



The effect of the Antarctic Circumpolar Wave on sea ice and surface temperatures, demonstrated using passive microwave and thermal infrared data respectively.

Top: Sea ice concentration anomaly map for July 1981 showing a regular pattern of sectors of ice edge advance and retreat around the continent associated with the Antarctic Circumpolar Wave.

Bottom: Corresponding surface temperatures derived from satellite thermal infrared data. This image shows a similar surface temperature anomaly map for July 1981 that indicates the correspondence of relatively cold surface temperatures with ice edge advance, and relatively warm air temperatures in locations of ice edge retreat. The white area shows the maximum ice extent for the period 1979 to 1999.

(Data from AVHRR instruments on NOAA satellites and SMMR and SSMI instruments on the Nimbus 7 and DMSP satellites, respectively, augmented by recent data from the AMSR-E instrument on the Aqua satellite.)