The ionospheric behavior over the Brazilian region was examined during the sudden stratospheric warming (SSW) events that occurred in the northern hemisphere winter of 2007-2008 and 2008-2009. For the January 2009 SSW the temperature reached its maximum value at the 10 hPa level on 23-24 January. The effect on ionospheric data started on January 25 as an increase in the equatorial ionization anomaly development before 15 LT and an inhibition in its development after this same local time. The effect persisted for a few days with its intensity decreasing gradually. The data show that the effects of a SSW in the northern hemisphere can be seen at latitudes up to the southern crest of the equatorial ionization anomaly. As suggested by Goncharenko et al. (Geophys. Res. Lett., 37, L10101, doi:10.1029/2010GL043125), it seems that the most probable cause of these effects are the large changes in atmospheric tides produced from their nonlinear interaction with the strengthened planetary waves that are observed during SSW events. The atmospheric tides are the drivers for the daytime ExB drifts which, in turns, are the responsible for the development of the equatorial ionization anomaly.