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NATIONAL DEBATE TOPIC FOR HIGH SCHOOLS, 2011–2012

Resolved: The United States Federal Government Should Substantially Increase Its Exploration and/or Development of Space Beyond the Earth's Mesosphere

NATIONAL DEBATE TOPIC FOR HIGH SCHOOLS, 2011–2012
Pursuant to 44 U.S.C. Section 1333

Compiled by the Congressional Research Service
Library of Congress

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44 U.S.C. SECTION 1333

CHAPTER 13--PARTICULAR REPORTS AND DOCUMENTS

Sec. 1333. National high school and college debate topics

(a) The Librarian of Congress shall prepare compilations of pertinent excerpts, bibliographical references, and other appropriate materials relating to:

(1) the subject selected annually by the National University Extension Association as the national high school debate topic and

(2) the subject selected annually by the American Speech Association as the national college debate topic.

In preparing the compilations the Librarian shall include materials which in his judgment are representative of, and give equal emphasis to, the opposing points of view on the respective topics.

(b) The compilations on the high school debate topics shall be printed as Senate documents and the compilations on the college debate topics shall be printed as House of Representative documents, the cost of which shall be charged to the congressional allotment for printing and binding. Additional copies may be printed in the quantities and distributed in the manner the Joint Committee on Printing directs.

(P.L. 90-620, Oct. 22, 1968, 82 Stat. 1270)

Historical and Revision Notes

Based on 44 U.S. Code, 1964 ed., Supp. III, Sec. 170 [Sec. 276a] (Dec. 30, 1963, Pub. L. 88-246, Secs. 1, 2, 77 Stat. 802)

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Foreword

The 2011-2012 high school debate topic is: "Resolved: The United States federal government should substantially increase its exploration and/or development of space beyond the Earth's mesosphere."

In compliance with 44 U.S.C. Section 1333, the Congressional Research Service (CRS) of the Library of Congress prepared this bibliography to assist high school debaters in researching the topic. This bibliography is intended to assist debaters in the identification of further references and resources on the topic. In selecting items and websites for this manual, CRS has sampled a wide spectrum of opinions reflected in the current literature on this issue. No preference for any policy is indicated by the selection or positioning of articles or websites cited, nor is CRS disapproval of any policy or article to be inferred from its omission.

Many of the U.S. Government documents listed in the subject bibliography are available in Federal depository libraries. These libraries may be identified in the Federal Depository Library Directory at: [http://catalog.gpo.gov/fdlpdir/public.jsp]. Your local library may be able to obtain the documents that are not available in an online format from these Federal depository libraries through an interlibrary loan.

The Library of Congress cannot distribute copies of this publication or other materials identified throughout this publication to debaters. This publication and other U.S. Government documents may also be found online in the Federal Digital System at: [http://www.gpo.gov/fdsys/].

The bibliography was prepared by Mark Gurevitz and Rita Tehan, Information Research Specialists, and Rob Sippel, Intern, in the Resources, Science, and Industry Section of the Knowledge Services Group, CRS, under the direction of Hannah Fischer, Acting Head, Resources, Science, and Industry Section, Knowledge Services Group, CRS.

Good luck to each debater in researching, preparing and presenting arguments on this year's topic.

Mary B. Mazanec, Acting Director
Congressional Research Service

NATIONAL DEBATE TOPIC FOR HIGH SCHOOLS, 2011-2012

RESOLVED: THE UNITED STATES FEDERAL GOVERNMENT SHOULD SUBSTANTIALLY INCREASE ITS EXPLORATION AND/OR DEVELOPMENT OF SPACE BEYOND THE EARTH'S MESOSPHERE

AN ANNOTATED BIBLIOGRAPHY ON THE 2011-2012 HIGH SCHOOL DEBATE TOPIC

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July 2011

Introduction

The 2011-2012 high school debate topic is: "Resolved: The United States federal government should substantially increase its exploration and/or development of space beyond the Earth's mesosphere."

This selective bibliography is intended to assist debaters as they identify resources and references on the debate topic. It lists citations to books, congressional publications, magazine and journal articles, and websites. The manual is divided into six subtopics:

Summary

The purpose of the debate manual is to provide students with a selective bibliography on the 2011-2012 high school debate topic **"RESOLVED: THE UNITED STATES FEDERAL GOVERNMENT SHOULD SUBSTANTIALLY INCREASE ITS EXPLORATION AND/OR DEVELOPMENT OF SPACE BEYOND THE EARTH'S MESOSPHERE."**

This bibliography includes citations to books, congressional publications, magazine and journal articles and websites. This compilation is not intended to supply complete coverage of the topic. Further research on the topic resources can be done at high school, research, depository, and public libraries. Also, debaters are encouraged to consult international organizations, U.S. Government agencies', private think tanks', and non-governmental organizations' (NGOs) websites which can provide further information on the topic of space exploration.

Thematic Resources

General Overviews

Abelson, Vivian M. 2002. *Exploration of Space: Issues and Status*. Hauppauge, N.Y: Nova Science.

This book examines programs, issues and plans for the exploration of space in the face of various challenges.

Ashley, Steven, and George Musser. 2007. "The Future of Space Exploration." Scientific American 297 (4) (October 1): 60-61.

Bainbridge, William Sims. 2009. "Motivations for space exploration." Futures 41 (8) (October): 514-522.

Bignami, Giovanni. 2009. "Why we need space travel." Nature 460 (7253) (July): 325-325.

Callmers, William N., ed. 2008. *Space Policy and Exploration*. New York: Nova Science Publishers.

Provides a range of analyses of U.S. space policy, space stations, the space shuttles, and space exploration.

Dasch, E. Julius, and Ian Ridpath, eds. 2005. *A Dictionary of Space Exploration*. Oxford, U.K. Oxford University Press.

Dictionary of technical terminology and jargon associated with space exploration and technology.

Denis, John H., and Paul D. Aldridge, eds. 2009. *Space Exploration Research*. New York: Nova Science Publishers.

Examines a range of space exploration-related issues, such as philosophy, biology, dark energy, space tourism, space station measurements, supernovas, and Saturn's rings.

Dick, Steven J., ed. 2010. *NASA's First 50 Years: Historical Perspectives*. Washington, DC: National Aeronautics and Space Administration, Office of Communications, History Division.

Written and edited by NASA staff members, this book reviews the achievements in manned and unmanned space travel associated with NASA's first fifty years.

The Discovery Channel/Curiosity.com. "Future Space Exploration: Curiosity," accessed June 8, 2011, http://curiosity.discovery.com/topic/future-space-exploration.

"Curiosity: the Questions of Our Life" is a television series and website from the Discovery Channel which attempts to tackle fundamental questions and underlying mysteries of our time. One of the topics is future space exploration.

Finarelli, P, and I Pryke. 2007. "Building and maintaining the constituency for long-term space exploration." Space Policy 23 (1) (February): 13-19.

Freeman, Marsha. 2000. *Challenges of Human Space Exploration.* Springer-Praxis books in astronomy and space sciences. London: Springer.

Based upon interviews conducted with astronauts involved in the Apollo-Soyuz and Shuttle-Mir programs, this book relates the mechanical and interpersonal challenges faced by the astronauts and the lessons they learned in meeting those challenges.

Hill, Tom. 2005. *Space: What Now? the Past, Present, and Possible Futures of Activities in Space*. Baltimore: PublishAmerica.

Examines basic issues facing the space program, such as what our goals in space should be, how critical space is to our future, the appropriate role for the government, and acceptable expenditures for space exploration.

Krone, Bob, ed. 2006. *Beyond Earth: The Future of Humans in Space*. Burlington, Ont: CGPub.

A collection of scholars' and scientists' writing, this book argues that humanity's innate need to explore points us to increasingly ambitious undertakings in space, and anticipates the future of future human life in space.

Lambright, W. Henry. 2003. *Space Policy in the Twenty-First Century*. New series in NASA history. Baltimore: Johns Hopkins University Press.

Ten observers of the U.S. space program explore such issues as the priorities and applications of space science, manned vs. unmanned flights, commercial access to the space enterprise, replacements for the space shuttle, the cost justification of the International Space Station, and the actual threat posed to Earth by asteroids.

Maguire, Dillon S., ed. 2010. *Exploring the Final Frontier: Issues, Plans and Funding for NASA*. New York: Nova Science Publishers.

Examines NASA's efforts to transition beyond the space shuttle program at a time of budget deficits.

Mari, Christopher. 2008. *The Next Space Age*. New York: H.W. Wilson Co.

A series of articles from periodicals and newspapers on the themes of Project Constellation, possible competition with China's space program, the commercialization of space travel, the exploration of Mars, the use of unmanned probes, and the search for exo-planets outside of our own solar system.

Moore, C., and S. Sharma. 2010. "Space exploration." Aerospace America 48 (11) (December): 71.

National Space Society, accessed June 8, 2011, http://www.nss.org/.

An independent educational non-profit organization focused on the creation of a space-faring civilization.

NASA. *Benefits of Space Exploration,* accessed June 3, 2011, http://www.hq.nasa.gov/office/hqlibrary/pathfinders/spinoff.htm.

Provides resources and references for NASA's fifty years of research and development that resulted in a wide range of inventions and products.

NASA. *Exploration,* accessed June 3, 2011, http://www.nasa.gov/exploration/home/index.html.

Provides background on NASA's space exploration programs.

Neal, Valerie, ed. 1994. *Where Next, Columbus?: The Future of Space Exploration.* New York: Oxford University Press.

Two collections of essays by historians, scientists, astronauts, and journalists that review the history of space exploration and consider the directions that it might take in the future.

NRC Solar System Exploration Decadal Survey. 2002. *The Future of Solar Exploration, 2003-2013: Community Contributions to the NRC Solar System Exploration Decadal Survey.* 1st ed. Astronomical Society of the Pacific conference series v. 272. San Francisco, Calif: Astronomical Society of the Pacific.

Contains a series of white papers written by panels of international scientists on issues facing solar system exploration in the 2003-2013 timeframe.

Schachter, H., and W. Lambright. Jan. "Exploring Space: NASA at 50 and Beyond." Public Administration Review 70 (1): 151.

Schmidt, Stanley, and Robert Zubrin. 1996. *Islands in the Sky: Bold New Ideas for Colonizing Space.* Wiley Popular Science. New York: Wiley.

A selection of articles from "Analog" magazine in which researchers and science writers make proposals for space travel and colonization, including the exploration of Mars, interstellar travel, and the adaptation of other planets to human life.

Schroer, R.B. 2008. "Space program overview [Part Two, NASA at 50]." *IEEE Aerospace and Electronic Systems Magazine* 23 (10) (October): 7-14.

Brief overview of NASA's activities and accomplishments over its first fifty years.

The Space Foundation, accessed June 8, 2011, http://www.spacefoundation.org/.

A nonprofit organization founded "to foster, develop and promote, among the citizens of the United States of America and among other people of the world ... a greater understanding and awareness ... of the practical and theoretical utilization of space ... for the benefit of civilization and the fostering of peaceful and prosperous world."

Space Frontier Foundation, accessed June 8, 2011, http://spacefrontier.org/.

"Founded in 1988, the Space Frontier Foundation is an advocacy organization committed to realizing the vision of a greatly expanded and permanent human presence in space."

Stern, S. Alan. 2002. *Worlds Beyond: The Thrill of Planetary Exploration.* Cambridge: Cambridge University Press.

Commentaries by ten planetary scientists on their favorite planet, their discoveries, and their motivations for exploring.

Budgetary Concerns

Anonymous. 2010. "NASA rethinks Mars missions; Stretching out trips to bring back samples could help cope with tighter budgets." *Los Angeles Times*, April 29.

Article about proposals by NASA to contend with budget constraints by extending the time over which it completes planned missions to Mars.

Brown, Josh. 2011. "House members question NASA's budget priorities." *Washington Times*, March 3, accessed June 8, 2011, http://www.washingtontimes.com/news/2011/mar/2/house-members-question-nasas-budget-priorities/.

Brumfiel, G., and A. Yeager. 2008. "Mars missions face cost crunch." *Nature* 455 (7215) (October 16): 840.

Hill, Jeffrey. 2010. "GAO: NASA Fails to Budget for Delays, Cost Overruns in Delta 2 Replacement Strategy." *Satellite News* 33 (48) (December 1).

Discusses Government Accounting Office (GAO) report stating that the NASA schedule and budget for the replacement of retiring Delta 2 launch vehicles may not be adequate.

Lawler, Andrew. 2009. "Trouble on the Final Frontier." *Science* 324 (5923) (April 3): 34-35.

Discusses implications of cost overruns on current NASA projects for future projects.

Musser, G. 2009. "Space Sticker Shock." *Scientific American* 300 (1) (January): 22.

Naeye, R. 2010. "Proposed NASA Budget Pros and Cons." *Sky and Telescope* 119 (6) (June): 8.

Pasztor, Andy. 2010. "Budget Deal Propels NASA on New Path; House's Passage of $58 Billion Compromise Bill Funds Commercial Space Travel, More Robotic Deep-Space Missions." *Wall Street Journal (Online)*, September 30, accessed June 8, 2011, http://online.wsj.com/article/SB10001424052748704116004575522770134156424.html.

Smith, Josh. 2011. "NASA's New Mission: Exploring the Heavens on a Budget." *National Journal* (January 21): 17.

Stern, Alan. 2008. "NASA's Black Hole Budgets." *New York Times*, November 24.

International Cooperation

Bowler, S. 2009. "ESA and NASA join up for Mars." *Astronomy & Geophysics* 50 (4) (August): 4.05.

Discusses a decision by the European Space Agency (ESA) and NASA to collaborate in the exploration of Mars.

Chang, Kenneth. 2010. "As Space Priorities Shift, Orbiting Station Takes On a Central Role." *New York Times*, August 4, accessed June 8, 2011, http://www.nytimes.com/2010/08/04/science/space/04nasa.html.

Dupas, A, and J Logsdon. 2007. "Creating a productive international partnership in the Vision for Space Exploration." *Space Policy* 23 (1) (February): 24-28.

Gibson, R. 2007. "The history of international space programmes." *Space Policy* 23 (3) (August): 155-158.

Logsdon, J. 2008. "Why space exploration should be a global project." *Space Policy* 24 (1) (February): 3-5.

Pasztor, Andy. 2010. "World News: Russia Seeks Cooperation With U.S. in Space Effort." *Wall Street Journal*, May 19.

The Planetary Society, accessed June 8, 2011, http://www.planetary.org/home/.

A non-profit organization which involves the world's public in space exploration through advocacy, projects, and education.

Sheehan, Michael. 2007. *The International Politics of Space*. Space, Power and Politics. London: Routledge.

Analyzes the space programs of the United States, Russia, China, India and the European Space Agency, and makes a case for the centrality of space to issues of war and peace, international law, justice and international development, and cooperation between the worlds leading states.

Taverna, M., and F. Morring. 2010. "International Effort." *Aviation Week & Space Technology* 172 (40) (November 1): 34.

Manned Versus Unmanned Exploration

Anonymous. "Battle for Mars." *New Scientist* 195, no. 2623 (October 29, 2007): 4.

Describes the efforts of the Mars Society, a charitable organization, to generate congressional support for the funding of manned (rather than unmanned) missions to Mars.

Anonymous. 2010. "NASA and Obama's budget: the politics and ideals of human space exploration." *The Christian Science Monitor*, April 16, accessed June 8, 2011, http://www.csmonitor.com/Commentary/the-monitors-view/2010/0416/NASA-and-Obama-s-budget-the-politics-and-ideals-of-human-space-exploration.

Describes the Obama administration's response to negative feedback on its decision to curtail manned space exploration efforts.

Anonymous. 2010. "Mr. Obama's starry-eyed vision; The moon is out, but why is Mars still in?" *The Washington Post*, April 23.

Editorial encouraging the Obama administration to have NASA focus on unmanned, rather than manned, exploration of space.

Anonymous. 2010. "Spaced out: What's missing from the bold plans for human spaceflight." *The Washington Post*, August 8.

Editorial advocating for the elimination of plans for manned exploration of outer space and instead providing private industry with incentives to develop the capacity to launch astronauts into low Earth orbit to access the International Space Station.

Billitteri, Thomas J. 2009. "Human Spaceflight: Are missions to the Moon and Mars feasible?" *CQ Researcher* 19 (36) (October 16): 861-884.

Examines the history and current status of the U.S. space program in the context of whether future manned missions to the Moon and Mars are practicable.

Crawley, Edward F. 2010. The human exploration of space: Review of U.S. Human Spaceflight Plans Committee. In *2010 IEEE Aerospace Conference*, 1-2. Big Sky, MT, USA, March.

Dorr, R. 2010. "The difficulties of letting go." *Aerospace America* 48 (8) (September): 8.

Discusses efforts by congress and the administration to achieve a compromise with regard to plans for human space exploration.

Flinn, E. 2009. "Endurance near and (really) far." *Aerospace America* 47 (6) (June): 22.

Discusses the endurance characteristics of UAVs (Unmanned Aerospace Vehicles) for performing missions at great distances from earth.

Jones, Tom. 2009. "Is human spaceflight 'optional'?" *Aerospace America* 47 (9) (October): 18-20.

Krauss, Lawrence M. 2011. "Rethinking the Dream." *Scientific American* 304 (4) (April): 14.

Considers the inspirational power of manned space exploration in the context of the much lower costs of unmanned exploration.

Lester, Daniel F., and Michael Robinson. 2009. "Visions of exploration." *Space Policy* 25 (4) (November): 236-243.

Logsdon, John M. 2011. "A new US approach to human spaceflight?" *Space Policy* 27 (1) (February): 15-19.

Matthews, Mark K. 2010. "NASA considers reducing roster of astronauts; 'Clearly there won't be a lot of flying going on'." *News Sentinel (2007-Current)*, December 5, accessed June 8, 2011, http://www.knoxnews.com/news/2010/dec/04/nasa-considers-reducing-roster-of-astronauts/?print=1.

Mindell, D. 2009. "The End of the Cult of the Astronaut." *IEEE Spectrum* 46 (6) (June): 68.

Rapp, Donald. 2007. *Human Missions to Mars: Enabling Technologies for Exploring the Red Planet*. Berlin: Springer.

Presents an argument for why, using its current approach, NASA will be unable to send humans to Mars before 2080.

Slakey, Francis. 2008. "Who Should Explore Space? Unmanned spacecraft are exploring the solar system more cheaply and effectively than astronauts are." *Scientific American Special Edition* 18 (1) (January): 26-32.

Societal Impacts

Anonymous. 2010. "Striking a balance NASA budget deal offers right flight plan for the nation's space program." *Houston Chronicle*, September 30, accessed June 8, 2011, http://www.chron.com/disp/story.mpl/editorial/7224318.html.

Editorial supporting the restoration of NASA funding to preserve jobs in areas of the country heavily vested in the space industry, as well as initiatives to encourage the development of orbital launch capabilities by private companies.

Bachnak, Rafic, Eduardo Chappa, and Karla De La Rosa. 2009. Exposing K-12 students to science and engineering. In *2009 39th IEEE Frontiers in Education Conference*, 1-4. San Antonio, TX, USA, October.

Chung, S.Y., P. Ehrenfreund, J.D. Rummel, and N. Peter. 2010. "Synergies of Earth science and space exploration." *Advances in Space Research* 45 (1) (January): 155-168.

Clarke, R. 2007. "Space: More than meets the eye." *Organisation for Economic Cooperation and Development. The OECD Observer* (263) (October): 16.

Cockell, Charles. 2007. *Space on Earth: Saving Our World by Seeking Others*. London: Macmillan.

Argues that environmentalism and space exploration can and should be undertaken in a manner that will be mutually beneficial.

Collins, Patrick, and Adriano Autino. 2010. "What the growth of a space tourism industry could contribute to employment, economic growth, environmental protection, education, culture and world peace." *Acta Astronautica* 66 (11-12) (June): 1553-1562.

Dick, S. 2007. "Assessing the impact of space on society." *Space Policy* 23 (1) (February): 29-32.

Ferris, Timothy. 2000. *Life Beyond Earth*. New York: Simon & Schuster.

Explains the belief of some scientists in extensive life throughout the universe, and discusses efforts to search for life in other worlds and communicate with extraterrestrial life forms.

Goel, Aditya, Rishi P. Jamdagni, and N. K. Mishra. 2010. New hope for clean energy through exploring space. In *Recent Advances in Space Technology Services and Climate Change 2010 (RSTS & CC-2010)*, 87-89. Chennai, India, November.

Hardersen, Paul S. 1997. *The Case for Space: Who Benefits from Explorations of the Last Frontier*. Shrewsbury, MA: ATL Press.

Jones, Greg and Kevin Kalinowski. 2007. "Touring Mars Online, Real-time, in 3D for Math and Science Educators and Students." *The Journal of Computers in Mathematics and Science Teaching* 26 (2): 123.

Macleish, M., W. Thomson, N. Moreno, R. Smith, C. Houston, M. Sognier, G. Coulter, and G. Vogt. 2008. "Education for the journey to the Moon, Mars, and beyond." *Acta Astronautica* 63 (7-10) (October): 1158-1167.

MacLeish, Marlene Y., and William A. Thomson. 2010. "Global visions for space exploration education." *Acta Astronautica* 66 (7-8) (April): 1285-1290.

Rodrigues, I, and H Carvalho. 2008. "Space education and outreach symposium (E1.). Structures for space education (2.)." *Acta Astronautica* 63 (1-4) (July): 475-485.

Schroer, R.B. 2008. "Looking ahead [Part Two, NASA at 50]." *IEEE Aerospace and Electronic Systems Magazine* 23 (10) (October): 38-40.

Provides a brief recap of the areas in which NASA has contributed to society in its first 50 years and discusses possible directions for the agency with the ending of the space shuttle program.

Semeniuk, Ivan. 2007. "What has the space age done for us?" *New Scientist*. 2007: 42-44

Simberg, Rand. 2011. "Space isn't a jobs program." *Washington Times*, March 14.

Space Tourism Society, accessed June 8, 2011, http://www.spacetourismsociety.org/Space_Tourism_Society/Welcome.html.

"Founded in 1996, the Space Tourism Society is the first organization specifically focused on the space tourism industry. Its goals are to conduct the research, build public desire, and acquire the financial and political power to make space tourism available to as many people as possible as soon as possible."

Whittell, Giles. 2010. "A blow to U. S. pride, but the economy is more important." *The Times*, June 14, accessed June 18, 2011, http://www.timesonline.co.uk/tol/news/science/space/article7149544.ece.

Discusses proposed changes to the space program in the context of associated job losses and economic impact.

Strategic Vision

Anonymous. 2007. "It's Time for a New Space Age." *Aviation Week & Space Technology*, January 8.

Argues that the U.S. space program needs to enter a transformative period that emphasizes lower costs, faster time to market and higher performance.

Anonymous. 2010. "Defying Politics." *Scientific American* 303 (6) (December): 16.

Discussion of the reasons behind the opposition to the Obama administration's plans to discontinue the Constellation program (which was to build rockets and space capsules to replace the space shuttle) and pay private companies to launch astronauts into orbit.

Anonymous. 2011. "After the space shuttle: Mission uncertain: The end of the programme will reverberate in Texas and beyond." *The Economist.* July 2

Anonymous. 2011. "The end of the Space Age: Inner space is useful. Outer space is history." *The Economist.* July 2, accessed July 6, 2011, http://www.economist.com/node/18897425?Story_ID=18897425&CFID=166956257&CFTOKEN=86939359

Anonymous. 2011. "Into the sunset: the final launch of the space shuttle brings to an end the dreams of the Apollo era." *The Economist.* July 2, accessed July 14, 2011, http://www.economist.com/node/18895018?story_id=18895018.

Anonymous. 2011. "Spooks in orbit: the other space programme." *The Economist.* July 2, accessed July 14, 2011, http://www.economist.com/node/18895010?story_id=18895010.

The Artemis Project. "Private Enterprise on the Moon," accessed June 8, 2011, http://www.asi.org/.

The Project is a private venture to establish a permanent, self-supporting community on the Moon.

Bates, Daniel. 2011. "NASA mission to put man on asteroid 5m miles away." *Daily Mail*, March 26, accessed June 8, 2011, http://www.highbeam.com/doc/1G1-252431540.html?key=01-

42160D517E1A116B1709031A026E4B2E224E324D3417295C30420B61651B617F13701 9731B7B1D6B39.

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Cordova, France A. 2010. "Reinvest in NASA." *Chicago Tribune*, April 18, accessed June 8, 2011, http://articles.chicagotribune.com/2010-04-18/news/ct-perspec-0418-space-20100418_1_nasa-s-human-spaceflight-program-nasa-field-centers-aeronautics-and-space-technology

Cox, Brian. 2010. "Obama's right to launch asteroid missions." *The Sun*, August 13.

David, L. 2009. "Return to the Moon: Shaping a new exploration agenda." *Aerospace America* 47 (1) (January): 30.

Dowd, Alan W. 2009. "Surrendering Outer Space." *Policy Review* (156) (August): 55-66.

Examines the implications of NASA retiring the space shuttle fleet and becoming reliant upon foreign countries to transport U.S. astronauts into outer space.

Fahys, Judy. 2011. "Lawmakers push to cut NASA climate funding, boost manned space flight." *The Salt Lake Tribune*, February 14, accessed June 8, 2011, http://www.sltrib.com/sltrib/home/51248435-76/billion-bishop-budget-chaffetz.html.csp.

Foust, Jeff. 2010. "A controversial new direction for NASA." *Ad Astra* 22 (1): 18.

Gordon-Murnane, Laura. 2010. "Incentive Prizes: Tools for Governments." *Searcher* 18 (1) (January/February): 12-15.

Article makes the case for using incentive prizes as a means of encouraging private individuals and companies to seek innovative solutions to technological challenges.

Gurney, Matt. 2010. "Falling behind; Under Obama, NASA has become an afterthought." *National Post*, December 14.

Hassler, S. 2009. "Why Mars? Why now?" *IEEE Spectrum* 46 (6) (June): 26.

Jamieson, Leah H. 2009. "The Mars Challenge." *IEEE Spectrum* 46 (6) (June): 73.

Kaufman, Marc. 2010. "Commercial spaceflight enters next stage." *The Washington Post*, December 9, accessed June 8, 2011, http://www.washingtonpost.com/wp-dyn/content/article/2010/12/08/AR2010120806697.html.

Keeton, Ann. 2009. "Future of U.S. Space Travel Is Up in the Air." *Wall Street Journal - Eastern Edition* 254 (148) (December 23): B7.

Krueger, Curtis. 2010. "A World of Difficulty." *St. Petersburg Times*, October 10.

Challenges and dangers associated with going to Mars.

Kushner, D. 2010. "Dream Chasers." *Discover* 31 (7) (September): 40.

Discusses the development and planned operation of the *Dream Chaser* spacecraft by a private firm, the Sierra Nevada Corporation.

Launius, R. 2008. "Space stations for the United States: An idea whose time has come—and gone?" *Acta Astronautica* 62 (10-11) (May): 539-555.

Lawler, Andrew. 2008. "Scientists Hope to Adjust the President's Vision for Space." *Science* 319 (5863) (February 2): 564-566.

Lockwood, Mike. 2007. "Fly me to the Moon?" *Nature Physics* 3 (10) (October): 669-671.

Lu, Edward. 2009. "Faster, NASA, Faster." *New York Times*, December 21, accessed June 8, 2011, http://www.nytimes.com/2009/12/21/opinion/21lu.html.

Editorial by former astronaut arguing that NASA should increase the rate of rocket launches as part of a program to spur more rapid innovation.

Lunau, Kate. 2010. "Destination Mars." *Maclean's* 123 (37): 52-59.

Mankins, John C. 2009. "Stepping stones to the future: Achieving a sustainable lunar outpost." *Acta Astronautica* 65 (9-10) (November): 1190-1195.

Morring Jr., Frank. 2010. "Commercial Route." *Aviation Week & Space Technology* 172 (6) (February 8): 20-23.

Morring, F. 2010. "Space Road Map." *Aviation Week & Space Technology* 172 (45) (December 13): 35.

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The titles listed below are available for purchase at the GPO Bookstore at:
http://bookstore.gpo.gov/collections/nasa.jsp

Psychology of Space Exploration: Contemporary Research in Historical Perspective (Paperback)

Publisher: National Aeronautics and Space Administration, Office of Communications, History Program Office

Description: Part of the NASA History Series, this book explores contributions of psychology to yesterday's great space race, today's orbiter and International Space Station missions, and tomorrow's journeys beyond Earth's orbit. Through essays on topics including survival in extreme environments, studies of commercial spaceflights, the multicultural dimensions of exploration, and the psychological benefits of viewing Earth from space and the multicultural dimensions of exploration, readers will gain an understanding of the psychological challenges that have faced the space program since its earliest days. An engaging read for those interested in space, history, and psychology alike.

Year/Pages: 2011: 264 p.; ill.

Price: $23.00

Wings in Orbit: Scientific and Engineering Legacies of the Space Shuttle 1971-2010 (Paperback)

Publisher: National Aeronautics and Space Administration, NASA Headquarters

Description: Provides authoritative documentation of the many accomplishments of the NASA Space Shuttle Program over the course of its 30 year history. It also provides accurate, authentic and easily understood accounts from NASA's best subject matter experts and external resources. This marvelous book, replete with extraordinary photographs, captures the passion of those who devoted their energies to the Program's success for more than three decades. It focuses on their science and engineering accomplishments, the rich history of the program and the shuttle as an icon in U.S. history.

Year/Pages: 2011: 600 p.; ill.

Price: $50.00

NASA's Contributions to Aeronautics, Vols. 1-2

Publisher: National Aeronautics and Space Administration

Description: A two-volume collection of case studies on aspects of NACA-NASA research by noted engineers, airmen, historians, museum curators, journalists, and independent scholars. Explores various aspects of how NACA-NASA research took aeronautics from the subsonic to the hypersonic era. 2 books in slipcase, sold as a set.

Year/Pages: 2010: 2 bks. (2019 p.); ill.

Price: $50.00

Modeling Flight: The Role of Dynamically Scaled Free-Flight Models in Support of NASA's Aerospace Program

Publisher: National Aeronautics and Space Administration

Description: Focuses on the applications of the techniques to generic configurations for general research as well as to specific aircraft and spacecraft configurations. Important lessons learned are also reviewed. A brief review of the special dynamic force tests that usually accompany free-flight tests is provided, and the document concludes with the author's perspective on potential future opportunities and requirements in free-flight model testing.

Year/Pages: 2010: 200 p.; ill.

Price: $35.00

Revolutionary Atmosphere: The Story of the Altitude Wind Tunnel and the Space Power Chambers

Publisher: National Aeronautics and Space Administration, NASA History Division, Office of Communications, NASA Headquarters

Description: This scholarly look at the Altitude Wind Tunnel covers the transformations the wind tunnel made in its long history from a wind tunnel doing full-scale testing for wartime applications, to a vacuum chamber supporting the Vision for Space Exploration, and even a brief period as home to Mercury astronaut training. The book also addresses the attempts to resurrect the facility and its eventual decommissioning and demolition.

Year/Pages: 2010: 410 p.; ill.

Price: $44.00

Spinoff 2010: NASA Technologies Benefit Society

Publisher: National Aeronautics and Space Administration, spinoff Program Office, NASA Center for AeroSpace Information, Office of the Chief Technologist

Description: Highlights the Agency's most significant research and development activities and the successful transfer of NASA technology, showcasing the cutting-edge research being done by the Nation's top technologists and the practical benefits that come back down to Earth in the form of tangible products that make our lives better.

Year/Pages: 2010: 315 p.; ill.

Price: $37.00

Our Changing Atmosphere: Discoveries From EOS Aura (Booklet)

Publisher: National Aeronautics and Space Administration, Earth Observing System Aura, Goddard Space Flight Center

Description: This booklet details discoveries from the Earth Observing System Aura, which was launched July 15, 2004. Aura is part of the Earth Science Projects Division, a program dedicated to monitoring the complex interactions that affect the globe using NASA satellites and data systems.

Year/Pages: 2010: 57 p.; ill.

Price: $10.00

Cosmos and Culture: Cultural Evolution in a Cosmic Context

Publisher: National Aeronautics and Space Administration, Office of External Relations, History Division

Description: Authors with diverse backgrounds in science, history, anthropology, and more, consider culture in the context of the cosmos in this book. How does our knowledge of cosmic evolution affect terrestrial culture? Conversely, how does our knowledge of cultural evolution affect our thinking about possible cultures in the cosmos? Are life, mind, and culture of fundamental significance to the grand story of the cosmos that has generated its own self-understanding through science, rational reasoning, and mathematics? Book includes bibliographical references and an index.

Year/Pages: 2009: 612 p.; ill.

Price: $61.00

Exploring the Unknown: Selected Documents in the History of the United States Civil Space Program: V. VII: Human Spaceflight: Projects Mercury, Gemini, and Apollo

Publisher: National Aeronautics and Space Administration, NASA History Division, Office of External Relations

Description: Emphasizes primary documents or long-out-of-print essays or articles and material from the private recollections of important participants in shaping space affairs. Each document or group of related documents is accompanied by a headnote setting out its context and providing a background narrative. These headnotes also provide specific information about people and events discussed.

Year/Pages: 2008: 893 p. ; ill.

Price: $35.00

Hubble 2008: Science Year In Review Book And Companion Poster

Publisher: NASA Goddard Space Flight Center

Description: This book describes the history and accomplishments of the Hubble space telescope. Includes color photographs and diagrams and a color wall poster.

Year/Pages: 2009: 151 p.; ill.

Price: $35.00

Rockets and People, Volume III, Hot Days of the Cold War

Publisher: National Aeronautics and Space Administration, NASA History Division, Office of External Relations

Description: In this volume, NASA covers the history of the Soviet space program from 1961 to 1967.

Year/Pages: 2009: 832 p.; ill.

Price: $69.00

Remembering the Space Age: Proceedings of the 50th Anniversary Conference

Publisher: National Aeronautics and Space Administration

Description: This publication contains papers presented at a conference convened by the NASA History Division and the National Air and Space Museum Space History Division on October 22-23, 2007, coverage 50 years in space. Divided into three parts, it encompasses the themes of the conference: 1. National and Global Dimensions of the Space Age; 2. Remembrance and Cultural Representation of the Space Age; and 3. Reflections on the Space Age.

Year/Pages: 2008: 479 p.; ill.

Price: $55.00

Read You Loud and Clear: The Story of NASA's Spaceflight Tracing and Data Network

Publisher: National Aeronautics and Space Administration, Office of External Relations, NASA History Division

Description: Contains an historical account of NASA's Spaceflight Tracking and Data Network (STDN), starting with its formation in the late 1950's to what it is today in the first decade of the 21st century. It traces the roots of the tracking network from its beginnings at the White Sands Missile Range in New Mexico to the Tracking and Data Relay Satellite System (TDRSS).

Year/Pages: 2008: 523 p.; ill.

Price: $25.00

Leadership in Space: Selected Speeches of NASA Administrator Michael Griffin, May 2005-October 2008

Publisher: National Aeronautics and Space Administration

Description: Contains selected speeches of NASA Administrator Michael Griffin about America's leadership role in space. Provides a thoughtful rationale for what we are doing in space, why we are doing it, and how we intend to bring it about.

Year/Pages: 2008 341 p.; ill.

Price: $43.00

Human Health and Performance Risks of Space Exploration Missions: Evidence Reviewed by the NASA Human Research Program

Publisher: National Aeronautics and Space Administration, Lyndon B. Johnson Space Center

Description: A collection of articles dealing with the risks of space exploration: behavioral health, radiation, medical capabilities, human factors and habitability, exercise and extravehicular activities.

Year/Pages: 2009: 396 p.; ill.

Price: $63.00

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112TH CONGRESS, 1ST SESSION/SENATE DOCUMENT 112–3

NATIONAL DEBATE TOPIC FOR HIGH SCHOOLS, 2011–2012

Resolved: The United States Federal Government Should Substantially Increase Its Exploration and/or Development of Space Beyond the Earth's Mesosphere

NATIONAL DEBATE TOPIC FOR HIGH SCHOOLS, 2011–2012
Pursuant to 44 U.S.C. Section 1333

Compiled by the Congressional Research Service
Library of Congress