LIST OF REFERENCES

Andersson, S. M., B. G. Martinsson, J.-P. Vernier, J. Friberg, C. A. Brenninkmeijer, M. Hermann, P. F. van Velthoven, and A. Zahn (2015), Significant radiative impact of volcanic aerosol in the lowermost stratosphere, *Nature communications*, 6.

Andrews F. G. (1987), *Middle atmospheric dynamics*, Academic Press Inc.

Angstrom, A. (1964), The parameters of atmospheric turbidity, Tellus, 16(1), 64 – 75.

Barth, C. A., D. W. Rusch, R. J. Thomas, G. H. Mount, G. J. Rottman, G. E. Thomas, R. W. Sanders, and G. M. Lawrence (1983), Solar Mesosphere Explorer - Scientific objectives and results, *Geophysical Research Letters*, 10, 237-240, doi:10.1029/GL010i004p00237.

Berthet, G., J.-B. Renard, C. Brogniez, C. Robert, M. Chartier, and M. Pirre (2002), Optical and physical properties of stratospheric aerosols from balloon measurements in the visible and near-infrared domains. i. Analysis of aerosol extinction spectra from the AMON and SALOMON balloonborne spectrometers, *Applied optics*, 41, 7522-7539.

Beuttell, R. G., and A. W. Brewer (1949), Instruments for the measurement of the visual range, *Journal of Scientific Instruments*, 26, 357.

Bickel, W. S., and W. M. Bailey (1985), Stokes vectors, Mueller matrices, and polarized scattered light, *American Journal of Physics*, 53, 468-478 (1985), doi:http://dx.doi.org/10.1119/1.14202

Bingen, C., D. Fussen, and F. Vanhellemont (2004), A global climatology of stratospheric aerosol size distribution parameters derived from sage ii data over the period 1984-2000: 1. methodology and climatological observations, *Journal of Geophysical Research*, 109.

Boucher O. (2015), *Atmospheric Aerosols: Properties and Climate Impacts*, Springer.

Bourassa, A. E., D. A. Degenstein, R. L. Gattinger, and E. J. Llewellyn (2007), Stratospheric aerosol retrieval with optical spectrograph and infrared imaging system limb scatter measurements, *Journal of Geophysical Research*, 112, D10217, doi:10.1029/2006JD008079.

Bourassa, A. E., D. A. Degenstein, and E. J. Llewellyn (2008), SASKTRAN: A spherical geometry radiative transfer code for efficient estimation of limb scattered sunlight, *Journal of Quantitative Spectroscopy and Radiative Transfer*, 109, 52-73, doi:10.1016/j.jqsrt.2007.07.007.

Bourassa, A. E., C. A. McLinden, A. F. Bathgate, B. J. Elash, and D. A. Degenstein (2012a), Precision estimate for Odin-OSIRIS limb scatter retrievals, *Journal of Geophysical Research: Atmospheres*, 117, D04303, doi:10.1029/2011JD016976.

Bourassa, A. E., L. A. Rieger, N. D. Lloyd, and D. A. Degenstein (2012b), Odin-OSIRIS stratospheric aerosol data product and SAGE III intercomparison, *Atmospheric Chemistry & Physics*, 12, 605{614, doi:10.5194/acp-12-605-2012.

Bourassa, A. E., A. Robock, W. J. Randel, T. Deshler, L. A. Rieger, N. D. Lloyd, E. T. Llewellyn, and D. A. Degenstein (2012c), Large volcanic aerosol load in the stratosphere linked to Asian monsoon transport, *Science*, 337, 78-81.

Bourassa, A. E., A. Robock, W. J. Randel, T. Deshler, L. A. Rieger, N. D. Lloyd, E. Llewellyn, and D. A. Degenstein (2013), Response to comments on" large volcanic aerosol load in the stratosphere linked to Asian monsoon transport", *Science*, 339, 647-647.

Bovensmann, H., J. Burrows, M. Buchwitz, J. Frerick, S. Noël, V. Rozanov, K. Chance, and A. Goede (1999), SCIAMACHY: Mission objectives and measurement modes, *Journal of the Atmospheric Sciences*, 56, 127-150.

Brasseur G. P. and S. Solomon (2005), *Aeronomy of the Middle Atmosphere: Chemistry and Physics of the Stratosphere and Mesosphere*, 3rd edition, Springer.

Brock, C. A., P. Hamill, J. C. Wilson, H. H. Jonsson, and K. R. Chan (1995), Particle Formation in the Upper Tropical Troposphere: A Source of Nuclei for the Stratospheric Aerosol, *Science*, 270, 1650-1653, doi:10.1126/science.270.5242.1650.

Canty, T., N. Mascioli, M. Smarte, and R. Salawitch (2013), An empirical model of global climate—Part 1: A critical evaluation of volcanic cooling, *Atmospheric Chemistry and Physics*, 13(8), 3997–4031.

Chang, I. C. (1977), Noncollinear tunable acousto-optic filter. Patent.

Charlson, R. J., N. Ahlquist, H. Selvidge, and P. MacCready Jr (1969), Monitoring of atmospheric aerosol parameters with the integrating nephelometer, *Journal of the Air Pollution Control Association*, 19, 937-942.

Chazette, P., C. David, J. Lefrere, S. Godin, J. Pelon, and G. Mégie (1995), Comparative lidar study of the optical, geometrical, and dynamical properties of stratospheric postvolcanic aerosols, following the eruptions of el chichon and mount pinatubo, *Journal of Geophysical Research*, 100, 23-195.

Chuang, T., P. Burns, E. B. Walters, T. Wysocki, T. Deely, A. Losse, L. Le, B. Drumheller, T. Schum, M. Hart, K. Puffenburger, B. Ziegler, and F. Hovis (2013), Space-based, multi-wavelength solid-state lasers for NASA’s Cloud Aerosol Transport System for International Space Station (CATS-ISS), *Proc. SPIE*, 8599, 85990N. doi:10.1117/12.2005545.

Cisewski, M., J. Zawodny, J. Gasbarre, R. Eckman, N. Topiwala, O. Rodriguez-Alvarez, D. Cheek, and S. Hall (2014), The stratospheric aerosol and gas experiment (SAGE III) on the international space station (ISS) mission, *Proc. SPIE*, 9241, 924,107-924,107-7, doi:10.1117/12.2073131.

Clarisse, L., P.-F. Coheur, N. Theys, D. Hurtmans, and C. Clerbaux (2014), The 2011 Nabro eruption, a SO2 plume height analysis using IASI measurements, *Atmospheric Chemistry and Physics*, 14, 3095-3111, doi:10.5194/acp-14-3095-2014.

Crutzen, P. J. (1976), The possible importance of CSO for the sulfate layer of the stratosphere, *Geophysics Research Letters*, 3, 73-76.

Damadeo, R. P., J. M. Zawodny, L. W. Thomason, and N. Iyer (2013), SAGE version 7.0 algorithm: application to SAGE II, *Atmospheric Measurement Techniques*, 6, 3539-3561, doi:10.5194/amt-6-3539-2013.

Dee, D. P., S. M. Uppala, A. J. Simmons, P. Berrisford, P. Poli, S. Kobayashi, U. Andrae, M. A. Balmaseda, G. Balsamo, P. Bauer, P. Bechtold, A. C. M. Beljaars, L. van de Berg, J. Bidlot, N. Bormann, C. Delsol, R. Dragani, M. Fuentes, A. J. Geer, L. Haimberger, S. B. Healy, H. Hersbach, E. V. Hlm, L. Isaksen, P. Kllberg, M. Khler, M. Matricardi, A. P. McNally, B. M. Monge-Sanz, J.-J. Morcrette, B.-K. Park, C. Peubey, P. de Rosnay, C. Tavolato, J.-N. Thpaut, and F. Vitart (2011), The ERA-interim reanalysis: configuration and performance of the data assimilation system, *Quarterly Journal of the Royal Meteorological Society*, 137, 553-597, doi:10.1002/qj.828.

Degenstein, D. A., A. E. Bourassa, C. Z. Roth, and E. J. Llewellyn (2009), Limb scatter ozone retrieval from 10 to 60 km using a multiplicative algebraic reconstruction technique, *Atmospheric Chemistry and Physics*, 9, 6521-6529.

Dekemper, E., N. Loodts, B. V. Opstal, J. Maes, F. Vanhellemont, N. Mateshvili, G. Franssens, D. Pieroux, C. Bingen, C. Robert, L. D. Vos, L. Aballea, and D. Fussen (2012), Tunable acousto-optic spectral imager for atmospheric composition measurements in the visible spectral domain, *Applied Optics*, 51, 6259-6267, doi:10.1364/AO.51.006259.

Deshler, T., M. Hervig, D. Hofmann, J. Rosen, and J. Liley (2003), Thirty years of in situ stratospheric aerosol size distribution measurements from Laramie, Wyoming (41 N), using balloon-borne instruments, *Journal of Geophysical Research*, 108.

Deshler T. (2008), A review of global stratospheric aerosol: Measurements, importance, life cycle, and local stratospheric aerosol, *Atmospheric Research*, 90, 2–4, 223-232.

Dueck, S., A. E., Bourassa, and D. A. Degenstein (2016), Polarization Additions SASKTRAN Radiative Transfer Model, In Preparations.

Ernst, F., C. von Savigny, A. Rozanov, V. Rozanov, K.-U. Eichmann, L. A. Brinkho, H. Bovensmann, and J. P. Burrows (2012), Global stratospheric aerosol extinction profile retrievals from SCIAMACHY limb-scatter observations, *Atmospheric Measurement Techniques*, 5, 5993-6035, doi:10.5194/amtd-5-5993-2012.

Fairlie, T. D., J.-P. Vernier, M. Natarajan, and K. M. Bedka (2014), Dispersion of the Nabro volcanic plume and its relation to the Asian summer monsoon, *Atmospheric Chemistry and Physics*, 14, 7045-7057, doi:10.5194/acp-14-7045-2014.

Fischer, R. E., B. Tadic-Galeb, and P. R. Yoder (2008), *Optical System Design*, 2nd ed., McGraw-Hill.

Fiocco, G., and G. Grams (1964), Observations of the aerosol layer at 20 km by optical radar, *Journal of the Atmospheric Sciences*, 21, 323-324.

Forsythe, W. E., and Worthing, A. G. (1925). The properties of tungsten and the characteristics of tungsten lamps. *The Astrophysical Journal*, 61, 146, doi:10.1086/142880.

Fromm, M., G. Nedoluha, and Z. Charvt (2013), Comment on "large volcanic aerosol load in the stratosphere linked to Asian monsoon transport", *Science*, 339, 647, doi:10.1126/science.1228605.

Fromm, M., G. Kablick, G. Nedoluha, E. Carboni, R. Grainger, J. Campbell, and J. Lewis (2014), Correcting the record of volcanic stratospheric aerosol impact: Nabro and sarychev peak, *Journal of Geophysical Research*, 119, 10,343-10,364, doi:10.1002/2014JD021507.

Fyfe, J. C., N. P. Gillett, and F. W. Zwiers (2013), Overestimated global warming over the past 20 years, *Nature Climate Change*, 3, 767-769.

Gass, P. A., and J. R. Sambles (1991), Accurate design of a non-collinear acousto-optic tunable filter, *Optics Letters*, 16, 429-431, doi:10.1364/OL.16.000429.

Gilbert, K., D. Turnbull, K. Walker, C. Boone, S. McLeod, M. Butler, R. Skelton, P. Bernath, F. Chateauneuf, and M.-A. Soucy (2007), The onboard imagers for the Canadian ACE SCISAT-1 mission, *Journal of Geophysical Research*, 112.

Guenther, R. (1990), *Modern Optics*, 1st edition ed., Wiley and Sons, Inc.

Hamill P., E. J. Jensen, P. B. Russell, and J. J. Bauman (1997), The Life Cycle of Stratospheric Aerosol Particles, *Bulletin of the American Meteorological Society*, 78, 1395–1410.

Hansen, J. E., and L. D. Travis (1974), Light Scattering in Planetary Atmospheres, *Space Science Reviews*, 16(4), 527-610.

Hansen, J., R. Ruedy, and M. Sato (1996), Global surface air temperature in 1995: Return to pre-Pinatubo levels, *Geophysical Research Letters*, 23(13), 1665-1668.

Harris, S. E., and R. W.Wallace (1969), Acousto-Optic Tunable Filter, *Journal of the Optical Society of America* (1917-1983), 59, 744.

Haywood, J. M., A. Jones, and G. S. Jones (2014), The impact of volcanic eruptions in the period 2000-2013 on global mean temperature trends evaluated in the HadGEM2-ES climate model, *Atmospheric Science Letters*, 15, 92-96, doi:10.1002/asl2.471.

Hofmann D. J. and J. M. Rosen (1983), Stratospheric sulfur acid fraction and mass estimate for the 1982 volcanic eruption of El Chichon, *Geophysical Research Letters*, 10(4), 313-316.

Hofmann, D., J. Barnes, M. O'Neill, M. Trudeau, and R. Neely (2009), Increase in background stratospheric aerosol observed with lidar at Mauna Loa observatory and Boulder, Colorado*, Geophysical Research Letters*, 36, doi:10.1029/2009GL039008, l15808.

Hoinka, K. (1997), The tropopause: Discovery, definition and demarcation, *Meteorologische Zeitschrift*, 6, 281-303.

Holton, J. R., P. H. Haynes, M. E. McIntyre, A. R. Douglass, R. B. Rood, and L Pfister (1995), Stratosphere-troposphere exchange, *Review of Geophysics,* 33, 403–439, DOI: 10.1029/95RG02097.

Jäager, H., and D. Hofmann (1991), Midlatitude lidar backscatter to mass, area, and extinction conversion model based on in situ aerosol measurements from 1980 to 1987, *Applied optics*, 30, 127-138.

Junge, C. E., C. W. Chagnon, and J. E. Manson (1961), Stratospheric aerosols, *Journal of Atmospheric Science*, 18, 81–108.

Kettle, A. J., U. Kuhn, M. von Hobe, J. Kesselmeier, M. O. Andreae, (2002) The global budget of atmospheric carbonyl sulfide: Temporal and spatial variations of the dominant sources and sinks, *Journal Geophysical Research*, 107, D22, 4658, doi:10.1029/2002JD002187.

Kiehl, J. T., and B. P. Briegleb (1993), The relative roles of sulfate aerosols and greenhouse gases in climate forcing, *Science*, 260, 311-314, doi:10.1126/science.260.5106.311.

Kosch, M., S. Mäkinen, F. Sigernes, and O. Harang (2003), Absolute optical calibration using a simple tungsten light bulb: Experiment, *Proceedings of the 30th Annual European Meeting on Atmospheric Studies by Optical Methods*, 50-54.

Kovilakam, M., and T. Deshler (2015), On the accuracy of stratospheric aerosol extinction derived from in situ size distribution measurements and surface area density derived from remote SAGE II and HALOE extinction measurements, *Journal Geophysical Research Atmospheres*, 120, 8426–8447, doi:10.1002/2015JD023303.

Kozun M. N. (2015), *Optical Pointing System For Stratospheric Balloon-Borne Multi-Slit OSIRIS-DM*, Master’s Thesis, University of Saskatchewan.

Kremser, S., L. W. Thomason, M. von Hobe, M. Hermann, T. Deshler, C. Timmreck, M. Toohey, A. Stenke, J. P. Schwarz, R. Weigel, S. Fueglistaler, F. J. Prata, J.-P. Vernier, H. Schlager, J. E. Barnes, J.-C. Antuña-Marrero, D. Fairlie, M. Palm, E. Mahieu, J. Notholt, M. Rex, C. Bingen, F. Vanhellemont, A. Bourassa, J. M. C. Plane, D. Klocke, S. A. Carn, L. Clarisse, T. Trickl, R. Neely, A. D. James, L. Rieger, J. C. Wilson, and B. Meland (2015), Stratospheric aerosol—Observations, processes, and impact on climate, *Rev. Geophys*, 54, doi:10.1002/2015RG000511.

Lacis, A., J. Hansen, and M. Sato (1992), Climate forcing by stratospheric aerosols*, Geophysical Research Letters*, 19, 1607–1610.

Llewellyn, E., N. D. Lloyd, D. A. Degenstein, R. L. Gattinger, S. V. Petelina, A. E. Bourassa,J. T. Wiensz, E. V. Ivanov, I. C. McDade, B. H. Solheim, J. C. McConnell, C. S. Haley,C. von Savigny, C. E. Sioris, C. A. McLinden, E. Grifoen, J. Kaminski, W. F. J. Evans, E. Puckrin, K. Strong, V. Wehrle, R. H. Hum, D. J. W. Kendall, J. Matsushita, D. P. Murtagh, S. Brohede, J. Stegman, G. Witt, G. Barnes, W. F. Payne, L. Piche, K. Smith, G. Warshaw, D. L. Deslauniers, P. Marchand, E. H. Richardson, R. A. King, I. Wevers, W. McCreath, E. Kyrölä, L. Oikarinen, G. W. Leppelmeier, H. Auvinen, G. Megie, A. Hauchecorne, F. Lefevre, J. de La Noe, P. Ricaud, U. Frisk, F. Sjoberg, F. von Scheele, and L. Nordh (2004), The OSIRIS instrument on the Odin spacecraft, *Canadian Journal of Physics*, 82, 411-422, doi:10.1139/p04-005.

McLinden, C. A., J. C. McConnell, C. T. McElroy, and E. Griffioen (1999), Observations of Stratospheric Aerosol Using CPFM Polarized Limb Radiances, *Journal of the Atmospheric Sciences*, 56:2, 233-240, doi:10.1175/1520-0469(1999)056<0233:OOSAUC>2.0.CO;2.

McCormick, M. P., and T. J. Swissler (1983), Stratospheric aerosol mass and latitudinal distribution of the El Chichon eruption cloud for October 1982, *Geophysical Research Letters*, 10(9), 877–880, doi:10.1029/GL010i009p00877.

McCormick, M. P. and R. E. Veiga (1992), SAGE II measurements of early Pinatubo aerosols, *Geophysical Research Letters*, 19(2), 155-158.

McCormick, M. P., L. W. Thomason, and C. R. Trepte (1995), Atmospheric effects of the Mt Pinatubo eruption, *Nature,* 373(6513), 399-404.

McElroy, C. T., C. R. Nowlan, J. R. Drummond, P. F. Bernath, D. V. Barton, D. G. Dufour, C. Midwinter, R. B. Hall, A. Ogyu, A. Ullberg, D. I. Wardle, J. Kar, J. Zou, F. Nichitiu, C. D. Boone, K. A. Walker, and N. Rowlands (2007), The ACE-MAESTRO instrument on SCISAT: description, performance, and preliminary results, *Applied Optics*, 46, 4341-4356, doi:10.1364/AO.46.004341.

Mie, G. (1908), Considerations on the optics of turbid media, especially colloidal metal solutions, *Ann. Phys. (Leipzig).*, 42, 377.

Mishchenko, M. I., L. D. Travis, and A. A. Lacis (2002), *Scattering, Absorption, and Emission of Light by Small Particles*, 3rd edition, Cambridge, UK: Cambridge University Press.

Murphy, D. M., K. D. Froyd, J. P. Schwarz, and J. C. Wilson (2014), Observations of the chemical composition of stratospheric aerosol particles, *Quarterly Journal of the Royal Meteorological Society*, 140, 1269-1278, doi:10.1002/qj.2213.

Neely, R. R., P. Yu, K. H. Rosenlof, O. B. Toon, J. S. Daniel, S. Solomon, and H. L. Miller (2014), The contribution of anthropogenic SO2 emissions to the Asian tropopause aerosol layer, *Journal of Geophysical Research*, 119, 1571-1579, doi:10.1002/2013JD020578.

Notholt, J., Z. Kuang, C. P. Rinsland, G. C. Toon, M. Rex, N. Jones, T. Albrecht, H. Deckelmann, J. Krieg, C. Weinzierl, H. Bingemer, R. Weller and O. Schrems (2003), Enhanced Upper Tropical Tropospheric COS: Impact on the Stratospheric Aerosol Layer, *Science*, 300, 307-310.

Oikarinen, L., E. Sihvola, and E. Kyrölä (1999), Multiple scattering radiance in limb-viewing geometry, *Journal of Geophysical Research*, 104, 31,261-31,274.

Plumb, R. A. and J. Eluszkiewicz, (1999), The Brewer–Dobson Circulation: Dynamics of the Tropical Upwelling, *Journal of Atmospheric Science*, 56, 868–890.

Rault, D. F., and R. P. Loughman (2013), The OMPS limb profiler environmental data record algorithm theoretical basis document and expected performance, *Geoscience and Remote Sensing*, IEEE Transactions on, 51, 2505-2527.

Ridley, D. A., S. Solomon, J. E. Barnes, V. D. Burlakov, T. Deshler, S. I. Dolgii, A. B. Herber, T. Nagai, R. R. Neely, A. V. Nevzorov, C. Ritter, T. Sakai, B. D. Santer, M. Sato, A. Schmidt, O. Uchino, and J. P. Vernier (2014), Total volcanic stratospheric aerosol optical depths and implications for global climate change, *Geophysical Research Letters*, 41, 7763-7769, doi:10.1002/2014GL061541, 2014GL061541.

Rieger, L. A., A. E. Bourassa, and D. A. Degenstein (2014), Stratospheric aerosol particle size information in Odin-OSIRIS limb scatter spectra, *Atmospheric Measurement Techniques*, 7, 507-522, doi:10.5194/amt-7-507-2014.

Rieger, L. A., A. E. Bourassa, and D. A. Degenstein (2015), Merging the OSIRIS and SAGE II stratospheric aerosol records*, Journal of Geophysical Research*, doi:10.1002/2015JD023133, 2015JD023133.

Rodgers, C. (2000), *Inverse Methods for Atmospheric Sounding: Theory and Practice, Series on atmospheric, oceanic and planetary physics*: 1999, World Scientific, River Edge, NJ, USA.

Rogers, R. R., C. A. Hostetler, J. W. Hair, R. A. Ferrare, Z. Liu, M. D. Obland, D. B. Harper, A. L. Cook, K. A. Powell, M. A. Vaughan, and D. M. Winker (2011), Assessment of the CALIPSO lidar 532 nm attenuated backscatter calibration using the NASA LARC airborne high spectral resolution lidar, *Atmospheric Chemistry and Physics*, 11, 1295-1311, doi:10.5194/acp-11-1295-2011.

Rosen J. M. (1971), The Boiling Point of Stratospheric Aerosols*, Journal of Applied Meteorology*, 10, 1044–1046.

Russell, P., and M. McCormick (1989), SAGE II aerosol data validation and initial data use: An introduction and overview, *Journal of Geophysical Research*, 94, 8335-8338.

Saito K., A. W. and T. Yano (1976), Acousto-optic filter. Patent.

Sawamura, P., J. P. Vernier, J. E. Barnes, T. A. Berko, E. J. Welton, L. Alados-Arboledas, F. Navas-Guzmn, G. Pappalardo, L. Mona, F. Madonna, D. Lange, M. Sicard, S. Godin-Beekmann, G. Payen, Z. Wang, S. Hu, S. N. Tripathi, C. Cordoba-Jabonero, and R. M. Ho (2012), Stratospheric AOD after the 2011 eruption of Nabro volcano measured by lidars over the northern hemisphere, *Environmental Research Letters*, 7, 034,013.

Schutz, B., H. Zwally, C. Shuman, D. Hancock, and J. DiMarzio (2005), Overview of the ICEsat mission, *Geophysical Research Letters*, 32.

Sioris, C. E., C. D. Boone, P. F. Bernath, J. Zou, C. T. McElroy, and C. A. McLinden (2010), Atmospheric chemistry experiment (ACE) observations of aerosol in the upper troposphere and lower stratosphere from the Kasatochi volcanic eruption, *Journal of Geophysical Research*, 115, doi:10.1029/2009JD013469, d00L14.

Smith, W. J. (2000), *Modern Optical Engineering*, New York: McGraw-Hill.

Sneep, M., and W. Ubachs (2005), Direct measurement of the Rayleigh scattering cross section in various gases, *Journal of Quantitative Spectroscopy and Radiative Transfer*, 92(3), 293-310, doi:10.1016/j.jqsrt.2004.07.025.

Soden, B. J., R. T. Wetherald, G. L. Stenchikov, and A. Robock (2002), Global cooling after the eruption of Mount Pinatubo: A test of climate feedback by water vapor, *Science*, 296(5568), 727–730, doi:10.1126/science.296.5568.727.

Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor, and H. L. Miller (2007), Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, *Tech. rep*.

Solomon, S., J. S. Daniel, R. R. Neely, J.-P. Vernier, E. G. Dutton, and L. W. Thomason (2011), The persistently variable background stratospheric aerosol layer and global climate change, *Science*, 333, 866-870, doi:10.1126/science.1206027.

Stocker, T. F., D. Qin, G.-K. Plattner, M. M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P. M. Midgley (2013), *Climate Change 2013 The Physical Science Basis*.

Suhre, D. R., L. J. Denes, and N. Gupta (2004), Telecentric confocal optics for aberration correction of acousto-optic tunable filters, *Applied Optics*, 43, 1255-1260, doi:10.1364/AO.43.001255.

Taylor B. J. A. (2015), *The Upgrade, Calibration, and Evaluation of the Multi-Slit OSIRIS-DM for Stratospheric Balloon Flight*, Master’s Thesis, University of Saskatchewan.

Thomason, L. W. (1991), A diagnostic stratospheric aerosol size distribution inferred from SAGE II measurements, *Journal of Geophysical Research*, 96(D12), 22,501-22,508.

Thomason, L. W., and G. Taha (2003), SAGE III aerosol extinction measurements: Initial results, *Geophysical Research Letters*, 30.

Thomason, L. W. and T. Peter (2006), Assessment of Stratospheric Aerosol Processes (ASAP), *World Climate Research Program*, 1–322.

Thompson, D. W., J. M. Wallace, P. D. Jones, and J. J. Kennedy (2009), Identifying signatures of natural climate variability in time series of global-mean surface temperature: Methodology and insights, *Journal of Climate*, 22(22), 6120–6141.

Thomason, L. W., and J.-P. Vernier (2013), Improved SAGE II cloud/aerosol categorization and observations of the Asian tropopause aerosol layer: 1989-2005, *Atmospheric Chemistry and Physics*, 13, 4605-4616, doi:10.5194/acp-13-4605-2013.

Uchida, N. (1971), Optical properties of single-crystal paratellurite (TeO2), *Physics Review B*, 4, 3736-3745, doi:10.1103/PhysRevB.4.3736.

Van de Hulst, H. C. (1962), *Light Scattering by Small Particles*, New York: Wiley and Sons Inc.

Vanhellemont, F., C. Tetard, A. Bourassa, M. Fromm, J. Dodion, D. Fussen, C. Brogniez, D. Degenstein, K. L. Gilbert, D. N. Turnbull, P. Bernath, C. Boone, and K. A. Walker (2008), Aerosol extinction profiles at 525 nm and 1020 nm derived from ACE imager data: comparisons with GOMOS, SAGE II, SAGE III, POAM III, and OSIRIS, *Atmospheric Chemistry and Physics*, 8, 2027-2037, doi:10.5194/acp-8-2027-2008.

Vernier, J.-P., L. Thomason, and J. Kar (2011a), CALIPSO detection of an Asian tropopause aerosol layer, *Geophysical Research Letters*, 38.

Vernier, J.-P., L. W. Thomason, J.-P. Pommereau, A. Bourassa, L. Blanot, C. Trepte, D. Degenstein, and F. Vargas (2011b), Major influence of tropical volcanic eruptions on the stratospheric aerosol layer during the last decade, *Geophysical Research Letters*, 38, L12807, doi:10.1029/2011GL047563.

Vernier, J.-P., L. W. Thomason, T. D. Fairlie, P. Minnis, R. Palikonda, and K. M. Bedka (2013), Comment on "Large volcanic aerosol load in the stratosphere linked to Asian monsoon transport", *Science*, 339, 647, doi:10.1126/science.1227817.

Volk, C. M., J. W. Elkins, D. W. Fahey, G. S. Dutton, J. M. Gilligan, M. Loewenstein, J. R. Podolske, K. R. Chan, and M. R. Gunson (1997), Evaluation of source gas lifetimes from stratospheric observations, *Journal of Geophysical Research*, 102(D21), 25543–25564, doi:10.1029/97JD02215.

Voloshinov, V. (1996), Spectral and polarization analysis of optical images by means of acousto-optics, *Optics Laser Technology*, 28, 119-127, doi:10.1016/0030-3992(95)00079-8.

Voloshinov, V. B., and J. C. Mosquera (2006), Wide-aperture acousto-optic interaction in birefringent crystals*, Optics and Spectroscopy*, 101, 635-641, doi:10.1134/S0030400X06100225.

Voloshinov, V. B., K. B. Yushkov, and B. B. J. Linde (2007), Improvement in performance of a TeO2 acousto-optic imaging spectrometer, *Journal of Optics A: Pure and Applied Optics*,9, 341-347, doi:10.1088/1464-4258/9/4/006.

von Savigny, C., F. Ernst, A. Rozanov, R. Hommel, K.-U. Eichmann, V. Rozanov, J. P. Burrows, and L. W. Thomason (2015), Improved stratospheric aerosol extinction profiles from SCIAMACHY: validation and sample results, *Atmospheric Measurement Techniques*, 8, 8353-8383, doi:10.5194/amtd-8-8353-2015.

Wang, P.-H., M. P. McCormick, T. J. Swissler, M. T. Osborn, W. H. Fuller, and G. K. Yue (1989), Inference of stratospheric aerosol composition and size distribution from SAGE II satellite measurements, *Journal Geophysical Research*, 94(D6), 8435–8446, doi:10.1029/JD094iD06p08435.

Winker, D. M., W. H. Hunt, and M. J. McGill (2007), Initial performance assessment of CALIOP, *Geophysical Research Letters*, 34.

Wiscombe, W. J. (1980), Improved Mie scattering algorithms, *Applied Optics*, 19, 1505-1509.

Xu, J., and R. Stroud (1992), *Acousto-optic devices: principles, design, and applications*, Wiley-Interscience*.*

Young, S. A., and M. A. Vaughan (2009), The retrieval of profiles of particulate extinction from cloud-aerosol lidar infrared pathfinder satellite observations (calipso) data: Algorithm description, *Journal of Atmospheric and Oceanic Technology*, 26, 1105-1119.

Zawada, D. J., S. R. Dueck, L. A. Rieger, A. E. Bourassa, N. D. Lloyd, and D. A. Degenstein (2015), High resolution and Monte Carlo additions to the SASKTRAN radiative transfer model, *Atmospheric Measurement Techniques*, 8, 3357-3397, doi:10.5194/amtd-8-3357-2015.