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Topographic Maps of Mount Etna's Summit Craters

- updated to December 2015 -

scale 1:5000[a,b] - 1:4000[c,d,e]

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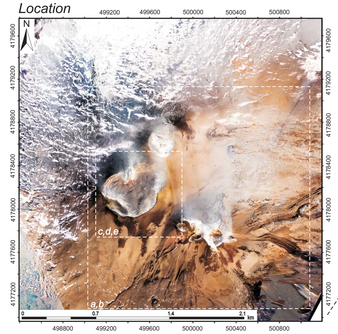
Data Survey Information

Contour Lines Map derived from surface of photogrammetry DEM - Contour equidistance: 50 m[a] - 10 m[b,c,d,e]
Coordinate System: WGS84 UTM Zone 33 N

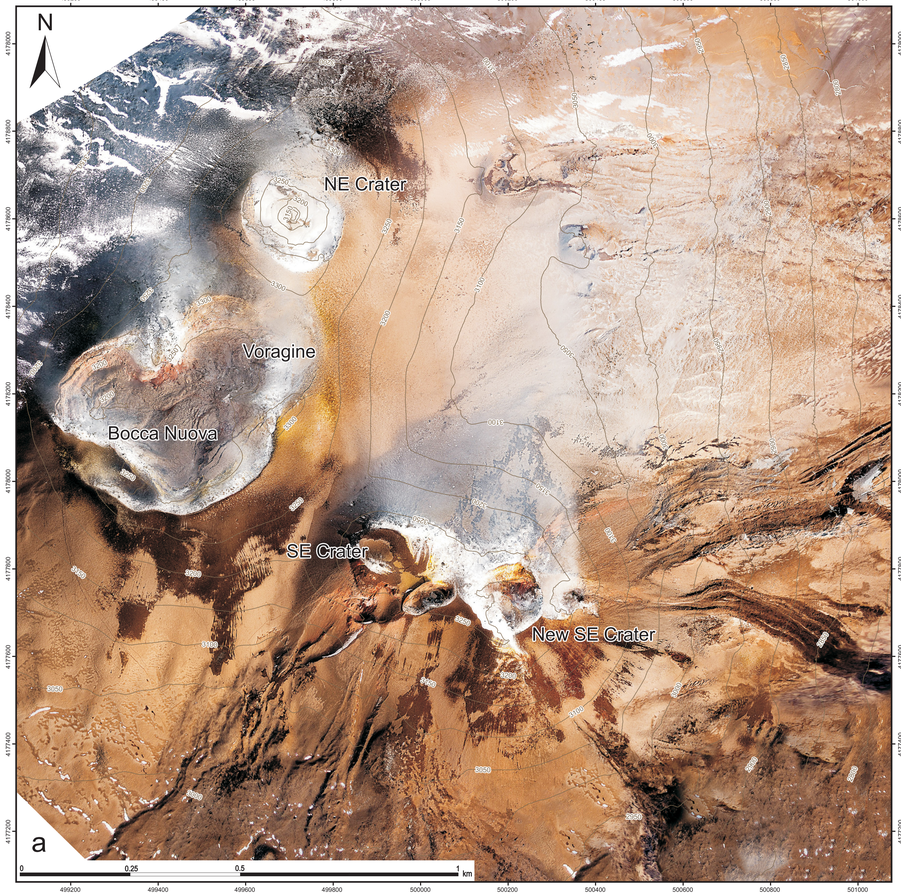
Acquisition period: 14 December 2015
Average flight altitude: 1200 m above sea level
Average acquisition distance: 800 m above the ground
Software: Micmac (http://micmac.ensg.eu); CloudCompare (http://www.danielgm.net/); RiscanPro (http://www.riegl.com)
RGB Camera Nikon D810

Sensor size: 35.9 x 24 mm
Max resolution: 7360 x 4912 pixel
Photographic lens: Nikkor AF-S 50 mm 1.8 G
Horizontal accuracy: ± 0.11 m
Vertical accuracy: ± 0.33 m
DEM resolution: 1 x 1 m

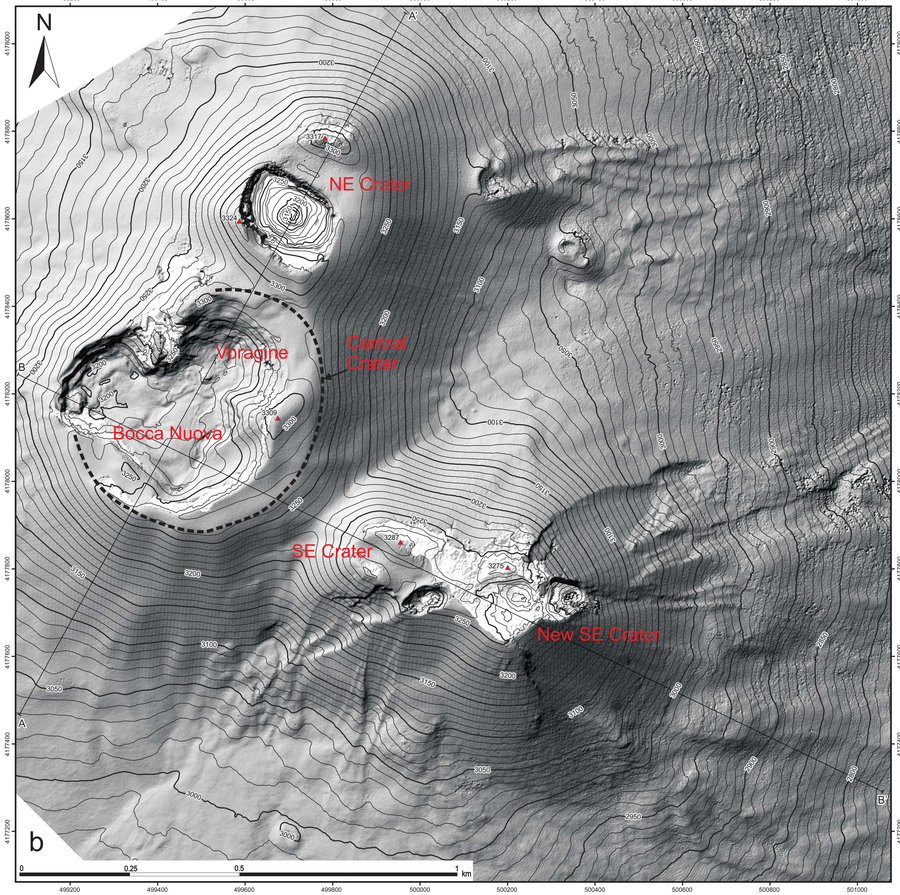
Note: *the contour lines of the inner portion of the NE Crater were reconstructed on the basis of 2010 data (modified from: Behncke, B., A. Fornaciai, M. Neri, M. Favalli, G. Ganci, and F. Mazzarini, 2016, LiDAR surveys reveal eruptive volumes and rates at Etna, 2007-2010. Geophys. Res. Lett., 42, doi:10.1002/2016GL068495).*



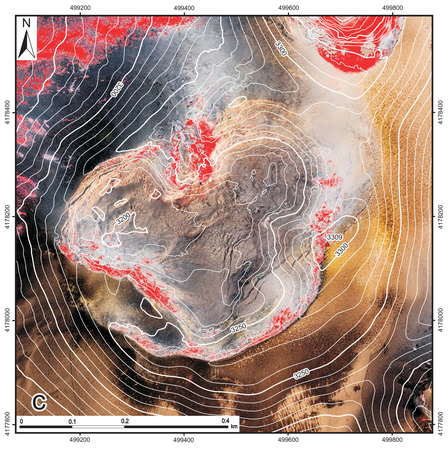
SOURCES: The image of the Italian territory is obtained from the TINITALY DEM re-sampled to 100 m resolution, available at: http://tinitaly.pi.ingv.it/download_image.html. The image is referenced in WGS 84 UTM zone 33 N.
Beyond the borders of Italy the DEM is represented by the SRTM dataset (Europe), available at: http://geodati.fmach.it/gfoss_geodata/SRTM-Italy/, and GEBCO dataset (sea), available at: http://www.gebco.net/data_and_products/gridded_bathymetry_data/.



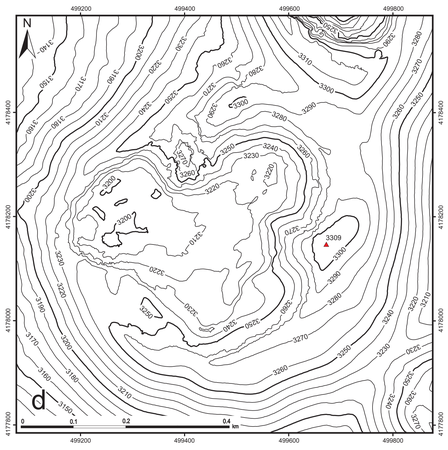
Summit Craters - Ortorectified Map derived from photogrammetry DEM
scale 1:5000



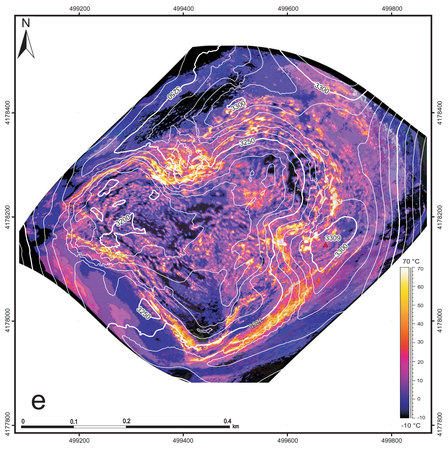
Summit Craters - Contour Lines on Hillshade base Map
scale 1:5000



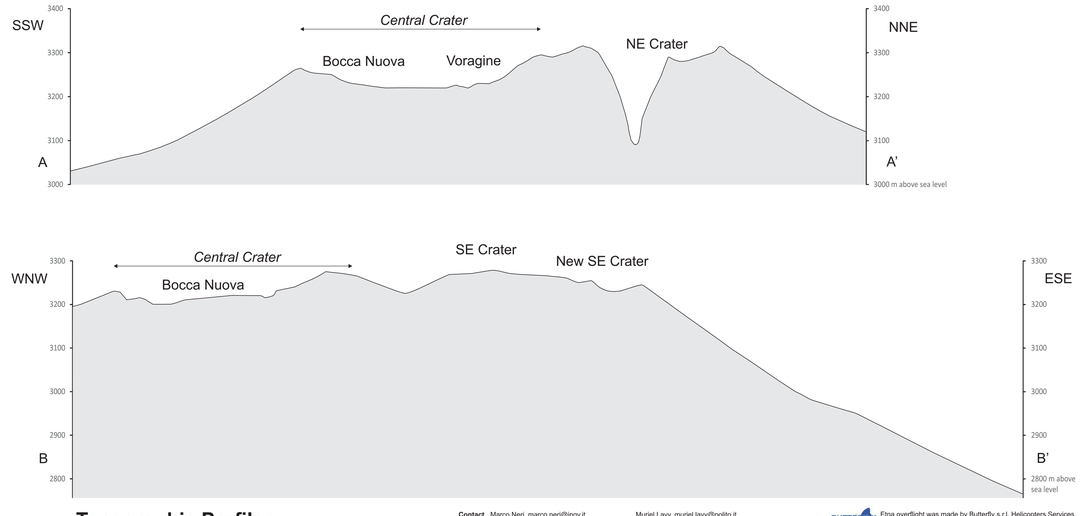
Central Crater
Ortorectified Snow-Gas Cloud Cover Map
scale 1:4000
Cover Index
(n° pixel snow-gas cloud / n° total pixel x100) 6% of the investigate area



Central Crater
Contour Lines Map
scale 1:4000



Central Crater
Orthorectified Thermal Map
scale 1:4000
derived from photogrammetry (RGB) DEM - Thermal FLIR Fc660
Image resolution 640x480 pixel - Sensitivity 30 mk - Temp. Range -40°C - 120°C
Lens 24 mm - Orthorectified Thermal Map resolution 10 x 10 meters



Topographic Profiles
scale 1:5000 - *see map b for location*

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Etna overflight was made by Butterfly s.r.l. Helicopters Services
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