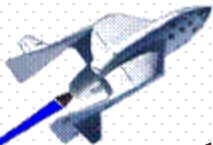


Aviation Exploring Post 107

Aerospace Education And
Youth Development

Somerset Air Service, Inc.
SMQ



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Aviation Exploring is "Learning for Life" sponsored by:
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Aviation Exploring Post 107 has taken off and is on an exciting journey in aerospace. Our journey is documented in our [AEP107 FLIGHT LOGS](#). Our experiences, activities, member information are recorded and published to our membership, alumni, recruits, partners and friends of AEP107, on a monthly basis. The AEP107 Flight Logs are also posted on our website: www.aep107.org. Please send all FLIGHT LOG information / updates to: chairman@aep107.org

YOUTH PROTECTION NOTES: The AEP107 Flight Log does not publish the last names of Aviation Explorers ages 17 and under. The AEP107 Flight Logs are distributed individually via Bcc:

PROGRAM CALENDAR [Return to Contents](#) (activities scheduled to date)

DECEMBER 2006

THU	7	7:30 PM	Business Meeting		SMQ Office
THU	14	7:30 PM	Career Development		SMQ Office
THU	21	7:30 PM	No Meeting		SMQ Office
FRI	15		HANUKKAH Begins	FAMILY	
MON	25		CHRISTMAS	FAMILY	
TUE	26		KWANZAA Begins	FAMILY	
THU	28	6 PM	AVIATION EXPLORING POST 107 2006 SIXTH ANNUAL DINNER CELEBRATING OUR TENTH ANNIVERSARY	 Tom	Sky Manor Airport Pittstown, NJ
			Sky Manor Restaurant		

UP & COMING EVENTS: [Return to Contents](#)

AEP107 10 Year ANNIVERSARY Celebration and Reunion

THU, DEC28, Sky Manor Restaurant, Pittstown, NJ

Invitation: Current Members and their families, Alumni, Recruits, and all of our FRIENDS!

Please Join Us and Celebrate ! ! ! !

- ❑ Dinner is \$17.50 per plate. This includes a buffet dinner and beverages. Please make your check **payable to "Aviation Exploring Post 107, BSA"**.
- ❑ Please either provide your check to me on THU's, DEC 7 or 14 at our meetings or mail to: **AEP107, 2006 Annual Dinner, P.O. Box 197, Bedminster, NJ 07921.**
- ❑ **Please ensure that your checks are received by SUN, DEC17.** We need to provide our number of participants on MON, DEC 18 to the Sky Manor Restaurant.



**AVIATION EXPLORING POST 107
FLIGHT LOG – NOVEMBER 2006**

C5 Flight Simulator Tour (being planned)

NY Air National Guard, Stewarts Airport, New York

We are currently working with the NYANG, Stewarts Airport, to set up a "hands-on" tour of the C5 Flight Simulators. We hope to schedule our visit in DEC.

2007 Raritan Valley – Aviation Merit Badge Program,

SAT, MAY5, 2007, 7:30 AM to 3:00 PM at the Sky Manor Airport, Pittstown, NJ

EAA AirVenture Oshkosh, JUL 23 - 29, 2007

SANTA ARRIVES AT CENTRAL JERSEY AIRPORT!

Saturday December 16th at 11:00 a.m.

- Bring Your Camera!!**
- Have Santa give your child a gift!**
- Bring a wrapped present with your child's full name prior to the 16th**
- and Santa will call out your child's name so they can receive their gift!!**

Millstone Valley Flight School will be conducting a Toy & Food Drive to benefit The Somerset County Network Food Bank.

Please bring new unwrapped toys & non-perishable food donations!

The Central Jersey Airport is located at
1034 Millstone River Rd.
Hillsborough, NJ 08844

[Complete driving directions can be found on the airport web page.](#)

For more information please call 908-526-2822

- The annual Christmas Party will also be held starting at 5PM on Saturday, December 16th.** As usual, everyone is invited!!! We can use some help offsetting the cost of the party. Please see Pat or Denise if you would like to make a donation.

Indoor Model Aircraft Flying, WED, JAN31, FRI, MAR30

4H Facility, Milltown Road, North Branch

Mr. Gene Sellars, 4H Broken Props Club has arranged for two dates for indoor flying. We will have our Cigar Box Soaring Contest, rubber band powered and micro r/c model flying.

THANK YOU!! Gene.

NASA Student Competition: Final entry is due on or before March 15, 2007

High School Competition Objective:

Aviation Exploring Post 107 members, will project the future of air and space transportation for the year 2057, and the technical and scientific challenges that will enable it.

CLASSIFIED [Return To Contents](#)

Somerset Soaring Ventures, Inc. <http://www.somersetsoaring.com>

AEP107 Members – Volunteer Wing Walkers

If you wish to be a Volunteer Wing Walker for FFF, Inc., please contact Jay Hahola at the glider line on **SAT, 12 PM** weather permitting. Jay would like to meet you personally.

AEROSPACE PROGRAM ACTIVITIES [Return To Contents](#)

Dassault Falcon Jet, Corp. Visit, NOV09, 2006

From Left: Bryan, Mrs. Paci, Don Pointer, Brian, Ian



Mr. Don Pointer, Director, Marketing Services and Development, Dassault Falcon Jet Corp, graciously set up tour for our Explorers at their Teterboro Airport facilities

AVIATION EXPLORING POST 107 FLIGHT LOG – NOVEMBER 2006

Don's presentation outlined what Dassault does from manufacturing, aircraft completion, service and marketing. Dassault Falcon Jet is a great place to start a career.

Our tour included an on-board Falcon Jet visit. The Explorers got to sit in the pilot / co-pilot seats and dream. Ian offered to buy a FalconJet. Barbara Paci and I were sitting in the passenger area, and we had to be escorted off. The interior is so beautiful, is like a top hotel or the interior of a Rolls-Royce.

THANK YOU!! Don.

MEET OUR ALUMNI - Return On Investment [Return To Contents](#)

Alumni, please send information about your career continues to develop

AEROSPACE: NEWS [Return To Contents](#)

[Scientists Crack Open Stellar Evolution](#) (*October 31, 2006*) — Using 3-D models run on some of the fastest computers in the world, laboratory physicists have created a mathematical code that cracks a mystery surrounding stellar evolution.

NTSB: Improper Loading Led To Teterboro Accident Operator Also Failed To Maintain Control Over Part 135 Ops

In its final report adopted Tuesday, the National Transportation Safety Board determined the probable cause of a February 2005 corporate jet accident at New Jersey's Teterboro Airport, was the flight crew's failure to ensure the airplane was loaded within weight and balance limits and their attempt to take off with the center of gravity well forward of the forward takeoff limit, which prevented the airplane from rotating at the intended rotation speed.

[First Sunrise On Solar Satellite's Instruments](#) (*November 1, 2006*) — The Hinode (formerly Solar-B) satellite, a joint Japan/NASA/PPARC mission launched on 22nd September 2006, has reported its first observations of the Sun with its suite of scientific instruments. The satellite was renamed "Hinode" which is Japanese for Sunrise, which is most appropriate since Hinode will watch at close hand massively explosive solar flares erupting from the Sun's surface and rising into interstellar space.

Space Station Crew Repairs Main Oxygen Generator

By [Tariq Malik](#), Staff Writer, posted: 1 November 2006, 11:47 a.m. ET
http://www.space.com:80/missionlaunches/061101_exp14_elektron.html


Astronauts aboard the [International Space Station](#) (ISS) restored the outpost's balky oxygen generator Tuesday after a series of repair efforts by [cosmonaut Mikhail Tyurin](#).

Tyurin, a flight engineer with the space station's [Expedition 14](#) crew, worked with Russian mission controllers to bring the orbital laboratory's [Elektron oxygen generator](#) back online, NASA spokesperson Lynette Madison told *SPACE.com*.

"After running without a hitch...the Elektron was deliberately shut off by Russian flight controllers to get additional data on valve and electrical continuity behavior," Madison said, adding that the device—the primary oxygen generator aboard the ISS—is slated for reactivation later today.

Located in the space station's [Zvezda service module](#), the Russian-built Elektron device [[image](#)] separates water into its component oxygen and hydrogen via electrolysis. The oxygen supports the station's three-astronaut Expedition 14 crew while the hydrogen is dumped overboard.

NASA to repair, upgrade Hubble

NASA will send space shuttle astronauts on a mission to repair and upgrade the Hubble Space Telescope as early as 2008, NASA Administrator Michael Griffin said Tuesday. A crew of seven will capture the observatory in its 380-mile-high orbit and conduct five spacewalks to replace its batteries and stabilizing gyroscopes. The mission is expected to last 11 days and cost \$900 million. Repairs will allow the telescope to continue working through 2013.  [AP-T/ClipSyndicate](#) (11/1), [The New York Times](#) (free registration) (11/1)

AVIATION EXPLORING POST 107 FLIGHT LOG – NOVEMBER 2006

Boeing finishes design for new freighter

Boeing has completed the basic design for its 747-8 freighter, a longer, more fuel-efficient version of its 747. The company has booked 44 orders for the cargo version of the plane. It has yet to receive an order for the passenger version but is in talks with several airlines. [San Diego Union-Tribune/Associated Press](#) (10/31), [Reuters](#) (10/31)

FAA uncovers pattern of pilot confusion in identifying runways

Aviation experts are analyzing a pattern of pilot confusion in identifying runways in the U.S. Nicholas Sabatini, head of safety for the FAA, says the agency is working with NASA to develop new analytical tools. Industry experts and the FAA have discovered 117 runway-related incidents. [The Wall Street Journal](#) (subscription required) (11/2), [The New York Times](#) (free registration) (11/3), [International Herald Tribune/Associated Press](#) (11/3)

Aerospace firms flock to China show

AFP AND AP, ZHUHAI, CHINA, Wednesday, Nov 01, 2006, Page 10

<http://www.taipeitimes.com/News/worldbiz/archives/2006/11/01/2003334327>

The biggest companies in the global aerospace industry gathered yesterday for the start of China's only international air show, all vying for a slice of the booming Chinese aviation market.

The chiefs of civil and military aircraft manufacturers, parts suppliers and designers were among the thousands of delegates to the Sixth China International Aviation and Aerospace Exhibition in Zhuhai, Guangdong Province.

It is also being attended by 550 exhibitors from 33 countries and regions.

Included in the list of exhibitors are US plane maker Boeing, its European rival Airbus Industries, French military giant Dassault Systemes and Russia's Tupolev.

Pennsylvania Governor Grants \$5 Million To GA Airports

Says "Many Don't Realize The Value Of General Aviation"

In a rare case where a politician isn't dumping on general aviation or threatening to close down another airport, Gov. Edward G. Rendell of Pennsylvania announced last Friday the investment of \$5 million to help 12 airports with improvement projects to expand and improve terminals, runways, and hangars.

Plane maker Scrambles For Answer To 787 Challenge

Airbus Considers Composites For A350 Fuselage

Are composites the answer for Airbus? There is mounting evidence that Airbus thinks so.

This would be a radical departure for a company that's publicly upbraided Boeing for its all-composite 787 Dreamliner. Airbus has accused Boeing of "pushing the technology envelope" with the 787.

Now, according to Bloomberg, Airbus is considering a composite fuselage for the A350.

[Researchers Explore Medicine In Space, The Final Frontier](#) (November 5, 2006) — Preliminary findings from a University of Florida study show there is little difference in the dose of general anesthesia needed to anesthetize patients in weightless or normal gravity environments. It's a step forward, but just one of many hurdles researchers face in trying to establish proper medical protocols in space.

Boeing says it can lighten 787

Boeing says it can lighten its hot-selling 787 by 2.5 tons, a move that will make the plane the most fuel-efficient airliner in its category. Boeing executives say the weight issue has forced it to boost research and development spending on the plane by \$300 million. [International Herald Tribune/Associated Press](#) (11/6), [Air Transport World](#) (11/7), [Reuters](#) (11/7)

Airbus to cut suppliers by 80%

Airbus will reduce its number of suppliers from 3,000 to 500. The move is part of the jetmaker's restructuring plan. Airbus hopes to cut costs by \$2.54 billion annually by 2010. [The Wall Street Journal](#) (subscription required) (11/7)

FedEx Delivers First A380 Cancellation To Airbus Switches To Boeing 777 Freighters

AVIATION EXPLORING POST 107 FLIGHT LOG – NOVEMBER 2006

Well, we knew it was coming... but it's from a somewhat unexpected source. On Tuesday, international parcel carrier FedEx announced it is cancelling its orders for 10 freighter variants of the oft-delayed Airbus A380. That's the first cancellation after Airbus [announced in September](#) deliveries of the mammoth airliner would be delayed an additional 11 months.

FedEx also announced it has ordered 15 Boeing 777-200 Freighters, with options for 15 more, to replace the A380-800Fs.

BA609 Tiltrotor Second Prototype Achieves First Flight



Fri, 10 Nov '06

The Bell/Agusta BA609 a/c 60002 performed its first flight on November 9th at AgustaWestland's facility located on the Italian Air Force airfield at Cameri, Italy. The first flight was completed successfully at 15.07 with Mr. Pietro Venanzi, Pilot and Mr. Herb Moran, Co-pilot onboard.

The rotorcraft performed left and right peddle turns, forward and aft flight maneuvers, several take-offs and landings, nacelle position changes and stability testing during the flight which lasted 52 minutes. Further flight test activities will take place during the next months in accordance with the test plan.

Space Law - Who owns and regulates space and why are space laws necessary?

Thursday, November 9, 2006, Source: [European Space Agency, Vodcast](#)

Prof. René Oosterlinck, ESA Director of External Relations explains how the issues of space law first arose during the Cold War, with the launch in 1957 of the Russian Sputnik, the world's first satellite, closely followed by the first American satellite. The race was on to be first on the Moon and no sovereignty rights existed in outer space.

Cessna Aircraft Books 115 Jet Orders Worth More than \$1 Billion at NBAA: Textron Businesses Make Headlines with Business Aviation Offerings

Wednesday, November 15th, 2006 and is archived under [Business & GA](#).

Providence, RI – October 20, 2006 – Textron Inc. (NYSE: TXT) today reported that its Cessna Aircraft business yielded strong customer orders and new business opportunities resulting from products announced and/or showcased at the National Business Aviation Association (NBAA) convention, held this week in Orlando, Florida. In total, Cessna received 115 jet orders worth more than \$1 billion and expects that these agreements will be finalized and enter backlog. Combined with pre-show agreements, the company has already booked over 160 orders for the fourth quarter.

Heineken To Track Beer By Satellite

By Bill Christensen, posted: 07 November 2006, 01:35 pm ET

Do you know where your beer is? Dutch beer maker Heineken wants to make sure - so it has put together a team that includes IBM and the University of Amsterdam to track beer by satellite.

Beer Living Lab is a pilot project that will track 20 beer containers shipped from the Netherlands to Heineken's UK distribution centre. Each container will be outfitted with GSM, GPRS and global positioning systems. Satellite uplinks will be provided due to particular [technical problems with RFID](#), which can only be read when the tag is close to a [RFID reader](#).

UNREAL AIRCRAFT

<http://www.unrealaircraft.com/index.php>

Unreal Aircraft features unique and unusual aircraft like twin-fuselage Mustangs, Canadian flying saucers, gravity-defying VTOL airplanes and even personal rocket packs.

Boeing may use composites to lighten 747-8 Intercontinental

Boeing may use composites to reduce the weight of its 747-8 Intercontinental. The change would give the plane extra range Emirates requires for its Dubai-U.S. West Coast flight. [Air Transport World](#) (11/13)

France hands \$186 million to aerospace industry battered by A380 woes

By [Victoria Moores](#), 17/11/06, [Flightglobal.com](#)

AVIATION EXPLORING POST 107 FLIGHT LOG – NOVEMBER 2006

French prime minister Dominique de Villepin has set aside €145 million (\$186 million) to boost the French aerospace sector, €80 million of which will be used to assist French aerospace subcontractors that have been affected by delays to the Airbus A380 programme.

Nanotechnology in space: Carbon nanotubes harden electronics for use in aerospace **November 19, 2006, 8:15:10 PM**

The electrical properties of CNTs are extremely sensitive to defects which can be introduced during the growth, by mechanical strain, or by irradiation with energetic particles such as electrons, heavy ions, alpha-particles, and protons. When highly energetic particles collide, a latchup, electrical interference, charging, sputtering, erosion, and puncture of the target device can occur. Therefore the information on the effects of various types of high energetic irradiation on CNTs and other nanomaterials will be important in developing radiation-robust devices and circuits of nanomaterials under aerospace environment. As a result, degradation of the device performance and lifetime or even a system failure of the underlying electronics may happen. Researchers in South Korea conducted a systematic study of the effects of proton irradiation on the electrical properties of CNT network field effect transistor (FET) devices showing metallic or semiconducting behaviors. The most important outcome of this work is that no significant change in the electrical properties of CNT-based FET was observed, even after high-energy proton beam irradiated directly on the device. This result show that CNT-based devices can be a promising substitute for classical silicon-based devices, which are known to be very fragile against proton radiations

global Growth

Business jet makers see enormous potential overseas

BY MOLLY MCMILLIN, The Wichita Eagle, Posted on Sun, Nov. 26, 2006

<http://www.kansas.com/mld/eagle/business/industries/aviation/16097891.htm>

Zhang Yue's company, Broad Air Conditioning, was the first industrial company in China to own a business jet. The company, in Hangzhou, Zhejiang province, now owns two Cessna Citations.

The use of business jets in mainland China is limited -- only 40 corporate jets are based in the entire country. But that figure is expected long term to grow to about 300, according to Bombardier Aerospace. Worldwide, demand for business jets is surging, especially in Europe.

National Aerospace Labs sets up carbon fibre unit in B'lore

<http://economictimes.indiatimes.com/articleshow/563995.cms>

TIMES NEWS NETWORK [SATURDAY, NOVEMBER 25, 2006 02:50:29 AM]

HYDERABAD: The National Aerospace Laboratories (NAL) has set up the country's first carbon fibre manufacturing facility in Bangalore at an investment of about Rs 30 crore.

The plant will produce 20 tonne fibre per annum which would be used for light combat aircraft (LCA), missile and space programmes. NAL is currently in talks with private agencies for managing and operating the facility.

"Carbon fibre composites are extremely light and can address various issues related to the weight of an LCA or a missile. India imports carbon fibre from other countries, at present. It has many applications in aerospace and automobile industry," said A R Upadhyaya, director of NAL.

Space Elevator 2007 Competition Registration Open and new Rulebooks

Monday, November 20, 2006, 1:46:04 PM | cosmosweb@aterra.com (MarcBoucher)

Ben Shelef at the [Spaceward Foundation](#) informs us today that registration is now open for the [2007 Climber \(Power Beaming\) Competition](#) and [2007 Space Elevator Tether Competition](#). If you register by February 1st the fee is \$500 for limited registration and \$2500 for full registration for the Power Beaming (Climber) competition and \$2500 registration fee for the Tether competition.

AEROSPACE: THE FUTURE [Return To Contents](#)

Z Machine Melts Diamond To Puddle In Experiments On Capsule For Nuclear-fusion Fuel

Sandia National Laboratories, November 3, 2006

Sandia's Z machine, by creating pressures more than 10 million times that of the atmosphere at sea level, has turned a diamond sheet into a pool of liquid.

<http://www.sciencedaily.com/releases/2006/11/061103104056.htm>

The object of the experiment was to better understand the characteristics of diamond under the extreme pressure it would face when used as a capsule for a BB-sized pellet intended to fuel a nuclear fusion reaction.

The experiment is another step in the drive to release enough energy from fused atoms to create unlimited electrical power for humanity. Control of this process has been sought for 50 years.

Half a bathtub full of seawater in a fusion reaction could produce as much energy as 40 train cars of coal.

Space Sunshade Might Be Feasible In Global Warming Emergency (November 5, 2006) —

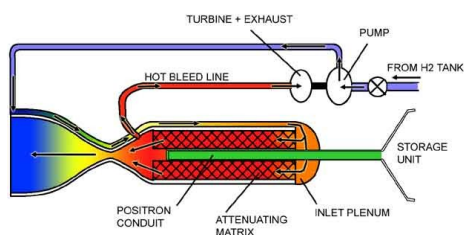
Developing renewable energy is the only permanent solution to global warming, University of Arizona astronomer Roger Angel concludes. But should Earth be faced with an abrupt climate crisis, a space sunshade is a technically feasible solution.

NASA Research Team Successfully Flies First Laser-Powered Aircraft

Ever since the dawn of powered flight, it has been necessary for all aircraft to carry onboard fuel whether in the form of batteries, fuel, solar cells, or even a human "engine" in order to stay aloft.

They have now chalked up a major accomplishment ... and a "first." The team has developed and demonstrated a small-scale aircraft that flies solely by means of propulsive power delivered by an invisible, ground-based laser. The laser tracks the aircraft in flight, directing its energy beam at specially designed photovoltaic cells carried onboard to power the plane's propeller.

A New Antimatter Engine Design



Written by Iddo Genuth Sunday, 29 October 2006

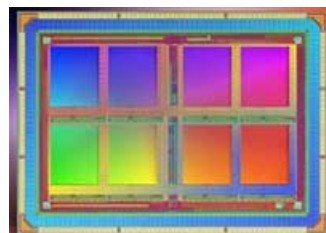
A team of scientists is currently working with NASA to develop a new form of space propulsion technology based on positrons. This revolutionary antimatter engine will require only a few milligrams of positrons to send a spaceship to Mars. Facing many hurdles along the way, this is the first time some of the real problems of building a real antimatter engine are being confronted

ABRAcadabra - AirBorne ReArming

Written by Iddo Genuth Saturday, 14 October 2006

The technology for rearming aircraft with weapons in midair might soon be a reality. This revolutionary technology would enable combat missions, currently requiring dozens of aircraft, to be performed by very few, and to carry out numerous missions by unmanned combat aircraft without returning to base. Airborne rearming might prove to be as significant as the airborne refueling revolution that occurred half a century ago.

MRAM – The Birth of the Super Memory



Contributed by Iddo Genuth & Lucille Fresco-Cohen Friday, 10 November 2006, <http://www.freescale.com>

In early July 2006, Freescale Semiconductor announced the first commercial availability of a new type of memory with the potential to surpass most existing types in terms of speed, power consumption, and durability. This article reviews the advantages of MRAM and its future potential.

<http://www.mram-info.com>

AVIATION EXPLORING POST 107 FLIGHT LOG – NOVEMBER 2006

Hello, and welcome to mram-info.com! This site focuses on Magnetic RAM, a new memory technology that promises to provide non-volatile, low-power, high speed and low-cost memory. Often described as the 'holy-grail' of memory, MRAM has the potential to replace FLASH, RAM and even Hard-discs.

Buckypaper – Nanotubes on Steroids <http://www.tfot.info/content/view/74/61/>

Contributed by Iddo Genuth & Lucille Fresco-Cohen Monday, 25 September 2006



Though widely researched for many years, the transfer of nanotube properties to composite materials to produce high performance composites has proved a difficult feat. Research for the past five years at the Florida Advanced Center for Composite Technologies on the further development of a novel pure nanotube material, called **buckypaper, might soon enable the manufacturing of stronger and lighter aircraft with larger payloads and greater fuel**

efficiency. In the more distant future, lighter cars with better fuel efficiency and even materials for improved thermal management of computers are envisioned.

Subvocal Speech - Speaking Without Saying a Word

Written by Iddo Genuth Thursday, 12 October 2006



In two years time a technology that will enable users to speak without uttering a sound might become commercially available. The ability to communicate silently could assist us in every day situations such as a phone conversation on a crowded subway or simply anytime we'd prefer that others wouldn't hear us. It could aid security and special operations forces, people with vocal cord problems, and might even find a place in gaming.

Landing Safely with a Broken Airplane

NeuroEngineering Laboratory at NASA Ames Research Center

http://www.aero-space.nasa.gov/news/vol2_iss3/landing.htm

Modern commercial aircraft are among the safest transportation systems ever designed. But even with their track record of successful operation, aircraft remain vulnerable to failures of flight control systems, whether due to accident or equipment malfunction. Post-accident analyses of catastrophic flight control accidents show that stricken aircraft usually retain some working control surfaces at the time of the crash. Given enough time, a skilled pilot can determine how to compensate for the loss of a control surface, but there is usually not enough time during an aircraft emergency for a human pilot to determine the nature of the failure and adapt to compensate for the loss.

Bridging Neurons And Electronics With Carbon Nanotubes

John Wiley & Sons, Inc, November 13, 2006

<http://www.sciencedaily.com/releases/2006/11/061112094819.htm>

New implantable biomedical devices that can act as artificial nerve cells, control severe pain, or allow otherwise paralyzed muscles to be moved might one day be possible thanks to developments in materials science. Writing in *Advanced Materials*, Nicholas Kotov of the University of Michigan, and colleagues describe how they have used hollow, submicroscopic strands of carbon, carbon nanotubes, to connect an integrated circuit to nerve cells. **The new technology offers the possibility of building an interface between biology and electronics.**

AVIATION EXPLORING POST 107 FLIGHT LOG – NOVEMBER 2006

Ceramic capacitor prevents short-circuit failures

Posted : 20 Nov 2006

[AVX](#) Corp. has designed a ceramic capacitor that virtually eliminates the risk of short-circuit failure. Terminated with the company's [Flexiterm](#) technology, [Flexisafe](#) capacitors absorb shock and prevent internal cracking due to board flexure and temperature cycling damage.

Space Mirrors May Create Martian 'Pocket-Eden'

Technovelgy.com, By Bill Christensen, posted: 18 November 2006,, 08:38 am ET

One of the problems that explorers on Mars will face is low surface temperature. Although the surface temperature on Mars can rise above freezing in the summer, the mean temperature is about -60°C (-90°C at night). Mars' orbit is highly elliptical which leads to even greater cold in winter - temperatures as low as -110°C on the poles.

Rigel Woida, an engineering student at Arizona State University in Tucson, has been awarded a \$9,000 NIAC (NASA Institute for Advanced Concepts) Student Fellows Prize to study the use of large orbital mirrors to heat a small area of the Martian surface. Raising the temperature in a 150 acre patch would make it easier and more economical for humans to study the Red Planet.

Samsung Introduces World's Slimmest Mobile LCD Screen

04:56 PM, November 21st 2006, by Mihai



[Samsung](#) revealed that it has developed the thinnest reported [LCD panel](#), one no thicker than a credit card at 0.82mm, which is 0.07mm thinner than the panel previously reported to be the world's slimmest. The company also announced that it has developed a new [mobile technology](#), which it is calling, "i-Lens", for integrating the entire panel assembly, including a protective layer, into a single, thinner module that is more shock-resistant and easier to read than conventional panels.

To achieve the slimmer package size, Samsung's Mobile Display Team redesigned the light guide plate subassembly and the glass substrate, which accounted for most of the LCD module's thickness.

Bigelow Orbital Modules: Accelerated Space Plans

By [Leonard David](#), Senior Space Writer, posted: 22 November 2006, 06:22 am ET

The success of Bigelow Aerospace's [Genesis 1](#) module, which has been operating in orbit since July 12, has put the company well ahead in its [plans for bigger](#) and more capable modules that eventually will host visitors in orbit.

Astronomers using the H.E.S.S. telescopes have discovered the first ever gamma ray clock

PRESS RELEASE, Date Released: Monday, November 27, 2006

Source: [Particle Physics and Astronomy Research Council](#)

<http://www.spaceref.com/news/viewpr.nl.html?pid=21359>

Astronomers using the H.E.S.S. [telescopes](#) have discovered the first ever modulated signal from space in Very High Energy Gamma Rays - the most energetic such signal ever observed. Regular signals from space have been known since the 1960s, when the first radio pulsar (nicknamed Little Green Men-1 for its regular nature) was discovered. This is the first time a signal has been seen at such high energies - 100,000 times higher than previously known - and is reported today (24th November) in the Journal Astronomy and Astrophysics.

Researchers Shine Light On Atomic Transistor

November 29, 2006, 11:00:00 PM

Researchers from TU Delft and FOM Foundation have successfully measured transport through a single atom in a transistor. This research offers new insights into the behavior of so-called dopant atoms in silicon. The researchers are able to measure and manipulate a single dopant atom in a realistic semi-conducting environment. The individual behavior of dopant atoms is a stumbling block to the further miniaturisation of electronics. The work is published in Physical Review Letters.

PICTURE(S) OF THE MONTH [Return To Contents](#)

Concept design of an ultra low noise, fuel efficient aircraft (Year 2030)

<http://silentaircraft.org/sax40>

The concept aircraft SAX-40 (Silent Aircraft eXperimental) is a result of an iterative design process (SAX-01 to SAX-40) to achieve low noise and improved fuel burn.



We predict:

- ❑ 149 passenger-miles per UK gallon of fuel (compared with about 120 for the best current aircraft in this range and size). This is equivalent to the Toyota Prius Hybrid car carrying two passengers.
- ❑ A noise of 63 dBA outside airport perimeter. This is some 25dB quieter than current aircraft

