

Sentinel-5 Precursor
Second Products Release Workshop
28 Sep. 2018

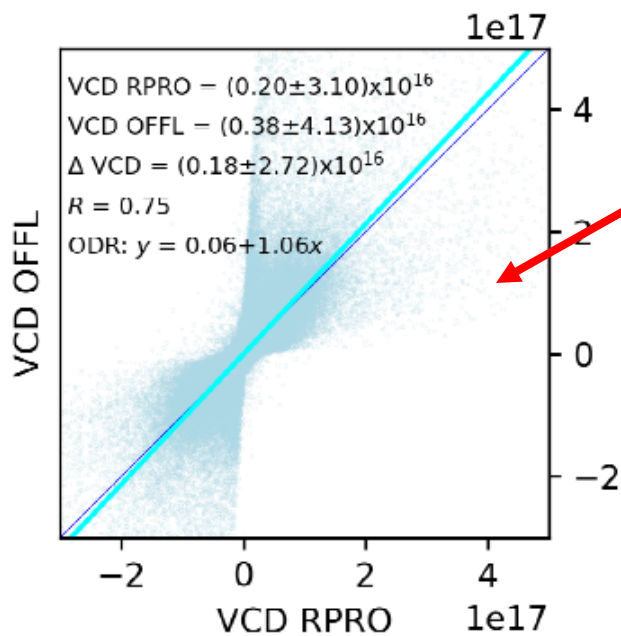
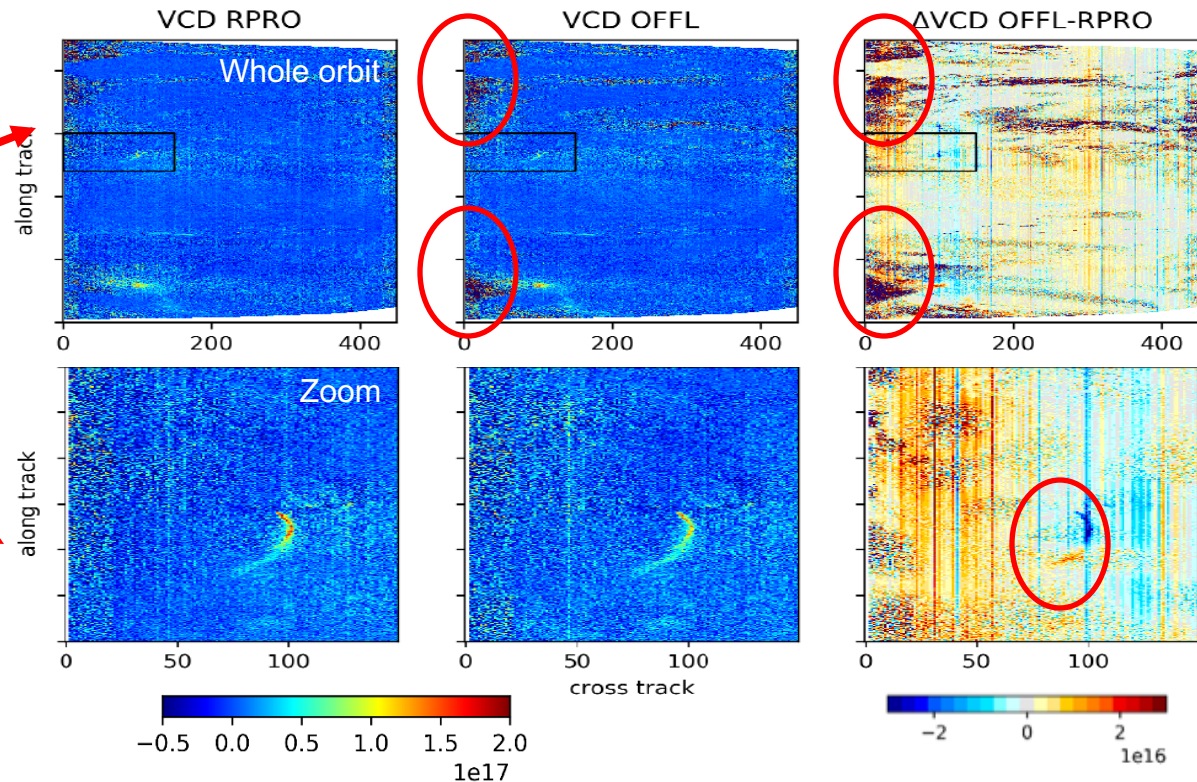
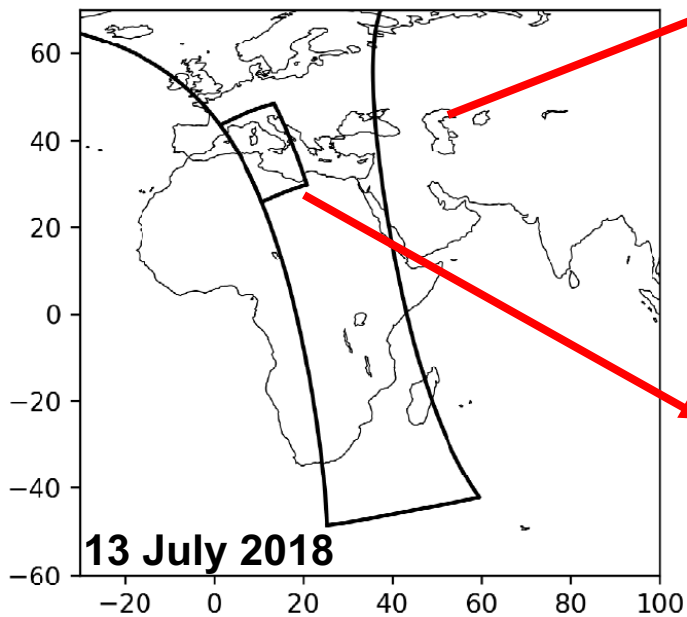
Status Sulphur Dioxide

Steffen Beirle, Christian Borger, and Thomas Wagner
MPI für Chemie, Mainz

Comparison of S5p/TROPOMI SO₂ products

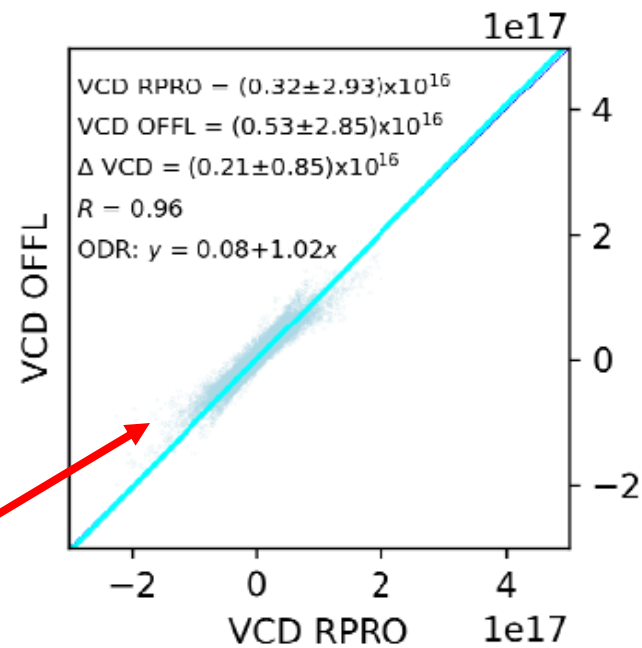
- Orbit 03874 on 13 July: OFFL vs. RPRO
- Orbit 04484 on 25 August: OFFL vs. NRTI
- Comparison on pixel-by-pixel basis,
no gridding, no averaging

Orbit 03874, $QA \geq 0$

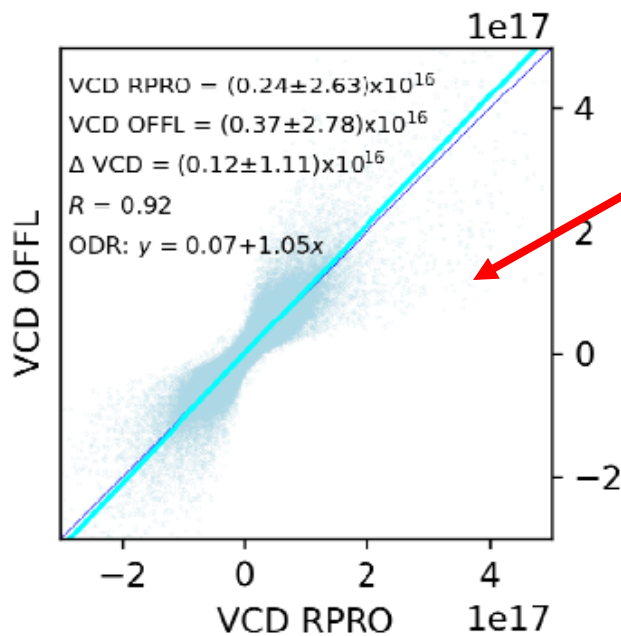
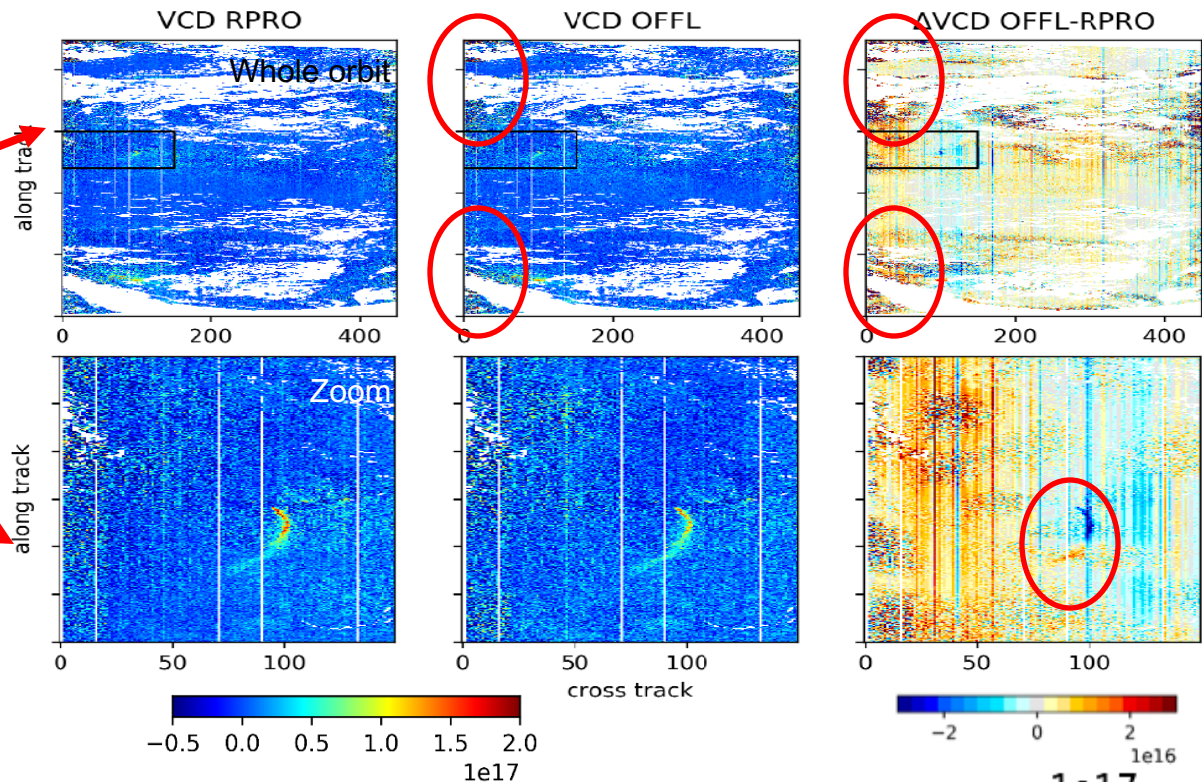
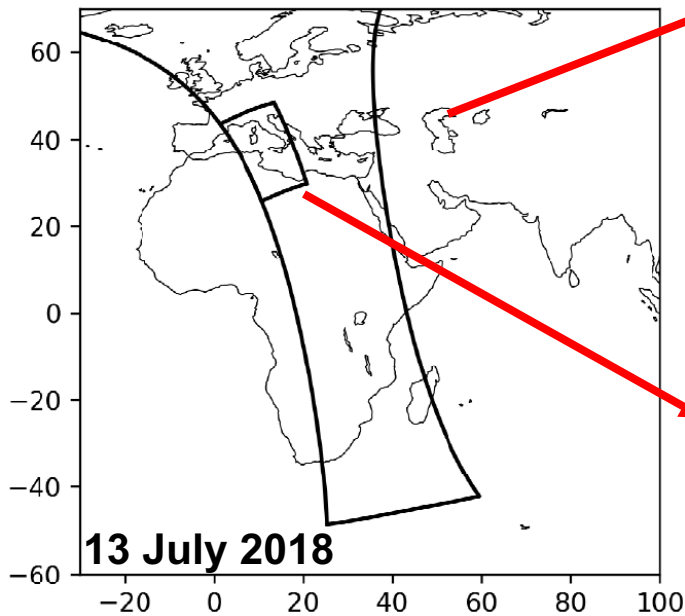


Whole orbit

Zoom over Etna

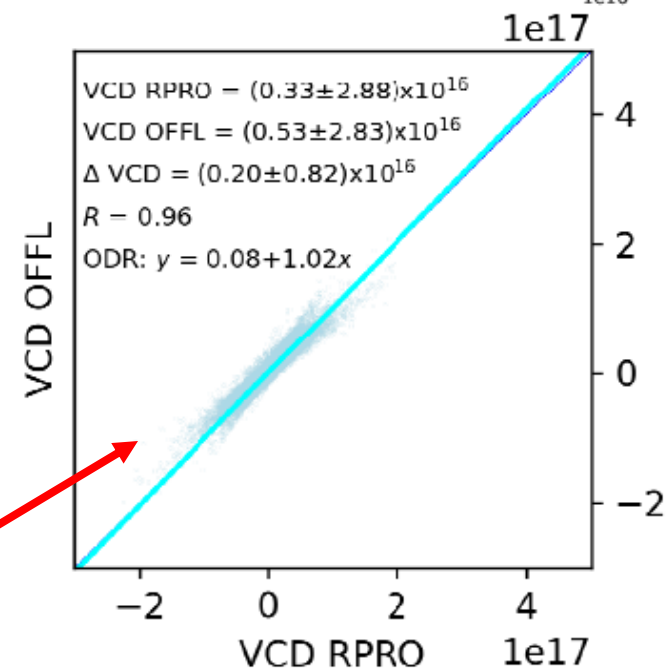


Orbit 03874, $QA > 0.5$

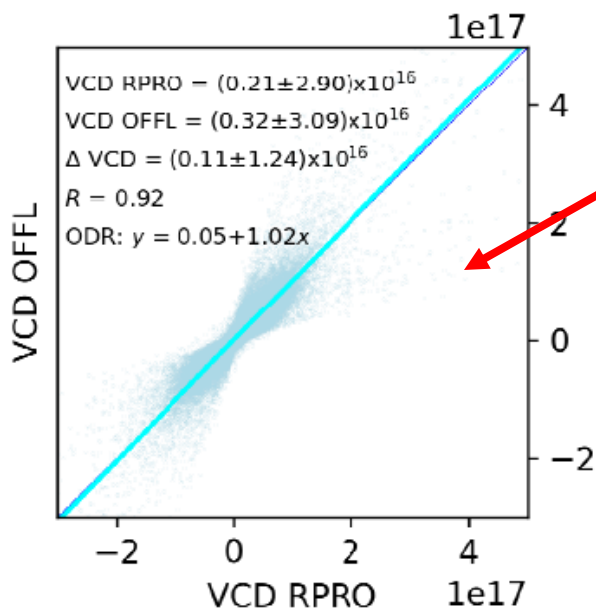
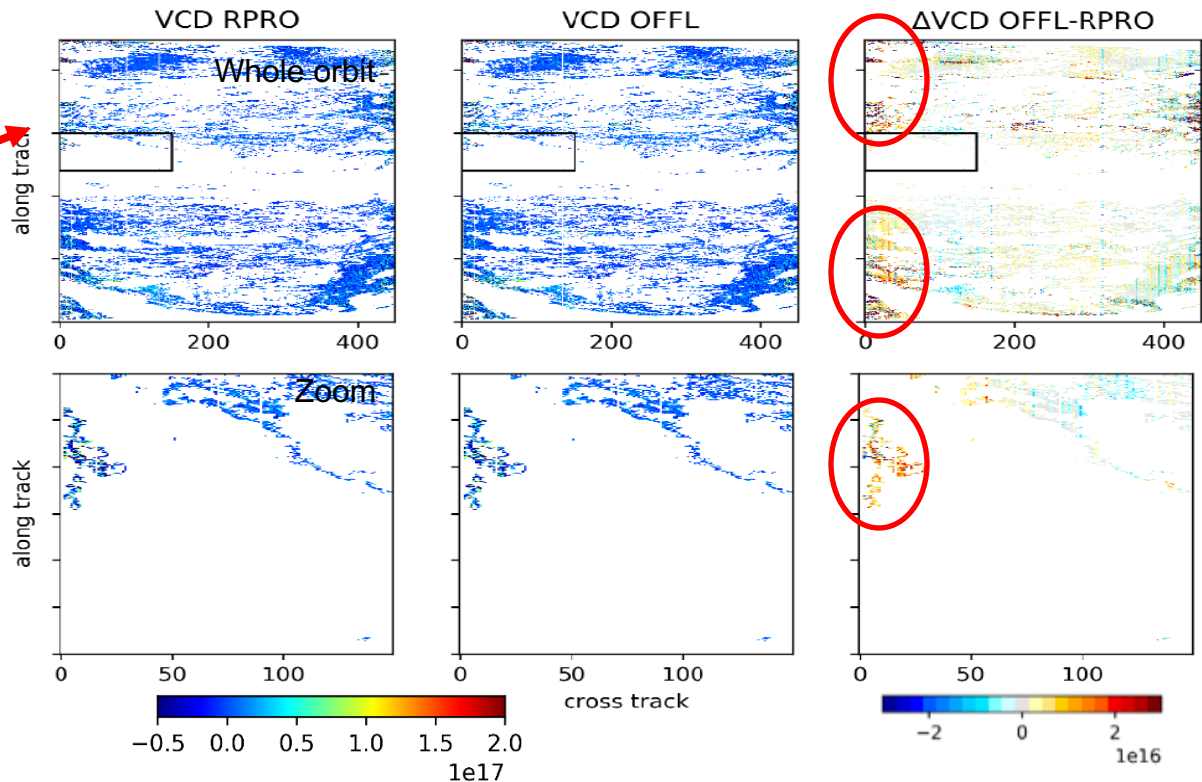
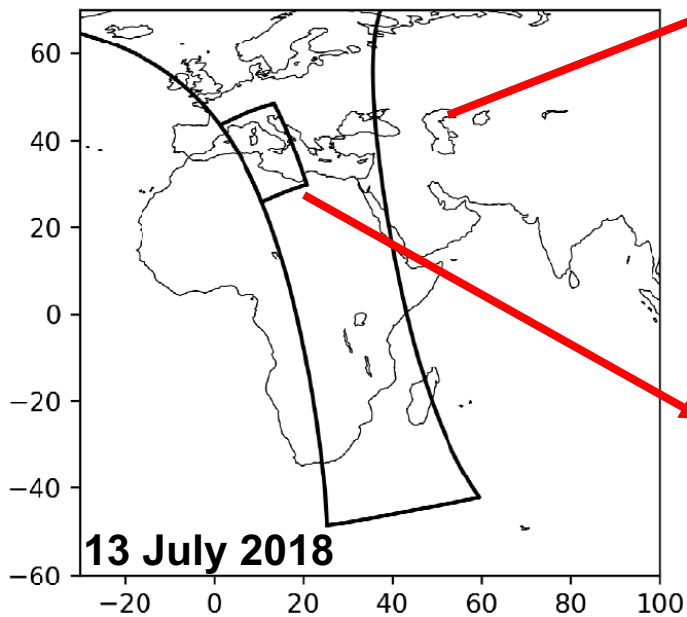


Whole orbit

Zoom over Etna

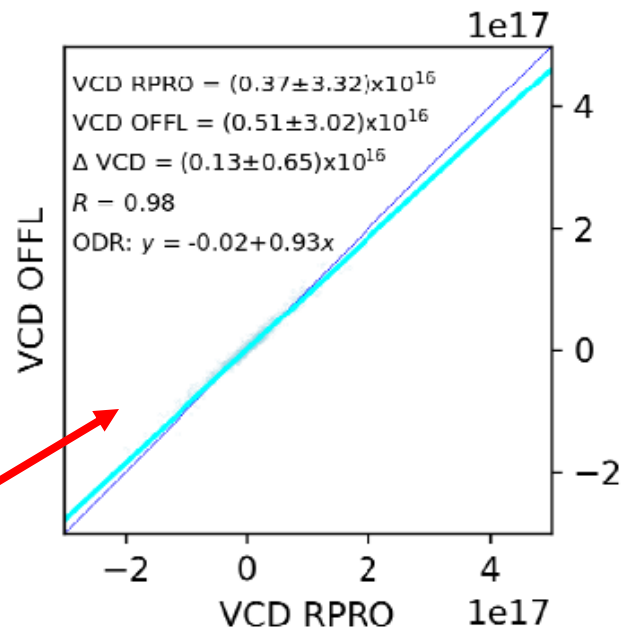


Orbit 03874, QA=1



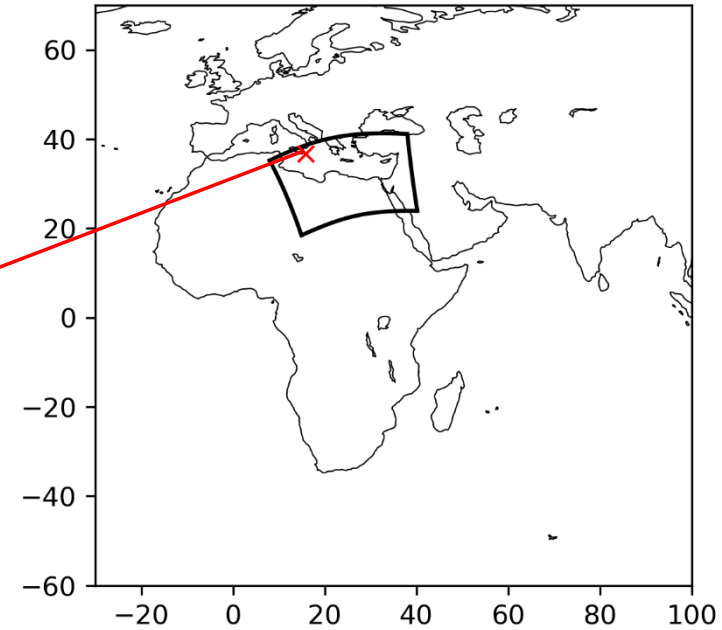
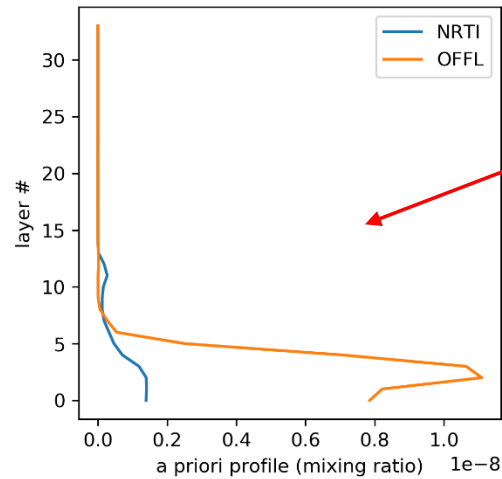
Whole orbit

Zoom over Etna



Comparison OFFL vs. NRTI

- 25 August 2018, ~11:30
- Orbit 04484 (OFFL) / 04485 (NRTI)
- Version 010102
- $qa > 0.5$

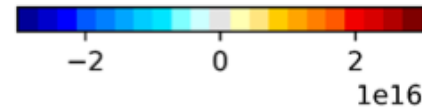
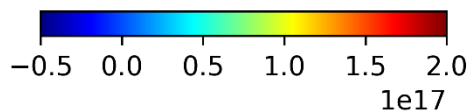
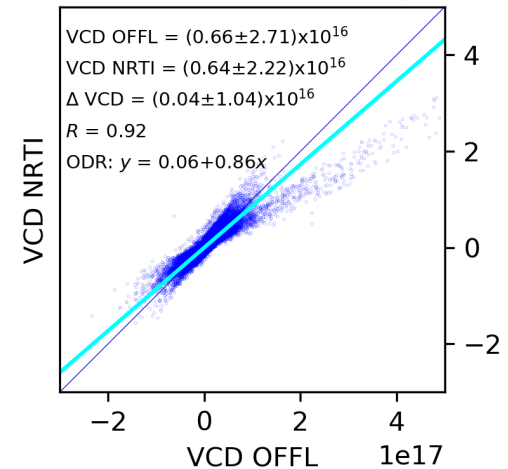
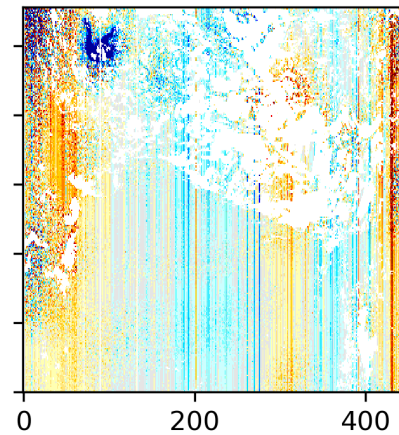
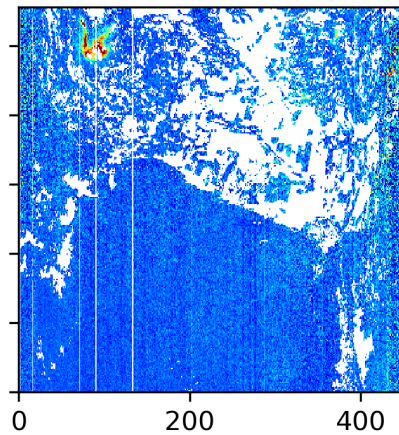
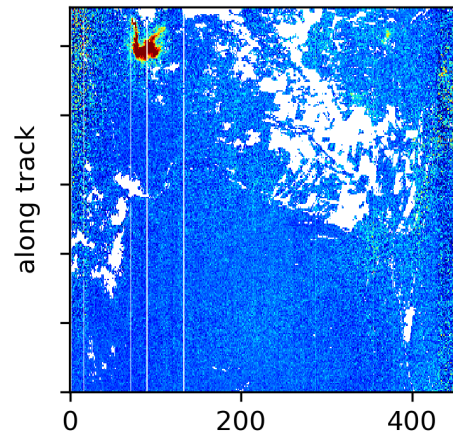


VCD OFFL

VCD NRTI

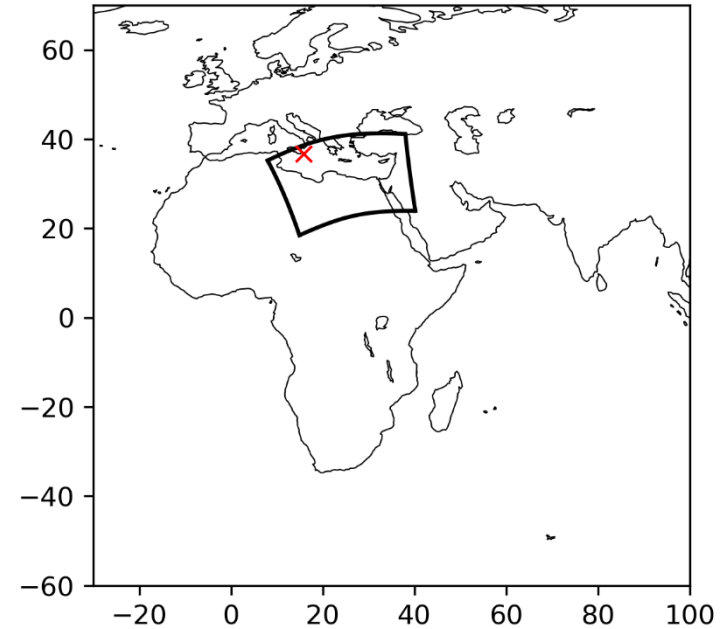
Δ VCD NRTI-OFFL

$1e17$



Comparison OFFL vs. NRTI

- 25 August 2018, ~11:30
- Orbit 04484 (OFFL) / 04485 (NRTI)
- Version 010102
- $qa > 0.5$
- Stripes in ΔSCD :
different irradiance, different background corr.

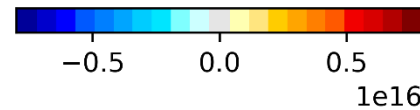
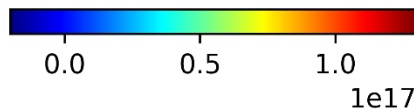
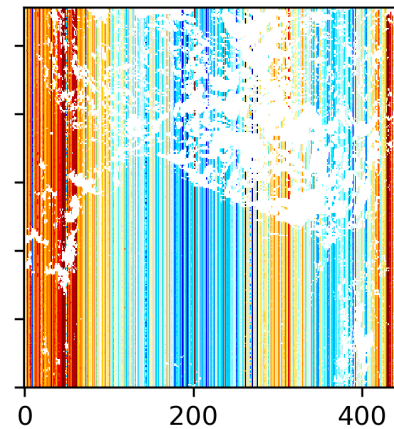
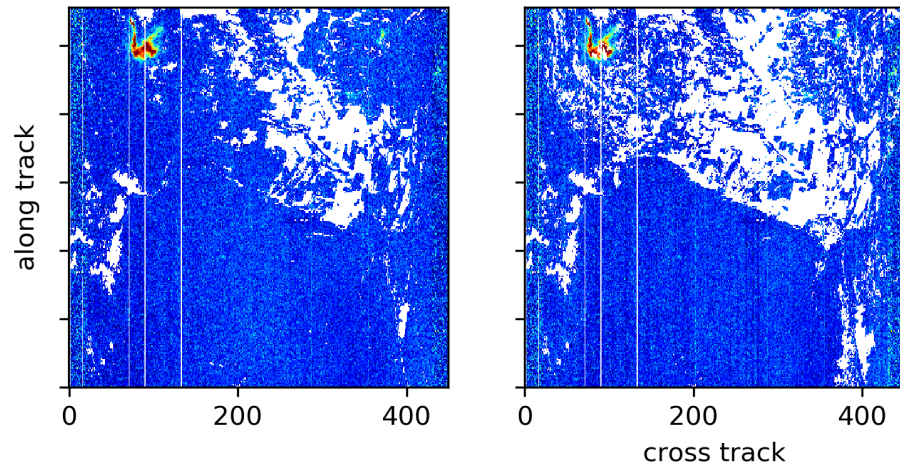
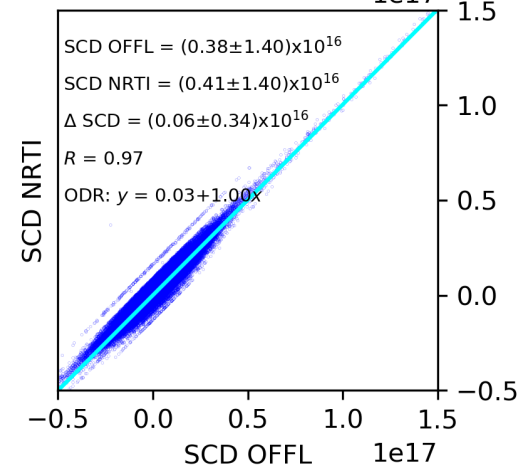


SCD OFFL

SCD NRTI

ΔSCD NRTI-OFFL

$1e17$



Status of SO₂ products

- Differences between OFFL/RPRO/NRTI AMFs caused by different TM5 dates
→ Issue #11701
- NRTI: orbit number different from OFFL
→ Issue #9431
- High scatter / outliers for large viewing angles

Recommendations

- Correct for date of TM5 input
- Reprocess OFFL/RPRO
- Make orbit number unique (“planned to be included in the PDGS Release v2.2.0 end of September”)
- Might be accounted for in qa value
(for swath edges, qa should not be 1)