TABLE 1. POINT-COUNTING PROPORTIONS OF SANDSTONES FROM THE ARPEROS, CUESTECITA, ESPERANZA, AND EL PAXTLE FORMATIONS

Arperos Formation (volcaniclastic slump)							Lvol+Lsbv		Lsed	Lmet			
SAMPLE	Qm	Qp	KF	P	Msv	Felsic	Lathwork	Microlithic	Qar	Sch+Phy	Microph	Misc	Sum
M1a	64 (12.8%)	33 (6.6%)	32 (6.4%)	170 (34.0%)	7 (1.4%)	42 (8.4%)	96 (19.2%)	2 (0.4%)	3 (0.6%)	20 (4.0%)	7 (1.4%)	24 (4.8%)	500 (100%)
M1b	99 (19.8%)	32 (6.4%)	24 (4.8%)	156 (31.2%)	10 (2.0%)	21 (4.2%)	92 (18.4%)	4 (0.8%)	7 (1.4%)	21 (4.2%)	0 (0.0%)	34 (6.8%)	500 (100%)
M2a	92 (18.4%)	44 (8.8%)	30 (6.0%)	169 (33.8%)	9 (1.8%)	30 (6.0%)	43 (8.6%)	0 (0.0%)	6 (1.2%)	29 (5.8%)	11 (2.2%)	37 (7.4%)	500 (100%)
M2b	94 (18.8%)	39 (7.8%)	18 (3.6%)	178 (35.6%)	12 (2.4%)	28 (5.6%)	40 (8.0%)	0 (0.0%)	9 (1.8%)	32 (6.4%)	12 (2.4%)	38 (7.6%)	500 (100%)
M3a	53 (10.6%)	48 (9.6%)	37 (7.4%)	223 (44.6%)	3 (0.6%)	51 (10.2%)	31 (6.2%)	0 (0.0%)	19 (3.8%)	14 (2.8%)	0 (0.0%)	21 (4.2%)	500 (100%)
M3b	66 (13.2%)	41 (8.2%)	31 (6.2%)	206 (41.2%)	5 (1.0%)	62 (12.4%)	27 (5.4%)	0 (0.0%)	13 (2.6%)	21 (4.2%)	2 (0.4%)	26 (4.2%)	500 (100%)
M4a	74 (14.8%)	38 (7.6%)	20 (4.0%)	231 (46.2%)	7 (1.4%)	29 (5.8%)	38 (7.6%)	3 (0.6%)	21 (4.2%)	15 (3.0%)	0 (0.0%)	24 (4.8%)	500 (100%)
M4b	68 (13.6%)	44 (8.8%)	11 (2.2%)	214 (42.8%)	11 (2.2%)	40 (8.0%)	32 (6.4%)	0 (0.0%)	24 (4.8%)	28 (5.6%)	0 (0.0%)	28 (5.6%)	500 (100%)
Cuestecita formation							Lvol+Lsbv		Lsed	Lmet			
SAMPLE	Qm	Qp	KF	P	Msv	Felsic	Lathwork	Microlithic	Qar	Sch+Phy	Microph	Misc	Sum
SL 18	91 (18.2%)	48 (9.6%)	11 (2.2%)	233 (46.6%)	16 (3.2%)	15 (3.0%)	22 (4.4%)	0 (0.0%)	8 (1.6%)	30 (6.0%)	0 (0.0%)	26 (5.2%)	500 (100%)
SL 25	68 (13.6%)	33 (6.6%)	15 (3.0%)	270 (54.0%)	17 (3.4%)	17 (3.4%)	28 (5.6%)	0 (0.0%)	13 (2.6%)	14 (2.8%)	0 (0.0%)	25 (5.0%)	500 (100%)
SL 45	73 (14.6%)	38 (7.6%)	20 (4.0%)	151 (30.2%)	14 (2.8%)	57 (11.4%)	80 (16.0%)	0 (0.0%)	19 (3.8%)	22 (4.4%)	0 (0.0%)	26 (5.2%)	500 (100%)
SL 46	87 (17.4%)	41 (8.2%)	11 (2.2%)	222 (44.4%)	19 (3.8%)	26 (5.2%)	36 (7.2%)	0 (0.0%)	3 (0.6%)	26 (5.2%)	0 (0.0%)	29 (5.8%)	500 (100%)
SL 48	84 (16.8%)	36 (7.2%)	12 (2.4%)	224 (44.8%)	9 (1.8%)	24 (4.8%)	44 (8.8%)	0 (0.0%)	18 (3.6%)	26 (5.2%)	0 (0.0%)	23 (4.6%)	500 (100%)
SL 51	73 (14.6%)	37 (7.4%)	10 (2.0%)	261 (52.2%)	17 (3.4%)	40 (8.0%)	22 (4.4%)	0 (0.0%)	0 (0%)	22 (4.4%)	0 (0.0%)	18 (3.6%)	500 (100%)
SL 52A	48 (9.6.2%)	43 (8.6%)	32 (6.4%)	162 (32.4%)	22 (4.4%)	36 (7.2%)	60 (12.0%)	0 (0.0%)	49 (9.8%)	27 (5.4%)	0 (0.0%)	21 (4.2%)	500 (100%)
SL 52B	82 (16.4%)	33 (6.6%)	24 (4.8%)	225 (45.0%)	9 (1.8%)	22 (4.4%)	57 (11.4%)	0 (0.0%)	15 (3.0%)	16 (3.2%)	0 (0.0%)	17 (3.4%)	500 (100%)
SL 56	72 (14.4%)	43 (8.6%)	27 (5.4%)	175 (35.0%)	14 (2.8%)	27 (5.4%)	54 (10.8%)	0 (0.0%)	29 (5.8%)	42 (8.4%)	0 (0.0%)	17 (3.4%)	500 (100%)
SL 65	81 (16.2%)	41 (8.2%)	21 (4.2%)	171 (34.2%)	18 (3.6%)	22 (4.4%)	59 (11.8%)	0 (0.0%)	30 (6.0%)	38 (7.6%)	0 (0.0%)	19 (3.8%)	500 (100%)
SL 67	73 (14.6%)	39 (7.8%)	19 (3.8%)	181 (36.2%)	12 (2.4%)	22 (4.4%)	78 (15.6%)	0 (0.0%)	28 (5.6%)	31 (6.2%)	0 (0.0%)	17 (3.4%)	500 (100%)
SL 69	80 (16.0%)	32 (6.4%)	0 (0%)	302 (60.4%)	13 (2.6%)	10 (2.0%)	31 (6.2%)	0 (0.0%)	5 (1.0%)	13 (2.6%)	0 (0.0%)	14 (2.8%)	500 (100%)
Esperanza Formation							Lvol+Lsbv		Lsed	Lmet			
SAMPLE	Qm	Qp	KF	P	Msv	Felsic	Lathwork	Microlithic	Qar	Sch+Phy	Microph	Misc	Sum
GTO 6	344 (68.8%)	48 (9.6%)	11 (2.2%)	0 (0%)	35 (7.0%)	3 (0.6%)	0 (0.0%)	0 (0.0%)	12 (2.4%)	35 (7.0%)	0 (0.0%)	12 (2.4%)	500 (100%)
GTO 7	329 (65.8%)	70 (14.0%)	6 (1.2%)	0 (0%)	18 (3.6%)	1 (0.2%)	0 (0.0%)	0 (0.0%)	17 (3.4%)	41 (8.2%)	0 (0.0%)	18 (3.6%)	500 (100%)
GTO 10	304 (60.8%)	102 (20.4%)	10 (2.0%)	0 (0%)	23 (4.6%)	0 (0%)	0 (0.0%)	0 (0.0%)	6 (1.2%)	39 (7.8%)	0 (0.0%)	16 (3.2%)	500 (100%)
GTO 12	348 (69.6%)	38 (7.6%)	21 (4.2%)	0 (0%)	25 (5.0%)	5 (1.0%)	0 (0.0%)	0 (0.0%)	8 (1.6%)	34 (6.8%)	0 (0.0%)	21 (4.2%)	500 (100%)
GTO 56	327 (65.4%)	74 (14.8%)	0 (0%)	0 (0%)	14 (2.8%)	5 (1.0%)	0 (0.0%)	0 (0.0%)	22 (4.4%)	32 (6.4%)	0 (0.0%)	26 (5.2%)	500 (100%)
E 15	368 (73.6%)	58 (11.6%)	3 (0.6%)	0 (0%)	15 (3.0%)	4 (0.8%)	0 (0.0%)	0 (0.0%)	11 (2.2%)	23 (4.6%)	0 (0.0%)	18 (3.6%)	500 (100%)
E 25A	321 (64.2%)	59 (11.8%)	8 (1.6%)	0 (0%)	17 (3.4%)	0 (0%)	0 (0.0%)	0 (0.0%)	21 (4.2%)	43 (8.6%)	0 (0.0%)	31 (6.2%)	500 (100%)
E 25B	343 (68.6%)	60 (12.0%)	3 (0.6%)	0 (0%)	21 (4.2%)	3 (0.6%)	0 (0.0%)	0 (0.0%)	16 (3.2%)	28 (5.6%)	0 (0.0%)	26 (5.2%)	500 (100%)

El Paxtle Formation							Lvol+Lsbv		Lsed	Lmet			
SAMPLE	Qm	Qp	KF	P	Msv	Felsic	Lathwork	Microlithic	Qar	Sch+Phy	Microph	Misc	Sum
SL 21	19 (3.8%)	47 (9.4%)	0 (0%)	281 (56.2%)	0 (0%)	0 (0.0%)	129 (25.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	24 (4.8%)	500 (100%)
SL 22bis	7 (1.4%)	53 (10.6%)	0 (0%)	218 (43.6%)	0 (0%)	0 (0.0%)	191 (38.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	31 (6.2%)	500 (100%)
SL 25A	13 (2.6%)	64 (12.8%)	0 (0%)	196 (39.2%)	0 (0%)	0 (0.0%)	197 (39.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (6.0%)	500 (100%)
SL 47	21 (4.2%)	53 (10.6%)	0 (0%)	267 (53.4%)	0 (0%)	0 (0.0%)	123 (24.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	36 (7.2%)	500 (100%)

RECALCULATED PARAMETERS

Arperos Formation (volcaniclastic slump)									
SAMPLE	QmFL %Qm	QmFL %F	QmFL %L	QtFL %Qt	QtFL %F	QtFL %L	QpLvLm %Qp	QpLvLm %Lv	QpLvLm %Lm
M1a	13.9	43.7	42.4	21.0	43.7	35.3	16.8	71.4	11.7
M1b	21.7	39.5	38.8	28.7	39.5	31.8	18.1	66.1	15.8
M2a	20.8	44.9	34.3	30.7	44.9	24.4	28.9	48.0	23.0
M2b	21.5	44.7	33.8	30.4	44.7	24.9	26.4	45.9	27.7
M3a	11.1	54.6	34.2	21.2	54.6	24.2	29.4	50.3	20.2
M3b	14.1	50.7	35.1	22.9	50.7	26.3	25.0	54.3	20.7
M4a	15.8	53.5	30.7	23.9	53.5	22.6	26.4	48.6	25.0
M4b	14.8	48.8	36.4	24.3	48.8	26.9	26.2	42.9	31.0

Cuestecita formation									
SAMPLE	QmFL %Qm	QmFL %F	QmFL %L	QtFL %Qt	QtFL %F	QtFL %L	QpLvLm %Qp	QpLvLm %Lv	QpLvLm %Lm
SL 18	19.9	53.3	26.8	30.3	53.3	16.4	39.0	30.1	30.9
SL 25	14.8	62.2	23.0	22.0	62.2	15.8	31.4	42.8	25.8
SL 45	15.9	37.2	46.9	24.1	37.2	38.7	17.6	63.4	19.0
SL 46	19.2	51.5	29.3	28.3	51.5	20.2	31.1	47.0	21.9
SL 48	17.9	50.4	31.7	25.6	50.4	24.0	24.3	45.9	29.8
SL 51	15.7	58.3	26.0	23.6	58.3	18.1	30.6	51.2	18.2
SL 52A	10.5	42.4	47.1	19.9	42.4	37.7	20.0	44.6	35.4
SL 52B	17.3	52.5	41.6	24.3	52.5	23.2	23.1	55.2	21.7
SL 56	15.4	43.2	41.6	24.5	43.2	32.4	22.0	41.5	36.5
SL 65	17.5	41.5	41.0	26.3	41.5	32.2	21.6	42.6	35.8
SL 67	15.5	42.5	42.0	23.8	42.5	33.7	19.7	50.5	29.8
SL 69	16.9	63.8	19.3	23.7	63.8	12.5	35.2	45.0	19.8

Esperanza Formation

SAMPLE	QmFL %Qm	QmFL %F	QmFL %L	QtFL %Qt	QtFL %F	QtFL %L	QpLvLm %Qp	QpLvLm %Lv	QpLvLm %Lm
GTO 6	75.9	2.4	21.7	86.5	2.4	11.1	49.0	3.1	47.9
GTO 7	70.9	1.3	27.8	86.0	1.3	12.7	54.3	0.8	44.9
GTO 10	65.9	2.2	31.9	88.1	2.2	9.7	69.4	0.0	30.6
GTO 12	76.7	4.6	18.9	85.0	4.6	10.4	44.7	5.9	49.4
GTO 56	71.1	0.0	28.9	87.2	0.0	12.8	55.6	3.8	40.6
E 15	78.8	0.6	20.6	91.2	0.6	8.2	60.4	4.2	35.4
E 25A	71.0	1.8	27.2	84.1	1.8	14.1	48.0	0.0	52.0
E 25B	75.7	0.7	23.6	89.0	0.7	10.3	56.1	2.8	41.1

El Paxtle Formation

SAMPLE	QmFL %Qm	QmFL %F	QmFL %L	QtFL %Qt	QtFL %F	QtFL %L	QpLvLm %Qp	QpLvLm %Lv	QpLvLm %Lm
SL 21	4.0	59.0	37.0	13.9	59.0	27.1	26.7	73.3	0.0
SL 22bis	1.5	46.5	52.0	12.8	46.5	40.7	21.7	78.3	0.0
SL 25A	2.8	41.7	55.5	16.4	41.7	41.9	24.5	75.5	0.0
SL 47	4.5	57.5	37.9	15.9	57.5	26.6	30.1	69.9	0.0

Point counting has been performed according to the Gazzi-Dickinson method (Dickinson, 1985). Values of the Cuestecita, Esperanza, and El Paxtle formations are from Martini et al. (2011) and are recalculated according to the new grain categories established for sandstones of the Arperos Formation. Qm: monocrystalline quartz; Qp: polycrystalline quartz; KF: K-feldspar; P: plagioclase; Msv: muscovite; Lv + Lsbv: volcanic and subvolcanic grains; Lsed: sedimentary grain; Qar: quartz-rich very fine arenite and siltite; Lmet: metamorphic grain; Sch + Phy: schist and phyllites; Micoph: microphaneritic grain; Misc: cement, matrix, dense minerals, and post-depositional components.Qt: Qm + Qp; F: KF + P; Lm: Lsed + Lmet.

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TABLE DR2.

SAMPLE M1a

(datum UTM nad 27: 2333786 N, 250650 E)

			CORRECTED RATIOS						CORRECTED AGES (Ma)								
Analysis	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{235}U$	±1s	$^{206}Pb/^{238}U$	±1s	Rho	$^{206}Pb/^{238}U$	±1s	$^{207}Pb/^{235}U$	±1s	$^{207}Pb/^{206}Pb$	±1s	Best age (Ma)	±1s	% disc.
Zircon_46_062	515	284	0.52	0.02916	0.0014	0.00471	0.00006	0.26	30.3	0.4	29	1	-6	103	30	0	-4.5
Zircon_18_028	**804**	**325**	**0.38**	**0.03892**	**0.0017**	**0.00488**	**0.00005**	**0.26**	**31.4**	**0.3**	**39**	**2**	**563**	**86**	**31**	**0**	**19.5**
Zircon_95_120	550	237	0.41	0.03489	0.0024	0.00489	0.00007	0.25	31.4	0.4	35	2	275	139	31	0	10.3
Zircon_08_016	**288**	**146**	**0.48**	**0.04547**	**0.0064**	**0.0049**	**0.0001**	**0.31**	**31.5**	**0.6**	**45**	**6**	**848**	**263**	**32**	**1**	**30.0**
Zircon_77_099	1108	488	0.41	0.03577	0.0019	0.005	0.00005	0.27	32.2	0.4	36	2	279	105	32	0	10.6
Zircon_11_020	**197**	**148**	**0.71**	**0.04741**	**0.005**	**0.00505**	**0.0001**	**0.29**	**32.5**	**0.7**	**47**	**5**	**871**	**189**	**33**	**1**	**30.9**
Zircon_90_114	**294**	**119**	**0.38**	**0.04318**	**0.0035**	**0.00508**	**0.00009**	**0.24**	**32.7**	**0.6**	**43**	**3**	**660**	**158**	**33**	**1**	**24.0**
Zircon_68_088	**991**	**384**	**0.37**	**0.04029**	**0.0043**	**0.00511**	**0.00007**	**0.27**	**32.8**	**0.4**	**40**	**4**	**501**	**215**	**33**	**0**	**18.0**
Zircon_96_122	**1218**	**542**	**0.42**	**0.04265**	**0.0025**	**0.00537**	**0.00007**	**0.3**	**34.5**	**0.4**	**42**	**2**	**513**	**113**	**35**	**0**	**17.9**
Zircon_04_011	**50**	**24**	**0.46**	**0.07002**	**0.015**	**0.00584**	**0.00022**	**0.29**	**38**	**1**	**69**	**14**	**1359**	**383**	**38**	**1**	**44.9**
Zircon_24_035	270	130	0.46	0.12758	0.0096	0.01758	0.00022	0.19	112	1	122	9	312	167	112	1	8.2
Zircon_31_044	746	994	1.26	0.13272	0.0028	0.01796	0.00012	0.32	114.8	0.8	127	3	354	47	115	1	9.6
Zircon_09_017	339	221	0.61	0.13614	0.0115	0.01825	0.00023	0.22	117	1	130	10	376	165	117	1	10.0
Zircon_97_123	600	254	0.40	0.13196	0.0032	0.01853	0.00013	0.3	118.4	0.8	126	3	279	50	118	1	6.0
Zircon_70_090	376	267	0.67	0.13416	0.0065	0.01866	0.00018	0.31	119	1	128	6	292	94	119	1	7.0
Zircon_58_076	267	76	0.27	0.14351	0.0081	0.01865	0.00017	0.21	119	1	136	7	445	125	119	1	12.5
Zircon_15_024	169	102	0.57	0.15017	0.0077	0.01892	0.00023	0.23	121	1	142	7	549	103	121	1	14.8
Zircon_33_046	486	465	0.90	0.13904	0.0036	0.01904	0.00015	0.3	121.6	0.9	132	3	321	59	122	1	7.9
Zircon_69_089	269	233	0.82	0.14274	0.0051	0.01903	0.00025	0.37	122	2	135	4	396	70	122	2	9.6
Zircon_79_101	193	111	0.54	0.15001	0.006	0.01915	0.00019	0.24	122	1	142	5	516	81	122	1	14.1
Zircon_17_027	**140**	**68**	**0.46**	**0.15486**	**0.0145**	**0.01922**	**0.00028**	**0.35**	**123**	**2**	**146**	**13**	**546**	**177**	**123**	**2**	**15.8**
Zircon_64_083	543	467	0.81	0.14413	0.0031	0.01948	0.00016	0.38	124	1	137	3	359	47	124	1	9.5
Zircon_26_038	**84**	**44**	**0.49**	**0.15761**	**0.0135**	**0.01946**	**0.0003**	**0.24**	**124**	**2**	**149**	**12**	**558**	**183**	**124**	**2**	**16.8**
Zircon_78_100	543	240	0.42	0.1326	0.0037	0.01946	0.00013	0.25	124.2	0.8	126	3	174	60	124	1	1.4
Zircon_21_032	181	101	0.52	0.15528	0.0073	0.0196	0.00022	0.23	125	1	147	6	524	105	125	1	15.0
Zircon_12_021	**211**	**55**	**0.25**	**0.15784**	**0.0061**	**0.01969**	**0.00022**	**0.28**	**126**	**1**	**149**	**5**	**543**	**76**	**126**	**1**	**15.4**
Zircon_54_071	**120**	**74**	**0.58**	**0.16763**	**0.0081**	**0.0197**	**0.00024**	**0.24**	**126**	**2**	**157**	**7**	**692**	**105**	**126**	**2**	**19.7**
Zircon_38_052	188	103	0.51	0.12827	0.0088	0.01968	0.00026	0.27	126	2	123	8	62	140	126	2	-2.4
Zircon_91_116	**137**	**71**	**0.49**	**0.16778**	**0.0111**	**0.01977**	**0.00029**	**0.32**	**126**	**2**	**157**	**10**	**659**	**122**	**126**	**2**	**19.7**
Zircon_93_118	**141**	**78**	**0.52**	**0.1606**	**0.012**	**0.01976**	**0.00025**	**0.26**	**126**	**2**	**151**	**11**	**565**	**147**	**126**	**2**	**16.6**
Zircon_34_047	411	272	0.62	0.13412	0.0036	0.01982	0.00017	0.32	127	1	128	3	151	61	127	1	0.8
Zircon_41_056	873	451	0.49	0.14257	0.0037	0.01986	0.0002	0.39	127	1	135	3	291	57	127	1	5.9
Zircon_59_077	245	149	0.57	0.15104	0.0056	0.01987	0.00019	0.27	127	1	143	5	436	84	127	1	11.2
Zircon_60_078	441	310	0.66	0.14814	0.0042	0.02029	0.00016	0.29	129	1	140	4	329	64	129	1	7.9
Zircon_43_058	207	144	0.66	0.15987	0.0062	0.02019	0.00024	0.31	129	2	151	5	515	85	129	2	14.6
Zircon_35_048	503	484	0.91	0.15505	0.0042	0.02027	0.00015	0.26	129.4	0.9	146	4	438	60	129	1	11.4
Zircon_44_059	298	199	0.63	0.15406	0.0047	0.02039	0.00018	0.29	130	1	145	4	398	67	130	1	10.3
Zircon_14_023	**234**	**139**	**0.56**	**0.1671**	**0.0062**	**0.0206**	**0.00021**	**0.27**	**131**	**1**	**157**	**5**	**568**	**73**	**131**	**1**	**16.6**
Zircon_13_022	468	478	0.96	0.15224	0.004	0.02073	0.00016	0.28	132	1	144	4	348	53	132	1	8.3
Zircon_66_086	253	177	0.66	0.15363	0.0065	0.02072	0.00019	0.22	132	1	145	6	357	97	132	1	9.0
Zircon_40_054	133	101	0.72	0.16392	0.0121	0.02074	0.00031	0.26	132	2	154	11	504	154	132	2	14.3
Zircon_32_045	411	249	0.57	0.14601	0.004	0.02079	0.00015	0.29	132.6	0.9	138	3	238	62	133	1	3.9
Zircon_42_057	105	59	0.53	0.15918	0.0086	0.02083	0.00023	0.2	133	1	150	8	428	124	133	1	11.3
Zircon_56_074	629	686	1.03	0.14436	0.0032	0.02108	0.00016	0.33	134	1	137	3	184	51	134	1	2.2
Zircon_39_053	164	112	0.64	0.15519	0.0056	0.02098	0.00017	0.24	134	1	146	5	363	82	134	1	8.2
Zircon_86_110	341	126	0.35	0.14914	0.0082	0.02114	0.0002	0.22	135	1	141	7	249	112	135	1	4.3
Zircon_48_064	418	132	0.30	0.16882	0.0156	0.02124	0.00037	0.36	135	2	158	14	517	198	135	2	14.6
Zircon_28_040	397	292	0.69	0.15339	0.0039	0.02134	0.00019	0.35	136	1	145	3	303	57	136	1	6.2
Zircon_83_106	**265**	**234**	**0.83**	**0.17287**	**0.0068**	**0.02131**	**0.0002**	**0.24**	**136**	**1**	**162**	**6**	**573**	**79**	**136**	**1**	**16.0**
Zircon_81_104	138	72	0.49	0.16872	0.0077	0.02135	0.00023	0.24	136	1	158	7	500	92	136	1	13.9
Zircon_55_072	459	252	0.52	0.14937	0.0036	0.02142	0.00016	0.32	137	1	141	3	222	55	137	1	2.8
Zircon_20_030	317	155	0.46	0.16719	0.005	0.02143	0.00017	0.27	137	1	157	4	475	67	137	1	12.7
Zircon_01_Ma1_	246	262	1.00	0.1611	0.0062	0.02187	0.00028	0.34	139	2	152	5	369	76	139	2	8.6
Zircon_84_107	149	87	0.55	0.16146	0.0092	0.02177	0.00025	0.25	139	2	152	8	362	112	139	2	8.6
Zircon_76_098	168	112	0.63	0.17311	0.0064	0.02216	0.00021	0.25	141	1	162	6	490	75	141	1	13.0
Zircon_29_041	359	224	0.59	0.16641	0.0086	0.02206	0.00027	0.32	141	2	156	7	400	106	141	2	9.6
Zircon_72_093	404	298	0.70	0.17495	0.0048	0.02231	0.00019	0.31	142	1	164	4	497	54	142	1	13.4
Zircon_50_066	296	150	0.48	0.16705	0.0052	0.02234	0.00016	0.25	142	1	157	4	391	70	142	1	9.6
Zircon_49_065	244	213	0.82	0.17241	0.0063	0.0223	0.00022	0.27	142	1	162	5	462	81	142	1	12.3
Zircon_71_092	536	281	0.49	0.1519	0.0093	0.0222	0.00023	0.29	142	1	144	8	177	120	142	1	1.4
Zircon_92_117	205	70	0.32	0.15806	0.0068	0.02276	0.00021	0.21	145	1	149	6	226	92	145	1	2.7
Zircon_27_039	277	153	0.52	0.15791	0.0057	0.02285	0.00037	0.45	146	2	149	5	202	77	146	2	2.0
Zircon_57_075	129	73	0.54	0.16529	0.0081	0.02294	0.00025	0.22	146	2	155	7	303	115	146	2	5.8
Zircon_22_033	235	119	0.48	0.17174	0.0112	0.02288	0.00023	0.21	146	1	161	10	389	144	146	1	9.3
Zircon_37_051	121	92	0.72	0.17418	0.0087	0.02324	0.0004	0.34	148	3	163	8	409	110	148	3	9.2
Zircon_07_015	984	983	0.94	0.16723	0.0037	0.02345	0.00018	0.33	149	1	157	3	278	45	149	1	5.1
Zircon_87_111	439	205	0.44	0.18451	0.0072	0.02388	0.00021	0.31	152	1	172	6	454	75	152	1	11.6
Zircon_06_014	432	281	0.61	0.16515	0.0038	0.02432	0.00016	0.28	155	1	155	3	171	48	155	1	0.0
Zircon_80_102	331	69	0.20	0.17857	0.0052	0.02427	0.0002	0.27	155	1	167	4	349	60	155	1	7.2
Zircon_03_010	369	239	0.61	0.18226	0.0223	0.02486	0.00055	0.35	158	3	170	19	336	230	158	3	7.1

Zircon_10_018	256	90	0.33	0.18862	0.0064	0.02565	0.00023	0.27	163	1	175	6	348	70	163	1	6.9
Zircon_02_009	265	117	0.42	0.18633	0.0073	0.0256	0.00023	0.24	163	1	173	6	340	80	163	1	5.8
Zircon_30_042	205	108	0.50	0.20545	0.0113	0.02655	0.00032	0.29	169	2	190	10	457	115	169	2	11.1
Zircon_85_108	264	47	0.17	0.22751	0.0077	0.02832	0.00022	0.23	180	1	208	6	545	68	180	1	13.5
Zircon_53_070	**351**	**152**	**0.41**	**0.27276**	**0.0176**	**0.0287**	**0.00169**	**0.92**	**182**	**11**	**245**	**14**	**786**	**57**	**182**	**11**	**25.7**
Zircon_74_095	**71**	**34**	**0.45**	**0.2746**	**0.0337**	**0.02953**	**0.00129**	**0.64**	**188**	**8**	**246**	**27**	**852**	**191**	**188**	**8**	**23.6**
Zircon_94_119	278	76	0.26	0.22663	0.0105	0.03026	0.00067	0.47	192	4	207	9	408	87	192	4	7.2
Zircon_05_012	705	698	0.93	0.24399	0.0055	0.03409	0.00041	0.53	216	3	222	4	281	41	216	3	2.7
Zircon_82_105	230	159	0.65	0.24636	0.0073	0.03438	0.00041	0.41	218	3	224	6	285	58	218	3	2.7
Zircon_75_096	626	125	0.19	0.27028	0.0071	0.0365	0.00062	0.64	231	4	243	6	362	43	231	4	4.9
Zircon_23_034	424	187	0.41	0.36693	0.0072	0.04862	0.00037	0.39	306	2	317	5	407	42	306	2	3.5
Zircon_67_087	**142**	**51**	**0.34**	**0.49603**	**0.0215**	**0.0514**	**0.00089**	**0.51**	**323**	**5**	**409**	**15**	**928**	**74**	**323**	**5**	**21.0**
Zircon_45_060	417	344	0.78	0.42903	0.008	0.05738	0.00044	0.41	360	3	362	6	379	40	360	3	0.6
Zircon_36_050	542	270	0.47	0.63808	0.0102	0.07952	0.00045	0.37	493	3	501	6	539	34	493	3	1.6
Zircon_62_081	628	271	0.41	0.66035	0.012	0.08023	0.00051	0.34	497	3	515	7	595	38	497	3	3.5
Zircon_63_082	206	211	0.96	0.62249	0.0147	0.08141	0.0007	0.36	505	4	491	9	445	51	505	4	-2.9
Zircon_61_080	147	75	0.48	0.76584	0.0177	0.08659	0.00082	0.41	535	5	577	10	747	46	535	5	7.3
Zircon_88_112	328	161	0.46	0.87756	0.0154	0.10338	0.00075	0.42	634	4	640	8	659	32	634	4	0.9
Zircon_89_113	261	109	0.39	0.91602	0.0164	0.10663	0.00086	0.44	653	5	660	9	683	32	653	5	1.1
Zircon_99_125	743	58	0.07	1.1291	0.0175	0.12487	0.00084	0.42	759	5	767	8	790	28	759	5	1.0
Zircon_98_124	134	87	0.61	1.1489	0.0259	0.1262	0.00102	0.37	766	6	777	12	802	42	766	6	1.4
Zircon_51_068	108	153	1.34	1.39589	0.0765	0.14481	0.00155	0.42	872	9	887	32	926	92	872	9	1.7
Zircon_100_126	455	142	0.29	1.6802	0.0254	0.16604	0.00095	0.37	990	5	1001	10	1022	27	1022	27	1.1
Zircon_25_036	174	64	0.35	1.9544	0.033	0.18277	0.00143	0.47	1082	8	1100	11	1136	31	1136	31	1.6
Zircon_65_084	241	147	0.57	2.3769	0.0397	0.21033	0.00191	0.54	1231	10	1236	12	1243	29	1243	29	0.4
Zircon_16_026	678	168	0.23	2.2097	0.0318	0.19439	0.00121	0.42	1145	7	1184	10	1244	24	1244	24	3.3
Zircon_52_069	108	145	1.27	3.0249	0.0562	0.24081	0.00181	0.4	1391	9	1414	14	1450	31	1450	31	1.6
Zircon_19_029	204	115	0.53	4.2191	0.0613	0.28421	0.00185	0.45	1613	9	1678	12	1761	25	1761	25	3.9
Zircon_73_094	**62**	**35**	**0.53**	**0.09942**	**0.0159**	**0.00578**	**0.00018**	**0.31**	**37**	**1**	**96**	**15**	**2024**	**258**	**2024**	**258**	**61.5**

SAMPLE M2a

(datum UTM nad 27: 2333786 N, 250650 E)

				CORRECTED RATIOS					CORRECTED AGES (Ma)								
Analysis	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{235}U$	±1s	$^{206}Pb/^{238}U$	±1s	Rho	$^{206}Pb/^{238}U$	±1s	$^{207}Pb/^{235}U$	±1s	$^{207}Pb/^{206}Pb$	±1s	Best age (Ma)	±1s	% disc.
Zircon_39_053	**450**	**229**	**0.49**	**0.05209**	**0.011**	**0.00502**	**0.00014**	**0.3**	**32.3**	**0.9**	**52**	**11**	**1074**	**413**	**32**	**1**	**37.9**
Zircon_12_021	**294**	**207**	**0.67**	**0.04084**	**0.0045**	**0.00503**	**0.00009**	**0.19**	**32.4**	**0.6**	**41**	**4**	**563**	**208**	**32**	**1**	**21.0**
Zircon_41_056	**295**	**177**	**0.57**	**0.05147**	**0.0049**	**0.00514**	**0.00007**	**0.15**	**33.1**	**0.5**	**51**	**5**	**1003**	**187**	**33**	**1**	**35.1**
Zircon_23_034	**355**	**126**	**0.34**	**0.05401**	**0.0046**	**0.0056**	**0.00009**	**0.27**	**36**	**0.6**	**53**	**4**	**926**	**162**	**36**	**1**	**32.1**
Zircon_14_023	**62**	**36**	**0.56**	**0.07116**	**0.0111**	**0.00658**	**0.00021**	**0.23**	**42**	**1**	**70**	**11**	**1158**	**270**	**42**	**1**	**40.0**
Zircon_26_038	286	178	0.59	0.14237	0.0045	0.01858	0.00018	0.3	119	1	135	4	461	65	119	1	11.9
Zircon_03_010	**150**	**75**	**0.48**	**0.15081**	**0.0111**	**0.01864**	**0.00023**	**0.24**	**119**	**1**	**143**	**10**	**556**	**138**	**119**	**1**	**16.8**
Zircon_43_058	806	985	1.17	0.12755	0.0036	0.01885	0.00015	0.29	120.4	0.9	122	3	163	62	120	1	1.3
Zircon_38_052	556	405	0.69	0.14164	0.0039	0.01894	0.00017	0.32	121	1	135	3	390	57	121	1	10.4
Zircon_25_036	1314	734	0.53	0.13971	0.009	0.0191	0.00018	0.19	122	1	133	8	331	135	122	1	8.3
Zircon_70_090	695	503	0.69	0.13966	0.0038	0.01955	0.00013	0.26	124.8	0.8	133	3	299	56	125	1	6.2
Zircon_10_018	235	187	0.76	0.15539	0.0053	0.01957	0.00019	0.28	125	1	147	5	523	68	125	1	15.0
Zircon_36_050	**197**	**114**	**0.55**	**0.16151**	**0.0079**	**0.01961**	**0.00017**	**0.18**	**125**	**1**	**152**	**7**	**612**	**102**	**125**	**1**	**17.8**
Zircon_72_093	882	533	0.58	0.14601	0.0082	0.01968	0.00018	0.35	126	1	138	7	363	109	126	1	8.7
Zircon_77_099	4050	1875	0.44	0.13597	0.0022	0.01988	0.00012	0.35	126.9	0.8	129	2	181	33	127	1	1.6
Zircon_15_024	**392**	**273**	**0.67**	**0.16894**	**0.0051**	**0.01992**	**0.00018**	**0.29**	**127**	**1**	**158**	**4**	**675**	**58**	**127**	**1**	**19.6**
Zircon_32_045	**179**	**100**	**0.53**	**0.1626**	**0.0125**	**0.01988**	**0.0002**	**0.16**	**127**	**1**	**153**	**11**	**579**	**157**	**127**	**1**	**17.0**
Zircon_05_012	1389	1360	0.93	0.13917	0.0025	0.02002	0.00013	0.36	127.8	0.8	132	2	218	37	128	1	3.2
Zircon_73_094	156	70	0.43	0.15866	0.0109	0.01999	0.00025	0.24	128	2	150	10	513	134	128	2	14.7
Zircon_65_084	418	242	0.55	0.15274	0.0092	0.02041	0.00025	0.38	130	2	144	8	382	127	130	2	9.7
Zircon_17_027	874	449	0.49	0.14386	0.003	0.02047	0.00013	0.31	130.6	0.8	136	3	240	43	131	1	4.0
Zircon_27_039	681	381	0.53	0.13827	0.0032	0.02053	0.00015	0.32	131	0.9	132	3	151	50	131	1	0.8
Zircon_75_096	631	594	0.90	0.15527	0.0047	0.02056	0.00018	0.3	131	1	147	4	426	61	131	1	10.9
Zircon_58_076	**291**	**226**	**0.74**	**0.17386**	**0.007**	**0.02058**	**0.00019**	**0.23**	**131**	**1**	**163**	**6**	**681**	**86**	**131**	**1**	**19.6**
Zircon_11_020	**246**	**220**	**0.85**	**0.17373**	**0.0125**	**0.02061**	**0.00024**	**0.3**	**131**	**2**	**163**	**11**	**644**	**129**	**131**	**2**	**19.6**
Zircon_30_042	317	188	0.57	0.15469	0.005	0.02072	0.00018	0.28	132	1	146	4	393	68	132	1	9.6
Zircon_29_041	**212**	**155**	**0.70**	**0.18056**	**0.0065**	**0.02073**	**0.00018**	**0.24**	**132**	**1**	**169**	**6**	**730**	**73**	**132**	**1**	**21.9**
Zircon_20_030	205	119	0.55	0.15863	0.0066	0.02064	0.00025	0.29	132	2	150	6	454	83	132	2	12.0
Zircon_76_098	369	196	0.51	0.15928	0.008	0.02065	0.00018	0.28	132	1	150	7	450	97	132	1	12.0
Zircon_59_077	**193**	**101**	**0.50**	**0.18072**	**0.0112**	**0.02082**	**0.00025**	**0.28**	**133**	**2**	**169**	**10**	**707**	**127**	**133**	**2**	**21.3**
Zircon_35_048	**399**	**295**	**0.70**	**0.17002**	**0.0051**	**0.02105**	**0.00027**	**0.44**	**134**	**2**	**159**	**4**	**555**	**58**	**134**	**2**	**15.7**
Zircon_57_075	661	481	0.69	0.14471	0.0083	0.02101	0.00017	0.3	134	1	137	7	193	124	134	1	2.2
Zircon_52_069	298	157	0.50	0.1528	0.004	0.02117	0.00017	0.31	135	1	144	4	318	59	135	1	6.3
Zircon_71_092	526	429	0.78	0.16189	0.0063	0.02124	0.0002	0.23	135	1	152	6	419	81	135	1	11.2
Zircon_07_015	481	316	0.63	0.15395	0.0039	0.02121	0.00015	0.29	135.3	0.9	145	3	322	51	135	1	6.7
Zircon_31_044	788	602	0.73	0.15656	0.0033	0.02143	0.00016	0.35	137	1	148	3	331	44	137	1	7.4
Zircon_19_029	442	214	0.46	0.15865	0.0043	0.02141	0.00016	0.28	137	1	150	4	371	54	137	1	8.7
Zircon_06_014	404	183	0.43	0.16184	0.0047	0.02162	0.00018	0.28	138	1	152	4	395	59	138	1	9.2
Zircon_54_071	574	476	0.79	0.16803	0.0051	0.02165	0.00026	0.4	138	2	158	4	459	64	138	2	12.7
Zircon_68_088	**164**	**92**	**0.53**	**0.18947**	**0.0192**	**0.02161**	**0.0003**	**0.2**	**138**	**2**	**176**	**16**	**728**	**195**	**138**	**2**	**21.6**

Zircon_56_074	**160**	**97**	**0.57**	**0.20028**	**0.0078**	**0.02186**	**0.00026**	**0.31**	**139**	**2**	**185**	**7**	**831**	**80**	**139**	**2**	**24.9**
Zircon_40_054	**445**	**456**	**0.98**	**0.18329**	**0.0175**	**0.02187**	**0.00039**	**0.38**	**139**	**2**	**171**	**15**	**632**	**180**	**139**	**2**	**18.7**
Zircon_08_016	270	152	0.54	0.16382	0.0049	0.02194	0.00017	0.26	140	1	154	4	389	61	140	1	9.1
Zircon_02_009	389	150	0.37	0.15864	0.0044	0.02215	0.00022	0.35	141	1	150	4	293	56	141	1	6.0
Zircon_64_083	498	254	0.49	0.17321	0.0049	0.02204	0.00024	0.38	141	2	162	4	483	59	141	2	13.0
Zircon_22_033	**110**	**69**	**0.60**	**0.19238**	**0.009**	**0.02212**	**0.00027**	**0.26**	**141**	**2**	**179**	**8**	**726**	**94**	**141**	**2**	**21.2**
Zircon_24_035	172	95	0.53	0.16365	0.0064	0.02235	0.00021	0.24	142	1	154	6	362	84	142	1	7.8
Zircon_50_066	**306**	**177**	**0.55**	**0.18926**	**0.0063**	**0.0225**	**0.00022**	**0.29**	**143**	**1**	**176**	**5**	**643**	**71**	**143**	**1**	**18.8**
Zircon_66_086	245	151	0.59	0.16569	0.0127	0.02263	0.00024	0.24	144	2	156	11	334	170	144	2	7.7
Zircon_33_046	**66**	**24**	**0.35**	**0.22067**	**0.0125**	**0.02273**	**0.00032**	**0.24**	**145**	**2**	**202**	**10**	**968**	**111**	**145**	**2**	**28.2**
Zircon_46_062	685	348	0.48	0.16521	0.005	0.02294	0.0003	0.43	146	2	155	4	306	64	146	2	5.8
Zircon_48_064	**139**	**59**	**0.40**	**0.19299**	**0.0113**	**0.02299**	**0.00029**	**0.27**	**147**	**2**	**179**	**10**	**635**	**123**	**147**	**2**	**17.9**
Zircon_74_095	389	218	0.53	0.17038	0.0057	0.02326	0.00023	0.29	148	1	160	5	332	69	148	1	7.5
Zircon_53_070	**306**	**141**	**0.44**	**0.20582**	**0.0129**	**0.02352**	**0.00035**	**0.35**	**150**	**2**	**190**	**11**	**724**	**125**	**150**	**2**	**21.1**
Zircon_04_011	836	117	0.13	0.16789	0.0036	0.02391	0.00017	0.33	152	1	158	3	238	43	152	1	3.8
Zircon_78_100	1852	408	0.21	0.17903	0.0037	0.02441	0.00019	0.38	155	1	167	3	354	41	155	1	7.2
Zircon_28_040	227	112	0.47	0.18438	0.0067	0.02439	0.00024	0.26	155	2	172	6	415	77	155	2	9.9
Zircon_80_102	342	173	0.48	0.18784	0.0059	0.02442	0.00022	0.29	156	1	175	5	461	63	156	1	10.9
Zircon_16_026	389	165	0.40	0.18326	0.0048	0.02504	0.0002	0.29	159	1	171	4	346	53	159	1	7.0
Zircon_79_101	367	176	0.46	0.18086	0.0054	0.0251	0.00019	0.27	160	1	169	5	307	63	160	1	5.3
Zircon_01_Ma-2	248	94	0.36	0.19649	0.0067	0.0261	0.00021	0.25	166	1	182	6	398	69	166	1	8.8
Zircon_49_065	**193**	**95**	**0.47**	**0.28033**	**0.0118**	**0.0331**	**0.00083**	**0.59**	**210**	**5**	**251**	**9**	**665**	**75**	**210**	**5**	**16.3**
Zircon_34_047	495	216	0.42	0.35249	0.0071	0.04768	0.0003	0.31	300	2	307	5	353	42	300	2	2.3
Zircon_37_051	1040	141	0.13	0.4161	0.0068	0.05455	0.00034	0.39	342	2	353	5	430	33	342	2	3.1
Zircon_67_087	1095	308	0.27	0.56496	0.0098	0.0725	0.00064	0.51	451	4	455	6	477	31	451	4	0.9
Zircon_63m_082	973	123	0.12	0.72364	0.0119	0.08311	0.00072	0.53	515	4	553	7	714	28	515	4	6.9
Zircon_44_059	949	61	0.06	0.77854	0.0132	0.09234	0.00074	0.47	569	4	585	8	648	33	569	4	2.7
Zircon_69_089	200	71	0.34	0.83253	0.0194	0.09741	0.00117	0.51	599	7	615	11	683	41	599	7	2.6
Zircon_09_017	281	143	0.48	1.0268	0.0199	0.11165	0.00123	0.57	682	7	717	10	823	31	682	7	4.9
Zircon_61_080	321	80	0.24	1.0062	0.0169	0.11339	0.00085	0.44	692	5	707	9	759	32	692	5	2.1
Zircon_62_081	176	86	0.47	1.5908	0.0314	0.15849	0.00128	0.41	948	7	967	12	1019	37	948	7	2.0
Zircon_18_028	289	69	0.23	1.9703	0.0301	0.18998	0.00116	0.4	1121	6	1105	10	1071	26	1071	26	-1.4
Zircon_42_057	278	98	0.34	1.7321	0.0281	0.16644	0.00103	0.39	992	6	1021	10	1085	29	1085	29	2.8
Zircon_51_068	487	83	0.16	2.495	0.0365	0.22859	0.00153	0.46	1327	8	1271	11	1180	26	1180	26	-4.4
Zircon_60_078	472	274	0.55	2.4518	0.0437	0.19444	0.00214	0.62	1145	12	1258	13	1452	27	1452	27	9.0
Zircon_13_022	119	117	0.93	4.7644	0.0731	0.31045	0.00196	0.41	1743	10	1779	13	1822	24	1822	24	2.0
Zircon_21_032	165	130	0.75	5.3771	0.0817	0.34567	0.00204	0.39	1914	10	1881	13	1847	24	1847	24	-1.8
Zircon_55_072	367	155	0.40	6.9208	0.1003	0.39335	0.00252	0.44	2138	12	2101	13	2069	23	2069	23	-1.8

Note: Mineral separation was carried out using the standard methodology (crushing, sieving, density and magnetic separation, handpicking) at the mineral separation facility of the Instituto de Geologia, UNAM. Zircons were observed and imaged under cathodoluminescence, using an ELM3R luminoscope connected to a digital camera. Individual zircon ages were obtained by laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS) at LEI, Centro de Geociencias, UNAM. Zircon ablation was performed with a Resolution M-50/Lambda Physik LPX220 Excimer laser, operating at a 193 nm wavelength and coupled to a Thermo XseriesII quadrupole ICPMS. Details of the analytic methodology can be found in Solari et al. (2010) and http://www.geociencias.unam.mx/~solari/index_files/LEI/LA-ICPMS.html. Reduction of raw data was performed using an in-house developed script (Solari and Tanner, 2011), employing the Plěsovice zircon (~337 Ma, Sláma et al., 2008) as bracketing standard. Replicate analyses of the Plěsovice zircon during the analytical sessions indicate an external reproducibility of 1.1% on the measured $^{207}Pb/^{206}Pb$ ratios, 0.9% on the measured $^{206}Pb/^{238}U$ ratios, and 1.7% on the $^{208}Pb/^{232}Th$ ratios (1σ relative standard deviation). These errors are quadratically added to the quoted uncertainties for individual analyses of the analyzed zircons. The common Pb correction is performed employing the algebraic method of Andersen (2002), due to the impossibility to accurately measure the ^{204}Pb, which is swamped by the ^{204}Hg contained in the carrier gas. Once corrected for common Pb, analyses that yielded >15% or <−5% discordant results are considered meaningless and thus discarded (values in bold in Table 2). Ages that present a porcentage of $^{207}Pb/^{235}U$ error > 10, and ages affected by lead loss, are not used in the concordia diagrams (underscored values in Table 2). Because the ^{207}Pb isotope has a considerable low signal in young (i.e., <1000 Ma) zircons, the mean $^{206}Pb/^{238}U$ age is preferred to establish crystallization ages. Tera and Wasserburg (1972) concordia plots as well as error calculation were obtained using Isoplot v.3.06 (Ludwig, 2004). Sample sites coordinates are given in Table 2.

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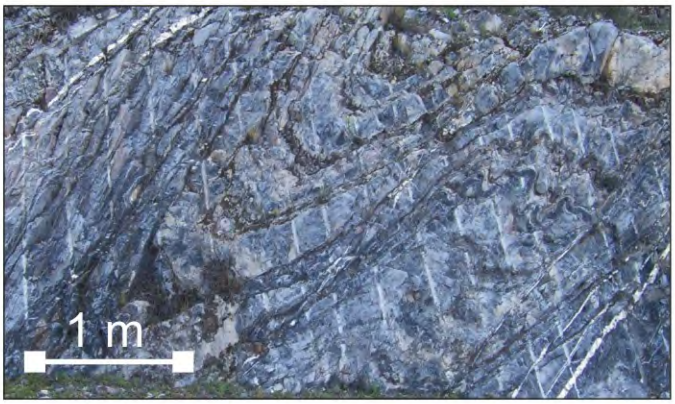
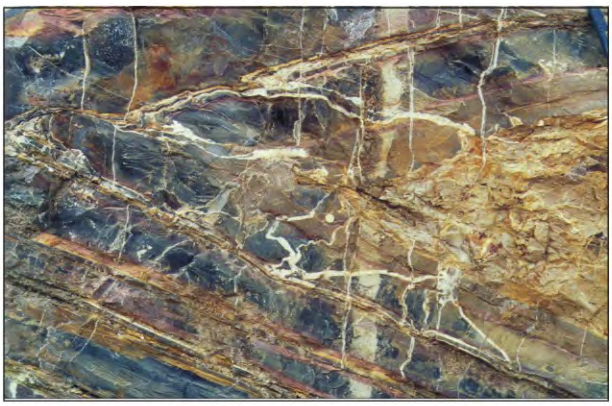
FIGURE A - Photographs showing details of the exposures that will be visited during the field trip.

1. Volcanic flow in the Trancas Fm., Zimapán Basin. Volcaniclastic sandstone and shale interbedded with a 6-m-thick felsic volcanic flow containing several lithic fragments and blocks of quartzite and limestone.

2. Deformation in the Trancas Fm., Zimapán Basin. Mesoscopic-scale asymmetrical, east-vergent anticline with an S1 pervasive axial plane cleavage. In these rocks, folds typically display rounded hinges and close to tight interlimb angles.

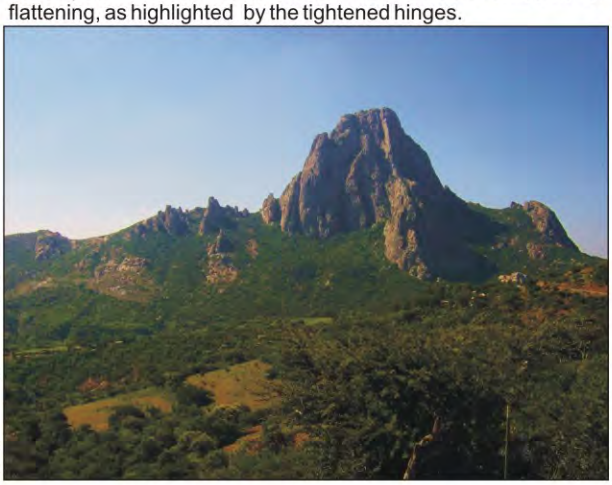


3. Train of folds in the Tamaulipas Fm., Zimapán Basin. East-vergent folds in mudstone layers interbedded with chert and thin beds of shale. Folds in the limestone layers are asymmetrical with high angle axial planes. They show angular hinges and strong variations in the layers thickness, with attenuated forelimbs and thickened hinges.



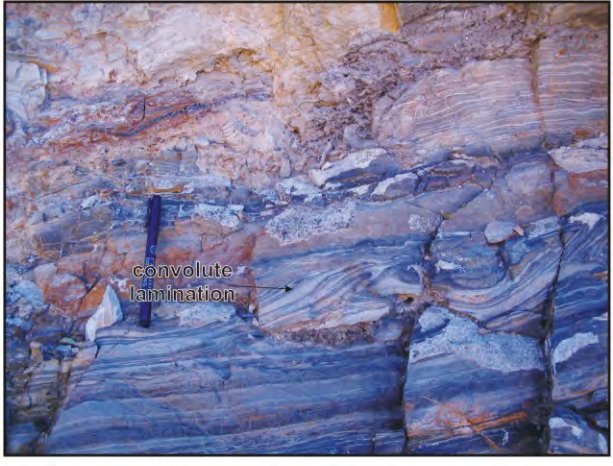
4. The icon fold in the Tamaulipas Fm., Zimapán Basin. Recumbent fold observed in the transitional contact between the Tamaulipas and Soyatal formations. The contact zone is made up of interbedded mudstone, shale, and bentonite. Folds developed in these rocks show considerable amounts of flattening, as highlighted by the tightened hinges.

5. El Doctor Thrust. El Doctor Platform limestone thrusting to the east shale and detrital limestone of the Soyatal Fm.



6. La Peña de Bernal. This remarkable volcanic feature was considered a volcanic neck for a long time. However, more recent studies indicate that this can be a 27 Ma old rhyolitic dome (Aguirre-Díaz *et al.*, 2005).

7. El Chilar Complex. Interbedded quartz rich metasandstone and phyllite, showing a complex deformation represented by refolded folds cut by thrust faults.



8. San Juan de la Rosa Fm., Tolimán area. Volcaniclastic turbidites showing convolute lamination.

9. Peña Azul Fm. in the Tolimán area. Detrital limestone at the base of the Peña Azul Fm., showing beds rich in chert intraclasts.

10. Folds in the Soyatal Fm. East-vergent asymmetrical inclined fold developed in detrital limestone and shale of the Soyatal Fm.

11. Tuna Manza Intrusive Complex, Esperanza area. Basaltic dike intruding and mingling with gabbro and diorite.

12. Santa Ana mylonitic shear zone, Esperanza area. Mylonitized metasandstone and phyllite of the Esperanza Fm. displaying asymmetrical folds showing a constant vergence to the southwest.

13. Esperanza Fm, Esperanza area. Peperite at the boundary of a felsic dike intruding sandstone and shale of the Esperanza Fm.

14. Arperos Fm., Arperos area. Decimeter-scale pillow basalts at the base of the Arperos Fm.