Observation of O_2(0-1) and OH(6-2) airglow and temperature at King Sejong Station (62°S, 58°W), Antarctica

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We have been measuring the emission rates and temperatures of O_2(0-1) band and OH(6-2) band using Spectral Airglow Temperature Imager(SATI) located at King Sejong Station(62°13′S, 58°47′W), Korea Antarctic Research Station since February, 2002. Here, we report the observational results that analyzed rotational temperatures and emission rates of both airglows obtained from 724 moonless nights during the period of February, 2002 through September, 2005. From our dataset, we found clear seasonal variations of temperatures and emission rates of both O_2 and OH airglows. The maximum temperatures of O_2(0-1) and OH(6-2) airglows appeared in southern fall with minimum temperatures in spring. We also found that there is a good correlation between the temperatures and emission rates of OH airglow, but not in O_2 airglow. We will discuss the OH correlation in terms of altitude change of OH airglow, which was proposed in previous studies. More detailed analysis will be performed to the dataset to study atmospheric waves, tides, or variations over hours and days.