Supplementary Material

The following tables (S1, S2, S3 and S4) and figures (Fig. S1 and Fig. S2) complement those included in the main article.

ID	Fault Length (m)	Max. Topographic Difference (m)	Max Displacement (m)	Displacement Rate (0.7-3 Ma) (mm/a)	Range of Displ. Rates (±) (mm/a)	Slip Per Event (m)	Magnitude (Mw)
44	58000	2600	2869	1.55	4.19-0.70	2.9	7.2
45	19500	800	883	0.48	1.29-0.24	1.0	6.6
46	12500	100	110	0.06	0.16-0.03	0.6	6.3
47	53000	600	662	0.36	0.97-0.18	2.7	7.1
48	23500	200	221	0.12	0.32-0.06	1.2	6.7
49	13500	100	110	0.06	0.16-0.03	0.7	6.4
50	21500	1000	1103	0.6	1.61-0.3	1.1	6.6
51	27000	900	993	0.54	1.45-0.27	1.4	6.7
52	19500	290	320	0.17	0.47-0.09	1.0	6.6
53	13000	250	276	0.15	0.4-0.08	0.7	6.3

Table S1. Table presenting the main kinematic characteristics of the offshore faults.

Island	Fault Group	Number of Faults	Onshore Fault Length Range (Km)	Faults with postglacial activity	Short-term (16 ± 2 ka) Displacement Rates (mm/a)		Long-term (0.7-3 Ma) Displacement Rates (mm/a)	
					Range	Average	Range	Average
Kythira	A	6	8.6 - 20.5	100%	0.19-1.25	0.59	0.05-0.38	0.18
	B	18	1 - 8	50%	0-0.5	0.16	0.02-0.21	0.08
	C	11	1.1 - 5.3	80%	0-1.19	0.43	0.02-0.23	0.1
AntiKythira	A	2	6.5 - 7	100%	0.38-0.56	0.47	0.09-0.18	0.14
	B	6	1 - 3.5	50%	0-0.5	0.21	0.03-0.08	0.05

Table S2. Table summarising the kinematics of each fault group on the islands of Kythira and Antikythira.

Island	Fault/ Fault Segment	Fault Group	Av. Dip (°)	Topographic Fault Length (m)	Short-term (16 ± 2 ka) Displacement (m)	Error (±) (m)	Long-term (0.7-3 Ma) Throw (m)	Slip Per Event (m)	EQ Mw	RI over the last 16 ± 2 ka (ka)	Error (ka)	RI over the last 0.7-3 Ma (ka)	Error (ka)	Ratio of long-term over Short-term RI	No of events (16 Ka)
Kythira	Joint Moni Fault	B	65	2500	0	0	20	0.1	5.4	-	-	13.3	10.2	-	-
	Agia Moni Fault	B	84	5000	0	0	140	0.3	5.8	-	-	3.8	2.9	-	-
	Paleopoli Fault	B	66	2700	0	0	90	0.1	5.4	-	-	3.2	2.4	-	-
	Monitochori Fault	B	70	1000	0	0	110	0.1	4.9	-	-	1	0.7	-	-
	Kato Moni Fault	B	70	5000	0	0	100	0.3	5.8	-	-	5.3	4.1	-	-
	Kalamos West Fault	B	49	2700	6.7	0.5	50	0.1	5.4	0.3	0.03	5.7	4.4	17.5	-
	Limnionas 1 Fault	B	-	1000	0	0	20	0.1	4.9	-	-	5.3	4.1	-	-
	Limnionas 3 Fault	B	-	1700	0	0	30	0.1	5.2	-	-	6	4.6	-	-
	Diakofti Fault	B	72	1700	0	0	15	0.1	5.2	-	-	12	9.2	-	-
	Platia Amos Fault	B	60	1800	0	0	30	0.1	5.2	-	-	6.4	4.9	-	-
	Aerodromio Fault	B	86	8000	6.2	0.2	80	0.4	6.1	1.0	0.04	10.6	8.1	10.2	-
	Avlemonas Fault	B	-	3300	3	0.5	30	0.2	5.5	0.9	0.17	11.7	8.9	12.6	-
	Limnionas 2 Fault	B	70	2600	5	1	60	0.1	5.4	0.4	0.1	4.6	3.5	10.4	-
	Limnionas 4 Fault	B	60	2500	4	1	120	0.1	5.4	0.6	0.15	2.2	1.7	4	-
	Kato Chora Fault	B	70	5000	5	1	170	0.3	5.8	0.9	0.19	3.1	2.4	3.7	-
	Pano Strapodi Fault	B	80	1400	8	1	100	0.1	5.1	0.1	0.02	1.5	1.1	10.3	-
	Melidoni Fault	B	60	2000	8	0.5	45	0.1	5.3	0.2	0.04	4.7	3.6	23.3	-
	Felodi Fault	B	56	2000	1.5	0.1	20	0.1	5.3	1.1	0.21	10.6	8.1	9.8	-
	Kalamos East Fault	C	34	2800	0	0	70	0.1	5.5	-	-	4.3	3.3	-	-
	Alexandrides Fault	C		3000	3	3	140	0.2	5.5	-	-	2.1	1.7	-	-
	Chora Fault	C	56	2300	0	0	50	0.1	5.3	-	-	4.9	3.7	-	-
	Antichora Fault	C	84	1800	0	0	15	0.1	5.2	-	-	12.8	9.8	-	-
	Koiladas North	C		3000	5	0.5	60	0.2	5.5	0.5	0.11	5.3	4.1	10.8	-
	Koiladas South	C	52	2400	19	1	160	0.1	5.4	0.1	0.02	1.6	1.2	15.6	-
	Viaradikas Fault	C	59	5300	8	0.5	75	0.3	5.8	0.5	0.1	7.5	5.7	14	-
	Kapsali Fault	C	83	3000	18	2	110	0.2	5.5	0.1	0.03	2.9	2.2	21.2	-
	Klaradika North Fault	C	57	1100	12	0.4	50	0.1	4.9	0.1	0.01	2.3	1.8	23	-
	Klaradika South Fault	C	61	2600	6.5	0.2	30	0.1	5.4	0.3	0.01	8	7	26.6	-
	Milopotamos Fault	C	54	2800	3.8	0.2	80	0.1	5.5	0.6	0.04	3.7	2.8	6.3	-
	Gerakianika fault	A	72	30500	4	0.2	320	1.5	6.8	-	-	10.1	7.7	-	3
	Gerakianika north		65	11500	4	0.2	110	0.6	6.3	2.3	0.13	11.1	8.5	4.8	-
	Gerakianika south		78	19000	0	0	320	1.0	6.5	-	-	6.3	4.8	-	-
	Alexandrades -Potamos	A	67	26000	12	1	155	1.3	6.7	1.8	0.16	17.8	13.6	2.4	9
	Alexandrades fault		67	26000	12	1	155	1.3	6.7	1.8	0.16	17.8	13.6	10.1	-
	Potamos Fault		70	1800	4.2	0.2	90	0.1	5.2	0.3	0.02	2.1	1.6	6.1	-
	Drimodas-Strapodi fault	A	-	17500	14	2.2	165	0.9	6.5	1.0	0.18	11.3	8.6	10.8	16
	Strapodi fault		63	17500	6	0.2	55	0.9	6.5	2.3	0.09	33.8	25.9	14.4	-
	Drimodas fault		44	5500	14	2	110	0.3	5.8	0.3	0.05	5.3	4.1	16.3	-
	Xeronomiata Fault	A	63	20500	13.3	0.8	130	1.0	6.6	1.2	0.08	16.8	12.8	13.4	13
	Xeronomiata south		72	7200	13.3	0.8	100	0.4	6.0	0.4	0.03	7.7	5.9	17.5	-
	Xeronomiata central		60	6300	3	3	40	0.3	5.9	-	-	16.5	12.8	-	-
	Xeronomiata North		56	7000	8	0.5	130	0.4	6.0	0.7	0.05	5.7	4.4	8.1	-
Antikythira	Galaniana Fault	B	68	3500	7	0.5	60	0.2	5.6	0.4	0.07	6.2	4.7	14.9	-
	Pateriana south Fault	B	60	1700	5	0.2	40	0.1	5.2	0.3	0.02	4.5	3.5	16.3	-
	Pateriana north Fault	B	60	1400	8	1	40	0.1	5.1	0.1	0.01	3.7	2.8	26.3	-
	Xiropotamos Fault	B	65	1000	0	0.4	35	0.1	4.9	-	-	3	2.3	-	-
	Antigalaniana Fault	B	65	1500	0	0.4	20	0.1	5.1	-	-	8	6.1	-	-
	Xiropotamos East Fault	B	80	1000	0	-	25	0.1	4.9	-	-	4.3	3.3	-	-
	Katsaneviana Fault	A	60	7000	6	-	150	0.4	6.0	0.9	0.09	5	3.8	5.2	17
	Charchaliana Fault	A	75	6500	9	-	70	0.3	5.9	0.6	0.01	9.9	7.5	17	28

Table S3. Table presenting the seismic parameters associated with different rupture scenarios of the faults in Kythira and Antikythira. Slip per event and earthquake recurrence intervals (RI) are calculated from Wells and Coppersmith (1994) equation $D = 5\times 10^{-5} L$.

ID	Fault ID		Postglacial Displacement (max) (m)	Error (±) (m)	Range of displacement measurements (m)
		Segment ID			
7	Kalamos West Fault		6.7	0.5	6.2-7.3
15	Aerodromio Fault		6.2	0.2	6-6.4
16	Avlemonas Fault		3	0.5	2.5-3.5
20	Limnionas 2 Fault		5	1	4-6
21	Limnionas 4 Fault		4	1	3-5
22	Kato Chora Fault		5	1	4-6
26	Pano Strapodi Fault		8	1	7-9
27	Melidoni Fault		8	0.5	7.5-8.5
28	Felodi Fault		1.5	0.1	1.4-1.6
17	Koiladas North		5	0.5	4.5-5.5
18	Koiladas South		19	1	18-20
19	Viaradikas Fault		8	0.5	7.5-8.5
23	Kapsali Fault		18	2	16-20
24	Klaradika North Fault		12	0.4	11.6-12.4
25	Klaradika South Fault		6.5	0.2	6.3-6.7
30	Milopotamos Fault		3.8	0.2	3.6-4.0
31	Gerakianika fault		4	0.2	
		Gerakianika north	4	0.2	3.8-4.2
	Alexandrades -Potamos		12	1	
32		Alexandrades fault	12	1	11-13
29		Potamos Fault	4.2	0.2	4-4.4
	Drimodas-Strapodi fault		20	2.2	17.8-22.2
33		Strapodi fault	6	0.2	5.8-6.2
34		Drimodas fault	14	2	12-16
35	Xeronomiata Fault		13.3	0.8	
		Xeronomiata south	13.3	0.8	12.5-14.1
		Xeronomiata North	8	0.5	7.5-8.5
36	Katsaneviana Fault		6	0.5	5.5-6.5
37	Charchaliana Fault		9	0.2	8.8-9.2
38	Galaniana Fault		7	1	6-8
39	Pateriana south Fault		5	0.4	4.6-5.4
40	Pateriana north Fault		8	0.4	7.4-8.4

Table S4. Table presenting the range of maximum postglacial displacements measured on each fault. See text for details.

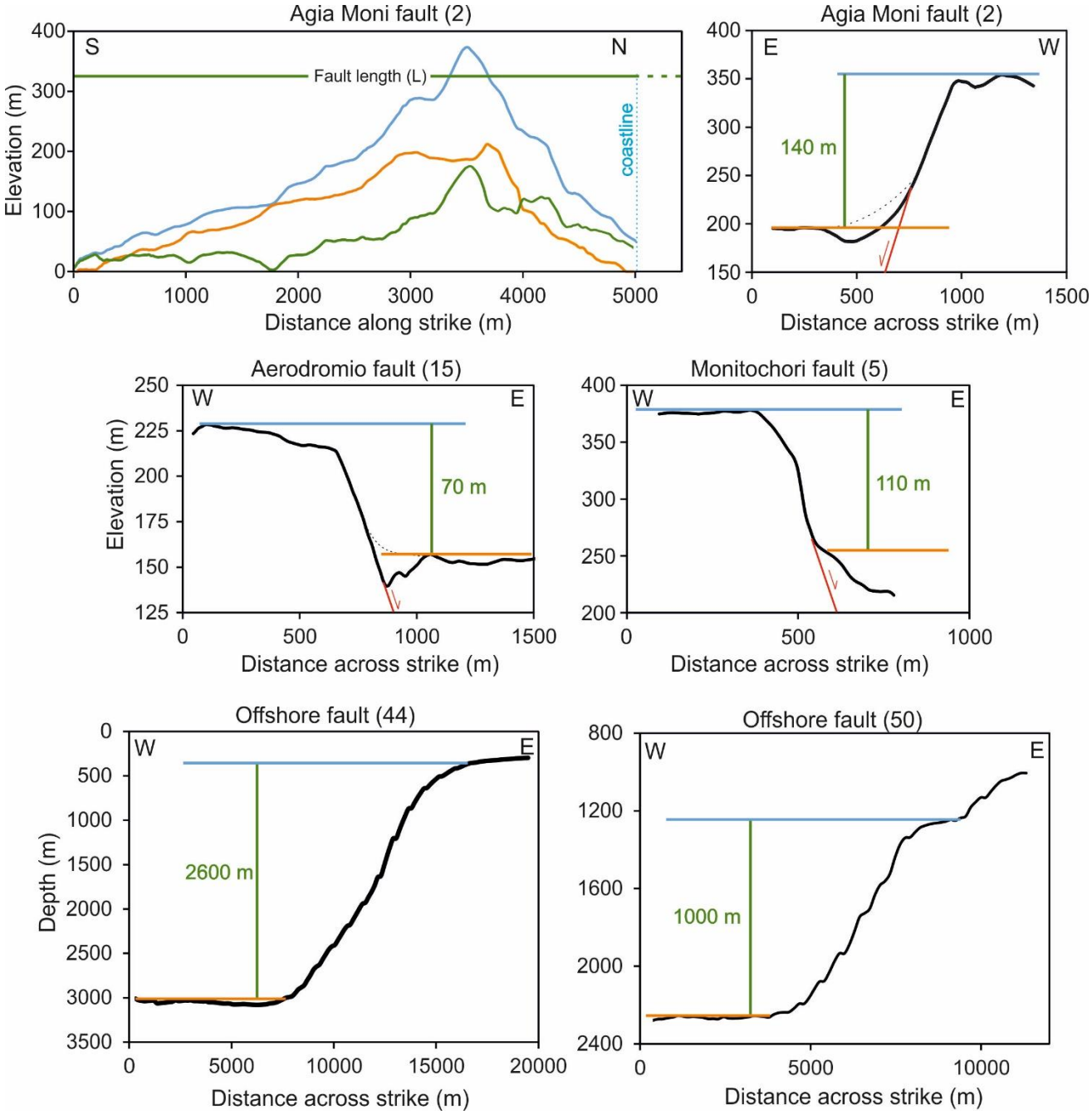

Figure S1. Along- and across-strike topographic profiles for three Group B onshore faults on Kythira (fault IDs 2, 5 and 15) and two offshore faults (fault IDs 44 and 50). Blue and orange lines highlight the elevation/depth of the footwall and hangingwall, respectively. Green lines denote throw.

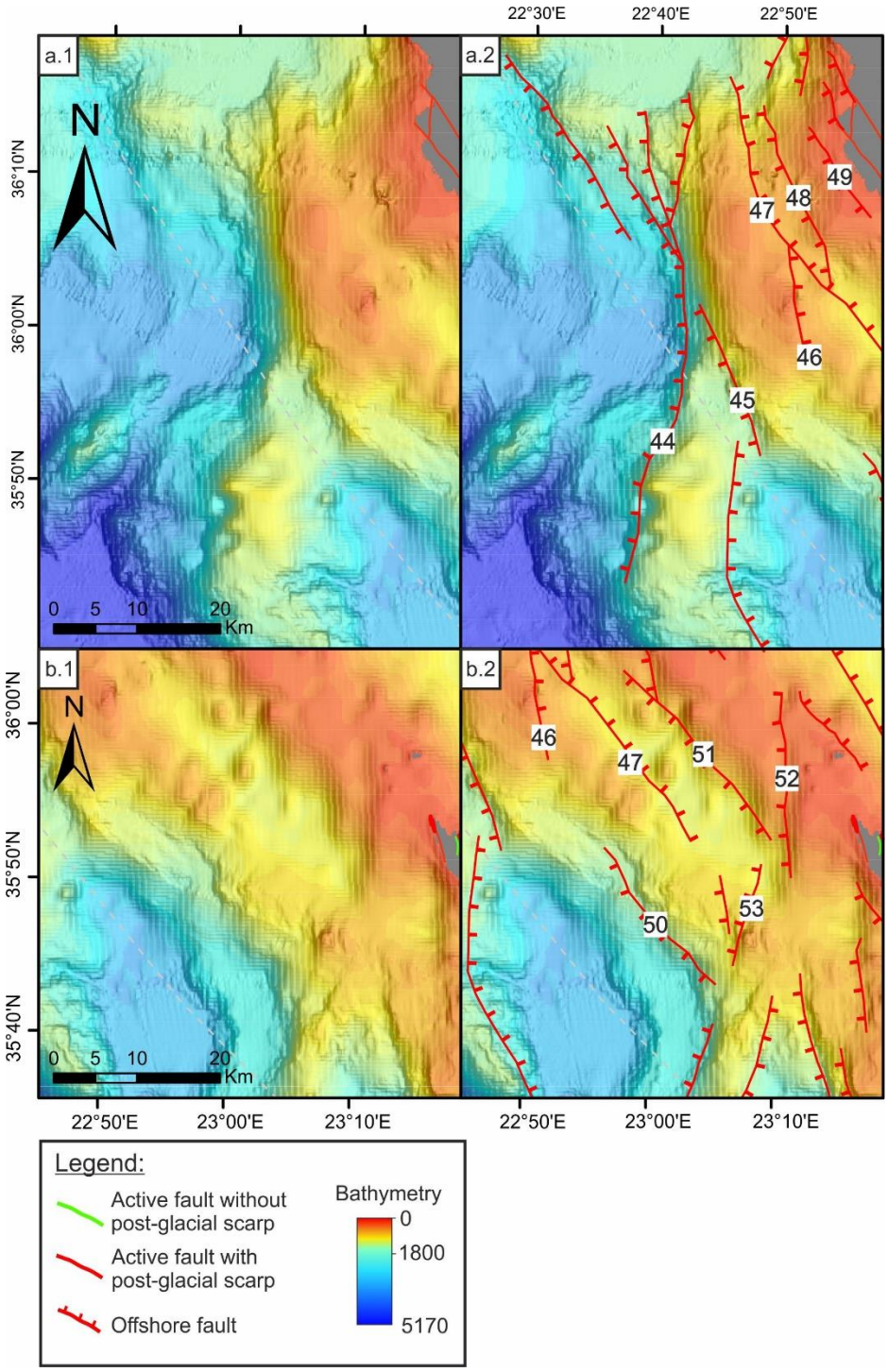

Figure S2. Map illustrating the bathymetry and interpreted normal faults within the offshore KAS (data from https://portal.emodnet-bathymetry.eu/). The DEM is superimposed by two hillshades illuminated from opposite directions (east and west). Uninterpreted **(a.1)** and interpreted **(a.2)** bathymetry southwest of Kythira. Uninterpreted **(b.1)** and interpreted **(b.2)** bathymetry west of Antikythira. For offshore fault IDs refer to Figure 1b (main paper) and Table S1. Land masses of Kythria and Antikythira appear in grey.