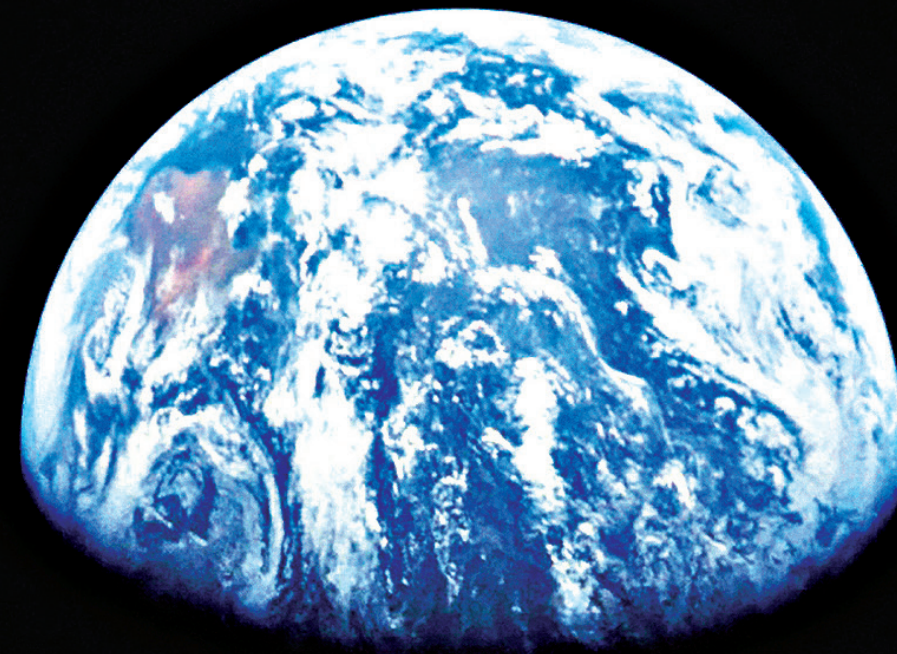


# ARAB NEWS

*The Voice of a Changing Region*

Saturday, July 20, 2019 - Dul Qaada 17, 1440 - [www.arabnews.com](http://www.arabnews.com)



**Eagle (Armstrong):** Houston, Tranquility base here. The Eagle has landed. **Control:** Roger, Tranquility. We copy you on the ground. You got a bunch of guys about to turn blue. We're breathing again. Thanks a lot.... **Eagle (Armstrong):** Going to step off the LEM now. That's one small step for man, one giant leap for mankind. The surface is fine and powdery. I can pick it up loosely with my toe... I only go in a small fraction of an inch - an eighth of an inch - but I can see the footprints of my boots and the treads in the fine sandy particles... It's quite dark in the shadow and a little hard for me to see, but I have good footing. I'll work my way to the sunlight here without looking directly into the sun... It has a stark beauty all its own. It's like much of the high desert of the United States. It's different, but it's very pretty out here.

# To the moon and back

On the 50th anniversary of the moon landing, we look at how one small step for man was a giant leap forward for Arab space exploration





Fifty years ago, Saudis joined the world in watching the moon landing. Among them was Prince Sultan bin Salman, the first Arab astronaut

Noor Nugali and Dhai Al-Mutairi  
Riyadh

**It was a sleepy afternoon in Saudi Arabia, just days before schools were due to start after summer vacation.**

Fifty years ago today, Saudis joined the world in gathering around TV sets to watch a live broadcast of what was once thought impossible: American astronauts Neil Armstrong and Buzz Aldrin took man's first steps on the moon.

Armstrong famously said: "That's one small step for man, one giant leap for mankind." True to his words, advancement in space has skyrocketed since the Apollo 11 mission, opening up doors for space scientists to reach for the stars.

It was only 16 years later that Saudi Prince Sultan bin Salman became the first Arab, Muslim — and royal — astronaut to travel into space. Before traveling to Houston for the Apollo mission anniversary, he sat down with Arab News in an

exclusive interview to talk about his NASA mission aboard the space shuttle Discovery in June 1985.

Prince Sultan, recently appointed chairman of the Saudi Space Commission, was only 13 when he watched the historic moon landing on TV. The picture quality might have been poor and the sound garbled, but footage of the landing captured his imagination.

"Humans made airplanes and made advances in industry, but for humans to leave their own planet,

**INSIDE**  
How Saudis watched the moon landing **P3**

An exclusive interview with Prince Sultan bin Salman **P4-5**

The next Arab astronaut from the UAE **P3**

**ONLINE**  
Our immersive story recreating Prince Sultan's 1985 journey to space

that's really something else," Prince Sultan told Arab News.

Most Saudis and residents living in the Kingdom watched it on Saudi channels 1 and 3, owned by Saudi Aramco.

Hessah Al-Sobaie, a housewife from Al-Dawadmi, recalled watching the moon landing from her grandparents' backyard as an 11-year-old. "It felt weird watching a human walk on the moon," she told Arab News. "I remember the endless questions I asked as a child."

It has been more than 30 years since space last had an Arab visitor (Syria's Muhammed Faris became the second Arab in space on board USSR's Soyuz spacecraft in 1987). But this September, the first Emirati will become the latest Arab visitor when he joins a team of astronauts at the International Space Station (ISS).

Hazza Al-Mansoori will travel to space on board a Soyuz-MS 15 spacecraft that is due to take off from the Baikonur Cosmodrome in Kazakhstan on Sept. 25.

DANGEROUS ESCALATION

# Iran seizes 2 British tankers in Strait of Hormuz

Arab News Jeddah

Iran's Revolutionary Guard Corps announced on Friday they had confiscated a British tanker in the strategic Strait of Hormuz for breaking "international maritime rules."

The Stena Impero tanker "was confiscated by the Revolutionary

Guards at the request of Hormozgan Ports and Maritime Organization when passing through the strait of Hormuz, for failing to respect international maritime rules," the Guards' official website Sepahnews announced.

A second tanker, the British-operated Mesdar, was also seized, US officials told CNN.

The UK government convened an emergency COBRA meeting to formulate its response and a Foreign Ministry spokesperson said: "We are urgently seeking further information and assessing the situation following reports of an incident in the Gulf."

Prime Minister Theresa May's office declined to comment.

Refinitiv data showed the Stena Impero was a British-flagged



The British oil tanker Stena Impero. AFP

vessel owned by Stena Bulk. It showed the vessel's destination as the Saudi port of Jubail on the Gulf.

The map tracking the ship's course showed it veering off course with a sharp turn north at about 1517 GMT on Friday and heading toward the Iranian coast.

The Stena company responsible for the ship also released a

statement, which read: "Stena Bulk and Northern Marine Management can confirm that at approximately 1600 BST on 19th July, UK registered vessel Stena Impero (built 2018, 49,683 DWT) was approached by unidentified small crafts and a helicopter during transit of the Strait of Hormuz while the vessel was in international waters. We are presently unable to contact the vessel which is now heading north toward Iran.

"There are 23 seafarers aboard. There have been no reported injuries and their safety is of primary concern to both owners and managers. The priority of both vessel owner Stena Bulk and ship manager Northern Marine Management is the safety and welfare of the crew.

MULTIMILLION-DOLLAR IMPORT DEAL

# Qatar LNG case: Former Pakistan PM in custody of anti-graft body

Raja Riaz and Aamir Saeed  
Lahore/Islamabad

Former Pakistani Prime Minister Shahid Khaqan Abbasi was remanded in the custody of the National Accountability Bureau (NAB) for 13 days, a day after he was arrested in a case involving a multibillion-rupee liquefied natural gas (LNG) import contract with Qatar.

Abbasi, who is also the vice president of the opposition Pakistan Muslim League — Nawaz (PML-N) party, was presented before Judge Bashir Ahmed of an accountability court on Friday morning. The case has been adjourned until Aug. 1.

Last year, the NAB ordered an inquiry into Abbasi over the alleged misappropriation of funds in the

import of LNG that the agency says caused a loss of about \$2 billion to the national exchequer.


He is also being investigated for allegedly granting a 15-year contract for an LNG terminal to a "favored" company. Abbasi rejects the allegations.

PML-N Sen. Mushahid Ullah Khan said Pakistan was facing "the worst energy crisis of its kind" when his party came to power after the 2013 general election, and the LNG deal was quickly finalized with Qatar to overcome it.

Pakistan is currently receiving a supply of 500 million cubic feet per day of LNG from Qatar under a 15-year agreement at 13.37 percent of the Brent crude price.

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# Spotlight

APOLLO 11 ANNIVERSARY

## ‘I was 11. It felt weird seeing a human walk on the moon’

Saudis recall watching in elation, disbelief and awe as history’s greatest TV event unfolded in their living rooms

Dhai Al-Mutairi Dubai

**It was a sleepy afternoon in Saudi Arabia, just days before the end of the school vacation, and Saudis had their eyes glued to their TV sets as they waited for live coverage of the Apollo 11 moon landing.**

Before July 20, 1969, the idea of a human walking on the moon was the stuff of science fiction. However, almost overnight, sci-fi had turned into reality with a live broadcast showing American astronaut Neil Armstrong’s dramatic descent onto the empty lunar landscape.

Between science fiction and science fact, the live coverage of the lunar landing amounted to an unusual fusion of news and entertainment.

The historic images — beamed back to Earth more than 320,000 km away — left Saudi viewers astounded and confused, but mostly elated to be witnessing such an epoch-making event.

The event was covered live on television and radio stations in Saudi Arabia. Most Saudis and residents living in the Kingdom watched it on Saudi channels 1 and 3, owned by Saudi Aramco.

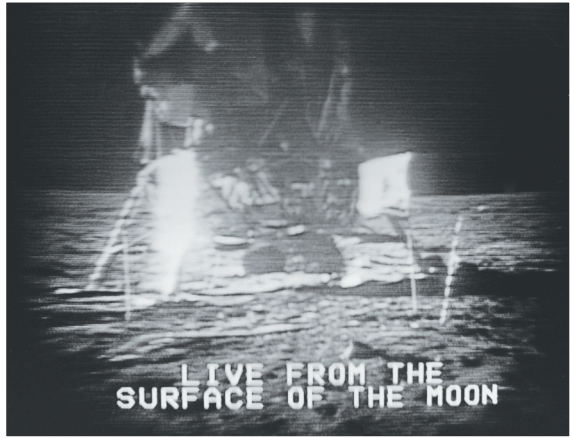
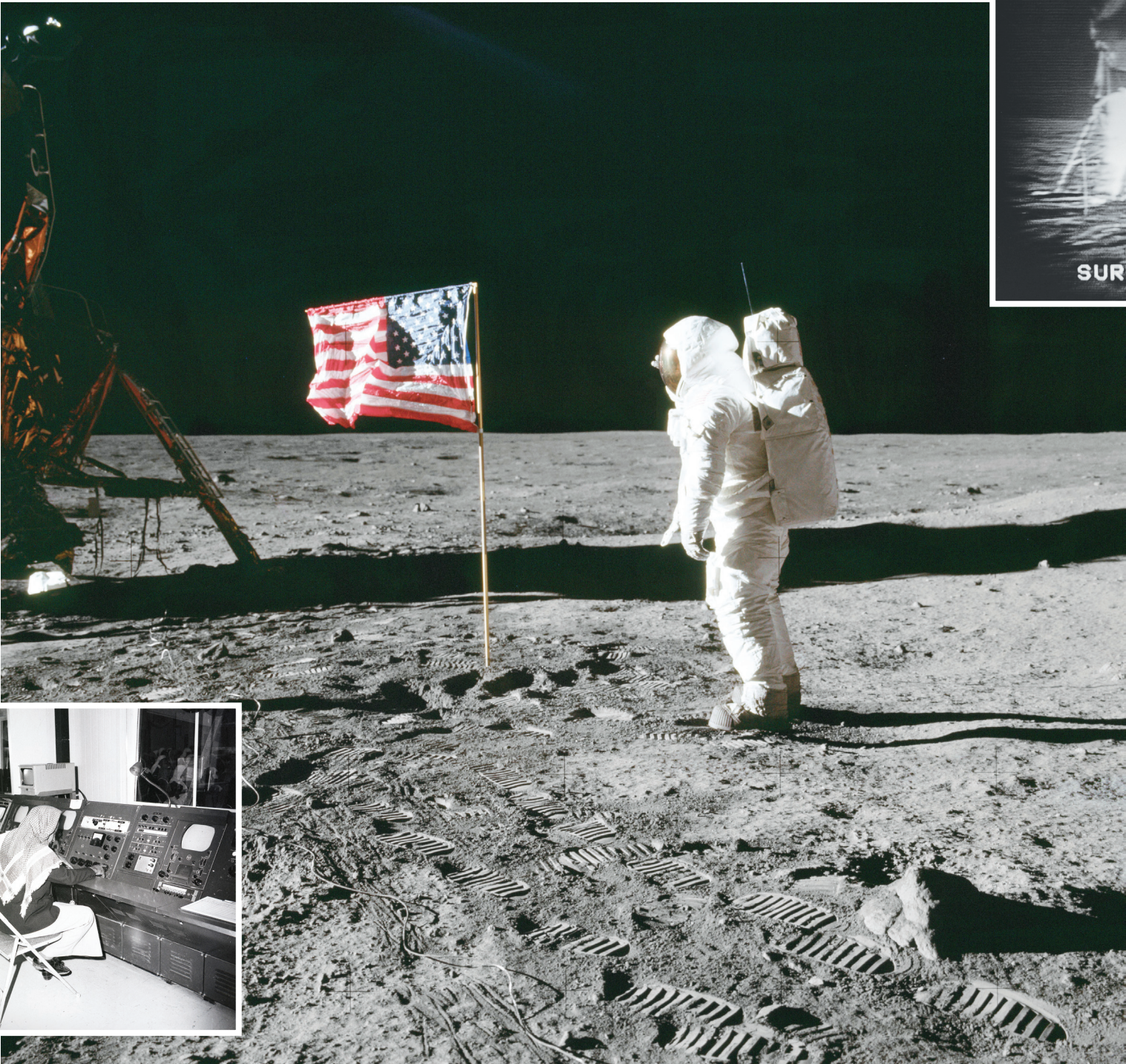
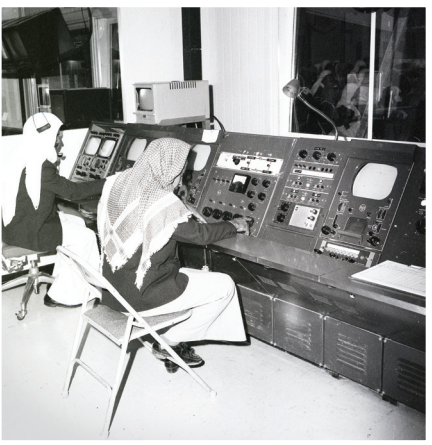
Hessah Al-Sobaie, a housewife from Al-Dawadmi, recalled watching the moon landing from her grandparents’ backyard as an 11-year-old.

“It felt weird watching a human walk on the moon,” she told Arab News. “I remember the endless questions I asked as a child.”

While most people were aware that going to the moon was risky, many Saudis believed that such a journey was impossible and all but unthinkable.

The Apollo 11 mission prompted discussions across the Middle East over the reality of what people saw on their TV screens. Some Saudi scholars found it hard to believe their eyes.

“I watched it, and I clearly remember each and every



### EVENTSWATCH

**1** NASA’s Apollo 11 mission control room in Houston has been restored to its 1969 condition and regular tours will be conducted by the Johnson Space Center.

**2** NASA ‘Science Live’ will have a special edition on July 23 on board the aircraft carrier that recovered the Apollo 11 capsule.

**3** A summer moon festival and family street fair will be held in Wapakoneta, Ohio, from July 17–20.

**4** Downtown Houston’s Discovery green will host a free public screening of the ‘Apollo 11’ documentary, with an appearance by NASA astronaut Steve Bowen.

**5** Amateur radio operators will host a series of events on July 20–21.

**6** The US Space and Rocket Center is staging a special ‘Rockets on Parade’ exhibition.

detail of the coverage,” Hayat Al-Bokhari, 68, a retired school principal in Jeddah, said.

“My father, Abdul, was 56 at the time. He said the landing was faked. He couldn’t believe or accept that a human could go to the moon.”

Khaled Almasud, 70, a retired university lecturer, was a student in the US state of Oregon at the time of the mission. “Americans were stunned and over the moon, happy with their national

**Saudi TV technicians, inset, bring the first live images of Neil Armstrong’s 1969 moon landing, above, to viewers around the Kingdom.**



**My father said the landing was faked. He couldn’t believe a human could go to the moon.**

achievement. But many Saudis like me were either in denial or insisting on more proof.”

Since the beginning of the 1960s, King Faisal had been rapidly transforming Saudi Arabia, inviting foreign-trained experts to help build a modern country with world-class infrastructure.

Billie Tanner, now 90, lived in the Kingdom for many years with her husband, Larry, and their two children, Laurie and Scott,

aged six and four. The family had just arrived in Saudi Arabia and headed to the Aramco compound in Ras Tanura in the Eastern Province.

“We were going through a culture shock,” she told Arab News. “I wasn’t thinking of the moon landing, but we heard about it on the news from Dhahran.

“My kids tried to see the astronauts on the moon with their binoculars and said they could see them walking around.”

The Apollo 11 spaceflight has become a milestone in the annals of human history and science. Since 1969 space exploration has greatly expanded man’s knowledge of the universe, far beyond Earth’s limits.

The captivating live coverage of the moon landing inspired millions of people around the world, profoundly influencing their thinking and attitudes. The people of Saudi Arabia were no exception.

### NEXT ARAB IN SPACE

## One giant leap for the UAE

More than 30 years after an Arab first journeyed into space, an Emirati is preparing to become the latest Arab space traveler when he joins a team of astronauts at the International Space Station (ISS) in September.

For months, Hazza Al-Mansoori and backup pilot Sultan Al-Neyadi have been undergoing intensive training in Russia, Germany and the US to prepare for the mission. The first Emirati to travel into

space will make the historic journey on board a Soyuz-MS 15 spacecraft due to take off from the Baikonur Cosmodrome in Kazakhstan on Sept. 25.

During the eight-day mission, he will conduct a tour of the ISS for Arabic viewers on Earth and carry out 15 experiments for the Science in Space schools competition conducted by Dubai’s Mohammed bin Rashid Space Center.

The crew, who will include an American and a Russian, are allowed to take up to 1 kg of personal items with them on the mission.

“I will take my family photo and share the experience of being in space with them,” Al-Mansoori said. There will also be an image of Sheikh Zayed, the UAE’s founding father, meeting American astronauts in 1976.

“I am also going to take an Emirati flag. I am living my dream

and want to give something back to my country.”

Al-Mansoori will join an elite space club comprising Saudi Arabia’s Prince Sultan bin Salman and Syria’s Muhammed Faris. Prince Sultan became the first Arab to travel to space as part of space shuttle Discovery’s crew in 1985. Faris was a crew member of USSR’s Soyuz spacecraft in 1987.

The Emirati astronaut is aware that history is resting on his shoulders. Speaking to the media recently during his training program in Houston, Al-Mansoori

**Emirati astronaut Hazza Al-Mansoori, right, and backup pilot Sultan Al-Neyadi during training for the space mission.**



**‘I will take an Emirati flag into space. I am living my dream and want to give something back to my country.’**

said it is a huge personal honor to be the first Emirati chosen for space exploration.

“I’m excited about the whole mission, but especially to experience the microgravity and be living in the ISS, and conducting daily experiments and working with the amazing group on board,” he said.

Al-Mansoori and Al-Neyadi have been undergoing rigorous training at the Johnson Space Center in Houston. The program includes familiarization with NASA equipment on board the space station, and handling emergency situations, such as ammonia gas leaks and depressurization. The Emiratis have been trained

to fend for themselves if the return goes off course and they land in the wilderness of Russia.

Speaking of the Soyuz-MS 15 mission, Yousuf Al-Shaibani, director general of the Mohammed bin Rashid Space Center, said: “We strive to see the UAE Astronaut Program achieve its objective of preparing generations of Emiratis who will contribute to enhancing the country’s position in space science and research to serve the ambitious aspirations aimed at building a national knowledge-based economy.”

The September launch could prove to be the beginning of a bold new era for Arabs and space. Al-Neyadi, the backup pilot, has been promised a seat on a future mission, and the UAE and Saudi Arabia are drawing up ambitious plans for the development of the region’s space industry.



# Arabs in Space



MISSION STS-51G

## Liftoff for a Saudi prince

As the world marks the 50th anniversary of the moon landing, Saudi Prince Sultan bin Salman, son of the king, talks exclusively to Arab News about how he became the first Arab, Muslim – and still the world's only royal – in space *By Noor Nugali*

**F**ifty years ago, on July 20, 1969, one not-so-small event changed the way we see the world. Two American astronauts, Neil Armstrong and Buzz Aldrin, did what was once thought impossible: They took man's first steps on the moon. Armstrong famously said: "That's one small step for man, one giant leap for mankind." True to his words, advancement in space has skyrocketed since the Apollo 11 mission, opening doors that have allowed space scientists to reach for the stars.

Only 16 years after the moon landing, the first Arab, Muslim — and royal — astronaut traveled into space, and he will be in Houston for the Apollo mission anniversary.

As the second son of Saudi Arabia's King Salman, Prince Sultan bin Salman Al-Saud needs little introduction. The recently appointed chairman of the Saudi Space Commission was aboard Discovery when it launched into space on NASA Mission STS-51G on June 17, 1985.

As the world reflects on one of mankind's most dramatic achievements, Prince Sultan, who recently released his book "7 Days in Space," sat down with Arab News for a special one-on-one interview to talk about his own remarkable journey, the first small step for the future of Saudis in space.

### Inspiration *How the moon landing inspired a young prince*

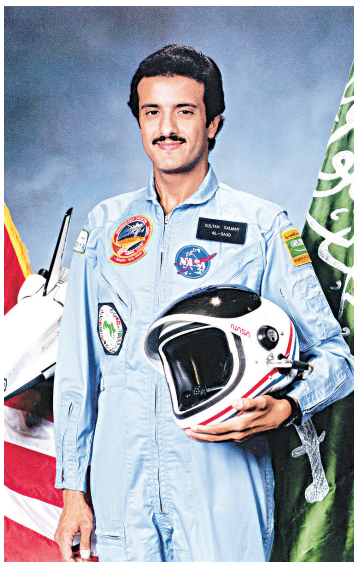
In Saudi Arabia's capital Riyadh, a 13-year-old boy first heard of the historic moon landing via radio. After discussing the Apollo 11 mission at school, Prince Sultan could barely wait to get back home to the palace to watch it on television. The picture quality might have been poor and the sound garbled, but footage of the landing captured his imagination.

"Humans made airplanes and made advances in industry, but for humans to leave their own planet, that's really something else," Prince Sultan said, sitting in his office in Riyadh.

As a young boy, the prince saw Saudi military students in Riyadh strut proudly in their uniforms and envisioned himself alongside them. However, his dreams were put on hold when he was diagnosed with rheumatism. The illness kept him away from school for a year and made strenuous physical activity impossible for several years.

Traveling to the US to continue his studies in mass communications at the University of Denver in 1974, Prince Sultan was determined to realize his dream of flying. He took aviation lessons and gained his private pilot license in 1977 from the US Federal Aviation Administration.

At the time, space flight was not on his agenda, the prince revealed, after he "dismissed as impossible the idea that somebody from the Arab world" would venture into space. However, following the Kingdom's key role in the Arab League's formation of Arabsat, a satellite communications



Prince Sultan's official NASA portrait showing his mission patch.

### INNUMBERS

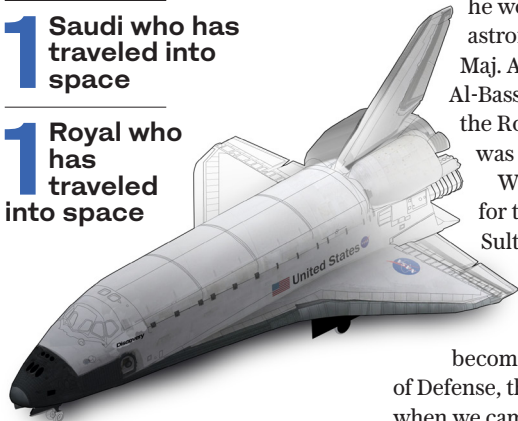
**561** People who have traveled into space

**2** Arabs who have traveled into space

**10** Muslims who have traveled into space

**1** Saudi who has traveled into space

**1** Royal who has traveled into space



company, in 1976, the impossible began to seem possible.

Arabsat launched its first satellite, Arabsat-1A, on a French rocket in February 1985. With its second satellite, Arabsat-1B, ready to be launched the same year by the National Aeronautics and Space Administration (NASA), the Arab League's member countries were permitted to select a payload specialist to travel aboard the space shuttle Discovery. Saudi Arabia won the slot.

The search for the best candidate took months. Lacking the usual 12-month time frame for training, the selection was restricted to qualified pilots who spoke fluent English and were physically prepared for the rigors of space travel. After clocking 1,000 flying hours and passing intensive medical examinations in Riyadh and the US, Prince Sultan was an obvious choice. He asked his parents for permission to submit his name as one of the candidates and received their blessing.

NASA accepted two candidates — the primary payload specialist and a backup who would be trained to take over if the primary astronaut was forced to drop out. Prince Sultan was named the primary payload specialist. At 28, he would be the youngest astronaut on the crew. Maj. Abdulmohsen Hamad Al-Bassam, an instructor in the Royal Saudi Air Force, was named as his backup.

When he was chosen for the mission, Prince Sultan was working at the Saudi Ministry of Information. "I only transitioned to become a part of the Ministry of Defense, the Saudi Air Force, when we came back," he said.

### Training *Getting ready for space, while fasting for Ramadan*

Before joining the space mission, Prince Sultan and his backup, Al-Bassam, had to undergo demanding physical preparation, including 114 hours of what NASA calls "habitability" training — learning to adapt to the daily routines of life in a space shuttle.

It takes anywhere between six to 18 months of intensive training to go into space, but the

mission was moved up, so the pair had only 10 weeks to learn all the scientific and technical information, as well as the exercises for the task of payload specialist. At times the training would last 16 hours a day, even during Ramadan when both men were fasting.

"When we started the training and started the mission, you know, it became evident that we had a lot of work to do, especially since our mission was scheduled for the winter and then pulled back to the summer," Prince Sultan recalled. "So, time was compressed. We were asked

whether we were ready to work double shifts."

The prince was undaunted and did not fear the challenges ahead. "Brave people are people who feel fear but still go forward," he said.

However, one fear did resonate with him: "I was actually fearful of not flying, that I would be sick or fall or break something and then, you know, we'll be pulled out of the mission and maybe we'll never get into another mission."

"That was my biggest fear."

Two weeks of training were conducted in Saudi Arabia, and the rest at NASA bases in Florida and Houston. In April 1985, the two men joined the mission's six other astronauts, five of whom were from the US: Mission commander Daniel Brandenstein and pilot John Creighton, along with and three



Prince Sultan and his backup Abdulmohsen Al-Bassam during intensive training for their mission.

### BACKGROUND

The Arab Satellite Communications Organization, known simply as Arabsat, was founded in 1976 by the Arab League's 21 member states. Based in Riyadh, and with Saudi Arabia as its main source of funding, it launched the first Arab satellites into space in 1985. Arabsat is the Arab world's leading satellite services provider, beaming more than 500 TV and 200 radio channels, as well as multiple specialty channels, to 170 million viewers in the Middle East and North Africa.



# Arabs in Space



mission specialists, John Fabian, Steven Nagel and Shannon Lucid, a graduate of NASA's first astronaut class to include women. With Patrick Baudry, a fourth mission specialist from France, this crew was the shuttle program's most international line-up. Brandenstein called on the human resources department in Aramco's Houston office to give his crew an introduction to Saudi customs.

Prince Sultan speaks highly of his comrades, saying they worked in unison and "became like family." During the Houston training, he would break the fast with Madinah Al-Munawara dates, and Fabian tried one with him. After that, they shared the dates together every day.

During training, each of the astronauts chose their three daily meals with snacks that they would have in space; some would be fresh, while others would be dehydrated. Prince Sultan would be fasting for a day in space for Ramadan, but otherwise his meals consisted of Chinese sweet

## Liftoff *'It's nothing like anything you've seen'*

Launch day finally arrived on June 17, 1985. The astronauts woke at 2 a.m. to get suited up for their journey into space, performing a ceremonial walkout to their bus ride to Launch Pad 39A. At 7:33 a.m. the Discovery's three main engines started up, and the rocket boosters ignited with a deafening roar, the ground beneath rumbling ferociously. STS-51G had a perfect liftoff, the spacecraft soaring into orbit through a near-cloudless Florida sky, cheered and applauded by about 230 Arab guests of NASA. Among them were 29 Saudi princes, including four of Prince Sultan's brothers — Prince Fahd, Prince Ahmed, Prince Abdul Aziz and Prince Faisal — along with Prince Bandar bin Sultan, the

Saudi ambassador to the US; Dr. Ali Al-Mashat, director general of Arabsat; and Gene Roddenberry, creator of the "Star Trek" series.

Prince Sultan's backup was also watching from the ground. "This is one of the greatest moments," Al-Bassam said. "He (Prince Sultan) is the first Muslim to travel into space."

While the cheering continued outside, inside the space shuttle the astronauts confronted a very different situation. When a space shuttle takes off, the rocket boosters deliver enough thrust to escape the force of gravity before separating about two minutes after launch. Hence the G-force, or what fighter pilots refer to as "pulling Gs" — a pressure equivalent to three times the force of gravity humans are normally exposed to on Earth.

Amid the rockets' deafening noise, the extreme G-force hit every



Prince Bandar bin Sultan, then Saudi envoy to the US, watches the Discovery liftoff with other Saudi royals, including Prince Sultan's brothers.

inch of the astronauts' bodies, pressing on their lungs and forcing them to breathe in small gasps. The boosters separated in a bright flash, engulfing the shuttle's front windows in flame for half a second.

Prince Sultan recalls: "When those rocket boosters ignite, there is no switch to turn them off. It's solid, dark fuel. It's just going to burn. So, you're in it. And when the space shuttle starts flying and then starts turning, you know, this

is amazing because then you start 'pulling the Gs' on the stomach, so you can't breathe. You try to gasp for breath, and it goes on, not like flying a fighter. It goes on for over a minute, just pressure on the body."

Doubts can creep in when the pressure and noise assault the senses. "That's when you start thinking, wait a minute, you know, maybe this is it," Prince Sultan said. "You're going to die of suffocation, but you don't. The

training allows you to react, to try to push the breathing."

As the quietness of space settles in, strange things start to happen in zero gravity, when everything becomes weightless. "The rocket boosters come out, and it becomes much more quiet. When you get into space, what hits you first is little things floating, little nails, little things that started flying around from the shaking."

The moment the astronauts were safely in space, the colossal experience began to sink in. "It's like nothing you've seen," the prince recalls. "What hits you is the blackness. People say space is black, but it's really the light shifting. It makes you see it as that color. And it's in the middle of nowhere."

"And you are alone. We were totally alone there. And it's a small world. These images stay with you throughout your lifetime."

## DECODER

### Payload specialist

Payload specialists are generally selected for a specific mission and chosen outside the standard NASA astronaut selection process. They were not required to be US citizens, but had to be approved by NASA and undergo rigorous training. In contrast, a space shuttle mission specialist was selected as a NASA astronaut candidate first and then assigned to a mission.

and sour chicken, steamed sweet corn, cauliflower with cheese, tuna, shrimp, salmon, pasta, fruit salad, orange and pineapple juice, tea and decaffeinated coffee.

While the astronauts were in training, Discovery was being readied for its flight by a specialist team working in the Kennedy Space Center's Vehicle Assembly Building.

Discovery, named after the ships used by explorers Henry Hudson and James Cook, was the third space shuttle orbiter to join the fleet since NASA launched its first, Columbia, in 1981.

With nine missions that year, 1985 was NASA's busiest yet; the program was curtailed after the Challenger, NASA's second space shuttle, broke apart on liftoff in 1986, only six months after Prince Sultan traveled into space. His mission, designated STS-51G, would be Discovery's fifth journey into space.

A team of about 30 NASA engineers and technicians supervised the slow-motion "rollout" on a crawler-

## DECODER

### STS-51G

NASA's designation for Prince Sultan's space shuttle mission. STS stands for Space Transportation System, 5 for the fiscal year in which it launched, 1 for the location of Kennedy Space Center, and G for the sequence of the launch during that fiscal year. Not all space shuttle missions flew in sequence.

transporter that inched the shuttle more than 5 km toward launch pad 39A, the same platform used for the Apollo 11 mission.

From there, any number of factors could have delayed the timing of the mission. The evening before Discovery's launch, lightning struck the launch pad's support structure, but fortunately did not cause a delay.

Following NASA tradition, the astronauts enjoyed a barbecue dinner at a private beach house on Cape Canaveral's Neptune Beach, a site that offered the crewmen a view of their "home in space" illuminated by bright searchlights in the Florida sky.



Hello, Discovery: King Salman, with the late King Fahd, speaks to his son in space. Opposite: Prince Sultan enjoys a meal on board the space shuttle.

## WAKEUPCALLS

Mission control has a tradition of waking astronauts with music. Here is a list of songs played to Prince Sultan's mission, compiled by Colin Fries of NASA's History Division.

**JUNE 18** 'Eye in the Sky' by the Alan Parsons Project

**JUNE 19** 'I Feel the Earth Move, by Carole King

**JUNE 20** 'Oklahoma,' sung by Richard Kiley

**JUNE 21** 'Proud Mary' by Creedence Clearwater



Revival (for Daniel Brandenstein)

**JUNE 22** 'Sailing' by Christopher Cross (for Steven Nagel)

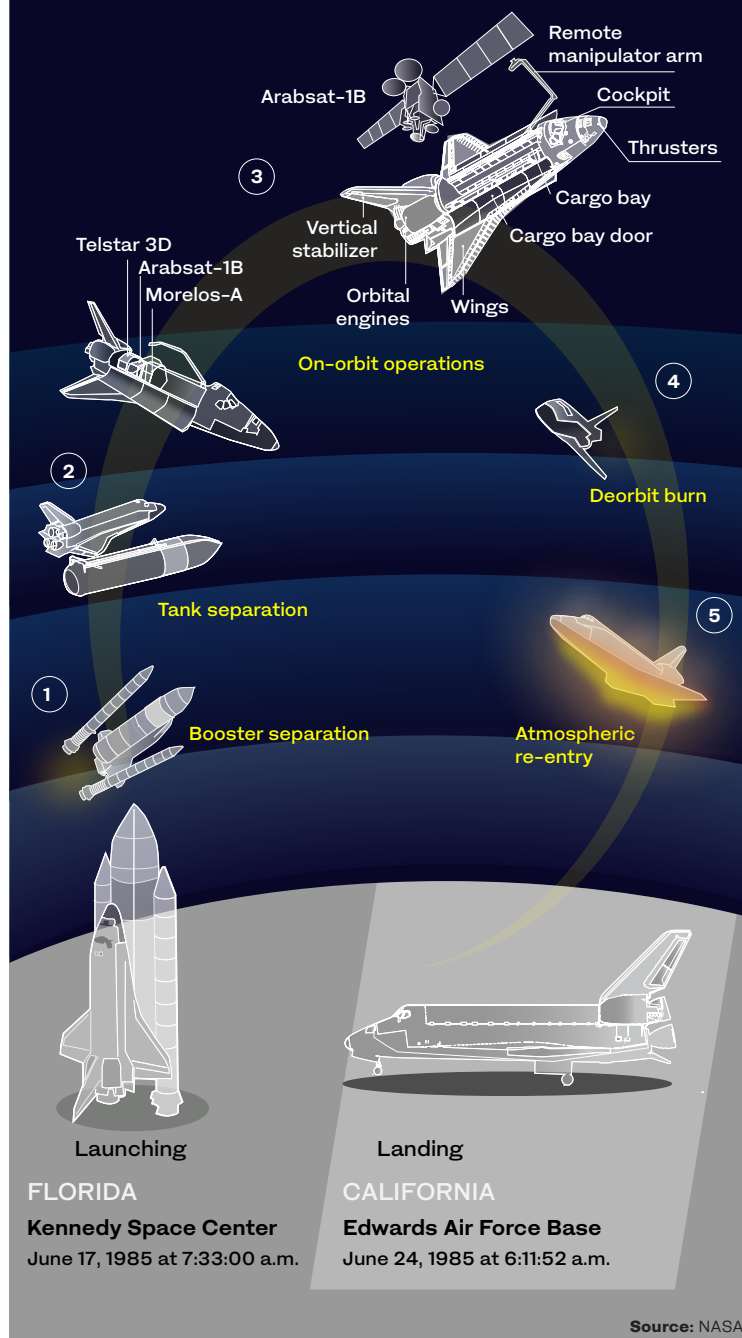
**JUNE 23** Medley of Arabian music, including song by Saudi singer Mohammed Abdo (for Prince

Sultan); 'Be' by Neil Diamond

**JUNE 24** Rossini's 'William Tell Overture.' Mendelssohn's 'Wedding March' and 'Get Me to the Church on Time' from 'My Fair Lady' (for pilot John Creighton's upcoming marriage)

## MISSION ACCOMPLISHED

### Discovery's journey, from liftoff to landing



## The mission *Reading the Qur'an in space*

Once the drama of liftoff had passed — and with seven days to conduct their experiments while they circled the Earth 111 times — it was time for the astronauts' real work to begin.

Eight hours after liftoff, the crew deployed Morelos-A, Mexico's first communications satellite. As a payload specialist, Prince Sultan's main task was to oversee the deployment of Arabsat-1B, which took place on June 18.

On June 20, the crew used the shuttle's mechanical arm to deploy the Shuttle Pointed Autonomous Research Tool for Astronomy, which would map X-ray emissions in the universe.

Another experiment involved the Strategic Defense Initiative of then-US president Ronald Reagan, a proposed space-based missile defense system dubbed "Star Wars." Discovery carried a target that would be tracked by a laser beam from a test site in Hawaii.

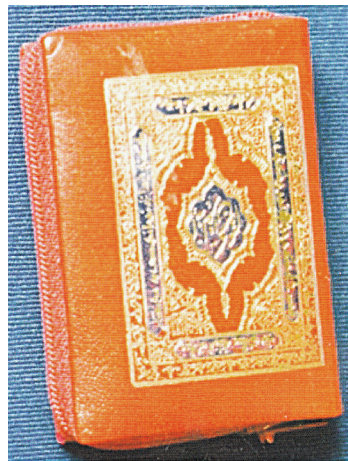
Prince Sultan conducted other scientific experiments aboard the shuttle and took photos of southwestern Saudi Arabia that were used to help develop a groundwater exploration program.

Observing Earth from space was more than just a scientific experiment. It helped Prince Sultan realize that we are all connected. "The first day or so we all pointed to our countries. The third or fourth day we were pointing to our continents. By the fifth day, we were aware of only one Earth," he said.

Another touching gesture, reminding Prince Sultan of our interconnectedness regardless of religion, came after Eid was

announced on the second day of their mission. Fabian presented the prince with the Madinah dates they had enjoyed together during Ramadan on Earth, saying: "This is your breakfast today."

The astronauts had eight hours reserved for sleep before being woken by mission control with daily music. On the sixth day, as a nod to Prince Sultan, they



The Qur'an carried into space aboard Discovery by Prince Sultan.

played a song by the Saudi singer Mohammed Abdo.

Since Prince Sultan sleeps as little as five to six hours each day, he decided to use the spare time wisely, by reading the Qur'an. "I'm not saying I finished it and I read very slowly because I just wanted to have that honor," he said. "You know, I was really doing it for my father and mother, not for myself."

In a teleconference broadcast on "Arab Live," in which King Fahd wished Prince Sultan a successful mission, his father, then governor of Riyadh, appeared alongside the king, and talked to him about the Qur'an. "My father said: 'I learned today that you finished the Qur'an,' and he was very happy about it," the prince said.

As for his mother, the prince knew he was in her prayers. In a rare interview, Princess Sultana Al-Sudairi said before the launch: "His father and I received an invitation to attend the launch ceremony, but we decided to stay close to the Kaaba, and I promised him that I will worship around the Kaaba as he flies around in space."

She did not have to wait long for her son's return. At 4 a.m. on June 24, Johnson Space Center woke the astronauts: "Hello, good morning, you're all preparing to come back, correct?"

That was a reminder for the astronauts to prepare for re-entry nine hours later, a risky procedure that would bring the shuttle safely back to Earth.

After passing over the Pacific Ocean, Discovery touched down at Edwards Air Force Base at 6.11 a.m. — a flawless landing during a California sunrise.

"We completed our mission safely. Our mission was actually flawless, Alhamdulillah," Prince Sultan said.

## INNUMBERS

**17** Shuttle missions before STS-51G

**4** Discovery missions before STS-51G

**7** days, **1hr, 38min, 52sec:** Length of the mission

**4.7** million kilometers traveled

**3** communications satellites deployed, including Arabsat



ARAB NEWS Saturday, July 20, 2019										ARAB NEWS Saturday, July 20, 2019									
Milestones in space exploration	<b>1957</b>  Sputnik 1 satellite launched by USSR on Oct. 4	<b>1957</b>  Dog called Laika becomes first animal in space on board USSR's Sputnik 2		<b>1961</b>  Yuri Gagarin becomes first human to orbit Earth aboard USSR's Vostok 1	<b>1963</b>  Valentina Tereshkova becomes first woman in space on board USSR's Vostok 6	<b>1969</b>  US astronauts Neil Armstrong and Edwin 'Buzz' Aldrin become first to walk on moon when Apollo 11 makes lunar landing on July 20		<b>1979</b>  NASA's Pioneer 11 becomes first spacecraft to fly by Saturn on Sept. 1		<b>1981</b>  NASA launches first reusable US spacecraft, space shuttle Columbia, on April 12	<b>1985</b>  Saudi Arabia's Prince Sultan bin Salman Al-Saud becomes first Arab, Muslim and royal to travel to space as part of space shuttle Discovery's crew		<b>1987</b>  Syria's Muhammed Faris becomes second Arab in space on board USSR's Soyuz spacecraft	<b>1995</b>  Galileo is first spacecraft to orbit Jupiter		<b>2018</b>  Saudi Space Agency chaired by Prince Sultan established by royal order on Dec. 27	<b>2019</b>  Emirati Hazza Al-Mansoori travels to International Space Station in September and becomes third Arab in space		<b>2021</b>  Dubai's Mohammed bin Rashid Space Center to put Mars Hope probe in planet's orbit as part of Emirates Mars Mission
	<div>Arabsin Space</div>										<div>Arabsin Space</div>								

# ‘We have long reached for the stars and beyond’

Fifty years after the Apollo 11 moon landing, the UAE and Saudi Arabia are spearheading a new era of Arab space exploration, turning a centuries-old dream into reality *By Rym Ghazal*

Arab astronauts may not have set foot on the moon, but an Arab geographer left his mark on the Earth's natural satellite as long ago as 1935.

A lunar impact crater 65 km in diameter was named AbulFeda by the International Astronomical Union (IAU) in honor of Isma'il Ibn Abu Al-Fida, a prince of the Ayyubid dynasty who lived between 1273 and 1331 in Syria.

The IAU was founded in 1919 to promote the science of astronomy and pay homage to major contributors in the field. AbulFeda is just one of 11 lunar craters named after luminaries from the golden age of Islamic civilization, which lasted from the mid-7th century to the 13th century.

In all, 24 lunar craters have been named after individuals from the region, including Abbas Ibn Firnas (810-887), an Andalusian inventor, physician, musician, engineer, humanitarian and poet — and the first man to fly. According to a 9th-century poem, the so-called Leonardo da Vinci of the Muslim world “flew faster than the phoenix in his flight.”

Ibn Firnas was 65 when he became the world's first hang-glider, jumping off the side of a mountain with feathers attached to his body and “touching the sky for a few minutes,” according to historical accounts.

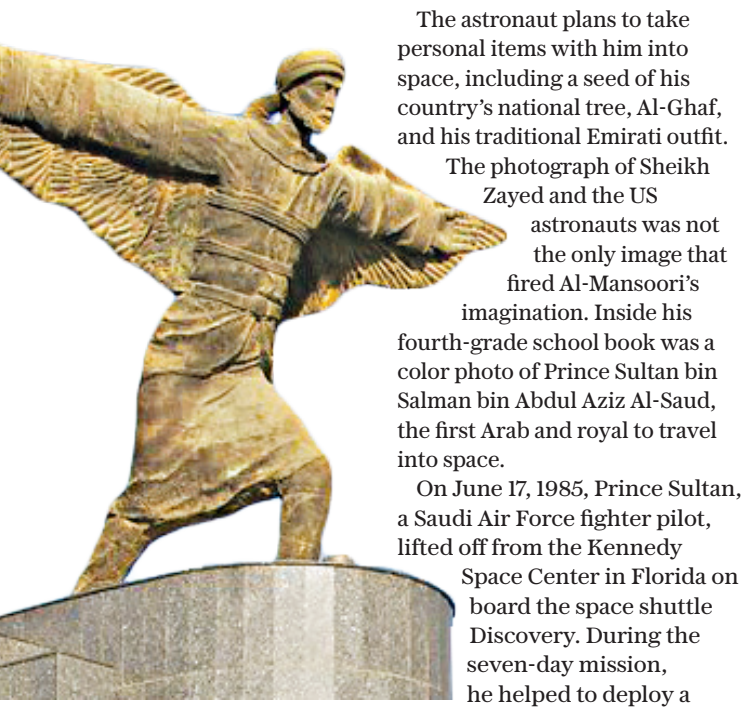
Centuries later, in February, 1976, a meeting between the-then president of the UAE Sheikh Zayed bin Sultan Al-Nahyan and three US astronauts changed the course of a man's life and fired the imagination of a young nation. A year earlier, the astronauts had taken part in the historic docking of an Apollo command/ service module and a Soviet Soyuz 19



Above: UAE President Sheikh Zayed bin Sultan Al-Nahyan meets US astronauts in February, 1976; a Baghdad statue honors 9th-century engineer and inventor Abbas Ibn Firnas, below.



**When you go up there, you realize there are no borders, no countries, no nationalities. Just Earth. Mother Earth.**



Prince Sultan, left, and his mission backup Maj. Abdulmohsen Hamad Al-Bassam receive a heroes' welcome after their successful Discovery mission in 1985.

capsule as part of the first joint US-Soviet space flight. A black-and-white photograph of the meeting, which can be seen at the operational air force squadron in Abu Dhabi, made a great impression on a young Emirati pilot, Hazza Al-Mansoori.

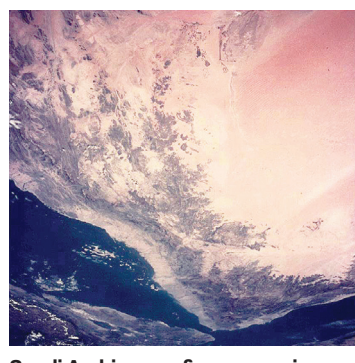
“I would look at the photo and imagine retaking it with three Emirati astronauts sitting with the founding father,” he said later. Nov 31-year-old Al-Mansoori, the UAE's first astronaut, will also make history when he joins a mission to the International Space Station in September.

“It is a great honor to be representing the UAE in space, and to make my dream and the dream of a nation come true,” he told Arab News.

The astronaut plans to take personal items with him into space, including a seed of his country's national tree, Al-Ohaf, and his traditional Emirati outfit.

The photograph of Sheikh Zayed and the US astronauts was not the only image that fired Al-Mansoori's imagination. Inside his fourth-grade school book was a color photo of Prince Sultan bin Salman bin Abdul Aziz Al-Saud, the first Arab and royal to travel into space.

On June 17, 1985, Prince Sultan, a Saudi Air Force fighter pilot, lifted off from the Kennedy Space Center in Florida on board the space shuttle Discovery. During the seven-day mission, he helped to deploy a



Saudi Arabia seen from space in an image taken by Prince Sultan aboard the Discovery space shuttle. Below: Muhammed Faris, a Syrian military aviator, became the first Syrian and the second Arab in space, carrying a vial of soil from Damascus on his journey from Earth.

are no borders, no countries, no nationalities. Just Earth. Mother Earth. We should protect this Earth. Who hurts their mother?”

The 1980s was a decade of expansion and transformation in the Middle East. Now, 30 years later, that energy has returned.

As the third Arab country (after Saudi Arabia and Syria) to send a man into space, the UAE has a special relationship with space and the moon. In a corner of the Al-Ain national museum is “a piece of the moon” gifted to Sheikh Zayed by the three US astronauts.

“This fragment is a portion of a rock from the Valley of Taurus-Littrow. It is given as a symbol of the unity of human endeavor



and carries with it the hope of the American people for a world at peace,” says the plaque describing the object.

Next to it, is a small, well-traveled UAE flag. “This flag of your nation was carried to the moon aboard spacecraft America during the Apollo XVII mission, Dec. 7-19, 1972. Presented to the people of the UAE from the people of the United States of America, Richard Nixon 1973.”

As the world celebrates the 50th anniversary of the Apollo moon landing, the UAE is looking forward to the launch of Al-Amal, or Hope, in 2021 to mark the 50th anniversary of the country's foundation. The spacecraft will orbit Mars, which has an area of contrasting brightness and darkness that was named Arabia Terra in 1979 for its resemblance to the Arabian Peninsula.

“The moon landing was a pivotal moment in human history,” Salem Humaid Al-Marri, assistant director general for science and technology at the Mohammed Bin Rashid Space Center, told Arab News.

“It was when something we imagined became a reality, and humanity left this planet. It was the result of science, engineering, mathematics and imagination coming together.”

“Space makes people dream the impossible,” said Al-Marri.

The words uttered by Neil Armstrong when he became the first man to step on to the lunar surface, on July 20, 1969 — “That's one small step for man, one giant leap for mankind” — have

become part of history. “It was such a powerful statement that influenced so many who watched the original landing as well as those from the current generation who watched it on the Internet or TV,” said Al-Marri. “There isn't

anyone who hasn't see the moon landing somewhere.”

The space era began as a “race” between the superpowers that helped to break new ground. “The race pushed space industry development to new levels.

While it was driven by military involvement, the benefits from the technological advances were for all people,” said Al-Marri. “We have better satellites, as well as a better understanding of our planet and the world around it, as a result.”

However, after the 1969 moon landing, strained budgets and depleted resources forced the space industry to abandon competition and embrace cooperation.

“Space today is all about cooperating to reach new heights. If you want to fly into space now, you have to do so on a Russian spacecraft as the Americans retired their shuttles in 2011,” Al-Marri said.

Al-Mansoori will head into space together with a US and a Russian astronaut, symbolizing a



**The moon landing was a pivotal moment. It was when something we imagined became a reality.**

new era of Arab participation in space exploration.

“The UAE is working with the Saudi space program, as well as with others such as Algeria, Egypt, Kuwait and Bahrain, to boost the Arab presence in the space industry,” said Al-Marri.

“Space is bringing Arab nations together.”

In the broad sweep of history, these space programs are building on the contributions of the Islamic civilization that shaped the modern world — and honoring the memory of scientists and explorers such as Abu Al-Fida and Ibn Firnas.



Above: Arab astronomers have played a key role in identifying major constellations through the ages. Shutterstock

## ASTRONOMY

## Beacons oflight

Man has always looked to the stars, tying their appearance and location to events on Earth, from births, deaths and natural disasters to changes in weather, harvests and even the migratory patterns of wildlife.

★ Many have believed, and some still do, that the constellations hold the key to understanding the world.

★ Al-Ghorab, the Corvus constellation, is a small star group in the southern sky, modeled on the Babylonian raven. Babylonians associated the constellation with Adad, the god of rain and storm, because its stars would rise before the onset of the spring rains.

★ One myth associated with Corvus is that when Apollo received news of his wife Coronis's unfaithfulness from a pure white crow, he turned its feathers black in rage.

★ Ad-Dulfin, the Delphinus constellation, is located in the northern sky. The constellation represents the dolphin sent by the sea god Poseidon to find Amphitrite, the sea goddess he wanted to marry. One of the major stars in the constellation is Epsilon Delphinii. Its traditional name, Deneb Dulfim, comes from the Arabic “zanab ad-dulfin,” or dolphin's tail.

★ Ad-Dubb Al-Akbar, or Ursa Major, the Greater Bear, includes a group of stars commonly known as the Big Dipper, and is one of the most recognizable patterns in the northern sky. One of its stars, Dubhe, gets its name from the Arabic “dubb,” which means bear.

★ Al-Hamal, or the Aries constellation, in the northern hemisphere is usually associated with the story of the Golden Fleece in Greek mythology. Hamal is the brightest star in the constellation and its name is derived from the Arabic “Ras Al-Hamal,” or Head of the Ram. Another star, Delta Arietis, or Botein, gets its name from the Arabic “baten” or “butain,” which means “belly.”

★ Al-Asad, the Lion, or the Leo constellation, is one of the largest constellations in the night sky. It is usually associated with the Nemean lion in Greek mythology. Regulus Alpha Leonis is the brightest star. Its Arabic name, Qalb Al-Asad, means “the heart of the lion.” Denebola is the second-brightest star in Leo. Its name is derived from the Arabic “Danab Al-Asad,” which means “the lion's tail.”



The first Arabsat satellite is deployed in 1985 as part of the Discovery space shuttle mission. Supplied