



The Abdus Salam
**International Centre
for Theoretical Physics**



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Earthquake Tectonics and Hazards on the Continents

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Remote sensing practical

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Earthquake Tectonics and Hazards on the Continents

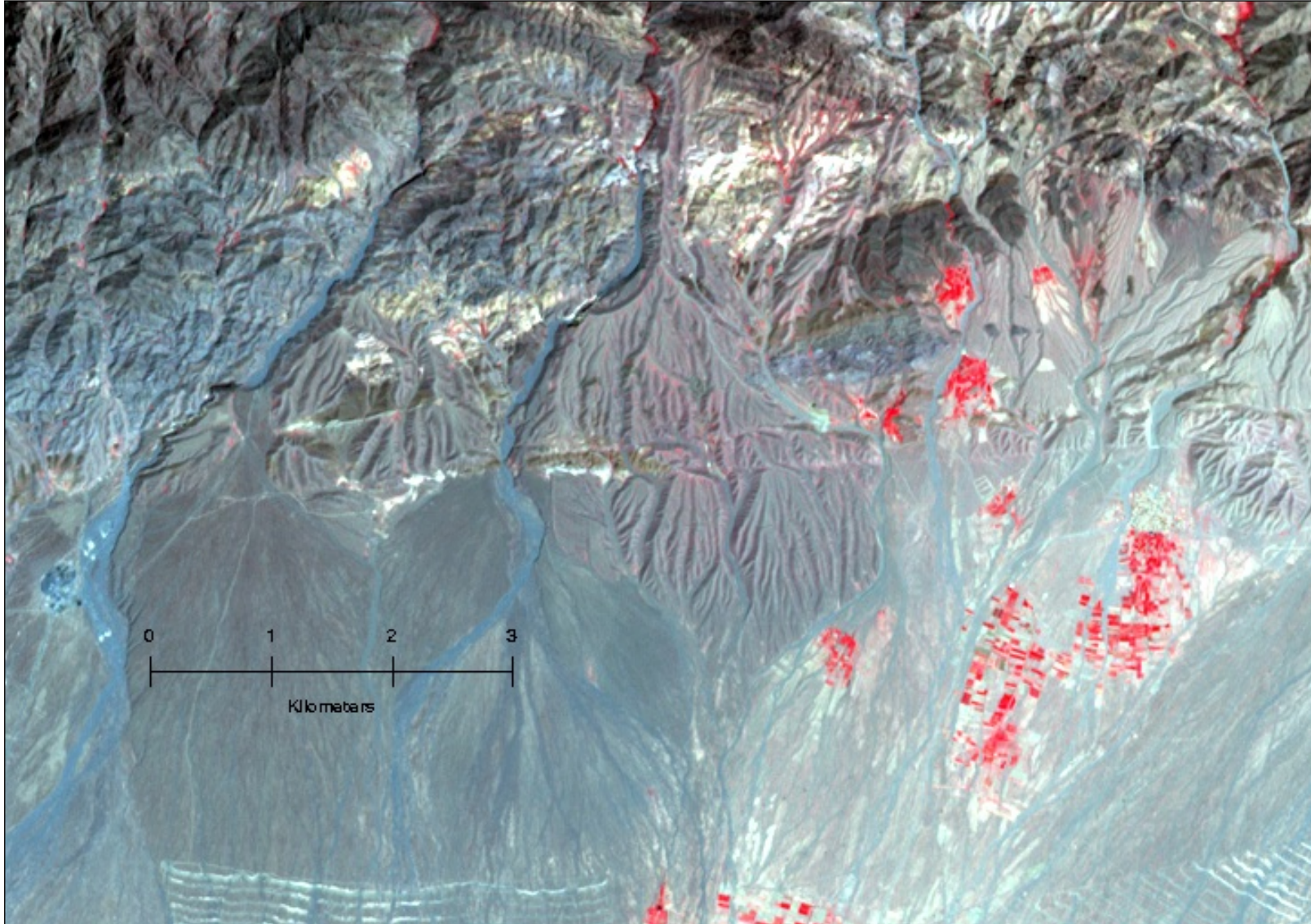


Figure 1. ASTER (RGB 321) image of area of active strike slip faulting.

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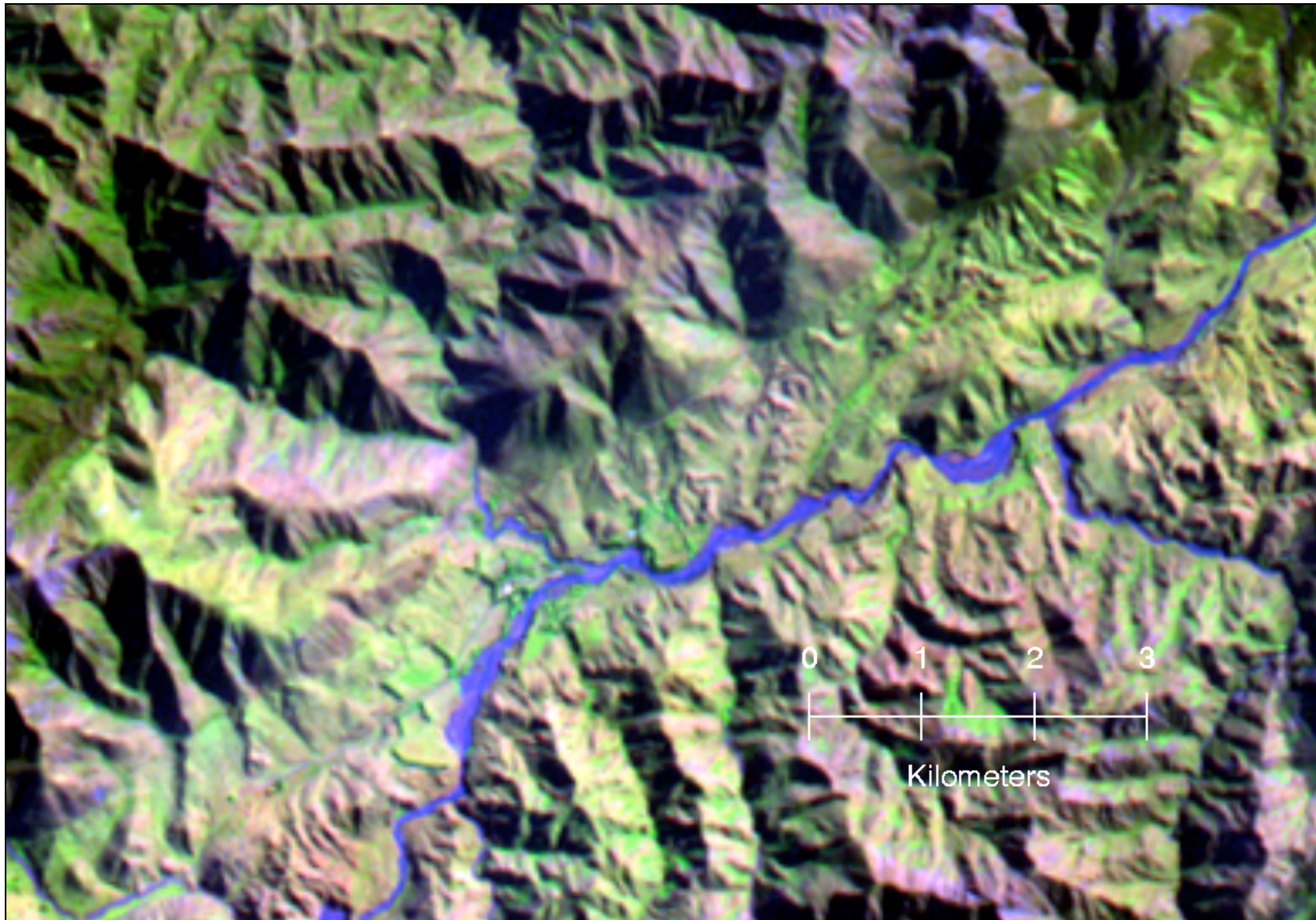


Figure 2. Landsat-7 ETM (RGB 541) image of area of active strike-slip faulting.

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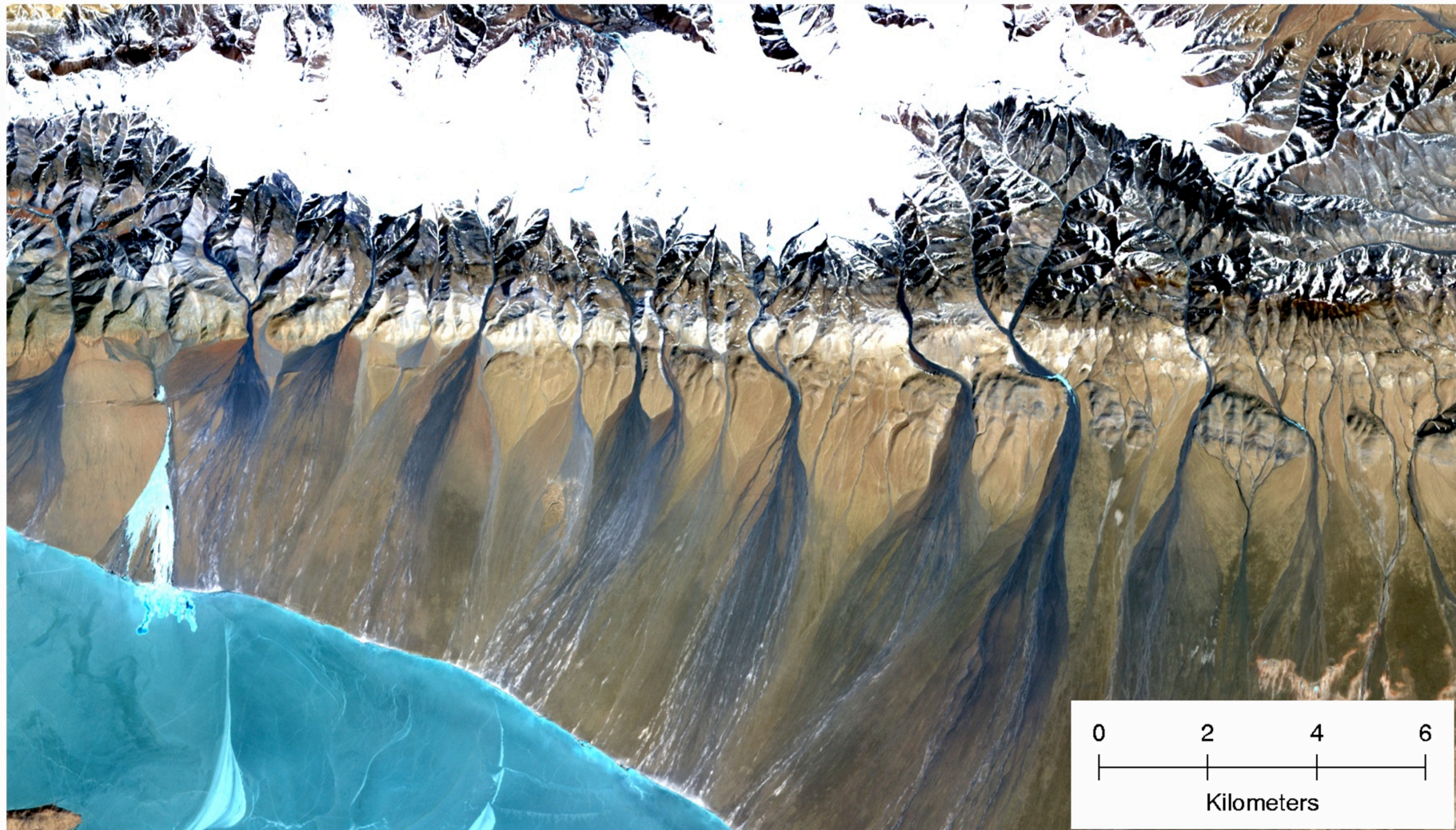


Figure 3. ASTER (RGB 321) image of area of active strike-slip faulting

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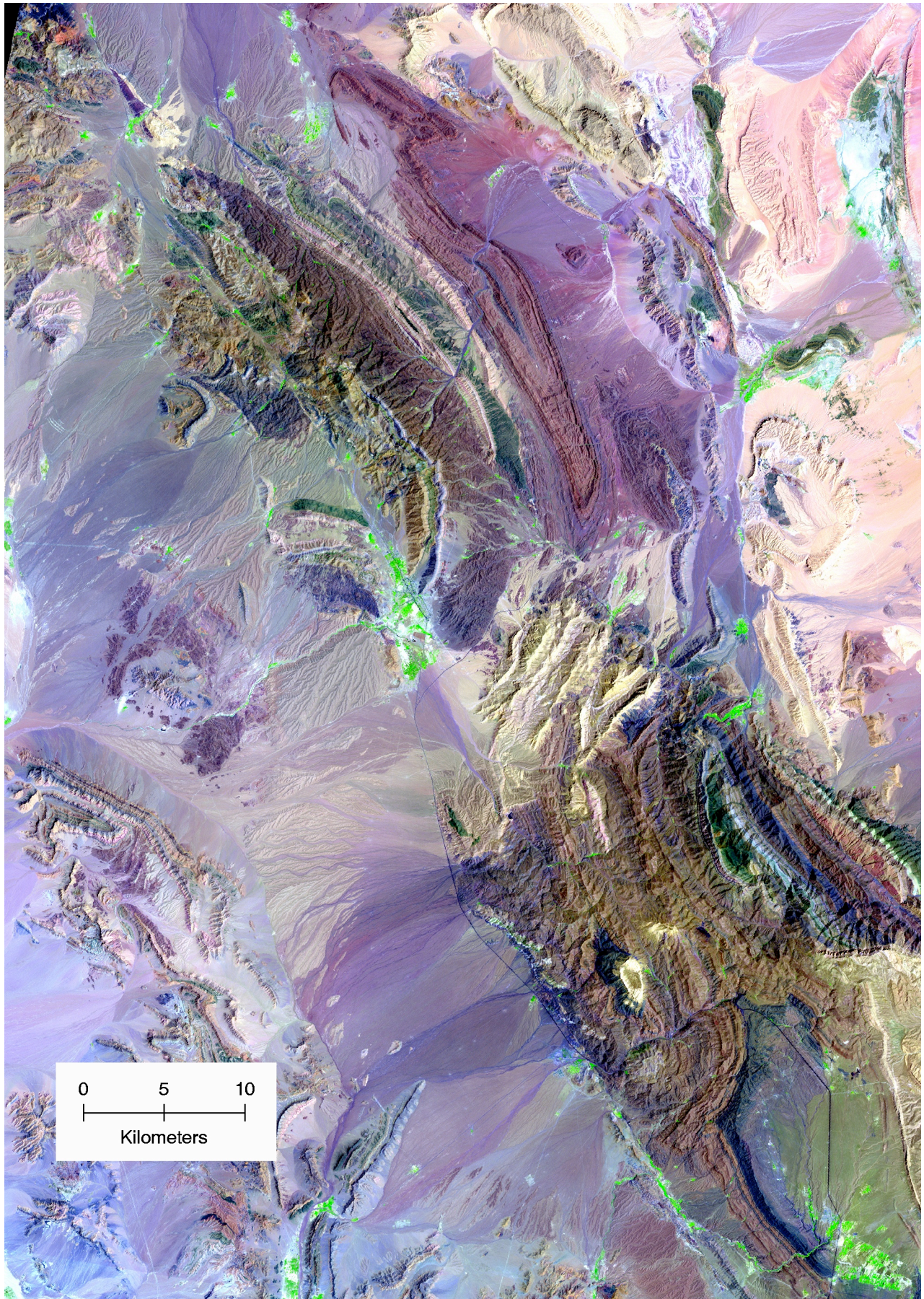


Figure 4. Landsat-7 ETM image (RGB 541) of area of active strike-slip faulting.

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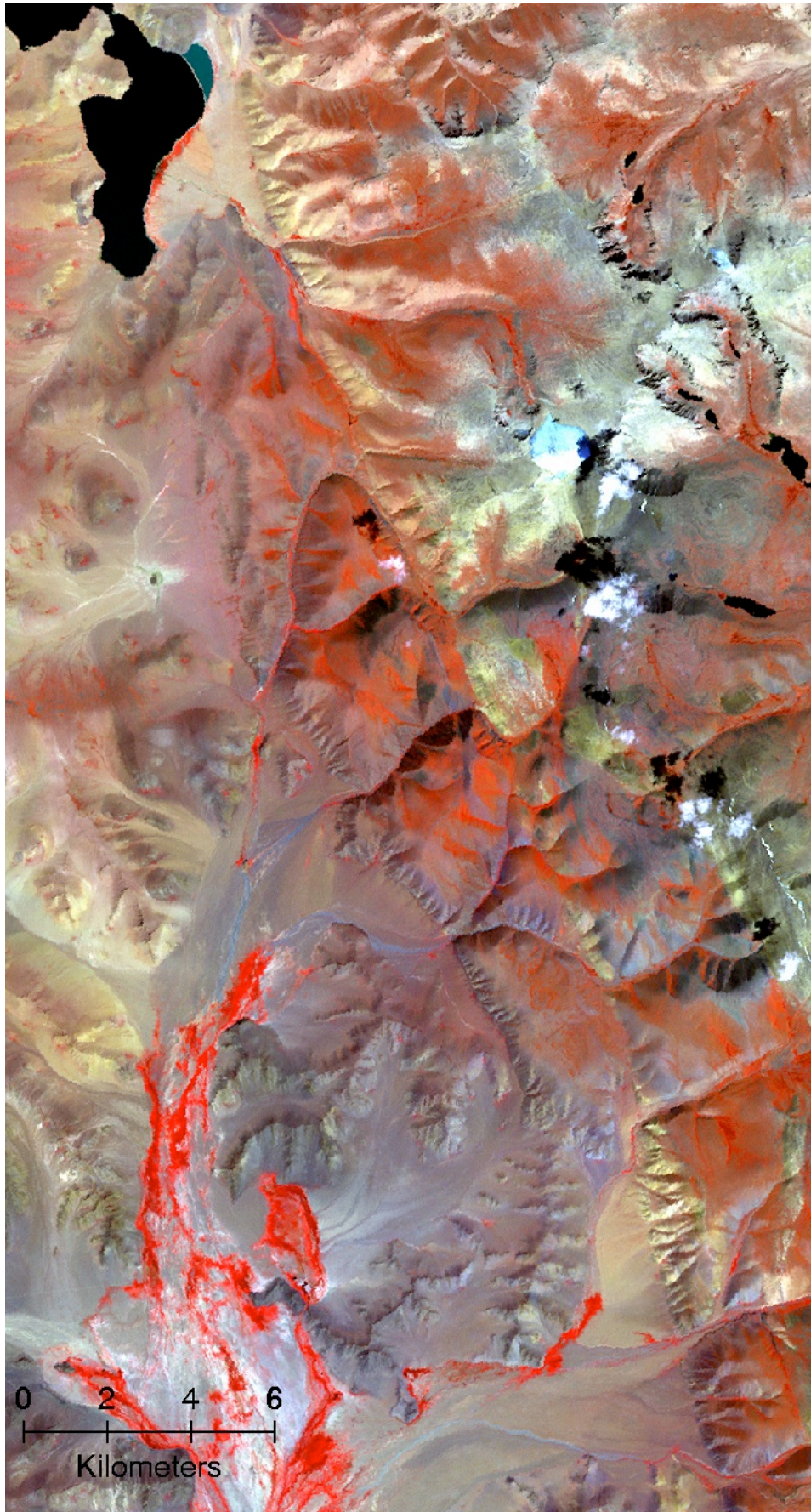


Figure 5. Landsat image (RGB 431) of an area of active strike-slip faulting.

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Remote Sensing of Strikeslip Faults

Figures 1-5 show false colour composite images of five areas of active strike-slip faulting. North is at the top of the image in each case.

1. In at least one of the images, mark an example of the following features: (i) an active alluvial fan, (ii) an inactive alluvial fan, (iii) offset drainage, (iv) offset or shutter ridges, (v) an offset alluvial fan, (vi) vegetation aligned along a fault, (vii) a pull-apart basin, and (viii) a restraining bend.
2. Draw the locations of the faults on the images and mark the sense of motion in each image, noting the observations on which your choice of motion is based.
3. One of the images is in the southern hemisphere (the rest are in the northern hemisphere). Which one?

We will talk about where the images are located at the end of the practical.

N.B. The false colour images are constructed so that vegetation will have a characteristic colour. Wavelengths in the very-near infrared (VNIR: wavelengths in the approximate range 0.7-0.9 μm) are highly reflected by actively growing vegetation compared to the visible. Vegetation will therefore have the colour – red (R), green (G) or blue (B) – according to which of the primary colours of the display device the VNIR band is input

Images 1 and 3 are derived from ASTER data with band 3 (wavelengths in the range 0.76-0.86 μm) displayed in red, band 2 (0.63-0.69 μm) in green, and band 1 (0.52-0.60 μm) in blue; 2 and 4 are constructed from Landsat-7 ETM data with band 5 (1.55-1.75 μm) displayed as red, band 4 (0.75-0.90 μm) as green, and band 1 (0.45-0.52 μm) as blue. Image 5 is Landsat data with band 4 (0.75-0.90 μm) displayed as red, band 3 (0.63 - 0.69 μm) as green, and band 1 (0.45-0.52 μm) as blue.