

# Known Issues for ATL16 and ATL17 Atmosphere Gridded Data Products, Version 6 (Release 006), and the Version 2.1 atlas\_l3b\_atm PGE

**August 13, 2025**

## **Expanded Global Total Column Optical Depth (parameter [expanded\\_global\\_column\\_od](#))**

Implemented in Release 004 and continued in Release 005. This is not so much a problem, but a comment on the scientific accuracy of this parameter. It is built by assuming that when a ground return is not found, that this is caused by a cloud with optical depth greater than 3 and less than 35. The selection of what optical depth to use is based on a random, normally distributed number from 3 to 35. A future release will improve upon this by using satellite-derived measurements of cloud optical depth distributions as a function of latitude.

With the cessation of further development on the atmosphere PGE software and data products, this estimated cloud thickness blocking the ground signal continues in this Release 006. The planned replacement of the normally distributed random number with derived ancillary data to realistically replace the missing column optical depth from ASR profile observation will not occur. As a cautionary note, the normally distributed random number generated estimate is simply a place-holder fill value and bears no physical correlation with the surrounding processed column optical depth data obtained in the apparent surface reflectance data processing. Consequently, it is recommended that the atmosphere gridded data user rely on the unadulterated Global Total Column Optical Depth parameter [global\\_column\\_od](#).

## **South Polar Surface Diamond Dust Frequency (parameter [spolar\\_surf\\_ddust\\_freq](#))**

This was a new parameter in Release 005 and is the frequency of occurrence of diamond dust that touches the surface over Antarctica. Along and near the trans Antarctic mountains and especially around longitude 165 degrees East and latitude 70-75 degrees South, the frequency is anomalously high due to ground signal contamination.