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Acknowledgement: The AVHRR Radiances - NASA CDR used in this study was acquired from the NOAA National Centers for Environmental Information (NCEI; formerly NCDC) (https://www.ncei.noaa.gov). This CDR was developed by David Doelling, Patrick Minnis, and Kristopher Bedka of the NASA Langley Research Center and Rajendra Bhatt, Arun Gopalan, Conor Haney, and Benjamin Scarino of Science Systems and Applications, Inc. through support from NOAA's CDR Program.

Literature Citations: Doelling, D. R., and co-authors, 2016: Calibration of Historical and Future AVHRR and GOES Visible and Near-Infrared Sensors. Algorithm Theoretical Basis Document. AVHRR Radiances – NASA [CDRP-ATBD-0823].

Bhatt, R., D. R. Doelling, B. R. Scarino, A. Gopalan, C. O. Haney, P. Minnis, and K. M. Bedka, 2016: A consistent AVHRR visible calibration record based on multiple methods applicable for the NOAA degrading orbits, Part I: Methodology. *J. Atmos. and Oceanic. Tech*, In Press. DOI: <u>http://dx.doi.org/10.1175/JTECH-D-16-0044.1</u>

Doelling, D. R., R. Bhatt, B. R. Scarino, A. Gopalan, C. O. Haney, P. Minnis, and K. M. Bedka, 2016: A consistent AVHRR visible calibration record based on multiple methods applicable for the NOAA degrading orbits, Part II: Validation. *J. Atmos. and Oceanic. Tech*, In Press. DOI: <u>http://dx.doi.org/10.1175/JTECH-D-16-0042.1</u>

Data Citation: David Doelling, Patrick Minnis and NOAA CDR Program (2016): NOAA Climate Data Record (CDR) of AVHRR Radiances - NASA, Version 1. NOAA National Centers for Environmental Information (NCEI). <u>doi: 10.789/V5NK3C0J</u>

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[1] On Being a Scientist: A Guide to Responsible Conduct in Research: 3rd Edition (2009), Committee on Science, Engineering, and Public Policy, National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, 82 pages, ISBN-10: 0-309-11970-7. Available for download at: http://www.nap.edu/catalog.php?record_id=12192.

[2] Ruth E. Duerr, Robert R. Downs, Curt Tilmes, Bruce Barkstrom, W. Christopher Lenhardt, Joseph Glassy, Luis E. Bermudez and Peter Slaughter. On the utility of identification schemes for digital earth science data: an assessment and recommendations, Earth Science Informatics, Vol. 4, Num. 3, 139-160, 2011, doi:10.1007/s12145-011-0083-6.

[3] http://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-13.pdf

[4] <u>http://www.whitehouse.gov/the-press-office/2013/05/09/executive-order-making-open-and-machine</u> <u>-readable-new-default-government-</u>

[5] https://www.ncdc.noaa.gov/cdr