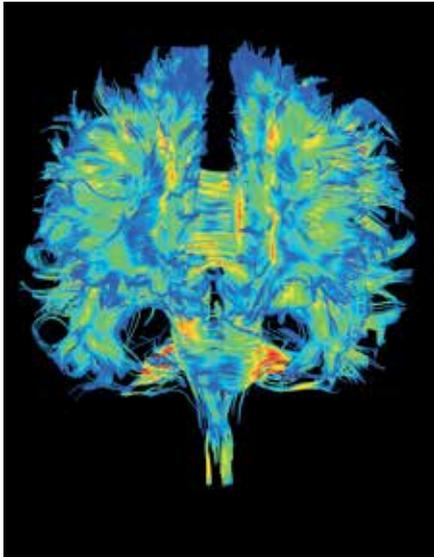


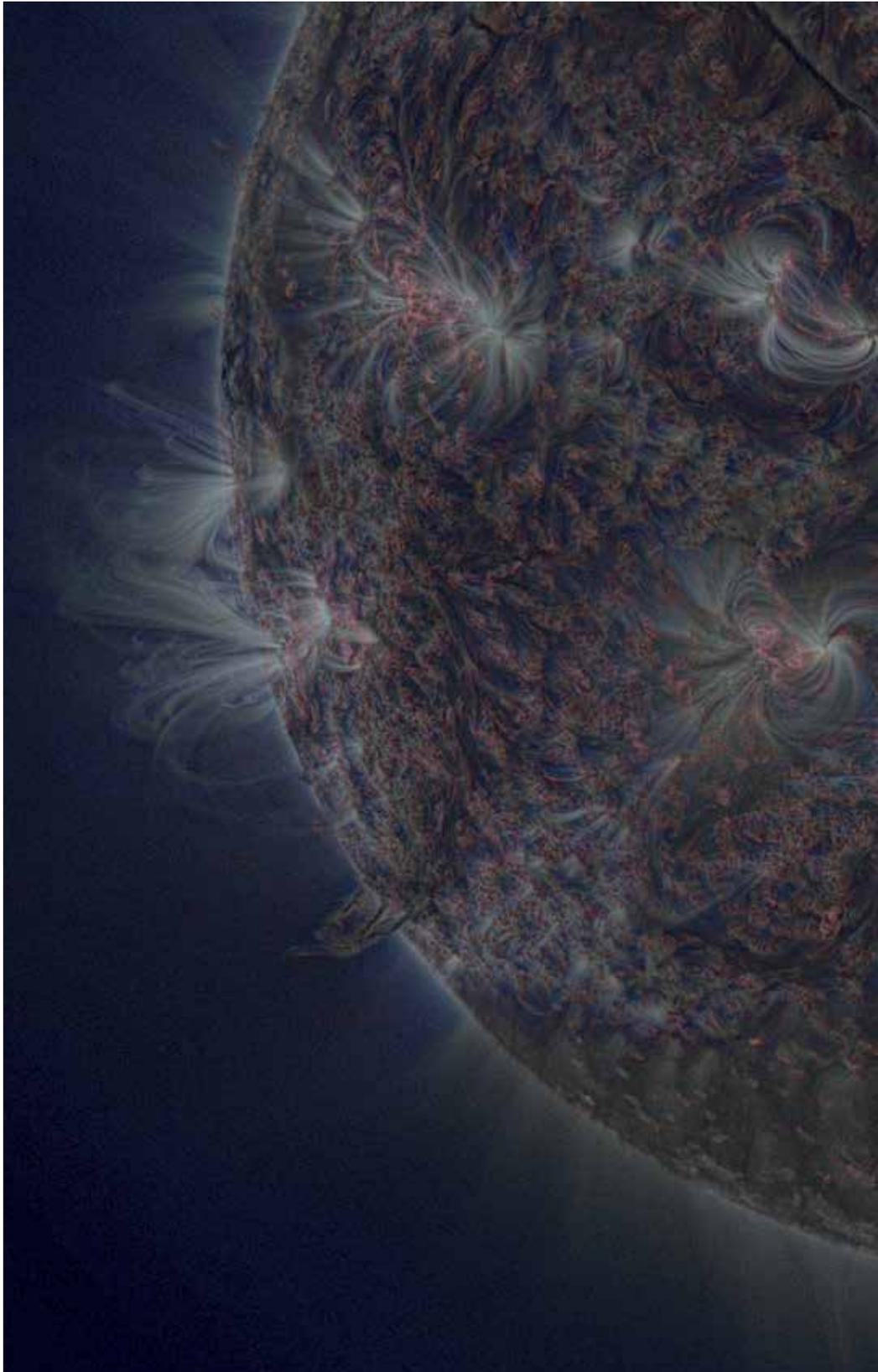
Light fantastic



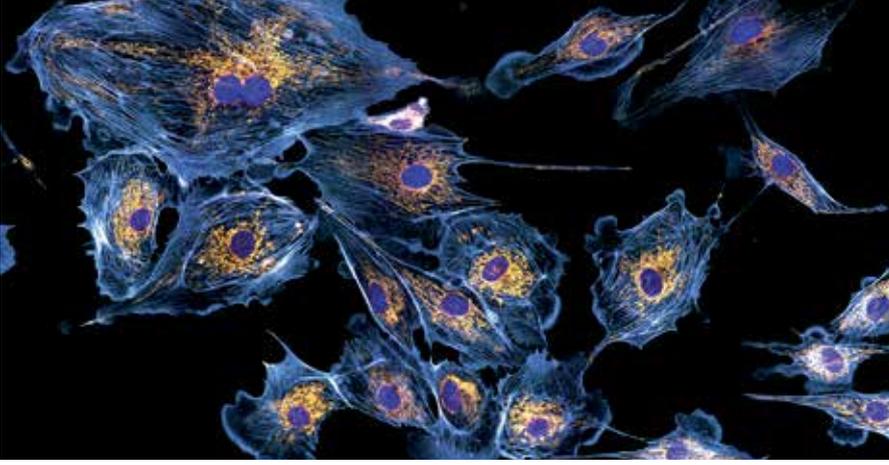
To mark the International Year of Light 2015, the Society has launched its Light Works exhibition. Rachel Segal Hamilton speaks to the show's curator, Gary Evans FRPS

There's more to light than the sliver of electromagnetic radiation we usually see. Laser cutting, fibreoptics and photolithography all use light to create things we rely on, such as the internet and microchips. Light-based medical imaging can diagnose diseases invisible to the human eye. 'Everything around us is made easier, safer or better because of light,' says Gary Evans FRPS, whose day job is at the Science Photo Library. 'When I found out that 2015 was the International Year of Light I thought, as The Royal Photographic Society, we should do something about it.'

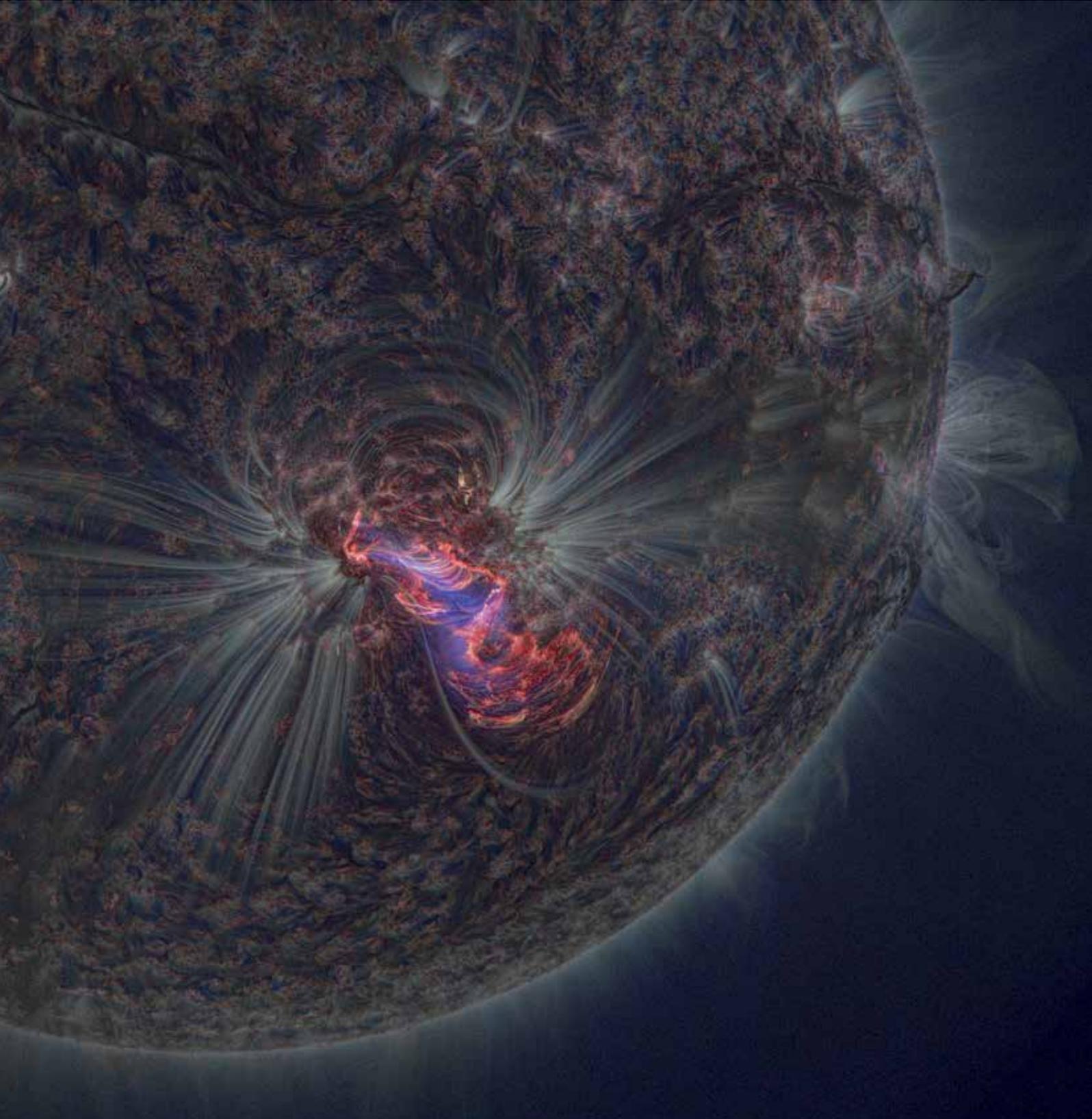
Cue Light Works, a free, touring exhibition of 50 extraordinary photographs. Having stopped in London and Belfast it has moved to Edinburgh – with more locations across the UK to be added throughout the year. The two-metre by 1.5-metre mounted prints show the light fulfilling many roles:



DR MICHAEL BORICH AND DR NAZMİN VIRJİ-BABUL;
DR TORSTEN WITTMANN, NASA / SDO / AIA,
PROCESSING BY MILOSLAV DRUCKMÜLLER



CLOCKWISE, FROM MAIN
Solar Flare; Seeing
Concussion (detail);
Lung Cells



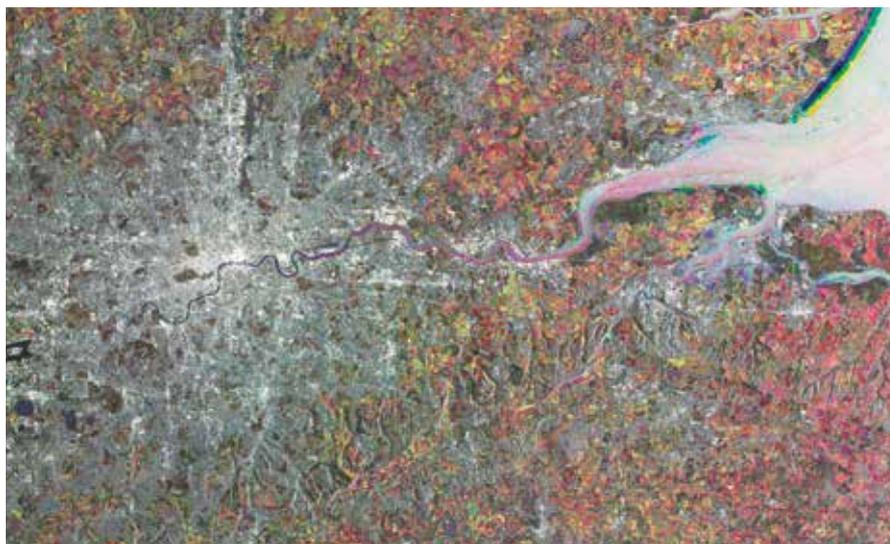


ABOVE Bacteria on the hands
RIGHT London, multitemporal satellite image

identifying weapons in airports, making chocolates, revealing bacteria on someone's hands or treating a newborn baby for jaundice. 'A virtual journey gives a natural flow to an exhibition,' Evans explains. 'So we came up with the idea of curating it as a walk through the whole of the electromagnetic spectrum. I started off with a sheet of A4 – gamma rays at the top, radio waves at the bottom and everything else in between. It was then a case of what images I could find to fit each wave band.'

Some were easier than others. Infrared and ultraviolet imaging, for example, are more accessible than those using the terahertz area of the spectrum, which lies between microwaves and infrared light waves. 'Working at the Science Photo Library, I'm quite familiar with the types of images around. But that only takes you so far,' admits Evans. He liaised with scientists and image makers from around the UK, who generously donated their time and pictures for free.

The exhibition challenges what we consider to be photography. Rather than recording visible light with a sensor or film, many scientific imaging techniques 'use light almost like a probe to get information,' says Evans. Take *Sleeping Sickness*, an abstract-looking dot pattern. 'It uses a process called crystallography.



I BEGAN WITH A SHEET OF A4 – GAMMA RAYS AT THE TOP, RADIO WAVES AT THE BOTTOM

You fire a laser at an enzyme crystal and the way the light scatters tells you about the structure of the crystal. You can use that to design vaccines.'

With light-based technologies advancing rapidly, what's next? 'They'll push ever-faster exposure times and brighter light sources to look at things in smaller scales,' says Evans. 'They'll push the resolution of microscopes to what we conceive as the limits and beyond.' Also on the horizon is fuller integration

of different types of medical imaging so doctors will be able to bring together a series of scans – such as MRI and CT – into a single, 3D model.

But you don't need to be a boffin to appreciate Light Works. Evans hopes above all that all sorts of passers-by will stumble on the exhibition. 'I'll be happy if people say, 'Look at that pretty image'. And then if they read the caption and learn some science, it's a bonus. To show people that science produces astonishingly beautiful things – which also have a purpose – that's the aim.'

Light Works is on show in St Andrew Square, Edinburgh, until 17 April. For details and more exhibition dates see rps.org/IYL2015