Report of the Symposium

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The International Institute of Space Law held the 9th Annual Symposium on Critical Issues in Space Law on December 10, 2014 at the Cosmos Club in Washington, D.C. The theme for the Symposium was "Non-traditional Commercial Space Activities: Legal & Policy Challenges, Opportunities, and Ways Forward." The Symposium, as always, was held in memory of Eilene M. Galloway one of the early pioneers of space law. This was noted in an address by her son Jonathan Galloway which was presented by Marcia Smith. The presentation highlighted Galloway's passion for space and her efforts to prevent the weaponization of outer space. The Symposium continued a tradition of pushing forward the conversation on vanguard legal issues facing the space community.

One of the critical issues that has remained a constant theme throughout the development of the field of space law is how to use law and regulation to foster innovation. Historically, this theme is reflected in the broad approach taken by the drafters of the 1962 Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, and it traces to the modern context in items such as the FAA's wait and see approach used in the Human Spaceflight Requirements. The 2014 Galloway Symposium directly engaged with this topic, which continues to maintain importance in light of a contemporary innovation bloom that is opening up across the technology sector. Access to a variety low cost technologies have allowed a diversity of innovations that can best be seen in the increasing number of technology start up companies. In the current environment, innovation has been freed significantly from its earlier economic limitations and is increasingly distributed among new and different actors creating a vibrant and diverse technology sector that differs dramatically from previous incarnations. The current round of innovation has led to the re-imagining of

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both technological possibilities as well as the underlying business models that often drive innovation.

The beginning of the Galloway Symposium served to lay a foundation by addressing how this new innovation environment is changing commercial space operations. The first keynote speaker, Mark J. Lewis, Director, Institute for Defense Analysis, Science and Technology Policy Institute, emphasized this by asking that attendees to consider the question "what is commercial space?" and consider how that answer has changed over time. He noted that space today more than ever is marked by an "entrepreneurial spirit."

The first panel of the day, moderated by Clayton Mowry, President of Arianespace, was the embodiment of Lewis' entrepreneurial spirit. Titled "Business Perspectives on Legal, Regulatory or Policy Barriers to Non-Traditional Commercial Activities in Space: What Needs to Change for Business to Succeed?", it contained representatives from some of the companies that are pushing innovation in space technoology including Bigelow Aerospace, Planet Labs, Google & Skybox Imaging, and Moon Express. All of these speakers emphasized that regulations written for a different technological environment posed major obstacles for their companies, often because outdated regulations get applied expansively to fill the regulatory void. The variety of issues noted by the panelists is indicative of this phenomena. Mike Gold, Bigelow Aerospace, discussed how this had occurred with the International Traffic in Arms Regulations (ITAR). Planet Lab's Richard Leshner discussed how his company was affected by uncertainty in U.S. remote sensing regulations, an issue echoed by Google & Skybox Imaging's Jim McClelland. McClelland also noted that the data restrictions in these and other regulations would become increasingly important as innovators find new ways to use space data. Finally, Jim Muncy of Moon Express emphasized the need for a clear and measured legal framework for resource extraction from the Moon and other Celestial Bodies. This panel was not simply about obstacles though, as a success story was highlighted. Gold gave an update on recent changes to ITAR, which were largely spearheaded by Bigelow Aerospace. These reforms show how legal innovation can result from positive engagement with the government.

Indeed the ITAR success story serves as a proper thematic segue into the second part of the Symposium. The second part of the symposium broadly investigated the need for legal innovation to respond to the technological innovation described during the first part of the Symposium. These panelists

emphasized that stakeholder engagement serves as the keystone to fostering the legal innovations needed to foster technical innovations.

The second panel was titled "International, Economic and National Security Perspectives: Are the Existing Space Treaties and International Law Adequate for Today's Operational Environment?", and it was moderated by Brian Israel from the U.S. Department of State's Office of the Legal Adviser. Israel started the panel by noting that multilateral treaty making was not well suited to solving current problems and that new governance tools were needed. Alexander MacDonald from NASA's Emerging Space Program, noted that space activities are inherently a mix of public and private actors, but that currently these roles are shifting as private actors increasingly find new markets for the use of space technologies. These changed roles necessitate new governance tools. Audrey Schaffer, Special Advisor, U.S. Department of State, addressed the new tools being used in the international context. She emphasized the use of political agreements, such as codes of conduct and rules of the road, and the use of diplomacy through engaging in international conversations, such as the UNCOPUOS Working Group on the Long Term Sustainability of Space. The next two speakers both highlighted specific areas where the space treaty regime falls short of giving companies regulatory certainty. Wang Guoyu, Deputy Director of the Beijing Institute of Technology's Institute of Space Law, presented on the inadequacies of the treaty regime to govern active debris removal. He noted a need for certainty for the actors involved. Fabio Tronchetti, Professor at Harbin University Law School, addressed extraterrestrial resource extraction. He stated that once there is international consensus on core issues, national regulation can be used to regulate these activities. Finally, Richard Crowther, Chief Engineer, UK Space Agency, also emphasized the nexus between the national and the international. He stated that national regulations needed to support international obligations, but in order to do this properly there needs to be full engagement with the space industry.

The second keynote speaker of the day, took up many of the same themes from the morning panels. George Nield, Associate Administrator for Commercial Space Transportation, Federal Aviation Administration, U.S. Department of Transportation, addressed the Symposium as the lunch keynote speaker. He emphasized the changing nature of space actors and of the space activities being undertaken. He stated that the FAA seeks active engagement with stakeholders in order to regulate in a way that ensures

safety, but minimizes regulatory impact on the development of new innovations.

The next panel of the day, "Domestic Perspectives: Are U.S. Laws, Regulations and Policies Appropriate for Today's Emerging Non-Traditional Commercial Space Activities?", was moderated by Franceska Schroeder, Principal, Fish & Richardson P.C. This panel focused on the need for legal certainty to encourage investment in commercial space. First, Laura Montgomery, Manager, Space Law Branch, Office of the Chief Counsel, Federal Aviation Administration, Department of Transportation, presented on how the FAA's licensing regime works. She stated that though the FAA lacks on-orbit jurisdiction for space activities, it has the ability to do a payload review and to deny a launch license for a payload issues such as national security or safety. Next, Glenn Tallia, Chief, Weather Satellites and Research Section, Office of General Counsel, National Oceanic and Atmospheric Administration, Department of Commerce, presented on the U.S. remote sensing regulations. He stated that NOAA's statutory authority was extended to any space based remote sensing, but that the regulatory structure limits that competency. Chris Shank, Policy Director, House Committee on Science, Space and Technology stated that Congress was working on innovative laws in order to give investors certitude. Finally, Michael Mineiro, Research Staff Member, Science and Technology Policy stated that the U.S. legal system has traditionally supported innovation, but that innovators and regulators needed take into account the speed at which technology changes.

The final panel was fittingly titled "The Way Forward." It was moderated by Matthew Schaefer, Professor, Space, Cyber and Telecommunications Law Programs, University of Nebraska College of Law. This panel discussed the near term prospects for the development of legal innovations. Professor Henry Herzfeld from George Washington University, stated that while space is still expensive and risky, it is rapidly being integrated into everyday technology. He stated that these changes in innovation will force new laws at the national level, but that these laws must still comply with the treaty regime. Professor Diane Howard, Embry-Riddle Aeronautical University, stated effective regulation can be fostered through stakeholder dialogue. This dialogue should develop clear and coherent policy goals to guide regulators. Finally, Michael Simpson, Executive Director of the Secure World Foundation, stated that certainty has economic value. He said that in the current environment there is not a choice of whether to act or not act, which

creates a "negotiable moment" in how the international regime is applied and interpreted. He stated that this should be guided by a policy that fosters innovation by increasing legal certainty.

The symposium was closed by a final keynote speaker, Ken Hodgkins, Director, Office of Space and Advanced Technology, Department of State. Hodgkins remarks served as an excellent cap to the day as they emphasized the ability of domestic action to shape the international framework. He stated that space law is primarily permissive and emphasizes openness and transparency. In this context, he noted that state practice can be an important tool for shaping the international regime. He said that the U.S. needs to help shape the international view to ensure that innovation is supported.

The Symposium's focal point on innovation, both technological and legal, was fitting, especially in light of the opening remarks which highlighted Eilene M. Galloway's role as a legal innovator. The advent space technology created a need for changes in the law. Galloway along with many other pioneers used many novel legal innovations and negotiated a regime of permissiveness. The Symposium made clear that again we are at a point in which the law falls short of the technology. In these "negotiable moments," as Simpson termed them, the law is developed through a negotiation among stakeholders in which balance can be struck among the parties. Legal innovation will be critical in moving these negotiations forward. Simply stated, the 2014 Galloway Symposium could be summarized: space is hard, but the law shouldn't make it impossible.