

Report on earthquake occurred in Bahraich, Uttar Pradesh on 20.08.2022

1. A perceptible earthquake of magnitude M 4.9 occurred at 01:12:47 IST (local time) in the North-Central region of India at the Bahraich district of Uttar Pradesh. The epicenter of earthquake was located at 28.07deg N and 81.25deg E (Motipur subdivision of Bahraich district)) at a focal depth of 33 km. The epicenter was about 139 km NNE from Lucknow and 66km NNW Baharaich. The epicenter location and intensity map of an earthquake are shown in Figure 1 and 2 respectively. The epicenter of the earthquake lies in the vicinity of a mapped NE-SW trending fault.
2. North-Central India falls in seismic zone III in the seismic zoning map of India (BIS code: IS 1893 (Part 1): 2016) which is a moderate seismically active zone.
3. The earthquake was felt widely in the Central parts of UP and the intensity map of an earthquake is given in **Fig. 1** suggests that the source zone is associated with a strong degree of shaking intensity and created panic among the people. No damage to structure or casualty was reported from the region.
4. At present, more than 15 permanent seismological observatories of NCS are functioning in the North-Central and its adjoining region whose data along with the remaining observatories have been used for locating the earthquake.
5. The list of the past 5-year earthquake (2017-2022) that occurred within the 200 km of radius from today's epicenter is shown below:

Date and Origin Time (IST)	Lat (deg N)	Long (Deg E)	Magnitude	Depth (Km)	Location
2022-08-20 01:12:47	28.07	81.25	4.9	33.0	139km NNE of Lucknow, Uttar Pradesh, India
2022-01-25 21:01:31	28.86	78.05	2.9	10.0	73km ENE of Noida, Uttar Pradesh, India
2021-07-18 20:44:34	28.84	81.22	3.8	23.0	127km SE of Pithoragarh, Uttarakhand, India
2019-07-14 00:32:07	28.39	78.84	4.1	153.0	142km E of Noida, Uttar Pradesh, India
2019-05-12 00:21:00	28.80	81.66	4.3	10.0	164km ESE of Pithoragarh, Uttarakhand, India
2019-05-04 08:36:19	27.21	80.26	4.7	10.0	79km WNW of Lucknow, Uttar Pradesh, India
2019-04-10 23:36:43	28.74	79.12	3.4	33.9	141km SW of Pithoragarh, Uttarakhand, India
2019-03-15 05:25:36	28.85	79.41	3.2	5.0	113km SW of Pithoragarh, Uttarakhand, India
2019-03-06 02:52:00	28.65	79.65	3.3	5.0	117km SSW of Pithoragarh, Uttarakhand, India

2019-02-07 23:28:37	28.24	78.92	3.5	5.0	148km NE of Agra, Uttar Pradesh, India
2019-02-06 01:38:55	28.53	78.12	3.2	5.0	71km E of Noida, Uttar Pradesh, India
2018-12-30 14:21:56	28.78	78.35	4.2	28.1	97km ENE of Noida, Uttar Pradesh, India
2018-10-06 20:37:35	28.97	79.75	3.1	10.0	82km SSW of Pithoragarh, Uttarakhand, India
2018-10-06 10:37:48	28.71	81.36	3.8	6.1	147km SE of Pithoragarh, Uttarakhand, India
2018-10-05 21:30:31	28.73	81.32	4.4	94.8	142km SE of Pithoragarh, Uttarakhand, India
2018-10-05 12:45:10	28.79	81.44	4.7	165.6	148km SE of Pithoragarh, Uttarakhand, India
2018-10-05 12:38:16	28.84	81.65	4.2	74.4	162km ESE of Pithoragarh, Uttarakhand, India
2018-08-19 12:00:40	26.33	81.78	4.5	253.3	66km SW of Ayodhya, Uttar Pradesh, India
2018-02-18 01:27:04	27.98	79.23	3.7	5.0	150km NE of Agra, Uttar Pradesh, India
2018-01-28 03:32:08	28.93	81.60	3.9	5.0	152km ESE of Pithoragarh, Uttarakhand, India
2017-10-26 18:21:42	28.96	81.25	3.9	2.7	121km SE of Pithoragarh, Uttarakhand, India
2017-10-20 12:57:21	27.73	78.58	2.8	5.0	83km NE of Agra, Uttar Pradesh, India
2017-09-02 13:06:32	27.17	78.45	3.7	5.0	44km E of Agra, Uttar Pradesh, India
2017-08-14 11:38:58	28.92	81.48	4.0	93.3	143km ESE of Pithoragarh, Uttarakhand, India
2017-07-23 16:08:54	26.63	78.75	3.0	228.9	72km NE of Gwalior, Madhya Pradesh, India
2017-06-26 18:38:00	28.97	78.07	3.6	170.6	81km NE of Noida, Uttar Pradesh, India
2017-06-25 18:03:49	28.22	78.98	2.9	85.6	149km NE of Agra, Uttar Pradesh, India
2017-06-25 00:59:09	27.76	79.75	3.9	5.0	156km NW of Lucknow, Uttar Pradesh, India
2017-03-31 05:41:32	27.75	78.91	2.7	5.0	109km NE of Agra, Uttar Pradesh, India

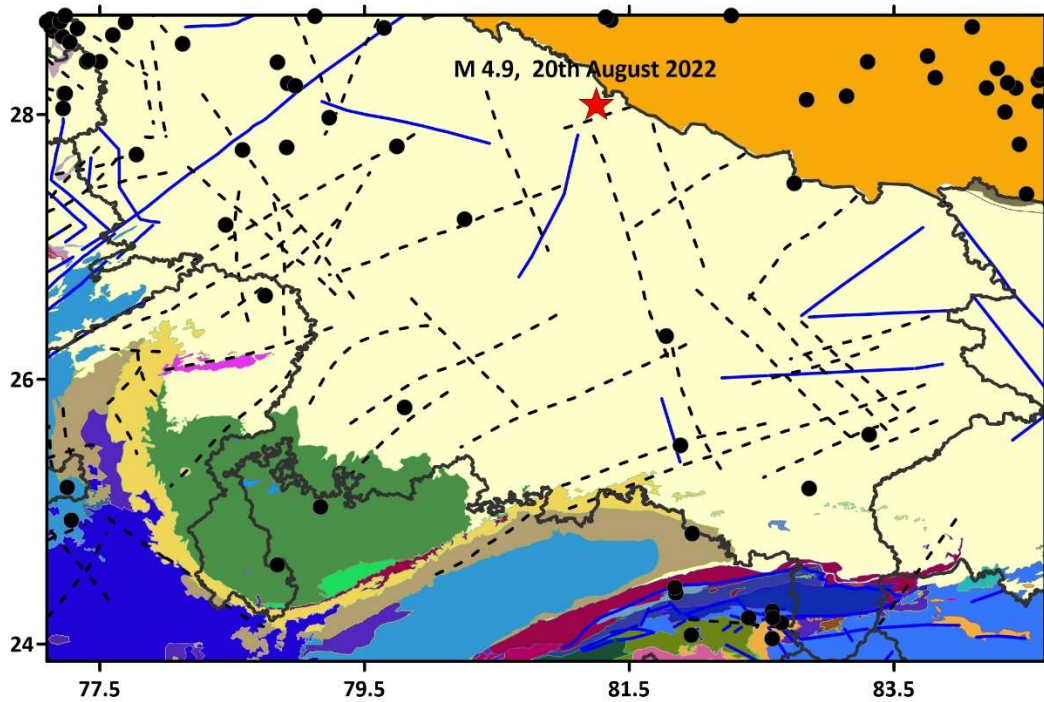


Fig 1: Geology map of Uttar Pradesh state, India. The location of the recent earthquake occurred on 20th August 2022 (M: 4.9) is shown as a Red star. The blue lines and dashed black lines are mapped fault and lineament (Source: <http://Bhukosh.gsi.gov.in>). The last five year (2017-2022) earthquake occurred in Uttar Pradesh and its surrounding region is shown as a black-filled-circle.

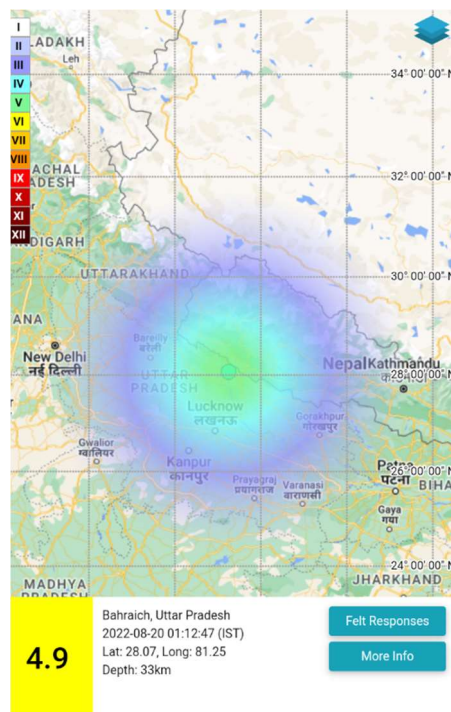


Fig 2: Intensity map of the earthquake of 20th August 2022 (M: 4.9), occurred in Bahraich District, Uttar Pradesh.

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