Raw_GPR_Data.zip:

Level 0 raw data from the Ground Penetrating Radar (GPR). The raw GPR profiles are in the manufacturer's format used by GPR practitioners. These can be opened with a variety of commercially available or free processing packages. An example of a commercially available software is ReflexW (Sandmeier Scientific Software, Karlsruhe, Germany). An example of a free software package is MATGPR (http://users.uoa.gr/~atzanis/matgpr/matgpr.html). The dataset being archived here was processed with ReflexW, Sandmeier Scientific Software, Karlsruhe Germany © 2014 (http://www.sandmeier-geo.de/GPR.html).

There are three files for each trace with the corresponding extensions:

File Extension	**Description of File Type**
Cor	GPS coordinates
RAD	GPR data header file (I.e. System & survey parameters)
RD3	Raw GPR data

Note: Within each RAW folder, a designation of "hires" in the file name indicates that the measurements were taken in high resolution. High resolution surveys were done when comparing point by point measurements from GPR with ALT probe measurements.

For more information on this product please refer to the Chen et al., (2015) paper.

Chen, A., Parsekian A., Schaefer K., Jafarov E., Panda S., Liu L., Zhang T., and Zebker H: 2015. "GPR-derived measurements of active layer thickness on the landscape scale with sparse calibration at Toolik and Happy Valley, Alaska."

Files with ".cor" extension:

Column Number	Variable	Unit	Description
1	Trace number	N/A	N/A
2	Date	YYYY-MM-DD	Date
3	GPS Time	HH:MM:SS	Time Zone: AKDT (UTC -8 hours)
4	Latitude 1	Degrees	North latitude in a geographic projection and WGS 84 datum.
5	Latitude 2	North	N = North
6	Longitude 1	Degrees	West longitude in a geographic projection and WGS 84 datum.
7	Longitude 2	West	W = West
8	Elevation	meter (see column 9)	Elevation

9	Elevation Units	M = meter	Meter
10	PDOP	N/A	GPS precision indicator, “positional dilution of precision”

Files with .rad extension:

This is a header file to be read by the GPS processing software.

Variable	Units
SAMPLES	none
FREQUENCY	Samples per second
FREQUENCY STEPS	none
SIGNAL POSITION	nanoseconds
RAW SIGNAL POSITION	samples
DISTANCE FLAG	meter
TIME FLAG	nanoseconds
PROGRAM FLAG	none
EXTERNAL FLAG	none
TIME INTERVAL	seconds
DISTANCE INTERVAL	meters
OPERATOR	none
CUSTOMER	none
SITE	none
ANTENNAS	none
ANTENNA ORIENTATION	none
ANTENNA SEPARATION	meters
COMMENT	none
TIME WINDOW	nanoseconds
STACKS	none
STACK EXPONENT	none
STACKING TIME	seconds

LAST TRACE	none
STOP POSITION	meters
SYSTEM CALIBRATION	none
START POSITION	meters
SHORT FLAG	none
INTERMEDIATE FLAG	none
LONG FLAG	none
PREPROCESSING	none
HIGH	none
LOW	none
FIXED INCREMENT	meters
FIXED MOVES UP	none
FIXED MOVES DOWN	none
FIXED POSITION	meters
WHEEL CALIBRATION	samples
POSITIVE DIRECTION	none

Files with .rd3 extension:

GPR software is required to view this file.