EARTHQUAKE ACTIVITY IN THE YELLOWSTONE REGION

Preliminary Epicenters

April 1 – June 30, 2024

Prepared by the University of Utah Seismograph Stations and funded by
the U.S. Geological Survey (Cooperative Agreement No. G21AC10068)

October 15, 2024

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, 2024

by J. Farrell, R. Burlacu, P. M. Roberson, and J. M. Hale
with contributions by
K. D. Koper, and K. L. Pankow

University of Utah Seismograph Stations
115 South 1460 East, Room 107 FASB
Salt Lake City, UT 84112-0102
Tele: (801) 581-6274
email: *jamie.farrell@utah.edu*
URL: *https://quake.utah.edu*

During the three-month period April 1 through June 30, 2024, the University of Utah Seismograph Stations (UUSS) located 286 earthquakes within the Yellowstone region (Figure 1). The total includes 1 earthquake in the magnitude 3 range, and 9 earthquakes in the magnitude 2 range. The largest event to occur during this period was a magnitude 3.0 earthquake on April 23. Three earthquakes were 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 2024). 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*.

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 3.0	April 23	03:30 MDT	10.2 mi NNE of West Yellowstone, MT

Notable Swarm Seismicity

During the report period, there were four 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 98 earthquakes ($-0.5 \leq M \leq 3.0$) occurred about 9.1 mi NNE of West Yellowstone, MT from April 21st – May 6th.
B. A swarm of 20 earthquakes ($-0.3 \leq M \leq 1.7$) occurred about 5.8 mi NNW of West Yellowstone, MT from April 27th – 29th.
C. A swarm of 10 earthquakes ($-0.3 \leq M \leq 1.8$) occurred about 7.2 mi NNW of West Yellowstone, MT from May 25th – 27th.
D. A swarm of 32 earthquakes ($-0.5 \leq M \leq 1.5$) occurred about 8.3 mi NNE of West Yellowstone, MT from June 7th – 9th.

These swarms are labeled in Figure 1.

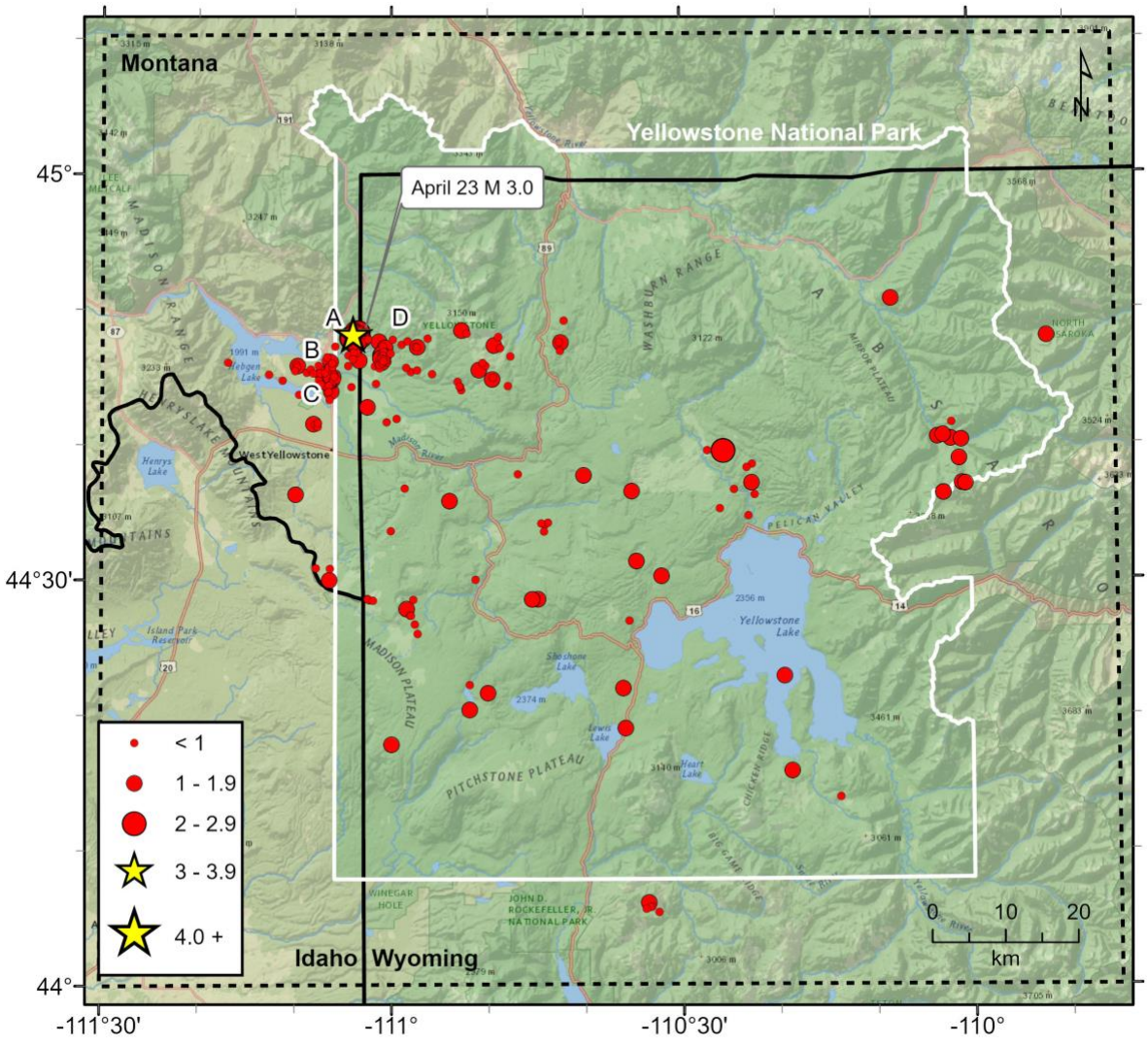

Figure 1. Epicenters of earthquakes located by the University of Utah Seismograph Stations, April 1, 2024, through June 30, 2024. Earthquake swarms (labeled A–D) are discussed in the text.

Table 1

EARTHQUAKES FELT IN THE YELLOWSTONE REGION
January 1, 2024, to June 30, 2024

Date	Time†	Felt Information‡	Latitude	Longitude	Magnitude§
January 01	07:41 MST 14:41 UTC	Yellowstone. Felt (II) at Yellowstone National Park.	44º 35.37’	110º 45.07’	M_L 3.1
January 03 January 04	17:10 MST 00:10 UTC	Yellowstone. Felt (III) at Yellowstone National Park.	44º 35.13’	110º 44.76’	M_L 3.3
April 23	03:30 MDT 09:30 UTC	Yellowstone. Felt (III) at Yellowstone National Park.	44º 48.25′	111º 04.00′	M_L 3.0
April 23	04:15 MDT 10:15 UTC	Yellowstone. Felt (II) at Yellowstone National Park.	44º 47.70′	111º 03.74′	M_L 2.7
June 10 June 11	21:29 MDT 03:29 UTC	Yellowstone. Felt (III) at Yellowstone National Park.	44º 39.56′	110º 25.67′	M_L 2.5

† 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, 2024

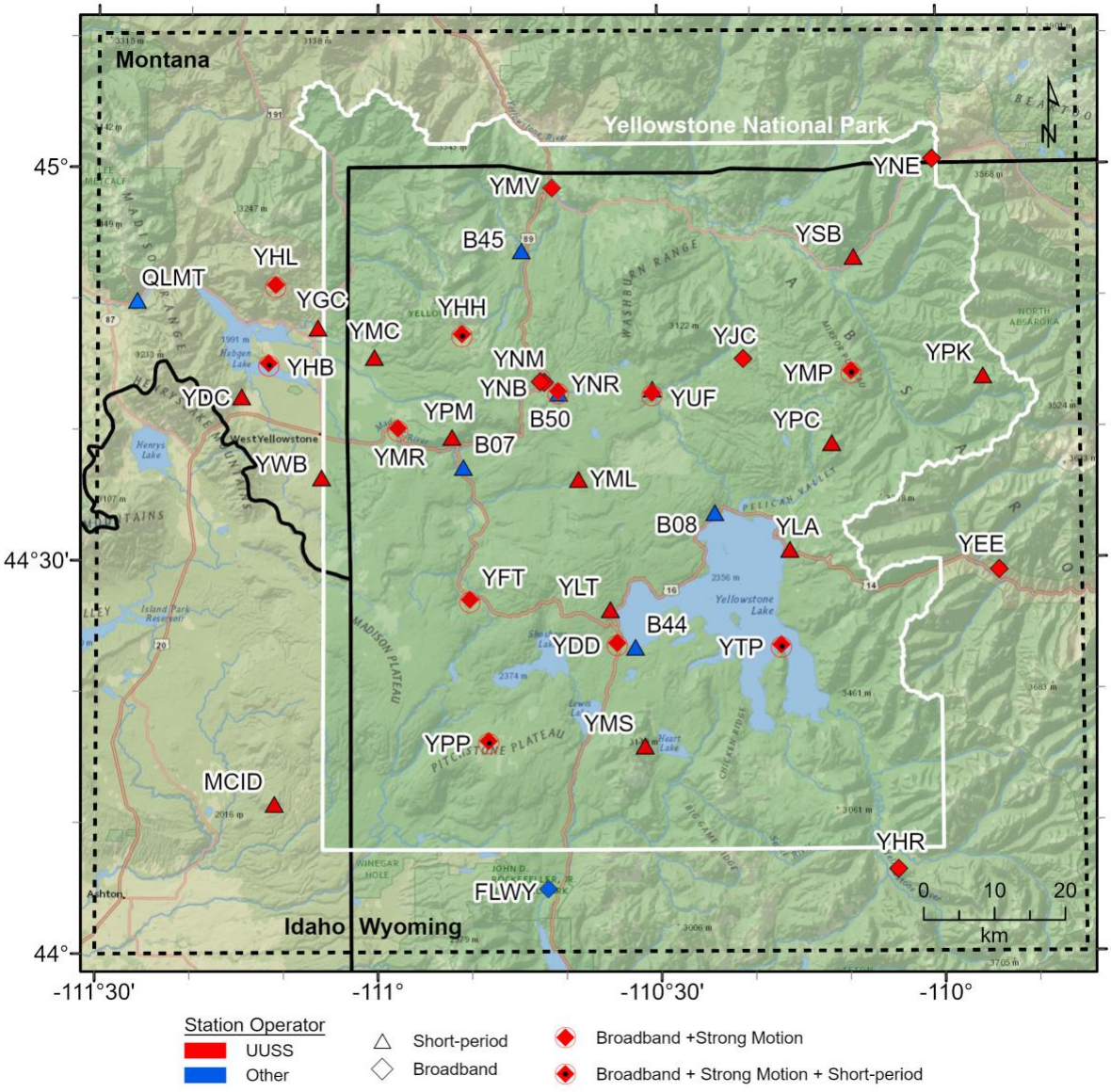

Figure 2. Seismograph stations of the Yellowstone Seismic Network as of June 30, 2024.

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2024

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
240401	10:40:45.86	44º46.10’	111º16.97’	8.4	0.7W	19	99	7	0.17
240402	02:41:20.10	44º48.00’	110º48.93’	5.3	0.3	10	209	3	0.07
240402	03:11:39.28	44º47.81’	110º59.87’	8.9	0.2	12	161	4	0.10
240402	21:11:01.27	44º35.30’	110º26.04’	7.9	-0.2	8	185	4	0.16
240403	13:20:31.58	44º41.71’	111º00.52’	5.0	0.2	9	144	5	0.10
240403	16:58:10.88	44º41.97’	110º59.47’	5.4	0.3	14	130	4	0.16
240406	05:02:31.91	44º34.09’	110º44.18’	7.1	0.9W	19	67	8	0.12
240406	05:06:17.12	44º33.63’	110º44.24’	3.5	0.2	15	83	9	0.08
240407	11:14:15.64	44º46.65’	111º04.48’	11.1	0.5W	14	132	3	0.10
240407	11:57:14.46	44º27.42’	110º58.01’	4.0	0.0	8	144	10	0.18
240407	11:58:53.11	44º26.08’	110º57.31’	10.1	0.3	12	115	10	0.21
240407	11:59:42.42	44º27.44’	110º58.09’	7.7	0.8	14	117	11	0.20
240408	13:04:47.21	44º40.64’	110º02.89’	14.4	1.1	9	92	11	0.06
240411	00:32:13.71	44º40.36’	110º02.09’	11.3	1.6	20	99	11	0.23
240411	22:17:53.43	44º36.60’	110º35.15’	1.6	1.3W	19	83	5	0.16
240412	04:12:49.47	44º17.63’	111º18.47’	13.6	0.5	13	231	15	0.24
240413	10:09:12.31	44º37.05’	110º00.60’	15.2	1.0	9	102	14	0.17
240413	10:11:10.31	44º37.08’	110º00.94’	13.1	1.1	10	117	15	0.19
240413	19:46:36.10	44º40.54’	110º03.45’	12.5	1.2	9	151	11	0.14
240414	03:05:51.67	44º47.92’	109º52.03’	13.1	1.3	16	132	9	0.19
240415	04:06:56.86	44º36.38’	110º02.88’	13.4	1.4	10	92	17	0.19
240418	05:51:07.61	44º45.78’	111º06.11’	9.9	0.0	11	86	4	0.15
240418	19:38:33.42	44º26.77’	110º57.60’	7.9	0.8	13	115	10	0.18
240419	08:39:47.53	44º46.27’	111º03.34’	8.4	1.2W	15	131	4	0.11
240419	12:35:53.80	44º33.67’	111º00.09’	11.7	0.9W	13	103	9	0.12
240419	15:14:13.17	44º49.20’	110º42.13’	2.0	0.6	12	147	9	0.29
240420	10:05:06.41	44º46.98’	110º42.53’	2.2	--	11	202	8	0.14
240420	10:07:22.70	44º47.61’	110º42.63’	4.2	0.7	18	131	7	0.17
240420	10:08:32.80	44º47.59’	110º42.46’	3.7	1.7W	20	146	7	0.17
240420	11:27:42.75	44º34.23’	110º44.51’	5.5	0.3	14	92	9	0.12
240421	10:15:29.48	44º48.48’	111º03.32’	7.9	-0.1	8	161	4	0.06
240422	05:44:48.42	44º47.27’	110º57.33’	9.8	1.1W	13	157	5	0.10
240422	05:45:41.48	44º47.29’	110º57.49’	9.7	0.2	11	219	5	0.10
240422	05:59:53.39	44º47.25’	110º57.37’	9.7	0.0	10	217	5	0.10
240423	03:32:20.72	44º48.00’	111º03.38’	7.5	0.8W	19	154	4	0.17
240423	06:04:33.87	44º27.03’	110º35.44’	4.1	0.8W	11	117	2	0.07
240423	08:42:01.47	44º48.26’	111º03.83’	8.7	1.6W	21	121	3	0.14
240423	09:30:20.15	44º48.25’	111º04.00’	9.4	3.0W	36	83	3	0.15
240423	09:31:23.32	44º47.75’	111º03.85’	7.9	1.5	16	148	3	0.12
240423	09:34:47.65	44º48.09’	111º03.57’	7.8	-0.1	15	154	4	0.15
240423	09:58:56.84	44º44.55’	111º01.62’	5.6	-0.2	14	86	3	0.16
240423	10:05:01.84	44º47.94’	111º03.82’	8.0	1.8W	23	125	3	0.13
240423	10:15:12.80	44º47.70’	111º03.74’	7.8	2.7W	29	111	3	0.11
240423	10:52:42.75	44º47.73’	111º03.57’	6.9	0.8	19	149	4	0.17
240423	11:03:52.67	44º48.18’	111º03.49’	8.0	1.3W	15	156	4	0.10

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2024

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
240423	11:17:40.04	44º48.07’	111º03.29’	6.3	-0.1	13	155	4	0.13
240423	11:18:23.04	44º48.02’	111º03.62’	7.2	1.3W	22	153	4	0.14
240423	11:30:39.61	44º47.85’	111º03.73’	7.8	1.7W	22	124	4	0.17
240423	14:32:16.76	44º48.36’	111º03.02’	7.4	0.1	15	161	5	0.14
240423	14:32:46.02	44º47.78’	111º03.87’	8.1	2.8W	27	123	3	0.12
240423	14:35:08.43	44º47.96’	111º03.30’	7.2	0.5	16	154	4	0.15
240423	15:18:24.18	44º48.12’	111º03.16’	7.7	0.4	14	157	4	0.14
240423	15:20:30.83	44º47.91’	111º03.65’	8.4	2.1W	25	124	4	0.17
240423	15:58:00.00	44º47.90’	111º03.63’	7.4	0.1	13	151	4	0.14
240423	16:21:21.29	44º48.07’	111º03.30’	6.4	0.3	15	155	4	0.15
240423	16:50:57.07	44º48.31’	111º03.38’	9.3	1.0W	13	159	4	0.14
240423	18:27:32.23	44º47.63’	111º03.91’	8.0	1.5W	18	146	3	0.15
240423	18:33:25.26	44º48.28’	111º02.91’	7.6	0.3	11	160	5	0.11
240423	19:18:39.03	44º48.04’	111º03.41’	7.4	0.4	11	154	4	0.14
240423	19:54:57.21	44º48.16’	111º02.90’	7.7	0.9W	15	158	5	0.14
240423	20:00:58.49	44º47.83’	111º03.77’	8.5	0.5	15	150	3	0.13
240423	20:01:09.37	44º47.40’	111º03.76’	8.7	-0.2	13	144	4	0.17
240423	20:17:56.72	44º48.12’	111º03.57’	9.1	1.5W	14	155	4	0.12
240424	02:38:43.49	44º48.12’	111º03.75’	8.2	0.5W	14	155	4	0.17
240424	07:39:41.01	44º47.65’	111º03.40’	8.0	1.1W	20	149	4	0.17
240424	08:33:59.53	44º47.77’	111º03.30’	7.8	0.9W	20	152	4	0.15
240424	08:39:12.98	44º47.85’	111º03.93’	8.7	2.4W	29	113	3	0.13
240424	08:41:45.46	44º47.98’	111º03.46’	7.9	--	17	154	4	0.10
240424	08:41:47.47	44º48.34’	111º03.46’	8.9	2.4W	14	159	4	0.11
240424	08:42:11.35	44º47.44’	111º03.84’	7.0	1.6	17	144	3	0.20
240424	08:48:14.28	44º47.88’	111º03.58’	7.0	0.5W	13	164	4	0.16
240424	08:56:11.56	44º47.89’	111º04.08’	8.2	2.1W	25	113	3	0.15
240424	09:02:43.92	44º47.76’	111º03.44’	7.1	1.2W	20	150	4	0.18
240424	09:13:39.50	44º48.09’	111º03.65’	7.8	0.6W	15	154	4	0.15
240424	09:22:44.50	44º47.74’	111º03.82’	7.9	-0.5	11	148	3	0.10
240424	09:22:52.71	44º48.13’	111º03.15’	7.9	0.2	12	157	4	0.12
240424	10:38:38.26	44º48.08’	111º03.39’	7.4	0.6W	12	155	4	0.10
240424	12:19:07.70	44º47.97’	111º03.52’	8.4	1.4W	16	153	4	0.12
240424	12:25:57.24	44º47.93’	111º03.72’	8.8	2.1W	26	82	4	0.14
240424	14:10:08.70	44º48.36’	111º03.58’	7.3	0.2	16	158	4	0.16
240424	17:36:54.87	44º48.03’	111º03.17’	7.4	0.7	19	155	4	0.15
240424	18:26:22.14	44º47.89’	111º03.48’	7.6	0.7W	13	152	4	0.10
240425	02:53:53.73	44º41.58’	110º01.99’	13.1	0.9	8	148	10	0.11
240425	07:29:13.32	44º48.40’	111º03.91’	7.9	1.0W	15	158	3	0.10
240425	09:47:36.56	44º48.28’	111º03.32’	7.8	-0.2	8	159	4	0.06
240425	11:42:18.95	44º47.78’	111º02.85’	6.9	-0.1	15	153	5	0.16
240425	12:53:12.19	44º48.05’	111º03.69’	8.0	1.1W	18	153	4	0.13
240425	13:26:47.60	44º47.84’	111º03.12’	7.0	0.0	15	153	4	0.15
240425	13:27:28.16	44º48.10’	111º03.21’	7.9	0.0	15	156	4	0.12
240425	13:27:38.14	44º48.12’	111º03.20’	7.3	0.5	14	157	4	0.13

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DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
240425	15:14:35.84	44º47.81’	111º03.00’	7.4	0.2	19	153	4	0.16
240425	17:15:46.45	44º48.09’	111º03.19’	7.8	1.2W	22	156	4	0.16
240425	17:19:40.65	44º47.95’	111º03.65’	8.7	1.7W	21	133	4	0.14
240425	17:21:34.35	44º48.15’	111º03.50’	8.2	1.0W	15	156	4	0.11
240425	17:26:16.55	44º48.56’	111º03.95’	7.9	1.5W	18	160	4	0.12
240425	17:40:22.03	44º48.21’	111º03.06’	8.4	0.4W	10	158	4	0.12
240425	17:40:56.46	44º48.16’	111º03.16’	7.8	0.5W	12	157	6	0.10
240425	18:56:13.57	44º48.02’	111º03.83’	8.1	1.6W	25	153	3	0.18
240425	19:33:10.72	44º47.63’	111º03.05’	7.6	-0.3	13	150	4	0.16
240425	20:36:17.58	44º47.69’	110º58.34’	5.9	0.1	14	163	5	0.18
240425	21:13:02.74	44º47.87’	111º02.91’	7.8	1.2W	19	153	5	0.17
240425	22:12:36.58	44º48.06’	111º03.12’	6.4	-0.1	15	155	6	0.19
240425	22:23:58.00	44º47.82’	111º02.43’	7.1	-0.3	15	154	5	0.16
240425	23:11:19.77	44º47.50’	111º03.00’	7.7	0.4	18	148	4	0.18
240425	23:45:41.50	44º47.96’	111º02.68’	7.4	0.9W	18	156	5	0.15
240426	01:39:09.50	44º46.84’	111º03.60’	7.9	0.1	15	137	4	0.15
240426	01:39:36.54	44º46.85’	111º03.91’	6.9	0.0	13	137	4	0.20
240426	02:52:04.71	44º47.86’	111º02.96’	7.6	0.8	21	125	5	0.16
240426	05:59:02.02	44º48.36’	111º02.90’	7.5	0.1	14	161	5	0.14
240426	05:59:32.53	44º48.08’	111º03.49’	7.8	1.5W	23	134	4	0.17
240426	06:44:11.59	44º47.92’	111º03.02’	8.3	-0.1	16	155	4	0.15
240426	08:47:38.36	44º47.65’	111º03.15’	7.8	0.0	16	150	4	0.17
240426	15:25:27.22	44º48.15’	111º02.81’	7.8	0.2	16	158	5	0.13
240426	19:01:45.16	44º47.98’	111º02.67’	7.8	0.3	18	156	5	0.17
240427	03:01:14.17	44º47.92’	111º03.52’	7.5	0.0	15	152	4	0.19
240427	11:21:41.88	44º43.74’	111º09.59’	5.7	0.1	12	129	4	0.16
240427	23:36:35.68	44º46.17’	111º06.33’	11.3	1.5W	20	85	3	0.16
240427	23:44:42.10	44º46.06’	111º06.15’	10.6	-0.3	11	88	3	0.18
240428	01:59:19.54	44º48.07’	111º03.85’	7.8	0.9W	19	153	3	0.17
240428	04:37:37.49	44º38.57’	110º22.68’	5.6	0.5	9	109	9	0.15
240428	08:00:16.34	44º47.94’	111º04.15’	8.1	2.2W	27	114	3	0.12
240428	08:07:25.23	44º48.11’	111º03.64’	7.4	0.1	15	155	4	0.15
240428	08:48:50.79	44º47.97’	111º03.80’	7.4	1.6W	18	152	3	0.15
240428	10:22:33.57	44º48.10’	111º04.00’	7.9	1.3W	18	153	3	0.15
240428	14:57:50.59	44º48.04’	111º02.98’	7.4	0.3	15	156	5	0.11
240428	16:00:51.89	44º36.32’	110º22.43’	4.0	0.4	8	181	5	0.12
240429	05:48:13.61	44º44.49’	111º06.30’	9.5	0.6W	16	93	6	0.18
240429	05:58:35.50	44º44.80’	111º06.52’	11.2	1.7W	26	82	5	0.18
240429	05:58:41.94	44º43.98’	111º06.26’	8.4	1.7W	12	141	7	0.24
240429	06:03:06.51	44º44.66’	111º06.09’	10.5	0.5	17	89	6	0.16
240429	06:03:30.15	44º44.51’	111º07.34’	7.8	0.5W	17	95	6	0.22
240429	06:04:30.67	44º44.80’	111º06.15’	9.6	0.6	20	88	6	0.20
240429	06:04:59.36	44º44.83’	111º06.16’	11.2	1.6W	22	88	5	0.17
240429	06:05:23.23	44º44.87’	111º05.66’	8.6	0.0	16	107	7	0.30
240429	06:06:06.85	44º44.72’	111º06.44’	11.4	1.3W	19	90	6	0.15

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2024

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
240429	06:38:30.74	44º44.42’	111º06.50’	9.1	-0.1	15	94	6	0.17
240429	06:41:08.18	44º44.45’	111º06.46’	8.9	0.2	14	94	6	0.18
240429	06:41:16.52	44º43.96’	111º06.51’	5.4	-0.3	11	110	7	0.13
240429	07:18:14.95	44º44.91’	111º05.94’	10.1	0.5W	18	85	5	0.14
240429	08:31:16.43	44º44.78’	111º06.02’	9.6	0.0	16	87	6	0.17
240429	08:47:37.76	44º45.07’	111º05.95’	11.2	-0.1	12	84	5	0.09
240429	10:50:02.27	44º48.09’	111º03.34’	8.5	-0.1	11	156	4	0.10
240429	10:58:43.55	44º44.65’	111º06.81’	10.9	1.1W	17	91	6	0.12
240429	11:01:55.19	44º45.07’	111º06.06’	11.3	1.4W	20	82	5	0.12
240429	11:03:15.51	44º47.70’	111º03.28’	8.1	0.3W	11	150	4	0.10
240429	11:16:43.54	44º45.07’	111º06.33’	10.8	1.0W	12	84	5	0.11
240429	12:57:57.48	44º44.81’	111º06.01’	10.9	0.8W	16	87	5	0.13
240429	14:56:50.77	44º28.59’	110º57.76’	5.6	0.4	9	114	10	0.22
240430	02:19:59.92	44º47.81’	111º03.15’	8.2	1.1W	13	152	4	0.09
240430	04:05:56.01	44º47.55’	111º03.22’	8.3	0.8W	13	148	4	0.08
240430	07:29:06.75	44º45.87’	111º04.50’	8.0	0.9W	17	116	4	0.11
240430	14:23:30.47	44º47.96’	111º03.77’	7.4	0.1	16	152	3	0.20
240501	01:12:58.63	44º45.70’	111º01.24’	10.7	0.9W	13	129	1	0.11
240501	04:54:11.04	44º46.51’	111º06.67’	9.7	-0.2	10	77	2	0.11
240502	00:29:27.44	44º45.21’	111º12.72’	5.3	0.4	13	120	1	0.15
240502	18:28:54.07	44º48.00’	111º03.85’	7.9	0.7	12	152	3	0.08
240503	02:19:01.03	44º46.29’	111º06.85’	8.4	0.8W	16	72	3	0.15
240503	04:44:42.36	44º47.89’	110º56.27’	7.2	0.1	10	226	7	0.09
240503	22:27:23.13	44º38.33’	110º23.24’	4.3	0.4	15	106	9	0.17
240504	05:14:15.96	44º47.94’	111º03.64’	7.7	0.6	22	153	4	0.19
240504	14:25:47.09	44º48.29’	111º03.18’	6.8	0.4	20	159	4	0.15
240505	06:22:32.08	44º47.32’	111º00.89’	5.6	0.8W	19	152	3	0.18
240505	22:47:57.91	44º47.44’	110º58.95’	10.0	0.9W	16	125	4	0.11
240506	00:53:30.36	44º35.89’	110º54.00’	12.3	1.0W	15	75	5	0.11
240506	05:43:46.81	44º48.06’	111º03.85’	7.9	0.4W	15	153	3	0.09
240507	12:28:08.20	44º22.05’	110º36.10’	1.0	1.8W	12	154	4	0.31
240508	04:56:32.69	44º44.88’	110º49.57’	5.4	1.5W	27	75	5	0.19
240508	04:57:19.48	44º45.01’	110º49.49’	5.1	0.3	11	130	5	0.12
240509	18:17:15.89	44º45.61’	111º08.38’	10.3	0.6	19	73	5	0.18
240509	19:46:56.07	44º45.37’	111º08.80’	10.8	0.8W	15	83	4	0.14
240510	15:05:02.61	44º45.88’	111º07.58’	10.8	0.6W	18	80	4	0.18
240510	18:18:09.08	44º45.33’	111º07.41’	11.0	0.9W	19	80	5	0.17
240511	04:14:42.06	44º41.65’	111º07.63’	7.3	0.6	17	135	8	0.17
240511	12:08:00.54	44º17.90’	111º00.00’	12.6	1.8W	16	112	16	0.23
240511	16:44:50.73	44º30.33’	110º32.10’	4.4*	1.5W	19	62	12	0.13
240511	18:07:45.60	44º46.57’	110º47.67’	5.5	0.1	11	199	5	0.14
240511	19:24:54.46	44º44.79’	111º07.54’	13.3	0.6	14	90	6	0.13
240513	14:28:45.85	44º36.36’	111º09.93’	8.6	1.1W	15	108	5	0.15
240515	19:36:09.19	44º28.67’	111º02.51’	9.5	0.6	16	142	15	0.22
240515	19:39:26.01	44º28.56’	111º02.30’	11.3	0.6	17	142	15	0.23

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2024

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
240515	19:46:52.61	44º28.62’	111º02.44’	11.9	0.5	17	142	15	0.24
240515	21:10:49.22	44º28.53’	111º01.92’	12.8	0.4	13	139	15	0.24
240516	06:27:27.66	44º48.25’	110º52.22’	6.5	0.3W	19	115	2	0.15
240516	06:28:15.10	44º48.49’	110º52.74’	8.0	1.1W	22	117	3	0.16
240517	13:37:45.95	44º38.91’	110º01.24’	14.3	1.7	9	177	12	0.07
240518	13:46:25.10	44º37.86’	110º46.93’	3.8	0.6	12	215	5	0.10
240518	15:53:25.38	44º28.62’	110º45.47’	4.8	1.0W	28	52	7	0.18
240518	15:53:27.13	44º28.63’	110º44.87’	1.1	1.6W	20	105	8	0.18
240519	07:16:14.59	44º36.71’	110º24.56’	2.0	0.4	18	118	6	0.23
240519	19:37:23.26	44º50.75’	110º08.17’	17.9	1.3	8	125	21	0.11
240520	03:13:21.88	44º22.30’	110º51.93’	8.4	0.7	9	93	9	0.26
240520	12:19:30.67	44º48.04’	111º03.08’	7.9	0.8W	15	155	4	0.11
240522	03:22:08.48	44º45.54’	110º57.36’	7.8	0.5W	15	101	4	0.12
240522	08:41:49.60	44º45.87’	111º09.74’	7.6	1.2W	16	110	3	0.16
240522	08:56:36.31	44º27.91’	110º58.44’	4.3*	1.0W	18	119	11	0.20
240522	11:17:02.87	44º45.76’	111º09.78’	6.3	0.0	8	107	3	0.13
240522	12:04:21.04	44º45.96’	111º09.90’	8.0	0.9	13	116	3	0.16
240524	16:40:26.87	44º44.78’	111º11.30’	11.8	0.5	15	89	1	0.13
240525	08:58:49.49	44º37.77’	110º40.13’	7.5	1.5W	29	54	3	0.20
240525	16:25:12.86	44º45.69’	111º06.52’	9.6	0.9W	17	79	4	0.16
240525	16:54:06.97	44º41.53’	111º07.95’	7.1	0.7	16	138	8	0.26
240525	17:51:43.07	44º45.26’	111º07.14’	10.7	1.8W	22	58	5	0.16
240525	17:54:34.37	44º45.86’	111º06.38’	10.0	0.5	16	82	4	0.16
240525	19:59:03.26	44º45.85’	111º06.45’	11.0	0.4	10	81	4	0.14
240525	22:43:09.69	44º45.69’	111º06.60’	10.7	0.8W	22	77	4	0.15
240526	00:02:15.34	44º45.50’	111º06.60’	10.0	0.4	15	86	4	0.18
240526	00:38:11.79	44º45.69’	111º06.59’	10.6	0.7W	20	78	4	0.18
240526	02:04:44.95	44º45.36’	111º06.88’	9.1	0.3	12	90	5	0.19
240526	03:17:45.81	44º45.73’	111º06.53’	10.0	0.3W	14	111	7	0.15
240527	04:29:14.92	44º45.49’	111º10.01’	6.8	-0.3	8	102	2	0.17
240528	02:47:01.93	44º42.83’	111º02.50’	11.7	1.0W	14	87	6	0.12
240529	03:33:18.75	44º47.38’	110º49.38’	4.8	1.1W	23	103	2	0.17
240529	12:08:34.74	44º30.07’	110º51.33’	0.8	0.8	11	131	6	0.23
240530	02:00:50.98	44º47.84’	111º04.44’	11.7	0.7W	10	148	3	0.10
240601	17:13:20.94	44º34.76’	110º23.10’	3.3	0.7	11	120	3	0.12
240603	13:19:56.89	44º41.58’	111º08.10’	10.0	1.8W	21	99	8	0.14
240604	09:16:29.74	44º41.36’	111º07.66’	8.5	0.7W	18	119	9	0.18
240604	17:09:19.47	44º19.10’	110º35.87’	3.2	1.7	12	182	9	0.10
240606	22:57:29.56	44º21.70’	110º50.05’	2.4	1.6W	11	87	10	0.22
240607	00:52:13.26	44º44.31’	111º04.17’	5.9	0.8	10	135	6	0.10
240607	00:55:22.86	44º45.96’	111º01.28’	9.1	0.4	13	132	1	0.21
240607	01:29:23.59	44º46.40’	111º00.95’	8.7	0.4	14	138	2	0.20
240607	06:30:23.55	44º46.40’	111º01.05’	8.7	0.1	12	138	2	0.15
240607	09:19:52.20	44º46.07’	111º00.97’	8.7	0.3	15	134	1	0.18
240607	10:58:47.70	44º46.59’	111º00.85’	9.7	1.3W	12	142	2	0.09

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2024

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
240607	20:20:58.39	44º45.43’	110º58.00’	3.5	0.6	6	154	3	0.05
240608	00:00:53.81	44º47.22’	111º00.67’	8.2	1.2	8	151	3	0.09
240608	00:03:05.87	44º46.90’	111º00.83’	9.3	0.6	9	146	3	0.06
240608	00:03:43.38	44º46.62’	111º01.07’	9.8	0.8	12	141	2	0.08
240608	00:19:45.31	44º46.35’	111º01.11’	9.6	1.5W	22	105	2	0.18
240608	00:32:56.81	44º46.63’	111º00.90’	8.2	0.4	13	142	2	0.17
240608	00:35:31.95	44º46.65’	111º00.89’	8.1	0.6W	14	142	2	0.15
240608	00:35:53.42	44º46.35’	111º01.24’	8.1	0.6	14	137	2	0.15
240608	01:37:34.18	44º46.43’	111º01.13’	9.5	1.1W	20	114	2	0.18
240608	06:29:17.56	44º46.13’	111º01.02’	9.7	1.3W	24	103	1	0.18
240608	06:31:39.95	44º46.16’	111º01.03’	9.4	0.9W	19	103	1	0.16
240608	09:08:58.46	44º43.36’	111º06.42’	10.6	0.3	20	108	8	0.17
240608	09:47:55.96	44º22.93’	110º19.45’	8.6	1.6W	17	76	3	0.16
240608	15:24:31.34	44º47.30’	111º05.85’	6.1	0.0	7	128	1	0.10
240608	23:09:27.21	44º45.85’	111º01.73’	8.5	0.9	15	130	2	0.19
240608	23:09:40.23	44º46.01’	111º01.36’	8.3	0.4	15	132	2	0.19
240608	23:15:10.66	44º46.79’	111º00.10’	9.1	-0.5	11	146	2	0.18
240608	23:15:27.35	44º46.30’	111º00.48’	8.4	0.3	12	138	1	0.18
240608	23:29:21.35	44º46.70’	111º01.14’	10.6	1.3W	15	108	2	0.11
240608	23:42:32.33	44º46.43’	111º00.80’	8.7	0.9W	20	106	2	0.17
240608	23:47:08.27	44º46.22’	111º00.78’	8.1	0.3	12	137	1	0.17
240608	23:53:45.00	44º46.33’	111º00.58’	8.4	0.2	12	138	1	0.14
240609	00:33:03.49	44º46.78’	111º01.05’	9.6	1.2W	15	108	2	0.10
240609	01:12:40.11	44º46.63’	111º01.07’	9.0	0.7W	12	141	2	0.09
240609	07:57:36.55	44º46.45’	111º01.16’	10.4	1.0W	15	105	2	0.12
240609	16:29:06.27	44º46.22’	111º00.87’	9.2	--	9	137	1	0.11
240609	16:29:08.10	44º46.14’	111º00.46’	6.9	0.5	13	136	1	0.14
240609	17:22:58.79	44º45.74’	110º58.49’	4.8	0.0	7	170	3	0.08
240609	17:24:34.36	44º46.18’	111º00.43’	9.2	0.8W	21	103	1	0.18
240610	05:11:51.71	44º45.32’	111º08.13’	7.0	-0.3	7	95	5	0.12
240611	03:29:57.35	44º39.56’	110º25.67’	5.2	2.5W	32	112	9	0.19
240612	09:21:18.43	44º34.28’	110º43.83’	6.0	0.8W	14	66	8	0.07
240614	16:38:24.26	44º36.82’	110º58.64’	12.7	0.6	10	152	6	0.11
240615	05:26:30.59	44º46.33’	111º00.82’	8.9	0.1	11	138	2	0.14
240615	07:43:30.95	44º44.38’	110º47.94’	5.9	0.2	11	141	7	0.14
240617	19:49:04.21	44º30.04’	111º06.45’	4.5*	1.4	10	172	12	0.08
240617	20:56:17.77	44º30.88’	111º06.38’	18.5	0.9	10	172	10	0.19
240618	00:01:34.82	44º30.92’	111º07.84’	8.4	0.8	10	186	10	0.23
240618	07:36:09.13	44º05.92’	110º33.22’	5.3*	0.9	12	152	28	0.11
240618	12:12:43.72	44º05.88’	110º33.39’	5.6*	0.6	12	152	28	0.15
240619	14:33:34.90	44º05.75’	110º33.83’	5.8*	0.6	9	150	27	0.23
240619	18:23:43.57	44º46.37’	111º04.00’	7.8	-0.1	10	130	4	0.15
240620	08:28:34.24	44º20.47’	110º51.95’	8.2	1.8W	20	91	9	0.22
240620	12:47:45.76	44º47.19’	110º48.74’	4.9	0.6	11	212	3	0.10
240621	18:13:09.08	44º13.96’	110º13.74’	10.8	0.6	10	272	18	0.11

Table 2. Earthquakes in the Yellowstone Region: April 1–June 30, 2024

DATE	ORIGIN TIME	LATITUDE	LONGITUDE	DEPTH	MAG	NO	GAP	DMN	RMS
240622	05:12:06.20	44º40.30’	110º01.01’	12.9	1.1	12	106	10	0.22
240622	23:51:02.67	44º37.20’	110º22.74’	3.1	1.1	13	135	7	0.08
240623	07:50:37.28	44º39.59’	110º27.31’	3.0	0.5	10	120	7	0.10
240626	07:21:14.05	44º46.09’	110º50.56’	6.6	0.1	11	129	2	0.08
240626	12:15:04.40	44º44.36’	110º52.97’	6.0	0.3	7	102	6	0.06
240626	12:15:49.31	44º44.34’	110º52.89’	5.7	0.5	6	101	6	0.04
240626	12:16:02.90	44º44.08’	110º52.78’	5.0	0.6	9	95	6	0.04
240626	12:16:58.24	44º44.70’	110º53.14’	7.6	0.9W	16	93	6	0.15
240626	12:26:26.42	44º45.27’	110º55.80’	7.8	0.1	8	143	6	0.05
240626	14:12:54.02	44º05.50’	110º32.51’	5.3*	0.7	10	155	29	0.22
240626	15:20:02.29	44º06.21’	110º33.55’	11.1*	1.2	17	143	27	0.13
240627	11:12:43.90	44º47.67’	111º01.31’	6.6	1.3W	18	115	4	0.14
240627	12:39:51.56	44º45.88’	110º50.26’	5.6	0.2	8	134	3	0.08
240630	04:29:12.63	44º45.57’	110º50.95’	6.9	1.1W	21	81	3	0.19
240630	11:34:50.27	44º15.92’	110º18.72’	11.0	1.5	17	80	14	0.21
240630	11:41:55.99	44º31.43’	110º34.69’	4.4	1.3W	19	64	10	0.14

number of earthquakes = 286
* 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, 2024

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 PH	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	Centaur	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	HH[ZEN]	3	WY	44° 45.33′	110° 20.95′	2684	Trillium 120	Centaur	Digital	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	HH[ZEN]	3	WY	44° 58.42′	110° 41.33′	1829	Trillium 120	Centaur	Digital	USGS
YNB	Norris Basin (YNP), WY	HH[ZEN]	6	WY	44° 43.64′	110° 42.67′	2307	Trillium 120	Centaur	Digital	USGS
		HDF[1,2,3]						InfraBSU			
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	Centaur	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	Trillium 120	Centaur	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: 160 data channels from 47 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
Compact PH	Nanometrics Compact Posthole 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, 2024

None