

# Report on Real Time Earthquake Location

**From: Earthquake Monitoring Center (EMC) of NCS  
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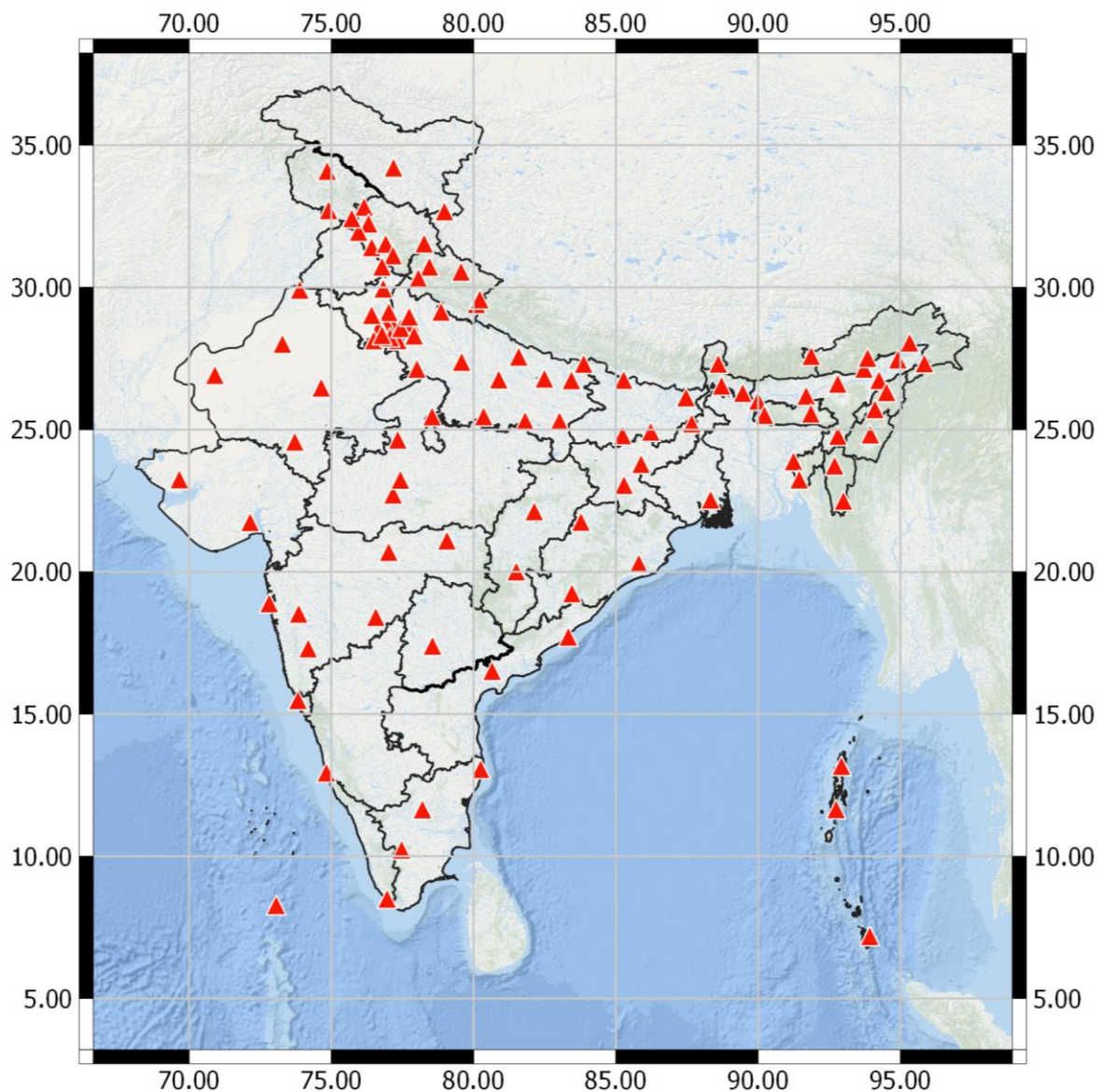
National Center for Seismology  
Ministry of Earth Sciences  
Government of India

Month: Jul 2021  
Technical Report No: NCS/2021/07

# Report of Earthquakes occurred in the month of Jul 2021

## 1) Introduction:

National Center for Seismology maintains National Seismological Network of 115 stations each having state of art equipment and spreading all across the country **(Figure:1)**. Using these stations



*Figure 1: National Seismological Network (NSN) of 115 Stations*

during the period 01<sup>st</sup> – 31<sup>st</sup> July 2021 a total number of 104 earthquakes have been located and disseminated from the center **(Figure:2)**, out of which 93 earthquakes has occurred in India and its neighborhood region bounded by the coordinates 0° - 40°N & 60° -100°E **(Figure:3)**.

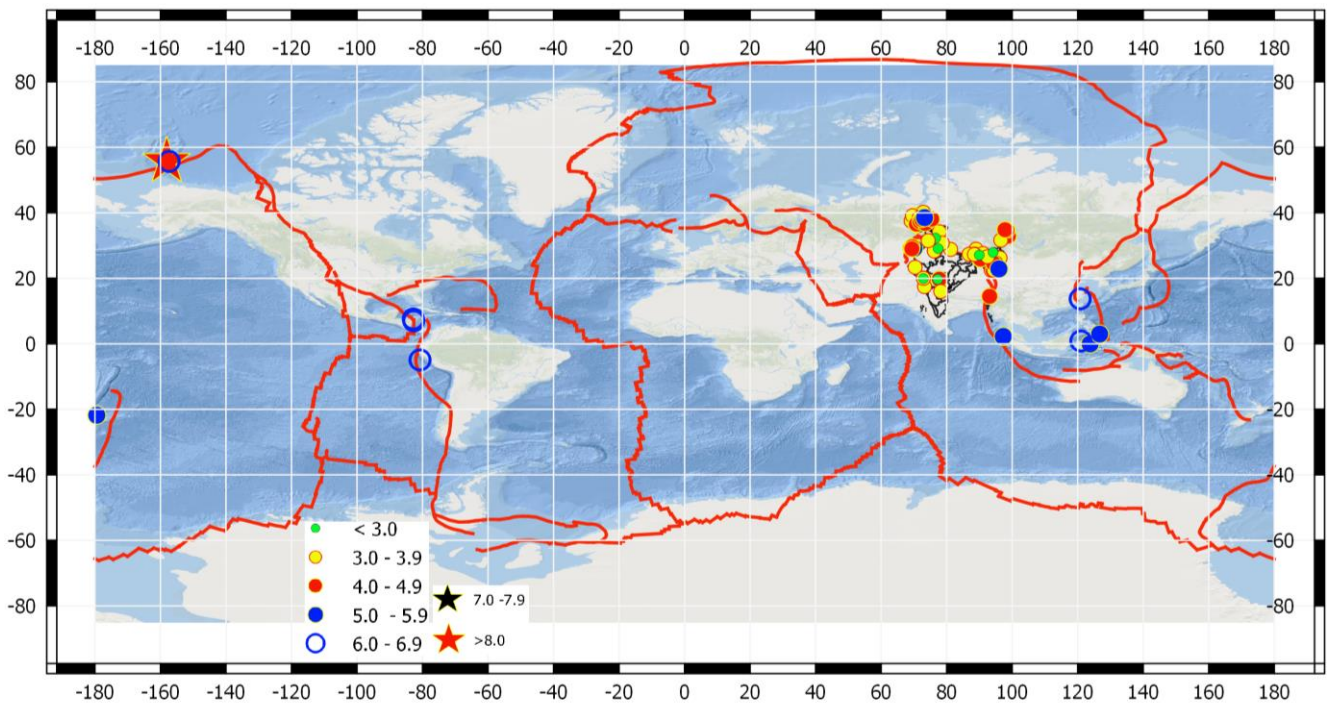


Figure 2: Earthquakes located and disseminated by NCS during 01<sup>st</sup> – 31<sup>st</sup> Jul 2021

## 2) Seismicity:

During the period, the density of earthquakes in India and its neighborhood region bounded by the coordinates 0- 40°N & 60-100°E; can largely be seen in Hindu Kush region, North Eastern part of India as shown in **Figure:3**. Few earthquakes of smaller magnitudes were also reported in NCT Delhi, Himachal Pradesh, central and western part of country. **Seven** earthquakes of magnitude **M:5.0 and above** occurred in during the month in the region; as detailed in following table.

SN	Date	Time (IST)	Lat(°N)	Long(°E)	Depth (KM)	M	Region
1	2021-07-07	08:45:25	26.15	90.28	14	5.2	Goalpara, Assam
2	2021-07-08	13:50:55	36.51	71.26	167	5.1	Afghanistan
3	2021-07-10	07:44:46	38.91	70.73	37	5.9	Tajikistan
4	2021-07-10	08:11:14	2.25	97.29	40	5.5	Northern Sumatra, Indonesia
5	2021-07-21	05:24:29	29.19	70.05	110	5.3	Pakistan
6	2021-07-29	14:09:29	22.88	95.95	10	5.5	Myanmar
7	2021-07-30	04:39:14	38.52	73.27	115	5.2	Tajikistan

Out of total 104 earthquakes, **38%** and **30%** of events occurred in the magnitude range **3.0-3.9** and **4.0 - 4.9** respectively, whereas nine earthquakes occurred in the magnitude range, **6.0-6.9** and one earthquake of **M:8.2** as shown in **Figure:4**. Detail list of earthquakes occurred during the month is available at <https://seismo.gov.in/>

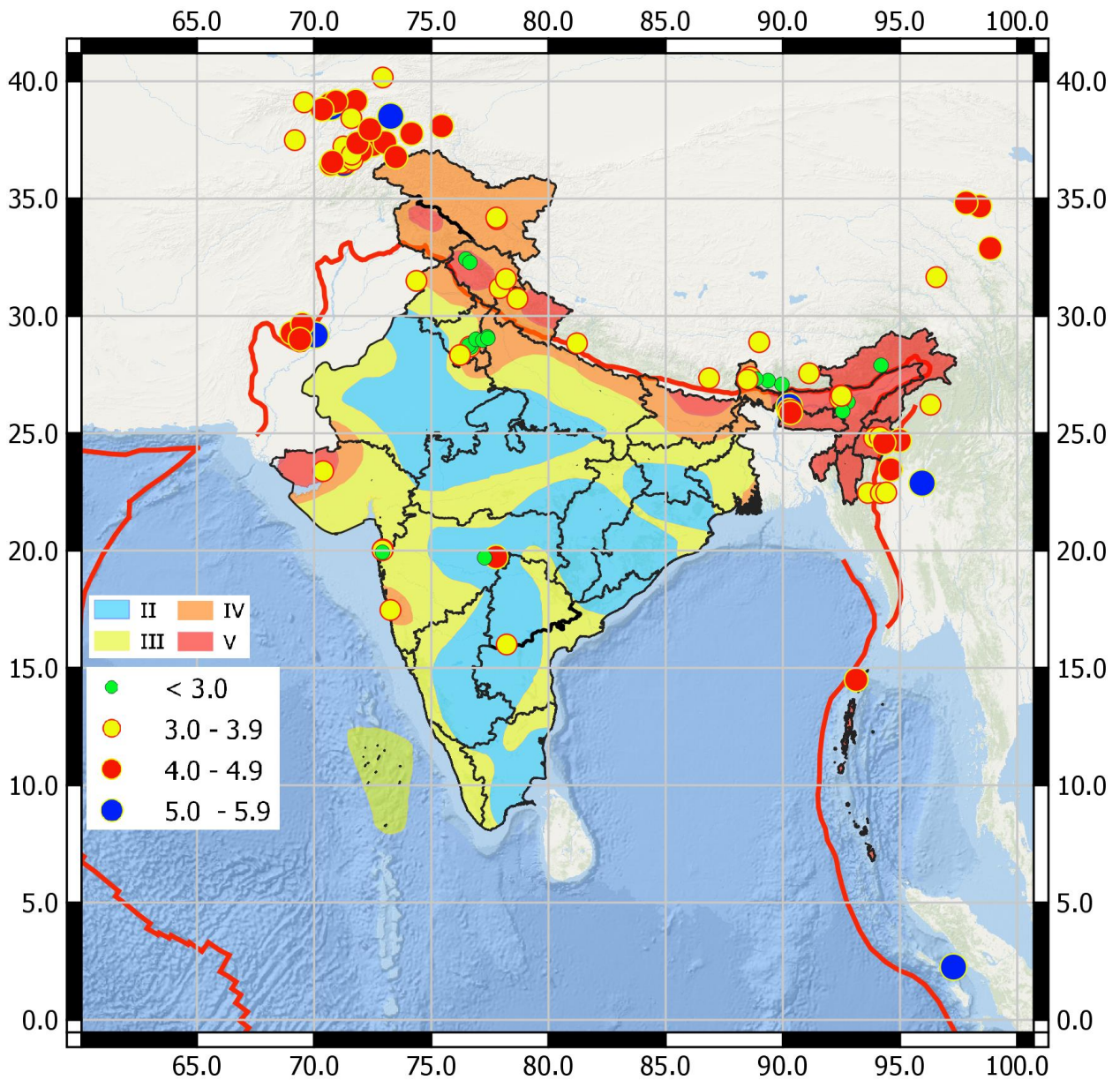


Figure 3: Map showing the seismicity during the period 01<sup>st</sup> – 31<sup>st</sup> Jul 2021 occurred in India and its neighbourhood region along with the seismic zone of India.

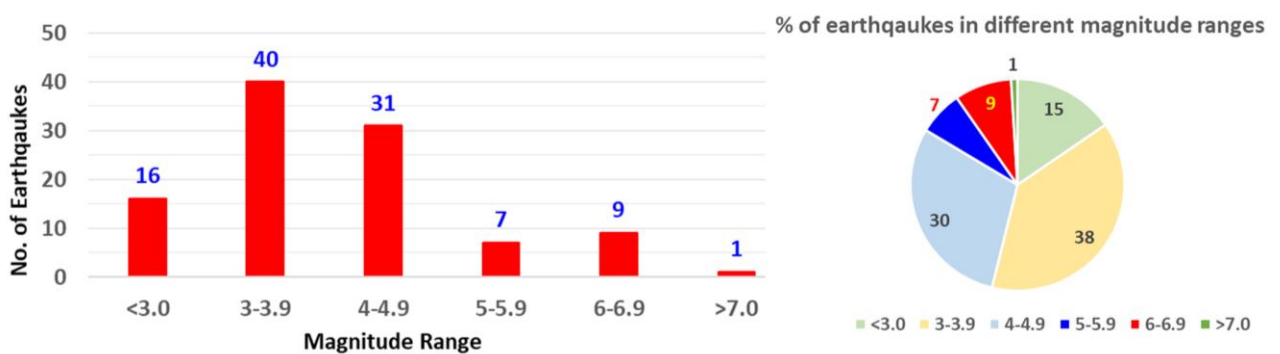


Figure4: Pie-Chart and Bar-Diagram showing the number of earthquakes occurred in the magnitude range during the period 01<sup>st</sup> – 31<sup>st</sup> Jul 2021 that was disseminated.

### 3) Significant Activity:

A. **Goalpara, Assam Earthquake of M:5.2** A Perceptible earthquake of **M: 5.2** occurred in North-East Region of India at District - Goalpara, Assam, at  $26.15^{\circ}$  N and  $90.28^{\circ}$  E with focal depth 14 km near Lakhipur sub-division of Goalpara district at **08:45:25 IST**. The epicenter was about 141 km West of Guwahati. The earthquake occurred around 20 km at the western side of North-South trending Dhubri Fault of Assam. The high seismicity of the northeast Indian region has been attributed to a complex tectonic province displaying juxtaposition of the E–W trending Himalaya and the N–S trending Arakan Yoma belt. This earthquake is occurred at a

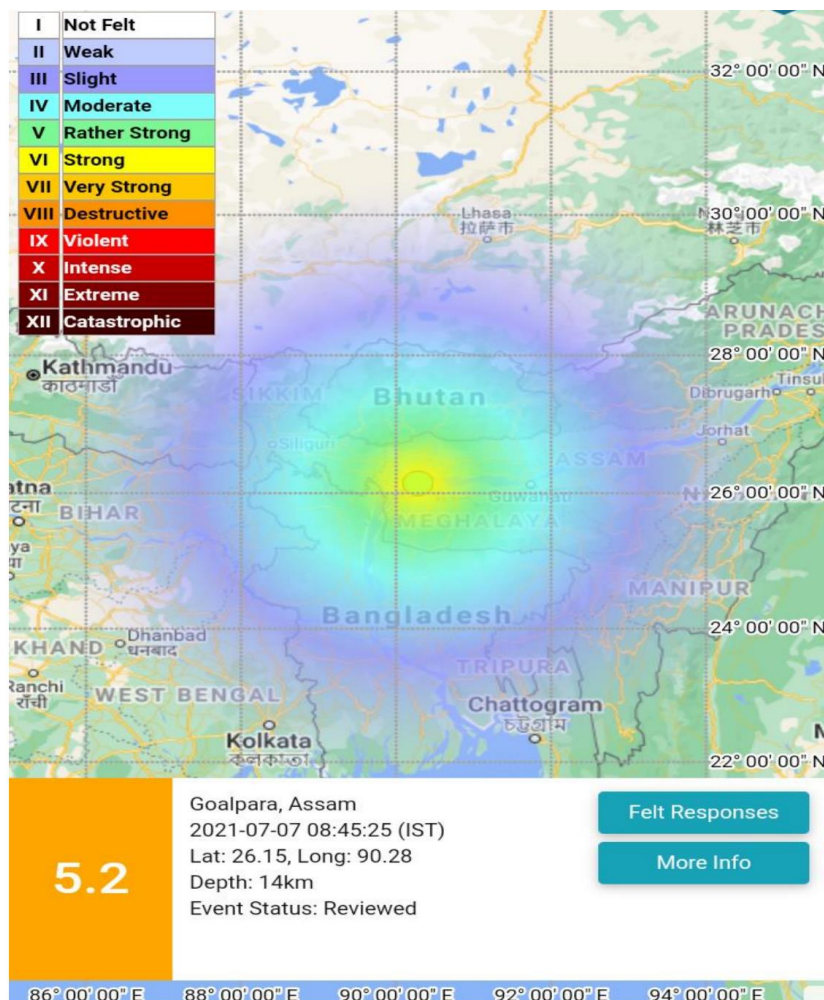


Figure 5: Map showing the epicentre (circle) and intensity of Gopalpara, Assam earthquake of M:5.2, occurred on 2021-07-07 at 08:45:25(IST).

distance of about 250 km in the south west of the 28<sup>th</sup> April 2021 Sonitpur earthquake (M 6.4) that rocked at 17 km depth, which signifies two different source ruptures associated with varying amount of structural heterogeneities. Location and intensity map of earthquake are shown in **Figure 5**. More than 30 felt responses varying from MMI II to MMI IV within the range of 30 to 250 km

from the epicentre were received for this earthquake through BhooKamp App (**Figure 6**).

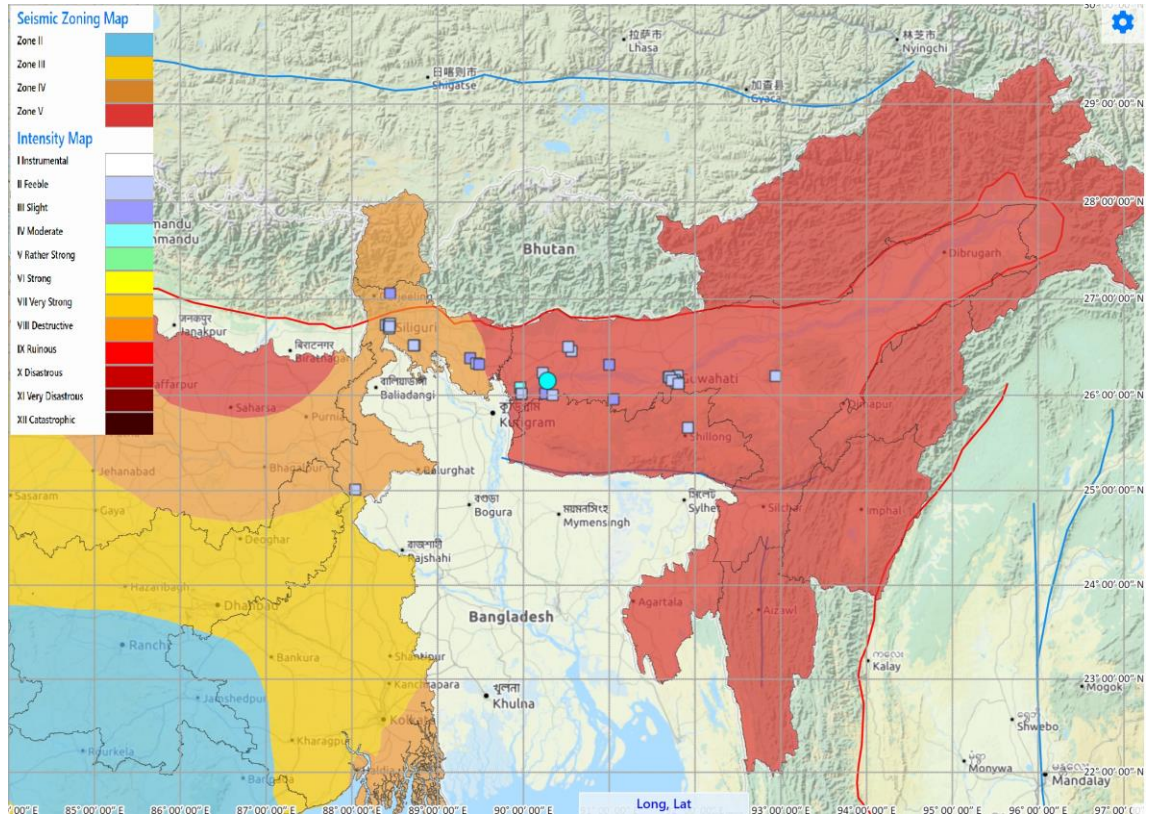
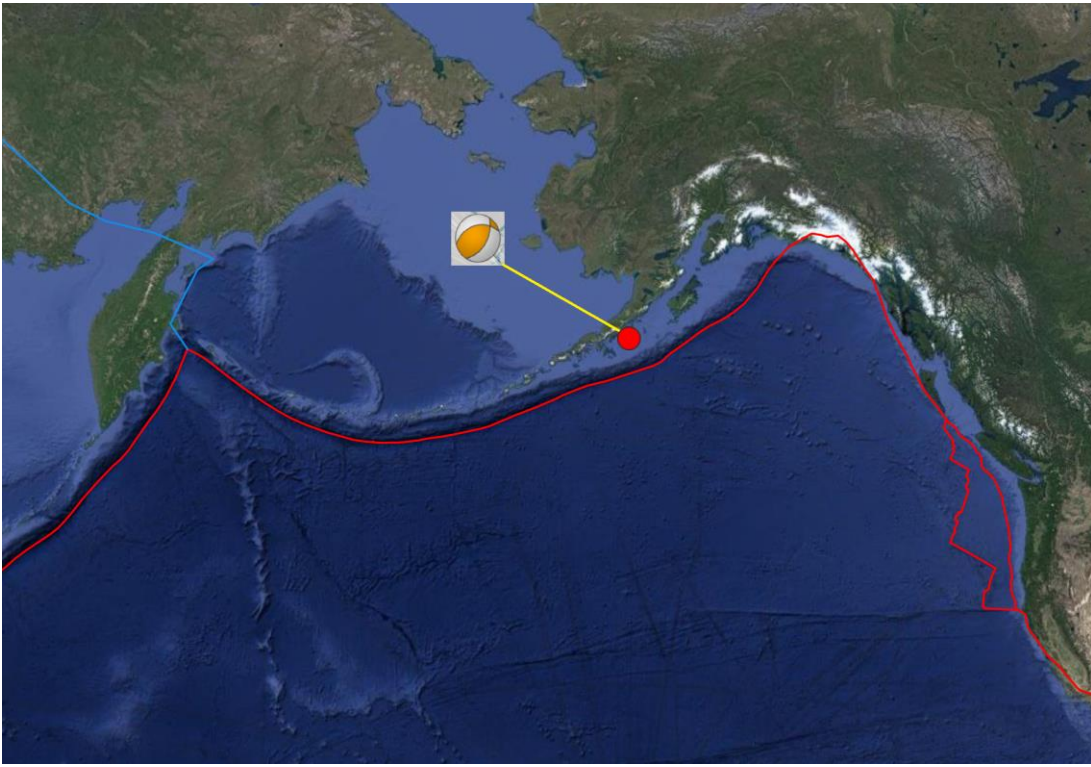


Figure 6: Map showing the felt responses received from different locations.

B. **Alaska Earthquake:** An earthquake of M:8.2 occurred on 29<sup>th</sup> Jul 2021 at 11:45:46 IST in the Alaska peninsula at 583km SW of Homer,Alaska,USA; having epicenter at 55.72°N , 158.07°W at 10 km depth(**Figure7**). Moment tensor details of the earthquake are detailed below.

Latitude	55.74°N	Nodal Plane 1			Nodal Plane 2		
Longitude	158.07°W	S(°)	D(°)	R(°)	S(°)	D(°)	R(°)
Depth	10 Km	30	56	62	253	42	124
Moment	2.49x10 <sup>23</sup> NM						
Mw	8.2						



*Figure 7: Map showing the epicentre (circle) and CMT solution of Alaska peninsula earthquake of M:8.2, occurred on 2021-07-29 at 11:45:46(IST).*