

# An Improved Method for Trending of Features on Aeromagnetic Maps

# FUGRO AIRBORNE SURVEYS

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Original data gridded using Akima bicubic spline. The line direction is shown with the black arrow. The feature perpendicular to the lines at A is well trended, but the oblique feature, i.e. at B, is poorly trended.

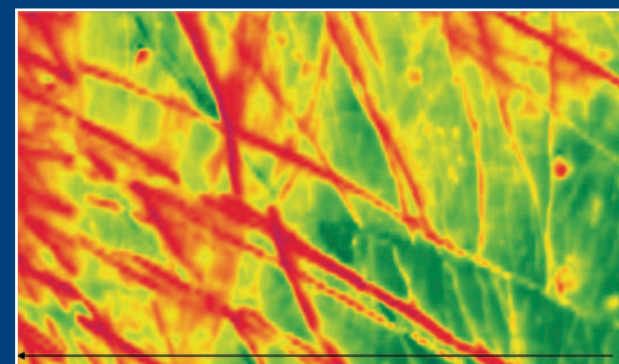
Boudinage artifacts due to aliasing.

First version of *T*Rending using *S*Tstructure (*TRUST*grid) produced a well trended image that honours the line data.

However, the analytic signal amplitude (ASA) image from the first *TRUST*grid shows flight line artifacts.

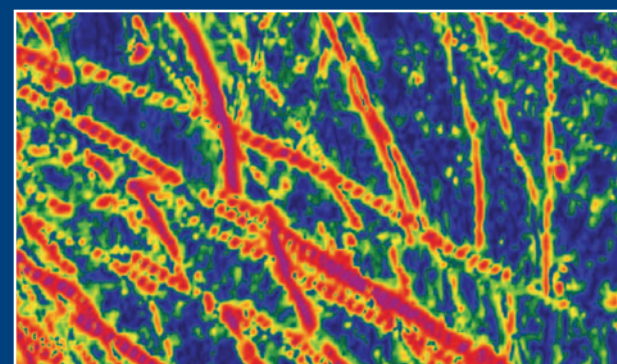
The new version of *T*Rending using *S*Tstructure (*TRUST*grid) also produces a well trended image that also honours the line data.

The new analytic signal amplitude (ASA) image shows no flight line artifacts.



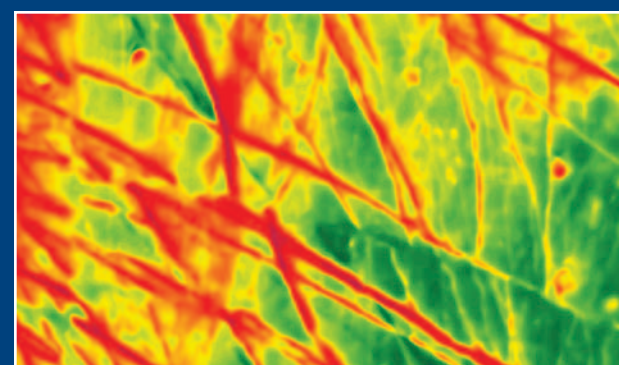
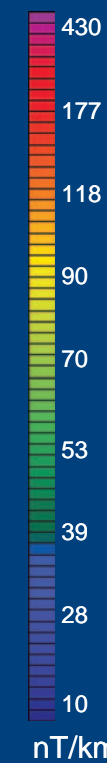
Akima TMI

This image shows poor trending of the narrow total magnetic intensity (TMI) features that are oblique to the flight direction (shown with a black arrow).



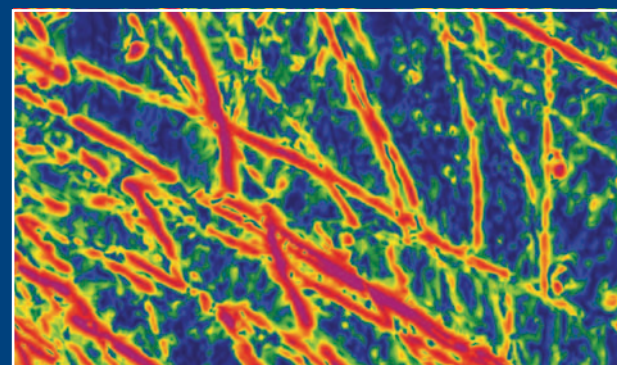
Akima ASA

The analytic signal amplitude (ASA) image from the AKIMA grid further highlights the poor trending.



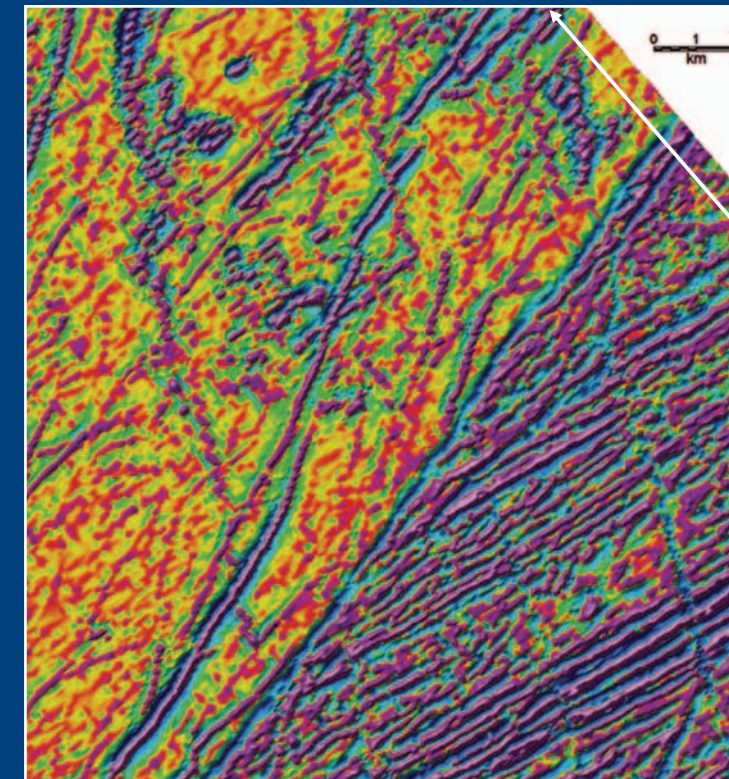
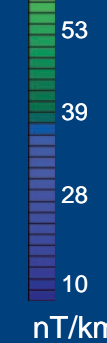
*TRUST*grid TMI

This image shows good trending of TMI features oblique to the flight direction.

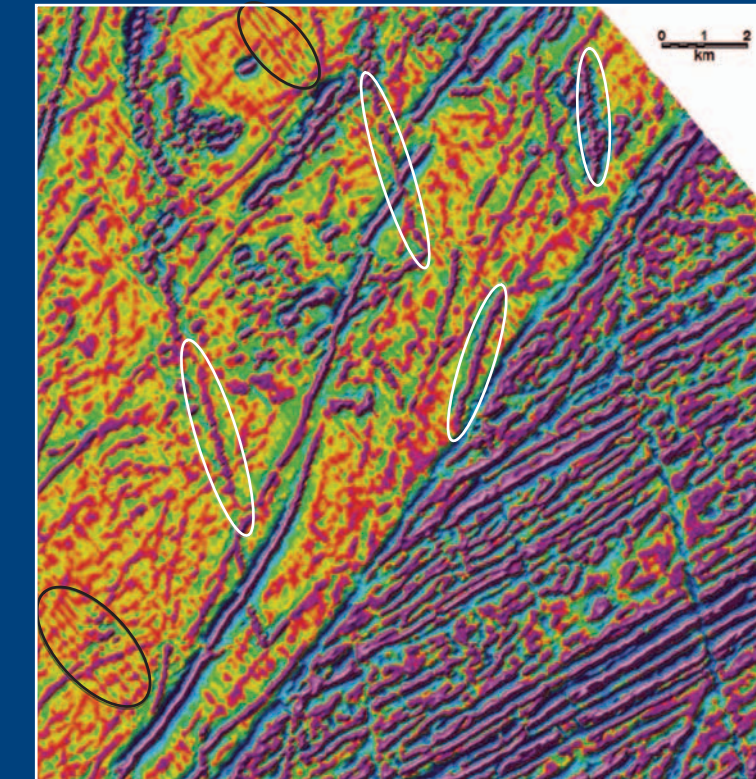


*TRUST*grid ASA

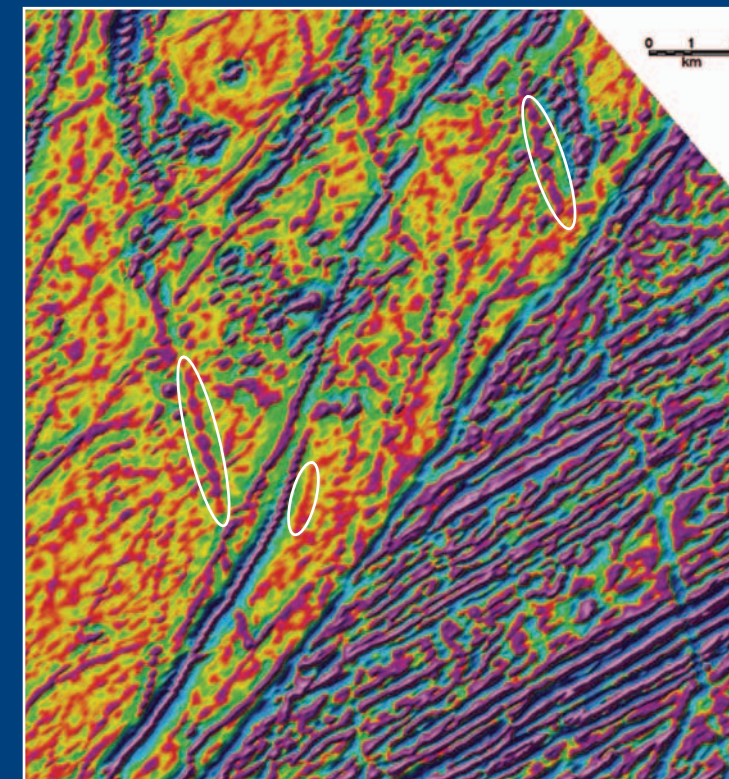
Good trending is evident on the ASA image derived from the new *TRUST*grid procedure with no flight line artifacts. Widths will better reflect depths.



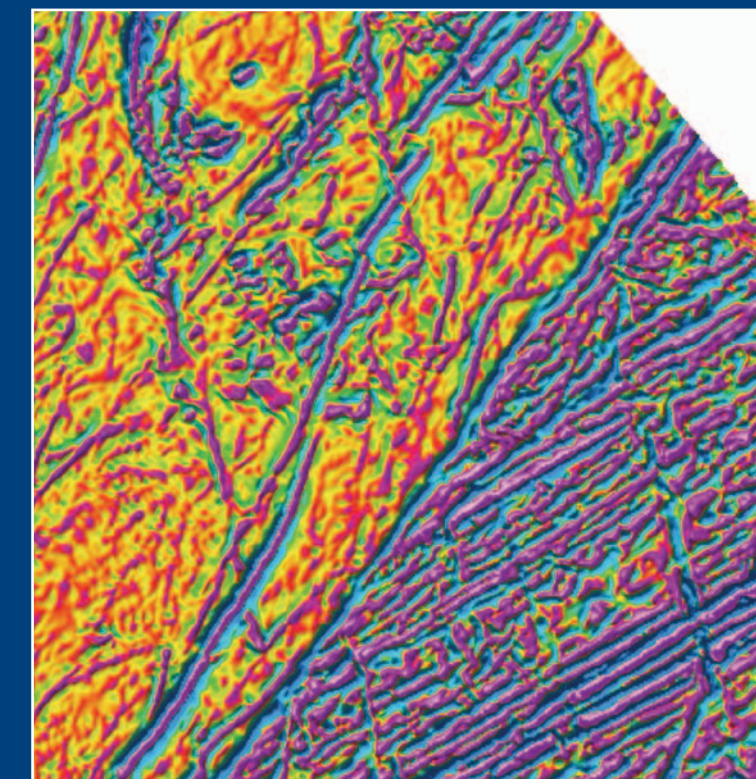
Short wavelength residuals for a minimum curvature grid of the Kapuskasing-Chapleau survey. There is poor trending on a number of features, particularly those trending obliquely to the flight direction (shown with a white arrow). This image is taken from Reford, (2006).



Short wavelength residual for the Kapuskasing-Chapleau survey from a grid generated using the method of Hardwick (1999). This method uses measured horizontal gradients. The trending has improved on the features highlighted with white, but flight line artifacts have appeared at the locations highlighted in black. This image is taken from Reford, (2006).



Short wavelength residual for the Kapuskasing-Chapleau survey from a grid generated using the method of Nelson (1994). This method uses measured horizontal gradients. There is some improvement in the areas highlighted with white. However, there are other locations where the trending is poor. This image is taken from Reford, (2006).



Short wavelength residual for the Kapuskasing-Chapleau survey from a grid generated with the new *TRUST*grid process. Almost all features show an improved trending. The colour stretch is identical to the previous three figures, but the sun shading is slightly different. Also, the grid cell size is larger.

