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SECURE WORLD FOUNDATION **ANNUAL REPORT**



Promoting Cooperative Solutions
For Space Sustainability



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A LETTER FROM CYNDA COLLINS ARSENAULT PRESIDENT AND FOUNDER

We learned a great deal in 2020. As our world was forced to shut down, we realized how important it is to connect – for our work, for our lives, for our well-being.

And we learned how resilient we are in finding new ways of connecting. We also found that in the new ways of connecting we could bring even more voices to the table. Diverse voices that had often been left out due to lack of access, finances or distance. And the conversations became richer and deeper because of that. Whether discussing lunar governance, best practices for on-orbit servicing or asteroid mining, or the role of space in accomplishing the Sustainable Development Goals, the global community has come together through the marvels of space technology. Now that the conversation has broadened, those new voices will not be content to be left out. As we begin to come back together in physical space we can learn new ways of connecting in hybrid models.

Space played a key role as the world switched to on-line communication. The commercial space industry continued to flourish as we become more and more reliant on space. What will be our next great challenge—another pandemic? Climate disaster? Whatever it is we know that we are interdependent and will require multilateral institutions, sharing information and dialogue. What role will space play then? We must continue developing the systems and effective governance to enhance our ability to benefit from the knowledge and capabilities that space provides.

We accomplished a great deal this year at SWF—more than we had thought possible given the restrictions. Thanks to our resilient and creative staff, new opportunities arose for bringing diverse views and multiple stakeholders together to discuss the challenges we face in the space environment arising from increased use, debris, and the lack of governance structures. Our vision looks to the future where the secure, sustainable and peaceful use of space contributes to global stability and benefits here on Earth. Our amazing view of the Earth from space demonstrates best that “We’re all in this together.”



A LETTER FROM PETER MARTINEZ, EXECUTIVE DIRECTOR

All generations have their own defining moments, but it is rare to have a common, shared experience that is simultaneously international, intergenerational and intercultural, shared by everyone on the planet at the same time. COVID-19 provided such a moment and opportunity to reflect on how interdependent we are on each other and how we all share a common destiny on this planet.

Even as the pandemic forced us into protective isolation, this underscored the importance of remaining connected. We explored new methods of working and discovered that these methods allowed us to enlarge the circle of voices in our dialogues, to include people that had previously been excluded from our conversations due to restrictions of finance, travel visas, or other reasons. These new voices have enriched discussions on the topics that we work on at Secure World Foundation to promote the secure, sustainable and peaceful uses of outer space as a means to contribute to global stability and development on Earth.

As the COVID-19 pandemic reminded us, overcoming global challenges requires coordinated global responses—and so it is with space sustainability, which is an intrinsically international challenge. In this Annual Report, it is my pleasure to share with you the many successful activities that were carried out in support of our mission during 2020, mostly through the medium of virtual events. All told, SWF completed 107 projects and activities with partners in 19 countries on 5 continents. This report presents just a few highlights of those activities spanning fields such as space governance, space policy, space security, and the growing importance of commercial space activities in the space sustainability narrative. I would like to take this opportunity to acknowledge and thank the dedicated staff of SWF for their great resourcefulness, creativity and resilience to sustain a high level of activities during a time of great adversity. I would also like to acknowledge and thank our many partners and sponsors who walked the uncertain road of 2020 together with us.

While we can all look forward to a gradual return to in-person events in late 2021 and beyond, we will continue to apply the lessons learnt during the COVID-19 pandemic to enhance the reach of our dialogues and activities going forward. Whatever the future may bring, we will continue to be guided by our belief that international cooperation and partnerships are key to preserving outer space as an environment for peaceful use and exploration, for the benefit of all nations.

SWF OVERVIEW



2020 SNAPSHOT

A Year Under Covid

2020 was a challenging year for the whole world, though one might not know it just by looking at all the achievements that continued to take place within the space community. Companies and governments found ways to continue making progress beyond Earth's atmosphere, stretching our capabilities and imagination. Likewise, SWF found new and innovative ways to use virtual conferencing technology to continue holding meaningful exchanges with stakeholders. Over the course of the year, SWF held 88 virtual events on topics ranging from counterspace capabilities to US perceptions of the Chinese commercial space sector. Moreover, SWF was able to reach a wider audience than ever before, with online events making it possible to have truly global participation. While not being able to organize in-person meetings, the greater reach of virtual events resulted in SWF setting records for the number of attendees, and from more countries than ever before. In this sense, while faced with a shared crisis around the world, SWF harnessed virtual events as an opportunity to increase participation in the dialogues that we organize and facilitate.



88

VIRTUAL EVENTS

1,800

PARTICIPANTS

2020 PROGRAM SPOTLIGHTS



NASA Administrator Jim Bridenstine announced NASA will purchase lunar soil from private actors.

PROGRAM 1 2020 SUMMIT FOR SPACE SUSTAINABILITY

From September 9 to 11, 2020, SWF organized and hosted the second Summit for Space Sustainability, a three-day, high-level event focused on developing solutions for space sustainability. Due to COVID-19, SWF moved to a virtual platform, reaching a wider audience than ever before. Nearly 550 participants from all corners of the globe gathered to discuss space sustainability, including the commercialization and globalization of space, space security, spectrum, and space governance, with a focus on promoting norms of responsible behavior in space. Overall, despite the challenges of interacting virtually, the Summit provided a useful informal forum for experts and leaders from across disparate communities to advance the space sustainability dialogue on several fronts.

Program Managers: Krystal Azelton and Josh Wolny



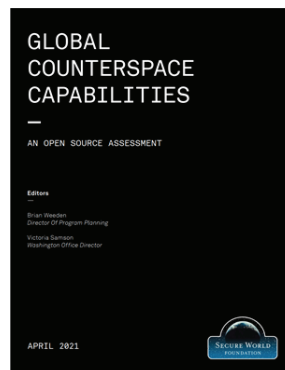
Astroscale Founder and CEO Nobu Okada discussed the role of active-debris removal for space sustainability.

PROGRAM 2

COUNTERSPACE REPORT

SWF published the third edition of its annual open-source assessment of counterspace capabilities being developed by multiple countries and across several categories. To broaden access to the main findings of this report, in 2020 the Executive Summary was translated into Spanish and French. SWF plans to make the Executive summary available in other languages in future.

Program Managers: Victoria Samson and Brian Weeden



AVAILABILITY:

- ☒ ENGLISH
- ☒ SPANISH
- ☒ FRENCH
- ☐ RUSSIAN
- ☐ CHINESE

PROGRAM 3

HANDBOOK FOR NEW SPACE ACTORS

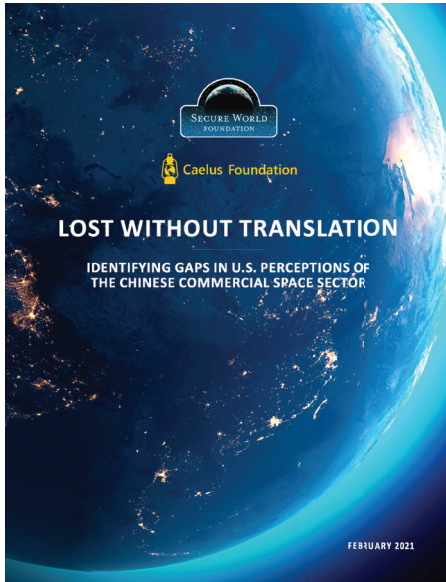
SWF continued to distribute and promote its Handbook for New Actors in Space, intended to provide nations, established satellite operators, start-up companies, universities and other space actors with a broad overview of the fundamental laws, norms and best practices for peaceful, safe and responsible activities in space. The Handbook is available in English and Spanish. To broaden access to the Handbook, in 2020 we developed Chinese and French translations, which are expected to be published in late 2021.

Program Manager: Krystal Azelton



AVAILABILITY:

- ☒ ENGLISH
- ☒ SPANISH
- ☐ FRENCH
- ☐ CHINESE



PROGRAM 4 BUILDING UNDERSTANDING OF CHINA'S SPACE INDUSTRY

As a notional private space sector emerges in China, SWF is working to build engagement and understanding. In February 2021, SWF published a new report entitled *Lost Without Translation: Identifying Gaps in U.S. Perceptions of the Chinese Commercial Space Sector*, which was the result of extensive research conducted from May - September of 2020. Carried out in cooperation with Caelus Foundation, this project involved numerous interviews with leaders in the U.S. commercial space sector to ascertain what the perceptions are of the Chinese commercial space sector, and compared those perceptions to narrative discussion in both American and Chinese written sources. With this research and dialogue, it is our goal to help build a better understanding of how both countries approach and perceive commercial space activities in order to yield a more informed strategic picture for commercial competition.

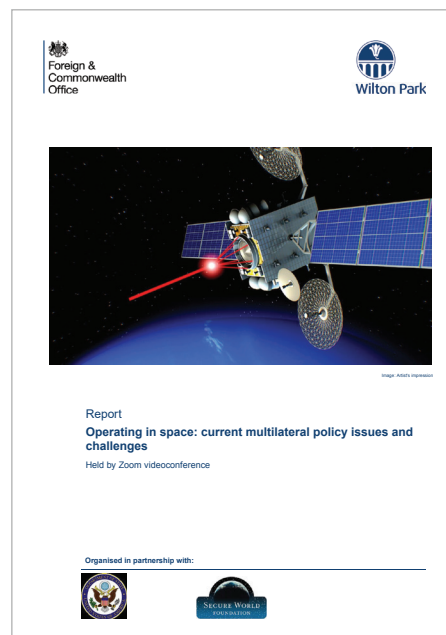
Program Manager: Ian Christensen

PROGRAM 5

REDUCING SPACE THREATS THROUGH NORMS, RULES AND PRINCIPLES OF BEHAVIOUR

Throughout 2020, SWF engaged with Wilton Park (U.K.) to organise a series of workshops that explored the need and benefits of norms of behavior for space activities. This included an in-person meeting in Singapore, entitled, “Operating in Space: Current Multilateral Policy Issues and Challenges.” Following the introduction of COVID-19 measures, SWF co-organized three additional virtual regional workshops for participants in Africa, Central Asia and the Middle East, and Latin America. Norms were also the theme of two major events in which the U.K. government participated, including an event co-organised with the RAND Corporation and the AMOS Policy Forum. These events fed into a larger effort that resulted in the adoption of UN General Assembly Resolution 75/36, the start of a new major initiative on bolstering space security and sustainability.

Program Managers: Victoria Samson and Brian Weeden





PROGRAM 6 **SERVING SOCIETY WITH** **SPACE DATA**

SWF and the Space-Enabled research group at the Massachusetts Institute of Technology (MIT) launched a virtual web-series on how space technologies and geospatial applications contribute to better outcomes in critical fields around the world. This bi-monthly series sought to engage a multi-stakeholder audience across diverse disciplines in order to highlight the ways that outer space facilitates progress towards the 17 UN Sustainable Development Goals.

SWF held workshops on each of these Goals:

SDG 02: Zero Hunger

SDG 16: Peace, Justice, and Strong Institutions

SDG 07: Affordable and Clean Energy

SDG 03: Good Health and Wellbeing

SDG 08: Decent Work and Economic Growth

All SDGs: Monitoring and Evaluation

Program Manager: Krystal Azelton

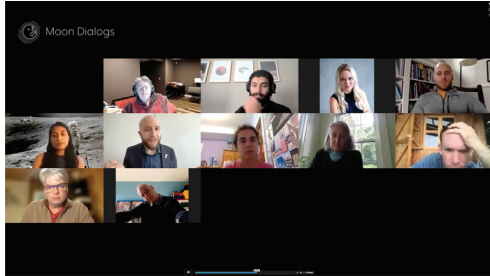
PROGRAM 7

CONSORTIUM FOR EXECUTION OF RENDEZVOUS AND SERVICING OPERATIONS (CONFERS)

SWF continued its role helping to lead the Consortium for Execution of Rendezvous and Servicing Operations (CONFERS), to develop best practices and standards for commercial satellite servicing activities. In 2020, CONFERS published an updated version of its Recommended Design and Operating Practices and its members continued to provide inputs to the International Organization for Standardization's draft standard 24330 on satellite servicing. CONFERS currently has 44 members from 9 countries and continues to be open to new private sector members from around the world. CONFERS is partially supported by funding from DARPA and partially supported by membership dues. SWF serves as part of the CONFERS Secretariat along with Advanced Technology International (ATI) and the Space Infrastructure Foundation (SIF).

Program Managers: Brian Weeden and Ian Christensen





PROGRAM 8 MOON DIALOGS

SWF is proud to be a part of the Moon Dialogs, a partnership focused on discussing potential governance and coordination mechanisms for future space activities on the lunar surface. As space resource utilisation comes closer to reality, the Moon Dialogs offers an opportunity for cross-disciplinary discussion among professionals and experts working in this exciting field. The Dialogs focus on finding practical policy tools, operating models and the right cooperative framework for lunar activities for the next decade.

Program Manager: Christopher Johnson

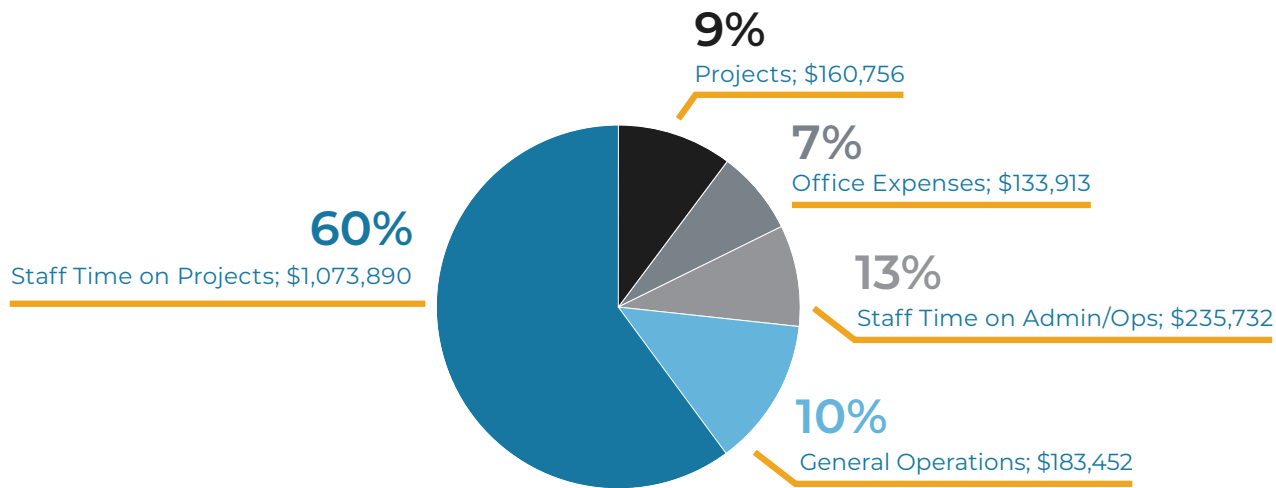


PROGRAM 9 SPACE POLICY AND SUSTAINABILITY: ISSUE BRIEFING FOR THE INCOMING BIDEN ADMINISTRATION

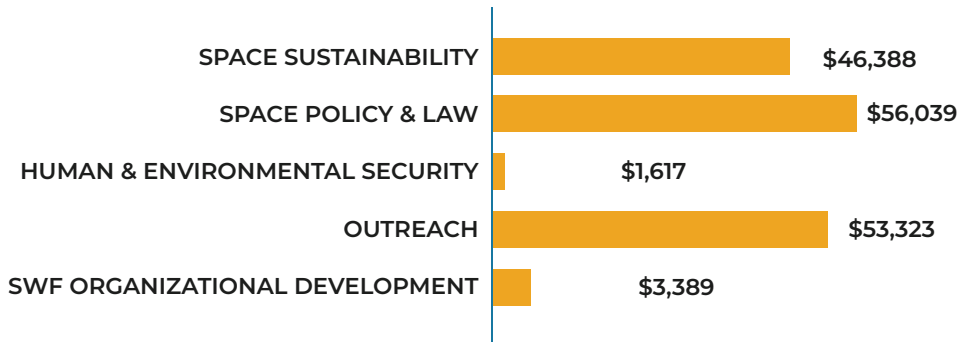
Outer space activities are more important to the United States now than at almost any time in history. The rapid growth in new actors conducting space activities, an increasing number of active satellites and debris objects, and the growing potential for conflict create both opportunities and challenges that require timely policy responses from the incoming administration. As the Biden administration began setting its policy agenda for the next four years, Secure World Foundation developed an issue briefing to provide background and recommendations on key issues to help the U.S. meet current and emerging challenges in outer space.

Program Manager: Brian Weeden

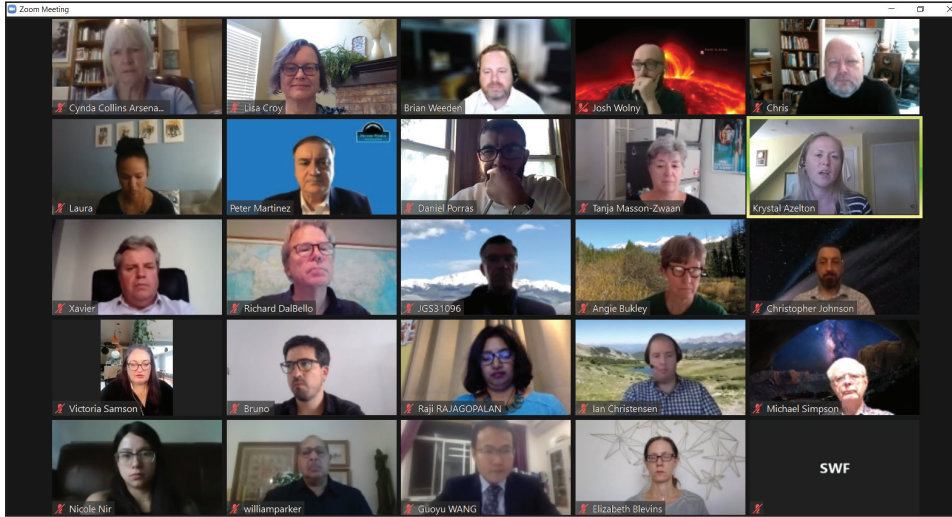
2020 FINANCES



2022 PROJECT EXPENDITURE



OUR TEAM



OUR STAFF 2020

- DR. PETER MARTINEZ, EXECUTIVE DIRECTOR
- JIHAN ASHER, OPERATIONS AND COMMUNICATIONS ASSOCIATE
- KRYSTAL AZELTON, DIRECTOR OF SPACE APPLICATIONS PROGRAMS
- ELIZABETH BLEVINS, HR MANAGER AND EXECUTIVE ASSISTANT FOR DR. PETER MARTINEZ
- IAN A. CHRISTENSEN, DIRECTOR OF PRIVATE SECTOR PROGRAMS
- LISA CROY, OPERATIONS DIRECTOR
- CHRISTOPHER D. JOHNSON, SPACE LAW ADVISOR
- CHRIS LUDWIG, ACCOUNTANT
- NICOLE NIR, OPERATIONS AND COMMUNICATIONS ASSOCIATE
- DANIEL PORRAS, DIRECTOR OF STRATEGIC PARTNERSHIPS AND COMMUNICATIONS
- VICTORIA SAMSON, WASHINGTON OFFICE DIRECTOR
- DR. BRIAN WEEDEN, DIRECTOR OF PROGRAM PLANNING
- JOSH WOLNEY, PROJECT MANAGER

OUR BOARD 2020

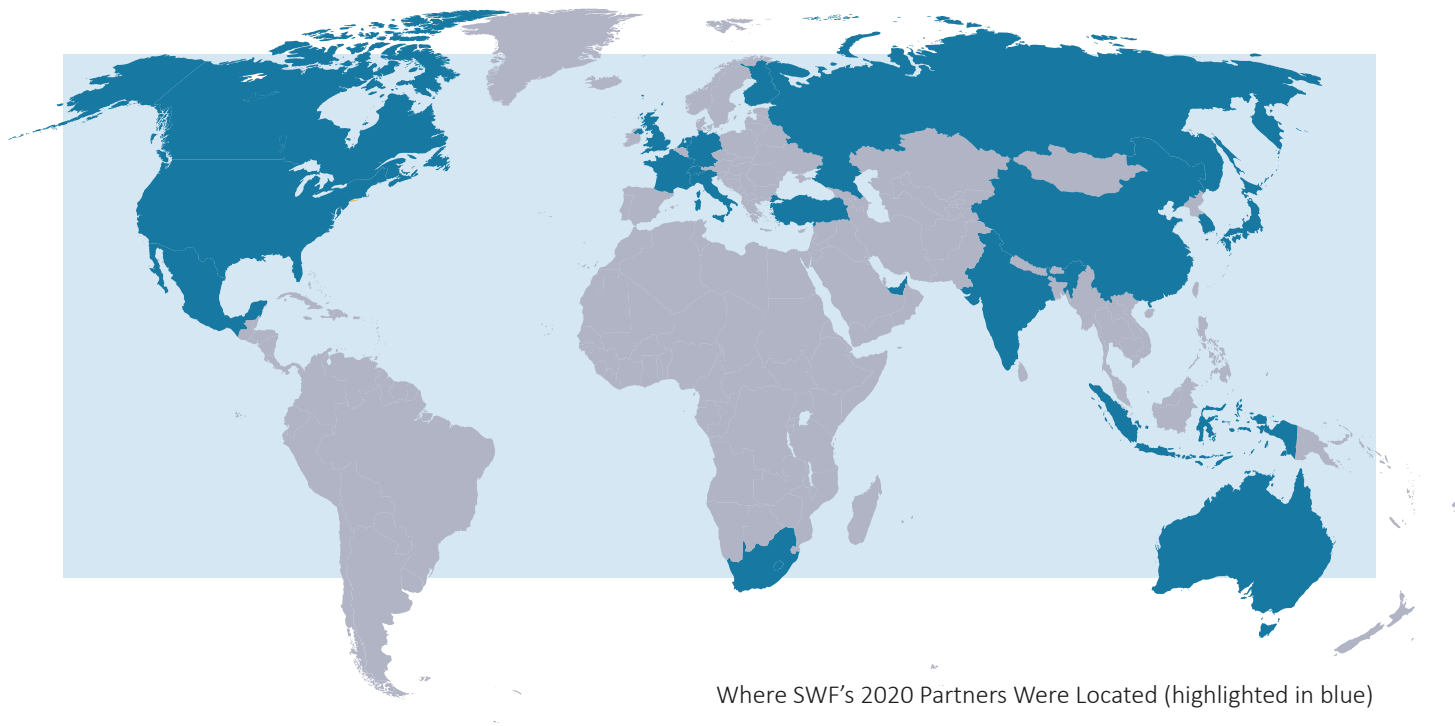
- CYNDA COLLINS ARSENAULT
CO-FOUNDER, BOARD
PRESIDENT
- ANGIE BUKLEY, PHD
SECRETARY
- MARCEL ARSENAULT
CO-FOUNDER, BOARD VICE
PRESIDENT, TREASURER
- MICHAEL SIMPSON, PHD
COMMUNITY MEMBER

OUR ADVISORY COMMITTEE 2020

- RICHARD DALBELLO
VIRGIN GALACTIC
VIRGIN ORBIT
- LAURA DELGADO
LOPEZ
NASA SCIENCE
MISSION
DIRECTORATE
- TANJA MASSON-
ZWAAN
LEIDEN UNIVERSITY
- MAZLAN OTHMAN, PHD
ACADEMY OF SCIENCES,
MALAYSIA
- WILLIAM PARKER
GLOBAL ENGAGEMENT
SOLUTIONS, LLC
- XAVIER PASCO, PHD
FONDATION POUR
LA RECHERCHE
STRATÉGIQUE
- RAJESWARI PILLAI
RAJAGOPALAN, PHD
OBSERVER RESEARCH
FOUNDATION
- BRUNO SÁNCHEZ-
ANDRADE NUÑO, PHD
MICROSOFT
“AI FOR EARTH”
- MAJ. GEN. JAY SANTEE
(RETIRED)
AEROSPACE
CORPORATION
- GUOYU WANG, PHD
BEIJING INSTITUTE OF
TECHNOLOGY

OUR PARTNERS

Almost all of the work SWF pursues and conducts is done in partnership with other organizations. We work with governments, academia, civil society, intergovernmental organizations, and companies to marshal the voices, perspectives, and resources that are critical to achieve our vision and mission. Partnership is at the heart of SWF's way of doing business and in 2020 we partnered with over 100 entities from around the world.



ANALYTICAL GRAPHICS INC.	SDA BOCCONI SPACE ECONOMY
ASTROSCALE	EVOLUTION LAB
CAELUS FOUNDATION	SPACE ENABLED RESEARCH GROUP
CENTER FOR STRATEGIC	SPACELOGISTICS
INTERNATIONAL STUDIES	SPACENEWS
CHINESE SOCIETY OF ASTRONAUTICS	SPACE SAFETY COALITION
EUROPEAN SPACE AGENCY	SPACEWATCHGLOBAL
GEORGE WASHINGTON UNIVERSITY	UNITED LAUNCH ALLIANCE
SPACE POLICY INSTITUTE	UNITED NATIONS INSTITUTE FOR
GLOBAL VSAT FORUM	DISARMAMENT RESEARCH
INTERNATIONAL ASSOCIATION FOR THE	UNITED NATIONS OFFICE FOR OUTER
ADVANCEMENT OF SPACE SAFETY	SPACE AFFAIRS
MAUI ECONOMIC DEVELOPMENT BOARD	UNIVERSITY OF COLORADO, BOULDER
NORTHERN SPACE AND SECURITY	VIRGIN ORBIT
SATNEWS	WILTON PARK



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