

Campaign GPS data for southern California

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(MIT)

With contributions from and thanks to:

Jessica Murray (USGS)

Duncan Agnew, David Sandwell, Eric Lindsey (UC San Diego)

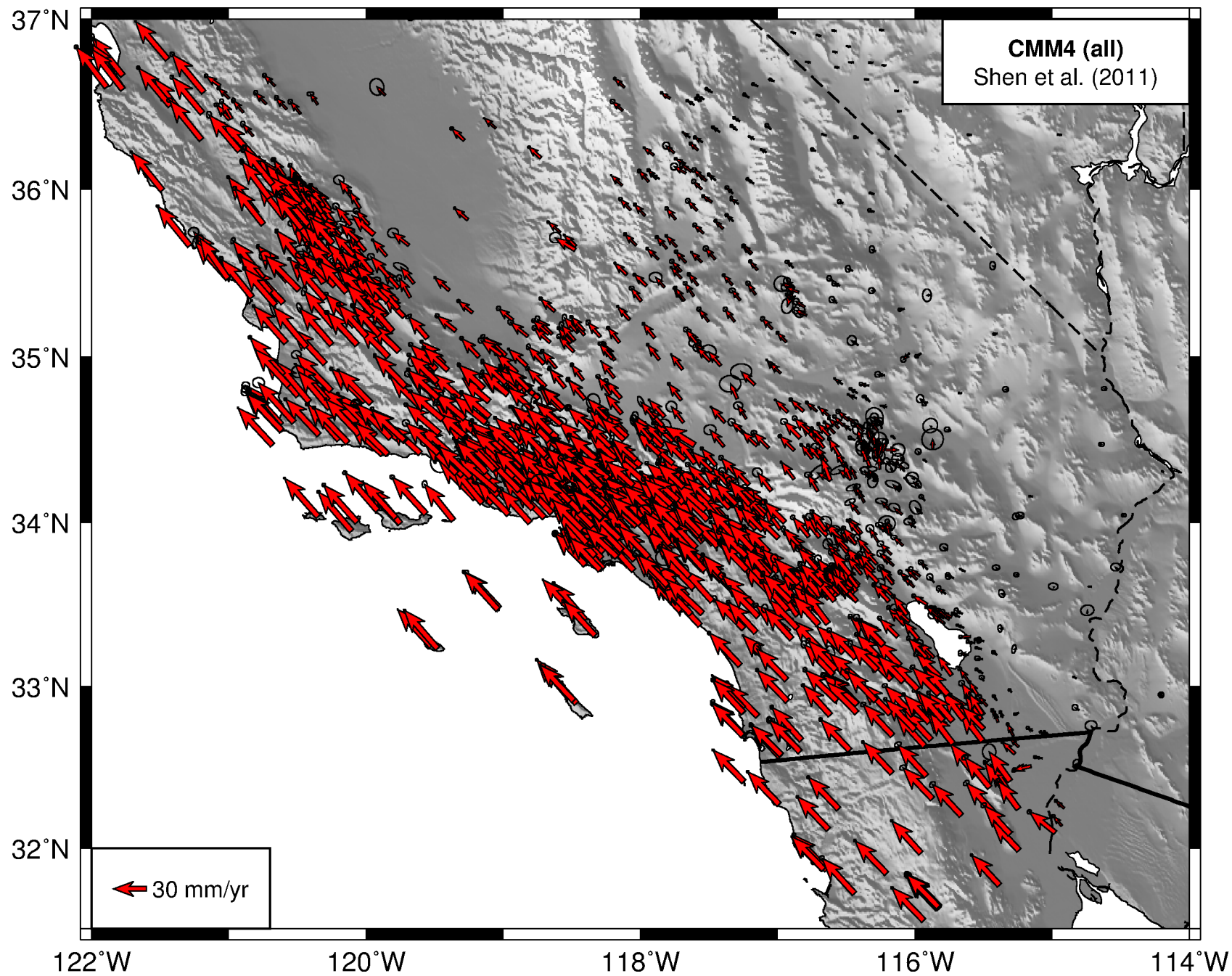
Sally McGill (Cal State San Bernardino)

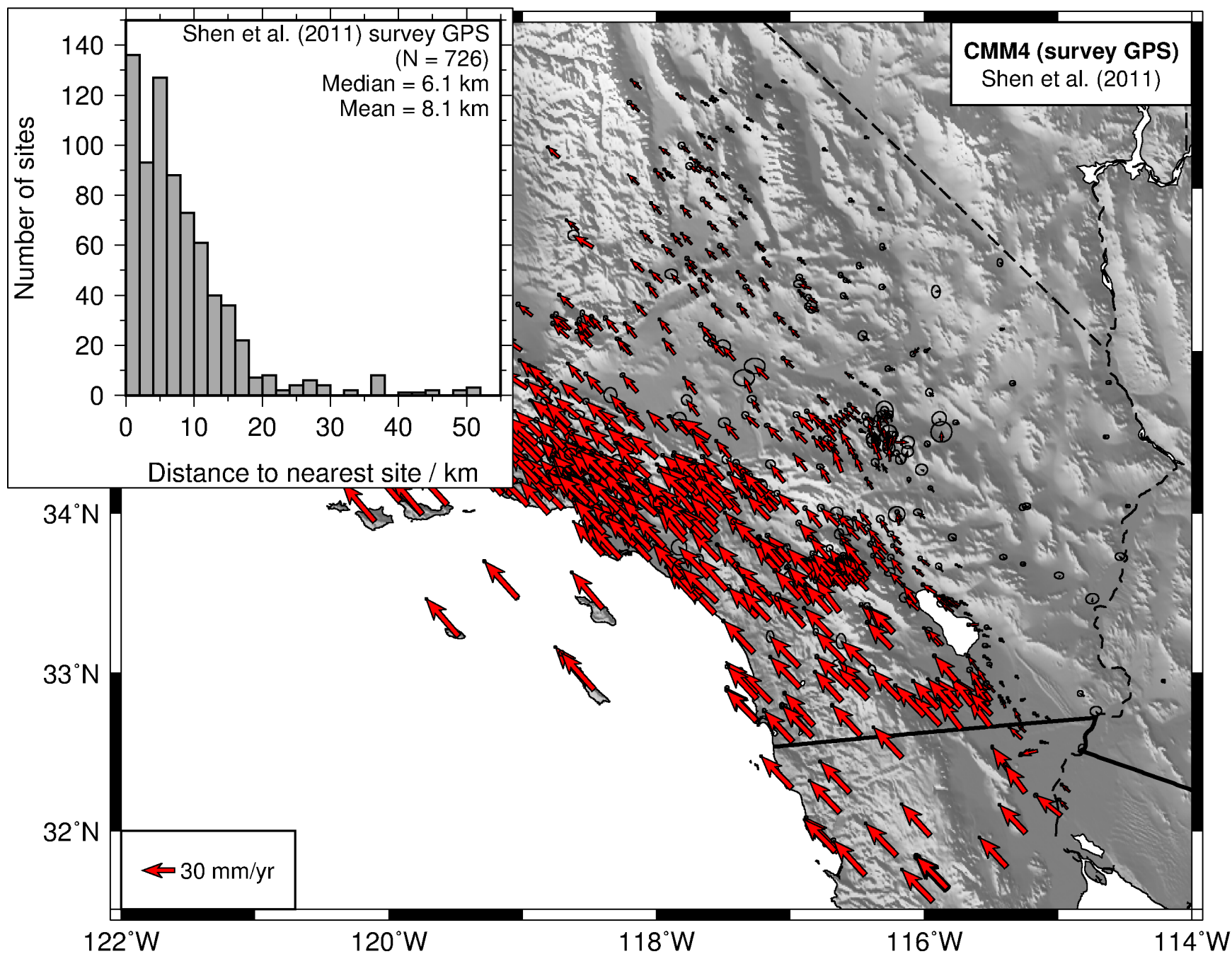
Joshua Spinler (University of Arizona)

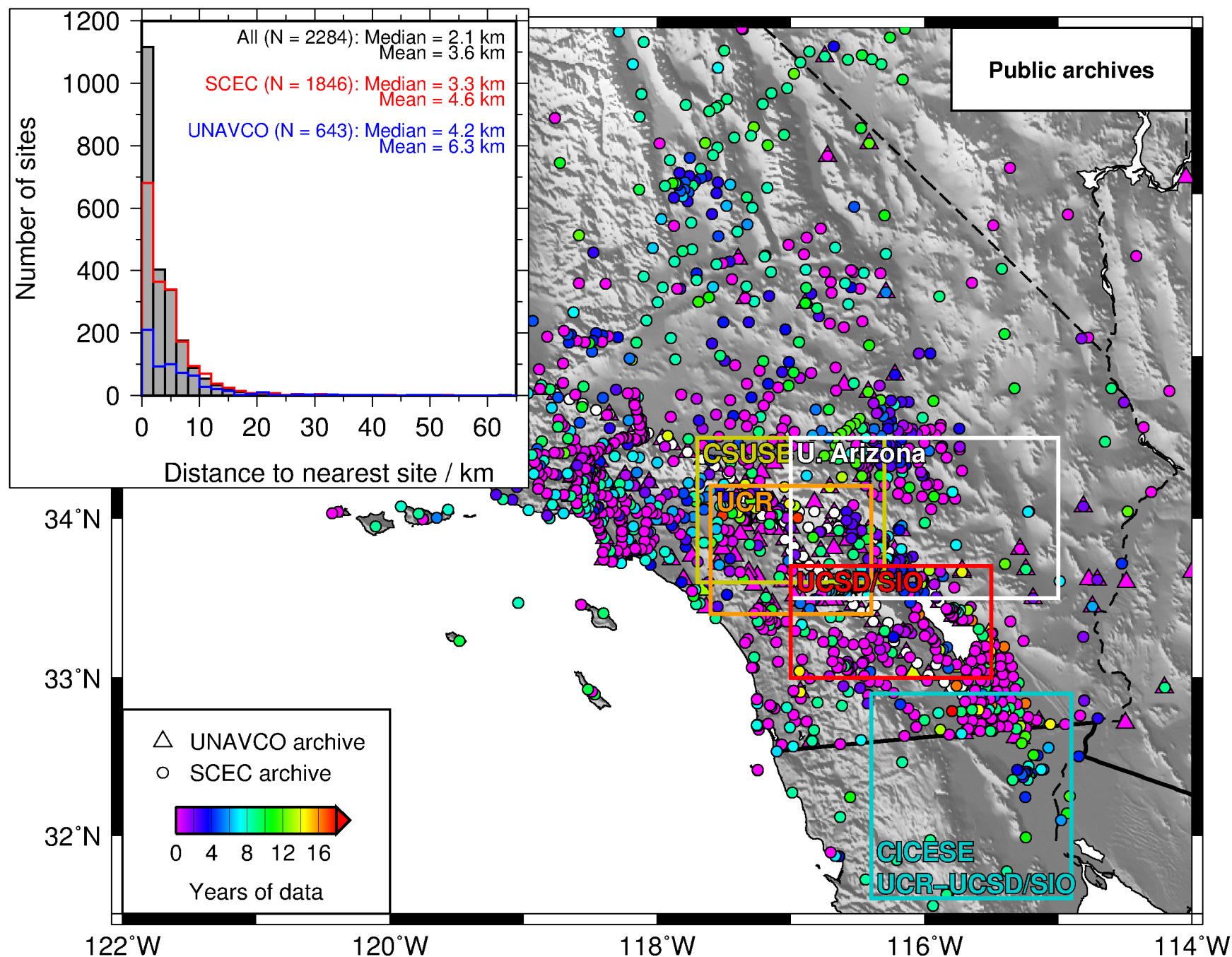
Gareth Funning (UC Riverside)

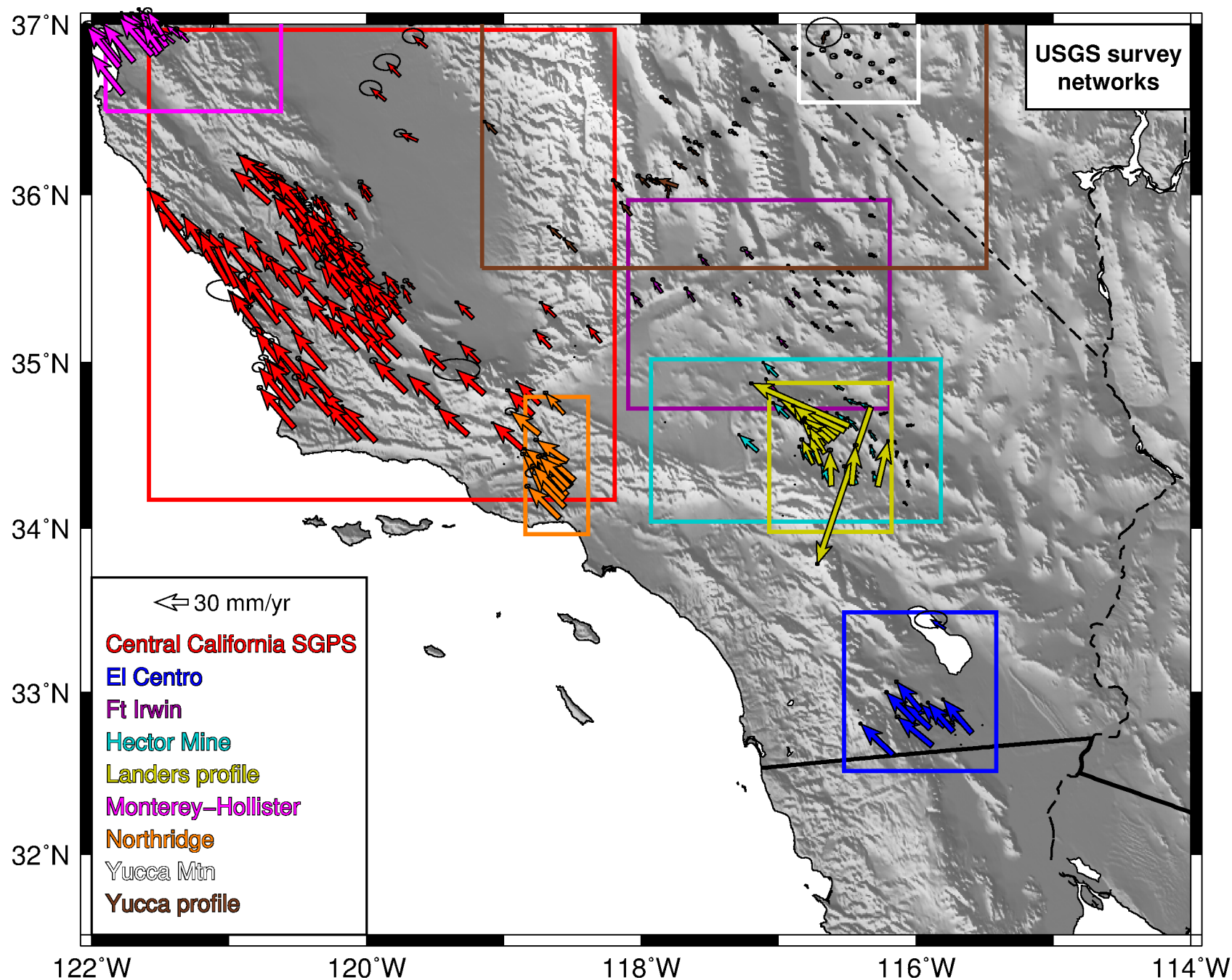
Over 25 years of data in 10 minutes...

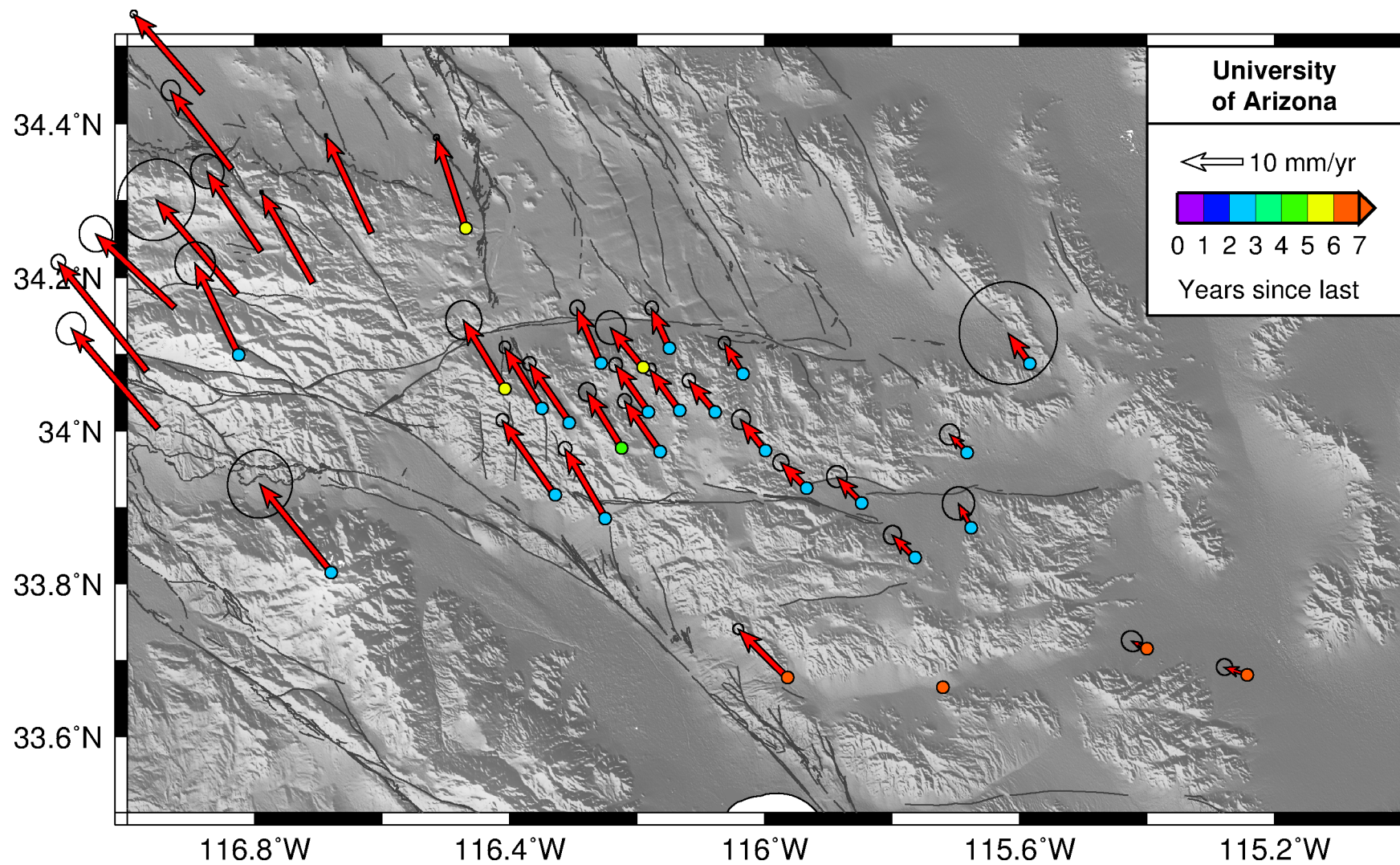
- Existing (published) products to date
- Public data archives
 - SCEC (<http://www.data.scec.org/gps/>)
 - UNAVCO (<http://facility.unavco.org/data/dai2/app/dai2.html>)
- Active institutions
 - USGS (<http://earthquake.usgs.gov/monitoring/gps/>)
 - University of Arizona (Joshua Spinler and Rick Bennett)
 - Cal State San Bernardino (Sally McGill)
 - UC Riverside (Funning)
 - UC San Diego (Sandwell, Fialko, Lindsey, Crowell)
- Where to go?



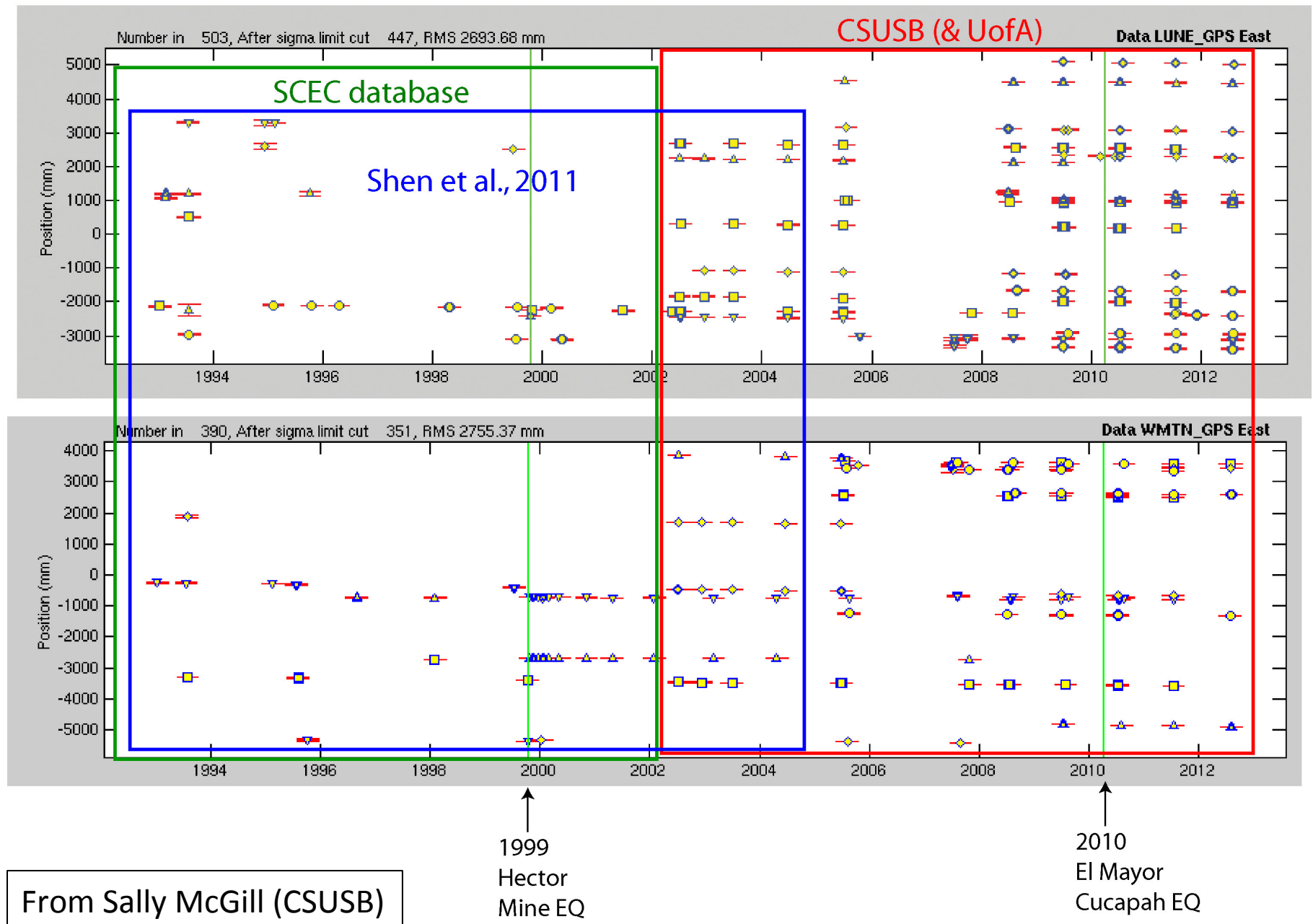








New data available for 37 sites in and around the San Bernardino Mountains



Cal State
San Bernardino

34.4°N

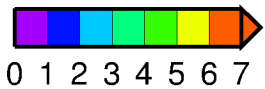
34.2°N

34°N

33.8°N

33.6°N

← 20 mm/yr



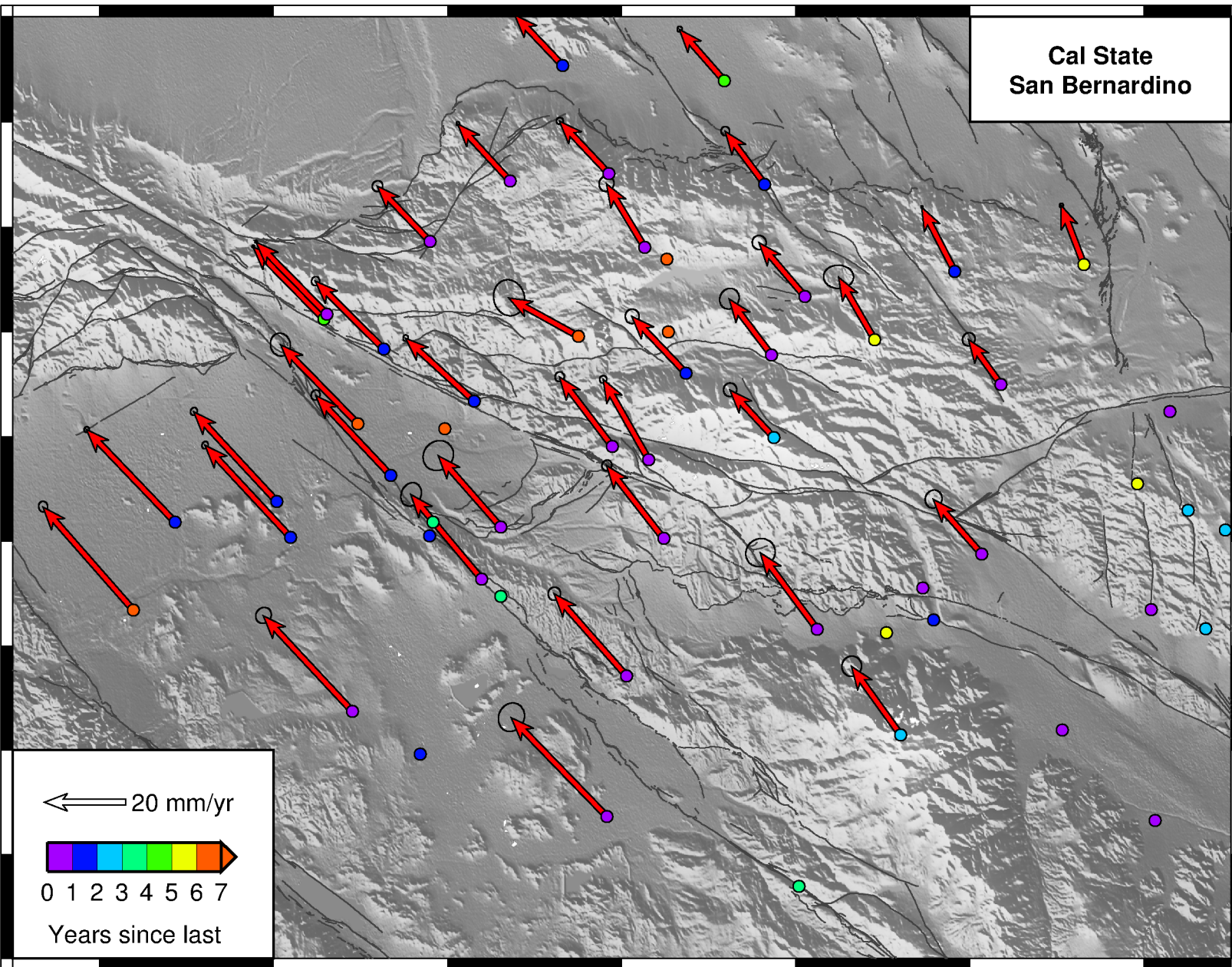
Years since last

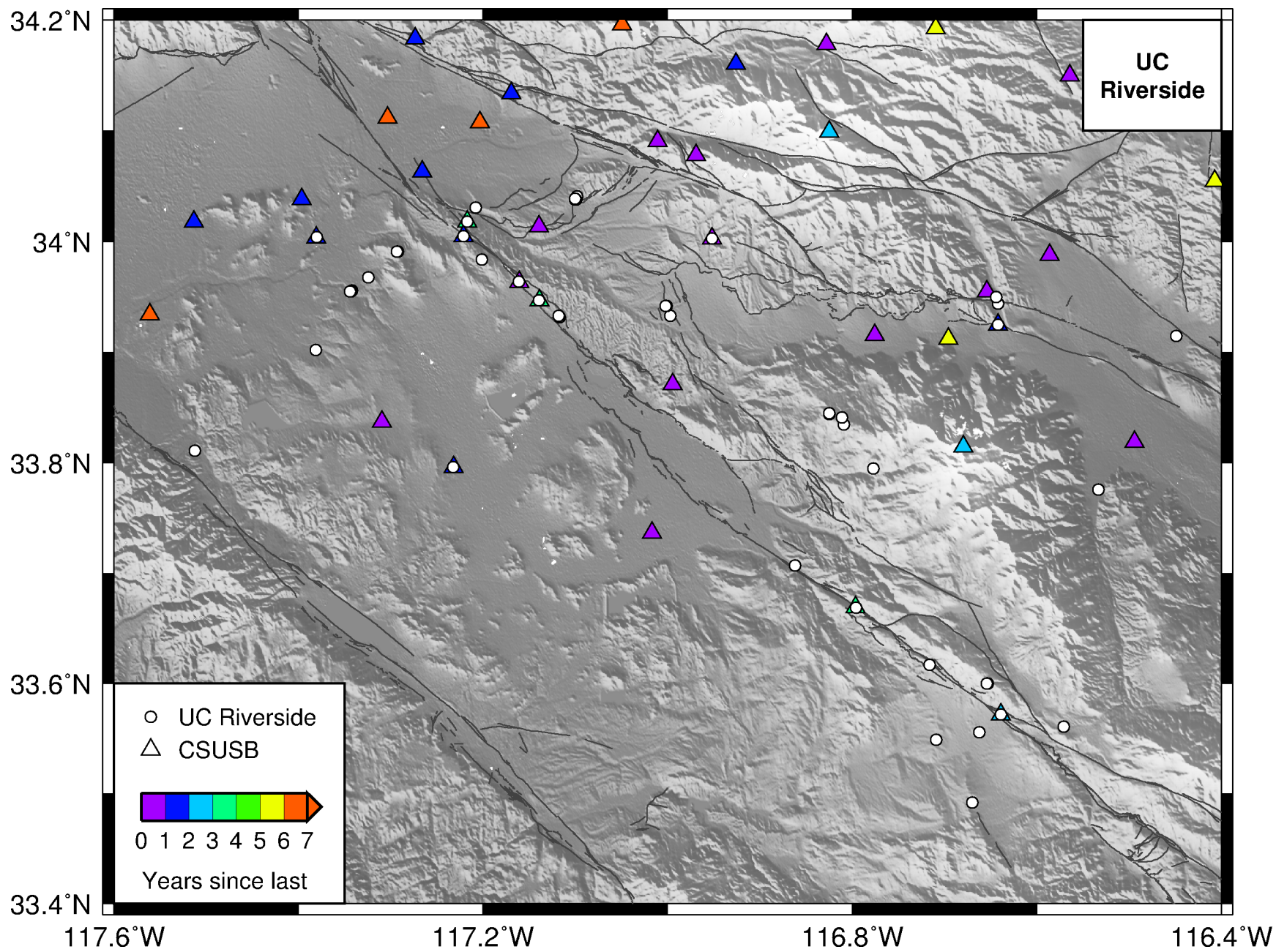
117.6°W

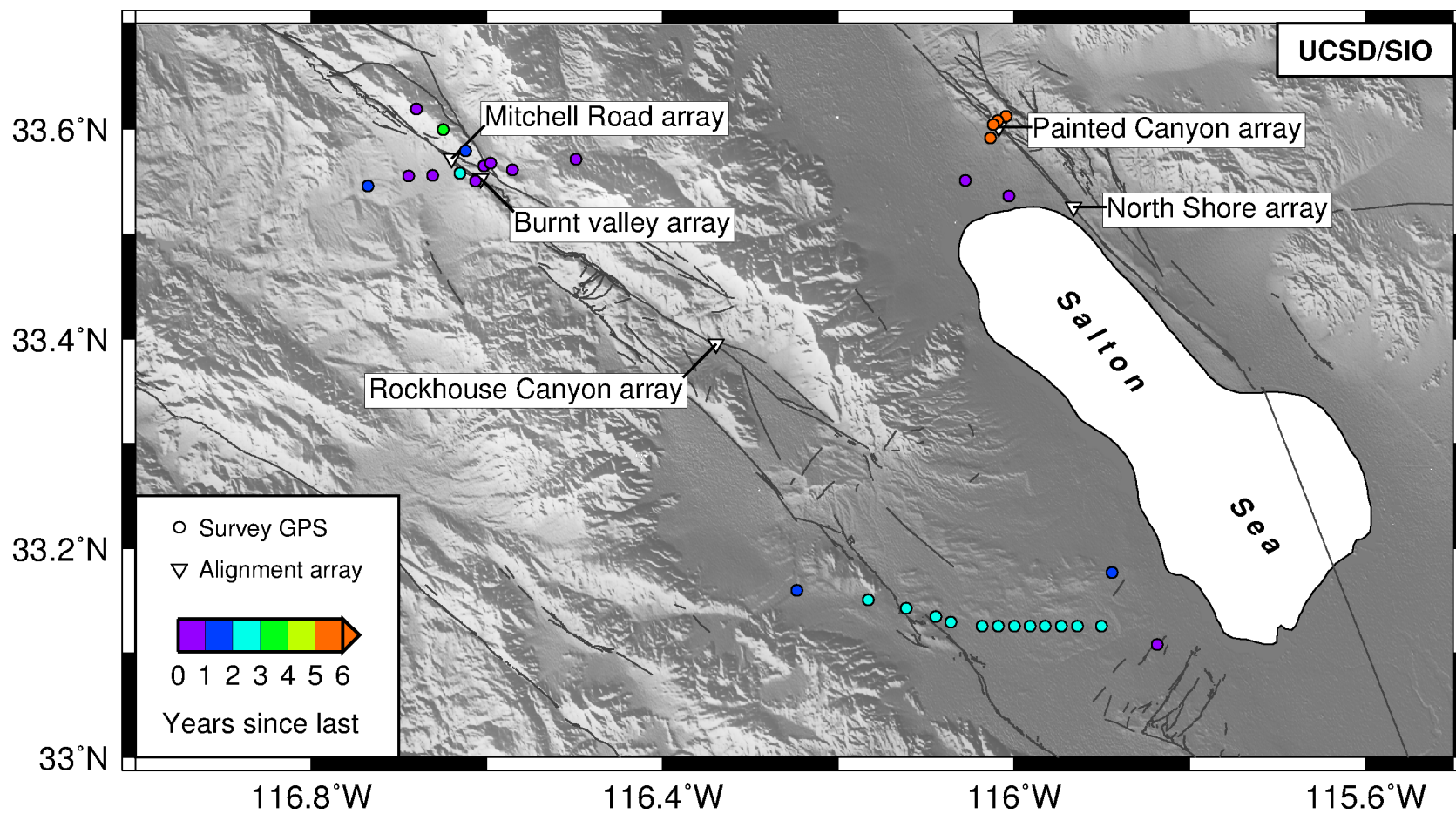
117.2°W

116.8°W

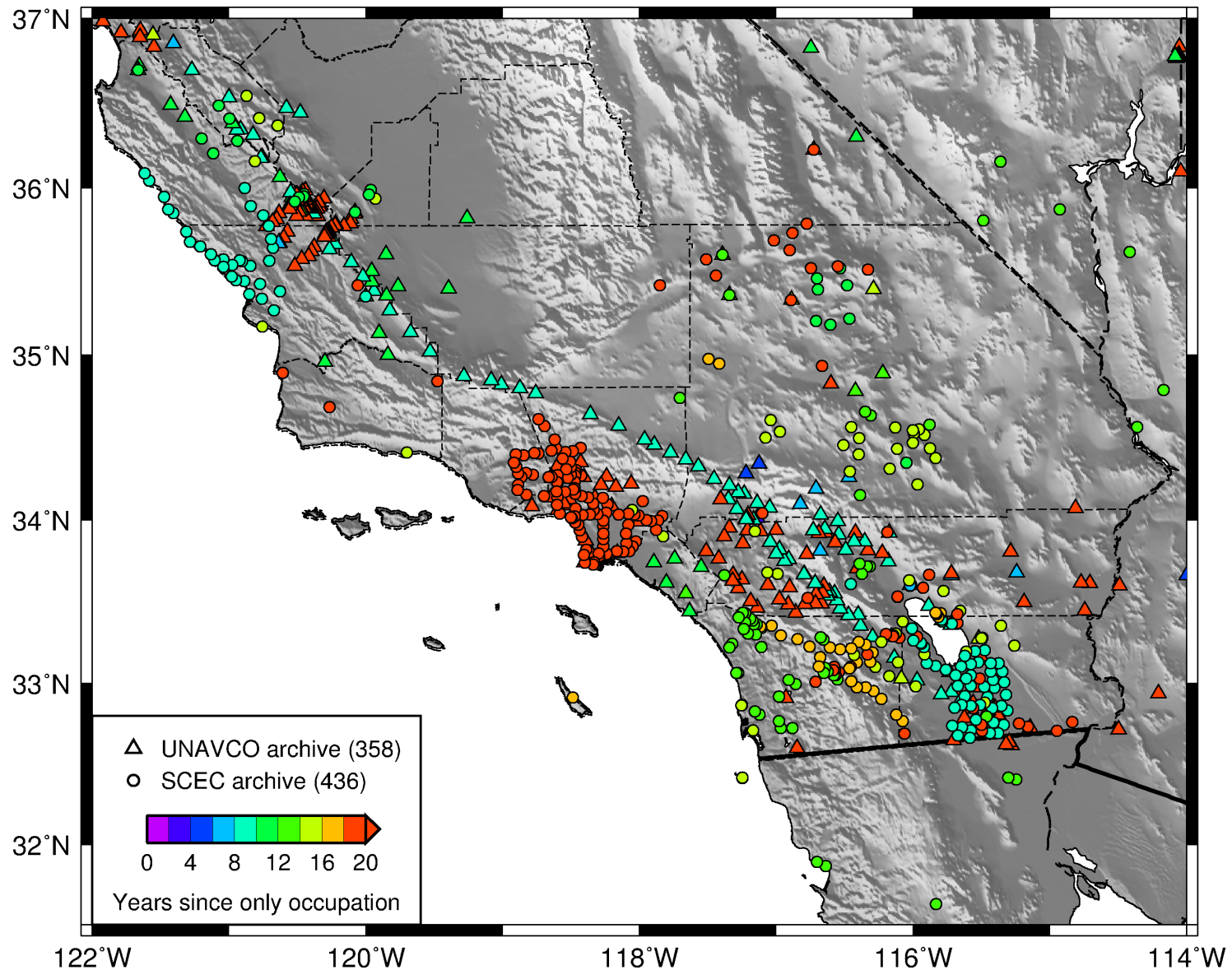
116.4°W

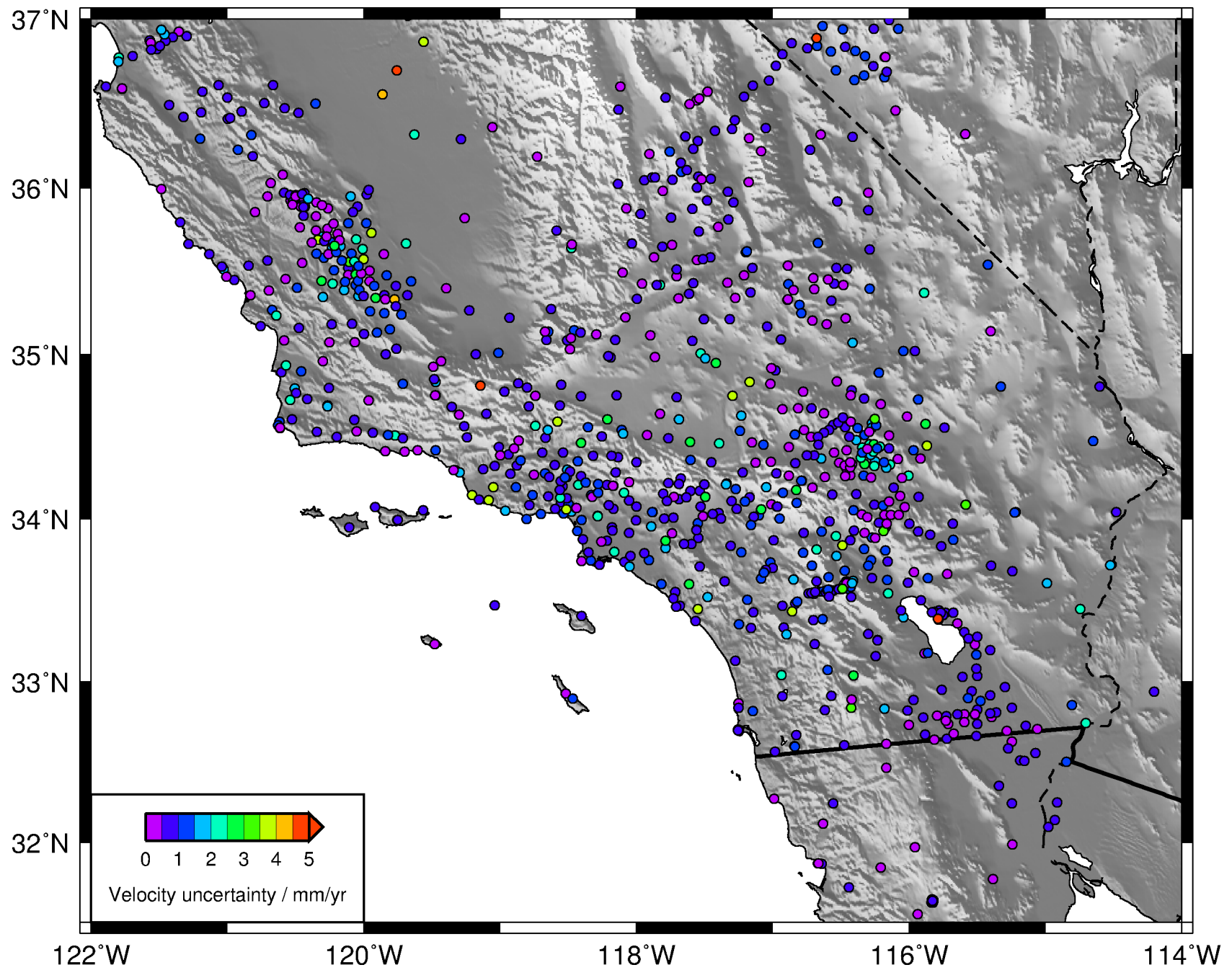






Where can we go for immediate impact?





Archiving data at SCEC

- Case 1:

You have observed on a mark that is already in the list, using the same 4-character ID. (List of marks available as a .csv file.) Need the year, day, and 4-char ID for each observation: eg, a text file with lines like:

vm1520121080

meaning, observed at VM15 on 2012 day 108. Note that this format is very close to the naming convention for RINEX, so OK to provide a list of RINEX filenames.

- Case 2:

You have observed on a mark that is already in the list, using a different 4-character ID. In this case, need to know the "SCEC ID" for each entry. The .csv file includes a SCEC Permanent ID; for the example above this would be

xyxn20121080 E1C9A8F4+0011

though OK to provide SCEC 4-char site ID

xyxn20121080 VM15

- Case 3:

You have observed on a mark that is not on the list. Then need, along with the times, the following monument information:

A. The 4-char ID (different from anything in the monuments.csv, or will be changed to avoid overlaps)

B. Good coordinates (< 1 m), XYZ preferred

C. The stamping or, if unstamped, a description such as "steel rod in plastic pipe" or "screw thread set in wall"

The aim is that (B) is enough to use a handheld to get close and (C) enough to make it clear that you have indeed found the right mark.

Pros and cons to consider

- What role should survey GPS (that currently exists as well as in the future) play in a CGM?
 - Cheap alternative to cGPS for spatially dense resolution?
 - Less intrusive/destructive than permanent cGPS installation, i.e. more sites suitable for sGPS? But more liable to human error and metadata issues?
 - Longer time series for study of historic events?
 - Just as many sites (if not more) as cGPS sites
- Is a survey GPS contribution already “static”, i.e. any need for further development?
 - Time to revisit survey sites to improve precision?
 - Areas of poor cGPS coverage that may be filled with sGPS?
- Data centers (DCs), analysis centers (ACs) and processing flow generally well defined for cGPS, e.g. PBO. Need for similar support towards sGPS data assimilation, product generation, and distribution?
 - Update and maintain SCEC archive (who, how, when, for how long)? Encourage archiving at UNAVCO (generally expected anyway)?