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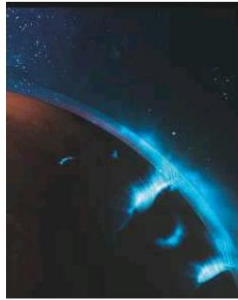
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**IMPERFECT LOVERS, UNHOLY MISDEEDS**

Taapsee, Vikrant star in psychological thriller *Haseen Dillruba*, out on Netflix

NATION

**Hope Probe captures first images of Mars' Discrete Aurora phenomenon | P5**



DUBAI

BY ANGEL TESORERO  
Senior Reporter

Images of a ghostly glow known as Mars' Discrete Aurora taken by Hope Probe's EMUS (Emirates Mars Ultraviolet Spectrometer) instrument were released by the Emirates Mars Mission (EMM) yesterday.

His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of UAE and Ruler of Dubai, also tweeted about the Martian phenomenon and said: "The UAE's Hope Probe, first-ever Arab interplanetary mission, has captured the first global images of Mars' Discrete Aurora. The high-quality images open up unprecedented potential for the global science community to investigate solar interactions with Mars."

An aurora is a natural phenomenon, which is characterised by a display of a natural-coloured (green, red, yellow or white) light show, which is caused when electrically-charged particles from the sun collide with particles from gases such as oxygen and nitrogen present in the atmosphere.

### Martian aurora

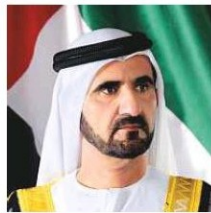
A type of Martian aurora first identified by Nasa's MAVEN spacecraft in 2016 is actually the most common form of aurora occurring on the Red Planet. According to scientists, the aurora can help them track water loss from Mars' atmosphere.

According to EMM, the images taken by Hope Probe "have revolutionary implications for our understanding of the interactions between solar radiation, Mars' magnetic fields and the planetary atmosphere."

"These unique global snapshots of the Discrete Aurora of Mars are the first time such detailed and clear observations

## Hope Probe shares images of Mars' Discrete Aurora

10 YEARS OF STUDY CAPTURED BY 10 MINUTES OF HOPE PROBE OBSERVATION



**The high-quality images open up unprecedented potential for the global science community to investigate solar interactions with Mars."**

**Shaikh Mohammad Bin Rashid Al Maktoum**

have been made globally, as well as across previously unobservable wavelengths. The implications for our understanding of Mars' atmospheric and magnetospheric science are tremendous and provide new support to the theory that solar storms are not necessary to drive Mars' aurora," said Hessa Al Matroushi, EMM Science Lead.

### Mars' magnetic fields

The ghostly glow known as Discrete Aurora is an intricate pattern that traces out the regions where Mars' enigmatic



An artist's impression of Mars' Discrete Aurora.

**The ghostly glow known as Discrete Aurora is an intricate pattern that traces out the regions where Mars' enigmatic crustal magnetic fields act like a funnel to guide fast electrons from space down into the atmosphere, causing it to shimmer in a manner similar to the Earth's aurora.**

crustal magnetic fields act like a funnel to guide fast electrons from space down into the atmosphere, causing it to shimmer in a manner similar to the Earth's aurora.

EMM said: "This influence of localised magnetic fields is a unique feature of the Red Planet as Mars, unlike Earth, does not have a global magnetic field generated by the planet's core. The most sensitive ultraviolet instrument yet to orbit Mars,

EMUS is able to image these dynamic auroral events globally at high resolution and across a wide range of wavelengths, providing an unprecedented window upon the interaction of the atmosphere with solar particles."

While previous studies had theorised the Discrete Aurora is tied to Mars' magnetic fields and existing observations had been consistent with that theory, prior images of this phenomenon at



Read the full report on Mars' Discrete Aurora and watch related videos

this quality had only been available as artist's impressions.

### Revolutionary study

EMM Deputy Science Lead Justin Deighan said: "We have totally blown out ten years of study of Mars' auroras with ten minutes of observations. The data we are capturing confirms the tremendous potential we now have of exploring Mars' aurora and the interactions between Mars' magnetic fields, atmosphere and solar particles with a coverage and sensitivity we could only previously dream of. These exciting observations go above and beyond the original science goals of the Emirates Mars Mission." The principal science goal of EMUS, one of three instruments on board the Hope Probe, is the measurement of oxygen and carbon monoxide in Mars' thermosphere and the variability of hydrogen and oxygen in the exosphere. Members of the science team who had previously worked on the MAVEN Mission had recognised the potential for the more sensitive EMUS instrument to capture new aspects of Mars' auroral phenomena, but the results of early observations have exceeded their wildest expectations.