Watch the United Arab Emirates launch its first mission to Mars

The United Arab Emirates is counting down to the launch of its first interplanetary space mission today — one that will send a spacecraft called "Hope" to orbit Mars. The Emirates Mars Mission will aim to provide a global snapshot of the weather on the Red Planet. It will also be a source of pride for the UAE as the country celebrates the 50th anniversary of its founding in December of 2021.

To ensure that Hope is actually at Mars by the anniversary, the UAE must launch this summer. Planetary scientists have a very small window every two years to send spacecraft to Mars, when the Red Planet and Earth closely align on their orbits. If Hope launches in July, the spacecraft will spend the next seven months traveling to Mars, arriving sometime in February — leaving it plenty of time in orbit before the anniversary.

Hope is launching on top of a Japanese H-IIA rocket
Hope is launching on top of a Japanese H-IIA rocket out of Japan's Tanegashima Space Center, located on an island off the southern coast of the country. At Tanegashima, the launch is taking place in the wee morning hours of July 20th, at 6:58AM. On the East Coast of the United States, the launch is at 5:58PM ET this afternoon.

The UAE's Hope spacecraft ahead of launch
Image: Emirates Mars Mission
About one hour after the launch, the H-IIA rocket will deploy Hope in space, putting it on its course toward Mars. The probe will then stretch out its solar panels and point them toward

the Sun to start generating power. The Emirates Mars Mission team operating the spacecraft will also try to get in touch with the vehicle, while it attempts to stabilize itself and then heads out into deep space.

“This is not for the faint of heart.”
About 28 days after the launch, Hope will correct its course slightly by burning its onboard thrusters — the first of many correction maneuvers it will do on the way to Mars. Such burns are necessary to keep Hope on track to meet a tiny window at Mars and then insert itself into the planet’s orbit. “It’s a very small target,” Pete Withnell, the program manager for the mission at the University Colorado Boulder, which partnered with the Emirates Mars Mission, said during a press call ahead of the launch. “It’s equivalent to an archer hitting a two-millimeter target, one kilometer away. So this is not for the faint of heart.”

The Emirates Mars Mission plans to provide multiple livestreams of the launch, and Mitsubishi Heavy Industries, which operates the H-IIA rocket, will also provide a livestream. Most of the streams begin at 3PM ET and will provide plenty of coverage leading up to the UAE’s first attempt to put a vehicle in deep space.

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