

[書評] (続き) “A BRIEF HISTORY OF TIME” 「ホーキング、宇宙を語る」

ペーパーバックの“A BRIEF HISTORY OF TIME”(Hawking)を読みかけたら、訳本が「ホーキング、宇宙を語る」として文庫で出されているのに気づき、さっそく Amazon.com 中古マーケットから165 円+送料 340 円で入手、そちらを読み始めた。

朝出勤時は江ノ電の中で PC 上の聖書を読み、夕方帰宅時に再び江ノ電でこの文庫本を読んでいる。基礎的な事が暗記的かつ断片的にしか理解できていないので、もう一度脳を活性化しながら味わうことができれば面白い。部分理論の統合化により、宇宙全体の仕組みを説明できるようなシンプルな大統一理論は未だ遙か彼方だとすると、凡人は部分理論の素人向け解説をあれこ

れ思い巡らすことになる。それはそれとして知的楽しみとして、人生の目的や人間のもつ精神面へのガイドとしては別の糧を要するであろう。幼児に人間のこうした別の側面を教える場で、親が擬人的な神や動物を語るというのは、物事の大局的な見方としては非常に判りやすい方法かと思う。単独では存在しないし、個別に分離できない素粒子とその先の世界はまさに、抽象的理解力に依存する。深い理解をもつ人の解きほぐした説明を信じるという形で納得した気にならざるを得ないというのは科学でありながら、信仰にも一脈通じるのかと思うことしきりである。

Civil space missions in 2005

| State    | Sapcecraft Name     | Mission        | Launch Vehicle  | Orbit     |
|----------|---------------------|----------------|-----------------|-----------|
| China    | Shenzhou 6          | Science        | Chang Zheng 2F  | LEO       |
| China    | Beijing-1           | Imaging        | Kosmos 11K65M   | LEO       |
| ESA      | Sloshsat-FLEVO      | Technology     | Ariane 5ECA     | MEO       |
| ESA      | Maqsat-B2           | Technology     | Ariane 5ECA     | MEO       |
| ESA      | SSETI Express XO-53 | Technology     | Kosmos 11K65M   | LEO       |
| ESA      | Venus Express       | Planetary      | Soyuz-FG        | Planetary |
| ESA      | Giove A             | Navigation     | Soyuz-FG        | MEO       |
| EUMETSAT | MSG 2               | Meterological  | Ariane 5GS      | GEO       |
| India    | Cartosat-1          | Imaging        | PSLV            | LEO       |
| India    | VO-52 HAMSAT        | Communications | PSLV            | LEO       |
| India    | Insat 4A            | Communications | Ariane 5GS      | GEO       |
| Iran     | Sinah-1             | Imaging        | Kosmos 11K65M   | LEO       |
| Japan    | Suzaku              | Science        | M-V             | LEO       |
| Japan    | Kirari              | Communications | Dnepr           | LEO       |
| Japan    | Reimei              | Technology     | Dnepr           | LEO       |
| Japan    | Cubesat XI-V        | Communications | Kosmos 11K65M   | LEO       |
| Russia   | Universitetskiy     | Science        | Kosmos 11K65M   | LEO       |
| Russia   | Progress M-52       | Space Station  | Soyuz-U         | LEO       |
| Russia   | TNS-0 Nanosputnik   | Space Station  | Soyuz-U         | LEO       |
| Russia   | Soyuz TMA-6         | Space Station  | Soyuz-FG        | LEO       |
| Russia   | Foton-M No. 2       | Science        | Soyuz-U         | LEO       |
| Russia   | Progress M-53       | Space Station  | Soyuz-U         | LEO       |
| Russia   | Progress M-54       | Space Station  | Soyuz-U         | LEO       |
| Russia   | Soyuz TMA-7         | Space Station  | Soyuz-FG        | LEO       |
| Russia   | Progress M-55       | Space Station  | Soyuz-U         | LEO       |
| Russia   | Gonets-D1           | Communications | Kosmos -11K65M  | LEO       |
| US       | Deep Impact         | Planetary      | Delta 7925 -9.5 | Planetary |
| US       | DART                | Technology     | Pegasus XL/HAPS | LEO       |
| US       | NOAA 18             | Meterological  | Delta 7320 -10C | LEO       |
| US       | Raffaello           | Science        | Space Shuttle   | LEO       |

|           |                             |               |               |           |
|-----------|-----------------------------|---------------|---------------|-----------|
| <b>US</b> | Discovery ( STS-114)        | Space Shuttle | Space Station | LEO       |
| <b>US</b> | Mars Reconnaissance Orbiter | Planetary     | Atlas V 401   | Planetary |

Jonathan McDowell, [Satellite Database](#).

via [Space Security 2005 Briefing Notes](#) <http://www.spacesecurity.org/BN-CivilSpaceProgramsAndGlobalUtilities.pdf>

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### Commercial space launches in 2005

| Satellite name      | State owner   | Owner        | Manufacturer  | Launch vehicle   | Launching organization | Launching state |
|---------------------|---------------|--------------|---------------|------------------|------------------------|-----------------|
| Anik F1R            | Canada        | Telesat      | Astrium       | Proton-M /Briz-M | Krunichev              | Russia          |
| Apstar 6            | <b>China</b>  | APT          | Alcatel /Cann | Chang Zheng 3B   | CASC                   | China           |
| Telkom 2            | Indonesia     | PT Telkom    | Orbital       | Ariane 5 ECA     | Arianespace            | France          |
| Ekspress AM-2       | <b>Russia</b> | GPKS         | NPO PM        | Proton-K /DM-2M  | Krunichev              | Russia          |
| Ekspress AM-3       | <b>Russia</b> | GPKS         | NPO PM        | Proton-K /DM-2   | Krunichev              | Russia          |
| Monitor-E No. 1     | <b>Russia</b> | Krunichev    | Krunichev     | Rokot            | KVR                    | Russia          |
| Rubin-5             | <b>Russia</b> | OHB /Polyot  | OHB System    | Kosmos 11K65M    | KVR                    | Russia          |
| Thaicom 4           | Thailand      | Shin         | Loral         | Ariane 5 GS      | Arianespace            | France          |
| Inmarsat 4 F1       | UK            | INMARSAT     | Astrium /Toul | Atlas V 431      | ILS/LMA                | USA             |
| Intelsat Americas 8 | UK            | Intelsat     | Loral         | Zenit-3SL        | SeaLaunch              | USA /Ukraine    |
| Inmarsat 4 F2       | UK            | INMARSAT     | Astrium /Toul | Zenit-3SL        | SeaLaunch              | USA /Ukraine    |
| AMC 12              | <b>US</b>     | SES Americom | Alcatel       | Proton-M /Briz-M | ILS/K                  | Russia          |
| XM Radio 3 (Rhythm) | <b>US</b>     | XM Radio     | Boeing /ES    | Zenit-3 SL       | SeaLaunch              | USA /Ukraine    |
| Spaceway 1          | <b>US</b>     | DirecTV      | Boeing /ES    | Zenit-3 SL       | SeaLaunch              | USA /Ukraine    |
| DirectTV-8          | <b>US</b>     | DirecTV      | SS /Loral     | Proton-M /Briz-M | ILS /K                 | Russia          |
| Galaxy 14           | <b>US</b>     | Panamsat     | Orbital       | Soyuz-FG         | Starsem                | France          |
| Galaxy 15           | <b>US</b>     | Panamsat     | OSC           | Ariane 5 GS      | Arianespace            | France          |
| Spaceway 2          | <b>US</b>     | DirecTV      | Boeing /ES    | Ariane 5 ECA     | Arianespace            | France          |
| AMC 23              | <b>US</b>     | SES Americom | Alcatel       | Proton-M /Briz-M | ILS /K                 | Russia          |

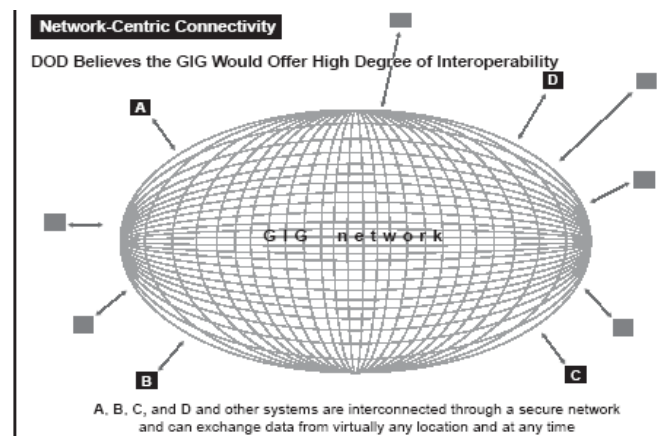
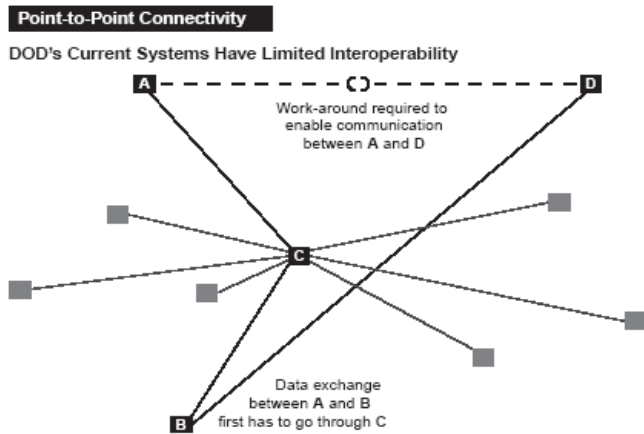
Jonathan McDowell, [Satellite Database](#). via [Space Security 2005 Briefing Notes](#) <http://www.spacesecurity.org/BN-CommercialSpace.pdf>

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[Aerospace Daily & Defense Report](#) Feb 9, 2006

**GIG (Global Information Grid) の有無による通信交換の比較**

## Comparison of communications exchanges with and without the GIG



Aerospace Daily & Defense Report Feb 9, 2006

### ロッキードマーチンはデュアル・ユース・IR センサを目指す

#### Lockheed targets dual-use IR sensors

Lockheed Martin is seeking to increase the use of its infrared sensor technology to provide threat detection and situational awareness capabilities on aircraft.

The company's goal is to produce IR sensors that not only detect incoming threats like missiles, but develop data on ground targets that can be downloaded and analyzed as part of a net-centric battle capability. Lockheed maintains that IR sensors, which would in many applications compete with UV threat-detection systems, can be a powerful tool for developing situational awareness. Building on the IR sensor and electrooptical targeting system (EOTS) technologies in its Sniper Advanced Targeting Pod, Lockheed is considering strategies for applying these capabilities to other platforms.

Morri Leland, business development manager for fire-control systems, says that while dozens of companies supply IR systems, Lockheed is one of a handful able to develop "high-end, sophisticated IR sensors with multi-use capabilities." Leland made his remarks at a press briefing Feb. 1, prior to the Air Force Association's 22nd annual Air Warfare Symposium in Orlando,

Fla., and in an interview afterward.

Leland says the IR sensors in Lockheed's Sniper pod are powerful enough to zero in on targets from 45,000 feet and distances of 45 miles. Accuracy is reportedly unaffected by the dynamics of flight. In a dual-use mode, aircraft on routine flights could use the sensors to transmit data on ground activity to troops or a central command.

The first effort to provide dual-use IR sensors could be a spiral upgrade of the threat-detection systems on C-5, C-17 and C-130 aircraft. The project, called "Large Aircraft IR Countermeasures," or LAIRCM, will replace UV sensors on the planes. Lockheed is vying with Northrop Grumman for the contract. Leland says IR sensors are more powerful than UV and so would detect threats earlier, increasing reaction time and the use of countermeasures. The concept of dual-use IR sensors is in its infancy, but Leland says applications will be limited by creativity. "With the onset of net-centric warfare, there is renewed emphasis on visibility and intelligence." IR sensors can produce both, he says. — Pat Toensmeier

Aerospace Daily & Defense Report Feb 9, 2006

### FY2006 には軍は戦域にロボット 4,000 個を計画

#### Military projects 4,000 robots in theater in FY '06

The U.S. military is projecting that there will be 4,000 robotic systems in Iraq and Afghanistan before the end of fiscal 2006, as compared to 2,400 systems in theater today. There will be 22 different robots, ranging from iRobot's PackBot and the Rapid

Equipping Force's MarcBot, to larger systems such as the Panther — a modified Abrams tank equipped with a countermine flail. U.S. military forces are using robots for improvised explosive device (IED) disposal, force protection, countermine, and urban

operations missions.

More than 1,000 new MarcBots are scheduled to be produced and shipped overseas, according to Marine Corps Col. Edward Ward, who manages logistics for the Joint Robotic Repair Facility (JRRF). The JRRF is repairing and maintaining robots currently in theater from locations at Camp Victory, Baghdad, and Baghram Air Base in Afghanistan.

The JRRF will repair a robot or provide a replacement within four hours, Ward said during the Association for Unmanned Vehicle Systems International's Unmanned Systems Program Review in Washington Feb. 7. With a staff of eight technicians, the JRRF repairs 100-150 robots and consumes \$2 million in spares each month. . Jefferson Morris (jeff\_morris@AviationNow.com)

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**Aerospace Daily & Defense Report Feb 9, 2006**

**アリアンスペースはクーラーからソユーズでロシアの衛星を打上げるかもしれない**

**Arianespace may launch Russian satellite on Soyuz from Kourou**

Arianespace is talking to the Russian **Satellite** Communications Company (RSCC) about launching its Express domestic communications **satellites** on the Soyuz rocket from Kourou, once launch facilities for the venerable Russian rocket are completed there in 2008.

"We are considering to launch Russian domestic spacecraft from French Guiana, once the launch pad is built," Jean-Yves LeGall, Arianespace CEO, said in an interview in Washington Feb. 7. "So we have a real momentum of the cooperation with the Russians, and I should say that both Europe and the Russians are very excited about this cooperation."

Such a step would help meet European complaints about Russia not playing its part in the strategic launcher agreement signed last year between the European Space Agency and the Russian space agency Roscosmos, which includes the new Soyuz pad in Kourou. The Europeans are particularly unhappy about Russian support for the Land Launch enterprise being mounted by the partners in Sea Launch. That plan to launch payloads on a version of the Sea

Launch Zenit rocket from the Baikonur Cosmodrome would compete with Soyuz boosters launched from Kourou. LeGall discounted the threat to the potential Soyuz business from Land Launch, arguing that Zenit's launched from Baikonur have a poor success rate and are unlikely to eat into the market for the highly reliable Soyuz. LeGall said discussions about orbiting Russian payloads from the new Soyuz facility in French Guiana "probably" involves the Express geostationary communications spacecraft built by RSCC. The Russian company likely would be the customer for Soyuz services from the new site, although the Arianespace CEO stressed that nothing has been decided yet. "It is an option which is in my opinion quite interesting," he said. "It is not yet decided. Today the customer for this type of spacecraft is RSCC in Russia, so we are entering in a study phase."

Frank Moring, Jr. (frank\_moring@aviationnow.com)

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**Aerospace Daily & Defense Report Feb 9, 2006**

**NASA グリフィン長官、NASA の広報記事は科学者の作成に基づいてとの指示**

**Griffin orders NASA PR to leave scientists alone**

NASA Administrator Michael Griffin has ordered agency public affairs officers not to spin public statements by scientists working with agency funds.

"It is not the job of public affairs officers to alter, filter or adjust engineering or scientific material produced by NASA's technical staff," Griffin says in an e-mail sent to all NASA employees. He was responding to complaints from the agency's top climate expert that headquarters public affairs officials had tried to stifle his contention that more needs to be done to mitigate global

warming.

Separately, Griffin denied that White House Chief of Staff Andrew Card had ordered him to silence James E. Hansen, director of the Goddard Institute for Space Studies, as some at the agency believed (Aviation Week & Space Technology, Feb. 6). Top NASA public affairs officers Joe Davis and David Mould echoed Griffin's denial about Card, while George Deutsch — a junior NASA spokesman quoted in news accounts on the issue as declaring his job was "to make the president look good"

resigned.

Griffin stressed that “there must be cooperation and coordination between our scientific and engineering community and our public

affairs officers,” and promised new procedures for releasing information. Frank Moring, Jr.

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**Aerospace Daily & Defense Report Feb 9, 2006**

### 激変にも係わらず J-UCAS 開発は継続

#### J-UCAS vehicle development continuing despite upheaval

Development of the Boeing X-45C and Northrop Grumman X-47B Joint Unmanned Combat Air System J-UCAS) vehicles is continuing for now with available fiscal 2006 funding, despite uncertainty over what happens in FY '07, when J-UCAS is scheduled to end.

The most recent Quadrennial Defense Review (QDR) determined that J-UCAS in its current form will be stopped at the end of FY '06, at which point the Navy will embark on the development of its own carrierbased UAV and the Air Force will concentrate on a new long-range strike

capability that may or may not be an unmanned bomber (DAILY, Feb. 3). The Navy's FY '07 budget request includes \$239.16 million for a naval unmanned combat air vehicle (UCAV) carrier demonstration, and the former J-UCAS budget has been zeroed for the year.

The new Navy UCAV effort presumably will continue development of the X-47B, which is being developed with carrier takeoff and landing requirements in mind, although JUCAS Program Manager Capt. Ralph Alderson (USN) would not comment on the X-47B's future. (後略)

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**Aerospace Daily & Defense Report Feb 9, 2006**

### GlobalFlyer は離陸、コクピット問題のあとアフリカを横断飛行

#### Fossett to fly across Africa after harrowing takeoff, cockpit problems

Adventurer Steve Fossett is to pilot the Scaled Composites/Virgin Atlantic GlobalFlyer across Africa Feb. 9, following a harrowing

takeoff and initial cockpit problems Feb. 8 at the ...

### NASA Scott Pace 副長官は民間宇宙計画の遂行予算が政府単独よりも安くつくという事に関し民間の見積りに疑問

#### NASA number cruncher cites credibility, affordability

The commercial realm likely can carry out civilian space programs cheaper than the government alone, but the credibility

of industry's cost estimates remains a question, according to ...

### 陸軍の無人車輦に必要な技術リストで遠隔運用のより優れた通信と共に自律歩行と衝突回避がトップに

#### Traffic avoidance, better comms top list of FCS robot needs

Autonomous pedestrian and traffic avoidance as well as better communications for tele-operation top the list of technologies

needed for the unmanned ground vehicles (UGVs) in the Army's ...

### ラインメタル社は6輛の FOX NBC 核生物兵器化学兵器対応の偵察車輦をオランダに納入

#### Rheinmetall delivers six FOX NBC reconnaissance vehicles to Netherlands

VEHICLES DELIVERED: The Dutch military has received six FOX nuclear, biological, and chemical reconnaissance vehicles

from Germany's Rheinmetall Landsysteme GmbH, the company said Feb. 7. The vehicles ...

### BAE システムズは透明な武装ガン防護服をイラクに納入

#### BAE Systems delivers transparent armored gun shields to Iraq

GUN SHIELDS: BAE Systems said Feb. 8 that it has delivered to Iraq 1,000 Transparent Armored Gun Shields (TAGS) for U.S.

Army Humvees. The \$4.7 million contract ...

| <b>Major Defense Acquisition Programs FY2007 (\$ in millions) -- USAF</b> |                         |                  |                |                         |                  |                |
|---|-------------------------|------------------|----------------|-------------------------|------------------|----------------|
| <b>Program</b>  | <b>FY06 Procurement</b> | <b>RDT&amp;E</b> | <b>Total**</b> | <b>FY07 Procurement</b> | <b>RDT&amp;E</b> | <b>Total**</b> |
| F-22A - Advanced Tactical Fighter   | 1 3,144.3               | 448.2            | 3,592.5        | 1 1,503.9               | 584.3            | 2,088.2        |
| C-17A - Globemaster III Advance Cargo Aircraft                            | 1,2 3,477.3             | 164.8            | 3,642.1        | 1,2 2,887.6             | 173.8            | 3,061.4        |
| Evolved Expendable Launch Vehicle (EELV)                                  | 773.2                   | 25.7             | 798.9          | 936.5                   | 18.5             | 955.0          |
| Transformational SATCOM System (TSAT)                                     | N/A                     | 429.2            | 429.2          | N/A                     | 867.1            | 867.1          |
| to-Air Missile (AMRAAM) engineering Program (RERP)                        | 103.1                   | 32.8             | 135.9          | 135.9                   | 43.4             | 179.3          |
| Space-Based Infrared System Program, High Component (SBIRS High)          | 91.9                    | 223.3            | 315.2          | 156.4                   | 150.2            | 306.6          |
| National Polar-Orbiting Operatoinal Environment Satellite System (NPOESS) | N/A                     | 696.6            | 696.6          | N/A                     | 668.9            | 668.9          |
| NAVSTAR GPS Global Positioning System                                     | N/A                     | 319.1            | 319.1          | N/A                     | 349.3            | 349.3          |
| Global Hawk High Altitude Endurance Unmanned Aerial Vehicle               | 82.7                    | 393.8            | 476.5          | 80.9                    | 624.2            | 705.1          |
| C-130J Hercules Cargo Aircraft  | 1 295.5                 | 327.8            | 623.3          | 1,2 440.6               | 247.7            | 688.3          |
| Advanced Extremely High Frequency Program (AEHF)                          | 1 884.7                 | 6.6              | 891.3          | 954.0                   | 40.5             | 994.5          |
| Joint Direct Attack Munition JDAM   | 1 521.1                 | 655.8            | 1,176.9        | N/A                     | 633.3            |                |
| Joint Primary Aircraft Training System (JPATS)                            | 220.3                   | N/A              | 220.3          | 175.0                   | 15.5             | 190.5          |
| Joint Air-Surface Standoff Missile (JASSM)                                | 328.9                   | N/A              | 328.9          | 305.1                   | N/A              | 305.1          |
| Wideband Gapfiller  | 98.7                    | 66.0             | 164.7          | 187.2                   | 40.9             | 228.1          |
| Small Diameter Bomb (SDB)   | 1 21.8                  | 92.3             | 114.1          | 363.7                   | 37.7             | 401.4          |
| Mission Planning System (MPS)   | 53.3                    | 73.3             | 126.6          | 99.1                    | 114.1            | 213.2          |
| National Airspace System (NAS)  | N/A                     | 119.9            | 119.9          | N/A                     | 146.4            | 146.4          |
| B-2A  | 54.6                    | N/A              | 54.6           | 53.8                    | N/A              | 53.8           |
| Global Broadcast Service (GBS)  | 2 87.3                  | 294.9            | 382.2          | 2 210.7                 | 224.2            | 434.9          |
|   | N/A                     | 19.4             | 19.4           | N/A                     | 23.6             | 23.6           |

1= Less Advance Procurement 2 = Includes modifications  
 Source: Dept. of Defense

\*\* Total represents costs of procurement and RDT&E, and does not include other costs associated with the program.

**FIA 次期偵察衛星システムの障害は商業画像を増大させることになる**

**FIA snags likely to boost commercial imagery**

As the U.S. government reworks its plans to build the next generation of its own high-resolution imaging satellites, it has

begun discussing stopgap measures to acquire more imagery from commercial providers, a key vendor says. "We have been asked by a number of people in Washington if we can fill gaps," GeoEye President and CEO Matthew M. O'Connell said at the **Satellite** 2006 conference and exhibition being held in Washington this week.

The gaps he was alluding to are those expected due to programmatic troubles of the Future Imaging Architecture (FIA), a classified effort to produce electro-optical and radar-imaging **satellites**. Last fall, FIA faced huge cost overruns (to \$15 billion from \$6 billion) and schedule slips totaling nearly five years (to a first launch in 2009). Grappling with the troubles, Director of National Intelligence John Negroponte decided to take the work on the optical **satellites** away from Boeing and switch the effort to Lockheed Martin (DAILY, Sept. 9, 2004). Boeing retained work on the radar **satellites**.

GeoEye, the company formed when Dulles, Va.-based Orbimage acquired Denver-based Space Imaging, already does substantial business with the government, both in the defense and intelligence realm and on the civil side with agencies like NASA and the National Oceanic and Atmospheric Administration. O'Connell said some \$1.5 billion in work is on contract to the federal government over the next two years.

GeoEye has three **satellites** in orbit that can provide 1-meter panchromatic and 4-meter multi-spectral imagery, and it plans to launch a fourth in 2007 capable of resolving objects as small as 0.41 meter across. Such pictures are not the equal of the best classified **satellites**, but they are sufficient for many military and intelligence applications.

Another key commercial provider of higher-resolution imagery is DigitalGlobe System of Longmont, Colo., whose QuickBird **satellite** produces 0.61-meter panchromatic and 2.4-meter multi-spectral imagery. The government has yet to put forth specific requirements or requests for additional imagery because of the missteps on FIA, O'Connell said, but it is asking if commercial outfits might be able to provide more imagery than they already are. "We're saying we can do more," O'Connell told the DAILY.

O'Connell declined to elaborate on GeoEye's conversations with federal officials about imagery to fill FIA's gaps. But those interested are believed to include the Defense Department, intelligence agencies and relevant congressional committees. — James R. Asker asker@AviationNow.com

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**Aerospace Daily & Defense Report Feb 8, 2006**

**DOD は非宇宙ベースの通信を求めている、統合参謀長発言**

**DOD seeking nonspace-based communications, Pace says**

The Defense Department is exploring alternatives to space-based communications as the gap between operational demands and

military **satellite** communications capacity grows, the chairman of the Joint Chiefs ...

**スペースハブ社は第2四半期、6ヶ月の損失を被る**

**SPACEHAB suffers second quarter, six-month losses**

NET LOSSES: SPACEHAB Inc. said Feb. 7 that it suffered net losses for both its second quarter of FY '06 and the six-month

period ending Dec. 31. ...

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2006年2月10日 11:23 時事通信社「世界週報」2月21日号目次 抜粋

<シリーズ>

今週の軍事情報 / 引退する国家空中作戦センター機の意味するもの(江畑謙介)

日本と世界の安全保障 / イラン、ウクライナ問題とエネルギー安全保障(金子熊夫)

宇宙よもやま話 / アインシュタインの予兆(的川泰宣)

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特集 中間選挙年を迎えた米国

2006年2月3日 14:43 時事通信社「世界週報」 2月14日号目次 抜粋

<シリーズ>

今週の軍事情報 / 本当だったサウジの英戦闘機購入の噂(江畑謙介)

日本と世界の安全保障 / 国民投票法制定と防衛庁の省昇格は今国会で(志方俊之)

英語ことわざ散歩 / 男は自覚で、女は容貌で年が決まる(吉田通之)

記事2 / アジア太平洋パートナーシップ

米国の温暖化対策の新世界戦略 注目されるアジア太平洋パートナーシップ

本郷 尚 国際協力銀行京都メカニズム担当審議役

昨年11月末から2週間にわたってカナダ・モントリオールで開かれた、京都議定書発効後最初の気候変動枠組み条約第11回締約国会議(COP11)で最も注目されたのは米の動きだった。1997年の京都議定書採択で世界をリードしたのは米であったが、2001年、ブッシュ大統領が京都議定書に反対を表明、事実上京都議定書から離脱している。ブッシュ政権の気候変動への取組み姿勢

が問われている中、昨年相次いで米南部を大型ハリケーンが襲い、その対応が注目されていた。米は温暖化ガス排出量の総量規制を含む京都議定書には依然反対したが、気候変動枠組み条約の中での将来的枠組みについての対話には参加することで合意し、将来への可能性を残した。

ほんごう・たかし 1958年生まれ。81年早稲田大学政治経済学部卒業、日本輸出入銀行入行。経済企画庁出向(国際経済担当)、日本興業銀行ロンドン支店出向、営業第二部課長代理(ロシア、東欧担当)、国際金融第

二部課長(中近東、アフリカ担当)、国際協力銀行環境審査室課長、フランクフルト首席駐在員などを経て現職。

記事3 / 特集・第1回インド大潮流

中国牽制の手段ではない対印外交 遅れて来た大国の時代が到来

鷹山 操 ジャーナリスト

ジョージ・ブッシュ米大統領が3月初め、インドを訪問する。6年前のクリントン前大統領の訪印が、両国関係を冷戦時代から解放したものだとなれば、今回は経済発展目覚ましいこの“遅れてきた大国”が国際社会で足場を固めたことをアピールする象徴的機会となるに違いない。ここで気になるのが、インドへの関心の高まり

の中で、中国を<RUBY CHAR="牽制","けんせい">せんがためにインドを重視するという貧寒な言説が米や日本ではびこっていることである。中国をにらんだカードとして使うにはインドはあまりに重い。ブッシュ訪印時に最大のアジェンダとなるであろう両国間の民生用原子力協力合意を材料に考えてみる。

たかやま・みさお 1951年生まれ。新聞社ニューデリー特派員、ニューヨーク特派員などを経てフリーランスで執筆活動中。早稲田大学アジア・太平

洋研究科修士課程修了。

**[近刊紹介]** 宇宙年鑑 2005 発売日:2月28日 出版社:アストローツ 発行間隔:年刊 サイズ:A4変

日本の宇宙開発の取組みと、世界の宇宙開発の詳細な資料を収録した、日本で唯一の宇宙開発を網羅したムック。

日本の宇宙関係機関が大集結した「JAXA(宇宙航空研究開発機構)誕生までの歩みや国産で大型ロケット『H-IIA』や世界最大級の固体燃料ロケット『M-V』、現在建設中の国際宇宙ステーションなどの構造についても収録。「資料編」では全世界の宇宙開発機関や現在稼働しているロケット発射場の詳細や世界の人工衛星と

惑星探査機、有人飛行の記録などを完全網羅しています。





目次 最新の目次ではない事もございます。ご了承願います)

## 特集

火星探査 双子ローバー火星面を走破 /// 土星探査 「カッシーニ」と「ホイヘンス」

宇宙への切符 日本の宇宙開発 50 年の歩み /// 未来の宇宙へ 日本の宇宙開発のこれから

## 宇宙関連トピックス

- ・彗星探査機「スターダスト」がヴェルト 2 彗星へ接近 /// ・ヨーロッパの彗星探査機「ロゼッタ」発進
- ・「はやぶさ」が地球スイングバイ、一路小惑星イトカワへ /// ・宇宙に広がるクローバー、ソーラーセイル展開実験成功
- ・「ジェネシス」のサンプル、空中キャッチに失敗 /// ・30 年ぶりに水星へ「メッセンジャー」探査機打上げ
- ・民間宇宙船が実現、「スペースシップワン」宇宙へ /// ・ガンマ線バーストの謎を追う「スウィフト」**衛星**
- ・「スマート 1」、13 か月以上かけて月へ到達 /// ・「X-43A」がスクラムジェットでマッハ 10 を達成
- ・45 年越しの計画がやっと実現「GP-B」打上げ /// ・新型ヘビー級ロケット、打上げ成功
- ・この夏、テンペル 1 彗星にディープインパクト /// ・H-IIA ロケット 7 号機、打上げ成功!
- ・リターン・トゥ・フライト、野口さんも準備 OK! /// ・2005 ~ 2006 年も注目の打上げが目白押し

## 宇宙・天文カレンダー

2005 年の天文現象 / 惑星データ / 2005 年 4 月 ~ 2006 年 3 月の宇宙・天文カレンダー

## 資料編

宇宙開発機関 / ロケット / 人工**衛星** / 探査機 / 科学**衛星** / 有人宇宙飛行 / 宇宙ステーション

## コラム 宇宙に近づく第一歩

1. あなたの名前を宇宙に ///
2. 人工**衛星**を見る ///
3. 水ロケットを飛ばす ///
4. 人工**衛星**を作る ///
5. イベントに参加する

2006 年 2 月 8 日 19:10 WIRED NEWS (2006/02/08)

### ハリケーン被災地の測量:機上からの遠隔探査が活躍

<http://hotwired.goo.ne.jp/news/20060208302.html>

昨年ハリケーン『カトリーナ』の直撃を受けたニューオリンズでは、復興のための測量調査に米航空宇宙局(NASA)のチームが投入されていた。レーザと GPS を活用する光検出・距離測定(LIDAR)技

術を使った上空からの測量により、以前なら完了までに数ヵ月を要した測量がわずか 2 日間で終わったという。

2006 年 2 月 8 日 19:10 WIRED NEWS (2006/02/08)

### プラズマパネル:松下、世界シェアで首位に

<http://hotwired.goo.ne.jp/news/20060208105.html>

2005 年第 4 四半期の世界のプラズマディスプレイ・パネル出荷数調査によると、松下プラズマディスプレイのシェアが 2004 年第 2 四

半期以来、1 年半ぶりに首位に立った。世界最大規模の尼崎工場が 9 月から稼働し、出荷数が同 3 倍に急増。

2006 年 2 月 6 日 18:40 WIRED NEWS (2006/02/06)

### ロケットエンジンを搭載した航空機レース、開催へ(上)

<http://hotwired.goo.ne.jp/news/20060206301.html>

ロケットエンジンを搭載した航空機によるレースが来年、ニューメキシコ州で開催予定。『X レーサ』と呼ばれる 10 機のロケット機が、高

さ約 1500m、幅約 3km の空間に広がるサーキットを飛回るレースとなる。

2006 年 2 月 7 日 18:30 WIRED NEWS (2006/02/07)

### ロケットエンジンを搭載した航空機レース、開催へ(下)

<http://hotwired.goo.ne.jp/news/20060207302.html>

ロケットエンジンを搭載した航空機が高さ約 1500m のサーキットを飛回るレースが、来年開催される予定。パイロットは、ヘッドアップ表示装置に映出されるコースに従って飛行し、操縦の腕を競合う。

現在開発中のビデオゲームを使えば、自宅にいるファンがレース中のパイロットと競争することも可能になるという。

2006 年 1 月 30 日 19:00 WIRED NEWS (2006/01/30)

### 次世代無線 LAN 規格「IEEE 802.11n」、実現に向け本格始動

<http://hotwired.goo.ne.jp/news/20060130304.html>

米国電気電子技術者協会(IEEE)が次世代無線 LAN 規格「IEEE802.11n」の仕様案を承認した。これを受け、来年の最終的規格発表に向け作業が本格化する。802.11n は現行の約 10 倍と

いう高速化と安定性実現を目指しており、例えば、家中至るところで高解像度テレビをワイヤレスで視聴することが可能に。

2006 年 1 月 24 日 18:30 WIRED NEWS (2006/01/24)

### NASA、小惑星探査機「ドーン」の打上げを無期延期へ

<http://hotwired.goo.ne.jp/news/20060124303.html>

太陽系最大級の 2 つの小惑星探査を目的に開発された NASA の探査機「ドーン」の打上げが、予算超過と技術問題が原因で無期限で延期になった。6 月打上げ予定のはずだったこのミッションは、

第三者による評価調査を経てゴーサインが出たとしても、年内打上げは無理だと見られている。

2006 年 1 月 20 日 WIRED NEWS (2006/01/20)

### 探査機「ニューホライズンズ」、冥王星に向かって出発

<http://hotwired.goo.ne.jp/news/20060120305.html>

探査機「ニューホライズンズ」が冥王星へ向けて打上げられた。およそ 10 年をかけて冥王星に到達し、太陽系外縁部にある氷の天体が集まる謎めいた領域、カイパーベルトも探査予定。プルトニウ

ムを動力源としているため、今回の打上げは原子力に反対する人々の注目も集めていた。

2006 年 1 月 23 日 人民網日本語版

### 上海に宇宙産業拠点を建設 事業スタート

中国航天科技集团公司と上海市政府はこのほど、上海市の宇宙科学技術産業の拠点となる「上海航天科技産業基地」の建設計画をスタート。双方は 22 日、事業に向けた戦略的協力枠組合意に調印。

同事業の第一段階として、約 33 億元を投じる民用向け宇宙産業プロジェクト(太陽電池、希土類 レアアース 磁石内蔵の電気

機械、複合材料) 22 億元を投じる宇宙科学普及パーク(宇宙博物館を含む)建設 の 2 事業にまもなく着手予定。事業地は同市閔行区浦江鎮。(編集 KS)

Week of February 6, 2006 For the full text go to: [SatNews Weekly](#)

### ロッキード空軍とネットワークミッション運用システムの製造で\$2B の契約を得る

[Lockheed Awarded \\$2-B Contract to Build Air Force's Network Missions Operations System](#)

### ローレルのシュワルツ会長リタイアすることに、後任は Targoff を指名

[Bernard L. Schwartz to Retire as Chairman of Loral, Michael B. Targoff Named as Successor](#)

### ボーイングは GPS IIF プログラムの追加マイルストーンを通過

[Boeing Successfully Completes Additional Milestones on GPS IIF Program](#)

### SS/L は Loral Skynet のマルチビーム Telestar 11N 衛星の製造を開始

□ [SS/L Begins Construction of Loral Skynet's Multi-Beam Telstar 11N Satellite](#)

[EADS Astrium はアルジェリアの Alsat-2 光学監視システムを供給することに](#)

□ [EADS Astrium to Supply Algeria's Alsat-2 Optical Observation System](#)

[アルカテルアレニアは ExoMars ミッション設計を開始](#)

□ [Alcatel Alenia Starts ExoMars Mission Design](#)

[Northern Sky は MSS 市場は 2010 年までに\\$8.6B の売上げに達すると発言](#)

□ [Northern Sky Says MSS Market to Generate \\$8.6-B in Revenue by 2010](#)

[シーローンチは EchoStar X ミッションで母港を出発](#)

□ [Sea Launch Departs Home Port for EchoStar X Mission](#)

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**Week of January 30, 2006**

For the full text go to: [SatNews Weekly](#)

[FCC はグローバルスターATC ライセンスを認可、継ぎ目のない衛星/地上のワイヤレスソリューションの提供に道を拓く](#)

□ [FCC Grants Globalstar ATC License, Paves Way for Company to Offer Seamless Satellite/Terrestrial Wireless Solutions](#)

[軌道上での異常により PanAmSat Galaxy 3R はリタイアに](#)

□ [In Orbit Anomaly Leads to PanAmSat Galaxy 3R Retirement](#)

[日本は ALOS 打上げ成功](#)

□ [Japan Successfully Launches Advanced Land Observing Satellite](#)

[ノースロップの宇宙技術部門は 2005 年に\\$3.39B の売上げを報告](#)

□ [Northrop's Space Technology Unit Reports \\$3.39-B Sales in 2005](#)

[SpainSat は Ariane 5 のデュアルパッセンジャーミッションのためスペースポートに到着](#)

□ [SpainSat Arrives at the Spaceport for Ariane 5's Dual-passenger Mission](#)

[2012 年までに広告売上げが\\$481.6M になると Satellite Radio は予測](#)

□ [Ad Revenue for Satellite Radio Predicted to Be Worth \\$481.6-M by 2012](#)

[GlobeCast WorldTV は Intelsat と IA-5 容量で契約を更新](#)

□ [GlobeCast WorldTV Renews Contract with Intelsat for IA-5 Capacity](#)

[ATK と KEI ミサイルチームは2段目のロケットモータのテスト燃焼に成功](#)

□ [ATK and KEI Missile Defense Team Successfully Test Fire Second-Stage Rocket Motor](#)

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1/30/2006 - 2/3/2006    [AstroExpo.com](#)

## Business News

[SpaceDev Completes Acquisition of Starsys Research Corporation](#)

[NASA Selects Support for Langley Simulation Facilities](#)

[International Rectifier Reports Fiscal Second Quarter Results](#)

[Honeywell Reports 2005 Sales of \\$27.7 Billion; Earnings Per Share Up 30%; Cash Flow From Operations of \\$2.4 Billion](#)

[U.S. Air Force Awards Lockheed Martin \\$491 Million Contract for 3rd Advanced Military Communications Satellite](#)

[Rocket Racing League Announces 1st Team; F-16 Pilots Rickard & Grantham Purchase First Mark-1 X-Racer](#)

[SPACEHAB Tasked to Support NASA in New Space Station Activities; Mission Preparation and New Business Opportunities Underway](#)

## International Space News

[Russian Experts Pleased with Brazilian Space Program](#)

[Russia Hopes to Launch Reusable Spacecraft in 2012](#)

[International Space Station Status Report: #3](#)

[Rocket Competition Draws Engineering Students to Aerospace Careers](#)

## [Second Stage of ISS Matryoshka Experiment Launched](#)

### Launch News

[NASA's Space Shuttle Processing Status Report: S06-004](#)

[NASA Expendable Launch Vehicle Status Report: E06-004](#)

[Launch of the Multi-functional Transport \*\*Satellite-2\*\* \(MTSAT-2\) of the Civil Aviation Bureau of the Ministry of Land](#)

[Launch of M-V Launch Vehicle No. 8](#)

[New Horizons Successfully Performs First Post-Launch Maneuvers](#)

IASC\_2005MoscowAirshow 抜粋 [http://www.strategycenter.net/printVersion/print\\_pub.asp?pubID=78](http://www.strategycenter.net/printVersion/print_pub.asp?pubID=78)

### 新しい照準ポッドでロシアが中国を援助した可能性

#### Possible Russian Help for China's New Targeting Pod:

Since at least the early 1990s, China has been developing low-light/laser targeting pods to enable aircraft to use precision guided munitions (PGMs). In June 2005 internet-source pictures appeared, most likely from a Chinese popular military magazine, showing two new Chinese targeting pods. Officials at the Russian company UMOZ, which is developing the Sapsan-3 targeting pod,

\*\*\*\*\*

Officials from the Russian guided bomb maker Region seemed familiar with new Chinese-made laser and optical guided bomb programs, but denied any specific cooperation program. These new Chinese bombs show a distinct similarity to Region's designs. However, the Chinese optical seeker appears to be smaller than

### NPO Mash 社が宇宙戦争に関連した展示

#### NPO Mashinostroyenia Revelations on Space Warfare:

For the first time the missile/satellite powerhouse NPO Mashinostroyenia released its official history. NPO Mash was and remains unique for building a consistently world-class competency in the sensor to shooter continuum for most of its 60 year existence. It was also deeply involved in Soviet manned and unmanned military space programs. These programs have been documented by scholars like Steven Zaloga and Mark Wade, but the NPO Mash document serves as a new confirmation from a company source. Among its more startling revelations is that it launched a test version of the first manned space combat vehicle in 1960, launched its first successful unmanned satellite interceptor in 1968 and that

said they had seen, even touched the new Chinese pod. However, for the record, they denied any role in its development. They did, however, agree there was a coincidence in certain aspects of the Chinese pod and similar systems made by UMOZ. UMOZ hopes that it will sell its Sapsan-3 to current Su-30 users, which include the Chinese Air Force and Navy.

Region's design.

Pod-sibilities: While UMOZ denies collaboration, they do acknowledge the basic similarities between Sapsan-E pod and a new Chinese targeting pod revealed in mid-2005.

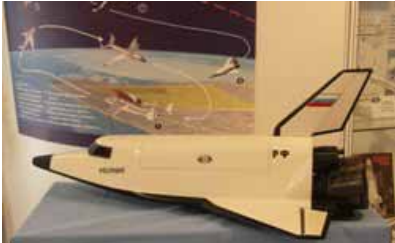
*Russia kept the NPO Mash "IS" satellite interceptor in service from 1973 to 1993.* This history also provided confirmation of previous reports that manned "Salut" space stations that operated between 1973 and 1979 had film-camera based earth military surveillance as their primary mission. Manned military space plane development began in the 1950s, to include one intended to be powered by a nuclear-plasma engine. This small shuttle-like space plane was abandoned in favor of the larger "Buran." The small space plane program was intended to create a "fleet" of "space combat fighters."



Operational NPO Space Combat Programs: The "IS" anti-satellite interceptor was operation from 1973 to 1991 and the "Almaz/Salut" space station series had three dedicated military missions. Photos: RD Fisher via NPO Machinostroyenia

Also in attendance at the show were *three former Soviet cosmonauts who trained for space combat missions onboard the Almaz/Salut space stations. They noted they were trained to shoot*

*back at possible U.S. intercepting satellites with a special space-gun* and that the Salut station was designed to withstand significant combat damage --in the vacuum of space--and still allow the crew to escape to its re-entry capsule.



Potential Space Fighter Concepts: Small space plane concepts from Russia's **Molyna** (left) and China's Shenyang Aircraft Company (right). Photos: RD Fisher and Internet

While most of these military space capabilities may not be current in the Russian armed forces, *it is worth asking whether these capabilities, and likely Chinese knowledge of them, might serve and example for Beijing.* China's first manned mission,

## 結論

### Conclusions:

The 2005 MAKS show offered additional insights into the levels of intimacy between the Chinese and Russian aerospace sectors. This relationship is now showing three main trends:

#### 1. ハードウェアの技術移転 Hardware to Technology transfer.

This relationship is now well on its way to evolving from one of hardware sales to that of technology transfer and co-development, as China's wishes. This shift is signaled by the painful hiatus in delivery of **KnAAPO-made Su-27 kits** for co-production by China's Shenyang Aircraft Company, and the growing ability of China to master the necessary components needed to build an "indigenized" version of this same aircraft. Other examples of aerospace technology transfer include the **NPO Mashinotroyenia radar satellite**, radar seekers for the new PL-12 active-guided anti-aircraft missile, and technologies for making precision guided weapons. Many Russian firms continue to insist, some with justification, that they are not building up a Chinese competitor that may soon consume their business. They are in the main also very aware of the many obstacles confounding Chinese firms. But nevertheless their respect for China's intense desire to master and excel is growing.

#### 2. 戦略的実力行使のシステムの増大する移転 Increasing

**Transfer of Strategic and Power Projection Systems.** The sale of additional Il-76 transport aircraft and Il-78M refueling aircraft will greatly increase the PLA's ability to project its Airborne armies and **long-range fighter-bomber** strikes. Even more importantly, the possible sale of the Tu-95 Bear and the Tu-22M3 Backfire would herald an increased willingness to sell strategic systems to China. This may in part be a Russian attempt to maintain its hold on the PLA market in response to possible competition from the European Community, should its lift its 1989 Tiananmen arms embargo. But it is also striking that Russia would provide strategic military

*"Shenzhou" was after all primarily for military surveillance?*

When asked this question and **NPO Mash** official responded, "Of course, why not?" He said "the nature of this regime" makes such a direction possible.

capabilities to a country that makes no secret of its desire to target American forces **The Bear and Backfire with refueling** would give the PLA increased options for striking at all U.S. bases in Asia, on to Hawaii and even Alaska and the U.S. West Coast. From Hainan Island, PLA Tu-95s could range well into the Indian Ocean or south to Australia, and even extend its reach to the Persian Gulf with refueling in Burma or Pakistan.

If China does purchase these Russian bombers then one may to ask whether the PLA might also revive its previous interest in purchasing Russian Akula-class nuclear attack submarines and Oscar-class nuclear powered cruise-missile submarines.

#### 3. ソフトウェアの増大する移転 Increasing Transfer of Software.

With the beginning of large scale joint military exercises, the Russia-China military relationship will now increasingly involve the transfer of Russian doctrine, operational methods and military experience what may be called "software". Russian statements following **"Peace Mission 2005"** indicate that the future will see more large-scale Russia-China military exercises. The 2005 exercises helped the PLA Navy practice anti-submarine and blockade missions, while PLA Air Force units were able to rehearse offensive and defensive missions. For the first time, inexperienced PLA Marine and Airborne units could exercise with Russian Marine and Airborne forces that have a long military experience. Even though such exercises do not rise to the level of true "wartime" experience, with their lasting impact on personnel leadership, doctrine development and hardware development, they do constitute a level of military experience that far exceeds that of Taiwan, and begins to catch up with that of Japan and South Korea.

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| FY07 NASA Budget Request (In Millions) |              |          |          |          |          |          |
|--|--------------|----------|----------|----------|----------|----------|
|  | FY06 Op Plan | FY07     | FY08     | FY09     | FY10     | FY11     |
| Total Agency                           | 16,623.0     | 16,792.3 | 17,309.4 | 17,614.2 | 18,026.3 | 18,460.4 |
| Year To Year Increase*                 |              | 3.2%     | 3.1%     | 1.8%     | 2.3%     | 2.4%     |
| Solar Sytem Exploration                | 1,582.3      | 1,610.2  | 1,598.6  | 1,840.4  | 1,899.6  | 1,846.7  |
| Universe                               | 1,507.9      | 1,509.2  | 1,500.9  | 1,307.9  | 1,276.1  | 1,309.7  |
| Earth-Sun System                       | 2,163.5      | 2,210.6  | 2,283.7  | 2,288.9  | 2,315.8  | 2,390.0  |
| Constellation Systems                  | 1,733.5      | 3,057.6  | 3,067.6  | 3,612.9  | 4,083.8  | 7,698.4  |
| Exploration Sys Res & Tech             | 692.5        | 646.1    | 632.2    | 605.1    | 679.2    | 764.6    |
| Human Sys Res & Tech                   | 624.1        | 274.6    | 281.8    | 281.8    | 292.8    | 312.1    |
| Aeronautics Research                   | 884.1        | 724.4    | 731.8    | 732.4    | 722.8    | 722.7    |
| International Space Station            | 1,753.4      | 1,811.3  | 2,200.3  | 2,255.6  | 2,197.1  | 2,896.7  |
| Space Shuttle                          | 4,777.5      | 4,056.7  | 4,087.3  | 3,794.8  | 3,651.1  | 146.7    |
| Space and Flight Support               | 338.8        | 366.5    | 392.8    | 392.0    | 394.7    | 389.2    |

\* Not including emergency supplemental of \$350 million in FY06

Source: Dept. of Defense

| Future Years Defense Plan — USAF Space (\$ in Millions) |               |         |       |         |         |         |         |         |
|---|---------------|---------|-------|---------|---------|---------|---------|---------|
| Program   | Appropriation | FY06    | FY07  | FY08    | FY09    | FY10    | FY11    | Total   |
| (Totals RDT&E & Procurement)                            |               |         |       |         |         |         |         |         |
| Advanced EHF  |               | 1,176.9 | 633.3 | 441.5   | 243.6   | 100.4   | 87.9    | 2,683.6 |
| Evolved Expendable Launch Vehicle                       |               | 798.9   | 955.0 | 1,244.8 | 1,105.1 | 1,250.8 | 1,428.7 | 6,783.3 |
| Global Positioning System III                           |               | 85.2    | 315.3 | 492.1   | 781.7   | 912.1   | 839.6   | 3,426.0 |
| National Polar-orbiting Operational                     |               |         |       |         |         |         |         |         |
| Environmental Satellite System                          |               | 319.1   | 349.3 | 246.3   | 198.0   | 388.8   | 318.4   | 1,819.8 |
| Space Based Infrared System                             |               | 700.2   | 673.1 | 900.3   | 1,783.3 | 382.2   | 262.5   | 4,701.7 |
| Space Radar   |               | 98.3    | 266.4 | 565.5   | 1,068.1 | 1,316.4 | 1,410.3 | 4,724.9 |
| Transformational Satellite                              |               |         |       |         |         |         |         |         |
| Communications  |               | 429.2   | 867.1 | 1,536.0 | 2,051.1 | 2,308.3 | 2,588.3 | 9,780.0 |

Source: Dept. of Defense

欧州は軍事宇宙利用を拡大

Europe expands military space use

The defense ministers from France and Luxembourg have agreed to study how countries that lack a domestic surveillance **satellite** capability can share data for European Union peacekeeping and humanitarian missions.

Data sharing is a growing concern as Europe ratchets up its overseas military and security presence (Aviation Week & Space Technology, Jan. 30). The need to support out-of-theater military operations also lies behind a trend toward increased government reliance on commercially funded **satellite** communications capacity.

The Netherlands recently became the fourth nation to lease bandwidth on the United Kingdom's Skynet 5, financed by EADS Paradigm. Portugal, France and the U.K. itself also have agreed to

use the system, which will be expanded later this year with the launch of the first of three new-generation Skynet 5 **satellites**.

Earlier XTAR, a joint venture of Loral Space & Communications and Spain's Hisdesat, received a fiveyear contract to provide X-band capacity to the Royal Danish Navy. XTAR already supplies data to the Spanish government, as well as to the U.S. State Department. The venture's second **satellite**, SpainSat, arrived last week in Kourou, French Guiana, for a Feb. 21 launch. It will join XTAR-1, orbited in early 2005.

空軍はさらに\$2B の RDT&E 研究開発テストの予算を望む

AF wants \$2B more in RDT&E funding

The U.S. Air Force wants \$2 billion more in RDT&E money and \$500 million less for procurement in fiscal 2007, and rolled out a budget request that reshuffles spending to emphasize long-range strike and reconnaissance and promises industry-style cost-cutting to free money for new systems and hardware.

The fiscal 2007 budget request significantly expands Predator and Global Hawk unmanned aerial vehicle (UAV) operations, kills the USAF piece of the Joint Unmanned Combat Air System (J-UCAS) program, outlines the F-22's survival strategy, and plants the seeds for a new Light Cargo Aircraft joint program with the Army and the

KC-X tanker replacement program.

The budget also speeds retirement of the F-117 stealth aircraft and the high-altitude U-2, and sharply cuts back on the Airborne Laser program and restructures the Transformational SATCOM (TSAT) effort. Officials also dropped the Joint Strike Fighter's alternative engine program, effectively killing the Rolls-Royce/General Electric F136 turbofan.(後略)

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**Aerospace Daily & Defense Report Feb 7, 2006**

**空軍の宇宙への投資は FY2007 には\$9.8B に達する**

**Air Force space investment reaches \$9.8B in FY '07**

The U.S. Air Force is requesting \$9.8 billion for space programs in fiscal 2007, which is up \$500 million from FY '06 and represents about 19 percent of the Air Force's total modernization funding for the year, according to service officials.

The biggest single space program for FY '07 will be the Evolved Expendable Launch Vehicle (EELV), which is requesting \$955 million. The request funds four launches and includes roughly \$300 million to allow EELV providers Lockheed Martin and Boeing to sustain their infrastructure independent of launch rate.

The Transformational **Satellite** (TSAT) program is requesting \$867.1 million in FY '07, compared to \$429.2 million enacted in FY '06. The **satellite** communications effort has endured several years of cuts from lawmakers skeptical about its technical maturity, including a \$400 million cut in FY '06 that will cause the award of the TSAT prime contract to slip a year to FY '08 and the launch of the first spacecraft to slip 18 months to FY '14. Capabilities scaled back

The Air Force has scaled back the capabilities of the first two of the

five planned TSAT spacecraft to reduce technical risk, which the service hopes will make the program more palatable to Congress. "We have defined this first increment of TSAT and it's a much more achievable spacecraft than had been the design six months ago," a Defense Department official told reporters at the Pentagon Feb. 6. The scaled-back spacecraft will have the same functions, but less capacity, the official said. TSAT is the biggest program in the Air Force acquisition portfolio over the next several years, totaling \$9.78 billion to be requested through FY '11. The service has raised the program's budgetary confidence level from 50 percent to 80 percent - a standard it hopes all its major programs will meet over the coming years.

Another victim of congressional budget cutting, the Space Radar program, is requesting \$266.4 million in FY '07. The Air Force has dropped a plan to launch two demonstration spacecraft in 2008 and instead is focused on making the first operational spacecraft "less of a technology leap," the official said. Lockheed Martin and Northrop Grumman are competing to build the **satellites**.

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**Aerospace Daily & Defense Report Feb 7, 2006**

**NASA 予算要求は少なくとも 16 回以上のシャトルの飛行を可能に**

**NASA budget request allows at least 16 more shuttle flights**

NASA's fiscal year 2007 spending request uses science funds to pay down a \$3-5 billion shortfall in space shuttle accounts and begin work in earnest on a shuttle replacement, allowing the agency to plan for at least 16 more space shuttle flights to assemble the International Space Station.

That should be enough to orbit and attach all of the station

hardware provided by NASA's international partners on the project — a European laboratory module and a pressurized lab, exposed experiment facility and logistics module supplied by Japan.

The \$16.792 billion request amounts to a 3.2 percent increase over what the agency got in fiscal 2006 (not counting \$350 million to repair damage to its facilities from Hurricane Katrina), but will be



flat over the remaining four years in the five-year budget runout. The high growth rates promised for the out-years in the agency's fiscal 2006 budget request have been trimmed by about \$2 billion over the new runout, leaving science with an increase of 1.5 percent in fiscal 2007 and about 1 percent a year thereafter.

Cuts were necessary

As a result, cutting-edge programs like the Space Interferometry Mission (SIM) and Terrestrial Planet Finder (TPF) will be delayed

or cancelled. Both would look for extra-solar planets and begin trying to identify those that carry the chemical signatures of possible life. Overall robotic solar system exploration accounts will be trimmed from fiscal 2006 requested levels by \$737.5 million in fiscal 2007, \$1.2 billion in fiscal 2008, \$1.2 billion in fiscal 2009 and \$1.2 billion in fiscal 2010. Not surprisingly, the changes drew fire from supporters of robotic space exploration. (後略)

Aerospace Daily & Defense Report Feb 7, 2006

### FY2007 防衛予算はエアボーンレーザの実証計画を後退

#### FY '07 defense budget scales back airborne laser to demo program

The Missile Defense Agency's Airborne Laser (ABL) program has been scaled back to a demonstration program in the Defense Department's \$439.3 billion fiscal 2007 budget request, Pentagon officials said Feb. 6.

ABL, a modified Boeing 747-400 freighter equipped with a high-energy chemical laser to shoot down ballistic missiles during their boost phase "will have more of a demo program" in the department's budget request, Vice Adm. Evan "Marty" Chanik said. Rumors began late last year that the Pentagon was considering cutting the program (DAILY, Dec. 2).

The ABL was one of the few programs trimmed in the fiscal 2007 budget, which seeks a 7 percent (\$28.5 billion) increase over the

\$410.8 billion fiscal 2006 budget passed by Congress last year.

Overall, the fiscal '07 budget increases spending on:

- Operations and maintenance by \$9.4 billion, from \$142.6 billion to \$152 billion;
- Procurement by \$8 billion, from \$76.2 billion to \$84.2 billion;
- Research, Development, Testing and Evaluation (RDT&E), by \$2.2 billion, from \$71 billion to \$73.2 billion.

The budget was paired with, and influenced by, the 2006 Quadrennial Defense Review (QDR), which was released Feb. 3.

Aerospace Daily & Defense Report Feb 7, 2006

### 複合材料の Sniper ATP アドバンス目標照準ポッドが作業中か

#### Composite Sniper ATP may be in works

SNIPER COMPOSITE: Lockheed Martin is evaluating the use of epoxy/carbon fiber composite in the housing for the Sniper

Advanced Targeting Pod (ATP). The current housing, 94 inches ...

### MDA ミサイル防衛庁は ABL エアボーンレーザ航空機の2号機の作業を遅らせる

#### MDA defers work on second ABL aircraft

The Missile Defense Agency (MDA) is delaying development of a second aircraft in the Airborne Laser (ABL) program until after

ABL's first scheduled shutdown test in late ...

### 新しい弾頭をもつ 5,000 ポンド爆弾が試験された

#### 5,000-pound bomb with new warhead tested

Northrop Grumman announced at the Air Force Association's Air Warfare Symposium in Orlando, Fla., last week a successful live

test of a B-2 bomber dropping a 5,000-pound ...

### ロシアの宇宙服はなお微弱信号を送信している

### Russian spacesuit still sending weak signals

A surplus Russian spacesuit recycled as an amateur radio **satellite** continued to send weak signals, at least intermittently, through the

weekend after the International Space Station (ISS) . . .

Aerospace Daily & Defense Report Feb 6, 2006

### 米国は欧州共同体と情報の共有する方法を考慮中

#### U.S. eyes ways to share intelligence with EU

Washington is working with Brussels on ways to make it easier to exchange politically important but secret intelligence.

Bureaucratic hurdles to giving European policy makers insight into U.S. intelligence information have traditionally been high. Washington policy makers were happy with the results last year when they provided threat information on China to their European counterparts as the European Union mulled lifting its embargo on arms sales to Beijing. But the process was cumbersome, says one Defense Department official.

Procedural steps under discussion would provide a standard

arrangement on information sharing while preserving intelligence security, making the entire process more responsive to real-world crises.

Just when the arrangement will be in place is hard to judge, the Defense Department official says. Progress is being made in staff-level talks, but the effort still could fall apart as it winds its way through the bureaucracies on both sides of the Atlantic.

With U.S. and EU policy makers focused on a number of conflict areas, from North Korea to Iran, a functioning intelligence-sharing mechanism could see heavy use in the coming months.

Aerospace Daily & Defense Report Feb 6, 2006 What's Ahead in Aerospace & Defense

**テスト飛行 2 TEST FLIGHT TWO:** NASA is still working toward a May window for the next space shuttle test flight, three years after the loss of Columbia forced development of in-orbit repair techniques for the delicate thermal protection system on the orbiter. The STS-121 mission will see spacesuited astronauts test mechanical plugs and putty-like filler on test articles in the cargo bay that later will be subjected to simulated re-entry temperatures in arc-jet tests on the ground. A spacewalker also will ride on the end of the new 50-foot robot-arm extension for the first time to gauge its stability as a work platform for repairs on the orbiter belly and wing leading edges. But strengthening the reinforced carbon carbon wing leading edge panels like the one that failed on Columbia when hit with a chunk of foam insulation proved "prohibitive," given the short time remaining before the shuttle is retired in 2010, John H. Casper, an experienced astronaut who heads the Space Shuttle Management, Integration and Planning Office, tells the Aerospace Safety Advisory Panel.

**GPS III GPS III:** The U.S. Air Force plans to release the final request for proposals (RFP) for the Global Positioning System III **satellite** segment by mid-March, followed by another RFP for the GPS III control segment later in the spring. Contracts will be awarded beginning in the fall. The service is now finalizing both RFPs with the undersecretary of the Air Force for space. "Minor

adjustments are being implemented in the program planning to reflect an incremental development and delivery approach for both acquisitions that will provide increased GPS capability sooner and more frequently over the life of the program," the service says. The launch of the first GPS III spacecraft is planned for 2013.

**外部タンク EXTERNAL TANKS:** NASA has modified its order for the big external tanks that carry cryogenic propellant on space shuttle missions to accommodate retirement plans for the shuttle in 2010. But the order still gives the agency enough hardware to launch all of the International Space Station modules supplied by its international partners and to send astronauts to service the Hubble Space Telescope one more time. An order for 35 tanks that was signed in 2000, when NASA thought it would be flying shuttles at least until 2020, has been trimmed to 18. Overall, the agency has 10 of the \$45 million tanks finished or under construction, including some ordered before 2000, and the modification calls for only 12 more. That would be more than enough for the "18-plus-one" manifest designed to finish building out the station infrastructure and attaching the European and Japanese laboratories, plus the Hubble mission at the end of next year. That manifest still stands, although the partners have been discussing it with NASA in bilateral technical meetings in the hope they can advance their hardware in the sequence. The final shuttle launch schedule to

support the ISS won't be set until a heads-of-agency meeting in the U.S. early next month, but the modified tank order suggests White House budget cutters have backed off their efforts to trim the

remaining number of flights drastically (Aviation Week & Space Technology, Oct. 10).

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**Aerospace Daily & Defense Report Feb 6, 2006**

**数ではなく能力が国防総省のレビューの指針に**

**Capabilities, not numbers, guide Pentagon review**

BANG, NOT BUCKS: Many aerospace industry and military planners have been looking toward Long-Range Strike as the next

major aircraft program that would make up for the ...

**国防省は化学/生物兵器防護を強化、QDR4年次防衛レビューは語る**

**DOD beefing up funding for chem/bio protection, QDR says**

QDR ON CHEM/BIO: For the next five years, beginning in fiscal 2006, the Defense Department is increasing funding for the

Chemical Biological Defense Program (CBDP) by \$2.1 ...

**宇宙飛行士は次のシャトル飛行で査察ブームに搭乗予定**

**Astronaut will ride inspection boom on next shuttle flight**

TEST FLIGHT TWO: NASA is still working toward a May window for the next space shuttle test flight, three years after the

loss of Columbia forced development ...

**2006年3月半ばまでにGPS III提案要求が出る事が期待される**

**GPS III RFP expected by mid-March '06**

GPS III: The U.S. Air Force plans to release the final request for proposals (RFP) for the Global Positioning System III satellite

segment by mid-March, followed by ...

**国防総省のリーダーは耐えられる中国の近代化には限界があると理解**

**Pentagon leaders see limits to tolerable Chinese modernization**

SETTING BOUNDARIES: So how do senior Pentagon leaders currently assess China as a military threat? "China is an emerging

world superpower and we want to constructively work ...

**NASAのタンクの注文はシャトルの飛行回数削減と矛盾**

**NASA tank order belies reports manifest will be cut**

EXTERNAL TANKS: NASA has modified its order for the big external tanks that carry cryogenic propellant on space shuttle

missions to accommodate retirement plans for the shuttle ...

**NASAが2005年が高温の記録となったことを公表後に政治的口論が噴出す**

**Political squabble erupts after NASA finds 2005 hottest on record**

GLOBAL WARMING: Congress is opening an informal probe into a key NASA scientist's charge that the agency has tried to stifle his

calls for reduced greenhouse-gas emissions. ...

**アルカテルはアフリカとの地球観測のつながりを強化**

**Alcatel reinforces African imaging ties**

AFRICAN IMAGING: South Africa's Council for Scientific and Industrial Research (CSIR) has concluded a memorandum of

understanding with Alcatel Alenia Space to collaborate in the space market. ...

#### 4年次防衛レビューは特殊部隊を強化、UAV 無人機調達を早める

##### QDR beefs up special forces, speeds UAV procurement

The Pentagon's 2006 Quadrennial Defense Review (QDR) calls for a 15 percent increase in special operations forces in fiscal 2007,

along with accelerated unmanned aerial vehicle (UAV) ...

#### 4年次防衛レビューの潜水艦の目標は圧力がかけられている革新に依存する

##### QDR's sub goal depends on innovations under pressure

The Quadrennial Defense Review, released Feb. 3, says the Navy will "return to a steady-state production rate" of two attack

submarines per year no later than 2012 ...

#### 予算、年度の防衛計画、4年次防衛レビューは企業が恐れていたよりましに見える

##### Budget, FYDP, QDR looking better than industry feared

The Defense Department is expected to request \$439 billion in its fiscal 2007 budget request, including \$84 billion for procurement

and \$73 billion for research, development, testing ...

#### NASA 監察官が取り調べを受ける

##### NASA's inspector general under investigation

NASA's inspector general, Robert W. Cobb, has himself become the object of an investigation into charges he "failed to investigate

violations of safety concerns" and retaliation against ...

#### 米政府は少なくとも\$120B の補正予算を要求することに

##### Administration to request at least \$120B in supplementals

The Bush administration will request \$70 billion more this fiscal year for global military operations such as in Iraq and Afghanistan,

and then an additional \$50 billion ...

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**Aerospace Daily & Defense Report Feb 3, 2006**

#### NASA は CEV 熱防護方法の代替候補に関する情報を求める

##### NASA seeking info on alternate CEV thermal protection schemes

NASA's Ames Research Center is seeking industry's help to identify alternate heat shield materials that could protect the Crew Exploration Vehicle (CEV) when it reenters Earth's atmosphere following a mission to low Earth orbit.

NASA and its CEV contractors already are working on the more advanced and robust heat shields that will be needed to protect the CEV when it re-enters following a trip to the moon. NASA plans to begin flying crew aboard the CEV by 2012 and return astronauts to the lunar surface in 2018.

The LEO-specific thermal protection system is a riskmitigating

alternative in case NASA runs into problems developing the thermal protection system for lunar returns, according to agency spokesman Kelly Humphries. The CEV may be called upon to service the International Space Station in LEO following the space shuttle's scheduled 2010 retirement.

Responders must have "high confidence" that the materials they propose for LEO re-entry also could be incorporated into a more robust heat shield for lunar returns, according to NASA's request for information. Responses are due March 10. Jefferson Morris (jeff\_morris@AviationNow.com)

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**Aerospace Daily & Defense Report Feb 3, 2006**

## NRO 米国偵察局の衛星画像はスーパーボール警備を助ける

### NRO spacecraft imagery helps protect Super Bowl

Terrorist protection for the Super Bowl in Detroit Feb. 5 includes a detailed imagery data base of the area taken by secret National Reconnaissance Office Advanced KH-11 type digital imaging spacecraft.

The imaging of U.S. cities by NRO reconnaissance spacecraft has also been done in the past to help build geometrically correct imagery products for use by agencies such as the Secret Service to support presidential visits and other high-profile visitors or events.

The National Geospatial-Intelligence Agency (NGIA) has used the reconnaissance **satellite** data to help compile 3D maps and other

imagery of the buildings and streets around the Super Bowl to help define the event's protection strategy and to also aid local officials with any real time threat assessments.

These data include line-of-sight angles to Ford Field, where the game will be played, and potential lines of attack for any ground or airborne terrorist threats. The NRO spacecraft image resolution of 12 in. or less is useful. But even more important than resolution is the **NGIA's** ability to manipulate such data into a variety of imagery products specifically useful to the Super Bowl protection challenge.

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Aerospace Daily & Defense Report Feb 3, 2006

## 年齢と倒産からの回復により ロラルのシュワルツ会長リタイアを早める

### Age, emergence from bankruptcy prompted Loral CEO's retirement

As he prepares to step down from the helm of Loral Space and Communications after 34 years, Bernard L. Schwartz says he learned a lesson from the company's financially disastrous Globalstar **satellite** telephone venture. But he has no regrets about his decision a decade ago to sell off the company's military electronics units to focus on space communications.

Schwartz says two milestones prompted him to announce his retirement as chairman/CEO: the company's emergence from bankruptcy protection last November and his 80th birthday the following month. Schwartz, who built the old Loral from a small

contractor into a defense electronics powerhouse, then suffered a stunning reversal of fortune after betting the company's future on space communications, will step down on March 1, ending a run of more than three decades at the helm of the company.

"I was around for 34 years," he said in an interview after announcing the decision. "That was enough time to do a lot of good things and a lot of bad things."

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Aerospace Daily & Defense Report Feb 3, 2006

## ラムズフェルド長官: FY2007 予算要求は適切

### Rumsfeld: FY '07 budget request 'appropriate'

Defense Secretary Donald Rumsfeld said Feb. 2 that the fiscal 2007 defense budget, which the Bush administration will propose Feb. 6,

is "appropriate" and that U.S. taxpayers . . .

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Aerospace Daily & Defense Report Feb 2, 2006

## 政府アカウントビリティオフィス: GIG は\$34B かかる、しかし、予算は分散している

### GAO: GIG to cost \$34B, but funding decentralized

The Defense Department's management approach for the Global Information Grid, in which no one entity is clearly in charge or accountable for results, is not optimized to enforce investment decisions across the department, congressional auditors told lawmakers Jan. 30.

Meanwhile, DOD officials estimate that the GIG infrastructure will

cost around \$34 billion through 2011, according to the Government Accountability Office. Without a management approach optimized to enforce department-wide investment decisions, the DOD is at risk of not knowing whether the GIG is being developed within cost and schedule, whether risks are being adequately mitigated, or whether the GIG will provide a worthwhile return on DOD's

investment, the GAO said in a report to the House and Senate Armed Services committees. The DOD's chief information officer

has lead responsibility (後略)

Aerospace Daily & Defense Report Feb 2, 2006

| 2005's TOP 25 DEFENSE/AEROSPACE Mergers & Acquisitions |             | U.S.    | Non-U.S. |                   |  |                                       |
|--|-------------|---------|----------|-------------------|--|---------------------------------------|
| Completed  | Price (\$M) | Rev's   | Ratio    | Acquired/Targeted | Buyer  |                                       |
| 1  | May-05      | \$7,058 | \$8,070  | 87%               | Snecma S.A. (France)<br>OK, not a match made in heaven. But it helped get Snecma privatized (and the French govt pocketed 1.1B euros).                     | Sagem S.A. (France)                   |
| 2  | Jun-05      | \$4,192 | \$2,292  | 183%              | United Defense Industries, Inc.<br>BAE Systems caps two years of frenetic buys with a U.S. prime—and becomes a land systems powerhouse.                    | BAE Systems plc (U.K.)                |
| 3  | Jul-05      | \$2,650 | \$2,047  | 129%              | Titan Corp., The<br>After Wall Street pans Lockheed Martin's abortive bid for Titan as too pricey, it rewards L-3 for paying more.                         | L-3 Communications                    |
| 4  | Dec-05      | \$2,200 | \$1,268  | 174%              | Anteon Corp.<br>All of GD's four deals in 2005 built its information technology business. This was the largest.  | General Dynamics Corp.                |
| 5  | Sep-05      | \$1,970 | \$884    | 223%              | Engineered Support Systems, Inc.<br>Two of the industry's fastest-growing acquisitions machines combine. For DRS the deal is a move towards services.      | DRS Technologies, Inc.                |
| 6  | Pending     | \$1,895 | \$1,670  | 113%              | MTU Friedrichshafen GmbH (Germany)<br>After jousting at U.S., French, and U.K. investors during 2005, Germany welcomes Swedish PE firm as MTU owner.       | EQT (Sweden)                          |
| 7  | Pending     | \$1,212 | \$822    | 147%              | Doncasters Group Limited (U.K.)<br>Doncaster's latest private equity owners... Arab? Seller Royal Bank of Scotland has no reason to rue the sale.          | Dubai International Capital LLC (UAE) |
| 8  | Jun-05      | \$1,200 | \$2,200  | 55%               | Boeing Co. [Wichita/Tulsa Div.]<br>Canadian investor times the aerospace cycle to a fare-thee-well. Boeing offloads more tin bending.                      | Onex Corp. (Canada)                   |
| 9  | Jun-05      | \$915   |          |                   | MTU Aero Engines [64.8%] (Germany)<br>Seller KKR sells its MTU Aero stake sooner than planned, as German govt gives the U.S. PE firm the bum's rush.       | public (Germany)                      |
| 10   | Feb-05      | \$850   | \$1,600  | 53%               | Computer Sciences Corp. [DynCorp assets]<br>Veritas did well with Raytheon Aero—so buys a competitor. CSC sells off lower end services portion of DynCorp. | Veritas Capital                       |

Aerospace Daily & Defense Report Feb 2, 2006

議員はブッシュの科学、数学、研究開発の推進を支持

Lawmakers endorse Bush's science, math, R&D push

House Science Committee leaders have endorsed President Bush's State of the Union call to boost math and science teaching, and they

are expected to push his proposal . . .

倫理オフィスは広範な逸脱を示唆、NASA に言及

Ethics office suggests broader waiver, notes NASA

The Office of Government Ethics (OGE) says it does not recommend eliminating any current statute dealing with conflicts of

interest for executive-branch hiring, but Congress may want . . .

日本は衛星データ伝送に欠陥を検出

Japan probes failures in sat data transmission

The Japan Aerospace Exploration Agency (JAXA) set up an investigation team on Jan. 30 to examine data transmission failures

in the Advanced Land Observing Satellite (ALOS) that . . .

ロラル会長シュワルツは3月1日にリタイア

Schwartz to retire as Loral chairman, CEO on March 1

RETIRING: Loral Space & Communications Chairman and CEO Bernard L. Schwartz plans to retire on March 1, the company said

Feb. 1. Schwartz has been chairman and . . .

| LEADING PURCHASERS OF U.S. DEFENSE ARTICLES & SERVICES<br>TOTAL VALUES OF DELIVERIES CONCLUDED<br>(In current U.S. dollars, rounded to nearest 10 million or 10 <sup>th</sup> of a billion) |                                |                              |
|---|--------------------------------|------------------------------|
| WORLDWIDE DELIVERIES 1997-2000  | WORLDWIDE DELIVERIES 2001-2004 | WORLDWIDE DELIVERIES 2004    |
| 1 Saudi Arabia \$16 billion   | 1 Egypt \$5.3 billion          | 1 Japan \$2 billion          |
| 2 Taiwan \$7.7 billion  | 2 Saudi Arabia \$4.7 billion   | 2 Egypt \$1.7 billion        |
| 3 Israel \$3.8 billion  | 3 Japan \$4.2 billion          | 3 Israel \$1.5 billion       |
| 4 South Korea \$3.5 billion   | 4 Taiwan \$4 billion           | 4 Saudi Arabia \$1.2 billion |
| 5 Turkey \$3.4 billion  | 5 Israel \$3.6 billion         | 5 Taiwan \$1.1 billion       |
| 6 Egypt \$3.2 billion   | 6 Greece \$3.4 billion         | 6 U.K. \$1 billion           |
| 7 Japan \$2.6 billion   | 7 South Korea \$2.6 billion    | 7 Greece \$990 million       |
| 8 Finland \$2.5 billion   | 8 U.K. \$2.4 billion           | 8 South Korea \$830 million  |
| 9 Greece \$2.1 billion  | 9 Italy \$1.6 billion          | 9 Italy \$690 million        |
| 10 U.K. \$1.8 billion   | 10 Turkey \$1.6 billion        | 10 Singapore \$590 million   |

Source: Congressional Research Service

| ARMY TOP 50 COMPANIES AND CATEGORY OF PROCUREMENT - FISCAL YEAR 2005 |                              |                   |                  |                   |                   |
|--|------------------------------|-------------------|------------------|-------------------|-------------------|
| RANK   | COMPANY NAME                 | TOTAL \$          | RDT&E \$         | OTHER SERVICES \$ | SUPPLIES \$       |
| TOTAL ARMY (DD350 REPORTS)   |                              | \$ 94,513,648,961 | \$ 8,556,078,270 | \$ 44,190,513,639 | \$ 41,767,056,452 |
| TOTAL ARMY TOP 50  |                              | \$ 46,345,948,061 | \$ 5,225,922,552 | \$ 18,025,514,992 | \$ 23,094,510,517 |
| 1  | HALLIBURTON COMPANY          | \$ 5,504,961,174  | \$ -             | \$ 5,504,963,314  | \$ 7,980          |
| 2  | GENERAL DYNAMICS CORPORATION | 3,479,447,407     | 309,719,783      | 683,309,192       | 2,486,418,432     |
| 3  | BAE SYSTEMS PLC              | 3,068,307,745     | 166,437,723      | 373,603,537       | 2,528,266,485     |
| 4  | LOCKHEED MARTIN CORPORATION  | 2,910,427,227     | 1,044,662,311    | 475,102,327       | 1,390,662,589     |
| 5  | BOEING COMPANY               | 2,532,124,171     | 509,799,344      | 44,715,722        | 1,978,609,105     |
| 6  | RAYTHEON COMPANY             | 2,228,483,793     | 511,367,229      | 259,607,493       | 1,457,509,081     |
| 7  | ITT INDUSTRIES, INC          | 1,856,454,647     | 75,026,977       | 547,551,766       | 1,233,875,904     |
| 8  | NORTHROP GRUMMAN CORPORATION | 1,794,584,499     | 362,502,184      | 616,901,094       | 815,181,230       |
| 9  | GM GDLS DEFENSE GROUP LLC    | 1,513,312,459     | 155,908,726      | 1,189,922,997     | 167,490,736       |
| 10   | RENCO GROUP, INC             | 1,315,541,510     | 21,379,539       | 19,960,615        | 1,274,211,356     |

技術移転の法律に影響の事前評価が求められる

Impact assessment sought on technology transfer rules

Europeans are urging the United States to conduct a cost-benefit analysis of the current set of technology transfer rules they argue

hamper business. . . .

空軍は他と似通ったスタッフ機能を再組織

Air Force reorganizes staff functions to resemble others

'A' TEAM: The Defense Department announced Jan. 30 that the staff functions at the Air Force headquarters, major commands and

warfighting headquarters will share the same structure . . .

**ロッキードは APKWSII のパートナーを指名**

**Lockheed Martin names APKWS II partners**

Lockheed Martin Corp. named HR Textron, Honeywell Defense and Space Electronics Systems, EaglePicher and ITT Power

Solutions as partners to compete for the second increment of the . . .

Aerospace Daily & Defense Report Jan 31, 2006

| AIR FORCE TOP 50 COMPANIES AND CATEGORY OF PROCUREMENT - FISCAL YEAR 2005 |                                  |                   |                   |                   |                   |
|---|----------------------------------|-------------------|-------------------|-------------------|-------------------|
| RANK  | COMPANY NAME                     | TOTAL \$          | RDT&E \$          | OTHER SERVICES \$ | SUPPLIES \$       |
| TOTAL AIR FORCE (DD350 REPORTS)   |                                  | \$ 55,484,051,377 | \$ 10,846,507,783 | \$ 21,896,351,980 | \$ 22,741,191,614 |
| TOTAL AIR FORCE TOP 50  |                                  | \$ 42,119,865,750 | \$ 9,277,797,264  | \$ 14,049,239,727 | \$ 18,792,828,759 |
| 1   | BOEING COMPANY                   | \$ 9,131,752,145  | \$ 1,462,696,898  | \$ 525,650,911    | \$ 7,143,395,368  |
| 2   | LOCKHEED MARTIN CORPORATION      | 7,920,018,656     | 2,332,328,947     | 1,585,432,413     | 4,002,257,296     |
| 3   | NORTHROP GRUMMAN CORPORATION     | 5,036,889,832     | 1,849,401,109     | 1,498,504,818     | 1,688,983,905     |
| 4   | RAYTHEON COMPANY                 | 2,035,188,488     | 583,211,202       | 274,345,574       | 1,177,631,692     |
| 5   | UNITED TECHNOLOGIES CORPORATION  | 1,981,286,652     | 31,810,178        | 21,111,754        | 1,928,364,720     |
| 6   | L-3 COMMUNICATIONS HOLDING, INC  | 1,698,659,277     | 163,435,168       | 1,098,083,818     | 437,140,291       |
| 7   | FEDEX CORP                       | 1,344,594,203     | -                 | 1,344,594,203     | -                 |
| 8   | GENERAL DYNAMICS CORPORATION     | 1,104,988,747     | 103,553,595       | 899,540,010       | 301,895,172       |
| 9   | EVERGREEN INTERNATIONAL AIRLINES | 985,088,202       | -                 | 985,088,202       | -                 |
| 10  | COMPUTER SCIENCES CORPORATION    | 853,445,300       | 1,726,195         | 836,073,167       | 15,645,938        |

| NAVY TOP 50 COMPANIES AND CATEGORY OF PROCUREMENT - FISCAL YEAR 2005 |                                 |                   |                   |                   |                   |
|--|---------------------------------|-------------------|-------------------|-------------------|-------------------|
| RANK   | COMPANY NAME                    | TOTAL \$          | RDT&E \$          | OTHER SERVICES \$ | SUPPLIES \$       |
| TOTAL NAVY (DD350 REPORTS)   |                                 | \$ 65,136,073,640 | \$ 13,459,811,068 | \$ 23,122,922,099 | \$ 28,553,340,473 |
| TOTAL NAVY TOP 50  |                                 | \$ 45,732,302,368 | \$ 11,323,886,101 | \$ 11,576,083,914 | \$ 22,832,332,351 |
| 1  | LOCKHEED MARTIN CORPORATION     | \$ 8,201,503,611  | \$ 4,804,810,177  | \$ 567,430,085    | \$ 2,829,263,399  |
| 2  | NORTHROP GRUMMAN CORPORATION    | 5,723,204,043     | 1,975,462,209     | 923,776,074       | 2,823,965,760     |
| 3  | GENERAL DYNAMICS CORPORATION    | 5,713,244,354     | 554,456,593       | 958,462,431       | 4,200,335,330     |
| 4  | RAYTHEON COMPANY                | 4,181,880,271     | 466,937,267       | 621,075,677       | 3,093,867,327     |
| 5  | BOEING COMPANY                  | 3,977,035,965     | 483,735,954       | 308,711,540       | 3,184,588,471     |
| 6  | BAE SYSTEMS PLC                 | 1,679,589,278     | 117,166,762       | 972,916,537       | 589,605,979       |
| 7  | UNITED TECHNOLOGIES CORPORATION | 1,642,533,221     | 1,075,059,461     | 68,689,489        | 500,804,271       |
| 8  | L-3 COMMUNICATIONS HOLDING, INC | 1,262,398,515     | 97,630,546        | 770,641,620       | 394,126,349       |
| 9  | ELECTRONIC DATA SYSTEMS CORP    | 1,255,570,255     | 16,900            | 1,254,065,605     | 1,487,750         |
| 10   | BELL BOEING JOINT PROGRAM       | 1,204,289,914     | 103,646,753       | 31,152,077        | 1,069,491,084     |

Aerospace Daily & Defense Report Jan 31, 2006

**ロッキードは TSAT の契約で競合を下す**

**Lockheed Martin beats competitors for TSAT award**

The U.S. Air Force has chosen Lockheed Martin Corp. over Northrop Grumman Corp. and Raytheon Co. for a \$2 billion award for the Transformational Satellite Communications

Lockheed Martin said in a statement.

Previously, first launch was slated for 2013, with full operational capability in 2018 (DAILY, June 2, 2005).

(TSAT) Mission Operations System (TMOS), the Defense Department announced late Jan. 27.

Meanwhile, the award was supposed to be made by last September, the end of fiscal 2005. TSAT faced strong congressional scrutiny last year as one of many military space programs that lawmakers cut into over concerns about programmatic problems.

The 10-year contract for the TMOS will link the TSAT program to the Global Information Grid (GIG), the U.S. military's protected Internet-like network, and is expected to start operations in 2014,

✕Awarding TMOS decreases TSAT program risk by providing an



integrating construct for network architecture and design and allows the awarded contractor to begin work on formal network interface definitions and specifications, the DOD said. TMOS will provide

circuit and packet mission planning and policy management, external network coordination, network operations and management, key management, and situational awareness-common oper-**TSAT**,

Aerospace Daily & Defense Report Jan 31, 2006

**英国の Astor レーダは隠れた能力をもつ**

**Britain's Astor radar has hidden potential**

GREENVILLE, Texas -- Britain's new Astor ground surveillance radar aircraft has some hidden, next-generation information warfare

and radar weapons effect potential. . . .

**ロッキード・マーチンは B-1, F-16 で JASSM をテスト**

**Lockheed Martin tests JASSM on B-1, F-16**

Lockheed Martin Corp. said Jan. 30 that it successfully flight-tested the Air Force-led Joint Air-to-Surface Standoff Missile (JASSM)

from B-1 and F-16 aircraft, making for 11 successful . . .

**NASA GDE-2 超音速地上実証エンジンの試験開始**

**Test firings begin for Ground Demonstration Engine**

Pratt & Whitney and the NASA Langley Research Center are beginning test firings of the hypersonic Ground Demonstration

Engine (**GDE-2**) at the NASA Hampton, Va., facility. . . .

**米政府アカウンタビリティオフィス: 軍事輸出は年平均\$11.5B**

**GAO: defense exports average \$11.5B per year**

The Government Accountability Office reported Jan. 27 that between 2000 and 2004, U.S. defense exports averaged \$11.5

billion a year versus imports of \$1.8 billion per year, . . .

Aerospace Daily & Defense Report Jan 30, 2006

| DoD TOP 100 COMPANIES AND CATEGORY OF PROCUREMENT - FISCAL YEAR 2005 |                                 |                           |                          |                           |                           |
|--|---------------------------------|---------------------------|--------------------------|---------------------------|---------------------------|
| RANK   | COMPANY NAME                    | TOTAL \$                  | RDT&E \$                 | OTHER SERVICES \$         | SUPPLIES \$               |
| <b>TOTAL DoD (DD350 REPORTS)</b>                                     |                                 | <b>\$ 269,237,525,386</b> | <b>\$ 37,099,016,908</b> | <b>\$ 105,525,932,943</b> | <b>\$ 126,612,575,535</b> |
| <b>TOTAL DoD TOP 100</b>   |                                 | <b>\$ 163,155,791,728</b> | <b>\$ 29,300,407,719</b> | <b>\$ 55,393,390,978</b>  | <b>\$ 78,461,993,031</b>  |
| 1  | LOCKHEED MARTIN CORPORATION     | \$ 19,447,130,633         | \$ 8,194,019,043         | \$ 2,826,425,971          | \$ 8,426,685,619          |
| 2  | BOEING COMPANY                  | 18,317,886,797            | 4,980,103,309            | 942,413,958               | 12,395,369,530            |
| 3  | NORTHROP GRUMMAN CORPORATION    | 13,512,356,291            | 4,429,732,015            | 3,640,605,955             | 5,442,018,321             |
| 4  | GENERAL DYNAMICS CORPORATION    | 10,640,762,393            | 986,443,016              | 2,605,312,074             | 7,049,007,303             |
| 5  | RAYTHEON COMPANY                | 9,109,329,221             | 1,825,636,321            | 1,474,910,766             | 5,808,782,134             |
| 6  | HALLIBURTON COMPANY             | 5,827,623,078             | -                        | 5,827,615,218             | 7,860                     |
| 7  | BAE SYSTEMS PLC                 | 5,582,580,591             | 527,446,968              | 1,678,975,543             | 3,376,158,080             |
| 8  | UNITED TECHNOLOGIES CORPORATION | 5,021,702,617             | 1,121,926,983            | 182,356,448               | 3,717,419,186             |
| 9  | L-3 COMMUNICATIONS HOLDING, INC | 4,713,813,503             | 403,533,761              | 3,136,166,124             | 1,174,113,618             |
| 10   | COMPUTER SCIENCES CORPORATION   | 2,827,726,732             | 269,074,854              | 2,471,189,877             | 87,462,001                |

|    |                                    |               |             |               |               |
|----|------------------------------------|---------------|-------------|---------------|---------------|
| 11 | SCIENCE APPLICATIONS INTERNATIONAL | 2,795,942,100 | 558,348,292 | 1,975,007,200 | 262,586,608   |
| 12 | ITT INDUSTRIES, INC                | 2,493,318,283 | 249,104,452 | 746,845,436   | 1,497,368,395 |
| 13 | HUMANA, INC                        | 2,260,685,194 | 404,373     | 2,260,280,821 | -             |
| 14 | GENERAL ELECTRIC COMPANY, INC      | 2,196,664,311 | 120,320,666 | 110,760,717   | 1,965,582,928 |
| 15 | HEALTH NET, INC                    | 2,031,991,411 | -           | 2,031,966,411 | 25,000        |
| 16 | TRIWEST HEALTHCARE ALLIANCE CO     | 1,803,645,659 | -           | 1,803,645,659 | -             |
| 17 | TEXTRON, INC                       | 1,599,948,596 | 219,103,870 | 32,373,522    | 1,348,471,204 |
| 18 | URS CORPORATION                    | 1,522,958,486 | 121,651,919 | 1,393,261,453 | 8,045,114     |
| 19 | GM GDLS DEFENSE GROUP LLC          | 1,513,312,459 | 155,908,726 | 1,189,922,997 | 167,480,736   |
| 20 | HONEYWELL INTERNATIONAL, INC       | 1,504,768,268 | 169,181,737 | 388,480,995   | 947,105,536   |
| 21 | B P PLC                            | 1,502,105,956 | -           | -             | 1,502,105,956 |
| 22 | BECHTEL GROUP, INC                 | 1,486,859,510 | 463,131,029 | 391,783,942   | 631,944,539   |
| 23 | OSHKOSH TRUCK CORPORATION          | 1,473,875,526 | 223,709,936 | 22,512,020    | 1,227,653,570 |
| 24 | ELECTRONIC DATA SYSTEMS CORP       | 1,450,518,021 | 16,900      | 1,446,858,821 | 3,642,300     |
| 25 | PUBLIC WAREHOUSING COMPANY         | 1,425,343,056 | 1,708,766   | 101,127,598   | 1,322,506,692 |
| 26 | RENCO GROUP, INC                   | 1,406,264,190 | 21,379,539  | 20,085,290    | 1,364,799,361 |
| 27 | FEDEX CORP                         | 1,369,725,116 | -           | 1,369,124,786 | 600,330       |
| 28 | STEWART & STEVENSON SERVICES, INC  | 1,295,813,335 | 14,525,730  | 3,605,823     | 1,277,681,782 |
| 29 | ALLIANT TECHSYSTEMS, INC           | 1,274,541,046 | 148,354,034 | 115,142,743   | 1,011,044,269 |
| 30 | BELL BOEING JOINT PROGRAM          | 1,204,289,914 | 103,646,753 | 31,152,077    | 1,069,491,084 |
| 31 | BOOZ ALLEN HAMILTON, INC           | 1,162,989,915 | 384,577,721 | 770,179,919   | 8,232,275     |
| 32 | N.V. KONINKLIJKE NEDERLANDSCHE     | 1,069,504,184 | -           | 1,344,399     | 1,068,159,785 |
| 33 | EXXON MOBIL CORPORATION            | 1,046,077,242 | -           | 154,869       | 1,045,922,373 |
| 34 | AMERISOURCEBERGEN CORPORATION      | 1,020,843,133 | -           | 301,845       | 1,020,541,288 |
| 35 | EVERGREEN INTERNATIONAL AIRLINES   | 985,088,202   | -           | 985,088,202   | -             |
| 36 | ANTEON INTERNATIONAL CORPORATION   | 938,637,452   | 129,685,256 | 761,323,541   | 47,628,655    |
| 37 | WASHINGTON GROUP INTERNATIONAL     | 879,146,162   | -           | 876,625,872   | 2,520,290     |
| 38 | ENGINEERED SUPPORT SYSTEMS, INC    | 769,274,209   | 84,723,376  | 285,368,790   | 399,182,043   |
| 39 | CARDINAL HEALTH, INC               | 765,862,546   | -           | 1,804,875     | 764,057,671   |
| 40 | CACI INTERNATIONAL, INC            | 764,655,418   | 160,259,776 | 599,749,629   | 4,646,013     |
| 41 | ROCKWELL COLLINS, INC              | 759,010,311   | 84,962,807  | 115,810,201   | 558,237,303   |
| 42 | HARRIS CORPORATION                 | 736,700,728   | 58,590,428  | 151,346,254   | 526,764,046   |
| 43 | MCKESSON CORPORATION DELAWARE      | 686,451,339   | 9,005       | 2,257,488     | 684,184,846   |
| 44 | MASSACHUSETTS INSTITUTE OF TECH    | 611,330,360   | 608,448,445 | 2,863,315     | 18,600        |
| 45 | AEROSPACE CORPORATION              | 611,298,284   | 611,298,284 | -             | -             |
| 46 | MITRE CORPORATION                  | 585,391,425   | 275,384,277 | 310,007,148   | -             |
| 47 | DELL, INC                          | 583,605,853   | 19,348      | 19,268,059    | 564,318,446   |
| 48 | GENERAL ATOMIC TECHNOLOGIES CO     | 573,641,426   | 120,095,262 | 105,654,654   | 347,891,510   |
| 49 | A P MOLLER GRUPPEN                 | 572,382,572   | -           | 572,382,572   | -             |
| 50 | VALERO ENERGY CORPORATION          | 564,413,358   | -           | -             | 564,413,358   |

Source: Department of Defense

Aerospace Daily & Defense Report Jan 30, 2006

米陸軍の宇宙に関する要求事項、公表準備整う

Space needs of U.S. Army are readied for release

COLORADO SPRINGS, Colo. The U.S. Army this summer will publish a space master plan, according to Lt. Gen. Larry J. Dodgen, commander of Army Space Command.

It will tell "exactly what the Army needs in space," he said Jan. 24 at the Spacecomm 2006 conference here. "You won't have to go to 20 places to understand what the Army wants in space, what the Army needs in space, where the Army is going in space."

But before the plan is released, "we're going to send it over to our brothers in the Air Force and say, 'Hey, does this make sense to you? We need a little more fidelity in this. Is this something that you can work with?' And we'll work back and forth as the last step," he said.

Dodgen also said that the senior Army Space Council, a body of three-star generals including himself, has been revived. Most

recently, Dodgen said that discussions have centered on the message the Army is sending to the Air Force on space.

"Are we telling them our needs in language that they can understand? Are we actually engaging them in such a way that our requirements" are being fully understood? "Or are we talking without the specificity that they need to go off and manage" relevant requirements?

Largest user of space

"We're talking about the Army position in the acquisition community" that the Air Force and the National Reconnaissance Office can weigh as they answer questions to help the Army, Dodgen said.

He said the Army "is probably the largest user of space," so members of the Army Space Council realize that they have an

obligation to integrate Army plans with those of the Air Force.

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**Aerospace Daily & Defense Report Jan 30, 2006**

### **NASA は墜落宇宙飛行士の記念日を追悼**

#### **NASA remembers anniversaries of fallen astronauts**

NASA REMEMBERS: The coming days will witness a series of solemn anniversaries for NASA. Jan. 27 will mark the 39<sup>th</sup>

anniversary of the loss of the Apollo . . .

### **DISA 防衛情報システム庁 CIO 情報長官:国防省はグーグルのように変革したい**

#### **DISA CIO: DOD wants to innovate like Google**

LIKE GOOGLE: The chief information officer of the Defense Information Systems Agency says the Defense Department wants to

innovate more like Google. The Internet-search company designs different . . .

### **シーロンチ スケジュールは2006年満タン**

#### **Sea Launch schedule is full for '06**

FULL PLATE: Launch of Echostar 10 on a Zenit-3SLB in early February will be the first of six missions scheduled for the Sea

Launch Odyssey floating platform . . .

### **New Horizons ミッションチームは2月に会合予定**

#### **New Horizons mission team to meet in February**

NEW HORIZONS MEETING: The Jupiter-flyby science team for the New Horizons mission to Pluto will meet by early February to

begin more formal Jupiter science-data acquisition planning, . . .

### **国防省はIEDS 即席爆弾に企業の支援を求める、しかし、秘密裏に。**

#### **DOD wants industry's help on IEDS, but secretly**

IED PLEAS: The Defense Department has ramped up its pleas to industry to provide more ideas, and spend more money, to defeat

improvised explosive devices (IEDs) -- . . .

### **インドは中距離戦闘機の提案を求める**

#### **India plans RFP for Medium Range Combat Aircraft**

AIRCRAFT RFP: India is expected to float a request for proposals for 126 Medium Range Combat Aircraft in March. The RFP that

was to be released in . . .

### **ボーイングは防衛ビジネスをリストラ中**

#### **Boeing restructuring its defense business**

Moving to improve profit margins and position itself for an anticipated slowdown in Pentagon spending in fiscal 2007, Boeing

on Jan. 27 unveiled a major restructuring of . . .

### **日本の空軍基地で見られる航空機は北朝鮮スパイ任務であるかもしれない**

#### **Aircraft seen at Japan air base may be on North Korea spy missions**

'BLACK' AIRCRAFT: Military personnel stationed at Yokota Air Base, Japan, have spotted what may be highly classified "black"

aircraft that could be flying spy missions over North . . .

**エアボーンレーザは 11 月に大気透過補正の試験を予定**

**ABL planning November test for atmospheric compensation**

The Missile Defense Agency's Airborne Laser (ABL) program plans this November to demonstrate the ability to compensate for distortions in the atmosphere and keep its laser properly focused, according to Air Force Col. John Daniels, director of the ABL program office.

ABL is a modified 747-400 freighter that will use a high-energy chemical laser to shoot down ballistic missiles in their boost phase out to ranges of hundreds of kilometers.

During the November test, the aircraft will use two solid-state lasers—the Tracking Illuminator Laser (TILL) and the Beacon Illuminator Laser (BILL)—to illuminate a missile target and

measure the atmosphere between it and the aircraft.

The ABL prototype aircraft currently is in Wichita, Kan., where the TILL and BILL are being installed. The aircraft also is being structurally modified to prepare for the installation of six SUV-sized modules that will power the laser used to destroy missiles, known as the Chemical Oxygen Iodine Laser (COIL).

Not yet installed on the aircraft, the COIL recently fired for the first time at full-power long enough to destroy a missile during a ground test at Edwards Air Force Base, Calif. Boeing is the integrator of ABL, with Northrop Grumman providing the COIL and Lockheed Martin providing (後略)

**カナダコマンドは NORTHCOM と似た問題に直面**

**Canada Command facing issues similar to NORTHCOM**

COLORADO SPRINGS, Colo. ❖ As the Canadian government prepares to formally establish Canada Command on Jan. 31, it continues to grapple with a series of issues not unlike those that faced its American counterpart, U.S. Northern Command, when it became operational in 2002, according to Lt. Gen. Rick Findley, deputy commander of the North American Aerospace Defense Command (NORAD).

Findley, a Canadian, said Jan. 26 at the Spacecomm 2006 conference here that even though both countries have the same perspective on terrorism, it has taken Canada a bit longer to form the new command than it took the U.S. to form NORTHCOM because “Canadians, historically and traditionally, are much more analytical. I don't mean that in a bad or a good sense. They take their time.” It also took a few years to develop the agency called Public Safety and Emergency Preparedness Canada, Findley said.

“It doesn't look the same as the [U.S.] Department of Homeland Security, but it has very similar functions.”

Canada Command grew out of two reviews last year, one on international policy and one on defense policy. One conclusion, Findley said, was that “you've got to look after your homeland in a much more substantive manner. It doesn't mean it didn't exist, but there's a better way of doing it.” He said Canada Command is “regionally based, so there are commanders in each of the

geographic regions of Canada responsible for homeland defense.”

It's different from NORTHCOM because those commanders “own the forces,” Findley said. “They don't have to request forces. It's a different command and control structure.”

At the same time, he said, “its responsibilities are remarkably similar. If you look at their area of operations, their area of responsibility, Canada Command's looks remarkably like Northern Command's.” And, he said, “If you were to ask them what their missions and tasks were, they would tell it they are remarkably like Northern Command's because it's a natural fit.

“The difference for Canada Command,” he said, is that its mission statement includes a line to the effect that “we will be the principle military organization in Canada that has responsibility for liaising and coordinating with U.S. Northern Command and NORAD,” Findley said. The result is that NORAD, formed in the 1950s and run jointly by the U.S. and Canada, has two new partners, NORTHCOM and Canada Command, Findley said. “I think there's a natural fit there, a natural center of gravity. Both countries are seeing an acceleration in their exchange of people,” so that Canada Command people will be working in the U.S. at NORTHCOM and NORTHCOM people will be working at Canada Command.

This, Findley said, will provide “great reach back,” or links back to higher headquarters.

Although NORTHCOM was established quickly after the Sept. 11 attacks “ a remarkable achievement,” Findley said it is relatively mature and has a solid grasp of its missions and responsibilities. “ I think if you went to Canada Command today and said, Show me your initial plan for homeland defense, they d be a little reticent because it isn t quite there yet. They re just standing up next week with the initial cadre of the force. ”

Canada Command has “ a busy year ahead of them as they begin to wrap their minds around ” such issues as information sharing and interagency relationships, Findley said. “ They re going to be holding hands with Northern Command for the next year or two. ” The conference is sponsored by the local chapter of the Armed Forces Communications and Electronics Association (AFCEA). Rich Tuttle (richtut@aol.com)

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**Aerospace Daily & Defense Report Jan 27, 2006**

**ロッキード・マーチン第4四半期の利益 53%拡大**

**Net earnings zoom 53% for LM in 4th quarter**

Lockheed Martin's net earnings zoomed 53% in the fourth quarter of 2005 and 44 percent for the full year, the company said Jan. 26. . . .

**英はアフガニスタンに 3,300 人以上の部隊を派遣予定**

**U.K. sending 3,300 more troops to Afghanistan**

LONDON -- Britain had decided to deploy an additional 3,300 military personnel to Afghanistan to support the expansion of

NATO operations in the south of the country. . . .

**DISA 長官は NCES ネットワーク・セントリック・エンタープライズ・サービスに 2 企業が選定される予定と発言**

**DISA chief says two vendors will be chosen for NCES**

COLORADO SPRINGS, Colo. -- Two vendors, not just one, will be chosen for the Net-Centric Enterprise Services (NCES) program,

says Lt. Gen. Charles Croom, director of the . . .

**NASA は先進ロケットコンセプトに商業契約を取り決める**

**NASA strikes commerical deal for advanced rocket concept**

NASA and Ad Astra Rocket Co., a Houston-based company, have agreed to collaborate on development of the Variable Specific

Impulse Magnetoplasma Rocket (VASIMR) technology pioneered by space . . .

**NASA は追悼の日に墜落した宇宙飛行士を称賛**

**NASA 'Day of Remembrance' honors fallen astronauts**

REMEMBRANCE: NASA paused on Jan. 26 to remember its employees who have died in the line of duty. The agency's annual

"Day of Remembrance" occurs on the . . .

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**[ 国際関係 ・ 一般 ]**

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米ミサイル防衛 航空機レーザ見直し 2機目の発注延期

毎日新聞 06年02月10日 朝刊 7面 3段 1381

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ロシアのミサイル防衛システム 最新型インドに売却提案 軍拡競争で商機狙う

産経新聞 06年02月10日 朝刊 6面 5段 1686

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CIA収容所疑惑 米国、秘密裏に移送 英元外交官が証言 「テロ容疑者関係国に」

毎日新聞 06年02月10日 朝刊 7面 5段 写 1378

米軍基地移転 額賀福志郎防衛庁長官明かす 反対決議回避を施設庁働き掛け  
東京新聞 06年02月09日 朝刊 3面 1段 1616

ルクセンブルク政府 アルセロールの防衛支援へ新法案  
鉄鋼新聞 06年02月09日 朝刊 1面 1段 0511

タイ タクシン首相に逆風 不透明な株取引不信一気に ごう慢発言に嫌悪感  
毎日新聞 06年02月09日 朝刊 6面 5段 写 1210

米国2007年度予算 国務省、13%増 伸び率、国防予算の倍  
日本経済新聞 06年02月08日 朝刊 8面 2段 1379  
米国2007会計年度国防予算案 ミサイル防衛に104億ドル 対テロ戦争 特殊部隊の増強盛る  
産経新聞 06年02月08日 朝刊 7面 5段 1568

この数字 = 米国防予算案、ミサイル防衛104億ドル  
日刊工業新聞 06年02月08日 朝刊 3面 3段 0024  
米国 2007年会計年度予算教書 財政赤字最大の4230億ドル 歳出減は限定的  
日本経済新聞 06年02月07日 朝刊 9面 5段 図表 1525

施設庁談合 特捜部、天下り全容解明へ 「防衛施設技術協会」を捜索  
産経新聞 06年02月07日 朝刊 31面 4段 1772

## [宇宙・航空・科学]

米アエリオン 夢のジェット開発中 東京 - シアトルが5時間  
フジサンケイビジネスアイ 06年02月09日 朝刊 13面 2段 写 1758

NASA、文科省に連絡 宇宙ステーション予定通り建設方針  
東京新聞 06年02月09日 朝刊 3面 2段 1619  
JAXA立川敬二理事長 日本の実験棟打上げを確認  
日経産業新聞(日経テレコン21) 06年02月09日 朝刊 9面 1段 2149

国産衛星打上げ続々 宇宙技術の“スター”へ  
読売新聞 06年02月08日 朝刊 27面 4段 写図 1182

赤外線衛星「アストロF」 宇宙地図塗り替える 今月打上げ 惑星探しも  
東京新聞 06年02月07日 朝刊 20面 5段 写 1845

次世代型航空機部品供給ネットワーク 航空機部品の参入フォーラム  
日刊工業新聞 06年02月07日 朝刊 29面 2段 0201

## [宇宙利用・宇宙からの観測・宇宙環境利用・宇宙実験]

チャイム = 米航空宇宙局 無人火星探査車「スピリット」が顕微カメラで近接撮影した石の画像を公開  
産経新聞 06年02月09日 朝刊 31面 1段 写 1594

フォルクスワーゲン米法人、米グーグル、エヌビディア 衛星写真使用3D地図のカーナビ開発に取り組む  
電波新聞 06年02月08日 朝刊 3面 3段 0248

北海道・大樹の「北海道衛星」 世界初の測定機 野菜の鮮度手元で一目 2万6000台中国へ  
北海道新聞 06年02月06日 朝刊 1面 6段 写 1973

## [防災・環境・資源・エネルギー・リスクマネジメント]

米レーダ配備計画 環境影響調査へ青森県が検討会  
河北新報 06年02月09日 朝刊 5面 1段 2066

日立ビルシステム 地震時の昇降機復旧でシステム  
フジサンケイビジネスアイ 06年02月10日 朝刊 8面 1段 1916

花粉特集 充実した花粉情報サイト リアルタイムに飛散状況を提供 今年の飛散量は少な目  
薬事日報 06年02月10日 朝刊 8面 5段 写 0881

ニッセイ同和損保 水災リスク診断サービス開始 わが国初 3D洪水シミュレーション技術活用  
保険毎日新聞 06年02月09日 朝刊 2面 5段 写 0843

日航機 整備ミスのまま4日間飛行  
朝日新聞 06年02月08日 朝刊 38面 3段 1102

また日航整備ミス 非常ドア装置に不具合 そのまま21回飛行  
毎日新聞 06年02月08日 朝刊 30面 2段 1315

ロシアの学者 6-7年後「ミニ氷河期」入り!? 太陽活動停滞が要因  
フジサンケイビジネスアイ 06年02月08日 朝刊 27面 3段 1886

中国整備局 地震津波対策で調査 水島港モデルに あす検討委初会合  
日刊建設工業新聞 06年02月08日 朝刊 11面 4段 0703

東芝エレベータ 広報誌で防災特集 地震国ニッポンの最先端技術を紹介  
建設通信新聞 06年02月07日 朝刊 2面 2段 0687

東芝エレベータ 広報誌で地震・防災研究の最前線特集  
日刊建設工業新聞 06年02月07日 朝刊 3面 3段 写 0777

国交省方針 大規模地震発生後の輸送拠点 空港活用へシナリオ 仙台モデルに作成

[技術・産業]

ダッシュ=トランシーブラザ 3次元画像を制作 効率重視で高成長維持

日刊工業新聞 06年02月10日 朝刊 27面 2段 写 0169

山梨大学と甲府商工会議所 医療機器開発で産学連携 30社の参加に期待

日経産業新聞(日経テレコン21) 06年02月10日 朝刊 10面 3段 2332

アドバネクス ネジ補強材3割増産 英国子会社の技術者増員

日経産業新聞(日経テレコン21) 06年02月10日 朝刊 11面 4段 写図 2336

富士通 分子軌道法ソフト最新版発売 たん白質 光物性を高精度予測 励起状態の計算可能

化学工業日報 06年02月10日 朝刊 4面 4段 写 0377

東芝マテリアル 構造用窒化ケイ素 新規用途開拓を推進 産機、車向けなどに展開

化学工業日報 06年02月10日 朝刊 8面 5段 0389

高輝度光科学研究センター トップアップ低エミッタンス電子ビーム運転 S-Pring-8蓄積リングで成功

原子力産業新聞 06年02月09日 朝刊 4面 3段 写 0538

新・関西ぶらんど バイオベンチャー最先端(2) = サインポスト ペプチド研究所

日刊工業新聞 06年02月09日 朝刊 25面 2段 写 0170

先端力学シミュレーション研究所 3次元眼底画像構築システム 高精度に血管再現

日刊工業新聞 06年02月09日 朝刊 26面 3段 0181

先端力学シミュレーション研究所 眼底検査に3D画像装置開発 糖尿病など早期発見

フジサンケイビジネスアイ 06年02月09日 朝刊 8面 2段 1733

先端力学シミュレーション研究所 3D眼底画像システム 製品化にメド 血液循環器系の診断にも

化学工業日報 06年02月09日 朝刊 8面 3段 0349

電気協同研究会専門委が報告書 電力変電技術・変電設備の運用限度評価

電気新聞 06年02月09日 朝刊 6面 9段 写図表 0432

産業技術総合研究所 カロテンの光劣化 CNTに内包し抑制

日刊工業新聞 06年02月09日 朝刊 26面 3段 0179

NTTドコモ FOMA専用の屋内アンテナ開発

日経産業新聞(日経テレコン21) 06年02月09日 朝刊 3面 3段 2100

アンリツが計測装置開発 レーダの解析・評価など一台で



日刊工業新聞 06年02月08日 朝刊 6面 2段 写 0050

凸版印刷 ホンジュラス博物館にVR

日刊工業新聞 06年02月08日 朝刊 10面 1段 写 0079

ミツミ電機がオプティカル・ネットワーク・ユニット開発 GE-PONシステム用

電波新聞 06年02月08日 朝刊 5面 2段 写 0265

ネットワーク=米国政府、警備目的で3Dホログラム技術「レイア姫のホログラム」も可能

フジサンケイビジネスアイ 06年02月08日 朝刊 10面 2段 1802

パナソニック四国エレクトロニクス 血糖値nmセンサ増産 糖尿病患者増に対応

日経産業新聞(日経テレコン21) 06年02月08日 朝刊 13面 2段 2210

NECとNECアクセステクニカ カラーキャナ搭載ビジネスFAX発売文書の電子化やファイリングも

電波新聞 06年02月07日 朝刊 4面 3段 写 0276

抵抗器特集 各社の主力製品/事業戦略 アルファ・エレクトロニクス 日本ファインケム ツバメ無線他

電波新聞 06年02月07日 朝刊 10面 5段 0294

米・KLAテンコール 電子ビーム検査システムを出荷 65nm以上の微細化に対応

電波新聞 06年02月07日 朝刊 11面 3段 0299

凸版印刷 バーチャルリアリティ・シアタシステム 海外博物館で好評ホンジュラスに納入

フジサンケイビジネスアイ 06年02月07日 朝刊 5面 4段 写 1888

オメガトロンが装置開発 電子ビーム加工を安く

フジサンケイビジネスアイ 06年02月07日 朝刊 11面 3段 写 1925

米国 自動車・航空会社の悪化、景況感に響く 米国民の6割経済運営に不満

フジサンケイビジネスアイ 06年02月07日 朝刊 12面 3段 1931

カレッジ・マスターハンズ 流体解析ソフト開発 動体でも空気の流れ解析競技者のフォーム研究に

日経産業新聞(日経テレコン21) 06年02月07日 朝刊 16面 2段 写 2155

## [通信・放送・IT・セキュリティ]

通信・放送懇座長、講演で表明 地上放送局 ハード・ソフト「分離を検討」

日本経済新聞 06年02月10日 朝刊 5面 3段 1484

総務省懇松原聡座長 「通信と放送の融合法制を」

フジサンケイビジネスアイ 06年02月10日 朝刊 9面 3段 1926

通信・放送懇 地上波・衛星放送の課題議論

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法務省 債権の電子化、法制審に諮問

朝日新聞 06年02月09日 朝刊 4面 3段 0992

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ソフトバンク 携帯参入、全国展開で 回線賃借 ポーダフォンと提携交渉

読売新聞 06年02月09日 朝刊 1面 4段 1078

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YRPユビキタス・ネットワーク研究所 沖電気工業が実験 神戸空港の案内携帯端末で提供

日経産業新聞(日経テレコン21) 06年02月10日 朝刊 3面 5段図 2279

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NECが超小型マイクロ波通信システム発売 携帯基地局を無線接続

日刊工業新聞 06年02月10日 朝刊 11面 2段 写 0077

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ライオンコーポレーション マンション向けシステム発売 携帯電話で遠隔操作

日刊工業新聞 06年02月10日 朝刊 19面 2段 0137

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米インテルサット メディアフローUSAとビデオ配信契約を締結 Kuバンドを使い地上波放送を配信

電波新聞 06年02月08日 朝刊 3面 2段 0252

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相場ウオッチ値 = 横ばい 有料放送サービス インターネット配信台頭、今後低下も

日経流通新聞M(日経テレコン21) 06年02月08日 朝刊 9面 3段 表 2340

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京セラ ワイヤレスブロードバンドシステム ケニアで商用サービス開始

化学工業日報 06年02月07日 朝刊 9面 1段 0412

京セラ iパースト ケニアで商用開始 VoIPも

電経新聞 06年02月06日 朝刊 4面 3段 写 0605

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海外事情 = テルストラ社 今後はiモードと3Gに傾注

電経新聞 06年02月06日 朝刊 1面 4段 写 0577

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【経営・人】

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TOKYO発 = 芸歴30年 渡辺哲さん ロッキード事件30年 田中元首相 ひとり芝居に挑戦

東京新聞 06年02月10日 朝刊 32面 7段 写 1863

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長辻象平の視点 “ヘビー級衛星”が続々 日本の宇宙開発 連続打上げで正念場

フジサンケイビジネスアイ 06年02月10日 朝刊 22面 5段 写 1976

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着眼着想 = JTBワールドパッケージ企画推進部長 常盤省吾さん 海外パックスツアー 「ガクタビ」

日経流通新聞M(日経テレコン21) 06年02月10日 朝刊 3面 3段 写 2420

日本毛織 テキスタイル事業 中国の生産能力増強 年産6万反体制へ

日本繊維新聞 06年02月10日 朝刊 3面 3段 0911

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谷洸武の未来紀行(91) = 高度な航空機技術でビジネスチャンス到来 カヤバ工業 トキメック

株式新聞 06年02月10日 朝刊 5面 4段 写図 0965

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放送改革 持ち株保有制限緩和 地域局の経営安定狙い キー局の力強まれば弊害も

読売新聞 06年02月09日 朝刊 9面 4段 1125

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ひと話題 = ルフトハンザドイツ航空 オットー・F・ベント日本支社長 北海道内にサッカー合宿誘致

北海道新聞 06年02月09日 朝刊 11面 3段 写 2032

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民間航空機、需要が回復 エアバスとボーイング 昨年受注、過去最高に

毎日新聞 06年02月09日 朝刊 8面 4段 写 1226

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ウォルト・ディズニー 05年10 - 12月期売上高 2%増収 放送事業部門は6%増

電波新聞 06年02月09日 朝刊 8面 3段 表 0262

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注目株 = 住友精密工業 航空機関連“離陸”近し 円安享受再増額も

株式新聞 06年02月09日 朝刊 1面 3段 図 0816

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北海道産ロケットで提携 米国企業副社長に聞く 衛星、低コストで軌道へ法制度のクリアが課題

北海道新聞 06年02月08日 朝刊 11面 4段 写 1859

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武田計測先端知財団 武田シンポジウム2006 パーチャル熱く語る 舘すすむ氏 廣川信隆氏 佐藤哲也氏

毎日新聞 06年02月08日 朝刊 22面 4段 写 1292

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ネットレーダ囲い込みに火花 注文システムを充実 相場分析機能の提供 商品先物各社がサービス競う

日刊工業新聞 06年02月08日 朝刊 17面 6段 0152

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タムラ製作所 太陽誘電子会社の電源事業買収 医療機器向け北米で開拓

日経産業新聞(日経テレコン21) 06年02月08日 朝刊 8面 3段 2174

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1月の工作機械大手8社の受注合計額 6.4%増452億円

日経産業新聞(日経テレコン21) 06年02月08日 朝刊 14面 1段表 2218

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米ジョンソン・エンド・ジョンソン 2005年決算 医療機器等が支え売上高7%増

薬事日報 06年02月08日 朝刊 7面 1段 0866

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制度改革評価小委員会 卸電力取引所 効率化、定量的に分析 市場分断対策が必要

電気新聞 06年02月08日 朝刊 2面 4段 0422

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ニッセイ同和損保 「経営塾WEB」で代理店支援を強化 登録店が着実に増加

保険毎日新聞 06年02月08日 朝刊 1面 5段 0956

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会社法省令 買収防衛策に開示義務 社外取締役選任など株主へ説明徹底

日本経済新聞 06年02月07日 朝刊 1面 5段 表 1473

会社法 省令 買収防衛策の平時導入促す

日本経済新聞 06年02月07日 朝刊 11面 2段 1536

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日本航空と全日本空輸 2005年4 - 12月期連結決算 日航、8億円の営業赤字 国内旅客不振

フジサンケイビジネスアイ 06年02月07日 朝刊 2面 3段 表 1880

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西田健一の産業的消息(50) = 春節が生む経済効果

フジサンケイビジネスアイ 06年02月07日 朝刊 13面 4段 写 1940

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### [航空輸送、エアライン]

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北九州市 新空港に光の案内

西日本新聞 06年02月08日 朝刊 1面 3段 写 2034

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航空会社 東京 - 札幌で価格競争 来年度「ドル箱」一転「局地戦」

日刊工業新聞 06年02月08日 朝刊 14面 4段 表 0125

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日航06年度計画 新千歳 - 名古屋 繁忙期に大型機

北海道新聞 06年02月07日 朝刊 11面 1段 1925

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元アジアナ航空社員を入管法違反で起訴 不法入国あっせん

毎日新聞 06年02月07日 朝刊 26面 1段 1456

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旅行大手 個人予約でこ入れ インターネット勢に対抗 JTB 日本旅行

日本経済新聞 06年02月07日 朝刊 11面 5段 写図 1534

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顧客争奪戦 神戸、新九州空港 攻める新参航空会社 「陸」は新サービスで対抗

産経新聞 06年02月07日 朝刊 8面 4段 写 1711

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インドネシアのアダム航空 豪カンタスが出資へ

日経産業新聞(日経テレコン21) 06年02月07日 朝刊 4面 3段写 2076

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### [民間航空機関連 (ex-SJAC 三輪さん)]

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## Smart Quote

「どんな企業もそれだけ単独で存在する事はできない。大いに必要にこたえるだろうし、サービス提供もするだろうが、それは自分自身のためにではなく他者のためにであるべきである。そうでなければ、内部崩壊し、利益が上がらないだけでなく存在すらストップすることになる。」

第 30 代 米国大統領 カルビン・クーリッジ

"No enterprise can exist for itself alone. It ministers to some great need, it performs some great service, not for itself, but for others ... or failing therein, it ceases to be profitable and ceases to exist."

--[Calvin Coolidge](#), 30th president of the U.S.

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2006年2月7日 AIA dailyLead February 6, 2006

「自分のしている事に楽しみを見出せずに成功を収める事はほとんどない」

"People rarely succeed unless they have fun in what they are doing."

--Dale Carnegie, American writer

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2006年2月8日 AIA dailyLead February 7, 2006

## 米国 2007 年政府予算、防衛関連

### Proposed budget spares weapons programs

The proposed budget for fiscal 2007 keeps major weapons program intact, but some experts expects cuts in the future. The budget includes \$2.6 billion for construction of two destroyers, and \$2.2 billion for the F-22 fighter jet. Spending on space operations

would rise 5% to \$9.8 billion. [The Wall Street Journal](#) (2/7), [The New York Times](#) (2/7), [The Washington Post](#) (2/7), [The Washington Post](#) (2/7), [Fort Worth Star-Telegram \(Texas\)](#) (2/7)

## ヒーロー空港給油割当

### Airlines to discuss Heathrow's fuel rationing system

Airlines this week will propose a plan to handle fuel rationing at London's Heathrow Airport. The **International Air Transport Association** will discuss the issue Thursday. [American Airlines](#) and

[United Airlines](#) say they are unfairly penalized. Heathrow-based U.K. carriers are allowed access to more fuel than U.S. carriers. [Reuters](#) (2/7)

## ノースウェスト航空パイロット組合スト回避

### Northwest pilots unlikely to strike, analysts say

The chances of a pilots strike at [Northwest Airlines](#) are slim, airline experts say. Some analysts predict the company and the union representing the pilots will agree on a contract at the last minute. Northwest

operates under bankruptcy protection and says it must cut its labor costs to survive. [The Washington Post/Reuters](#) (2/6)

## ワシントン・ダレス空港定時発着率 改善

### Column: Washington Dulles improves on-time performance

On-time performance has improved at Washington Dulles International Airport, Washington Post columnist Keith L. Alexander writes. In December, the

airport ranked first among large airports for the first time in its history, according to the Bureau of Transportation Statistics. [The Washington Post](#) (2/7)

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### 米国防省予算2007で、武装費関連プログラムは継続

#### Weapons programs to remain intact in 2007 budget, officials say

Pentagon officials say the 2007 Defense Department budget will keep weapons-procurement plans intact.

The White House today will release details of its funding request, which includes \$84.2 billion for weapons procurement. [The Wall Street Journal](#) (2/6)

### 米航空局 FAA が運賃からの負担増を認める方向

コントロールタワー関連費用等 FAA 経費のビジネスジェットによる負担配分を(受益者負担原則で)増加しようとする大統領府の計画をエアラインは支持

#### Plan would allow FAA to charge user fees

A White House plan, which needs congressional approval, would force business jets to pay a larger share for upgrades to the air traffic control system. Airlines support the user-fee arrangement. In 2004,

commercial airlines paid 90% of aviation taxes, but operated two-thirds of flights. [The Wall Street Journal](#) (2/5)

### 今年中にまた幾つかのエアライン統合がありうるの見通し

#### Some analysts expect airline consolidation in 2006

Some analysts and observers believe the airline industry is ripe for another merger, and experts say the industry will not turn a profit with six or seven large carriers competing for passengers. "The stars

are lined up," said Richard Aboulafia, an aviation consultant with the Teal Group in Fairfax, Va. [Journal and Constitution \(Atlanta\)](#) (2/5)

### JFK 空港へのヘリ便ニューヨークのダウンタウンから9分サービス再開

#### New York helicopter service will speed travelers to JFK

A startup company is launching helicopter service that will fly customers from Wall Street to Kennedy International Airport in about nine minutes. The service will also allow travelers to fly to their planes

without passing through airport security; the Transportation Security Administration will screen the passengers at the Downtown Manhattan Heliport. [The New York Times](#) (2/6)

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2006年2月7日 9:50 最も読まれた3本 (2006/01/30 - 2006/02/05)

#### 1位 「ジョブズとゲイツ」比較コラムに手厳しい批判(上)

<http://hotwired.goo.ne.jp/news/20060130201.html> >

#### 2位 インテルCPU搭載の新型マックは「買い」か?(下)

<http://hotwired.goo.ne.jp/news/20060130302.html> >

#### 3位 ウィンドウズで『マック OS X』の『エクスポゼ』を実現

<http://hotwired.goo.ne.jp/news/20060203302.html> >

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2006年1月31日 9:40 最も読まれた3本 (2006/01/16 - 2006/01/22)

#### 1位 インテルCPU搭載の新型マックは「買い」か?(上)

<http://hotwired.goo.ne.jp/news/20060127301.html> >

#### 2位 ジョブズとゲイツ、真の「善玉」はどっち?

< <http://hotwired.goo.ne.jp/news/20060126201.html> >

3位 「リッター140キロの燃費」を謳うハイブリッド車が開発中

< <http://hotwired.goo.ne.jp/news/20060123301.html> >

2006年1月24日 11:33 最も読まれた3本 (2006/01/16 - 2006/01/22)

1位 銭湯とウォシュレットにみる日本の「ソフトパワー」

< <http://hotwired.goo.ne.jp/news/20060116204.html> >

2位 「ライブドア・ショック」に揺れる日本

< <http://hotwired.goo.ne.jp/news/20060119102.html> >

3位 イヤフォンで難聴、異例の警告CM

< <http://hotwired.goo.ne.jp/news/20060118306.html> >

**[新刊広告]** 月刊誌「軍事研究」2006年3月号

絶賛好評発売中。本号は特集・現代戦場の高等サバイバル技術。中でも必読記事は「ステルス戦闘艦の最新デザインと構造」。海自護衛艦も含め、世界各国海軍戦闘艦外観は時代の流れにより、マ

スト、上部構造物などがどのように変化しつつあるかを詳細解説。

またまた今回も店頭立読禁止。定価 980 円。 多田智彦

