

GIAME WIDE ANGLE SEISMIC REPORT

- **Principal Investigator & Institutions**

Project Manager

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- **Experiment Name & Nickname**

Name: Geociencia Integral de Los Andes de Mérida

Nickname: GIAME.

- **Purpose of the experiment**

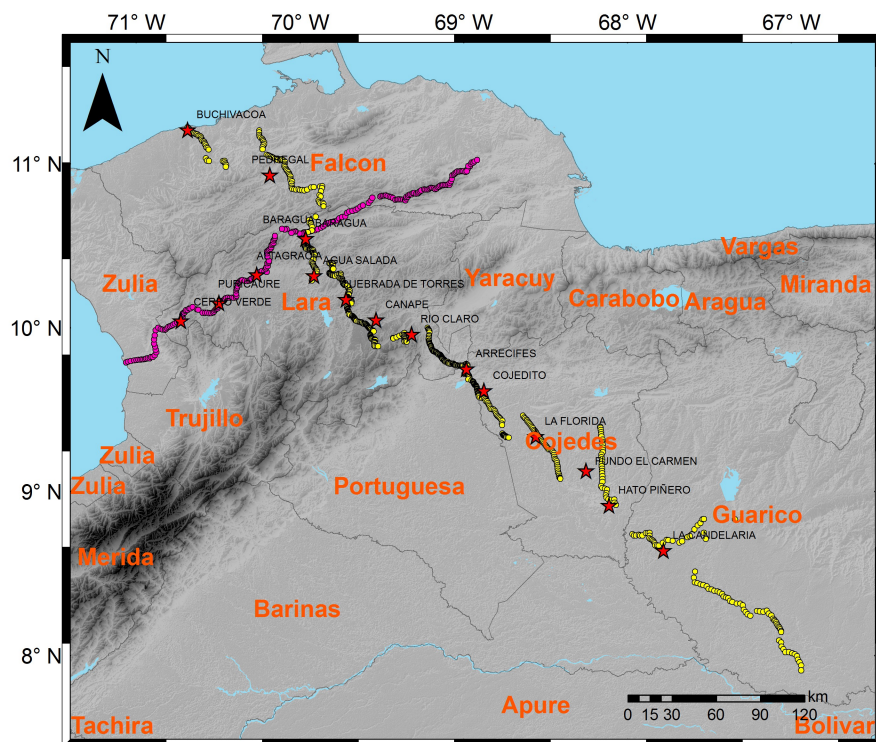
As a base for the lithospheric investigations of the Andes we propose three seismic wide-angle profiles crossing the orogen at three representative sites, in order to determine the internal structure and the relation to the gravimetric root of the orogen. Up to date there are no seismic studies at lithospheric scale which cross the Merida Andes, which points to the importance of the proposed study, helping to unveil much of the doubts regarding the origin, evolution and structural configuration of the Andean chain that arose in past years. The seismic wide angle studies are complemented with the re-interpretation of existing seismic reflection data, which will allow to establish a relation between the Merida Andes and the flexural basins of Maracaibo and Barinas-

Apure, thus contributing to the knowledge on the development of these petroleum bearing basins. The profile proposed crossing Burro Negro Fault seeks defining their importance at crustal level and the implication for the generation of petroleum bearing basins in the region.

- **Layout of Instruments**

1st Deployment (Andes North and Burro Negro Profiles)

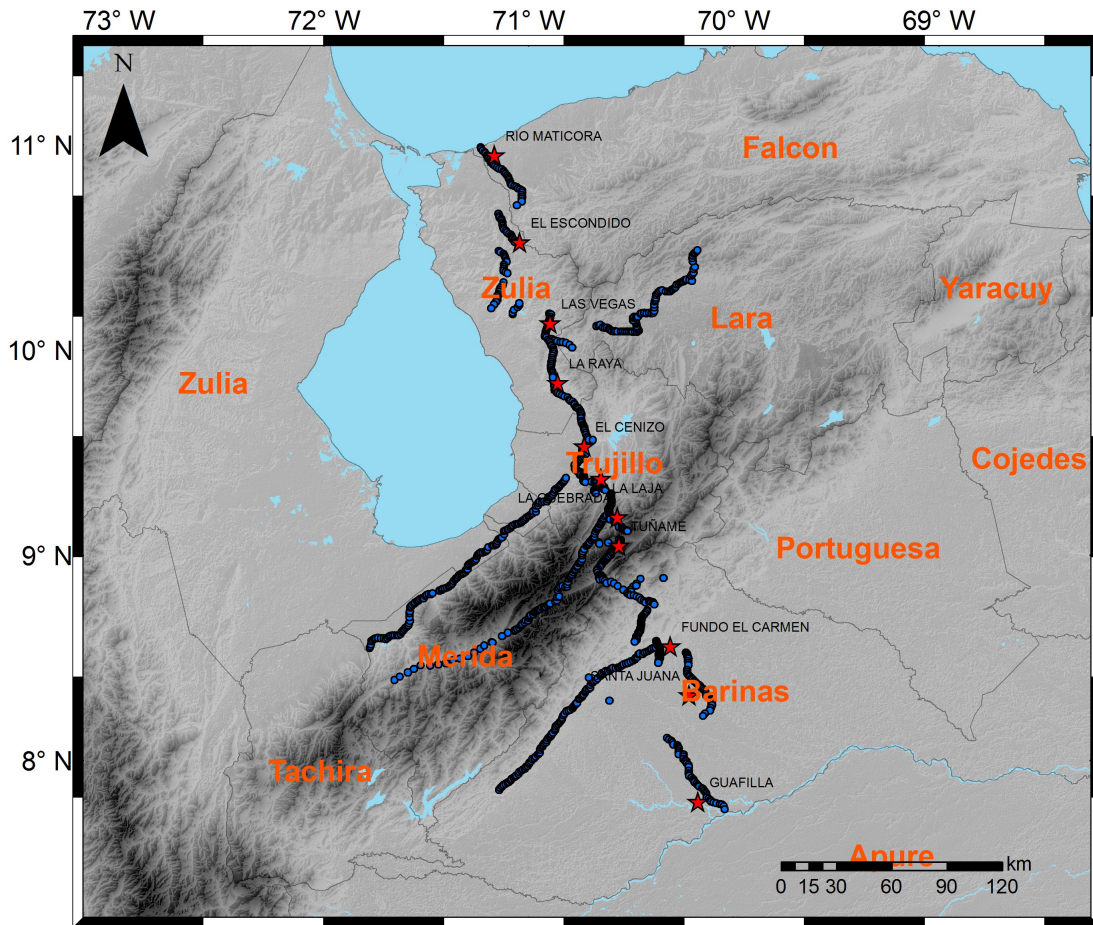
841 seismometers were deployed from central-north coast of Falcon state to southeast crossing Lara, Portuguesa and Cojedes up to Calabozo city in Guarico state. A perpendicular profile, from east coast of Maracaibo Lake in Zulia state, crossing Lara up to La Cienaga, east of Falcon state, was deployed.



Site	doy	UTC	day	LVT	Charge (kg)	Coord N	Coord W	Elevation (m)	Shot time
Andes Norte									
Capatarida (Buchivacoa)	53	01:31	21-feb	21:01	1000	70°41'5,4"	11°12'26,2"	6	01:30:59,85 a.m.
Urumaco (Pedregal)	52	13:51	21-feb	09:21	200	70°11'01"	10°55'52"	276	13:51:01,96 p.m.
Baragua	52	02:51	20-feb	22:21	400	69°57'0,7"	10°32'43,8"	426	02:51:01,07 a.m.
Palmarito (Cerro Verde)	53	08:36	22-feb	04:06	400	-70,7261	10,0435	347	08:36:01,73 a.m.
Puricaure	53	02:56	21-feb	22:26	450	-70,4941	10,1525	507	02:56:01,16 a.m.
Altagracia	121	01:06	30-abr	20:36	400	-70,2619	10,32372	516	01:06:09,56 a.m.
Carora (Agua Salada)	52	13:16	21-feb	08:46	200	-69,91420	10,31710	396	13:16:00,70 p.m.
Quibor (Quba de Torres)	52	10:16	21-feb	05:46	400	-69,71770	10,17390	650	10:16:03,10 a.m.
Barquisimeto (Canape)	52	08:16	21-feb	03:46	200	-69,53420	10,04780	670	08:16:00,81 a.m.
Cabudare (Rio Claro)	53	15:36	22-feb	11:06	400	-69,31650	9,96010	741	15:36:01,04 p.m.
San Rafael de Onoto (Los Arrecifes)	53	02:41	21-feb	22:11	370	-68,98260	9,74942	189	02:41:01,70 a.m.
Cojedito	52	05:41	21-feb	01:11	960	-68,87528	9,61711	152	05:41:00,50 a.m.
San Carlos (La Florida)	52	09:01	21-feb	04:31	230	-68,55890	9,33680	88	09:01:00,52 a.m.
El Baul (Fundo el Carmen)	53	05:46	22-feb	01:16	380	-68,25281	9,12747	79	05:46:02,77 a.m.
Hato Piñero	121	05:56	01-may	01:26	220	-68,06758	8,93464	62	05:56:22,92 a.m.
Calabozo (La Candelaria)	52	09:06	21-feb	04:36	720	-67,77900	8,64230	67	09:06:01,02 a.m.

2nd Deployment (Andes Central, Burro Negro and Extensions: Andes Axis, Foothills and Lake South Profiles)

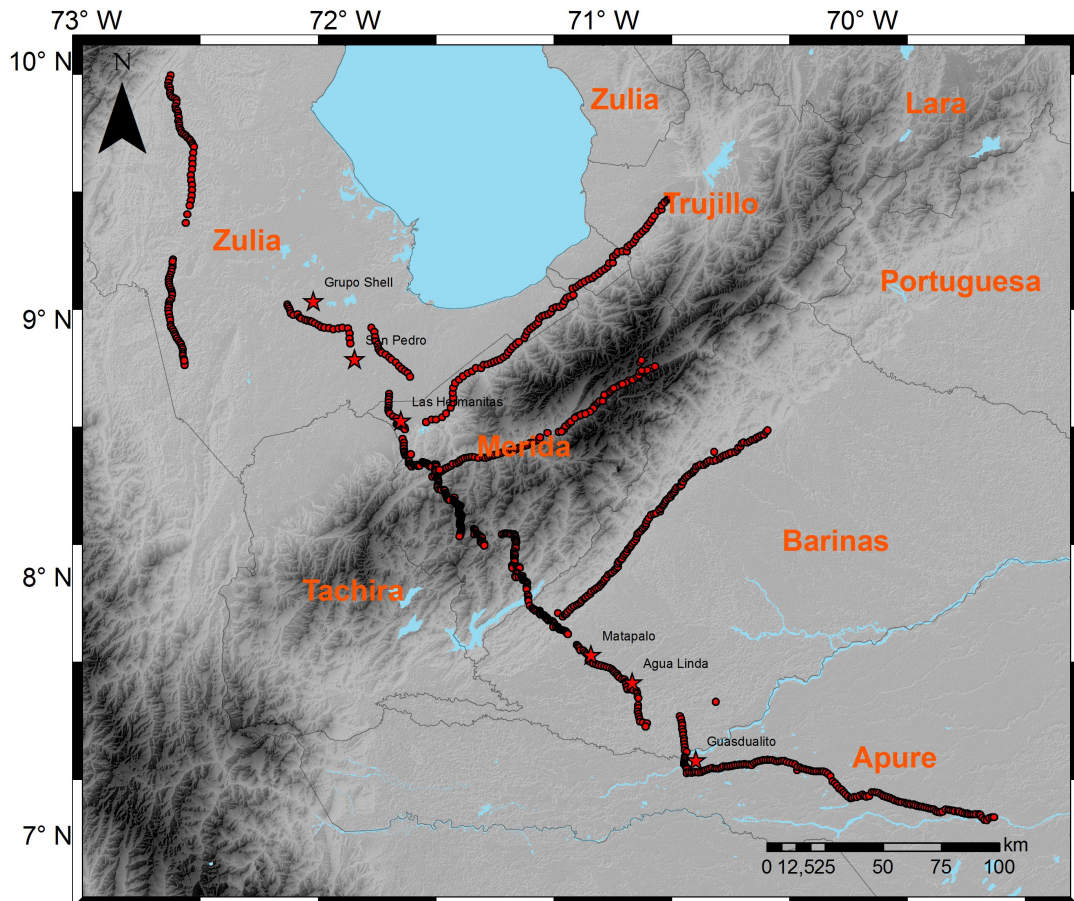
903 seismometers were deployed from northwest coast of Falcon State crossing east part of Zulia state, Trujillo up to Apure River south of Barinas state. Three perpendicular profiles to Andes Central named from north to south: South Lake (western Trujillo, southern Zulia and northern Merida states), Andes Axis (southern Trujillo and Merida states) and Foothills (Barinas state) are included. Burro Negro profile was also covered with the instruments in this deployment.



Site	doy	UTC	day	LVT	Charge (kg)	Coord N	Coord W	Elevation (m)	Shot time
Andes Central									
Mene de Mauroa (Río Maticora)	57	18:31	26-feb	14:01	1600	71°10'4,6"	10°56'58,5"	14	18:31:00,58 p.m.
Consejo de Ciruma) El Escondido	57	12:31	26-feb	08:01	200	71°2'41,1"	10°31'36,4"	149	12:31:01,06p.m.
El Venado (Las Vegas)	57	08:31	26-feb	04:01	200	70°53'46,	10°07'53,3"	164	08:31:00,48a.m.
La Raya	57	05:51	26-feb	01:21	200	70°51'30,	9°50'27,8"	52	05:50:59,85 a.m.
Agua Viva (El Cenizo)	57	01:56	25-feb	21:26	90	-70,7294	9,5319	60	01:56:01,48 a.m.
Valera (La Laja)	58	03:56	26-feb	23:26	860	-70,6479	9,3727	634	03:56:00,98a.m.
La Quebrada									
Niquitao (Tuñame)	58	02:41	26-feb	22:11	320	-70,55882	9,04688	3462	02:40:58,13a.m.
Barinas (Fundo El Carmen II)	58	03:26	26-feb	22:56	570	8°33'23.6"	70°18'29.8"	204	03:25:33,40a.m.
San Silvestre (Santa Juana)	57	20:26	26-feb	15:56	240	8°19'09.8"	70°12'59.4"	144	20:26:26,26p.m.
Río Apure (Guafilla)	58	12:46	27-feb	08:16	1190	7°47'57.8"	70°10'25.2"	110	12:46:02,25p.m.
					carga kg superficial				
Niquitao (Tuname) - explosives destroyed	58	03:41	26-feb	23:11	80	-70,55882	9,04688	3536	03:40:58,21 a.m.

3rd Deployment (Andes South and Extensions: Andes Axis, Foothills and Lake South Profiles)

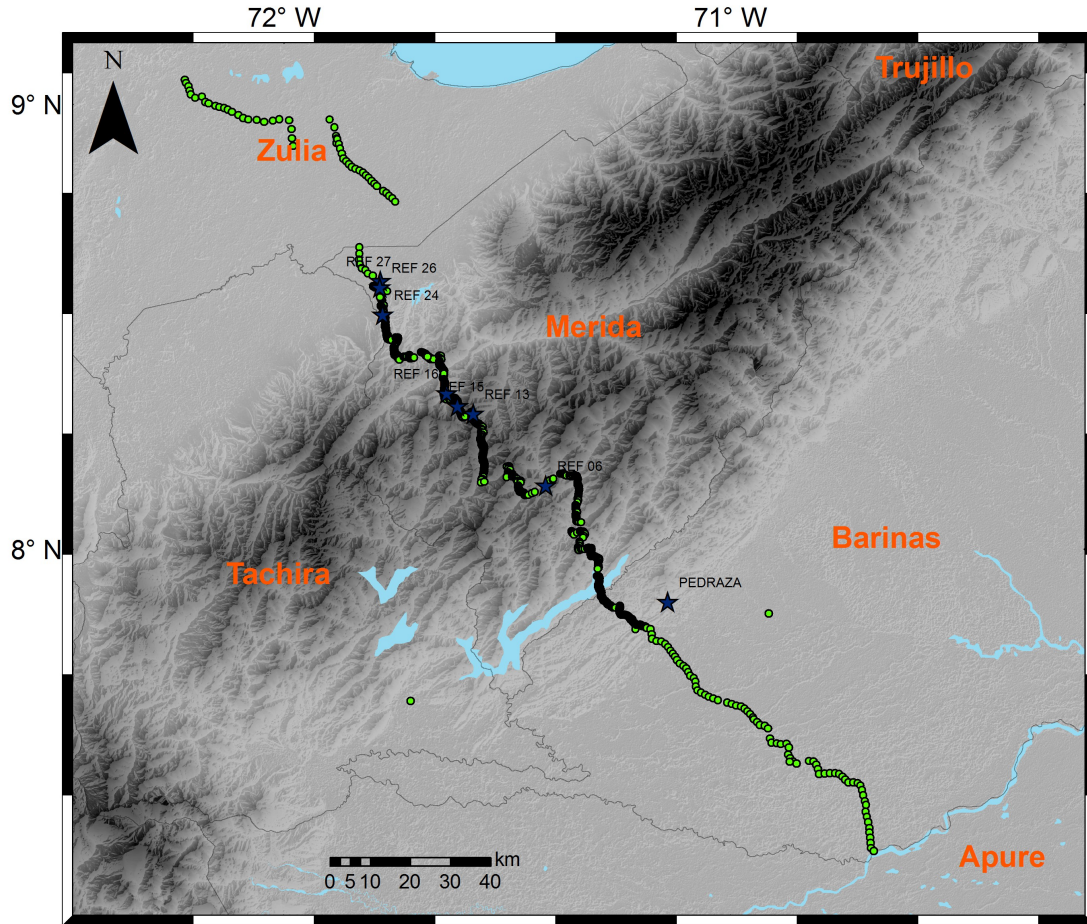
877 seismometers were deployed from Machiques west of Zulia state crossing Merida, Barinas up to Elorza town in Apure state. Three perpendicular profiles to Andes South named from north to south: South Lake (western Trujillo, southern Zulia and northern Merida states), Andes Axis (southern Trujillo and Merida states) and Foothills (Barinas state) were covered also in this deployment.



Site	doy	UTC	day	LVT	Charge (kg)	Coord N	Coord W	Elevation (m)	Shot time
Andes Sur									
Santa Barbara de Zulia (Grupo Shell)	63	01:51	03-mar	21:21	800	72°7'17.4"	94°11.2"	5	01:50:59,28a.m.
San Pedro de Zulia	62	03:11	02-mar	22:41	170	71°57'44,1"	8°57'41,8"	7	03:11:00,26a.m.
El Vigia (Las Hermanitas)	62	06:31	03-mar	02:01	200	71°46'55,1"	8°36'23,8"	61	06:30:59,98a.m.
Santa Barbara de Barinas (El Matapalo)	62	01:41	02-mar	21:11	680	7°41'54.6'	71°02'50.6'	138	01:40:55,45a.m.
Rio Caparo (Agua Linda II)	62	04:41	03-mar	00:11	200	7°35'33.7'	70°53'17.5'	147	04:40:55,05a.m.
Guasqualito	62	11:26	03-mar	06:56	1360	7°17'23.6'	70°38'33.6'	140	11:25:46,59a.m.
					carga kg superficial				
El Vigia (Las H.) - explosivos destroyed	62	18:41	03-mar	14:11	110	71°57'44,1"	8°57'41,8"	61	18:40:59,99p.m.
El Vigia (Las H.) - explosivos destroyed	62	19:21	03-mar	14:51	110	71°57'44,1"	8°57'41,8"	61	19:21:00,14p.m.
El Vigia (Las H.) - explosivos destroyed	62	19:56	03-mar	15:26	110	71°57'44,1"	8°57'41,8"	61	19:56:01,32p.m.

4th Deployment (Andes South: Reflection profile)

918 seismometers were deployed from Santa Barbara del Zulia town in Zulia state, crossing Merida state up to Guasqualito town in Apure state.



Site	day	UTC	day	LVT	Charge (kg)	Coord N	Coord W	Elevation (m)	Shot time
Reflexión									
El Vigia (=Ref 27)	67	01:06	07-mar	20:36	150	71°47'0,21"	8°36'11,7"	61	01:06:00,63 a.m.
KM 15 (=Ref 26)	67	01:56	07-mar	21:26	110	71°47'2,1"	8°35'22,4"	63	01:56:00,67 a.m.
Peaje Zea (=Ref 24)	68	01:51	08-mar	21:21	280	71°46'40,6"	8°31'40,2"	169	01:51:01,29 a.m.
Santa Cruz de Mora (=Ref 16)	67	05:16	08-mar	00:46	210	-71,3806	8,21029	1116	05:16:25,65a.m.
Las Labranzas (=Ref 15)	67	13:06	08-mar	08:36	400	-71,32906	8,2308	2385	13:05:48,04p.m.
La Y / Capilla (=Ref 13)	67	15:06	08-mar	10:36	420	-71,34519	8,18329	2686	15:06:19,69p.m.
Canagua (=Ref 06)	68	00:56	08-mar	20:26	180	-71,4124	8,1428	1552	00:56:01,63a.m.
Pedraza Vieja	68	01:41	08-mar	21:11	500	7°53'00.3'	71°08'22.7'	232	01:41:01,87a.m.
					carga kg superficial				
Las Labranzas (=Ref 15) - explosivos destroyed	67	19:03	08-mar	14:33	100	-71,5484	8,3847	2385	19:03:04,86p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	67	19:48	08-mar	15:18	100	-71,5484	8,3847	2385	19:47:48,25p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	67	20:13	08-mar	15:43	100	-71,5484	8,3847	2385	20:12:48,01p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	67	20:48	08-mar	16:18	100	-71,5484	8,3847	2385	20:47:48,20p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	67	21:08	08-mar	16:38	100	-71,5484	8,3847	2385	21:07:48,31p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	67	21:28	08-mar	16:58	100	-71,5484	8,3847	2385	21:28:18,24p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	67	21:53	08-mar	17:23	100	-71,5484	8,3847	2385	21:52:48,32p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	67	22:18	08-mar	17:48	100	-71,5484	8,3847	2385	22:17:49,06p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	67	22:43	08-mar	18:13	100	-71,5484	8,3847	2385	22:42:48,40p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	67	23:28	08-mar	18:58	100	-71,5484	8,3847	2385	23:27:48,18p.m.
Las Labranzas (=Ref 15) - explosivos destroyed	68	00:26	08-mar	19:56	90	-71,5484	8,3847	2385	00:25:49,61a.m.
Las Labranzas (=Ref 15) - explosivos destroyed	68	01:06	08-mar	20:36	90	-71,5484	8,3847	2385	01:05:49,03a.m.