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U.S. Research Institutions

Literature and debate over space warfare and defense is conducted in many U.S. research institutions or think tanks. These organizations may be funded by academic institutions, corporations, the military, or government agencies. Work produced by these organizations is published and available in many U.S. and foreign academic libraries, and many of these organizations freely publish and distribute their material through their Web sites. Individuals employed by these organizations are often scholars and former governmental or military policymakers. These individuals may present their research findings and opinions to government and military policymakers or they may testify before congressional oversight committees; they are often interviewed in newspapers, on television and radio news, and may also present their views through Internet blogs or other Web-based communication modes. This chapter describes the work of various U.S. research institutions that produce freely available Internet resources dealing with space warfare and defense. These organizations include industry groups, think tanks, commercial groups, and advocacy organizations.

American Institute of Aeronautics and Astronautics

The American Institute of Aeronautics and Astronautics (AIAA) was established in 1963, has 41,000 members, and its headquarters are in Reston, Virginia. Its membership includes scientists and engineers in aeronautics and astronautics, and its mission includes exchanging technological information through publications and conferences to promote technical progress in these arenas and to enhance members' professional expertise. AIAA also runs a public policy program striving to provide federal policymakers with essential technical information and policy guidance on aerospace issues. It carries out its policy program activities through congressional testimony, position papers, and workshops.

AIAA's Web site (www.aiaa.org) contains significant information resources describing organizational activities. These include information on upcoming conferences such as the 4th Annual U.S. Missile Defense Conference in Washington, D.C., information on professional training and instructional courses, news on aerospace industry trends and developments, descriptions of organizational committees and sections, and details on public policy program activities.

Several AIAA publications are available through its Web site, though some of these may only be accessible through computers in libraries subscribing to AIAA publications.

Examples of these information resources, which cover U.S. and international aerospace developments, include the periodical *Aerospace America* (September 2000–present) and the scholarly journals *AIAA Journal* (January 1963–present), *Journal of Propulsion and Power* (January/February 1985–present), and *Journal of Spacecraft and Rockets* (January/February 1964–present).

Additional accessible information resources include the opening statements of AIAA expert witnesses before congressional oversight committees, the archives of AIAA's policy-watch news containing news of governmental aerospace policy developments from May 2004–present with information on the president's proposed defense and NASA budgets being highlights of the February 10, 2006 edition of this resource, and various aerospace information and policy papers prepared by AIAA personnel. Examples of these publications include *Ballistic Missile Defense: A Challenge to Space Technology* (1984), *Export Control Policy and the U.S. Satellite Industry* (1999), *Recommended Government Actions to Address Critical U.S. Space Logistics Needs* (2004), and *The Versatile Affordable Advanced Turbine Engines (VAATE) Initiative* (2006).

Arms Control Association

The Arms Control Association (ACA) is a Washington, D.C.-based organization founded in 1971 seeking to enhance public understanding and support for what the organization considers effective arms control policies for journalists and scholars.

ACA's Web site (www.armscontrol.org) contains descriptions of association sponsored events (1999–present); press releases (2001–present); the text of various international arms control agreements including those dealing with weapons in space; resources on countries of arms control concern such as Iran; and subject resources dealing with space, missile defense, and other arms control issues such as the Comprehensive Test Ban Treaty.

Accessible publications include articles from the periodical *Arms Control Today* (January/February 1997–present), fact sheets such as *The Anti-Ballistic Missile (ABM) Treaty at a Glance* (2003) and *U.S. Missile Defense Programs at a Glance* (2004), and articles such as "Weapons in the Heavens: A Reckless and Radical Option" (October 2004).

Brookings Institution

The Brookings Institution (BI) is one of the United States' major public policy research organizations. Founded in 1916, it has a staff of 250, a $31-million annual budget, and its research interests encompass a variety of domestic and international public policy issues.

Features of BI's Web site (www.brookings.edu) include information on its multifaceted research areas, descriptions of its scholars, their areas of expertise, links to some of their publications, information about past and upcoming institute-sponsored events, and the complete text or excerpts from publications dealing with space warfare and defense such

Brookings Institution. *(Shepard Sherbell/Corbis)*

as *Beyond Missile Defense: Countering Terrorism and Weapons of Mass Destruction* (2001), *Neither Star Wars Nor Sanctuary: Constraining the Military Uses of Space* (2004), and *Preserving U.S. Dominance While Slowing the Weaponization of Space* (2005).

Center for Nonproliferation Studies

The Center for Nonproliferation Studies (CNS) is located in Monterrey, California and is part of the Monterey Institute of International Studies. Established in 1989, CNS's staff includes over 40 specialists and 50 graduate students located in Monterey, Washington, D.C., and Almaty, Kazakhstan. CNS's institutional purpose is preventing the spread of weapons of mass destruction by training nonproliferation specialists and distributing timely information and analysis. Further information about CNS's multifaceted programs and research activities are provided on its Web site, http://cns.miis.edu/. These information resources include descriptions of organizational program areas including the Weapons of Mass Destruction Terrorism Research Program, East Asian Nonproliferation Program, and International Organizations and Nonproliferation Program. Publications discussing space warfare and other nonproliferation topics include the scholarly journal *Nonproliferation Review* (1993–present), the newsletter *International Export Control Observer* (October 2005–present), and numerous reports including *A History of Ballistic Missile Development in the DPRK* (2000), *Missile Proliferation and Defenses: Problems and Prospects* (2001), *Ballistic Missile Defense and Northeast Asian Security: Views from Washington, Beijing, and*

Tokyo (2001), *New Challenges in Missile Proliferation, Missile Defense, and Space Security* (2003), and *Future Security in Space: Commercial, Military, and Arms Control Trade-Offs* (2003).

Center for Security Policy

The Center for Security Policy (CSP) is a conservative-oriented institution founded in 1988; it has a staff of four and an annual budget of approximately $850,000. Its mission involves serving as a foreign and national security policy information resource for government officials, press, industry, and the public, and developing strategies to facilitate the work of policymakers engaged in these issues.

CSP's Web site, www.centerforsecuritypolicy.org/, features a variety of information resources organized into geographical and functional areas. Its military space materials include articles and journalistic op-eds supporting missile defense and related subjects including *The Blackout Next Time* (an op-ed dealing with electromagnetic pulse) (2003); *Restructure, Don't Cut the Missile Defense Program: Focus Should Be on Deployment of Near-Term Anti-Missile Systems* (2004); *Anti-Anti-Missile Defense* (2004); *The High Ground: The Next Missile Defense Battle Heats Up in Space* (2004); and *The Rods from God: Are Kinetic-Energy Weapons the Future of Space Warfare?* (2005).

Center for Strategic and Budgetary Assessments

The Center for Strategic and Budgetary Assessments (CSBA), located in Washington, D.C., was founded in 1983, has a staff of seven, and its annual operating budget is $500,000. CSBA is a nonpartisan research organization seeking to provide timely analyses of military spending and national security policy issues for policy makers, the media, and interest groups.

A variety of information resources are provided through CSBA's Web site, www.csbaonline.org/. Besides containing information on organizational activities and a staff directory, several publications dealing with space warfare or defense are posted including *Future Warfare 20XX Wargame Series: Lessons Learned Report* (2001), *The Military Use of Space: A Diagnostic Assessment* (2001), and *Classified Funding in the 2006 Defense Budget Request* (2005).

Center for Strategic and International Studies

The Center for Strategic and International Studies (CSIS) is located in Washington, D.C. and is a nonpartisan research institute founded in 1962 specializing in providing practical insights to policymakers on international security issues.

CSIS's Web site (www.csis.org) features a stellar array of information resources. These include biographical information on institutional scholars, press releases (1997–present), listings of CSIS-sponsored events (1999–present), and descriptions of institute programs

including the Human Space Exploration Initiative, Technology and Public Policy Project, and the Transnational Threats Project. Its Web site also features publications on a variety of international strategic issues with representative samples of resources dealing with space warfare and defense including articles from the scholarly journal *Washington Quarterly* (1999–present) and reports such as *A Sober Second Look: Reassessing the Logic of Missile Defense* (2000), *China and the U.S: National Missile Defenses and Chinese Nuclear Modernization* (2001), *Remote Sensing Satellites and Presidential Decision Directive 23* (2003), *U.S.-Russian Missile Defense Cooperation: Limits of the Possible* (2003), *Responding to Asymmetric Threats in Space* (2005), *A Flight From Responsibility: Canada and Missile Defense of North America* (2005), and *The Still Untrodden Heights: Global Imperatives for Space Exploration in the 21st Century* (2005).

Chinese Military Power (Aerospace Section)

Chinese Military Power (CMP) is part of the Project on Defense Alternatives (PDA) sponsored by its parent institution the Commonwealth Institute. This institute is based in Cambridge, Massachusetts and conducts a variety of public policy research. Founded in 1991, PDA institutional objectives include promoting what it sees as reliable and cost-effective defenses against aggression; using military structures that it contends will not

China's first manned spacecraft, the Shenzhou-5, blasts off from the Jiuquan Satellite Launch Center in the northwestern province of Gansu in 2003. *(Xinhua/Xinhua Photo/Corbis)*

contribute to international tensions or crisis instability; allowing significant reductions in military spending and armed force sizes; enhancing progress in arms control; gradually demilitarizing international relations; and facilitating increasing reliance on collective and global peace-keeping entities and nonmilitary methods of conflict prevention, containment, and resolution.

PDA's Web site covering its overall array of information resources is accessible at www.comw.org/pda/, while its Chinese Military Power Web site emphasizing Chinese security trends and development is www.comw.org/cmp/. A variety of materials describing Chinese military aerospace developments are featured on this Web site including documents such as *The Chinese Threat to American Leadership in Space* (2001); *New Questions About U.S. Intelligence on China: An Analysis of the March 2005 Report by the U.S. National Air and Space Intelligence Center* (2005); *China's Future in Space: Implications for U.S. Security* (2005); *Action/Reaction: U.S. Space Weaponization and China* (2005); and *China's Space Program: A Strategic and Political Analysis* (2005).

Federation of American Scientists

The Federation of American Scientists (FAS), located in Washington, D.C., was founded in 1945 and has 2,500 members and a professional office staff of 18. Its annual budget is $3 million. FAS membership includes scientists, engineers, and other individuals concerned with societal impacts of science and seeks to provide what it believes are science-based perspectives on public policy issues.

The FAS Web site (www.fas.org) includes information about federation activities in a variety of national security related program areas such as intelligence, terrorism, U.S. weapons systems, and weapons in space. Publicly accessible federation periodicals include *Public Interest Report* newsletter (1946–present) and *Secrecy News* (September 2000–present).

In addition, the text of many reports produced by FAS or by government agencies on space war and defense issues are also provided. Examples of these resources include documents by FAS personnel such as *Not So Fast: Comments on "Estimates of Performance and Cost for Boost Phase Intercept" Presented to the Marshall Institute's Washington Roundtable on Science and Public Policy by Greg Canavan on 24 September 2004* (2005?) and *Ensuring America's Space Security* (2005), links to government and military reports on space defense maintained by FAS from agencies such as Air University, the Army Science Board, and Defense Science Board, and FAS maintained Web sites on military space programs involving satellite tracking, geodesy and mapping, imagery intelligence, wide-area ocean surveillance, antisatellite weapons, and a listing of military satellites in orbit.

GeoEye

GeoEye (formerly Space Imaging) is a for-profit company located in Thornton, Colorado with various branch offices in the United States and other countries. It was founded

in 1994 and seeks to provide space imagery and aerial photography to document continually changing features of the earth's environment, natural resources, and human development. GeoEye applications are used to provide solutions and analytical tools for various business, economic, environmental, and security situations internationally.

GeoEye's Web site (www.geoeye.com) features press releases (1995–present); descriptions of company product lines and some technical specifications for these products in imagery such as Ikonos satellites; radar products such as Radarsat; digital terrain models such as IM-1; and software products such as Carterra Analyst, which allows for the viewing, manipulation, and integration of imagery with other data to expedite decision-making.

White papers such as *Homeland Security* (2002) and *What is Imaging Radar?* (2005) are also noteworthy features of www.geoeye.com, along with descriptions of ongoing corporate activities in homeland security, regional and government support, and ensuring secure electronic data delivery. However, satellite photography is the hallmark characteristic of this Web site with representative samples including a photograph of the Kandahar, Afghanistan airfield on April 23, 2001 and a later photograph of this site on October 10, 2001 after its bombing by U.S. forces during Operation Enduring Freedom; photographs of the Pentagon between September 7, 2001 and September 7, 2002; before and after photographs of communities and regions affected by Hurricane Katrina in 2005; regions affected by the 2005 Pakistani Kashmir earthquake; and photographs of 2006 Winter Olympic venues in and near Torino, Italy.

George Washington University Space Policy Institute

The Space Policy Institute (SPI) is part of George Washington University's Elliott School of International Affairs in Washington, D.C. SPI was established in 1987 and conducts research on space policy issues relating to U.S. space policy and cooperative and competitive space policy contacts the United States has with other countries. Institute activities include research and conferences on these topics. SPI receives funding from George Washington University, individuals, corporations, foundations, and government sources.

SPI's Web site (www.gwu.edu/~spi) features a descriptive institutional overview, biographical information about institute faculty and listings of their publications, information about courses including the syllabus for the Fall 2005 "U.S. Space Policy" course, and information about current and recent institute research projects such as the U.S.–European gap in defense technologies and dual-purpose space technologies having both commercial and military applications.

Accessible publications include *Just Say Wait to Space Power* (2001), *High Resolution Earth Observations From Space: What Are Today's Issues?* (2001), *Space and Military Power in East Asia: The Challenge and Opportunity of Dual-Purpose Space Technologies* (2002?), *Europe's Ambitions in Space* (2002), *Space Economic Data* (2002), and *Reflections on Space as a Vital National Interest* (2003).

Elliott School of International Affairs at George Washington University, home of the Space Policy Institute. *(Claire Duggan, The George Washington University)*

Global Security

Global Security is located in Alexandria, Virginia. It was founded in 2000 and provides exhaustive online coverage of emerging news in defense, space, intelligence, weapons of mass destruction, and homeland security. Global Security sees its institutional mandate as providing innovative approaches to emerging security problems by reducing reliance on nuclear weapons and their possible use, transforming conventional U.S. military forces to meet post–Cold War security environment threats, supporting space technology initiatives to strengthen international peace and security, and improving the capabilities of the U.S. intelligence community respond to existing and emerging threats.

Numerous pertinent information resources are accessible through Global Security's Web site, www.globalsecurity.org/. These include materials broken into topical areas such as military, weapons of mass destruction, intelligence, homeland security, space, policy, and a weekly "public eye" feature presenting a satellite photograph of an international security area of interest, with a January 2006 photo highlighting the Iranian nuclear uranium enrichment site at Natanz and a June 2006 photo covering the North Korean Musudan-ri Missile Test Facility.

A "hot topics" section on the homepage features links to information resources on the European Union's Galileo navigation satellite, the National Security Agency and domestic

surveillance, North Korea's nuclear weapons program, and news reports on military topics from a variety of U.S. and international sources from 1997–present. Global Security's Web site also features links to the text of various U.S. Government agency space policy documents from 1988–present and analyses presented by Global Security personnel and other analysts such as *The Military Capabilities and Implications of China's Indigenous Satellite-Based Navigation System* (2004), *China and Russia Challenging the Space Leadership of the United States* (2005), and *The Case for Missile Defense in the Arabian Gulf* (2005). These multifaceted information resources combine to make Global Security an essential resource for those studying contemporary and recent historical space war and defense issues.

Heritage Foundation

The Heritage Foundation is located in Washington, D.C. and has become a major conservative public policy research institution. Founded in 1973, it sees its mission as developing and advocating conservative public policies based on free enterprise, limited government, traditional values, and strong national defense.

Detailed information about the Heritage Foundation and its work are provided through its Web site at www.heritage.org/. Available resources include listings of Heritage policy analysts broken down by subject expertise with links to their writings, links to foundation Web sites delineated by various areas of domestic policy and international affairs, and news releases from 2000–present.

Examples of accessible Heritage Foundation resources dealing with space warfare and defense include *America Needs a New Space Launch Vehicle* (2001); *Strategic Synchronization: The Relationship Between Strategic Offense and Defense* (2002); *China and the Battlefield in Space* (2003); *The Operational Missile Defense Capability: A Historic Advance for the Defense of the American People* (2004); *When Government Regulations Hinder Security: Shoulder-Fired Missile Defenses* (2005); *The 2005 Quadrennial Defense Review: China and Space—The Unmentionable Issues* (2005); and *Slipping the Surly Bonds of the Real World: The Unworkable Effort to Prevent the Weaponization of Space* (2005).

Institute for Defense Analyses

The Institute for Defense Analyses (IDA) is located in Alexandria, Virginia. Its institutional origins date back to 1947 when Secretary of Defense James Forrestal established a Weapons System Evaluations Group to produce technical analyses of weapons systems and programs. Its subsequent history has seen IDA evolve into a federally funded research and development center advising the Defense Department and military on national security issues requiring scientific and technical expertise. To preserve its institutional autonomy, IDA does not work for individual military departments, private industry, or foreign governments.

IDA's Web site (www.ida.org) lists members of its board of trustees and corporate officers, links to project Web sites including "Command Post of the Future," "Defense Science Study Group," and "Military Critical Technologies List," and descriptions of ongoing research areas such as C3, ISR and Space Systems, National Security Strategy Issues, Sensors, Surveillance and Target Acquisition, and Space, Air, Missile, and Weapons Technology.

Access to some IDA research reports is provided through the National Technical Information Service Web site (www.ntis.gov) or through the Federally Funded Research and Development Centers Web site of the Defense Technical Information Center (http://stinet.dtic.mil/special/ffrdc.html). Examples of some IDA reports accessible here include *Duel Between an ASAT With Multiple Kill Vehicles and a Space-Based Weapons Platform With Kinetic Energy Weapons* (1986), *Schedule-Assessment Methods for Surface-Launched Interceptors* (1995), *FY96 Analysis of the Ballistic Missile Defense Interoperability Standards* (1996), *China and Ballistic Missile Defense: 1955 to 2002 and Beyond* (2003).

International Assessment and Strategy Center

The International Assessment and Strategy Center (IASC) is located in Alexandria, Virginia. Established in 2004, IASC is independent and nonpartisan and seeks to provide governmental and military policymakers with research and analyses of international affairs and national security issues looking 10–20 years into the future. IASC organizational assessments make multidisciplinary examinations of current and future trends and scenarios while also looking at ways U.S. policy responses to these developments can utilize diplomatic, economic, information, military, and political assets.

IASC's Web site (www.strategycenter.net) includes research project descriptions such as the Asian Security and Democracy Project, the Eurasian Sand Table, Military Balance Databases, and Trends in International Islam; biographical information on affiliated scholars; and listings of center publications. Examples of relevant IASC publications on space warfare and defense issues include *North Korea's New Missiles* (2004); *Pakistan's Long-Range Ballistic Missiles: A View From International Defense Exhibition and Seminar (IDEAS)*(2004); *Top Ten Chinese Military Modernization Developments* (2005); *China's New Strategic Cruise Missiles: From the Land, Sea, and Air* (2005); *China's Manned Military Space Ambitions* (2005); and *Will North Korea Midwife a New Historical Era?* (2006).

MissileThreat.com

MissileThreat.com is affiliated with the Claremont Institute in Claremont, California. It seeks to promote the importance of ballistic missile defense believing that the United States remains threatened by ballistic missiles armed with nuclear weapons or other weapons of mass destruction.

Further information about MissileThreat.com is provided by its Web site, www.missilethreat.com, which began in 2003. Accessible resources include news stories on bal-

Shock-absorbing pads fall away from the surface of an MGM-118A Peacekeeper intercontinental ballistic missile as it emerges from its launch canister. This is the first test launch of the Peacekeeper. *(U.S. Department of Defense)*

listic missile threats and defenses from January 2000–present, an extremely useful database called "Ballistic Missiles of the World," and threat scenario presentations demonstrating the consequences of a ballistic missile attack on critical U.S. infrastructures such as an ICBM attack on Alaska's Prudhoe Bay oil reserves, a missile strike on Hoover Dam and how such a strike would affect Las Vegas, and a Quicktime video simulation of a Chinese missile attack on Los Angeles. Publications provided include *Our Founding Principles and Ballistic Missile Defense* (2004), *Policy Statement on Ballistic Missile Defense* (2004), and *Independent Working Group Report: Missile Defense, the Space Relationship and the Twenty-First Century* (2006).

National Institute for Public Policy

The National Institute for Public Policy (NIPP), located in Fairfax, Virginia, was founded in 1981, and has a staff of twenty. Its organizational mission encompasses examining rapidly evolving international foreign policy and security issues such as the effectiveness of post–Cold War nuclear deterrence, the ability of the United States and its allies to counter weapons of mass production proliferation and missile delivery systems, and the future of NATO and other U.S. and allied military compacts. NIPP's Web site (www.nipp.org) features biographies of professional members, listings of advisory board members, and descriptions of institute programs such as The Future of Ballistic Missiles, Strategic Offensive Forces and the Nuclear Posture Reviews "New Triad," European Perspectives

on U.S. Ballistic Missile Defense, and Rationale and Requirements for U.S. Nuclear Forces and Arms Control.

Representative publications on space warfare and defense by NIPP personnel include *European Perspectives on U.S. Ballistic Missile Defense* (2002), *Understanding "Asymmetric" Threats to the United States* (2002), and *Wars of the Future: Implications for the Reform of Russian Armed Forces* (2004).

National Remote Sensing and Space Law Center

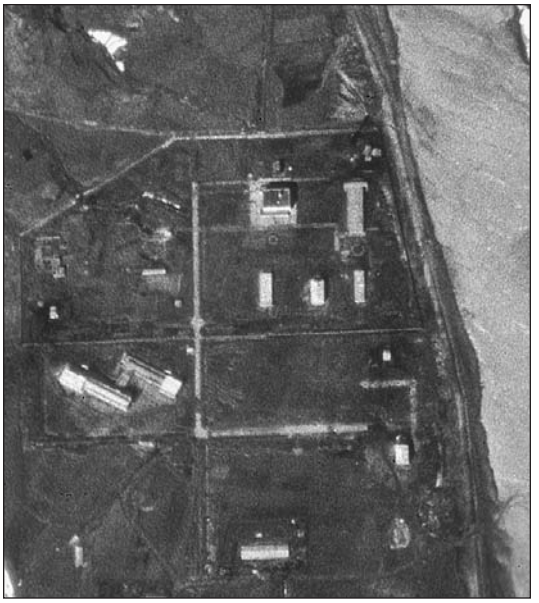
The National Remote Sensing and Space Law Center (NRSSLC) is located at the University of Mississippi in Oxford, Mississippi. Established in 2000 as part of that university's law school, NRSSLC seeks to create and disseminate objective and timely research on remote-sensing and space and aviation research. The center defines remote sensing as including satellite, airborne, and ground-based observation and imaging of the earth's surface, interior, oceans, and atmosphere. NRSSLC also examines related legal issues affecting remote sensing in areas such as intellectual property, international law, using imagery as legal evidence, and environmental licensing issues.

The NRSSLC Web site (www.spacelaw.olemiss.edu) features information about the center's mission, listings of staff members, information on Mississippi organizations engaged in remote-sensing activities such as the University of Mississippi Geoinformatics Center, descriptions of NRSSLC publications such as *Proceedings: The First International Conference on the State of Remote Sensing Law* (2002) and *Landsat 7: Past, Present, and Future* (n.d), and information about the *Journal of Space Law.* Staff presentations are also included with examples of these including *U.S. Domestic Space Law Regime* (2001), *Legal Implications of National Security Operations in Space: Space Warfare and Law Enforcement* (2002), *A Brief Survey of Remote Sensing Law Around the World* (2003), *Licensing and the Landsat Story: Law and Policy 1972–2003* (2003), *Legal Issues Using Satellite, Aerial, and UAV Platforms* (2003), and *Beginner's Guide to U.S. Satellite System Data Policy* (2003).

National Security Archive

The National Security Archive (NSA) is a nonprofit research institution affiliated with The George Washington University. It was founded in 1985 by journalists and scholars and receives nearly $2.3 million in annual revenue from publication sales and annual support from private organizations such as the Carnegie Foundation, Ford Foundation, and John and Catherine T. MacArthur Foundation. NSA's mission is serving as an international affairs research institution and maintaining an archive of declassified U.S. government documents obtained through Freedom of Information Act (FOIA) requests.

The archive's Web site (www.gwu.edu/~nsarchiv) contains information about NSA's documentary collections, news releases (May 1997–present), information about subscrip-



Yongbyon, the center of North Korean nuclear research activities, as photographed on March 17, 1970, by a KH-4B Corona satellite. *(National Security Archive (www.nsarchive.org))*

tion services it offers such as the Digital National Security Archive, and descriptions and sample documents from microfiche collections available for purchase including *Military Uses of Space, 1945–1991* (1991), *U.S. Nuclear History: Nuclear Arms and Politics in the Missile Age, 1955–1968* (1997), and *China and the U.S.: From Hostility to Engagement, 1960–1998* (1999).

An especially welcome feature provided by the NSA is its Electronic Briefing Books series available at www.gwu.edu/~nsarchiv/NSAEBB/.

This resource features over 100 freely accessible documentary compilations on various aspects of U.S. foreign and national security policy as of February 2006. Representative samples for those studying U.S. space warfare and defense issues include *U.S. Satellite Imagery, 1960–1999* (1999), *Missile Defenses Thirty Years Ago: Deja Vu All Over Again?* (2000), *The Secret History of the ABM Treaty, 1969–1972* (2001), *Eyes on Saddam: U.S. Overhead Imagery of Iraq* (2003), and *The Spy Satellite So Stealthy That the Senate Couldn't Kill It* (2004).

Nautilus Institute

The Nautilus Institute (NI) was founded in 1992, is located in San Francisco with an international office in Melbourne, Australia, and conducts research on topics such as environmental insecurity, international security policy, and global governance issues.

NI's Web site (www.nautilus.org) features listings of institute board members, biographies of affiliated scholars, and links to the Web sites of current and former institute programs. Examples of relevant publications relating to space warfare and defense include

The Political and Strategic Imperatives of National Missile Defense (2000), *British Approaches to Nuclear Disarmament and National Missile Defense* (2000), *Assessment of the North Korean Missile Threat* (2003), *Theater Missile Defense in Asia* (n.d.), and *U.S. BMD Program Under Bush Administration: Its Influence on Arms Race and Proliferation in East Asia* (n.d.).

Praeger Security International

Praeger Security International (PSI) is an online subscription database being offered by Greenwood Publishing Group beginning in 2006. This resource will provide online access to over 500 titles in international security, defense and foreign policy, military history, and terrorism from a variety of disciplinary and political perspectives.

General information about PSI is available at www.greenwood.com/psi/ and with representative titles in this database including *Sky State: The Space Debris Crisis* (2003); *Ballistic Missile Defense: Still Trying After All These Years* (2004); *Satellites: Communication, Observation, Navigation and Detecting* (2004); and *Thunder Over the Horizon: From V-2 Rockets to Ballistic Missiles* (2006).

Rand Corporation

The Rand Corporation is one of the most influential public policy think tanks in the United States and internationally. Its origins date back to December 1945 as Project Rand, a venture involving the Army Air Force and Douglas Aircraft Company. In May 1946 it issued *Preliminary Design of an Experimental World-Circling Spaceship,* which sought to describe how man-made satellites might be designed and perform. On May 14, 1948, Rand was incorporated as a nonprofit corporation in California and listed its institutional mandate as being: "To further and promote scientific, educational, and charitable purposes, all the public welfare and security of the United States of America."

Rand is headquartered in Santa Monica, California and has offices in Washington, D.C. and other locales. It provides nonpartisan public policy research in a variety of social science disciplines with an acute emphasis on national security issues. Rand has benefited from close relationships with and support from numerous U.S. Government agencies including the U.S. Air Force. Rand's Web site (www.rand.org) is a treasure trove of information resources including press releases (1995–present); listings of governmental, corporate, academic, and other supporters of Rand work; descriptions and Web site links for organizational component organizations including the Arroyo Center, which conducts research for the U.S. Army, and the National Security Research Division and its functional and regional geographic subdivisions. Additional Web site features include congressional testimony by Rand personnel (1993–present) and listings of Rand scholars arranged by name and area of expertise.

Charles Heffern (L) with space-rocket expert Robert Buchheim (R) at Rand Corporation Research Institution with model of Thor-Able rocket, 1958. *(Leonard Mccombe//Time Life Pictures/Getty Images)*

Numerous publications are provided through Rand's Web site including the journal *Rand Review* and its predecessor *Rand Research Review* (1993–present) and reference publications such as *Selected Rand Abstracts: A Guide to Rand Publications* (1998–present). The highlight of Rand's Web site is the full text access it provides to innumerable research reports on various public policy topics. Reports regarding space warfare and defense are featured prominently with examples including *Life Cycle Cost Assessments for Military Transatmospheric Vehicles* (1997); *Space: Emerging Options for National Power* (1998); *Trends in Space Control Capabilities and Ballistic Missile Threats: Implications for ASAT Arms Control* (1998); *The Changing Role of the U.S. Military in Space* (1999); *Commercial Observation Satellites: At the Leading Edge of Global Transparency* (2001); *Ballistic Missile Defense: A German-American Analysis* (2001); *Army Air and Missile Defense: Future Challenges* (2002); *Space Weapons, Earth Wars* (2002); *Mastering the Ultimate High Ground: Next Steps in the Military Uses of Space* (2003); *Toward Fusion of Air and Space: Surveying Developments and Assessing Choices for Small and Middle Powers* (2003); *Communications Networks to Support Integrated Intelligence, Surveillance, Reconnaissance, and Strike Operations* (2004); *Supporting Air and Space Expeditionary Forces: A Methodology for Determining*

Air Force Deployment Requirements (2004); *Building a Multinational Global Navigation Satellite System: An Initial Look* (2005); *High Altitude Airships for the Future Army* (2005); *Improving the Development and Utilization of Air Force Space and Missile Officers* (2005); and *Supporting Air and Space Expeditionary Forces: Capabilities and Sustainability of Air and Space Expeditionary Forces* (2006).

Stimson Center–Space Security Project

The Henry Stimson Center in Washington, D.C. was founded in 1989 and named for the U.S. Secretary of State from 1929–1933. It is a nonprofit and nonpartisan institution seeking to enhance international peace and security through analytical research and public outreach.

The Stimson Center's Web site, www.stimson.org/, contains press releases (October 1998–present), listings of affiliated scholars and their areas of expertise, descriptions of past center-sponsored events, and descriptions of historical and current center-sponsored projects including ones dealing with chemical and biological weapons nonproliferation, regional security in South Asia, global health security, and space security.

Space Security Project objectives include increasing public awareness of what the Stimson Center sees as the dangerous consequences of flight testing and deploying space weapons, giving policymakers, legislators, negotiators, and nongovernmental organizations information to making what Project participants consider prudent space security choices, and offering pragmatic alternatives to space weapons.

Resources provided on the Space Security Project Web site (www.stimson.org/wos) include statistics on the amount of satellites and orbital debris in space and publications such as *Space Assurance or Space Dominance?: The Case Against Weaponizing Space* (2003); *Model Code of Conduct for the Prevention of Incidents and Dangerous Military Practices in Outer Space* (2004); *Weapons in the Heavens: A Radical and Reckless Option* (2004); *Outer Space Threats* (2005); *Code of Conduct for Outer Space* (2005); and *Space Security or Space Weapons: A Citizen's Guide to the Issues* (2005).

Stratfor

Stratfor is an Austin, Texas-based commercial global intelligence organization founded in 1996. It specializes in providing its clientele with geopolitical and commercial intelligence, forecasting, and strategic policy analysis and provides a variety of fee-based information products and services to its customers. Stratfor's Web site (www.stratfor.com) features descriptions of its research and data gathering methodology, organizational leaders biographies, references to organizational analysis in print and electronic media, and information about subscribing to company products and services.