

Appendix 2.5AA Earthquake Source Catalog

The updated earthquake catalog prepared for the Fermi 3 project constitutes this appendix. The development of this catalog is described in [Section 2.0](#). This catalog was used to select the final catalog of earthquakes occurring within 322 km (200 mi) of the Fermi 3 site.

The headings for the data in [Table 2.5AA-201](#) are described below:

Year – Year in Coordinated Universal Time (UTC)

Month – Month in Coordinated Universal Time (UTC)

Day – Day in Coordinated Universal Time (UTC)

Hour – Hour in Coordinated Universal Time (UTC)

Minute – Minute in Coordinated Universal Time (UTC)

Second – Second in Coordinated Universal Time (UTC)

Latitude – Latitude (North)

Longitude – Longitude (West negative)

Depth – Hypocentral depth in km

m_b^* – m_b adjusted for bias due to uncertainties

Final m_b – m_b

Type – Category for earthquakes:

- EPRI, from EPRI-SOG (1988)
- Added_hist, newly identified earthquakes added to EPRI-SOG catalog (occurring from 1776 to February 1985)
- Post_EPRI, earthquakes occurring post-EPRI-SOG catalog (May 1985 to April 2008)

EPRI Flag – Earthquake dependency:

- MAIN, mainshock with dependent events
- Blank, mainshock with no associated dependent events
- [number], EPRI UNID of mainshock

R (km) – distance from Fermi 3 site in km

Table 2.5AA-201 Fermi 3 Earthquake Source Catalog (Sheet 1 of 5)

Year	Month	Day	Hour	Minute	Second	Latitude	Longitude	Depth	m _b *	Final m _b	Type	EPRI Flag	R ¹ (km)
1776	0	0	0	0	0	39.9	-82	0	4.36	4.00	EPRI	MAIN	252.7
1779	2	13	0	0	0	40.2	-81.9	0	4.86	4.50	added_hist		226.8
1833	2	4	0	0	0	42.3	-85.6	0	4.14	4.00	EPRI	MAIN	196.6
1836	7	9	2	15	0	41.5	-81.7	0	3.46	3.10	EPRI	MAIN	139.5
1840	9	10	0	0	0	43.2	-79.85	0	4.14	4.00	EPRI	MAIN	311.8
1843	6	19	23	0	0	40.1	-83.8	0	3.86	3.50	added_hist		212.0
1848	4	6	11	0	0	39.5	-82.4	0	4.55	4.19	added_hist		283.3
1850	10	1	10	25	0	41.42	-81.55	0	3.56	3.20	EPRI	MAIN	154.5
1852	9	15	0	0	0	41.63	-80.17	0	4.06	3.70	added_hist		259.2
1854	1	11	1	0	0	39.4	-83.7	0	3.86	3.50	added_hist		287.4
1857	2	27	20	30	0	42.31	-80.94	0	4.24	4.10	added_hist		195.5
1857	3	1	1	40	0	41.8	-80.6	0	3.66	3.30	EPRI	MAIN	221.3
1858	4	10	11	30	0	41.7	-81.3	0	3.46	3.10	EPRI	MAIN	165.3
1868	2	7	1	0	0	41.5	-81.6	0	3.36	3.00	added_hist		147.3
1869	4	9	8	0	0	42.68	-80.8	0	3.66	3.30	added_hist		217.8
1872	2	6	14	0	0	43.5	-83.8	0	3.76	3.40	EPRI	MAIN	176.8
1873	1	4	23	40	0	39.96	-83	0	4.16	3.80	added_hist		223.8
1873	4	23	4	14	0	39.7	-84.2	0	3.36	3.00	EPRI	MAIN	263.7
1873	4	30	0	0	0	43.3	-79.9	0	3.46	3.10	EPRI	MAIN	313.1
1875	6	18	13	43	0	40.2	-84	0	4.84	4.70	EPRI	MAIN	205.5
1877	8	17	16	50	0	42.3	-83.3	0	3.24	3.10	EPRI	*	37.9
1881	4	20	0	0	0	41.6	-85.8	0	3.46	3.10	EPRI	MAIN	214.4
1882	2	9	20	0	0	40.4	-84.2	0	3.24	3.10	EPRI	*	190.6
1883	1	5	10	30	0	41.35	-82.1	0	3.36	3.00	added_hist		118.1
1884	9	19	20	14	0	40.7	-84.1	0	4.94	4.80	EPRI	MAIN	156.8
1885	1	18	10	30	0	41.15	-81.55	0	3.94	3.80	added_hist		168.7
1886	5	3	3	0	0	39.36	-82.24	0	3.94	3.80	added_hist		302.0
1886	9	11	9	0	0	40.97	-81.7	0	3.46	3.10	added_hist		170.7
1888	2	9	20	0	0	41.49	-81.69	0	3.66	3.30	added_hist		140.7
1888	2	11	2	0	0	41	-81.5	0	3.76	3.40	added_hist		181.7

Table 2.5AA-201 Fermi 3 Earthquake Source Catalog (Sheet 2 of 5)

Year	Month	Day	Hour	Minute	Second	Latitude	Longitude	Depth	m _b *	Final m _b	Type	EPRI Flag	R ¹ (km)
1889	2	26	15	30	0	40.65	-85.4	0	4.00	3.64	added_hist		230.7
1891	1	3	22	0	0	40.3	-85.7	0	4.44	4.08	added_hist		275.6
1892	4	15	5	25	0	40.55	-84.57	0	4.16	3.80	added_hist		191.4
1893	12	20	2	0	0	41.62	-85.95	0	4.58	4.22	added_hist		226.3
1894	2	27	22	0	0	42.12	-86.46	0	4.16	3.80	added_hist		264.9
1894	11	9	3	0	0	42.12	-86.46	0	4.16	3.80	added_hist		264.9
1896	3	15	7	0	0	40.3	-84.2	0	3.46	3.10	EPRI	MAIN	200.9
1897	5	2	20	0	0	42.79	-86.11	0	3.66	3.30	added_hist		251.7
1899	2	6	15	0	0	41.2	-85.9	0	3.70	3.34	added_hist		235.4
1899	2	10	24	0	0	43.35	-85.4	4.9	3.24	3.10	added_hist		233.5
1899	2	11	10	0	0	41.6	-86.8	0	5.00	4.64	added_hist		296.4
1899	9	14	3	0	0	41.17	-82.12	0	3.66	3.30	added_hist		129.6
1899	11	12	14	0	0	39.3	-83	0	3.46	3.10	EPRI	MAIN	296.9
1902	3	10	6	0	0	39.9	-85.2	0	3.36	3.00	EPRI	MAIN	281.3
1902	6	14	7	0	0	40.3	-81.4	0	3.66	3.30	EPRI	MAIN	241.9
1906	4	23	7	12	0	40.7	-83.6	0	3.76	3.40	EPRI	MAIN	143.1
1906	6	27	21	10	0	40.4	-81.6	0	3.34	3.20	EPRI	MAIN	222.6
1910	2	25	0	0	0	43.2	-79.8	0	3.46	3.10	EPRI	MAIN	315.5
1925	3	27	4	6	0	39.5	-83.9	0	3.76	3.40	EPRI	MAIN	279.1
1926	10	28	8	42	0	41.7	-83.6	0	3.54	3.40	EPRI	*	40.4
1926	10	28	11	0	0	41.7	-83.6	0	3.46	3.10	EPRI	MAIN	40.4
1927	2	17	5	30	0	40.7	-82.5	0	3.46	3.10	EPRI	MAIN	154.1
1927	10	29	0	0	0	40.9	-81.2	0	3.76	3.40	EPRI	MAIN	208.7
1928	10	27	0	0	0	40.4	-84.1	0	3.14	3.00	EPRI	*	187.4
1929	3	8	9	6	0	40.4	-84.2	0	3.84	3.70	EPRI	MAIN	190.6
1930	6	26	21	45	0	40.5	-84	0	3.34	3.20	EPRI	MAIN	173.9
1930	7	11	0	15	0	40.6	-83.2	0	3.46	3.10	EPRI	MAIN	151.5
1930	9	30	20	40	0	40.3	-84.3	0	3.64	3.50	EPRI	MAIN	204.3
1931	3	21	15	48	0	40.4	-84.2	0	3.14	3.00	EPRI	*	190.6
1931	9	20	23	4	54	40.43	-84.27	5	4.84	4.70	EPRI	MAIN	190.1

Table 2.5AA-201 Fermi 3 Earthquake Source Catalog (Sheet 3 of 5)

Year	Month	Day	Hour	Minute	Second	Latitude	Longitude	Depth	m _b *	Final m _b	Type	EPRI Flag	R ¹ (km)
1933	2	23	3	20	0	40.3	-84.2	0	3.44	3.30	EPRI	MAIN	200.9
1934	10	29	20	7	0	42	-80.2	0	3.34	3.20	EPRI	MAIN	253.4
1936	1	31	19	30	0	41.2	-83.2	0	3.46	3.10	EPRI	MAIN	84.8
1936	10	8	16	30	0	39.3	-84.4	0	3.44	3.30	EPRI	MAIN	311.3
1937	3	2	14	47	33.3	40.49	-84.27	2	5.04	4.90	EPRI	MAIN	184.2
1938	2	12	6	27	0	41.6	-87	0	3.94	3.80	EPRI	MAIN	312.9
1938	3	14	16	40	0	42.08	-83.17	0	3.46	3.10	added_hist		15.3
1939	1	14	8	10	16	43.25	-79.85	0	3.49	3.30	EPRI	MAIN	314.2
1940	6	16	4	30	0	40.9	-82.3	0	3.46	3.10	EPRI	MAIN	142.8
1943	3	9	3	25	24.9	41.63	-81.31	7	4.54	4.40	EPRI	MAIN	166.1
1944	11	13	11	52	0	40.4	-84.4	0	4.24	4.10	EPRI	MAIN	198.1
1947	8	10	2	46	41.3	41.93	-85	2	4.64	4.50	EPRI	MAIN	143.9
1950	4	20	0	0	0	39.8	-84.2	0	3.46	3.10	EPRI	MAIN	253.1
1952	6	20	9	38	8.6	39.64	-82.02	9	4.04	3.90	EPRI	MAIN	278.7
1952	12	25	0	0	0	43.8	-81	0	3.46	3.10	EPRI	MAIN	275.5
1953	6	12	0	0	0	41.7	-83.6	0	3.64	3.50	EPRI	MAIN	40.4
1955	5	26	18	9	0	41.29	-81.57	0	3.44	3.30	EPRI	MAIN	159.3
1956	1	27	11	3	27	40.5	-84	0	3.84	3.70	EPRI	MAIN	173.9
1957	6	29	11	25	9	42.9	-81.3	0	3.46	3.10	EPRI	MAIN	192.1
1958	8	4	20	25	58	43.13	-80	0	3.93	3.80	EPRI	MAIN	297.4
1959	2	9	0	0	0	43	-81	0	3.46	3.10	EPRI	MAIN	218.7
1961	2	22	9	45	3	41.2	-83.3	0	3.84	3.70	EPRI	MAIN	84.7
1967	4	8	5	40	30.5	39.65	-82.53	1	3.84	3.70	EPRI	MAIN	264.5
1968	7	26	15	2	53.7	40.43	-84.18	0	3.05	3.00	added_hist		186.9
1974	9	29	2	26	19.1	41.21	-83.49	1	2.99	3.00	EPRI	*	85.7
1975	2	3	10	31	0	41.3	-83.2	0	3.44	3.30	EPRI	MAIN	73.7
1976	2	2	21	14	2.3	41.88	-83.73	5	3.39	3.40	EPRI	MAIN	39.8
1976	2	2	21	14	2.3	41.88	-83.73	5	3.39	3.40	added_hist		39.8
1977	6	17	15	39	46.9	40.57	-84.67	1	3.29	3.30	EPRI	*	194.5
1980	8	20	9	34	53.4	41.97	-82.99	1	3.19	3.20	EPRI	*	22.5

Table 2.5AA-201 Fermi 3 Earthquake Source Catalog (Sheet 4 of 5)

Year	Month	Day	Hour	Minute	Second	Latitude	Longitude	Depth	m _b *	Final m _b	Type	EPRI Flag	R ¹ (km)
1980	10	14	0	58	56.4	43.15	-80.57	5	3.59	3.40	EPRI	MAIN	257.3
1981	8	28	10	51	33	43.15	-80.59	1	3.29	3.30	EPRI	*	255.9
1981	9	5	5	49	21	42.8	-81.41	9	3.09	3.10	EPRI	*	178.6
1985	4	14	3	44	39	42.95	-80.04	0	3.09	3.10	post_EPRI		286.6
1985	4	14	11	39	54	41.59	-80.4	18	3.19	3.20	post_EPRI		241.1
1986	1	31	16	46	42.3	41.59	-81.21	2	4.99	5.00	post_EPRI		175.2
1986	7	12	8	19	37.9	40.537	-84.371	10	4.49	4.50	post_EPRI		183.6
1987	7	13	5	49	17.4	41.9	-80.73	5	3.79	3.80	post_EPRI		209.8
1987	8	13	7	52	0	41.982	-80.534	5	3.29	3.30	post_EPRI		225.7
1988	5	28	16	18	28.12	39.753	-81.613	0	3.39	3.40	post_EPRI		282.2
1990	4	17	10	27	34.7	40.49	-84.83	5	2.99	3.00	post_EPRI		209.8
1991	1	26	3	21	22.6	41.536	-81.453	5	3.29	3.30	post_EPRI		157.5
1991	1	27	3	21	24.23	41.61	-81.594	9.7	3.49	3.50	post_EPRI		143.8
1992	3	15	6	13	55.2	41.911	-81.245	5	3.49	3.50	post_EPRI		167.1
1993	10	16	6	30	5.3	41.698	-81.012	5	3.49	3.50	post_EPRI		188.9
1994	9	2	21	23	6.5	42.57	-84.64	5	3.39	3.40	post_EPRI		132.2
1995	1	12	21	25	51	40.8	-82.68	0	3.29	3.30	post_EPRI		138.0
1995	2	19	12	57	6	39.12	-83.47	10	3.59	3.60	post_EPRI		316.6
1998	1	27	0	38	30.24	41.87	-81.11	0	2.99	3.00	post_EPRI		178.5
1998	9	25	19	52	52.07	41.495	-80.388	0	5.19	5.20	post_EPRI		244.3
1998	11	25	2	55	7.52	41.02	-82.543	0	3.19	3.20	post_EPRI		120.7
2000	8	7	2	2	30.16	41.01	-81.1	10	2.99	3.00	post_EPRI		209.0
2001	1	26	3	3	20.63	41.87	-80.76	2.5	4.49	4.50	post_EPRI		207.5
2001	6	3	22	36	45.37	41.995	-80.954	5	4.11	3.93	post_EPRI		191.0
2001	6	3	22	36	46.4	41.905	-80.767	5	3.19	3.20	post_EPRI		206.7
2003	3	18	6	4	24	44.69	-82.89	5	3.68	3.50	post_EPRI		305.2
2003	6	30	19	21	17.2	41.8	-81.2	4.6	3.39	3.40	post_EPRI		171.8
2004	6	30	4	3	14.58	41.78	-81.07	5	3.29	3.30	post_EPRI		182.8
2006	3	11	12	27	15.16	41.76	-81.39	5	2.99	3.00	post_EPRI		156.8
2006	6	20	20	11	18.54	41.84	-81.23	4	3.79	3.80	post_EPRI		168.9

Table 2.5AA-201 Fermi 3 Earthquake Source Catalog (Sheet 5 of 5)

Year	Month	Day	Hour	Minute	Second	Latitude	Longitude	Depth	m_b^*	Final m_b	Type	EPRI Flag	R^1 (km)
2007	3	12	23	18	16.41	41.28	-81.38	5	3.29	3.30	post_EPRI		173.9
2007	10	17	20	4	9.74	41.75	-81.42	5	3.19	3.20	post_EPRI		154.5
2008	1	9	1	34	46.7	41.72	-81.43	5	3.09	3.10	post_EPRI		154.2

1. Distance from Fermi 3 site