

SPACE BRIEF

ROUND THE SPACE-WORLD IN TIME

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Dear readers,

This edition of Space Brief points out the rapid thinning of the divide between air-space & outer-space, aviation & spaceflight, terrestrial communication & space communication, and between air force & space force. It brings to the fore, the urgent need to grow Africa's human capability and industrial capacity in air and space.

Happy reading.

AVIATION

World's newest airliner on debut flight

The world's newest jetliner, the Airbus A350, made its debut commercial flight on Thursday, 15 January, 2015, from Doha, Qatar, to Frankfurt, Germany. On board the inaugural flight were the CEO of Airbus, Fabrice Bregier and the Group CEO of Qatar Airways, Akbar Al Baker. Depending on the model and seating arrangement, the A350 can fly 276 to 369 passengers. Qatar Airways has configured its A350s to hold 283 seats, including 36 full-flat-bed business class seats and 247 in coach.



The entrance atrium on board the first Qatar Airways A350
(Credits: Qatar Airways)

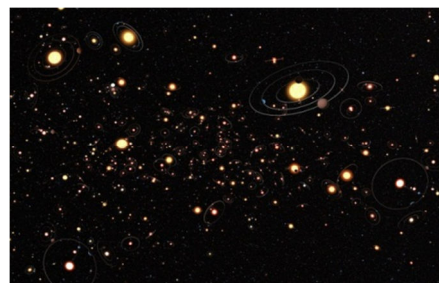
Of the 778 A350s that have been pre-ordered, Qatar Airways has 80, and plans to use them on new long-haul routes to Asia and Europe. For passengers, the new plane offers wider panoramic windows and larger overhead storage space plus the ability to limit connections. Most of the body of the plane is made from composite materials; this gives it a relatively light weight, and less use of fuel.

It takes many years to design and build an airplane. Currently, neither Boeing nor Airbus currently have any all-new models under way, meaning it could be a decade or longer until passengers see another all-new aircraft type produced by either of the world's two major jetmakers.

SPACE SCIENCE AND ASTRONOMY

IAU announces competition to name exoplanets

An exoplanet is a planet that does not orbit the Sun; rather it orbits another star in the universe. While our solar system contains eight planets, there are over 1800 exoplanets. An exoplanet with its host star is called an exoworld.



Artist's view gives an impression of how commonly planets orbit the stars in the Milky Way
(Credits: Wikipedia)

On 14 January, 2015, the International Astronomical Union (IAU) announced the commencement of the first round of the NameExoWorlds competition. According to a news release by the IAU, "For the first time, in response to the public's increased interest in being part of discoveries in astronomy, the International Astronomical Union (IAU) is organizing a worldwide contest to give popular names to selected exoplanets along with their host stars. The proposed names will be submitted by astronomy clubs and non-profit organisations interested in astronomy, and votes will be cast by the public from across the world through the web platform NameExoWorlds." The winning names could be used interchangeably with their scientific names and due credit will be given to the astronomy clubs or organisations that proposed them. The final results will be announced at a special public ceremony during the IAU XXIX General Assembly, scheduled for 3-14 August, 2015, in Honolulu, USA.

SPACE EXPLORATION

India's Mission to Mars wins Space Pioneer Award



The US-based National Space Society (NSS) announced that India's Mars Orbiter Mission has won its 2015 Space Pioneer Award in the Science and Engineering category. According to the statement issued by the organisation, "This mission has achieved two significant mission

firsts. (1) An Indian spacecraft has gone into orbit around Mars on the very first try (on Sept 24, 2014). No other country has ever done this. (2) The spacecraft is in an elliptical orbit with a high apoapsis, and has a high resolution camera which is taking full-disk color imagery of Mars. Very few full disk images have ever been taken in the past, mostly on approach to the planet, as most imaging is done looking straight down in mapping mode. These images will aid planetary scientists." The award will be presented to the India Space Research Organisation (ISRO) during the 34th International Space Development Conference, scheduled for 20-24 May, 2015, in Toronto, Canada.

The Mars Orbiter Mission (or Mangalyan), was launched from India's Satish Dhawan Space Centre on November 5, 2003 and went into orbit on September 24, 2014. Its primary objective was to develop technologies for interplanetary missions, while its secondary objective was to advance knowledge about Mars.

ISS gets re-supplies

The International Space Station (ISS) is the largest man-made object which orbits the Earth (artificial satellite) from a distance of about 400km. Currently, six scientists live in the ISS, conducting experiments in biology, physics, chemistry, human anatomy, medicine, materials science, and other fields. Researches in the ISS produce unique results as the experiments are conducted in a simulated environment where there is little or no gravity (researches on Earth are affected by gravity).



The ISS is also the largest international collaborative science and engineering project. The current occupants of the ISS are Elena Serova (Russia), Barry Wilmore (US), Alexander Samokutyaev (Russia), Anton Shkaplerov (Russia), Terry Virts (US), and Samantha Cristoforetti (Italy). They got their newest supply of food, water, science experiments and equipment, on Monday, 12 January, 2015, through a rocket owned by SpaceX, a private space company in US. The mission also provided opportunity to test technologies for reusable rockets. Until now, rockets either burn up in space or fall into the ocean.

SPACE BUSINESS AND MANAGEMENT

Space companies to invest in Internet services

The liberalization of spaceflight and space exploration, led by the USA, gave birth to new space companies like SpaceX,

Virgin Galactic, Orbital Sciences, Blue Origin, XCOR Aerospace and Planetary Resources. Some old aerospace companies, like Boeing and Lockheed Martin, have also divested into commercial space. Some of these companies have also indicated their intention to invest in Internet service provision.

On Wednesday, 15 January, 2015, Virgin Galactic announced that it has partnered with OneWeb (an Internet-service company) to launch an initial 648 satellites, with the possibility of increasing to 2400 satellites, to improve terrestrial communication in undeveloped countries. In another event two days later, SpaceX reiterated its plans to launch about 4000 satellites within 5 years, so as to increase the speed and access to the Internet, all over the world. He plans to extend the network to Mars, such that there could be easy and instant communication between Earth and Mars.

New leadership for India's space programme



On 12 January 2015, Alur Seelin Kiran Kumar succeeded K. Radhakrishnan, as the new chairman of the Indian Space Research Organisation (ISRO) and chairman of the Space Commission (India's space think-tank body). He also doubles as the Secretary of the Department of Space.

Prior to his new appointment, A.S. Kiran Kumar was director of the ISRO's Space Applications Centre (SAC). He is credited with the success of the India's Mars Orbiter Mission. Among many other scientific feats, he contributed to the design and development of the instruments that were used in Chandrayaan-1 mission (India's first lunar probe).

MILITARY

Russia to merge Air Force and Space Force in 2015

In the 18th century, war and peace were determined by superiority of land power; in 19th century, it was sea power; in 20th century, it was air power; in 21st century, it is space power. Air power began with the dawn of aviation in 1903; space power began with the launch of the first satellite in 1957.

British military doctrine defines airpower as "the ability to project power from the air and space to influence the behaviour of people or the course of events." This means that the British military have a sense of utilizing 'air' and 'space' for warfare. Toeing this line of thought is Russia. This year, Russia intends to create an Air-Space Force by merging its Air Force and Space Force. In a statement by the Chief of the General Staff of the Armed Forces of Russia, Valery Vasilevich Gerasimov, on Tuesday, 13 January, 2015, "A new type of armed forces will be created in 2015, the Air-Space Forces, by combining two already existing types of military armed forces: the Air Force and Space Forces."