

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 6393
TO BE ANSWERED ON WEDNESDAY, APRIL 12, 2017**

SEISMIC TREMORS

6393. SHRI BAIJAYANT JAY PANDA:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) the details of seismic tremors reported during the last six months in the country along with their intensity, location wise and the loss of life and property reported therein;**
- (b) the details of claims of insurance /compensation of earthquake victims lying pending, State-wise and the action taken/being taken by the Government in this regard;**
- (c) the details of earthquake study centres and monitoring stations set up in the country, location and State-wise;**
- (d) the details of funds allocated and released for establishment of new earthquake study centres, monitoring stations and appointment of geologists, State/UT-wise;**
- (e) whether the Government is taking any measures to better study the tectonic plate shift and impact of mining and other such activities on the earth's surface and if so, the details thereof; and**
- (f) the other steps that the Government is planning to take to minimize this impact and if not, the reasons therefor?**

ANSWER

**MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(SHRI Y. S. CHOWDARY)**

- (a-b) Details of significant earthquake tremors reported in the country (covering the area bounded by 6°-38°N Latitude and 68°-98°E Longitude) by the National Seismological Network, National Center for Seismology(NCS), MoES during last six months (01, October 2016 to 31st March 2017) are annexed in Annexure-I. Data on loss and property due to earthquakes are not compiled by NCS.**

However no significant damage of life and property reported during this period. Data on claims of insurance/Compensation of Earthquake victims are not maintained by NCS.

- (c) NCS, maintains a National Seismological Network (NSN) comprising of 84 (eighty four) permanent seismological field stations. Its state wise location is in Annexure-II.**

Besides NCS, Wadia Institute of Himalyan Geology, Dehradun; National Geophysical Research Institute, Hyderabad; Institute of Seismological Research (ISR) Gandhinagar; North East Institute of Science & Technology, Jorhat and some academic institutes are also involve in earthquake study.

- (d) During the FY 2015-16 an amount of Rs 18.21crore was allocated to the NCS and expenditure incurred was about Rs.16.05 crore. During the FY 2016-17 an amount of Rs 24.36 crore is allocated to NCS.**

In addition to permanent employees of NCS, a total of sixteen (16) scientists on project basis are working in NCS.

- (e-f) The National Centre for Seismology (NCS) is involved in earthquake monitoring and plate motion studies. These studies have revealed that Indian plate moves at a very small pace towards northeast and collides with the Eurasian plate. All associated sub-surface strain accumulation related studies are also taken up.**

In addition, project funding opportunities for Seismicity and Plate motion studies exists under extra-mural activities of the ministry for various research and development academic to take up related studies.

Annexure-I

Details of earthquakes which have been detected and located in and around the country (Covering the area bounded by 6°-38°N Latitude and 68°-98°E Longitude) by the National Seismological Network during 1st October 2016 and 30th March 2017 (six months)

Day	Origin-TIME	Latitude	Longitude	Depth	Magnitude				
Year	Mon	day	hr	min	sec	°N	°E	(Km)	(Richter scale)

2016	10	01	08	04	43	34.4	73.8	10	5.2
2016	10	03	21	16	03	25.0	94.6	114	3.7
2016	10	06	14	47	57	26.5	92.9	37	4.4
2016	10	07	04	52	33	27.7	86.1	15	4.5
2016	10	14	02	01	25	29.7	80.2	10	3.3
2016	10	14	10	34	36	25.6	92.0	10	3.6
2016	10	17	00	30	48	29.6	80.3	10	4.0
2016	10	18	21	31	33	22.9	92.5	147	3.5
2016	10	19	07	20	49	24.7	91.0	40	4.3
2016	10	20	00	39	01	36.4	71.4	102	5.4
2016	10	21	13	04	57	24.8	91.1	10	4.2
2016	10	22	06	00	32	26.2	92.7	10	3.9
2016	10	23	15	57	40	25.9	90.1	10	4.7
2016	10	23	22	57	51	24.2	71.2	10	3.0
2016	10	24	10	51	57	34.9	72.9	115	4.5
2016	10	24	10	51	57	34.9	72.9	115	4.5
2016	10	25	22	00	28	7.2	92.4	10	4.7
2016	10	26	02	21	58	22.8	94.3	90	5.0
2016	10	26	06	29	07	23.1	92.7	45	4.8
2016	10	27	08	50	11	29.9	80.1	15	3.2
2016	10	31	22	55	01	26.4	95.0	70	3.2
2016	11	03	04	06	54	23.7	70.1	25	3.3
2016	11	08	00	37	25	26.6	93.0	36	3.5
2016	11	13	21	22	26	10.6	94.2	45	4.6
2016	11	15	02	10	22	24.7	92.3	10	5.0
2016	11	15	14	27	16	24.5	93.7	35	3.3
2016	11	15	16	02	54	36.5	70.8	150	5.2
2016	11	16	05	07	44	31.4	75.7	13	3.6
2016	11	16	22	58	56	27.8	76.7	10	4.4
2016	11	17	04	10	41	26.6	93.2	30	3.3
2016	11	21	18	09	18	27.9	91.6	5	4.4
2016	11	23	02	31	03	30.3	78.0	10	3.4
2016	11	23	17	02	50	26.4	93.4	10	3.1
2016	11	23	19	57	54	24.7	94.6	107	3.5
2016	11	24	02	06	28	24.8	94.9	48	3.4
2016	11	24	14	16	37	33.5	72.5	10	4.6
2016	11	24	19	27	25	17.3	73.8	10	4.0
2016	11	25	11	17	09	13.4	92.9	10	4.4
2016	11	25	19	37	58	7.4	92.4	10	4.2
2016	11	27	23	35	21	27.7	86.4	10	5.5
2016	11	30	22	42	48	31.4	77.5	10	3.3
2016	12	01	16	52	48	29.8	80.6	10	5.2
2016	12	01	19	41	19	27.2	88.9	10	3.5

2016	12	01	22	03	05	25.0	94.6	90	3.5
2016	12	02	22	50	32	33.3	75.5	10	3.5
2016	12	03	19	42	13	11.0	91.9	10	4.8
2016	12	05	05	26	00	23.9	94.2	104	4.0
2016	12	06	20	36	39	24.9	93.8	33	3.2
2016	12	07	05	21	23	23.5	70.5	20	3.6
2016	12	08	07	46	25	23.5	94.2	10	4.0
2016	12	08	09	33	05	25.4	94.1	5	3.2
2016	12	11	01	57	26	25.7	91.7	10	4.2
2016	12	11	19	43	15	25.3	91.4	33	3.2
2016	12	12	02	21	40	30.8	78.2	10	2.8
2016	12	12	07	48	56	26.5	93.5	40	3.1
2016	12	13	19	14	04	30.8	78.0	5	3.9
2016	12	13	22	41	37	30.9	78.0	5	3.4
2016	12	17	17	26	00	33.8	73.7	10	4.6
2016	12	18	02	16	16	28.6	94.9	106	3.8
2016	12	18	16	08	10	26.1	92.2	10	3.2
2016	12	19	04	31	56	30.9	78.0	10	3.4
2016	12	19	17	14	02	24.9	94.1	70	3.2
2016	12	20	07	01	20	26.6	92.8	35	3.6
2016	12	20	08	56	18	27.0	92.6	15	3.1
2016	12	21	21	53	26	24.2	94.2	11	3.8
2016	12	23	04	56	16	12.5	92.3	13	4.5
2016	12	26	08	45	48	30.8	77.9	10	3.5
2016	12	26	08	45	48	30.8	77.9	10	3.5
2016	12	26	16	17	18	25.7	74.2	10	3.5
2016	12	26	22	26	55	31.4	77.2	10	3.2
2016	12	27	21	21	53	12.7	94.1	48	4.2
2017	01	03	09	09	03	24.1	91.9	28	5.7
2017	01	03	18	49	51	23.4	94.0	10	5.4
2017	01	04	13	40	32	24.0	92.0	15	3.4
2017	01	05	05	56	52	25.1	95.0	123	4.3
2017	01	06	15	03	52	24.1	91.9	55	3.9
2017	01	08	04	28	16	25.2	94.4	20	3.3
2017	01	10	15	27	41	30.3	79.4	5	3.2
2017	01	11	13	21	14	28.3	94.1	10	3.3
2017	01	12	09	32	07	26.5	95.4	75	4.7
2017	01	17	15	22	16	27.6	88.6	10	3.6
2017	01	18	01	46	10	23.9	93.0	27	3.7
2017	01	18	03	03	17	24.5	94.8	22	4.2
2017	01	23	09	33	05	30.8	78.2	10	3.5
2017	01	24	12	25	38	25.6	91.7	15	3.4
2017	01	24	18	14	29	25.5	94.6	50	3.1
2017	01	27	07	40	55	36.4	71.5	10	5.2
2017	01	29	09	09	04	24.8	92.8	10	3.2
2017	01	31	05	28	42	26.4	93.5	22	3.2
2017	02	03	13	35	48	30.5	79.2	10	3.6
2017	02	04	07	05	17	32.6	76.6	10	3.5
2017	02	05	12	54	59	27.9	93.8	10	3.8
2017	02	06	17	03	08	30.5	79.1	33	5.8
2017	02	06	20	21	45	30.6	79	10	3.6
2017	02	07	22	03	54	25.2	63.4	10	6.2
2017	02	08	08	14	28	26.9	92.9	15	3.6
2017	02	10	14	03	43	9.9	125.5	10	6.3
2017	02	11	17	21	13	30.5	79.1	5	3.2
2017	02	11	18	12	51	23.9	91.8	10	3.5
2017	02	11	17	21	13	30.5	79.1	5	3.2
2017	02	12	04	05	30	25.6	90.8	10	4.5
2017	02	16	15	13	10	26.2	92.8	20	3.6

2017	02	17	07	46	56	28.6	76.9	5	2.1
2017	02	18	18	53	42	26.6	93.0	30	3.4
2017	02	23	20	16	07	23.7	94.5	82	3.4
2017	02	23	21	39	16	27.3	88.1	150	3.5
2017	02	24	12	02	49	24.1	93.4	20	5.2
2017	02	24	21	00	44	28.7	96.0	36	3.2
2017	02	25	00	00	44	28.7	96.0	10	3.5
2017	02	25	07	02	19	24.1	92.1	33	4.0
2017	02	27	03	37	47	27.3	85.9	10	5.0
2017	02	27	04	21	45	27.3	85.9	10	4.7
2017	02	27	16	23	23	34.0	75.8	10	2.8
2017	02	28	13	42	16	37.6	72.1	115	5.4
2017	03	01	20	09	31	32.3	76.6	10	3.8
2017	03	01	23	06	31	27.3	75.8	10	2.7
2017	03	03	23	38	13	24.3	94.2	70	3.5
2017	03	04	02	11	52	25.2	94.6	70	5.0
2017	03	04	06	50	44	25.5	90.9	10	3.3
2017	03	06	02	44	16	35.7	74.0	50	4.8
2017	03	07	09	59	16	26.8	90.5	30	4.1
2017	03	01	20	09	31	32.3	76.6	10	3.8
2017	03	01	23	06	31	27.3	75.8	10	2.7
2017	03	03	23	38	13	24.3	94.2	70	3.5
2017	03	04	02	11	52	25.2	94.6	70	5.0
2017	03	04	06	50	44	25.5	90.9	10	3.3
2017	03	06	02	44	16	35.7	74.0	50	4.8
2017	03	07	09	59	16	26.8	90.5	30	4.1
2017	03	09	02	55	15	25.0	94.2	36	4.1
2017	03	09	06	18	25	35.9	71.7	160	5.0
2017	03	09	08	39	56	32.5	76.6	5	3.5
2017	03	10	12	39	33	8.5	91.9	10	4.7
2017	03	13	10	22	17	24.6	72.1	10	4.5
2017	03	14	00	18	01	32.7	75.6	10	3.6
2017	03	14	02	51	19	6.4	92.2	10	5.9
2017	03	17	10	24	17	28.1	76.3	5	2.6
2017	03	17	14	01	49	11.5	92.7	60	4.9
2017	03	19	08	57	09	9.9	94.0	10	4.7
2017	03	21	15	40	44	24.9	92.1	37	3.9
2017	03	24	07	12	25	27.6	75.4	5	2.9
2017	03	25	02	05	55	25.0	95.1	82	5.0
2017	03	26	21	42	09	27.3	88.6	10	4.6
2017	03	28	10	18	49	26.5	93.5	10	3.0
2017	03	29	19	14	33	26.1	91.3	18	3.5
2017	03	30	03	40	23	26.5	93.0	24	3.5

LIST OF SEISMOLOGICAL OBSERVATORIES OPERATED BY NCS

S.No.	Name of Station	State to which it belongs
1	Allahabad	Uttar Pradesh
2	Ajmer	Rajasthan
3	Akola	Maharashtra
4	Ayanagar	Delhi
5	Asaura	Uttar Pradesh
6	Bhakra	Himachal Pradesh
7	Bhubaneswar	Odisha
8	Bilaspur	Chhattisgarh
9	Bisrakh	Uttar Pradesh
10	Bahadurgarh	Haryana
11	Bahraich	Uttar Pradesh
12	Bhavnagar	Gujarat
13	Kolkata	West Bengal
14	Jammu	Jammu & Kashmir
15	Jharsuguda	Odisha
16	Jaisalmer	Rajasthan
17	Jhansi	Uttar Pradesh
18	Nagpur	Maharashtra
19	Kodaikanal	Tamil Nadu
20	Karad	Maharashtra
21	Khetri	Rajasthan
22	Kundal	Haryana
23	Kurukshetra	Haryana
24	Lohaghat	Uttarakhand
25	Latur	Maharashtra
26	Mangalore	Karnataka
27	Mumbai	Maharashtra
28	Sahibganj	Jharkhand
29	Pithoragarh	Uttarakhand
30	Ridge, Delhi	Delhi

31	Meerut	Uttar Pradesh
32	Rayagada	Odisha
33	Siliguri	West Bengal
34	Salem	Tamilnadu
35	Sohna	Haryana
36	Thein Dam	Punjab
37	Varanasi	Uttar Pradesh
38	Valmiki Nagar	Bihar
39	Vijayawada	Andhra Pradesh
40	Dhubri	Assam
41	Mokokchung	Nagaland
42	Agartala	Tripura
43	Jorhat	Assam
44	Belonia	Tripura
45	Gangtok	Sikkim
46	Kohima	Nagaland
47	Imphal	Manipur
48	Aizawal	Mizoram
49	Silchar	Assam
50	Lekhapani	Assam
51	Ziro	Arunachal Pradesh
52	Tezpur	Assam
53	Itanagar	Arunachal Pradesh
54	Tura	Meghalaya
55	Guwahati	Assam
56	Dibrugarh	Assam
57	Tawang	Arunachal Pradesh
58	Pasighat	Arunachal Pradesh
59	Saiha	Mizoram
60	Bhopal	Madhya Pradesh
61	Bhuj	Gujarat
62	Chennai	Tamil Nadu
63	Dehradun	Uttarakhand

64	Goa	Goa
65	Minicoy	Lakshadweep
66	Port Blair	Andaman & Nicobar
67	Pune	Maharashtra
68	Shillong	Meghalaya
69	Thiruvananthapuram	Kerala
70	Visakhapatnam	Andhra Pradesh
71	Campbell Bay	Andaman & Nicobar
72	Dharamsala	Himachal Pradesh
73	Diglipur	Andaman & Nicobar
74	Hyderabad	Telangana
75	Bokaro	Jharkhand
76	Shimla	Himachal Pradesh
77	Srinagar	Jammu & Kashmir
78	Lodi Road, New Delhi	Delhi
79	Agra	Uttar Pradesh
80	Rohtak	Haryana
81	Kalagarh	Uttarakhand
82	Unchagaon	Uttar Pradesh
83	Kalpa	Himachal Pradesh
84	Joshimath	Uttarakhand