



Press release

18.00 GMT | Wednesday 25 February 2026
(10am US Pacific Standard Time)

UK scientists open a real-time window to our vast and ever-changing Universe

As the Vera C. Rubin Observatory issues its first live alerts of changes detected in the night sky, a UK innovation is allowing us to observe millions of astronomical events as they unfold.

Starting today, Wednesday 25 February 2026, UK astronomers are providing public real-time updates on the changes in our Universe, be it exploding stars, belching black holes, or asteroids cruising through our solar system.

The UK-developed software system, Lasair, has been created by a team from Queen's University Belfast, the University of Edinburgh and the University of Oxford, to filter millions of events from the Rubin Observatory alerts stream, unlocking new scientific opportunities faster than ever before.

More than a decade in development, Lasair is one of a handful of Rubin data brokers. As a specialist in detecting transient events, it will uncover explosions of stars in distant galaxies that can tell us about the origin of the elements, the expansion of the Universe and the complex physics of black holes.

Lasair will ingest, process, and filter millions of astronomical alerts from the data that Rubin will capture during its 10-year Legacy Survey of Space and Time (LSST). This will enable scientists to focus on significant changes in the sky, from supernovae, variable stars, and gamma-ray bursts to black holes eating stars, and asteroids in the Solar System.

The first Rubin Observatory alerts distributed to researchers around the world were generated the night of 24 February. The alerts contained the flares of new supernovae and the flickers of stars, actively feeding black holes in distant galaxies, and asteroids cruising through our Solar System.

A deluge of data

Every night, powerful computers in the UK will help to crunch the huge influx of data captured by the world's largest digital camera before serving it up to the science community through the Lasair web portal. The computers that run Lasair are part of a wider data facility constructed on IRIS, a

network of powerful, digital research infrastructure for priority astronomy, particle physics, and nuclear physics in the UK. It provides the technology that astronomers around the world will use to unlock the secrets from Rubin. Over the next 10 years, UK scientists will use powerful supercomputers to analyse around 10 million images, captured by the Observatory as part of LSST, identifying and measuring billions of stars and galaxies – most of which have never previously been detected.

Dr Roy Williams of the University of Edinburgh has been the lead developer for Lasair for over a decade. He said: “Lasair is a platform to enable custom filtering: each user imagines and creates their own filter. Most nights there will be a massive flow of data that Lasair will strain through those filters, and we hope this flexibility will allow users to find new and unexpected discoveries from this glorious deluge.”

Professor Stephen Smartt, the Wetton Professor of Astrophysics at the University of Oxford, is the scientific lead of the Lasair team. He said: “The data that Lasair will serve up – not only to the scientific community but also to the general public – will enable early Rubin science. Lasair is a Gaelic word that means ‘flame’ or ‘flash’; our broker will enable users to detect things that move and explode in the sky, within minutes of the image being taken in Chile.

“The Rubin Observatory uses the largest camera ever built for astronomy, and for 10 years it will take an image every 30 seconds. Every night, these images are likely to contain around 7 million sources that have changed in some way. Lasair will match all of those to every major astronomical catalogue that exists and give an initial classification – variable star, active galactic nucleus, a supernova near a known galaxy – and match these sources to gamma-ray burst and x-rays detected from space telescopes in real time. We are providing a platform for any scientist in the world to connect to and find new explosions in the nearby and distant Universe.”

Dr Héloïse Stevance of the University of Oxford has used Lasair to build an automated filter for the Rubin data that will help users hunt down extragalactic explosions, so they don’t get drowned in the other millions of alerts per night. Dr Stevance, a Schmidt AI in Science fellow, said: “The sky is too vast for us to work alone: discovery in modern astronomy will have to come from a partnership between human experts and smart algorithms.”

Sophisticated software

Professor Bob Mann, Professor of Survey Astronomy at the University of Edinburgh, is the Project Leader for UK participation in the Rubin LSST. He said: “The Lasair alert broker is one of the important contributions that UK astronomers are making to the Rubin LSST. Over the course of a decade, the Lasair team have used data from simulations and a precursor sky survey to develop a sophisticated system that will enable astronomers to detect instances of rare time-varying celestial phenomena of different kinds within the deluge of data that will flow from Rubin. Today marks a major milestone for them and the start of an exciting decade of science for astronomers in the UK and beyond.”

Lasair is part of a multi-million-pound investment by the Science and Technology Facilities Council (STFC), which is enabling the UK to participate in the groundbreaking Rubin LSST. Across 36 research institutions in the UK, researchers and software developers are addressing scientific and technical challenges that will enable astronomers to make discoveries within the multi-Petabyte dataset that will be captured by the Rubin Observatory over the next 10 years.

The beginning of scientific alerts is one of the last major milestones before Rubin Observatory begins its Legacy Survey of Space and Time (LSST) this year.

Visit the Lasair website at <https://lasair.lsst.ac.uk/>

Technical notes on Lasair at lasair-lsst.readthedocs.io/en/main/about.html

For more information and for interviews:

contact Eleanor O’Kane, LSST:UK Communications Officer.

Email: eokane@roe.ac.uk | Mobile: 07766 687274.

A selection of initial visuals are [available to download here](#).

See end of the document for notes on accompanying visuals and further resources.

Notes to editors

About Lasair

Lasair is part of Rubin UK (LSST:UK) and one of seven independent Rubin brokers, Lasair will also share classifications from three other Rubin community brokers: Fink (France), AMPEL (Germany), and Alerce (Chile). Visit <https://lasair.lsst.ac.uk/>

About LSST:UK

To date, UK participation in the Rubin LSST has been funded by £23 million of investment by the Science and Technology Facilities Council (STFC), part of UK Research and Innovation. Computational resources used by LSST:UK are provided through the STFC-funded IRIS (www.iris.ac.uk) project.

Formed in 2014, the LSST:UK Consortium is made up of 36 partners representing all major UK astronomy research groups*.

The LSST:UK Consortium has created the LSST:UK Science Centre (LUSC), a distributed team of researchers and software developers addressing scientific and technical challenges that will enable astronomers to make discoveries within the multi-Petabyte dataset produced by LSST.

Visit www.rubin.ac.uk

*Armagh Observatory; Cardiff University; Durham University; Imperial College London; Keele University; Lancaster University; Liverpool John Moores University ; Newcastle University; Open University; Queen Mary University of London; Queen’s University Belfast; University of Bath; University of Birmingham; University of Bristol; University of Cambridge; University of Lancashire; University of Edinburgh; University of Exeter; University of Glasgow; University of Hertfordshire; University of Hull; University of Kent; University of Leicester; University of Leeds; University of Manchester ; University of Nottingham; University of Oxford ; University of Portsmouth; University of St Andrews; University of Sheffield; University

of Southampton; University of Surrey; University of Sussex; University of Warwick; University College London; UK Astronomy Technology Centre.

About the NSF–DOE Vera C. Rubin Observatory

The NSF–DOE Vera C. Rubin Observatory is jointly funded by the U.S. National Science Foundation and the U.S. Department of Energy’s Office of Science. Rubin Observatory is a joint Programme of NSF NOIRLab and DOE’s SLAC National Accelerator Laboratory.

Rubin’s 3200-megapixel camera is the world’s largest digital camera. It’s the size of a car and weighs around 2,800kg.

During its 10-year survey, Rubin will catalogue an estimated 17 billion stars, 20 billion galaxies, and millions of transients – more objects than there are living people on earth.

- Visit rubinobservatory.org
- [Rubin web page about the brokers](#)

Visuals and accompanying resources

Selection of initial visuals [available to download here.](#)

More Rubin alerts images will be available when the embargo lifts.

Other visual assets

- [Rubin difference imaging explainer video](#)
 - [First Look images and videos](#)
 - [Rubin Observatory main image gallery](#)
-