

Neotectónica y Paleosismología  
Tema 4

NEOTECTÓNICA  
DE  
FALLAS INVERSAS Y PLEGAMIENTO ASOCIADO

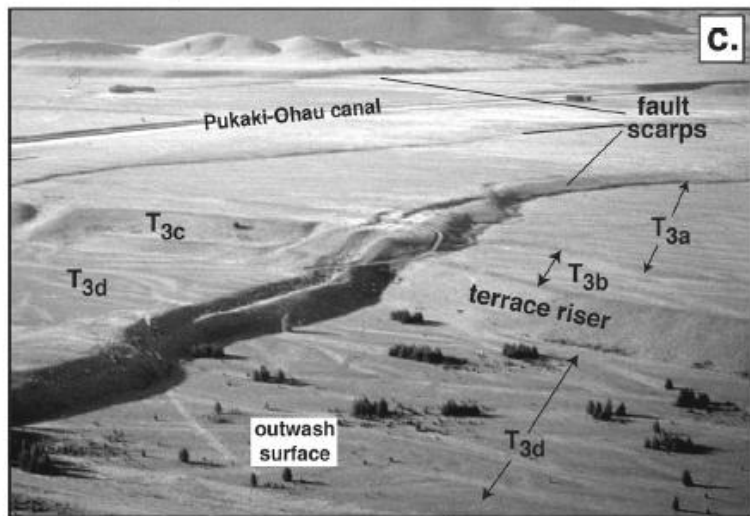
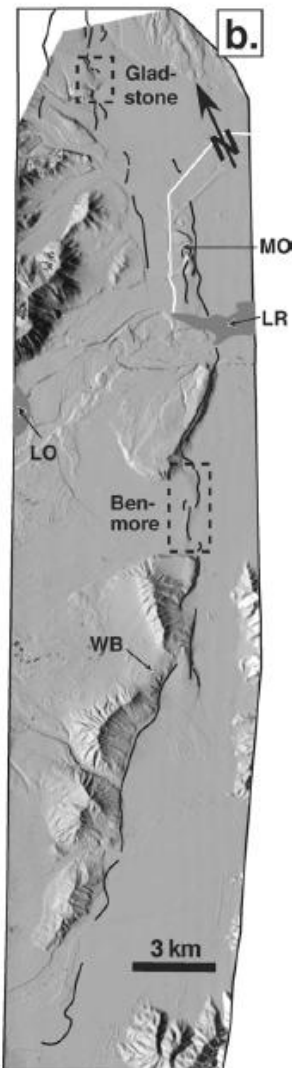
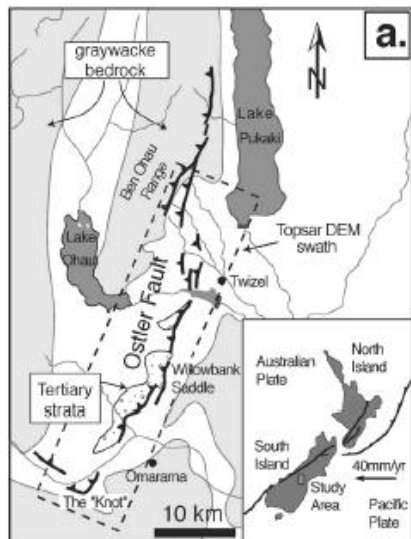
EJEMPLOS E HISTORIA DE CASOS  
(1)

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# FALLA OSTLER, NUEVA ZELANDIA

1530

K. Davis et al. / Journal of Structural Geology 27 (2005) 1528–1546





## FALLA OSTLER

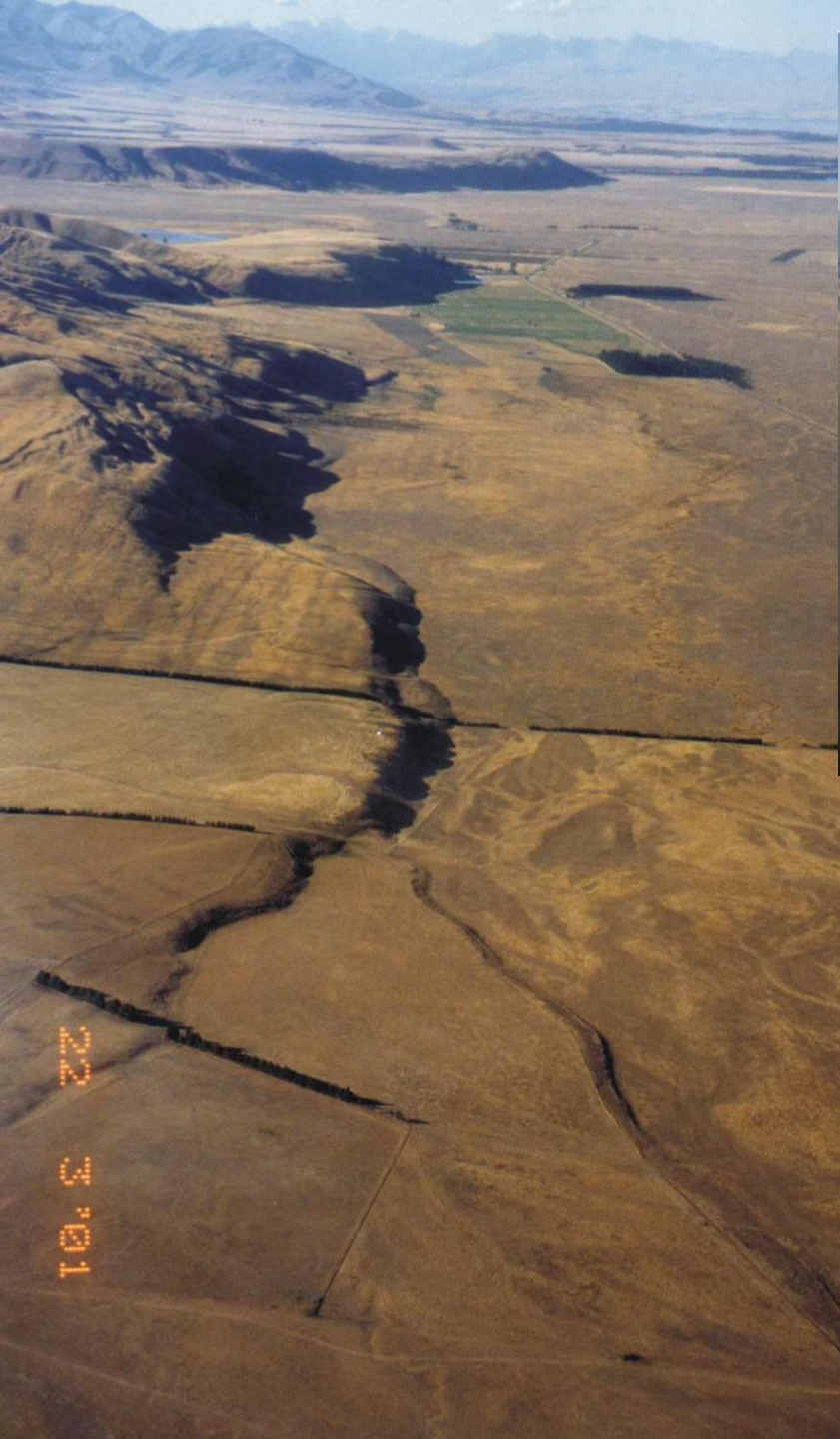
Fold-limb scarp & bending-moment faults





## FALLA OSTLER

Trazo sinuoso, fallas normales y deslizamientos en el bloque elevado



FALLA OSTLER

Remoción en masa en el bloque elevado



## FALLA OSTLER

Discordancias progresivas por rotación  
En el bloque elevado

# FALLAS INVERSAS ASOCIADAS AL TERREMOTO DE MOGOD (MONGOLIA) M 7.8, 1967

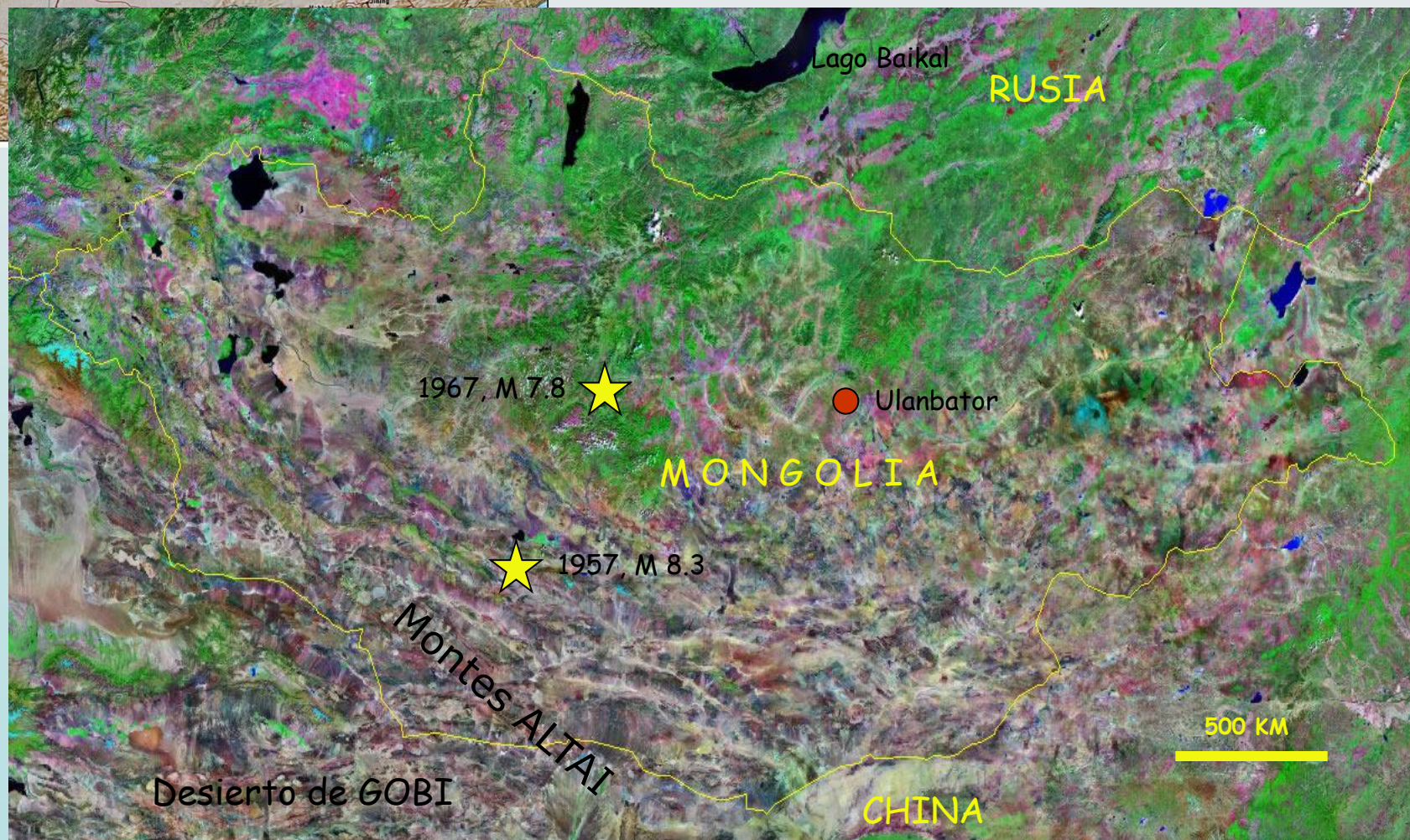


**Mongolia**

- International boundary
- Province (*aymag*) boundary
- National capital
- Province (*aymag*) center
- Railroad
- Road

The cities of Darhan, Erdenet, and Ulaanbaatar are municipalities (indicated) with province-level status.

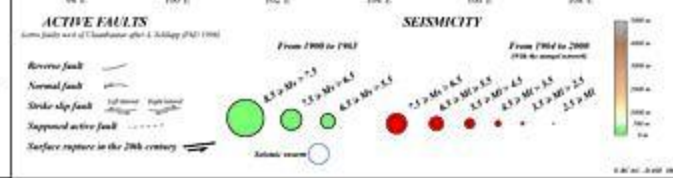
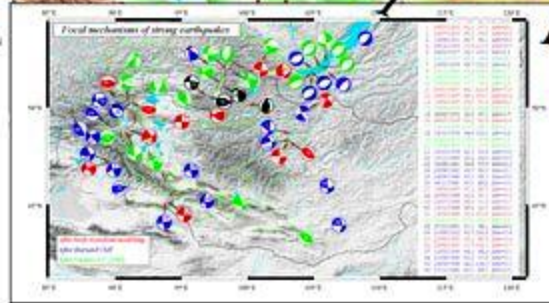
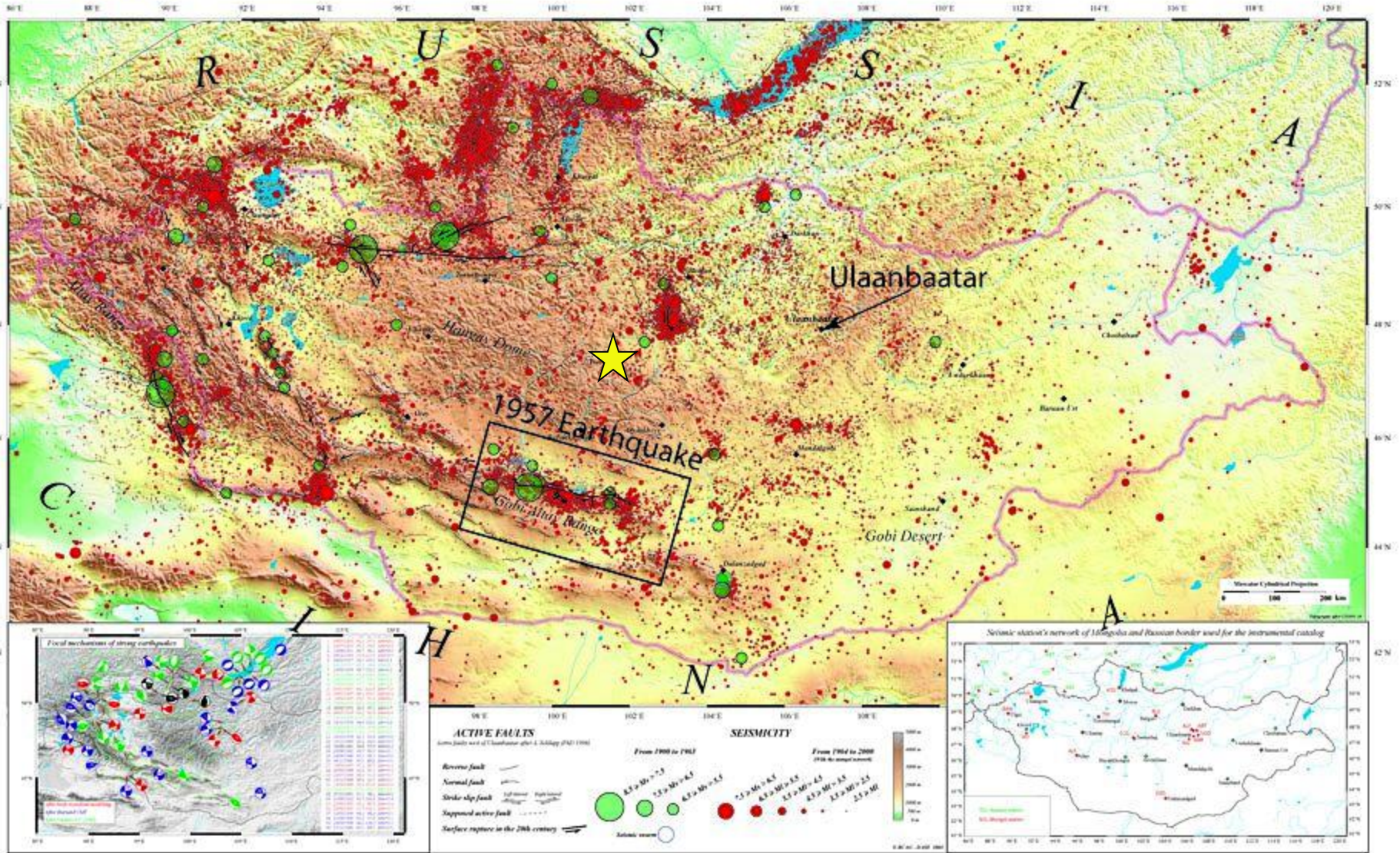
0 100 200 Kilometers  
0 100 200 Miles  
Lambert Conformal Conic Projection, SP 47NEDN

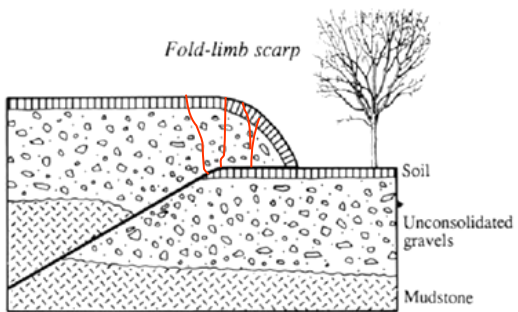


# ONE CENTURY OF SEISMICITY IN MONGOLIA (1900 - 2000)

Coordinators: Dr. Dagarmaa T. (head of Department Seismology-RCAG) and Dr. Schlapp A. (Researcher - DASE)

Authors: Adiya M., Aakhiev D., Baasanbat Ts., Bayar G., Bayarsaikhan Ch., Erdenezai D., Maagsuren D., Munkhsaikhan A., Munkhan D., Narantsetseg R., Odonsabaar Ch., Selenge L., Dr. Tsemel B., Urtibat M., Urtnasan Kh. and in collaboration with DASE since 1994 and its scientific (DASE/LDG) and technical (DASE/TMG) teams





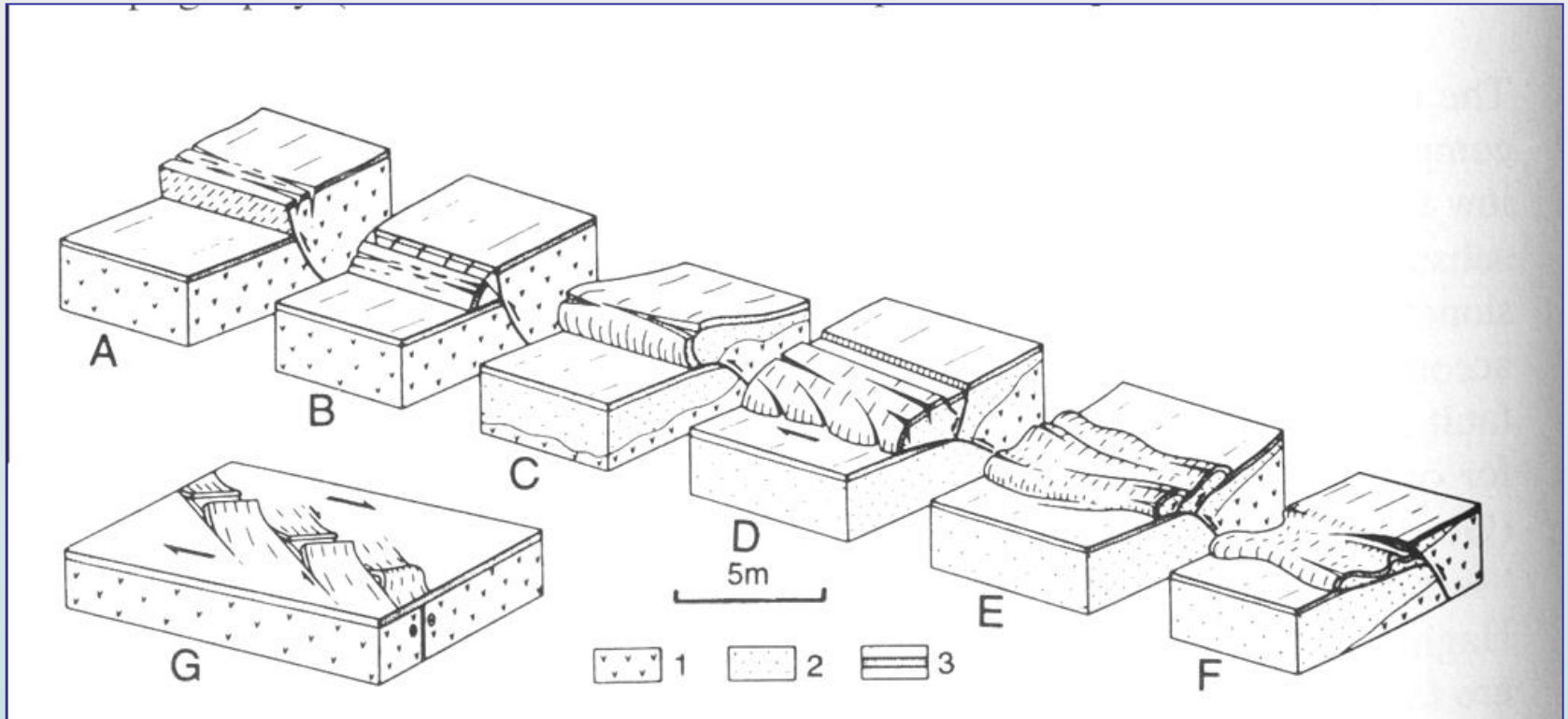
# FALLAS INVERSAS ASOCIADAS AL TERREMOTO DE MOGOD M 7.8, 1967











## Rupturas superficiales asociadas al terremoto de Spitak Armenia, 1988

(Cisternas et al. 1989, Philip et al., 1992)

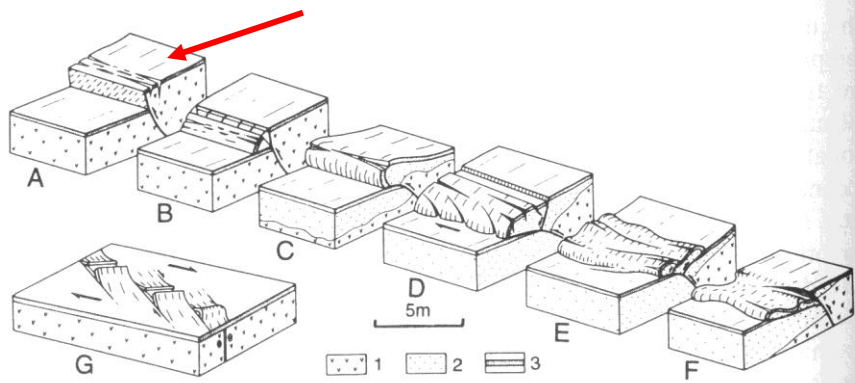


Foto: H. Philip

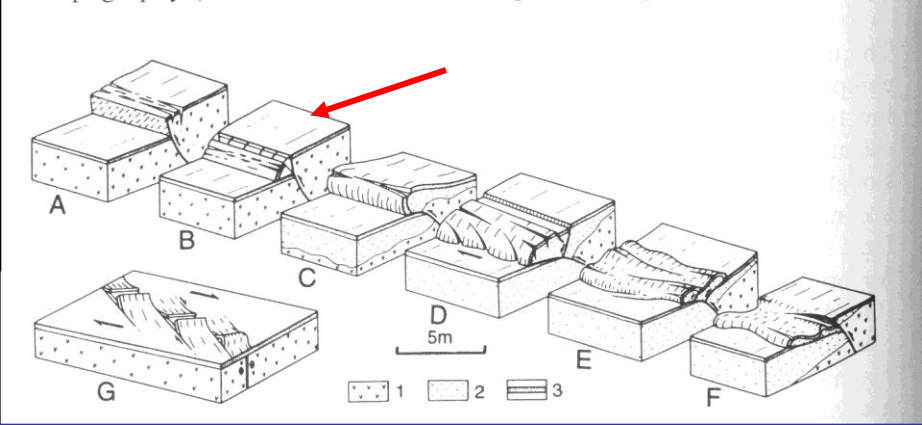
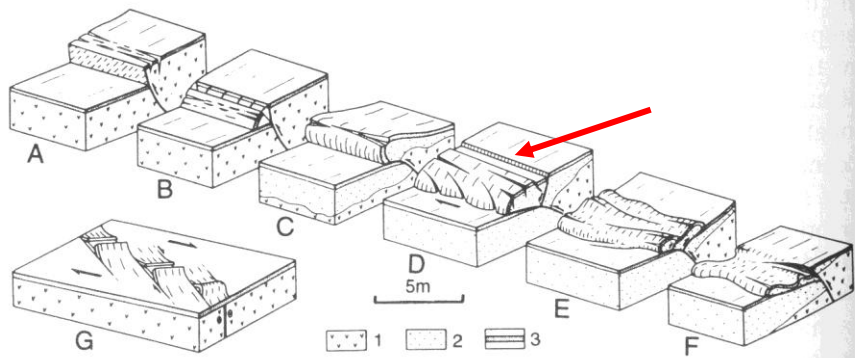


Foto: H. Philip



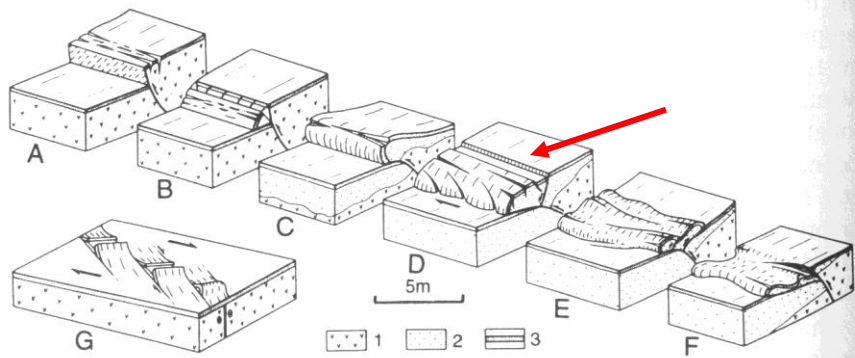


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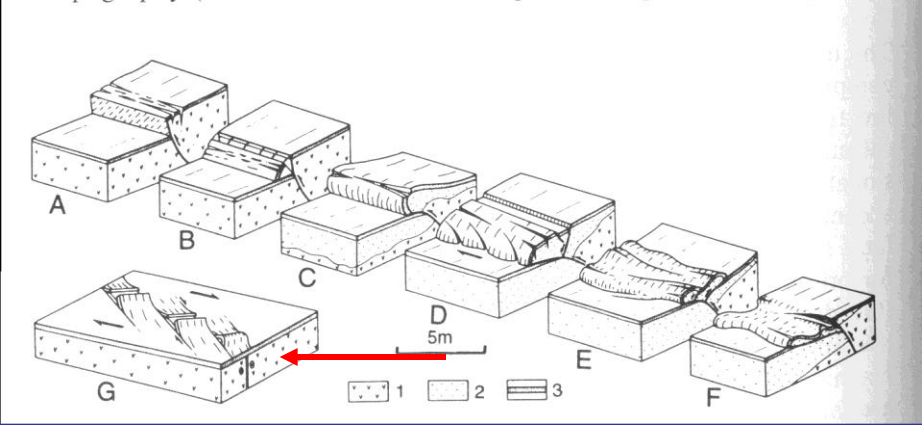
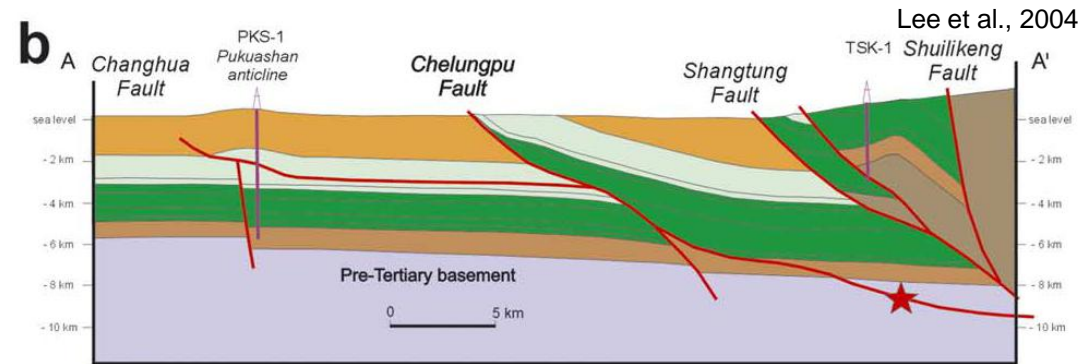
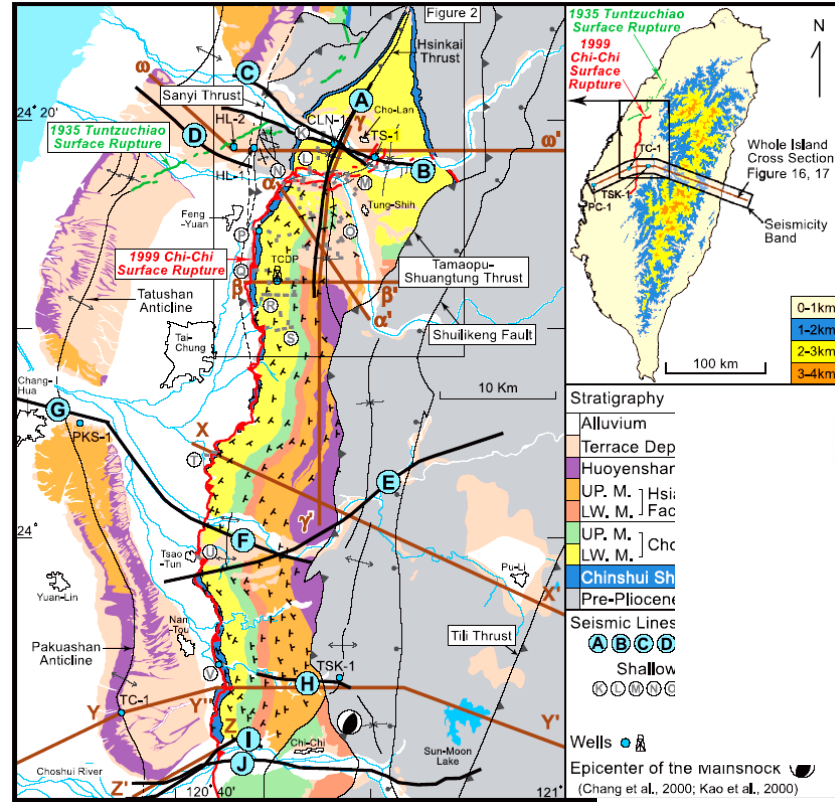


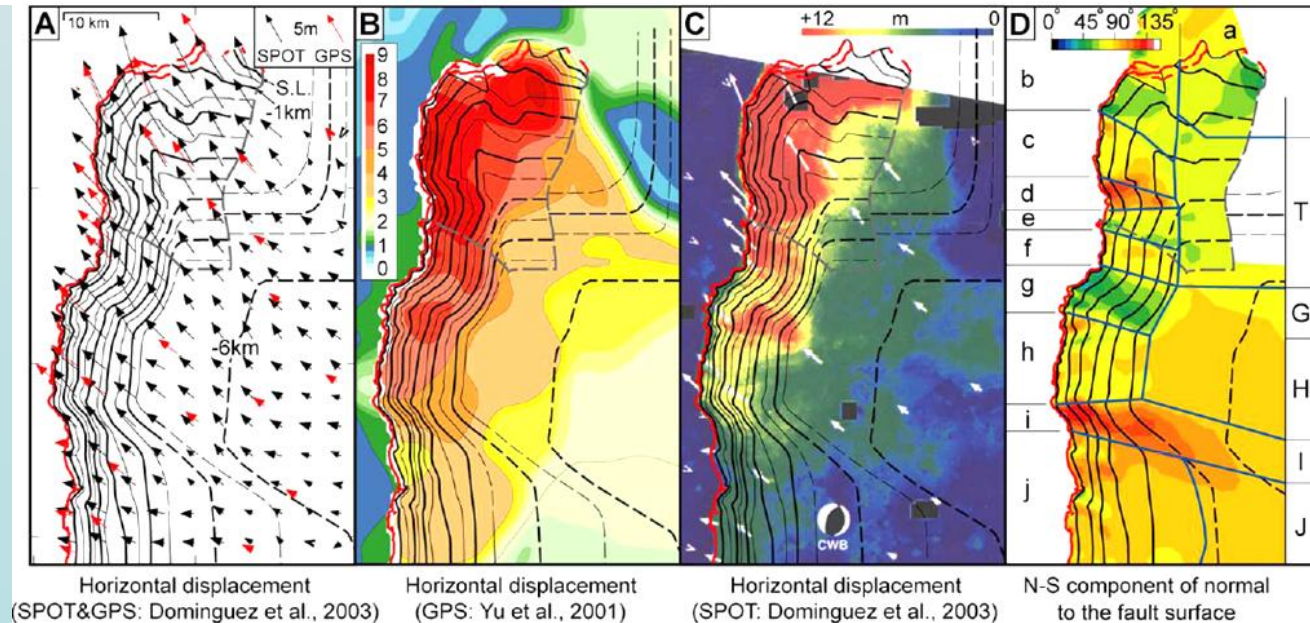
Foto: H. Philip

# Chelungpu-Sanyi Thrust

## TERREMOTO de "CHI-CHI", TAIWAN, 1999

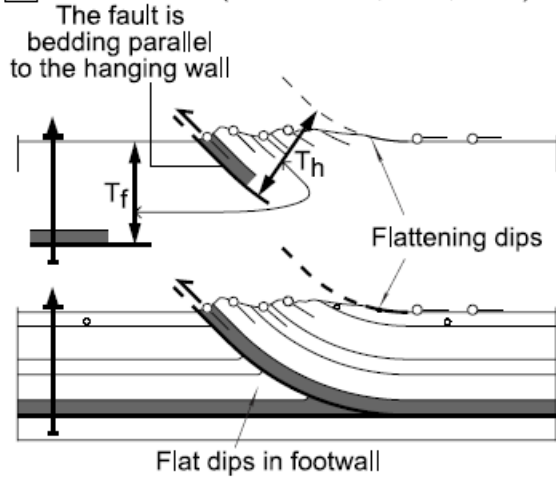


Yue et al. 2005 JSG

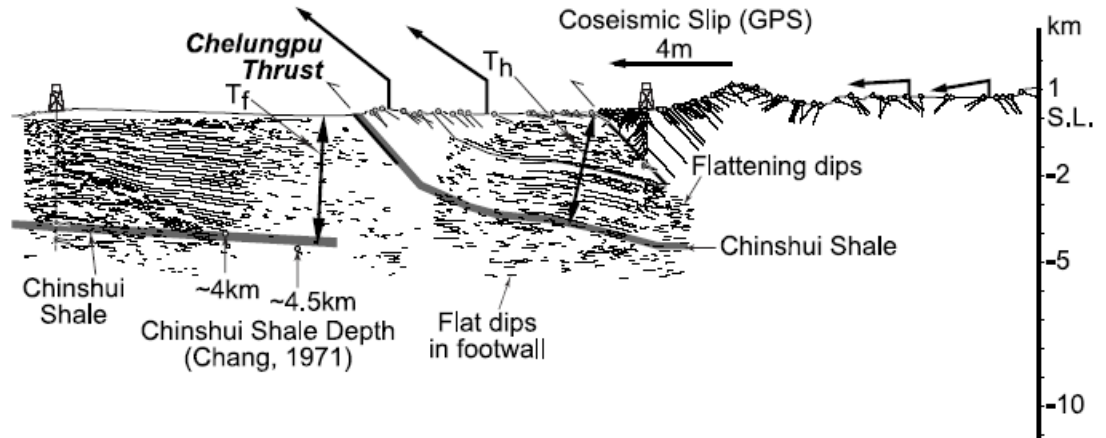




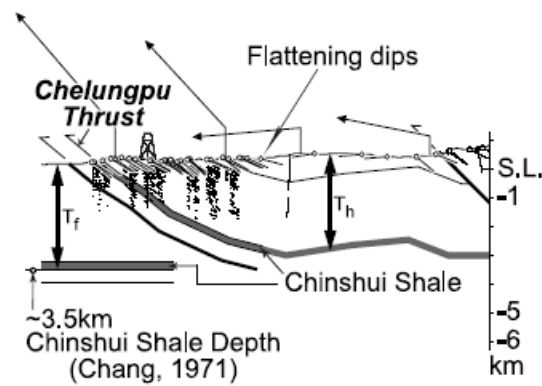
**A** Classic model (After Roeder, et al., 1978)



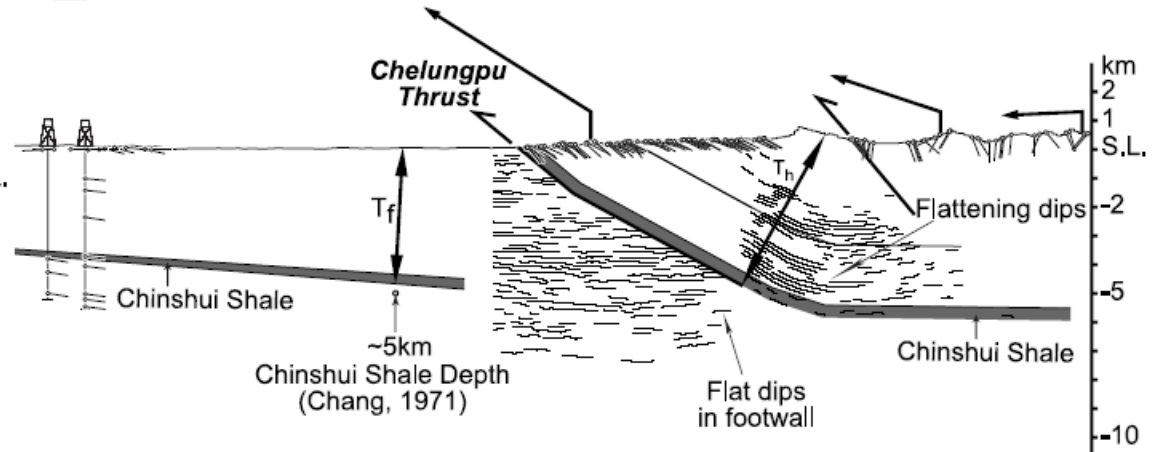
**B** Data: cross section YY'



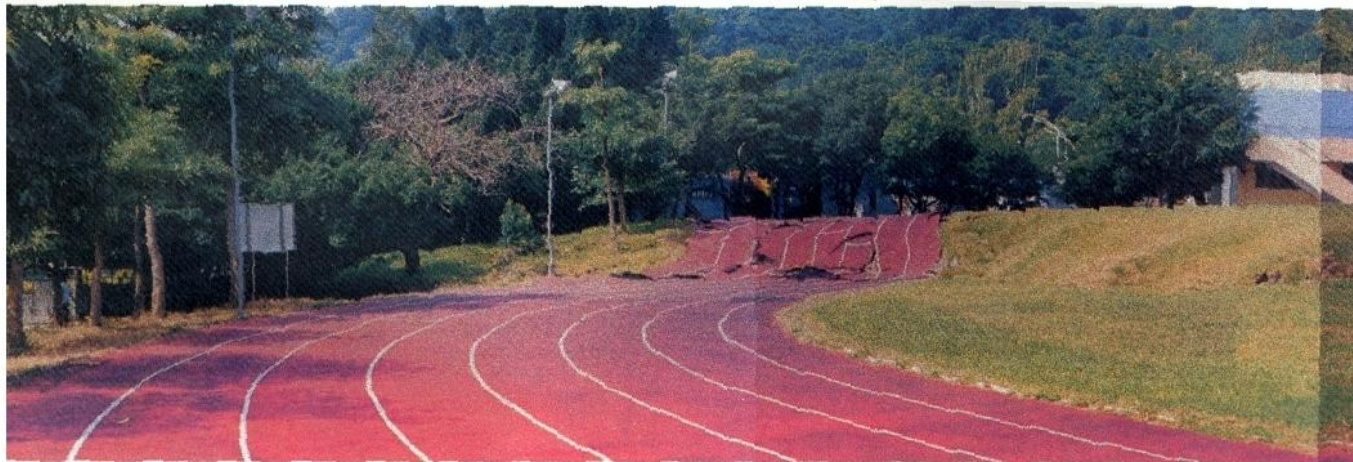
**C** Data: cross section  $\beta\beta'$



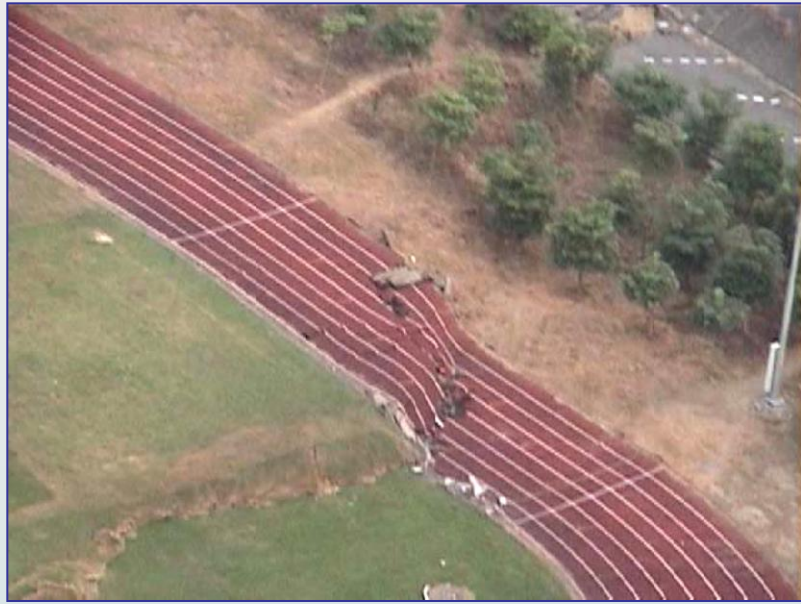
**D** Data: cross section XX'



# TERREMOTO "CHI-CHI", TAIWAN, 1999

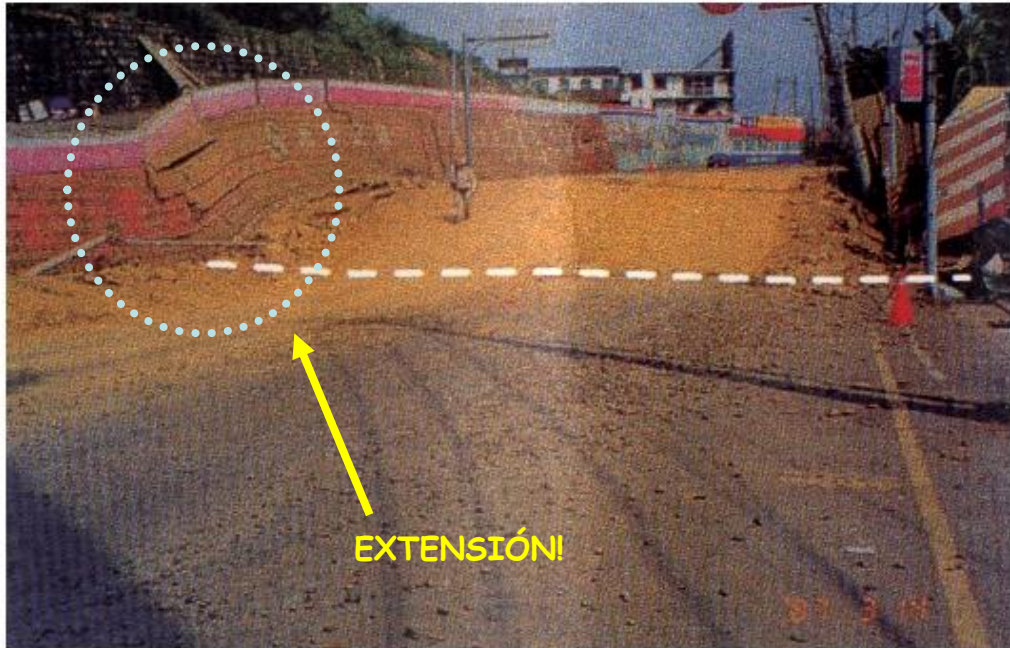


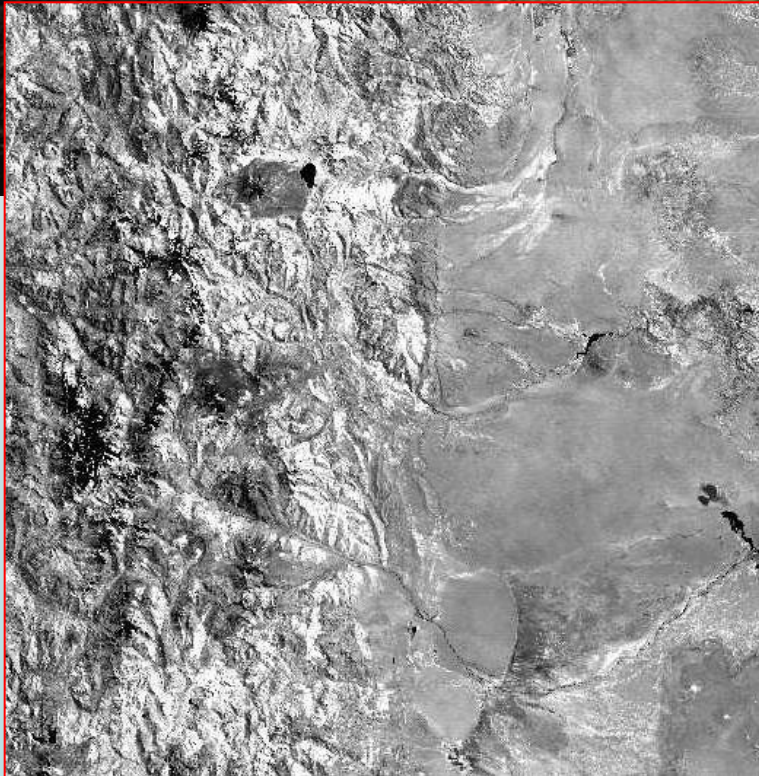
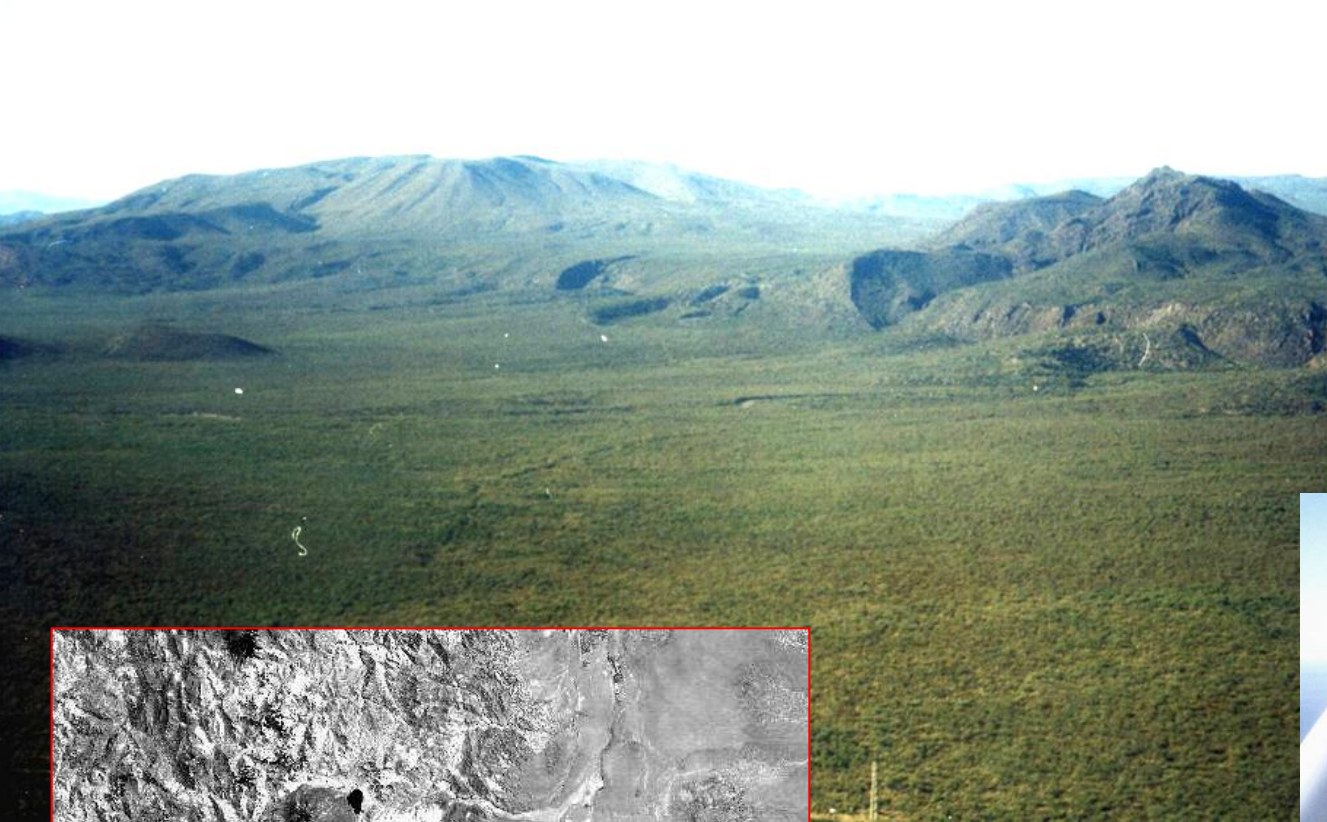
Fotos: Geol. Survey of Taiwan





Escarpa monoclinal en terrazas aluviales

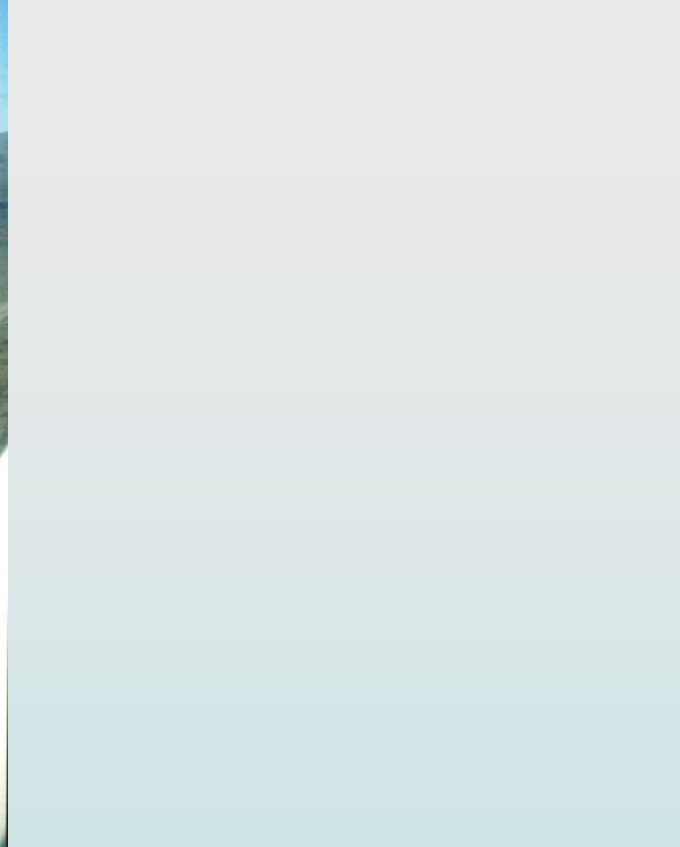




FALLA LAS MALVINAS,  
BLOQUE DE SAN RAFAEL  
MENDOZA, ARGENTINA



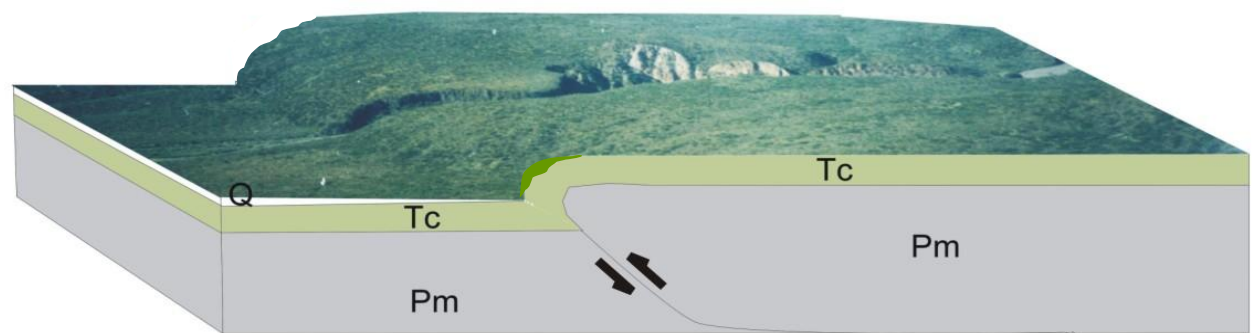




FALLA LAS MALVINAS,  
MENDOZA, ARGENTINA

E

O

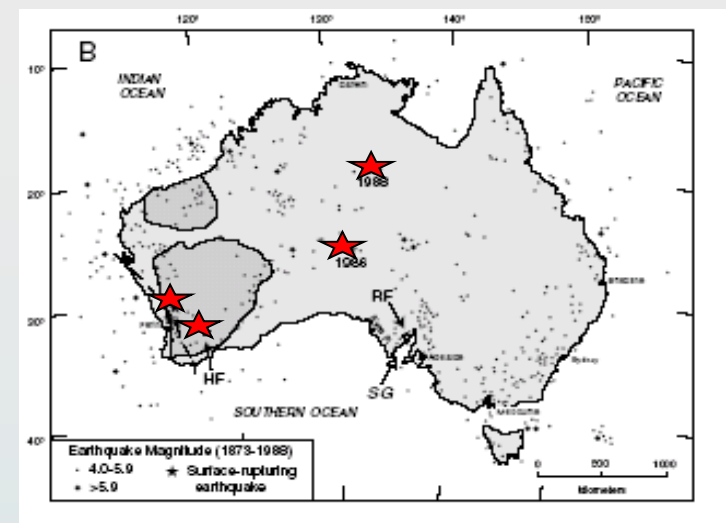
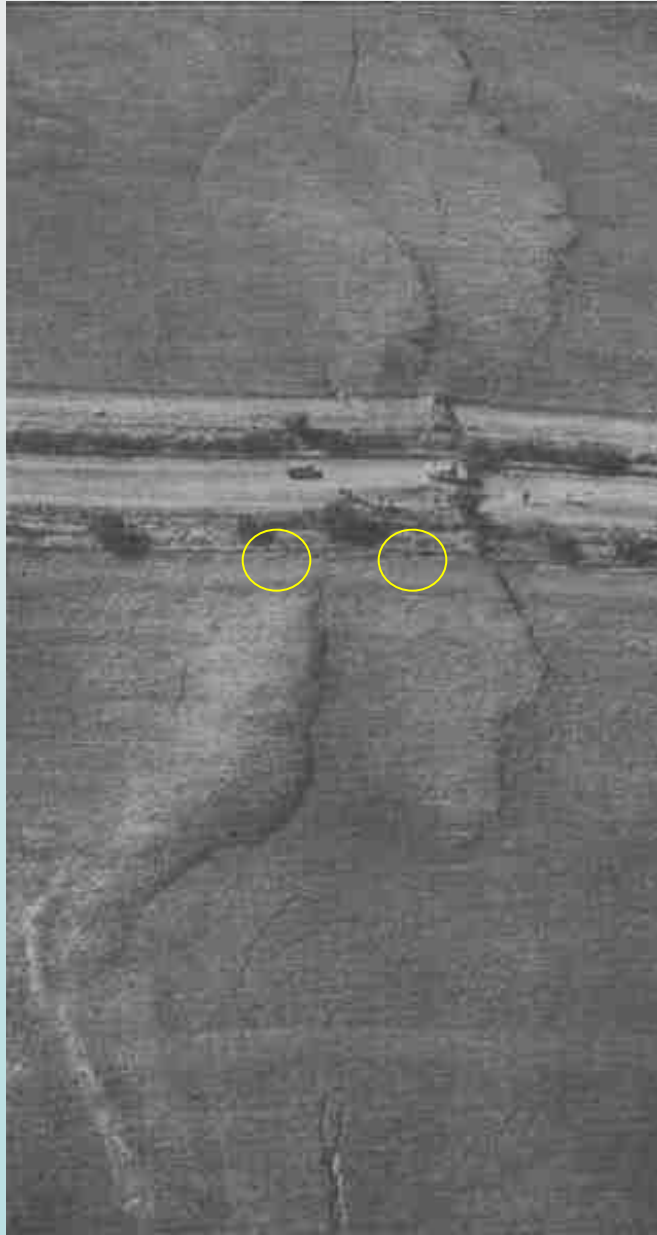


Costa y Cisneros (2006)

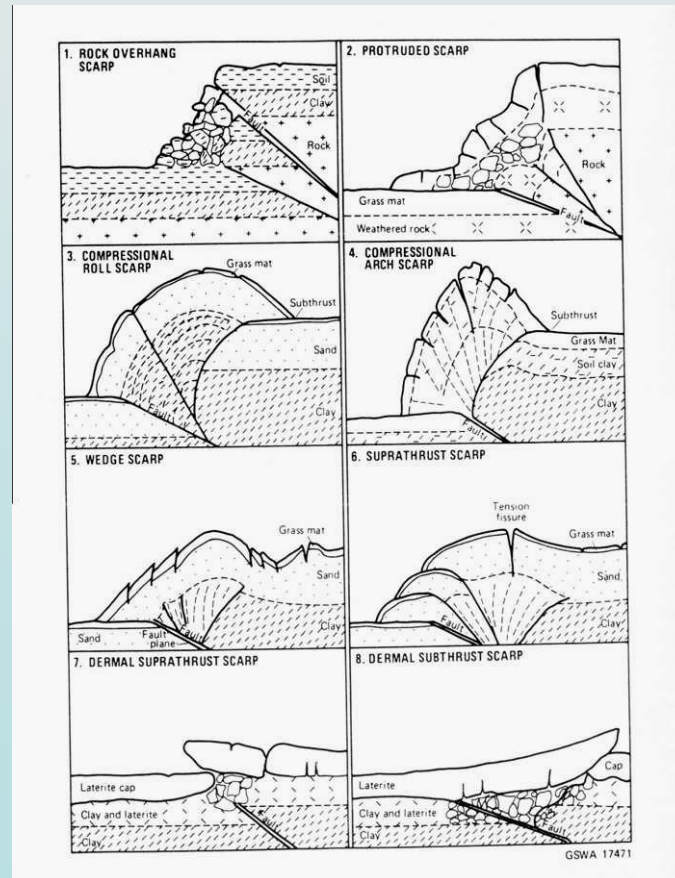
# Terremotos en Areas Continentales "Estables" (SCI)

Meckering, Australia, M 6.8, 1968

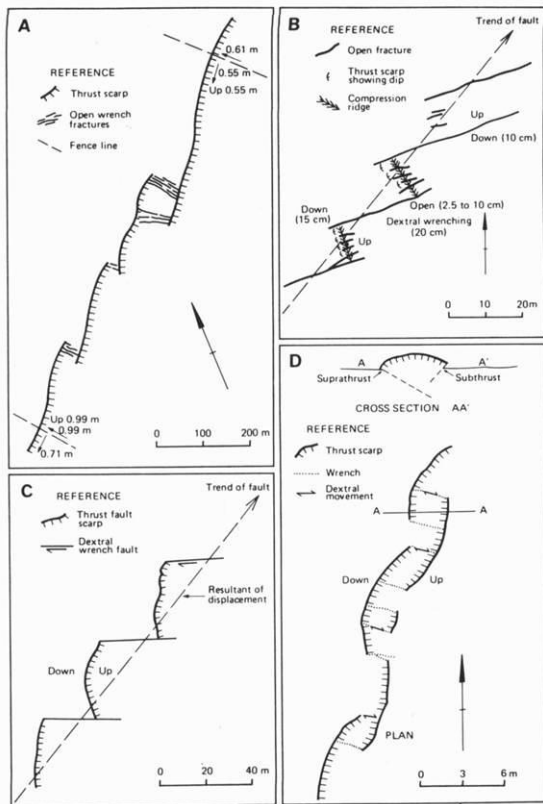
Tennant Creek, Australia M 6.8 1988



Adaptado de Crone et al. (2003)



Hull (1987)



**Figure 10-58.** Typical fault patterns on the 1968 Meckering fault. After Gordon and Lewis (1980).

Meckering, 2001



Meckering, 2001

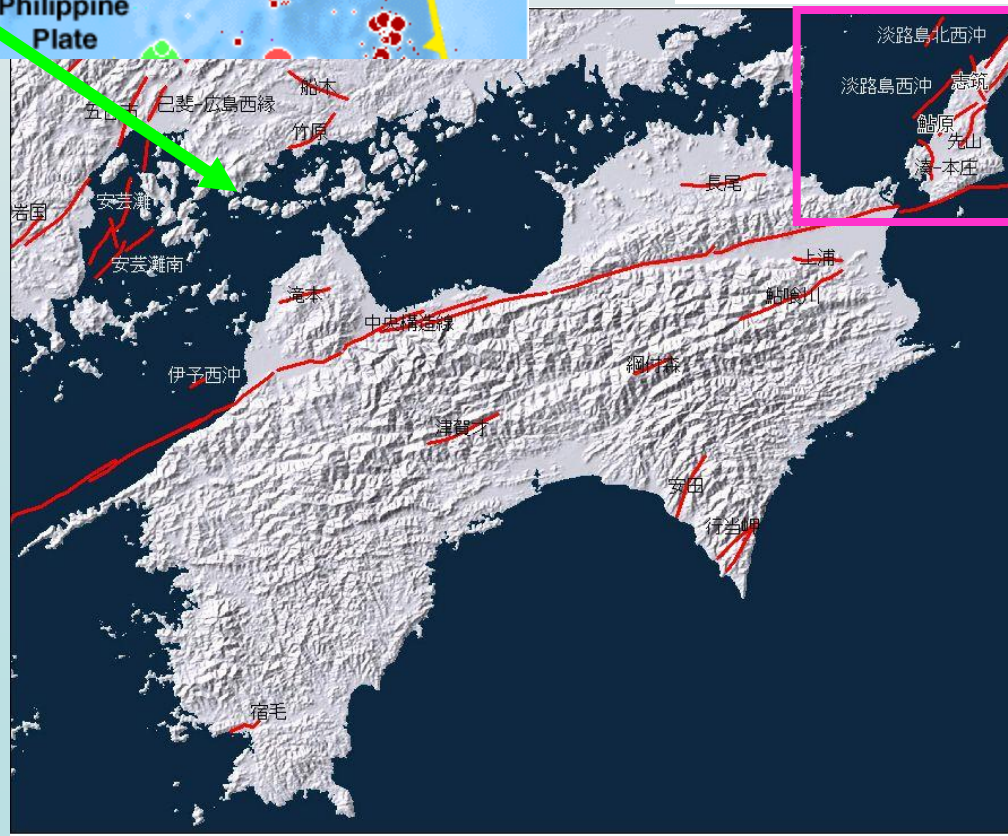
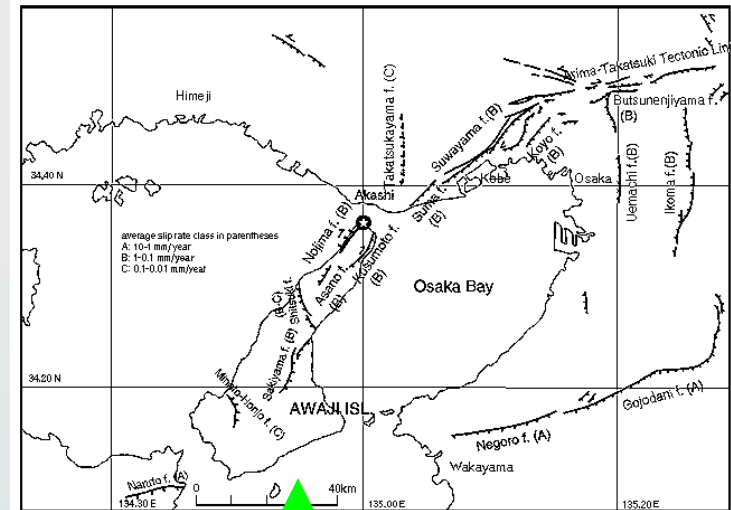
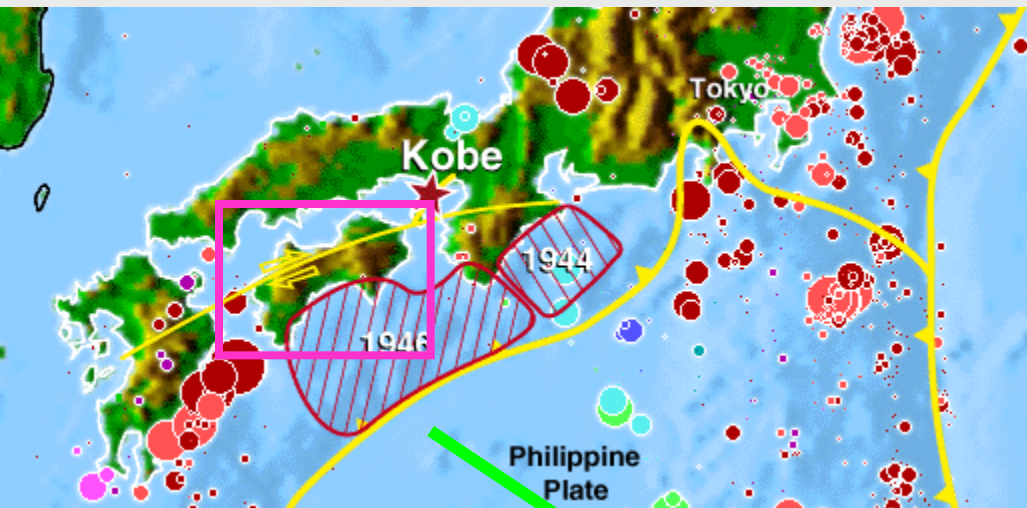
Foto: K. McCue



*Ground faulting, Tennant Creek earthquake, 1988*

# TERREMOTO DE KOBE, 1995, M 7.2

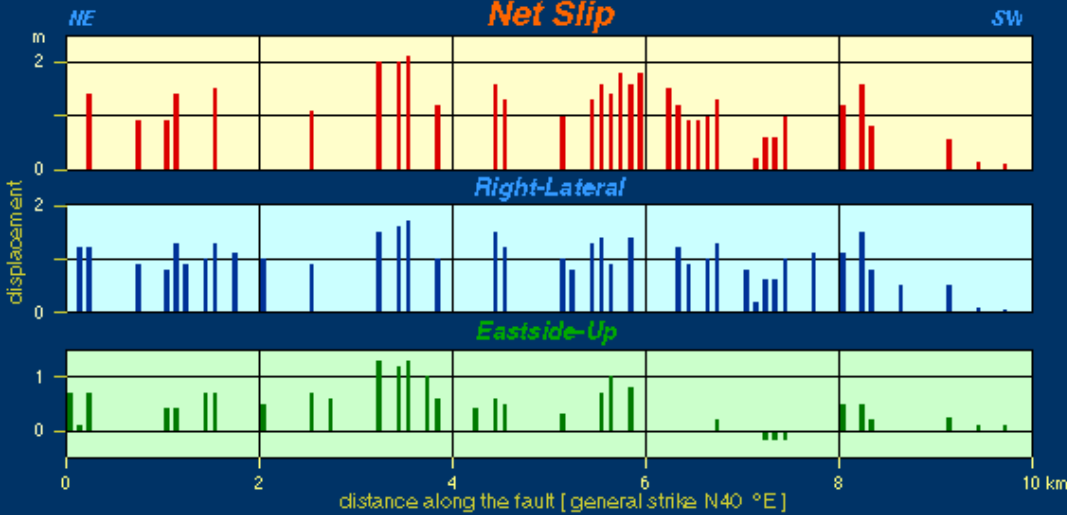
## TRANSCURRENCIA + COMPRESIÓN





*Coseismic Slip of the Nojima Fault in Awaji Island*

**Net Slip**



by Y. Awata, K. Mizuno, Y. Sugiyama, K. Shimokawa, and T. Imura

© Geological Survey of Japan 1995

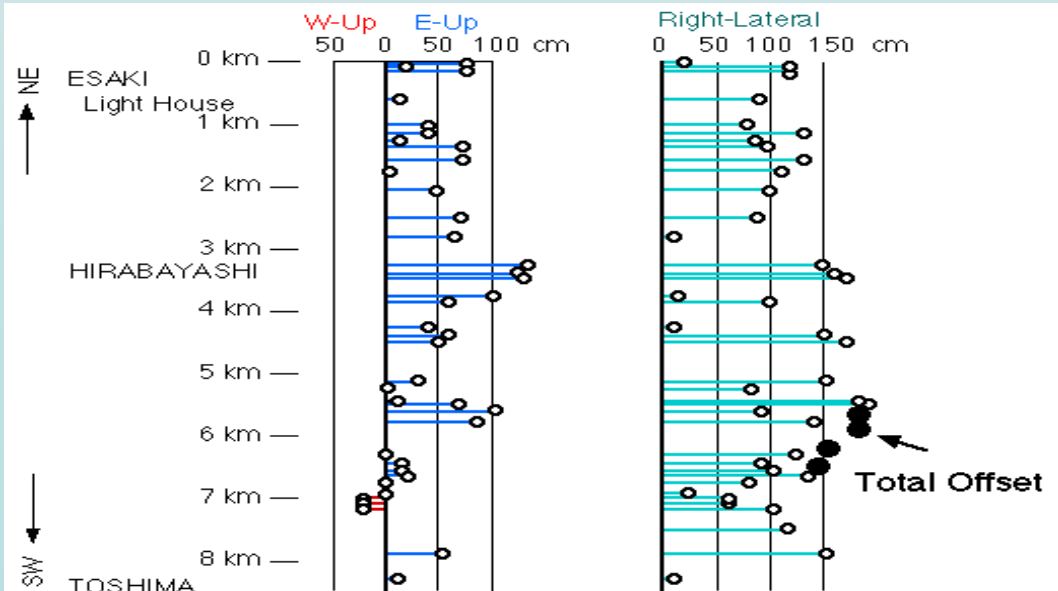






Foto: Geol. Survey of Japan



Foto: Y. Kinugasa



Foto: Geol. Survey of Japan



Foto: Geol. Survey of Japan



The Earthquake Museum, Awaji Island, Japón



Terremoto de Kobe, 1995

Escarpa de falla con componente inversa  
en bedrock con labio elevado y cara libre  
Preservado intacto!!



