

Hope Mars Mission Probe



The Emirates Mars Mission (EMM) is the United Arab Emirates' (UAE) first mission to Mars. EMM is designed to orbit Mars and study the dynamics in the Martian atmosphere on a global scale, and on both diurnal and seasonal timescales. Using three scientific instruments on board of the spacecraft, EMM will provide a set of measurements fundamental to an improved understanding of circulation and weather in the Martian lower and middle atmosphere. Combining such data with the monitoring of the upper layers of the atmosphere, EMM measurements will reveal the mechanisms behind the upward transport of energy and particles, and the subsequent escape of atmospheric particles from the gravity of Mars. This could be "the first true weather satellite" at Mars.

The United Arab Emirates has taken a historic first step to interplanetary exploration, with the launch of the Arab world's first mission to Mars. The Hope, or Al Amal, spacecraft departed Earth from Tanegashima, Japan, on a Mitsubishi H-IIA rocket on July 20, 2020, shortly before 3 p.m PT.

Now they join the United States, the Soviet Union, Europe, and India in the elite club of nations that have successfully sent spacecraft to Mars.

If all works well, Al Amal should enter the orbit of Mars in February 2021, which coincides with the 50th anniversary of the founding of the United Arab Emirates next year.

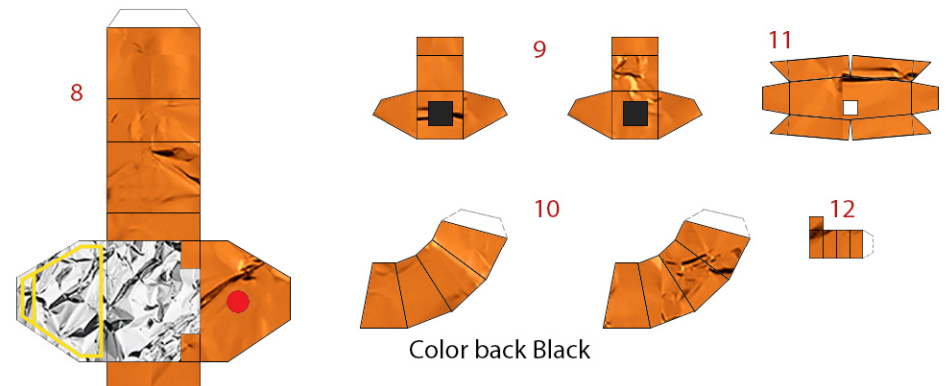
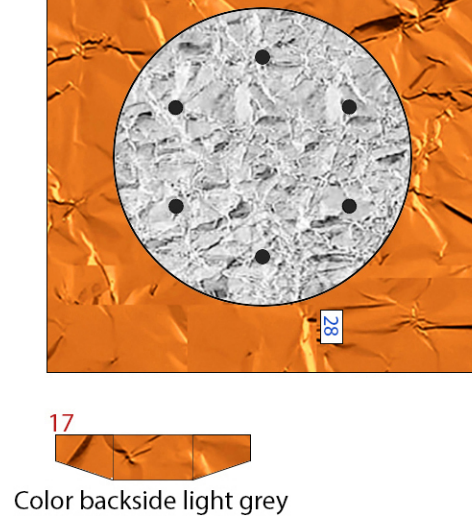
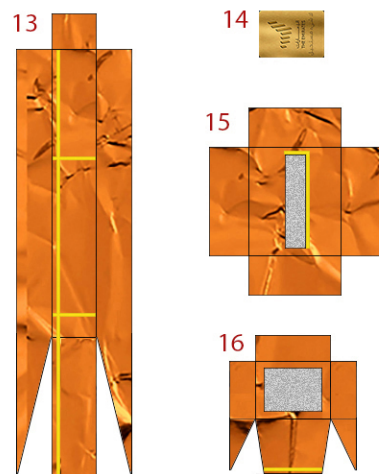
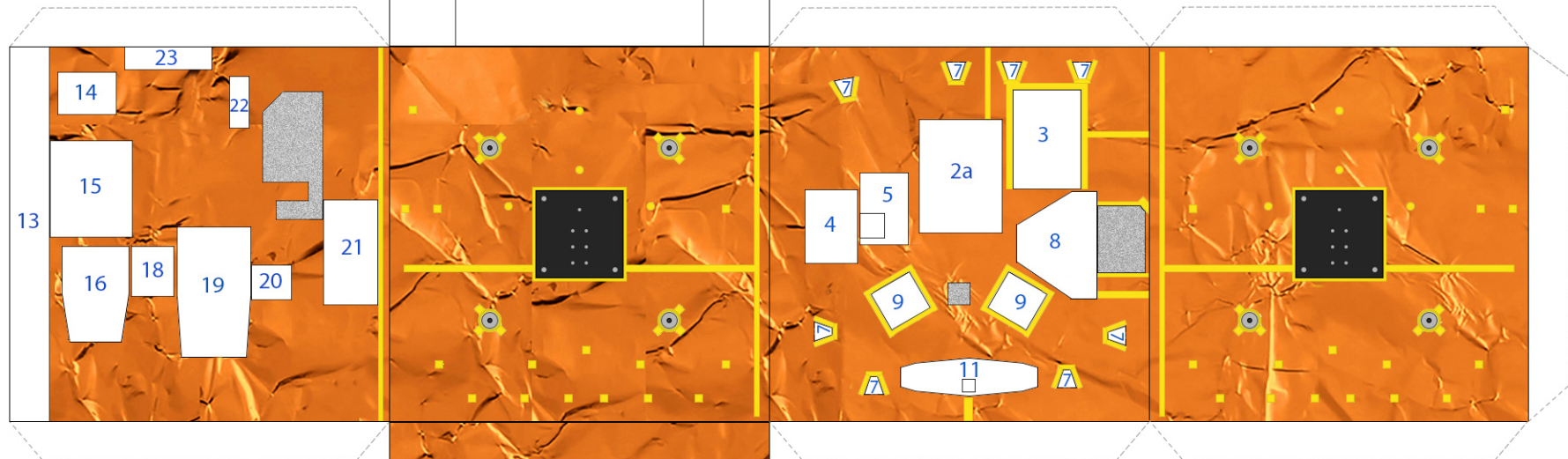
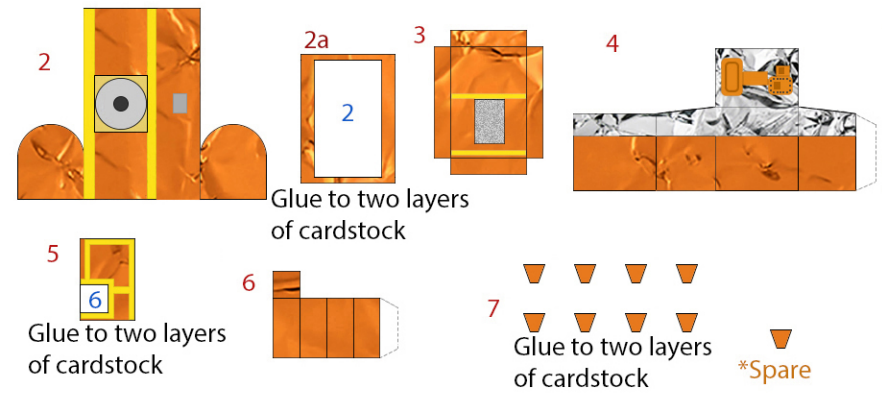
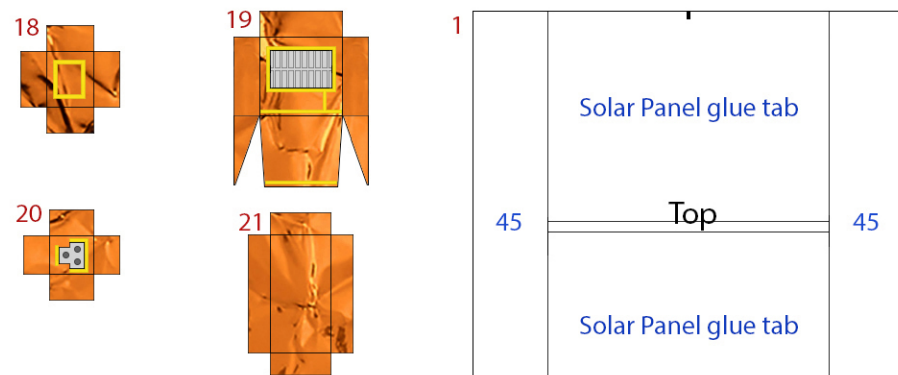
Furthermore, if Al Amal successfully enters orbit of Mars, the United Arab Emirates will become only the second nation in history to succeed in placing a vehicle at the Red Planet on its very first attempt.

The Al Amal probe for the Emirates Mars Mission was built and will be operated by the Mohammed Bin Rashid Space Centre in cooperation with the University of Colorado-Boulder, Arizona State University, and the University of California, Berkeley in the United States.

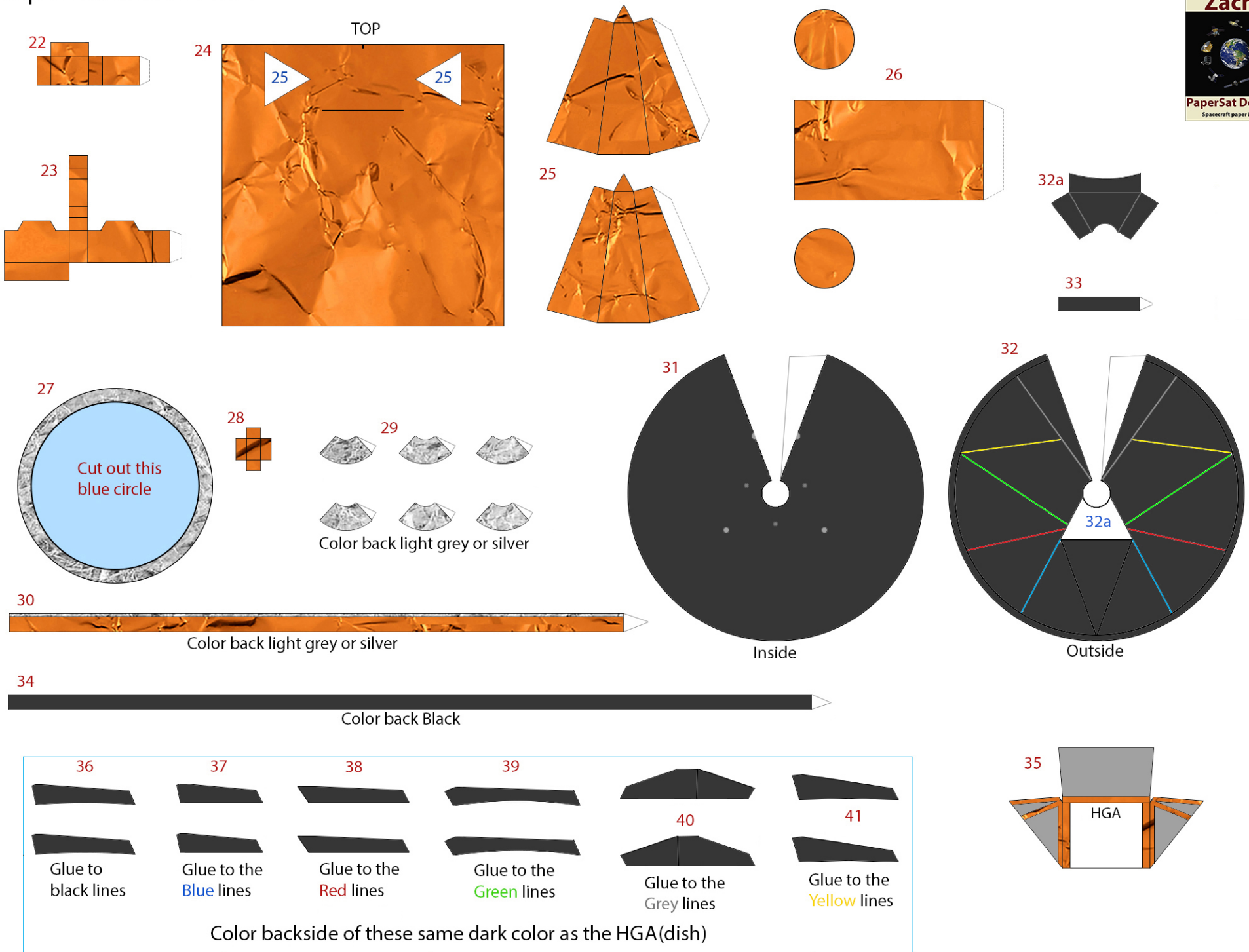
The spacecraft itself has a cubical main structure, which is constructed out of aluminum and features a composite face-sheet. Al Amal stands at 2.9 meters (9.5 feet) tall and has a width of 2.37 meters (7.8 feet), and will weigh in at approximately 1,350 kilograms (2,976 pounds) when fully fueled.

Two large solar panels, which are able to supply up to 600 watts of electrical power once unfolded, will act as the main source of power generation for the probe when in space and in orbit of Mars.

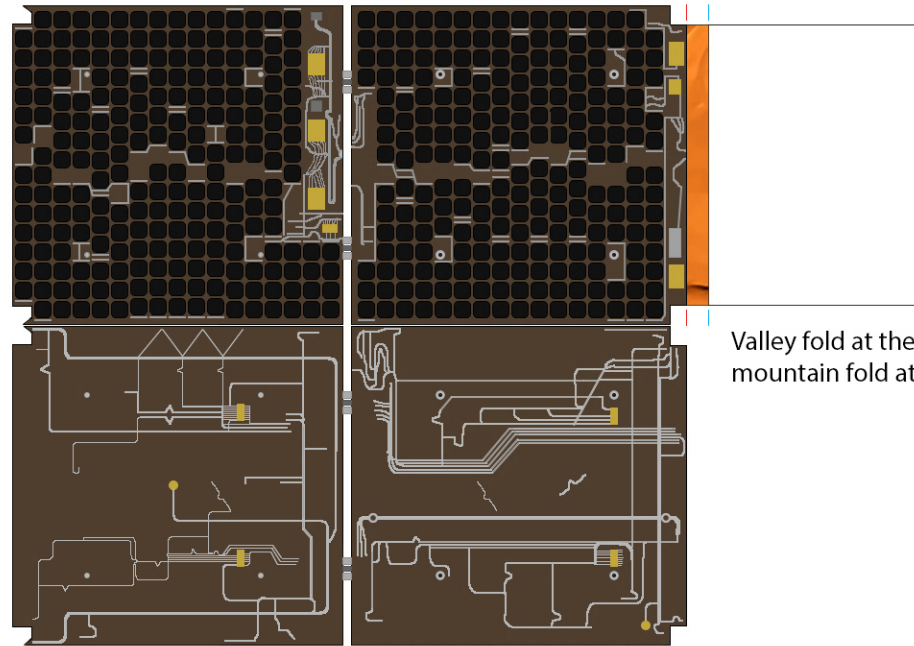
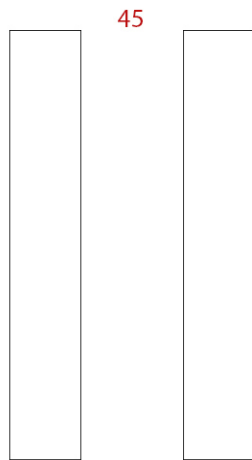
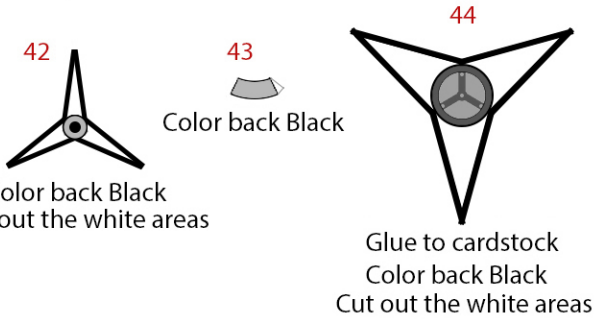
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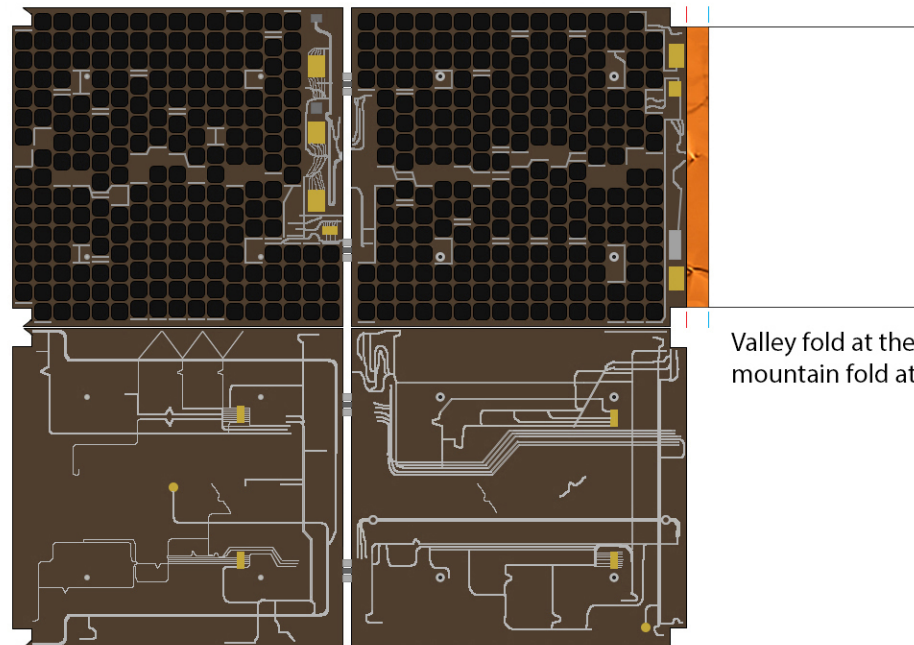


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Valley fold at the red lines
mountain fold at the blue lines

Fold-glue each solar panel back-to-back



Valley fold at the red lines
mountain fold at the blue lines