

<i>SURFACE $[CO_3^{2-}]$ (Figure 3a)</i>								
input	Carbon Parameter		Alkalinity ^c	Silicate ^d	Phosphate ^d	Salinity ^d	SST ^e	Pressure ^f
	fCO_2^a	pCO_2^b						
time frame	1998-2011	1998-2013	climatology					concurrent with f/pCO_2 measurement
format method	austral summer mean concentrations from all data collected during DJF		average of the DJF months from each climatology					austral summer mean values from monthly means
<i>WATER COLUMN $[CO_3^{2-}]$ (Figure 3b)</i>								
input type	TCO_2	Alkalinity	Silicate	Phosphate	Salinity	Temp.	Pressure	
available years	bottle ^g 1994, 1996, 1998, 2001, 2003 (only samples taken in D, J, and/or F)							
format method	for a given year, $[CO_3^{2-}]$ estimated at each sample location, then binned according to latitude (every 1 deg.) and depth (every 20 m)							

^a Surface Ocean CO_2 Atlas gridded data products (Sabine et al., 2013).

^b Global Surface pCO_2 (LDEO) Database V2013 (http://cdiac.ornl.gov/oceans/LDEO_Underway_Database/).

^c LDEO Surface Gridded Carbon Parameters dataset (http://www.ldeo.columbia.edu/res/pi/CO2/carbondioxide/global_ph_data/).

^d World Ocean Atlas 2013 (<http://nodc.noaa.gov/>).

^e Merged satellite time series detailed in main text (Figure S1c,d): Level-3 AVHRR Oceans Pathfinder (1997-2009; <http://science.oregonstate.edu/ocean.productivity/>) and MODIS-Aqua (2002-2014; <http://oceancolor.gsfc.nasa.gov/>).

^f NCEP/NCAR Reanalysis monthly surface product from NOAA/OAR/ESRL PSD, Boulder, Colorado, USA (<http://www.esrl.noaa.gov/psd/>).

^g SR03 (south of Australia), CLIVAR & Carbon Hydrographic Data Office (<http://cchdo.ucsd.edu/>).