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Appendix D About the Authors

David Albright is president of the Institute for Science and International Security (ISIS). His research organization has been a leader in assessing how commercial and civilian satellites could be used by nongovernmental organizations to monitor potential nuclear weapon facilities and test sites of foreign countries.

John C. Baker is a technology policy analyst at RAND. His work is concerned with commercial observation satellites and other dual-use space technologies. Previously, as a staff member at the Space Policy Institute at George Washington University, he directed the Institute's South China Sea Remote Sensing project. He has also been a research associate at the International Institute for Strategic Studies, Pacific-Sierra Research Corporation, and the Brookings Institution.

Dr. Adam Bernstein is a physicist working in the Radiation Detection Department at the Livermore branch of Sandia National Laboratories. He is a specialist in the development and use of technologies for treaty verification and cooperative monitoring, with an emphasis on nuclear arms control.

Dr. Einar Bjorgo works for the United Nations High Commissioner for Refugees (UNHCR) Mapping Unit as an associate information officer for geographic data. He received his Ph.D. in remote sensing from the Nansen Environment and Remote Sensing Center at the University of Bergen, Norway. While at the Nansen Center, he initiated the U.S. Institute of Peace–sponsored ReliefSat

and European Commission–supported ENVIREF projects on the use of high-resolution satellite imagery in refugee relief operations. He is the author of several international publications on applications of commercial high-resolution remote sensing technology in humanitarian relief operations.

Dr. Michel Bourbonniere is associate professor of International Law at the Royal Military College of Canada. He is a graduate of the McGill University Institute of Air and Space Law. He is a member of the International Institute of Space Law; a fellow of the Center for Hemispheric Defense Studies, National Defense University; and a member of the American Society of International Law. He has acted as consultant for the Canadian Space Agency on the RADARSAT-2 project. Professor Bourbonniere has published numerous articles in Canada, the United States, and in Europe dealing with air, space, and armed conflict laws.

Yahya Dehqanzada was, at the time this book was written, a RAND researcher specializing in commercial observation satellite issues and substantially contributed to producing this book. He now works for the U.S. government. He was previously with the Project on Transparency at the Carnegie Endowment for International Peace and was a coauthor (with Ann Florini) of *Secrets for Sale: How Commercial Satellite Imagery Will Change the World* (2000). He has also served as an intern at the State Department and the National Security Council.

Dr. Ann Florini is a resident associate at the Carnegie Endowment for International Peace. She wrote one of the earliest scholarly articles on the security implications of the worldwide proliferation of imaging satellites and has since published widely on the policy implications of growing access to satellite imagery. She currently directs two efforts at the Carnegie Endowment that address broad issues of global governance: the Project on Transparency and the Project on Transnational Civil Society.

Deborah Foster is a research analyst at the Strategic Assessment Center of the Science Applications International Corporation (SAIC), where she specializes in assessing trends in foreign use of space-based capabilities. She previously worked at the Center for Strategic and Budgetary Assessments.

Dr. Mark D. Gabriele is an expert on the Treaty on Open Skies and has written a book on its policy implications for the United States. His other work involves international transparency and studies of the collection and interpretation of

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John Gates is an employee of the National Imagery and Mapping Agency (NIMA) in Bethesda, Maryland, and has held previous positions with NIMA and its predecessor agencies in Panama, Peru, and Chile. As a participant in the Ecuador-Peru border negotiations following the 1995 conflict, Mr. Gates provided technical support and analysis to representatives of the guarantor nations and the deliberating parties. Mr. Gates holds Bachelor and Master of Science degrees from the State University of New York, College of Environmental Science and Forestry in Syracuse, New York.

Dr. Vipin Gupta is a senior member of the technical staff at the Livermore branch of Sandia National Laboratories, where he is currently working on assignment in the Advanced Concepts Group. He is a pioneer in the application of civilian and commercial satellite imagery to international security problems. Along with his colleague, Dr. Adam Bernstein, he provided the satellite imagery analysis for the South China Sea Remote Sensing project.

Dr. Louis Haeck is an adjunct professor at the *Ecole Polytechnique*, University of Montreal, and at the Royal Military College of Canada. Professor Haeck received his Ph.D. from McGill University in space law, where his thesis examined the military uses of outer space by the Canadian forces. He was awarded a NATO fellowship and obtained postdoctoral research scholarships from the Department of National Defence. He serves as a consultant for the military attaché at the Canadian Space Agency and has published many legal articles in various professional reviews in Europe and in the Americas.

Dr. Gregg Herken is a historian and the military curator for the Smithsonian Institution's National Air and Space Museum. He organized the museum's "Secret No More?" workshop in May 1998 that focused attention on the broader political and security implications of higher resolution commercial observation satellites.

Greg Hilgenberg is currently with Litton/TASC. Previously, he was a researcher at RAND, working on space policy and military issues. He holds a graduate degree in science, technology, and public policy from the Elliott School of International Affairs at the George Washington University. At RAND, he focused primarily on commercial remote sensing, microsatellites, and Air Force space policy issues.

Corey Gay Hinderstein is a policy analyst at the Institute for Science and International Security (ISIS). She has been a main contributor to the institute's continuing nonproliferation research on using civilian and commercial satellite imagery for monitoring nuclear-related sites.

Dr. Dana Johnson is national security analyst at RAND, where she focuses on military space policy issues. She has coauthored studies on air and space integration issues for the U.S. Air Force, as well as analyses on space support to the warfighter and the national security community.

Dr. Richard Johnson is an associate with Booz-Allen & Hamilton, Inc., and chief engineer of the Engineering Edge Alliance, a consortium of firms providing systems engineering and integration support to the National Imagery and Mapping Agency (NIMA). At the time of the Dayton peace talks, then-Colonel Johnson was Commander of the U.S. Army Topographic Engineering Center at Fort Belvoir, Virginia, and was deployed to Dayton as the night-shift supervisor for mapping support to the negotiators.

Beth E. Lachman is a science and technology policy analyst at RAND. Her current research focuses on analyzing market trends of geospatial technology industries and the application of such technologies to address environmental issues and urban systems. Her recent work includes analyzing trends in the commercial remote sensing and GIS marketplaces, developing an indicator system within a GIS to support decisionmaking within the Greater Yellowstone Ecosystem, and analyzing public-private partnerships for geospatial data sharing.

Richard Leghorn is the former president of the Itek Corporation and a pioneer in aerial and satellite reconnaissance. He has contributed first-person insights to the book regarding the evolution of early U.S. postwar efforts to acquire a remote sensing capability and early thinking on transparency as national policy.

Dr. Karen Litfin, associate professor of Political Science at the University of Washington, is an expert on global environmental politics and nongovernmental organizations. Her recent research includes work on how various NGOs are making use of satellite imagery.

Dr. Steven Livingston is associate professor of Political Communication and International Affairs at the George Washington University. He is an expert on assessing the influence of the news media on U.S. foreign and defense policy.

His current research focuses on how the news media are taking advantage of emerging information technologies, including commercial observation satellites.

Kevin M. O’Connell is a senior international policy analyst and manager of intelligence community programs at RAND. Prior to joining RAND, he served for more than a decade in various government positions, including on the intelligence community management staff and on the National Security Council staff in the White House Situation Room. His research projects at RAND focus on space commercialization, including assessments of the prospects for commercial remote sensing markets and international opportunities for imagery cooperation.

Dr. Xavier Pasco is an expert on space policy and American politics. He directs the research program at the *Fondation pour la Recherche Stratégique* in Paris. He has written extensively about French military and civilian satellite programs and is a coauthor of *Espace et Puissance* (1999).

Bob Preston is a former U.S. Air Force officer who is now with RAND. Much of his Air Force career was spent working on space policy and technology issues. In addition, he is the author of *Plowshares and Power: The Military Uses of Civil Space* (1994), which includes an assessment of commercial observation satellites and their implications for U.S. security policy and policymaking.

Isabelle Sourbès-Verger is a geographer and senior researcher at the *Centre National de la Recherche Scientifique* and the *Fondation pour la Recherche Stratégique* in Paris. Her research focuses on comparative space policies in the world with a special interest in national strategy for space occupation. Most recently, she coauthored *Atlas de Géographie de l’Espace* (1997), to be translated and updated in English as *Cambridge Encyclopedia of Space* (2000), and she is also coauthor of *Espace et Puissance* (1999). She has written different French and English articles about civilian and military uses of space.

Dr. Gerald Steinberg is professor of politics and directs the Program on Conflict Resolution at Bar-Ilan University in Israel. He has written extensively on arms control, verification, and space imaging issues, including a study assessing the security implications of commercial observation satellites: *Dual Use Aspects of Commercial High-Resolution Imaging Satellites* (1998).

William E. Stoney is currently principal engineer for Mitretek Systems, supporting NASA’s Stennis Space Center’s Commercial Data Buy and Land Imaging Satellite Data Base programs. He was director of NASA’s Earth Observation

Program from 1972 through 1978, during which Landsats 1, 2, and 3 were launched, the Thematic Mapper sensor was defined and developed, and NOAA's TIROS and GEOS satellites and sensors were developed and launched. After leaving NASA, he worked for RCA and General Electric, supporting NASA in the development of the EOS program and for MITRE and now Mitretek on the current and future Landsat systems.

Kazuto Suzuki is writing his doctoral thesis on European space policy and is also studying Japanese space programs in association with Isabelle Sourbes-Verger and Xavier Pasco. He is currently a researcher at the Sussex European Institute at the University of Sussex and has been a part-time lecturer at the School of Policy Science at Ritsumeikan University since April 2000. He received his master's degree in international relations from Ritsumeikan University in Kyoto.

George J. Tahu is a space policy analyst at NASA headquarters in Greenbelt, Maryland. He is a graduate of the George Washington University's Space Policy Institute and the International Space University, and previously worked with the ANSER Corporation as a specialist on Russian space activities, including remote sensing programs.

John Weikel is an employee of the National Imagery and Mapping Agency (NIMA) in Reston, Virginia, and has been the requirements officer and production manager for the SOUTHCOM Customer Operations Team for the past 10 years. In this capacity, Mr. Weikel initiated the use of RADARSAT to produce many of the early products used by the Military Observer Mission in Ecuador and Peru following the 1995 conflict, and he oversaw the production of the final treaty maps. Mr. Weikel holds a Bachelor of Arts degree in geography from Miami University in Oxford, Ohio.

Dr. Ray A. Williamson is a research professor of space policy and international affairs at the George Washington University's Space Policy Institute, which is part of the Elliott School of International Affairs. He served for 16 years with the Office of Technology Assessment (OTA) of the U.S. Congress, where he directed their space-related studies and several studies on imaging satellite policies. Dr. Williamson directs the Space Policy Institute's Dual-Purpose Space Technologies project. He has written extensively on earth observation and remote sensing policy issues.