a balloon mission from NASA observed rare electric-blue clouds these are polar mesospheric clouds or PMC's they are only visible during Twilight and form above Earth's polar regions at the upper reaches of the atmosphere as Earth's uppermost clouds at around 50 miles high PMC's are composed of ice crystals that glow bright blue or white when reflecting sunlight they are extremely sensitive to environmental factors like water vapor and temperature atmospheric motions like air flow over mountains or thunderstorms can disturb
the atmosphere and cause waves that can propagate to very high altitudes these waves are known as gravity waves and although they are invisible they can be seen as I move through PMC's gravity waves lead to turbulence chaotic movement in the atmosphere that can influence weather and climate and their predictions but the exact causes and effects of turbulence are not well understood to better understand this complex process scientists sent a giant balloon to observe gravity waves in PNC's the cruellest balloon traveled 250
miles high and floated from Sweden to Canada over five days in July 2018 a

laser radar on the balloon measured the PMC altitudes and the atmospheric temperature that affects their formation and brightness and from 6 million camera images captured from the balloon scientists could see both large and small ripples caused by gravity waves a better understanding of turbulence can help improve weather forecasts models and our understanding of processes around Earth which affect our satellites and assets in space