On the dark side of the earth – How the Black Marble Alliance supports humanitarian activities with satellite-derived night-time light observations

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Various satellite data are part of humanitarian decision-making workflows. The added value of daytime imagery is mostly obvious, contributing to damage and needs assessment or the monitoring of populations of concern among other applications. However, the development and practical humanitarian applications of night-time imagery are largely unexplored. New possibilities are emerging with the public release of NASA’s black marble dataset – a global nighttime lights product derived from the Visible Infrared Imaging Radiometer Suite (VIIRS) on-board the Suomi National Polar-orbiting Partnership (NPP) satellite. Emerging evidence demonstrates the added-value of the black marble dataset to assess disaster impact and displacement after cyclone Idai made landfall in Mozambique in March 2019. Similar data was used to monitor reconstruction efforts in Puerto Rico in the wake of hurricane Maria’s landfall in 2017, uncovering socio-economic inequalities in electricity restoration efforts. This work is led by a unique collaboration between the Universities Space Research Association’s (USRA) Earth from Space Institute, NASA Goddard Space Flight Center, Harvard Humanitarian Initiative, the World Bank, logistics services companies, aid and development organizations.