

# Seismic Observation and Seismicity of Egypt

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## 1. Egyptian National Seismic Network (ENSN)

ENSN includes 67 seismic stations (Figure 1) with 9 Radio telemetry and 58 satellites.

It consists of:

1 main center at Helwan City, 5 sub-centers at Burg El-Arab, Hurghada, Mersa Alam, Aswan and Kharga, which are connected to the main center using satellite communication.

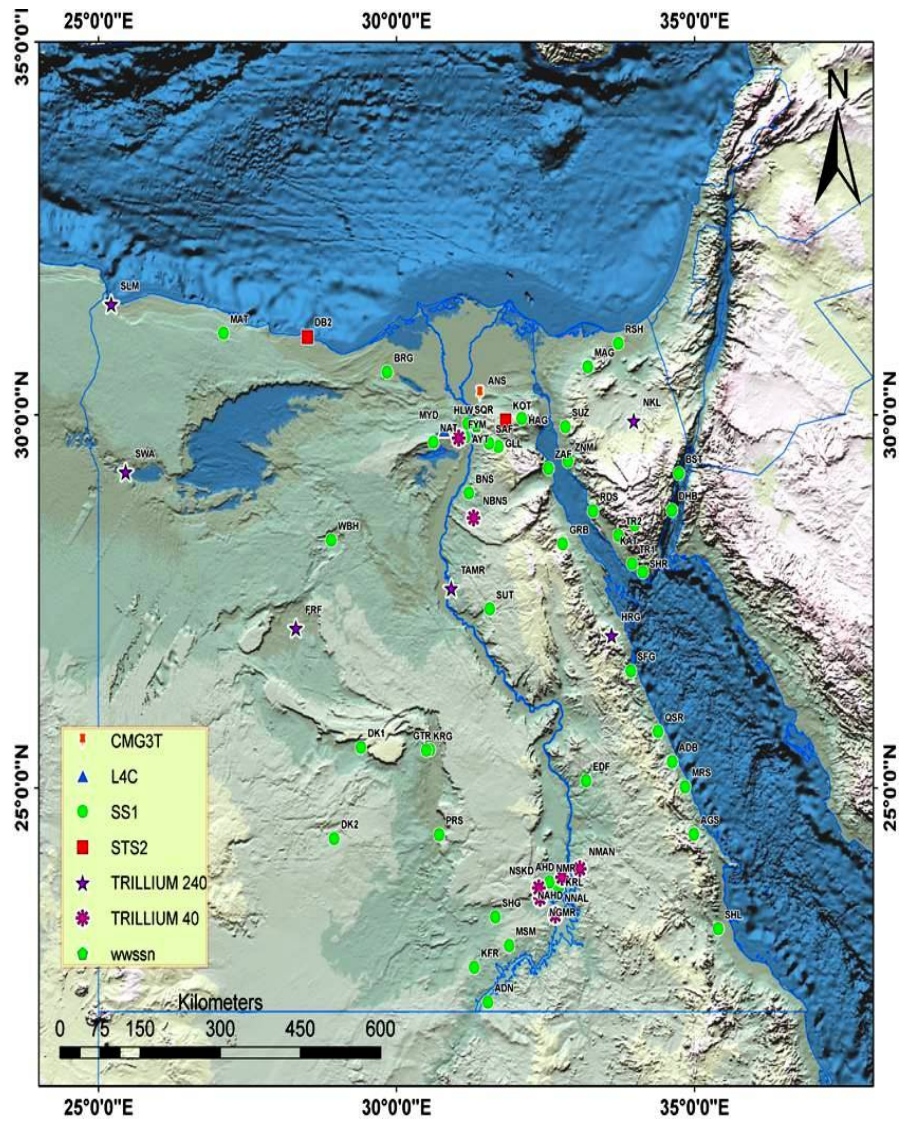


Figure 1. Egyptian National Seismic Network

## 1.2 The Hurghada Seismological Network

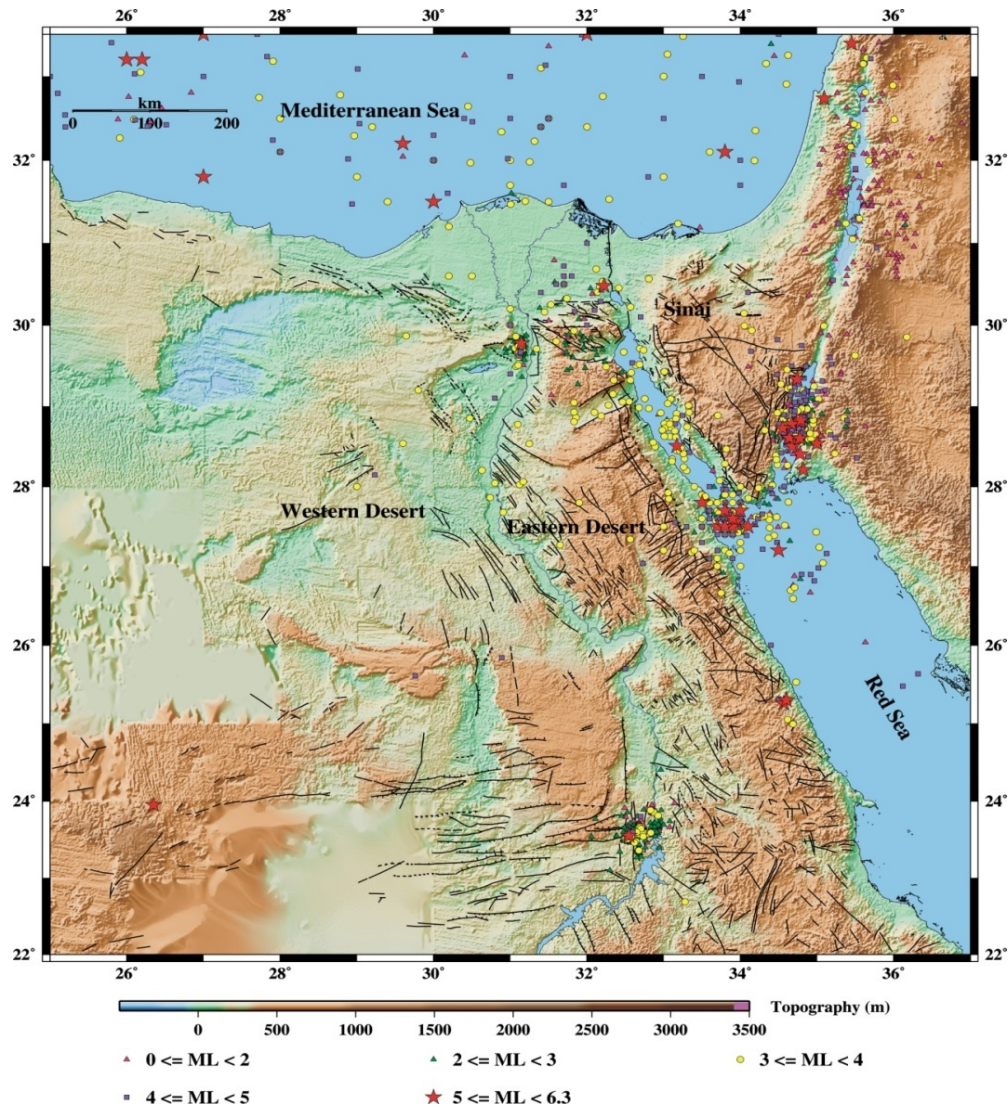
As the result of cooperation between Japan and Egypt, a telemetric Seismological Network was installed in August 1994 which consists of ten remote stations with (1) three-component and (9) vertical component.

### **Instruments**

- 34 short period stations (STS1 seismometer type)
- 2 broadband stations (STS2 seismometer type)
- 10 broadband stations (TRILLIUM 240 seismometer type)
- 10 broadband stations (STS1 seismometer type)
- 8 broadband stations (TRILLIUM 40 seismometer type)
- 1 broadband stations (CMG3T seismometer type)
- 1 short period stations (L4C seismometer type)

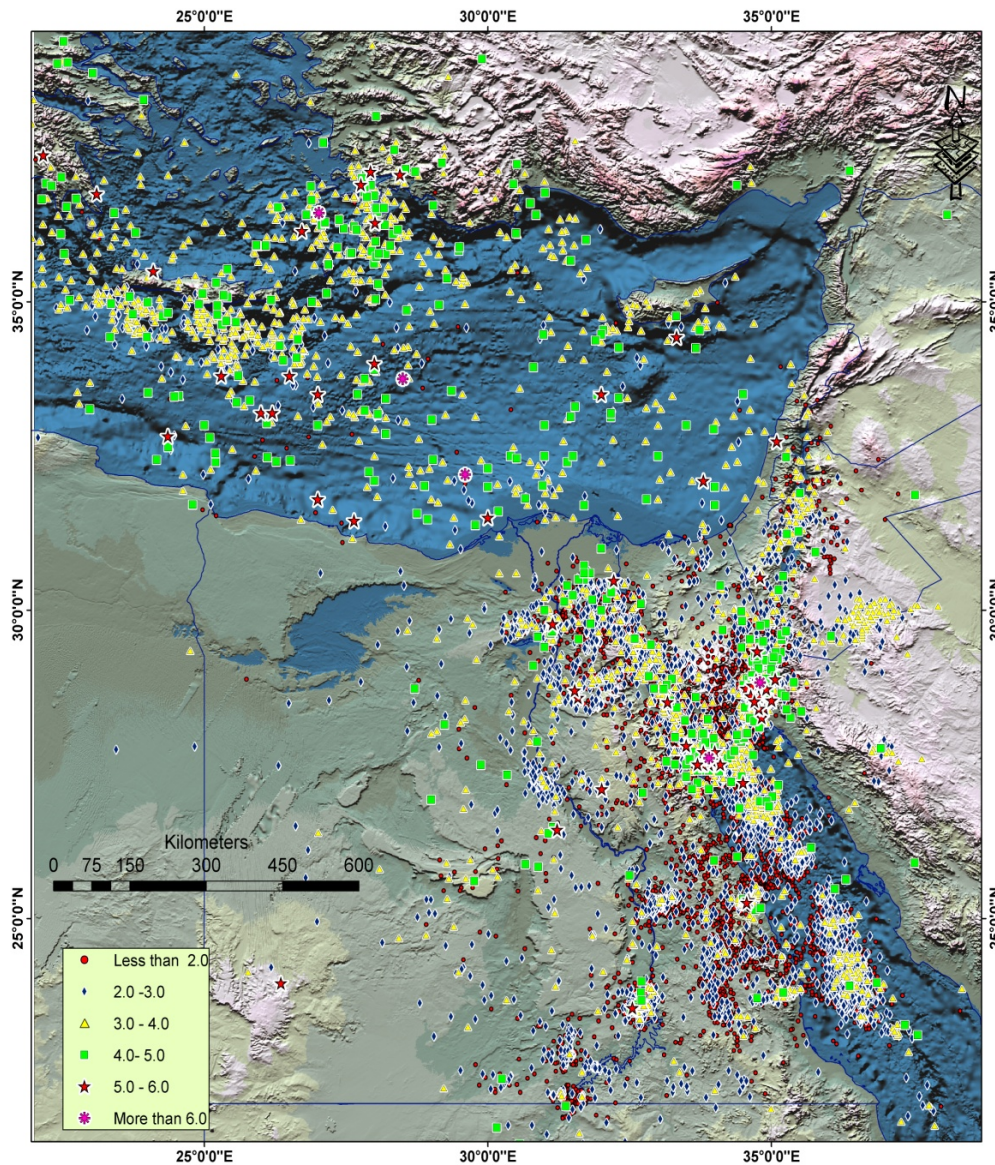
## 2. Seismicity of Egypt

The seismicity of Egypt is characterized by small to moderate earthquake activities due to the relative motions between the African, Arabian and Eurasian plates. The highest seismicity rates are found at the eastern boundaries of Egypt, viz. the Gulf of Aqaba, which forms the southern end of the Dead Sea Fault, and the northern part of the Red Sea (Figure2)



**Figure 2.** Seismicity of Egypt recorded from the period 1900 to August 1997

With the establishment of Egyptian National Seismic Network (ENSN), much activity with more accurate parameters was revealed. The recorded earthquake activity by ENSN from November 1997 to December 2009 reflects the incredible increase in the number of smaller earthquakes (Figure 3). This large number of events could be attributed to the increase of the seismic stations and hence the detectability of ENSN.



**Figure 3.** Local and regional seismic activity recorded by ENSN from Nov. 1997 to Dec. 2009.  
(Modified after Abou Elenean, 2008), (Egyptian Geological Survey, 1981).