

File Revision Date:

August 20, 2018

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.

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| 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. |