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WELCOME BACK SULTAN AL NEYADI

OUR HERO IS HOME

President His Highness Shaikh Mohammad Bin Zayed Al Nahyan and His Highness Shaikh Mohammad Bin Rashid Al Maktoum led the nation in welcoming back Sultan Al Neyadi in Abu Dhabi yesterday, following his landmark six-month mission aboard the International Space Station.

Courtesy: Dubai Media Office

Pride overflows as the UAE celebrates Al Neyadi's return

Historic moment the beginning of more inspirations

DUBAI

BY ALIA AL THEEB
Special to Gulf News

Becoming a space engineer, or working in a space-related job, was never a career prospect I would have thought of ever as an Emirati. It seemed as far as space!

However, today, space has opened up to us to reach and explore thanks to the vision and ambition of our leadership. It was a sign when His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, said: "We have broadened the horizons of our future generations in space", on astronaut Hazza Al Mansouri's return to Earth, following his eight-day stay at the ISS in 2019.

A few years after, the UAE sent its second astronaut on the longest Arab space mission in history.

Dreams of a nation

We watched from home as Sultan Al Neyadi embarked on his journey to the ISS. And as he bade goodbye to his family, there was an amazing feeling of pride, seeing one of us, an Emirati, heading to space again carrying the dreams and hopes of his nation.

His time in space was the most exciting and engaging because of his regular posts and videos about life in space.

The day of Sultan's arrival back to Earth after six months wasn't an ordinary day.

I felt so proud and lucky to be able to witness this moment live.

As the UAE celebrates the return of a hero, we get to witness a historic moment, one that's here to last and one that is a beginning of more inspirations to come.

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WELCOME BACK SULTAN AL NEYADI

PRAYER TIMINGS
FAJR 04:49 | DHUHUR 12:15 | ASR 15:41 | MAGHRIB 18:22 | ISHA 19:36
For other countries, go to gulfnews.com/guides/prayer-times
Abu Dhabi: +4 mins, Ras Al Khaimah: -4 mins, Fujairah: -6 mins

SULTAN OF SPACE SHOWED US WHAT'S BEYOND THE STARS IN THE DESERT NIGHT SKY

Astronaut's regular posts and videos about life on ISS have inspired young Emiratis to dream big

BY ALIA AL THEEB
Special to Gulf News

ROLE MODEL

DUBAI

"I know exactly what I want to do when I grow up, I want to be a space engineer!" said my 12-year-old niece, Mahra, as she watched a video clip of Emirati astronaut, Sultan Al Neyadi being brought out of the SpaceX Dragon spacecraft on September 4, returning to Earth after a six-month mission to the International Space Station (ISS).

Becoming a space engineer or working in a space related job, was never a career prospect I would have thought of ever as an Emirati.

It seemed as far as space!

However, today, space has opened up to us thanks to the vision and ambition of our leadership. It was a sign when His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, said: "We have broadened the horizons of our future generations in space", on astronaut Hazza Al Mansouri's return to Earth, following his eight-day stay on the ISS in 2019. A few years after, the UAE sent its second astronaut on the longest Arab space mission in history.

I had no idea what I wanted to do until I was in university and had to choose a specialisation. To be able to inspire enthusiastic young Emiratis and attract their attention to a whole new horizon is amazing and an achievement in itself.

Amazing feeling of pride

We watched from home as Sultan embarked on his journey, wearing a pressure suit, to the ISS. And as he bade goodbye to his family and children, there was an amazing feeling of pride, seeing one of us, an Emirati, heading to space again, this time for a longer mission carrying the dreams and hopes of his nation.

On the day Sultan left, each one of us felt like one of his family members, the youngsters excited and proud, the elders praying for his safety.

Our elderly neighbour, Umm Ali, was visiting on the day and watched with us. She remembered the times when they used to look at the stars and wonder what could be beyond that desert sky. She said: "I always wondered what is beyond the sky. It was a curiosity. I am happy to see it now once Sultan reaches and shows us what's there."

Building interest in space

Sultan didn't disappoint.

His time in space was the most exciting and engaging because of his regular posts and videos about life in space. He gave a "twist" to the ordinary coverage of a space mission.

His posts varied between sharing photos of different cities with interesting, sometimes touching captions as the ISS passed over them. He had something for everyone. He made sure we got glimpses of various international cities and how they appeared from space. He embodied the UAE's values of peace, humanity, coexistence and respect to all.

In his first appearance in a press conference by Nasa after his return to Earth, Sultan said sharing everything he did, talking to students and the engagement with people through his captures of Earth was a big part of his mission.

The day of Sultan's arrival back to Earth after six months wasn't an ordinary day. The anxiousness of waiting for his safe landing kept us glued to the live coverage.

Heroic mission

It was the feeling of a family member coming back after a long time, but not just from anywhere, from space, and not just an ordinary return, but a return that at least can be called heroic.

As he was being carried out of the spacecraft, everyone around me was cheering and saying "*Al Hamdulilah*". I felt so proud and lucky to be able to witness this moment live.

The trust that our leadership always places in its youth makes it a mission for all of us to achieve even more.

As the UAE celebrates the return of a hero, we get to witness a historic moment, one that's here to last and one that is a beginning of more inspirations to come.

You made us proud, Sultan. Welcome home.

Alia Al Theeb is acting director, Strategic Media Affairs Department, Government of Dubai Media Office and a former editor with Gulf News.

Above: Sultan Al Neyadi, affectionately known as the 'Sultan of Space,' made a triumphant return to Earth on September 4 following a record-setting six-month mission aboard the International Space Station (ISS).

Left: Al Neyadi shared a breathtaking view of a brightly-lit UAE from the ISS taken at the break of dawn on the horizon at the Earth's curvature on Hijri New Year on July 19.

On the day Sultan left, each one of us felt like one of his family members, the youngsters excited and proud, the elders praying for his safety. His time in space was the most exciting.

186
number of days Sultan Al Neyadi spent on the ISS

WATCH: Al Neyadi in space: A mission that inspires generations to come

A dream come true for boy from Al Ain

DUBAI

BY FAISAL MASUDI
Assistant Editor

After a record-setting six months on the International Space Station (ISS), UAE astronaut Al Neyadi has returned to his hometown of Al Ain to a hero's welcome. Known as the 'Sultan of Space,' Al Neyadi, one of the first Emirati astronauts named in 2018 alongside Hazzaa Al Mansoori, fulfilled his childhood dream.

Born in Umm Ghafa, 30km southeast of Al Ain, on May 23, 1981, Al Neyadi completed his early education in his hometown. He pursued higher education in the UK, earning a bachelor's degree in Electronics and Communications Engineering from the University of Brighton.

Military career

Following his father's military path, Al Neyadi joined the UAE Armed Forces after his UK studies. His quest for knowledge led him to Australia in 2008, where he earned a master's degree in Information Technology from Griffith University.

In 2012, he returned to Australia for a five-year stay, completing a PhD in Information Technology specialising in Data Leakage Prevention and publishing six research papers.

Aiming high

Al Neyadi's childhood stargazing in the desert turned into a passion for space. In 2017, the UAE Astronaut Programme launched, and he, along with Hazzaa Al Mansoori, competed against 4,000 candidates for the UAE's first space mission. Al Neyadi served as the backup for Al Mansoori, who became the first Emirati astronaut in 2019. In March, he embarked on the SpaceX Crew-6 mission, making history as a mission specialist. Six months later, on September 4, Al Neyadi and Crew-6 safely returned to Earth.

Al Neyadi, a father of six, is popular among students and is known for practicing jiu-jitsu in space during his time on the ISS in May.

Special stamp at Dubai airports marks astronaut's heroic return

GDRFA initiative aims to commemorate historic achievement

DUBAI

BY AGHADDIR ALI
Senior Reporter

The General Directorate of Residency and Foreigners Affairs (GDRFA) in Dubai, in collaboration with the Mohammad Bin Rashid Space Centre, unveiled a special commemorative stamp to mark the return of Emirati astronaut Sultan Al Neyadi.

This stamp emblazoned with the slogan 'The Homecoming of the Hero Sultan Al Neyadi', will be used at Dubai airports today. It was also used yesterday.

Emirati astronaut Sultan Al Neyadi etched his name in history by becoming the first astronaut from the Arab region to venture into space for six months and successfully return after completing his space missions.

Lt Gen Mohammad Ahmad Al Marri, Director of GDRFA, said: "GDRFA is committed to supporting national milestones, and we truly proud of this new Emirati feat in the realm of space exploration. Sending the first Emirati astronaut to space symbolises excellence and technological advancement in the UAE, reflecting our dedication to progress and significant contributions to space exploration for the benefit of humanity."

As a global hub for research and innovation in space science, the UAE continues to solidify its reputation with substantial government support and investment in this critical sector. These endeavours are expected to culminate in strategic advancements and the creation of scientific and economic opportunities for the young Emirati generation and researchers.

WAM

■ His Highness Shaikh Mohammad Bin Zayed Al Nahyan and His Highness Shaikh Mohammad Bin Rashid Al Maktoum with Sultan Al Neyadi, other dignitaries and MBRSC officials during a homecoming reception held for the astronaut in Abu Dhabi yesterday. Al Neyadi returned to the UAE after his six-month space mission yesterday and was met with a hero's welcome.

HOME SWEET HOME: FRESH FROM SPACE, AL NEYADI HAS HIS EYES SET ON MOON

A rousing reception, an emotional reunion mark the hero's historic homecoming

ABU DHABI

BY SAJILA SASEENDRAN
Senior Reporter

UAE astronaut Sultan Al Neyadi has set his eyes on the Moon next, he revealed during the grand welcome accorded to him by his proud country on his homecoming after the longest Arab space mission yesterday.

The UAE opened a new airport terminal in Abu Dhabi to welcome the space hero, who was received by the leaders of the country. Abu Dhabi International Terminal A, which is expected to be inaugurated later this year, had a special arrival. The 'Sultan of Space' was flown in from Houston to the new swanky terminal in an official plane sent by the UAE government.

Hailing from Al Ain, Al Neyadi was flown home on an official plane bearing the name of his homeland. His "Al Ain" plane lasted for 17 hours, around the same time that his Nasa SpaceX Crew-6 took to splash down to Earth from the International Space Station on September 4.

In honour of his return, the UAE's Al Fursan aerobatic team performed a fly-past over the airport after his flight landed.

Al Neyadi was accompanied by top officials of the Mohammad Bin Rashid Space Centre (MBRSC), the agency behind the UAE Astronaut Programme, and the first Emirati astronaut Hazzaa Al Mansoori, who was Al Neyadi's reserve in the longest Arab space mission and the first Arab Increment for the Expedition 69 on-board the International Space Station (ISS).

He had an emotional reunion with his father and three of his six children before he was received by the leaders of the nation. He was seen giving tight hugs to his children before he proudly walked ahead with them and his father Saif Al Neyadi.

90%
how normal Al Neyadi feels physically post the space trip

■ **Above**: Sultan Al Neyadi, along with Salem Humaid Al Marri and Hazzaa Al Mansoori, address the media in Abu Dhabi yesterday.
Afra Mubarak Al Nofeli/Gulf News

■ **Right**: Al Neyadi embraces his children as he arrives in the new terminal of the Abu Dhabi International Airport.

"It is the flag that I hung on the Cupola. It has the smell of the space. This is the one I gave to the President. It has visited space and returned."

Sultan Al Neyadi | on gifting the President the UAE flag

Leaders hail the astronaut

President His Highness Shaikh Mohammad Bin Zayed Al Nahyan and His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, then welcomed Al Neyadi.

Their Highnesses Shaikh Mohammad Bin Zayed and Shaikh Mohammad Bin Rashid spent time in conversation with Al Neyadi — accompanied by his father and three of his children — and discussed aspects of the mission and his experience during his time in space.

The UAE astronaut thanked Their Highnesses for their ongoing support for the UAE's space programme, and then presented the President with a UAE flag that had accompanied him throughout his 186-day mission to space.

"It is the flag that I hung on the Cupola. It has the smell of the space. This is the one I gave to the President. It has visited space and returned," Al Neyadi said about the flag he gifted to the President.

To mark the homecoming, a grand reception ceremony was held at the new Abu Dhabi Airport Terminal A. The ceremony was attended by schoolchildren dressed in astronaut flight suits, government employees, and members of the public. Al Neyadi was greeted by a performance of the traditional Al Ayyala dance and the audience waving UAE flags and applauding, demonstrating the depth of pride and celebration felt by the people of the nation.

Al Neyadi then attended a press conference along with Salem Al Marri, director general of MBRSC, and Hazzaa Al Mansoori.

Next celestial ambitions

During the press conference, it became clear that the Sultan of Space has set his eyes on the Moon next. Asked about his personal preference to go to the Moon, he said: "I see myself as an astronaut ready to go into any field. Personally, I would love to go to the Moon and go to Mars if possible. I don't think it will happen sooner regarding Mars."

He highlighted that the UAE has signed the Artemis Accords for the safe and peaceful exploration to the Moon. "This is the biggest step. We all know about the gateway," he said referring to the Lunar Gateway, Nasa's planned space station that will orbit the Moon. The UAE is reportedly exploring ways of helping design the Gateway, including providing an airlock module on the station.

"It's a proposed station that will orbit the Moon, so I would love to be part of it."

However, he pointed out that it depends on the opportunity and suitability for the mission.

"As you know, space has a lot of effects. We don't know what could happen. [Astronaut's bodies receive a lot of radiation. We're still in the process of identifying what sort of impact the six months in space has had on my body."

He said he felt almost 90 per cent back to normal after the two-week rehabilitation programme and thanked Dr Hanan Al Suwaidi, the flight surgeon at MBRSC, for helping him readjust to gravity and life back on Earth.

Immediate desire — sleep

Back on the home planet, his immediate priority was, however, to catch a good night's sleep. "The first thing that I am going to do is sleep."

He said he wanted to have some downtime and relax. "I would love to go out just to nature. I wanna go out to the mosque. I love to pray, see everybody, greet everybody and answer some questions."

He said he was happy to see his children would have some quality time with them and explain his mission to them. "I took some small toys for them. I brought Suhail [toy mascot of MBRSC which accompanied him to the ISS] and my son was joking. Is it the Suhail you took [to space] and I told no, this is a fake one. I have the real one hidden. He is a VIP.

Appreciation for Al Mansoori

Al Neyadi said he was honoured to be referred to as the 'Sultan of Space,' but he politely said that he believed that the title should go to Hazzaa Al Mansoori as he was the first Emirati to fly into space.

Al Mansoori said he was proud of Al Neyadi

Al Neyadi also highlighted the significance of the UAE hosting COP28 as a commitment to protecting the planet Earth.

Courtesy: UAE Presidential Court

■ President His Highness Shaikh Mohammad Bin Zayed Al Nahyan receives the UAE flag that Astronaut Sultan Al Neyadi took with him to the International Space Station, during a homecoming reception held at the new Abu Dhabi International Airport yesterday.

Afra Mubarak Alnofeli/Gulf News

■ A woman takes a snap of posters welcoming Sultan Al Neyadi back to the UAE after his record-setting space mission.

■ UAE astronaut Sultan Al Neyadi is received by his father Saif Al Neyadi (R) and his children during a homecoming reception at the new Abu Dhabi International Airport.

■ Burj Khalifa was lit up with images of the country's space hero to welcome his triumphant return.

HOW AL NEYADI'S 200 EXPERIMENTS ABOARD SPACE STATION CAN IMPROVE LIFE ON EARTH

Microgravity and high levels of radiation make it a unique lab for scientific and medical research

EXPLAINER

DUBAI

BY SHYAM A. KRISHNA
Senior Associate Editor,
BIJU MATHEW | Online Editor, and
ALEX ABRAHAM | Senior Associate Editor

UAE astronaut Sultan Al Neyadi spent six months in space doing around 200 scientific experiments. The results of these experiments would yield new discoveries and technological breakthroughs that could benefit future space missions and people on Earth.

Space offers a unique environment for experiments. The International Space Station (ISS) has been an orbiting laboratory since it was inhabited in 2000, and thousands of experiments have been carried out in the last 23 years.

Why are so many experiments conducted in the space station? Can't these be done on Earth? What are the benefits of running experiments aboard the ISS?

The simple answer is these experiments can't be done on Earth, where gravity impacts everything. It determines how blood is pumped from human hearts and how plants grow their roots. So gravity becomes a significant factor, which is not the case in the space station.

WHAT IS MICROGRAVITY?

Microgravity, or weightlessness, is the best reason to run tests aboard the ISS, which orbits the Earth at a distance of 400km. The ISS offers permanent weightlessness as it circles the Earth every 90 minutes. That makes it a laboratory with a perennial microgravity environment.

ON GULFNEWS.COM

Towering welcome for Sultan Al Neyadi

Abu Dhabi on Sunday night lit up its iconic buildings to mark Sultan Al Neyadi's historic homecoming

WATCH: Abu Dhabi Media Office shares video showing the iconic buildings lit up

IS ZERO GRAVITY THE SAME AS MICROGRAVITY?

Although the two terms are used interchangeably, gravity in space is often called microgravity since a small amount of gravity is everywhere. Gravity keeps the Moon in orbit around Earth and the Earth in orbit around the Sun. It's impossible to 'turn off' gravity. To simulate microgravity, gravity's pull has to be balanced with another force (falling, in the case of ISS, Nasa simulator planes, freefall rides or towers).

WHY DO ASTRONAUTS EXPERIENCE WEIGHTLESSNESS IN SPACE?

When the ISS orbits the Earth, gravity constantly pulls it towards the ground. Since it also moves very fast (28,000km/hour) in orbit, its motion matches Earth's curvature. It's falling around the Earth, and this constant falling motion creates a sense of weightlessness.

CAN MICROGRAVITY BE CREATED ON EARTH?

Microgravity can be created on Earth, but only for short periods. Nasa creates microgravity by flying planes in up-and-down parabolas. At the top of the parabola, people and objects inside the plane feel weightlessness (freefall) for about 20-30 seconds. Fleeting microgravity experiences occurs during rollercoaster rides and freefall rides at amusement parks.

HOW DOES MICROGRAVITY AFFECT PHYSICAL, CHEMICAL PROCESSES?

Many physical and chemical processes change in the absence of gravity, providing new opportunities to study boiling, melting, fluid and gas mixing in ways that are not possible on Earth.

Without gravity, hot air does not rise, and flames become spherical. Fluids too behave differently as microgravity affects surface tension and capillary forces.

WHAT ARE THE EXPERIMENTS CONDUCTED ABOARD ISS?

These are some of the scientific and medical experiments conducted in microgravity. Some of the results have had applications on Earth.

■ **Study of fundamental physics:** In the near-weightless environment, researchers can investigate the behaviour of matter and physical processes that are obscured by the influence of gravity on Earth. This includes experiments related to fluid dynamics, combustion, heat transfer, and crystal growth, which can lead to ad-

"It must have been such an amazing experience for Al Neyadi to be in space and now back on Earth. I am so inspired and I wish I can become the first Emirati woman to travel to Mars one day."

Alia Al Sharif | Grade 5, American Academy for Girls

"I was always intrigued by milestones that we humans could achieve in outer space... As a proud resident of Dubai, it gives me immense joy to witness the spectacular achievements of Al Neyadi and UAE and to welcome him back."

Ema Mariyam Jolly | Grade 12, Credence High School

"I was very curious to learn about space travel... So one of my questions to Al Neyadi was, 'what was the difference between training on a simulator and space travel in real life?' I was thrilled when he gave me an answer."

Nirav Sahityani | Year 13, Jumeirah College

"Although he was not the first Arab in space, Al Neyadi was the first Arab to perform a spacewalk. Being an Arab myself, I wonder how many times other Arab astronauts will attempt a spacewalk before I do it myself one day."

Sami Hamid Hassan | Year 13, Jumeirah College

WELCOME BACK SULTAN AL NEYADI

As part of his work, Sultan Al Neyadi used protein samples shipped from the UAE for a ground breaking space experiment to create and improve medicines. He also completed the Dreams experiment, a pivotal study in sleep science and space research and played a role in the HRF Veg experiment, that focuses on space nutrition.

WAM/MBRSC

HIGHLIGHTS OF AL NEYADI'S EXPERIMENTS ON THE INTERNATIONAL SPACE STATION

Sultan Al Neyadi conducted over 200 experiments in collaboration with 10 space agencies and 25 UAE and global universities. Here are some of them.

1 **Cardiobreath study** examined how cardiovascular and respiratory systems adapt during spaceflight.

2 **Cardinal Heart 2.0** study explored the effects of clinical drugs on heart cells in microgravity using heart tissues.

3 **Host-pathogen** experiment analysed the reaction between astronauts' immunity and microbial pathogens.

4 **Dreams** experiment monitored sleep patterns of astronauts.

5 **Monoclonal Antibodies Protein Crystal Growth** experiment analysed the process of crystallising biotherapeutics in microgravity, potentially improving production and shortening development cycle for new medicines.

6 Demonstrated the use of a **3D printer** to manufacture tools and components on the ISS.

7 Conducted experiment to find a cure for **Alzheimer's** disease.

8 Al Neyadi installed a syringe filled with a protein solution inside the Microgravity Science Glovebox (MSG) for the **Ring Sheared Drop** (RSD) experiment that may provide potential treatments for neuro-degenerative diseases.

9 Collected and stowed samples in a science freezer to explore the **bio-manufacturing** of pharmaceuticals in space.

10 Treated samples in the Kibo module for the **Engineered Heart Tissues-2** experiment using Kibo's Life Sciences Glovebox. This research may help doctors treat and prevent space-caused heart conditions and Earth-bound cardiac disorders.

11 Set up hardware for the **CapiSorb Visible Systems** fluid physics study. This experiment investigates the potential of using a liquid-based carbon dioxide removal system to promote more efficient space-based solutions and advanced Earth-bound applications.

12 Performed **spacewalk** lasting 7.01 hours. One objective was to work on a series of preparatory tasks which involved routing power cables. The other was to retrieve a crucial Radio Frequency Group (RFG) unit or communications antenna.

13 Conducted investigations into back pain, a common problem for astronauts. Findings could help take countermeasures to reduce spinal injuries in space and improve spinal health in the general population.

14 Participated in **MALETH** research project aimed to advance medicine for treating Type 2 diabetes.

15 Conducted studies on **Immune system**, which will further explain the effects of stress on immune changes in healthy adults.

vancements in various scientific and industrial fields.

■ **Biomedical research:** Microgravity offers insights into the effects of space flight on the human body. Researchers can study changes in bone density, muscle atrophy, cardiovascular health, and the immune system in astronauts.

These studies help scientists understand the health challenges astronauts face during long-duration space missions and may have applications in improving health care on Earth, such as in osteoporosis research or the treatment of muscle-related diseases.

■ **Drug development and protein crystal growth:** Microgravity allows for the growth of higher-quality protein crystals, which are essential for structural biology and drug development. These crystals can be more precisely studied, leading to a better understanding of the structures of biomolecules and potentially accelerating the development of new medications.

■ **Fluid and material sciences:** Microgravity enables researchers to conduct experiments on liquids and materials that would be impossible or impractical on Earth. For instance, the behaviour of fluids, foams, and granular materials can be explored, leading to advances in materials science and aerospace engineering.

■ **Space medicine:** Medical research in microgravity can help identify and mitigate health risks associated with space travel. This includes studying the effects of radiation exposure, fluid shifts in the body, changes in vision, and psychological factors. These findings can lead to developing countermeasures and strategies to protect astronauts on long-duration missions.

■ **Life sciences:** Microgravity allows studying various life forms, from microorganisms to plants and animals. Understanding how these organisms adapt to microgravity can provide insights into fundamental biological processes and may have applications in agriculture and medicine.

■ **Technological advancements:** Conducting experiments in microgravity often requires developing specialised equipment and technologies. These innovations can have broader applications beyond space research and lead to the creation of new technologies and industries.

WHY CAN'T MICROGRAVITY EXPERIMENTS BE DONE ON EARTH?

Microgravity cannot be created on Earth for sustained periods long enough to conduct experiments. Space with its microgravity offers the best place for such trials, making the International Space Station in a low Earth orbit the ideal place to carry out such experiments. And hundreds of research studies are conducted aboard the ISS every year.

WHAT ARE THE OTHER BENEFITS OF ISS LAB?

Besides microgravity, the space station environment offers increased exposure to high levels of radiation, which can be used to study the effects of radiation on materials and living organisms.

The space station also offers an excellent view of the Earth at varying conditions, making it an observation post. Crew and instruments aboard the ISS can observe 85 per cent of Earth's surface and take photographs. It helps track urban growth, study weather patterns, monitor hurricanes and volcanic eruptions, document melting glaciers and deforestation, and measure carbon dioxide in the atmosphere.

The extreme temperature fluctuations in space allow scientists to test the durability of materials.

CAN THE SPACE STATION HELP IN MONITORING CLIMATE CHANGE?

From their vantage point on the ISS, astronauts gather images and data to monitor Earth's landmasses, water, air, vegetation and other resources. The data helps in tracking storms, fires and other extreme weather events.

"Monitoring water and energy cycles, ecosystem changes, population migration patterns and other developments help inform environmental research and climate science," a World Economic Forum report said.

WHEN RESEARCHERS BECOME GUINEA PIGS

Astronauts conduct an array of science experiments in the space station, but they themselves become subjects of some experiments. They are both scientists and guinea pigs.

"We participate in studies on osteoporosis, DNA mutations, as well as blood vessels, and their changes (in microgravity). Our aim is to understand the effects of zero gravity on humans and the potential dangers of deep space travel," Al Neyadi had said.

While some of these experiments yield solutions for diseases on Earth, results of many studies will be invaluable if humans travel to Mars and deep space in future. Interstellar voyages may no longer be science fiction.

EDITORIAL COMMENT — P12

"Al Neyadi's journey has been an incredible source of inspiration for us. We've closely followed his adventures, and they've awakened a newfound passion for scientific exploration that we never knew existed within us."

Priyanshu | Grade 10, Indian International School DSO

"I am one of the millions of expats in the UAE supporting the longest Arab space mission. I feel proud for the country and the Agency [Mohammad Bin Rashid Space Centre] for achieving another milestone in their space missions."

Ryan Banks | Filipino expat

"I am delighted to see the continued strides the UAE are taking. This achievement not only puts the UAE on the global map of space exploration but also demonstrates the country's inclusive and forward-thinking approach."

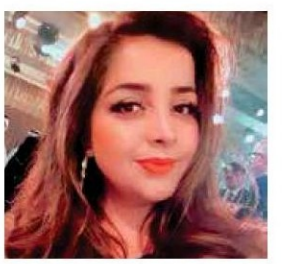
Brad Maasdorp | South African expat

"I feel proud of Al Neyadi's accomplishment. He has put the UAE and the Arab world on the international map. His spacewalk has gone down in history and has set the tone for the Arab world to dream and aim to achieve more success..."

Robert Aaraj Jr | Lebanese national living in the UAE

"As an aspiring entrepreneur, I am inspired at many levels by [Sultan Al Neyadi's] achievement. I consider it as a blessing that I am a resident of this great country that says and acts like 'Nothing is impossible'."

Sethu Ramaswamy | Indian expat



"As an expat and as a mother, Al Neyadi's success has positively impacted me. I can now share a massive success story close to home with my children. In fact they have been inspired by his spacewalk and are very curious..."

Maryam Adeel Khan | Pakistani homemaker

Compiled by Anjana Kumar, Senior Reporter

Al Neyadi's mission will boost UAE's $6b space sector

Feat takes nation step closer to achieving goal to be space tourism hub

DUBAI

BY DHANUSHA GOKULAN
Chief Reporter

Emirati astronaut Sultan Al Neyadi's groundbreaking 186-day mission on the International Space Station (ISS) marks a pivotal moment, heralding a 'space renaissance' in the UAE. And for UAE's leading business leaders, especially those in the aeronautical and aerospace sectors, space exploration presents a new frontier.

Rashed Al Ansari, Group CEO of Al Ansari Financial Services, said: "He [Al Neyadi] etched history as the first Arab to accomplish a spacewalk and set the record for the longest space mission by an Arab astronaut. As we mark this occasion, we take pride in highlighting that this historic event is the embodiment of the ambition of the UAE's Founding Father, Shaikh Zayed Bin Sultan Al Nahyan."

The UAE's investment in the space sector has already exceeded Dh22 billion (around $6 billion), including satellite communications, Earth and space exploration, data transmission, satellite broadcasting, and mobile satellite communications, among others. Already, local satellite component manufacturing and expertise development have created at least 3,200 jobs, with 57 space companies and organisations operating in the country.

And according to UAE business leaders, the nation's next step in achieving its space ambitions are poised to benefit industries such as meteorology, energy, telecommunications, transportation, maritime, aviation, and urban development.

Mohammad Badri, Owner and Managing Director of Eros Group, said: "It is a source of great pride and accomplishment for the UAE. Sultan Al Neyadi's journey into space signifies a pivotal moment in the nation's scientific and space research pursuits."

New career opportunities

The endeavours of Al Neyadi and Hazzaa Al Mansoori, UAE's first astronaut to travel to space, are igniting heightened interest in career opportunities among UAE's youth, said **Mansoor Janahi**, Managing Director and Group CEO of Sanad — a Mubadala Company. He said: "The investments our nation is channelling into space missions will fuel the demand for pilots, engineers, and technicians."

Heightened interest in STEM programmes

Janahi also said UAE's space mission underscores the importance of science, technology, engineering, and mathematics (STEM) education. "These fields nurture exceptional talent equipped with critical skills needed not only in the space sector but also equally important in aviation," he explained.

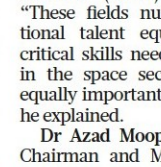
Dr Azad Moopen, Founder Chairman and Managing Director, Aster DM Healthcare, said: "We are immensely proud of Sultan Al Neyadi's historic mission aboard the International Space Station, which is a significant milestone in the UAE's space journey. His six-months mission has been an inspiration for the youth and people of UAE."

Notably, UAE higher education institutions are experiencing growing interest from Emirati and UAE resident students in enrolling for STEM subjects, particularly aeronautical and aerospace engineering programs.

This surge in interest aligns with the UAE's heightened space ambitions, as highlighted by **Dr Mohammad Al Musleh**, Assistant Professor at Heriot-Watt University Dubai. "Programmes in data science and robotics are key components, with an emphasis on autonomous systems. Knowledge in project management is going to be crucial for handling these programmes, with a strong focus on communication aspects," said Dr Musleh.

Regional leader

Al Neyadi's journey to space has ignited a fervour among the youth of our country, inspiring them to dream big and reach for the cosmos, said **Ghaith Al Ghaith**, CEO of Dubai carrier flydubai. He said: "Just as we transformed the UAE into a global hub for travel, trade and tourism, leading by example on economic development and investing in our people and infrastructure, we are now witnessing a new chapter unfold as a regional leader in space exploration."



SPACE TOURISM IS NOW A REALITY

As UAE looks to the future, space tourism becomes an exciting new frontier where the UAE is poised to play a pivotal role in making it a reality, said Al Ghaith. In 2021, the UAE Ministry of Economy said it is working with Jeff Bezos's Blue Origin to bring space tourism flights to the UAE. And in 2019, the UAE Space Agency and Virgin Galactic and the Spaceship Company (TSC) also signed an MoU planning for a SpaceShipTwo and carrier aircraft vehicle pair that would be operated from the UAE.

"As the UAE plans to establish a thriving space tourism industry, it represents an exciting opportunity to expand our influence and contribute to the growth of the space sector," said Sanad's Janahi.

"With our existing infrastructure and optimal desert conditions for space projects, our potential extends beyond economic impact to significantly influence the realms of space exploration and scientific advancements," he explained. — *D. G.*

HERO'S WELCOME

ABU DHABI

BY ANJANA KUMAR
Senior Reporter

Emirati astronaut Sultan Al Neyadi returned to the UAE yesterday, on a special plane landing in Abu Dhabi.

Many miles away, in his hometown in Umm Ghafeh area of Al Ain, well-wishers had arrived beforehand. Al Neyadi was expected to come home soon — perhaps last night, possibly today.

It's easy to know where he lives — a giant portrait of the space hero dominates the entrance to the Al Neyadi family villa. Also out of the ordinary is a long tent that will fill up with guests and welcomers.

Decades-long bond

In Umm Ghafeh, long-time family friends of Al Neyadi — who completed the longest Arab space mission and is the first Arab to perform a spacewalk — spoke to Gulf News about a deep sense of achievement the astronaut has instilled in the UAE community.

Ali Al Ahbabi, 93, a well respected poet and education activist, said: "May Allah bless Sultan Al Neyadi with more success. He has made the people of Al Ain, the UAE and the Arab World very proud. We pray for more success to him and his family. He is like my son, for his father Saif and I have known each other for decades. Sultan Al Neyadi's achievement makes me proud like my son has achieved the success."

Old friends

Awad Al Ahbabi, son of Ali Al Ahbabi and an engineer by profession, recalled his friendship with Al Neyadi.

"We used to play together long time ago. Our family takes immense pride in the safe return of astronaut Sultan Al Neyadi to Earth. Indeed, the safe return of astronaut Sultan Al Neyadi to Earth fills us with tremendous pride. His journey beyond our planet is a testament to human exploration and achievement."

Awad's brother, Humaid Al Ahbabi, who works for a government entity in Abu Dhabi, was also present at his father's majlis in Al Ain where celebrations were brewing for the return of the spacewalker.

"We have been following his journey in space and massive efforts he took for all the research and experiments in space on-board ISS [International Space Station]. He has made Al Ain, Abu Dhabi, UAE and the Arab world so proud. At home, we did a cake cutting in the presence of the entire family," Humaid said.

AL NEYADI'S HOMETOWN, FRIENDS GEARED UP FOR A GRAND REUNION

GIANT GREETING AREA SET UP TO RECEIVE WELL-WISHERS EAGER TO MEET THEIR HERO

Ahmed Ramzan/Gulf News

■ Poster of Sultan Al Neyadi outside his house in Al Ain to welcome his return to UAE.

Ahmed Ramzan/Gulf News

■ Ali Al Ahbabi with his sons Humaid Ali Al Ahbabi (right) and Awad Ali Al Ahbabi, at their house in Al Ain.

> **May Allah bless Sultan Al Neyadi with more success. He has made the people of Al Ain, the UAE and the Arab World very proud. We pray for more success to him and his family. He is like my son, for his father Saif and I have known each other for decades."**
>
> **Ali Al Ahbabi**
> | Poet, education activist in Al Ain

Watch: Al Neyadi's hometown, friends eager for reunion

Emiratis hail Al Neyadi as 'guiding light'

Sultan of Space's stellar achievements inspire them to excel in serving the nation

DUBAI

BY ANJANA KUMAR
Senior Reporter

The historic homecoming of UAE astronaut Sultan Al Neyadi has inspired Emiratis, who closely followed his historic mission, to excel in their fields to serve the nation.

'Professional role model'

Ali Saleh Al Shunnar, 25, said: "Sultan Al Neyadi's interactions on social media with his science experiments has created a huge interest in STEM [Science, Technology, Engineering, Maths] subjects among students. They are inspired and motivated to learn more thanks to Al Neyadi's stint in space. They now have a professional role model in the space world. That gives us all great confidence in our future."

He added that Al Neyadi's journey has gone a full circle, connecting the youth with their heritage and their past, as Arabs were pioneers in the science of space.

■ Eman Al Suwaidi

■ Ali Saleh Al Shunnar

■ Alia Busaibe

'A proud moment for us'

Eman Al Suwaidi, leadership coach, trainer and founder of AlNoor LifeStyle Coaching, said: "The UAE has been put on the international map of the space world. Al Neyadi has achieved what no other Arab astronaut has been able to accomplish with his spacewalk. I and my family watched every step of his journey. We loved that he carried the UAE flag and spoke Arabic in space. It was a very proud moment indeed for us. I wish him more success."

'I want to do a space walk'

Alia Busaibe, 12, studying in Brighton College Abu Dhabi, said she has been following the inspiring journey of Al Neyadi over the last six months.

"I was captivated by his space walk and his life aboard the ISS. Now I really want to become an astronaut and do a space walk just like him. It feels great that a fellow Emirati has travelled so far into space. It makes me confident that I can achieve huge success in the field of space," she said.

Giant leap forward

Taybah Awadh Alameri, 25, who works at Inception, said: "I am overcome with an immense sense of pride and inspiration. Sultan Al Neyadi's six-month odyssey of adventure and research in space perfectly aligns with the UAE's larger objectives of advancing scientific knowledge, diversifying our economy, and fostering a knowledge-based society. It's a testament to our nation's commitment to reaching for the stars."

GULF NEWS

Sultan Al Neyadi's historic homecoming

Astronaut's journey is a testament to the UAE's ambition and pursuit of knowledge

In an era adorned with monumental scientific achievements and cosmic exploration milestones, the UAE has indisputably ascended as a star in the realm of celestial endeavours.

Yesterday's historic homecoming of Sultan Al Neyadi, following the longest Arab space mission, stands as a resounding testament to the UAE's unwavering commitment to kindle inspiration far beyond its borders.

Al Neyadi's celestial voyage commenced on March 3 when he embarked on a transcendent journey to the International Space Station (ISS). His mission transcended mere space flight; it embodied the audacious spirit of the UAE to delve into the cosmos. Over 186 days, Al Neyadi conducted more than 200 experiments, exemplifying his unwavering devotion to the pursuit of cosmic knowledge.

The zenith of his odyssey unfolded on April 28 when Al Neyadi etched his name indelibly in the annals of Arab space exploration. He became the first Arab astronaut to grace the cosmos with a historic spacewalk — an Extravehicular Activity (EVA) in the vacuum of outer space, outside the ISS.

Al Neyadi's return to Earth, on September 4, was nothing short of spectacular. As the SpaceX Dragon capsule gracefully descended into the Atlantic waters off Jacksonville, Florida, it not only marked the UAE's second triumphant human space flight but also the Arab world's inaugural extended mission. This remarkable achievement reverberates the UAE's unshakeable commitment to propel its space sector to soaring heights.

The UAE's vision for its space programme transcends national boundaries, encompassing a bold investment of approximately $10 billion over the next decade. It positions the nation to claim a paramount role in global space exploration. The UAE is not merely reaching for the stars; it is resolutely determined to clasp them firmly within its grasp.

Enduring wellspring of inspiration

Al Neyadi's cosmic journey serves as an enduring wellspring of inspiration, resonating not only within the UAE, but across the entire region. It encapsulates the UAE's solemn vow to usher in a new era in space exploration, nurturing a cadre of aspiring astronauts prepared for future scientific odysseys.

This historic moment mirrors the visionary leadership of the UAE and radiates an unparalleled sense of pride, not only for the nation but for its people as well.

Al Neyadi's homecoming represents the triumphant culmination of an extraordinary odyssey — a mix of courage, intellect, and relentless determination. It is a testament to the UAE's audacious spirit — a nation that dauntlessly reaches for the stars and beyond. It serves as an exemplar of unwavering ambition and pursuit of knowledge.

This momentous return transcends being a mere homecoming; it is a celebration of boundless human potential. It stands as a testament to the indomitable spirit that propels us to explore the universe, redefining the boundaries of possibility.