

Electronic Supplement 2:
Captions for Supplemental Figures 1–2
Captions for Online Color Figures 7, 8, 10
for

Recent and Long-Term Behavior of the Brawley Fault Zone,
Imperial Valley, California: An Escalation in Slip Rate?

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SUPPLEMENTAL FIGURE CAPTIONS

Supplemental Figure 1

Log of the south wall of trench BFH1 West. Units numbered 200 and above are inferred to be modern anthropogenic fill. Carbon-14 sample sites are denoted by open circles. Also shown is a log of a second exposure of the F1w fault zone, ~40 cm south of the main exposure. The deepest part of the exposure, shown without a photomosaic background, could not be logged in detail; on the last day that the trench was open, a backhoe was used to deepen the trench, in order to expose as much section as possible. After the deeper section was exposed, there was only enough time to sketch the main contacts before that part of the trench collapsed. Prior to the deepening of the trench, an auger borehole was dug into the floor of the trench, in order to accurately measure the depths to key contacts on the downthrown side of F1w. From the combination of these depth measurements and the sketch, the information shown on the deeper portion of the log should be correct, although details were invariably missed.

Supplemental Figure 2

Log of the south wall of trench BFH1 East. Units numbered 200 and above are inferred to be modern anthropogenic fill. Carbon-14 sample sites are denoted by open circles; stratigraphic positions of the two OSL sample locations are designated by filled black circles.

FIGURE CAPTIONS FOR ONLINE COLOR FIGURES

Online Color Version of Figure 7

Stratigraphic profile across fault F2 at Harris Road inferred from auger boreholes at Site BFH2. Unit colors in this figure are keyed to the colors in Supplemental Figures 1–2.

Online Color Version of Figure 8

Southern Salton Trough deltaic system, based on DEM imagery. Color contours indicate elevation; each color band represents a 5–10 m change in elevation. Sections of some contours are highlighted with thin black lines for improved visibility. Red contour line corresponds to the elevation of 12 m above mean sea level, which represents the highstand shoreline of Lake Cahuilla. Note the location of the modern delta, which is interpreted to have formed initially in response to the 1905–1907 filling of the Salton Sea; slow retreat of the lake combined with regular flow of the New and Alamo Rivers has built this modern delta that is prograding into the Salton Sea. In addition to the modern delta, four prehistoric delta lobes have been interpreted on this DEM: deltas N1 and N2 on the New River, and deltas A1 and A2 on the Alamo River. Main faults are mapped in black. SMF: Superstition Mountain fault; SHF: Superstition Hills fault. Modified from Ragona (2003).

Online Color Version of Figure 10

Retro-deformation of uppermost stratigraphy across fault F1w. Top: present configuration. Bottom: best-fitting restoration of the section to its position immediately after deposition of Unit 160. 87 mm of vertical displacement have been “undone”; we find that “undoing” a vertical displacement of anywhere in the range 87 ± 8 mm provides a reasonable restoration, but discrete vertical displacements that are larger or smaller than that range yield less plausible restorations.