

Supplementary materials for "Deformation in northern Central America from 1999 to 2017 using GPS observations, Part 1: Time-dependent modeling of large regional earthquakes and their postseismic effects"

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The supplementary materials include the following:

1. Supplementary Figures 1 through 10, all of which are referenced in the main document.
2. Tables 1 and 2, which respectively document the GPS sites and data that were used for our analysis and coseismic offsets estimated via our TDEFNODE modeling for each site and each earthquake included in the analysis. Separate text files of both tables are also provided for convenience.
3. "TDEFNODE_ControlFile.txt", which is the control file used as input to the TDEFNODE inversion described in the main document.
4. "TDEFNODE_GPS_Input.zip", a zip archive with two files that have all of the daily GPS station positions used for our analysis. The files have either episodic GPS site positions (Daily_eGPS_Input.txt) or continuous station positions (Daily_cGPS_Input.txt). A header line in each file explains the format. Daily positions in the two files are specified as easting, northing, and vertical differences in millimeters from the site starting coordinates, which are given with high precision at the beginning of each station time series. Any adjustments made for antenna-related or other non-earthquake-related offsets are implicit in these position time series. The underlying geodetic reference frame is ITRF2008. No other adjustments to these observed daily positions have been made (such as adjustments for plate motion, transient earthquake effects, or seasonality).
5. "Daily_SiteXYZ_All.zip", a zip archive with one file per GPS station with all of the daily geocentric GPS station positions used for our analysis. The daily positions are not corrected for any antenna offsets, but are corrected for common-mode regional noise. The processing and post-processing methods used to determine these site daily positions is described in the main document.
6. "TransientCorrections_For_AllSites.zip", a zip archive of the TDEFNODE daily estimates of the summed transient effects in the easting, northing, and vertical components of the May 2009 Swan Islands and August and November 2012 El Salvador and Guatemala earthquakes and their protracted afterslip. For each GPS station considered in the analysis, the transient effects of the three earthquakes are summed on a daily basis from the beginning to the end of each GPS site time series, such that users can subtract these daily transient effects from their own station position estimates to reveal the underlying, secular velocity of each site. The slopes and intercepts of the transient corrections are all zero and seasonal components have been ignored in order to isolate the effects of the earthquakes.

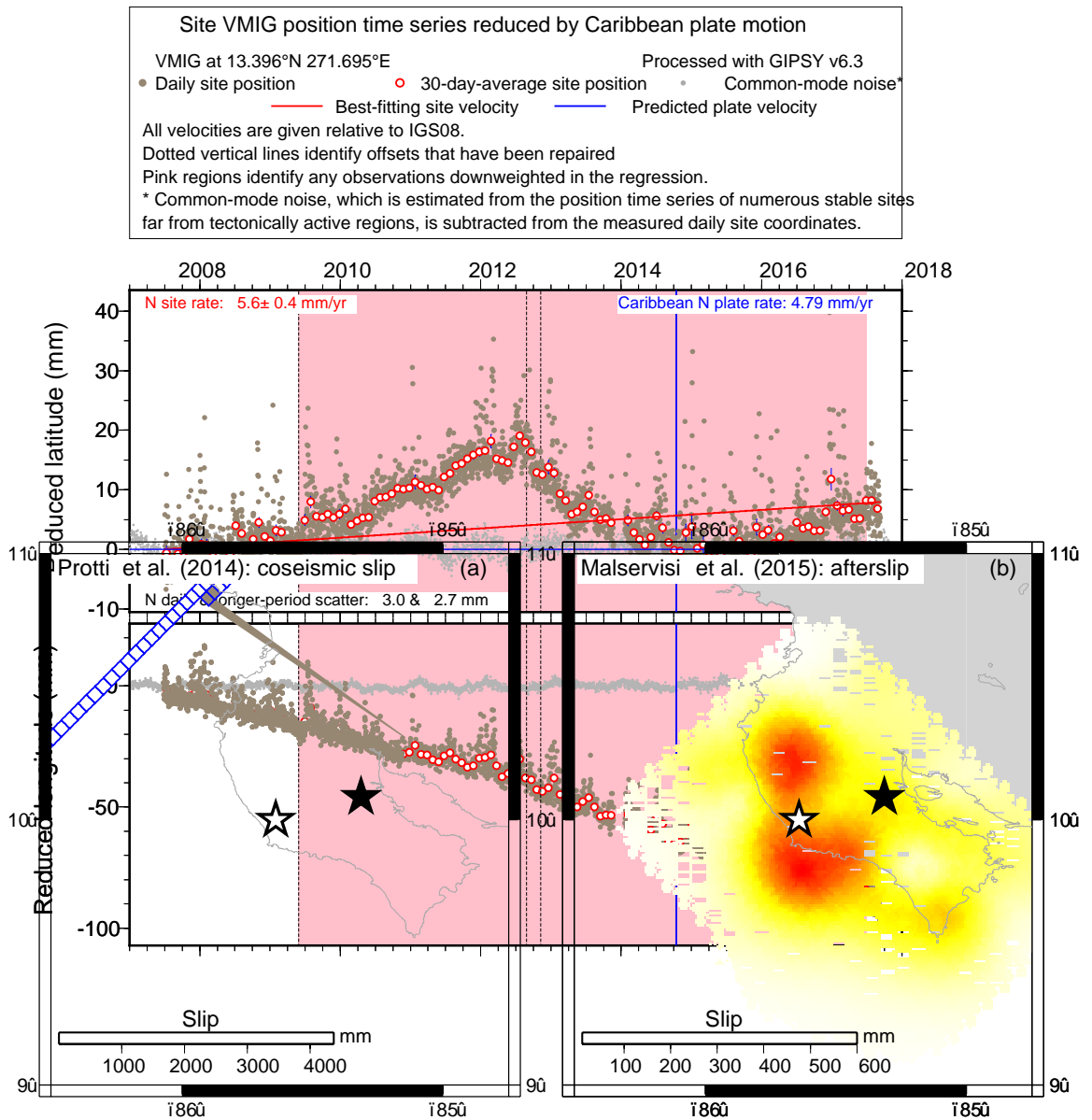
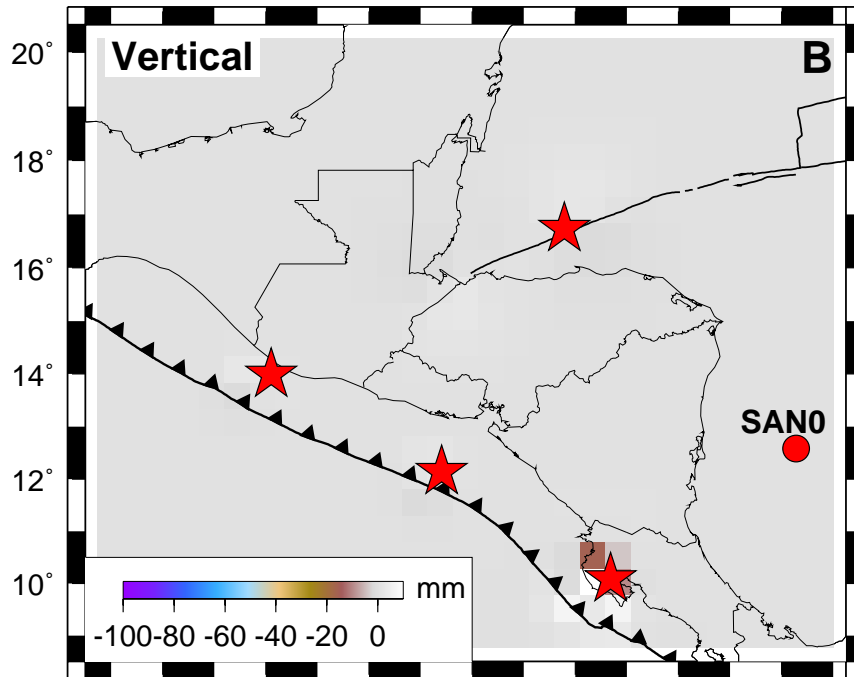
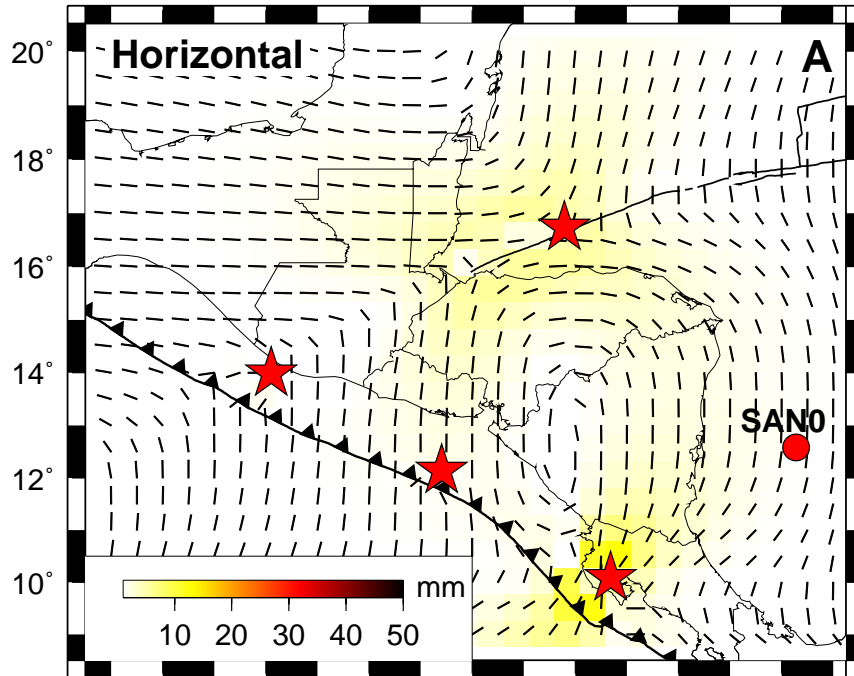


Fig. S9. (a) The geodetic coseismic slip solution of Protti et al. (2013) for the September 2012 M=7.6 Nicoya earthquake. (b) The geodetic afterslip solution for the same earthquake, representing the cumulative afterslip for the first 70 days after the earthquake (Malservisi et al. 2015).



Supplemental Figure 10. Cumulative viscoelastic deformation integrated over the period May 28, 2009 to 2017.0 as predicted with VISCO-1D software and the minimum-response rheological model shown in Supplemental Figure 2 and described in the text. Four earthquake slip solutions were used as input to VISCO-1D, as follows: (1) the 28 May 2009 $M_w=7.3$ Swan Islands strike-slip earthquake, (2) the August 27, 2012 $M_w=7.3$ El Salvador subduction-thrust earthquake, (3) the September 5, 2012 $M_w=7.6$ Nicoya (Costa Rica) subduction-thrust earthquake, (4) the November 11, 2012 $M_w=7.4$ Champerico (Guatemala) subduction-thrust earthquake (Protti *et al.* 2013). Their respective coseismic slip solutions are shown in Figures 3a, 6a, 9a, and Supplementary Figure 8. The tick marks in (A) show the directions of the horizontal viscoelastic displacements.

Table 1: GPS site information

Site ID	Lat. °N	Long. °E	Elevation meters	Time span	Observation days
ACAJ	13.575	-89.833	20.0	2004.23-2017.21	59
AGLA	13.836	-89.683	1021.2	2008.73-2013.19	6
AHUA	13.909	-89.808	918.9	2004.25-2009.19	48
AIES	13.447	-89.050	38.1	2007.35-2016.63	2567
ALAR	13.998	-89.781	569.0	2014.56-2016.66	346
AMAT	13.405	-87.999	126.4	2007.88-2012.39	4
AVES	15.667	-63.618	-36.8	1994.37-1998.25	28
AZTE	16.225	-93.937	32.4	2002.05-2005.14	13
BARI	15.802	-91.315	1461.1	2010.62-2015.78	1188
BEND	14.177	-90.595	315.4	2013.16-2015.07	8
BLUX	11.994	-83.772	28.1	2002.54-2012.75	9
BT10	13.529	-88.507	539.7	2006.34-2012.36	60
CABA	13.728	-88.677	344.6	2007.84-2012.36	7
CAH0	15.605	-89.818	306.6	1999.07-2015.06	11
CAM0	15.394	-89.059	244.4	2003.10-2015.06	9
CAMP	19.845	-90.539	0.9	1995.67-2008.95	2683
CARI	13.833	-87.689	230.2	2004.54-2013.45	20
CATR	14.463	-89.743	688.3	2011.88-2015.99	754
CAYS	15.800	-79.850	688.3	2010.69-2014.10	686
CBSB	19.712	-79.833	-7.2	2005.88-2014.25	2405
CEGD	13.939	-88.902	252.4	2004.33-2012.35	52
CGUI	12.976	-87.559	746.0	2012.71-2016.25	928
CH15	13.622	-88.561	42.5	2004.07-2014.88	75
CHA0	14.835	-89.519	338.8	2003.10-2015.10	6
CHET	18.495	-88.299	2.9	1993.28-2016.81	5415
CHIO	14.779	-89.652	1361.2	1999.07-2012.91	15
CHIQ	14.282	-87.509	921.3	2003.95-2013.46	27
CHIS	15.812	-90.291	242.0	2011.65-2015.92	1146
CHL0	14.075	-90.382	231.0	1999.06-2015.07	17
CHNN	12.640	-87.137	68.8	2001.05-2012.72	33
CHPO	14.294	-91.915	9.8	2012.90-2016.13	1146
CHQG	15.350	-90.752	1280.5	2010.59-2013.44	863
CLV2	12.572	-86.846	287.2	2010.20-2014.52	1530
CML0	14.638	-90.804	1767.8	1999.07-2015.08	19
CMP1	14.509	-85.715	391.4	2000.19-2005.41	6
CN18	17.408	-83.944	1.3	2014.74-2016.85	605
CN21	13.403	-87.427	15.8	2014.33-2016.85	825
CN22	12.384	-87.045	28.8	2012.11-2014.00	652
CN23	17.261	-88.779	55.3	2012.56-2016.85	1508
CN24	19.576	-88.054	7.8	2013.83-2016.85	1094
CN25	16.232	-92.135	1649.2	2014.12-2016.81	970
CN30	11.994	-83.772	30.0	2012.12-2012.67	205
CNCC	16.125	-92.693	553.3	2002.12-2015.13	17

Site ID	Lat. °N	Long. °E	Elevation meters	Time span	Observation days
CNCH	14.027	-88.344	561.2	2004.52-2013.54	17
CNG2	12.501	-86.699	513.5	2011.39-2016.85	655
CNR1	13.670	-89.289	926.7	2008.17-2010.75	939
COA0	15.473	-90.404	1320.3	2003.09-2006.08	2
COAT	14.702	-91.885	428.0	2010.52-2015.43	1251
COB0	15.464	-90.389	1359.7	1999.06-2015.06	27
COMI	16.282	-92.137	1616.6	2002.07-2016.81	1639
CON0	14.517	-89.452	801.8	1999.07-2015.10	17
CORI	12.517	-87.200	6.7	2003.16-2012.72	22
CORN	12.177	-83.065	8.1	2001.03-2003.15	10
COTZ	14.335	-91.058	304.4	2011.82-2015.99	940
CPJ0	14.854	-89.240	564.7	2003.10-2006.08	5
CRM1	13.727	-88.898	869.2	2007.88-2012.35	4
CRO1	17.757	-64.584	-32.0	1998.23-2010.86	2383
CRR1	13.669	-88.728	485.9	2007.84-2012.35	8
CSJO	13.487	-88.386	624.1	2007.86-2012.37	5
CUCU	14.578	-88.860	897.5	2008.07-2013.56	9
DERA	13.668	-88.823	832.1	2004.17-2007.84	31
DOL2	14.351	-90.572	1323.6	2012.93-2015.04	7
DOLO	14.352	-90.580	1373.0	2012.93-2015.04	7
ECOP	15.332	-88.324	184.5	2004.41-2006.47	10
ELCO	12.805	-87.404	25.0	2001.05-2012.70	21
ELEN	16.916	-89.868	118.1	2001.93-2015.92	3499
ERAN	14.232	-88.463	1250.5	2004.52-2013.55	17
ERAZ	14.601	-87.114	1005.3	2004.64-2010.48	21
ESPI	15.696	-92.073	803.5	2002.10-2015.13	13
ESPO	15.935	-93.604	289.2	2002.05-2005.14	13
ESTC	17.462	-93.479	42.6	2004.10-2015.13	14
FMIN	15.084	-89.671	1780.9	1999.08-2015.09	18
FRT1	15.780	-88.040	8.8	2004.58-2013.15	24
FSD0	14.735	-61.147	484.0	1994.39-1999.87	15
GCGT	19.293	-81.379	8.4	2005.44-2011.90	2093
GLCO	15.030	-86.070	662.2	2000.18-2010.47	11
GOME	14.034	-91.081	18.6	2013.16-2015.27	8
GRAC	14.588	-88.584	847.6	2004.50-2013.55	17
GRUT	16.419	-92.857	680.2	2003.11-2015.13	14
GUAJ	14.228	-89.469	437.2	2004.28-2009.33	45
GUAT	14.590	-90.520	1519.9	2000.57-2013.49	4375
GUAY	13.841	-89.162	468.6	2008.88-2012.34	6
HERH	12.609	-86.831	740.0	2010.19-2015.29	1762
HON0	15.030	-89.615	211.0	1999.08-2006.10	8
HON1	15.032	-89.615	210.8	2012.92-2015.09	8
HOYN	12.599	-86.828	764.7	2010.19-2015.60	1771
HUE0	15.282	-91.469	1914.7	1999.06-2006.08	9
HUEH	15.318	-91.503	1878.2	2002.43-2015.67	1143

Site ID	Lat. °N	Long. °E	Elevation meters	Time span	Observation days
ICAM	19.853	-90.527	2.6	2010.03-2016.81	2389
ICHA	13.560	-88.716	360.4	2007.85-2012.35	4
IPA0	14.623	-89.628	806.9	2006.09-2015.10	10
ISCO	5.544	-87.056	10.4	2011.38-2016.71	1527
ITUX	16.749	-93.122	551.8	2013.50-2015.88	836
IXTA	14.183	-90.269	1396.5	2012.95-2015.06	8
JAGU	15.099	-88.710	419.1	2004.43-2013.57	20
JALA	14.624	-90.011	1444.8	2013.01-2015.05	7
JCFI	12.684	-86.828	44.1	2010.76-2016.59	816
JOY0	15.011	-90.826	1613.4	2003.10-2006.09	4
JUCU	13.253	-88.250	726.2	2004.87-2012.72	48
LAGO	14.944	-87.998	704.1	2008.08-2010.44	7
LCAN	14.730	-88.437	1048.2	2004.50-2013.55	14
LCEB	15.748	-86.841	15.4	2004.02-2013.59	24
LEME	12.427	-86.909	78.2	2009.90-2016.84	1594
LEON	12.428	-86.909	76.3	2001.05-2003.15	7
LESP	14.315	-88.160	1698.1	2004.10-2010.42	24
LJAS	13.596	-87.747	67.1	2004.54-2013.45	28
LNUB	13.902	-89.780	1306.8	2014.56-2016.66	535
LOLO	13.559	-88.369	741.7	2007.86-2012.37	8
LPIN	13.680	-87.919	261.8	2007.88-2012.39	5
LPZW	14.314	-87.691	777.4	2003.95-2013.53	30
LSSJ	13.378	-88.198	85.7	2007.87-2017.10	7
MALP	12.546	-86.678	216.7	2003.14-2012.69	8
MANA	12.149	-86.249	71.0	2000.39-2012.68	2495
MAYA	14.841	-89.135	597.5	2004.50-2013.58	19
MAZ0	14.537	-91.550	344.2	1999.06-2012.95	8
MAZ2	14.540	-91.552	360.5	2012.90-2016.13	1105
MEZA	15.445	-87.931	26.2	2003.81-2013.59	38
MGL1	13.529	-88.150	212.0	2007.87-2012.39	13
MNGO	13.965	-89.197	319.5	2004.31-2017.09	57
MNTO	14.917	-86.381	656.6	2000.16-2010.47	13
MOD0	15.930	-89.234	4.5	2003.10-2015.06	9
MON0	14.496	-89.859	993.2	2006.10-2015.05	9
MORO	13.599	-86.925	244.0	2006.29-2013.45	15
MOYU	14.033	-90.085	1232.7	2013.01-2015.06	8
MPSC	15.459	-92.894	73.3	2002.05-2015.13	19
MRLS	15.462	-88.850	46.3	2011.88-2016.00	1112
MTP1	14.791	-92.368	54.9	2008.31-2016.85	2598
NAJO	15.557	-87.625	194.6	2004.60-2005.75	11
NARA	17.227	-90.810	73.3	2010.37-2016.12	1505
NDAM	13.678	-87.357	175.1	2004.74-2013.44	20
NOCO	14.438	-89.199	806.4	2004.45-2013.57	34
NONU	13.574	-88.952	446.0	2007.83-2012.34	6
OCOM	14.695	-87.949	626.3	2004.51-2013.58	21

Site ID	Lat. °N	Long. °E	Elevation meters	Time span	Observation days
OPAC	13.722	-88.367	241.0	2007.85-2012.37	5
OSIC	13.814	-88.146	472.6	2004.11-2012.39	49
PAM0	15.458	-90.630	1435.0	2003.09-2006.09	5
PASA	13.592	-87.832	67.3	2007.88-2012.39	4
PAZC	12.295	-86.592	55.9	2001.05-2012.69	11
PCYA	14.414	-90.638	1530.7	2009.05-2012.03	84
PIN0	14.551	-90.380	1702.7	1999.06-2006.10	25
PIN2	14.546	-90.386	1712.0	2012.95-2015.04	10
PLAY	13.793	-89.345	484.5	2008.88-2017.09	4
POCH	11.773	-86.506	13.2	2000.44-2012.72	15
POLS	12.649	-86.813	133.3	2010.18-2016.85	1227
PONE	12.383	-87.021	47.3	2001.06-2012.69	18
POPT	16.325	-89.410	521.5	2010.36-2014.81	1027
PRT1	12.573	-85.367	455.2	2000.61-2012.73	23
PRUS	13.347	-88.605	46.1	2007.85-2012.36	7
PUEC	14.042	-83.382	23.3	2001.04-2006.16	13
QICH	15.025	-91.148	2020.3	2013.02-2015.12	7
QUE0	14.871	-91.514	2388.7	1999.06-2006.08	9
QUE1	14.871	-91.514	2389.0	1999.06-2016.13	1005
QUEN	12.592	-86.852	449.6	2010.20-2014.10	1394
RECA	13.332	-87.155	66.7	2004.54-2013.44	29
RIOB	12.921	-85.221	239.1	2000.60-2003.15	12
ROA0	16.318	-86.527	10.0	2007.35-2016.81	3047
ROG1	13.824	-88.578	582.1	2007.84-2012.35	5
ROSA	14.767	-88.776	1167.1	2004.51-2013.56	16
ROTB	12.525	-86.736	270.4	2010.78-2014.41	95
RUB0	15.990	-90.447	139.1	1999.07-2015.12	13
SABY	18.967	-91.187	-3.4	2004.50-2016.81	2226
SAIN	13.325	-87.815	15.9	2004.38-2014.88	88
SAL0	15.075	-90.281	983.2	1999.06-2015.13	12
SALN	12.618	-86.856	535.0	2010.19-2014.35	1099
SAN0	12.580	-81.716	10.1	2007.93-2016.85	2963
SAN2	14.816	-90.249	996.6	1999.07-2015.13	14
SANA	12.524	-81.729	5.8	1994.10-2003.27	25
SAYA	16.520	-90.192	143.9	2010.59-2014.85	683
SBAR	13.634	-88.354	261.6	2007.85-2012.37	5
SCAR	13.638	-88.083	213.2	2007.87-2012.39	6
SCW2	12.697	-87.021	873.3	2013.02-2016.25	1138
SFDP	14.966	-86.245	1591.8	2000.17-2004.54	6
SGTO	13.100	-87.063	82.8	2004.55-2013.44	20
SIGN	13.495	-89.320	146.3	2003.09-2006.19	6
SJAN	14.815	-88.211	412.4	2004.51-2013.58	19
SJUL	14.140	-86.589	1119.2	2008.08-2010.46	7
SLOR	13.424	-87.437	12.0	2000.72-2010.46	603
SMCO	14.403	-88.954	999.8	2008.06-2013.57	11

Site ID	Lat. °N	Long. °E	Elevation meters	Time span	Observation days
SMHO	14.953	-91.808	2414.3	2012.91-2014.80	646
SNJE	13.868	-89.601	1659.2	2007.22-2016.61	3349
SNTA	14.066	-87.950	1643.0	2004.52-2013.54	19
SOLO	15.571	-91.494	3358.9	1999.06-2015.07	14
SOLE	16.675	-92.519	2337.4	2002.12-2015.12	17
SSAS	13.446	-89.052	30.0	2004.35-2009.08	49
SSIA	13.697	-89.117	626.6	2004.79-2016.96	3264
SUNZ	13.502	-89.390	126.9	2004.21-2009.10	44
SVCI	13.639	-88.793	430.8	2014.55-2016.66	518
SVIC	13.630	-88.787	403.1	2007.88-2012.35	9
TACA	13.970	-89.354	338.6	2008.88-2017.09	6
TAXI	14.035	-90.465	47.2	2011.04-2015.39	1253
TECF	12.603	-86.838	862.8	2010.76-2015.41	1543
TECP	14.761	-90.992	2298.7	2013.16-2016.14	973
TEG2	14.090	-87.206	951.3	2011.32-2016.85	1512
TEGU	14.090	-87.206	948.8	2000.37-2014.02	4009
TEJU	14.175	-89.105	354.4	2003.09-2006.19	6
TELN	12.606	-86.835	891.6	2009.98-2016.05	1953
TEUS	12.410	-85.814	154.0	2000.59-2006.13	21
TGIG	16.778	-93.122	609.0	2015.50-2016.81	284
THIG	14.882	-92.296	114.5	2015.50-2016.81	281
TIKA	17.225	-89.612	239.9	2011.03-2013.08	362
TINT	15.318	-89.875	116.7	2010.60-2014.16	979
TNPJ	15.705	-93.219	63.4	2014.88-2016.06	429
TONU	13.926	-86.841	937.1	2004.69-2013.46	21
TOTO	15.025	-91.335	2174.7	2013.03-2015.12	7
TPCH	14.883	-92.296	112.4	2003.49-2006.50	570
TRAN	12.025	-86.689	28.5	2001.07-2012.73	12
USPO	15.348	-90.870	1839.0	2003.09-2006.09	5
USUL	13.380	-88.484	240.5	2007.87-2012.38	9
UVGS	14.789	-91.185	2348.3	2013.16-2015.08	10
VIEJ	13.515	-88.988	86.2	2007.83-2010.30	4
VIKH	17.716	-64.798	-6.4	2006.64-2016.77	3182
VILL	17.996	-92.913	21.0	1993.14-2016.81	5337
VMIG	13.396	-88.305	377.1	2007.49-2016.02	2301
ZACO	14.981	-89.501	306.1	2003.10-2015.09	19
ZACA	15.113	-89.356	132.4	2010.57-2013.75	1026
ZAPO	14.139	-89.827	882.3	2013.01-2015.06	8

Site coordinates are in IGS08/ITRF2008. Site elevations are specified relative to the WGS84 reference ellipsoid.

Table 2: Estimated coseismic offsets

Site ID	Lat. °N	Long. °E	2009 Swan Islands (mm)			2012 El Salvador (mm)			2012 Champerico Islands		
			East	North	Vertical	E	N	V	E	N	V
ACAJ	13.5751	-89.8333	0.9	2.6	0.9	0.6	-2.8	-0.5	-0.2	-0.6	
AGLA	13.8359	-89.6834	1.1	3.1	1.1	0.5	-3.1	-0.2	-0.5	-0.7	
AHUA	13.9087	-89.8081	0.9	2.8	0.9	0.5	-2.6	-0.3	-0.7	-0.8	
AIES	13.4473	-89.0504	1.5	4.0	1.5	0.4	-9.0	0.1	-0.1	-0.3	
AMAT	13.4053	-87.9989	1.6	4.9	1.8	-3.5	-11.6	1.1	-0.1	-0.2	
AVES	15.6670	-63.6183	0.1	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	
AZTE	16.2247	-93.9373	-0.9	0.3	-0.3	0.0	-0.1	-0.1	0.4	-2.3	
BARI	15.8019	-91.3148	-2.2	0.7	-0.8	0.1	-0.5	-0.1	-3.3	-7.3	
BEND	14.1771	-90.5954	-0.1	1.4	0.3	0.2	-1.0	-0.3	-3.3	-2.9	
BLUX	11.9937	-83.7718	0.9	-0.1	-0.2	-0.1	-0.2	-0.2	0.0	-0.0	
BT10	13.5290	-88.5071	1.7	5.2	1.9	-1.5	-10.8	0.8	-0.1	-0.2	
CABA	13.7278	-88.6770	1.9	5.6	2.0	-0.6	-8.1	0.6	-0.2	-0.3	
CAH0	15.6052	-89.8177	-5.4	1.8	-1.6	0.1	-1.3	0.1	-1.9	-2.3	
CAM0	15.3941	-89.0592	-7.7	4.7	-1.2	-0.1	-2.0	0.2	-1.2	-1.2	
CAMP	19.8447	-90.5393	-1.2	0.3	-0.4	0.0	-0.3	0.0	-0.3	-0.9	
CARI	13.8333	-87.6891	2.1	6.3	2.2	-2.3	-6.7	0.9	-0.2	-0.2	
CATR	14.4629	-89.7426	0.4	3.0	0.8	0.2	-2.2	-0.0	-1.5	-1.4	
CAYS	15.7956	-79.8460	0.8	-0.3	-0.3	-0.0	-0.0	0.0	0.0	0.0	
CBSB	19.7120	-79.8331	0.1	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	
CEGD	13.9395	-88.9017	2.0	5.7	2.1	-0.1	-5.9	0.4	-0.4	-0.5	
CGUI	12.9763	-87.5587	1.1	3.5	1.3	-6.8	-13.3	1.0	0.0	-0.1	
CH15	13.6225	-88.5612	1.8	5.4	2.0	-1.1	-9.5	0.7	-0.2	-0.3	
CHA0	14.8346	-89.5195	-0.3	3.5	0.6	0.1	-2.1	0.1	-1.5	-1.4	
CHET	18.4953	-88.2992	-3.1	-0.7	-0.3	-0.1	-0.6	0.1	-0.5	-0.8	
CHIO	14.7792	-89.6518	-0.4	3.0	0.5	0.2	-2.0	0.1	-1.6	-1.6	
CHIQ	14.2821	-87.5091	3.2	8.2	2.7	-1.6	-4.4	0.7	-0.2	-0.3	
CHIS	15.8123	-90.2914	-4.2	1.3	-1.4	0.1	-0.9	0.0	-2.4	-3.4	
CHL0	14.0754	-90.3816	0.2	1.7	0.4	0.2	-1.2	-0.3	-2.0	-1.9	
CHNN	12.6404	-87.1374	0.9	2.5	0.9	-6.9	-9.0	0.3	0.0	-0.1	
CHPO	14.2940	-91.9150	-0.5	0.6	-0.1	0.0	-0.2	-0.3	-40.3	-73.2	
CHQG	15.3501	-90.7521	-2.2	0.9	-0.7	0.1	-0.8	-0.1	-4.1	-5.7	
CLV2	12.5725	-86.8456	0.9	2.1	0.8	-4.8	-5.4	-0.1	0.0	-0.1	
CML0	14.6380	-90.8039	-0.8	1.1	-0.1	0.1	-0.8	-0.2	-6.0	-6.1	
CMP1	14.5092	-85.7146	4.6	0.3	-0.7	-1.0	-1.5	0.2	-0.1	-0.1	
CN18	17.4077	-83.9443	1.1	-2.1	-0.1	-0.3	-0.5	0.1	-0.1	-0.1	
CN21	13.4028	-87.4271	1.5	4.3	1.5	-3.9	-8.1	0.9	-0.1	-0.1	
CN22	12.3841	-87.0447	0.8	2.2	0.8	-6.8	-7.5	-0.4	0.0	-0.1	
CN23	17.2606	-88.7788	-7.6	0.8	-1.9	-0.1	-0.9	0.1	-0.8	-1.1	
CN24	19.5756	-88.0539	-1.4	-1.1	0.2	-0.1	-0.5	0.1	-0.3	-0.6	
CN25	16.2321	-92.1352	-1.6	0.5	-0.6	0.0	-0.3	-0.1	-1.2	-6.5	
CN30	11.9936	-83.7720	0.9	-0.1	-0.2	-0.1	-0.2	-0.2	0.0	-0.0	
CNCC	16.1246	-92.6935	-1.3	0.4	-0.5	0.0	-0.2	-0.1	-0.2	-6.2	
CNCH	14.0269	-88.3438	2.5	7.7	2.7	-1.0	-6.3	0.7	-0.3	-0.4	

Site ID	Lat. °N	Long. °E	2009 Swan Islands (mm)			2012 El Salvador (mm)			2012 Champerico Islands		
			East	North	Vertical	E	N	V	E	N	V
CNG2	12.5012	-86.6993	0.8	1.9	0.7	-3.9	-4.1	-0.3	0.0	-0.1	
CNR1	13.6705	-89.2890	1.5	3.9	1.4	0.6	-5.6	-0.0	-0.2	-0.4	
COA0	15.4729	-90.4042	-3.0	1.2	-0.9	0.1	-1.0	-0.0	-3.0	-3.9	
COAT	14.7019	-91.8845	-0.8	0.6	-0.2	0.0	-0.3	-0.2	-16.0	-37.5	
COB0	15.4638	-90.3888	-3.0	1.2	-0.9	0.1	-1.0	-0.0	-3.0	-3.9	
COMI	16.2819	-92.1369	-1.7	0.5	-0.6	0.0	-0.3	-0.1	-1.1	-6.2	
CON0	14.5174	-89.4518	1.0	4.1	1.2	0.2	-2.7	0.1	-1.2	-1.1	
CORI	12.5166	-87.1996	0.9	2.4	0.9	-8.2	-10.4	0.1	0.0	-0.1	
CORN	12.1767	-83.0648	0.9	-0.3	-0.3	-0.1	-0.2	-0.1	0.0	-0.0	
COTZ	14.3347	-91.0582	-0.5	1.0	0.0	0.1	-0.6	-0.3	-8.7	-8.1	
CPJ0	14.8537	-89.2403	0.7	5.4	1.2	0.0	-2.5	0.2	-1.2	-1.1	
CRM1	13.7265	-88.8985	1.8	5.0	1.9	-0.1	-7.3	0.4	-0.2	-0.4	
CRO1	17.7569	-64.5843	0.1	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	
CRR1	13.6692	-88.7277	1.9	5.3	2.0	-0.6	-8.5	0.6	-0.2	-0.3	
CSJO	13.4865	-88.3861	1.7	5.1	1.9	-2.0	-11.5	0.9	-0.1	-0.2	
CUCU	14.5784	-88.8597	3.0	8.9	2.9	-0.2	-3.5	0.3	-0.8	-0.7	
DERA	13.6684	-88.8227	1.8	5.1	1.9	-0.3	-8.2	0.5	-0.2	-0.3	
DOL2	14.3509	-90.5720	-0.3	1.4	0.2	0.2	-1.0	-0.3	-3.8	-3.4	
DOLO	14.3517	-90.5797	-0.3	1.4	0.2	0.2	-1.0	-0.3	-3.9	-3.5	
ECOP	15.3318	-88.3236	16.4	46.4	8.1	-0.3	-2.4	0.3	-0.7	-0.7	
ELCO	12.8055	-87.4043	1.0	3.0	1.1	-7.7	-12.7	0.8	0.0	-0.1	
ELEN	16.9161	-89.8676	-5.5	1.8	-1.9	0.0	-0.8	0.1	-1.2	-2.0	
ERAN	14.2322	-88.4634	2.9	8.9	3.1	-0.7	-5.2	0.6	-0.4	-0.4	
ERAZ	14.6014	-87.1136	5.2	7.6	2.1	-1.3	-3.1	0.5	-0.3	-0.3	
ESPI	15.6956	-92.0734	-1.4	0.5	-0.5	0.0	-0.3	-0.1	-2.3	-10.8	
ESPO	15.9353	-93.6039	-0.9	0.3	-0.3	0.0	-0.1	-0.1	0.6	-3.5	
ESTC	17.4617	-93.4786	-1.1	0.4	-0.4	0.0	-0.2	-0.1	0.1	-1.9	
FMIN	15.0835	-89.6706	-2.1	2.5	-0.2	0.1	-1.7	0.1	-1.8	-1.8	
FRT1	15.7797	-88.0401	226.3	185.3	2.5	-0.3	-1.9	0.3	-0.7	-0.7	
FSD0	14.7348	-61.1467	0.1	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	
GCGT	19.2930	-81.3794	-0.0	-0.6	0.1	0.0	0.0	0.0	0.0	0.0	
GLCO	15.0298	-86.0699	8.4	1.6	-0.9	-0.9	-1.6	0.3	-0.2	-0.2	
GOME	14.0344	-91.0805	-0.2	1.1	0.1	0.1	-0.5	-0.4	-6.2	-5.5	
GRAC	14.5885	-88.5843	3.8	11.8	3.8	-0.4	-3.8	0.4	-0.6	-0.6	
GRUT	16.4192	-92.8568	-1.3	0.4	-0.5	0.0	-0.2	-0.1	-0.1	-4.6	
GUAJ	14.2284	-89.4687	1.3	4.0	1.3	0.3	-3.1	0.0	-0.9	-0.9	
GUAT	14.5904	-90.5202	-0.7	1.4	0.0	0.2	-1.1	-0.2	-4.0	-3.9	
GUAY	13.8411	-89.1623	1.7	4.6	1.6	0.3	-5.4	0.2	-0.4	-0.5	
HERH	12.6093	-86.8310	0.9	2.2	0.8	-4.6	-5.3	-0.0	0.0	-0.1	
HON0	15.0300	-89.6147	-1.7	2.7	-0.0	0.1	-1.8	0.1	-1.7	-1.7	
HON1	15.0320	-89.6151	-1.7	2.7	-0.0	0.1	-1.8	0.1	-1.7	-1.7	
HOYN	12.5988	-86.8281	0.9	2.2	0.8	-4.6	-5.3	-0.1	0.0	-0.1	
HUE0	15.2822	-91.4694	-1.5	0.7	-0.5	0.1	-0.5	-0.1	-6.1	-12.4	
HUEH	15.3182	-91.5027	-1.5	0.6	-0.5	0.1	-0.5	-0.1	-5.8	-12.4	
ICAM	19.8535	-90.5275	-1.2	0.3	-0.4	0.0	-0.3	0.0	-0.3	-0.9	

Site ID	Lat. °N	Long. °E	2009 Swan Islands (mm)			2012 El Salvador (mm)			2012 Champerico Islands		
			East	North	Vertical	E	N	V	E	N	V
ICHA	13.5603	-88.7162	1.7	5.0	1.8	-0.7	-9.8	0.6	-0.1	-0.3	
IPA0	14.6229	-89.6284	0.2	3.3	0.7	0.2	-2.2	0.0	-1.5	-1.4	
ISCO	5.5444	-87.0558	0.1	0.3	0.1	0.0	0.5	0.1	0.0	0.0	
ITUX	16.7494	-93.1218	-1.2	0.4	-0.4	0.0	-0.2	-0.1	0.1	-3.3	
IXTA	14.1829	-90.2688	0.1	1.9	0.5	0.3	-1.4	-0.3	-2.0	-1.9	
JAGU	15.0992	-88.7099	4.9	17.4	4.1	-0.2	-2.6	0.3	-0.9	-0.8	
JALA	14.6236	-90.0105	-0.4	2.1	0.3	0.2	-1.6	-0.1	-2.2	-2.1	
JCFI	12.6838	-86.8283	0.9	2.2	0.8	-4.5	-5.3	0.1	0.0	-0.1	
JOY0	15.0112	-90.8264	-1.5	0.9	-0.4	0.1	-0.8	-0.1	-5.4	-6.7	
JUCU	13.2529	-88.2496	1.4	4.5	1.7	-3.7	-15.3	1.0	-0.0	-0.2	
LAGO	14.9444	-87.9984	6.7	21.1	6.0	-0.7	-3.1	0.5	-0.5	-0.5	
LCAN	14.7304	-88.4371	4.7	15.4	4.8	-0.5	-3.5	0.4	-0.6	-0.6	
LCEB	15.7479	-86.8407	33.5	18.1	1.0	-0.6	-1.6	0.3	-0.4	-0.4	
LEME	12.4274	-86.9095	0.8	2.1	0.8	-5.3	-5.8	-0.3	0.0	-0.1	
LEON	12.4276	-86.9092	0.8	2.1	0.8	-5.3	-5.8	-0.3	0.0	-0.1	
LESP	14.3148	-88.1605	3.2	10.3	3.5	-1.0	-4.9	0.6	-0.4	-0.4	
LJAS	13.5957	-87.7470	1.7	5.4	2.0	-3.0	-8.5	1.0	-0.1	-0.2	
LNUB	13.9022	-89.7799	0.9	2.9	1.0	0.5	-2.7	-0.2	-0.7	-0.8	
LOLO	13.5589	-88.3685	1.8	5.4	2.0	-1.9	-10.5	0.9	-0.1	-0.2	
LPIN	13.6805	-87.9195	1.9	5.9	2.1	-2.5	-8.4	1.0	-0.1	-0.2	
LPZW	14.3138	-87.6909	3.2	9.2	3.1	-1.4	-4.6	0.7	-0.3	-0.3	
LSSJ	13.3780	-88.1980	1.6	4.8	1.8	-3.1	-12.8	1.1	-0.1	-0.2	
MALP	12.5460	-86.6776	0.9	1.9	0.7	-3.8	-4.0	-0.2	0.0	-0.1	
MANA	12.1490	-86.2490	0.7	1.3	0.4	-1.5	-1.5	-0.7	0.0	-0.0	
MAYA	14.8407	-89.1346	1.3	6.5	1.7	-0.0	-2.6	0.2	-1.1	-1.0	
MAZ0	14.5370	-91.5499	-0.7	0.7	-0.1	0.1	-0.4	-0.2	-18.2	-25.6	
MAZ2	14.5405	-91.5517	-0.7	0.7	-0.1	0.1	-0.4	-0.2	-18.2	-25.6	
MEZA	15.4452	-87.9311	24.4	44.6	7.2	-0.5	-2.2	0.3	-0.6	-0.6	
MGL1	13.5286	-88.1500	1.7	5.4	2.0	-2.6	-10.6	1.0	-0.1	-0.2	
MNGO	13.9651	-89.1974	1.7	4.7	1.7	0.2	-4.7	0.2	-0.5	-0.6	
MNTO	14.9168	-86.3805	7.9	3.6	0.1	-1.0	-1.9	0.3	-0.2	-0.2	
MOD0	15.9296	-89.2338	-13.7	3.9	-3.8	-0.0	-1.4	0.1	-1.3	-1.5	
MON0	14.4961	-89.8587	0.1	2.6	0.6	0.2	-2.0	-0.1	-1.7	-1.6	
MORO	13.5989	-86.9246	1.8	3.7	1.2	-2.8	-4.7	0.6	-0.1	-0.1	
MOYU	14.0327	-90.0848	0.5	2.2	0.7	0.3	-1.8	-0.3	-1.2	-1.3	
MPSC	15.4589	-92.8938	-1.0	0.4	-0.3	0.0	-0.2	-0.1	0.6	-10.3	
MRLS	15.4623	-88.8497	-14.3	6.8	-1.4	-0.1	-2.0	0.2	-1.0	-1.1	
MTP1	14.7914	-92.3680	-0.8	0.5	-0.2	0.0	-0.2	-0.2	-5.0	-40.0	
NAJO	15.5569	-87.6249	38.9	23.1	2.3	-0.5	-2.1	0.3	-0.5	-0.5	
NARA	17.2268	-90.8100	-3.1	1.1	-1.1	0.0	-0.5	0.0	-1.1	-2.6	
NDAM	13.6777	-87.3568	1.9	5.0	1.7	-2.9	-6.3	0.8	-0.1	-0.2	
NOCO	14.4384	-89.1987	1.8	5.6	1.8	0.1	-3.3	0.2	-0.9	-0.8	
NONU	13.5741	-88.9520	1.6	4.5	1.7	0.1	-8.4	0.3	-0.1	-0.3	
OCOM	14.6952	-87.9491	4.7	15.0	4.7	-0.8	-3.6	0.5	-0.4	-0.4	
OPAC	13.7218	-88.3667	2.0	6.1	2.2	-1.5	-8.7	0.8	-0.2	-0.3	

Site ID	Lat. °N	Long. °E	2009 Swan Islands (mm)			2012 El Salvador (mm)			2012 Champerico Islands		
			East	North	Vertical	E	N	V	E	N	V
OSIC	13.8139	-88.1457	2.1	6.7	2.4	-1.8	-7.8	0.9	-0.2	-0.3	
PAM0	15.4583	-90.6297	-2.6	1.0	-0.8	0.1	-0.8	-0.1	-3.5	-4.9	
PASA	13.5918	-87.8322	1.8	5.5	2.0	-3.0	-8.9	1.0	-0.1	-0.2	
PAZC	12.2948	-86.5921	0.8	1.7	0.6	-3.0	-3.0	-0.6	0.0	-0.0	
PCYA	14.4139	-90.6378	-0.4	1.3	0.1	0.2	-0.9	-0.2	-4.4	-4.0	
PIN0	14.5506	-90.3797	-0.5	1.6	0.1	0.2	-1.2	-0.2	-3.3	-3.1	
PIN2	14.5457	-90.3865	-0.5	1.5	0.1	0.2	-1.2	-0.2	-3.3	-3.1	
PLAY	13.7932	-89.3452	1.5	4.0	1.4	0.5	-4.7	-0.0	-0.4	-0.5	
POCH	11.7732	-86.5065	0.6	1.3	0.5	-0.9	-1.2	-1.4	0.1	-0.0	
POLS	12.6493	-86.8129	0.9	2.2	0.8	-4.5	-5.2	0.0	0.0	-0.1	
PONE	12.3830	-87.0209	0.8	2.1	0.8	-6.5	-7.1	-0.4	0.0	-0.1	
POPT	16.3255	-89.4105	-9.9	3.1	-3.1	-0.0	-1.1	0.1	-1.3	-1.7	
PRT1	12.5731	-85.3671	1.0	0.5	0.0	-0.8	-0.8	-0.3	-0.0	-0.1	
PRUS	13.3471	-88.6054	1.5	4.5	1.7	-1.5	-13.5	0.7	-0.1	-0.2	
PUEC	14.0421	-83.3820	2.3	-1.0	-0.9	-0.4	-0.4	-0.0	-0.0	-0.1	
QICH	15.0253	-91.1479	-1.3	0.8	-0.4	0.1	-0.6	-0.2	-7.1	-10.2	
QUE0	14.8713	-91.5145	-1.0	0.7	-0.3	0.1	-0.4	-0.2	-11.0	-18.7	
QUE1	14.8712	-91.5144	-1.0	0.7	-0.3	0.1	-0.4	-0.2	-11.0	-18.7	
QUEN	12.5918	-86.8519	0.9	2.2	0.8	-4.8	-5.5	-0.1	0.0	-0.1	
RECA	13.3322	-87.1548	1.4	3.7	1.3	-3.8	-6.7	0.8	-0.1	-0.1	
RIOB	12.9209	-85.2206	1.3	0.3	-0.1	-0.9	-0.9	-0.1	-0.0	-0.1	
ROA0	16.3182	-86.5268	123.5	43.6	-1.0	-0.5	-1.2	0.2	-0.3	-0.4	
ROG1	13.8240	-88.5778	2.1	6.2	2.2	-0.8	-7.5	0.7	-0.2	-0.3	
ROSA	14.7669	-88.7757	3.7	11.4	3.5	-0.2	-3.1	0.3	-0.8	-0.8	
ROTB	12.5245	-86.7363	0.9	2.0	0.7	-4.1	-4.4	-0.2	0.0	-0.1	
RUB0	15.9903	-90.4469	-4.0	1.2	-1.4	0.1	-0.8	-0.0	-2.3	-3.6	
SABY	18.9670	-91.1865	-1.5	0.6	-0.6	0.0	-0.3	0.0	-0.4	-1.3	
SAIN	13.3249	-87.8153	1.5	4.5	1.7	-4.3	-11.6	1.1	-0.1	-0.2	
SAL0	15.0755	-90.2814	-1.9	1.4	-0.5	0.1	-1.2	-0.1	-3.1	-3.4	
SALN	12.6177	-86.8561	0.9	2.2	0.8	-4.8	-5.5	-0.0	0.0	-0.1	
SAN0	12.5805	-81.7157	1.0	-0.4	-0.4	-0.1	-0.1	-0.1	0.0	0.0	
SAN2	14.8160	-90.2486	-1.1	1.6	-0.1	0.2	-1.3	-0.1	-3.0	-3.0	
SANA	12.5238	-81.7294	0.9	-0.4	-0.4	-0.1	-0.1	-0.1	0.0	0.0	
SAYA	16.5205	-90.1923	-5.0	1.6	-1.7	0.1	-0.8	0.0	-1.6	-2.6	
SBAR	13.6340	-88.3542	1.9	5.7	2.1	-1.7	-9.6	0.9	-0.1	-0.3	
SCAR	13.6383	-88.0829	1.9	5.8	2.1	-2.4	-9.2	1.0	-0.1	-0.2	
SCW2	12.6966	-87.0209	0.9	2.5	0.9	-5.7	-7.3	0.2	0.0	-0.1	
SFDP	14.9659	-86.2449	8.1	2.8	-0.4	-0.9	-1.8	0.3	-0.2	-0.2	
SGTO	13.0996	-87.0626	1.2	3.1	1.1	-4.5	-6.8	0.6	-0.0	-0.1	
SIGN	13.4945	-89.3195	1.4	3.6	1.3	0.8	-6.3	-0.2	-0.1	-0.4	
SJAN	14.8153	-88.2111	5.4	18.6	5.6	-0.6	-3.4	0.5	-0.6	-0.5	
SJUL	14.1401	-86.5886	3.2	3.5	0.9	-1.7	-2.9	0.4	-0.1	-0.2	
SLOR	13.4239	-87.4365	1.5	4.4	1.6	-3.8	-8.1	0.9	-0.1	-0.1	
SMCO	14.4035	-88.9535	2.5	7.2	2.4	-0.1	-3.9	0.3	-0.7	-0.7	
SMHO	14.9532	-91.8078	-1.0	0.6	-0.3	0.1	-0.3	-0.2	-9.9	-24.1	

Site ID	Lat. °N	Long. °E	2009 Swan Islands (mm)			2012 El Salvador (mm)			2012 Champerico Islands		
			East	North	Vertical	E	N	V	E	N	V
SNJE	13.8683	-89.6007	1.2	3.3	1.2	0.5	-3.4	-0.2	-0.5	-0.7	
SNTA	14.0663	-87.9502	2.5	8.1	2.8	-1.6	-5.9	0.8	-0.2	-0.3	
SOLO	15.5710	-91.4940	-1.8	0.6	-0.6	0.1	-0.5	-0.1	-4.2	-9.8	
SOLE	16.6753	-92.5195	-1.5	0.5	-0.6	0.0	-0.2	-0.1	-0.4	-4.3	
SSAS	13.4463	-89.0519	1.5	4.0	1.5	0.4	-9.0	0.1	-0.1	-0.3	
SSIA	13.6971	-89.1166	1.6	4.4	1.6	0.3	-6.4	0.1	-0.2	-0.4	
SUNZ	13.5021	-89.3904	1.3	3.4	1.3	0.8	-5.7	-0.3	-0.1	-0.4	
SVCI	13.6390	-88.7930	1.8	5.0	1.9	-0.4	-8.6	0.5	-0.2	-0.3	
SVIC	13.6304	-88.7872	1.8	5.0	1.9	-0.4	-8.7	0.5	-0.2	-0.3	
TACA	13.9700	-89.3536	1.5	4.2	1.5	0.4	-4.1	0.0	-0.6	-0.6	
TAXI	14.0348	-90.4653	0.1	1.6	0.4	0.2	-1.1	-0.4	-2.1	-2.0	
TECF	12.6031	-86.8383	0.9	2.2	0.8	-4.7	-5.4	-0.1	0.0	-0.1	
TECP	14.7611	-90.9920	-1.0	0.9	-0.2	0.1	-0.7	-0.2	-7.4	-8.6	
TEG2	14.0901	-87.2056	2.8	5.9	1.9	-1.9	-4.4	0.6	-0.2	-0.2	
TEGU	14.0905	-87.2056	2.8	5.9	1.9	-1.9	-4.4	0.6	-0.2	-0.2	
TEJU	14.1754	-89.1046	2.0	5.6	1.9	0.1	-4.2	0.2	-0.6	-0.6	
TELN	12.6064	-86.8348	0.9	2.2	0.8	-4.7	-5.3	-0.0	0.0	-0.1	
TEUS	12.4098	-85.8136	0.9	0.9	0.2	-1.2	-1.2	-0.4	0.0	-0.1	
TGIG	16.7782	-93.1222	-1.2	0.4	-0.5	0.0	-0.2	-0.1	0.1	-3.2	
THIG	14.8823	-92.2958	-0.8	0.5	-0.3	0.0	-0.2	-0.2	-5.5	-34.1	
TIKA	17.2246	-89.6123	-5.4	1.7	-1.8	-0.0	-0.8	0.1	-1.0	-1.6	
TINT	15.3177	-89.8754	-3.5	1.7	-0.9	0.1	-1.4	0.0	-2.1	-2.4	
TNPJ	15.7046	-93.2189	-0.9	0.3	-0.3	0.0	-0.1	-0.1	0.7	-6.0	
TONU	13.9260	-86.8407	2.4	4.1	1.2	-2.1	-3.8	0.5	-0.1	-0.2	
TOTO	15.0249	-91.3348	-1.3	0.7	-0.4	0.1	-0.5	-0.2	-8.1	-13.1	
TPCH	14.8834	-92.2959	-0.8	0.5	-0.3	0.0	-0.2	-0.2	-5.5	-34.1	
TRAN	12.0250	-86.6891	0.7	1.6	0.6	-2.5	-2.5	-1.2	0.0	-0.0	
USPO	15.3479	-90.8703	-2.1	0.9	-0.6	0.1	-0.7	-0.1	-4.5	-6.5	
USUL	13.3799	-88.4842	1.6	4.7	1.8	-2.0	-13.2	0.8	-0.1	-0.2	
UVGS	14.7892	-91.1850	-1.0	0.8	-0.2	0.1	-0.6	-0.2	-9.1	-11.7	
VIEJ	13.5149	-88.9884	1.6	4.3	1.6	0.2	-8.8	0.2	-0.1	-0.3	
VIKH	17.7162	-64.7981	0.1	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0	
VILL	17.9961	-92.9133	-1.2	0.4	-0.5	0.0	-0.2	-0.0	-0.1	-1.8	
VMIG	13.3962	-88.3046	1.6	4.9	1.8	-2.7	-12.8	1.0	-0.1	-0.2	
ZAC0	14.9807	-89.5010	-1.2	3.3	0.3	0.1	-2.0	0.1	-1.5	-1.5	
ZACA	15.1130	-89.3557	-2.0	3.8	0.1	0.1	-2.0	0.1	-1.4	-1.4	
ZAPO	14.1394	-89.8269	0.7	2.8	0.8	0.4	-2.3	-0.2	-1.1	-1.1	

The east (E), north (N), and vertical (V) coseismic offsets for the 28 May 2009 Swan Islands earthquake and 27 August and 07 November 2012 El Salvador and Guatemala (Champerico) earthquakes are estimated with the TDEFNODE model described in the main document.