



**SAUDI ARABIA**  
SCIENCE TEAM ARRIVES HOME AFTER TOP HONOR AT REGENERON CONTEST IN US [Page 4](#)

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THE JEDDAH DECLARATION SHOWS SAUDI ARABIA'S SERIOUSNESS

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BOOMING SAUDI SPORTS SHOWCASED WITH AWARDS AND FIRST EXPO

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**& FINALLY**  
STARS PAINT THE TOWN RED IN CANNES

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# ARAB NEWS

The Voice of a Changing Region

SINCE 1975



RAYYANAH BARNAWI



ALI ALQARNI



The SpaceX Falcon 9 rocket with the Crew Dragon spacecraft lifts off from pad 39A at the Kennedy Space Center early Monday in Cape Canaveral, Florida. During an eight-day stay on the ISS, the astronauts plan to carry out 20 research projects. AFP

GUARDIANS OF THE GALAXY

## Ax-2 mission carrying Saudi astronauts blasts off for ISS

The launch from NASA's Kennedy Space Center represents a huge milestone for the Kingdom

Saleh Fareed Jeddah

Axiom Space's second private astronaut Mission 2 successfully blasted off from NASA's Kennedy Space Center in Florida early Monday morning to the International Space Station, carrying a four-person crew on the SpaceX Dragon Endeavour.

The quartet departed on a SpaceX Dragon capsule that was propelled by a Falcon 9 rocket. Both the first stage and the Dragon separated without issue. The crew is led by Commander Peggy Whitson, pilot John Shoffner and mission specialists Ali Alqarni and Rayyanah Barnawi of Saudi Arabia.

They plan to undock from the ISS on May 30 for a fiery plunge back to



**This mission not only includes the first female astronaut and the second male astronaut but is helping achieve the goals of Vision 2030.**

Princess Reema bint Bandar  
Saudi ambassador to the US

Earth and splashdown off the coast of Florida.

During an eight-day stay on the ISS, they plan to carry out 20 research projects — 14 of them developed by Saudi scientists — ranging from human physiology and cell biology to technology development.

The crew will also conduct technology demonstrations to improve onboard communication and im-

age transferring, explore the use of computer vision applications for inventory management, and better understand odors in a pressurized environment.

The launch represents a huge milestone for the Kingdom as Barnawi, a breast cancer researcher, makes history as the first Saudi female astronaut to go to space. Alqarni is the second

Saudi male astronaut to do so.

The Kingdom's Ambassador to the US Princess Reema bint Bandar, who attended the launch of Ax-2, tweeted: "This mission not only includes the first female astronaut and the second male astronaut but is helping achieve the scientific goals of Vision 2030."

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# Spotlight



Along the mission patch border are the flags that represent the two countries flying as part of the Ax-2 mission.

## Ali Alqarni

BA in aeronautical science from King Faisal Air Academy.

Diploma in aeronautical science from Vance Air Force Base, US.

Captain pilot in the Royal Saudi Air Force with more than 12 years flying jets.



**We will be, Allah willing, an extension for the homeland's accomplishments in our coming journey.**

Ali Alqarni  
Saudi astronaut

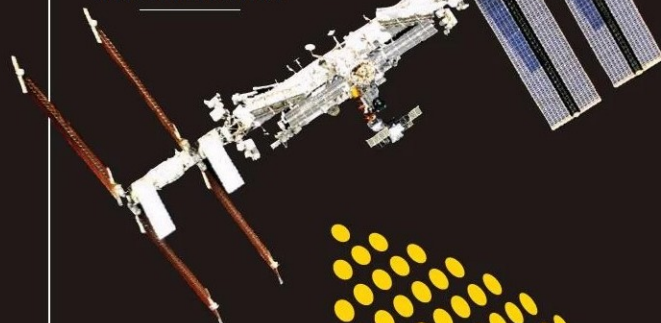


## Ax-2

name of the mission

# 408km

distance from Earth to ISS



# 14

scientific experiments to be conducted in 10 days

# 11

scientific experiments in microgravity

# 3

educational awareness experiment

# 9

months of training took place for the mission

# 12

days in simulated space conditions were undergone

# 12,000

students in 42 locations in the Kingdom will be involved in 3 educational experiments



## Timeline of the phases from takeoff to entering the ISS

### TAKEOFF

A rocket leaves the ground and starts to ascend into space.

### ORBIT ACTIVATION

A rocket transitions from a suborbital trajectory to an orbital trajectory.

### ADJUSTING ROCKET'S TRAJECTORY

The rocket's trajectory is adjusted to make sure it travels safely to its target. Short bursts of engine firing are used to make minor adjustments to the rocket's course.

### STARTING AN APPROACH

The shuttle enters its orbit and is set to begin its journey to the space station. This step requires a precise calculation of orbits.

### PROXIMITY OPERATION

To prevent a collision between the shuttle and the ISS, the pilot must carefully guide the shuttle spacecraft into position.

### DOCKING

Two spacecrafts are joined using a docking port.

### PRESSURE-BUILDING

When two spacecraft are joined, air pressure inside the spacecraft is increased, allowing the astronauts to safely enter the ISS.

## Rayyanah Barnawi

BA in biomedical sciences (ReGD) from Otago University, New Zealand.

MA in biomedical sciences from Alfaisal University, Saudi Arabia.

Research laboratory specialist with over 9 years in stem cell and tissue reengineering.



**We are very enthusiastic to blast off into space and bring off historic achievements to our country and to the entire humanity.**

Rayyanah Barnawi  
Saudi astronaut



## MAKING HISTORY

# Saudi astronauts land among the stars

Rayyanah Barnawi and Ali Alqarni will work on International Space Station during 10-day mission

Dhah Al-Mutairi Riyadh

Saudi astronauts Rayyanah Barnawi and Ali Alqarni have embarked on the Axiom Mission 2 to the International Space Station after blasting off in a SpaceX Falcon 9 rocket from the Kennedy Space Center in Florida.

Barnawi, who is the first Arab woman to reach orbit, graduated from the University of Otago, New Zealand with a BA in biomedical sciences, and obtained a master's degree in biomedical sciences from Alfaisal University.

In working as a research laboratory specialist, Barnawi has more than nine years of experience in stem cell and tissue re-engineering. "We are very enthusiastic to blast off to space and bring historic achievements to our country and humanity," said Barnawi.

Alqarni graduated from King Faisal Air Academy with a BA in aeronautical science and obtained a diploma in aeronautical science from Vance Air Force Base in the US.

He is a captain in the Royal Saudi Air Force with more than 12 years of experience as a jet pilot. "We feel proud and excited because it will be our first time going to the International Space Station," he said.

The astronauts are scheduled to conduct 14 experiments during their 10-day stay. Eleven are on microgravity, including the effects on the brain and eyes, and three are educational awareness experiments with the involvement of 12,000 students from across the Kingdom.

They are joined on ISS by Americans commander Peggy Whitson and pilot John Shoffner.

Before blasting off, the Saudi astronauts were put through intensive training for nine months at Axiom Space and SpaceX, NASA Johnson Center, SpaceX headquarters in Hawthorne, California, Japanese Aerospace Exploration Agency, and the European Space Agency.

They also spent 12 days in simulated space conditions, learning about weightlessness and practicing to float, communication skills while in orbit, expeditionary skills and the possible side effects of spaceflight.

Their mission is the first in the Kingdom's Human Space Flight program, which was launched by the Saudi Space Commission and will pave the way for a sustainable program by sending future Saudi astronauts on long-stay missions to conduct more research and expand the Kingdom's contributions to science.

The HSF program furthers the



The Ax-2 mission crew, at the Falcon 9 launch station, (from left to right): Rayyanah Barnawi, Peggy Whitson, John Shoffner, and Ali Alqarni. Twitter/saudispace

## HIGHLIGHTS

● The Kingdom is committed to supporting space exploration and enhancing the role of Saudis in space and technology.

● The Ax-2 is the first in the Human Space Flight program, which was launched by the Saudi Space Commission.

● The mission will pave the way for a sustainable program by sending future Saudi astronauts on long-stay missions to conduct more research and expand the Kingdom's contributions to science.

Vision 2030 plan by increasing the knowledge and technical skills of Saudis, diversifying the economy and expanding industry. The focus areas of the research in the HSF program will enable future missions to the Moon and Mars, in addition to physical science, human health, biology, biotechnology, biopharma, earth science, space manufacturing, and technology development.

The research opportunities will foster international collaboration, further enhancing the Kingdom's role internationally, the SSC.

Established less than five years ago in December 2018, the commission represents the

Kingdom at international forums, works with government agencies, regulates space activities and policies and promotes research and industrial activities related to space.

The Kingdom has further committed itself to supporting space exploration and enhancing the role of Saudis in space and technology with the Custodian of the Two Holy Mosques Scholarship program in collaboration with the Saudi Space Commission.

The program offers Saudi students the opportunity to study undergraduate and graduate degrees in space-related fields at the most prestigious international universities.

The top space majors include astronomy and space sciences, aerospace engineering, astrophysics, general relativity physics and cosmology, vehicle design and engineering, aeronautics and astronautics engineering, space engineering, space law and policies.

"The scholarship opportunities for space-related programs are one of the strategies of the Supreme Committee for Research, Development and Innovation launched by the Crown Prince to enhance the labor market with human cadres," said Amal Shuqair, the deputy minister of Education for Scholarship.

The Kingdom's interest in space goes back to 1977, when the Saudi government established the Saudi Arabian National Center for Science and Technology, which conducted applied scientific research in several fields including space.

In 1985, when Prince Sultan bin Salman traveled to space to launch the second Arab satellite, the center's name was changed to King Abdulaziz Center for Science and Technology. It then worked to advance the sector and plan for the transfer and localization of satellite technology.

A year after, the Kingdom established the Saudi Center for Remote Sensing, and it also established the Space and Aviation Research Institute at the King Abdulaziz City for Science and Technology in 1997.

The Kingdom also succeeded in launching 16 Saudi satellites from 2000 to 2019, providing communication in semi-remote areas.

The last launch sent the Saudi Geostationary Satellite 1, which was developed by a team from King Abdulaziz City for Science and Technology.

The satellite provided telecommunications capabilities, stronger internet connectivity, and TV and secure communications in the Middle East, North Africa, and Europe.