0-Central California DEM.jpg, created from an oblique Google image. Image contributed by Ross Stein, courtesy of the Global Earthquake Model (GEM) project.

1-20430074.jpg. Fault scarp of Rodgers Creek fault, the continuation of the Hayward fault north of San Francisco Bay.

2-00190016.jpg. Peachtree Valley north of Parkfield; view from State Highway 198, showing sagpond on San Andreas fault. Photo by Robert Yeats on IGCP field trip accompanying 1989 International Geological Congress.

3-00190013.jpg. Offset of curbs at Fifth Street in Hollister due to creep on Calaveras fault. Photo by Robert Yeats.

4-20430070.jpg. Left-stepping extension cracks accompanying creep on Calaveras fault at Locust Avenue and Virginia Drive, Hollister, central California. Photo by Robert Yeats.

5-00190012.jpg. Culvert at Almaden Cienega winery, central California, offset right-laterally due to creep on San Andreas fault. Photo by Robert Yeats.

6-00190020.jpg. San Andreas fault in central California, including 1857 rupture; shows pressure ridges and shutter ridges. Photo by Robert Wallace.

7-SAF offsets, S. Calif. Note the absence of large earthquakes S of Transverse Ranges in several centuries. Diagram prepared by Tom Rockwell, San Diego State University.

8-00190018.jpg. View east across San Andreas fault at Elkhorn Hills in Carrizo Plain in central Coast Ranges. Temblor Hills in distance. Shows *en-echelon* pressure ridges and offset drainage. Photo by Robert Yeats.

9-00190019.jpg. Offset stream along San Andreas fault in Carrizo Plain, view NW. Photo by Robert Yeats.

10-20430073.jpg. Aerial view of San Andreas fault looking south to San Gabriel Mountains. Note pressure ridges and offset streams. Photo by Robert Yeats.

11-Pitman Canyon. LiDAR image of section of San Andreas fault with 46 m right-lateral stream offsets.

12-00190015.jpg. Fault in trench at Pallett Creek, north side of San Gabriel Mountains. Dark organic layers have been dated, allowing correlation of individual ruptures over many centuries. For example, displacement on fault in lower part of image is not present above carbonaceous layer, although sediments above the carbonaceous layer are deformed. Both the carbonaceous layer and a light-colored layer overlying it are thicker on the east (downthrown) side of the fault. Reference: Sieh, 1978, *Jour. Geophys. Research 83*:3907-3939. Sieh reconstructed the fault history at Pallett Creek because of the excellent exposures and the presence of many carbonaceous layers suitable for radiocarbon dating.

13-San Gorgonio Pass.jpg. Oblique view  looking northwest above the central San Gorgonio Pass region. DEMS are prepared from B4 LiDAR data and draped over Google Earth Imagery. Thick yellow arrows approximate the relative motion between the San Jacinto Mtn. and San Gorgonio Mtn blocks on either side of the active fault zones. The dextral strike-slip San Bernardino segment of the San Andreas fault enters the imaged area in the upper left at Burro Flats.  White arrows point at Holocene fault scarps along the San Gorgonio Pass fault zone, an active, oblique thrust fault system that transfers slip through the Pass to the east into Coachella Valley where right-lateral strike-slip motion again predominates. Thin yellow arrows locate trench sites across thrust scarps at Millard Canyon and Cabezon. Image by Doug Yule, Cal. State Northridge. Reference Yule, D., and Sieh, K., 2003, *Jour. Geophys. Research 108*, B11.

14-Cabezon T5 thrust exposure.jpg. Photo of the west wall of Trench 5 at Cabezon, CA (locagted on San Gorgonio image) excavated across the San Gorgonio Pass fault zone. Units 100-500 consist of interbedded silty mudstone, fine- to coarse-grained sand, pebbly sand, and pebble- to cobble -sized gravel. An unconformity (U1 - Cab T5) separates deformed *vs* undeformed units and constrains the most recent rupture of fault here. Note low-angle thrust fault cutting units 100-300 at far end of trench beyond person (S. Ramzan, CSU Northridge graduate student). Photo by Doug Yule, California State University Northridge.

15-00190017.jpg. Infrared photo from Apollo 9 spacecraft of southern end of San Andreas fault at Salton Sea. San Andreas plate-boundary fault does not continue past Salton Sea, but geomorphic features including sand dunes do continue to SE.

16-00190014.jpg. Imperial fault near El Centro, showing offsets produced by 1979 earthquake. From National Geophysical Data Center, NOAA. Reference: *USGS Prof. Paper 1254*.

18-Hog Lake paleoseismic site. This site across the San Jacinto fault includes an ephemeral lake that allows the preservation of delicate lacustrine deposits with datable charcoal. This permits establishment of an earthquake time sequence for the San Jacinto fault. Photo by Tom Rockwell.

19-Hog Lake paleo site 2. Trench wall exposes lacustrine sediments; dark layers include charcoal. Photo by Tom Rockwell.

20-Hog Lake paleo site 3. Detail of trench wall showing faults in red, and individual earthquakes identified in trench (letters E3 through E7). Evidence in photo includes upward termination of fault offsets (E3, E4) and fold (E6). Individual sediment layers are numbered. Can you confirm each of the earthquakes based on this image? Photo by Tom Rockwell. Ref. Rockwell, T. K. et al., 2004, USGS Final Technical Report, 13p.

21-Jce00002.gif. Mole track in a field south of Heber Road, after 1979 earthquake, 2.4 km from SE end of fault. Piled up soil fragments are compressional features between the ends of *en echelon* fractures. Source: C.E. Johnson, USGS.

22-Jce00004.gif. Imperial fault at Dogwood Road. Main fault crosses photo horizontally. Secondary fault is nearly parallel to Dogwood Road.

23-00190010.jpg. South side of Santa Susana Mountains, Ventura basin, where Miocene organic shale (dark) is thrust over fan material along Santa Susana fault. Photo by Robert Yeats, reference: Yeats, 1987, *USGS Prof. Paper 1339*. Even though this is one of the fastest-moving faults in the Transverse Ranges, trenching has thus far failed to identify Holocene displacement.

24-00190009.jpg. San Cayetano fault, Silverthread oil field, Ventura basin, view west. Photo by Robert Yeats, reference: Huftile, 1991, *AAPG Bull. 75*:1353-1373.

25-00190008.jpg. Ventura Avenue anticline at San Miguelito, view west. Fold is overpressured and formed in late Quaternary time. Photo by Robert Yeats, reference: Yeats, R.S. and Grigsby, F.B., 1987, *GSA Centennial Field Guide v. 1*:219-26

26-20430069.jpg. Cross section of Red Mountain fault, Ventura Basin, in which fault is delineated based on subsurface well data and, at greater depth, by seismicity related to filling of Lake Casitas. Reference Yeats, R.S., et al., 1987, *USGS Prof. Paper 1339*:161-167.

27-20430076.jpg Structure contour map of Red Mountain fault showing deep well control and relation to Ventura Avenue anticline. Reference Yeats, R.S., et al., 1987, *USGS Prof. Paper 1339*:161-167.

28-San.Fern.sidewalk. Surface rupture in 1971 on San Fernando fault. Fault buckles and uplifts curb, indicating shortening. Hanging wall is on far side. Ruined building in distance is convalescent home where four died. Photo by Robert Yeats. Reference: Sharp, R.V., 1975, *Calif. Div. Mines and Geology Bull. 196*:187-194.

29-Cal00015.jpg. “Split-level” house damaged by 1971 surface rupture on Fernando fault. Source: USGS.

30-LA Deep Trough.jpg. Cross section through LA Basin along a multichannel seismic profile including its deepest well, 6477 m. On right (N), is Puente Hills blind thrust, source of 1987 Whittier Narrows earthquake. Reverse fault on left (S) is Compton-Los Alamitos (CLA) reverse fault, related to Newport-Inglewood right-lateral fault, source of 1933 Long Beach earthquake. The CLA fault, together with the broad anticline around the Newport-Inglewood fault, lead to interpretation this is a strain-partitioned structure, capable of strike slip or reverse type earthquake. From R. Yeats and D. Verdugo, 2012, Earth Consultants International, in prep.

31-Whittier f., view N toward San Gabriel Mts. Fault crosses foothills in lower part of diagram. The fault is within the foothills, not at the range front, evidence for strain partitioning with respect to an anticline in footwall. Work by E. Gath and T. Rockwell, Earth Consultants International.

32-20430067.jpg. DEM of Whittier fault, La Habra syncline, and Coyote Hills. Whittier fault does not control the range front of the Puente Hills but is within the foothills, where it is underlain by active reverse faults and folds. The large-scale right-lateral offset of streams takes place within the range, not at the range front. Low hills to south are Coyote Hills, active anticlines housing oil fields. Santa Ana River cuts through between Puente Hills and northern end of Santa Ana Mountains. Reference: Bjorklund et al., 2002, *Jour. Structural Geology 24*:1369-1397.

33-20430068.jpg. DEM of West Coyote Hills and East Coyote Hills, uplifted along blind reverse faults. Some of the major drainage predates uplift and is entrenched within the hills. Reference Myers, D.J., et al., 2003, *Jour. Geophys. Research 108*, B9.

34-00190007.jpg. Flexural-slip faulting south of San Cayetano fault, Ventura Basin, showing line of cross section (00190006.jpg) . Subsurface control is from oil-exploratory wells. Reference: Yeats et al., 1981, *GSA Bull. 92*:189-196. 00190007.jpg., map, 00190006.jpg., cross section.

35-Rose Cyn flt. Example of 3D trenching at La Jolla, N. of San Diego. Fault is southern extension of Newport-Inglewood fault in LA Basin. Trenches expose several displacements of stream channel, marked by vertical orange pipes. Photo by Tom Rockwell, San Diego State University. Ref. Lindvall, S.C., and Rockwell, T.K., 1995, *Jour. Geophys. Research 100*:24,121-24,132.

36-Rose Cyn flt trench map, showing distribution of trenches parallel to and normal to fault strike. Fault traces in red lines; blue band shows stream channel, offset across several strands of the fault. Ref. Lindvall, S.C., and Rockwell, T.K., 1995, *Jour. Geophys. Research 100*:24,121-24,132.

37-Lenwood fault, Mojave Desert. Right-lateral strike slip. Note faulted alluvial fans, hillslope scarps, pull-apart basin. Map created from LiDAR.

38-Lenwood pull-apart. Enlargement of preceding image, showing pull-apart basin on Lenwood fault.

39-Hector Mine eq. This right-lateral strike-slip earthquake ruptured faults on a Marine base east of the 1992 Landers earthquake. Photos show shutter ridges offset by right slip. Photo by Tom Rockwell.

40-20430075.jpg. Low-sun-angle air photo of Garlock fault at Mesquite fan. North-trending faults show E-W extension accompanying left slip on Garlock fault. Older, more degraded fan on left, with higher fault scarps; younger fan on right. Shutter ridge, channels show 200 m offset. Highway and rail line for scale. Based on work by Malcolm Clark, USGS.

41-00190005.jpg. Owens Valley fault scarp with 1872 rupture, view W. From USGS compilation. Reference Beanland, S., and Clark,M.M., 1994, *U.S. Geol. Survey Bull.1982*, 29 p.

42-00190004.jpg. Owens Valley fault, view W; W side up. Fault is in center of valley; cuts cinder cones. From USGS compilation. Ref. Beanland and Clark, *op. cit*.

43-20430077.jpg. Owens Valley fault at Lone Pine. View W. Ref. Beanland and Clark, *op. cit*.

44-20430073.jpg. Santa Cruz Island fault in the Channel Islands off southern California, view W. The fault appears to be very young and juxtaposes different rock types. However, its seismic and paleoseismic history is unknown. Photo by Robert Yeats.

45-00190006.jpg. Flexural-slip faulting south of San Cayetano fault, Ventura Basin, showing line of cross section (00190006.jpg) .  Subsurface control is from oil-exploratory wells.  Reference: Yeats et al., 1981, GSA Bull. 92:189-196.  00190007.jpg., map, 00190006.jpg., cross section.