Ethane is the second most abundant atmospheric hydrocarbon (after methane). Its major sources are biomass burning, vegetation and fossil fuels and its major sink is by reaction with OH· in the atmosphere. Ethane (C₂H₆) has an atmospheric lifetime of approximately 2 months and a seasonal cycle that reflects the concentrations of atmospheric OH·; with C₂H₆ concentrations peaking in the winter (when OH· is low). Global surface measurements have shown a rapid decline in C₂H₆ concentrations from the mid 1980’s to the current day that have been attributed to reduced leaks from natural gas & oil fields. These trends have been echoed in northern hemisphere total column measurements of C₂H₆ made from Switzerland, USA and Japan using Fourier transform infrared (FTIR) solar absorption spectra in periods from the late 1970’s to the year 2000. However, previously published FTIR measurements of total column C₂H₆ from Lauder, New Zealand from 1993 -2000 failed to show a statistically significant trend in southern hemisphere C₂H₆. Here we present multiyear time-series of C₂H₆ measurements from a number of sites in the global Network for Detection of Atmospheric Composition and Change.