

## FOREWORD

“Celebrating the Space Age: 50 Years of Space Technology, 40 Years of the Outer Space Treaty” was the sixth conference held by the United Nations Institute for Disarmament Research (UNIDIR) on the issue of space security, the peaceful uses of outer space and the prevention of an arms race in outer space.

Participants at the conference reflected on the anniversaries celebrated in 2007—the launch of Sputnik I in 1957 and the entry into force of the Outer Space Treaty in 1967—and how the Space Age has shaped, and continues to shape, the world of today. The necessity of making human use of outer space sustainable was a common theme, underlined by discussions of the challenges and threats faced by all states in this regard. Various understandings of and approaches to space security were put forward, as well as concrete proposals on how to guarantee that outer space is preserved as an environment to be used peacefully by humankind, for the good of humankind.

A fiftieth anniversary is known as a golden anniversary and a fortieth is known as a ruby. We refer often to stars in the myriad of galaxies as the jewels of the heavens. Outer space is most certainly a wealth of enormous potential—almost the entire world depends on communications via satellite, the poorest of people now have their local and regional economies empowered by wireless technology, farmers in developing and developed countries alike check weather conditions and market prices daily on-line, and health care and education reaches people in remote locations who otherwise would be unreachable. Space debris from accidental or deliberate collisions and the weaponization of space would halt all such important developments.

UNIDIR is grateful to all of our colleagues from academia and the United Nations for coming to Geneva every year to give their time and expertise. We are also grateful for the financial, political and material support of the Governments of Canada, the People’s Republic of China and the Russian Federation, as well as of the Secure World Foundation and The Simons Foundation, that makes these conferences and publications possible.

Patricia Lewis, Director  
UNIDIR



## ACKNOWLEDGEMENTS

The United Nations Institute for Disarmament Research would like to thank all the speakers at the conference for their expert and intellectual contributions: James Armor, Phillip Baines, Sergey Batsanov, Gérard Brachet, Richard DalBello, Colleen Driscoll, Laura Grego, Peter Hays, Rebecca Johnson, Michael Krepon, Petr Lála, Jeffrey Lewis, Paul Meyer, Kiran Nair, Hewa Palihakkara, Vladimir Putkov, Anton Vasiliev, Jessica West, David Wright, Xu Yansong and Zhang Jun'an. We would also like to thank the Director-General of the United Nations Office at Geneva and Secretary-General of the Conference on Disarmament, Sergei Ordzhonikidze, for delivering the opening remarks.

UNIDIR would like to express its gratitude to the Governments of Canada, the People's Republic of China and the Russian Federation, as well as to the Secure World Foundation and The Simons Foundation, for their financial, political and material support of this conference.

In particular, UNIDIR would like to thank Ambassador Paul Meyer, Eric Walsh and Gillian Frost of the Permanent Mission of Canada in Geneva; Douglas Aldworth from Foreign Affairs and International Trade of Canada; Ambassador Cheng Jingye, Li Yang and Zhao Li of the Permanent Mission of China in Geneva; and Ambassador Valery Loshchinin, Anton Vasiliev, Valery Semin and Alexey Petrenko of the Permanent Mission of the Russian Federation in Geneva. We are also indebted to Cynda Collins Arsenault of the Secure World Foundation and particularly to Jennifer Allen Simons of The Simons Foundation for her unswerving support for this series of conferences.

Special thanks are due to Arjun Dutta for compiling the conference report with the assistance of William Assanvo. Jason Powers edited this publication and Anita Blétry, Nicolas Gérard and Kerstin Vignard followed it through the production phase.

The opinions expressed in the papers are those of the authors and the authors alone.



## ABOUT THE SPEAKERS

### **James ARMOR**

Maj. Gen. James B. Armor, Jr. is Director, National Security Space Office, Office of the Undersecretary of the Air Force, Washington, DC. He is responsible for integrating and coordinating defence and intelligence space activities to achieve unity of effort. He also advises the Secretary of Defense, the Director of National Intelligence, and their respective staffs on matters affecting or affected by national security space capabilities.

### **Phillip BAINES**

Phillip Baines is senior policy adviser (Science and Technology) at Foreign Affairs Canada, in the Non-Proliferation and Disarmament (Chemical, Biological and Conventional Weapons) Division. Previously, he worked at EMS Technologies Canada on various verification modes. He was also seconded to the Department of Foreign Affairs and International Trade of Canada as a Verification Research Officer.

### **Sergey BATSANOV**

Ambassador Sergey Batsanov is a long-time practitioner and scholar in the field of international security, arms limitation and non-proliferation. Since 2005 he is the Director of the Geneva Office of the Pugwash Conferences on Science and World Affairs. He is also a member of the International Advisory Board of the Geneva Centre for the Democratic Control of Armed Forces.

### **G rard BRACHET**

G rard Brachet is chairman of the United Nations Committee for the Peaceful Uses of Outer Space for the period 2006–2008. He is a member of the International Academy of Astronautics since 1992 and chairs its Commission V: “Space policy, law and economics”. He is also Vice President of the French Acad mie Nationale de l’Air et de l’Espace, of which he chairs the Space Committee.

### **Richard DalBello**

Richard DalBello, as Vice President of Government Relations, is responsible for leading Intelsat General’s government relations and

public policy efforts at the federal and state level and representing Intelsat General before numerous US and international policy bodies.

**Colleen DRISCOLL**

Dr Colleen Driscoll is Director of the Kurtz Institute of Peacemaking, and is a Visiting Professor in the Political Science Department of Quinnipiac University. She is the author of *Outer Space for the Benefit of All Humanity*; and she organized and moderated the United Nations Department for Disarmament Affairs seminar entitled “The Outer Space Treaty at Thirty-Five”, held in New York in October 2002.

**Laura GREGO**

Dr Laura Grego studies the implications of physics and technology for space security as a Staff Scientist for the Global Security Program of the Union of Concerned Scientists. She works extensively with scientists and other non-governmental organizations to analyse the technical issues of space weapons and develop relevant policy advice to ensure the secure and equitable use of outer space.

**Peter HAYS**

Lt Col (ret.) Peter L. Hays is a policy analyst supporting the Plans and Programs Division of the National Security Space Office, Office of the Undersecretary of the Air Force, Washington, DC. He is Associate Director for Studies for the Center for Space and Defense Studies at the US Air Force Academy, as well as adjunct professor at George Washington University’s Space Policy Institute.

**Rebecca JOHNSON**

Dr Rebecca Johnson is co-founder of the Acronym Institute for Disarmament Diplomacy. She is Vice Chair of the Board of the Bulletin of the Atomic Scientists and senior adviser to the Weapons of Mass Destruction Commission, chaired by Hans Blix. She serves on the advisory councils of several organizations, including the Centre for Policy Studies (PIR, Moscow), the Peace Depot (Japan), the UK All Party Parliamentary Group on Global Security and Non-Proliferation, and the Oxford Research Group (United Kingdom).

**Michael KREPON**

Michael Krepon is co-founder of the Henry L. Stimson Center and the author or editor of 11 books and over 350 articles. He divides his time

between Stimson's South Asia and Space Security projects. The Space Security project seeks to promote a Code of Conduct for Responsible Space-Faring Nations and works toward stronger international norms for the peaceful uses of outer space. He also teaches in the Politics Department at the University of Virginia.

**Petr LÁLA**

Dr Petr Lála is former Deputy to the Director of the United Nations Office for Outer Space Affairs. Since retiring in 2003, he cooperates with the Czech Ministry of Foreign Affairs and the Czech Space Office on promotion of space research and technology applications. He is also actively involved in deliberations of the United Nations Committee on the Peaceful Uses of Outer Space regarding the issues of space debris, geostationary orbits, safety of nuclear power sources in outer space and registration of space objects.

**Jeffrey LEWIS**

Dr Jeffrey G. Lewis was the Executive Director of the Project on Managing the Atom at the Belfer Center for Science and International Affairs at the John F. Kennedy School of Government, and he remains an affiliate of the project. He is the author of *Minimum Means of Reprisal: China's Search for Security in the Nuclear Age* and a member of the Editorial Advisory Board of the *Bulletin of the Atomic Scientists*.

**Paul MEYER**

Paul Meyer is Ambassador to the Office of the United Nations and Ambassador for Disarmament in Geneva, representing Canada. He joined the Department of External Affairs in 1975 as a Foreign Service Officer and served abroad in Oslo, Moscow and Brussels, where he was Political Counsellor in Canada's delegation to NATO. He was Director-General of the International Security Bureau from 1998–2001.

**Kiran NAIR**

Wing Commander Kiran Nair is a serving officer of the Indian Air Force. He is presently on a two-year attachment with the Centre for Airpower Studies, New Delhi, for research on space activities. His articles have appeared in various journals and magazines ranging from the *Airpower Journal* to India's *National Security Review*. His recent publications include a departmental study on the "Role of Space for Defence" and *Space: The Frontiers of Modern Defence*, released in April 2006.

**Hewa PALIHAKKARA**

Hewa Palihakkara retired as Foreign Secretary of Sri Lanka on 31 December 2007 after 38 years of civil and diplomatic service. He served a number of assignments to the United Nations, in Geneva and New York, covering work related to the Committee on Disarmament and later the Conference on Disarmament, human rights and humanitarian affairs. He served as Sri Lanka's Permanent Representative to the United Nations and Leader of Delegation to the Conference on Disarmament from 1997 to 2000.

**Vladimir PUTKOV**

Vladimir Putkov is Deputy Head of the International Cooperation Department of the Russian Space Agency. He has been working since 1976 with Russian outer space industries, and since 1997 with the Space Agency. From 1987 until 1996 he was posted successively in Guinea-Bissau, Angola and Zambia.

**Anton VASILIEV**

Anton Vasiliev is Deputy Permanent Representative of the Russian Federation to the United Nations Office and Other International Organizations in Geneva. Prior to this, he was Deputy Director of the Department for Disarmament and Security Affairs of the Russian Foreign Ministry with responsibility for Asian security affairs, and also for arms control and disarmament in strategic weapons. In 1997, he was Representative of the Russian Federation to the START I Joint Compliance and Inspections Commission.

**Jessica WEST**

Jessica West is Program Manager for the Space Security Index at Project Ploughshares. She joined Project Ploughshares in 2006 as a Program Associate responsible for nuclear weapons and space weaponization. She has experience researching conflict and security issues at the Canadian International Development Agency and has worked as a Program Manager for the Stabilization and Reconstruction Task Force at the Department of Foreign Affairs and International Trade Canada.

**David WRIGHT**

Dr David Wright is Senior Scientist and Co-Director of the Global Security Program at the Union of Concerned Scientists, and a Research Affiliate in the Program on Science, Technology, and Society at the

Massachusetts Institute of Technology. His areas of expertise include the technical aspects of security and arms control, particularly those related space security, space debris, US nuclear weapons policy, ballistic missile defence and ballistic missile proliferation.

**XU Yansong**

Xu Yansong is Deputy Division Director of the National Space Administration of the People's Republic of China.

**ZHANG Ju'nán**

Zhang Ju'nán is Deputy Division Director of the Department of Arms Control and Disarmament in the Ministry of Foreign Affairs of the People's Republic of China.