

Table S1. Centroid-moment-tensor solutions for 110 earthquakes occurring in the Western Gulf of Aden, 11/2010-4/2011.

No.	Date		Centroid Parameters							Depth**	Drtn	Half Scale Factor	M ₀	Elements of Moment Tensor							
			Time		Latitude		Longitude		M _{TT}					M _{BB}	M _{SS}	M _{FB}	M _{BS}	M _{SS}			
			Y	M	D	h	m	sec											δt_0	λ	$\delta \lambda_0$
1	2010	11	13	18	26	55.9 ± 0.5	0.2	12.06 ± 0.04	0.24	44.14 ± 0.06	0.18	12.0	0.5	16	0.8	-0.71 ± 0.07	0.61 ± 0.04	0.10 ± 0.06	-0.13 ± 0.15	0.32 ± 0.21	-0.30 ± 0.05
2	2010	11	14	6	32	28.4 ± 0.1	0.4	12.03 ± 0.01	0.05	44.21 ± 0.01	0.25	12.0	1.9	17	1.8	-1.57 ± 0.03	1.65 ± 0.03	-0.07 ± 0.03	-0.49 ± 0.07	-0.28 ± 0.08	-0.47 ± 0.03
3	2010	11	14	6	46	9.2 ± 0.3	0.8	12.06 ± 0.02	0.16	44.10 ± 0.04	0.05	12.0	1.0	16	3.3	-3.27 ± 0.15	2.56 ± 0.11	0.71 ± 0.15	-0.04 ± 0.42	0.91 ± 0.66	-1.23 ± 0.11
4	2010	11	14	6	58	21.5 ± 0.5	1.2	12.15 ± 0.04	0.47	44.11 ± 0.07	-0.01	12.0	1.0	16	2.1	-1.64 ± 0.15	1.51 ± 0.11	0.13 ± 0.16	0.98 ± 0.41	0.93 ± 0.56	-0.60 ± 0.11
5	2010	11	14	7	8	32.8 ± 0.3	0.6	12.03 ± 0.02	0.23	44.23 ± 0.03	0.28	12.0	1.1	16	4.9	-4.69 ± 0.21	4.70 ± 0.15	-0.02 ± 0.19	-0.14 ± 0.52	-0.33 ± 0.75	-1.31 ± 0.15
6	2010	11	14	7	27	35.7 ± 0.4	1.7	12.06 ± 0.02	0.14	44.36 ± 0.05	0.39	12.0	1.2	16	2.9	-2.40 ± 0.17	2.66 ± 0.12	-0.25 ± 0.18	0.05 ± 0.43	-1.29 ± 0.62	-0.56 ± 0.13
7	2010	11	14	7	31	17.0 ± 0.4	-3.0	12.06 ± 0.03	-0.19	44.21 ± 0.06	-0.04	12.0	1.3	16	2.2	-1.94 ± 0.18	1.93 ± 0.11	0.01 ± 0.16	0.16 ± 0.36	0.91 ± 0.59	-0.66 ± 0.11
8	2010	11	14	7	38	34.3 ± 0.2	1.1	12.01 ± 0.01	0.08	44.24 ± 0.02	0.25	12.0	1.2	17	0.8	-0.72 ± 0.02	0.69 ± 0.02	0.03 ± 0.02	-0.20 ± 0.05	-0.12 ± 0.07	-0.22 ± 0.02
9	2010	11	14	8	0	3.8 ± 0.5	9.3	12.10 ± 0.04	0.20	44.12 ± 0.07	-0.01	12.0	1.0	16	1.6	-1.62 ± 0.13	1.24 ± 0.09	0.37 ± 0.13	-0.02 ± 0.38	0.44 ± 0.52	-0.50 ± 0.09
10	2010	11	14	8	8	40.0 ± 0.3	0.5	12.08 ± 0.02	0.30	44.16 ± 0.05	0.17	12.0	1.0	16	2.2	-1.87 ± 0.12	1.57 ± 0.09	0.30 ± 0.11	0.50 ± 0.28	1.09 ± 0.44	-0.71 ± 0.08
11	2010	11	14	8	21	21.5 ± 0.2	-0.2	12.02 ± 0.01	-0.01	44.24 ± 0.02	0.28	12.0	1.3	17	1.0	-0.92 ± 0.02	0.93 ± 0.02	-0.01 ± 0.02	-0.34 ± 0.05	-0.30 ± 0.07	-0.21 ± 0.02
12	2010	11	14	8	30	19.9 ± 0.4	-2.3	12.10 ± 0.03	0.17	44.30 ± 0.06	0.27	12.0	1.0	16	2.1	-2.07 ± 0.15	1.84 ± 0.10	0.23 ± 0.15	0.37 ± 0.39	-0.26 ± 0.57	-0.71 ± 0.11
13	2010	11	14	8	59	21.4 ± 0.3	1.4	12.07 ± 0.02	-0.18	44.23 ± 0.04	-0.02	12.0	1.3	16	3.1	-2.99 ± 0.12	2.55 ± 0.09	0.44 ± 0.11	0.82 ± 0.31	-0.90 ± 0.48	-0.68 ± 0.09
14	2010	11	14	9	5	55.5 ± 0.4	-1.7	12.09 ± 0.02	0.29	44.18 ± 0.05	0.14	12.0	1.0	16	1.6	-0.60 ± 0.11	1.42 ± 0.07	-0.82 ± 0.10	0.19 ± 0.25	1.00 ± 0.36	0.18 ± 0.10
15	2010	11	14	9	17	51.0 ± 0.4	-0.1	12.10 ± 0.04	0.19	44.13 ± 0.05	0.14	12.0	1.2	16	1.6	-1.59 ± 0.12	1.22 ± 0.08	0.37 ± 0.12	-0.20 ± 0.35	0.59 ± 0.59	-0.53 ± 0.08
16	2010	11	14	9	23	25.8 ± 0.4	-0.9	12.08 ± 0.03	0.07	44.29 ± 0.06	0.29	12.0	1.1	16	1.8	-1.74 ± 0.12	1.52 ± 0.08	0.22 ± 0.14	0.40 ± 0.37	0.48 ± 0.44	-0.27 ± 0.08
17	2010	11	14	9	49	23.5 ± 0.4	-0.1	12.09 ± 0.03	0.15	44.06 ± 0.05	0.22	12.0	1.0	16	1.5	-1.46 ± 0.10	1.09 ± 0.06	0.37 ± 0.09	0.06 ± 0.25	0.29 ± 0.37	-0.64 ± 0.07
*18	2010	11	14	10	34	25.7 ± 0.8	-0.8	12.04 ± 0.04	0.19	44.23 ± 0.06	0.13	12.0	1.1	16	1.7	-1.69 ± 0.20	1.64 ± 0.15	0.05 ± 0.18			-0.36 ± 0.16
19	2010	11	14	10	37	43.6 ± 0.2	-3.8	12.07 ± 0.01	0.13	44.23 ± 0.02	0.26	12.0	1.3	17	0.9	-0.91 ± 0.02	0.86 ± 0.01	0.04 ± 0.02	0.00 ± 0.06	-0.11 ± 0.09	-0.23 ± 0.01
20	2010	11	14	11	14	12.7 ± 0.4	0.2	12.03 ± 0.04	0.25	44.19 ± 0.06	0.17	12.0	1.0	16	1.3	-1.41 ± 0.09	1.07 ± 0.07	0.34 ± 0.10	0.09 ± 0.31	0.27 ± 0.40	-0.37 ± 0.07
21	2010	11	14	11	30	16.1 ± 0.3	-2.1	12.09 ± 0.02	-0.01	44.10 ± 0.05	0.15	12.0	1.2	16	2.4	-2.29 ± 0.12	2.16 ± 0.08	0.13 ± 0.11	0.43 ± 0.29	0.01 ± 0.50	-0.69 ± 0.09
*22	2010	11	14	12	0	43.9 ± 0.7	-3.1	12.03 ± 0.05	0.22	44.32 ± 0.12	0.33	12.0	1.0	15	7.0	-6.71 ± 0.83	5.77 ± 0.48	0.95 ± 0.90	0.31 ± 2.06	3.54 ± 3.78	-0.35 ± 0.65
*23	2010	11	14	12	10	11.7 ± 0.4	-2.3	12.10 ± 0.02	0.27	44.30 ± 0.03	0.42	12.0	1.0	16	1.4	-1.50 ± 0.10	1.35 ± 0.06	0.15 ± 0.09			-0.08 ± 0.07
24	2010	11	14	12	17	15.1 ± 0.2	-0.7	12.09 ± 0.02	0.26	44.16 ± 0.03	0.31	12.0	1.1	16	3.2	-3.23 ± 0.11	2.89 ± 0.08	0.34 ± 0.11	-0.32 ± 0.30	-0.72 ± 0.38	-0.57 ± 0.08
25	2010	11	14	12	39	5.0 ± 0.2	9.7	12.09 ± 0.01	0.36	44.18 ± 0.03	0.24	12.0	1.1	16	4.2	-4.23 ± 0.13	3.88 ± 0.10	0.34 ± 0.12	-0.17 ± 0.39	-0.82 ± 0.60	-0.78 ± 0.10
26	2010	11	14	12	41	47.4 ± 0.4	-1.2	12.12 ± 0.02	0.16	44.13 ± 0.05	0.23	12.0	1.0	16	2.7	-2.83 ± 0.13	2.35 ± 0.10	0.48 ± 0.12	-0.18 ± 0.39	0.37 ± 0.57	-0.72 ± 0.11
27	2010	11	14	12	49	57.4 ± 0.2	1.3	12.06 ± 0.01	0.20	43.94 ± 0.03	0.18	12.0	1.1	16	4.1	-3.77 ± 0.14	3.40 ± 0.10	0.37 ± 0.13	0.06 ± 0.35	1.12 ± 0.56	-1.70 ± 0.10
*28	2010	11	14	13	19	53.3 ± 0.4	1.3	12.12 ± 0.03	-0.13	44.01 ± 0.05	-0.24	12.0	1.1	16	1.2	-1.01 ± 0.07	0.81 ± 0.05	0.20 ± 0.06	0.39 ± 0.17	0.67 ± 0.23	-0.32 ± 0.05
29	2010	11	14	13	50	5.4 ± 0.2	1.9	12.04 ± 0.01	0.11	43.95 ± 0.02	0.01	12.0	1.3	17	0.8	-0.65 ± 0.02	0.65 ± 0.01	0.00 ± 0.02	-0.20 ± 0.05	0.10 ± 0.06	-0.38 ± 0.02
30	2010	11	14	14	4	37.5 ± 0.2	6.7	12.08 ± 0.01	0.11	44.19 ± 0.02	0.26	12.0	1.3	16	6.9	-6.56 ± 0.18	6.10 ± 0.14	0.46 ± 0.17	-1.28 ± 0.49	-2.42 ± 0.66	-0.92 ± 0.13
31	2010	11	14	14	27	42.0 ± 0.3	-0.6	12.00 ± 0.02	0.22	43.93 ± 0.03	0.26	12.0	1.2	16	4.9	-4.18 ± 0.22	4.23 ± 0.16	-0.06 ± 0.22	-1.56 ± 0.52	0.64 ± 0.67	-2.09 ± 0.16
32	2010	11	14	14	33	20.0 ± 0.2	0.8	12.04 ± 0.01	0.09	43.98 ± 0.02	0.17	12.0	1.7	17	1.3	-0.85 ± 0.04	1.43 ± 0.02	-0.59 ± 0.03	0.18 ± 0.09	0.33 ± 0.12	-0.26 ± 0.03
*33	2010	11	14	14	41	46.8 ± 0.4	-2.1	12.17 ± 0.03	0.21	44.35 ± 0.07	0.48	12.0	1.0	16	2.3	-1.70 ± 0.15	1.57 ± 0.10	0.13 ± 0.16	1.09 ± 0.42	-1.26 ± 0.56	-0.18 ± 0.12
34	2010	11	14	14	55	27.4 ± 0.1	1.6	12.01 ± 0.01	-0.03	43.96 ± 0.02	0.16	12.0	1.4	17	1.4	-1.18 ± 0.03	1.18 ± 0.02	0.00 ± 0.03	-0.44 ± 0.07	-0.12 ± 0.09	-0.52 ± 0.02
35	2010	11	14	15	6	30.9 ± 0.2	0.3	12.03 ± 0.01	0.12	43.91 ± 0.02	0.27	12.0	1.7	17	0.9	-0.82 ± 0.02	0.79 ± 0.02	0.03 ± 0.02	-0.17 ± 0.06	0.08 ± 0.10	-0.32 ± 0.02
36	2010	11	14	15	15	5.7 ± 0.3	-0.4	12.06 ± 0.02	-0.04	43.93 ± 0.04	0.18	12.0	1.1	16	2.7	-2.39 ± 0.14	2.19 ± 0.09	0.20 ± 0.12	0.18 ± 0.31	0.95 ± 0.50	-1.02 ± 0.09
37	2010	11	14	15	27	13.2 ± 0.3	0.1	12.05 ± 0.02	0.29	43.84 ± 0.04	0.13	12.0	1.0	16	2.4	-2.03 ± 0.11	2.18 ± 0.07	-0.15 ± 0.10	0.30 ± 0.25	0.86 ± 0.42	-0.66 ± 0.08
38	2010	11	14	15	37	1.8 ± 0.4	1.8	12.01 ± 0.03	0.13	43.98 ± 0.05	0.21	12.0	1.1	16	1.2	-1.17 ± 0.08	0.84 ± 0.06	0.33 ± 0.07	-0.26 ± 0.21	0.16 ± 0.28	-0.50 ± 0.06
39	2010	11	14	16	33	18.8 ± 0.2	0.5	12.03 ± 0.01	0.14	43.91 ± 0.03	0.25	12.0	1.1	16	3.7	-3.50 ± 0.11	3.29 ± 0.08	0.22 ± 0.10	-0.92 ± 0.29	-0.73 ± 0.42	-0.75 ± 0.09
40	2010	11	14	16	46	13.7 ± 0.5	-0.7	12.08 ± 0.03	0.27	44.31 ± 0.08	0.37	12.0	1.0	16	1.0	-0.92 ± 0.08	0.85 ± 0.05	0.08 ± 0.07	0.24 ± 0.21	-0.27 ± 0.30	-0.14 ± 0.06

* Indicates less-well-constrained event (see text).

** All depths fixed to 12.0 kilometers

Table S1 (continued)

No.	Date		Centroid Parameters						Half Drtn	Scale Factor	M ₀	Elements of Moment Tensor									
			Time		Latitude		Longitude					Depth**	Elements of Moment Tensor								
			Y	M	D	h	m	sec					δt_0	λ	$\delta \lambda_0$	ϕ	$\delta \phi_0$	h	M _{TT}	M _{BB}	M _{BB}
41	2010	11	14	17	2	54.8 ± 0.2	7.1	11.98 ± 0.01	0.12	43.92 ± 0.02	0.20	12.0	1.9	17	2.1	-1.86 ± 0.05	1.88 ± 0.04	-0.03 ± 0.05	-0.41 ± 0.12	-0.33 ± 0.15	-0.69 ± 0.04
42	2010	11	14	17	17	8.0 ± 0.2	0.2	12.03 ± 0.01	0.16	43.91 ± 0.02	0.17	12.0	1.0	16	6.6	-6.33 ± 0.17	5.93 ± 0.13	0.40 ± 0.16	-0.84 ± 0.49	-1.16 ± 0.68	-1.85 ± 0.12
43	2010	11	14	17	39	29.1 ± 0.2	11.6	12.06 ± 0.01	0.20	44.16 ± 0.02	0.18	12.0	1.2	17	0.7	-0.71 ± 0.02	0.67 ± 0.01	0.04 ± 0.02	-0.07 ± 0.04	-0.24 ± 0.05	-0.11 ± 0.01
44	2010	11	14	18	54	28.4 ± 0.3	-0.3	12.09 ± 0.02	0.08	44.04 ± 0.03	0.02	12.0	1.1	16	2.7	-2.37 ± 0.10	1.65 ± 0.07	0.72 ± 0.09	-0.23 ± 0.24	1.57 ± 0.36	-0.76 ± 0.08
45	2010	11	14	19	15	44.4 ± 0.2	-0.4	12.07 ± 0.01	0.09	44.23 ± 0.02	0.31	12.0	1.3	16	4.1	-3.60 ± 0.12	3.49 ± 0.09	0.11 ± 0.12	-0.61 ± 0.29	-1.80 ± 0.40	-1.00 ± 0.09
46	2010	11	14	20	18	3.0 ± 0.2	-0.2	12.02 ± 0.01	0.10	43.93 ± 0.02	0.31	12.0	1.2	16	6.0	-5.69 ± 0.17	5.79 ± 0.11	-0.10 ± 0.15	-0.55 ± 0.39	-0.84 ± 0.65	-1.32 ± 0.11
47	2010	11	14	20	19	45.4 ± 0.5	-1.1	12.10 ± 0.03	0.26	44.32 ± 0.07	0.24	12.0	1.2	16	2.1	-2.20 ± 0.17	1.80 ± 0.11	0.39 ± 0.15	0.26 ± 0.42	-0.20 ± 0.61	-0.43 ± 0.11
48	2010	11	14	21	14	45.1 ± 0.2	0.3	12.01 ± 0.01	0.25	43.84 ± 0.03	0.11	12.0	1.2	16	2.4	-2.19 ± 0.10	2.30 ± 0.06	-0.11 ± 0.10	-0.24 ± 0.22	0.56 ± 0.36	-0.64 ± 0.07
49	2010	11	14	21	29	6.2 ± 0.3	0.7	12.11 ± 0.02	0.30	44.14 ± 0.04	0.20	12.0	1.1	16	2.0	-2.01 ± 0.09	1.70 ± 0.06	0.32 ± 0.08	-0.10 ± 0.25	-0.10 ± 0.34	-0.56 ± 0.06
50	2010	11	14	22	22	31.2 ± 0.1	1.1	11.98 ± 0.01	0.07	43.90 ± 0.01	0.32	12.0	1.5	17	1.3	-1.11 ± 0.02	1.11 ± 0.02	0.00 ± 0.02	-0.42 ± 0.05	-0.33 ± 0.07	-0.26 ± 0.02
51	2010	11	14	22	41	49.4 ± 0.5	-2.6	12.11 ± 0.03	-0.14	44.31 ± 0.10	0.56	12.0	1.1	16	0.8	-0.70 ± 0.07	0.69 ± 0.04	0.01 ± 0.07	0.20 ± 0.19	-0.35 ± 0.32	-0.06 ± 0.06
52	2010	11	14	23	25	35.4 ± 0.2	0.6	12.10 ± 0.01	-0.02	44.19 ± 0.02	0.18	12.0	1.2	16	5.9	-5.55 ± 0.13	4.97 ± 0.10	0.58 ± 0.12	-0.31 ± 0.32	-2.45 ± 0.43	-1.18 ± 0.10
53	2010	11	15	0	6	8.0 ± 0.4	1.9	12.09 ± 0.02	0.18	44.22 ± 0.05	0.40	12.0	1.1	16	2.0	-1.81 ± 0.12	1.87 ± 0.07	-0.06 ± 0.12	0.41 ± 0.24	-0.54 ± 0.42	0.09 ± 0.09
54	2010	11	15	3	44	3.8 ± 0.4	-1.4	12.15 ± 0.02	0.16	44.06 ± 0.03	0.38	12.0	1.0	16	0.8	-0.27 ± 0.06	0.85 ± 0.04	-0.58 ± 0.05	0.29 ± 0.12	0.16 ± 0.15	0.10 ± 0.04
55	2010	11	15	5	44	51.0 ± 0.4	3.0	12.04 ± 0.03	-0.21	43.74 ± 0.06	-0.01	12.0	1.1	16	1.0	-0.98 ± 0.08	0.86 ± 0.05	0.12 ± 0.09	0.12 ± 0.20	0.28 ± 0.27	-0.26 ± 0.06
56	2010	11	15	7	9	6.3 ± 0.5	-1.0	12.07 ± 0.04	0.13	44.25 ± 0.08	0.37	12.0	1.0	16	0.7	-0.76 ± 0.06	0.61 ± 0.04	0.15 ± 0.06	-0.17 ± 0.21	-0.19 ± 0.29	-0.07 ± 0.04
57	2010	11	15	7	36	8.6 ± 0.3	1.7	12.09 ± 0.02	0.16	44.23 ± 0.03	0.23	12.0	1.3	16	2.5	-2.48 ± 0.09	2.10 ± 0.07	0.39 ± 0.09	-0.10 ± 0.23	-0.47 ± 0.35	-0.77 ± 0.06
58	2010	11	15	11	12	21.7 ± 0.2	2.0	11.97 ± 0.01	0.20	43.79 ± 0.03	0.32	12.0	1.0	16	2.6	-2.24 ± 0.10	2.47 ± 0.07	-0.22 ± 0.10	-0.44 ± 0.20	-0.18 ± 0.37	-1.11 ± 0.07
59	2010	11	15	13	37	48.9 ± 0.3	-0.9	12.06 ± 0.02	0.05	44.22 ± 0.03	0.27	12.0	1.0	16	2.6	-2.42 ± 0.10	2.06 ± 0.07	0.36 ± 0.10	-1.04 ± 0.27	-0.26 ± 0.31	-0.75 ± 0.07
*60	2010	11	15	13	44	54.2 ± 0.5	1.3	12.01 ± 0.04	0.25	44.44 ± 0.08	0.53	12.0	1.0	16	1.0	-0.81 ± 0.08	0.78 ± 0.06	0.03 ± 0.08	-0.13 ± 0.22	-0.62 ± 0.33	-0.14 ± 0.07
61	2010	11	15	17	54	2.7 ± 0.4	-2.6	12.08 ± 0.04	0.13	44.11 ± 0.05	0.17	12.0	1.0	16	0.9	-0.86 ± 0.06	0.59 ± 0.04	0.27 ± 0.06	0.02 ± 0.18	0.49 ± 0.19	-0.20 ± 0.04
62	2010	11	15	18	37	1.8 ± 0.3	-0.6	12.12 ± 0.02	0.30	44.15 ± 0.05	0.21	12.0	1.1	16	1.6	-1.63 ± 0.08	1.38 ± 0.06	0.25 ± 0.08	0.19 ± 0.22	-0.26 ± 0.33	-0.47 ± 0.06
63	2010	11	15	19	48	5.0 ± 0.3	-1.8	12.12 ± 0.02	0.25	44.23 ± 0.05	0.39	12.0	1.0	16	1.4	-0.97 ± 0.08	1.38 ± 0.05	-0.42 ± 0.08	0.13 ± 0.16	-0.54 ± 0.30	0.18 ± 0.05
64	2010	11	15	20	44	7.5 ± 0.3	-0.1	12.13 ± 0.01	0.15	44.00 ± 0.02	0.18	12.0	1.1	16	2.0	-0.54 ± 0.09	1.79 ± 0.06	-1.25 ± 0.09	1.18 ± 0.20	0.39 ± 0.22	0.94 ± 0.07
*65	2010	11	15	23	29	29.5 ± 0.5	-0.3	12.03 ± 0.03	0.26	44.14 ± 0.07	0.31	12.0	1.0	16	1.2	-0.84 ± 0.08	0.93 ± 0.05	-0.09 ± 0.08	0.30 ± 0.18	-0.86 ± 0.33	-0.01 ± 0.07
66	2010	11	15	23	35	29.2 ± 0.3	0.0	12.07 ± 0.02	0.18	44.22 ± 0.04	0.23	12.0	1.1	16	2.3	-2.32 ± 0.09	1.98 ± 0.07	0.34 ± 0.08	-0.19 ± 0.29	0.08 ± 0.43	-0.66 ± 0.07
*67	2010	11	16	2	5	18.3 ± 0.8	-2.7	11.96 ± 0.03	-0.04	44.39 ± 0.05	0.43	12.0	1.1	16	2.4	-2.61 ± 0.28	2.22 ± 0.19	0.39 ± 0.28			-0.29 ± 0.23
*68	2010	11	16	2	7	1.0 ± 0.4	5.7	12.12 ± 0.02	0.17	44.09 ± 0.02	0.13	12.0	1.4	16	5.2	-6.00 ± 0.28	4.43 ± 0.18	1.57 ± 0.28			-0.26 ± 0.22
69	2010	11	16	15	51	27.8 ± 0.2	0.7	12.07 ± 0.02	0.04	44.19 ± 0.03	0.19	12.0	1.2	16	2.3	-2.34 ± 0.09	1.84 ± 0.06	0.51 ± 0.09	-0.21 ± 0.22	-0.24 ± 0.33	-0.82 ± 0.06
70	2010	11	16	17	37	24.1 ± 0.3	0.8	12.01 ± 0.02	0.10	44.22 ± 0.05	0.18	12.0	1.0	16	2.1	-2.00 ± 0.09	1.69 ± 0.06	0.31 ± 0.10	-0.56 ± 0.26	0.46 ± 0.44	-0.49 ± 0.07
*71	2010	11	16	22	58	34.6 ± 0.4	-0.6	12.09 ± 0.03	0.30	44.16 ± 0.08	0.18	12.0	1.1	16	0.9	-0.82 ± 0.06	0.67 ± 0.04	0.14 ± 0.06	0.19 ± 0.16	0.33 ± 0.31	-0.24 ± 0.05
72	2010	11	17	6	36	12.5 ± 0.5	4.5	12.02 ± 0.04	-0.23	44.15 ± 0.06	-0.60	12.0	1.1	15	7.6	-6.86 ± 0.54	5.41 ± 0.37	1.45 ± 0.54	-1.21 ± 1.58	3.93 ± 1.94	-1.95 ± 0.38
73	2010	11	17	20	28	27.4 ± 0.3	-2.4	12.09 ± 0.02	0.16	44.13 ± 0.04	0.01	12.0	1.1	16	2.0	-1.79 ± 0.09	1.45 ± 0.06	0.33 ± 0.09	0.05 ± 0.25	1.16 ± 0.29	-0.45 ± 0.06
74	2010	11	17	20	45	36.6 ± 0.4	-0.5	12.08 ± 0.03	0.09	44.20 ± 0.05	0.26	12.0	1.0	16	1.1	-1.09 ± 0.07	0.79 ± 0.05	0.30 ± 0.08	0.20 ± 0.21	0.22 ± 0.25	-0.46 ± 0.05
75	2010	11	18	1	56	52.7 ± 0.2	-1.0	12.12 ± 0.01	0.11	44.15 ± 0.02	0.16	12.0	1.0	16	3.5	-3.46 ± 0.10	2.89 ± 0.08	0.57 ± 0.10	-0.43 ± 0.28	-0.98 ± 0.36	-0.95 ± 0.08
76	2010	11	18	2	25	51.3 ± 0.3	-0.1	12.13 ± 0.03	0.21	44.18 ± 0.04	0.23	12.0	1.1	16	1.4	-1.44 ± 0.08	1.10 ± 0.05	0.34 ± 0.07	0.24 ± 0.22	-0.07 ± 0.26	-0.51 ± 0.06
77	2010	11	20	1	55	22.9 ± 0.3	-4.8	12.09 ± 0.02	0.26	44.21 ± 0.03	0.19	12.0	1.0	16	1.9	-2.00 ± 0.08	1.61 ± 0.06	0.39 ± 0.08	0.04 ± 0.20	-0.12 ± 0.28	-0.64 ± 0.06
78	2010	11	20	11	53	55.3 ± 0.5	-1.9	12.13 ± 0.04	0.12	44.10 ± 0.07	0.18	12.0	1.0	16	0.8	-0.79 ± 0.06	0.65 ± 0.04	0.14 ± 0.07	0.17 ± 0.21	0.10 ± 0.22	-0.20 ± 0.05
79	2010	11	20	23	38	35.1 ± 0.2	0.1	12.09 ± 0.02	0.16	44.26 ± 0.03	0.29	12.0	1.1	16	3.1	-3.04 ± 0.10	2.43 ± 0.08	0.61 ± 0.10	0.39 ± 0.27	-1.05 ± 0.38	-0.99 ± 0.08
*80	2010	11	21	16	46	18.1 ± 0.5	2.1	12.04 ± 0.02	-0.21	44.27 ± 0.04	0.52	12.0	1.1	16	0.7	-0.81 ± 0.06	0.57 ± 0.04	0.24 ± 0.06			-0.20 ± 0.05

* Indicates less-well-constrained event (see text).

** All depths fixed to 12.0 kilometers

Table S2. Principal axes and best-double-couple parameters.

No.	Scale Factor 10^{ex}	Principal Axes									M_0	Best Double Couple					
		T-axis			N-axis			P-axis				Plane 1			Plane 2		
		σ	δ	ξ	σ	δ	ξ	σ	δ	ξ		ϕ_1	θ	λ	ϕ_2	θ	λ
1	16	0.79	10	208	0.03	16	300	-0.82	71	86	0.8	279	38	-117	131	57	-71
2	17	1.82	7	193	-0.10	14	101	-1.72	74	309	1.8	299	40	-68	90	54	-108
3	16	3.21	4	208	0.28	12	298	-3.48	77	100	3.3	284	42	-109	129	50	-74
4	16	1.86	12	13	0.51	26	277	-2.37	61	126	2.1	132	40	-47	262	62	-120
5	16	5.04	0	195	-0.33	5	104	-4.72	85	288	4.9	289	45	-83	100	45	-96
6	16	2.78	3	12	0.24	25	104	-3.01	64	275	2.9	78	47	-126	304	53	-58
7	16	2.14	2	198	0.19	23	289	-2.33	67	104	2.2	266	48	-122	129	51	-60
8	17	0.78	6	196	0.00	13	104	-0.78	76	311	0.8	300	40	-70	94	53	-106
9	16	1.48	4	206	0.23	12	296	-1.72	78	98	1.6	283	42	-108	127	50	-74
10	16	1.89	0	24	0.57	26	294	-2.46	64	114	2.2	138	50	-55	270	51	-125
11	17	1.02	9	189	0.07	19	96	-1.08	69	303	1.0	300	40	-60	83	56	-113
12	16	2.15	6	21	-0.03	3	111	-2.12	83	229	2.1	107	39	-95	294	51	-86
13	16	2.94	10	19	0.34	9	111	-3.28	76	242	3.1	97	36	-106	297	56	-79
14	16	1.48	9	352	0.24	47	252	-1.72	42	90	1.6	122	54	-26	228	69	-141
15	16	1.54	8	208	0.22	13	300	-1.76	75	86	1.6	283	38	-111	129	55	-74
16	16	1.60	5	9	0.31	15	278	-1.91	74	119	1.8	115	42	-68	266	52	-109
17	16	1.47	2	211	0.05	10	301	-1.52	79	111	1.5	290	44	-105	131	48	-76
*18	16	1.72	0	192	-0.03	0	102	-1.69	90	180	1.7	282	45	-90	102	45	-90
19	17	0.92	1	15	-0.01	7	105	-0.92	83	277	0.9	98	44	-99	291	46	-81
20	16	1.22	1	203	0.24	10	293	-1.46	80	110	1.3	283	45	-104	122	46	-76
21	16	2.41	5	17	-0.07	3	287	-2.33	84	162	2.4	111	40	-85	284	50	-94
*22	15	5.80	0	4	2.32	21	274	-8.11	69	95	7.0	114	49	-61	254	49	-119
*23	16	1.36	0	184	0.14	0	94	-1.50	90	180	1.4	274	45	-90	94	45	-90
24	16	3.02	2	192	0.39	12	101	-3.40	78	289	3.2	294	45	-73	90	48	-106
25	16	4.05	0	12	0.33	10	102	-4.38	80	282	4.2	92	46	-105	292	46	-75
26	16	2.61	3	199	0.26	5	289	-2.87	84	79	2.7	284	42	-98	114	48	-83
27	16	4.18	3	205	-0.10	16	296	-4.09	74	104	4.1	279	44	-113	129	50	-69
*28	16	0.96	4	19	0.46	27	287	-1.42	62	118	1.2	136	47	-51	266	55	-124
29	17	0.86	8	205	-0.17	1	295	-0.68	81	32	0.8	293	37	-92	116	53	-89
30	16	6.31	4	187	1.17	18	96	-7.48	71	290	6.9	296	44	-63	81	52	-113
31	16	5.38	10	202	-0.91	0	292	-4.48	80	22	4.9	292	35	-90	112	55	-90
32	17	1.47	3	7	-0.37	35	274	-1.10	54	101	1.3	128	52	-43	248	58	-133
*33	16	2.08	21	20	0.46	17	116	-2.54	63	242	2.3	82	28	-127	303	68	-72
34	17	1.43	8	199	-0.14	13	108	-1.29	74	320	1.4	304	39	-69	98	54	-106
35	17	0.93	6	200	-0.08	1	290	-0.84	84	29	0.9	289	39	-92	111	51	-89
36	16	2.63	3	204	0.12	20	295	-2.75	69	107	2.7	274	46	-119	132	51	-63
37	16	2.36	1	14	0.07	23	284	-2.42	67	107	2.4	126	49	-58	263	50	-121
38	16	1.19	7	211	0.02	0	301	-1.21	83	32	1.2	301	38	-90	121	52	-90
39	16	3.54	6	191	0.26	13	100	-3.79	75	306	3.7	296	41	-70	90	52	-107
40	16	0.92	9	13	0.10	11	104	-1.01	76	245	1.0	89	37	-108	292	55	-76

* Indicates less-well-constrained event (see text).

Table S2 (continued)

No.	Scale Factor 10^{ex}	Principal Axes									M_0	Best Double Couple					
		T-axis			N-axis			P-axis				Plane 1			Plane 2		
		σ	δ	ξ	σ	δ	ξ	σ	δ	ξ		ϕ_1	θ	λ	ϕ_2	θ	λ
41	17	2.13	4	197	-0.14	14	106	-1.99	75	304	2.1	302	43	-69	94	51	-108
42	16	6.51	2	196	0.12	12	106	-6.63	78	297	6.6	298	44	-73	95	48	-106
43	17	0.69	1	189	0.10	17	99	-0.79	73	283	0.7	296	46	-66	83	49	-113
44	16	2.32	14	218	0.71	18	313	-3.03	67	93	2.7	285	35	-123	143	61	-69
45	16	3.76	1	195	0.68	24	104	-4.44	66	287	4.1	307	49	-57	83	51	-122
46	16	6.08	2	192	-0.23	10	102	-5.86	80	292	6.0	292	44	-76	93	48	-103
47	16	1.94	4	16	0.28	3	106	-2.23	85	229	2.1	103	41	-94	288	49	-86
48	16	2.49	5	195	-0.16	13	286	-2.33	76	86	2.4	271	42	-110	117	51	-73
49	16	1.90	1	199	0.13	3	109	-2.02	87	304	2.0	293	44	-85	106	46	-95
50	17	1.22	9	190	0.07	18	97	-1.30	70	304	1.3	300	40	-61	84	56	-112
51	16	0.74	10	10	0.12	20	103	-0.86	68	254	0.8	77	39	-122	296	58	-66
52	16	5.28	2	15	1.17	20	106	-6.45	70	280	5.9	86	47	-118	303	50	-64
53	16	1.92	6	359	0.09	16	91	-2.01	73	248	2.0	72	41	-114	283	53	-70
54	16	0.93	14	355	-0.28	62	237	-0.65	24	91	0.8	131	63	-7	224	84	-153
55	16	0.94	1	17	0.12	15	287	-1.07	75	110	1.0	122	46	-69	272	48	-111
56	16	0.64	6	186	0.18	12	94	-0.82	76	302	0.7	289	40	-71	85	52	-105
57	16	2.40	1	21	0.17	10	111	-2.57	80	286	2.5	101	45	-104	301	47	-76
58	16	2.89	4	199	-0.56	10	109	-2.32	79	310	2.6	300	42	-74	100	50	-104
59	16	2.51	10	198	0.20	12	106	-2.71	74	329	2.6	302	36	-70	98	56	-104
*60	16	0.80	1	190	0.35	29	99	-1.15	61	281	1.0	306	51	-52	75	52	-127
61	16	0.72	9	213	0.32	19	306	-1.04	69	99	0.9	282	39	-120	139	57	-67
62	16	1.57	5	20	0.10	6	111	-1.67	82	252	1.6	104	41	-99	296	50	-82
63	16	1.40	2	355	-0.09	32	86	-1.32	58	262	1.4	56	51	-133	292	55	-50
64	16	2.56	22	344	-1.03	67	180	-1.52	6	76	2.0	122	70	12	28	79	160
*65	16	1.01	14	12	0.42	29	110	-1.43	57	259	1.2	68	40	-139	305	65	-57
66	16	2.22	3	199	0.11	0	289	-2.33	87	25	2.3	289	42	-90	110	48	-90
*67	16	2.27	0	189	0.34	0	99	-2.61	90	180	2.4	279	45	-90	99	45	-90
*68	16	4.45	0	185	1.55	0	95	-6.00	90	180	5.2	275	45	-90	95	45	-90
69	16	2.23	1	205	0.16	7	115	-2.38	83	304	2.3	302	44	-80	108	47	-100
70	16	1.96	10	199	0.19	6	290	-2.15	78	52	2.1	281	36	-101	115	55	-82
*71	16	0.77	3	19	0.19	20	288	-0.96	70	116	0.9	129	46	-61	271	51	-117
72	15	6.78	12	209	1.66	17	303	-8.44	69	85	7.6	277	36	-120	133	59	-70
73	16	1.65	7	205	0.65	23	298	-2.32	66	99	2.0	271	43	-125	135	56	-62
74	16	1.07	1	30	0.10	14	300	-1.16	76	127	1.1	134	45	-71	287	48	-109
75	16	3.23	1	199	0.52	15	109	-3.75	75	292	3.5	304	46	-69	95	48	-111
76	16	1.38	5	27	0.09	2	296	-1.46	85	189	1.4	118	40	-87	295	50	-92
77	16	1.88	1	23	0.12	3	113	-2.01	87	269	1.9	110	44	-94	296	46	-86
78	16	0.73	5	18	0.10	9	287	-0.83	79	136	0.8	118	41	-76	280	51	-102
79	16	2.97	8	26	0.36	12	118	-3.32	75	265	3.1	102	39	-110	307	54	-75
*80	16	0.67	0	205	0.14	0	115	-0.81	90	180	0.7	295	45	-90	115	45	-90

* Indicates less-well-constrained event (see text).

Table S2 (continued)

No.	Scale Factor 10^{ex}	Principal Axes									M_0	Best Double Couple					
		T-axis			N-axis			P-axis				Plane 1			Plane 2		
		σ	δ	ξ	σ	δ	ξ	σ	δ	ξ		ϕ_1	θ	λ	ϕ_2	θ	λ
*81	16	0.72	0	198	0.12	0	108	-0.85	90	180	0.8	288	45	-90	108	45	-90
82	16	1.29	10	197	0.13	5	288	-1.42	79	43	1.4	281	36	-98	111	55	-84
83	16	1.16	5	194	0.00	3	284	-1.16	85	42	1.2	281	40	-94	106	50	-87
84	16	1.55	10	3	0.00	47	262	-1.55	41	101	1.5	133	54	-25	238	70	-142
*85	16	0.75	0	196	0.08	0	106	-0.83	90	180	0.8	286	45	-90	106	45	-90
86	16	1.27	9	16	0.16	15	108	-1.43	72	257	1.3	89	39	-115	299	55	-71
87	16	1.06	10	203	0.14	12	295	-1.21	74	76	1.1	278	37	-111	123	56	-75
88	16	1.30	0	22	-0.02	3	112	-1.28	87	290	1.3	109	45	-94	295	45	-86
89	16	1.47	12	25	0.04	1	295	-1.51	78	198	1.5	117	33	-87	294	57	-92
90	16	1.39	7	26	0.20	4	116	-1.59	82	236	1.5	111	38	-97	299	52	-85
91	15	7.07	3	213	0.91	26	305	-7.96	64	116	7.5	278	47	-127	146	54	-57
*92	15	6.36	0	201	-0.13	0	111	-6.22	90	180	6.3	291	45	-90	111	45	-90
93	16	2.53	1	205	0.03	2	115	-2.56	88	326	2.5	296	44	-88	113	46	-92
94	16	1.01	3	34	0.13	16	303	-1.13	73	133	1.1	140	45	-66	289	50	-112
95	16	1.32	2	18	0.18	0	108	-1.50	88	210	1.4	108	43	-91	288	47	-89
*96	16	0.91	0	197	0.11	0	107	-1.02	90	180	1.0	287	45	-90	107	45	-90
*97	16	0.90	0	204	0.09	0	114	-0.99	90	180	0.9	294	45	-90	114	45	-90
98	16	0.86	12	16	0.16	28	112	-1.02	59	265	0.9	75	41	-135	308	62	-58
99	16	1.69	3	202	0.23	3	112	-1.92	85	337	1.8	295	42	-85	109	48	-94
100	16	3.94	4	19	0.47	15	110	-4.41	74	276	4.2	94	43	-112	303	51	-70
101	16	2.79	4	197	0.09	4	106	-2.88	84	330	2.8	291	41	-84	103	49	-95
102	16	1.70	0	199	0.08	3	289	-1.78	87	104	1.7	286	45	-94	111	45	-86
103	16	2.63	2	202	0.20	4	112	-2.83	85	317	2.7	296	43	-83	107	47	-96
104	16	6.17	7	200	0.86	14	108	-7.03	75	316	6.6	305	40	-69	98	53	-107
105	16	4.05	6	199	0.51	15	107	-4.56	74	311	4.3	305	41	-67	96	53	-109
106	16	1.37	13	210	0.28	10	302	-1.65	73	70	1.5	286	33	-109	129	59	-78
*107	15	6.68	7	209	1.55	19	302	-8.24	70	99	7.5	279	41	-119	136	55	-67
108	16	2.35	4	197	0.26	6	106	-2.61	83	323	2.5	293	41	-82	102	49	-97
109	16	2.19	1	204	0.41	19	114	-2.59	71	296	2.4	312	47	-64	96	49	-115
*110	16	1.84	0	203	-0.04	0	113	-1.79	90	180	1.8	293	45	-90	113	45	-90

* Indicates less-well-constrained event (see text).

Table S1: Centroid-moment-tensor solutions for 110 earthquakes occurring in the western Gulf of Aden from 2010 November to 2011 April. The number in the first column is the event number for each earthquake. An asterisk next to the event number indicates that the earthquake is less-well constrained (see text). The event number is followed by the year, month, day and origin time of the earthquake. The origin time listed is that of the centroid solution, where the estimated standard deviation, δt_0 , indicates the time shift (in seconds) with respect to the time reported by the NEIC in its Preliminary Determination of Epicenters (PDE) or the Global CMT Project's Surface Wave Catalog.

The hypocentral coordinates are for the centroid location, and $\delta\lambda_0$ and $\delta\phi_0$ indicate the perturbations in latitude and longitude obtained with respect to the original epicenter. Because all of the earthquakes are shallow, their centroid depths were constrained by the inversion to be 12 kilometers, so no standard error in depth is given.

The half duration (*Half Drtn*) of the earthquake is a fixed parameter in the inversion, estimated from the scalar moment using an empirical relationship. The moment-rate function is modeled as a triangle.

The scale factor (10^{ex}) is the number by which the scalar seismic moment and moment-tensor elements must be multiplied to obtain a result in Nm. The entries in the table represent the exponent (*ex*) values. The scalar moment (M_0) is defined as $M_0 = (\sigma_{max} - \sigma_{min})/2$, where σ_{max} and σ_{min} are the maximum and minimum eigenvalues of the moment tensor.

The elements of the moment tensor are given in the standard spherical coordinate system (Gilbert & Dziewonski 1975). In Cartesian coordinates, $M_{rr} = M_{zz}$, $M_{\theta\theta} = M_{xx}$, $M_{\phi\phi} = M_{yy}$, $M_{r\theta} = M_{xz}$, $M_{r\phi} = -M_{yz}$, and $M_{\theta\phi} = -M_{xy}$ (see Aki & Richards 2002). The CMT solutions are constrained to have no isotropic component, so that $M_{rr} + M_{\theta\theta} + M_{\phi\phi} = 0$. In some cases, the elements of $M_{r\theta}$ and $M_{r\phi}$ are also constrained to zero because of the instability of the solution. In these cases, the corresponding values and standard errors are omitted in the table. Each element of the moment tensor is followed by its estimated standard error.

Table S2: Moment tensors expressed in principal-axis system and best-double-couple parameters. As in Table S1, the number in the first column is the event number, and an asterisk next to the event number indicates that the solution is less-well constrained. The scale factor (10^{ex}) is the number by which the scalar seismic moment and eigenvalues must be multiplied to obtain a result in Nm. Each principal axis is described by an eigenvalue, plunge and azimuth. The scalar moment (M_0) is repeated from Table S1. The strike, dip, and rake for the nodal planes of the best-double-couple mechanism are listed, following the convention of Aki & Richards (2002).

References:

Aki, K. & Richards, P. G., 2002. *Quantitative Seismology*, 2nd edn, University Science Books, Sausalito, California.

Gilbert, F., Dziewonski, A. M., 1975. An application of normal mode theory to the retrieval of structural parameters and source mechanisms from seismic spectra. *Philos. Trans. R. Soc., Lond. Ser. A*, **278**, 187-269.