e-news

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Bangalore Branch Building
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Telefax: +91 80 25273851
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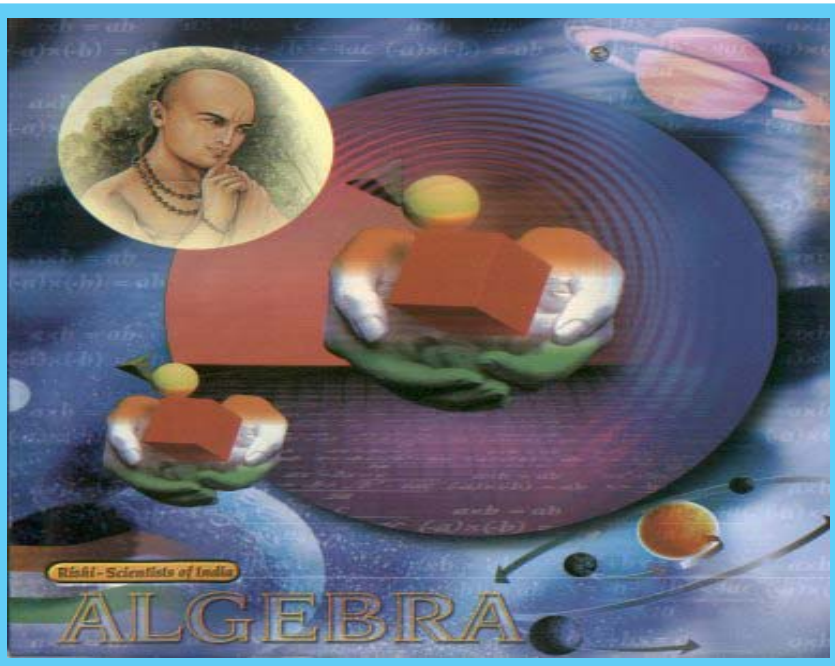
Head Quarters

The Aeronautical Society of India
13-B, Indraprastha Estate
New Delhi 110 002, India
Tel: ++91 11 23370516
Fax: ++91 11 23370768
e-mail: aerosoc@bol.net.in



ARYABHATTA
(476 CE) MASTER ASTRONOMER AND MATHEMATICIAN

GENIUS IN ALGEBRA

Born in the obscure village of Vijjadit (Jalgaon) in Maharastra, Bhaskaracharya's work in Algebra, Arithmetic and Geometry catapulted him to fame and immortality. His renowned mathematical works called "Lilavati" and "Bijaganita" are considered to be unparalled and a memorial to his profound intelligence. Its translation in several languages of the world bear testimony to its eminence. In his treatise " Siddhant Shiromani " he writes on planetary positions, eclipses, cosmography, mathematical techniques and astronomical equipment. In the " Surya Siddhant " he makes a note on the force of gravity: "Objects fall on earth due to a force of attraction by the earth. Therefore, the earth, planets, constellations, moon, and sun are held in orbit due to this attraction." Bhaskaracharya was the first to discover gravity, 500 years before Sir Isaac Newton . He was the champion among mathematicians of ancient and medieval India . His works fired the imagination of Persian and European scholars, who through research on his works earned fame and popularity.

READER'S RESPONSE

The editorial team invites your views, suggestions, to the News about Members Column and contributions to the e-news.

Honourable Minister Mr Praful Patel lists measures to ensure flight safety

The Directorate-General of Civil Aviation (DGCA) has taken various initiatives to ensure safe operations including evaluating the financial health of scheduled airlines and its impact on safety, the Minister for Civil Aviation Mr Praful Patel informed the Rajya Sabha. "The DGCA is in the process of framing regulations to ensure that safety is not compromised on account of financial distress of airlines," the Minister said in a statement in response to a Calling Attention Motion regarding 'serious safety problems faced by the airline industry in the country in the context of the Mangalore aircraft crash'. The Minister informed the House that this was one of the several initiatives that the DGCA was taking to ensure safe operations of airlines. The other initiatives include setting up Surveillance and Enforcement Division for preparation and monitoring of Annual Surveillance Programme, the Minister said and added that while DGCA conducted 4,327 surveillance activities in 2009.

Source: Hindu Business Line

DAE unveils supercomputer

The Department of Atomic Energy (DAE) added yet another feather to its cap with the inauguration of its latest supercomputer cluster, "Annapurna," at the Institute of Mathematical Sciences (IMSc) here. The home-built supercomputer, built at a cost of Rs 6 crore, is a major facility for scientists and researchers and one of the fastest in the country. The induction of the machine "is a major event," said AEC chairman Dr Srikumar Banerjee. India had years ago begun building such "parallel processors" through a network of institutes amid an "embargo against us", Dr Banerjee said. While the Tatas have done some strong work in this area, the supercomputers built DAE institutes were planned "users themselves" which was remarkable, he said. The latest machine has been designed to be fast enough to "meet our application needs over the next five years," he said.

Source: Deccan Herald

Mars rocks show evidence of life on the planet

Scientists have identified rocks which they claim could contain evidence of life on Mars. An international team, led Search for Extraterrestrial Intelligence Institute (SETI) in California, has made the discovery in the ancient rocks of Nili Fossae, the "Earth and Planetary Science Letters" reported. Their work has revealed that the ancient rocks of Nili Fossae are almost identical to those in the Pilbara region of north-west Australia where some of the earliest evidence of life on the earth was recorded and preserved in mineral form. In fact, the scientists claim the same "hydrothermal" processes that preserved these markers of life on the earth could have taken place on the Red Planet at Nili Fossae. The study found that the ancient rocks shared similar minerals and features, known as "stromatolites".

Source: Deccan Herald

GAGAN undergoing final testing: AAI

The GPS-aided Geo Augmented Navigation (GAGAN) System, aimed at making Indian skies safer is undergoing the final operation phase, which will be over in the next three years before it is commissioned. The GAGAN project is currently undergoing the final operation phase since June 2009 and is scheduled to be completed by June 2013," an official from the Airports Authority of India (AAI) said. The AAI, in collaboration with Indian Space Research Organisation, is developing and implementing this state-of-the-art satellite-based navigation system. Once operational, GAGAN project would provide augmented information for satellite navigation to aircraft flying over Indian airspace and the routes over the high level of accuracy, integrity and continuity at all phases of flight operations, he added.

Source: Indian Express

China's next goal: soaring past 737

Models of Chinese-made helicopters and small jets fill the aviation pavilion at Expo, built to show the country's "soaring aspirations." Next in line: a large commercial airplane. Even Boeing Chief Executive Mr Jim Mc Nerney acknowledges that the era of two aircraft rivals dominating the skies is almost over. China is gearing up to manufacture its first large passenger plane, the C919, a single-aisle jet that will seat up to 190 people and is scheduled to take flight in 2014. That means new pressure for Boeing and its Renton-built 737, but it also could open some doors for local aerospace suppliers. China's growing domestic airlines, a key market for Boeing and Airbus, are likely customers. A large passenger aircraft is "the jewel of modern manufacturing" and "will bring significant progress in a number of basic disciplines," said a spokesman for COMAC, the government consortium that leads the C919 project.

Source: Seattle Times

DRDO, IAF sign pact for pilot selection system

The Defence Research and Development Organisation (DRDO) and the Indian Air Force (IAF) signed an agreement for series production of computerised pilot selection system (CPSS). The embedded micro controller-based CPSS has built-in security features which capture accurate, reliable and high-speed data relating to the skills of the candidates appearing for selection as pilot. The CPSS evaluates the qualities required for a highly demanding job of a military pilot such as psychomotor skills, information processing skills (speed and accuracy), coordination, visualisation, time-sharing, etc by subjecting the candidate to perform concurrent multiple tasks.

Source: Indian Express

Jakkur flying school set to take wings again

Here is some good news for aspiring pilots. The state-owned Jakkur Flying School (JFS), which was defunct since 1997, is set to reopen in the next one month. Sports and Textiles Minister Mr Goolihatti Shekhar announced that the flying school would be opened in a month or two. He said all necessary steps have been

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taken. The school, which was once considered a prestigious flying school in the country, had to stop operations due to some legal and technical hurdles. The minister said the office of the Director General of Civil Aviation (DGCA) has given green signal for the school to start running again. "The DGCA has given permission for one year," the minister said. "It could extend the permission after verifying the infrastructure facilities at the school after one year." The school offers a flying course of one and half years.

Source: Indian Express

Tejas to guard South skies soon

In a few years, indigenous Tejas light combat aircraft (LCA) will guard South Indian skies with full gusto as the Indian Air Force (IAF) plans to station the first two Tejas squadrons in the South. While the first squadron of 20 fighters - already contracted by the IAF to Hindustan Aeronautics Ltd - will be stationed in Sulur in Coimbatore, the second squadron may be stationed at Kayathar in Tuticorin, where a new airbase is getting ready, sources told Deccan Herald. The IAF has agreed to buy one more squadron of LCA mark-1, the contract for which is being processed at the IAF headquarters. The first squadron is expected to receive initial operation clearance by December. While Sulur is being gradually converted a major base, the IAF has taken a decision to revive Kayathar - a World War II air field - in a big way.

Source: Deccan Herald

Sikorsky Aircraft eyes opportunities Indian defence market

Sikorsky Aircraft Corp plans to pursue multiple opportunities in the Indian defence market, a strategy that could see the company, actively targeting the country's internal security set-up. However, the company ruled out the manufacture of its iconic Black Hawk helicopters in India, unless it sees a greater demand. Refuting media reports that suggested that the US defence contractor was all set to enlarge its Hyderabad manufacturing facility, run jointly with the Tatas, to make the helicopter, Mr AJS Walia, managing Director, India and South Asia, said, it would depend largely on the market for the product. Mr Walia said the Sikorsky is willing to bring the Black Hawk production line to India, provided it bags a major defence tender.

Source: Planenews.com

Delhi students find main belt asteroid

Mr Amanjot Singh and Mr Sahil Wadhwa, both students of Ryan International in Rohini here, have created a history of sorts by discovering the main belt asteroid named 2010 PO24. This is the first time an asteroid has been spotted by any school in the country. Mr Amanjot and Mr Sahil found it while participating in the "All-India Asteroid Search Campaign," conducted by the Science Popularisation Association of Communicators and Educators (SPACE) in collaboration with the International Astronomical Search Collaboration. Ever since the August 6 discovery, Sahil has been on cloud nine. "I have been interested in astronomy since Class VII. We were trained to use the software. [Dr.] Patrick Miller from the United States used to transmit pictures of celestial objects taken from his 32" and 24" telescopes to us. We used the software to analyse the pictures and after detecting the correct one, our discovery was confirmed," said the Class XII science student.

Source: Hindu

Nod for National Innovation Council

Prime Minister Dr Manmohan Singh gave the green signal for the setting up of a National Innovation Council headed by Mr Sam Pitroda, Adviser to the Prime Minister on Public Information Infrastructure and Innovations, to give shape to the Government's decision to observe the current decade (2010-2020) as the Decade of Innovation. The Council will have a mandate to evolve an Indian model of innovation that focuses on inclusive growth and creating an appropriate eco-system conducive to fostering inclusive innovation. The 17-member panel would include PlanningCommission members Dr K. Kasturirangan and Dr Arun Maira, former Director General of the Council for Scientific and Industrial Research (CSIR) Dr R.A. Mashelkar, former President of the National Association of Software and Services Companies Mr Kiran Karnik, Executive Director of Tata Sons Mr R. Gopalakrishnan, and Biocon Chairman Mr Kiran Mazumdar Shaw. The present CSIR Director General Dr Samir Brahmachari, Director General of the Confederation of Indian Industry Chandrajit Banerjee, Secretary General of the Federation of Indian Chambers of Commerce and Industry Mr Amit Mitra, IIT Kanpur Director Mr Sanjay Dhande, would also be members.

Source: Hindu

DRDO working on border intelligence system

The DRDO is working on a number of electronics and computer science (ECS) related projects for the Armed Forces and the Para military, including a border communication intelligence gathering system and a laser-based ordnance disposal system that are likely to be inducted in service by the end of next year. DRDO chief controller of R&D For ECS, cluster of seve labs, Dr. Sreehari Rao said on Monday that the border communication intelligence gathering system would be ready and inducted fully to cover all border areas before December next year. Developed by Hyderabad- based Defence Electronics Research Laboratory, the envisaged fitting up of 10 static and 25 mobile stations for intercepting enemy communication. DLRL Director Mr G Boopathi, in this presentation, said the system would be of help to both the Armed Forces and the paramilitary in intercepting communication of terror groups across the border.

Source: Indian Express

ISRO scientists review Chandrayaan-2

Senior scientists at the Indian Space Research Organisation (ISRO) met, to review the country's second unmanned lunar mission, Chandrayaan-2. At the meeting. Scientists evaluated the progress of the mission and discussed the configuration of the satellite, to be launched in 2013. Speaking to Express. ISRO spokesperson Mr Satish said scientists-would meet again in the next couple of days to decide on the num6er of payloads the satellite would carry onboard. He said, the satellite would have an orbital spaceflight and would carry a soft landing system up to Lunar Transfer Trajectory. While ISRO will be developing the orbiter, Russia will develop the lander and the rover, and in addition, there will be payloads developed by foreign space agencies.

Source: Indian Express

Agni II – testing in September

A "totally new missile," called Agni II – is to be tested in September from the Wheeler Island, off the Orissa coast. Developed by the Defence Research and Development Organisation (DRDO), Agni II – has two stages and both are powered by solid propellants. "It has several advanced technologies," sources in the DRDO said. The missile, which can carry nuclear warheads, can be transported by both rail and road. Its range is between 2,750 and 3,000 km. It will thus fill the gap between Agni II, which can cover about 2,500 km, and Agni III that has a range of about 3,500 km. Agni I can hit enemy targets 700 km away. While Agni II and Agni III are two-stage missiles, Agni I is a single-stage one. All are capable of carrying nuclear warheads. The Agni series have proved the re-entry technology developed by the DRDO. When the missile re-enters the atmosphere from the vacuum of space, the nuclear warhead has to be protected from intense heat.

Source: Hindu

India developing laser weapons to target missiles

Move over missiles, rockets and bombs; for India has embarked on an ambitious mission to develop its own laser weapons. In a two-track process, defence scientists are developing a strong laser source to kill enemy missiles and rockets on the one hand and perfecting the technology to control the laser beam for effectively utilising the source as a weapon on the other. "We aim to conduct the trials of a tactical level laser weapon (that can strike an enemy target 5-7 km away) within the next five years," Mr Anil Maini, Director of Laser Science and Technology Centre (Lastec) here, said at a Defence Research and Development Organisation meeting. The idea of using lasers as weapons has been around since it was invented in 1960. But to make an effective weapon, the source has to be strong enough to generate beams producing hundreds of kilowatts of energy. Nobody in the world has perfected a laser weapon for operational use so far. As the defence laboratory planned to develop a 25 kilo watt solid state laser source for its first trial, Mr Maini said it was going to be an arduous task considering that defence scientists so far have developed only a 1kilo watt solid state laser source, which is ideal for field use.

Source: Deccan Herald

IAF to have 42 squadrons by 2022

The Indian Air Force will have 42 squadrons - at least 10 more than the existing strength - in next 12 years. If all goes as per plans, by 2022, the IAF's combat fleet will comprise whole new range of advanced aircraft from Sukhois, multi-role combatants, medium combat aircraft and a fifth generation fighter. A large number of current aircraft, largely the MiG-series would be phased out. There will be more than half a dozen Airborne Early Warning and Control Systems (AWACS), or the eyes in the sky, and a whole new range of transporters and helicopters. But the road to the 2022 plan will not be all that comfortable. Most of the air assets are being procured from foreign vendors. They come with their own problems.

Source: Indian Express

Agni III ready, says Antony

After the Agni I and Agni II surface-to-surface missiles, the 3000-km range Agni III missile is ready for being inducted into the service, PTI reports from New Delhi. "The 700 km range Agni I and 2,000 km range Agni II have been developed and inducted into service. Agni III with a range of 3000 km is ready for induction," Defence Minister Mr A K Antony said in reply to a question in the Lok Sabha. He said the third generation Nag anti-tank missile's user trials have been successfully conducted and the system is ready for induction in to the production phase.

Source: Deccan Herald

Jupiter swallowed small planet to become a giant

Jupiter, the biggest planet in the solar system, might have gained its dominant position after swallowing a smaller planet, scientists believe. Studies on Jupiter have revealed that the giant planet, which is more than 120 times bigger than the Earth, has an extremely small core that weighs just two to 10 Earth masses. Now scientists have claimed that Jupiter's core might have been vaporised in huge collision with a planet up to ten times the size of Earth, the New Scientist reported. Researchers led by Mr Shu

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Lin Li of Peking University in China have modelled what might have happened in the wake of the collision. Their simulations showed that the incoming rocky body flattened like a pancake when it hit the gas giant's atmosphere.

Source: Bangalore Mirror

Prototype for $35 tablet PC from B'lore based startup

IT may not be possible to make a $35 tablet PC, yet, but with a little help from the Chinese and economics of scale playing out for a Bangalore-based company. We might soon have a tablet PC at that price. Allgo Embedded Systems, a Bangalore-based R&D company, has designed a prototype tablet PC that is likely to cost about $50 or about 2,250. The creators claim that with large scale production and low cost manufacturing the costs can be cut to $40. The five-year-old startup has been working on the project codenamed 'Stamp' for about a year-and-a-half its founder Mr K Srinivasan told Express.

Source: Indian Express

CSIR Academy Bill introduced

The government introduced a Bill to establish an academy for advancement of learning and prosecution of research in the field of science and technology in association with the Council of Scientific and Industrial Research (CSIR). The Academy of Scientific and Innovative Research Bill, 2010 tabled in the Lok Sabha by the Minister of State for Science and Technology and Earth Science, seeks to declare the Academy of Scientific and Innovative Research as an institution of national importance. The proposed academy will be allowed to use the infrastructure and scientific manpower of the CSIR for teaching and research purposes and will award degrees or diplomas. It will design curriculum and pedagogy for award of diplomas or certificates and confer degrees and other academic distinctions as it may deem fit. The institute will primarily focus on research and imparting instruction in areas that are not taught in regular academic universities in India, and also provide teaching and research facilities in frontline branches of learning and in emerging areas. It will conduct research in branches of learning like natural sciences, life sciences, mathematical and computational sciences, medical sciences, engineering, applied art, humanities, social sciences and law relating to these areas. The academy will be allowed to appoint people from any other university, institution or industry from appropriate fields of studies as faculty.

Source: Hindu

India will order 42 more Sukhois for Rs 20k crore

India is all set to order another 42 Sukhoi 30MKIs, to add to the 230 such "air dominance" fighter jets already contracted from Russia, at a cost of Rs 20,107 crore. Defence minister Mr A K Antony said 42 new multi-role Sukhois, which will be built at Hindustan Aeronautics Ltd, are slated for delivery during 2014-2018. As first reported by TOI, with both China and Pakistan bolstering their air combat fleets, IAF had asked for the additional 42 Sukhois in order to be prepared for any contingency on both the eastern and western fronts. Having inducted over 110 of the 230 original Sukhois, contracted from Russia in three deals worth upwards of $8.5 billion, IAF has already begun to base these jets in the North-East in a clear move to counter China's rapid modernisation of its armed forces.

Source: Times of India

Air India's aircraft-buy plan hits turbulence as Boeing delays delivery of 787s

Air India's plans for acquiring 27 Boeing 787 aircraft has run into fresh trouble. The airline has not only sought an "immediate refund" of $240 million paid as pre-delivery payment (PDP) for the aircraft, but also a firm delivery schedule listing out the daily financial liability that Boeing will have to pay AI for it to take delivery of the aircraft. Sources said that as a result of the delay in delivery of the Boeing 787, the airline has suffered a great deal on account of sub-optimal utilisation of the existing fleet and missed business opportunities. A letter has been sent to this effect to Boeing. The airline has also indicated that it has no plans of making any more PDP for the Boeing 787. Furthermore, sources indicated that the contract that Air India entered into with Boeing when it signed the deal to purchase the aircraft caps the liability of the aircraft manufacturer at $140 million.

Source: Hindu Business Line

No compensation for delays

Contrary to the general perception, air passengers in India will not be getting any financial compensation for flight delays, no matter how long the delay may be. But from August 15 onwards flyers will be compensated monetarily when the airline denies them boarding despite passengers reporting at the check-in counter on time with a confirmed air ticket. This happens during peak season when airlines overbook their flights. Other than that, financial compensation will be payable only for flight cancellation if it is not for reasons beyond the control of an airline and, then again, only if the airline has not informed you three hours in advance. In short, the DGCA's Independence Day package has very few goodies for the janta. On Friday, the Directorate-General of Civil Aviation (DGCA) issued the Civil Aviation Requirement (CAR), Section 3-Air Transport, listing the facilities to be provided to passengers by airlines for being denied boarding, cancellation of flights and flight delays. The CAR will come into effect on August 15.

Source: Times of India

Boeing plans commercial space taxis by '15

The Boeing Co. plans to be ready to fly commercial space

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taxis from Cape Canaveral to the International Space Station by 2015 and soon will decide where the spacecraft will be manufactured and assembled, officials said Thursday. Designed to launch on United Launch Alliance Atlas or Delta rockets, or perhaps even SpaceX Falcon 9s, the spacecraft also are destined to fly to a commercial space station being developed by Bigelow Aerospace in Nevada. Four test flights — including three from the Space Coast — are targeted to launch in late 2013 and 2014. Florida is competing with Alabama, Texas and Nevada for various parts of the spacecraft work. The number of jobs is still to be determined. Decisions on where work will be done are expected within three months.

Source: Florida Today

Rs.100-cr mission to develop micro air vehicles

The Defence Research Development Laboratory (DRDL), along with scientific institutions, is embarking on a '100-crore mission to develop Micro Air Vehicles (MAVs) which will mimic the flight of birds and carry out surveillance for the Para military Forces during low-intensity conflicts and urban warfare. Delivering the inaugural address at the All India Seminar on 'Micro and Nano Air Vehicles,' Dr Prahlada, Chief Controller Research and Development) of DRDO, said that an amount of Rs.l00 crore for the development of the MAVs was recently approved by the government to assist Para military Forces such as the CRPF, BSF and also the state police and provide instantaneous reactions in minimal time during the anti-terrorist operations, low intensity conflicts and urban warfare. He said that DRDL and the Council for Scientific and Industrial Research (CSIR), along with the participation of universities and industry partners, will work on developing the MAVs which can mimic the flight of birds. "We want those (MAVs) to resemble birds rather than aircraft. The birds have demonstrated that they have high energy efficiency and more endurance.

Source: Indian Express

CAREER

IISc offers course for undergrads

For the first time after its establishment a hundred years ago, the Indian Institute of Science (IISc) has turned its focus on undergraduate students. The institute, which had educational programmes only for post-graduate students and PhD candidates, has decided to start a four-year Bachelor of Science (BS) course in engineering from the next academic year. Sources in the institute said the course is designed for specialisation in six streams - physics, mathematics, chemistry, biology, materials and environmental science. The first three semesters will cover core courses in physics, mathematics, chemistry, biology, humanities and engineering. This will include large components of laboratory demonstrations and hands-on experiments. Specialisation is offered in the next three semesters and the students can choose courses from electives and other areas. The fourth year will have a research project under the supervision of an IISc faculty member.

Source: Bangalore Mirror

EVENTS

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