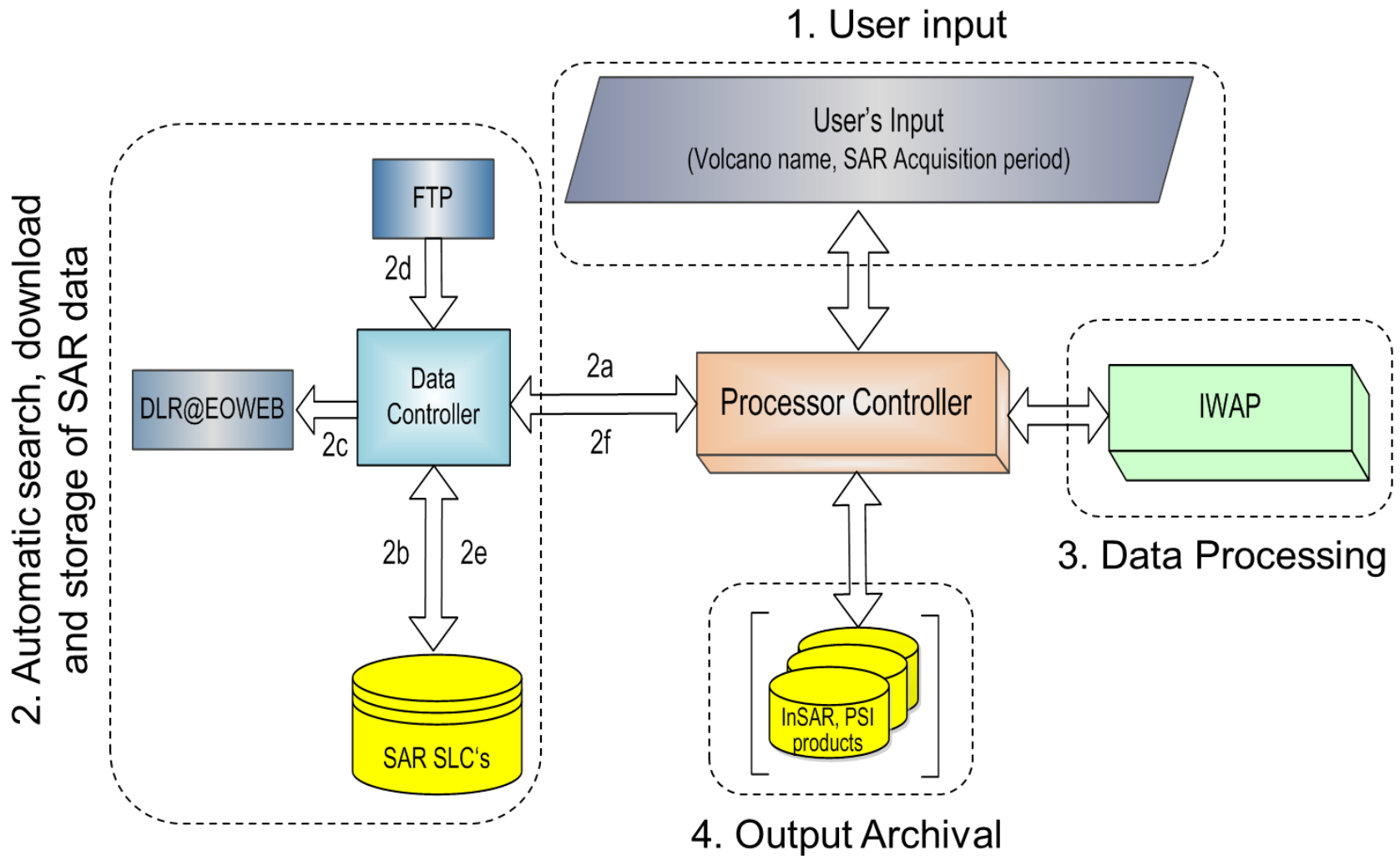
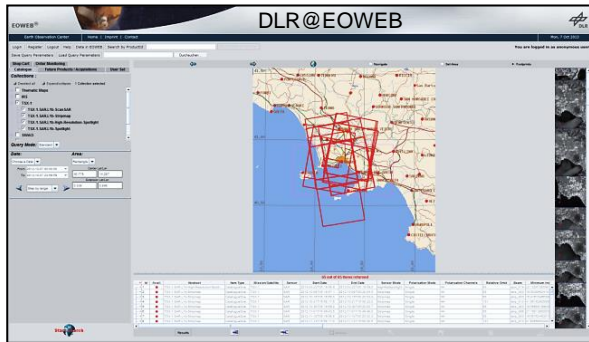


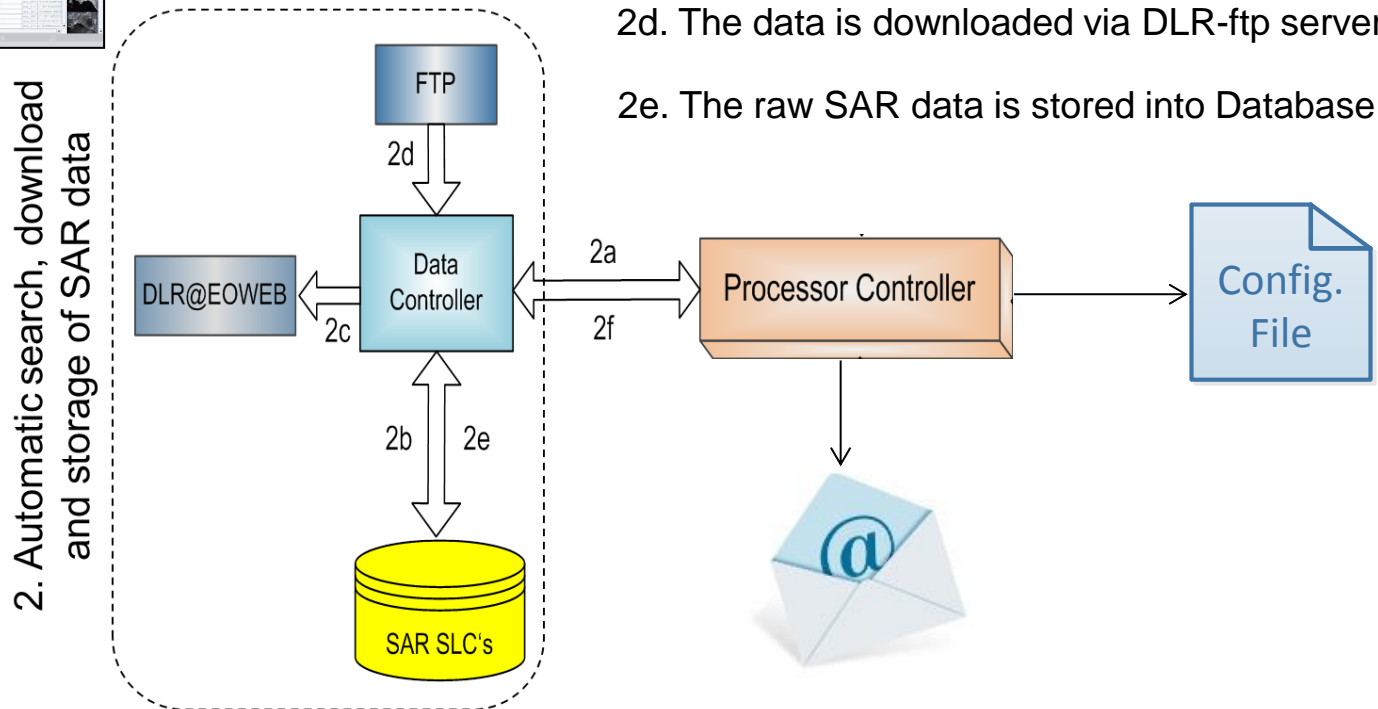
System design & Operations – Overview



System design & Operations – SAR data download



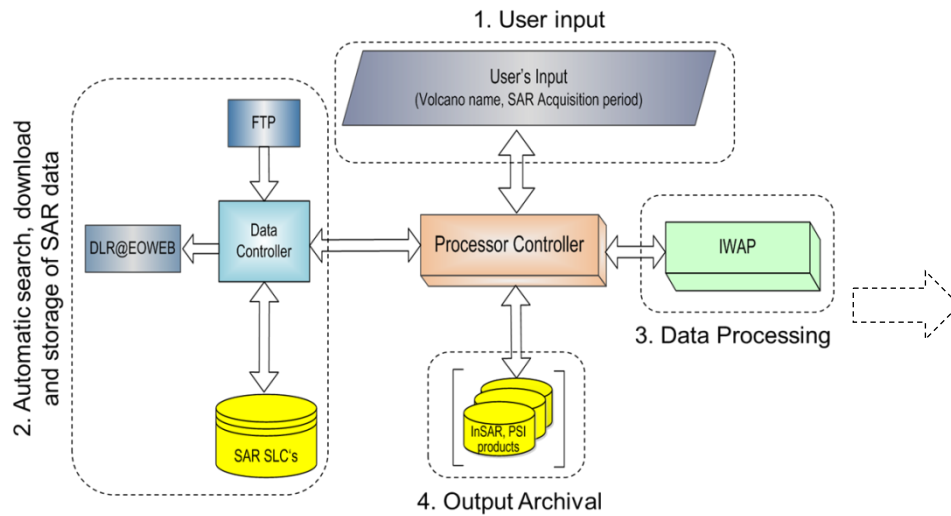
- 2a. Processor controller receives the input
- 2b. Data controller searches into the database
- 2c. Data controller connects to DLR@EOWEB
- 2d. The data is downloaded via DLR-ftp server
- 2e. The raw SAR data is stored into Database



For future acquisitions: Every 24 hours the **System** runs for searching new acquired SAR scene over the volcanoes and download via ftp-transfer.



Piton de la Fournaise – InSAR products



A prototype of SAR satellite based automated volcano monitoring **System**

SLAVE ORBIT	DIFFERENTIAL PHASE	DIFFERENTIAL COHERENCE	AMPLITUDE COMPOSITE
INT_44156 SENSOR TSX-1 ORBIT NUMBER 44156 ORBIT TYPE SCIE ACQUISITION DATE 2015-06-01T14:41:20 TIME BASELINE 22 DOPPLER 56.8 Hz EFF. BASELINE -166.2 m HEIGHT OF AMB. 31.1 m			
INT_44490 SENSOR TSX-1 ORBIT NUMBER 44490 ORBIT TYPE SCIE ACQUISITION DATE 2015-06-23T14:41:21 TIME BASELINE 44 DOPPLER 128.1 Hz EFF. BASELINE -67.0 m HEIGHT OF AMB. 77.1 m			
INT_44824 SENSOR TSX-1 ORBIT NUMBER 44824 ORBIT TYPE SCIE ACQUISITION DATE 2015-07-15T14:41:21 TIME BASELINE 66 DOPPLER 85.8 Hz EFF. BASELINE 27.4 m HEIGHT OF AMB. -188.4 m			

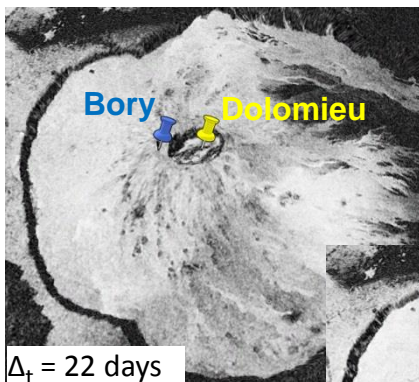
SAR image information:

- TerraSAR-X stripmap mode
- Polarization VV & Ascending orbit
- Center latitude -21.24° & longitude 55.71°
- Acquisition time $\sim 14:41$ UTC



Piton de la Fournaise – Differential coherence

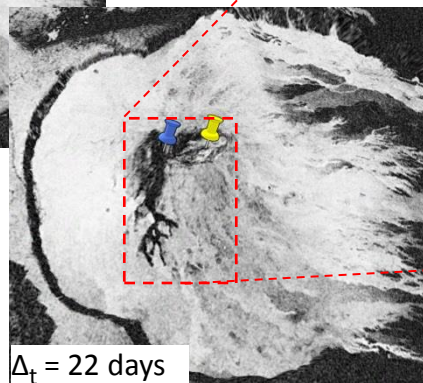
29.12.2014



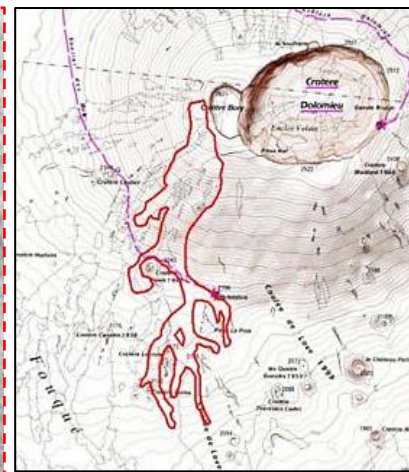
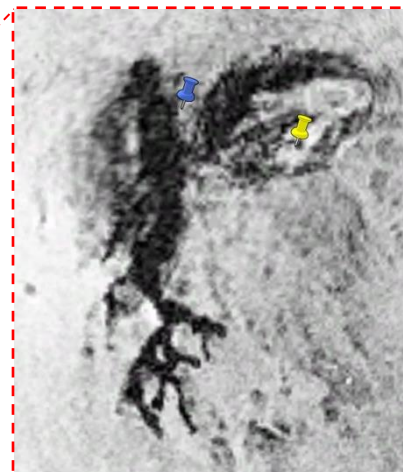
Master 20.01.2015

Slave 11.02.2015

$\Delta_t = 22$ days

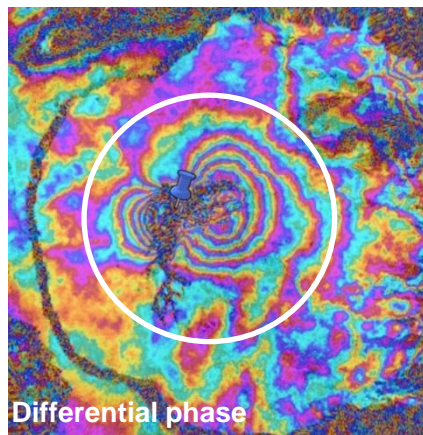


$\Delta_t = 22$ days



Source: Observatoire
Volcanologique du Piton de la
Fournaise (OVPDLF)

Lava flow emitted on 8 February 2015
from an eruptive fissure 100m W of Bory
crater.

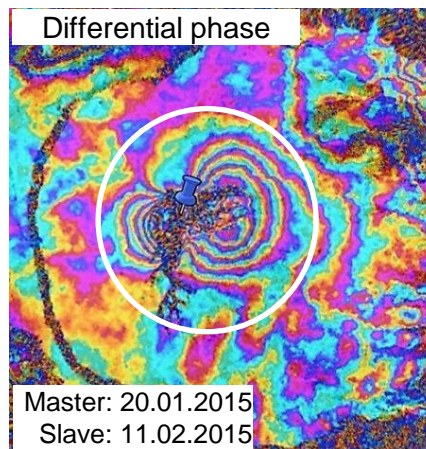
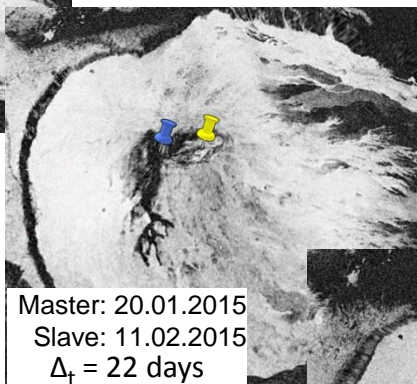
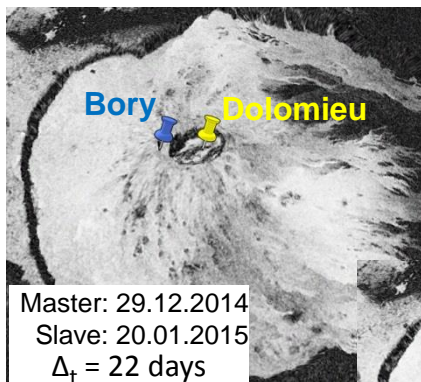


OVPDLF reported 180
earthquakes on 04.02.2015

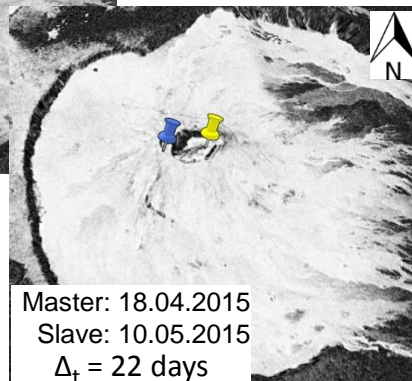
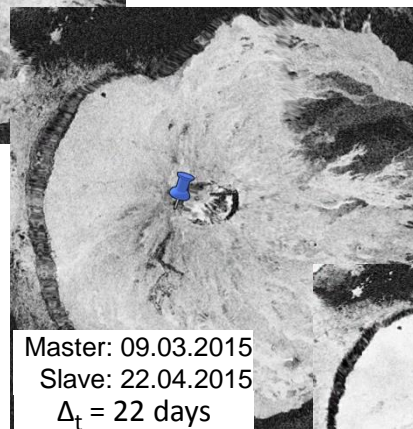
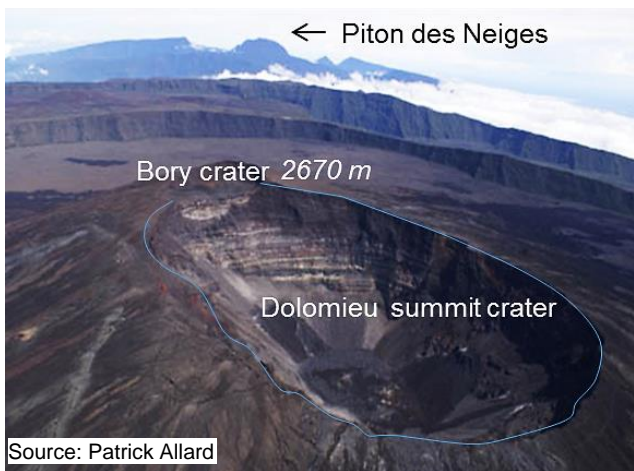


Piton de la Fournaise – Differential coherence

1
0

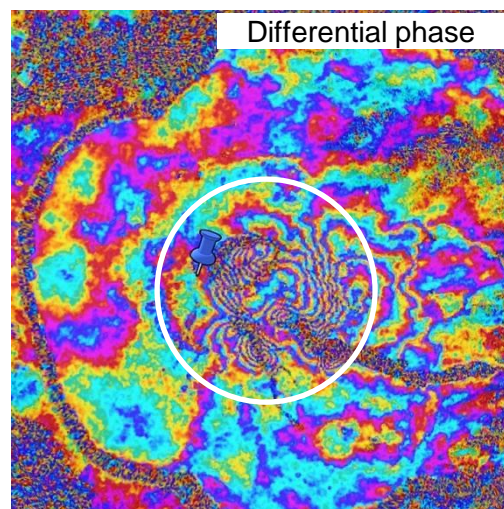
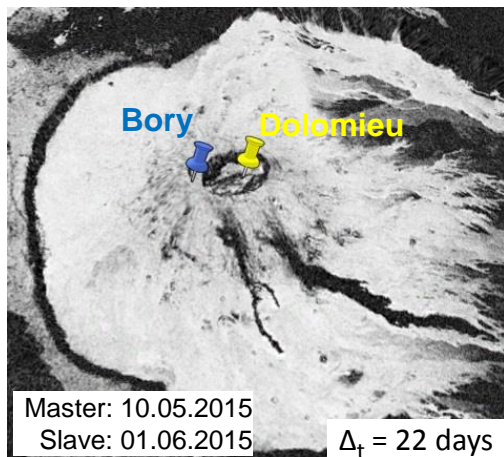


OVPDLF reported 180 earthquakes on 04.02.2015

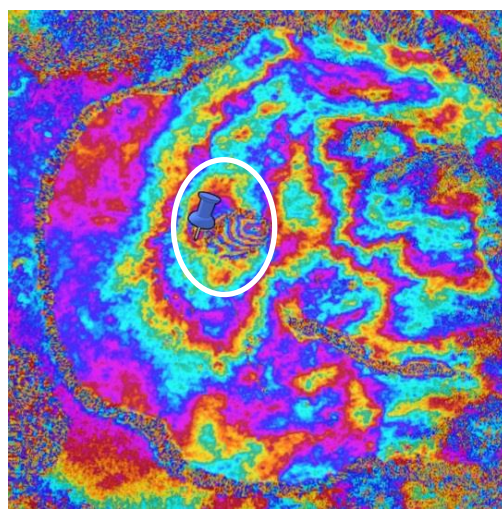
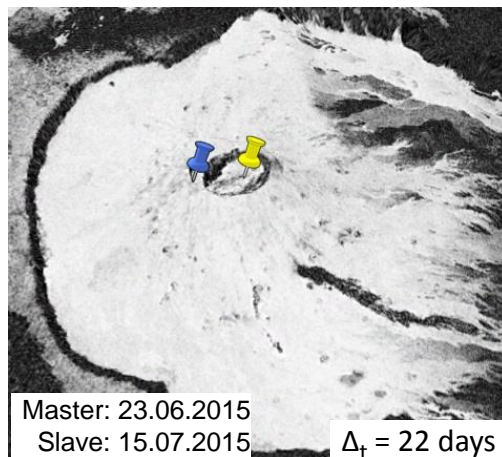


Piton de la Fournaise – Differential coherence

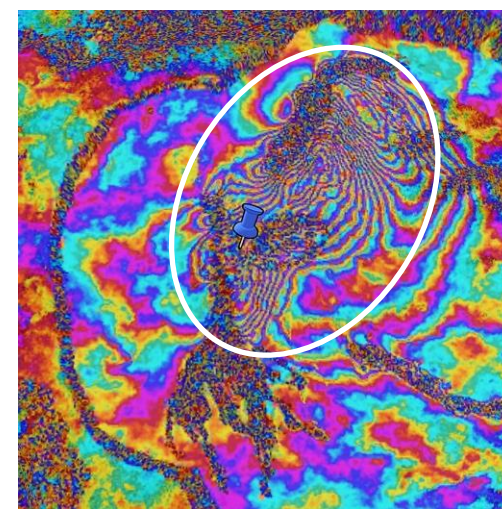
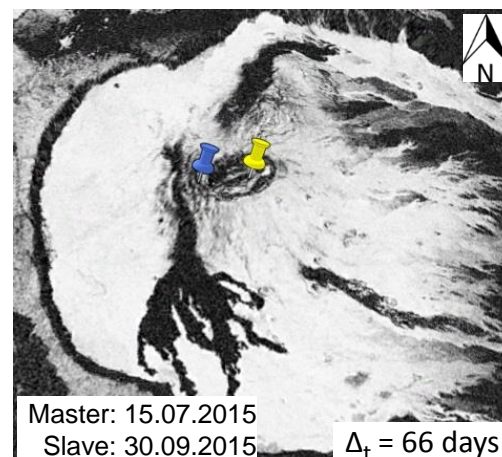
1



13-19 May 2015
significant deformation in
Dolomieu crater rim



07 July 2015
earthquakes located under the
summit of Dolomieu crater



24-27 September 2015
deformation in Dolomieu crater and
NE part of Enclos Fouqué caldera

