUN

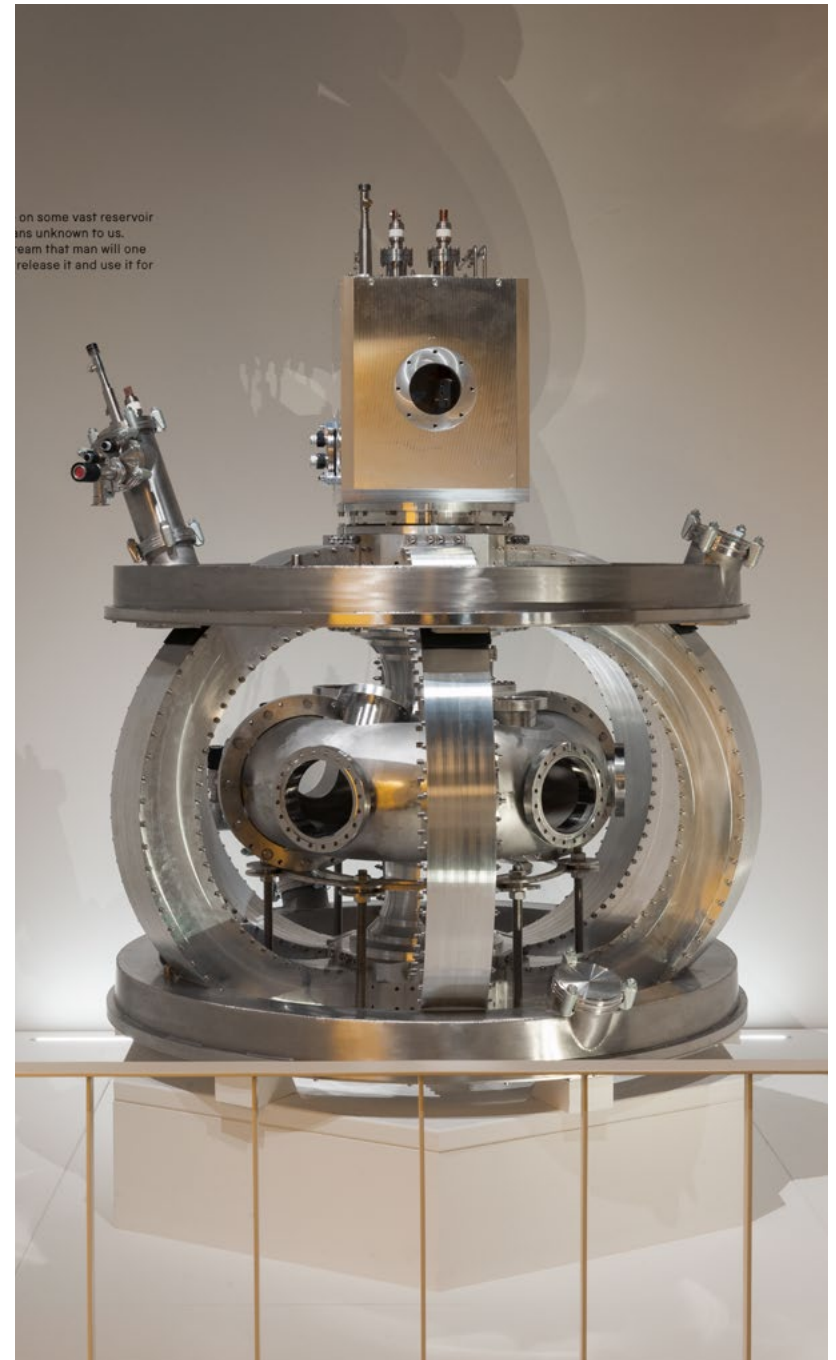


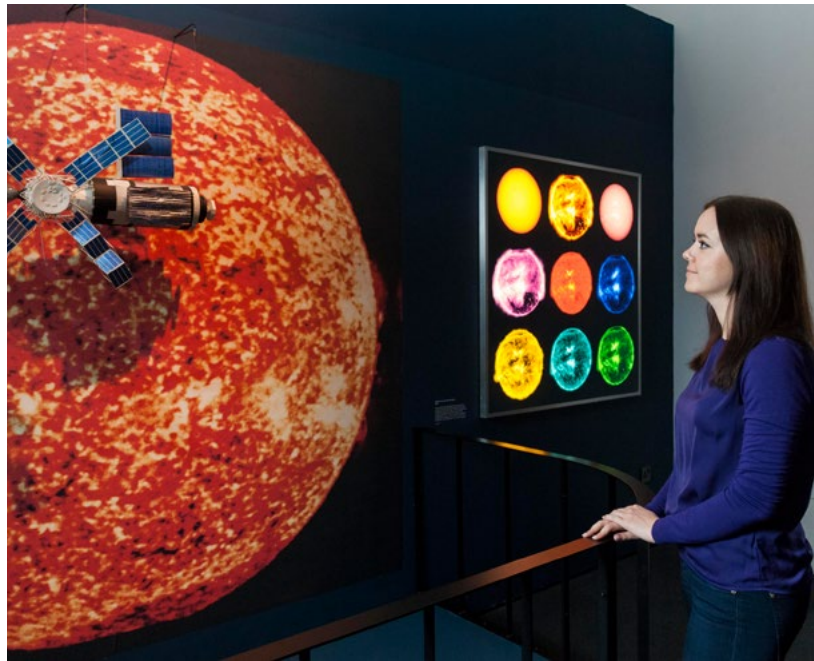
HIGHLIGHTS

- 4 videos and 2 animations
- Hands-on multi-player physical interactive inviting visitors to experiment with ways of generating as much power as they can from a solar cell
- Over 35 historic objects including a model of the ZETA fusion reactor and one of the first solar-powered watches
- Exhibition also features a Solar-thermal Panel that was originally installed on the roof of the White House during President Jimmy Carter's time in office, 1979

The Sun provides nearly all energy on Earth. For thousands of years, people have developed ways of putting the limitless energy of our nearest star to use – capturing its heat, converting its light into electricity, and even attempting to reproduce the source of its power.

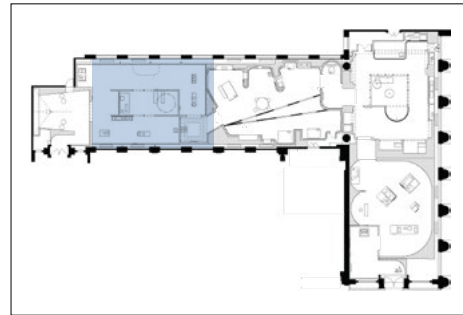
From ancient burning mirrors to some of the latest photovoltaic technologies, this section explores the varied and ingenious ways humanity has sought to harness the light and heat of the Sun and the impact they had on our world. Looking deep into the Sun itself, the section also examines the nuclear fusion reactions taking place in its core and which are the source of its radiant energy. Could researchers ever recreate and harness the vast power of the Sun here on Earth?





SECTION 4

OBSERVING THE SUN



The Sun has always been a source of fascination and yet for most of history its secrets were hidden behind its dazzling glare. The invention of the telescope at the start of the 17th century changed everything. Suddenly people began to see spots on its surface, triggering passionate debates over the nature of the Sun and firing the starting gun on four centuries of solar observations.

Then in 1859 a colossal solar storm bathed the Earth in stunning auroras and sent sparks flying from telegraph equipment, dramatically revealing the Sun's power to disrupt the technology on which we all rely. Today scientists are still trying to understand our nearest star, with the hope of being able to anticipate and prepare for the potentially catastrophic effects of space weather. As NASA and ESA launch the most ambitious solar missions ever attempted, we explore what we still do not understand about our nearest star and how scientists from all over the world are trying to unlock its secrets.

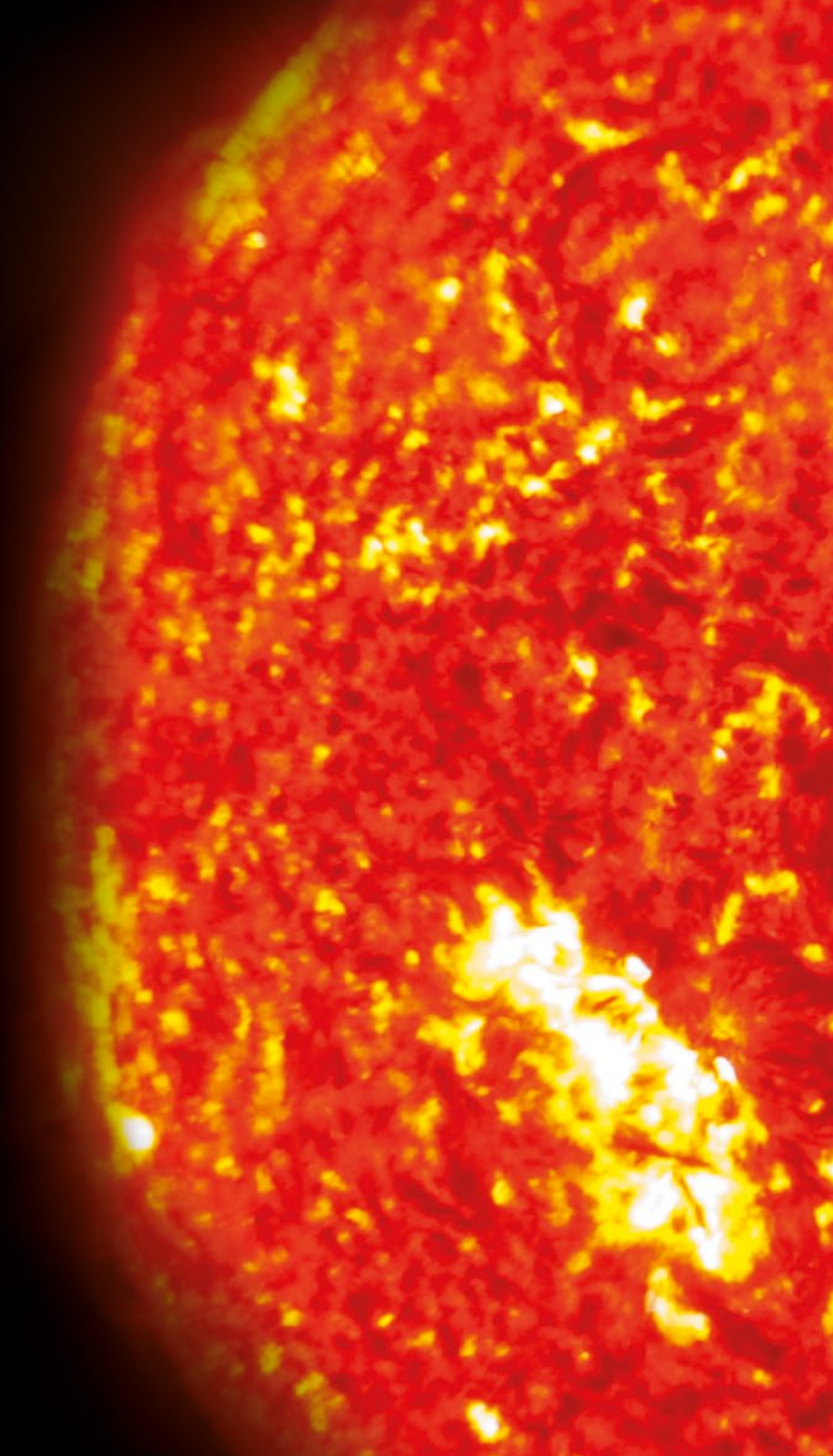
HIGHLIGHTS

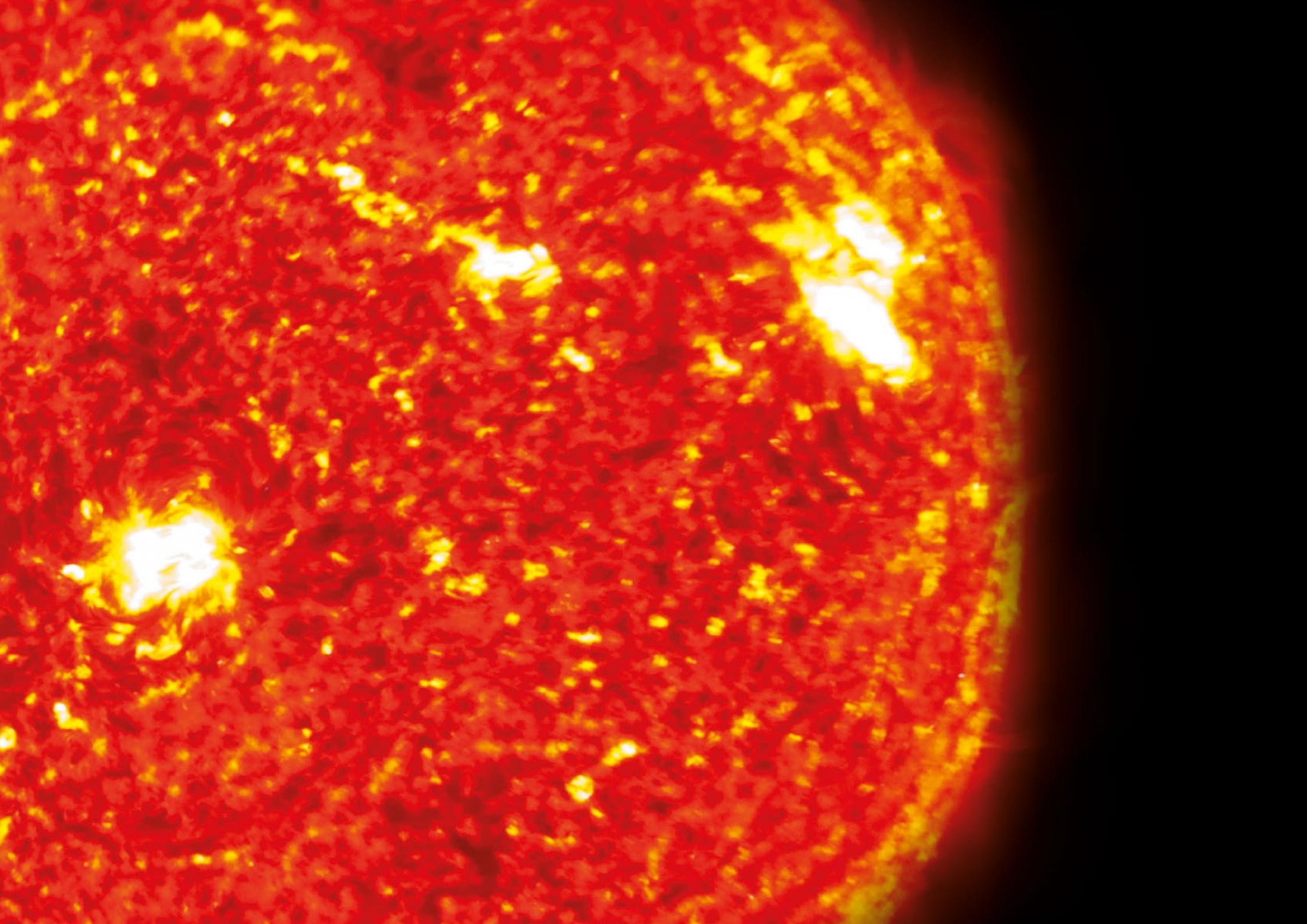
- Mass display of beautiful solar imagery, from the 17th century to the present day
- Large-scale retelling of the solar storm of 1859
- Interactive game that explores space weather forecasting
- 1 video and 2 animations
- Approximately 50 images and 15 historic objects including the Kew spectroheliograph used to photograph the solar corona and Norman Lockyer's seven-prism spectroscope



FINALE

THE FINAL EXPERIENCE WILL BE A
VISCERAL, AWE-INSPIRING ENCOUNTER
WITH THE SUN AS REVEALED BY
THE LATEST SCIENTIFIC IMAGERY.





EXHIBITION PRINCIPLES

LEARNING OBJECTIVES

TOP-LINE MESSAGE:

Throughout history, science and technology have transformed the way we understand and relate to one of the most powerful influences in our lives – the Sun.

OVERARCHING THEMES:

- The Sun has always inspired and fascinated people.
- Throughout history people have harnessed the Sun for timekeeping, medicine, heat and power.
- We have learnt a huge amount about the Sun and how it affects us, but there are still things we do not fully understand.
- Though science and technology have transformed our relationship with the Sun, understanding and harnessing it remains crucially important in the modern world.

TARGET AUDIENCE

The Sun is aimed at diverse audiences seeking experiential engagement and hands-on exploration as well as those interested in culture, art and scientific ideas. The exhibition offers an opportunity for shared experiences and learning among friends, families and school groups. *The Sun* provides answers to common questions with text and visual aids which can be used by parents and teachers to facilitate children's learning.

Above: Wooden sign,
Europe, 1701–1900
Below: A compendium
sundial by Christoph
Schissler, 1566



EXHIBITION DETAILS

The Sun is primarily a turnkey exhibition requiring about 750 m²/8,000 ft² of indoor display space. The exhibition will tour with objects, display cases, audiovisual equipment and integrated lighting. To minimise shipping costs, the venue will be required to fabricate basic walls and structures and provide general gallery lighting. We will work with your venue to provide floor and design plans.

THE HIRE FEE INCLUDES:

- Licence to display the exhibition
- Display cases, backdrops, props, open display plinths and partial set structure
- Audiovisual displays and hardware
- Objects from the Science Museum collections and external lenders
- Exhibition toolkits
- Touring Exhibitions Coordinator to manage the installation and deinstallation process
- Specialist Science Museum conservator/courier to undertake object handling, installation and deinstallation

VENUES PROVIDE:

- Basic walls and structures
- General gallery lighting
- Insurance
- Staff and equipment to assist with installation and deinstallation, depending on venue support facilities
- Storage for transport crates
- Gallery staff during operating hours
- Translation and production of graphics and digital components with text if not displaying in English
- Production of promotional and press material

RETAIL AND PUBLICATIONS

Choose from a variety of solar themed merchandise and publications for your retail space.



ABOUT THE LEAD CURATOR

Harry Cliff is the Lead Curator of *The Sun – Living With Our Star* at the Science Museum. Since 2012, he has held a joint fellowship with the Science Museum and the Cavendish Laboratory at the University of Cambridge.

At the Science Museum he was previously Head of Content of the 2013 exhibition *Collider – Step Inside The World's Greatest Experiment*, and also acts as a spokesperson for the museum on physics and astronomy. Harry is also a particle physicist who works on the Large Hadron Collider, the world's largest particle accelerator at CERN, near Geneva. His research is focused on searching for signs of new fundamental particles in high energy collisions recorded by the LHCb experiment.

Harry is very active in communicating science to the general public on radio, television and through public lectures, including talks at TED and the Royal Institution that have been viewed millions of times.



CONTACT

Touring Exhibitions
Science Museum
Exhibition Road
London SW7 2DD
+44 (0)207 942 4219
touring.exhibitions@sciencemuseum.ac.uk
sciencemuseum.org.uk/touringexhibitions

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