EARTHQUAKE ACTIVITY IN THE YELLOWSTONE REGION

Preliminary Epicenters

April 1 – June 30, 2020

Prepared by the University of Utah Seismograph Stations and funded by
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Foreword and Data Explanation

This report contains an epicenter map (Figure 1) and listings of earthquakes (Tables 1 and 2) detected and located in the Yellowstone region (lat. 44° 00′ – 45° 10′ N, long. 109° 45′ – 111° 30′ W). The computer program HYPOINVERSE-2000 (F. W. Klein, 2012, U.S. Geological Survey Open-File Report 02-171 revised) was used to process the earthquake data. This report also includes maps and a table of operating seismograph stations in the University of Utah's Yellowstone seismic network (Figure 2, Table 3).

The earthquake listing in Table 2 is estimated to be systematically complete above magnitude 1.5 within Yellowstone. *These data are preliminary—both the locations and magnitudes in this table are subject to revision.*

The following data are listed for each earthquake in Table 2:

- Date (yymmdd) and origin time in Coordinated Universal Time (UTC). To convert to local time, subtract seven hours for Mountain Standard Time (MST) and six hours for Mountain Daylight Time (MDT). During the report period, local time was MDT.

- Earthquake location coordinates in degrees and minutes of north latitude and west longitude, and depth in kilometers below sea level. Note that prior to October 1, 2012, the earthquake depths in these quarterly reports were computed relative to a datum of 2000 m above sea level.

- "*" indicates poor depth resolution: no recording stations within 10 km or twice the depth.

- MAG, the computed Richter local magnitude (M_L) for each earthquake. "W" indicates that peak amplitude measurements from Wood-Anderson records were used. Otherwise, the estimate is calculated from signal durations and is more correctly identified as coda magnitude (M_C). The notation "--" indicates that a reliable magnitude estimate could not be made.

- NO, the number of P and S readings used in the solution.

- GAP, the largest azimuthal separation in degrees between recording stations used in the solution.

- DMN, the epicentral distance in kilometers to the closest station.

- RMS, the weighted root-mean-square of the travel-time residuals in seconds:

$$RMS = \left(\frac{\sum_i (W_i R_i)^2}{\sum_i (W_i)^2} \right)^{\frac{1}{2}}$$

where: R_i is the observed minus the computed arrival time for the i-th P or S reading, and W_i is the relative weight given to the i-th P or S arrival time (0.0 for no weight through 1.0 for full weight).

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April 1 – June 30, 2020

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During the three-month period April 1 through June 30, 2020, the University of Utah Seismograph Stations (UUSS) located 524 earthquakes within the Yellowstone region (Figure 1). The total includes 1 earthquake in the magnitude 3 range, and 13 earthquakes in the magnitude 2 range. The largest event to occur during this period was a magnitude 3.1 earthquake on May 29. There were no earthquakes reported felt in the region during the report period (see Table 1, a cumulative tabulation of earthquakes that were felt in the Yellowstone region during 2020). Additional information on earthquakes within the Yellowstone region is available from the University of Utah Seismograph Stations.

Online Information

A complete copy of this report, including maps and the earthquake catalog, is available on the UUSS web site at *https://quake.utah.edu/earthquake-center/quarterly-seismicity-reports*.

Note: On October 1, 2012, UUSS began using the ANSS Quake Monitoring System (AQMS) software package for data acquisition and data processing. The primary effect on the data reported herein comes from computing the earthquake locations with a newer version of the computer program HYPOINVERSE-2000 (F. W. Klein, 2012, U.S. Geological Survey Open-File Report 02-171 revised) and a revised and expanded set of velocity models. As implemented at UUSS, this new version of the location program accounts for station elevation differences more accurately and reports focal depths relative to sea level instead of the 2000 m elevation datum used previously.

For earthquakes of magnitude 3 and larger in the Yellowstone region, the U. S. Geological Survey automatically posts a Community Internet Intensity Map (CIIM) on its "Did You Feel It?" web page at http://earthquake.usgs.gov/earthquakes/dyfi/. We encourage anyone who feels an earthquake to report their observations on this interactive web site; felt information is available by zip code on the CIIM site or can be obtained from UUSS directly.

Earthquakes of Magnitude 3.0 or Larger

M_L 3.1	May 29	04:39 MDT	4.7 mi W of Norris Geyser Basin, YNP

Notable Swarm Seismicity

During the report period, there were six earthquake swarms in the Yellowstone region. For reporting purposes, we use the Mogi definition [Mogi, 1963] of a swarm and require each swarm to have ten or more earthquakes. Note that typically, around 50% of Yellowstone earthquakes occur as part of a seismic swarm [Farrell et al., 2009].

A. A swarm of 20 earthquakes ($0.2 \leq M \leq 1.5$) occurred about 4.0 mi SE of West Thumb Geyser Basin, YNP from April 12th – 13th.
B. A swarm of 19 earthquakes ($-0.1 \leq M \leq 1.4$) occurred about 5.0 mi W of Norris Geyser Basin, YNP from May 4th – 5th.
C. A swarm of 88 earthquakes ($-0.6 \leq M \leq 2.0$) occurred about 10.8 mi NNE of West Yellowstone, MT from May 8th – 16th.
D. A swarm of 41 earthquakes ($-1.0 \leq M \leq 2.1$) occurred about 4.9 mi W of Norris Geyser Basin, YNP from May 20th – 23rd.
E. A swarm of 103 earthquakes ($-0.2 \leq M \leq 3.1$) occurred about 5.8 mi W of Norris Geyser Basin, YNP from May 29th – June 4th.
F. A swarm of 19 earthquakes ($0.4 \leq M \leq 2.8$) occurred about 7.4 mi W of Norris Geyser Basin, YNP from June 12th – 15th.

These swarms are labeled in Figure 1.

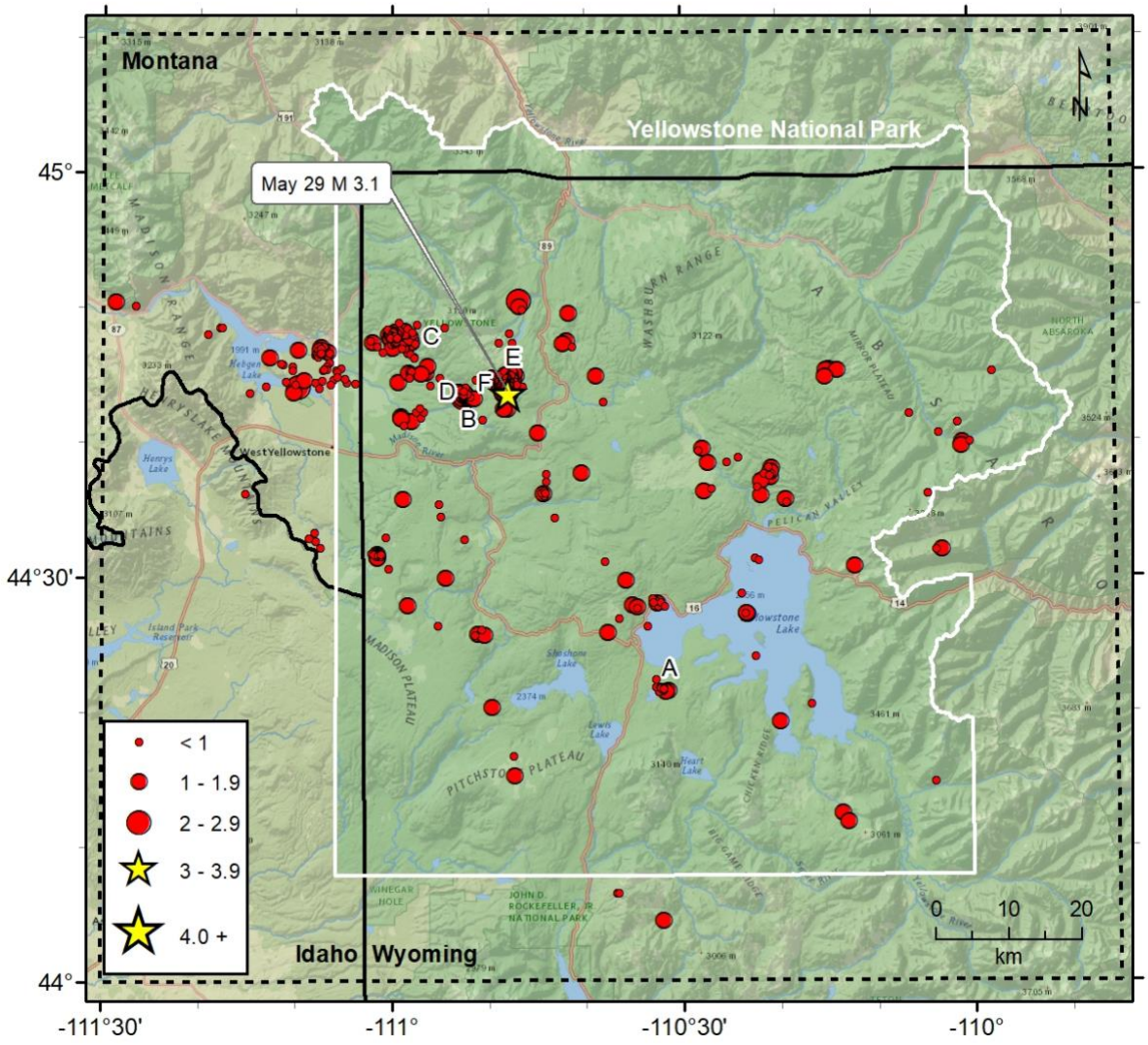

Figure 1. Epicenters of earthquakes located by the University of Utah Seismograph Stations, April 1, 2020, through June 30, 2020. Earthquake swarms (labeled A–F) are discussed in the text.

Table 1

EARTHQUAKES FELT IN THE YELLOWSTONE REGION
January 1, 2020 to June 30, 2020

Date	Time†	Felt Information‡	Latitude	Longitude	Magnitude§
March 31	09:36 MDT 15:36 UTC	Yellowstone. Felt (II) at West Yellowstone, MT.	44º 44.40′	111º 08.28′	M_L 3.1

† Times are listed both as Local Time—Mountain Standard Time (MST) or Mountain Daylight Time (MDT)—and as Coordinated Universal Time (UTC).
? Indicates on-line reports that appear questionable given the distance from the source
‡ *CIIM* indicates the availability of a Community Internet Intensity Map (http://earthquake.usgs.gov/earthquakes/dyfi), compiled by the U.S. Geological Survey (USGS); *ShakeMap* indicates the availability of computer-generated maps of ground-shaking (*https://quake.utah.edu*), produced by the University of Utah Seismograph Stations (UUSS). Roman numerals correspond to the Modified Mercalli intensity scale. Unless otherwise indicated, felt information is from the USGS (1) CIIM reports and/or (2) PDE Monthly (or) Weekly Listing Files (http://earthquake.usgs.gov/data/pde.php).
§ Richter local magnitude (M_L) or coda magnitude (M_C) determined by UUSS. If labeled "NEIC," data are from the National Earthquake Information Center of the USGS.

Yellowstone Seismic Network
June 30, 2020

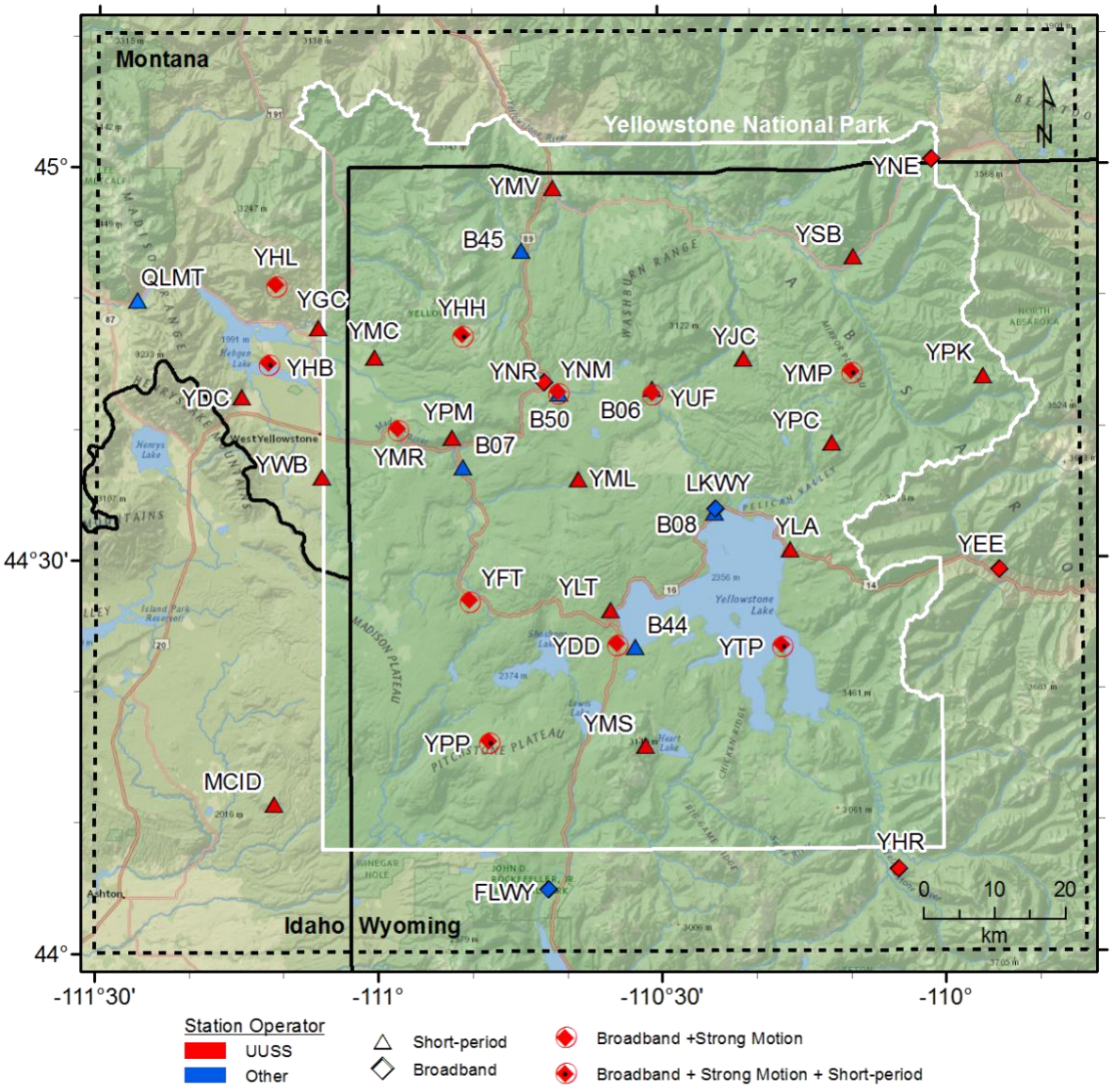

Figure 2. Seismograph stations of the Yellowstone Seismic Network as of June 30, 2020.

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2020

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200401	00:04:05.70	44º28.15’	110º33.03’	2.0	--	10	143	5	0.12
200401	00:04:23.93	44º27.87’	110º31.84’	2.1	--	6	166	5	0.38
200401	00:05:24.96	44º28.08’	110º32.64’	2.0	1.4	10	139	5	0.12
200401	01:09:29.16	44º45.29’	110º13.83’	6.5	1.4	13	112	6	0.27
200401	01:11:45.85	44º45.29’	110º14.98’	6.3	1.4	10	117	8	0.06
200401	01:27:08.45	44º45.35’	110º14.74’	7.2	1.6	11	117	7	0.12
200401	03:19:09.25	44º28.15’	110º32.21’	2.7	0.0	6	177	5	0.16
200401	03:19:14.95	44º28.34’	110º32.77’	2.5	0.5	7	188	5	0.12
200401	05:50:10.53	44º27.88’	110º32.51’	2.3	0.9	7	136	5	0.08
200401	20:18:22.63	44º50.09’	111º26.68’	11.6	0.4	13	208	1	0.17
200401	22:47:22.37	44º31.46’	110º22.48’	5.1	0.3	8	126	5	0.37
200401	22:48:15.90	44º31.26’	110º22.07’	2.1	0.0	9	127	5	0.35
200402	12:28:25.62	44º46.29’	111º12.76’	11.9	1.0W	15	111	3	0.17
200403	17:59:28.39	44º44.44’	110º59.42’	5.9	1.5W	14	115	8	0.15
200403	21:10:53.68	44º32.02’	110º03.05’	9.5	1.3	13	117	13	0.18
200404	03:27:00.52	44º46.74’	111º06.67’	2.7	1.9W	11	170	7	0.18
200405	11:30:20.33	44º14.86’	110º03.97’	11.7*	0.3	14	198	24	0.10
200405	13:39:31.20	44º47.14’	111º07.10’	10.2	-0.1	9	102	2	0.12
200406	00:54:11.17	44º47.03’	110º59.98’	8.8	1.0W	16	149	3	0.13
200406	12:23:58.19	44º44.80’	110º58.23’	5.1	0.2	13	118	3	0.14
200406	19:42:50.07	44º47.00’	111º07.43’	10.4	0.2	12	91	2	0.11
200407	16:11:42.04	44º46.66’	111º07.54’	7.9	0.9W	15	89	3	0.14
200408	20:32:02.58	44º41.60’	110º58.03’	4.5	1.2W	12	69	3	0.20
200409	04:25:29.00	44º43.82’	110º52.60’	2.2	-0.7	11	89	7	0.10
200409	04:44:57.78	44º41.88’	110º57.07’	1.7	0.6	12	98	3	0.14
200409	05:14:59.42	44º42.27’	110º56.76’	1.1	0.2	9	93	4	0.10
200410	23:54:04.05	44º25.75’	110º50.50’	1.8	1.3	14	170	3	0.11
200411	04:03:18.86	44º45.64’	110º56.34’	4.9	1.0W	14	108	5	0.12
200412	23:52:53.40	44º21.64’	110º31.48’	4.7	1.5W	13	103	4	0.11
200412	23:56:32.47	44º21.60’	110º32.06’	4.4	0.9	11	105	3	0.12
200413	00:10:53.28	44º21.54’	110º32.48’	6.7	0.7	11	95	3	0.17
200413	00:13:13.89	44º21.83’	110º32.02’	4.3	0.9	11	96	3	0.13
200413	00:33:35.33	44º21.74’	110º31.95’	4.0	0.2	11	98	3	0.12
200413	00:33:54.32	44º21.56’	110º31.80’	3.5	1.0	10	100	4	0.14
200413	00:50:14.00	44º21.70’	110º31.93’	4.6	0.7	11	98	3	0.09
200413	00:51:27.60	44º21.73’	110º32.03’	4.4	0.8	11	97	3	0.10
200413	00:51:53.37	44º21.67’	110º31.96’	3.5	0.6	9	97	3	0.14
200413	00:58:39.64	44º22.46’	110º32.79’	5.1	0.6	7	89	2	0.22
200413	01:28:10.27	44º21.82’	110º32.16’	4.1	0.4	10	115	3	0.14
200413	01:28:18.01	44º21.83’	110º31.97’	3.3	0.3	9	112	3	0.16
200413	02:08:46.64	44º21.74’	110º32.00’	4.8	0.8	15	97	3	0.16
200413	02:58:37.60	44º21.93’	110º32.36’	4.8	0.5	10	122	3	0.07
200413	03:46:37.70	44º21.86’	110º32.28’	4.5	0.4	10	94	3	0.10
200413	04:26:00.22	44º21.78’	110º32.13’	4.3	0.6	9	123	3	0.10
200413	07:31:11.94	44º21.78’	110º32.03’	4.3	0.9	10	97	3	0.07

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2020

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200413	07:48:57.26	44º21.95’	110º32.78’	4.8	0.6	8	144	3	0.08
200413	08:29:25.56	44º21.83’	110º32.44’	4.6	0.9	9	93	3	0.14
200413	09:59:31.29	44º45.38’	111º05.84’	10.5	0.4	13	88	4	0.14
200413	12:03:51.66	44º47.44’	110º47.58’	4.4	0.0	12	225	5	0.13
200413	12:04:51.92	44º45.21’	111º05.68’	10.6	0.0	11	89	5	0.11
200413	12:31:13.69	44º45.51’	111º05.32’	10.8	0.0	13	97	4	0.10
200413	13:03:35.27	44º21.68’	110º31.98’	4.7	0.7	9	97	3	0.05
200413	17:09:35.11	44º32.95’	111º08.64’	11.4	0.6	11	170	7	0.11
200413	19:19:18.07	44º46.60’	111º07.92’	10.1	0.5	9	93	3	0.11
200414	08:22:29.38	44º31.19’	110º37.98’	3.6	0.4	11	134	10	0.17
200414	15:13:33.05	44º48.53’	110º54.59’	8.4	0.2	9	192	5	0.08
200414	22:43:59.48	44º46.75’	111º07.74’	8.4	0.6W	13	92	3	0.15
200415	01:27:10.87	44º46.50’	111º07.96’	7.9	0.7W	13	93	3	0.13
200415	05:06:40.34	44º38.16’	110º20.99’	6.8	0.5	10	154	9	0.03
200415	12:58:28.93	44º47.00’	111º07.45’	10.1	-0.1	12	91	2	0.11
200416	19:29:03.13	44º46.67’	111º06.53’	10.2	0.0	12	81	2	0.10
200417	00:02:10.68	44º26.45’	110º33.57’	1.7	0.3	8	122	2	0.09
200417	00:02:18.88	44º27.73’	110º34.64’	3.0	0.5	13	86	3	0.10
200417	00:10:35.83	44º27.01’	110º36.55’	2.0	0.4	7	133	2	0.09
200417	00:10:58.39	44º27.95’	110º35.11’	2.7	1.2W	15	69	3	0.14
200417	00:12:49.29	44º27.81’	110º34.65’	3.5	1.0	12	68	3	0.11
200417	03:14:12.81	44º36.16’	110º04.51’	6.0*	0.0	6	162	18	0.11
200417	18:14:50.30	44º46.55’	111º07.53’	8.5	0.0	7	98	3	0.09
200418	06:34:57.82	44º43.99’	110º52.97’	3.5	-0.4	10	95	7	0.10
200418	07:08:11.68	44º45.17’	109º57.70’	11.5	0.8	8	95	4	0.12
200418	12:30:44.97	44º48.13’	110º47.86’	6.1	0.2	11	113	4	0.15
200418	13:40:49.58	44º39.66’	110º00.95’	13.2	1.4	10	111	11	0.11
200419	06:48:34.82	44º46.81’	111º07.19’	8.1	0.7	15	86	2	0.16
200419	11:19:39.76	44º37.67’	110º20.76’	5.3	0.8	13	75	9	0.10
200419	12:14:32.19	44º28.84’	110º23.82’	2.0	0.9	13	93	9	0.17
200420	03:32:41.46	44º46.97’	111º07.31’	8.6	0.3	15	89	2	0.15
200420	04:09:03.90	44º46.79’	111º07.64’	8.3	0.5	16	91	2	0.16
200420	05:01:11.13	44º46.67’	111º07.88’	8.3	0.3	13	94	3	0.15
200420	07:37:37.21	44º12.54’	110º13.59’	11.1	1.6	22	165	21	0.15
200420	07:55:39.28	44º46.86’	111º07.67’	9.4	0.1	11	92	2	0.11
200420	09:41:16.99	44º39.95’	110º00.85’	11.2	1.8	14	106	10	0.20
200420	16:59:51.81	44º32.00’	110º03.71’	6.9*	0.4	11	117	14	0.14
200420	20:37:16.83	44º45.81’	111º11.38’	12.3	0.6	12	78	2	0.15
200420	20:37:29.01	44º45.39’	111º10.32’	9.9	-0.3	10	138	2	0.15
200421	03:20:44.68	44º44.92’	110º38.92’	4.0	1.5W	20	93	4	0.12
200421	15:22:19.84	44º39.56’	110º27.91’	3.6	1.6W	19	114	7	0.13
200421	15:22:49.31	44º39.42’	110º28.28’	3.1	0.8	15	111	7	0.14
200421	21:11:03.48	44º27.27’	110º23.27’	3.5*	1.1	11	82	11	0.08
200422	00:40:34.11	44º44.99’	110º49.67’	4.0	0.4	9	129	5	0.07
200422	06:49:30.05	44º44.80’	110º48.04’	4.2	0.0	9	149	6	0.11

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2020

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200422	10:03:26.03	44º45.10’	110º49.73’	5.4	0.2	9	130	4	0.06
200422	10:08:51.98	44º45.10’	110º49.48’	7.8	0.5	16	88	5	0.19
200422	22:05:00.39	44º46.49’	111º07.82’	9.3	0.1	12	100	3	0.13
200423	01:10:44.37	44º46.88’	111º07.54’	9.1	1.0W	13	91	2	0.15
200423	01:25:35.82	44º46.67’	111º07.41’	8.2	-0.1	10	87	2	0.12
200423	08:44:53.45	44º04.64’	110º32.13’	6.8*	1.1	10	251	21	0.11
200423	22:25:07.39	44º27.35’	110º23.36’	3.8*	1.1	13	81	11	0.09
200423	22:25:07.39	44º27.28’	110º23.30’	3.5*	1.1	14	82	11	0.09
200424	00:07:05.16	44º27.33’	110º23.49’	2.0*	0.9	14	110	11	0.22
200424	01:29:43.61	44º48.01’	111º19.13’	12.4	-0.2	8	144	9	0.12
200424	19:10:04.41	44º28.28’	110º32.74’	2.1	0.6	8	187	5	0.16
200424	19:10:20.56	44º28.45’	110º33.13’	3.5	0.4	10	189	5	0.11
200424	19:32:08.23	44º50.39’	111º28.73’	13.8	1.9W	18	205	4	0.16
200424	23:29:50.60	44º36.21’	110º44.40’	6.7	1.2W	19	77	8	0.17
200424	23:34:59.75	44º36.29’	110º44.55’	6.0	0.6W	14	77	8	0.19
200424	23:34:59.75	44º37.11’	110º44.08’	6.6	0.6W	10	118	7	0.11
200424	23:36:46.46	44º36.33’	110º44.13’	7.3	0.6W	14	74	7	0.10
200424	23:37:16.26	44º36.07’	110º44.29’	6.8	0.9W	15	77	8	0.10
200424	23:38:01.14	44º36.44’	110º44.23’	4.7	0.6W	14	128	7	0.13
200425	18:53:31.85	44º44.43’	111º08.00’	6.2	0.2	9	128	5	0.14
200426	15:23:34.56	44º44.81’	110º55.02’	2.7	0.7	5	126	7	0.05
200427	10:52:10.44	44º43.71’	111º14.75’	13.3	0.0	10	142	2	0.14
200427	12:16:07.40	44º33.34’	111º08.10’	12.1	0.1	10	149	6	0.11
200427	13:29:14.84	44º32.73’	111º08.00’	14.3	0.9W	20	150	7	0.17
200428	00:17:19.64	44º49.60’	110º41.75’	3.7	1.0W	13	156	8	0.21
200428	01:45:28.33	44º31.64’	111º01.16’	15.2	0.3	14	124	11	0.15
200428	01:45:46.18	44º31.77’	111º01.93’	17.2	0.4	14	130	10	0.15
200428	01:46:42.65	44º31.58’	111º01.30’	15.7	0.9W	19	120	11	0.17
200428	01:58:05.07	44º47.53’	110º41.96’	2.1	1.7W	16	136	7	0.17
200428	01:58:42.21	44º33.04’	111º00.72’	14.5	-0.3	11	253	9	0.13
200428	02:02:34.07	44º47.30’	110º42.32’	2.0	1.4W	15	131	8	0.15
200428	23:45:46.67	44º44.26’	110º48.17’	4.1	0.6	11	137	7	0.11
200428	23:46:03.63	44º44.39’	110º47.63’	2.4	0.3	8	145	7	0.14
200428	23:46:13.29	44º44.19’	110º47.89’	2.1	-0.1	10	138	7	0.14
200429	05:18:10.85	44º44.29’	110º48.27’	5.0	0.9W	12	132	7	0.17
200429	05:18:54.34	44º44.02’	110º48.25’	2.0	0.2	11	132	7	0.13
200429	05:19:29.16	44º44.02’	110º48.13’	2.3	0.0	11	133	7	0.14
200429	15:32:51.00	44º45.67’	111º10.41’	9.4	0.6W	16	118	2	0.18
200430	03:00:50.99	44º37.79’	110º20.85’	5.3	0.9	11	74	9	0.11
200430	05:27:28.91	44º42.54’	110º57.12’	1.4	0.0	11	130	5	0.12
200430	05:55:42.83	44º41.94’	110º59.16’	6.6	1.5W	19	59	4	0.16
200430	06:03:06.24	44º41.77’	110º59.07’	6.2	1.2W	13	70	3	0.15
200430	06:14:17.77	44º42.28’	110º57.57’	2.1	0.0	10	142	4	0.14
200430	09:57:47.25	44º38.11’	110º20.69’	2.0	1.0	7	126	9	0.13
200501	01:35:51.73	44º25.84’	110º51.15’	4.0	1.5W	24	73	3	0.16

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2020

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200501	09:27:32.21	44º40.62’	110º03.30’	13.9	0.7	8	164	11	0.08
200501	15:53:22.26	44º11.91’	110º12.95’	6.6*	1.0	13	200	22	0.14
200504	00:55:37.98	44º44.25’	110º48.17’	4.2	0.1	10	137	7	0.08
200504	01:08:02.04	44º44.20’	110º48.09’	3.9	0.5W	13	137	7	0.08
200504	01:27:25.73	44º44.63’	110º48.07’	7.8	1.0W	15	89	6	0.11
200504	02:55:52.18	44º44.23’	110º47.90’	5.1	0.1	11	139	7	0.10
200504	02:57:40.73	44º44.56’	110º48.02’	6.0	0.4	14	145	6	0.16
200504	02:57:46.08	44º44.27’	110º48.17’	5.2	0.4	13	137	7	0.16
200504	02:57:57.21	44º44.70’	110º48.12’	6.4	0.5	12	146	6	0.16
200504	02:58:02.42	44º44.16’	110º48.30’	4.7	0.5	12	133	7	0.16
200504	02:59:22.18	44º44.63’	110º48.13’	6.3	0.5	13	144	6	0.15
200504	03:00:11.81	44º44.15’	110º48.18’	6.2	1.1W	23	84	7	0.19
200504	03:00:15.94	44º44.23’	110º48.48’	4.9	1.4W	17	90	7	0.17
200504	03:02:05.43	44º44.29’	110º48.25’	5.1	0.8W	11	137	7	0.11
200504	03:02:30.21	44º44.10’	110º48.19’	4.4	0.8	11	134	7	0.13
200504	03:02:58.63	44º43.96’	110º48.23’	2.2	0.4	10	130	7	0.16
200504	03:23:20.97	44º44.09’	110º48.06’	2.2	0.0	11	135	7	0.13
200504	03:45:15.59	44º44.16’	110º48.25’	3.4	-0.1	9	134	7	0.07
200504	06:38:01.72	44º44.44’	110º48.10’	4.5	0.5	9	142	7	0.06
200504	06:38:36.93	44º43.99’	110º48.24’	3.2	0.4	11	131	7	0.06
200505	14:43:20.77	44º44.50’	110º48.32’	4.7	0.5W	13	91	6	0.12
200506	09:48:13.63	44º31.66’	111º01.52’	17.8	0.4	12	145	11	0.10
200506	09:51:33.10	44º31.47’	111º01.59’	16.0	1.1W	19	122	11	0.13
200506	12:29:13.25	44º43.02’	110º38.15’	5.7	0.8	12	153	3	0.16
200506	18:55:50.98	44º30.79’	110º12.19’	3.8	1.3	12	109	5	0.15
200507	04:38:14.37	44º31.59’	111º01.59’	16.3	1.1W	14	146	11	0.13
200507	08:40:21.66	44º19.29’	110º19.93’	7.0	1.0	12	204	9	0.06
200507	20:37:38.11	44º31.81’	111º02.12’	19.0	0.7	12	131	10	0.11
200508	02:08:49.03	44º31.72’	111º01.61’	16.5	1.5W	15	125	10	0.14
200508	02:14:49.35	44º31.77’	111º01.18’	16.6	0.2	15	123	11	0.15
200508	12:45:25.08	44º48.02’	110º57.80’	7.1	-0.1	13	169	6	0.14
200509	08:37:24.82	44º47.45’	110º58.07’	8.2	1.7W	23	115	5	0.16
200509	08:40:56.49	44º48.21’	110º57.88’	7.4	-0.2	10	172	6	0.10
200509	16:22:18.47	44º48.06’	111º00.05’	8.1	0.7	16	124	5	0.10
200509	16:28:18.13	44º48.00’	110º59.93’	8.0	0.3	11	164	5	0.09
200509	16:31:47.12	44º48.05’	111º00.03’	8.8	0.9W	17	90	5	0.10
200509	16:32:43.07	44º47.42’	110º59.83’	7.6	0.3	13	206	4	0.19
200509	16:33:00.51	44º46.28’	110º57.74’	2.5	-0.4	8	188	4	0.07
200509	16:51:53.20	44º48.88’	110º59.28’	10.1	0.2	12	224	6	0.15
200509	17:03:34.11	44º47.74’	110º58.17’	7.9	1.2W	15	77	5	0.11
200509	17:06:20.72	44º48.05’	110º57.97’	8.4	0.3	11	130	6	0.10
200509	17:55:08.73	44º48.01’	111º00.42’	7.8	1.4W	16	91	5	0.13
200509	17:58:51.99	44º47.97’	110º59.86’	8.0	1.0W	14	124	5	0.09
200509	18:07:21.92	44º47.96’	110º59.92’	8.2	0.2	9	163	4	0.06
200509	18:26:57.20	44º47.94’	110º59.70’	6.7	-0.4	13	163	4	0.18

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2020

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200509	18:27:03.60	44º47.37’	110º59.83’	6.8	0.1	12	155	3	0.14
200509	18:27:11.98	44º47.49’	110º59.63’	5.6	-0.1	10	157	4	0.11
200509	18:28:05.72	44º47.99’	111º00.09’	7.8	0.8W	13	130	5	0.10
200509	18:37:07.26	44º47.71’	110º59.74’	9.0	2.0W	24	148	4	0.13
200509	19:00:22.20	44º46.96’	110º58.74’	5.2	0.3	15	197	3	0.15
200509	19:02:33.40	44º48.00’	111º00.13’	7.8	0.1	10	164	5	0.10
200509	19:46:03.83	44º47.83’	111º00.28’	8.3	0.8W	15	129	4	0.12
200509	19:51:15.50	44º48.19’	110º59.74’	8.7	1.1W	13	168	5	0.12
200509	20:10:19.86	44º48.05’	110º59.82’	7.3	0.3	16	131	5	0.11
200509	20:24:18.40	44º48.15’	111º00.01’	7.3	0.5	12	166	5	0.09
200509	20:30:01.94	44º48.00’	111º00.07’	8.1	0.6	15	130	5	0.09
200509	20:31:25.75	44º47.94’	111º00.03’	8.0	1.7W	24	119	4	0.11
200509	20:31:41.61	44º47.70’	111º00.17’	7.0	1.1	15	127	4	0.11
200509	20:34:25.25	44º47.93’	110º59.89’	7.9	0.0	16	163	4	0.11
200509	20:40:58.31	44º48.29’	111º00.01’	7.4	0.5	12	217	5	0.09
200509	20:51:46.33	44º48.22’	111º00.03’	7.9	0.8W	17	167	5	0.10
200509	20:51:55.11	44º47.02’	110º58.66’	5.4	0.5	9	227	4	0.06
200509	20:57:19.12	44º47.70’	110º59.62’	7.8	-0.6	8	160	4	0.09
200509	20:57:41.37	44º47.86’	110º59.85’	7.7	-0.2	9	162	4	0.10
200509	21:14:06.90	44º48.41’	111º00.54’	7.4	0.4	9	282	5	0.12
200509	21:14:45.14	44º47.82’	110º59.94’	7.0	-0.1	13	161	4	0.17
200509	21:15:00.71	44º47.74’	111º00.16’	6.6	-0.6	10	159	4	0.18
200509	21:33:48.25	44º47.97’	111º00.02’	6.6	1.2W	20	163	4	0.16
200509	21:40:32.26	44º47.67’	111º00.05’	7.4	1.1W	20	159	4	0.16
200509	21:40:46.05	44º47.41’	110º59.72’	7.3	0.1	15	155	4	0.20
200509	21:46:40.00	44º48.03’	111º00.01’	6.7	0.9	17	164	5	0.15
200509	21:46:48.02	44º46.61’	110º58.12’	2.3	-0.2	6	264	9	0.06
200509	21:54:17.28	44º47.28’	110º59.05’	5.1	-0.1	11	202	4	0.14
200509	21:54:22.41	44º46.63’	110º58.39’	2.0	0.2	11	209	3	0.14
200509	21:56:04.00	44º47.79’	110º59.98’	7.3	1.6W	22	128	4	0.17
200509	21:56:28.21	44º47.83’	110º59.88’	7.0	0.7	16	161	4	0.17
200509	21:58:11.66	44º47.96’	110º59.94’	6.9	0.3	13	163	4	0.16
200509	22:00:22.60	44º47.79’	110º59.98’	7.0	0.8W	17	161	4	0.18
200509	22:05:48.40	44º47.98’	110º59.93’	7.3	0.4	15	164	5	0.11
200509	22:06:17.94	44º47.84’	110º59.79’	6.6	0.5	15	161	4	0.19
200509	22:14:43.90	44º47.65’	110º59.92’	8.7	1.8W	23	116	4	0.16
200509	23:41:35.94	44º47.97’	111º00.11’	7.5	1.3W	20	130	4	0.14
200509	23:43:23.36	44º47.95’	110º59.99’	7.3	0.4	13	204	4	0.13
200509	23:44:37.03	44º47.90’	110º59.58’	7.6	0.3	12	163	4	0.19
200509	23:50:26.16	44º47.89’	110º59.86’	6.1	0.1	16	163	4	0.18
200510	00:04:36.45	44º49.88’	110º46.60’	3.3	0.9	14	126	7	0.18
200510	01:03:49.07	44º47.77’	110º59.46’	6.4	--	9	209	4	0.12
200510	01:30:34.57	44º47.93’	110º59.92’	8.4	1.7W	19	163	4	0.15
200510	01:30:45.20	44º47.28’	111º00.14’	5.8	0.9	14	152	3	0.16
200510	01:31:45.37	44º48.16’	110º59.89’	7.4	0.2	16	166	5	0.18

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DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200510	01:31:59.26	44º47.94’	110º59.84’	6.7	0.3	17	163	4	0.16
200510	01:32:47.42	44º47.71’	111º00.15’	6.5	-0.1	12	117	4	0.11
200510	01:47:38.80	44º47.96’	110º59.97’	7.1	0.6W	15	163	4	0.16
200510	03:27:20.19	44º47.95’	111º00.05’	7.9	1.1W	21	163	4	0.16
200510	03:28:00.75	44º47.94’	111º00.09’	7.5	1.2W	22	163	4	0.15
200510	03:30:46.13	44º47.71’	110º59.94’	7.6	1.5W	22	127	4	0.17
200510	03:30:50.88	44º47.72’	111º00.23’	2.9*	1.3	10	159	12	0.13
200510	04:22:14.58	44º48.01’	110º59.97’	7.2	1.1W	17	164	5	0.11
200510	04:57:01.99	44º48.07’	111º00.03’	7.6	0.8	15	164	5	0.17
200510	05:11:36.10	44º47.60’	110º59.62’	6.9	0.3	17	158	4	0.18
200510	06:34:49.51	44º46.74’	111º00.99’	9.8	0.3	13	143	2	0.27
200510	06:57:31.36	44º47.75’	110º59.49’	6.6	0.3	18	161	4	0.19
200510	08:25:08.89	44º47.42’	110º59.44’	6.3	0.0	13	157	4	0.14
200510	08:49:16.88	44º47.09’	110º58.78’	6.0	0.4	15	152	4	0.15
200510	10:36:16.95	44º47.93’	110º59.83’	6.6	0.3	14	163	4	0.12
200510	11:48:30.45	44º32.83’	110º52.57’	8.1	0.7	14	128	8	0.16
200510	14:23:17.73	44º47.87’	111º00.05’	7.8	0.9W	18	162	4	0.17
200510	14:34:52.81	44º47.99’	110º59.82’	6.5	0.4	16	164	5	0.18
200510	14:46:22.81	44º47.00’	110º58.70’	5.4	0.2	12	226	3	0.14
200510	14:46:40.08	44º46.97’	110º59.05’	5.1	-0.2	12	197	3	0.13
200510	15:09:01.43	44º47.64’	110º59.64’	6.9	0.1	13	160	4	0.16
200510	19:41:59.67	44º37.78’	110º40.40’	5.0	1.7W	26	71	4	0.18
200510	23:16:48.13	44º47.78’	110º59.88’	7.2	1.2W	21	128	4	0.15
200510	23:17:23.51	44º48.06’	111º00.00’	6.9	0.2	15	164	5	0.16
200511	00:33:16.97	44º47.72’	110º59.54’	7.1	0.1	15	160	4	0.09
200511	14:18:18.63	44º48.20’	110º59.78’	8.6	0.5	15	168	5	0.12
200512	11:36:41.78	44º48.74’	110º57.39’	10.0	0.5	13	183	7	0.19
200513	00:49:22.33	44º47.88’	110º59.93’	5.7*	0.8W	12	203	12	0.15
200513	08:18:46.46	44º44.58’	111º09.18’	5.9	1.8W	13	133	4	0.14
200513	12:01:25.06	44º20.43’	110º49.67’	4.6	1.0	14	178	8	0.11
200514	04:30:36.45	44º47.06’	111º07.43’	8.9	1.4W	17	91	2	0.16
200514	08:46:49.83	44º46.69’	111º07.39’	8.6	-0.1	10	87	2	0.09
200514	10:27:33.62	44º48.20’	110º59.96’	7.2	0.3	16	166	5	0.15
200514	10:41:05.01	44º31.58’	111º01.68’	17.0	0.5	13	145	11	0.11
200514	11:14:45.78	44º35.57’	110º19.12’	4.4	--	7	97	8	0.12
200514	11:14:46.92	44º35.78’	110º19.23’	4.7	1.0	7	96	8	0.06
200515	05:30:46.74	44º39.99’	110º00.13’	14.1	0.5	7	147	10	0.06
200515	08:25:54.90	44º29.81’	110º35.86’	4.0	1.8W	24	50	7	0.11
200516	01:16:12.04	44º47.75’	110º59.68’	6.4	0.8W	18	161	4	0.16
200516	03:15:27.29	44º44.64’	111º07.30’	8.4	-0.2	12	75	6	0.17
200516	12:00:38.80	44º44.72’	111º04.98’	9.9	0.6W	15	93	6	0.17
200516	18:01:15.83	44º46.33’	110º57.75’	2.8	-0.1	10	190	4	0.10
200517	01:09:46.07	44º15.35’	110º47.38’	3.6	1.7W	19	82	2	0.18
200517	01:12:39.99	44º16.84’	110º47.50’	2.1	0.9	11	125	1	0.08
200517	12:54:19.92	44º44.27’	110º56.02’	5.1	0.6	16	93	6	0.16

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DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200517	13:20:33.21	44º44.70’	111º06.13’	13.1	0.8W	14	79	6	0.14
200517	13:22:51.22	44º44.90’	111º05.68’	9.6	-0.1	11	85	5	0.15
200517	18:02:16.24	44º44.45’	111º04.76’	10.4	0.9W	14	89	6	0.12
200517	23:06:04.78	44º44.42’	111º03.86’	12.4	-0.1	8	148	5	0.10
200518	07:42:32.17	44º48.49’	111º17.69’	12.9	0.9W	13	172	10	0.15
200518	12:19:58.76	44º36.25’	111º15.22’	12.4	0.1	10	193	12	0.16
200519	06:34:37.69	44º47.39’	110º48.99’	4.5	0.2	14	102	3	0.13
200519	07:00:43.73	44º47.44’	111º02.06’	7.9	1.2W	15	150	4	0.09
200519	12:09:48.93	44º47.57’	111º02.25’	7.2	0.1	12	151	4	0.09
200519	14:13:44.40	44º34.44’	110º43.17’	6.9	0.7W	16	85	7	0.09
200520	08:55:08.66	44º47.17’	111º01.62’	5.3	0.8W	19	120	3	0.16
200520	12:54:31.50	44º42.46’	110º48.05’	3.8	1.5W	20	69	8	0.13
200520	19:19:57.94	44º42.51’	110º48.44’	4.9	1.5W	8	106	8	0.09
200522	08:02:15.13	44º44.17’	110º48.28’	3.7	0.9	15	129	7	0.15
200522	08:02:47.42	44º44.08’	110º48.36’	5.7	2.1W	24	76	7	0.18
200522	08:05:59.10	44º44.02’	110º48.23’	2.1	0.7	11	132	7	0.07
200522	08:06:12.81	44º43.98’	110º48.18’	2.8	--	8	132	7	0.11
200522	08:06:24.51	44º44.05’	110º48.31’	2.2	0.7	12	95	7	0.06
200522	08:08:10.00	44º44.11’	110º48.37’	3.5	0.5	12	93	7	0.09
200522	08:08:40.21	44º43.86’	110º48.18’	7.3	2.1W	23	84	7	0.20
200522	08:08:57.11	44º44.09’	110º48.00’	2.2	1.7	11	129	7	0.15
200522	08:09:12.94	44º43.58’	110º48.27’	4.0	1.3	16	116	8	0.27
200522	08:10:24.01	44º44.27’	110º48.24’	4.5	1.3W	18	92	7	0.14
200522	08:12:57.70	44º44.03’	110º48.15’	3.1	0.4	10	133	7	0.07
200522	08:13:23.92	44º44.05’	110º47.86’	9.2	1.3W	17	96	7	0.20
200522	08:14:41.86	44º43.72’	110º48.12’	7.7	1.4W	16	99	8	0.20
200522	08:15:13.54	44º43.83’	110º48.23’	5.2	1.2W	22	86	7	0.20
200522	08:15:50.02	44º43.97’	110º48.05’	3.5	1.1W	14	95	7	0.22
200522	08:16:00.91	44º43.97’	110º48.04’	3.2	1.9	15	95	7	0.13
200522	08:16:10.80	44º43.93’	110º47.83’	2.4	1.1	11	135	8	0.10
200522	08:16:28.73	44º43.94’	110º48.20’	5.0	1.8W	22	76	7	0.17
200522	08:17:44.24	44º43.69’	110º48.24’	2.8	0.4W	9	126	8	0.12
200522	08:17:55.68	44º43.86’	110º48.10’	7.8	1.6W	17	97	7	0.19
200522	08:18:08.75	44º44.03’	110º47.89’	2.8	1.0	8	136	7	0.12
200522	08:19:22.45	44º44.01’	110º48.02’	3.5	0.9W	12	134	7	0.13
200522	08:21:23.12	44º43.93’	110º48.12’	2.5	0.3	10	131	7	0.06
200522	08:21:32.52	44º44.35’	110º48.18’	5.8	0.5	10	138	7	0.12
200522	08:24:47.32	44º44.11’	110º48.47’	5.8	0.9W	14	125	7	0.24
200522	08:25:11.39	44º44.10’	110º47.97’	2.2	0.7	10	136	7	0.16
200522	08:25:38.62	44º44.65’	110º47.98’	4.7	1.1	9	147	6	0.18
200522	08:25:56.73	44º43.89’	110º48.10’	2.2	0.5	10	131	7	0.07
200522	08:27:21.38	44º44.04’	110º47.84’	2.5	1.1W	12	136	7	0.12
200522	08:27:46.60	44º44.01’	110º47.96’	5.1	1.1W	15	134	7	0.14
200522	08:32:51.60	44º44.25’	110º48.51’	4.9	1.6W	18	79	7	0.19
200522	08:37:22.07	44º43.97’	110º47.95’	2.1	0.4	10	134	7	0.13

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2020

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200522	08:37:51.02	44º43.98’	110º48.34’	2.2	-0.1	11	130	7	0.10
200522	08:43:51.91	44º43.97’	110º48.15’	5.0	1.5W	17	77	7	0.16
200522	09:23:45.35	44º44.22’	110º48.02’	4.0	-0.1	10	137	7	0.06
200522	10:29:41.34	44º44.05’	110º48.18’	2.2	0.4W	13	132	7	0.13
200522	13:32:25.48	44º46.85’	111º09.76’	11.5	0.9W	19	86	4	0.14
200523	12:23:51.37	44º44.78’	110º48.20’	6.8	1.2W	17	147	6	0.18
200523	12:27:31.13	44º44.75’	110º48.25’	6.9	0.6	10	145	6	0.08
200523	12:37:33.49	44º45.04’	110º47.74’	7.9	1.0W	16	158	6	0.15
200527	11:37:29.57	44º47.32’	110º57.61’	5.7	0.1	13	158	5	0.14
200528	04:10:01.05	44º37.73’	110º44.08’	4.1	0.2	14	155	8	0.13
200528	05:30:57.94	44º27.91’	110º58.41’	4.5*	1.3W	21	176	11	0.21
200528	08:10:15.48	44º44.31’	111º10.11’	7.7	0.5W	11	82	3	0.18
200528	12:06:14.50	44º44.54’	111º11.06’	5.7	-0.3	8	116	1	0.08
200529	09:15:07.97	44º43.92’	110º48.34’	5.0	1.9W	21	76	7	0.18
200529	09:19:22.96	44º44.79’	110º48.21’	4.0	-0.2	9	147	6	0.13
200529	09:19:44.96	44º44.72’	110º47.54’	5.6	0.9W	13	149	7	0.16
200529	09:20:26.20	44º44.68’	110º51.33’	3.4	0.5	7	95	5	0.09
200529	09:20:43.53	44º44.22’	110º47.75’	5.0	1.7W	18	82	7	0.15
200529	09:22:08.74	44º45.00’	110º47.83’	6.0	0.3	11	156	6	0.19
200529	09:22:22.95	44º45.38’	110º47.51’	7.8	0.9	10	168	6	0.11
200529	09:23:27.19	44º44.31’	110º47.86’	6.4	1.7W	18	82	7	0.19
200529	09:24:26.38	44º44.83’	110º47.76’	8.4	1.1W	10	150	6	0.23
200529	09:27:55.15	44º44.50’	110º47.32’	2.2	0.6	9	151	7	0.22
200529	09:28:20.27	44º44.22’	110º48.37’	5.1	1.6W	17	82	7	0.16
200529	09:28:34.77	44º44.38’	110º48.01’	4.6	0.9	8	141	7	0.16
200529	09:31:00.42	44º44.16’	110º48.14’	4.3	2.0W	22	54	7	0.19
200529	09:31:23.77	44º44.36’	110º47.89’	2.5	1.2	10	137	7	0.16
200529	09:31:41.68	44º44.17’	110º48.17’	2.4	1.1	8	137	7	0.17
200529	09:33:45.87	44º44.99’	110º47.64’	5.3	0.2	9	158	6	0.21
200529	09:34:25.99	44º44.62’	110º47.48’	5.3	1.2W	13	152	7	0.10
200529	09:35:00.64	44º44.95’	110º47.16’	8.2	1.6W	20	149	7	0.14
200529	09:42:31.99	44º44.30’	110º48.03’	2.4	0.7W	10	139	7	0.12
200529	09:43:05.21	44º44.80’	110º48.20’	5.8	1.2W	15	143	6	0.14
200529	09:45:36.86	44º43.89’	110º48.05’	7.4	2.3W	24	45	7	0.21
200529	09:49:59.68	44º44.80’	110º48.05’	7.5	1.2W	14	146	6	0.14
200529	09:51:14.72	44º44.65’	110º48.05’	6.1	1.6W	18	79	6	0.14
200529	09:54:52.82	44º44.40’	110º48.17’	6.1	2.2W	25	54	7	0.22
200529	10:11:15.31	44º45.05’	110º47.47’	8.3	1.7W	18	145	6	0.16
200529	10:12:38.79	44º44.44’	110º47.90’	4.5	0.6	8	143	7	0.06
200529	10:13:11.14	44º45.31’	110º48.31’	7.2	0.8W	11	155	5	0.15
200529	10:16:41.05	44º44.43’	110º47.87’	4.1	0.2	9	144	7	0.07
200529	10:18:13.16	44º44.42’	110º47.88’	3.8	0.5	7	143	7	0.04
200529	10:39:04.88	44º43.66’	110º47.97’	9.6	3.1W	32	46	8	0.25
200529	10:40:10.96	44º44.13’	110º48.11’	4.8	2.5W	18	54	7	0.14
200529	10:42:06.98	44º43.75’	110º48.20’	8.9	2.3W	24	45	8	0.19

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2020

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200529	10:46:30.62	44º44.77’	110º47.90’	7.9	1.0W	13	147	6	0.12
200529	10:46:49.24	44º44.43’	110º47.56’	4.9	0.8	9	142	7	0.17
200529	10:47:05.10	44º44.59’	110º47.78’	4.9	0.1	10	148	7	0.09
200529	10:48:21.26	44º44.82’	110º47.34’	8.1	0.7W	10	157	7	0.14
200529	10:49:15.27	44º44.71’	110º48.06’	6.7	0.6W	9	147	6	0.07
200529	10:49:50.01	44º44.83’	110º47.99’	8.4	0.9W	12	147	6	0.12
200529	10:50:58.74	44º44.49’	110º48.23’	5.1	0.4	7	141	6	0.04
200529	10:54:04.50	44º45.08’	110º47.81’	5.5	0.8	6	158	6	0.16
200529	10:54:54.97	44º45.01’	110º48.25’	7.9	1.0W	11	151	6	0.15
200529	10:55:41.90	44º44.63’	110º48.10’	5.4	1.2W	8	144	6	0.05
200529	11:03:57.69	44º44.40’	110º48.10’	2.7	0.2	7	140	7	0.09
200529	11:05:43.95	44º44.83’	110º47.94’	7.8	0.7W	11	151	6	0.11
200529	11:06:26.08	44º45.01’	110º48.22’	6.1	1.2W	12	152	6	0.11
200529	11:10:07.67	44º44.53’	110º48.32’	4.8	1.7W	17	78	6	0.14
200529	11:11:18.31	44º44.29’	110º48.50’	7.3	2.2W	26	49	6	0.20
200529	11:11:40.70	44º44.18’	110º48.43’	5.0	1.5	12	108	7	0.17
200529	11:11:48.02	44º45.18’	110º47.41’	5.8	1.2	8	163	6	0.23
200529	11:11:58.67	44º44.15’	110º48.40’	4.9	1.5	12	108	7	0.18
200529	11:12:13.75	44º44.46’	110º48.23’	2.1	--	9	136	6	0.15
200529	11:15:20.65	44º44.41’	110º47.96’	2.4	1.2W	9	143	7	0.20
200529	11:16:26.13	44º44.51’	110º48.07’	4.6	0.6	11	143	6	0.08
200529	11:37:46.02	44º44.66’	110º48.11’	5.8	2.1W	19	57	6	0.15
200529	11:42:06.43	44º44.47’	110º47.89’	5.4	1.0W	12	144	7	0.12
200529	11:43:11.24	44º44.21’	110º48.01’	4.8	1.8W	22	54	7	0.16
200529	12:06:59.38	44º44.49’	110º48.24’	4.5	1.7W	17	82	6	0.15
200529	12:07:30.26	44º44.19’	110º48.15’	4.9	1.7W	17	82	7	0.18
200529	12:18:13.67	44º44.62’	110º48.26’	2.1	0.1	7	143	6	0.08
200529	12:26:58.02	44º44.34’	110º48.30’	2.2	0.6W	9	137	7	0.10
200529	12:37:13.38	44º44.62’	110º48.20’	5.0	1.0W	13	143	6	0.12
200529	12:42:54.78	44º44.45’	110º47.90’	2.3	0.4	8	144	7	0.08
200529	13:38:31.45	44º44.97’	110º47.88’	8.1	1.4W	12	154	6	0.14
200529	13:39:48.19	44º44.66’	110º48.31’	4.6	0.6	7	143	6	0.09
200529	13:42:43.34	44º44.47’	110º48.29’	3.3	0.2	6	139	6	0.06
200529	14:00:21.40	44º44.45’	110º48.29’	4.9	0.6W	8	139	6	0.06
200529	14:00:44.59	44º44.88’	110º48.03’	2.2	-0.1	6	151	6	0.15
200529	15:40:19.03	44º44.39’	110º48.25’	3.9	0.0	7	139	7	0.05
200529	17:18:27.50	44º44.31’	110º48.02’	2.0	0.0	10	139	7	0.07
200529	17:41:27.05	44º06.67’	110º36.71’	8.6	0.5	11	140	8	0.16
200529	17:41:27.05	44º06.67’	110º36.92’	8.1	0.6	12	139	7	0.15
200529	18:57:44.57	44º44.73’	110º48.51’	5.2	1.3W	16	91	6	0.16
200529	23:04:53.06	44º44.79’	110º47.95’	5.5	0.5	8	150	6	0.13
200529	23:05:15.52	44º44.63’	110º48.08’	5.5	0.5	8	145	6	0.11
200529	23:07:32.39	44º44.24’	110º48.23’	5.2	0.9W	16	91	7	0.11
200529	23:07:32.42	44º44.31’	110º48.22’	5.3	0.9W	10	91	7	0.09
200529	23:07:40.97	44º44.10’	110º48.13’	5.0	1.7W	19	78	7	0.14

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2020

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200529	23:07:41.00	44º44.03’	110º48.34’	4.6	1.7W	20	82	7	0.13
200529	23:12:26.79	44º44.18’	110º48.23’	4.5	--	17	92	7	0.10
200529	23:19:37.64	44º44.28’	110º48.27’	4.7	0.9W	9	137	7	0.08
200529	23:20:11.92	44º44.46’	110º48.23’	4.9	0.3	9	140	6	0.07
200529	23:22:22.00	44º44.14’	110º48.13’	2.0	0.7W	12	88	7	0.12
200529	23:27:31.95	44º44.34’	110º48.06’	4.7	0.7W	8	140	7	0.07
200529	23:36:21.40	44º44.35’	110º48.32’	5.3	0.4W	9	137	7	0.09
200529	23:36:43.35	44º44.35’	110º48.32’	3.0	0.3	9	137	7	0.09
200530	14:40:48.38	44º44.28’	110º47.87’	2.1	0.5W	9	140	7	0.09
200530	14:42:39.94	44º44.27’	110º47.81’	2.1	0.1	9	141	7	0.11
200530	14:48:15.76	44º44.45’	110º48.08’	5.8	1.2W	15	92	7	0.12
200530	14:51:25.42	44º44.38’	110º47.39’	3.2	0.7W	9	148	7	0.11
200530	14:57:24.05	44º44.25’	110º47.63’	2.2	1.2W	9	143	7	0.11
200530	15:42:08.54	44º44.39’	110º47.68’	4.7	1.6W	19	88	7	0.13
200530	16:02:14.05	44º44.13’	110º47.81’	3.8	1.4W	13	95	7	0.11
200530	16:04:10.40	44º44.15’	110º47.88’	2.1	0.8W	11	138	7	0.07
200530	20:07:02.28	44º44.19’	110º47.39’	2.3	0.1	8	143	8	0.18
200601	03:00:52.79	44º44.04’	110º47.96’	2.2	0.7W	10	135	7	0.11
200601	04:19:16.64	44º44.26’	110º47.95’	3.2	1.1W	14	93	7	0.13
200601	04:30:13.63	44º44.55’	110º47.78’	6.7	1.3W	15	94	7	0.17
200601	05:44:45.35	44º46.40’	111º07.65’	6.8	0.1	11	87	3	0.17
200601	07:26:05.01	44º44.35’	110º47.84’	4.3	0.6W	9	142	7	0.06
200601	07:53:08.67	44º44.34’	110º48.00’	8.1	0.6	11	91	7	0.13
200601	08:33:05.18	44º44.21’	110º48.28’	4.8	1.4W	18	83	7	0.13
200601	11:41:14.93	44º40.75’	110º44.89’	8.3	1.2W	21	66	6	0.14
200602	04:45:39.08	44º41.75’	110º50.60’	1.8	0.5	11	103	5	0.09
200602	06:11:29.49	44º45.19’	110º49.76’	5.1	0.3	14	132	4	0.14
200602	07:45:42.40	44º44.54’	110º47.78’	6.0	0.7W	12	146	7	0.12
200603	04:19:36.01	44º48.51’	111º17.86’	11.4	0.9W	15	187	10	0.15
200603	05:25:32.45	44º48.48’	110º58.45’	4.2	0.6W	11	175	6	0.10
200603	09:53:38.08	44º44.62’	110º47.84’	5.7	0.1	11	148	7	0.14
200603	20:06:40.89	44º35.82’	110º58.87’	8.5	1.0	16	82	8	0.14
200603	21:42:35.58	44º29.97’	110º54.49’	5.4	1.1W	17	160	8	0.21
200604	02:52:42.42	44º44.36’	110º48.11’	4.1	0.4	11	140	7	0.08
200604	02:52:48.55	44º44.38’	110º48.04’	2.4	0.6	7	141	7	0.10
200604	12:20:02.64	44º50.05’	110º46.88’	3.7	1.0W	15	109	7	0.18
200606	01:19:02.59	44º50.48’	110º46.89’	10.8	2.8W	38	38	7	0.17
200606	02:28:28.28	44º43.37’	110º52.35’	3.8	1.3W	16	72	7	0.12
200606	09:43:32.60	44º44.20’	111º13.13’	12.1	0.0	9	163	2	0.10
200606	10:24:08.73	44º45.12’	110º57.08’	5.0	1.0W	17	121	4	0.17
200607	06:32:57.48	44º44.29’	111º06.40’	11.9	0.5W	11	76	6	0.11
200607	12:47:43.80	44º43.56’	110º52.38’	4.5	1.1W	11	84	7	0.05
200607	23:16:06.85	44º44.12’	111º09.81’	12.3	2.2W	22	63	3	0.16
200610	00:53:36.63	44º45.47’	111º06.82’	10.9	0.1	14	112	4	0.18
200610	02:02:01.70	44º45.67’	111º06.79’	10.3	0.1	13	110	7	0.13

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DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200610	02:44:36.68	44º45.20’	110º56.50’	8.2	1.2W	17	99	5	0.17
200610	03:10:00.61	44º45.97’	111º06.53’	12.0	0.3	11	80	3	0.15
200610	03:48:51.18	44º44.14’	110º46.50’	2.8	0.4	9	151	8	0.07
200610	06:59:02.59	44º44.16’	110º47.86’	2.5	0.2	11	138	7	0.09
200610	06:59:11.91	44º44.29’	110º47.88’	4.1	-0.2	8	140	7	0.08
200610	06:59:35.73	44º44.09’	110º47.80’	2.2	0.1	10	137	7	0.11
200610	07:03:33.05	44º48.30’	110º58.67’	5.1	1.1W	16	172	6	0.11
200610	07:06:49.11	44º25.76’	110º51.47’	1.8	0.9W	13	91	3	0.14
200610	07:08:09.89	44º26.20’	110º50.77’	2.0	0.8	10	144	2	0.10
200610	12:01:54.66	44º31.51’	111º01.61’	16.2	1.5W	20	122	11	0.12
200610	16:12:29.98	44º45.44’	111º07.06’	12.0	-0.4	7	154	4	0.09
200610	16:54:24.88	44º44.04’	111º07.63’	8.6	0.0	10	91	6	0.10
200611	03:06:28.36	44º45.35’	111º07.24’	10.9	0.8W	14	70	5	0.16
200612	02:10:56.24	44º43.31’	110º52.10’	4.1	1.4W	16	79	7	0.10
200612	05:36:00.85	44º43.22’	110º52.08’	1.8	1.8W	20	75	7	0.14
200612	07:19:14.07	44º43.30’	110º51.56’	5.2	1.0W	12	87	7	0.08
200613	01:06:37.99	44º43.32’	110º52.83’	4.2	1.6W	23	76	7	0.13
200613	01:08:59.08	44º43.48’	110º52.60’	4.4	1.2W	14	75	7	0.07
200613	05:32:53.77	44º44.82’	110º50.33’	4.9	0.5	9	116	5	0.12
200613	10:09:41.65	44º37.55’	110º20.94’	4.4	0.6	9	84	8	0.17
200613	10:09:56.85	44º37.71’	110º21.51’	5.3	0.6	9	103	8	0.16
200613	10:25:14.89	44º43.27’	110º52.77’	4.8	1.6W	22	75	7	0.15
200613	11:05:35.47	44º37.43’	110º20.80’	3.9	1.1	13	77	8	0.17
200613	11:05:55.89	44º37.15’	110º21.84’	2.0*	1.1	9	72	14	0.15
200613	13:00:02.61	44º44.97’	110º49.52’	4.7	0.4	8	132	5	0.08
200613	18:08:28.95	44º38.47’	110º27.33’	3.6	1.4	11	121	9	0.12
200613	18:14:49.85	44º44.80’	110º15.08’	8.8	1.1	5	122	8	0.01
200613	19:21:23.42	44º44.36’	110º47.66’	5.4	1.2	8	145	7	0.08
200613	20:41:50.53	44º44.79’	110º47.81’	8.7	1.0	7	152	6	0.07
200614	03:01:36.86	44º43.60’	110º52.32’	5.1	0.8W	10	84	7	0.07
200614	05:27:20.92	44º43.61’	110º52.85’	4.1	1.1W	11	88	7	0.10
200614	10:26:22.64	44º43.34’	110º52.65’	7.2	2.8W	31	81	7	0.17
200614	10:28:00.65	44º43.48’	110º52.98’	5.1	1.7W	23	78	8	0.16
200614	10:28:28.03	44º25.92’	110º37.71’	6.0	1.1	10	85	3	0.12
200614	10:58:21.78	44º43.56’	110º52.65’	3.6	0.4	9	86	7	0.05
200614	11:16:45.43	44º43.51’	110º52.28’	4.4	1.7W	19	79	7	0.11
200614	11:44:21.87	44º43.60’	110º52.19’	4.8	0.7	12	83	7	0.07
200614	11:48:04.40	44º43.66’	110º52.74’	4.6	0.6	9	88	7	0.06
200614	11:54:24.90	44º43.66’	110º52.51’	4.8	1.0W	15	76	7	0.10
200614	14:02:34.10	44º43.39’	110º51.92’	3.5	0.8	7	84	7	0.04
200615	09:12:48.80	44º43.46’	110º52.61’	4.5	0.6	9	85	7	0.06
200615	14:50:34.66	44º41.34’	110º58.86’	6.3	0.6	13	95	3	0.12
200618	17:40:28.52	44º43.53’	110º52.89’	2.9	0.8	11	88	7	0.06
200619	12:42:43.36	44º36.35’	110º27.74’	2.1	1.4	14	141	7	0.09
200619	12:55:45.04	44º36.57’	110º26.96’	2.0	0.7	10	164	6	0.14

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2020

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
200620	00:47:29.10	44º43.70’	111º10.26’	4.8	1.1	17	72	3	0.21
200620	18:22:01.48	44º43.62’	110º52.90’	3.6	0.8	10	88	7	0.10
200621	02:04:12.10	44º45.87’	111º11.58’	11.7	0.4	11	152	2	0.21
200621	11:57:08.95	44º41.42’	110º01.33’	13.6	0.4	9	154	9	0.19
200621	12:45:27.64	44º42.11’	110º06.39’	2.3	0.3	5	152	6	0.10
200621	14:29:55.79	44º32.21’	111º07.46’	15.5	0.3	12	166	8	0.16
200621	15:47:02.91	44º43.76’	110º53.11’	6.0	1.1W	13	82	7	0.13
200621	17:00:19.08	44º24.20’	110º22.41’	2.8	0.5	7	164	7	0.14
200622	03:13:53.67	44º44.13’	110º52.45’	5.0	0.4	11	81	6	0.12
200622	16:01:36.56	44º47.10’	110º41.35’	2.0	0.6	9	257	8	0.10
200622	17:39:13.72	44º35.50’	110º55.20’	9.6	0.9	13	112	6	0.10
200622	20:42:35.00	44º44.33’	110º47.11’	2.1	0.1	11	150	8	0.06
200623	04:28:02.48	44º34.53’	110º54.99’	10.0	0.7	13	119	7	0.06
200623	20:11:45.15	44º26.46’	110º55.25’	4.1	0.7	9	170	7	0.10
200624	23:27:25.85	44º20.63’	110º16.72’	11.0	0.8	10	177	5	0.08
200624	23:39:26.75	44º30.72’	111º00.44’	20.6	0.5	9	156	13	0.08
200625	08:24:04.41	44º38.91’	110º24.18’	2.4	0.2	8	131	9	0.09
200625	21:48:02.88	44º36.70’	110º22.24’	3.0	0.8	8	164	6	0.05
200625	22:03:50.39	44º36.06’	110º21.78’	4.7	1.0	11	74	5	0.08
200626	04:17:19.35	44º45.06’	110º58.10’	8.1	0.8W	14	104	3	0.11
200626	04:18:35.46	44º45.35’	110º58.23’	8.9	0.9W	14	106	3	0.11
200626	04:32:35.40	44º45.30’	110º57.98’	9.5	0.7W	11	106	3	0.11
200626	04:32:50.71	44º45.26’	110º58.12’	9.6	0.8W	13	125	3	0.10
200626	04:38:05.36	44º45.18’	110º58.36’	8.5	1.3W	22	98	3	0.14
200626	05:45:54.82	44º45.20’	110º58.18’	8.9	0.9W	15	124	3	0.13
200626	20:29:33.82	44º38.52’	110º25.33’	9.2	0.8	8	115	9	0.08
200627	08:55:44.62	44º44.30’	110º48.06’	3.7	0.0	12	139	7	0.12
200627	08:55:51.96	44º44.21’	110º48.05’	2.2	0.4	10	137	7	0.13
200630	07:11:03.93	44º47.50’	110º59.73’	4.7	0.5	11	157	4	0.10

number of earthquakes = 524
* indicates poor depth control
W indicates Wood-Anderson data used for magnitude calculation

Table 3
UNIVERSITY OF UTAH YELLOWSTONE SEISMIC NETWORK
Operating Seismograph Stations
June 30, 2020

SEED Station	Location	SEED Channel	No. of Channels	Network Code	Latitude	Longitude	Elevation (meters)	Sensor	Digitizer	Telemetry	Sponsor
B206*	Canyon206bwy2008, Yellowstone, WY	EH[ZEN]	3	PB	44° 46.66′	110° 30.70′	2400	IESE-S2	Q330	Digital	PBO
B207*	Madisn207bwy2007, Yellowstone, WY	EH[ZEN]	3	PB	44° 37.14′	110° 50.91′	2182	IESE-S2	Q330	Digital	PBO
B208*	Lakejn208bwy2008, Yellowstone, WY	EH[ZEN]	3	PB	44° 33.61′	110° 24.09′	2406	IESE-S2	Q330	Digital	PBO
B944*	Grantt944bwy2008, Yellowstone, WY	EH[ZEN]	3	PB	44° 23.38′	110° 32.63′	2365	IESE-S2	Q330	Digital	PBO
B945*	Panthr944swy2008, Yellowstone, WY	EH[ZEN]	3	PB	44° 53.64′	110° 44.65′	2249	IESE-S2	Q330	Digital	PBO
B950*	Norris950bwy2013, Yellowstone, WY	EH[ZEN]	3	PB	44° 42.77′	110° 40.71′	2328	IESE-S2	Q330	Digital	PBO
FLWY*	Flagg Ranch, WY	BH[ZEN]	3	IW	44° 04.96′	110° 41.96′	2078	3ESP	RT-130	Digital	ANSS
IMW*	Indian Meadows, WY	BH[ZEN]	3	IW	43° 53.58′	110° 56.58′	2670	3ESP	RT-130	Digital	ANSS
LKWY*	Lake, WY	BH[ZEN]	3	US	44° 33.91′	110° 24.00′	2424	STS-2	Q330	Digital	USGS
LOHW*	National Elk Refuge, WY	BH[ZEN]	3	IW	43° 36.76′	110° 36.30′	2245	3ESP	RT-130	Digital	ANSS
MCID	Moose Creek, ID	EHZ	1	WY	44° 11.45′	111° 11.03′	2137	L4C	PSN	Analog	USGS
MOOW*	Moose Ponds, WY	BH[ZEN]	3	IW	43° 44.92′	110° 44.69′	2128	3ESP	RT-130	Digital	ANSS
QLMT*	Earthquake Lake, MT	EHZ	1	MB	44° 49.84′	111° 25.80′	2064	L4C	-	Analog	MBMT
REDW*	Red-Top Meadows, WY	BH[ZEN]	3	IW	43° 21.74′	110° 51.18′	2322	3ESP	RT-130	Digital	ANSS
SNOW*	Snow King Mountain, WY	BH[ZEN]	3	IW	43° 27.75′	110° 45.31′	2390	3ESP	RT-130	Digital	ANSS
TPAW*	Teton Pass, WY	BH[ZEN]	3	IW	43° 29.41′	110° 57.04′	2512	3ESP	RT-130	Digital	ANSS
TPMT*	Teepe Creek, MT	EHZ	1	MB	44° 43.79′	111° 39.94′	2518	L4C	-	Analog	MBMT
YDC	Denny Creek, MT	EHZ	1	WY	44° 42.51′	111° 14.60′	2025	L4C	PSN	Analog	USGS
YDD	Grant Junction, Yellowstone, WY	HH[ZEN]	3	WY	44° 24.00′	110° 34.80′	2400	STS-2	Q330	Digital	NSF
		EN[ZEN]	3					Episensor			
YEE	East Entrance (YNP), WY	HH[ZEN]	3	WY	44° 29.12′	109° 53.81′	2270	Compact	Centaur	Digital	USGS
YFT	Old Faithful (YNP), WY	HH[ZEN]	3	WY	44° 27.05′	110° 50.24′	2292	Compact	Centaur	Digital	USGS
		EN[ZEN]	3					Titan			
YGC	Grayling Creek, MT	EHZ	1	WY	44° 47.77′	111° 06.45′	2075	L4C	PSN	Analog	USGS
YHB	Horse Butte, MT	EHZ	1	WY	44° 45.07′	111° 11.71′	2157	L4C	PSN	Analog	USGS
		HH[ZEN]	3					Compact	ANSS-130	Digital	
		EN[ZEN]	3					Titan			
YHH	Holmes Hill (YNP), WY	EHZ	1	WY	44° 47.30′	110° 51.03′	2717	S13	PSN	Analog	USGS
		HH[ZEN]	3					Trillium 120	Q330	Digital	
		EN[ZEN]	3					Titan			

SEED Station	Location	SEED Channel	No. of Channels	Network Code	Latitude	Longitude	Elevation (meters)	Sensor	Digitizer	Telemetry	Sponsor
YHL	Hebgen Lake, MT	HH[ZEN]	3	WY	44° 51.05′	111° 10.98′	2691	Trillium 120	Q330	Digital	USGS
		EN[ZEN]	3					Titan			
YHR	Hawk's Rest, WY	HH[ZEN]	3	WY	44° 06.36′	110° 04.90′	2976	Trillium 120	Q330	Digital	USGS
YJC	Joseph′s Coat (YNP), WY	EH[ZEN]	3	WY	44° 45.33′	110° 20.95′	2684	S13	PSN	Analog	USGS
YLA	Lake Butte (YNP), WY	EHZ	1	WY	44° 30.76′	110° 16.12′	2580	L4C	PSN	Analog	USGS
YLT	Little Thumb Creek (YNP), WY	EHZ	1	WY	44° 26.25′	110° 35.28′	2439	L4C	PSN	Analog	USGS
YMC	Maple Creek (YNP), WY	EH[ZEN]	3	WY	44° 45.53′	111° 00.41′	2073	S13	PSN	Analog	USGS
YML	Mary Lake (YNP), WY	EH[ZEN]	3	WY	44° 36.20′	110° 38.63′	2653	S13	PSN	Analog	USGS
YMP	Mirror Plateau (YNP), WY	EHZ	1	WY	44° 44.38′	110° 09.40′	2774	S13	PSN	Analog	USGS
		HH[ZEN]	3					Trillium 120	Q330	Digital	
		EN[ZEN]	3					Titan			
YMR	Madison River (YNP), WY	HH[ZEN]	3	WY	44° 40.12′	110° 57.90′	2149	Trillium 120	Q330	Digital	USGS
		EN[ZEN]	3					Titan			
YMS	Mount Sheridan (YNP), WY	EHZ	1	WY	44° 15.84′	110° 31.67′	3106	L4C	PSN	Analog	USGS
YMV	Mammoth Vault (YNP), WY	EHZ	1	WY	44° 58.42′	110° 41.33′	1829	L4C	PSN	Analog	USGS
YNE	Northeast Entrance (YNP), WY	HH[ZEN]	3	WY	45° 00.46′	110° 00.48′	2343	Compact	Centaur	Digital	USGS
YNM	Norris Museum (YNP), WY	HH[ZEN]	3	WY	44° 43.59′	110° 42.22′	2311	Trillium 240	Q330	Digital	USGS
YNR	Norris Junction (YNP), WY	HH[ZEN]	3	WY	44° 42.93′	110° 40.75′	2336	Trillium 120	Q330	Digital	USGS
		EN[ZEN]	3					Titan			
YPC	Pelican Cone (YNP), WY	EHZ	1	WY	44° 38.88′	110° 11.55′	2932	L4C	PSN	Analog	USGS
YPK	Parker Peak (YNP), WY	EH[ZEN]	3	WY	44° 43.91′	109° 55.32′	2897	L4C	PSN	Analog	USGS
YPM	Purple Mountain (YNP), WY	EHZ	1	WY	44° 39.43′	110° 52.12′	2582	L4C	PSN	Analog	USGS
YPP	Pitchstone Plateau (YNP), WY	EHZ	1	WY	44° 16.26′	110° 48.27′	2707	S13	PSN	Analog	USGS
		HH[ZEN]	3					Trillium 120	Q330	Digital	
		EN[ZEN]	3					Titan			
YSB	Soda Butte (YNP), WY	EHZ	1	WY	44° 53.04′	110° 09.06′	2072	L4C	PSN	Analog	USGS
YTP	The Promontory (YNP), WY	EHZ	1	WY	44° 23.51′	110° 17.10′	2384	L4	PSN	Analog	USGS
		HH[ZEN]	3					Trillium 120	Q330	Digital	
		EN[ZEN]	3					Titan			
YUF	Upper Falls (YNP), WY	HH[ZEN]	3	WY	44° 42.76′	110° 30.71′	2394	40T	ANSS-130	Digital	USGS
		EN[ZEN]	3					Titan			
YWB	West Boundary (YNP), WY	EHZ	1	WY	44° 36.35′	111° 06.05′	2310	L4C	PSN	Analog	USGS

* Station operated by another agency and recorded as part of the Yellowstone Seismic Network
Network Statistics: 150 data channels from 46 stations were being recorded at the end of this report period

EXPLANATION OF TABLE

UURSN Code: Station code formerly used in routine processing. Owing to software limitations, the station code may not be the same code used by the original operator. For multi-component stations, the vertical, east-west, and north-south high gain (low gain) components are identified by an appended Z(V), E(L), and N(M), respectively, in UUSS phase files.

Location: General description of station location. YNP = Yellowstone National Park.

SEED Station: The SEED (Standard for the Exchange of Earthquake Data) station code used by the original operator.

SEED Channel: The SEED format uses three letters to name seismic channels. See <<http://www.iris.edu/manuals/SEEDManual_V2.4.pdf>> for information about the SEED channel naming convention. Relevant sections are reproduced below. In the SEED convention, each letter describes one aspect of the instrumentation and its digitization. The first letter specifies the general sampling rate and the response band of the instrument. Band codes used in this table include:

Band Code	Band Type	Sample Rate	Corner Period
E	Extremely short period	≥ 80 Hertz	< 10 seconds
H	High broadband	≥ 80 Hertz	≥ 10 seconds
B	Broadband	≥ 10 to < 80 Hertz	≥10 seconds
S	Short period	≥ 10 to < 80 Hertz	< 10 seconds

The second letter specifies the family to which the sensor belongs. Sensor families used in this table are:

Instrument Code	Description
H	High gain seismometer
L	Low gain seismometer
N	Accelerometer

The third letter specifies the physical configuration of the members of a multiple axis instrument package. Channel orientations used in this table are:

Z E N Traditional (Vertical, East-West, North-South)

Number of Channels: Total number of waveform channels recorded.

Network Code: The FDSN (Federation of Digital Seismographic Networks) registered network code. See <<http://www.iris.edu/dms/nodes/dmc/services/network_codes>> for information about registered seismograph network codes. Network codes referenced in this table:

Network Code	Network name; Network operator or responsible organization
IE	Idaho National Laboratory Seismic Network
IU	IRIS/USGS Network; USGS Albuquerque Seismological Laboratory
IW	Intermountain West Network, U.S. Geological Survey

MB	Montana Regional Seismic Network; Montana Bureau of Mines and Geology
PB	Plate Boundary Observatory
UU	University of Utah Regional Network; University of Utah
US	US National Network; USGS National Earthquake Information Center
WY	Yellowstone Wyoming Seismic Network; University of Utah

Latitude, Longitude: Sensor location in degrees and decimal minutes; North latitude, West longitude.

Elevation: Sensor altitude in meters above sea level.

Sensor	**Description**
L4, L4C	Mark Products L4 or L4C short-period seismometer
S13, 18300	Geotech S13 or 18300 short-period seismometer
Ranger	Kinemetrics Ranger short-period seismometer
40T	Guralp CMG-40T broadband seismometer
3T	Guralp CMG-3T broadband seismometer
3ESP	Guralp CMG-3ESP broadband seismometer
STS-2	Streckheisen STS-2 broadband seismometer
FBA23	Kinemetrics FBA-23 accelerometer
EpiSensor	Kinemetrics EpiSensor accelerometer
Applied Mems	Applied Mems accelerometer
PA-23	Geotech PA-23 accelerometer
Compact	Nanometrics Compact broadband seismometer
Trillium 120	Nanometrics Trillium 120 broadband seismometer
Trillium 240	Nanometrics Trillium 240 broadband seismometer
Titan	Nanometrics Titan accelerometer
Observer	Refraction Technology (REF TEK) Model 151 Observer broadband seismometer
IESE-S2	Institute of Earth Science and Engineering S-2 model borehole seismometer

Digitizer	**Description**
K2	Kinemetrics Altus Series K2 (19-bit resolution field digitizer)
Etna	Kinemetrics Altus Series Etna (18-bit resolution field digitizer)
72A-07	Refraction Technology (REF TEK) model 72A-07 (24-bit field digitizer)
72A-08	Refraction Technology (REF TEK) model 72A-08 (24-bit field digitizer)
ANSS-130	Refraction Technology (REF TEK) model 130-ANSS/02 (24-bit resolution field digitizer)
RT-130	Refraction Technology (REF TEK) model RT-130 (24-bit resolution field digitizer)
Q330	Quanterra, Inc Q330 digitizer (24-bit resolution field digitizer)
SMART-24	Geotech SMART-24 digitizer (24-bit resolution field digitizer)
PSN	PSN-ADC-SERIAL version III (16-bit resolution field digitizer)
Basalt	Kinemetrics Basalt (24-bit resolution field digitizer)
Taurus	Nanometrics Taurus (24-bit resolution field digitizer)
Centaur	Nanometrics Centaur (24-bit resolution field digitizer)

Telemetry	Description
Analog	Data transmission is analog along part of the transmission pathway
Digital	Data are converted to digital form at the station site
None	On-site recording system

Sponsor (or Operator for stations marked by * in preceding columns)

USGS	U.S. Geological Survey
Utah	State of Utah
ANSS	Advanced National Seismic System
INL	Idaho National Laboratory
MBMT	Montana Bureau of Mines and Geology
PBO	Plate Boundary Observatory
NSF	National Science Foundation

Network Changes During April 1–June 30, 2020

None