Compare Data Products

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Compare Data Products - 1

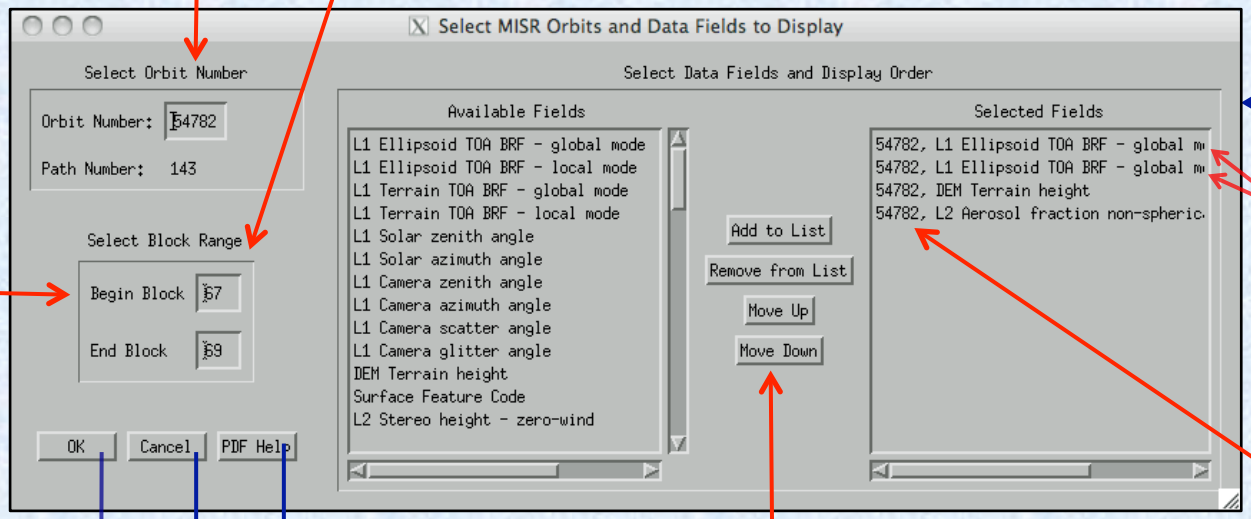
Objective: To display several user-selected, MISR data products side-by-side in separate panes of a larger window, all at the same 1100 m/pixel resolution. Also to query all these data products for their values with a single mouse click. Useful for studying the spatial variation of MISR data and relating data types to each other.

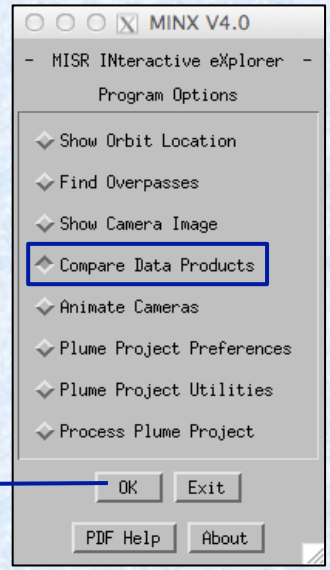
MISR data fields that can be selected for display in the "Available Fields" list include:

- **Global and local mode radiance data (level 1 GRP_TERRAIN or GRP_ELLIPSOID products)**
- **Radiometric cloud and glitter masks (level 1 RCCM product)**
- **Sun and camera angles (level 1 GP_GMP geometric parameters product)**
- **DEM terrain heights and surface feature codes (AGP ancillary geographic product)**
- **Cloud heights, winds and cloud masks (level 2 TC_STEREO and TC_CLOUD stereoscopic products)**
- **Aerosol optical depths, single scatter albedos, angstrom exponents and mixture sizes and shapes (level 2 AS_AEROSOL product) – a new aerosol product is expected to become available in 2015**
- **Surface BRF, DHR, NDVI and RPV parameters (level 2 AS_LAND aerosol surface product)**
- **Local, restrictive and expansive top-of-atmosphere albedos, both spectral and broadband (level 2 TC_ALBEDO albedo product)**
- **Cloud, smoke and dust masks (level 2 TC_CLASSIFIERS product)**

Compare Data Products - 2

First enter an orbit number to display - its path number is automatically updated. Then select beginning and ending MISR block numbers to display for all data fields. 4 to 9 blocks may fit on your screen; others will be accessible by vertical scrolling. Dialog controls at the bottom of each pane scroll with the data, so it's best to limit the number of blocks you display.





2 different cameras can be displayed by entering the same field twice – the cameras will be selected in the next step.

The orbit number is added to the field name so different orbits can be displayed and compared. You must select orbits from the same path.

Continue processing

Return to Main Menu

Display these instructions

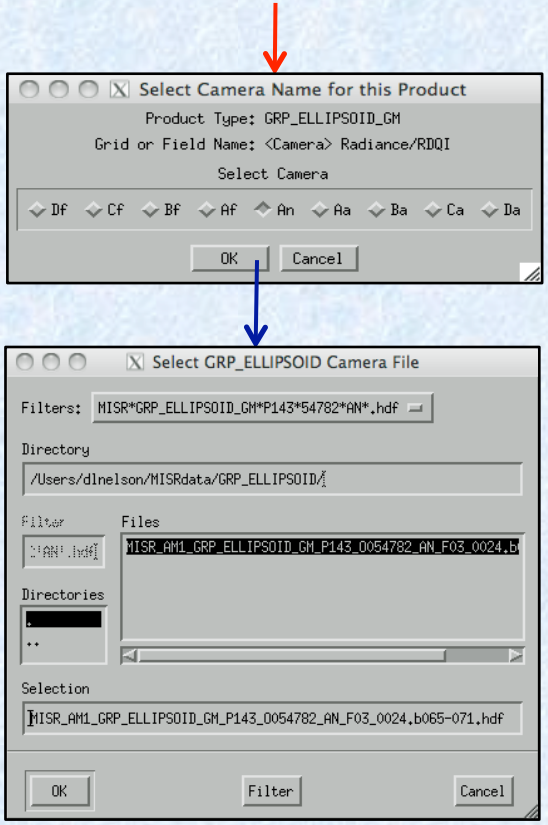
Select a data field to display from "Available Fields", then click "Add to List" to copy the name to "Selected Fields". Add more fields as needed. You can select several fields at once. 3 to 5 fields may fit on your screen – others you have loaded will be accessible by horizontal scrolling. Remove a field by highlighting it in "Selected Fields" and clicking "Remove from List". Or rearrange the order in which data fields will be displayed by highlighting a field and clicking the "Move Up" and "Move Down" buttons.

After the first field has been added to the "Selected Fields" list, editing of block numbers is disabled. To re-enable block numbers, you must first remove all entries in the "Selected Fields" list.

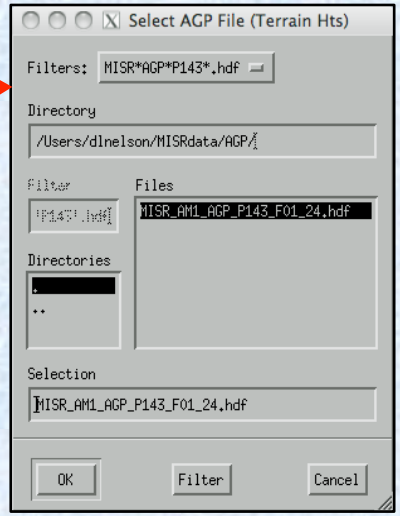
Compare Data Products - 3

Next a series of dialog boxes is presented in two passes over the selected products. In the first pass, select the MISR product files to load. File names are requested in the order they appeared in the “Selected Fields” list.

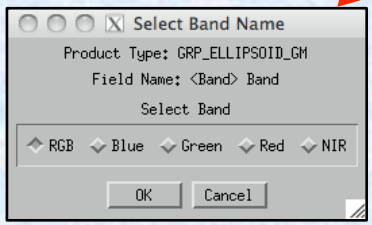
For level 1 product files that are divided into 9 camera files per orbit, a camera-name dialog is shown before the camera-file dialog. MINX will show only those file names in the camera-file dialog that match the camera name you entered in the camera-name dialog. Read the dialog title and text carefully to ensure you’re selecting parameters for the correct product. In the example on the previous slide, the second product type is also GRP_ELLIPSOID. The same pair of camera-name and camera-file dialogs will be repeated, allowing a different camera to be selected.

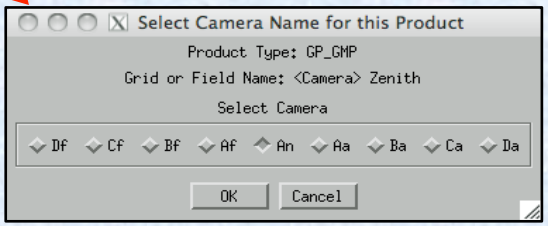


For most other product types, e.g. the AGP file containing DEM Terrain height on the preceding slide, only the file name is requested in pass 1.



In the second pass, select extra dimensions for each product. If a product has camera or band dimensions inside the file, dialogs will be shown where appropriate, in the same order as the products appeared in the “Selected Fields” list. Many products have no extra dimensions, and no dialog box will be shown for them. Dialog boxes for extra bands or cameras look like this:





Proceed to the next slide to see displayed results

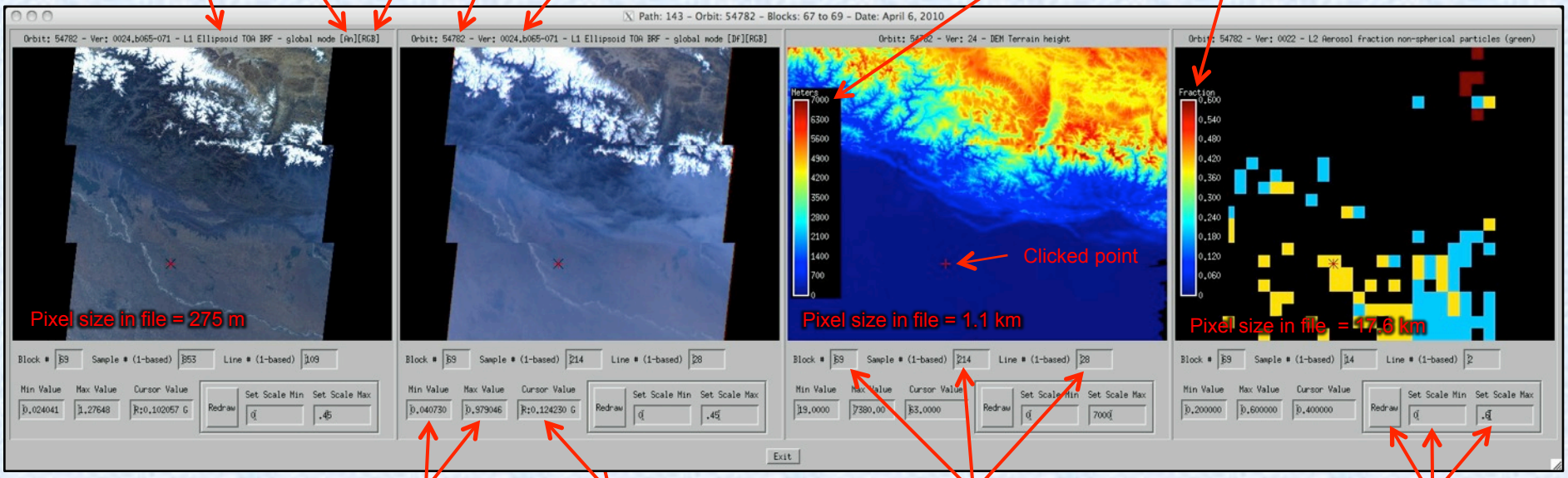
Compare Data Products - 4

Main "Compare Data Products" window and 4 product panes for 3 blocks of orbit 54782 over the Himalayas and Ganges Basin. Panes 1 and 2: radiance data for An and Df cameras respectively; pane 3: terrain heights; and pane 4: fraction of aerosol particles that are non-spherical.

Smoke is more evident at right center on pane 2 in the oblique Df image than in the vertical An image of pane 1. Dust streaming SE off the river channel near the clicked point is visible only in the Df image. The "Aerosol fraction non-spherical" product detects the dust: it shows more spherical particles in the smoky region and more non-spherical particles in the dusty region.

Data field Camera Band Orbit # Product version #

Color bars are automatically generated and are updated when you change scales.



All products are converted to 1100 m/pixel resolution for display purposes.

Minimum and maximum values in each pane are displayed.

Clicking in any pane displays a cursor symbol and a data value in all panes at the clicked point.

Clicking also shows the MISR block/sample/line coordinates appropriate to the native resolution of the pane's data.

The minimum and/or maximum of the color scale for each pane can be changed causing the pane to be redrawn.