

# News story: British instruments reveal secrets of Martian sky

Over the last year the European Space Agency's (ESA) Trace Gas Orbiter (TGO) spacecraft followed the onset of the storm and monitored how the increase in dust affected the water vapour in the atmosphere – important for understanding the history of water on Mars.

It did not observe the presence of methane, further adding to the mystery of why other missions like the NASA Curiosity rover reported localised concentrations, which could indicate life.

ExoMars is a two-part mission. The Trace Gas Orbiter will be joined by the UK-built Rosalind Franklin rover, which will roam the surface of the planet in 2021.

Sue Horne, Head of Space Exploration, UK Space Agency said:

ExoMars embodies the best of UK and European space science and I'm delighted that Britain is one of the biggest supporters.

This data release is the first of many on our mission to unearth the mysteries of the Red Planet. The results both answer, and raise new questions, paving the way for more exciting discoveries from the Rosalind Franklin rover which is due to launch next year.

The UK Space Agency has invested €287 million to the overall ExoMars mission and €14 million to the instruments over 13 years, making it the second largest European contributor after Italy. A further £370,000 has been committed on the spacecraft's instrument operations and over £2.5 million on data analysis.

The UK space industry provided the spacecraft's batteries, ultra-high frequency (UHF) transceiver and aerodynamic analysis. Dr Manish Patel at the Open University led the UK design input for the spectrometer system which will look at atmospheric composition and is playing a key role in the instrument operations and data analysis. The UK Space Agency is also supporting 18 researchers in 5 British institutions to analyse data received on the Martian atmosphere.

Dr Manish Patel, Open University, and Co-Principal Investigator of the NOMAD instrument on TGO, said:

The measurements we have made are very surprising. The methane previously detected by ground-based telescopes, the ESA Mars Express spacecraft and the NASA Curiosity rover seems to have disappeared.

Mars continues to confound us – the only way these results make sense with previous observations is if there is a new mechanism in the atmosphere, removing the methane at a rate far faster than thought possible. As always, Mars provides us with another mystery to solve.

ESA's Trace Gas Orbiter is studying Martian atmospheric trace gases and their sources in unprecedented detail. It will help us understand the source of the methane in Mars' atmosphere and whether it is from a geological or biological source and provide a data connection to the Rosalind Franklin rover, currently under construction by Airbus in Stevenage, Hertfordshire.

The Trace Gas Orbiter arrived in orbit 400 km above the Red Planet in April 2018, just a couple of months before the start of the massive dust storm that would eventually lead to the demise of NASA's Opportunity rover after 15 years roving the Martian surface.

The ExoMars rover was named after UK scientist and co-discoverer of the structure of DNA Rosalind Franklin in February 2018, following a competition to which almost 36,000 people responded.

The Trace Gas Orbiter results were presented this morning at a press conference for the [European Geosciences Union \(EGU\) general assembly](#) in Vienna.

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## **News story: Civil Procedure Rule Committee: Annual open meeting 10 May 2019**

Are you interested in observing the rule making process?

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## **News story: Civil Procedure Rule Committee: Annual open meeting 10 May 2019**

The open meeting of the Civil Procedure Rule Committee will take place on the above date at the Ministry of Justice HQ, 102 Petty France, London, SW1H 9AJ

from 10:30am – 3:30pm.

Guests will be observers only and not be able to participate in the Committee's business or contribute to items in the agenda. However, there will be an opportunity at the end of the meeting for guests to ask pre-submitted questions to the Committee.

## **Attendance**

Accommodation is limited, so we are asking potential guests to complete a short [application form](#) (MS Word Document, 19.7KB) and return it by 4pm on Wednesday 24 April 2019 to the secretariat at the following postal or email address:-

Civil Procedure Rule Committee Secretariat  
Post Point 10.18  
Ministry of Justice  
102 Petty France  
London SW1H 9AJ

DX 152380 Westminster 8

Email: [peter.clough@justice.gov.uk](mailto:peter.clough@justice.gov.uk)

Applications to attend close on 24 April 2019 at 4pm.

## **Format of the meeting**

The nature of the Committee's work means that, at the time of this announcement, we cannot confirm the topics that will be under discussion, however, an agenda will be available for the meeting.

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## **[News story: Funding awarded to support vulnerable EU citizens apply for settled status](#)**

Home Secretary Sajid Javid has today (Wednesday 10 April 2019) announced that 57 organisations across the UK will receive funding to provide practical support to vulnerable or at-risk people applying to the EU Settlement Scheme.

The Home Office has made up to £9 million available in funding which will be used to help organisations both inform vulnerable individuals about the need to apply for settled status and support them to complete their applications

to protect their status as the UK exits the EU.

The successful organisations, including disability and homeless charities and a wide-range of community organisations will provide support to an estimated 200,000 people, who may be marginalised or in need of extra help.

The funding comes as the Home Office confirmed it had now received more than 400,000 applications to the EU Settlement Scheme.

Home Secretary Sajid Javid said:

EU citizens have contributed so much to this country and we want them all to stay. That's why we have made the EU Settlement Scheme free and simple to use.

It's vital no one is left behind and we support vulnerable people who may have difficulties applying.

This £9million of funding will help do that.

Those who may require additional support include victims of human trafficking or domestic abuse, those with severe mental health conditions, those without a permanent address, and those who are elderly and isolated.

Over the last year, officials have met with experts from more than 200 community groups, voluntary sector bodies and businesses nationwide that have strong local links with vulnerable EU citizens to inform them about the EU Settlement Scheme and to make sure that we reach everyone.

Additional support is also available to those EU citizens in the UK who do not have the appropriate access, skills or confidence to apply. This includes [over 200 assisted digital locations across the UK](#) where applicants can be supported through their application.

The EU Settlement Scheme is designed to make it straightforward for EU citizens and their family members to stay after the UK leaves the EU.

They only need to complete 3 key steps – prove their identity, show that they live in the UK, and declare any criminal convictions. Deal or no deal, EU citizens will have until at least 31 December 2020 to apply.

Full details of all the organisations receiving funding will be published on GOV.UK in due course.

The Home Office will be publishing a full report on the public beta test phase shortly. Further information will be published in statistical updates and a more detailed quarterly official statistics publication from August 2019.

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## **News story: GAD and ERNIE 5**

### **GAD helps ensure Premium Bond draws remain random**

Statistical tests carried out by experts at the Government Actuary's Department (GAD) help ensure Premium Bond winners are chosen fairly!

The power behind the generation of the random numbers in each monthly draw has recently been upgraded to a new version called ERNIE 5 (or Electronic Random Number Indicator Equipment).

So, before the launch GAD carried out independent statistical tests on the ERNIE 5 machines to reassure National Savings and Investments (NS&I) that the draw output appeared random.

### **Cash prizes**

Premium Bonds from NS&I do not pay interest, but investors get the chance to win a range of cash prizes in monthly draws. These include two £1 million prizes distributed every month. These winnings are free of income tax and capital gains tax. People can withdraw their money whenever they like. As NS&I is backed by HM Treasury, all money invested is 100% secure.

### **Lightning speed**

There have been 5 generations of ERNIEs with the first one being invented by a Bletchley Park code breaker in 1956. The new ERNIE 5 is based on quantum technology that uses light photons. This allows the random numbers for a monthly prize draw to be generated far quicker than had previously been possible.

### **Assessing randomness**

Since 1970 the Government Actuary has undertaken independent and robust statistical testing to assess the randomness of each monthly draw. While it's not possible to confirm absolute randomness, the Government Actuary provides a monthly certificate to NS&I stating there is no reason to believe the output from ERNIE is not random. Monthly draw prizes cannot be paid until this certificate is issued.

### **Testing ERNIE 5**

GAD assessed a large number of sample draws produced by ERNIE 5. It was vital to confirm these sample draws would pass the standard monthly randomness tests required to issue the draw certificates. A wider range of checks was undertaken to provide additional reassurance for each aspect of the output and these were all completed successfully.

## **Strength to strength**

The first monthly Premium Bond draw using ERNIE 5 was in March 2019. GAD will continue to independently test the monthly draw output, issuing confirmation certificates as appropriate, after which prizes can be paid to the winners.

Further details on [Premium Bonds and ERNIE 5](#) are available at NS&I's website.