Crawford Art Gallery





7 October - 29 November

A visual art exhibition that creatively explores the Electromagnetic Spectrum



EXHIBITION

Art meets Science in Invisible Light, an expansive new exhibition cells, gaze far into the universe, and peer behind micron-thin layers from The School of Looking. Funded by Science Foundation of paint to reveal the secrets of the Grand Masters of art. Crawford Art Gallery as an institution for both artistic and scientific endeavour.

Invisible Light is an ambitious, collaborative project with Tyndall National Institute and the Irish Photonic Integration Centre (IPIC). The exhibition creatively explores the Electromagnetic Spectrum in its relationship to history, society, artistic creation and art conservation.

Just as we can describe the spectrum of visible light in seven colours - red, orange, yellow, green, blue, indigo, violet - we can also divide the Electromagnetic Spectrum into seven zones. The middle zone the smallest - is the only one we call visible, but in truth they are all visible to us now. The invention and construction of machine eyes to see all this invisible light has been a collective project since the late nineteenth century, and a vision revolution that has made the whole universe visible to us.

Scientists have slowly rendered visible the entire range of energy frequencies that permeates our universe - Gamma Rays, X-Rays, Infrared Radiation, Visible Light, Ultraviolet Radiation, Microwaves, Radio Waves - and imagined extraordinary applications for them, including inventions that have progressed society in countess ways saving lives, allowing us to see into the molecular structure of our www.schooloflooking.org

Ireland's (SFI) Discover Programme, it reignites the heritage of Marking the 200th anniversary of the birth of visionary Irish scientist John Tyndall (1820-1893), artists Anne Cleary and Denis Connolly from The School of Looking have worked closely with scientists from Tyndall National Institute and IPIC, and curators at Crawford Art Gallery to imagine an exhibition that truly unites art and science.

> Invisible Light shares this adventure with the public, through seven newly commissioned artworks, each one exploring a region of the Electromagnetic Spectrum and accompanied by seven Ray Days, days of safe public engagement dedicated to each separate type of radiation.

> Invisible Light receives its world premiere at Crawford Art Gallery and, in 2021, will represent Ireland at the Dubai Expo.

> The School of Looking, founded by artists Anne Cleary and Denis Connolly, focuses on the eye and visual perception to create innovative multi-disciplinary art projects bringing together science, technology, and people.

> "Our artwork captivates people through strong visual language and uses technology to explore scientific concepts related to light, movement, time and space."



A VISION REVOLUTION

In seven talks, Anne Cleary and Denis Connolly from The School of Looking introduce us to the history of light – 400 years of discovery and experiment, from Isaac Newton to Albert Einstein and beyond...

In 1666, a young Isaac Newton made his first inquiry into the nature invisible light that fills the univ of light. Shining a ray of sunlight through a prism, he was able to secrets of the universe to them. produce an array of colour. But he was unable to explain why the

prism revealed this spectrum, and he was unaware of all the light that our eyes cannot see.

In the centuries that followed scientists would slowly discover this invisible light that fills the universe, and this light would reveal the secrets of the universe to them.



BANANA MUSIC radiation from a banana creates music

Easy to forget that Gamma rays are a form of light - if we think of these rays at all, we think of them as nuclear radiation (which is correct) that has little impact on our everyday world. A banana is a rare source of this invisible light which is emitted in tiny - and therefore safe - quantities by the potassium in the fruit. This work is about making this most subtle light source perceptible.

SEE THROUGH ME

penetrates matter. Although these are negative images, they appear neither negative nor positive. natural to us: white bone, dark tissue.

X-rays collected to collage the human body from head to toe in The displayed images are the result of a collaborative project begun transparency. A conventional X-ray image is a black-and-white during lockdown in March 2020. Departing from the monochrome photographic film, which has been exposed to invisible light from a X-ray tradition, they are printed as duotones, using contrasting, cathode tube emitting high energy, high frequency light that complementary colours to create highly coloured prints that are

UV TIPI a contemplative environment of fluorescent minerals, pigments and fabrics

Ultraviolet (UV) light is visible to some animals, in particular to foraging insects and birds. Should we then consider this light as colour? And is it possible for us to represent or even imagine colour that our own eyes have never seen? There are cameras that can capture invisible colours and display them to us as visible colours, but a more natural form of translation is the fluorescence of materials that absorb UV and emit visible light.



VISIBLE

THE ANIMAL COLOUR DEBATE a light-hearted investigation of the colours animals see

Most mammals are dichromats, seeing two colours (blue and yellow) – a simpler colour space than our own trichromatic vision, with its rich landscape of primary and secondary hues.

But exactly what colours any animal can see will always be unknown unless we can find some way to ask them directly...



THE SENSE OF HEAT

When William Herschel discovered invisible light beyond the red end of the visible spectrum in 1800, he referred to it as "heat rays" because the instrument that detected it was a thermometer. We now have Infrared cameras that show us heat information* as visible light. The resulting image may resemble what our eyes see in unfamiliar colours but, in fact, it offers us sensory information unlike any that we have: a true sixth sense – heat vision!

Our own bodies and most of the objects that we encounter in everyday life have temperatures that radiate at infrared wavelengths, while a forest fire or a bright star (like the sun) might radiate in the visible or even in the ultraviolet zones of the spectrum!

Discover more >



The Cosmic Microwave Background is the oldest light in the universe. Once impossibly bright and hot, it has cooled to less than three degrees above absolute zero and faded to invisible microwaves.

But it is still there - a true relic of the beginning of everything: the surface of a sphere which we observe from its very centre; the horizon of the observable universe; the beginning of time; the end of space...

RADIO HAT WORKSHOP

RADIO

People have been building crystal radio receivers since the early days of radio. These devices need no external power and there is an enormous sculptural freedom in the way the coil, the capacitor and the antenna can be elaborated to tune into AM radio signals that can be listened to using earphones. This work is the result of a joyful experiment in marrying this technology with the art of millinery.







Each week, the artists will lead Workshops, Talks and Guided Visits (virtual or onsite) accompanied by scientific collaborators from Tyndall National Institute and IPIC (Irish Photonic Integration Centre).

Each of these **RAY DAYS** focuses on a different form of invisible light, from the mysterious gamma ray to the familiar radio wave.

Free but pre-booking is essential.

For information: https://crawfordartgallery.ie/the-school-of-looking-invisible-light/

More about The School of Looking: www.schooloflooking.org







An Roinn Turasóireachta, Cultúir, Ealaíon, Gaeltachta, Spóirt agus Meán Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media

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