# Pléiades Glacier Observatory : DEM

**Date :**    **2016-11-15**
**Site :**    **Cotopaxi_TRP**

## DEM information

| | |
|---|---|
| **Coordinate system** | UTM 17 south - EPSG 32717 |
| **Correlation algorithm** | Semi Global Matching (SGM) |
| **DEM resolution** | 2 m and 20 m |
| **Reference for height** | Ellipsoidal Height (WGS84) |
| **Shift vector to Copernicus GLO-30 (m)** | dx=-2.69; dy=-2.64; dz=+1.74 |
| **Base-to-Height ratio (B/H)** | 0.42 |

## Source images

| | |
|---|---|
| **PHR** | DS_PHR1B_201611151534305_FR1_PX_W079S01_0708_01575 |
| **PHR** | DS_PHR1B_201611151535093_FR1_PX_W079S01_0708_01604 |

## Copyright

## Archive structure

```
└─2016-11-15_1535065_Cotopaxi_TRP
 ├─BM
 ├─2016-11-15_1535065_Cotopaxi_TRP_footprint.shp
 ├─2016-11-15_1535065_Cotopaxi_TRP_footprint.dbf
 ├─2016-11-15_1535065_Cotopaxi_TRP_footprint.prj
 ├─2016-11-15_1535065_Cotopaxi_TRP_footprint.shx
 └─SGM
   ├─2016-11-15_1535065_Cotopaxi_TRP_1B_DEM_SGM_2m.tif
   ├─2016-11-15_1535065_Cotopaxi_TRP_1B_DEM_SGM_20m.tif
   ├─README_SGM_DEM.pdf
   ├─PREVIEW_2016-11-15_1535065_Cotopaxi_TRP_1B_DEM_SGM_20m.png
   └─Coreg_2016-11-15_1535065_Cotopaxi_TRP_1B_DEM_SGM_20m_vs_Cop30.png
```

## Description

DEMs and orthoimages where generated from raw Pléiades images using the Ames Stereo Pipeline [Beyer et al., 2018]. The set of processing parameters used for DEM generation are from [Marti et al., TC, 2016] for block matching -BM- and from [Deschamps-Berger et al., 2020] for semi global matching -SGM.

All DEMs and orthoimages are coregistered on the Copernicus GLO-30 DEM using the demcoreg tool [Shean et al., 2021].

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References

Beyer et al.: The Ames Stereo Pipeline: NASA's Open Source Software for Deriving and Processing Terrain Data, Earth and Space Science, 5(9), 537–548, doi:10.1029/2018EA000409, 2018.

Shean et al.: dshean/demcoreg, Zenodo, v1.1.0, https://doi.org/10.5281/zenodo.5733347, 2021.

Deschamps-Berger et al.: Snow depth mapping from stereo satellite imagery in mountainous terrain: evaluation using airborne laser-scanning data, The Cryosphere, 14(9),2925–2940, https://doi.org/10.5194/tc-14-2925-2020, 2020.

Marti et al.: Mapping snow depth in open alpine terrain from stereo satellite imagery, The Cryosphere, 10(4), 1361–1380, doi:10.5194/tc-10-1361-2016, 2016.