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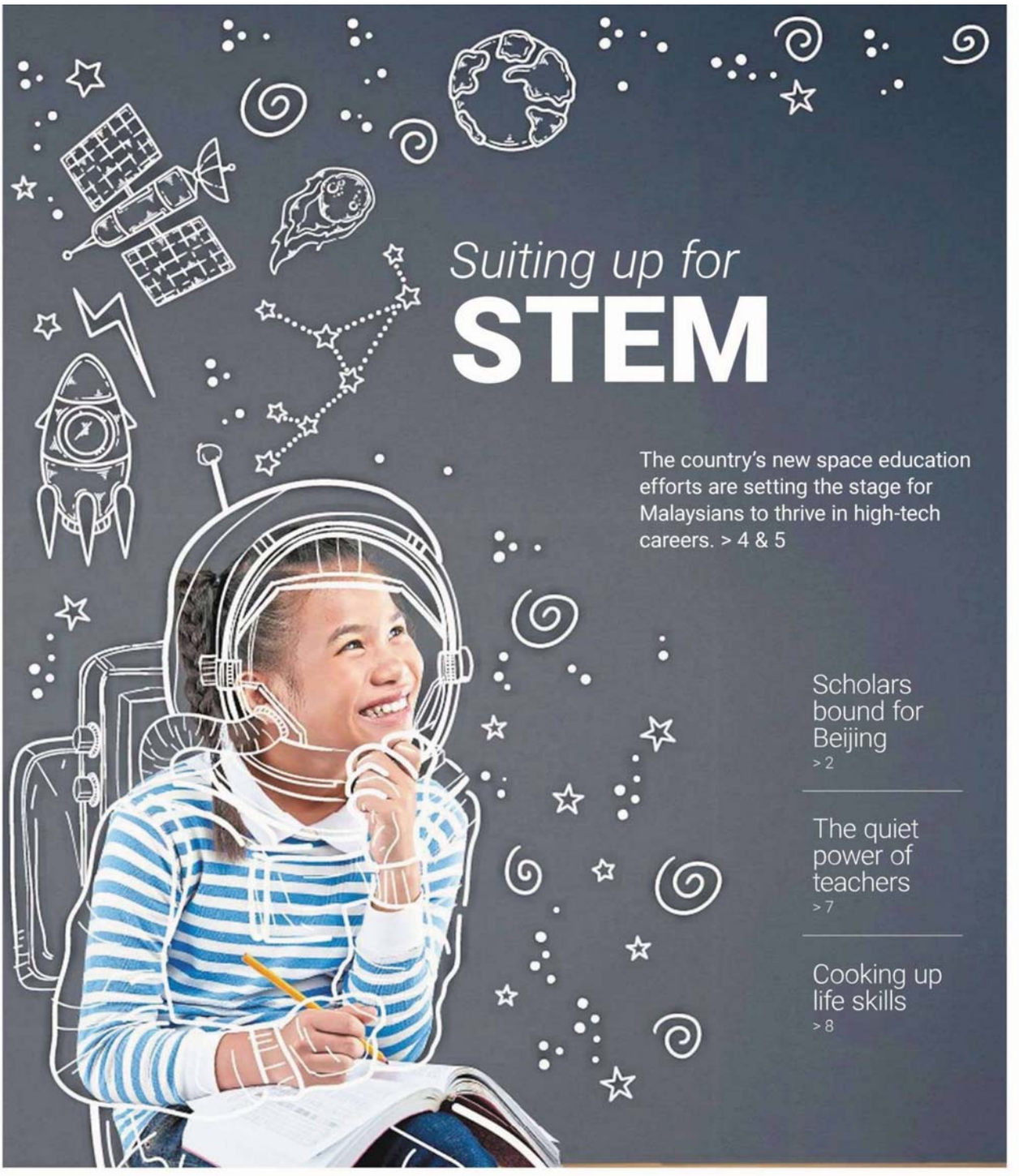
27 JUL, 2025

To infinity and beyond Prof Ahmad

Sunday Star, Malaysia



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Stories by SAMANTHA SO
samantha.so@thestar.com.my

MALAYSIA'S efforts to boost science, technology, engineering and mathematics (STEM) education may soon reach new heights through the potential of space exploration.

Pointing to data from the Education Ministry, National STEM Association president and founder Emerita Prof Datuk Dr Noraini Idris noted that interest in STEM at the secondary level remains below the national goal of 60%.

According to ministry data, some 50.83% students enrolled for STEM streams last year.

One reason for this shortfall, according to Prof Datuk Dr Ahmad Ibrahim of the UCSI University Tan Sri Omar Centre for Science, Technology and Innovation Policy, is the perception that STEM subjects are highly technical and difficult.

"People see STEM as something difficult and complex, so students are not so keen," he said.

Space exploration, both experts noted, could help change this perception by sparking students' curiosity and making STEM more relatable.

"STEM education is something that has to be made exciting, and space is one tool that can be used to spark interest," Prof Ahmad said.

Agreeing, Prof Noraini said space can uniquely inspire awe and motivate students to pursue STEM fields.

Pioneering steps

Building on this vision, momentum gathered at the recent Langkawi International Maritime and Aerospace Exhibition 2025 (Lima' 25), where Ocullospace Sdn Bhd and the Malaysian Space Agency (MYSA) formalised a landmark partnership to prepare Malaysia's youth for a future in space.

This collaboration aims to transform how Malaysian students engage with space – starting in classrooms and collaborative global projects.

MYSA director general Datuk Azlikamil Napiah underscored the importance of strengthening space education for Malaysia's ambitions in the sector.

"Space education is important to ensure the sustainability and enhancement of the country's capacity and capability in the space sector," he said.

He added that investing in education is also key to developing local talent and keeping pace with rapid advancements in space technology.

"It is significant to establish human capital development and synchronise with fast advancement in the space technology ecosystem.

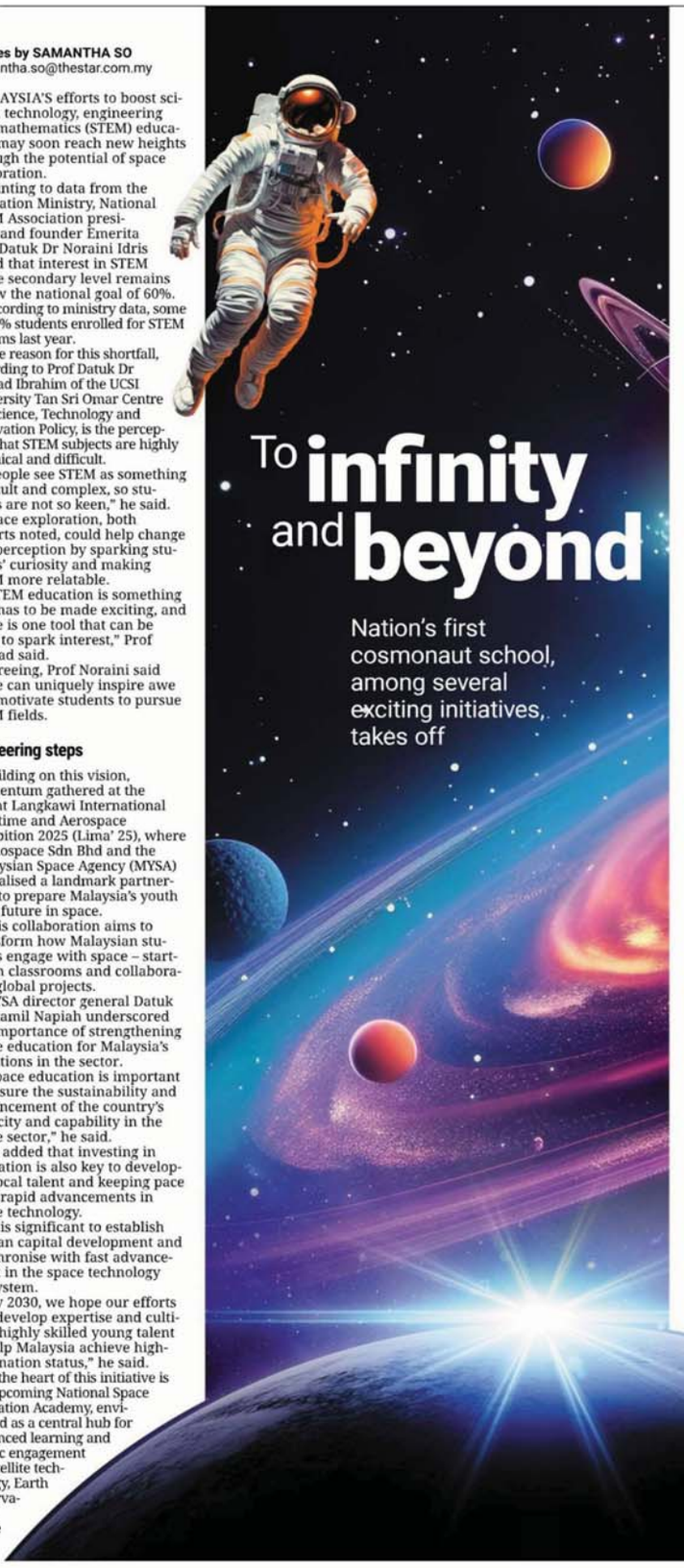
"By 2030, we hope our efforts will develop expertise and cultivate highly skilled young talent to help Malaysia achieve high-tech nation status," he said.

At the heart of this initiative is the upcoming National Space Education Academy, envisioned as a central hub for advanced learning and public engagement in satellite technology, Earth observation, space exploration and data analytics.

To bring science to life, the partnership will also launch national competitions such as nanosatellite design challenges and satellite coding contests, giving students hands-on experience to hone problem-solving and critical thinking skills.

Malaysia will also adopt world-renowned programmes such as NASA HUNCH (High School Students United with NASA to Create Hardware) and DreamUp – exposing students to real-world space projects and collaboration with global experts.

Azlikamil said these initiatives support Malaysia's vision to become a regional hub for space technology and innovation, with aspirations for the space sector to contribute at least 1% (RM10bil) to the country's gross domestic product by 2030 and create 5,000 jobs.




Prof Noraini


Prof Ahmad


Nonee Ashirin


Azlikamil


Mazlan


Egorov

Malaysia's first Young Cosmonaut School

In addition, come 2027, Malaysia's first Young Cosmonaut School – officially known as the International Youth Space Academy (IYSA) – will open its doors to its first batch of students.

The academy is a joint effort between the Nonee Ashirin Foundation (NAF) – a non-profit organisation empowering young people to explore space careers – and Singapore-based international research and education organisation CWC Enterprise Pte Ltd.

Its mission is to inspire and equip the next generation of space leaders.

The IYSA, which was also launched at Lima'25 on May 20 under the newly introduced A.T.M.O.S Sphere, will be located in Penang.

The A.T.M.O.S Sphere is a high-tech exhibition, showcasing how space technology is driving progress in climate science, telecommunications, navigation, agriculture and national security.

"This agreement marks our commitment to building a sustainable space ecosystem in Malaysia. Through collaboration and education, we are laying the groundwork for long-term growth in the global space economy," NAF founder Datuk Nonee Ashirin Mohd Radzi said.

The academy will work closely with international and local partners – including trainers from Russia's renowned Gagarin Cosmonaut Training Centre, the Association Ecology of the Unknown, the Shanghai Science and Technology Museum, Malaysia's own astrophysicist Tan Sri Mazlan Othman, and Tech Dome Penang.

The IYSA, said Nonee Ashirin, aligns closely with national education goals to strengthen STEM and cultivate a future-ready workforce.

"This academy supports national frameworks like the 10-10 Malaysian Science, Technology, Innovation and Economy (MySTIE) Framework and the Malaysia Education Blueprint, which aims to increase STEM enrolment to 60% this year," she explained.

She added that while Malaysia has made significant strides in building STEM capabilities, bringing space

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education into the mix makes STEM more engaging and aspirational for young minds.

"By nurturing interest in space science, we are equipping students with the mindset and skills to lead in high-value, high-tech sectors that are key to our country's economic transformation," she said.

Weighing in, Prof Noraini noted that Malaysia has long recognised space and aerospace as critical drivers for high-tech growth under the National Science, Technology and Innovation Policy and the MySTIE Framework.

"Programmes like the IYSA provide a direct channel to develop interest, capability, and eventual workforce readiness in these areas," she said.

Beyond meeting national targets, Nonee Ashirin views the IYSA as a platform to help Malaysian youth see space as a real and attainable future.

"From mission simulations and robotics labs to mentorship from global astronauts and engineers, students will be immersed in a world that fosters innovation, resilience and vision," she said.

The IYSA, said Prof Noraini, will not only strengthen STEM content knowledge but also build critical 21st-century skills.

"Such programmes are vital for creating sustained interest in STEM, especially when integrated with Malaysia's school curriculum and co-curricular ecosystems. More importantly, space-based projects promote interdisciplinary thinking, which is critical for cultivating innovation in the Fourth Industrial Revolution," she added.

More than skills

Meanwhile, Russian cosmonaut trainer Timofey Egorov stressed the importance of character in space training.

"For space flights, the level of ethics of a person will be especially important for future space missions because these missions will probably be long-term and connected with long isolation in a closed volume of a spaceship (space station)," he said.

Such conditions, he noted, can trigger profound psychological challenges that require strong ethical grounding to maintain a healthy and sustainable environment among crew members.

As a pioneer of the Angkasawan programme that sent Dr Sheikh Muszaphar Shukor Al Masrie Sheikh Mustapha to the International Space Station, Malaysia's first astrophysicist Mazlan emphasised that aspiring astronauts must possess exceptional human qualities.

"If you look at the competition in the United States, for instance – when you read their CVs, they have multiple PhDs, they've been to flying school, skydiving, ocean diving.

"They are full of drive and fearless. That's the sort of people we need to nurture to bring Malaysia to space and succeed there," she said.

A mission in space demands extraordinary resilience, teamwork and character, she stressed.

"It's not like flying on an aeroplane where there's a large crew – there are only three of you in the capsule," she added.

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SUMMARIES

STEM The country's new space education efforts are setting the stage for Malaysians to thrive in high-tech careers. > 4 & 5

Nation's first cosmonaut school, among several . exciting initiatives, takes off Nonee Ashirin

MALAYSIA'S efforts to boost science, technology, engineering and mathematics (STEM) education may soon reach new heights through the potential of space exploration.