

## Title

# Discontinuous surface ruptures and slip distributions in the epicentral region of the 2021 Mw7.4 Maduo earthquake, China

Figure S1

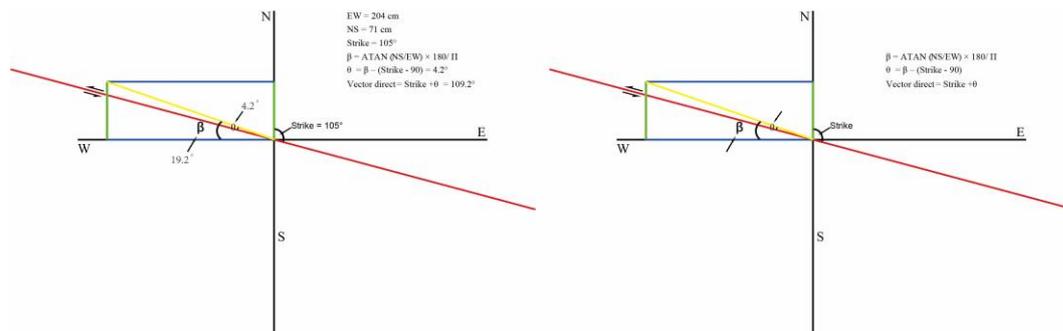


Figure S1. The sketch map demonstrates the procedure to calculate the slip vector of displacement from the Optical correlation image.

Figure S2

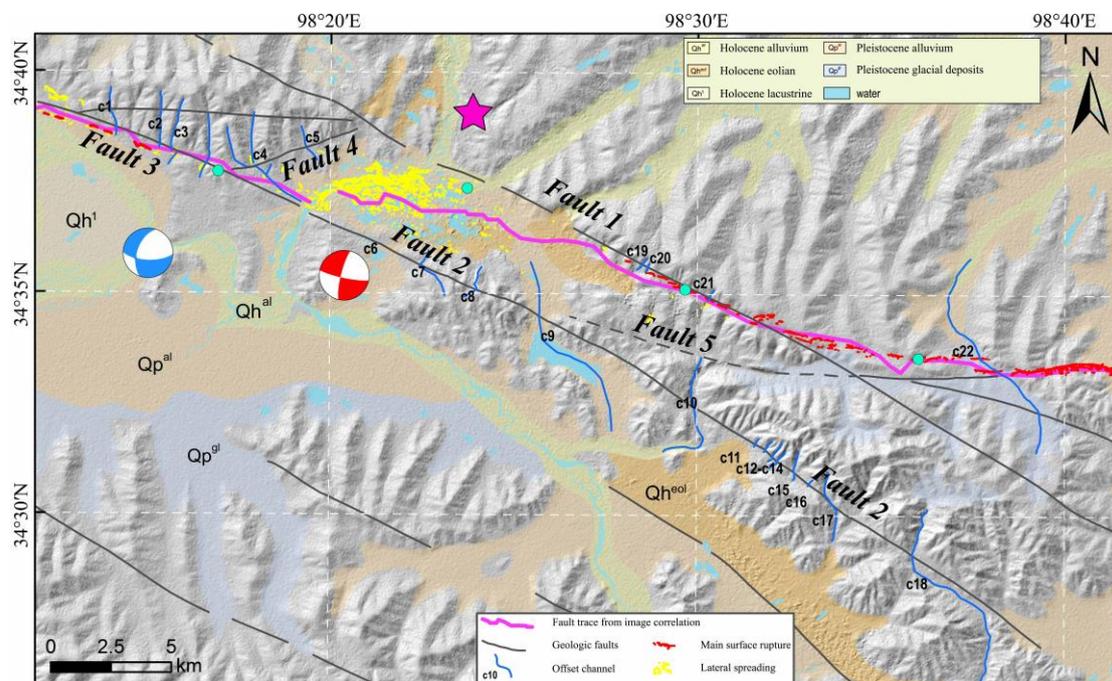


Figure S2. Displaced channels distribute along the geomorphic fault.

**Figure S3**

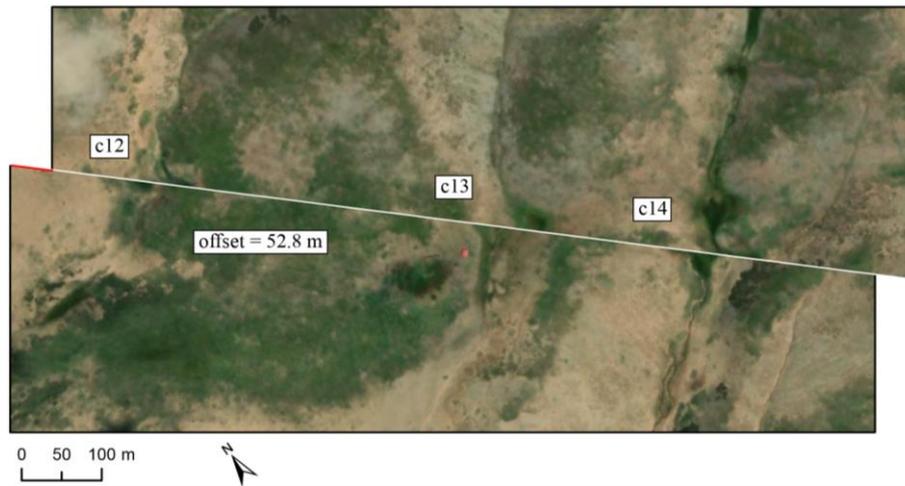


Figure S3. Three displaced channels with the same offset of 52.8 m along the fault section extended from the southern boundary fault.

**Figure S4**

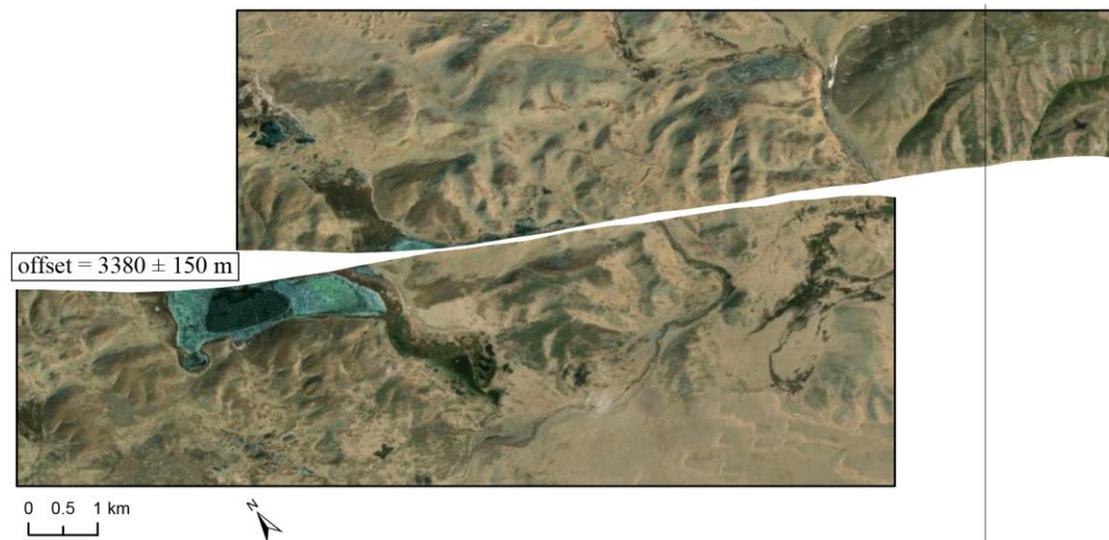


Figure S4 shows that the lake along the south boundary fault is displaced  $\sim 3$  km.

**Figure S5**

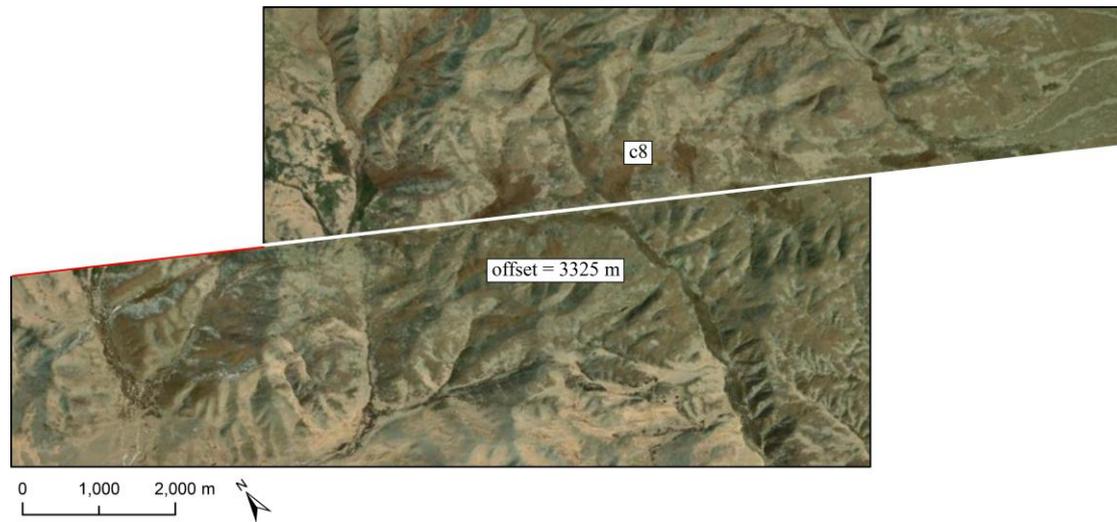


Figure S5 shows that the channel along the fault section extended from the southern boundary fault is displaced  $\sim 3$  km.

**Figure S6**

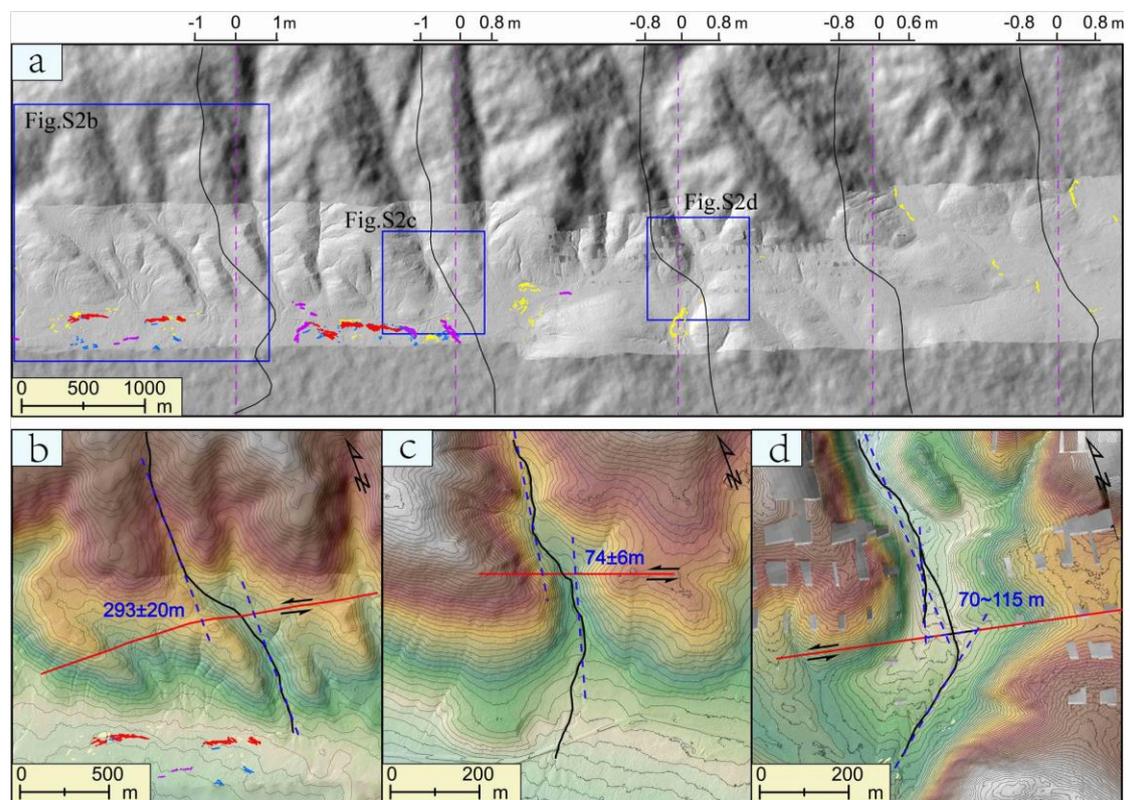


Figure S6. Offset drainages, slip gap and displacement profiles in  $S_3$ . (a) discontinuous surface ruptures and slip gaps in  $S_3$ . The long-term topography is consistent with the maximal slope of the

deformation curves. The slip of the profiles from optical correlation can be ~1.5 m (b, c, d) offset drainages in  $S_3$ .

**Figure S7**

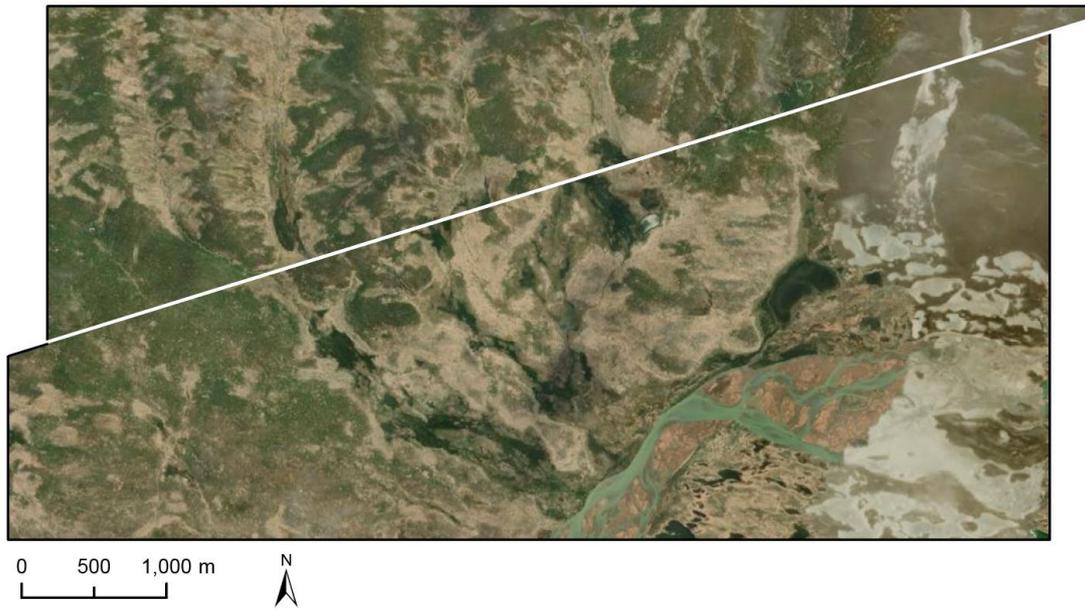


Figure S7 shows that the channel is displaced ~ 285 m along the northwest boundary fault of the large stepover.