

Earthquake Report on M:6.7, Tajikistan occurred on 23rd February 2023

An earthquake of magnitude M:6.7 occurred at 06:07:44 IST (Local Time) in Mughrob district of Tajikistan, with epicenter at 37.88°N and 73.39°E and a focal depth of 25 km. The focal depth estimated initially by preliminary analysis as 113 km which was later revised to 25 km after adding more global stations. The epicenter is about 400 km east of Dushanbe (capital city of Tajikistan). At the time of preparation of report, a total 11-aftershocks of magnitude 3.5 or more have occurred till 1815hrs. The epicenter location and intensity map of earthquake are shown in Figures 1 and 2. The maximum Intensity VI (MMI scale) have been reported near to the source region (Figure 2).

The epicenter of the earthquake lies on the Central Pamir region and closer to junction of Karakoram fault and Karakax fault. The preliminary fault plane solution obtained from waveform inversion suggest the dominant strike-slip faulting is the causative source of the event.

List of the earthquakes (M>5.0) occurred in the region during immediate past 5 years (Feb, 2018 to Feb, 2023) within 100 km of radius from the mainshock, is as follows:

Year	Time (IST)	Latitude (°N)	Longitude (°E)	Depth (Km)	Magnitude
2018-01-09	05:35:50	37.94	72.88	102	5.3
2018-02-07	03:23:56	38.00	72.80	100	5.2
2018-07-13	01:16:50	38.30	73.61	181	5.3
2018-10-19	18:55:43	38.46	73.95	125	5.4
2020-09-18	23:17:50	38.70	73.61	36	5.1
2020-09-18	23:17:48	37.92	73.82	10	5.1
2021-02-12	22:31:33	38.00	73.58	74	6.3
2021-03-30	21:40:24	37.46	72.50	225	5.4
2021-07-30	04:39:14	38.52	73.27	115	5.2
2021-09-08	10:50:09	37.85	73.43	195	5.5
2021-09-18	03:36:42	38.43	73.61	129	5.0
2022-01-09	01:26:16	38.59	73.79	140	5.0

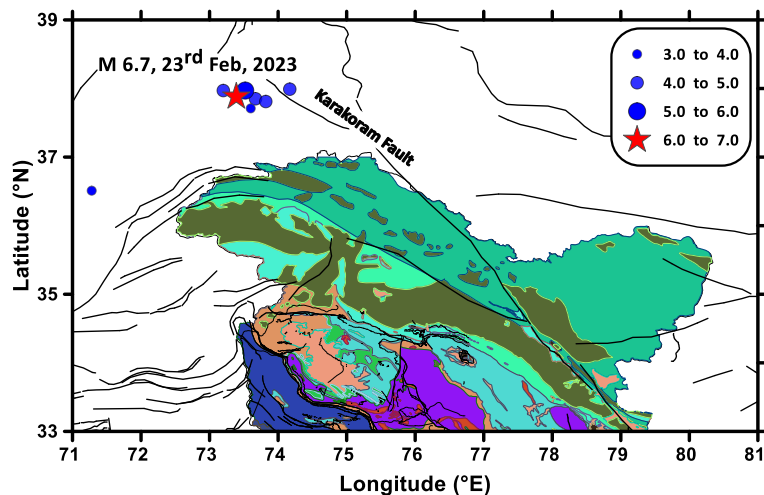


Fig 1: Map showing the location of the present earthquake of M:6.7 (Red Star) occurred on 23rd February 2023 at Mughrob District, Tajikistan, and its aftershocks (Blue color) and past seismicity (in the last 5 years). The continuous thick black lines are the major fault system in the epicentral region.

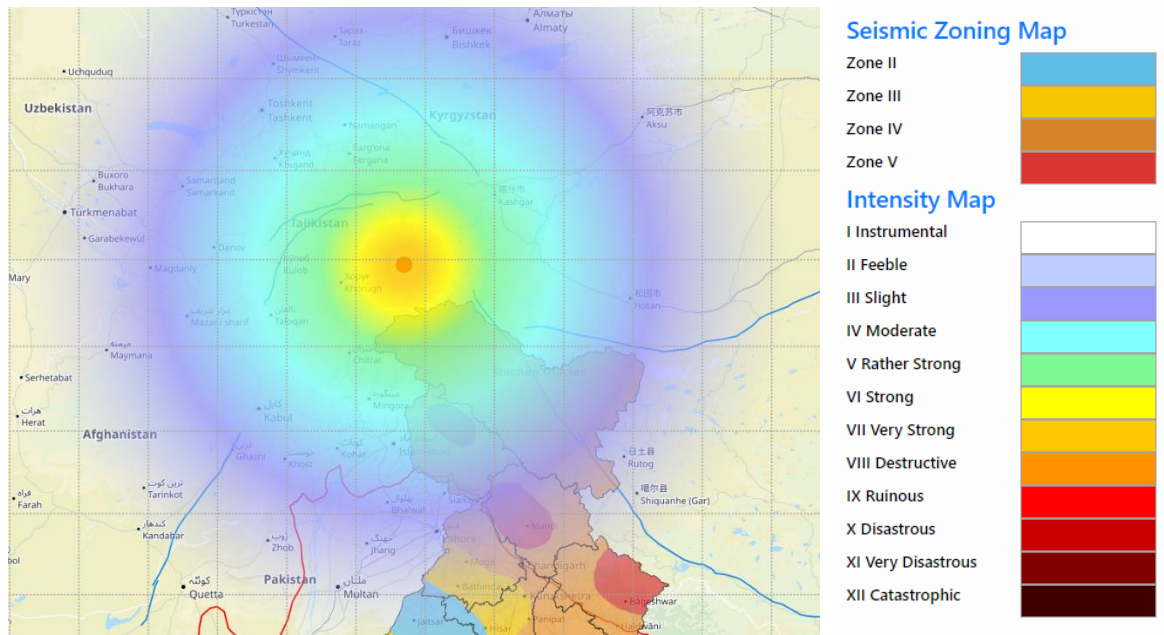


Fig 2: Map showing the intensity map of M:6.7 earthquake occurred on 23rd February 2023 at Mughrob District, Tajikistan.