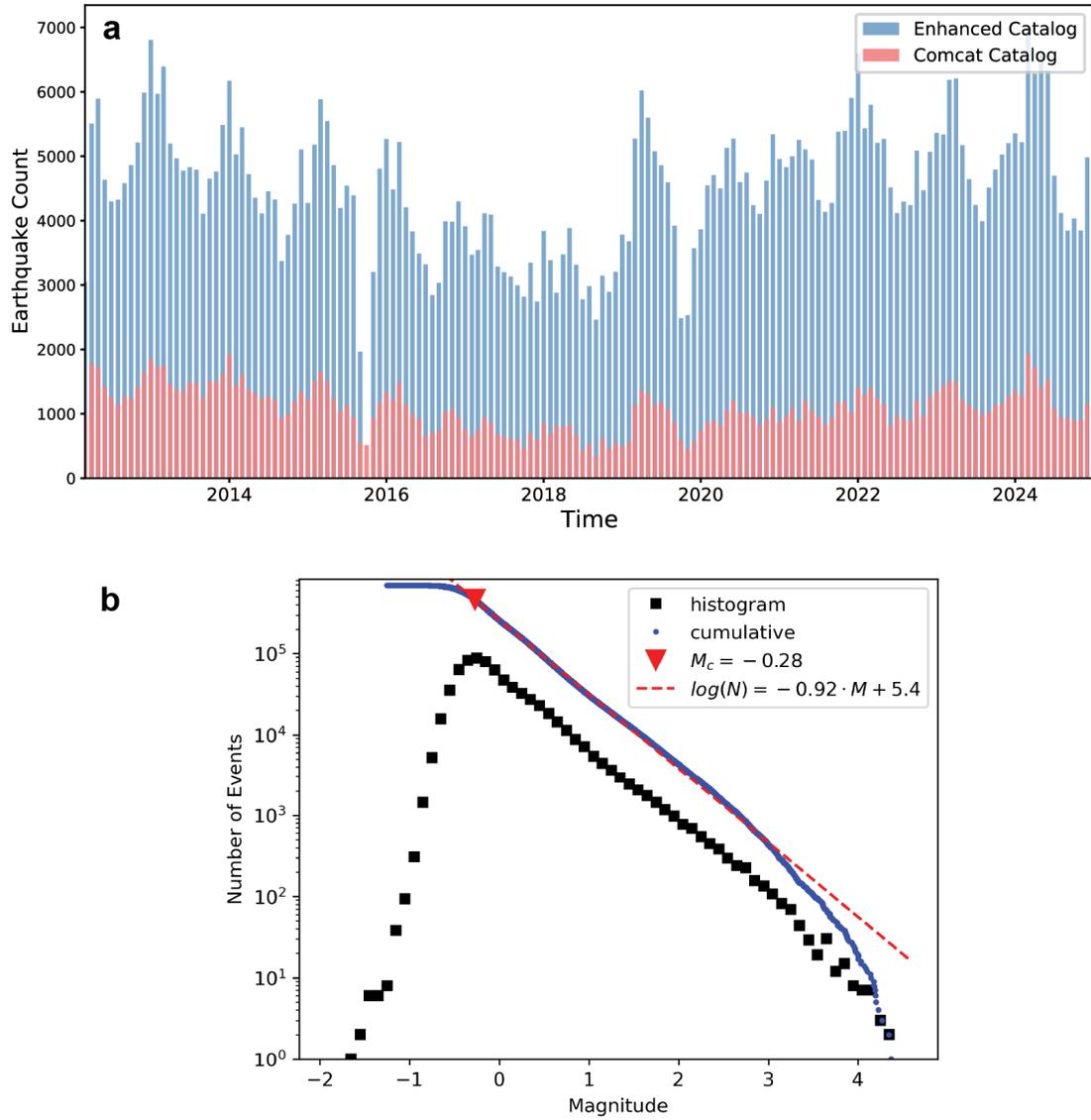


**Fig. 1 Seismic stations used in this study.**

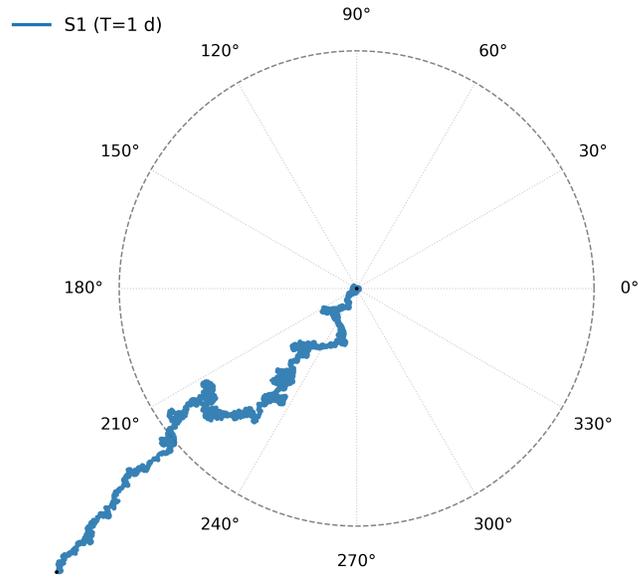
We including stations from five local networks, including the Berkeley Geysers Network (BG), Berkeley Digital Seismic Network (BK), Northern California Seismic Network (NC), United States National Strong-Motion Network (NP), Plate Boundary Observatory Borehole Network (PB).



**Fig. 2** Temporal and magnitude distributions for the earthquakes.

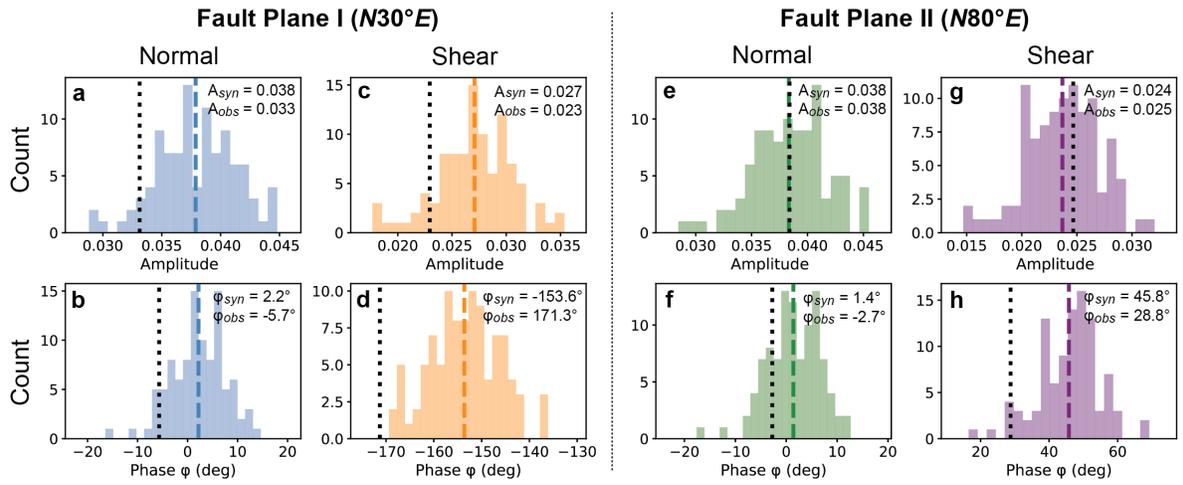
**a**, Histogram of event counts as a function of time for the ANSS Comprehensive Earthquake Catalog (ComCat) and our enhanced catalog. Data gap in 2015 was due to a network shutdown caused by a local wildfire. **b**, The measured  $b$ -value is 0.92 and the completeness of earthquake magnitude is -0.28.

### Schuster walks for $S_1$



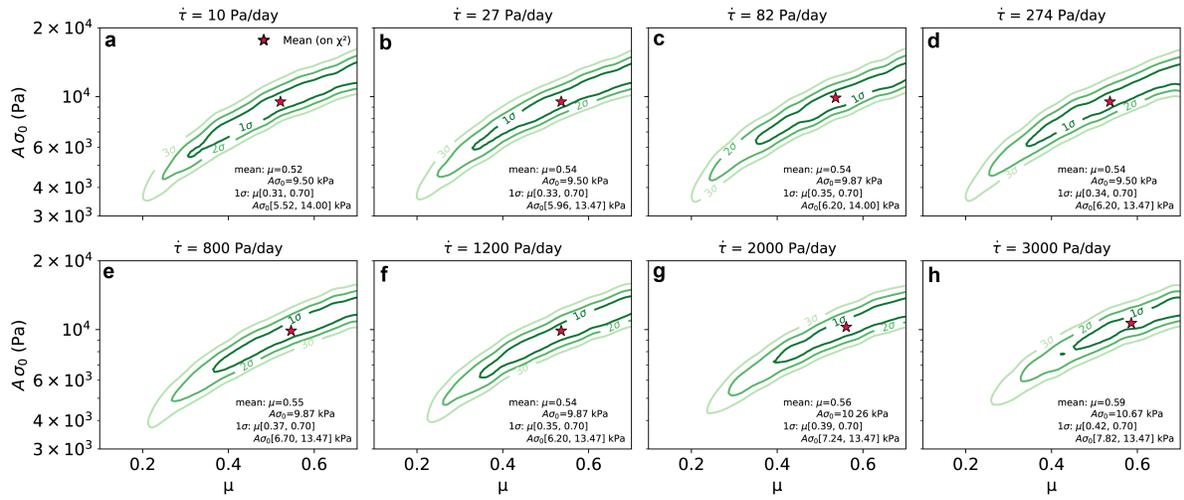
**Fig. 3 Schuster walk for  $S_1$  assuming the 24-hour periodicity is caused by this constituent.**

Blue line represents the observed walk from the enhanced catalog. Radial lines indicate the phases of peak volumetric stress (pressure). Apart from the small amplitude of this constituent, the fact that the Schuster walk for  $S_1$  is out of phase with  $0^\circ$  (and other major constituents) also indicates that  $S_1$  is not the cause of the 24-hour periodicity observed in the Schuster spectrum (Fig.2b).



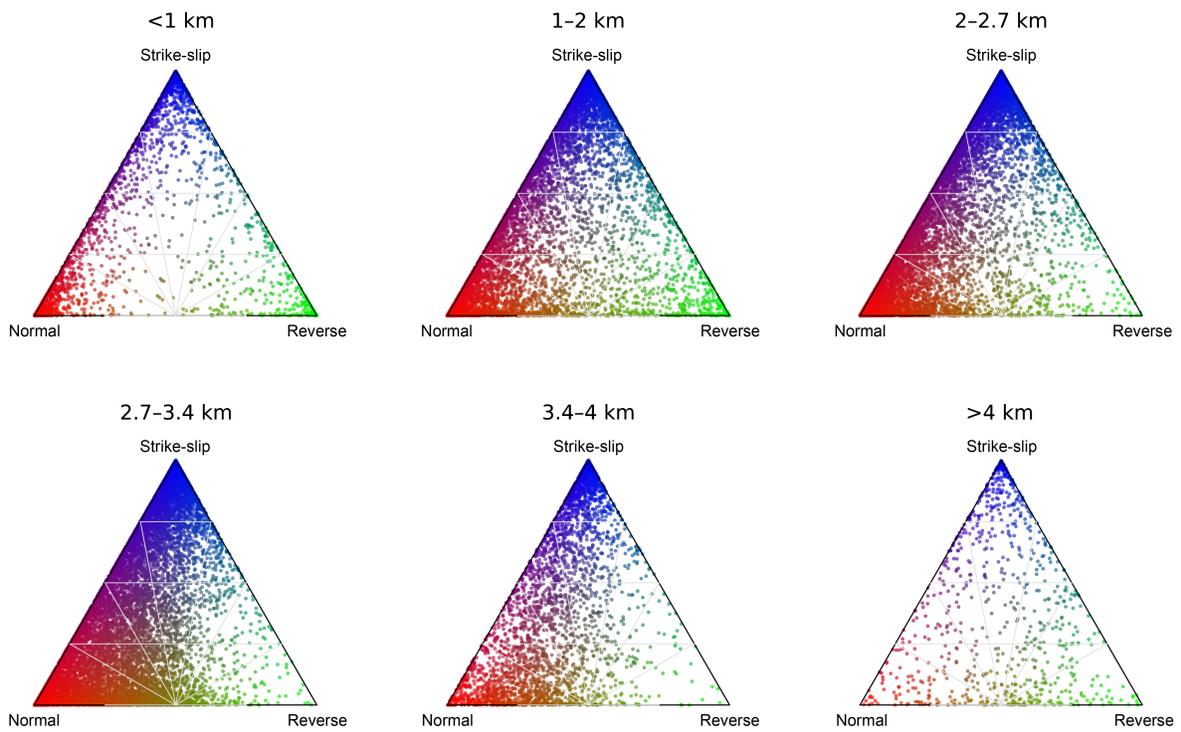
**Fig. 4** Distribution of tidal phases using synthetic catalogs.

**a-h**, Modeled modulation amplitude and phase in comparison with the observation in Extended Data Fig.2 for two dominant fault planes.



**Fig. 5** Joint  $\chi^2$  confidence contours in  $(\mu, A\sigma_0)$  space for different stress rates  $\dot{\tau}$ . **a-h**, Results for  $\dot{\tau} = 10$ –3000 Pa/day, where contours denote the 1 $\sigma$ , 2 $\sigma$ , and 3 $\sigma$  confidence levels. Red stars indicate best-fitting models.





**Fig. 7 Ternary diagrams for earthquakes at a range of depths.** Blue denotes strike-slip faulting, red represents normal faulting, and green indicates reverse faulting.