File Revision Date:
October 31, 2024

Data Set Description:

PI:	Sylvia E. Nichol
Instrument:	Dobson Spectrophotometer
Site(s):	Arrival Heights (77.8S, 166.7E)
Measurement Quantities:	Total column ozone

Contact Information:

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Reference Articles:

Nichol, S.E., S. Coulmann, and T.S. Clarkson, 1991: Relationship of springtime ozone depletion at Arrival Heights, Antarctica to the 70 hPa temperatures. Geophys. Res. Lett. 18, 1865-68.

Nichol, S.E., and C. Valenti, 1993: Intercomparison of total ozone measured at low sunangles by the Brewer and Dobson spectrophotometers at Scott Base, Antarctica. Geophys. Res. Lett. 20, 2051-2054.

Nichol, S.E., J.G. Keys, S.W. Wood, P.V. Johnston, and G.E. Bodeker, 1996. Intercomparison of total ozone data from a Dobson spectrophotometer, TOMS, visible wavelength spectrometer, and ozonesondes. Geophys. Res. Lett. 23, 1087-1090

Instrument Description:
Dobson spectrophotometer instrument No.017

Algorithm Description:
Uses algorithm set out in "Operations handbook - ozone observations with a Dobson spectrophotometer", W.D. Komhyr, Global Ozone Research and Monitoring Project. Report 6, World Meteorological Organisation, Geneva,1980.
Uses Bass/Paur (1992) ozone absorption coefficients.
The instrument was upgraded with WinDobson automation over the period November 2014 to January 2015, so since then has been using WinDobson software.

Expected Precision/Accuracy of Instrument:
"Review of the Dobson spectrophotometer and its accuracy", Reid E. Basher, Global Ozone Research and Monitoring Project. Report 13, World Meteorological Organisation, Geneva,1982.

Instrument History:

June 1985	Recalibrated against World Standard Dobson instrument No.083 in Boulder, Colorado, USA.
January 1991	Recalibrated against Dobson instrument No.105 in Melbourne, Australia.
January 1996	Recalibrated against Dobson instrument No.105 in Melbourne, Australia.

January 1999	Recalibrated against Dobson instrument No.105 in Melbourne, Australia.
January 2004	Recalibrated against Dobson instrument No.105 in Melbourne, Australia.
January 2011	Recalibrated against Dobson instrument No.111 in Melbourne, Australia.
Nov2014-Jan2015	Instrument upgraded with WinDobson automation. Recalibrated against Dobson instrument No.072 in Lauder, New Zealand.
January 2018	Recalibrated against Dobson instrument No.105 in Melbourne, Australia.
January 2022	Recalibrated against Dobson instrument No.105 in Melbourne, Australia.