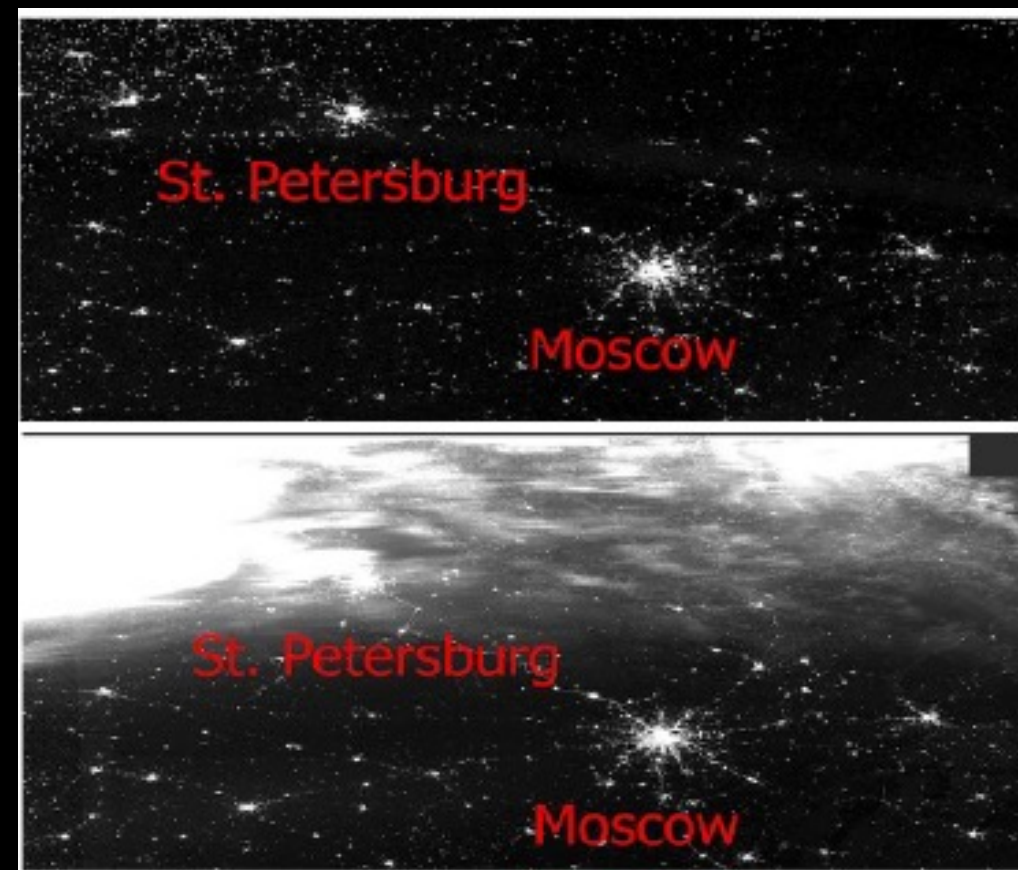


# Machine Learning Method Detects Aurora, Corrects Nighttime Light Images

Earth scientists use satellite imagery of nighttime lights as a proxy for human activity. However, more than 20% of the population live in areas where the effects of aurorae present a major challenge in characterizing manmade light sources.

For climate research, it is important to try to distinguish “clean” light signal from human-produced light in pursuit of a consistent long-term record of global energy demand within cities. This is especially true for Earth science research tracking human activity in the Arctic, which is warming at a much higher rate than the rest of the world.

Aurorae are also important indicators of Space Weather threats, including GPS scintillations and power grid fluctuations.



*Top:* Clear view of nighttime lights in northern Russia March 16, 2015. *Bottom:* The same region, the next day, obscured by aurora.