Description of Version 2 Data Format NSF UV Monitoring Network: Effective Albedo

Filename: SITE_all_albedo.csv

where SITE is MCM for McMurdo Station, Antarctica
PAL for Palmer Station, Antarctica
SPO for South Pole, Antarctica
USH for Ushuaia, Argentina
SAN for San Diego, California
BAR for Barrow, Alaska
SUM for Summit, Greenland

Effective Albedo was calculated from UV spectra using an algorithm published in:
Bernhard G., C. R. Booth, J. C. Ehramjian, and S. E. Nichol. (2006) UV climatology at McMurdo Station, Antarctica, Based on Version 2 data of the National Science Foundation's Ultraviolet Radiation Monitoring Network, J. Geophys. Res., 111, D11201, doi:10.1029/2005JD005857, available at http://www.biospherical.com/nsf/Version2/Paper/2004JD004937.pdf.

Notes:

- Effective albedo is defined as the albedo of a uniform Lambertian surface, that, when used as input into a 1-D model, reproduces the measured spectrum.
- Effective albedo values are only provided for periods with clear skies.
- Effective albedo values for solar zenith angles larger than 80° should be treated with caution.
- Effective albedo derived from clear-sky spectra may not be applicable to cloudy situations due to multiple reflections between the surface and the cloud base. Multiple reflections change the effective surface area (or radius around the instrument) that affects UV levels at the place of the instrument.

Column Assignment

Label	Description	Unit	Remark
Filename	Filename of spectral scan		1
Time	Time in UT at start of scan	mm/dd/yy hh:mm:ss	
SZA	Solar zenith angle at start of scan	degree	2
Volume	Volume label; ".2" indicates Version 2		
Albedo	Effective albedo		

See next page for remarks.

Remarks

1 - Filename convention of spectral scans:
sCyyhhmm.jjj

where
s = Site identifier (A=McMurdo; B=Palmer; C=South Pole; D=Ushuaia; E=San Diego; F=Barrow; J=Summit)
C = Always C
yy = Year
hh = Hour (UT)
mm = Minute
jjj = Day of Year

2 - Solar zenith is the true solar zenith angle, i.e., the angle between the zenith and the Sun if the Earth had no atmosphere. Due to refraction of the Earth's atmosphere, the Sun appears to an observer, who is standing at the surface of the Earth, at a smaller angle.