



SPACE GENERATION
ADVISORY COUNCIL

Webinar Summary Space for Climate Action

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The use of outer space can be leveraged to advance the knowledge, technology, and insights needed to address significant weather events and climate change on Earth. Satellite observations enable continuous monitoring of global weather patterns – especially in areas without weather stations on the ground – and persistent tracking of key environmental issues such as methane leaks, coastal erosion, and ice melts. It is critical that the valuable data and innovations brought by space exploration and utilization not be overlooked in the fight against climate change. Leveraging “Space for Climate” has been a significant focus of the US Task Force and, more broadly, the Space Generation Advocacy and Policy Platform (SGAPP). *The US Task Force hosted an event to promote the SGAPP Report, “Saving Our Future on Earth Through Our Presence in Space,” published in December 2022.*¹

Webinar on space technology and climate monitoring²

Space for Climate Action

Organized by the U.S. Task Force,
Space Generation Advocacy and Policy Platform



Caroline Juang
Columbia University



Dr. Cassidy Rankine
Planet



Sahba El Shawa
SGAC SGAPP

On July 6th, 2023, the US Task Force held a webinar to discuss the intersection between space technology and climate monitoring. The full webinar can be viewed on our website and YouTube. Featured were expert panelists Dr. Cassidy Rankine (Planet), Caroline Juang (Columbia University), and Sahba el-Shawa (Jordanian Space Initiative & SGAPP).

- **Sahba discussed key takeaways from the report;** the goal of the report was to be transdisciplinary by exploring the intersection of space and climate from different backgrounds, and framing the climate crisis as a global crisis. Recommendations are centered around stakeholders such as commercial industry, the scientific community and academia, and government and policy makers.
- **Dr. Rankine discussed the trends in industry moving towards carbon offset programs and the need for quantifying carbon offsets.** Space technology can support global monitoring that is standardized and independent, yielding more accuracy

¹ SGAPP Space For Climate Action Report, “Saving Our Future on Earth Through Our Presence in Space.” <https://spacegeneration.org/united-policy-position-on-the-role-of-space-in-climate-action>

² Space For Climate Action Webinar Recording: <https://youtu.be/4jjckV3FifY>

than Earth-based sensing. The panelist noted that the space industry can help facilitate and accelerate this transformation.

- **Caroline Juang discussed the benefits of monitoring Earth for a protracted period of time**; she noted that we are at the cusp of space data becoming useful for quantifying climate and visualizing long term environmental changes such as sea surface temperature and seasonal changes to form a deeper understanding of how our climate is changing over time.
- **Sahba discussed her own research using space for climate disaster and flood monitoring**, and brought up remaining challenges in bridging the gap between policy and implementation.
- **The panelists discussed the importance for companies to value environmental and social sustainability**, and suggested companies should consider how space can help realize their environmental goals.
- **The panelists discussed mitigation of future crises resulting from climate change.** Scientific modeling and machine learning applied to Earth observation data can help understand where disasters may erupt.

The webinar was widely attended, with considerable audience participation and questions:

- **Is Environmental, Social, Governance (ESG) a good tool to keep businesses accountable?** The panelists agreed ESG is not a comprehensive tool but it is a way to make sure companies consider how environmental impacts affect their bottom line.
- **The audience also asked the panelists whether they think space will help reduce climate change and in which ways.** Sahba suggested considering the environmental impact of the military as part of space activities. Caroline suggested that reducing our carbon footprints in large scale agriculture practices can make a big difference. Dr. Rankine discussed development as not evenly distributed and therefore innovation will be required to meet the needs of different developing countries around the world.
- **On the question of access by different communities to space data**, Dr. Rankine shared that Planet is working with indigenous communities to support their claims over their land and prevent over exploitation of resources. New space companies are providing more data access, while the cost of data has come down significantly in recent years. Caroline discussed how NASA's ARSET³ provides open access to users globally. However, using data in a meaningful way continues to be a bottleneck; data should be made available to communities affected by natural disasters and understanding long term trends can help us adapt by changing our current practices. Sahba expressed concerns that political situations can limit the data shared over an area such as Palestine, making it a human rights concern as people can't monitor human migration due to climate change and other factors. Sabah also suggested that the scientific community should consider ways to work with indigenous communities to improve their data access and let them decide how they can best use this data.

In their closing remarks, Sahba discussed that space is an interdisciplinary field and we should think about the role of space from many angles. Dr. Rankine suggested that seeing Earth science as a cross border issue can provide an opportunity for us to work together. Caroline discussed that we all have tools in the tool kit, despite different backgrounds in many fields and professional careers, we have the ability to work on this issue.

³ NASA ARSET, <https://appliedsciences.nasa.gov/what-we-do/capacity-building/arset>

Author Bio: Hanh Nguyen Le is a member of the SGAPP US Task Force – she is interested in commercial space policy and space sustainability issues. Cody is also a leader in the US Task Force. Barbara Milewski is an undergraduate student at the University of Washington who is interested in the role weather and climate play in human society, especially in the aviation and space industries.