Resonance lidar observations of interactions between the middle and the upper atmospheres in the poldar region

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We are planning to develop a multiple-wavelengh resonance lidar for observing middle atmosphere and upper atmosphere over Syowa, Antarctica, as a 6 year project starting in 2010. The characteristics of the lidar system is to observe both neutral atoms and ions in the middle atmosphere and upper atmosphere, with a tunable Alexandrite lasers. The target will be neutral and ionized atmospheres as well as precise profiling of temperature. Rayleigh scatter from the molecules and Mie scatter from the polar mesospheric clouds are also included in the targets.