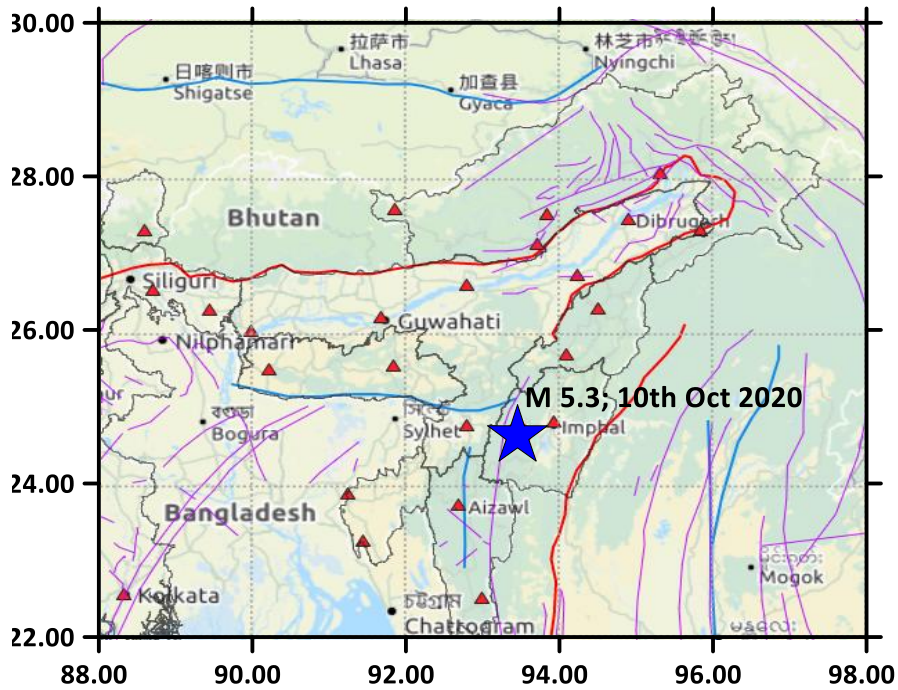
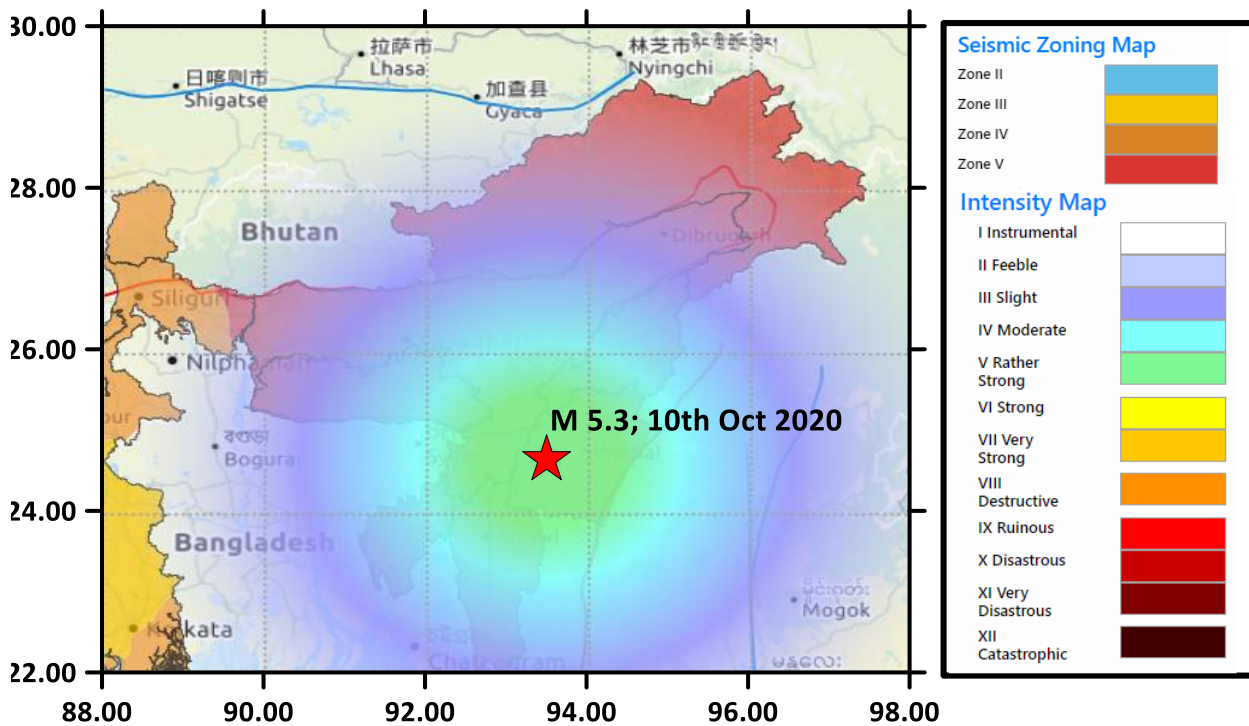


## A Brief Report on Earthquake (M:5.3) occurred on 10<sup>th</sup> October 2020 in Tamenglong District, Manipur

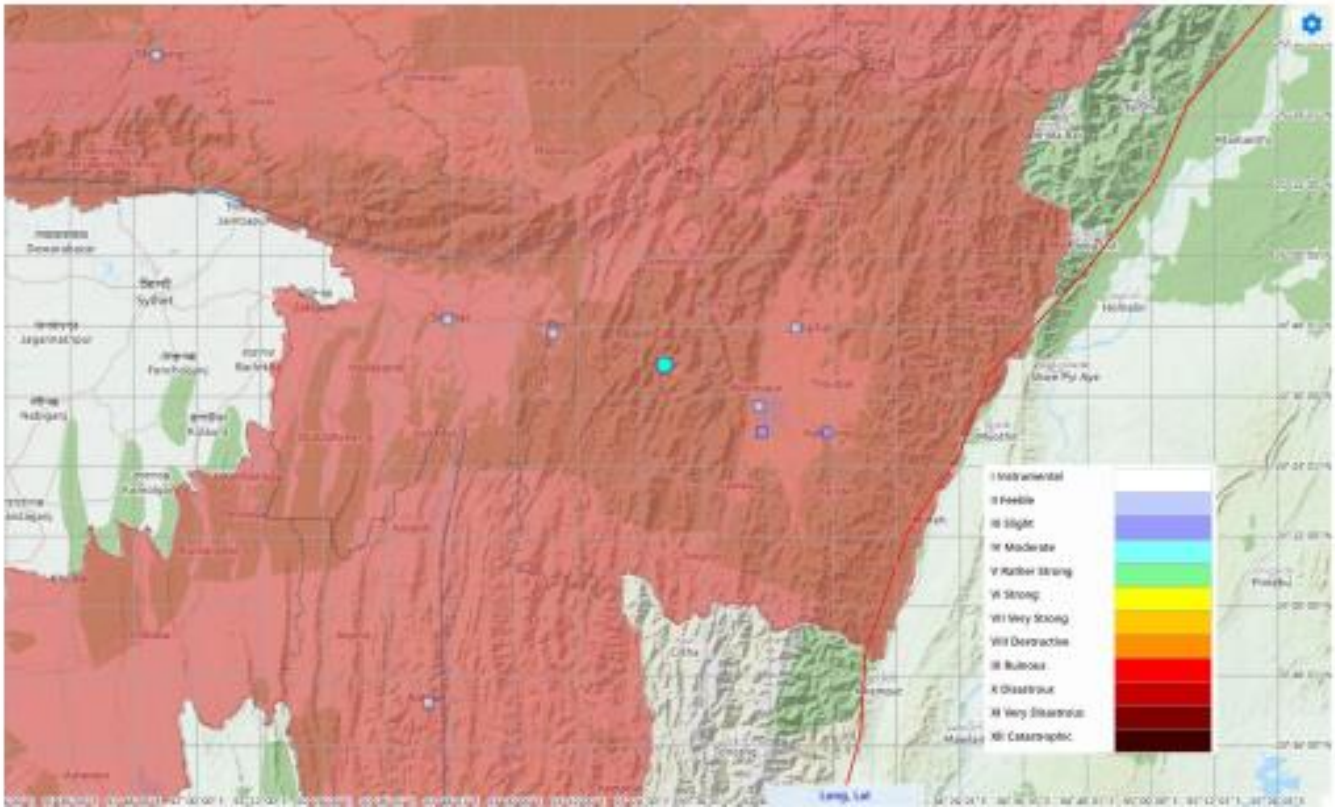
1. An earthquake of magnitude **M:5.3** occurred on 10<sup>th</sup> Oct 2020 at **23 hrs 08 min 00 sec (IST)**, near Tamenglong District, Manipur. The epicentre of the earthquake is 24.69°N and 93.47°E with a focal depth of 28 km. The epicentre was about 40 km East-North-East (ENE) of Imphal and 30 km West-North-West (WNW) of Bishnupur, and the epicentral area lies in **Zone-V** as per seismic zoning map of India. The epicentre location and intensity map of the earthquake are given in Figure 1 and 2.
2. The epicentre of the earthquake lies in the vicinity of Churachandpur Mao Fault (CMF), which is N-S trending strike-slip fault and runs from approximately 22.1°N, 93.1°E to 26.0°N, 93.6°E. The preliminary fault-plane solution obtained from waveform inversion suggests that the dominant strike-slip mechanism for the event and confirm the CMF is the causative source of the event.
3. During the **past 20 years within 50km radius of this earthquake location**, two earthquakes of M:5.0 and above were occurred on **3<sup>rd</sup> Jan 2016 (M:6.6)** and on **2<sup>nd</sup> Aug 2017 (M:5.2)**. During this period, about **10 earthquakes** occurred in the magnitude range of **4.0 and 4.9**. **The list of the past earthquakes within a 50km radius of the present earthquake is given in Table-1.**
4. Felt responses reported are in the range of II to III on the scale of Modified Mercalli Intensity (MMI) within 18 hours at a distance from 30 to 190 km from the epicentre (Figure 3).



**Figure 1:** Map showing the location of the earthquake of M:5.3 (Blue Star) occurred on 10<sup>th</sup> October 2020 near Tamenglong district, Manipur State. Seismological stations of NCS in NE region of the country are also shown as Red colour triangle. The continuous thin blue and red thick lines are the major fault and plate boundary in the epicentral region respectively.



**Figure 2:** Map showing the intensity map of M:5.3 earthquake occurred on 10<sup>th</sup> October 2020 near Tamenglong District of Manipur State.



**Figure 3:** Map showing the epicentre of the earthquake (blue colour circle) and felt responses (squares) received within 18 hours from the occurrence of the earthquake.

**Table-1:** The list of past earthquakes of Magnitude 3.0 and above occurred within the 50 km of radius during the past 20 years (01<sup>st</sup> March 2000 to 31<sup>st</sup> March 2020) are as follows:

Date Day-mm-yr	Time (UTC) Hr:mn:sec	Latitude (°N)	Longitude (°E)	Depth (km)	Magnitude	Location
18-03-2000	16:38:35	24.85	93.79	33	3.5[MC]	15km WNW of Imphal, Manipur, India
05-11-2004	21:15:40	24.70	93.53	33	4.8[MB]	24km WNW of Bishnupur, Manipur, India
27-12-2005	16:19:11	24.89	93.10	87	4.6[MB]	72km WNW of Bishnupur, Manipur, India
07-12-2007	06:56:42	24.70	93.71	97	4.7[ML]	9km NW of Bishnupur, Manipur, India
22-07-2008	02:20:48	24.66	93.56	33	3.3[ML]	20km W of Bishnupur, Manipur, India
12-12-2010	01:40:02	24.89	93.49	33	4.8[MB]	39km NW of Bishnupur, Manipur, India
01-08-2011	00:26:14	24.50	93.82	38	3.8[ML]	4km E of Moirang, Manipur, India
08-10-2011	03:00:40	24.43	93.57	13	3.1[ML]	22km WSW of Moirang, Manipur, India
26-02-2012	15:55:31	24.69	93.75	65	4.4[ML]	6km N of Bishnupur, Manipur, India
04-03-2012	04:55:06	24.71	93.35	29	3.1[ML]	42km WNW of Bishnupur, Manipur, India
24-04-2012	18:11:11	24.72	93.47	30	3.0[ML]	30km WNW of Bishnupur, Manipur, India
26-04-2012	07:28:31	24.93	93.69	11	3.1[ML]	27km WNW of Imphal, Manipur, India
31-05-2012	06:37:22	24.72	93.88	30	3.4[ML]	12km SSW of Imphal, Manipur, India
04-07-2012	05:24:09	24.90	93.89	19	3.3[ML]	10km NNW of Imphal, Manipur, India
24-07-2012	03:26:54	24.64	93.85	22	3.2[ML]	9km E of Bishnupur, Manipur, India
11-09-2012	18:09:46	24.65	93.73	13	3.8[ML]	3km NW of Bishnupur, Manipur, India
12-10-2012	23:16:16	24.65	93.69	37	4.1[ML]	7km WNW of Bishnupur, Manipur, India
04-03-2013	20:15:53	24.96	93.70	35	3.8[ML]	28km WNW of Imphal, Manipur, India
15-06-2013	00:10:32	24.54	93.55	7	3.5[ML]	23km W of Moirang, Manipur, India

Date Day-mm-yr	Time (UTC) Hr:mn:sec	Latitude (°N)	Longitude (°E)	Depth (km)	Magnitude	Location
24-10-2013	01:23:07	24.65	93.34	32	3.0[ML]	42km W of Bishnupur, Manipur, India
26-02-2014	20:58:53	24.59	93.68	19	4.0[ML]	9km WSW of Bishnupur, Manipur, India
06-10-2014	13:46:03	24.40	93.57	27	3.8[ML]	23km WSW of Moirang, Manipur, India
22-05-2015	20:11:36	24.69	93.29	16	3.8[ML]	47km W of Bishnupur, Manipur, India
21-07-2015	08:21:41	24.40	93.69	53	3.7[ML]	14km SW of Moirang, Manipur, India
03-01-2016	23:05:20	24.84	93.47	28	6.6[Mb]	37km NW of Bishnupur, Manipur, India
04-01-2016	09:00:00	24.80	93.48	77	3.6[ML]	34km WNW of Bishnupur, Manipur, India
28-03-2016	15:42:48	24.68	93.40	9	3.4[ML]	36km W of Bishnupur, Manipur, India
31-08-2016	01:26:47	24.70	93.39	11	3.2[ML]	38km W of Bishnupur, Manipur, India
17-09-2016	02:46:24	24.44	93.82	50	4.1[ML]	7km SE of Moirang, Manipur, India
15-11-2016	14:27:16	24.60	93.66	38	3.2[ML]	10km WSW of Bishnupur, Manipur, India
04-01-2017	13:40:31	24.43	93.70	81	3.5[ML]	10km SW of Moirang, Manipur, India
24-02-2017	12:02:47	24.30	93.46	20	4.9[ML]	38km SW of Moirang, Manipur, India
29-07-2017	22:01:23	24.70	93.90	70	3.1[ML]	13km SSW of Imphal, Manipur, India
02-08-2017	18:18:08	24.38	93.47	89	5.2[ML]	33km WSW of Moirang, Manipur, India
08-08-2017	00:35:37	24.33	93.58	72	4.2[ML]	27km SW of Moirang, Manipur, India
21-09-2017	22:35:55	24.34	93.50	59	3.2[MW]	33km WSW of Moirang, Manipur, India
15-03-2018	02:26:03	24.41	93.65	85	4.6[MW]	16km SW of Moirang, Manipur, India
21-04-2018	07:10:58	24.46	93.70	36	3.8[MW]	8km WSW of Moirang, Manipur, India
24-05-2018	14:17:01	24.90	93.29	5	3.1[ML]	56km WNW of Bishnupur, Manipur, India
25-03-2019	12:41:23	24.33	93.38	13	4.6[Mb]	44km WSW of Moirang, Manipur, India
05-09-2019	16:52:54	24.64	93.40	14	3.3[MW]	36km W of Bishnupur, Manipur, India
05-11-2019	10:19:34	24.31	93.57	59	3.8[MW]	29km SW of Moirang, Manipur, India
20-12-2019	09:38:32	24. 72	93.58	31	3.4[ML]	20km WNW of Bishnupur, Manipur, India

