



The Politics of Outer Space in the Arab Region

Aya Badr

The Middle East Goes to Space

In recent years, Middle Eastern governments have raised their profile in the field of space activities. The UAE sent an unmanned probe into Mars orbit and, like Saudi Arabia, has sent astronauts to the International Space Station. Both countries have made space exploration a major pillar of their post-oil economy. These projects are captivating Arab populations, reminding us of the enduring fascination with space and its appeal for national pride. Space is also a critical component of military strategies in the region, as reflected in Iran's ballistic missile programme or Israel's air defence systems.

This volume of *Insights* is aimed at discussing the various dimensions of the space programmes launched by countries in the Middle East as well as the role of external players in developing these programmes.

Cover image: Emiratis standing outside the Mohammed Bin Rashid Space Centre in Dubai, ahead of the expected launch from Japan of the UAE's "Amal" (Hope) Mars probe, 19 July 2020. Giuseppe CACACE / AFP.

The Politics of Outer Space in the Arab Region

Aya Badr*

Outer space has become an arena for economic as well as geopolitical competition. This article aims to study the patterns of regional interactions among Arab states that have space programmes and their interactions with international players to understand the possible political and security repercussions. It finds, among other things, that the growing space race among regional space players is due to widening capability gaps, the involvement of foreign actors and the conflict of interests and gains among the various actors.

Outer space has witnessed rapid transformation in usage and patterns of interaction among the actors involved. Owing to the dual-use nature of many space-derived applications, space has become a domain for not only economic but also geopolitical competition, giving rise to an emerging field of study in international relations known as space policy analysis.¹

¹ Dimitrios Stroikos, “International Relations and Outer Space”, *Oxford Research Encyclopedia of International Studies* (Oxford University Press, 19 October 2022), [doi:10.1093/acrefore/9780190846626.013.699](https://doi.org/10.1093/acrefore/9780190846626.013.699).

Space politics is not only evident among global players but also in some regions as developing and emerging countries begin to utilise and exploit space for several purposes. These countries have turned to different foreign actors to help them meet their interests in outer space.

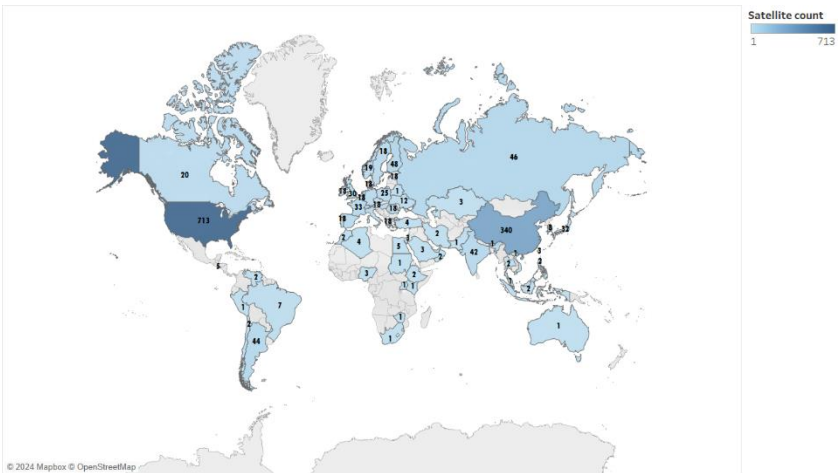
Among the Arab states, most have endeavoured to keep pace with the global scramble for outer space by developing national space programmes. However, space capabilities and aspirations differ among the various countries. Some among them have distinguished themselves as promising outer space actors with effective national space programmes and space diplomacy to promote their leadership and influential role in various aspects of space. There is also a critical role for foreign partners in developing Arab space programmes, which could raise concerns about national security and sovereignty. This article aims to study the patterns of regional interactions among Arab states that have space programmes as well as their interactions with international players to understand the possible political and security repercussions.

Arab Ventures in Outer Space

Looking at the number of satellites by country – satellites being one of the most obvious elements of the space industry that most countries invest in – the Arab share is relatively modest, compared with the major global actors (see Figure 1). More significantly, there is a noticeable gap among the Arab actors who are involved in the space domain, inferred from their varying industrial capacities and innovation capabilities (see Table 1). The CIA World Factbook sheds light on the milestones in the Arab outer space experience, showing the disparity in objectives and achievements. Some countries started their national space programmes much earlier, such as Algeria, Egypt, Iraq, Syria, and Saudi Arabia. Others like Oman, the United Arab Emirates, Bahrain, and Morocco are newcomers, while yet others like Sudan could be considered stalled actors. Furthermore, the data reflects variation in governmental spending on space programs. For example, Algeria's spending in 2022 was estimated at US\$100 million. In contrast, as of 2021, the UAE Space Agency had reportedly received more than US\$5 billion in government, private and semi-private support, while the UAE government had

invested nearly US\$6 billion in its space industry sector. In addition, the UAE government pledged to spend more than US\$800 million in the private space sector to grow the country’s capabilities in space over the next 10 years.² So, the newcomers have accelerated their efforts and objectives in outer space, compared with the historical actors in the region.³

Figure 1. Countries with Earth Observing Satellites



Source: Eros Calvas Center of Excellence (ECCOE), US Geological Survey, US Department of the Interior, n.d., <https://www.usgs.gov/MEDIA/IMAGES/COUNTRIES-EARTH-OBSERVING-SATELLITES>

² CIA, “The World Factbook, Space Programs”, n.d., <https://www.cia.gov/the-world-factbook/references/space-programs/>.

³ Charlotte Croison, “Exploring the MENA Space Sector’s Dynamic Investment Landscape”, Kratos Defence & Security Solutions, 7 January 2024, <https://www.kratosdefense.com/constellations/articles/exploring-the-mena-space-sectors-dynamic-investment-landscape>

Table 1. Arab Competitive Industrial Performance (2021) and Innovation Capabilities (2023)

	Industrial Performance Score*	Industrial Performance Rank*	Global Innovation Rank**
UAE	0.12	29	32
Saudi Arabia	0.09	35	48
Qatar	0.05	50	50
Bahrain	0.05	51	67
Oman	0.05	56	69
Kuwait	0.04	62	64
Morocco	0.04	66	70
Egypt	0.03	68	86
Tunisia	0.03	70	79
Jordan	0.02	75	71
Algeria	0.01	99	119
Lebanon	0.01	105	92
Syria	0.01	118	-
Libya	0.01	120	-
Iraq	0.00	150	-
Yemen	0.00	150	-

* UNIDO, Competitive Industrial Performance Index Database, 2021, <https://stat.unido.org/database/CIP%20-%20Competitive%20Industrial%20Performance%20Index>.

** World Intellectual Property Organization (WIPO), “Global Innovation Index: Innovation in the Face of Uncertainty”, 2023, [doi:10.34667/tind.48220](https://doi.org/10.34667/tind.48220).

The regional gap in industrial potentials and expenditures is reflected in the nature of the Arab countries’ activities in outer space. Yet, despite the lack of indigenous technologies and skills, some Arab countries have sought to be prominent actors in outer space, drawing on international support, and these ambitions are expected to grow over time, driven by the motives of these enthusiastic players. Reflecting the growing space ambitions of the Arab countries, the size of the space market in the Middle East and North Africa (MENA) region, driven mainly by downstream applications and services, was reported to be

about US\$13.2 billion in 2020. This figure is expected to reach US\$57.1 billion in 2030.⁴

Shifts in Arab Outer Space Roles

Growing Arab space ambitions have been reflected in a move towards new roles in outer space. So, beyond focusing on traditional aspects of space such as telecommunications, navigation and military applications, these players have shifted towards scientific and deep space exploration. Such activities include, but are not limited to, space tourism and manned or unmanned space missions, which are obvious in the Saudi and Emirati experiences.⁵ These paradigm shifts in Arab space activities come in line with their efforts to diversify their economies away from dependence on hydrocarbons and towards knowledge-based industries. This trend is especially apparent in the Gulf countries.⁶ An additional spur in the case of Saudi Arabia to scramble to develop its space industry could be Iran's involvement in the space arena. Iran's Islamic Revolutionary Guard Corps (IRGC) has weaponised space through dual-use activities. It has built military satellites and enhanced its ability to launch both satellites and missiles.⁷

⁴ Euroconsult Group, "Beyond the Stars: The Middle East's Space Ecosystem on the Move – White Paper", 2024, <https://www.euroconsult-ec.com/wp-content/uploads/2024/01/Beyond-the-Stars-The-Middle-East-Space-Ecosystem-on-the-Move-White-Paper-Euroconsult.pdf>.

⁵ M. Amer Khan, "An Analysis of the Space Tourism Market in the United Arab Emirates and the Kingdom of Saudi Arabia and Its Potential for Development of Zero-Gravity and Suborbital Commercial Spaceflights", *New Space* 10, no. 4 (2021), pp. 315–329, doi: 10.1089/space.2021.0007.

⁶ Agnivesh Harshan, "MENA Watch: Middle East's Ascent to Space", *Global Business Outlook*, 26 July 2023, <https://www.globalbusinessoutlook.com/economy/mena-watch-middle-east-ascent-space/>.

⁷ Isabel Brandt, "US Response to Iran's Space Program", Alliance for Citizen Engagement, USA (ACE), blog post, 31 October 2023, <https://ace-usa.org/blog/research/research-foreignpolicy/us-response-to-irans-space-program/>; CIA, The World Factbook: Space Programs; John Krzyzaniak, "Explainer – Iran's Space Program", The Iran Primer, USIP (blog post), 9 August 2022 <https://iranprimer.usip.org/blog/2022/jun/03/explainer-irans-space-program>.

In addition, non-traditional security uses of space have received attention in recent years, such as the potential for remote sensing to enhance food and water security and its ability to establish early warning systems that help in disaster risk reduction. COP 28, the UN climate change conference in the UAE in late 2023, hosted the Space Agencies Leaders' Summit, aiming to foster the nexus between space and climate by focusing on the role of space-based climate initiatives in addressing climate change and promoting sustainability.⁸

Moreover, the emerging space nations have sought to become space makers by working on the localization of the space industry, such as developing national spaceports and small launcher operations. In this regard, the Gulf countries have made ambitious efforts to promote their national contributions to the space industry. Bahrain, for example, was one of the latest Arab countries to announce, in 2022, its national objective of domestically producing a satellite.⁹

To sum up, the Arab region has witnessed revamped space ambitions, which could be illustrated by government initiatives and national strategies as well as the increasing number of regional actors that have engaged in outer space on different levels.¹⁰

Foreign Policy and the Space Domain

The growing space ambitions of the Arab countries and the evolution of their space activities have led to competition among them to become leading actors in the domain as well as stepped-up space diplomacy and possible geopolitical realignments.

⁸ Space Watch Global, "UAE Organizes First Space Agencies' Leaders' Summit during COP28", 6 December 2023 <https://spacewatch.global/2023/12/uae-organizes-first-space-agencies-leaders-summit-during-cop28/>

⁹ CIA, "The World Factbook: Space Programs".

¹⁰ Charlotte Croison, "Exploring the MENA Space Sector's Dynamic Investment Landscape".

Egypt, as the oldest Arab space actor, is pursuing its regional supremacy ambitions through space diplomacy and the emerging role of its national space agency. It now hosts the headquarters of the Africa Space Agency.¹¹ In addition, in 2021 it adopted and led the pan-African space aspiration and multinational cooperation framework known as the African Development Satellite Initiative (AfDev-Sat), which includes Arab countries like Morocco and Sudan.¹²

“Some emerging Arab actors in the outer space domain have managed to make major breakthroughs through significant space diplomacy, which has given them soft power and the ability to improve balance-of-power equations.”

Some emerging Arab actors in the outer space domain have managed to make major breakthroughs through significant space diplomacy, which has given them soft power and the ability to improve balance-of-power equations. The UAE stands out as a regional space actor in this regard, having managed to launch the first Arab mission to Mars, although this would not have been possible without international support in building the space probe and launching it.¹³ In addition, the UAE has established Mars Science City as an initial step towards the ambitious goal of establishing a human settlement on the planet within a

¹¹ Shaul Shay, “Egypt and the “Space Race””, Institute for Policy and Studies, October 2018, <https://www.runi.ac.il/media/2zghhg4c/shaulshay-spacerace12-9-18a.pdf>; CIA, “The World Factbook: Space Programs”.

¹² Juan Pons, “President El-Sisi Relies on Space Technology to Boost Egypt’s Economy”, *Atalayar*, 15 September 2022. <https://www.atalayar.com/en/articulo/new-technologies-innovation/president-el-sisi-relies-space-technology-boost-egypts-economy/20220915102033158192.html>.

¹³ Robert Sanders, “Emirates Launches First Mars Probe with Help from UC Berkeley”, Berkeley Research, University of California, 19 July 2020, <https://vcresearch.berkeley.edu/news/emirates-launches-first-mars-probe-help-uc-berkeley>

century.¹⁴ It must be noted that Emirati companies have played important roles in space commerce through their investments in space mining and satellite communications.¹⁵

“State fragility may pave the way for foreign intervention and scrambling in the Arab space domain, providing opportunities for such states to move towards their space ambitions.”

To push its space agenda, the UAE has been actively involved in space diplomacy through its national entities. It has also pursued regional cooperation to promote its leadership among the Arab countries and, at the sub-regional level, among the Gulf countries. It is eyeing to appoint a space ambassador for the growing frontier of space.¹⁶ For example, it launched the Arab Space Cooperation Group with 10 other Arab countries to push the regional space industry by building on the Emirati experience.¹⁷ Also, the UAE has sought to establish itself as a centre for space research and innovation at the regional level and beyond through its national entities such as the Mohammed Bin Rashid Space Centre (MBRSC).¹⁸ At the international level, the UAE’s practice of space

¹⁴ Bader Al-Saif, “Hope in Space: The United Arab Emirates Plans a Space Mission to Mars This Week, Bolstering the Country’s Regional Power Status”, Carnegie Middle East Centre, 13 July 2020, <https://carnegie-mec.org/diwan/82282>

¹⁵ John Sheldon, “The Spectacular Rise of the UAE Space Agency and the Challenges Ahead”, *SpaceWatch.Global*, 24 March 2024, <https://spacewatch.global/2016/07/spectacular-rise-uae-space-agency-challenges-ahead/>.

¹⁶ N. Janardhan, “Space Diplomacy Propels Khalifasat”, *The National*, 5 July 2021, <https://www.thenationalnews.com/opinion/comment/space-diplomacy-propels-khalifasat-1.784812>.

¹⁷ Sarwat Nasir, “UAE Launches Arab Space Collaboration Group”, *Khaleej Times*, 19 March 2019, <https://www.khaleejtimes.com/uae/uae-launches-arab-space-collaboration-group>.

¹⁸ Kristian Alexander and Gina Bou Serhal, “From Mars to the ISS: UAE’s Space Diplomacy and Scientific Ambitions”, *Gulf News*, 5 May 2023,

diplomacy could be demonstrated by its participation in the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS), which aims to regulate the peaceful uses of outer space.

While the abovementioned advances in space technology have been made in some quarters, armed conflicts and state fragility have discouraged the space ambitions of other Arab countries, such as Sudan and Iraq.¹⁹ However, state fragility may pave the way for foreign intervention and scrambling in the Arab space domain, providing opportunities for such states to move towards their space ambitions. The Russian role in the Syrian outer space programme is a case in point, bearing in mind that Russia-Syria cooperation has its roots dating back to the Soviet era.²⁰

“Russian involvement in the Syrian space domain has guaranteed Russian control over the airspace in the MENA region.”

Syria announced the establishment of its national space agency in 2014, as the civil war was escalating.²¹ Two years later, Syria and Russia signed a scientific cooperation agreement on space technology and remote sensing.²² In 2018, Al-Assad’s government announced its goals of developing a national space programme and building its first satellite. That cooperation has evolved to the extent that the Arab outer space has

<https://gulfnews.com/opinion/op-eds/from-mars-to-the-iss-uaes-space-diplomacy-and-scientific-ambitions-1.95515501>; John Sheldon, “The Spectacular Rise of the UAE Space Agency and the Challenges Ahead”.

¹⁹ CIA, “The World Factbook: Space Programs”.

²⁰ Space Watch Global, “Syria Seeks to Build Satellite, Establish a Space Programme, December 2018, <https://spacewatch.global/2018/12/syria-seeks-to-build-satellite-establish-a-space-programme/>.

²¹ AFP, “Syria Creates ‘Space Agency’ despite War, *Times of Israel*, 18 March 2014, <https://www.timesofisrael.com/syria-creates-space-agency-despite-war/>.

²² Syrian Arab News Agency (SANA), “Syria, Russia Sign Scientific Cooperation Agreement in space Technology”, 19 August 2016, <https://sana.sy/en/?p=85787>

become militarised and weaponised as Russia has been able to support its military intervention in the Syrian civil war through the use of its military satellites and the GLONASS navigation system. Thus, Russian involvement in the Syrian space domain has guaranteed Russian control over the airspace in the MENA region.²³

“China is keen to cooperate with the Arab countries through the concept of the Space Silk Road to further its ambitions of challenging US global supremacy.”

Furthermore, the role of external players in the Arab space has become a trigger for regional rivalry, as that role has not been limited to involvement in fragile states; most of the other Arab states have been able to develop their national space capabilities only through cooperation and alignments with the major international space powers, such as Russia, China, and India.²⁴ For instance, China is keen to cooperate with the Arab countries through the concept of the Space Silk Road to further its ambitions of challenging US global supremacy.²⁵

In this regard, China has contributed to funding the Egyptian space agency and the African regional space headquarters as well. The two countries have signed a cooperation agreement to boost deep space exploration, spacecraft development, and the construction of space

²³ Samuel Bendett, Mathieu Boulègue, et.al, “Advanced Military Technology in Russia: Capabilities, Limitations and Challenges”, Research Paper, Chatham House, 23 September 2021, <https://www.chathamhouse.org/2021/09/advanced-military-technology-russia/04-russian-space-systems-and-risk-weaponizing-space>; Can Kasapoğlu, “Control of the Syrian Airspace: Russian Geopolitical Ambitions and Air Threat Assessment”, Stiftung Wissenschaft und Politik, 14 April 2018, https://www.swp-berlin.org/publications/products/comments/2018C14_kpu.pdf; David Axe, “Russia Is Using Space Power in Its Attack on Syria”, *The Daily Beast*, 16 December 2015, <https://www.thedailybeast.com/russia-is-using-space-power-in-its-attack-on-syria>.

²⁴ Agnivesh Harshan, “MENA Watch: Middle East’s Ascent to Space”.

²⁵ Arushi Singh, “Why Is China Giving Satellites to Egypt”, *Geopolitical Monitor*, 13 September 2023, <https://www.geopoliticalmonitor.com/why-is-china-giving-satellites-to-egypt/>.

infrastructure.²⁶ China has also sought to promote space cooperation with the Gulf Cooperation Council (GCC) countries.²⁷ The increasing Chinese engagement in the Arab space domain will in turn naturally have raised US concerns about the military and security implications of China's inroads into the area.²⁸

“The increasing Chinese engagement in the Arab space domain will in turn naturally have raised US concerns about the military and security implications of China’s inroads into the area.”

The American involvement in the Arab space domain involves, among other things, space cooperation between the US Space Command (USSPACECOM) and Qatar to exchange information for promoting the stability and security of satellites in orbit.²⁹ In addition, NASA has co-opted the UAE's MBRSC, among other space agencies, into its Artemis

²⁶ “China, Egypt Sign Deals to Boost Lunar Exploration, Spacecraft Launching”, *Global Times*, 6 December 2023, <https://www.globaltimes.cn/page/202312/1303174.shtml>; Jevans Nyabiage, “Egypt Gets China-funded Satellites in Step towards Space Industry Ambitions”, *South China Morning Post*, 3 July 2023, <https://www.scmp.com/news/china/diplomacy/article/3226283/egypt-gets-china-funded-satellites-step-towards-space-industry-ambitions>.

²⁷ Oxford Business Group, “China Eyes Partnership with Gulf Countries For Space Exploration”, *Oilprice.com*, 27 August 2023, <https://oilprice.com/Geopolitics/International/China-Eyes-Partnership-With-Gulf-Countries-For-Space-Exploration.html>;

Wen Shaobiao and Yao Chen, “China’s Middle East Economic Diplomacy in the New Era”, *Chinese Journal of International Review*, December 2022, [doi:10.1142/s263053132250007x](https://doi.org/10.1142/s263053132250007x).

²⁸ Shaul Shay, “The Space Race in the Middle East”, *Jewish News Syndicate*, 25 February 2019, <https://www.jns.org/the-space-race-in-the-middle-east/>.

²⁹ Unipath, “Qatar’s Commitment to Space: The Qatar Armed Forces Signs an Agreement with U.S. Space Command to Protect Satellites in Orbit”, 22 November 2023, <https://unipath-magazine.com/qatars-commitment-to-space/>.

programme, which involves the development of the first space station to be deployed in orbit around the moon.³⁰

“Another regional geopolitical dimension of space cooperation is the Israeli role in developing Arab space programmes.”

For its part, India has fostered space cooperation with the MENA countries through the science diplomacy adopted by the Indian Space Research Organisation (ISRO). For example, it has signed a memorandum of understanding with Saudi Arabia’s King Abdul-Aziz City for Science and Technology (KACST) to promote cooperation in space-related fields such as remote sensing and disaster management.³¹

Another regional geopolitical dimension of space cooperation is the Israeli role in developing Arab space programmes. Following normalisation of its relations with Israel, the UAE agreed on a joint space mission to the moon (Beresheet 2) with Israel in addition to promoting cooperation in knowledge sharing and space exploration.³² Morocco, for its part, has exploited the normalisation of its relations with Israel to secure Israeli help to build a new surveillance satellite.³³

³⁰ NASA, “NASA, United Arab Emirates Announce Artemis Lunar Gateway Airlock”, 7 January 2024, <https://www.nasa.gov/news-release/nasa-united-arab-emirates-announce-artemis-lunar-gateway-airlock/>.

³¹ Samiksha Agarwal, “India’s Transformative Space Cooperation with the Middle East: A New Frontier of Collaboration”, *Gulf Times*, 29 August 2023, <https://gulftimes.news/2023/08/29/indias-space-cooperation-with-the-middle-east/>; Anuttama Banerji, “India’s Space Cooperation With the Middle East”, *The Diplomat*, 29 August 2023, <https://thediplomat.com/2023/08/indias-space-cooperation-with-the-middle-east/>.

³² Ricky Ben-David, “Israel, UAE to Launch Joint Space Projects, including Beresheet 2 Moon Mission”, *Times of Israel*, 20 October 2021, <https://www.timesofisrael.com/israel-uae-to-launch-joint-space-projects-including-beresheet-2-moon-mission/>.

³³ Basma El Atti, “Morocco to Build Surveillance Satellite with Israel Aerospace Industries”, *The New Arab*, 6 December =2023, <https://www.newarab.com/news/morocco-build-satellite-israel-aerospace-industries>.

The Arab region has also witnessed interactions between the old players and the newcomers in the space race. For example, Egypt and Qatar have a strategic partnership agreement involving cooperation for providing satellite services in the MENA region.³⁴ However, the widening gaps in space capabilities, the involvement of foreign actors, or in the case of the UAE and Saudi Arabia, the conflict of interests have sparked a space race.³⁵ This could trigger conflict if space programmes depart from their peaceful agendas.³⁶

Collaboration or Competition?

This article has focused on analysing the dynamics of the Arab space domain. One of the most significant changes in recent years, particularly in the case of Saudi Arabia and the UAE, is the shift from focusing on communication systems and the building of satellites to outer space exploration. The lack of a strong indigenous skills base has not deterred these countries. On the contrary, there has been a rise in space diplomacy as the Arab countries seek international cooperation to achieve their space agendas and also to profile their growing achievements in space. The race to exploit the space domain could possibly lead to significant regional collaborative efforts to promote mutual gains. Alternatively, competition in the space domain, together with the intervention of foreign players, could heighten the historical geopolitical tensions in the region owing to the nexus between military, technological, geopolitical

³⁴ Ahram Online, “Egypt’s Nilesat and Qatar’s Es’hailsat Form Strategic Partnership for Satellite Services in MENA”, 6 February 2024, <https://english.ahram.org.eg/News/517233.aspx>.

³⁵ Sheikh Nawaf Bin Mubarak Al-Thani, “Gulf Stars Rising: The GCC’s Quest in the New Space Race”, Gulf International Forum, n.d., <https://gulffif.org/gulf-stars-rising-the-gccs-quest-in-the-new-space-race/>; Charles W. Dunne, “Arab Space Programs Level Up”, Arab Centre, Washington DC., 30 April 2021, <https://arabcenterdc.org/resource/arab-space-programs-level-up/>.

³⁶ Elia Preto Martini, “The Middle East Space Race and the Future of Regional Disputes”, *Diplomatic Courier*, 29 June 2023, <https://www.diplomaticcourier.com/posts/the-middle-east-space-race-and-the-future-of-regional-disputes>; Eman Fakhry, “Motives for the Escalation of the Regional Race in Outer Space”, Future for Advanced Research & Studies, 23 November 2021.

and economic interests. Such competition has the potential to spark conflict. ◆

- * **Aya Badr** is a PhD candidate in political science at the Faculty of Economics and Political Science, Cairo University. Her research interests are focused on armed conflict and security studies in the Middle East and North Africa region.



29 Heng Mui Keng Terrace
Block B #06-06
Singapore 119620
Tel: +65 6516 2380; Fax: +65 6774 0458
Email: contact.mei@nus.edu.sg
www.mei.nus.edu.sg

