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ARAB NEWS

The Voice of a Changing Region

TheSpace

●● Saudi Arabia's three decades of pride in astronauts' achievements

BASIL M.K. AL-GHALAYINI

In 1985, after completing his space mission, Prince Sultan bin Salman visited Boston as part of his world tour. For me and my friends who were studying at Harvard, it was a memorable and historic day to meet the first Arab astronaut at the city's Museum of Science. Back then, the Arab world needed communications through a satellite to cover all Arab countries. The idea of the Arab world's first communications satellite resulted from the efforts of the Arab Telecommunication Union and the Arab Organization for Education, which are under the Arab League's auspices. The Arab League agreed to set up an institution for satellite communications based in Riyadh.

Almost three decades later, with the country's vision to enhance the quality of life by creating better environments, while actively enabling the prospects of lucrative economic and monetary inventions to serve humanity, the Saudi Space Commission was set up in December 2018, chaired by Communications and Information Technology Minister Abdullah Alswaha.

The primary roles of the commission include devising plans and policies for the national space sector, implementing national space strategy, promoting research and industrial activities in the field of space, developing technology for the launch of space vehicles and infrastructure, regulating all activities related to space missions and exploration, and working with government agencies and related parties in pursuit of common goals.

Last week, another historic space mission kicked off from Houston in the US. Two young

Saudi astronauts, Ali Alqarni and Rayyanah Barnawi, launched to the International Space Station aboard Axiom Mission 2, a four-person private mission operated by Axiom Space. Barnawi, a biomedical science researcher, made history by becoming the first Arab woman to go into space. As for Alqarni, he is a fighter jet pilot in the Royal Saudi Air Force. They are part of a 10-day mission along with two other astronauts.

As part of their mission, the astronauts have begun conducting experiments in various nanomaterial therapeutic applications, such as drug delivery, tissue engineering and regenerative medicine. They have also performed a test run of the DreamUp Nanoracks Space Kite payload, which will demonstrate the aerodynamic behavior of kites in microgravity. Furthermore, in collaboration with the Saudi Space Commission and Nanoracks, the mission will fly three experiments in microgravity to educate students. Alqarni and Barnawi have also delivered talks as part of an effort to engage students nationwide.

Prince Sultan inspired me and millions of my generation in Saudi Arabia and the Arab world. Years later, he accepted our invitation to be guest of honor at the BMG Polo Cup, in the presence of the late Queen Elizabeth and the now-King Charles. He is the only astronaut we have had as a guest of honor throughout our 25-year history. Now, Alqarni and Barnawi have inspired my four children and millions of other youngsters in Saudi Arabia and the Arab world. From Prince Sultan to Alqarni and Barnawi, Saudi Arabia has continued its decades of space leadership.

Basil M.K. Al-Ghalayini is the chairman and CEO of BMG Financial Group.

●● Ali Alqarni and Rayyanah Barnawi have inspired my four children and millions of other youngsters in Saudi Arabia and the Arab world.

Preventing war in space: Fill the space policy vacuum now

DR. AMAL MUDALLALI

As Saudi astronauts were taking a "giant step" for the Kingdom and the Arab world by stepping into the International Space Station last week — inspiring the whole region, especially women, thanks to Rayyanah Barnawi becoming the first Arab woman in space — and joining their UAE colleague who was already on the ISS, I was listening to the first conference of its kind on "Preventing Space War," sponsored by Arizona State University's Interplanetary Initiative. It was unsettling to hear about war when the majority of the world is still taking its first steps in space, enthralled by its potential for all humanity.

The conference shed some much-needed light on what is happening in space, with different and divergent views of how various countries see space. Space today is a Wild West domain, with different powers vying for control and dominance. It is also a mess, with thousands of pieces of debris and discarded satellites, or space junk, circling in low Earth orbit, threatening astronauts on both the ISS and the Chinese space station, Tiangong. There is the potential for war to be sparked in space, as a result of a miscalculation or a misunderstanding, in the absence of transparency. All of this is happening at a time when space law, governance and space policies are either weak or entirely lacking.

The UN's Outer Space Treaty of 1967 is outdated, with space technology light-years ahead of it, and the private sector's big role in commercial space activity is unregulated.

But most concerning is that big power competition and tensions are reaching space, mirroring the conflicts on Earth.

During the conference, US space officials and experts alike drew a picture of space that is contested, while expressing concerns about potential conflict if the domain remains without rules and if the current confrontations on Earth extend into space.

China and Russia accuse the US of "weaponizing" outer space. The US, meanwhile, blames China and Russia for the debris in space because of their respective anti-satellite tests in 2007 and 2021. These two tests produced thousands of pieces of debris that are still circling in low Earth orbit, threatening space activity, the Americans complain. This prompted Lt. Gen. DeAnna Burt, the US Space Force's deputy chief of operations, cyber and nuclear, to ask "where is my Greenpeace for space?"

America's strategy to maintain superiority in space was called "competitive endurance" by Burt. She said the US will continue to lead and show responsible behavior in space.

While space experts highlighted the importance of communication and notification as key principles that reduce risk and prevent conflict in space, communication is



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currently missing from the Chinese-American relationship, whether on Earth or in space. Burt told the conference that the Chinese are not responsive to any US warnings about potential collisions in space, or even close encounters that could affect the Chinese space station.

However, experts challenged the US argument about superiority in space.

Christopher Johnson, space law adviser at the Secure World Foundation, questioned space superiority, calling it "illogical and not permissible under the Outer Space Treaty." He said sovereignty "does not exist in space." He added that claiming dominance in a shared domain "builds to escalation, tension and anxiety akin to saber-rattling."

According to the Outer Space Treaty, countries should use "outer space for peaceful purposes," but some experts thought that the treaty's preamble was "aspirational," when they were asked about the legality of placing weapons systems in space. Lt. Col. Matthew King, chief of international and administrative law for the Office of the Chairman of the Joint Chiefs of Staff, said: "It is not prohibited under any law that I know."

Article IV of the Outer Space Treaty specifies only nuclear weapons and weapons of mass destruction, leaving a loophole. All participants agreed that international law and the principles of armed conflict apply in space.

One of the interesting issues discussed was whether a commercial asset should be considered a military asset if it is seen as such by an opponent, recalling the situation in Ukraine and the use of commercial satellites in the conflict there. While some agreed they are military assets, it was obvious there is an urgent need for a conversation about the role of the private sector in space, especially during conflict.

Burt spoke at length on the importance of having space law, norms and rules that govern behavior in space, saying that "having something is better than having nothing." She said that, although the US has not ratified the UN Convention on the Law of the Sea, it follows it "customarily every day," implying that the US might do the same in space. The Artemis Accords have their own norms, but they are adhered to only by the 24 signatory nations.

She said that "there is no victory in space." True, but there will not be peace either if no new or updated Outer Space Treaty is agreed to by all the states, especially the big powers. Amid the current tense relations between the US, China and Russia, preventing war in space will remain an aspiration. In his "Our Common Agenda," UN Secretary-General Antonio Guterres called for a multistakeholder dialogue on outer space as part of his Summit of the Future this year. Time is of the essence for this conversation to start.