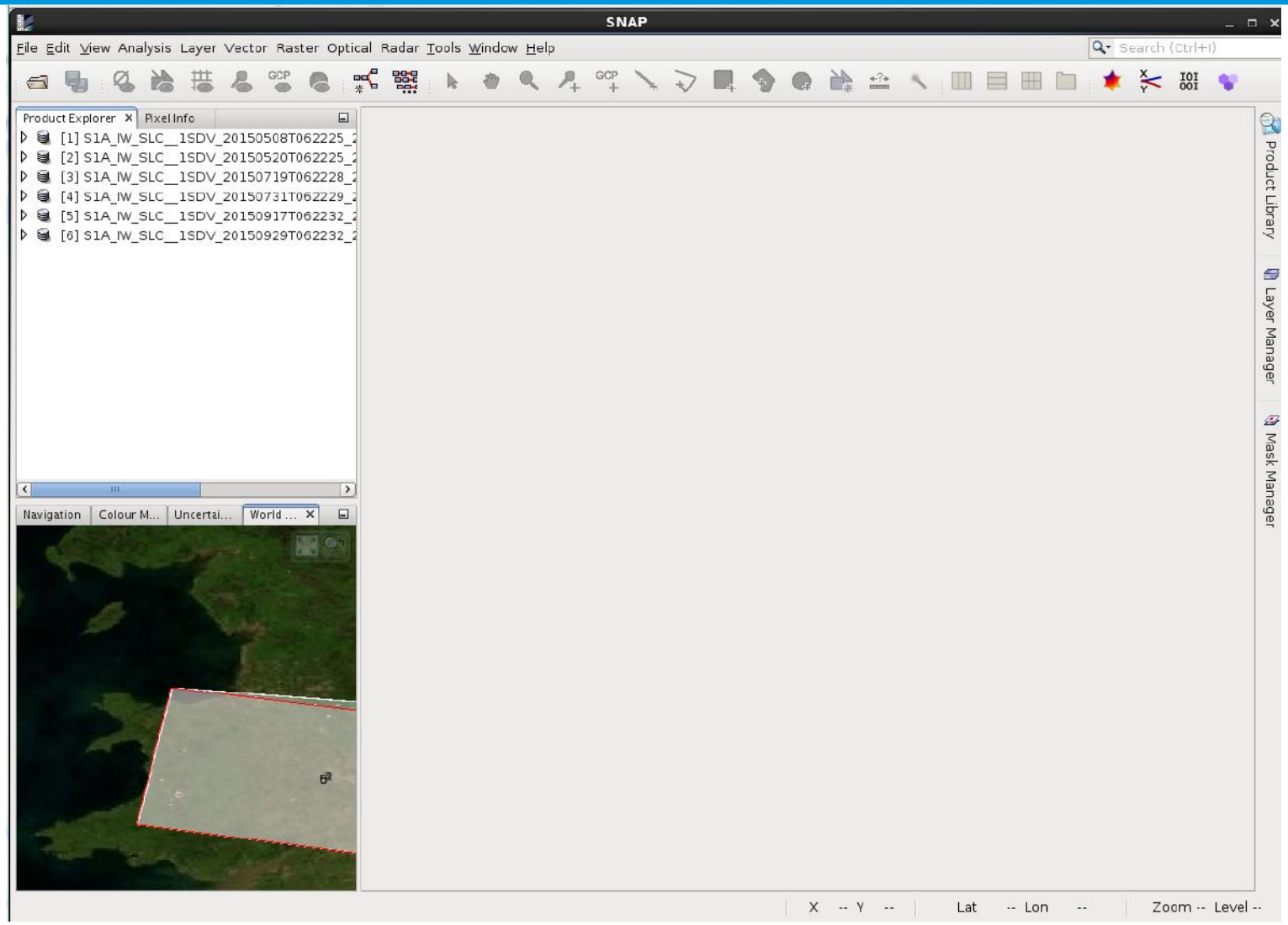
Sentinel 1 backscattering coefficient from SLC data

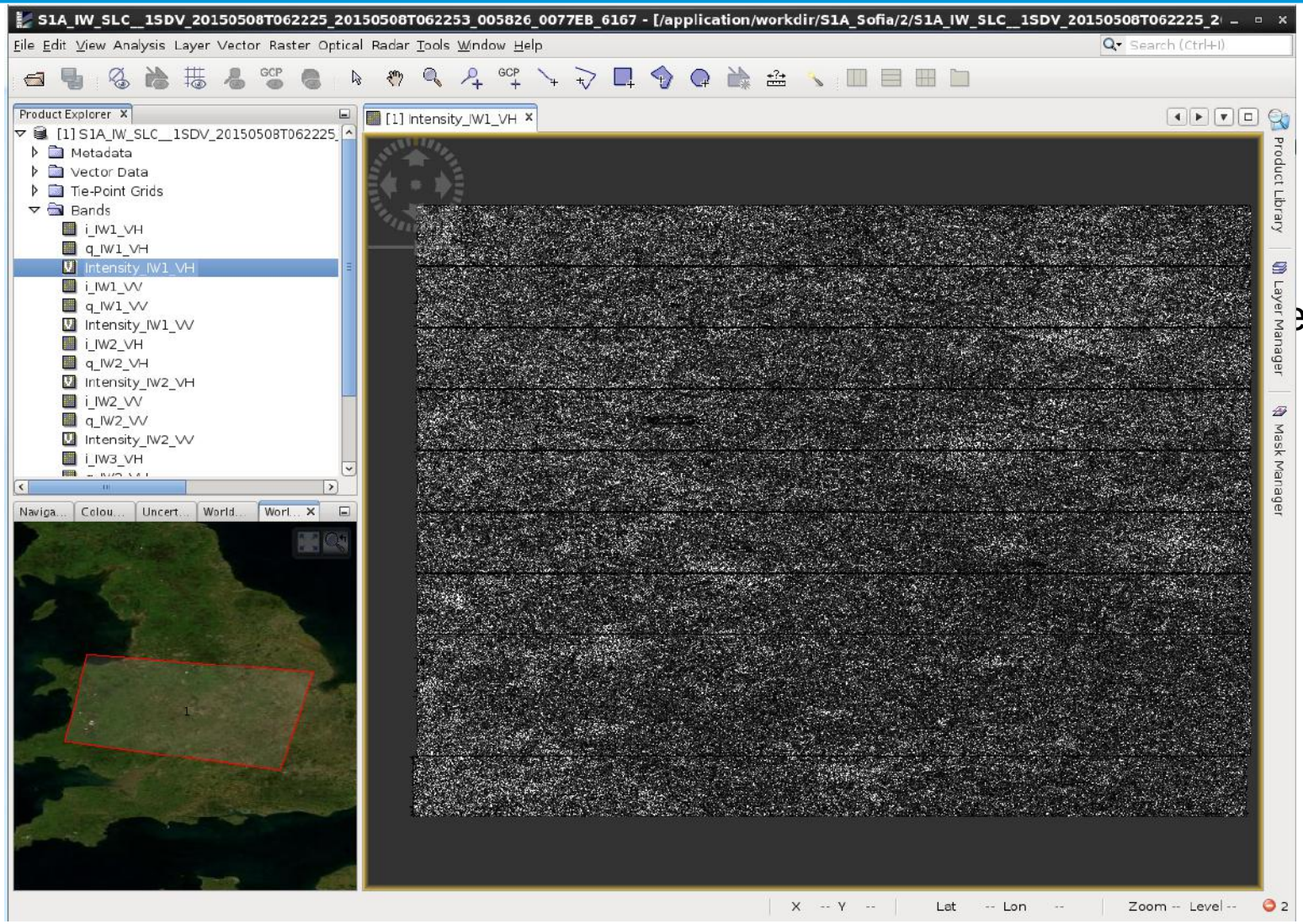
Processing chain

1. Splitting the data (single sub-swath, single polarisation)
2. Applying orbits
3. Radiometric calibration
4. TOPS deburst
5. Multilooking
6. Coregistration (DEM assisted + cross correlation)
7. Multitemporal speckle filtering

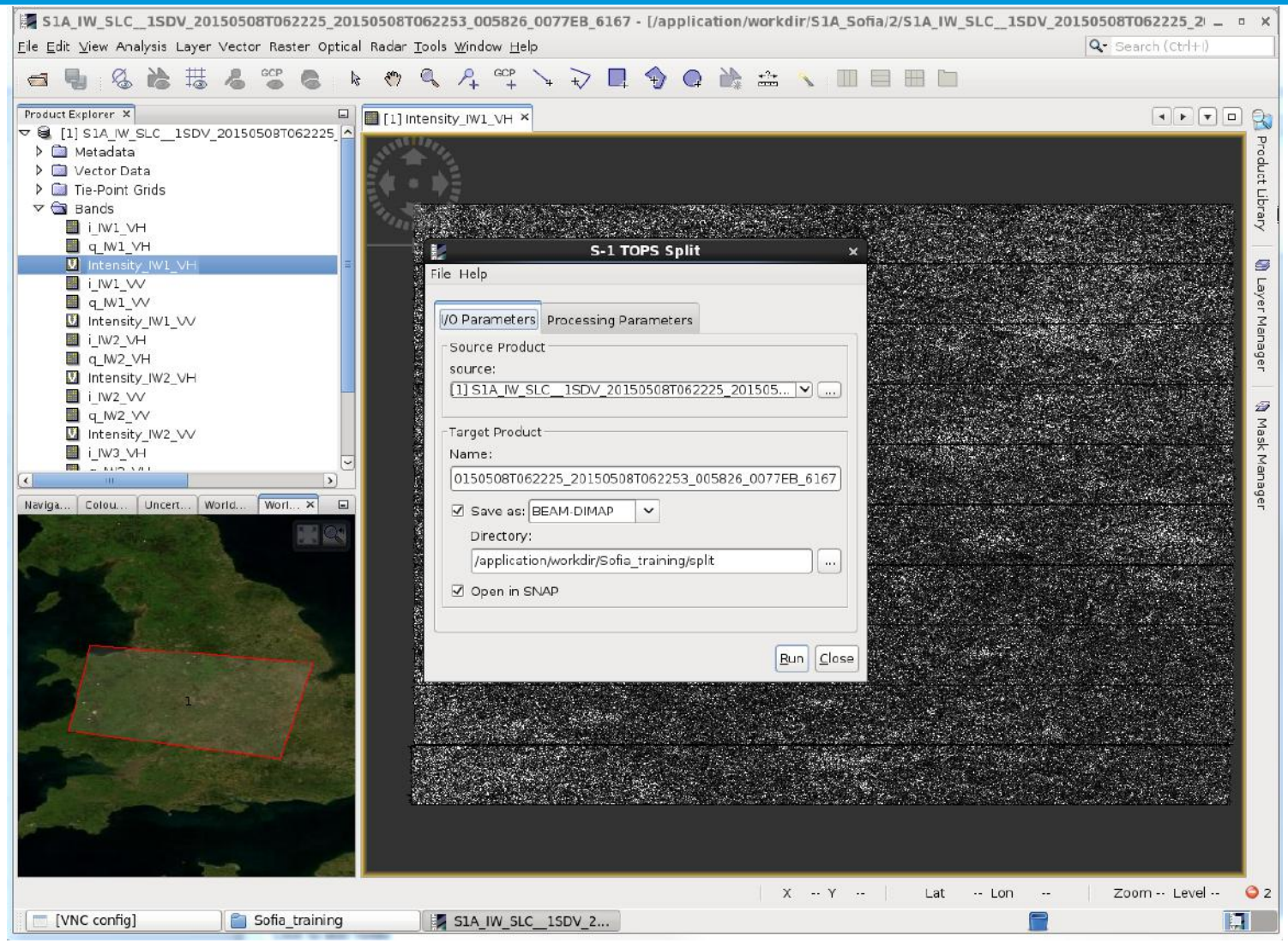
Opening the dataset



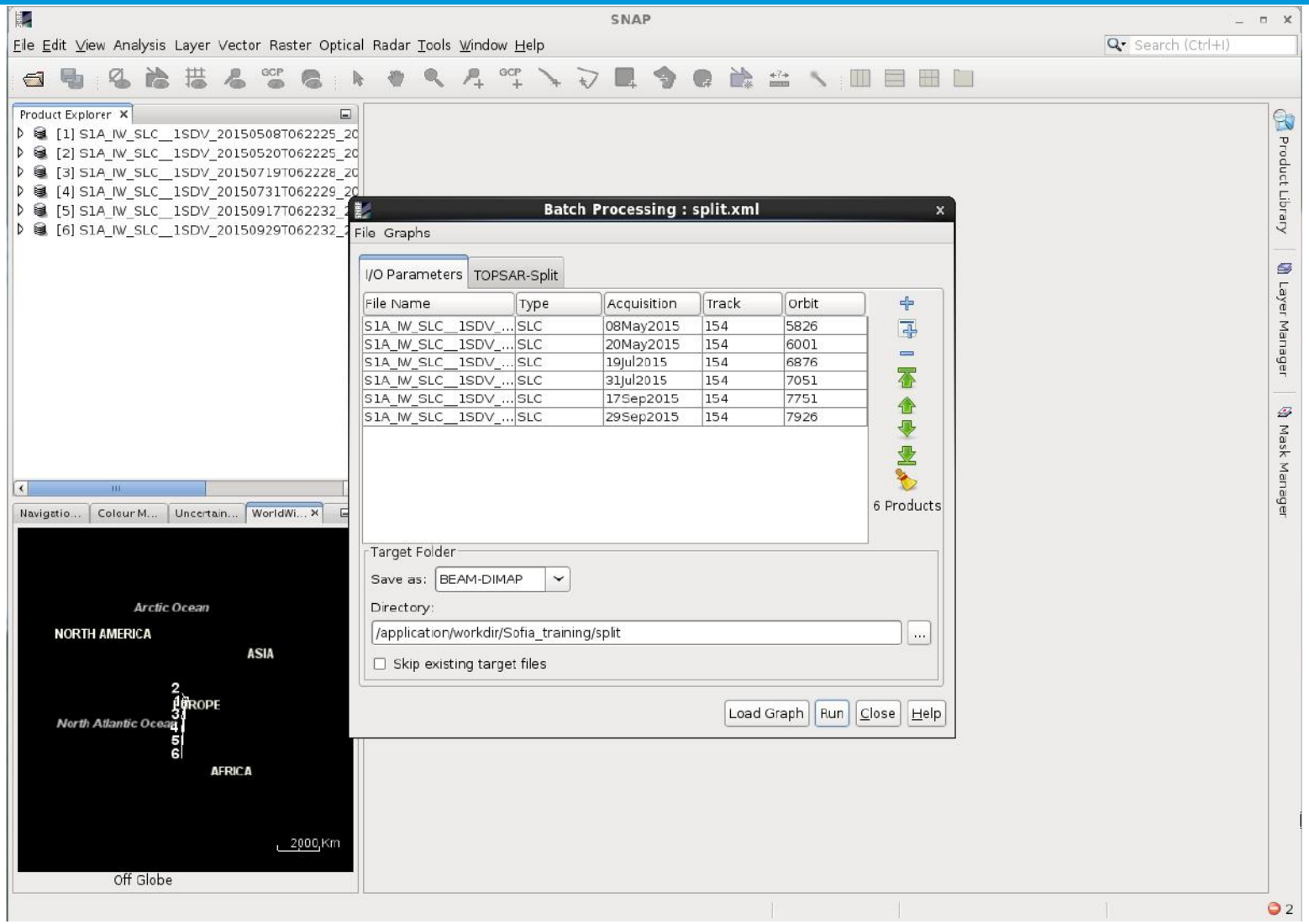
Visualisation of SLC data



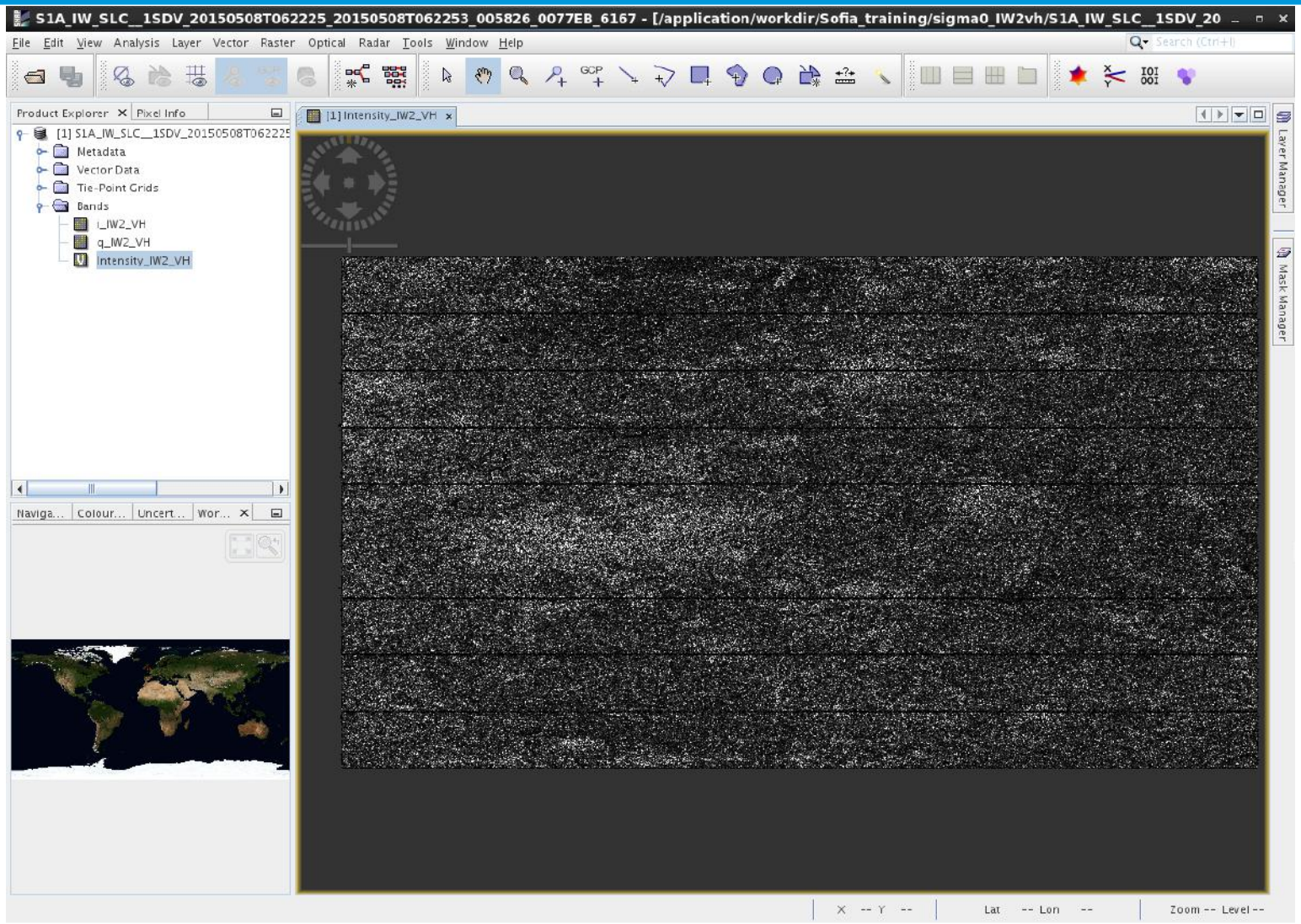
Splitting the image into subswaths



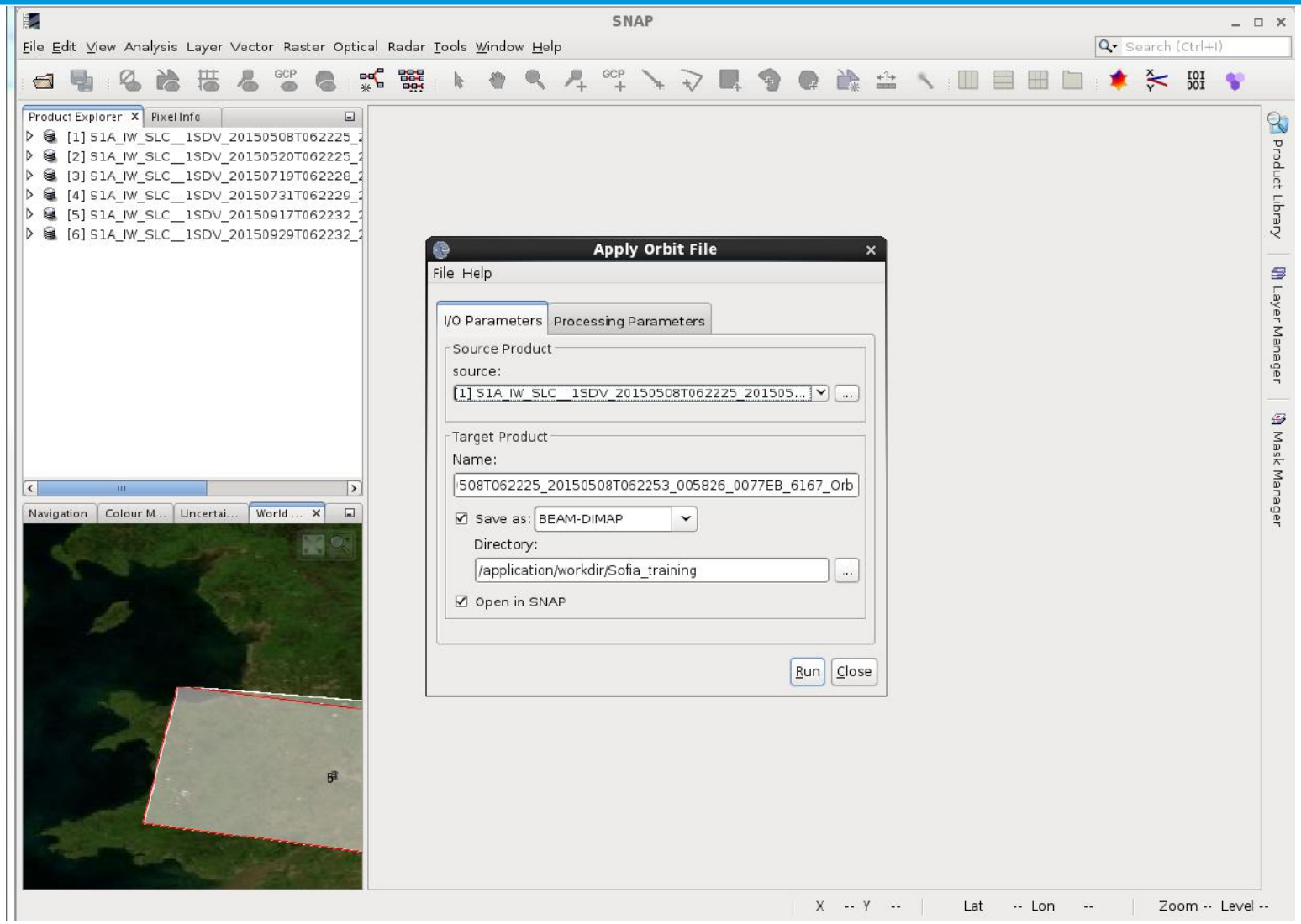
TOPSAR Split with Batch Processing



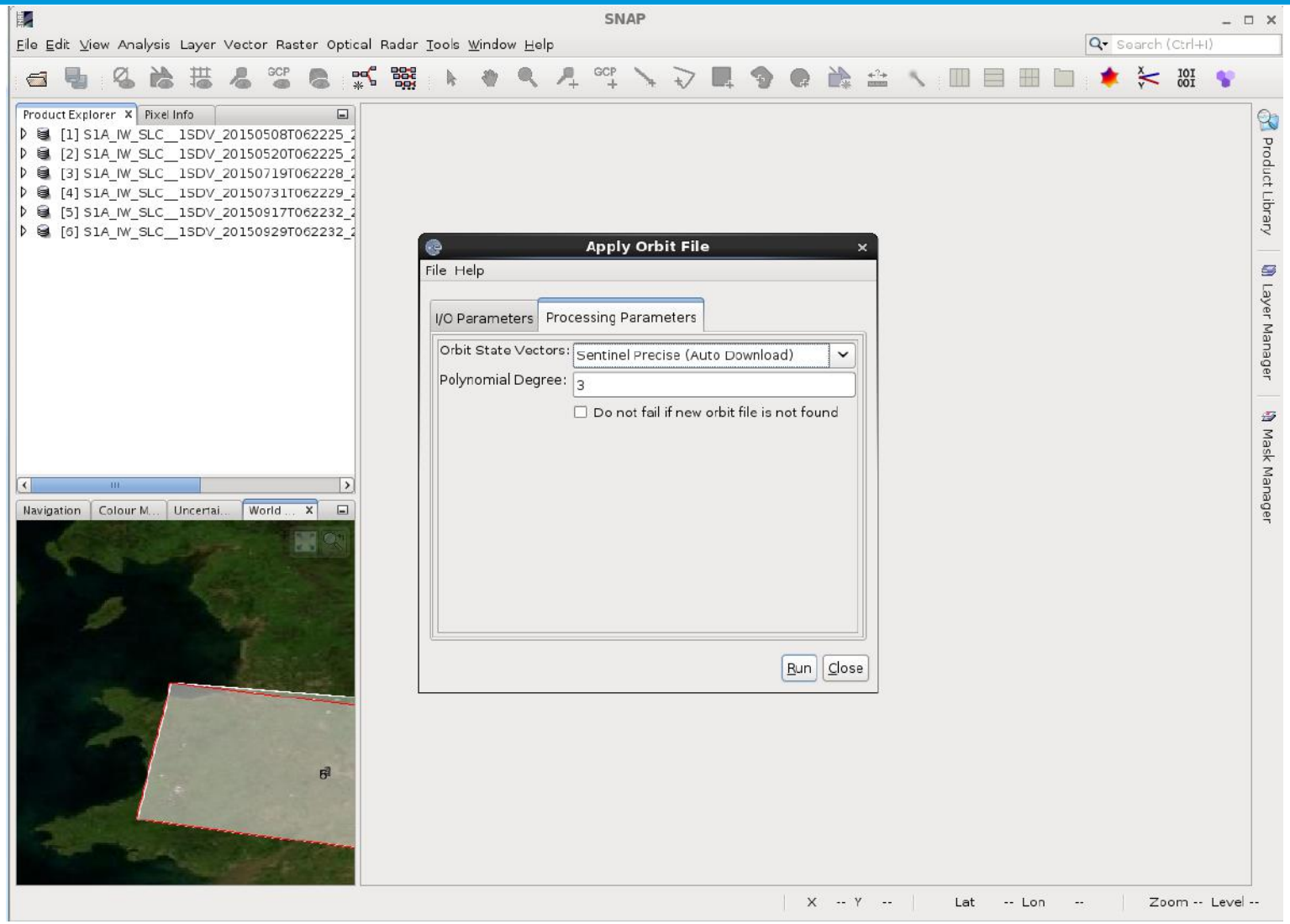
Visualisation of single sub-swath (IW2) polarisation VH



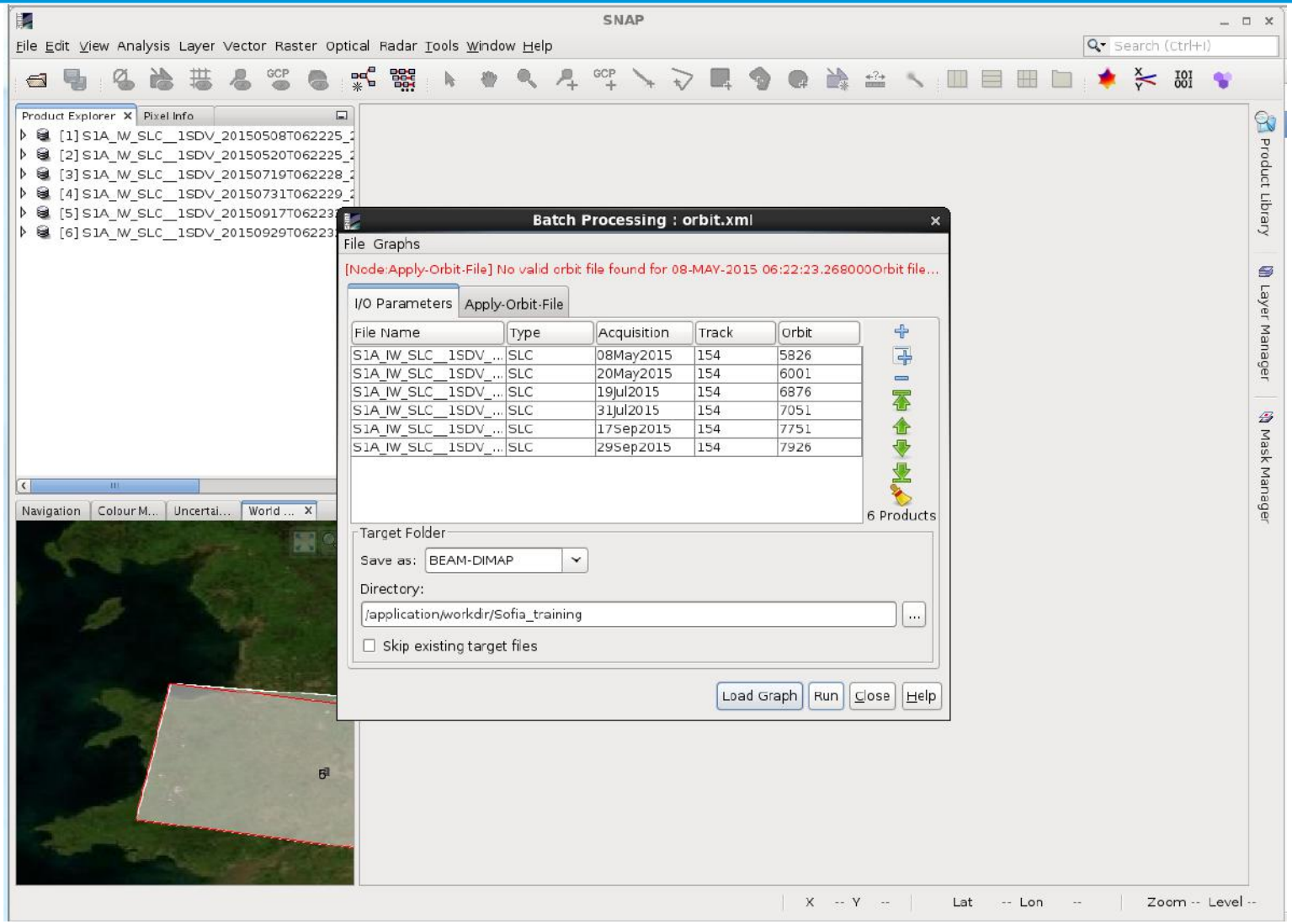
Applying orbits



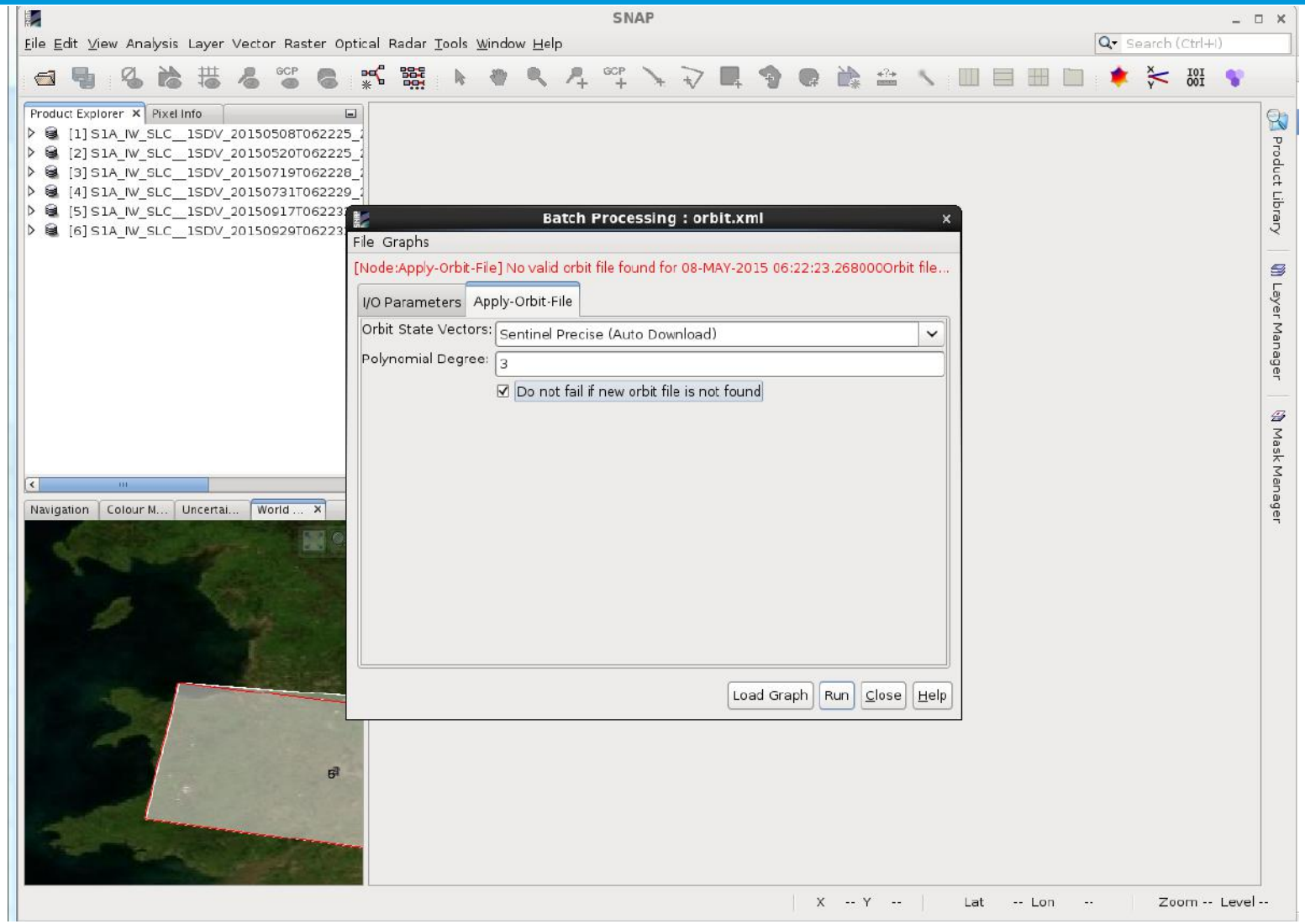
Applying orbits



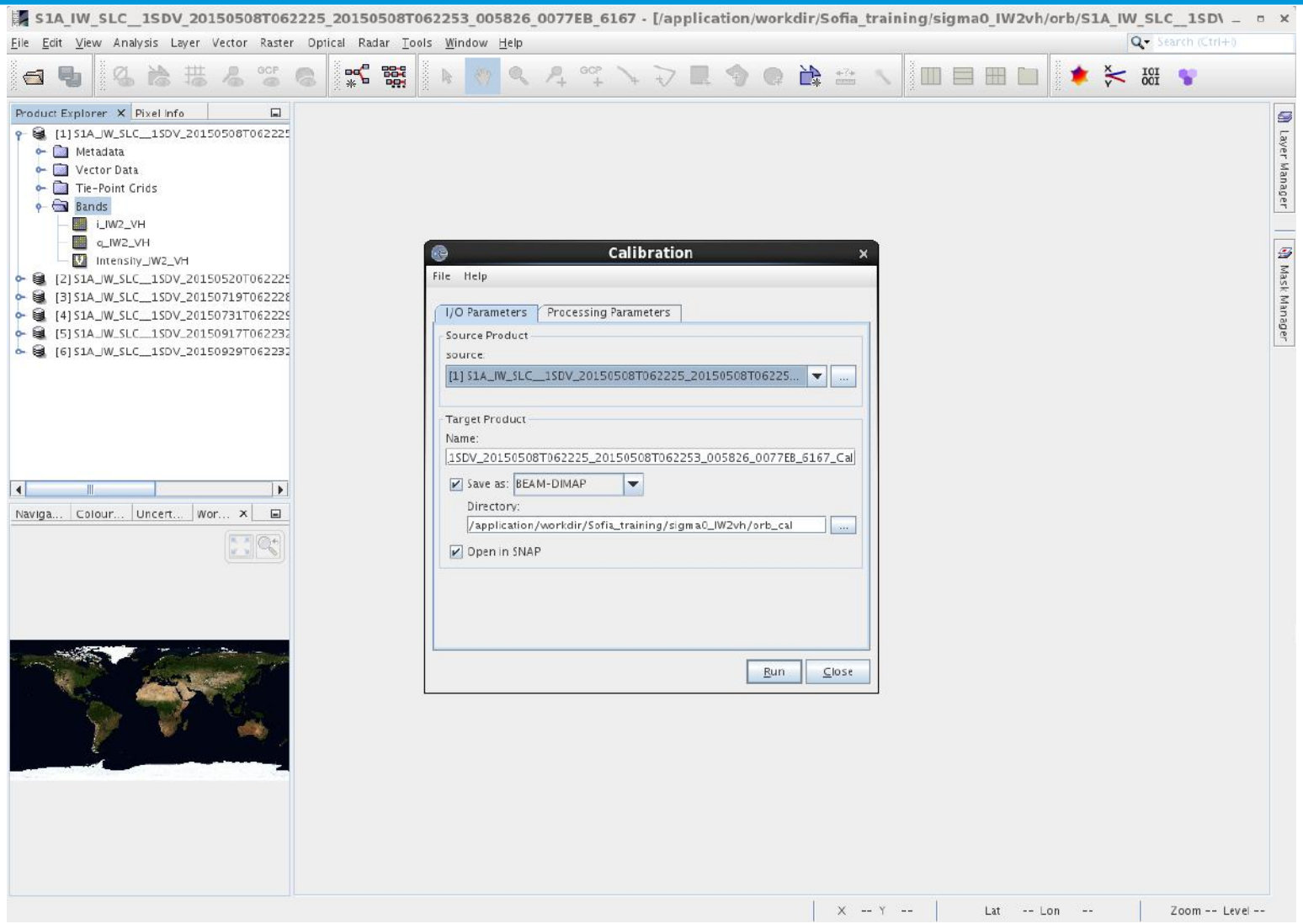
Applying orbits in Batch Processing



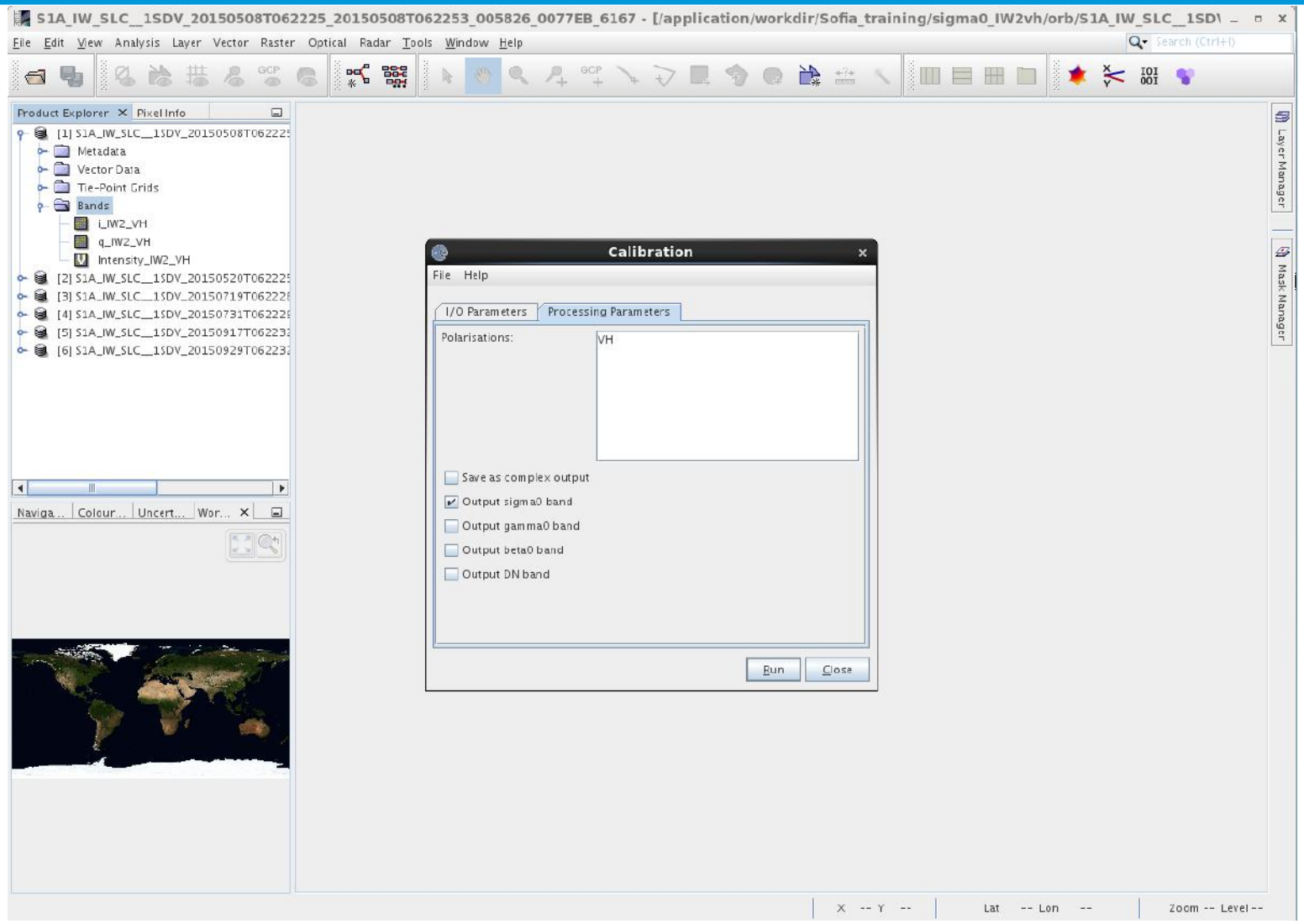
Applying orbits in Batch Processing



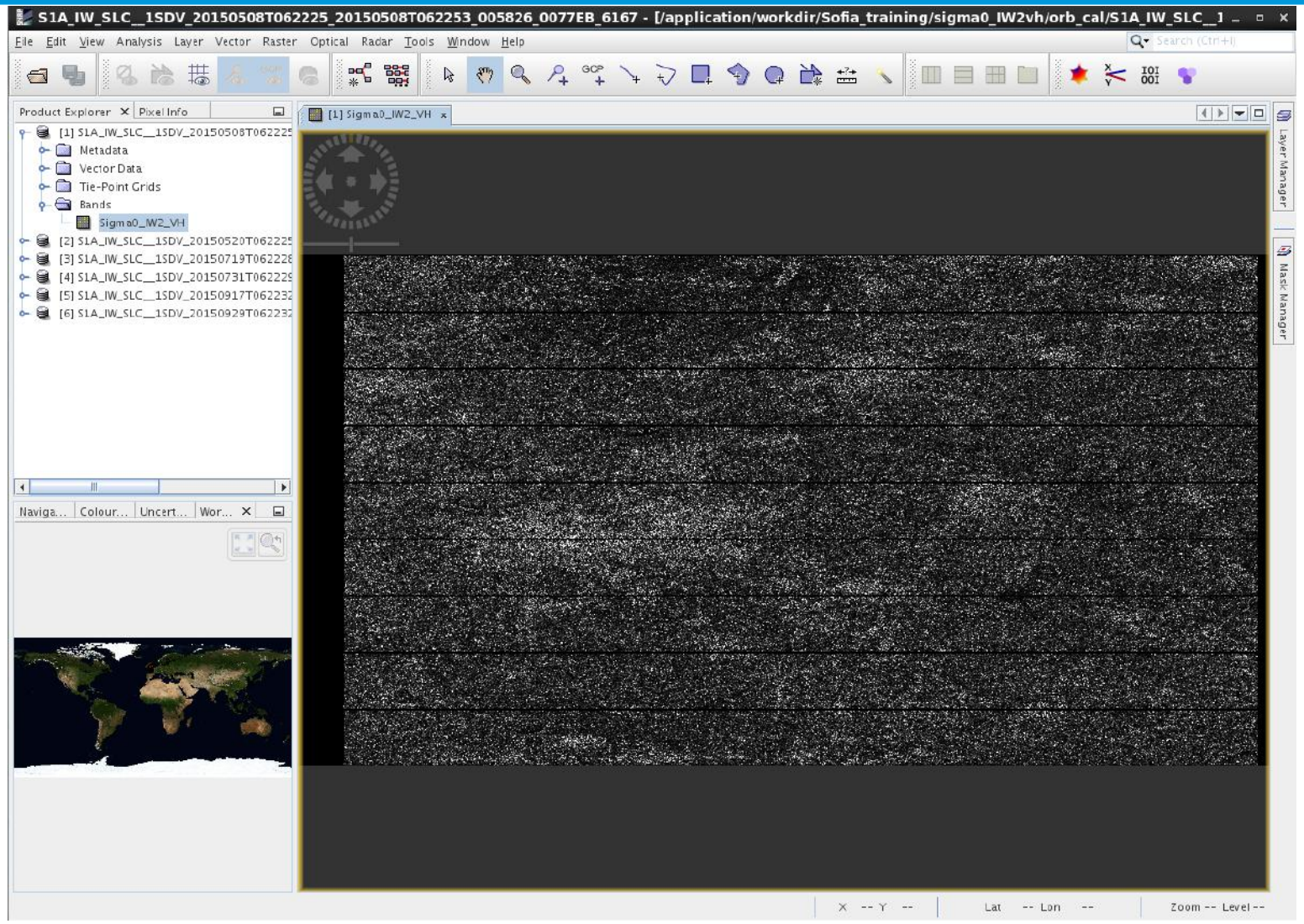
Radiometric calibration



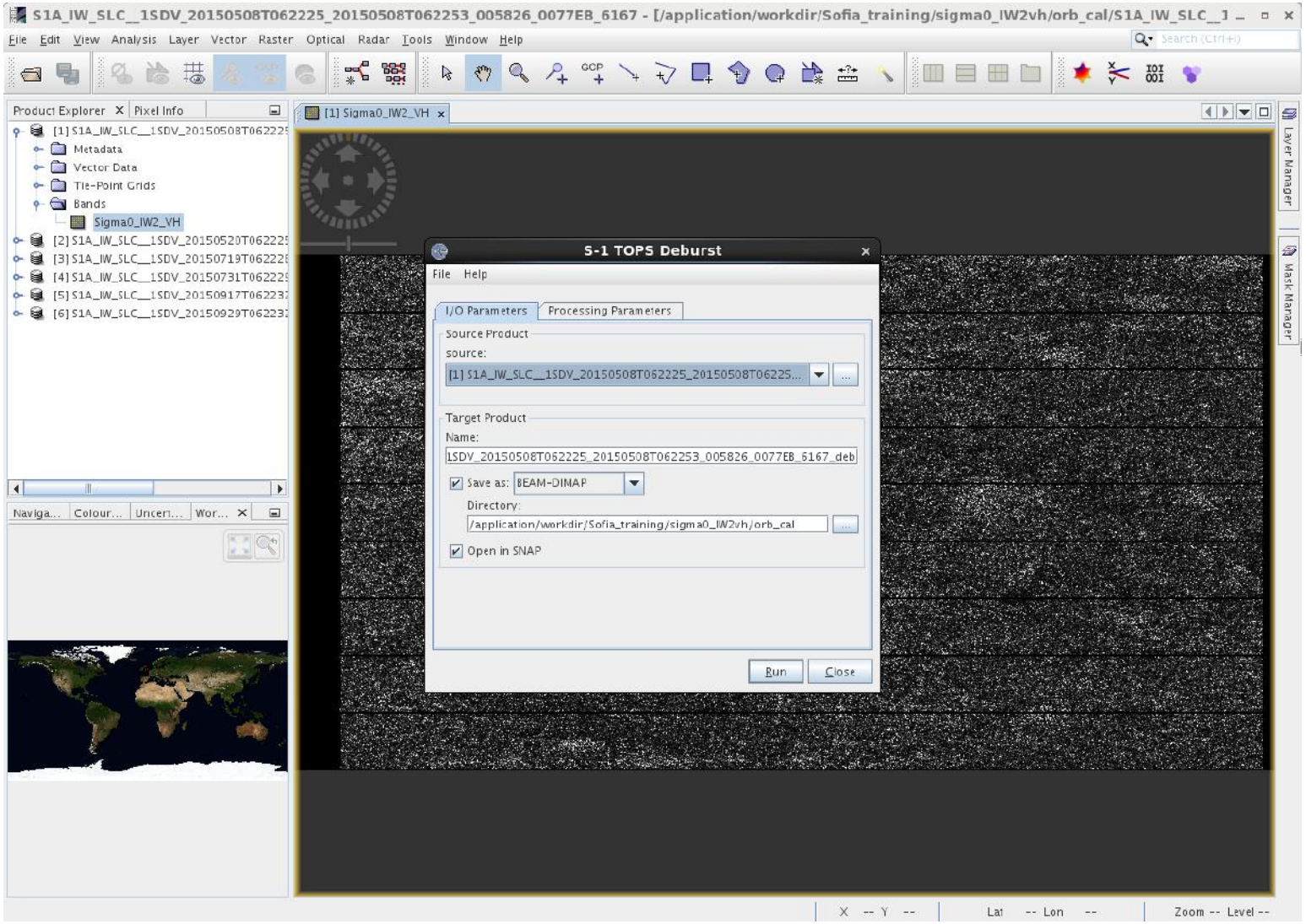
Radiometric calibration



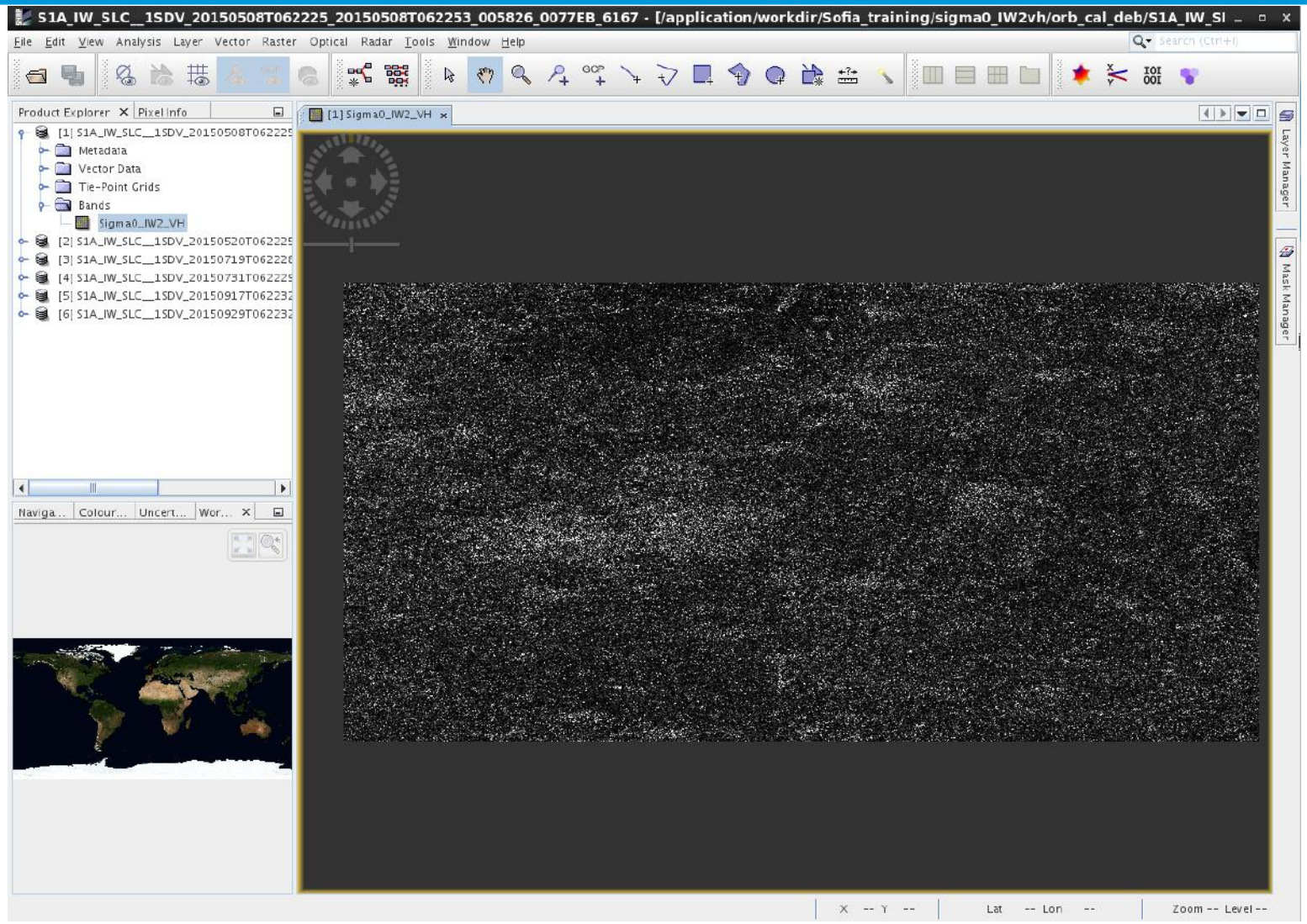
Radiometric calibration



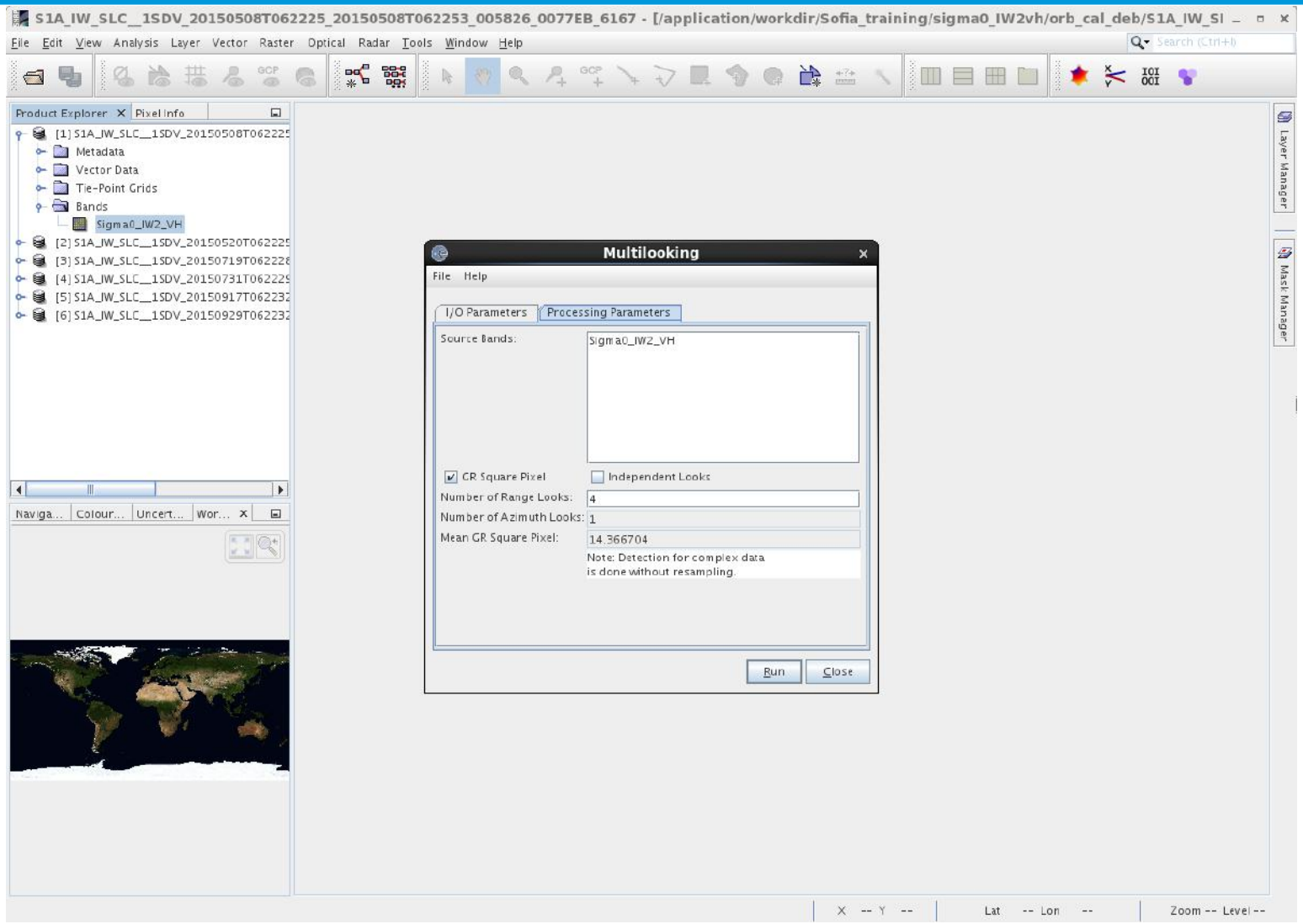
TOPS Deburst



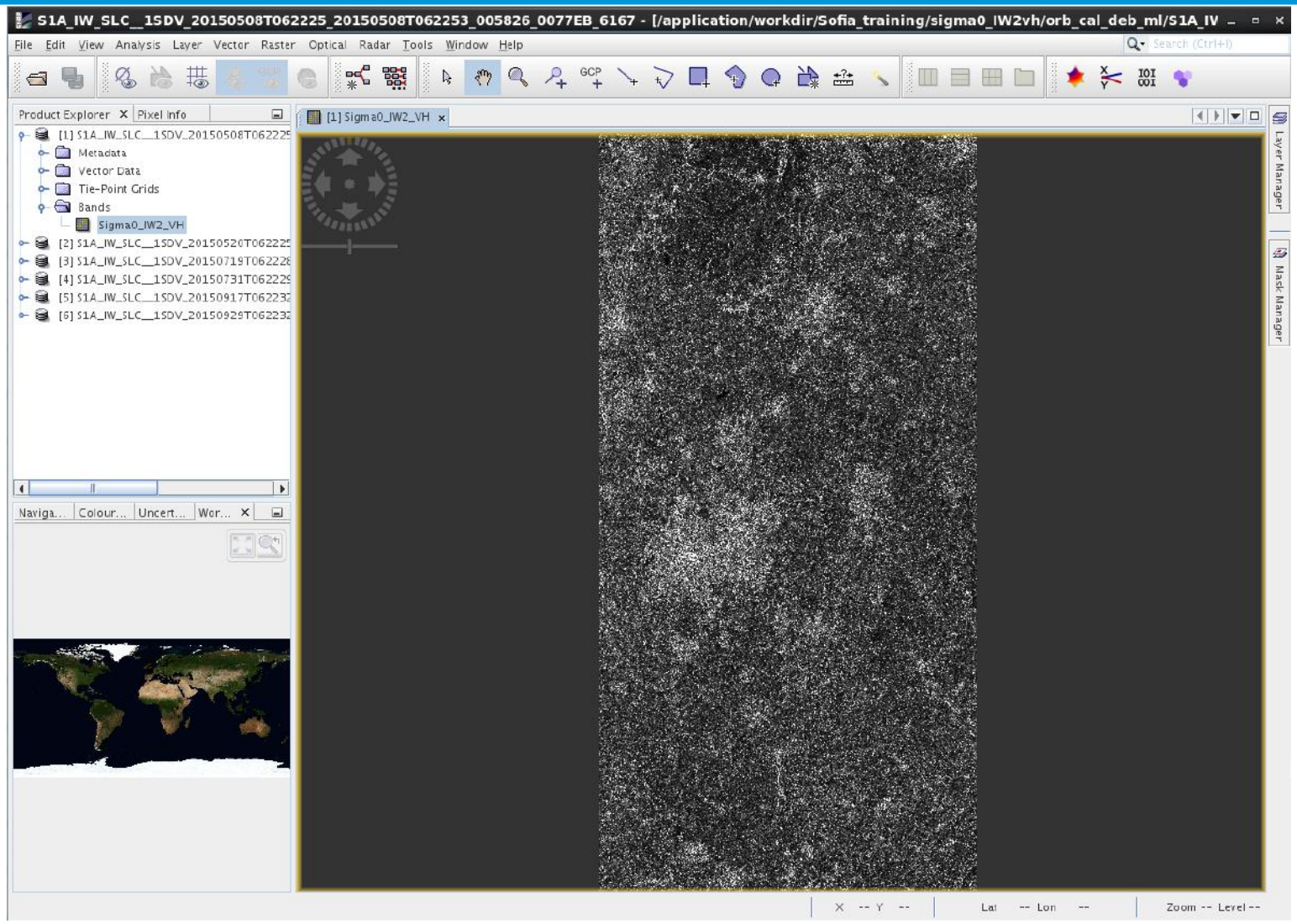
TOPS-Deburst



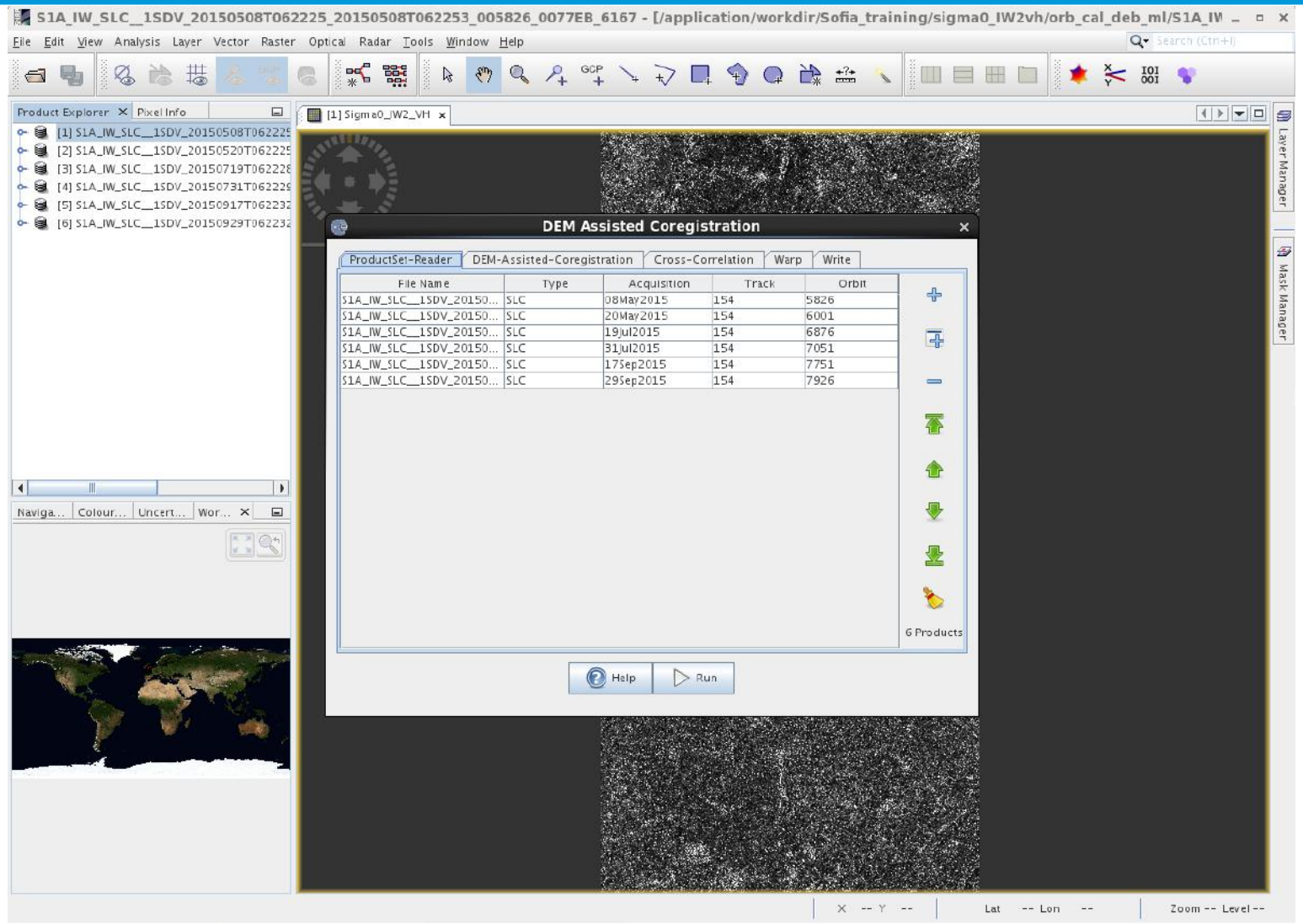
Multilooking



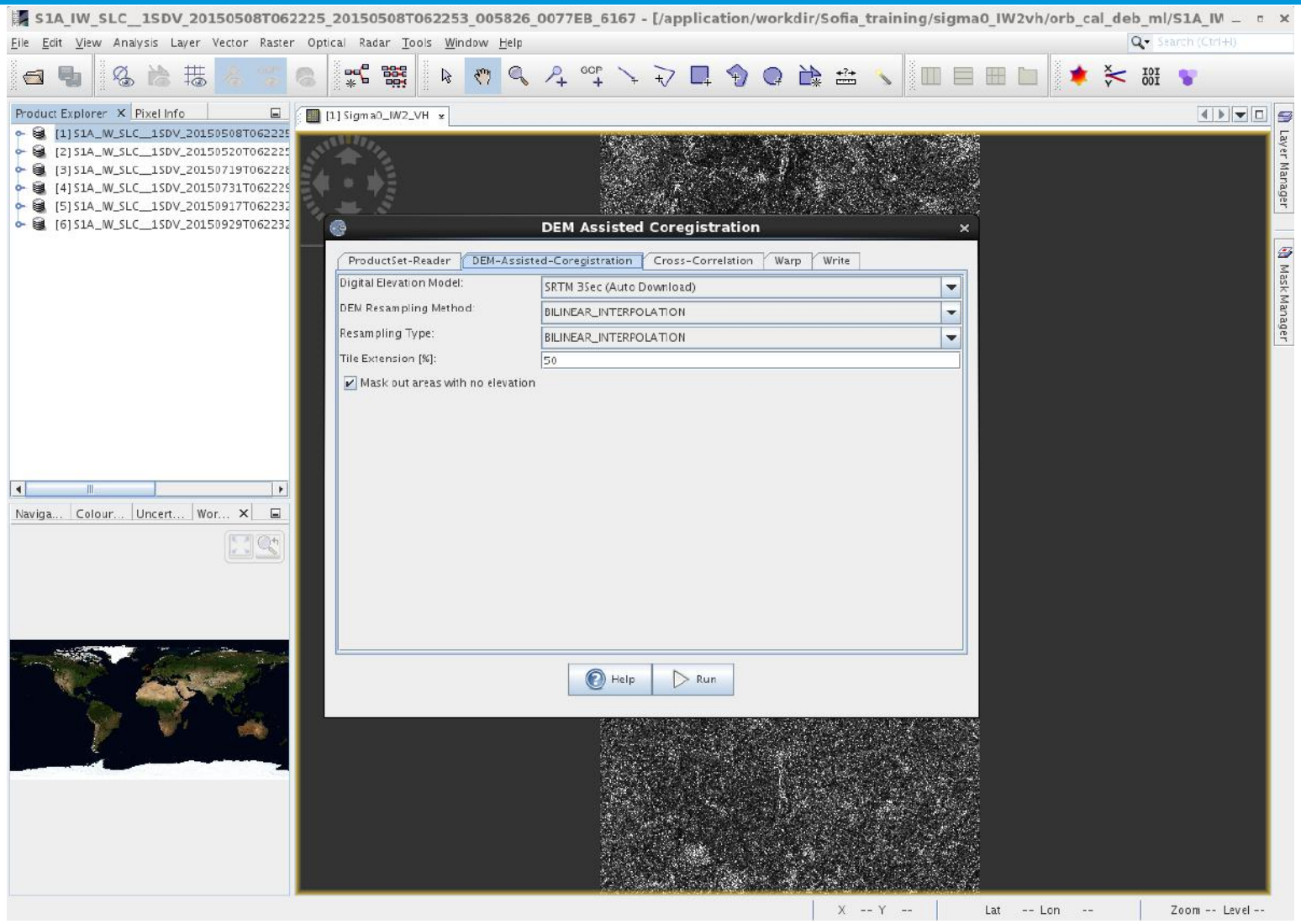
Multilooking



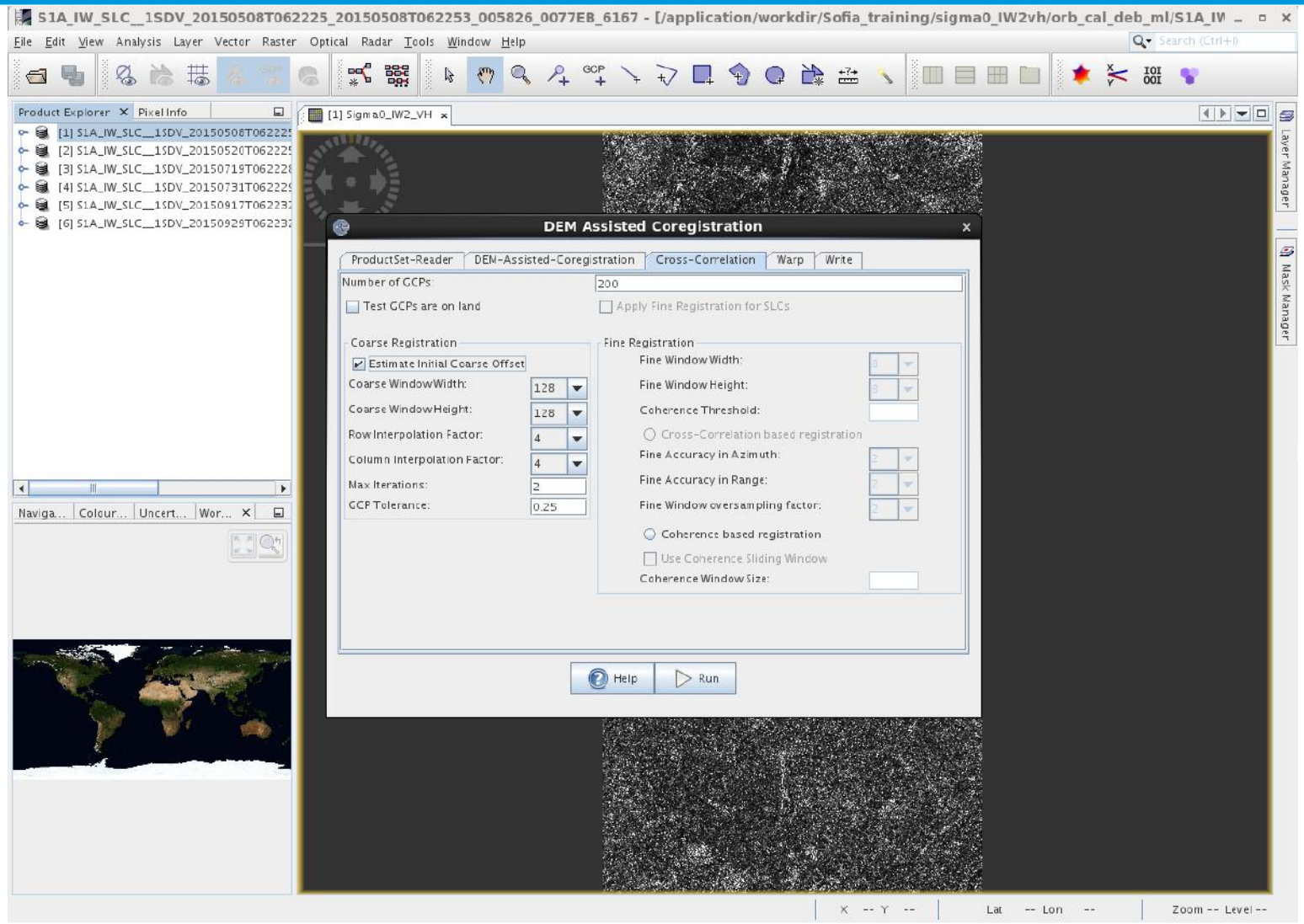
DEM Assisted coregistration



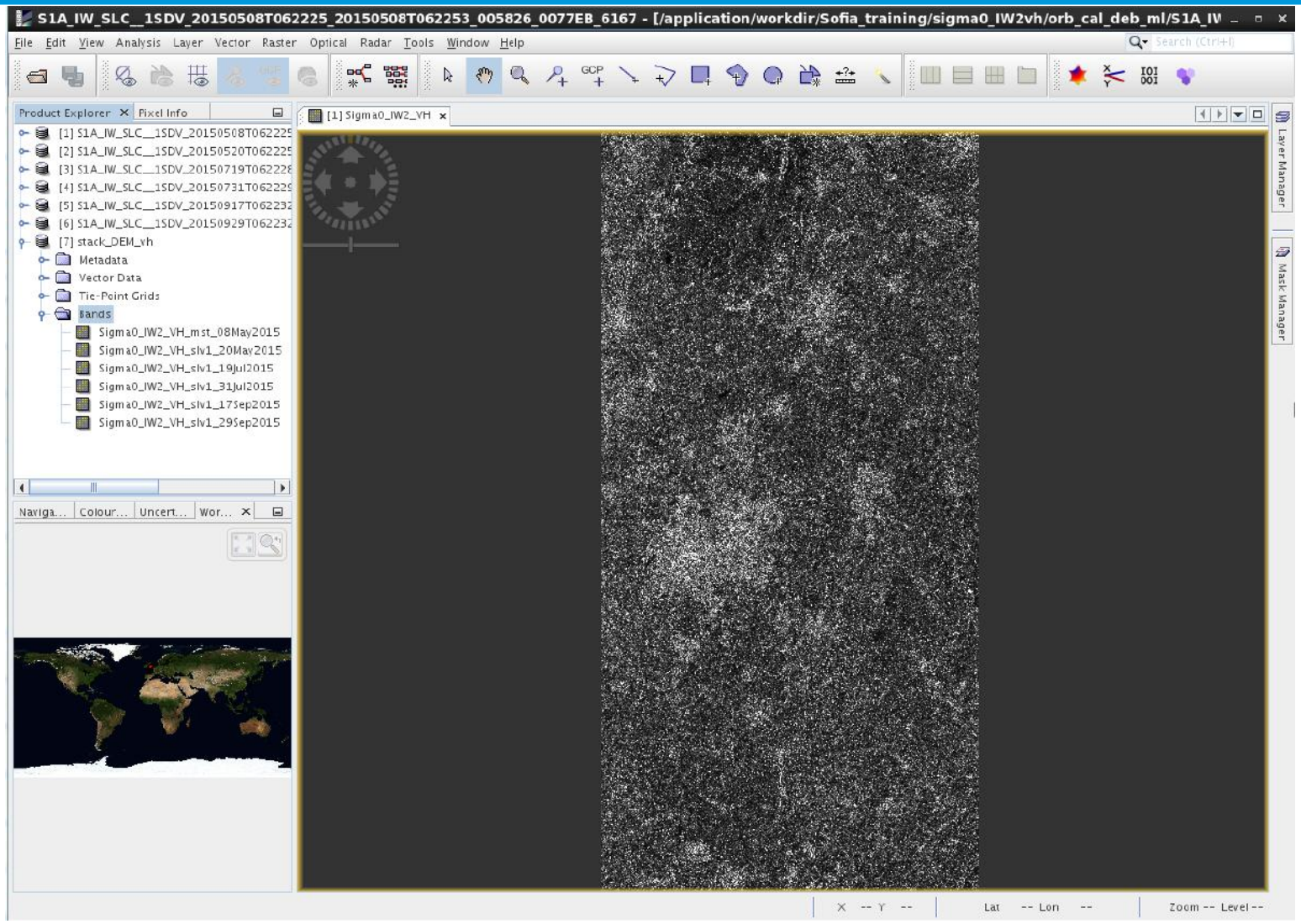
DEM Assisted coregistration



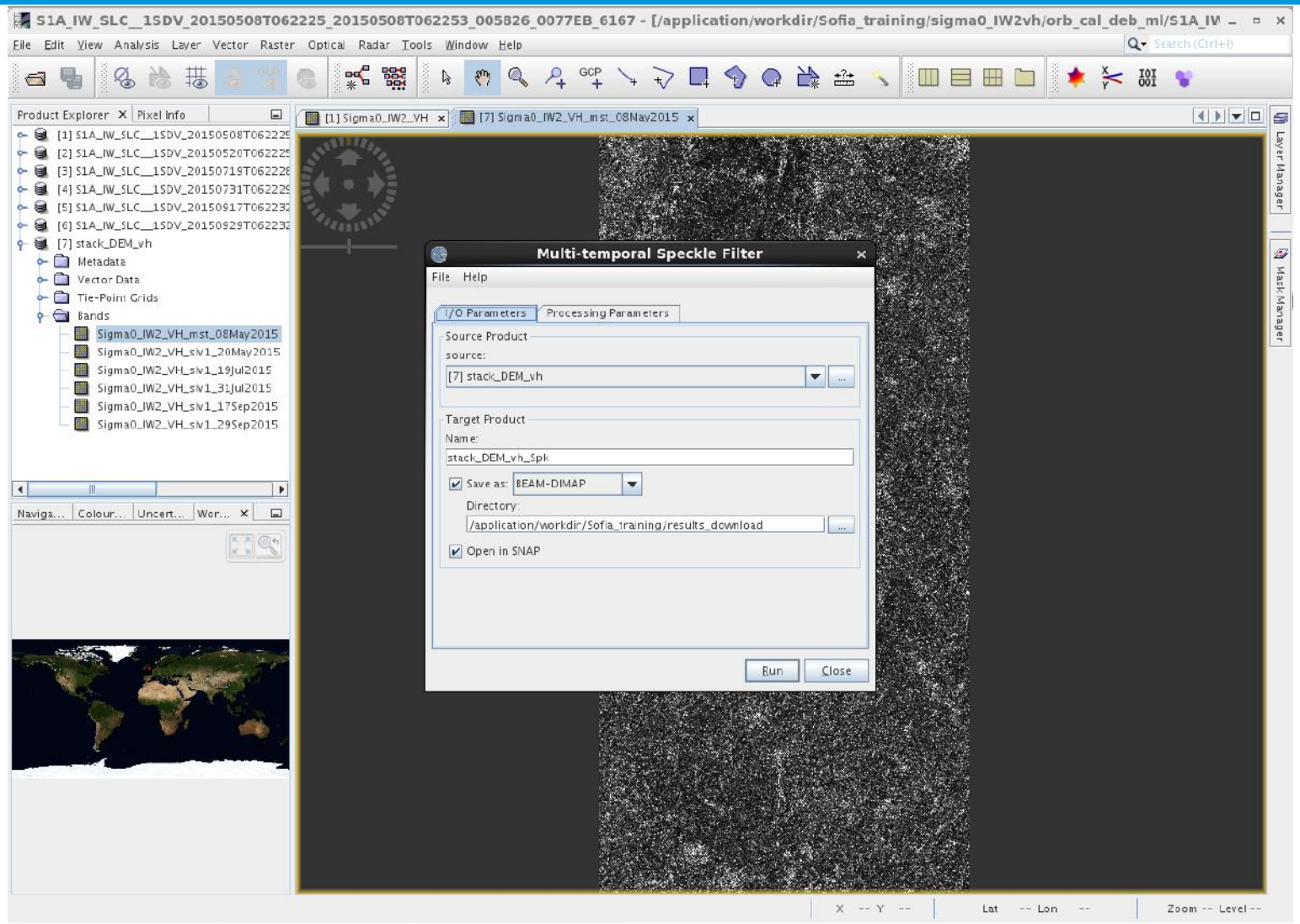
DEM Assisted coregistration



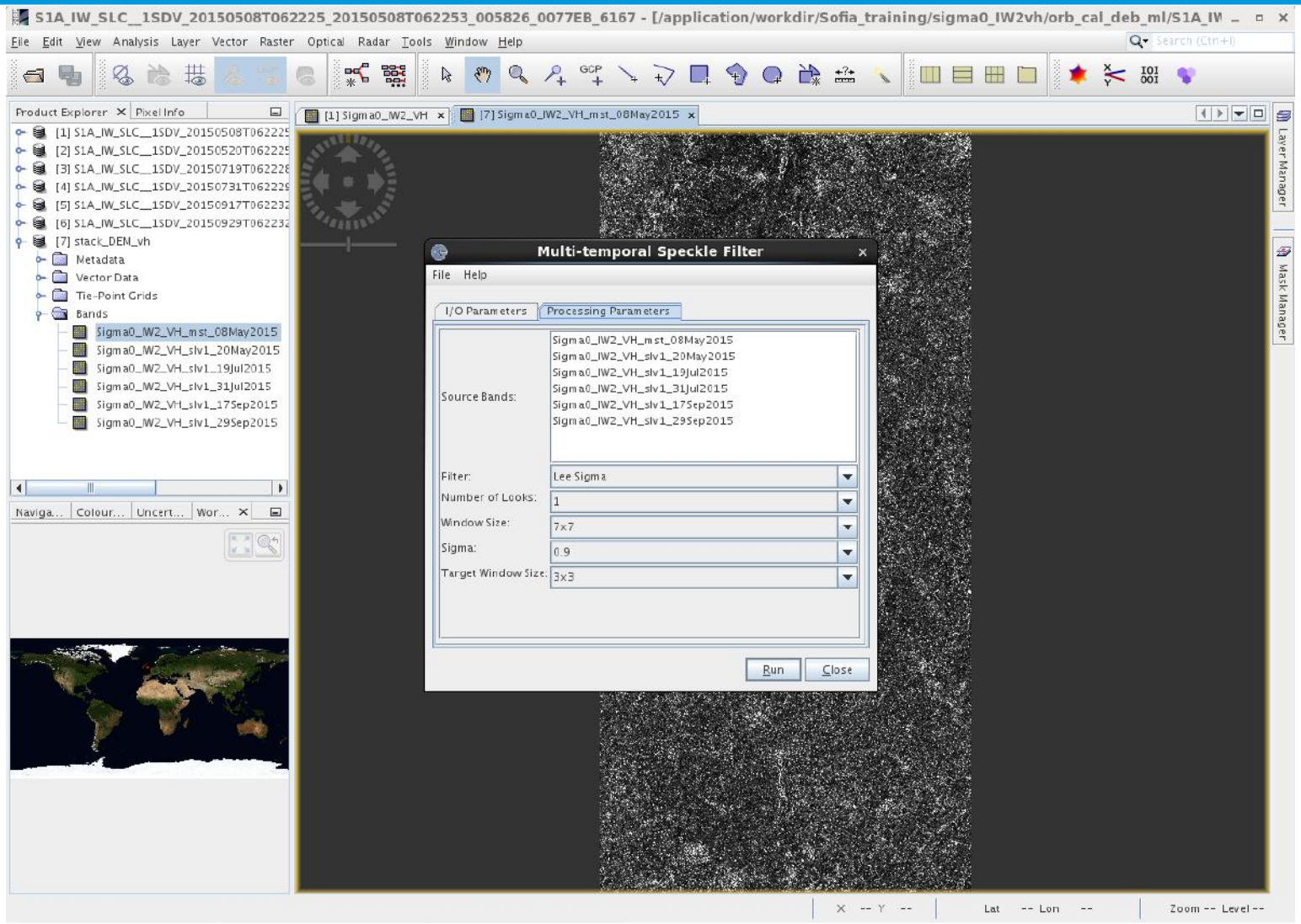
Data stack


S1A_IW_SLC__1SDV_20150508T062225_20150508T062253_005826_0077EB_6167 - [/application/workdir/Sofia_training/sigma0_IW2vh/orb_cal_deb_ml/S1A_IW
File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help
Product Explorer
Pixel Info
[1] Sigma0_IW2_VH
[1] S1A_IW_SLC__1SDV_20150508T062225
[2] S1A_IW_SLC__1SDV_20150520T062225
[3] S1A_IW_SLC__1SDV_20150719T062228
[4] S1A_IW_SLC__1SDV_20150731T062229
[5] S1A_IW_SLC__1SDV_20150917T062232
[6] S1A_IW_SLC__1SDV_20150929T062232
[7] stack_DEM_vh
Metadata
Vector Data
Tie-Point Grids
Bands
Sigma0_IW2_VH_mst_08May2015
Sigma0_IW2_VH_slv1_20May2015
Sigma0_IW2_VH_slv1_19Jul2015
Sigma0_IW2_VH_slv1_31Jul2015
Sigma0_IW2_VH_slv1_17Sep2015
Sigma0_IW2_VH_slv1_29Sep2015
Naviga... Colour... Uncert... Wor...
Layer Manager
Mask Manager
X -- Y --
Lat -- Lon --
Zoom -- Level --

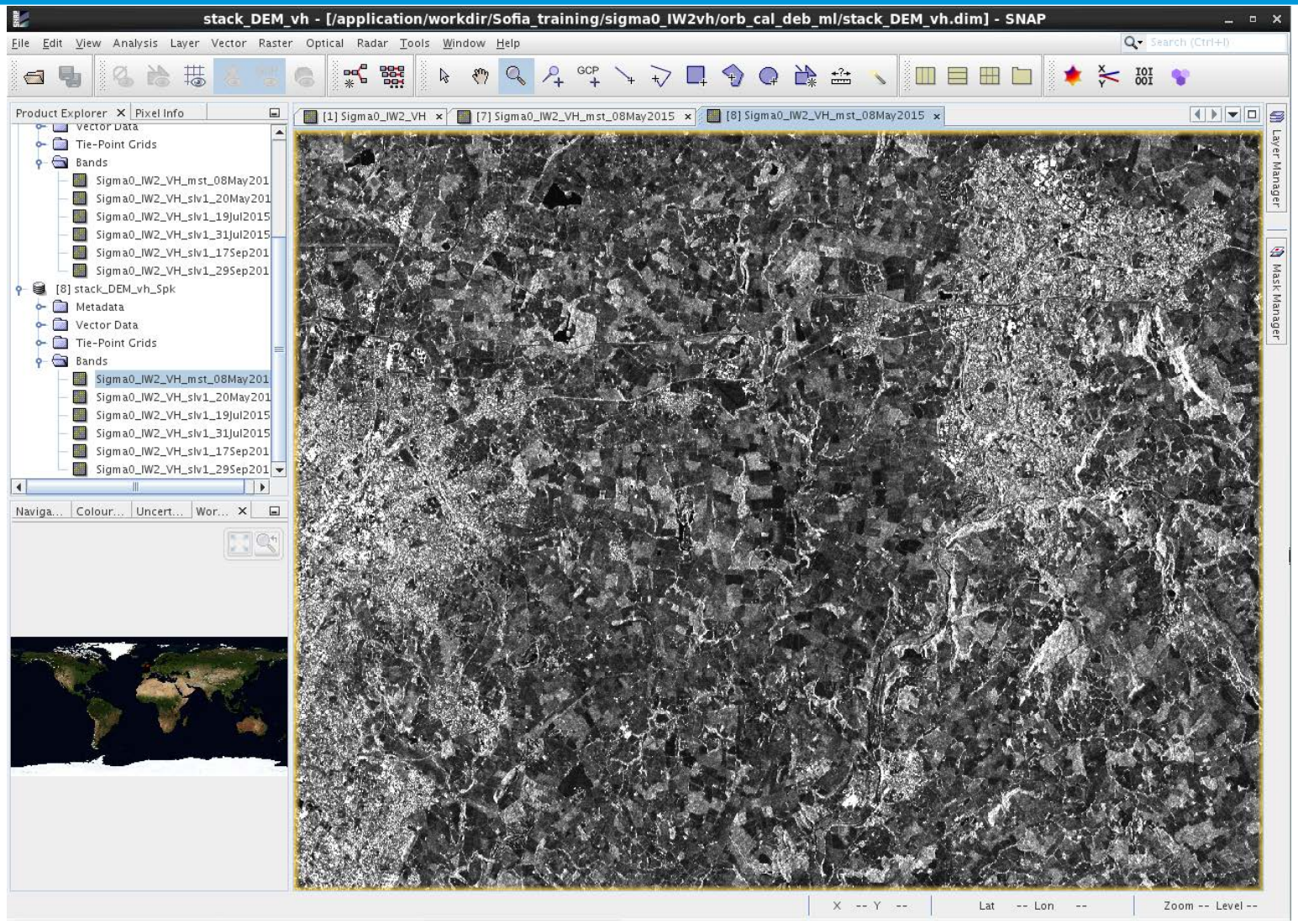
Multitemporal speckle filtering



Multitemporal speckle filtering



Multitemporal speckle filtering

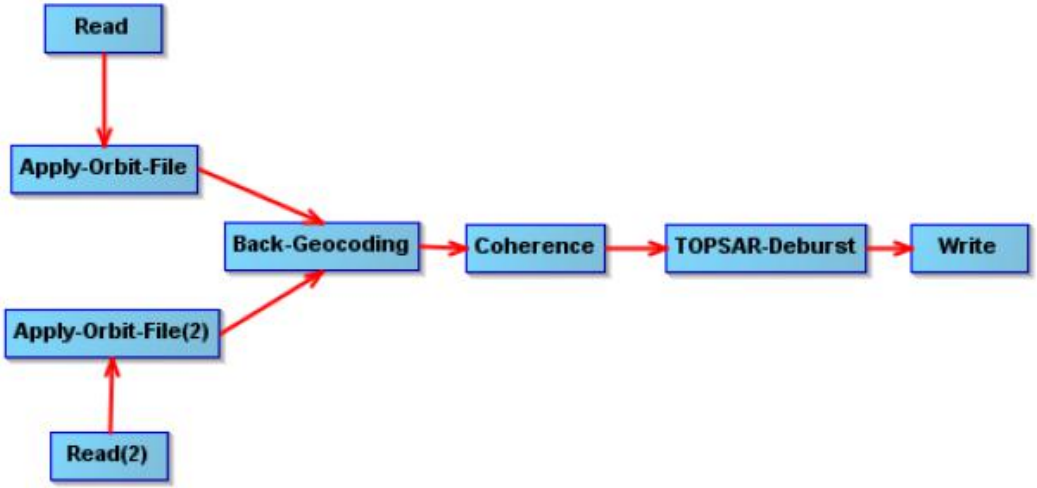


Sentinel 1 interferometric coherence

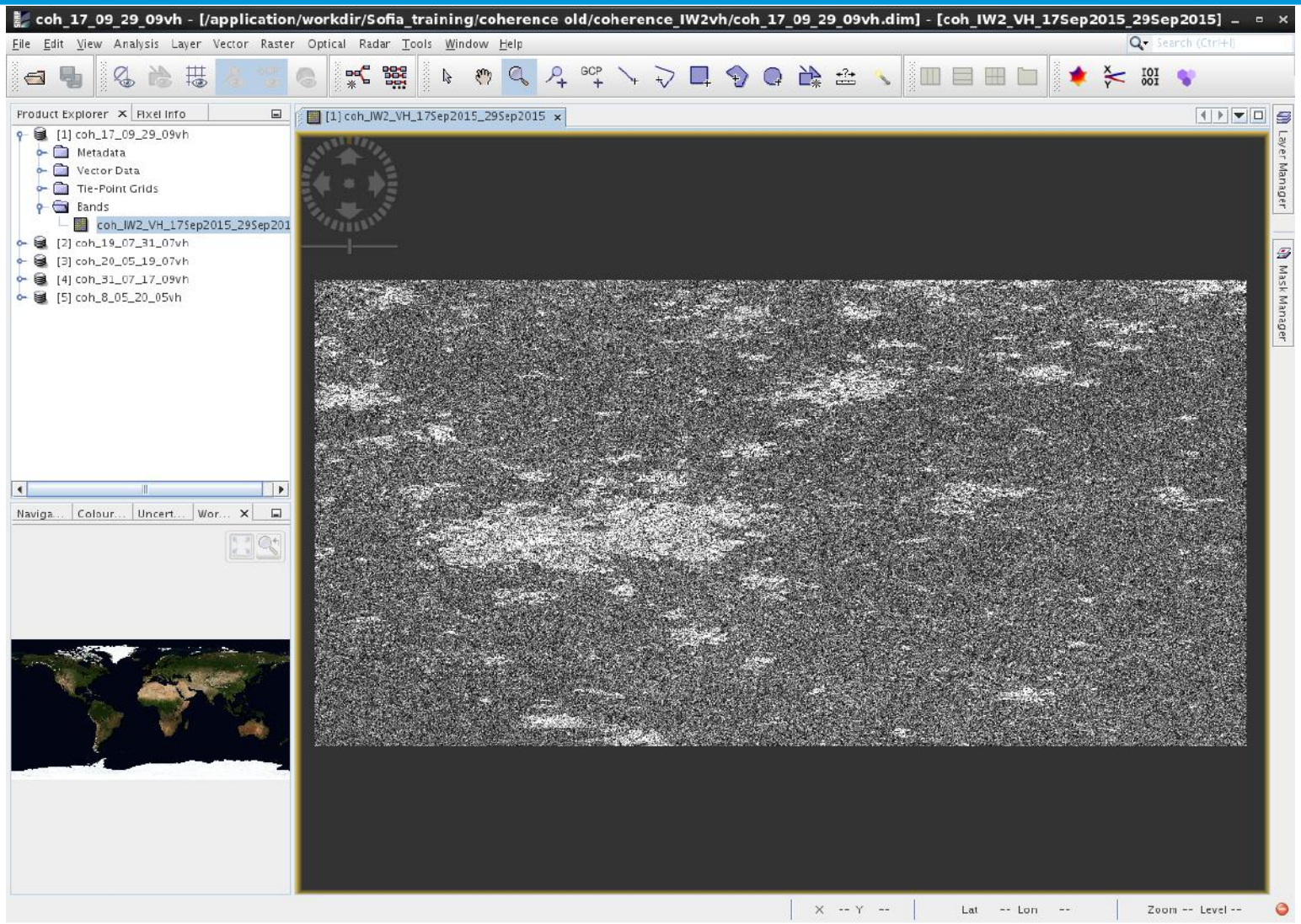
Processing chain

1. Data preparation (Slice assembly, Split)
2. Applying orbits
3. Back-Geocoding
4. Coherence
5. TOPSAR-Deburst
6. Multilooking

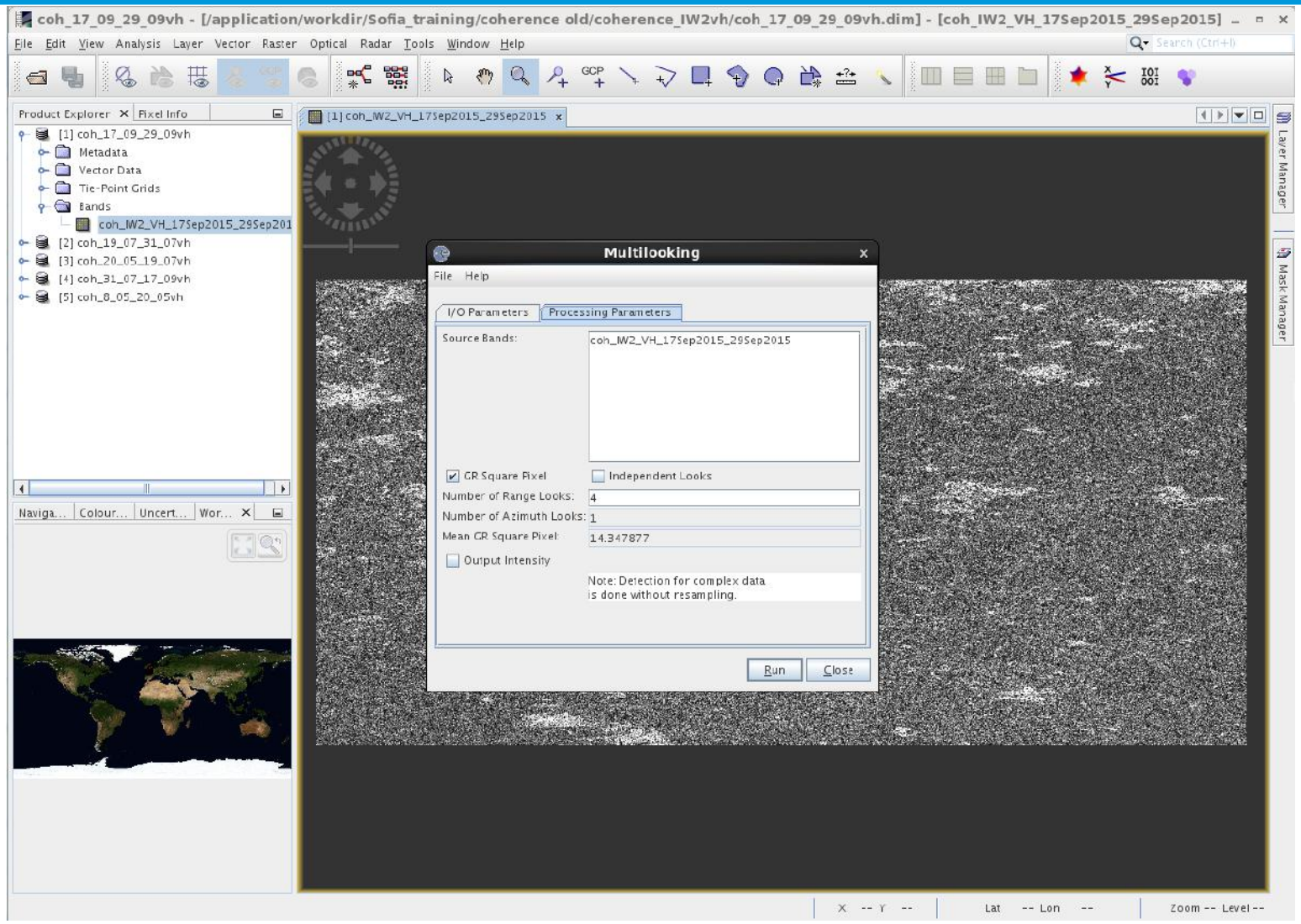
Coherence Estimation



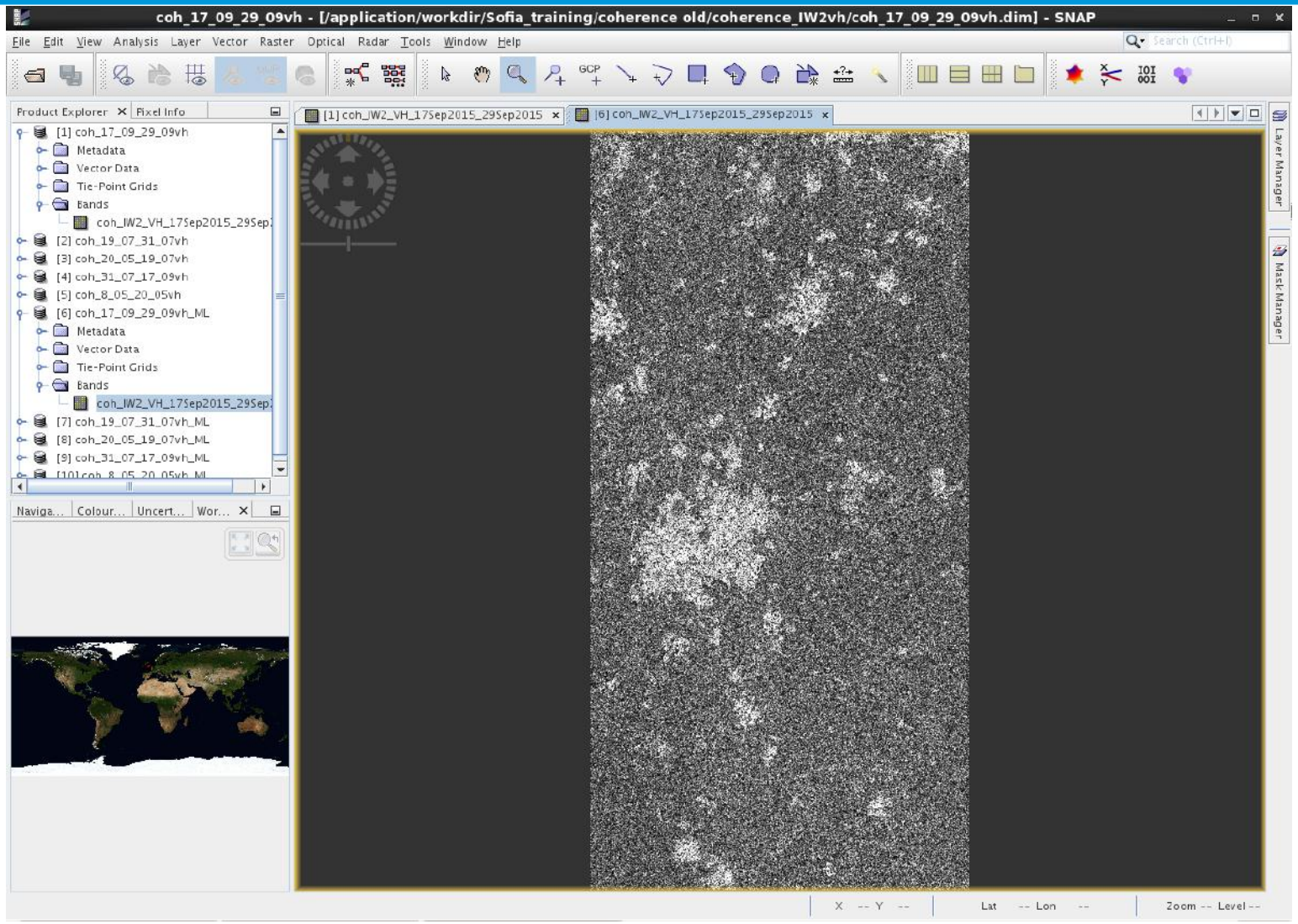
Coherence Estimation



Multilooking



Multilooking



Sentinel 1 RGB composites (backscattering and coherence)

Image statistics – Stack tools

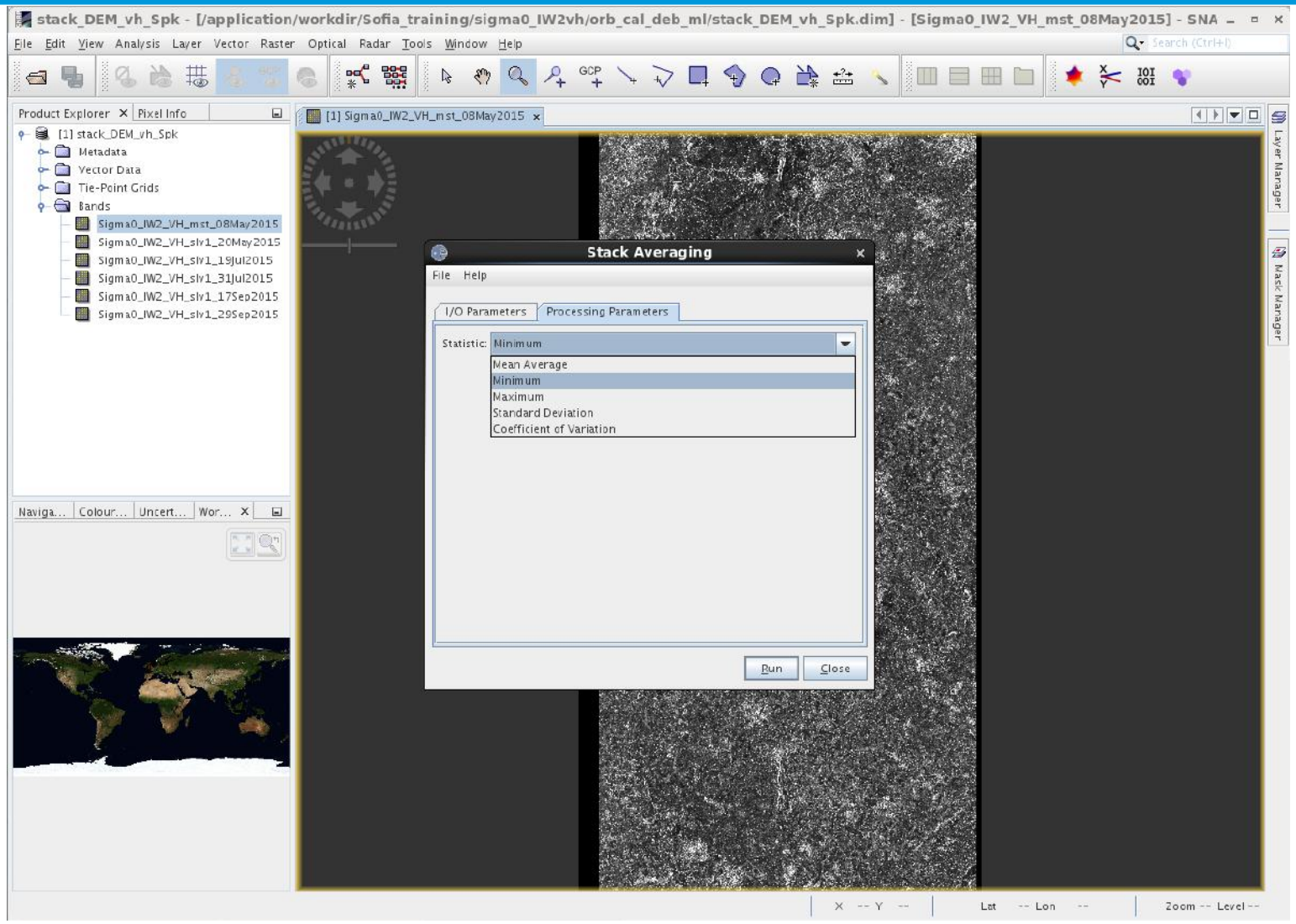
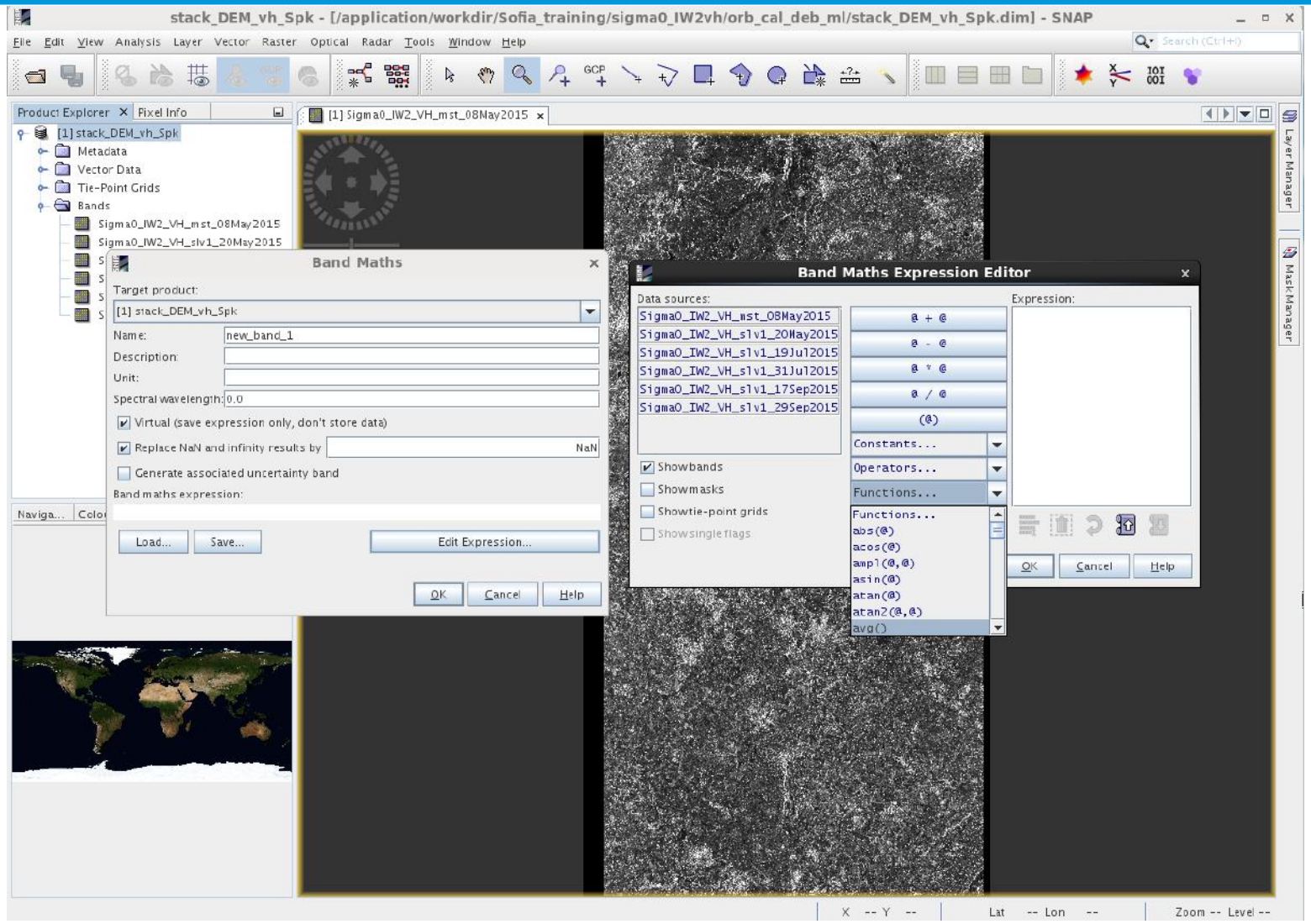
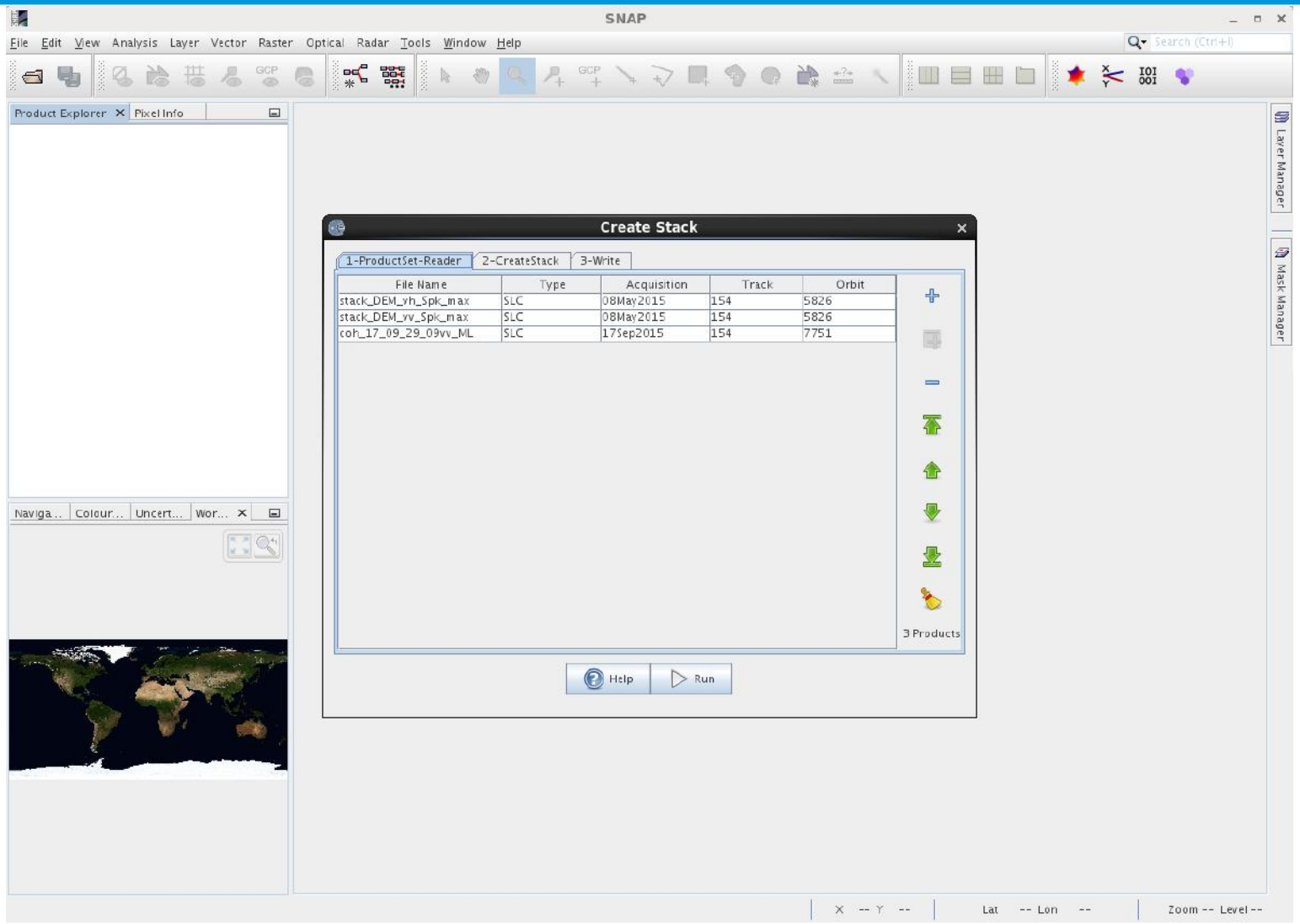
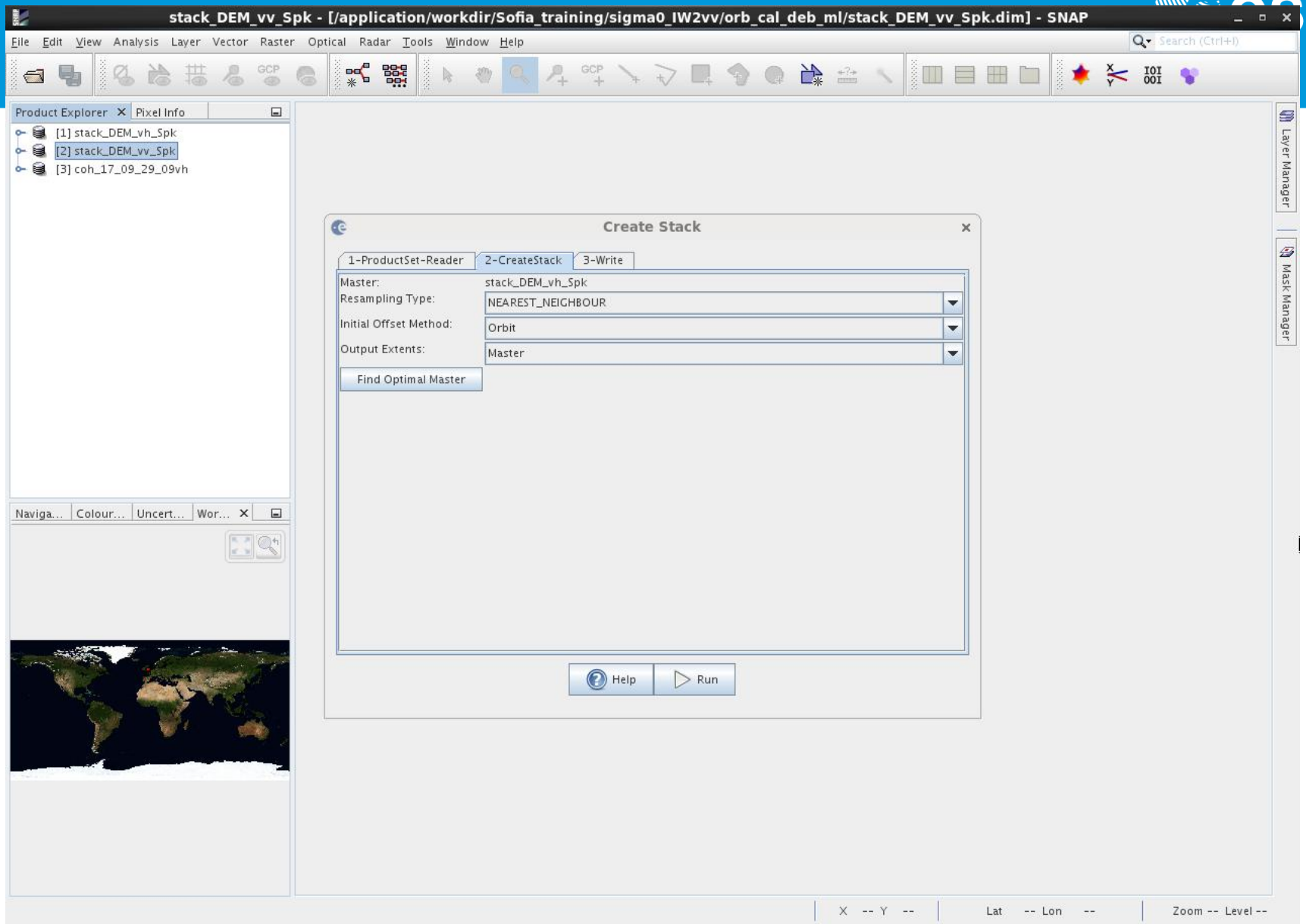


Image statistics – Band math

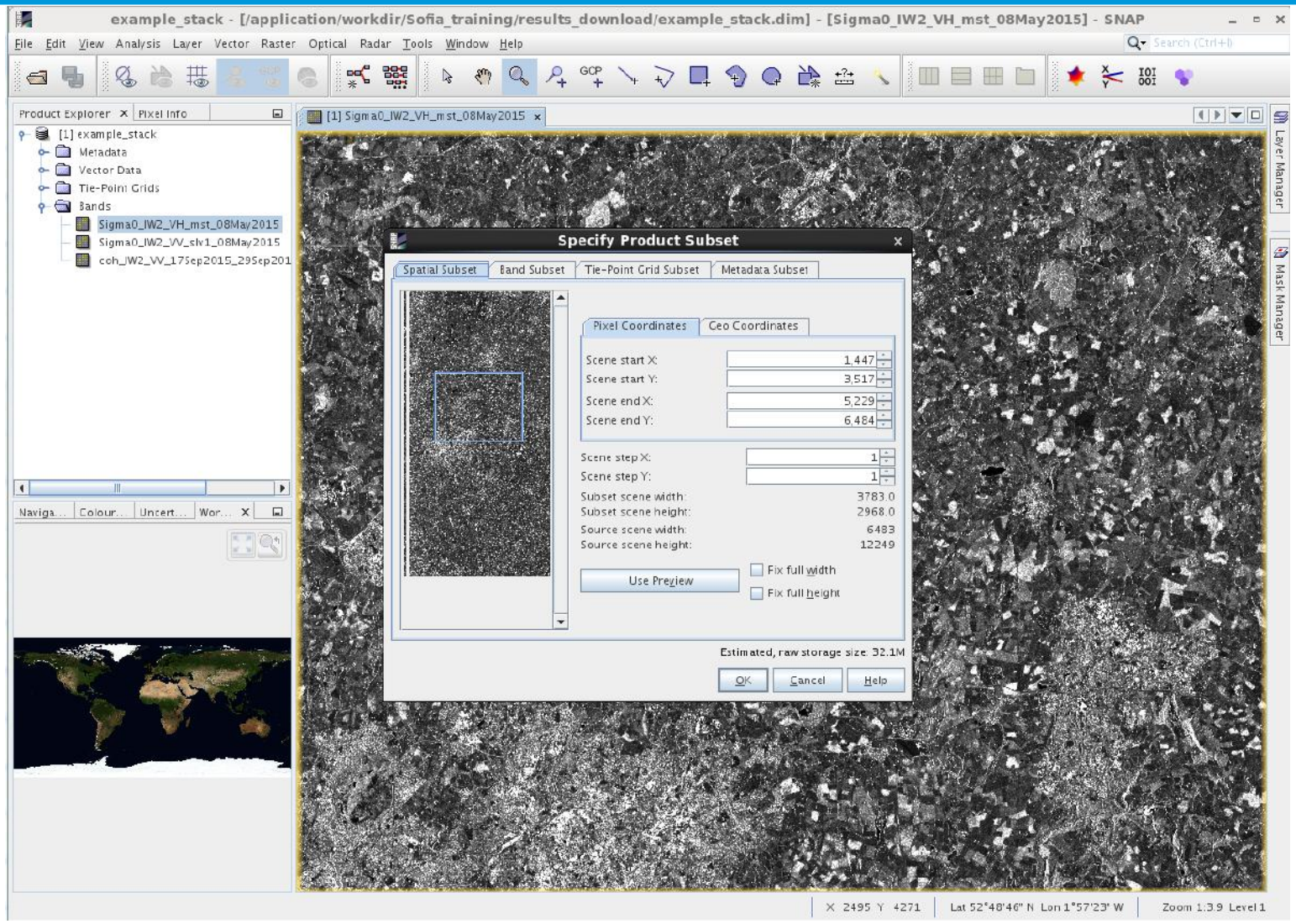


Creating stack

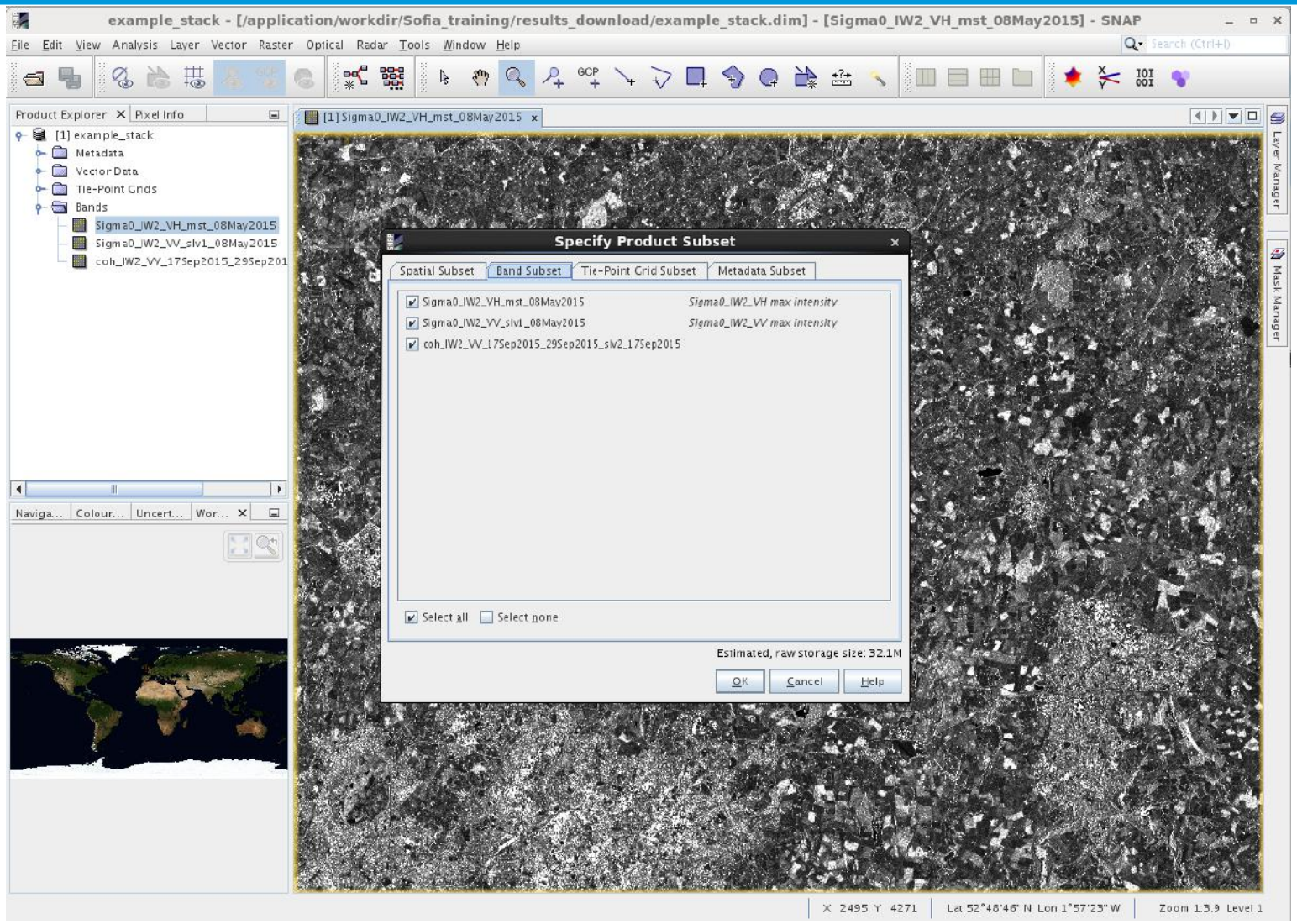



stack_DEM_vv_Spk - [/application/workdir/Sofia_training/sigma0_IW2vv/orb_cal_deb_ml/stack_DEM_vv_Spk.dim] - SNAP
File Edit View Analysis Layer Vector Raster Optical Radar Tools Window Help
Product Explorer
Pixel Info
[1] stack_DEM_vh_Spk
[2] stack_DEM_vv_Spk
[3] coh_17_09_29_09vh
Naviga...
Colour...
Uncert...
Wor...
Create Stack
1-ProductSet-Reader
2-CreateStack
3-Write
Master:
stack_DEM_vh_Spk
Resampling Type:
NEAREST_NEIGHBOUR
Initial Offset Method:
Orbit
Output Extents:
Master
Find Optimal Master
Help
Run
Layer Manager
Mask Manager
X -- Y --
Lat -- Lon --
Zoom -- Level --

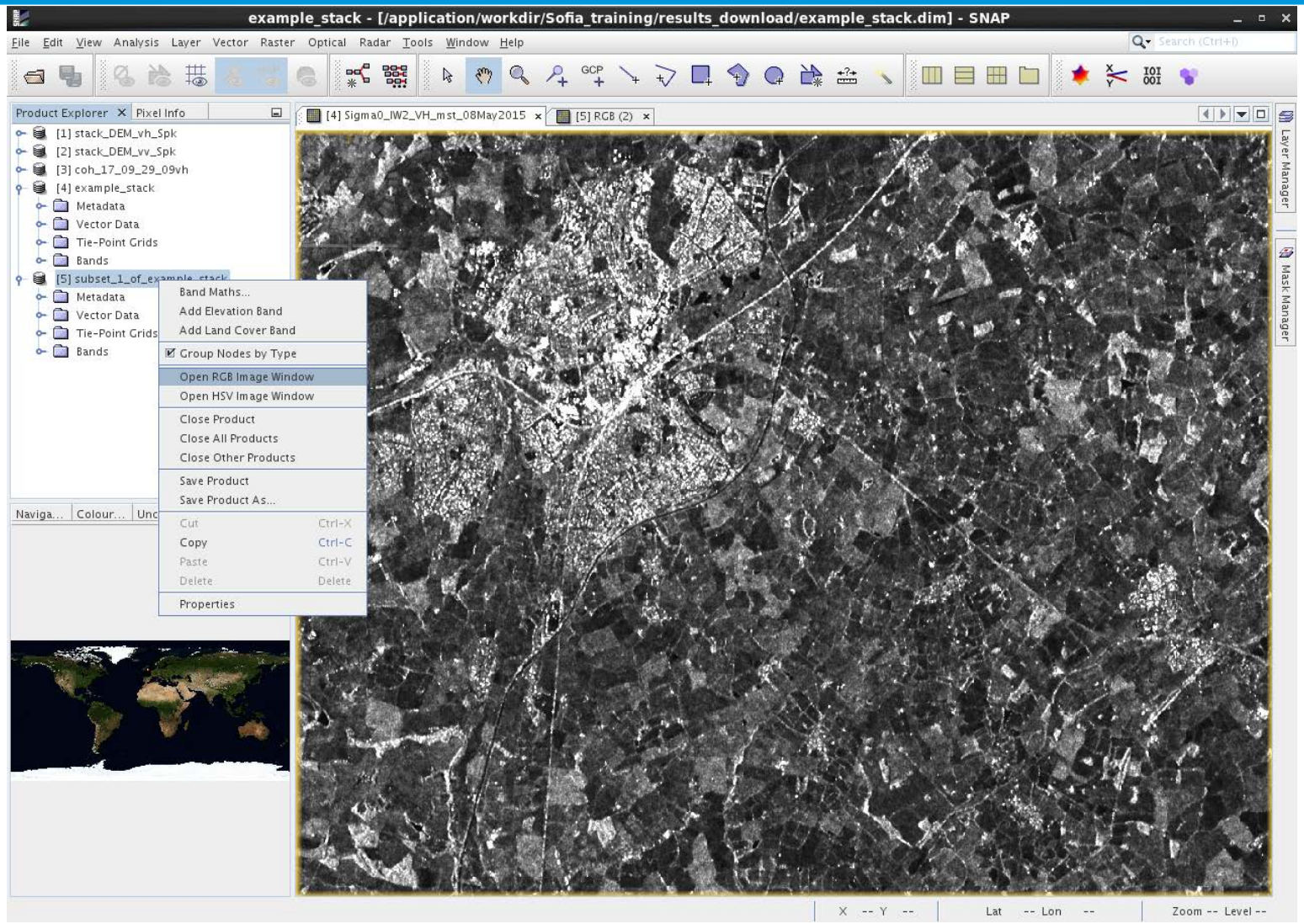
Spatial subset from view



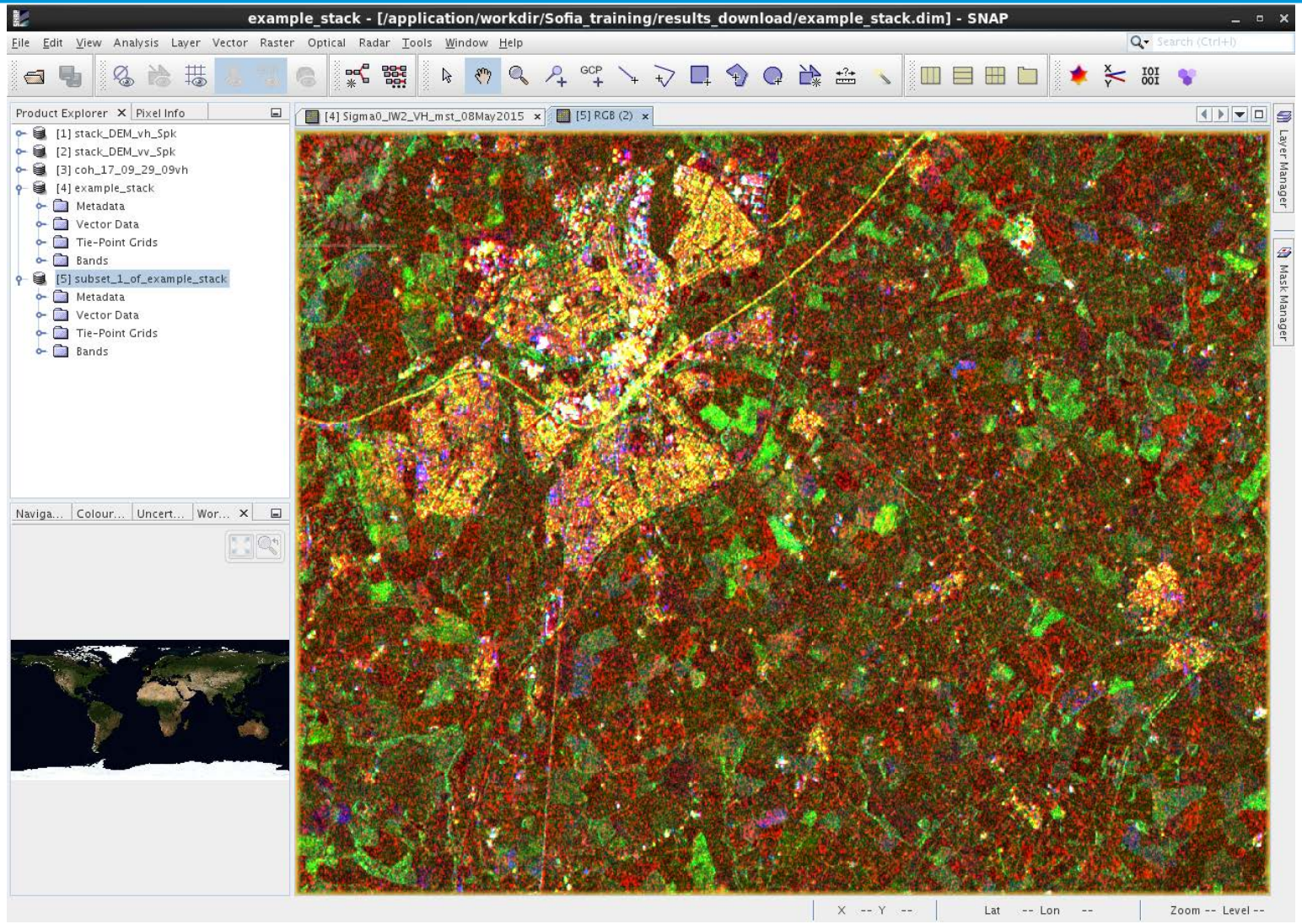
Spatial subset from view



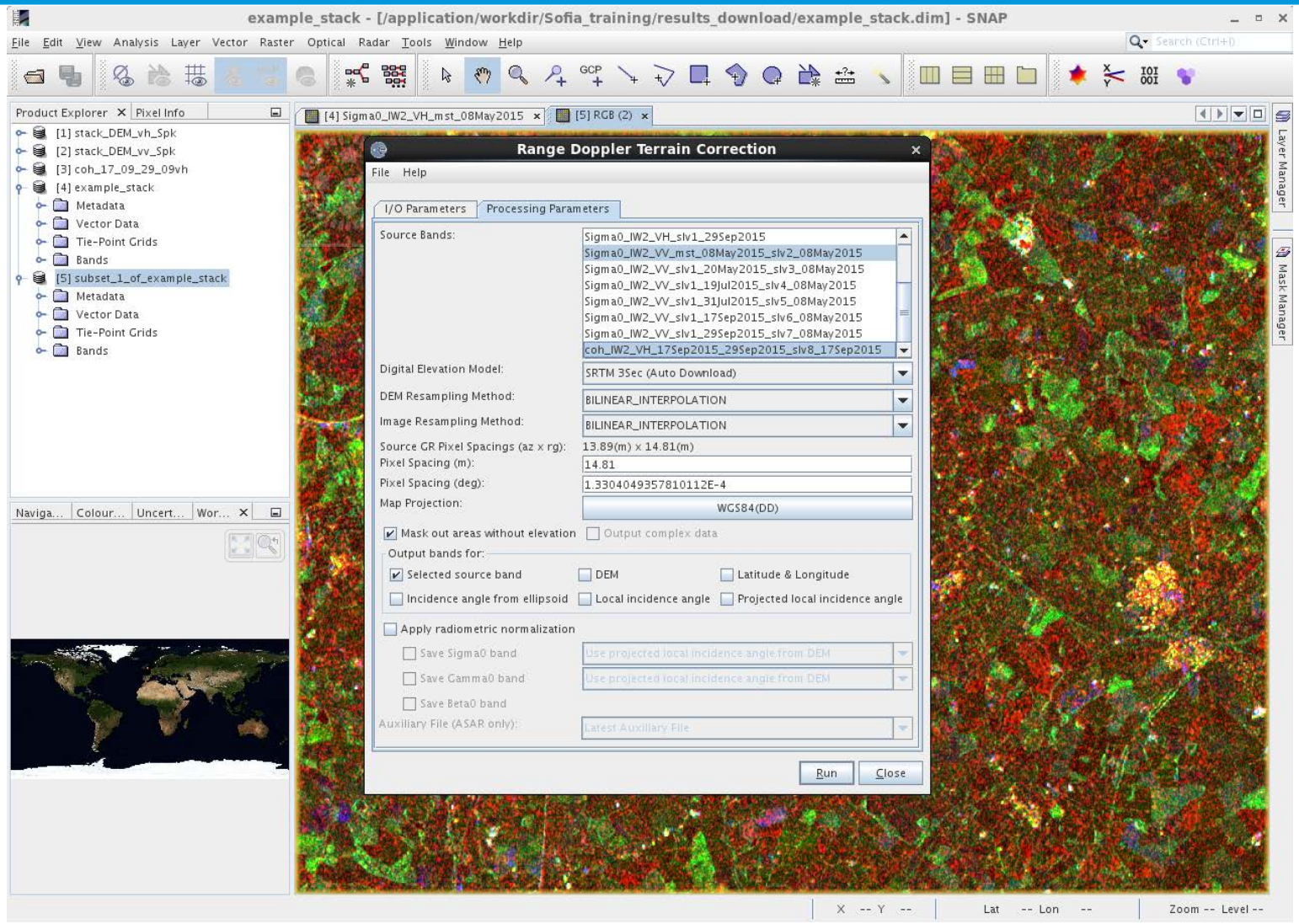
RGB composite



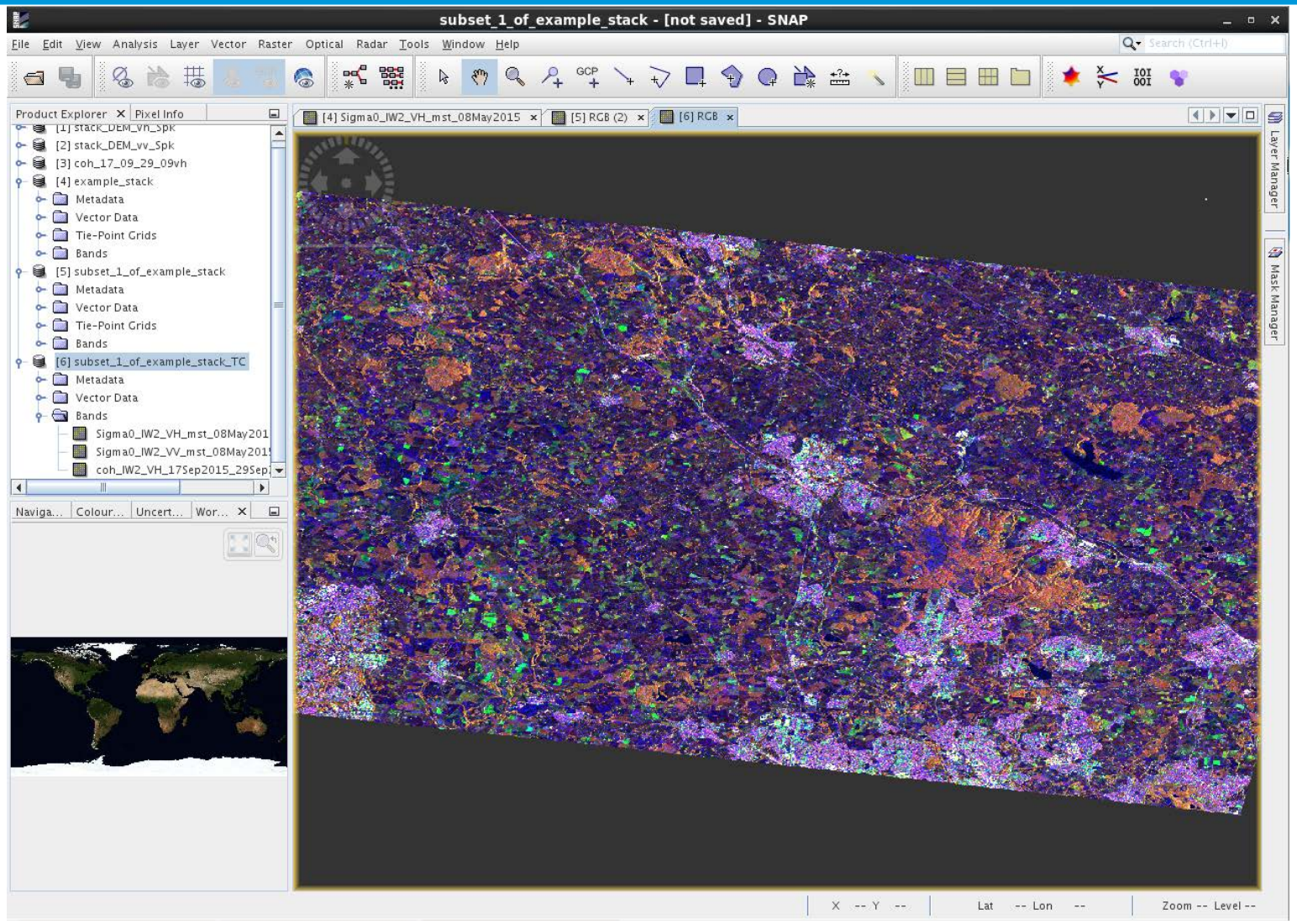
RGB composite



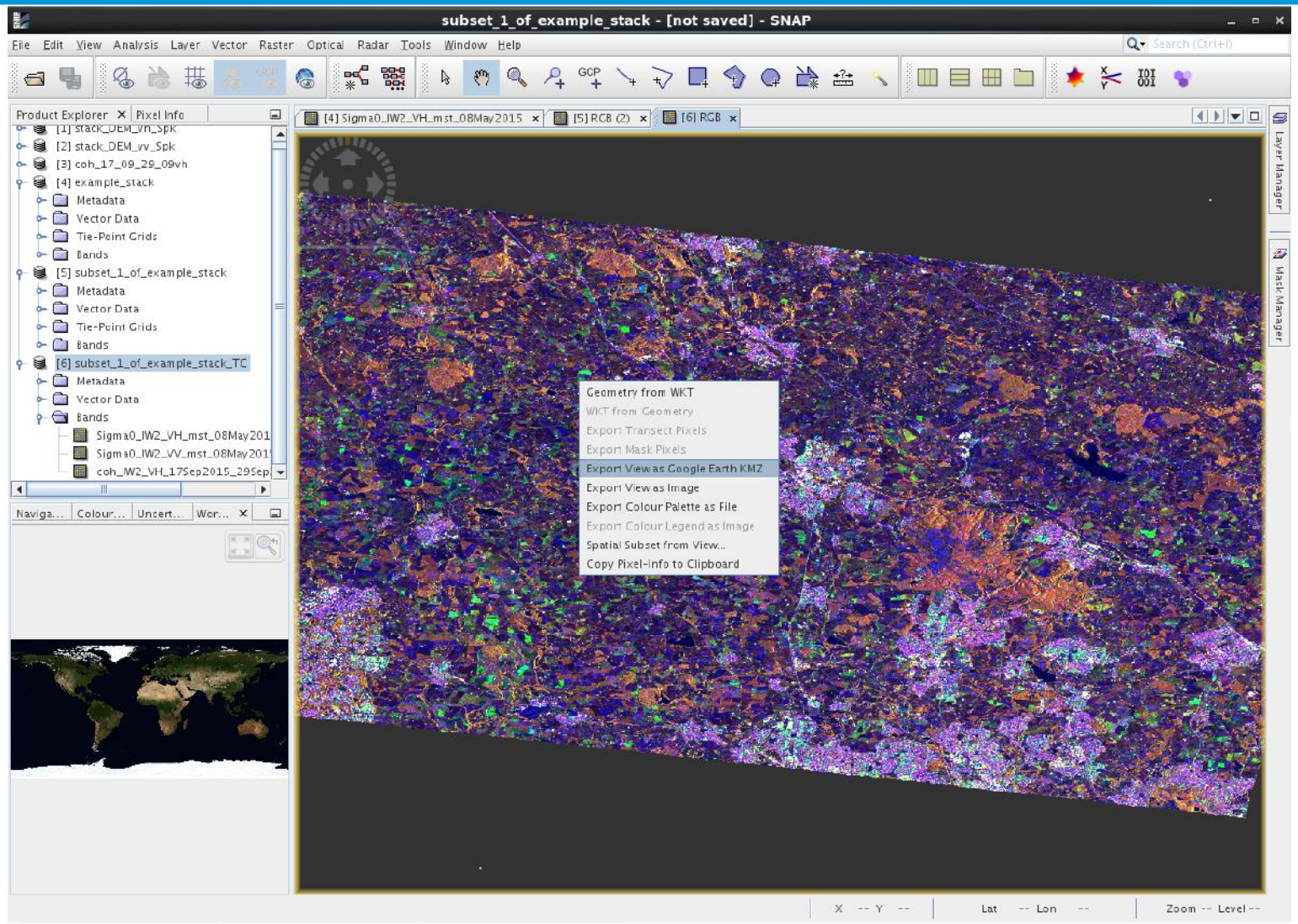
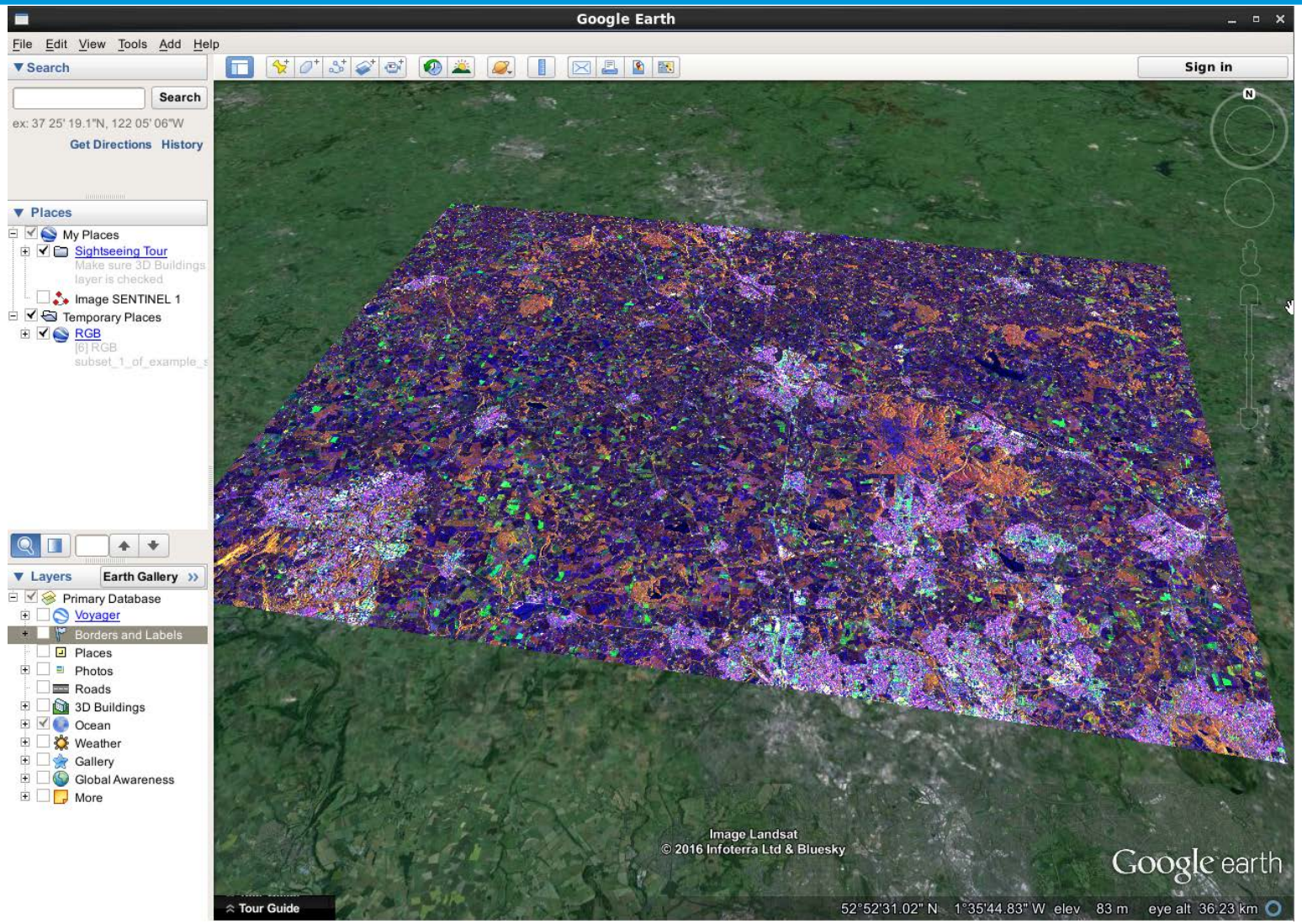
Terrain correction



RGB composite – terrain corrected



Export to kmz



Google Earth View