

Supporting Information for

Vertical-displacement history of an active Basin and Range fault based on integration of geomorphologic, stratigraphic, and structural data

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Introduction

This file includes two additional figures. The first figure (S1) shows the knickpoint picks along Brush Canyon, which is located in "The Bend" area of the fault and is representative of the central part of the fault system. Here we show how knickpoints are selected: enlargement of specific stretches of the channel and changes in the aspect ratio of the image are usually necessary to be able to pick all knickpoints along the channel. Once all knickpoints have been identified in the channel, the difference in elevation between each knickpoint and the fault trace (Δe in eq. 1) is measured.

The second figure (S2) shows the location of all the channels, the profiles for the three channels used for calculations (#4, #5, and #6, which drain into the geothermal area in northern Dixie Valley), and an additional channel (#13), which is representative for the southern fault segment.

The coordinates of each channel mouth, and the elevation of all knickpoints picked in all channels, are given in Supporting Information File S2.

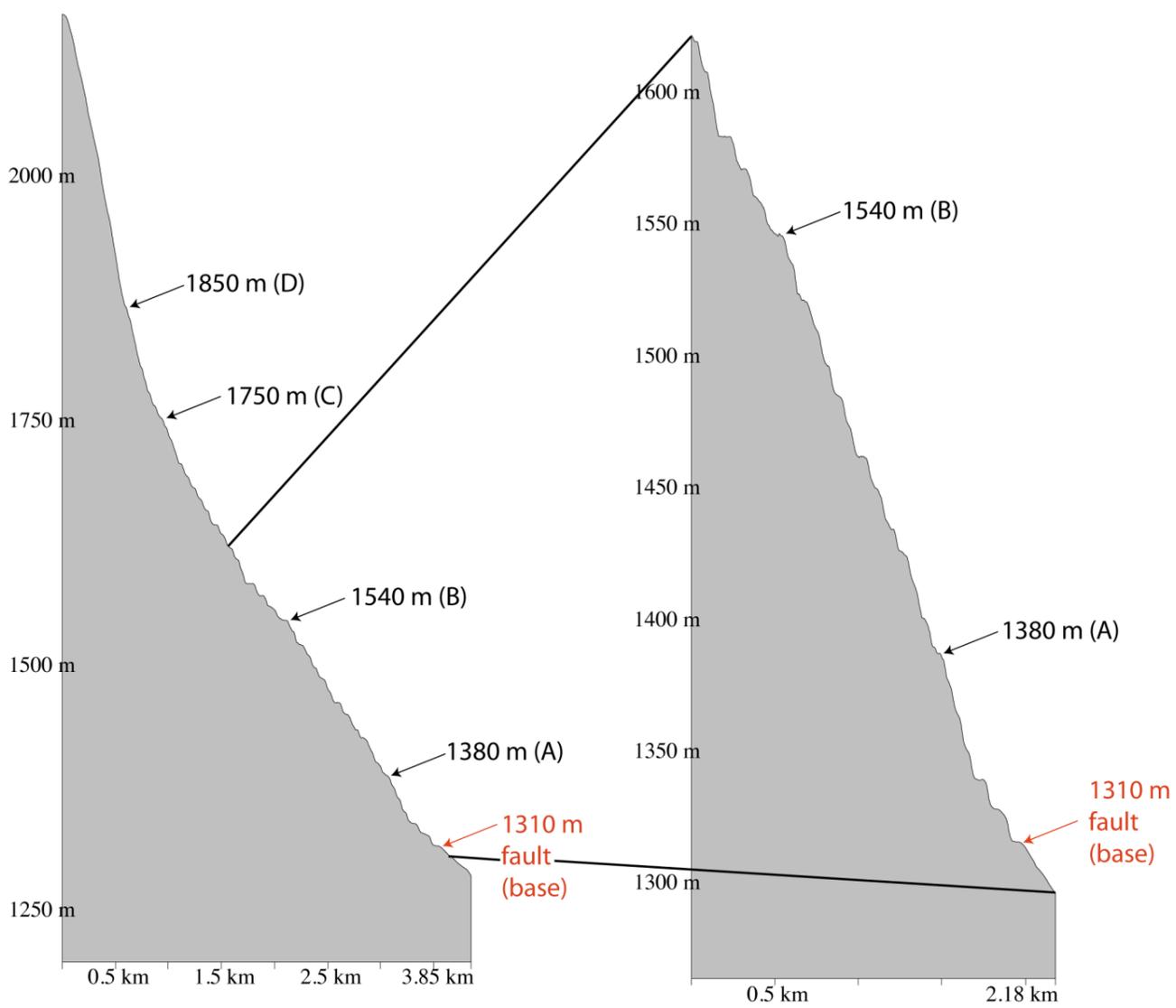
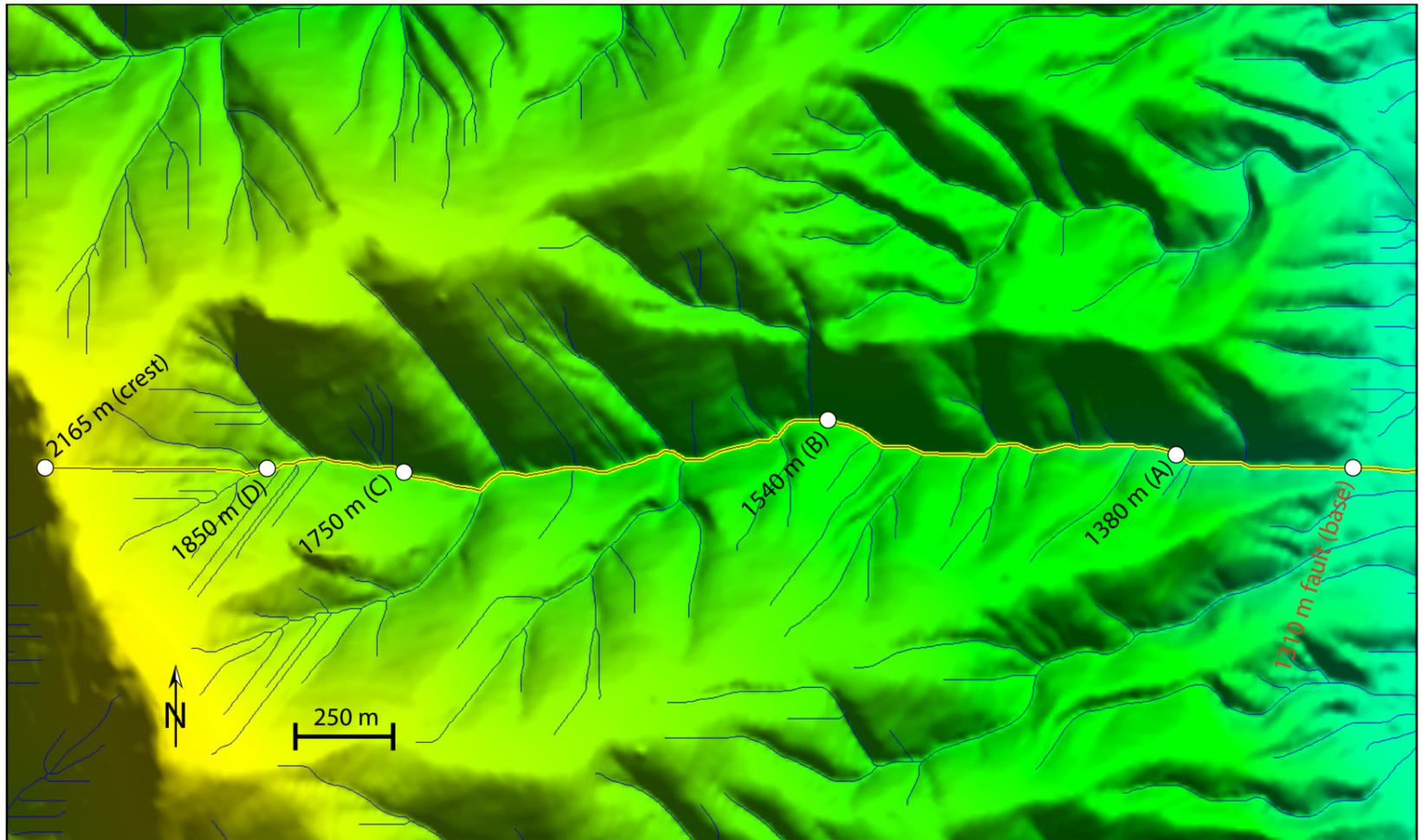
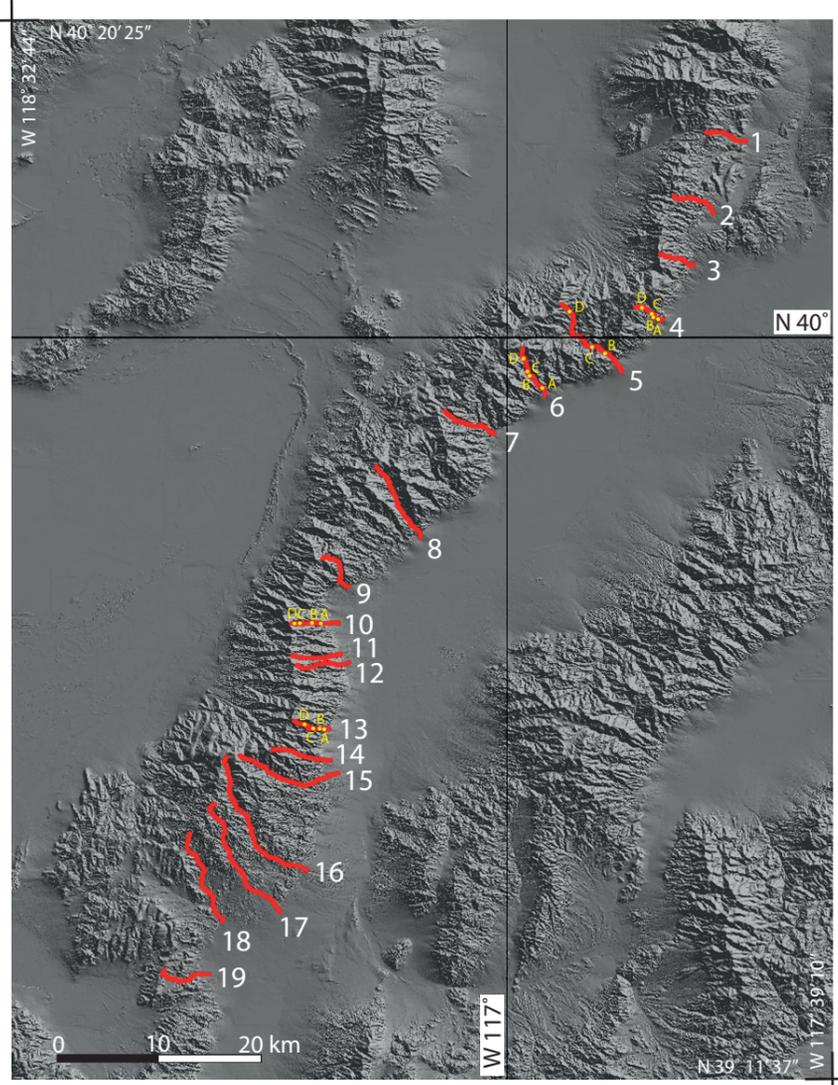


Figure S1. Brush Canyon: Example of canyon profile with picks of main knickpoints A, B, C, D. Profile on the right is an enlarged view of the lower reaches of the canyon. Small steps at ~ 10 m intervals, especially prominent on gentler slopes, are mostly due to the resolution limit of the DEM and have been ignored. This canyon is entirely within slates and phyllites.



channel path, with knickpoint

NAD 83, unprojected

Channel numbers are the same as in Supporting Information file S2, and channel mouth coordinates are also in the same file. Named channels are as follows (the other channels have no formal name):

- 3 = Old Man Canyon
- 5 = Cottonwood Canyon
- 6 = Corral Canyon
- 7 = White Rock Canyon
- 8 = Cottonwood Canyon
- 9 = Wood Canyon
- 10 = Brush Canyon*
- 11 = Job Canyon
- 12 = Rough Creek Canyon
- 14 = Coyote Canyon
- 15 = East Lee Canyon
- 16 = Elevenmile Canyon
- 17 = La Plata Canyon

* The detailed map and channel profile for this canyon are in fig. S1.

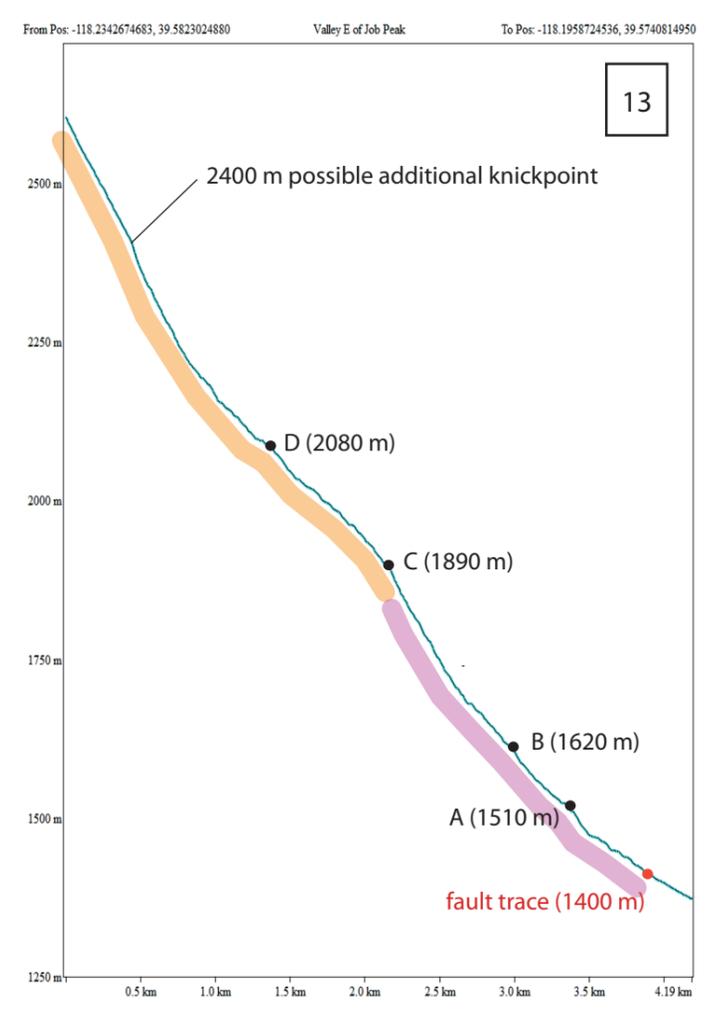
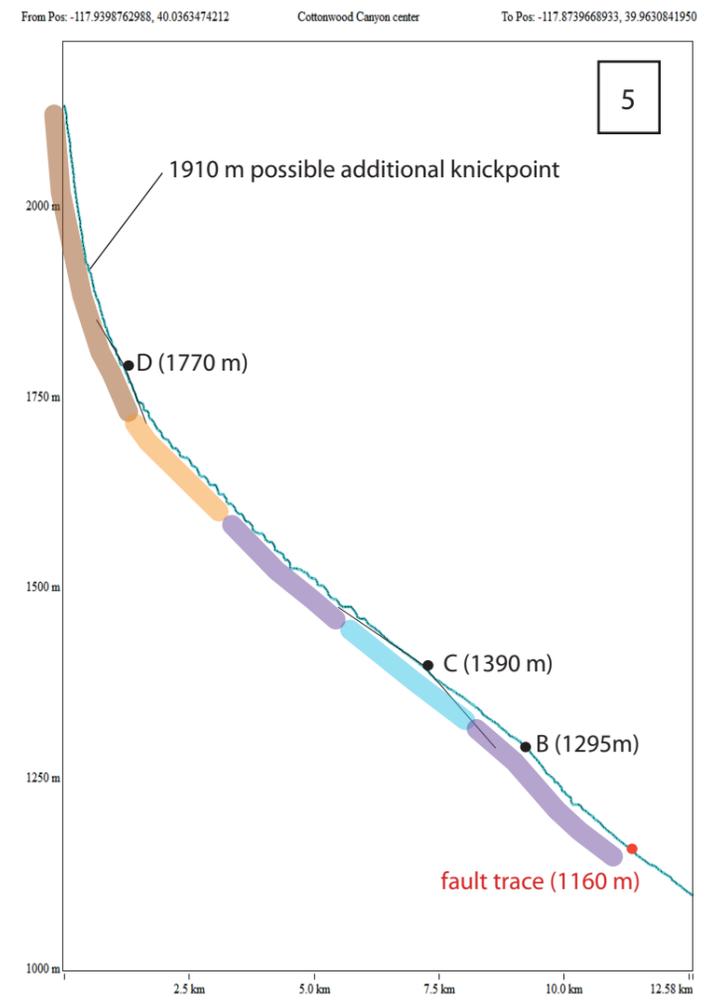
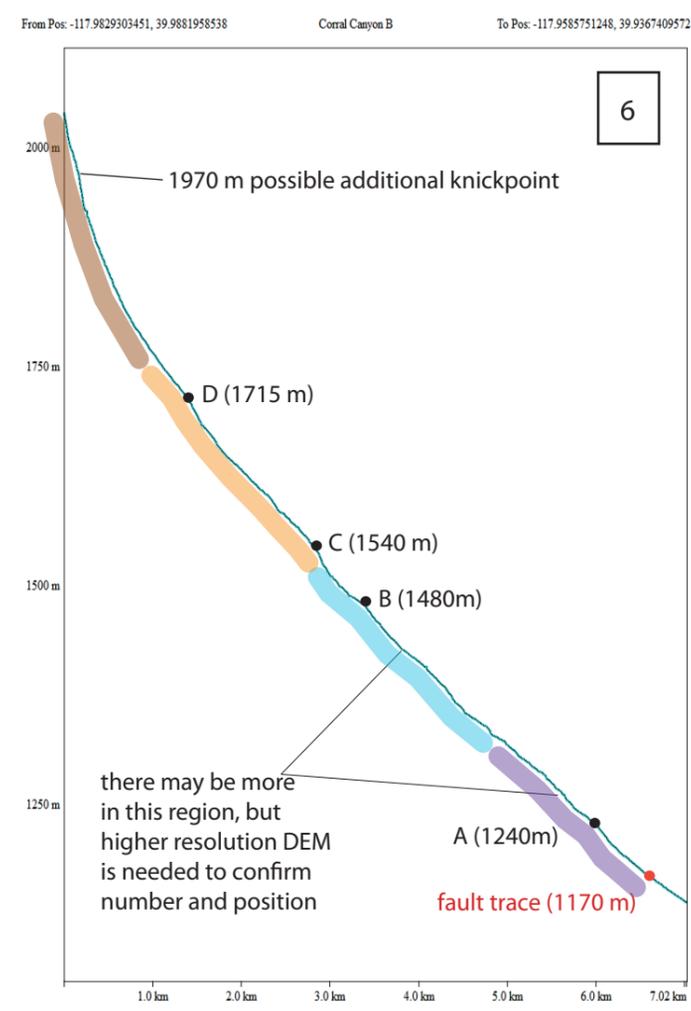
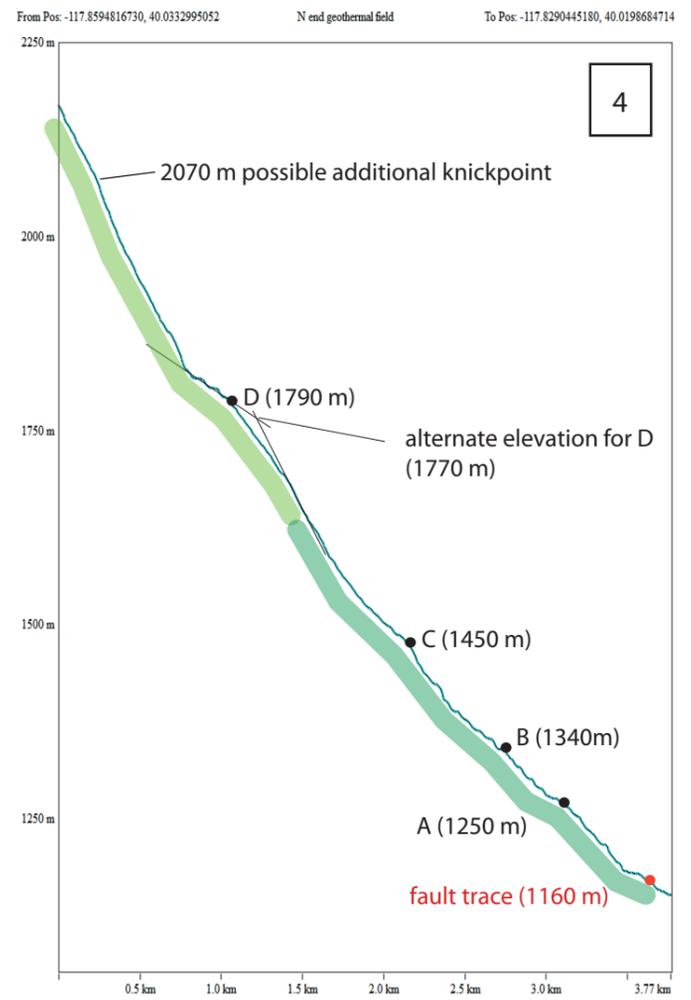


Figure S2



[†] from Willden and Speed (1974), Johnson (1977)