



Scan for our social media

# GULF NEWS

© All rights reserved 2022

NATION | P6

**Dutch expat on life lessons cancer imparts**



THE VIEWS | P13

**How the World Cup rekindled Arab spirit**



BUSINESS | P10

**AI Olama praises India's exemplary digital march**

TABLOID | P3

**GOLDEN GLOBE NOD FOR ELVIS, TOP GUN, AVATAR**



Commodities OR Shares! Where to invest?

800-CENTURY (2368879)

century.ae

Regulated by SCA

Trading in financial markets carries risk and can result in loss of capital

CENTURY FINANCIAL



3072/31

# How Rashid rover will work on Moon

EQUIPPED WITH CAMERAS AND SENSORS, ROBOTIC EXPLORER WILL STUDY THE LUNAR SURFACE

DUBAI

BY ANGEL TESORERO  
Senior Reporter

**T**he UAE-made Rashid rover that was launched on Sunday aboard the Japanese lunar lander Hakuto-R has begun its five-month, fuel-saving 384,400km journey to the surface of the Moon.

Rashid Rover, which is almost the same size as an air passenger's carry-on luggage, is expected to land on the Atlas Crater on the Moon's southeastern outer edge of Mare Frigoris (Sea of Cold), by April next year.

How exactly will it operate on the Moon, study the lunar surface and send back data?

## Powered by the sun

According to the Mohammad Bin Rashid Space Centre (MBRSC), the rover will operate on solar panels mounted at a specific angle to maximise the collection of solar energy.

It carries four cameras, including a microscopic and a thermal imaging camera, in addition to sensors and systems equipped to characterise the lunar soil, dust, radioactive and electrical activities and rocks.

## Several experiments

The four-wheeled rover will perform numerous scientific experiments to measure the effectiveness of materials on the lunar surface, such as the efficiency of adhesion of its wheels, and explore the process of overcoming natural obstacles.

The rover faces challenges. The temperature on the Moon drops to as low as -173 degrees Celsius from as high as 127 de-

## WORLD'S MOST COMPACT ROVER TO EXPLORE MOON

**384,400** km

distance to Moon  
Rashid rover will cover in 5 months



**10** kg

weight of the four-wheeled rover with payload. It is **70cm tall and 50cm wide**



**4** cameras

Rashid rover has two main cameras (microscopic and thermal imaging) in addition to sensors and systems

**10** glgabytes

of recorded material and scientific data expected to be collected by the rover

**1** lunar day

or **14 Earth days** is how long the rover will study the lunar surface



## How will it communicate?

The rover will communicate with the MBRSC mission control centre in Dubai using its two built-in communication channels.



**Pictures:** UAE's Rashid Rover's journey to the Moon

Hamad Obaid Al Mansouri, chairman of MBRSC, said: "With the Emirates Lunar Mission's successful launch, the UAE space industry is entering a new era. This mission embodies the spirit of the UAE's innovation and scientific progress in accordance with the vision of the UAE's wise leadership."

## One-way trip

The rover will not return to Earth. What it will bring back to Earth are multiple images – around 10 gigabytes of recorded material and scientific data. The ELM team at MBRSC will use these to test new technologies in material science, robotics, mobility, navigation and communications. The findings will also help in the design of future space missions.

Salem Al Marri, director-general of MBRSC, said: "We have made history with the launch. We now look forward to the landing and completing the Emirates Lunar Mission."

## Moon and beyond

Hamad Al Marzooqi, mission project manager, earlier told *Gulf News*: "ELM will pave the way for the realisation of the UAE Mars 2117 Programme." He added that international space agencies are developing a lunar gateway. "There are also efforts to build base stations for human settlement on the Moon that can be used to support longer human missions."

grees Celsius. But the rover is equipped with technologies that can resist the lunar surface temperature, according to MBRSC.

The rover will study the surroundings for at least one lunar day (equivalent to 14 Earth days). Its Langmuir probe, for instance, can help scientists understand the electrically charged environment at the

lunar surface, which is apparently caused by the solar wind which is a stream of charged particles from the sun.

## Communication channels

Rashid rover will communicate with the MBRSC mission control centre in Dubai using its two built-in communication channels. The primary com-

munications channel allows high-speed bandwidth that transfers information from the rover through the lander and then to the ground station.

The secondary communication channel is used for direct communication with the ground station. It will be activated in the event of a malfunction in the main channel.