File Revision Date:
August 21st, 2023

Data Set Description:

PI:	Dr. Ryan Stauffer (Instrument)
	Glen McConville (for instrument)
Instrument:	Dobson Ozone Spectrophotometer
Site(s):	Wallops Island, Virginia USA (37.86 N, 75.510 W)
Measurement Quantities:	Total Column Ozone
DOI:	doi: 10.7289/V5H41PQ6
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Contact Information:

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Reference Articles:

The instrument is described in numerous publications, the most commonly used reference is "Operations handbook - ozone observations with a Dobson spectrophotometer", W.D. Komhyr, Global Ozone Research and Monitoring Project. Report 183, World Meteorological Organization, Geneva, 2008.

Evans, R.D., Petropavlovskikh, I., McClure-Begley, A., McConville G., Quincy, D., and Miyagawa, K., The US Dobson Station network Data Record Prior to 2015, Re-evaluation of NDACC and WOUDC archived records with WinDobson Processing Software, Atmos. Chem. Phys., https://doi.org/10.5194/acp-2017-383, 2017.

Instrument Description:

Dobson Ozone Spectrophotometer number 38

Algorithm Description:

Uses algorithm described in "Operations handbook - ozone observations with a Dobson spectrophotometer", W.D. Komhyr, Global Ozone Research and Monitoring Project. Report 183, World Meteorological Organization, Geneva, 2008. www.esrl.noaa.gov/gmd/ozwv/dobson/GAW183-Dobson-WEB.pdf

Uses Bass/Paur ozone absorption coefficients, as defined in:
www.esrl.noaa.gov/gmd/ozwv/dobson/papers/coeffs.html

Expected Precision/Accuracy of Instrument:

There is a paper; "Review of the Dobson spectrophotometer and its accuracy", Reid E. Basher, Global Ozone Research and Monitoring Project. Report 13, World Meteorological Organization, Geneva,1982, describing the precision and accuracy.

In general, the precision is considered to be from +/-1% (direct sun observations) to +/-5% (Observations on cloud zenith) for total ozone. Accuracy is part of an ongoing debate, but is considered in the 5% range.

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Instrument History:

1966.06.16-1979.10.31 ; D072
1979.11.01-1984.04.27 ; D038
1984.04.28-1985.06.02 ; D086
1985.06.03-9999.12.31 ; D038