

Acknowledgement

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Description

A homogeneous earthquake catalogue for Bulgaria and adjacent areas covering the period 1981–2019 (including instrumental seismicity) is presented. The catalogue is homogenized concerning magnitude. Regression equations (Solakov, D., S. Simeonova, P. Raykova, I. Aleksandrova, 2018. Empirical relations converting Md and Mp magnitudes applied in Bulgarian seismological routine practice to moment magnitude. Comptes rendus de l'Academie Bulgare des Sciences, 71, 8, 1076-1085 DOI:10.7546/CRABS.2018.08.09) are applied to convert magnitudes used in Bulgarian seismological routine practice (Md and Mp) to the widely used moment magnitude Mw. For stronger events are given moment magnitude estimation (if exist) from [Global Centroid Moment Tensor Catalog](#) (with priority) or [EMSC catalog](#).

The catalogue will be updated annually, including the seismicity of the previous year.

Year	Month	Day	Hour	Minute	Second	Latitude (N°)	Longitude (E°)	Depth (km)	Mw	I0/I _{max}
1981	4	1	10	55	2	41.96	23.21	4	3.3	3.5
1981	4	2	12	30	11	41.93	22.99	8	3.4	4.5
1981	5	3	22	16	10	42.13	25.2	14	3.2	
1981	5	6	4	41	17	41.88	23.99	8	4.0	5.5
1981	5	25	18	1	33	44.02	27.59	15	3.4	
1981	6	8	3	19	24	42.76	27.52	2	3.4	
1981	6	10	1	54	40	42.59	27.83	12	3.2	
1981	6	13	14	39	60	41.82	22.84	9	3.4	
1981	7	17	19	17	44	41.92	23	9	3.2	
1981	7	21	17	45	42	42.63	27.64	6	3.2	
1981	7	23	6	15	0	43.15	27.45	6	4.4	6.5
1981	8	26	19	42	48	41.96	23.23	15	4.0	4.5
1981	8	30	15	40	37	42.15	25.23	16	4.3	5.5
1981	9	4	0	22	1	43.14	27.57	7	3.9	5.5
1981	9	5	0	8	24	41.85	23.24	16	3.3	
1981	9	7	17	43	12	41.4	22.6	8	4.7	5.5
1981	9	13	22	9	45	41.74	25.26	5	3.3	
1981	9	19	15	28	45	43.16	27.57	13	3.2	
1981	9	20	9	12	58	42.24	24.93	17	3.4	

1981	9	25	19	50	38	41.72	23.84	13	3.2	
1981	9	30	12	3	0	41.95	23.15	11	3.3	4
1981	10	1	12	10	54	41.88	23.65	12	4.1	5.5
1981	10	14	18	36	39	41.97	23.25	13	3.4	
1981	11	9	13	40	3	41.88	23.7	3	3.4	3.5
1981	11	27	2	54	45	42.52	23.61	3	3.2	
1981	12	7	9	33	47	42.09	24.81	5	3.2	5.5
1982	2	20	4	45	52	41.82	24.34	12	3.7	4.5
1982	3	6	8	59	54	42.67	28.48	20	4.1	
1982	4	27	3	51	48	41.89	23.35	10	3.7	
1982	5	15	4	44	51	42.12	24.27	9	3.5	
1982	6	26	19	47	34	41.87	23.69	12	3.5	
1982	6	30	18	49	6	41.71	23.84	14	3.7	
1982	8	27	9	58	54	43.65	26.21	19	4.4	5.5
1982	8	31	3	45	6	43.16	27.46	10	3.5	5
1982	10	23	18	25	54	42.06	24.83	13	3.8	4.5
1982	12	30	12	11	11	41.88	23.15	7	3.4	
1983	4	24	14	33	7	42.65	22.8	2	3.2	
1983	8	13	2	8	46	41.81	23.18	15	3.5	3.5
1983	8	26	16	15	31	41.03	22.38	11	4.6	
1983	8	28	11	37	50	41.79	23.76	11	3.5	4
1983	9	10	18	40	21	42.17	23.73	10	3.7	
1983	9	13	20	39	26	41.72	23.77	4	3.2	
1983	11	10	17	28	21	43.11	27.53	4	4.5	6.5
1983	12	21	12	51	26	43.21	26.08	12	3.3	
1983	12	22	14	56	45	42.74	23.33	13	3.9	5
1984	1	23	9	29	25	41.94	23.39	12	4.7	5.5
1984	1	23	10	26	34	41.95	23.35	11	5.2	6
1984	1	23	15	5	29	43.31	25.4	13	3.5	5
1984	1	23	22	42	26	42.06	24.01	15	3.3	4.5
1984	2	14	15	56	9	43.7	27.85	13	3.2	
1984	3	1	12	56	11	42.18	25.43	18	3.3	4
1984	5	28	5	38	51	41.96	23.19	14	3.6	
1984	6	14	14	11	41	43.12	27.51	11	3.3	4
1984	7	3	8	23	4	41.022	22.5	10	3.8	4
1984	8	13	0	8	33	41.78	23.68	5	3.3	
1984	8	31	6	55	49	41.99	24.22	16	3.4	4
1984	9	3	9	19	6	42.18	25.06	14	3.4	
1985	1	5	13	6	33	42.56	22.12	28	4.9	6
1985	2	16	6	33	40	42.05	23.62	10	4.1	5
1985	4	4	21	45	39	42.11	25.84	12	3.4	
1985	6	12	14	5	0	43.11	27.5	12	4.3	6
1985	8	6	14	25	55	42.75	27.91	18	3.2	

1985	9	17	6	53	33	41.93	23	13	3.7	5
1985	9	28	14	50	15	41.58	22.25	7	5.2	7
1985	9	29	0	36	12	41.49	22.33	10	3.4	
1985	10	1	13	21	1	41.56	22.32	5	3.3	
1985	10	1	13	25	2	41.54	22.31	10	3.4	
1985	10	2	2	32	51	41.43	22.24	5	4.0	
1985	11	9	23	19	50	41.26	24.03	17	3.4	
1985	11	9	23	30	43	41.26	23.98	18	5.2	7.5
1985	11	12	16	41	31	42.24	24.88	12	3.2	
1985	11	14	20	59	8	41.96	23.27	8	3.3	
1986	2	21	5	39	56	43.27	26.05	11	5.4	7.5
1986	2	21	6	18	36	43.26	25.97	16	4.4	5.5
1986	2	21	6	20	54	43.23	25.99	18	3.5	
1986	2	21	8	36	38	43.26	26.02	15	3.8	4.5
1986	2	22	3	51	50	41.87	23.71	2	3.2	
1986	3	23	20	50	56	43.06	25.62	12	3.2	
1986	4	10	4	43	11	43.18	26.13	0	3.2	
1986	5	15	16	37	14	41.95	23.13	17	3.9	4.5
1986	5	15	16	45	23	41.95	23.15	18	4.5	5.5
1986	5	25	16	57	30	43.21	26.01	14	3.3	4
1986	5	26	15	46	30	43.24	26.03	13	3.2	4
1986	5	26	20	36	2	41.85	25.27	17	3.2	
1986	5	29	6	24	35	41.92	23.17	2	3.6	4.5
1986	6	20	12	26	36	43.25	26.07	10	3.4	4.5
1986	6	30	5	14	1	42.05	22.13	10	3.9	
1986	8	1	14	34	12	43.27	26.06	11	3.4	4.5
1986	8	19	4	5	42	43.19	25.99	13	4.0	
1986	8	29	19	30	18	43.34	26.06	11	3.2	
1986	8	30	19	8	38	41.73	24.27	14	3.4	
1986	9	7	10	47	53	43.23	26.01	13	3.3	4
1986	9	7	10	54	1	43.26	26	12	3.3	5
1986	10	26	13	32	14	41.94	23.15	16	3.3	3.5
1986	11	23	4	34	31	43.25	26.01	9	3.4	4
1986	12	7	14	17	9	43.25	26.02	14	5.6	8
1986	12	7	14	53	26	43.14	26.11	20	4.4	5.5
1986	12	7	15	20	29	43.2	26.04	2	3.3	
1986	12	7	17	26	6	43.22	25.98	14	4.8	6
1986	12	7	17	39	20	43.22	25.98	13	3.2	
1986	12	8	9	31	33	43.3	26.06	13	3.3	
1986	12	8	14	44	28	43.26	26.03	20	4.5	6
1986	12	11	3	52	31	43.24	26.04	15	3.4	
1986	12	12	1	28	48	43.25	26.09	10	3.6	
1986	12	12	19	29	52	43.27	26.05	12	4.6	6

1986	12	14	10	29	49	43.24	26.02	10	3.2	
1986	12	15	0	58	51	43.27	26.03	6	3.4	
1986	12	17	22	1	45	43.28	26.07	14	4.8	6.5
1986	12	18	7	16	16	43.23	26.06	14	4.4	6.5
1986	12	18	17	16	16	43.25	26.07	18	4.5	6.5
1986	12	18	23	39	15	43.25	26.07	11	3.6	
1986	12	23	17	45	60	43.24	26.07	6	3.2	
1987	1	14	6	30	13	43.23	25.97	16	3.3	
1987	1	21	9	54	5	43.26	26.03	15	4.3	6
1987	1	29	21	43	30	43.2	26	10	3.4	
1987	2	4	6	7	58	41.97	23.18	13	3.2	
1987	2	22	3	18	2	42.21	24.93	15	3.8	4
1987	3	13	11	48	36	41.39	23.92	16	3.3	
1987	3	21	6	27	20	43.21	26.13	2	3.2	
1987	3	23	9	5	24	43.88	23.56	4	3.8	5.5
1987	3	29	4	10	7	42.14	25.38	15	4.2	5.5
1987	4	8	1	31	59	42.17	25.14	8	3.2	
1987	4	12	9	0	54	42.54	26.59	16	3.9	5.5
1987	5	2	9	5	32	41.92	24.61	11	3.9	5.5
1987	5	2	14	2	33	43.1	27.47	8	4.1	5
1987	5	7	21	14	7	42.54	26.55	10	3.8	4.5
1987	5	11	17	35	3	43.24	25.98	14	4.2	4
1987	5	30	6	59	8	41.66	23.61	11	3.2	
1987	6	3	12	36	58	41.96	22.92	14	3.3	
1987	7	25	9	25	32	43.25	25.99	13	3.4	4
1987	8	3	20	14	20	41.78	23.74	10	3.2	
1987	8	6	8	17	10	43.23	25.89	15	3.2	
1987	9	16	13	1	52	41.14	23.8	5	3.2	
1987	9	19	6	32	54	43.45	27.82	14	3.2	5
1987	9	30	11	49	23	41.78	23.75	10	3.5	
1987	10	19	4	0	35	43.25	25.98	12	3.3	4
1987	11	9	5	23	26	41.77	23.74	5	3.2	
1987	11	25	9	43	57	43.16	26.09	14	3.3	5
1988	3	7	20	24	33	41.78	23.75	13	3.2	4
1988	3	23	18	58	45	41.86	22.77	14	3.3	4.5
1988	4	24	13	44	34	41.98	23.2	15	3.3	
1988	5	9	20	13	5	41.78	23.75	12	3.5	
1988	5	17	13	42	59	41.91	23.56	14	3.3	
1988	5	27	12	58	48	41.74	23.72	18	3.2	
1988	6	21	16	26	28	42.23	24.87	16	3.2	
1988	6	22	15	41	44	41.78	23.73	13	3.3	4
1988	8	18	17	37	43	42.08	24	9	3.2	4
1988	9	2	14	24	25	41.02	25.62	8	3.2	

1988	9	28	6	26	46	41.91	23.04	9	3.4	
1988	9	28	14	42	40	41.76	23.71	20	3.2	
1988	12	23	5	21	13	42.13	25.17	16	3.7	4.5
1989	1	16	8	36	49	42.27	24.76	18	3.2	
1989	1	18	7	14	14	41.6	24.6	8	3.2	
1989	3	6	21	38	15	42.11	24.37	15	3.2	
1989	4	9	20	50	4	41.84	22.89	12	3.5	4
1989	4	10	1	34	3	41.88	22.91	8	3.6	
1989	4	23	23	56	19	41.92	23.57	4	3.2	
1989	6	3	16	37	36	41.96	23.27	12	3.7	
1989	7	8	15	48	18	41.28	23.18	15	3.4	
1989	10	25	15	27	43	43.05	26.7	17	4.4	6
1989	10	25	16	23	44	42.99	26.6	11	3.2	
1989	10	26	5	57	34	42.48	26.26	14	3.2	
1989	11	28	12	30	40	41.95	23	14	3.2	3.5
1989	12	6	13	5	14	42.07	24.83	12	3.4	5.5
1989	12	12	6	50	50	41.3	23.37	16	3.2	
1989	12	26	5	56	1	41.96	23.15	15	3.2	
1990	1	2	22	54	35	43.1	27.59	18	3.4	
1990	1	28	10	21	32	42.53	26.26	15	3.2	
1990	1	31	10	16	14	41.41	22.72	13	4.4	4
1990	1	31	19	40	25	41.41	22.71	13	3.3	
1990	2	3	22	50	21	41.44	22.79	0	3.2	
1990	3	3	20	39	25	42.94	27.72	16	3.4	
1990	3	11	17	54	6	41.89	23.31	12	3.4	
1990	3	16	19	21	55	41.42	22.73	10	3.5	
1990	3	22	7	15	49	41.95	23.07	15	3.4	4.5
1990	4	16	17	50	22	42.54	26.1	14	3.2	
1990	6	10	11	36	45	41.27	29.36	14	4.5	
1990	6	12	4	21	19	43.97	26.41	20	4.2	4.5
1990	6	23	14	33	40	41.7	23.79	11	3.2	
1990	7	11	14	54	36	41.94	23.79	12	3.7	
1990	7	12	2	19	54	43.93	24.61	12	3.2	
1990	7	16	7	5	7	41.4	22.72	12	3.4	
1990	7	28	9	28	27	41.94	23.13	19	3.5	
1990	9	10	18	28	10	42.25	25.39	5	3.7	
1990	9	18	22	59	4	41.95	23.14	16	3.5	3.5
1990	11	18	23	21	39	41.5	23.74	15	3.2	
1990	12	5	9	39	15	43.29	26.01	16	3.5	4.5
1990	12	21	6	57	43	41.01	22.3	13	6.1	
1990	12	21	8	0	58	41.03	22.43	14	3.7	
1991	1	16	14	45	28	41.35	23.28	10	3.2	
1991	1	25	3	23	31	42.95	28.07	12	3.2	

1991	2	6	10	45	10	41.93	23	12	3.4	
1991	2	9	8	56	40	42.37	23.62	17	3.8	4.5
1991	2	17	21	49	11	41.44	25.44	12	4.0	4.5
1991	3	15	11	38	46	41.77	22.93	2	3.2	
1991	5	31	11	17	52	41.7	23.83	18	3.7	
1991	6	11	16	16	41	43.3	26.11	7	3.4	
1991	6	17	14	46	35	43.03	22.83	15	3.5	
1991	6	23	19	10	40	41.25	23.38	14	3.3	
1991	6	29	22	27	22	41.87	22.89	13	3.7	
1991	7	3	15	33	14	41.98	23.4	11	3.3	
1991	7	23	11	55	33	41.77	23.09	12	3.8	
1991	8	15	4	58	58	41.02	22.02	15	4.2	
1991	8	22	8	38	49	41.26	23.68	17	3.4	
1991	8	24	20	10	41	41.08	22.08	17	3.6	
1991	9	8	16	57	18	41.12	22.47	10	3.2	
1991	9	11	9	3	27	42.23	25.46	16	3.4	
1991	9	17	5	25	16	41.96	23.15	16	3.7	
1991	10	1	3	6	31	43.87	26.62	2	3.2	
1991	10	10	6	10	4	42.17	25.09	16	3.3	
1991	10	17	3	12	47	41.15	24	14	3.8	
1991	10	18	3	12	47	41.17	23.99	16	3.8	
1991	10	25	18	5	21	41.27	23.29	11	4.1	
1991	11	8	9	40	22	41.28	23.67	5	3.4	
1992	1	13	5	58	0	43.25	26.01	7	3.5	4.5
1992	1	25	22	34	26	41.79	22.63	5	4.2	
1992	2	21	19	7	9	41.83	22.84	11	3.4	
1992	3	7	12	48	8	41.99	24.27	19	3.4	
1992	4	1	6	9	57	41.15	24.03	6	3.5	
1992	4	6	4	12	45	42.51	25.75	5	3.3	
1992	6	8	2	52	8	42.13	25.43	17	4.2	4.5
1992	6	10	4	5	10	42.33	23.99	13	4.0	
1992	7	7	7	47	3	41.32	22.48	2	3.5	
1992	7	24	4	34	51	41.97	25.57	10	3.3	
1992	8	17	13	23	26	42.52	26.29	8	3.4	
1992	8	24	21	43	47	42.47	24.9	20	4.3	4.5
1992	8	26	18	38	50	41.31	22.73	7	3.2	
1992	9	1	17	39	15	42.55	24.57	18	3.2	
1992	9	29	11	37	3	41.83	22.93	17	3.2	
1992	10	30	13	43	4	42.47	24.06	11	3.2	
1992	11	12	6	24	29	41.84	26.35	13	3.5	4
1992	11	21	22	26	8	43.27	26.87	15	3.3	
1992	11	23	2	19	59	43.2	26.8	4	3.7	4.5
1993	1	5	16	36	57	41.37	22.84	11	3.7	

1993	1	12	18	50	54	42.47	22.21	13	4.2	
1993	1	13	2	3	55	42.53	22.02	6	3.4	
1993	1	14	0	41	26	41.97	23.09	11	3.4	
1993	1	16	7	49	30	41.97	23.03	11	3.4	
1993	1	16	17	32	59	41.98	23.06	10	3.3	
1993	1	17	10	21	34	42.97	25.45	2	3.2	
1993	2	12	2	53	6	41.62	25.21	10	3.8	4.5
1993	3	27	23	47	9	41.15	23.08	12	4.3	4
1993	3	28	0	6	39	41.16	23.02	12	4.1	
1993	4	3	4	52	58	41.82	22.74	10	3.5	
1993	4	11	23	24	37	41.66	24.14	8	3.2	
1993	4	21	16	54	3	43.15	27.56	8	4.3	5.5
1993	5	22	5	4	42	41.46	23.12	14	3.7	
1993	5	24	14	14	31	41.86	22.9	20	3.5	
1993	6	10	15	19	3	41.83	22.31	8	3.5	
1993	9	2	2	3	54	41.14	25.92	2	3.3	
1993	9	7	11	56	47	43.16	27.31	20	3.7	
1993	10	11	23	18	5	41.94	23.06	10	3.3	
1993	11	13	19	36	57	41.91	22.71	14	3.3	
1993	12	16	9	22	16	41.53	23.13	11	4.3	5.5
1994	1	7	3	48	17	41.81	22.27	6	3.2	
1994	1	11	1	59	31	41.74	24.2	13	4.0	4
1994	3	21	21	42	26	42.09	23.49	10	4.3	
1994	4	7	20	32	16	41.94	23.14	19	3.3	
1994	4	24	18	17	6	41.63	24.06	17	3.3	
1994	5	23	12	23	17	41.96	23.2	18	4.0	
1994	5	23	12	25	18	41.99	23.29	4	3.6	
1994	5	25	23	46	53	41.91	24.46	11	3.5	
1994	7	15	9	28	29	44.25	26.94	2	3.3	
1994	7	16	3	9	20	41.02	26.96	10	3.4	
1994	8	3	3	52	8	41.94	23.1	10	3.8	
1994	8	23	6	47	48	42.75	28.7	8	3.3	
1994	10	31	1	42	39	42.33	22.04	11	3.8	
1994	11	5	17	29	3	41.12	23.34	12	3.9	
1994	11	5	18	51	13	41.07	23.28	4	3.2	
1994	11	17	23	45	51	42.51	23.63	4	3.3	
1994	11	26	19	22	13	41.79	25.27	13	3.5	
1994	11	29	10	18	41	42.16	25.19	13	3.9	4.5
1995	1	1	16	25	23	42.58	23.38	1	3.3	
1995	1	28	14	18	0	41.84	23.18	18	3.2	
1995	3	20	20	39	7	41.36	22.63	5	3.2	
1995	4	22	8	57	36	41.44	22.72	12	3.2	
1995	5	20	20	9	52	41.09	23.09	5	3.5	

1995	6	28	21	47	37	41.99	23.1	8	3.4	
1995	7	17	11	13	1	42.7	23.16	12	3.5	
1995	7	17	15	24	22	41.81	25.17	11	3.2	
1995	7	17	20	10	30	41.26	25.4	9	3.7	
1995	7	18	20	34	53	41.33	27.4	2	3.2	
1995	7	18	23	29	53	42.61	27.87	5	4.1	4.5
1995	7	20	19	20	8	43.95	26.68	6	3.4	
1995	7	28	2	49	9	43.57	22.21	2	3.7	
1995	8	17	4	38	12	41.96	23.31	5	3.5	
1995	8	20	0	56	31	41.08	27.31	5	3.3	
1995	8	23	9	27	17	42.02	24.9	5	3.5	
1995	8	29	1	1	3	41.93	24.49	16	3.2	
1995	9	8	3	51	40	41.69	24.03	14	3.4	
1995	12	14	16	25	23	42.61	23.37	10	3.5	
1995	12	28	1	17	34	41.94	23.11	17	3.2	
1996	2	1	17	43	55	41.72	23.81	14	4.5	
1996	2	2	5	11	49	42.76	24	11	3.4	
1996	4	20	19	56	51	42.7	23.58	8	3.9	
1996	6	2	12	46	30	41.29	24.1	11	3.3	
1996	9	25	9	18	53	41.83	22.84	8	3.4	
1996	11	15	0	5	6	42.05	22.46	10	3.2	
1996	11	18	4	19	32	42.03	22.45	12	3.2	
1996	12	29	8	21	51	42.89	29.6	5	3.6	
1997	1	19	4	12	18	42.44	26.14	11	3.4	
1997	3	18	7	57	28	41.64	23.76	19	3.7	
1997	4	2	16	10	39	42.05	26.58	10	3.2	
1997	4	4	8	31	29	41.7	23.82	10	3.8	
1997	4	19	21	0	46	43.42	28.56	18	3.8	
1997	5	6	7	5	56	41.7	23.86	12	3.2	
1997	5	13	19	15	58	41.22	23.71	10	4.0	
1997	6	13	8	20	26	41.24	24.56	9	3.8	
1997	6	13	16	13	10	41.83	23.54	7	3.5	
1997	6	27	8	35	11	42.03	23.49	15	3.5	
1997	7	1	4	27	43	42.02	23.48	2	3.7	
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1997	8	5	19	34	2	41.85	23.53	3	3.4	
1997	8	5	19	50	27	41.86	23.54	5	3.5	
1997	8	7	22	38	13	42.11	24.08	13	3.2	

1997	8	8	10	36	16	43.12	27.48	11	4.0
1997	8	13	10	44	47	42.73	23.14	11	3.5
1997	8	19	0	48	5	41.82	23.32	8	3.3
1997	9	22	7	7	18	41.23	23.2	10	3.7
1997	10	3	0	20	19	42.03	23.52	2	3.3
1997	10	24	20	55	2	41.66	22.35	3	3.4
1997	10	29	4	8	17	42.03	23.48	13	3.8
1997	11	15	9	25	38	42.05	23.48	0	3.2
1997	11	15	12	48	52	42.02	23.49	4	3.6
1997	11	18	22	55	6	42.03	23.48	4	3.7
1997	11	20	8	46	47	42.02	23.45	6	3.7
1997	11	25	0	31	50	42.04	23.47	7	3.7
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1998	2	4	2	18	12	41.11	23.8	9	3.5
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1998	3	26	20	38	0	41.29	22.73	4	3.2
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1998	7	6	23	10	9	41.93	22.07	11	3.4
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1998	7	28	7	26	39	41.1	23.82	10	3.9
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1998	9	2	11	39	11	41.02	24.06	6	3.4
1998	9	2	11	42	46	41.12	24.06	10	3.4
1998	9	10	16	57	37	41.87	23.53	20	3.2
1998	10	2	21	22	5	42.13	23.65	3	3.2
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1998	11	25	23	38	17	41.22	29.91	15	3.4

1998	12	6	11	4	56	43.29	28.61	13	3.2	5.5
1998	12	10	8	3	56	41.8	22.89	10	3.3	
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1999	1	3	7	33	32	41.89	22.02	9	4.0	
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1999	1	23	5	1	39	42.04	23.49	5	3.8	
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2000	10	25	23	7	12	42.86	22.81	10	3.6	
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2000	11	29	13	45	8	41.07	23.29	2	3.6	
2000	12	5	12	38	30	43.11	27.54	6	3.5	
2000	12	6	12	21	18	41.31	23.54	16	3.4	
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2000	12	27	18	31	18	41.95	23.19	8	3.2	
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2001	4	12	22	29	22	42.76	28.11	12	3.9	
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2001	5	23	7	23	4	41.8	22.82	2	3.2	
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2001	7	16	11	51	27	42.74	23.73	11	3.4	
2001	7	26	17	52	2	41.38	23.59	14	3.2	
2001	7	29	20	10	29	43.98	26.7	2	3.3	
2001	8	8	0	58	16	42.55	26.48	15	4.1	5
2001	8	9	1	44	2	42.65	26.39	5	3.8	
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2001	8	15	19	7	56	41.69	28.23	10	3.3	
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2001	10	3	9	42	11	42.57	26.51	14	3.3	
2002	2	4	19	45	42	42.12	23.39	2	3.2	
2002	2	18	10	19	19	42.03	23.33	10	4.4	5
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2002	3	8	13	31	26	41.05	23.42	5	3.9	

2002	3	18	17	2	35	42.76	28.1	18	3.5	
2002	3	27	8	28	38	41.13	24.59	9	3.3	
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2002	11	17	3	15	12	41.82	25.47	14	3.3	
2002	11	18	10	54	37	41.81	25.44	14	3.4	
2003	1	14	8	3	8	41.15	24.5	7	3.9	
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2003	11	15	14	11	8	42.09	24.87	13	3.4	
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2004	4	26	2	10	46	42.14	25.98	15	3.3	
2004	4	26	11	58	12	41.98	23.22	5	3.3	
2004	4	26	13	22	21	41.92	23.23	16	3.8	
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2004	6	12	0	10	34	42.36	22.47	20	3.8	
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2005	7	6	23	26	22	41.08	26.72	20	3.2	
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2005	10	16	7	1	12	41.81	22.64	9	3.5
2005	10	19	8	54	37	41.88	24.05	11	3.7
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2006	2	16	5	47	22	41.87	22.02	10	3.5
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2006	2	20	17	22	55	41.69	25.51	2	3.5
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2006	2	24	10	36	40	41.72	25.47	20	3.3
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2006	3	14	8	6	48	41.7	25.45	12	3.7
2006	3	14	8	39	4	41.72	25.45	10	3.5
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2006	4	27	12	38	14	42.57	23.37	2	3.2
2006	5	3	19	40	34	41.96	23.19	5	3.5
2006	5	5	19	44	35	41.96	23.18	8	3.4
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2013	7	27	3	21	55	41.95	23.24	2	3.9	
2013	7	27	3	51	22	41.96	23.25	6	3.2	
2013	8	9	19	55	17	43.93	26.98	20	3.5	
2013	8	13	6	14	35	43.13	27.45	5	3.9	4.5
2013	8	14	12	52	55	42.99	23.63	12	3.7	
2013	8	28	6	48	50	41.62	24.05	13	3.6	
2013	8	28	8	43	43	41.6	24.05	15	3.6	
2013	8	29	4	6	16	44.06	25.87	20	3.9	
2013	9	8	18	8	1	41.66	23.95	13	3.2	
2013	9	10	18	56	39	43.01	23.59	10	3.3	
2013	9	10	19	28	49	41.65	25.29	14	3.6	
2013	9	20	10	48	11	41.84	22.86	20	3.2	
2013	9	22	12	27	1	42.39	23.67	15	3.8	
2013	10	14	21	44	7	41.79	22.76	8	3.2	
2013	10	26	11	44	20	43.41	27.69	15	3.3	
2013	11	19	16	50	54	41.62	24.65	17	3.2	
2013	12	10	2	35	38	41.28	22.48	12	3.4	
2014	1	3	11	33	34	41.28	22.74	5	3.4	
2014	1	14	15	44	2	41.91	24.53	17	3.3	
2014	1	16	2	1	10	42.22	26.24	20	3.2	
2014	1	29	5	5	11	41.92	24.54	20	3.6	
2014	1	30	9	23	39	42.41	23.81	11	3.2	
2014	2	5	1	56	44	41.42	28.64	26	3.6	
2014	2	20	15	12	0	41.69	23.83	2	3.5	
2014	2	28	15	35	15	41.14	25.6	8	3.4	
2014	3	4	0	49	12	42.41	23.82	9	3.2	
2014	3	11	18	50	48	43.12	22.04	4	3.7	

2014	3	16	23	44	37	41.15	24.47	12	3.3	
2014	3	28	4	41	45	42.16	23.58	8	3.4	
2014	4	5	3	36	48	41.82	22.83	11	3.4	
2014	4	19	16	2	51	42.17	25.16	13	3.4	
2014	5	26	20	39	12	41.51	24.93	16	3.7	
2014	6	24	19	39	53	43.85	24.51	28	4.3	4
2014	7	8	17	4	28	41.18	23.13	9	3.2	
2014	8	21	4	28	16	41.68	24.23	6	4.1	
2014	10	1	9	47	55	41.1	23.32	10	3.2	
2014	10	5	9	45	2	41.04	24.29	8	3.3	
2014	10	10	20	21	40	42.2	25.28	9	3.4	
2014	11	5	11	0	44	41.84	25.15	11	3.2	
2014	11	7	7	42	9	41.04	23.4	6	3.2	
2014	11	20	12	13	25	41.96	23.17	14	3.4	
2015	1	2	5	50	54	41.21	23.98	9	3.5	
2015	1	14	3	10	54	41.21	25.79	2	3.3	
2015	2	5	6	16	45	42.75	26.08	12	4.2	4
2015	3	24	20	37	50	41.97	23.26	14	3.2	
2015	3	28	17	29	2	41.3	22.69	10	3.8	
2015	3	28	19	0	30	41.3	22.74	15	3.6	
2015	4	2	2	24	10	42.25	26.23	11	3.2	
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2015	4	2	2	29	36	42.24	26.24	8	3.2	
2015	4	29	4	40	56	42.18	29.02	20	4.1	
2015	6	7	1	37	47	42.18	25.2	15	3.4	
2015	7	5	4	20	26	41.19	24.89	12	3.4	
2015	7	15	8	30	37	43.34	28.37	28	4.2	4.5
2015	7	16	3	33	42	41.96	23.27	10	3.4	
2015	7	16	10	13	4	42.66	26.29	10	3.4	
2015	7	24	15	42	34	41.33	24.46	10	3.4	
2015	7	28	1	3	47	41.27	24.47	13	3.5	
2015	7	30	9	32	23	42.26	24.88	15	3.2	
2015	8	5	13	53	42	41.78	22.8	7	3.2	
2015	8	16	9	39	5	41.42	22.46	16	3.3	
2015	8	29	12	47	55	41	27.64	10	3.6	
2015	10	5	0	40	13	42.76	23.71	15	3.3	
2015	10	10	17	6	51	41.63	23.8	18	3.2	
2015	10	20	22	40	28	41.6	24.01	12	3.3	
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2015	11	21	0	42	35	41.16	22.32	2	3.6	
2015	12	4	23	4	16	41.29	24.48	10	3.2	
2015	12	15	1	13	39	42.43	29.52	21	3.8	

2016	1	27	21	31	0	43.35	28.59	13	3.6	
2016	2	2	12	10	45	41.38	22.68	8	3.5	
2016	2	28	11	17	17	41.46	22.84	12	4.1	4
2016	3	2	23	44	50	41.28	24.47	13	3.4	
2016	4	1	19	51	12	42.55	25.75	17	3.4	
2016	4	18	6	46	14	42.51	26.03	12	4.3	6
2016	5	6	2	46	50	41.78	22.78	12	3.4	
2016	5	13	14	6	12	43.51	29.99	6	3.5	
2016	5	22	8	58	30	41.6	23.27	21	4.5	5.5
2016	5	30	21	52	12	41.15	24.65	10	3.2	
2016	6	19	5	54	18	41.39	23.22	20	3.2	
2016	7	11	22	18	51	41.15	23.76	9	4.0	
2016	7	12	0	1	47	41.14	23.76	9	3.9	
2016	9	18	8	28	13	41.34	23.36	15	3.6	
2016	9	18	10	26	45	41.3	23.33	13	4.0	
2016	9	24	22	4	23	41.83	22.65	2	3.2	
2016	9	29	8	41	32	41.12	23.36	2	3.2	
2016	10	17	13	2	33	41.29	22.7	8	3.8	
2016	11	10	4	40	27	41.47	23.17	16	3.5	
2016	11	16	7	38	50	41.01	22.79	14	3.7	
2016	11	16	9	15	14	41.01	22.73	19	4.3	
2016	11	19	1	44	20	41.01	22.76	3	3.5	
2016	11	21	8	42	33	41.02	22.64	6	3.2	
2016	11	22	3	47	31	41.02	22.65	2	3.3	
2016	11	24	1	25	38	41.03	22.75	22	3.8	
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2016	12	15	4	4	39	41.61	23.51	18	3.3	
2017	1	3	22	2	32	43.2	25.83	16	3.8	4.5
2017	3	15	11	20	43	41.95	23.26	13	3.3	3
2017	3	24	17	40	27	42.41	23.52	13	3.2	4.5
2017	4	29	0	7	44	41.34	22.72	3	3.2	
2017	7	29	3	31	39	41.02	22.75	18	3.6	
2017	8	19	13	19	36	43.29	26.08	14	3.2	
2017	8	27	22	12	48	41.06	22.48	10	3.3	
2017	9	14	1	53	18	42.58	23.03	13	3.5	4
2017	10	4	12	53	24	41.83	22.83	10	3.4	
2017	10	19	8	0	47	41.82	22.86	20	3.2	
2017	10	19	8	27	21	41.83	22.9	20	3.4	
2017	11	10	23	51	5	41.04	22.78	2	3.2	
2017	11	11	4	54	5	42.9	23.43	17	4.0	5
2017	11	24	12	12	59	43.33	27.01	13	3.2	
2017	11	24	17	26	50	41.66	24.6	13	3.5	4.5
2017	11	26	19	1	31	42.7	24.4	14	4.1	5

2017	12	7	23	50	14	42.19	25.19	14	3.2	
2017	12	8	4	5	57	41.42	23.4	15	3.9	
2017	12	18	17	51	11	41.66	23.99	20	3.5	
2017	12	29	23	9	19	41.82	22.83	11	3.2	
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2018	1	1	22	19	12	41.21	22.86	11	3.7	
2018	1	1	23	0	46	41.24	22.86	12	4.0	
2018	1	2	4	24	16	41.18	22.82	9	5.1	5
2018	1	2	4	28	41	41.2	22.79	9	4.0	
2018	1	2	15	40	14	41.22	22.84	11	3.4	
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2018	1	16	3	47	55	41.25	22.86	20	3.3	
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2018	2	21	23	41	58	42.07	24.91	14	4.7	5
2018	2	22	8	3	42	41.24	22.89	10	3.2	
2018	2	22	23	15	4	42.05	24.89	14	3.8	4
2018	3	7	22	13	38	43.14	27.48	9	3.7	4.5
2018	3	25	15	1	59	41.64	26.79	16	3.7	
2018	4	2	19	23	22	41.2	23.75	12	3.4	
2018	4	10	9	49	22	42.1	29.31	52	3.6	
2018	4	26	0	45	2	42.75	29.88	20	3.6	
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2018	5	12	6	30	51	42.16	25.17	15	3.5	4
2018	6	6	7	38	40	41.63	23.68	15	3.2	
2018	6	18	9	0	29	41.79	23.74	18	3.5	4
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2018	8	2	15	2	58	41.68	23.62	7	3.3	
2018	8	25	10	3	33	41.94	23.13	15	3.2	
2018	8	30	0	10	40	41.39	22.7	10	3.4	
2018	11	17	12	9	27	41.05	23.44	11	4.1	
2018	11	19	14	35	20	42.49	23.53	15	3.3	
2018	11	30	13	18	43	41.03	23.46	9	3.2	
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2019	2	9	20	59	18	41.23	24.73	9	3.4	
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2019	3	19	3	30	33	41.13	23.34	11	3.6	

2019	3	25	0	27	53	41.95	23.28	20	3.2	
2019	4	25	1	11	53	41.02	22.69	16	3.2	
2019	4	30	18	22	35	43.16	27.47	5	3.6	4.5
2019	5	24	8	48	13	42.12	25.74	17	3.3	
2019	5	24	17	29	44	41.81	22.81	11	3.3	
2019	6	9	2	26	50	41.79	23.76	10	3.3	
2019	7	15	13	50	19	41.83	22.86	8	3.2	
2019	7	16	19	17	30	41.36	22.71	8	3.4	
2019	8	6	17	56	56	42.53	24.41	20	3.2	3.5
2019	8	10	6	39	40	41.95	26.43	20	3.5	4
2019	9	22	12	13	22	41.63	25.34	13	3.6	4
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2019	12	29	17	36	52	41.96	23.47	17	3.8	4
2019	12	30	18	1	40	42.17	23.55	12	4.4	4.5