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SPACE SATELLITES FOR A HEALTHY EARTH

Abstract

March 15th, 2019 will mark the day where thousands of students across the world strike for climate action. The reasoning behind this student movement is simple, but it still manages to evoke the urgency of the situation: “Why study for a future, which may not be there?”¹. Human activities have had a negative impact on the environment and the younger generations are now advocating for a better future. Climate change has far reaching effects on natural phenomena such as floods, hurricanes, drought, wildfires and the melting of polar ice caps. The full impact of these catastrophic events can be observed from space. This is where space technologies come into play.

Satellites are valuable tools that can help increase the knowledge of climate processes and their repercussions. They can be used to monitor signs of climate change. With the data collected, there is a better understanding of the global phenomenon and more effective solutions can be proposed to fight climate change. Satellites can measure pollution, which helps experts identify pollution sources, monitor and study air, water and soil quality. It allows experts to gather data on carbon monoxide distribution, detect oil spills and locate areas contaminated by mining activities. Satellites can also improve the response time in the event of natural disasters. The severity and the frequency of these events are exacerbated by climate change. Authorities around the world often turn to satellites in order to make more informed decisions and effectively plan their emergency response. Space technologies can help protect the planet’s ecosystems by monitoring changes, predicting potential deterioration and finding ways to prevent it.

Science *must* meet public policy in order to tackle climate change efficiently. Data gathered from satellites are already being used in different organizations to better understand how to address this issue. Copernicus, the European Union’s Earth Observation Programme, and more specifically the Copernicus Climate Change Service (C3S) is an example of how we can use space technologies for the benefit of the Earth. C3S provides climate data and information on various topics through its Climate Data Store. The service can be tailored to public and commercial needs. Their users include scientists, consultants, policy makers, the media and the general public.

This paper will present different initiatives and programmes that are using satellites in order to mitigate climate change.

¹Fridays For Future. Retrieved from <https://fridaysforfuture.org/>