

# GPS Network Status of Some Asian Countries

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# GPS in Asia



# **Overview**

- **Current Status of GPS Network in China**  
**National Network : CMONOC I & II**  
**Local Network for RTK**
- **GPS Network in Some Other Asian Countries**  
**Japan, Korea, India, Nepal, Mongolia ...**
- **Perspective on GNSS Cooperation in Asia**

# Crustal Movement Observation Network Of China ( CMONOC I )



- ★ CORS 27
- Annually Observed Sta. 55
- Triyearly Observed Sta. 100  
0

# IGS Tracking Stations in CMONOC



URUM

BJFS

LHAS

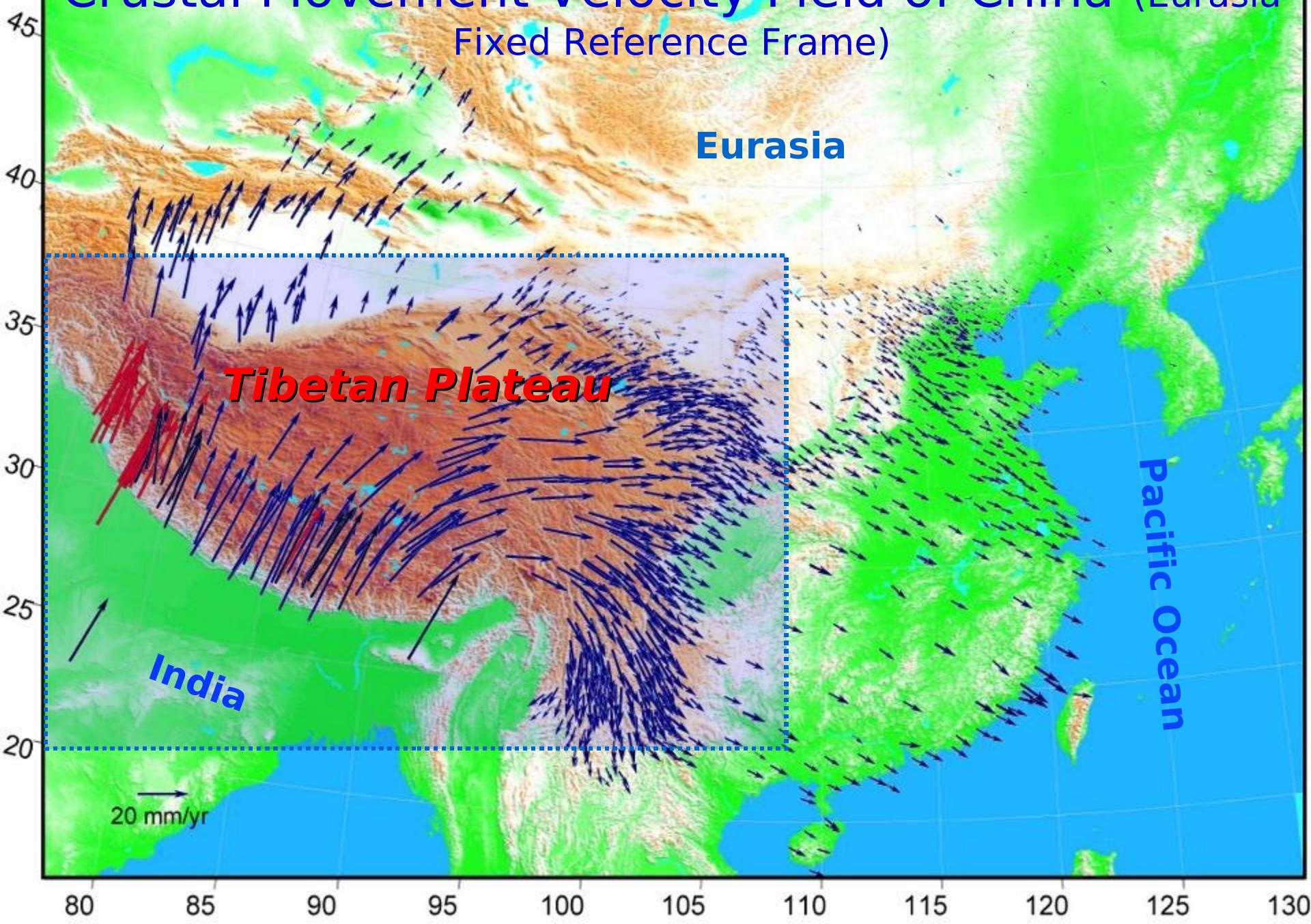
WUHN

SHAO

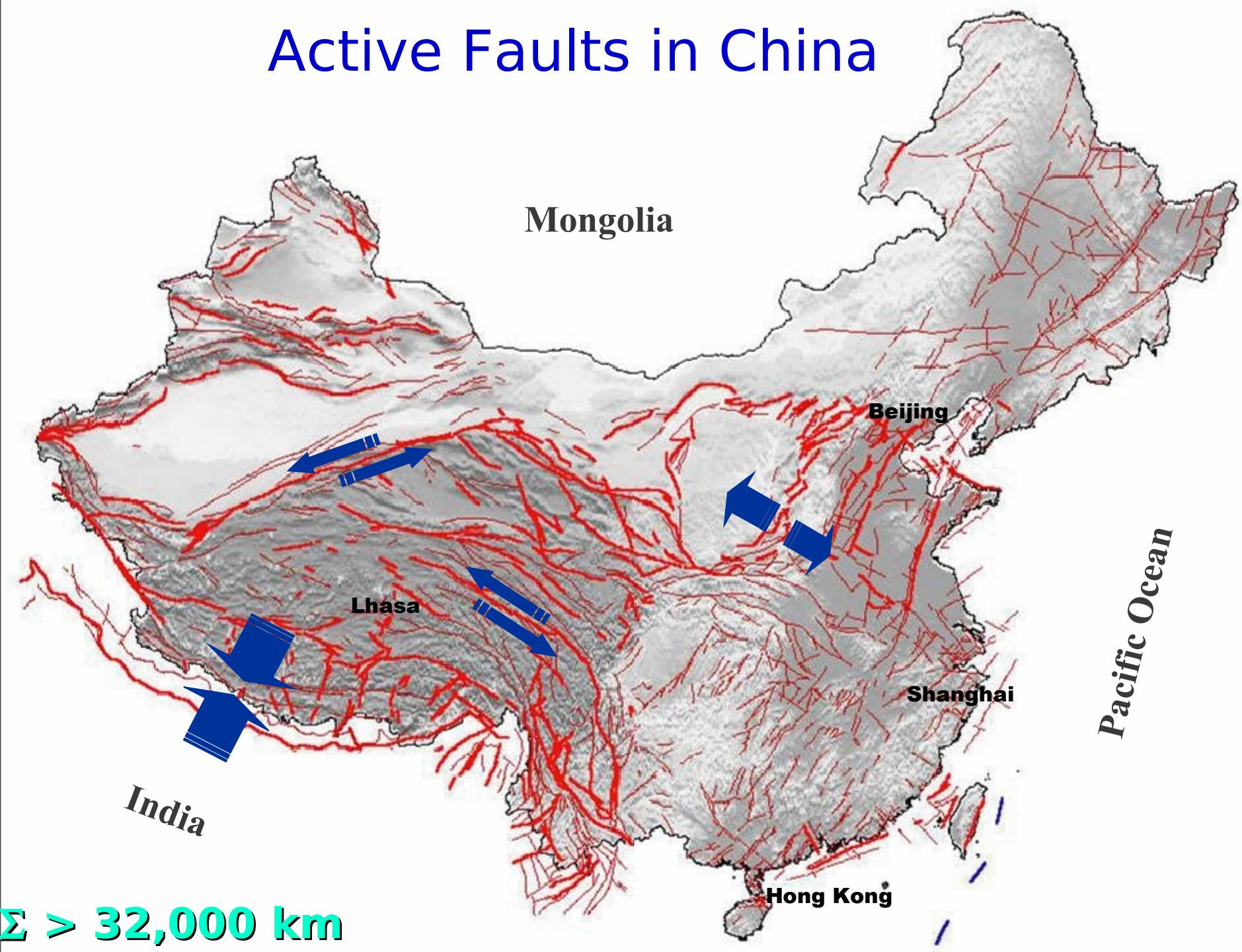
KMIN

IGS  
Trackin  
g  
Station

# Crustal Movement Velocity Field of China (Eurasia Fixed Reference Frame)



# Active Faults in China



# Earthquake in China

( 1900 - Present )

Mongolia

Beijing

Japan

India

Lhasa

Shanghai

Taipei

Hong Kong

- 5.0-5.9
- 6.0-6.9
- 7.0-7.9
- > 8.0

# Update of CMONOC: New CORS



Additional 233 CORS

$\Sigma$  260

# Update of CMONOC: New Campaign Stations

Additional 1000  
Stations  
 $\Sigma$  2000



# Stations of CMONOC I+II (After 2010)



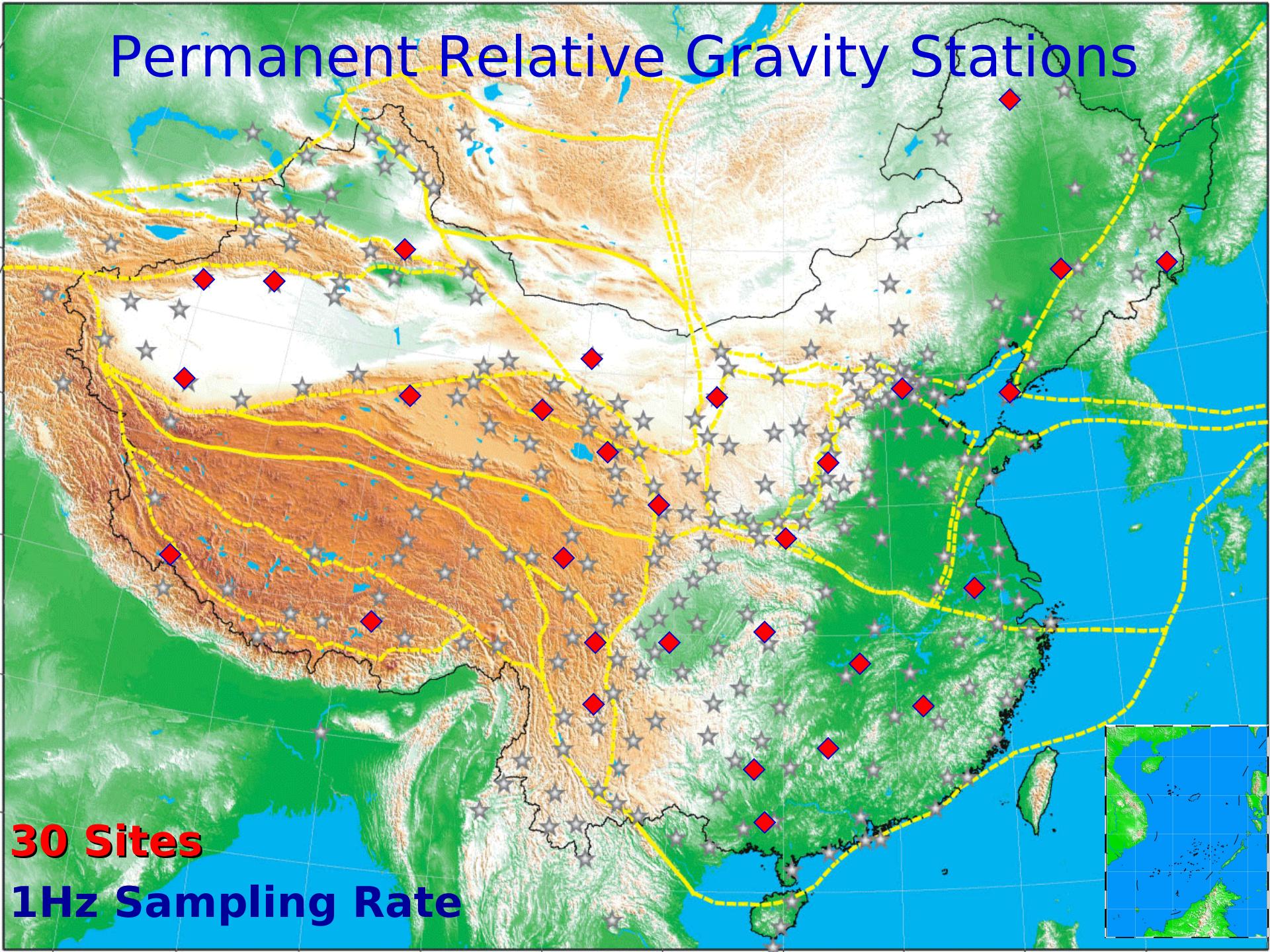
## Campaign Sta.

- CMONOC I (1000)
- CMONOC II (1000)

## CORS

- ★ CMONOC I (27)
- ★ CMONOC II (233)

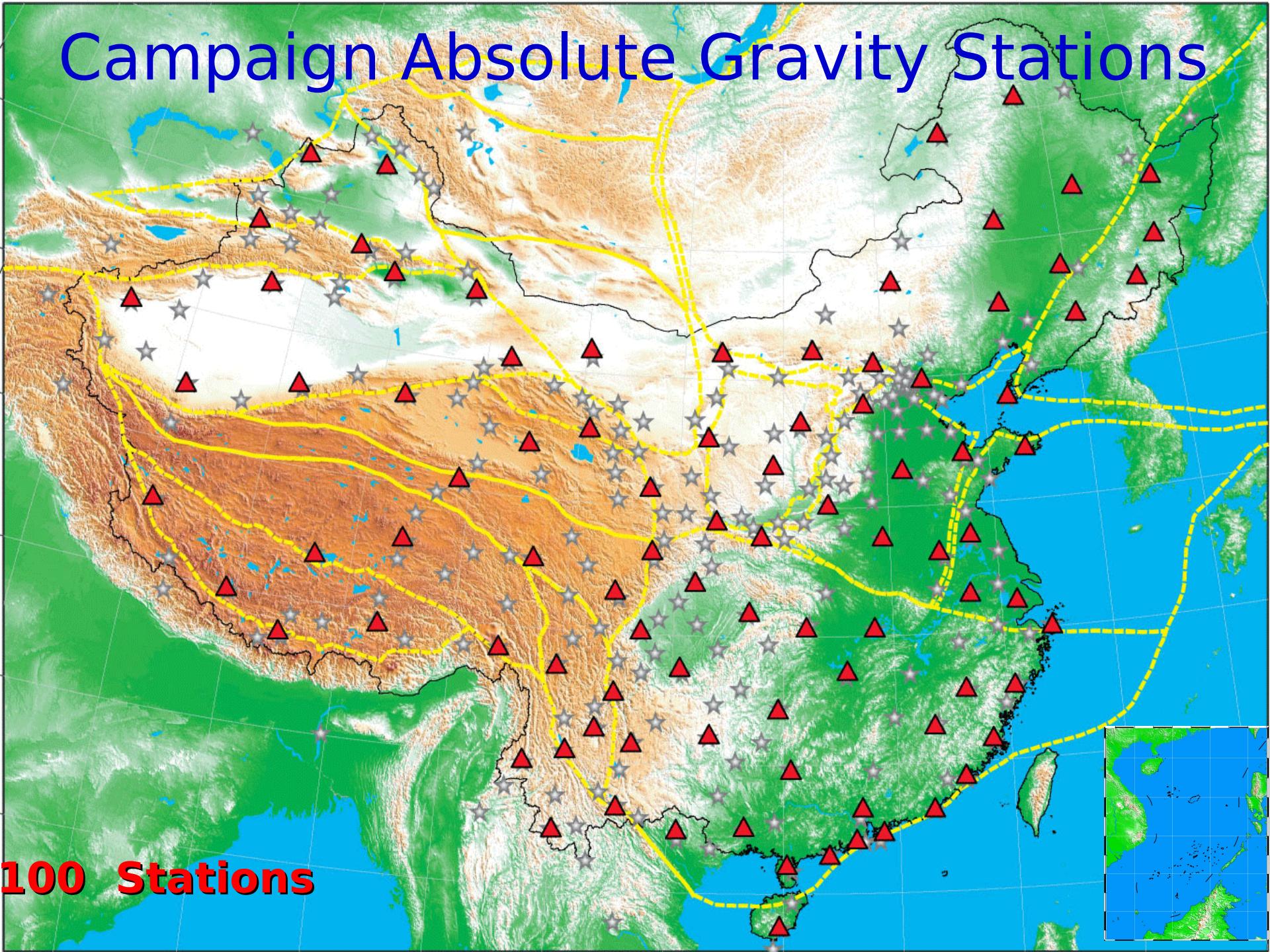
# Permanent Relative Gravity Stations



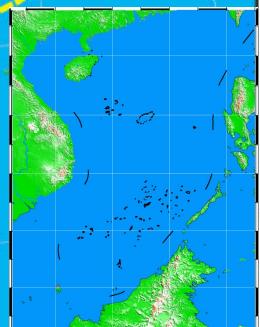
**30 Sites**

**1Hz Sampling Rate**

# Campaign Absolute Gravity Stations



**100 Stations**





# VLBI and SLR

URUM  
●

CHUN  
★

BJFS  
★

Xi'an  
★

WUHN  
★

SHAO  
★

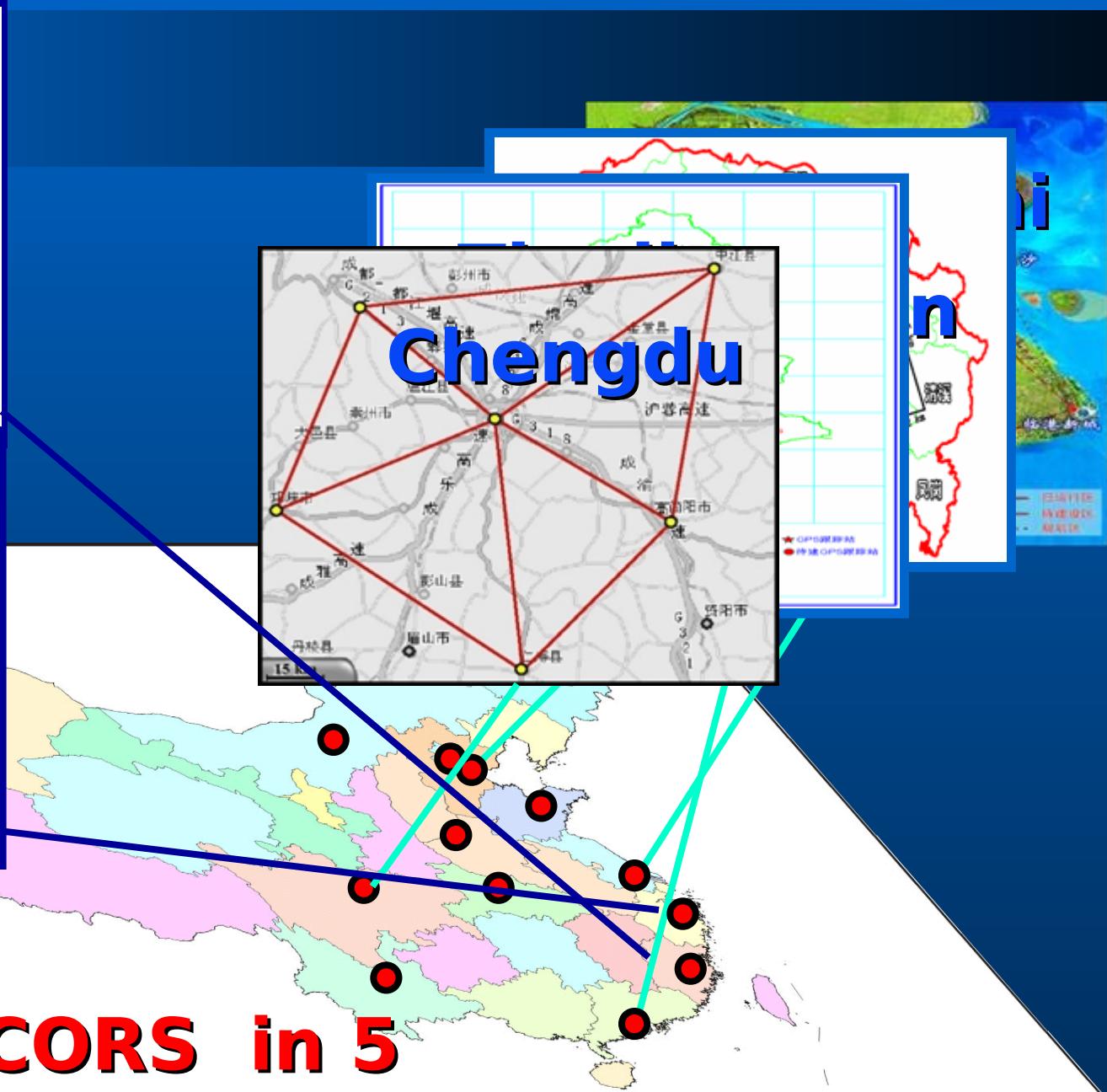
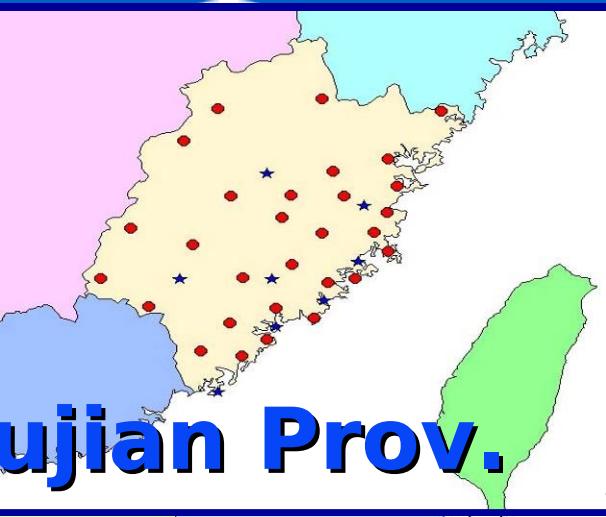
KMIN  
★

- VLBI Station
- ★ SLR Station

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# Local GPS CORS for RTK Applications

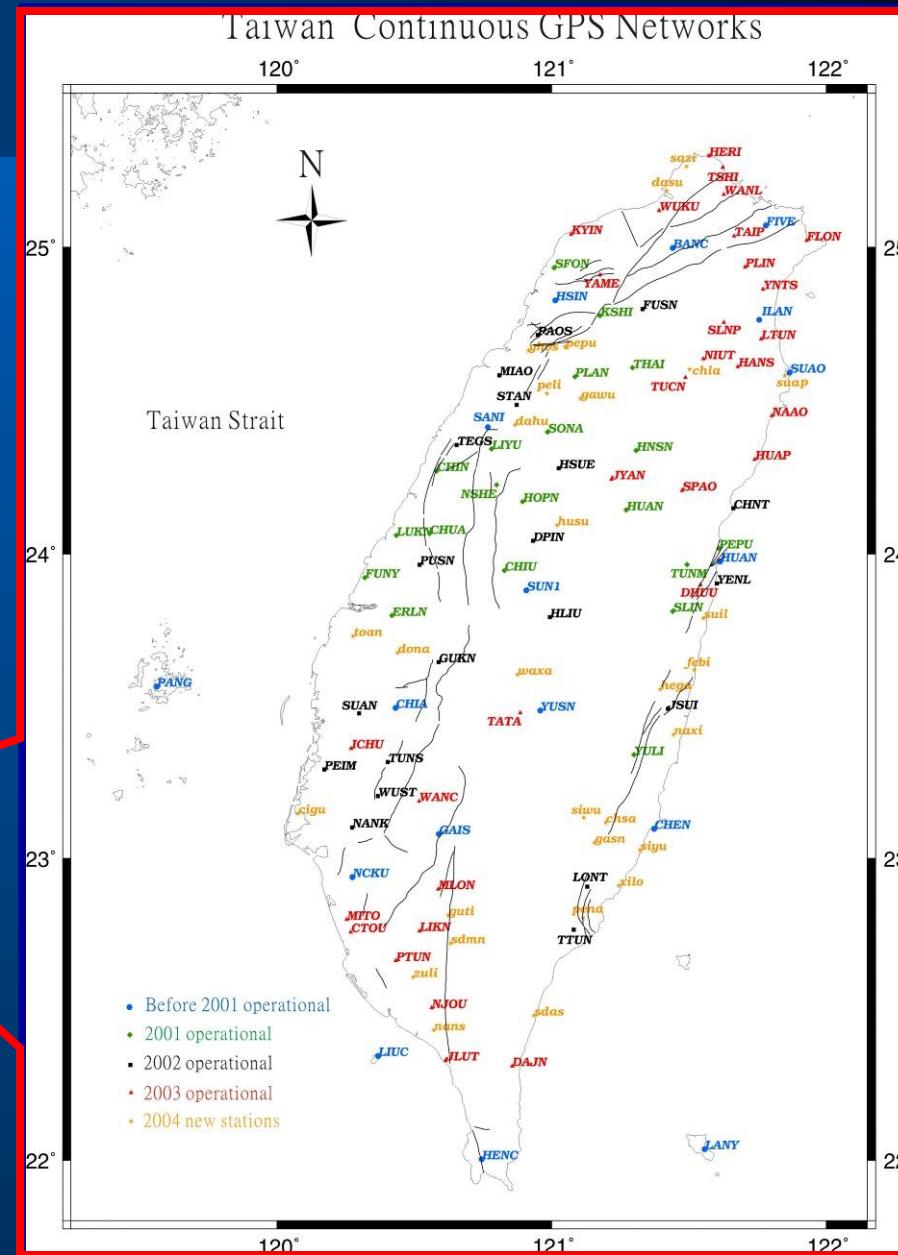


~300 Local CORS in 5

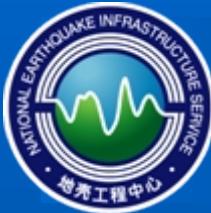
# GPS CORS in Taiwan



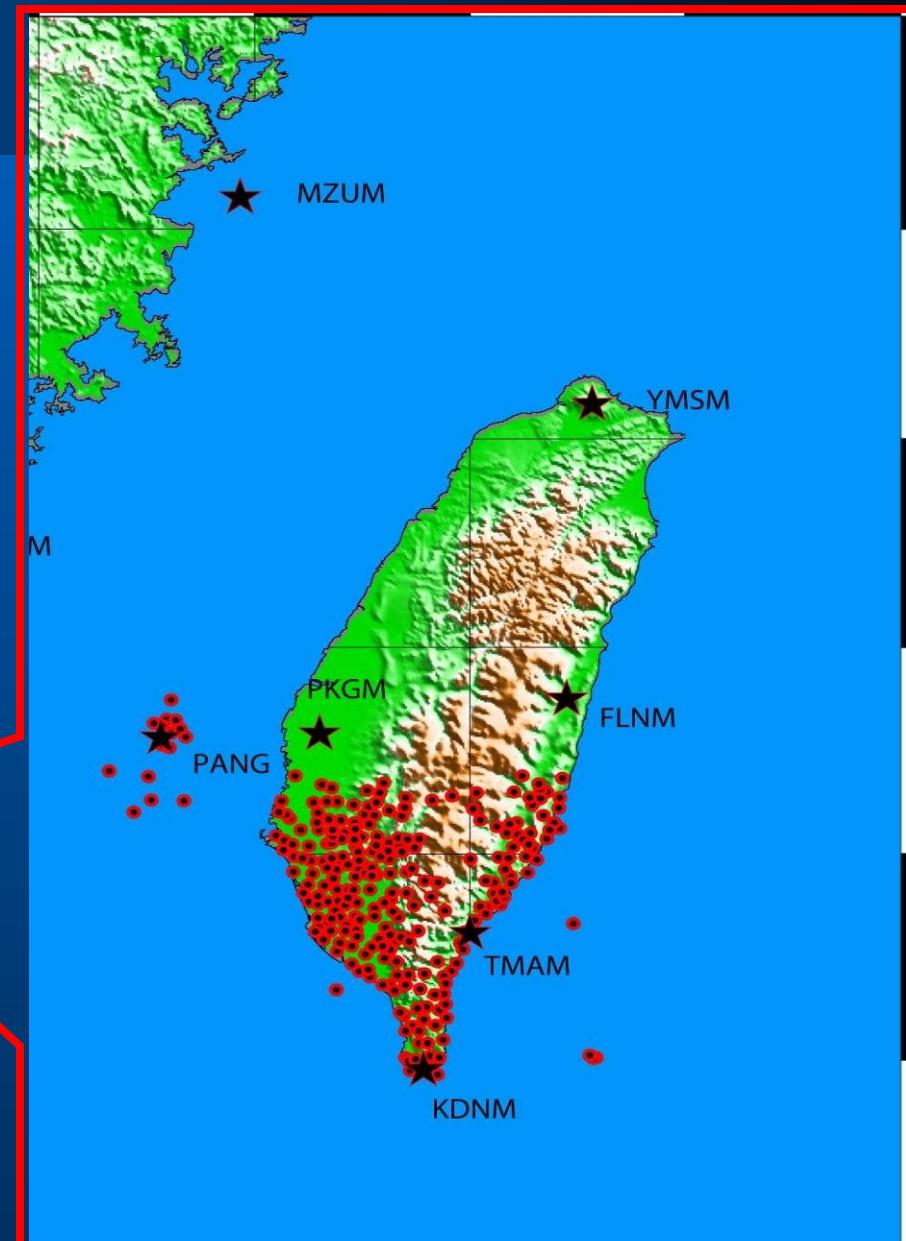
~120  
CORS



# GPS Campaign Stations in Taiwan



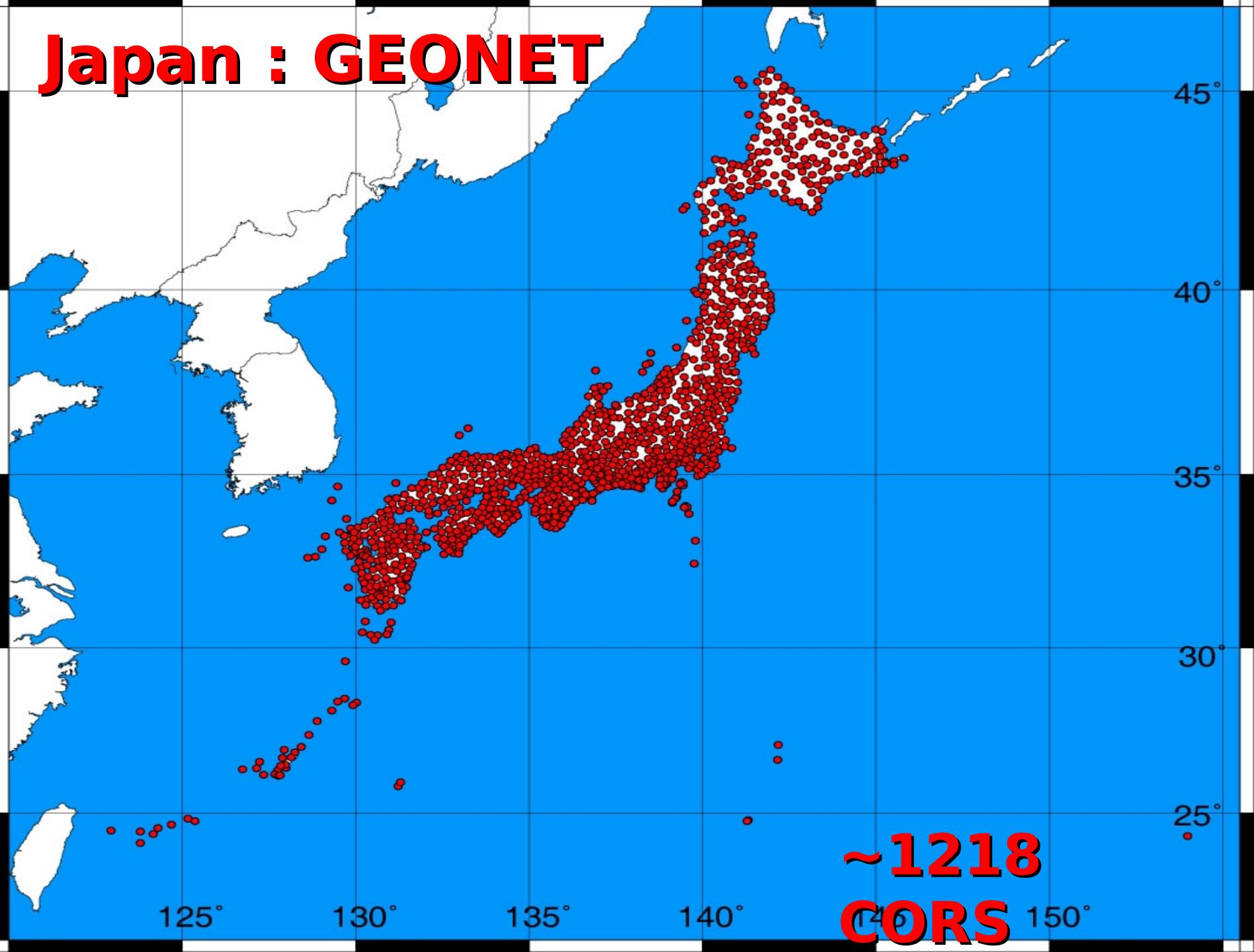
**South :**  
**~260**  
**Mid & North**



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# Japan : GEONET



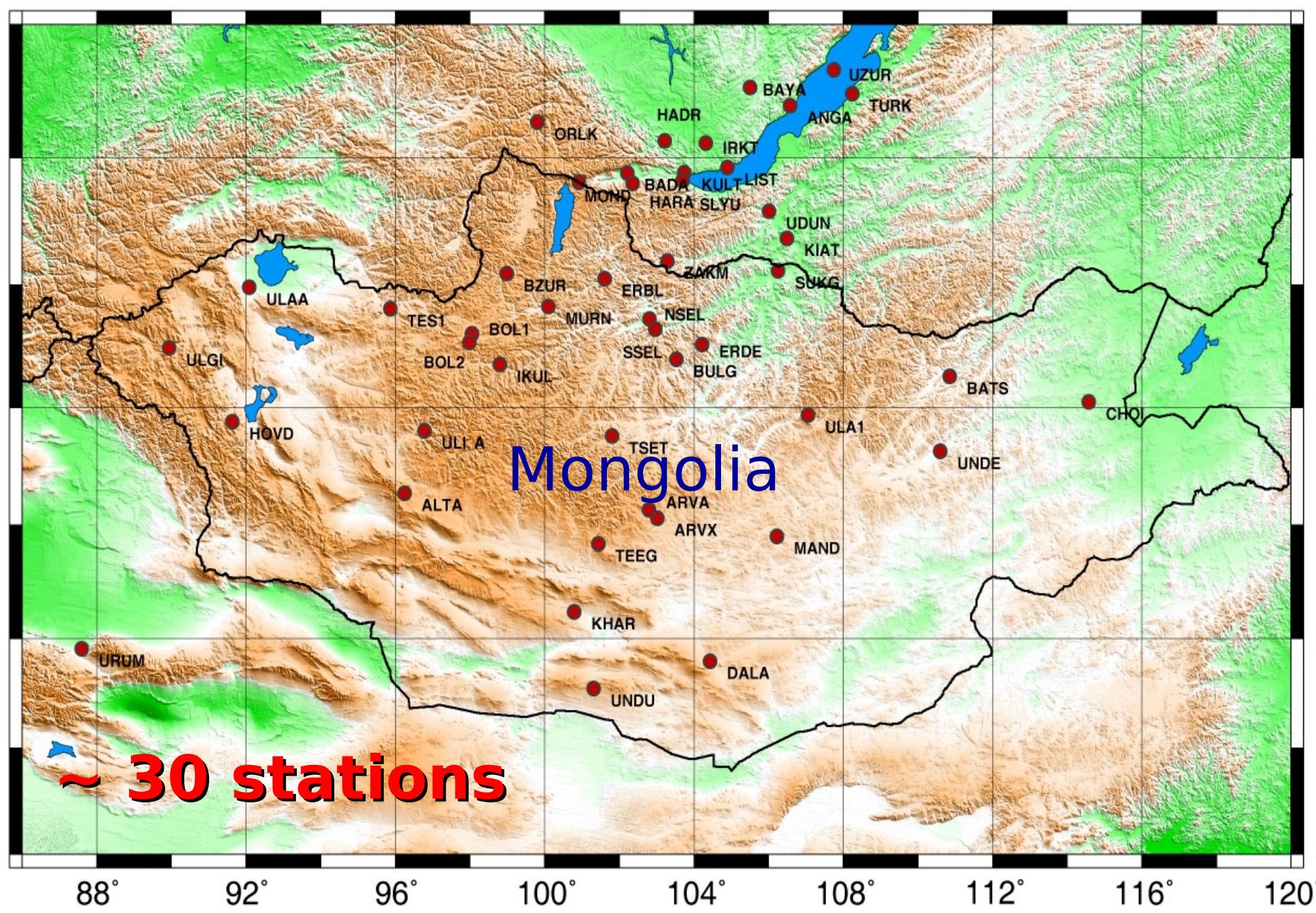
~1218  
CORS

# GPS in Korea

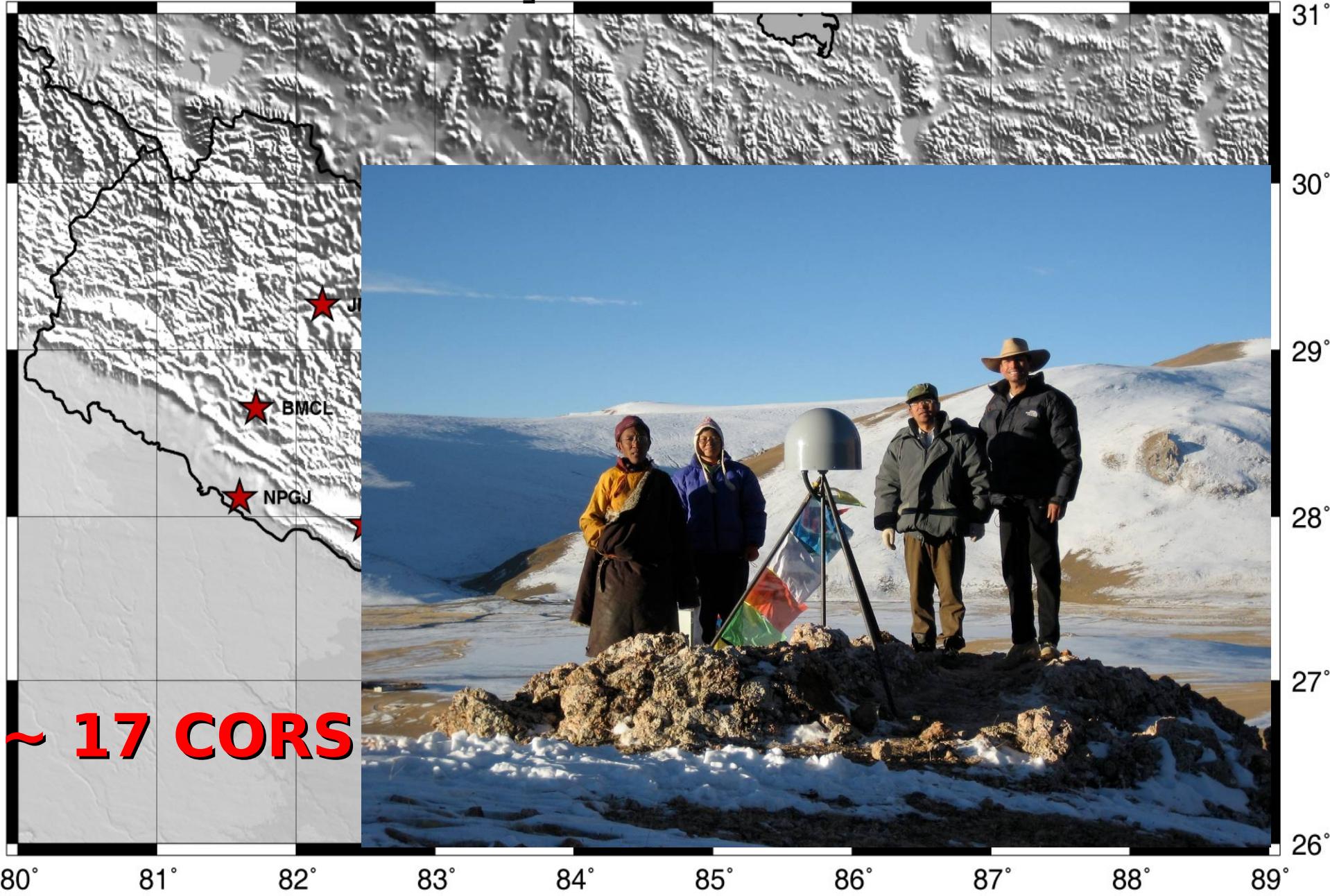


**85 CORS**

# Mongolia: CORS + Campaign Stations

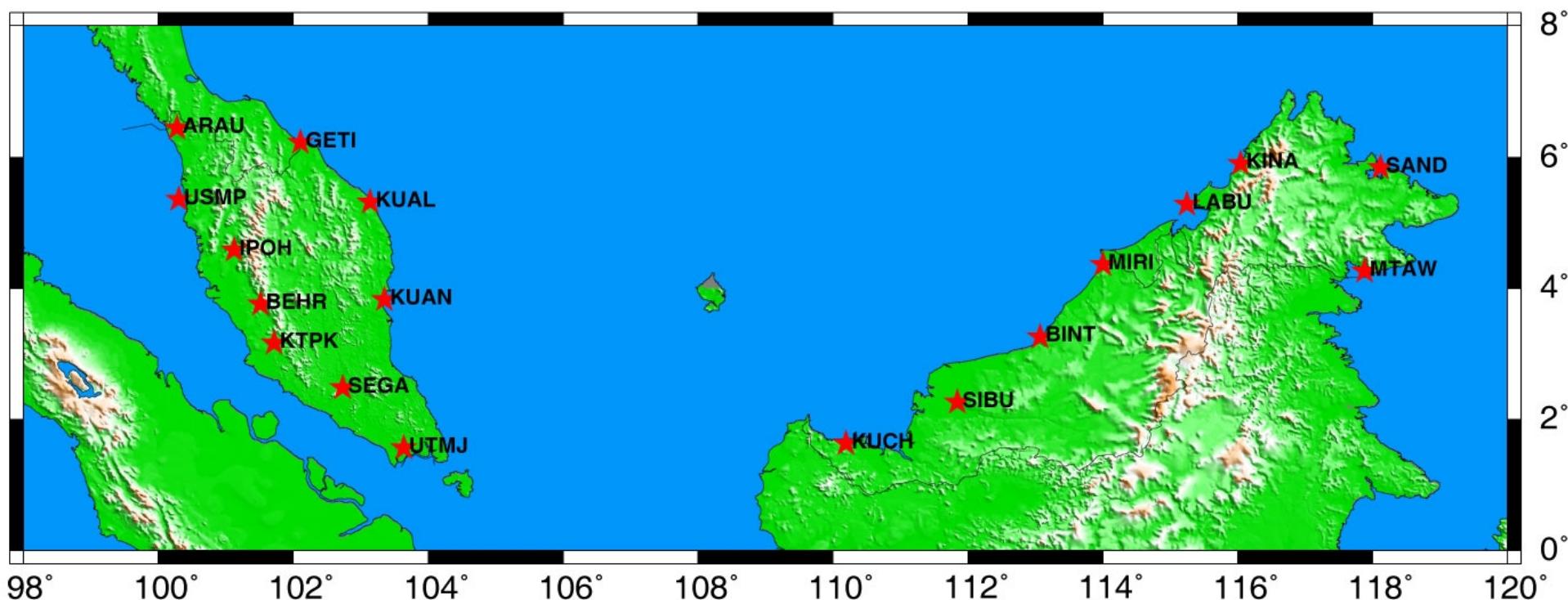


# Nepal: CORS



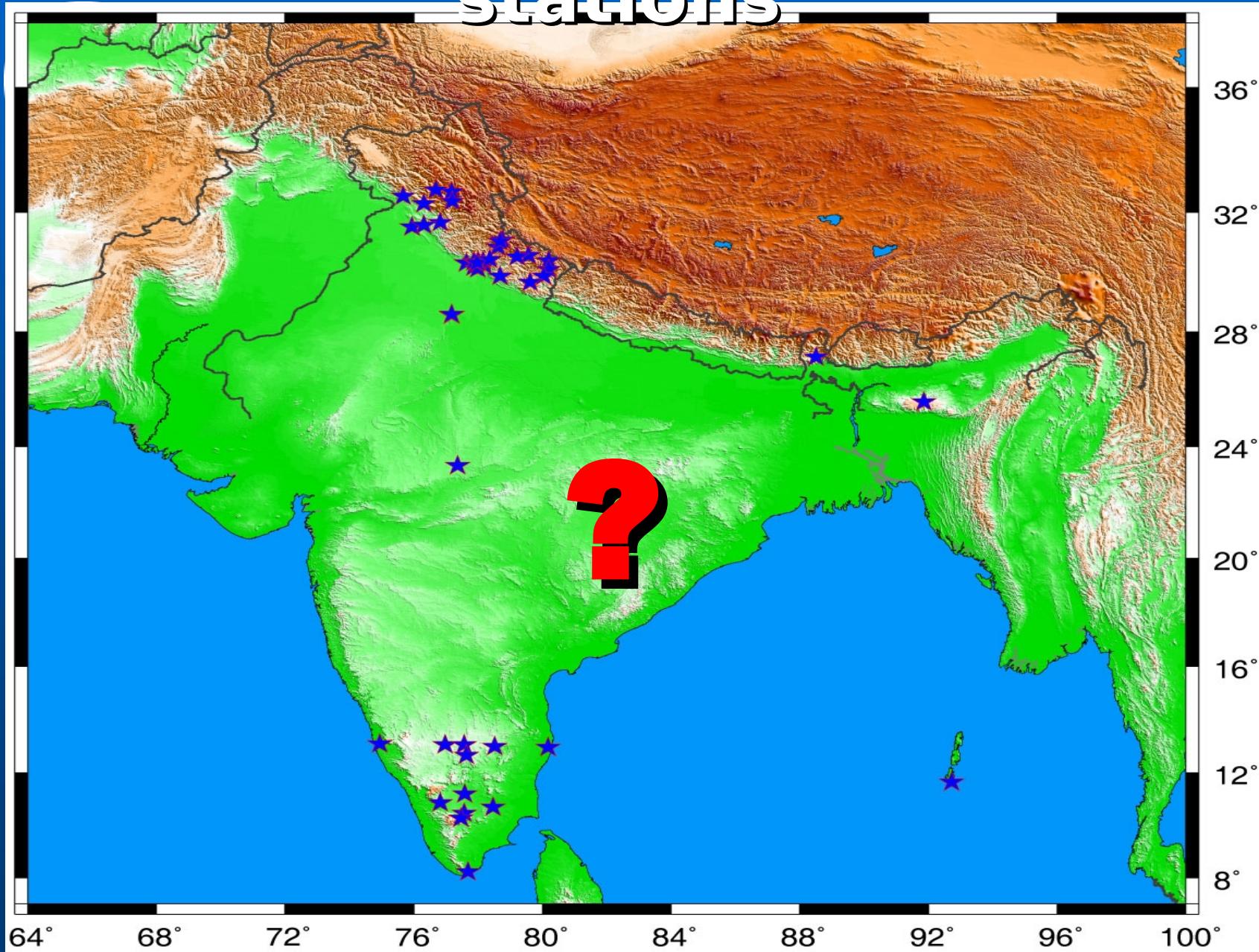


# Malaysia: CORS

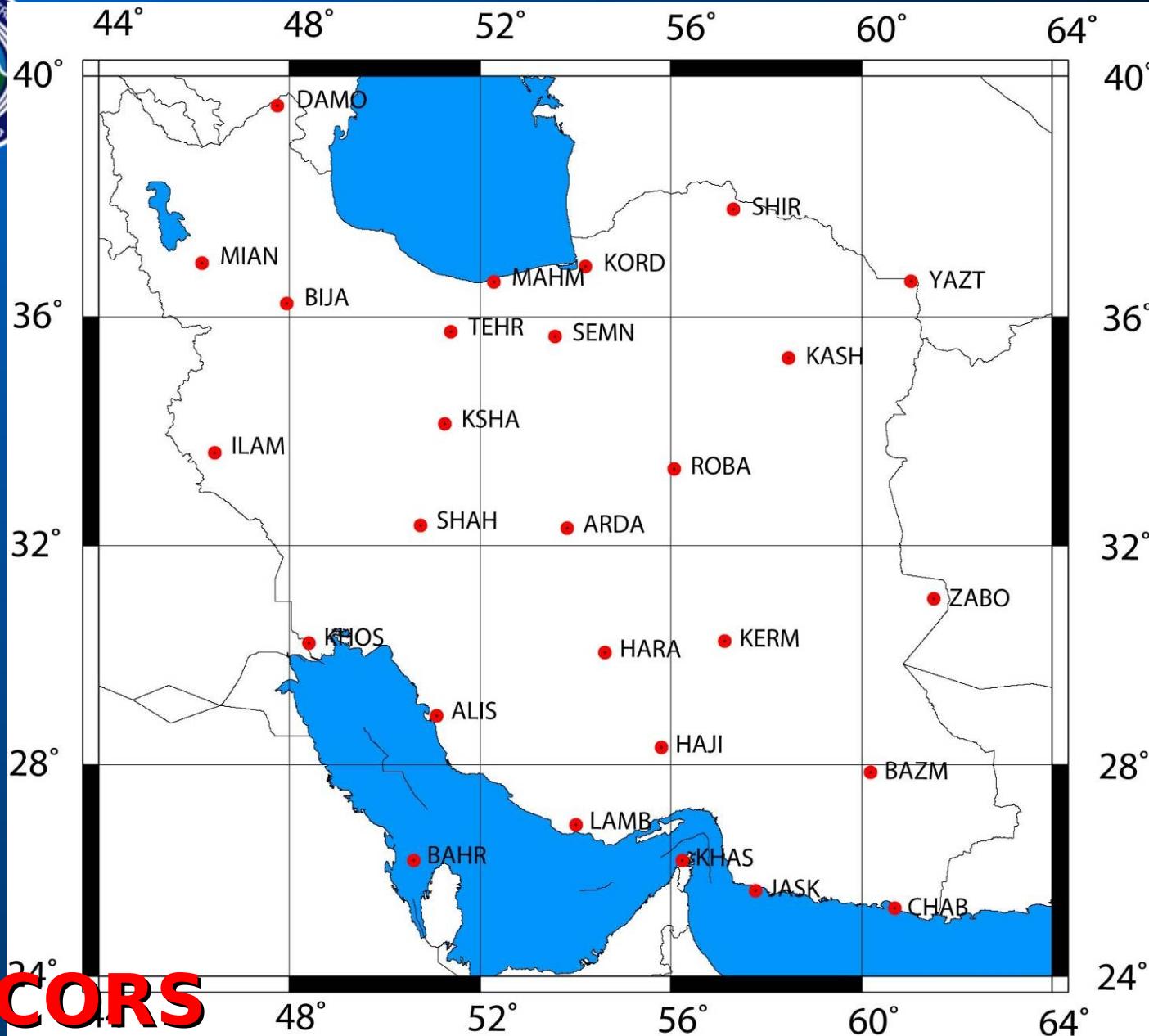
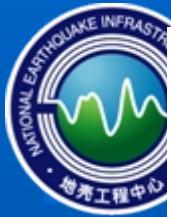


~ 18 CORS

# India: CORS + Campaign stations

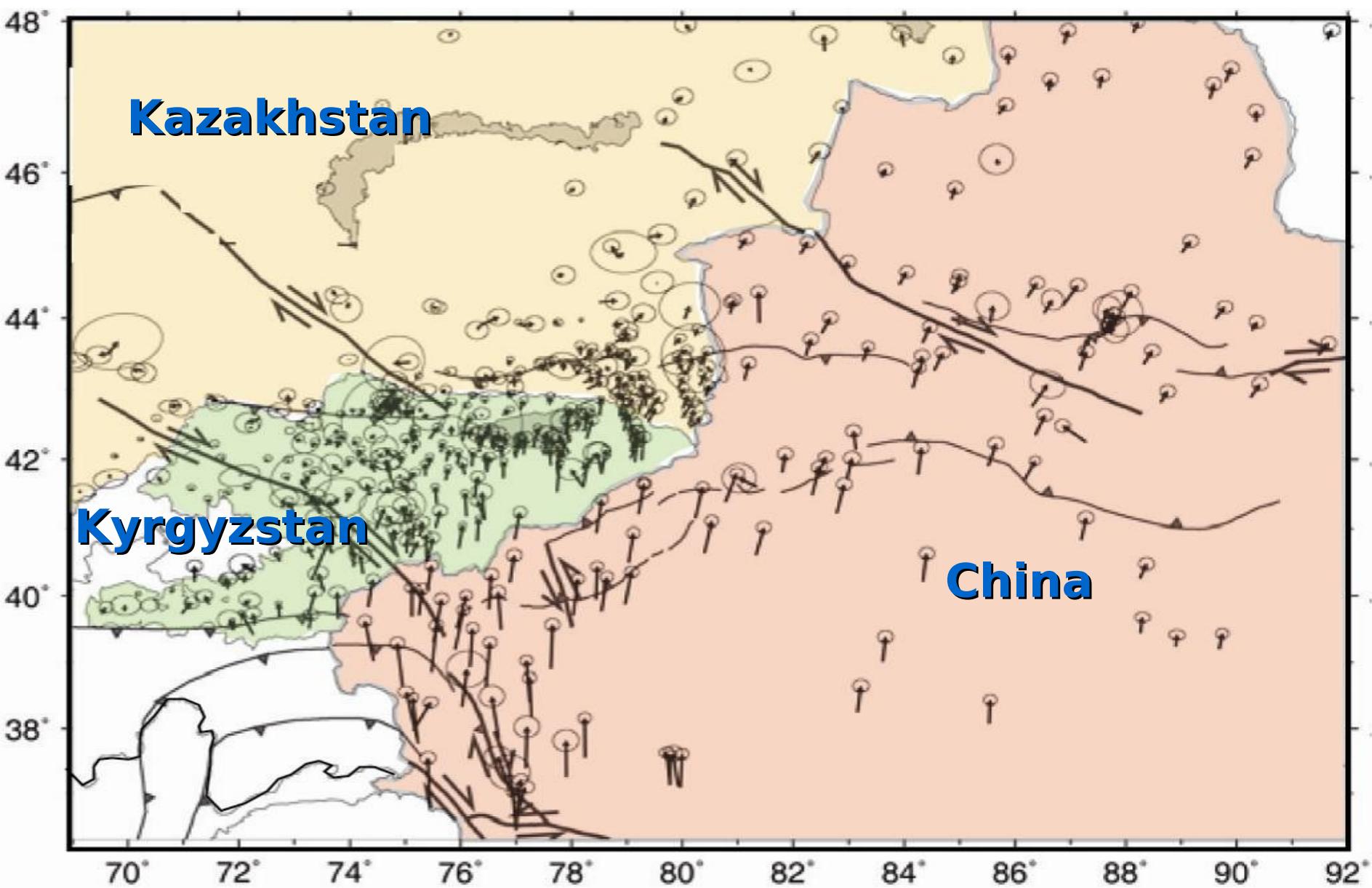


# Iran: CORS



~ 30 CORS

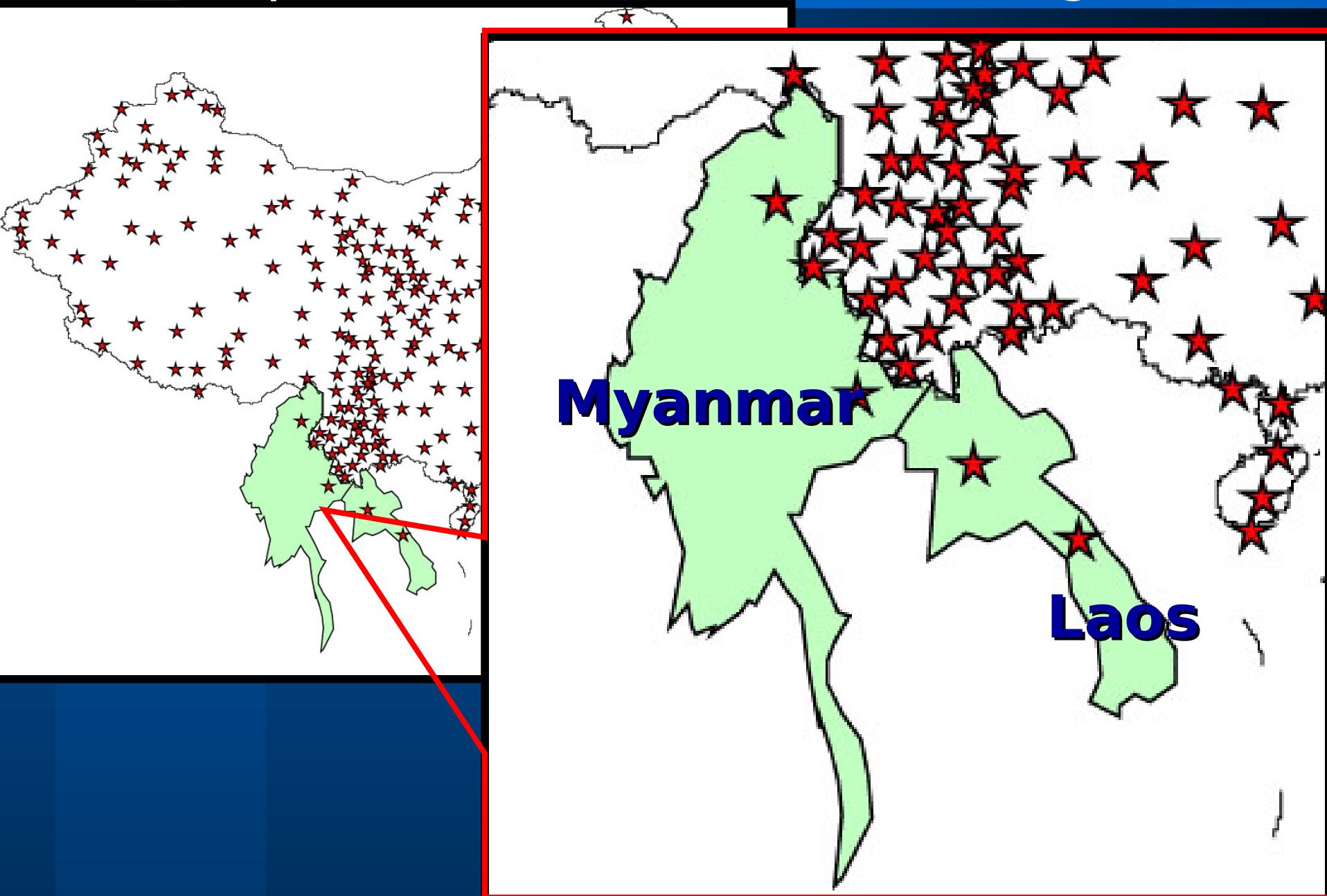
# Kazakhstan + Kyrgyzstan



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# GPS Cooperation: China and its Neighbors



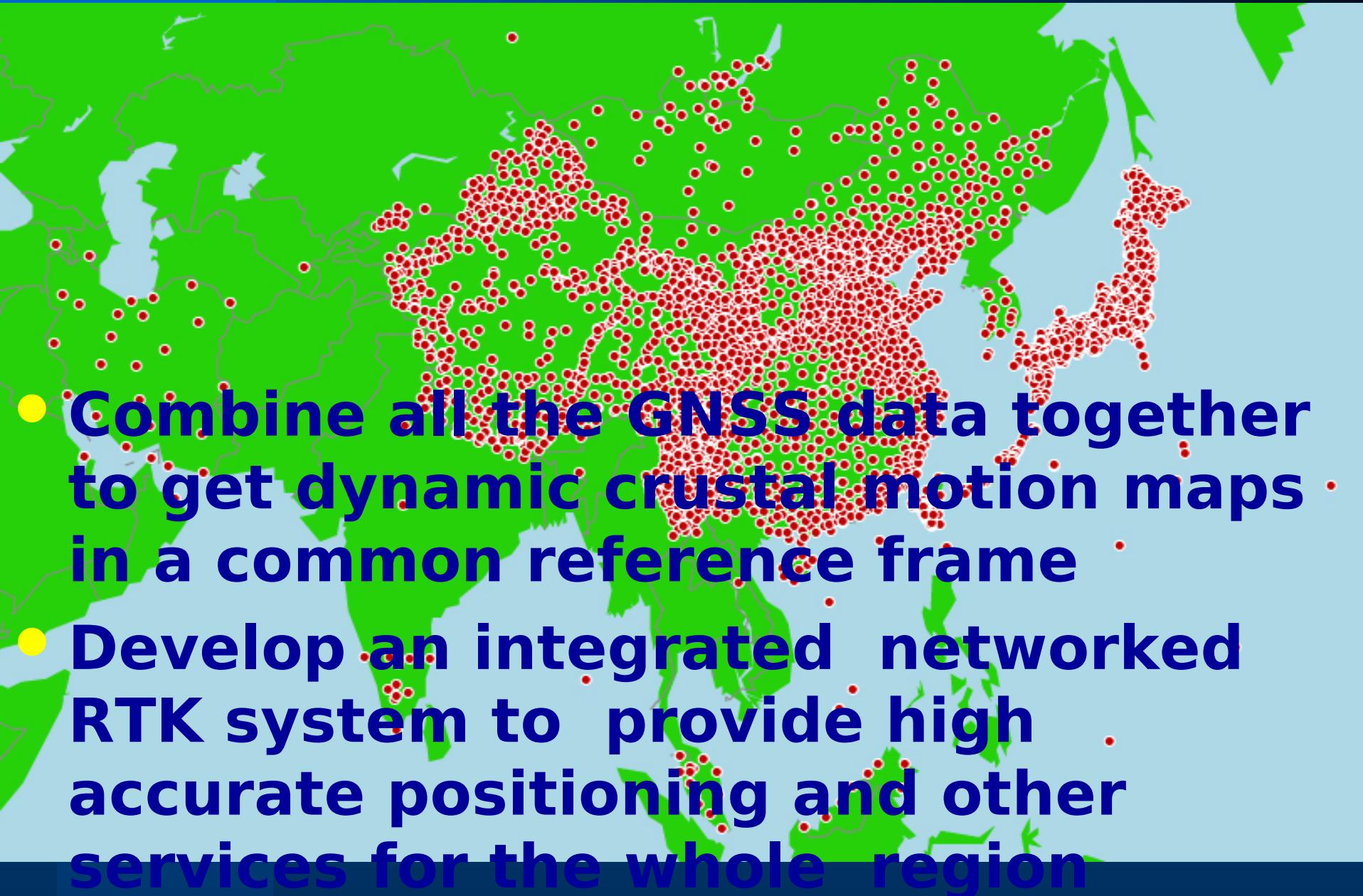




2008 3 4



# Near future GGOS in Asia

- 
- Combine all the GNSS data together to get dynamic crustal motion maps in a common reference frame
  - Develop an integrated networked RTK system to provide high accurate positioning and other services for the whole region

The background of the image is a vibrant, scenic landscape. It features a lush, bright green field that stretches across the foreground and middle ground. In the distance, there are rolling green hills. The sky above is a clear, bright blue, dotted with large, fluffy white clouds. One particularly large, puffy cloud is centered in the upper half of the image, while others are scattered across the horizon.

**Thanks for your attention !**