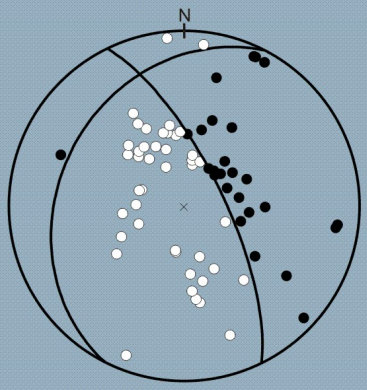
CATALOGUE OF FOCAL MECHANISMS OF PERUVIAN EARTHQUAKES



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ABSTRACT

A way to know the orientation and to quantify the movement of tectonic plates and cortical faults, is studying the nature of faults related with the occurrence of great earthquakes. The orientation of the forces, which produce faults, gives us information to make the "Focal Mechanism", which solutions give important and relevant information in seismology studies, tectonics analysis and it is applicable in evaluation of Seismic Hazard. However, the values of these parameters appear in many scientific studies and technical reports without a uniform format. Also the issues have different assembly especially in the angle, which define the orientation of seismic fault in the source.

Now a days there is no a compilation of focal mechanisms in Perú. The "Instituto Panamericano de Geografía e Historia" supports our desire to compile this information. The Focal Mechanisms Catalogue, join earthquakes with magnitudes great than 4.8 mb (from 1687) which has been subject matter of specially studies for many investigators. However our constrain is limited to bibliography information. This catalogue intends to be permanently updated with forthcoming data.

RESUMEN

Una manera de conocer la orientación y cuantificar el movimiento de las placas tectónicas o de los fracturamientos corticales, es estudiando la naturaleza de las fracturas asociadas a la producción de grandes terremotos. La orientación de las fuerzas que generan una ruptura, permiten configurar los denominados "Mecanismos Focales", cuyas soluciones proveen de información necesaria para estudios en Sismología, Análisis Tectónicos y son posibles de aplicarse en la evaluación del Peligro y Riesgo Sísmico. Sin embargo, los valores de estos parámetros son presentados en diferentes estudios científicos y reportes técnicos, sin existir un compendio único al cual se pueda consultar. Además, se suma a esta dificultad, el que los resultados sean presentados con diferentes convenciones, especialmente los relacionados a los ángulos que definen la orientación del fracturamiento en la fuente sísmica.

Para el Perú, a la fecha no existe ninguna compilación de Mecanismos Focales. Para llenar este vacio, el Instituto Panamericano de Geografía e Historia apoyó la iniciativa del autor, de presentar a consideración de la comunidad científica este Catálogo de Mecanismos Focales, el cual agrupa a los sismos con magnitudes mayores a 4.8 mb desde 1687 a la fecha, que han sido objeto de estudio de muchos investigadores.

Sin embargo, los autores se han visto limitados en cuanto a información bibliográfica se refiere; por lo que, de producirse la publicación de nuevos estudios, estos serán dados a conocer en una nueva edición.

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CATALOGUE OF FOCAL MECHANISMS OF PERUVIAN EARTHQUAKES

Hernando Tavera

I. INTRODUCTION

The occidental border of South America is one of the most seismic regions of the world. The Perú belong of this region and its seismicity will be divided in two groups: the first is the most important and is related with subduction of Nazca plate below continental plate. This activity is really 90% of total annual seismic energy more frequent and of great magnitude.

The second group is related with seismicity generated by cortical deformations and it is associated to technical fault in Perú (system faults of Tambomachay, Satipo-Moyobamba, Cordillera Blanca, Huaytapallana, Quiches, etc.). This seismic activity is not frequent and with moderate magnitude.

After 1960, seismicity studies increase in Perú and were developed by foreign scientists; the most important study was developed by Barazangi and Isacks (1976) which configure the subduction zone from Ecuador to North of Chile they used depth seismicity distribution. By the other hand the studies of

Stauder and Bollinger (1964-65) and Stauder (1975) were the first beginnings of analyses stresses distribution in Perú. Subsequently this work was development by peruvian scientist, but only for regional zones or important earthquakes.

In the catalogue of this paper, we show some solutions of focal mechanisms for the same earthquake from original publications. The solution of focal mechanisms was obtained using the direction of the first movement of P and/or PKP waves. In some cases the data of P wave is completed with S wave, considering the polarization angle or the direction of first movement of SV in SH components. Recently some earthquakes were studied using other methods like Centroid Moment Tensor (CMT) or using the volume and surface waves' inversion. These CMT solutions are not considerate in present catalogue because we do not have bibliographic information.

A way to represent the mechanism of an earthquake is defined by a shear fault of plane surface which dimensions are little in contrast with the distance of the observation point and with the longitude of wave of determination observations used. Geometrical parameters which define fault orientation are strike of trace, dip and slip direction. These parameters are obtained using elastic displacements generated by the event and are detected in seismic stations (seismograms). The solution of focal mechanism (fault plane), assume polarity of P waves (signal and sense of first movement) registered in the stations around the world, and plotted them into a focal sphere separated by two ortogonals planes in four quadrants. The models equivalents to forces in seismic focus are like to a simple or double couple forces. The model of double couple is equivalent to "pure shear displacement dislocations", which explain the nature of big earthquake generation.

The area selected for recompilation of seismic events, which belongs to this catalogue is limited between 0° to 19° south latitude and between 68° to 85° west longitude. The catalogue is limited in total solutions about focal mechanism

earthquakes in Perú and boundary regions until now and publicized in scientific works or technical reports. In the first part we show 116 events whose relation is indicated in Table 1 and geographical distribution in Figures 1,2 and 3: Shallow, intermediate and deep earthquakes.

II. DESCRIPTION OF THE CATALOGUE

The presentation of focal parameters in this catalogue is in chronological order considered the date of occurrence. The data are presented for each event in one or many solutions for author agreement the date of publication as follow:

1. - EVENT:

- Nro. of Seismic Event and Date.
- Origin Time, Latitude, Longitude and Depth.
- Magnitude (Ms, mb, Mw) and Geographic Region.

The value in parenthesis has been obtained from Seismic Catalogue of Perú 1500-1982 edited by Instituto Geofísico del Perú (1985). Likewise, the distribution of regions to localize the earthquakes on this catalogue is displayed in Figure 4.

2. - MECHANISM PARAMETERS:

-Reference: Author (s) and year of publication.

-Fault-planes A and B: Orientation is been given by their strike, dip and slip.

.**Strike**: is measured clockwise from north 0° at 360°, so that the dip direction follows to the right.

.**Dip**: measured from the horizontal 0° at 90° in the direction of dip.

.**Slip**: measured from the horizontal along the fault plane, starting from the direction of the strike -180° at 180°. Positive values of slip correspond to faults with reverse sense of motion and negative to normal sense of motion.

The angles values for planes A and B indicated with (*), have been calculated by authors from information of each publication.

3. - PRINCIPALS AXES:

.- Axes P and T: are the pressure and tension axes.

.- Axes X and Y: are these poles these fault-planes A and B.

.- Axe Z: as the null axis (intersection of the two nodal planes).

.- Trend: measured positive clockwise from North 0° at 360°.

.- Plunge: measured positive downward from horizontal 0° at 90°.

These angles values of axes P and T indicated with (*) has been calculated by authors from information of each publication.

4. - SEISMIC MOMENT:

.- (Mo) measure in dines-centimeter or Newton-meter.

5. - FAULT LENGTH:

.- Length measure faults in km.

6. - SOURCE-TIME FUNCTION:

.- Define time of seismic source in seconds.

7. - COMMENTS:

.- Method used in the calculation of solution the focal mechanism.

8.- MECHANISM DIAGRAM:

.- Equal area projection of the lower hemisphere of the focal sphere with the quadrant of compressions in black (axe T) and the quadrant of dilatations in white (axe P). A short segment marks the direction of North.

III. - SEISMICITY AND STRESS DISTRIBUTION

The regional stress orientation is frequently used to know the forces of crustal earth (Mendiguren, 1971; Bergman & Solomon, 1980). The variety of stress in lithosphere is related of many forces generated by local sources (heterogeneous structure, thermal anomalies in asthenosphere, etc.) and regional movements of plates (subduction process and plate's expansion, etc). From these sources the last play the most important roll in dynamic process of lithosphere.

By the other hand, is important to know some indicators of orientation (seismic parameters measures in situ of stress in geological faults) forces in big areas interplate and intraplate. The focal mechanisms of important events are used generally to infer stress regional orientations (Richardson et al. 1979; Bergman & Solomon, 1984). A great numbers of seismic events are necessary to know patterns of regional stress in interplate's zones (subduction zones) and intraplates zones (reactivation of geological faults). In the case of stress related to great earthquakes, are important the pressure (P) and tension (T) axes related to solutions of faults planes.

In west side of american continent the interplate earthquakes show the pressure axes (P) in E-W direction for this reason Stauder (1975), Suárez et al. (1983), Chinn and Isacks, (1983) y Assumpçâo & Suárez (1988) affirm the presence of compressional forces generated for collision of Nazca plate an sudamericana plate. This horizontal compression generate important gravitationals effects in andean topography, this fact would explain the presence of extensional forces in N-S direction (interplate earthquakes) in Perú and Bolivia andes (Sébrier et al., 1985, 1988).

All seismic activity of Perú shows us the active state of principal seismotectonic zones (interplate, subduction zones; intraplate, faults actives) as constant liberation energy (earthquakes). The study of these seismic events (magnitude great 4.8 mb) individually or in set gives the distribution of movements and displacement in seismic source. Many studies have been elaborated to explain lithosphere dynamics in Perú, some of the most important were development by: Mendiguren (1966), Isacks & Molnar (1971), Tellería (1971), et al (1983), Froidevaux & Isacks (1984), Sébrier et al (1985,1988), Carey-Gailhardis & Mercier (1987), Assumpçâo & Suárez (1988) y Assumpçâo (1990,1991). The results obtained in these studies let us to get an idea about all seismic energy generated in American continent.

CATALOGO DE MECANISMOS FOCALES PARA TERREMOTOS PERUANOS

Hernando Tavera

I. INTRODUCCION

El borde Occidental de América del Sur, se caracteriza por ser una de las regiones sísmicamente más activas del mundo. El Perú, forma parte de esta región, y su sismicidad puede ser dividida en dos grupos: el primero y el más importante, esta relacionado con la sismicidad asociada al proceso de subducción de la Placa de Nazca por debajo de la Placa Continental. Esta actividad, libera aproximadamente el 90% del total de la energía sísmica anual, siendo generalmente más frecuente y de grandes magnitudes.

El segundo grupo, considera a la sismicidad producida por las deformaciones corticales y esta asociada a los fallamientos tectónicamente activos existentes en el Perú. Por ejemplo: sistema de fallamientos de Tambomachay, Satipo-Moyobamba, Cordillera Blanca, Huaytapallana, Quiches, etc. Esta actividad sísmica es menos frecuente y de magnitudes moderadas.

Después de los años 60, los estudios de sismicidad se incrementaron en el Perú y fueron desarrollados principalmente por científicos extranjeros. El estudio más importante, fue el realizado por Barazangi & Isacks (1976), que llegaron a configurar la zona de subducción desde el Ecuador hasta el

Norte de Chile, a partir de la distribución de la sismicidad en profundidad. En lo referente a estudios sobre mecanismos focales, los trabajos realizados por Stauder & Bollinger (1964-65) y Stauder (1975) iniciaron el camino al análisis de la distribución de esfuerzos en el Perú. Posteriormente, esta labor fue complementada por investigadores peruanos, pero únicamente para zonas de interés regional o para sismos importantes.

En este catálogo, se presenta una o varias soluciones del mecanismo focal obtenido para un mismo terremoto, compilado a partir de publicaciones originales. La solución de los mecanismos focales, fue obtenida generalmente utilizando la dirección del primer movimiento de las ondas P y/o PKP. En algunos casos, los datos de la onda P son complementados con los de las ondas S, considerando su ángulo de polarización o el sentido del primer movimiento de sus componentes SV y SH.

Recientemente, algunos terremotos fueron estudiados utilizando la metodología del modelamiento e inversión de ondas de volumen y superfiales. Asimismo, el Observatorio de Harvard publica en el "Earthquake Data Reports" de la U.S. Geological Survey, las soluciones de los mecanismos de algunos terremotos usando el método del Centroid-Moment-Tensor. Estas soluciones, no han sido consideradas en el presente catálogo.

Una manera de representar el mecanismo de un terremoto, es el de una fractura de cizalla de supeficie plana y cuyas dimensiones son pequeñas comparadas con la distancia al punto de observación, y con la longitud de onda de las observaciones empleadas en su determinación. Los parámetros geométricos que definen la orientación de una falla son el azimut de su traza, el buzamiento del plano y la dirección del deslizamiento que ha tenido lugar. El cálculo de estos parámetros se realiza a partir del campo de desplazamientos elásticos producidos por el sismo. Estos desplazamientos son observados en los sismogramas registrados en las estaciones distribuidas sobre la superficie de la tierra.

La definición de solución del mecanismo focal (planos de falla), asume la polaridad de las ondas P (sentido del primer movimiento) registradas en las estaciones mundiales, las mismas que son distribuidas sobre una esfera focal y separadas por dos planos ortogonales en cuatro cuadrantes. Los modelos equivalentes a las fuerzas que actúan en el foco sísmico, corresponden a un sistema de simple o de doble par de fuerzas. El modelo de doble par, es equivalente a "pure shear displacement dislocation", el mismo que explica la naturaleza de la generación de grandes terremotos.

El área seleccionada para la recopilación de los eventos sísmicos, que forman parte de este Catálogo, se encuentra entre 0° a 19° Latitud Sur y 67° a 85° Longitud Oeste. El catálogo, esta limitado al total de soluciones que sobre mecanismos focales se han elaborado para terremotos ocurridos en el Perú y areas vecinas a la fecha y que han sido publicados en trabajos científicos o informes técnicos. Preliminarmente, se presenta un total de 116 eventos sísmicos, los mismos que posteriormente pueden ser complementados en una nueva edición. La relación de los eventos considerados en el presente catálogo, está indicada en la Tabla 1 y su distribución geográfica en las Figuras 1, 2 y 3: superficiales, intermedias y profundas.

II. DESCRIPCION DEL CATALOGO

La presentación de los parámetros focales en este catálogo, se encuentra en orden cronológico según la fecha de ocurrencia del sismo. Los datos son presentados para cada evento en una o varias soluciones, cuando se trata de más de una solución, se presentan por orden de publicación.

1.- EVENTO:

- Nro. del Evento Sísmico y Fecha.
- Tiempo de Origen, Latitud, Longitud y Profundidad.
- Magnitud (Ms, mb, Mw) y Región Geográfica.

Los valores indicados en paréntesis, han sido obtenidos del Catalogo Sísmico del Perú 1500 - 1982, editado por el Instituto Geofísico del Perú (1985). Asimismo, la distribución de las regiones para la ubicación de los eventos contenidos en este catálogo, es presentada en la Figura 4.

2.- PARAMETROS DEL MECANISMO:

- Referencia: Autor (es) y año de publicación.
- Planos de Falla A y B: Su orientación esta dada por su Azimut, Buzamiento y Angulo de Deslizamiento.
  - **Azimut** (Strike): medido en la misma dirección que el movimiento de las agujas del reloj, a partir del norte desde 0° a 360°.
  - **Buzamiento** (Dip): medido desde la horizontal de 0° a 90° en dirección del plano de falla.
  - **Angulo de Deslizamiento** (Slip): medido desde la horizontal a lo largo del plano de falla, se inicia en la dirección del azimut y va de -180° a 180°. Los valores positivos corresponden a fallas del tipo inverso y los valores negativos a fallas del tipo normal.

Los valores para los ángulos de los planos A y B indicados

con asterisco (*), han sido calculados por el autor a partir de la información contenida en cada publicación.

3.- PRINCIPALES EJES:

- Ejes P y T: definen a los ejes de Presión y Tensión.
- Ejes X y Y: definen a los polos de los planos nodales A y B.
- Eje Z: define al eje nulo o punto de intersección de los planos.
  . **Azimut** (Trend): medida positiva a partir del norte según el movimiento de las agujas del reloj, de 0° a 360°.
  . **Inclinación** (Plunge): medida positiva hacia abajo desde la horizontal, de 0° a 90°.

Los valores para los ángulos de los ejes P y T indicados con asterisco (*), han sido calculados por los autores a partir de la información contenida en cada publicación.

4.- MOMENTO SISMICO:

- (Seismic Moment), definido como Mo y es medido en dina.cm o N.m.

5.- LONGITUD DE FALLA:

- (Fault Length), longitud observada o calculada para la falla, en km. Esta información es presentada solamente para algunos eventos, de acuerdo a la cita bibliográfica.

6.- DURACION FUENTE:

- (Source-Time function), define la duración de la fuente sísmica en segundos.

7.- COMENTARIO:

- (Comment), describe el método utilizado para la solución del mecanismo focal.

8.- DIAGRAMA DEL MECANISMO:

- Se presenta el diagrama de la solución del mecanismo focal, en una proyección estereográfica del tipo Schimdt, hemisferio inferior. Los cuadrantes de compresión (eje T) son presentados de color oscuro y los de dilatación (eje P) en blanco. Un pequeño segmento ubicado en el exterior del diagrama, indica la dirección del norte.

III.- SISMICIDAD Y DISTRIBUCION DE ESFUERZOS

La orientación de los esfuerzos regionales en la litósfera es frecuentemente utilizado para inferir las fuerzas que causan el movimiento de la corteza terrestre (Mendiguren, 1971; Bergman & Solomon, 1980). La diversidad de esfuerzos en la litósfera, es debida a la presencia de diferentes fuerzas causadas por fuentes locales (estructuras heterogéneas, anomalías termales en la astenósfera, etc), y regionales o movimiento de las placas (procesos de subducción y expansión de placas, etc). De estas fuentes, la última juega el rol más importante en el proceso dinámico de la litósfera.

Por otro lado, es importante conocer algunos indicadores de la orientación de estas fuerzas (parámetros sísmicos, medidas "in situ" de esfuerzos observados sobre fallas geológicas) sobre grandes áreas interplaca e intraplaca. Los mecanismos focales de sismos importantes, son comúnmente usados para inferir la orientación de los esfuerzos tectónicos regionales (Richardson et al. 1979; Bergman & Solomon, 1984). Un gran número de eventos sísmicos son necesarios para establecer patrones de esfuerzos regionales en zonas interplacas (zonas de subducción) y en zonas intraplacas (formación o reactivación de fallas geológicas). En el caso de los esfuerzos relacionados a los grandes sismos, son importantes los ejes de Presión (P) y Tensión (T) relacionados a la solución de los planos de falla.

En el flanco oeste del continente sudamericano, los sismos interplaca generalmente presentan el eje de Presión (P) orientado en la dirección E-W, por lo que Stauder (1975), Suárez et al. (1983), Chinn & Isacks, (1983) y Assumpçâo & Suárez (1988) atribuyen la presencia de fuerzas compresionales causados por la colisión de la placa de Nazca y la placa Sudamericana.

Esta compresión horizontal, ha generado importantes efectos gravitacionales en la topografía andina, hecho que explicaría la presencia de fuerzas extensivas orientadas en la dirección N-S (sismos intraplaca) en los altos andes de Perú y Bolivia (Sébrier et al., 1985,1988).

La totalidad de la actividad sísmica que se produce en el Perú pone de manifiesto el caracter activo de las principales zonas sismotectónicas (interplaca, zona de subducción; intraplaca, fallas activas) a partir de la constante liberación de energía a manera de sismos. El estudio de estos eventos sísmicos (magnitudes mayores a 4.8 mb), ya sea de manera individual o en conjunto permite conocer la distribución de los principales esfuerzos que gobiernan los movimientos o desplazamientos producidos en la fuente o foco sísmico. Muchos estudios han sido ya elaborados para explicar la dinámica de la litósfera en el Perú, siendo los más importantes los desarrollados por: Mendiguren (1966), Isacks & Molnar (1971), Tellería (1971), et al (1983), Froidevaux & Isacks (1984), Sébrier et al (1985,1988), Carey-Gailhardis & Mercier (1987), Assumpçâo & Suárez (1988) y Assumpçâo (1990,1991). Con los resultados obtenidos de estos estudios, se puede tener idea del total de la energía que se libera en esta parte del continente americano.

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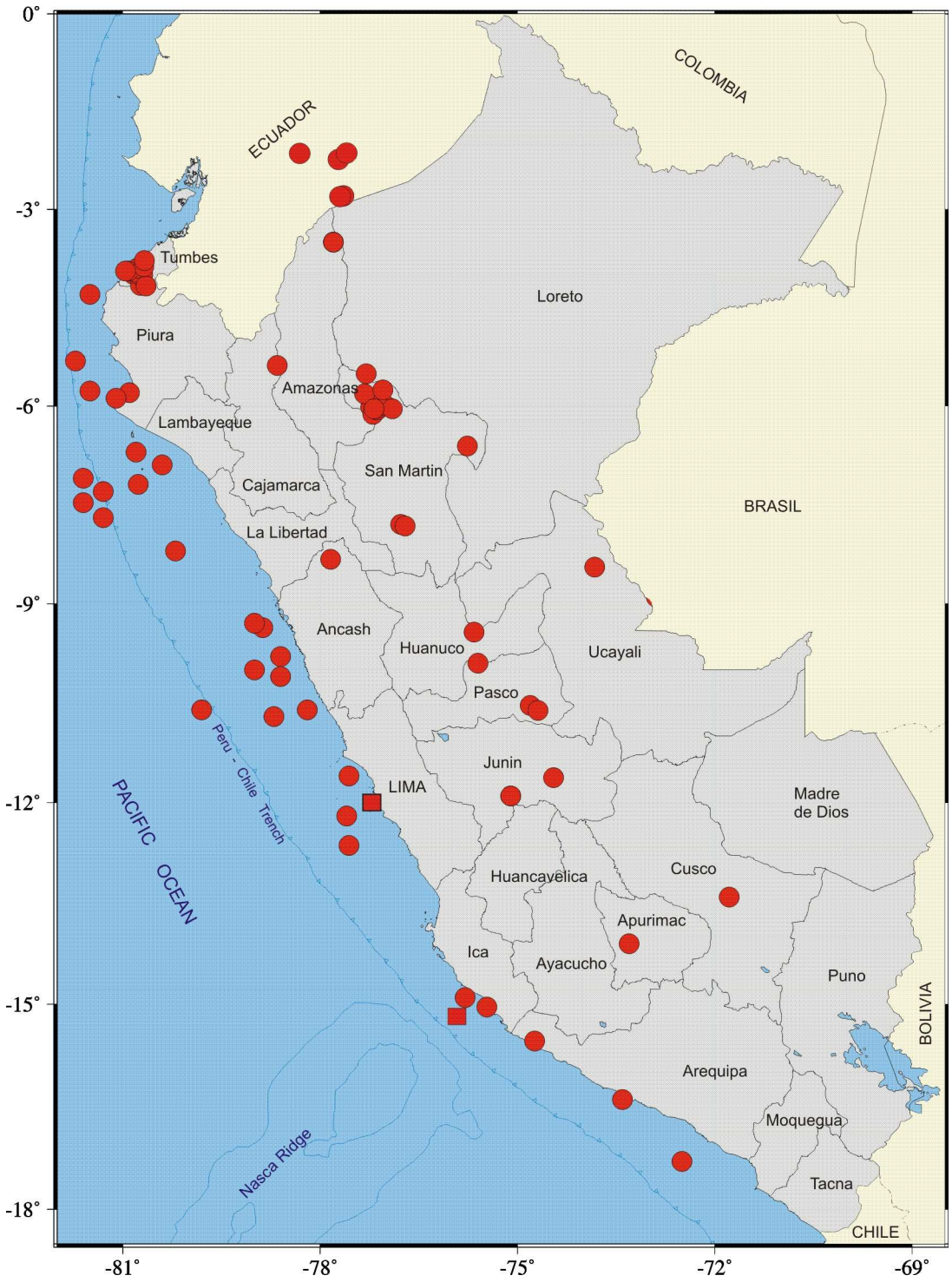


Figure 1. - *Spatial distribution of shallow-depth earthquakes (0-60 km.) considered in this catalog. The square symbols represent the possible epicenters of 1687 and 1746 historical earthquakes.*

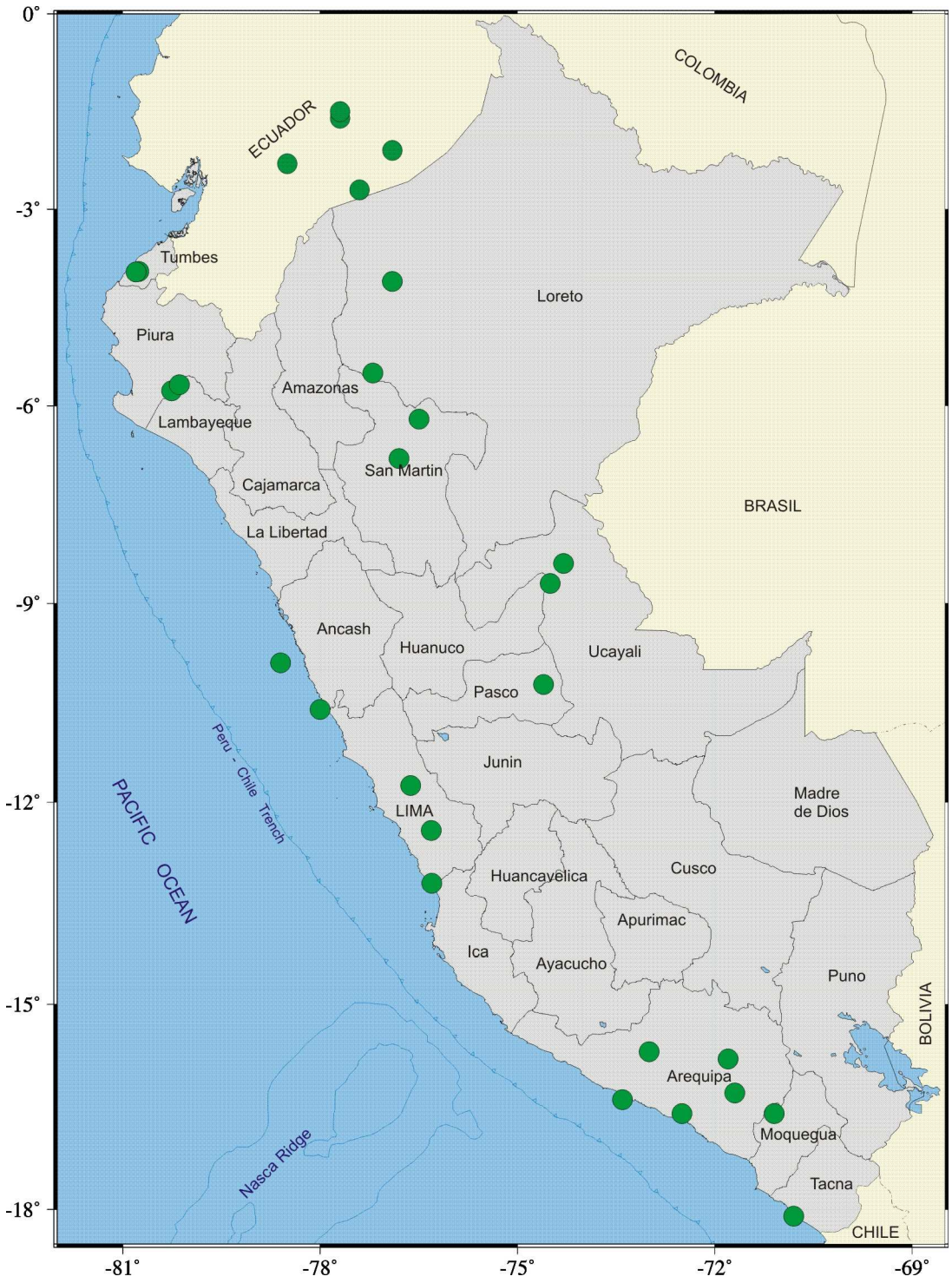


Figure 2. - *Spatial distribution of intermediate-depth earthquakes (61 -350 km.) considered in this catalog.*

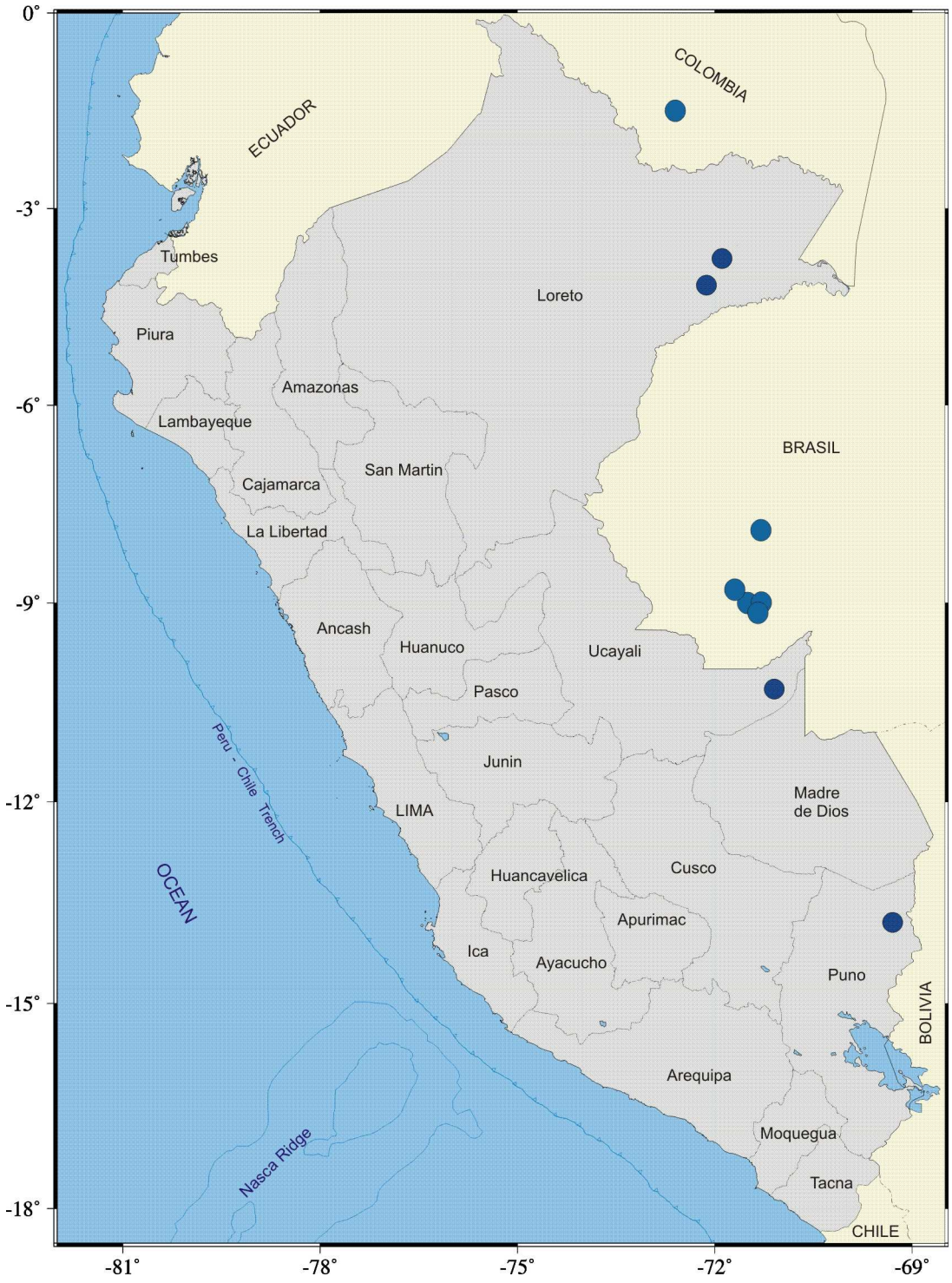


Figure 3. - *Spatial distribution deep earthquakes (>351 km.) considered in this catalog.*

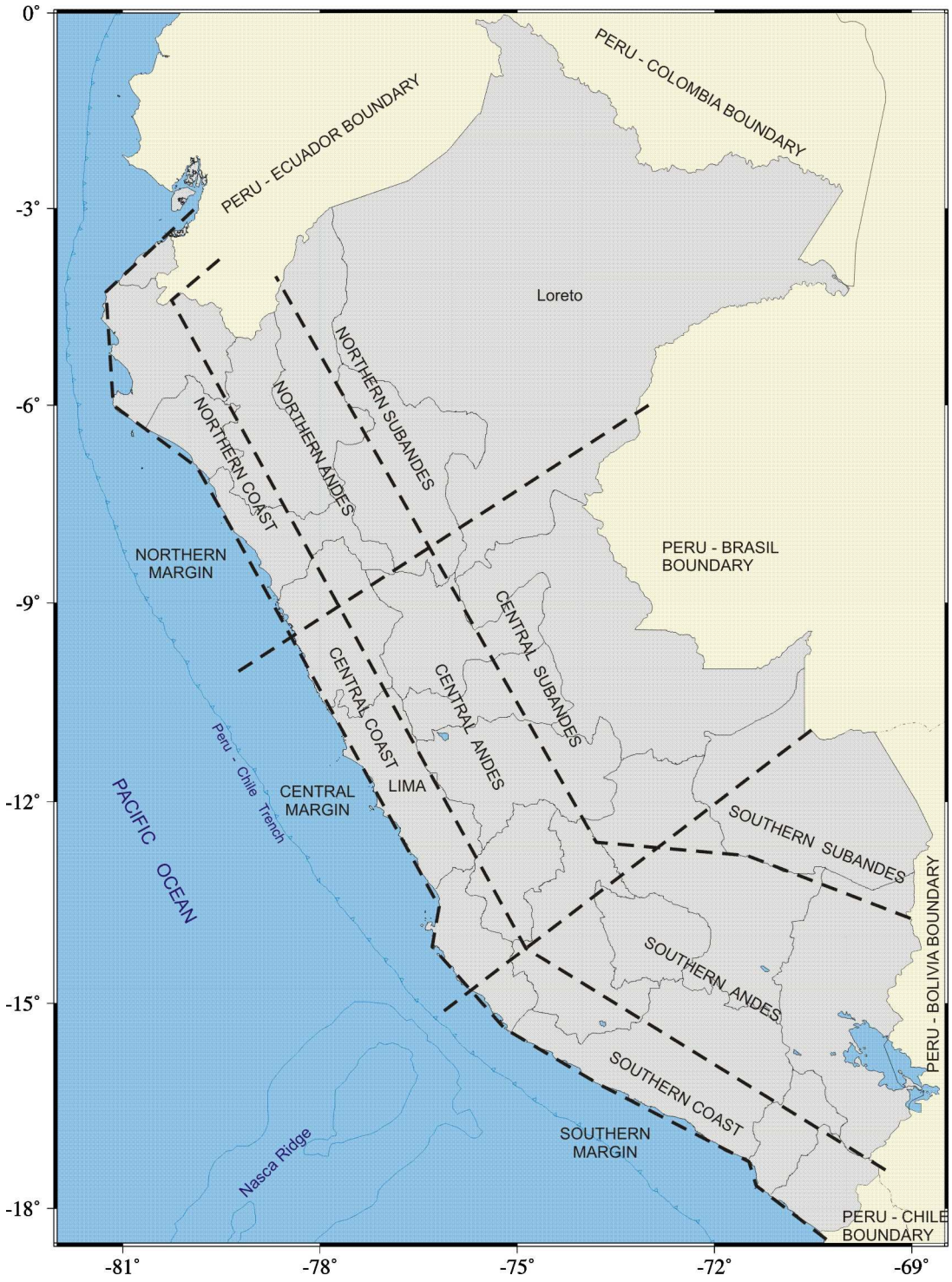


Figure 4.- *Distribution of seismic area locations.*

TABLES

HYPOCENTRAL DATA

Nro. Event	Date yy-mm-dd	Time GMT	Lat South	Long West	Mag Ms	Mag mb	Depth km
001	1687-10-20	(11h30m)	(15.20)	(75.90)			(28.0)
002	1746-10-29	(03h30m)	(12.00)	(77.20)			(30.0)
003	1911-04-28	-h-m	9.5	7.12			557.0
004	1921-12-18	15h29m	4.17	72.13			630.0
005	1922-01-17	03h50m	3.76	71.89			664.0
006	1940-05-24	16h33m	(11.6)	(77.56)	8.0		20-30
007	1942-08-24	22h50m	15.54	74.74			60.0
008	1946-11-10	17h42m	8.33	77.84	7.2		30-40
009	1958-01-15	19h14m	16.6	72.5	(7.0)		90.0
010	1960-01-13	15h40m	15.7	73.0	(7.5)		82.0
011	1960-11-20	17h02m	6.7	80.8			5-25
012	1962-04-18	19h14m	10.0	79.0		(6.7)	39.0
013	1963-04-13	02h20m	6.2	76.5	(6.9)	7.0	125.0
014	1963-08-15	17h25m	13.8	69.3	(7.8)	8.0	543.0
015	1963-08-29	15h30m	7.1	81.6		6.5	23.0
016	1963-09-17	05h54m	10.6	78.2	(5.5)	6.7	61.0
017	1963-09-24	16h30m	10.6	78.0		7.0	80.0
018	1963-11-03	03h10m	3.5	77.8		(6.0)	33.0
019	1963-11-09	(21h15m)	8.8	71.7			576.0
020	1963-11-10	01h00m	9.0	71.5			596.0
021	1963-12-29	(17h15m)	18.35	69.5		(5.5)	125.0
022	1964-01-26	(09h09m)	16.3	71.7		(6.1)	119.0
023	1964-11-02	(06h51m)	4.1	76.9		(6.0)	91.0
024	1964-11-28	(16h41m)	7.9	71.3			650.0
025	1965-07-30	(05h45m)	18.1	70.8	(4.8)		72.0
026	1965-08-03	02h01m	7.7	81.3	(5.4)	5.8	49.0
027	1965-08-20	09h42m	19.0	69.1		6.5	129.0
028	1965-09-17	(11h13m)	1.5	77.7		(6.0)	191.0
029	1965-11-03	(01h39m)	9.1	71.4		(6.2)	593.0
030	1965-12-30	06h16m	16.6	71.1	(6.0)	(5.7)	112.0
031	1966-05-01	(16h22m)	8.4	74.3	(6.8)	(5.8)	154.0

Nro. Event	Date yy-mm-dd	Time GMT	Lat South	Long West	Mag Ms	Mag mb	Depth km
032	1966-06-07	00h59m	14.9	75.8	(6.3)	5.6	48.0
033	1966-10-17	21h41m	10.7	78.7		6.3	38.0
034	1967-02-15	16h11m	9.0	71.3	6.2	(4.5)	597.0
035	1967-05-15	17h08m	10.23	74.6		5.0	116.0
036	1967-06-21	06h49m	2.25	77.75	6.0	5.4	62.0
037	1967-08-09	07h14m	8.45	73.83		5.1	42.0
038	1967-08-23	09h21m	4.3	81.5	4.0	5.0	19.0
039	1967-09-03	21h07m	10.6	79.8		(6.5)	38.0
040	1967-09-27	06h02m	7.3	81.3	4.2	5.1	16-37
041	1967-10-11	20h28m	10.3	71.1		(5.8)	590.0
042	1967-11-04	16h26m	2.8	77.7		6.0	59.0
043	1968-05-09	12h52m	5.31	81.72	2.1	4.2	34.0
044	1968-06-19	08h13m	5.5	77.2	(6.9)	6.4	89.0
045	1968-06-20	02h38m	5.51	77.30	(5.7)	5.8	33.0
046	1968-07-30	20h38m	6.9	80.4	(6.4)	5.8	37.0
047	1968-08-27	05h17m	8.90	72.89	3.9	4.9	26.0
048	1968-09-06	07h49m	5.77	80.26	4.7	5.3	97.0
049	1968-09-09	00h37m	8.7	74.5		6.0	120.0
050	1968-09-28	13h53m	13.21	76.3	(6.0)	6.4	70.0
051	1968-10-31	09h15m	16.4	73.4		5.7	67.0
052	1968-12-01	13h14m	10.54	74.81	(5.6)	5.4	33.0
053	1969-02-04	04h10m	8.2	80.2	(5.9)	6.0	16.0
054	1969-05-28	(13h30m)	2.1	76.9	5.4	5.5	163.0
055	1969-07-19	04h54m	17.3	72.5	(5.7)	5.9	54.0
056	1969-07-24	02h59m	11.9	75.1	(5.7)	5.9	1.0
057	1969-10-01	05h05m	11.9	75.1	(6.2)	5.9	4.0
058	1970-02-14	11h17m	9.9	75.6	(5.4)	5.9	35.0
059	1970-03-31	08h50m	5.68	80.14	5.4	5.6	69-90
060	1970-05-31	20h23m	9.36	78.87	7.8	(6.6)	40.0
061	1970-06-02	01h37m	9.3	79.0	(5.4)	5.7	49.0
062	1970-06-04	04h09m	9.8	78.6	(6.2)	5.8	57.0
063	1970-06-17	04h44m	15.8	71.8		5.9	91.0
064	1970-06-21	15h13m	9.9	78.6		5.3	80.0
065	1970-07-02	00h45m	10.1	78.6	(5.3)	5.8	62.0

Nro. Event	Date yy-mm-dd	Time GMT	Lat South	Long West	Mag Ms	Mag mb	Depth km
066	1970-07-31	(17h00m)	1.5	72.6	(7.0)		653.0
067	1970-12-10	04h34m	4.0	80.7	(7.1)	6.5	(15.0)
068	1970-12-10	05h32m	3.95	80.76		5.2	67.0
069	1970-12-10	17h29m	3.99	80.84		5.0	52.0
070	1970-12-10	19h50m	4.16	80.73		5.0	58.0
071	1970-12-10	21h46m	3.96	80.8		5.0	71.0
072	1970-12-11	10h24m	3.98	80.79	(5.4)	5.4	34.0
073	1970-12-15	21h15m	3.96	80.8		5.1	41.0
074	1970-12-21	07h33m	3.90	80.78		5.1	41.0
075	1970-12-29	08h02m	3.94	80.92	(5.2)	5.7	56.0
076	1971-03-27	00h53m	7.47	81.6	4.9	5.4	29-34
077	1971-05-17	11h04m	1.6	77.7		5.7	176.0
078	1971-06-11	01h32m	4.17	80.65		5.5	45.0
079	1971-07-27	02h02m	2.7	77.4	(7.5)	6.3	135.0
080	1971-10-15	10h33m	14.1	73.3		5.7	54.0
081	1971-10-28	06h30m	3.87	80.68		5.2	46.0
082	1972-01-12	09h59m	6.9	71.8			580.0
083	1972-03-20	07h33m	6.8	76.8		6.1	64.0
084	1972-09-04	23h32m	3.78	80.67		5.5	35.0
085	1973-05-30	(04h38m)	2.3	78.5		5.7	107.0
086	1973-08-07	02h05m	7.19	80.77	4.2	5.1	35.0
087	1973-11-09	22h41m	3.94	80.96		5.6	19.0
088	1974-01-05	08h33m	12.42	76.31	6.6	(6.3)	93.0
089	1974-06-09	10h41m	5.8	80.9	4.2	5.1	44-52
090	1974-06-09	14h16m	5.77	81.5	5.6	5.7	30-50
091	1974-10-02	02h55m	5.88	81.1	5.6	5.7	5-7
092	1974-10-03	14h21m	12.2	77.6	7.6	6.3	21.0
093	1974-11-09	(12h59m)	12.64	77.56	7.2	(6.0)	20-25
094	1976-05-15	21h55m	11.62	74.45	6.5	5.9	18.0
095	1982-11-11	04h27m	10.61	74.69		6.3	14.0
096	1984-06-03	04h10m	7.8	76.78		5.3	34.0
097	1984-06-05	04h15m	7.82	76.71		5.8	25.0

Nro. Event	Date yy-mm-dd	Time GMT	Lat South	Long West	Mag Ms	Mag mb	Depth km
098	1985-07-26	17h56m	5.38	78.65		5.3	18.0
099	1985-08-13	05h29m	15.04	75.47		5.4	25.0
100	1986-04-05	20h14m	13.41	71.78		5.3	51.0
101	1987-11-15	22h00m	9.43	75.66		5.4	32.0
102	1988-04-12	15h26m	2.79	77.65		5.5	27.0
103	1989-05-04	10h30m	6.61	75.76		5.5	36.0
104	1990-05-30	02h34m	6.02	77.23		6.1	24.0
105	1990-05-30	16h49m	6.01	77.12	5.1	5.4	21.5
106	1990-06-06	02h01m	6.13	77.2	5.0	5.1	25.3
107	1990-06-09	01h14m	6.06	77.13	4.9	5.5	25.6
108	1991-04-04	15h23m	6.03	77.13	6.3	6.0	20.7
109	1991-04-04	16h08m	5.99	77.08		5.2	28.7
110	1991-04-05	04h19m	5.98	77.09	6.8	6.5	19.8
111	1991-04-05	05h01m	5.81	77.33		5.5	24.1
112	1991-04-05	17h13m	6.0	77.0		5.2	42.7
113	1991-04-06	14h21m	6.04	76.9		5.1	40.3
114	1991-04-07	23h16m	6.04	77.18		5.0	33.0
115	1991-04-12	03h50m	5.75	77.05	4.5	5.2	33.0
116	1993-04-18	09h16m	11.75	76.62		5.7-5.8	94.0

REFERENCES BY ALPHABETIC ORDER

ABE,K. (1972).
Mechanisms and tectonic implications of the 1966 and 1974 Peru earthquakes., *Phys. Earth Planet. Inter.*, 5, 367-379.

ASSUMPÇAO,M. (1992).
The regional intraplaque stress field in South America., *J. Geophys. Res.*, 97, 11889-11903.

ASSUMPÇAO,M. & SUAREZ,G. (1988).
Source mechanisms of moderate size earthquakes and stress orientation in mid-plate South America., *Geophys. J.*, 92, 253-267.

ASTIZ, L., LAY, T.& KANAMORI, H. (1988)
Intermediate-depth earthquakes and subduction process. PEPI, 53, 80-166.

BARAZANGI,M. & ISACKS,B. (1979).
Subduction of the Nazca plate beneath Peru: evidence from spatial distribution of earthquakes., *Gephys. Jour. Roy. Astr. Soc.*, 57, 537-555.

BECK,S. & RUFF,L. (1986).
The great 1940 and 1942 Peru earthquakes (abstract), *EOS Trans. AGU*, 67, 1105.

BECK,S. & RUFF,L. (1989).
Great earthquakes and subduction along the Peru trench. *Phys. Earth Planet. Inter.*, 57, 199-224.

BECK,S. & NISHENKO,S. (1990).
Variations in the mode of great earthquake rupture along the Central Peru subduction zone., *Geophy. Res. Lett.*, 17(11), 1969-1972.

BERCKHEMER,H. & JACOB,H. (1968).
Investigation of the dynamical process in earthquake foci by analyzing the pulse shape of body waves., Final Rep. Contract AF61(052)-801, *Inst. of Meteorology and Geophysics, Unv. of Frankfurt*, 85 pp.

BERGMAN,E. & SOLOMON,S. (1980).
Oceanic intraplate earthquakes, implications for local and regional intraplate stress. *J. Geophys. Res.*, 85, 5389-5410.

BERGMAN,E. & SOLOMON,S. (1984).
Source mechanisms of earthquakes near mid-ocean ridges from body waveform inversion and implications for the early evolution of oceanic lithosphere., *J. Geophys. Res.*, 89, 11415-11441.

CAREY-GAILHARDIS,E. & MERCIER,J. (1987).
A numerical method for determining the state of stress using mechanisms of earthquake populations: applications to Tibetan teleseisms and microseismicity of Southern Peru., *Earth Planet. Sci. Lett.*, 88, 165-179.

CHANDRA, U. (1970).
The Peru-Bolivian border earthquake of August 15, 1963., *Bull. Seismol. Soc. Amer.*, 60, 639-646.

CHINN,D. & ISACKS,B. (1983).
Accurate source depths and focal mechanics of shallow earthquake in Western South America and in the New Hebrides Island Arc., *Tectonics*, 2, 529-563.

DEWEY,J. & SPENCE,W. (1979).
Seismic gaps and source zones of recent large earthquakes in coastal Peru. *Pure Appl. Geophys.*, 117, 1148.

DOSER,D. (1987).
The Ancash, Peru earthquake of 1946 November 10: evidence for low-angle normal faulting in the high Andes of northern Peru., *Geophys. J. R. Astr. Soc.*, 91, 57-71.

FROIDEVAUX,C. & ISACKS,B. (1984).
The mechanical state os stress of the Altiplano-Puno segment of the Andes. *Earth Planet. Sci. Lett.*, 71, 305-314.

HODGSON,J. & BREMNER,P. (1953).
Direction of faulting in the Ancash, Peru earthquake of November 10, 1946 from teleseismic evidence. *Bull. Seism. Soc. Am.*, 43, 121-125.

HODGSON,J. & METZGER,M. (1962).
Direction of faulting in source of the larger earthquakes of 1958., *Publ. Dominion Observatory, Ottawa,* 26, 305.

HUACO,D. (1976).
Source parameters and the static field of earthquakes at near distances., *Dissertation Ph.D.*, St. Louis University, 132 p.

HUACO,D. (1977).
La tectónica reciente de la zona de Bayovar - Piura, *Contribución IGP-78*, 63 p.

HUACO,D.,RODRIGUEZ,A. & RODRIGUEZ,L. (1979).
Sismicidad en la región de Arequipa., *Contribución IGP-DCS*, 80 p.

ISACKS,B. & MOLNAR,P. (1971).
Distribution of stresses in the descending lithosphere from a global survey of focal mechanism solutions of mantle earthquakes., *Rev. Geophys. Space Phys.,* 9, 103-174

JIMENEZ, E., CARA, M. & ROULAND, D. (1989).
Focal mechanisms of moderate-size earthquake from the analysis of single-station three. Component surface-ware records. BSSA. V79, N4,955-972.

LAY,T.,ASTIZ,L.,KANAMORI,H. & CRISTERSEN,D. (1989).
Temporal variation of large - intraplate earthquakes in coupled subduction zones. *Phys. Earth. Planet. Inter.*, 54, 258-312.

LEJSEK,K. (1971).
Mecanismo Focal de Terremotos y el Tectonismo Sudamericano., *Tesis UM San Andres*, Fac. Ciencias Geológicas, La Paz-Bolivia, 134 pp.

MENDIGUREN,J. (1966).
Focal mechanism and pressure axis direction in Central America and South America., *Bull. Intr. Inst. Seismol., Earthquake Engineering*., Vol. 3.

MENDIGUREN,J. (1971).
Focal mechanism of a shock in the middle of the Nazca plate. *J. Geophys. Res.*, 76, 3861-3879.

MENDIGUREN,J. (1973).
Identification of free oscillation spectral peaks for 1970 July 31, Colombian deep shock using excitation criterion. *Geophys. J. R. Astron. Soc.*, 33, 281-321.

OCHOA,D. & STAUDER,W. (1964).
The focal mechanism of two peruvian earthquakes., *PAGEOPH*, vol.58, 114-122.

OCOLA,L.,BECERRA,O.,PARDO,F. & HUACO,P. (1979).
Sismicidad, Peligro Sísmico y de Tsunamis en el Area de Bayovar., *Convenio ODECOB-IGP,* 170 pp.

OKAL, E. & BINA, C. (1994).
The deep earthquake of 1921-1922 in northern Peru. PEPI, 87, 33-54.

PENNINGTON,W. (1981).
Subduction of the eastern Panama Basin and Seismotectonics of the northwestern South America., *J. Geophys. Res.*, 86, 10753-10770.

PELAYO, A. & WIENS, D. (1990).
November 20,1960 Peru Tsunami earthquake! Source Mechanism of a show event. Geography. Re. Lett – V 17, N 61, 661-664.

PETERSEN,E. (1976).
Características de la zona de Benioff en el Perú y el Ecuador., *Bol. Soc. Geol. del Perú*, T52, 49-72.

RICHARDSON,R.,SOLOMON,S. & SLEEP,N. (1979).
Intraplate stress as an indicator of plate tectonic driving forces., *J. Geophys. Res.*, 81, 1847-1856.

SEBRIER.M.,MERCIER.J-C.,MEGARD.F.,LABAUCHER.G. & CAREY - GAILHARDIS. E. (1985).
Quaternary normal and reverse faulting and the state of stress in the Central Andes of Peru., *Tectonics*, 4, 739-780.

SEBRIER.M.,MERCIER.J-C.,MACHARE.J.,BONNOT.D.,CABRERA.J. & BLANC.J-L. (1988).
The state of stress in an overriding plate situated above a flat slab: The Andes of Central Peru., *Tectonics,* 7, 895-928.

SILGADO,E. (1951).
The Ancash Peru earthquake of November 10, 1946. *Bull. Seis. Soc. Am.*, 41, 83-100.

SPENCE,W.,LANGER,C. & JORDAN,J. (1976).
A tectonic study of the Peru earthquakes of October 3 and November 9, 1974., *Bull. Seism. Soc. Am.* (in press).

SPENCE,W.,LANGER,C. & JORDAN,J. (1979).
Seismic gaps source zones of earthquakes in coastal Peru. *PAGEOPH*, v.117, 1148-1171.

STAUDER,W. (1973).
Mechanism and spatial distribution of Chilean earthquakes with relation to subduction of the Oceanic Plate., *Jour. Geophys. Res.*, 78, 5033-5061.

STAUDER,W. (1975).
Subduction of the Nazca plate under Peru as evidenced by focal mechanism and by seismicity. *J. Geophys. Res*., 80, 1053-1064.

STAUDER,W. & BOLLINGER,G. (1964).
The S-wave project for focal mechanism studies earthquakes 1962., *Department of Geophysics and Geophysical Engineering Institute of Technology,* Saint Louis University, 93 pp.

STAUDER,W. & BOLLINGER,G. (1965).
The S-wave project for focal mechanism studies earthquakes 1963., *Department of Geophysics and Geophysical Engineering Institute of Technology,* Saint Louis University, 91 pp.

SUAREZ,G.,MOLNAR,P. & BURCHFIELD,B. (1983).
Seismicity fault plane solutions, depth of faulting and active tectonics of the Andes of Peru, Ecuador and Southern Colombia., *Jour. Geophys. Res*., 88, 10403-10428.

SWENSON, J. & BECK, S. (1996).
Historical 1942 Ecuador, 1942 Peru subduction earthquakes an earthquakes cycles along Colombia, Ecuador and Peru subduction segments. PFIGEOPH, V. 146, N1,67-101.

TAVERA,H. (1993a).
El terremoto del Cuzco, 4 de Abril de 1986. Aspectos sismotectónicos., *Instituto Geofísico del Perú - Div.* Sismología y Gravimetría*,* 17 p.

TAVERA,H. (1993b).
Aspectos sismotectónicos de la región de Rioja-Moyobamba: terremotos del 29 de Mayo 1990 y del 4 y 5 de Abril de 1991., Instituto Geofísico del Perú - Div. Sismología y Gravimetría., en preparación.

TAVERA,H. (1993c).
El sismo de Lima-Perú del 18 de Abril de 1993. Aspectos sismológicos., *Contrib. IGP/01-93*, 16 pp.

TELLERIA,G. (1970).
Dinamismo sísmico bajo los Andes Centrales y la tectónica global., *Tesis de Grado, UMSA*, La Paz-Bolivia, 209 pp.

WAGNER,D. (1972).
Statistical decision theory applied to the focal mechanism of peruvian earthquakes., *Ph.D. Dissertation,* St. Louis Univ., St. Louis M., 176 pp.

CATALOGUE

CATALOGO

SEISMIC EVENT N°: 001 **DATE: OCT 20 1687**

Time:(11h 30m) Lat:(-15.20°) Long:(-75.90°) Depth: (28.0)km

Ms: mb: Mw: 8.6 - 8.7 Region: Southern margin

Reference: Beck, S. & Nishenko, S. (1990).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 1-2xE22 N.m

Source-Time function:

Comment: The far-field ratio of tsunami heights.

SEISMIC EVENT N°: 002 **DATE: OCT 29 1746**

Time:(03h 30m) Lat:(-12.00°) Long:(-77.20°) Depth: (30.0)km

Ms: mb: Mw: 8.8 - 9.5 Region: Central margin

Reference: Beck, S. & Nishenko, S. (1990).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 2-2.6xE22 N.m

Source-Time function:

Comment: The far-field ratio of tsunami heights.

SEISMIC EVENT N°: 003 **DATE: 28 APR 1911**

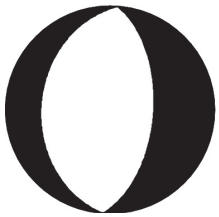
Time: (--h --m) **Lat:** -9.5° **Long:** -71.2 **Depth:** 557.0 km

Ms: **mb:** **Mw:** 7.1 **Region:** Brasil Boundary

Reference: Okal, E. & Bina, C. (1994).

	Strike	Dip	Slip
Plane A:	184.0°	34.0°	-90.0°
Plane B:	4.0°	56.0°	-90.0°

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 3.7xE26 dyn.cm

Source-Time function:

Comment: Ware form inversion

SEISMIC EVENT N°: 004 **DATE: 18 DEC 1921**

Time: 15h 29m Lat: -4.17° Long: -72.13° Depth: 630.0 km

Ms:7.9 mb: Mw: 7.3 Region: Northern subandes

Reference: Okal, E. & Bina, C. (1994).

	Strike	Dip	Slip
Plane A:	44.0°	30.0°	-33.0°
Plane B:	163.0°	74.0°	-64.0°

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 1.2xE27 dyn.cm

Source-Time function:

Comment:

SEISMIC EVENT N°: 005 **DATE: 17 JAN 1922**

Time: 03h 50m **Lat: -3.76°** **Long:**-71.89 **Depth:664.0 km**

Ms: 7.6 **mb:** **Mw: 7.7** **Region: Northern subandes**

Reference: Okal, E. & Bina, C. (1994).

,

	Strike	Dip	Slip
Plane A:	44.0°*	30.0°*	-53.0°*
Plane B:	183.0°*	66.0°*	-71.0°*

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 6xE27 dyn.cm

Source-Time function:

Comment:

SEISMIC EVENT N°: 006 **DATE: MAY 24 1940**

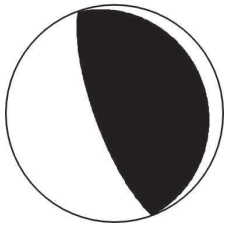
Time: 16h 33m **Lat:(-11.6 °)** **Long:(-77.56°)** **Depth: 20-30 km**

Ms: 8.0 **mb:** **Mw:** **Region: Central margin**

Reference: Beck, S. & Ruff, L.J. (1986).

	Strike	Dip	Slip
Plane A:	340.0°	15.0°	90.0°
Plane B:	160.0°*	75.0°*	90.0°*

	Trend	Plunge
Axe P:	250.0°*	30.0°*
Axe T:	70.0°*	60.0°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function: 20 s

Comment: P-wave first motion and wave form.

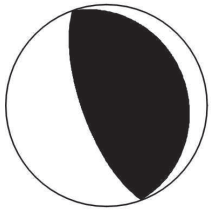
Time:(16h 33m) **Lat: -11.22°** **Long: -77.79°** **Depth: 10-30 km**

Ms: 8.0 **mb:** **Mw:** **Region: Central margin**

Reference: Beck, S. & Ruff, L. J. (1989).

	Strike	Dip	Slip
Plane A:	340.0°	20.0°	90.0°
Plane B:	160.0°*	70.0°*	90.0°*

	Trend	Plunge
Axe P:	250.0°*	25.0°*
Axe T:	70.0°*	65.0°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 2xE27 dyn.cm

Source-Time function: 24 - 30 s

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 007 **DATE: 24 AUG 1942**

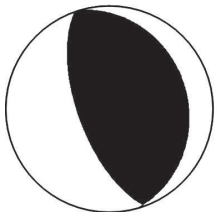
Time: 22h 50m **Lat: -15.54** **Long:**-74.74 **Depth: 60.0 km**

Ms: 8.1 **mb: 6.7** **Mw: 7.9-8.2** **Region: Sourthern margin**

Reference: Swenson, J. & Beck, S. (1996)

	Strike	Dip	Slip
Plane A:	345.0°	25.0°	95.0°
Plane B:	160.0°	65.0°	85.0°

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 10-25xE27 dyn.cm

Source-Time function:

Comment:

SEISMIC EVENT N°: 008 **DATE: NOV 10 1946**

Time: 17h 42m Lat: - 8.33° Long: -77.84° Depth: 30-40 km

Ms: 7.2 mb: Mw: Region: Central andes

Reference: Silgado, E. (1951).

	Strike	Dip	Slip
Plane A:	140.0°	58.0°	-90.0°
Plane B:	320.0°*	32.0°*	-90.0°*

	Trend	Plunge
Axe P:	50.0°*	77.0°*
Axe T:	230.0°*	13.0°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: Observations of surface faulting.

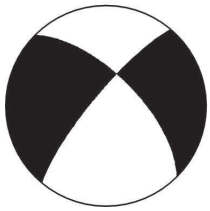
Time:(17h 42m) Lat: - 8.27° Long: -77.82° Depth: 27.0 km

Ms:(7.3) mb: Mw: Region: Central andes

Reference: Hodgson, J & Bremner, P. (1953).

	Strike	Dip	Slip
Plane A:	315.0°	65.0°	-168.0°
Plane B:	219.9°*	79.0°*	-25.5°*

	Trend	Plunge
Axe P:	174.9°*	25.5°*
Axe T:	269.6°*	9.6°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time:(17h 42m) Lat: - 8.47° Long: -77.86° Depth: 15-17 km

Ms:6.3-6.5mb:6.5-6.9Mw: Region: Central andes

Reference: Doser, D. (1987).

	Strike	Dip	Slip
Plane A:	135.0°	30.0°	-90.0°
Plane B:	315.0°*	60.0°*	-90.0°*

	Trend	Plunge
Axe P:	225.0°*	75.0°*
Axe T:	45.0°*	15.0°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 1.7xE26 dyn.cm

Source-Time function: 2 of 6 s Fault Length: 28 km

Comment: P-wave first motion / Wave form.

Time: 17h 42m Lat: -8.27° Long: -77.82° Depth: 17-20 km

Ms: 7.2 mb: Mw: 7.4 Region: Central andes

Reference: Jimenez, E. Cara, M. & Rouland, D. (1989).

	Strike	Dip	Slip
Plane A:	301.0°	20.0°	-69.0°
Plane B:	143.0°	71.0°	-83.0°

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 1.7xE27 dyn. Cm.

Source-Time function:

Comment: Surface - wave inversion

SEISMIC EVENT N°: 009 DATE: JAN 15 1958

Time: 19h 14m Lat: -16.6 ° Long: -72.5 ° Depth: 90.0 km

Ms:(7.0) mb: Mw: Region: Southern coast

Reference: Hodgson, J. H. & Metzger, M. E. (1962).

	Strike	Dip	Slip
Plane A:	299.0°	82.1°	-41.8°*
Plane B:	36.0°	48.7°	-169.5°*

	Trend	Plunge
Axe P:	248.7°*	34.3°*
Axe T:	354.4°*	21.7°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 19h 14m Lat: -16.6 ° Long: -72.5 ° Depth: 90.0 km

Ms:(7.0) mb: Mw: Region: Southern coast

Reference: Ochoa, D. & Stauder, W. (1964).

	Strike	Dip	Slip
Plane A:	286.0°	80.3°	-16.5°*
Plane B:	18.8°	74.0°	-169.9°*

	Trend	Plunge
Axe P:	240.0°	20.0°
Axe T:	332.0°	5.0°
Axe X:	288.0°	16.0°
Axe Y:	196.0°	10.0°
Axe Z:	76.0°	20.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation

Time: 19h 14m Lat: -16.6 ° Long: -72.5 ° Depth: 90.0 km

Ms:(7.0) mb: Mw: Region: Southern coast

Reference: Huaco, D. et al. (1979).

	Strike	Dip	Slip
Plane A:	299.0°	82.0°	-41.4°*
Plane B:	36.0°	49.1°	-169.4°*

	Trend	Plunge
Axe P:	248.9°*	34.2°*
Axe T:	354.3°*	21.4°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 010 DATE: JAN 13 1960

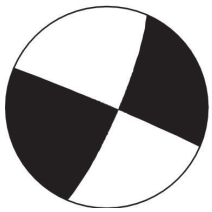
Time: 15h 40m Lat: -15.7 ° Long: -73.0 ° Depth: 82.0 km

Ms:(7.5) mb: Mw: Region: Southern coast

Reference: Ochoa, D. & Stauder, W. (1964).

	Strike	Dip	Slip
Plane A:	293.0°	88.0°	171.0°*
Plane B:	23.3°	81.0°	2.0°*

	Trend	Plunge
Axe P:	340.0°	3.0°
Axe T:	249.0°	9.0°
Axe X:	294.0°	9.0°
Axe Y:	204.0°	2.0°
Axe Z:	102.0°	9.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 15h 40m Lat: -15.7 ° Long: -73.0 ° Depth: 82.0 km

Ms:(7.5) mb: Mw: Region: Southern coast

Reference: Huaco, D. et al. (1979).

	Strike	Dip	Slip
Plane A:	305.0°	87.0°	170.5°*
Plane B:	35.5°	80.0°	3.0°*

	Trend	Plunge
Axe P:	350.6°*	4.5°*
Axe T:	259.9°*	8.8°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 011 **DATE: 20 NOV 1960**

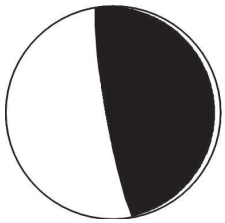
Time: 17h 02m Lat: -6.7 Long: -80.8 Depth: 5-25 km

Ms: 6.75 mb: Mw: 7.6 Region: Northern coast

Reference: Pelayo, A. & Wiens, D. (1990).

	Strike	Dip	Slip
Plane A:	0.0°	6.0°	100.0°
Plane B:	170.0°	84.0°	80.0°

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 1.9E27 dyn.cm

Source-Time function: 110 sec.

Comment: Wave form inversion

SEISMIC EVENT N°: 012 **DATE: APR 18 1962**

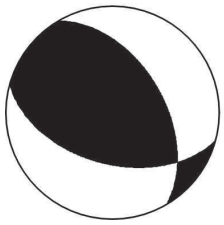
Time: 19h 14m **Lat: -10.0 °** **Long: -79.0 °** **Depth: 39.0 km**

Ms: **mb:(6.7)** **Mw:** **Region: Central margin**

Reference: Stauder, W. & Bollinger, G. (1964).

	Strike	Dip	Slip
Plane A:	330.0°*	50.0°*	122.9°*
Plane B:	104.8°*	50.0°*	57.1°*

	Trend	Plunge
Axe P:	37.0°	0.0°
Axe T:	307.0°	65.0°
Axe X:	15.0°	40.0°
Axe Y:	239.0°	40.0°
Axe Z:	127.0°	25.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 013 DATE: APR 13 1963

Time: 02h 20m Lat: - 6.2 ° Long: -76.5 ° Depth: 125.0 km

Ms:(6.9) mb: 7.0 Mw: Region: Northern subandes

Reference: Stauder, W. & Bollinger, G. A. (1965).

	Strike	Dip	Slip
Plane A:	170.0°*	62.0°*	-104.0°*
Plane B:	18.0°*	31.1°*	-65.5°*

	Trend	Plunge
Axe P:	49.0°	69.0°
Axe T:	271.0°	16.0°
Axe X:	290.0°	59.0°
Axe Y:	79.0°	27.5°
Axe Z:	177.0°	13.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time:(02h 20m) Lat: - 6.3 ° Long: -76.6 ° Depth: 115.0 km

Ms:(6.9) mb:(6.1) Mw: Region: Northern subandes

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	156.0°*	60.0°*	-110.0°*
Plane B:	12.0°*	35.5°*	-59.4°*

	Trend	Plunge
Axe P:	25.0°	68.0°
Axe T:	260.0°	13.0°
Axe X:	283.0°	54.0°
Axe Y:	66.0°	30.0°
Axe Z:	166.0°	18.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time:(02h 20m) Lat: - 6.2 ° Long: -76.5 ° Depth: 125.0 km

Ms:(6.9) mb:(6.1) Mw: Region: Northern subandes

Reference: Lejsek, K. (1971).

	Strike	Dip	Slip
Plane A:	171.0°	62.5°	-104.9°
Plane B:	21.0°	30.0°	-63.7°

	Trend	Plunge
Axe P:	50.7°*	68.8°*
Axe T:	271.9°*	16.2°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 014 **DATE: AUG 15 1963**

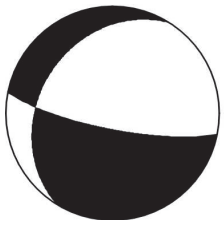
Time: 17h 25m **Lat: -13.8 °** **Long: -69.3 °** **Depth: 543.0 km**

Ms:(7.8) **mb: 8.0** **Mw:** **Region: Southern andes**

Reference: Stauder, W. & Bollinger, G. A. (1965).

	Strike	Dip	Slip
Plane A:	212.0°*	31.0°*	-156.0°*
Plane B:	101.0°*	78.0°*	-61.3°*

	Trend	Plunge
Axe P:	41.0°	50.0°
Axe T:	169.0°	27.0°
Axe X:	9.0°	13.0°
Axe Y:	122.0°	60.0°
Axe Z:	274.0°	26.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

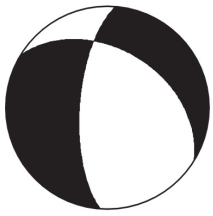
Time: 17h 25m **Lat: -13.8 °** **Long: -69.3 °** **Depth: 543.0 km**

Ms:(7.8) **mb: 8.0** **Mw:** **Region: Southern andes**

Reference: Stauder, W. & Bollinger, G. A. (1965).

	Strike	Dip	Slip
Plane A:	184.0°*	67.5°*	-54.3°*
Plane B:	302.0°*	42.0°*	-144.7°*

	Trend	Plunge
Axe P:	137.0°	53.0°
Axe T:	250.0°	14.0°
Axe X:	94.0°	24.5°
Axe Y:	219.0°	52.0°
Axe Z:	351.0°	28.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

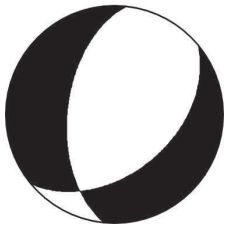
Time: 17h 25m Lat: -13.8 ° Long: -69.3 ° Depth: 543.0 km

Ms:(7.8) mb: 8.0 Mw: Region: Southern andes

Reference: Chandra, U. (1970).

	Strike	Dip	Slip
Plane A:	186.0°*	54.0°*	-119.6°*
Plane B:	50.0°*	45.3°*	-55.8°*

	Trend	Plunge
Axe P:	37.0°	66.0°
Axe T:	299.0°	4.0°
Axe X:	98.0°	37.0°
Axe Y:	322.0°	44.0°
Axe Z:	207.0°	24.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

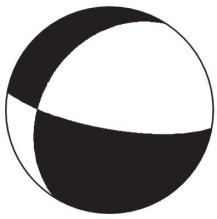
Time: 17h 25m Lat: -13.8 ° Long: -69.3 ° Depth: 543.0 km

Ms:(7.8) mb:(6.0) Mw: Region: Southern andes

Reference: Lejsek, K. (1971).

	Strike	Dip	Slip
Plane A:	213.0°	35.0°	-152.0°
Plane B:	100.0°	75.0°	-58.1°

	Trend	Plunge
Axe P:	45.5°*	50.0°*
Axe T:	166.1°*	23.1°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 015 **DATE: AUG 29 1963**

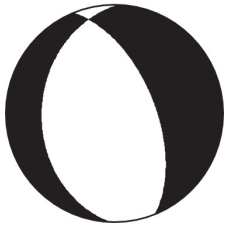
Time: 15h 30m **Lat: - 7.1 °** **Long: -81.6 °** **Depth: 23.0 km**

Ms: **mb: 6.5** **Mw:** **Region: Northern margin**

Reference: Stauder, W. & Bollinger, G. A. (1965).

	Strike	Dip	Slip
Plane A:	338.0°*	59.0°*	-103.0°*
Plane B:	182.0°*	33.3°*	-70.0°*

	Trend	Plunge
Axe P:	212.0°	72.0°
Axe T:	79.0°	13.0°
Axe X:	95.0°	56.0°
Axe Y:	248.0°	31.0°
Axe Z:	345.0°	12.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

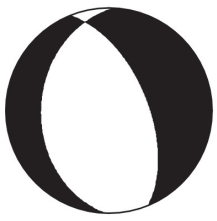
Time: 15h 30m **Lat: - 7.1 °** **Long: -81.6 °** **Depth: 23.0 km**

Ms: **mb:(6.1)** **Mw:** **Region: Northern margin**

Reference: Lejsek, K. (1971).

	Strike	Dip	Slip
Plane A:	182.0°	34.0°	-69.7°
Plane B:	338.0°	59.0°	-103.1°

	Trend	Plunge
Axe P:	214.3°*	73.2°*
Axe T:	77.5°*	12.4°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

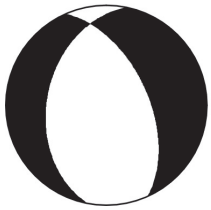
Time: 15h 30m Lat: - 7.1 ° Long: -81.6 ° Depth: 23.0 km

Ms: 6.6 mb: 6.1 Mw: Region: Northern margin

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	191.0°*	40.0°*	-61.8°*
Plane B:	336.0°*	55.5°*	-111.6°*

	Trend	Plunge
Axe P:	193.0°	70.0°
Axe T:	81.0°	8.0°
Axe X:		
Axe Y:		
Axe Z:	360.0°	15.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 15h 30m Lat: - 6.97° Long: -81.48° Depth: 23.0 km

Ms: mb:(6.1) Mw: Region: Northern margin

Reference: Chinn, D. S. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 10.22xE25 dyn.cm

Source-Time function: 1 s

Comment: Wave form.

SEISMIC EVENT N°: 016 **DATE: SEP 17 1963**

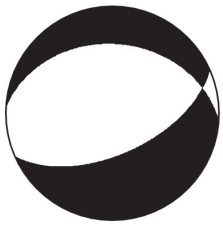
Time: 05h 54m Lat: -10.6 ° Long: -78.2 ° Depth: 61.0 km

Ms:(5.5) mb: 6.7 Mw: Region: Central margin

Reference: Stauder, W. & Bollinger, G. A. (1965).

	Strike	Dip	Slip
Plane A:	274.0°*	35.0°*	-66.5°*
Plane B:	66.0°*	58.3°*	-105.6°*

	Trend	Plunge
Axe P:	298.0°	72.0°
Axe T:	168.0°	12.0°
Axe X:	185.0°	54.0°
Axe Y:	335.0°	32.0°
Axe Z:	76.0°	14.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 05h 54m Lat: -10.6 ° Long: -78.2 ° Depth: 61.0 km

Ms:(5.5) mb: 6.7 Mw: Region: Central margin

Reference: Stauder, W. & Bollinger, G. A. (1965).

	Strike	Dip	Slip
Plane A:	132.0°*	40.0°*	-97.7°*
Plane B:	322.0°*	50.4°*	-83.6°*

	Trend	Plunge
Axe P:	272.0°	82.0°
Axe T:	48.0°	5.0°
Axe X:	234.0°	38.0°
Axe Y:	43.0°	51.0°
Axe Z:	140.0°	6.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 05h 54m Lat: -10.6 ° Long: -78.2 ° Depth: 76.0 km

Ms:(5.5) mb:(5.5) Mw: Region: Central margin

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	169.0°*	40.0°*	-74.0°*
Plane B:	328.0°*	52.0°*	-104.0°*

	Trend	Plunge
Axe P:	192.0°	77.0°
Axe T:	66.0°	8.0°
Axe X:	236.0°	36.0°
Axe Y:	78.0°	52.0°
Axe Z:	334.0°	10.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time:(05h 54m) Lat: -10.6 ° Long: -78.2 ° Depth: 61.0 km

Ms:(5.5) mb:(5.5) Mw: Region: Central margin

Reference: Lejsek, K. (1971).

	Strike	Dip	Slip
Plane A:	275.0°	35.0°	-65.6°
Plane B:	66.0°	58.5°	-106.1°

	Trend	Plunge
Axe P:	297.6°*	71.5°*
Axe T:	167.6°*	12.1°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

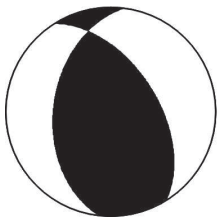
Time: 05h 54m Lat: -10.6 ° Long: -78.26° Depth: 61.0 km

Ms:(5.5) mb: 6.7 Mw: Region: Central margin

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	328.0°*	53.0°*	64.0°*
Plane B:	187.0°*	44.0°*	120.2°*

	Trend	Plunge
Axe P:	76.0°	5.0°
Axe T:	180.0°	69.0°
Axe X:	238.0°	37.0°
Axe Y:	97.0°	46.0°
Axe Z:	344.0°	20.0°



Seismic Moment (Mo):

Source-Time function:
Comment: P-wave first motion / S-wave polaritation.

Time: 05h 54m Lat: -10.63° Long: -78.23° Depth: 62.0 km

Ms: 6.4 mb:(5.5) Mw: Region: Central margin

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 1.39xE25 dyn.cm

Source-Time function: 4 s

Comment: Wave form.

SEISMIC EVENT N°: 017 **DATE: SEP 24 1963**

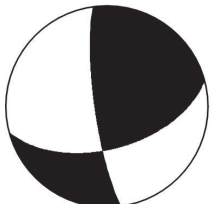
Time: 16h 30m Lat: -10.6 ° Long: -78.0 ° Depth: 80.0 km

Ms: mb: 7.0 Mw: Region: Central margin

Reference: Stauder, W. & Bollinger, G. A. (1965).

	Strike	Dip	Slip
Plane A:	172.0°*	80.0°*	35.3°*
Plane B:	75.0°*	55.3°*	167.8°*

	Trend	Plunge
Axe P:	299.0°	16.0°
Axe T:	39.0°	32.0°
Axe X:	345.0°	35.0°
Axe Y:	83.0°	10.0°
Axe Z:	186.0°	53.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

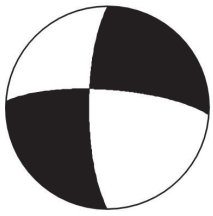
Time: 16h 30m Lat: -10.6 ° Long: -78.0 ° Depth: 80.0 km

Ms: mb: 7.0 Mw: Region: Central margin

Reference: Stauder, W. & Bollinger, G. A. (1965).

	Strike	Dip	Slip
Plane A:	180.0°*	75.0°*	-15.1°*
Plane B:	274.0°*	75.4°*	-164.5°*

	Trend	Plunge
Axe P:	137.0°	21.0°
Axe T:	47.0°	0.0°
Axe X:	90.0°	12.0°
Axe Y:	183.0°	12.0°
Axe Z:	318.0°	72.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time:(16h 30m) Lat: -10.7 ° Long: -78.3 ° Depth: 60.0 km

Ms: mb:(6.0) Mw: Region: Central margin

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	130.0°*	22.0°*	-90.0°*
Plane B:	310.0°*	68.0°*	-90.0°*

	Trend	Plunge
Axe P:	220.0°	67.0°
Axe T:	40.0°	23.0°
Axe X:	220.0°	18.0°
Axe Y:	40.0°	72.0°
Axe Z:	130.0°	0.0°

Seismic Moment (Mo):

Source-Time function:
Comment: P-wave first motion / S-wave polaritation.

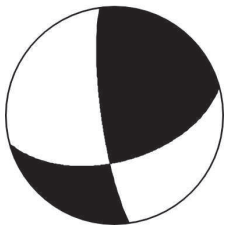
Time:(16h 30m) Lat: -10.6 ° Long: -78.0 ° Depth: 80.0 km

Ms: mb:(6.0) Mw: Region: Central margin

Reference: Lejsek, K. (1971).

	Strike	Dip	Slip
Plane A:	172.0°	80.0°	37.0°
Plane B:	75.0°	55.0°	167.8°

	Trend	Plunge
Axe P:	299.0°*	16.2°*
Axe T:	39.0°*	31.7°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 16h 30m Lat: -10.6 ° Long: -78.0 ° Depth: 80.0 km

Ms: mb: 7.0 Mw: Region: Central margin

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	**325.0°***	**75.0°***	**-69.7°***
Plane B:	**90.0°***	**25.0°***	**-142.3°***

	Trend	Plunge
Axe P:	**261.0°**	**56.0°**
Axe T:	**39.0°**	**27.0°**
Axe X:	**0.0°**	**65.0°**
Axe Y:	**235.0°**	**15.0°**
Axe Z:	**139.0°**	**20.0°**

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 018 **DATE: NOV 03 1963**

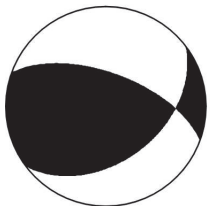
Time: 03h 10m Lat: - 3.5 ° Long: -77.8 ° Depth: 33.0 km

Ms: mb:(6.0) Mw: Region: Northern subandes

Reference: Lejsek, K. (1971).

	Strike	Dip	Slip
Plane A:	53.0°	44.0°	42.1°
Plane B:	290.0°	62.3°	125.6°

	Trend	Plunge
Axe P:	355.2°*	10.3°*
Axe T:	249.0°*	56.9°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

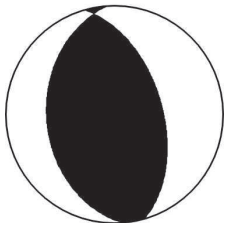
Time:(03h 10m) Lat: - 3.5 ° Long: -77.8 ° Depth: 33.0 km

Ms: mb: 6.7 Mw: Region: Northern subandes

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	176.0°*	37.0°*	99.0°*
Plane B:	344.0°*	53.6°*	82.8°*

	Trend	Plunge
Axe P:	79.0°	8.0°
Axe T:	225.0°	81.0°
Axe X:	256.0°	37.0°
Axe Y:	82.0°	53.0°
Axe Z:	348.0°	3.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 03h 10m Lat: - 3.49° Long: -77.91° Depth: 13.0 km

Ms: 6.5 mb:(6.0) Mw: Region: Northern subandes

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 3.02xE25 dyn.cm

Source-Time function: 1 s
Comment: Wave form.

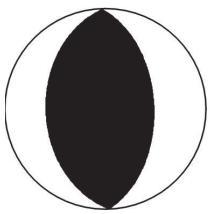
Time: 03h 10m Lat: - 3.5 ° Long: -77.8 ° Depth: 18.0 km

Ms: mb: 6.7 Mw: Region: Northern subandes

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	178.0°*	40.0°*	90.0°*
Plane B:	358.0°*	50.0°*	90.0°*

	Trend	Plunge
Axe P:	90.0°	5.0°
Axe T:	270.0°	85.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 2.73xE25 dyn.cm

Source-Time function:

Comment: P-wave frist motion and ware form.

SEISMIC EVENT N°: 019 **DATE: NOV 09 1963**

Time:(21h 15m) Lat: - 8.8 ° Long: -71.7 ° Depth: 576.0 km

Ms: mb: Mw: Region: Perú-Brasil boundary

Reference: Berckhemer, H. & Jacob, H. (1968).

	Strike	Dip	Slip
Plane A:	160.0°*	50.0°*	-99.8°*
Plane B:	355.0°*	41.0°*	-78.6°*

	Trend	Plunge
Axe P:	17.0°	84.0°
Axe T:	258.0°	3.0°
Axe X:	263.0°	48.0°
Axe Y:	74.0°	42.0°
Axe Z:	168.0°	4.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 21h 15m Lat: - 9.0 ° Long: -71.5 ° Depth: 600.0 km

Ms: mb: Mw: Region: Perú-Brasil boundary

Reference: Lejsek, K. (1971).

	Strike	Dip	Slip
Plane A:	315.0°	27.0°	-61.8°
Plane B:	104.0°	66.4°	-103.5°

	Trend	Plunge
Axe P:	350.1°*	65.9°*
Axe T:	204.2°*	20.3°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

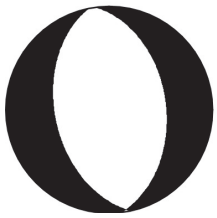
Time: 21h 15m Lat: - 9.0 ° Long: -71.5 ° Depth: 600.0 km

Ms: mb: 7.0 Mw: Region: Perú-Brasil boundary

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	168.0°*	46.0°*	-93.5°*
Plane B:	353.0°*	44.0°*	-86.4°*

	Trend	Plunge
Axe P:	12.0°	88.0°
Axe T:	261.0°	1.0°
Axe X:	80.0°	44.0°
Axe Y:	262.0°	46.0°
Axe Z:	171.0°	1.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 020 **DATE: NOV 10 1963**

Time: 01h 00m **Lat: - 9.0 °** **Long: -71.5 °** **Depth: 596.0 km**

Ms: **mb:** **Mw:** **Region: Perú-Brasil boundary**

Reference: Berckhemer, H. & Jacob, H. (1968).

	Strike	Dip	Slip
Plane A:	155.0°*	52.0°*	-106.7°*
Plane B:	1.0°*	41.0°*	-69.8°*

	Trend	Plunge
Axe P:	11.0°	74.0°
Axe T:	257.0°	7.0°
Axe X:	266.0°	50.0°
Axe Y:	64.0°	37.0°
Axe Z:	165.0°	14.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 01h 00m **Lat: - 9.2 °** **Long: -71.5 °** **Depth: 600.0 km**

Ms: **mb:** **Mw:** **Region: Perú-Brasil boundary**

Reference: Lejsek, K. (1971).

	Strike	Dip	Slip
Plane A:	309.0°	29.0°	-71.4°
Plane B:	108.0°	62.6°	-100.0°

	Trend	Plunge
Axe P:	356.3°*	70.6°*
Axe T:	205.4°*	17.1°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

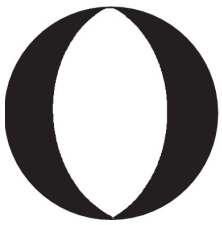
Time: 01h 00m Lat: - 9.2 ° Long: -71.5 ° Depth: 600.0 km

Ms: mb: 6.7 Mw: Region: Perú-Brasil boundary

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	1.0°*	46.0°*	-87.2°*
Plane B:	177.0°*	44.1°*	-92.9°*

	Trend	Plunge
Axe P:	333.0°	87.0°
Axe T:	91.0°	1.0°
Axe X:	87.0°	46.0°
Axe Y:	275.0°	44.0°
Axe Z:	181.0°	4.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 021 **DATE: DEC 29 1963**

Time: (17h 15m) Lat: -18.35° Long: -69.5 ° Depth: 125.0 km

Ms: mb: 5.5 Mw: Region: Perú-Chile boundary

Reference: Isacks, B & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	346.0°*	80.0°*	-75.6°*
Plane B:	110.0°*	17.5°*	-144.7°*

	Trend	Plunge
Axe P:	271.0°	53.0°
Axe T:	67.0°	34.0°
Axe X:	259.0°	10.0°
Axe Y:	34.0°	76.0°
Axe Z:	165.0°	9.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 022 **DATE: JAN 26 1964**

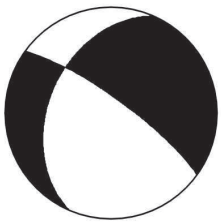
Time:(09h 09m) **Lat: -16.3 °** **Long: -71.7 °** **Depth: 119.0 km**

Ms: **mb:(6.1)** **Mw:** **Region: Central andes**

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	306.0°*	79.0°*	-129.6°*
Plane B:	203.0°*	40.8°*	-17.0°*

	Trend	Plunge
Axe P:	181.0°	43.0°
Axe T:	64.0°	26.0°
Axe X:	112.0°	52.0°
Axe Y:	216.0°	10.0°
Axe Z:	313.0°	36.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 023 **DATE: NOV 02 1964**

Time:(06h 51m) **Lat: - 4.1 °** **Long: -76.9 °** **Depth: 91.0 km**

Ms: **mb:(6.0)** **Mw:** **Region: Northern subandes**

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	146.0°*	42.0°*	-97.5°*
Plane B:	336.0°*	48.5°*	-83.3°*

	Trend	Plunge
Axe P:	298.0°	85.0°
Axe T:	60.0°	3.0°
Axe X:	243.0°	42.0°
Axe Y:	56.0°	48.0°
Axe Z:	150.0°	4.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 024 **DATE: NOV 28 1964**

Time:(16h 41m) **Lat: - 7.9 °** **Long: -71.3 °** **Depth: 650.0 km**

Ms: **mb:** **Mw:** **Region: Perú-Brasil boundary**

Reference: Isacks, B & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	154.0°*	52.0°*	-84.4°*
Plane B:	325.0°*	38.3°*	-97.0°*

	Trend	Plunge
Axe P:	93.0°	82.0°
Axe T:	240.0°	7.0°
Axe X:	238.0°	52.0°
Axe Y:	64.0°	39.0°
Axe Z:	332.0°	3.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 025 **DATE: JUL 30 1965**

Time:(05h 45m) Lat: -18.1 ° Long: -70.8 ° Depth: 72.0 km

Ms:(4.8) mb: Mw: Region: Southern margin

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	226.0°*	30.0°*	0.0°*
Plane B:	316.0°*	90.0°*	-120.0°*

	Trend	Plunge
Axe P:	200.0°	38.0°
Axe T:	73.0°	38.0°
Axe X:	226.0°	0.0°
Axe Y:	136.0°	60.0°
Axe Z:	316.0°	30.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 05h 45m Lat: -18.1 ° Long: -70.8 ° Depth: 72.0 km

Ms:(4.8) mb: 6.1 Mw: Region: Southern margin

Reference: Stauder, W. (1973).

	Strike	Dip	Slip
Plane A:	234.0°*	25.0°*	0.0°*
Plane B:	324.0°*	90.0°*	-115.0°*

	Trend	Plunge
Axe P:	211.0°	41.0°
Axe T:	78.0°	39.0°
Axe X:	235.0°	1.0°
Axe Y:	145.0°	65.0°
Axe Z:	325.0°	25.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 026 **DATE: AUG 03 1965**

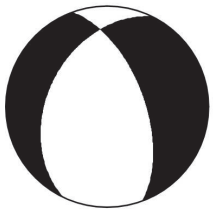
Time: 02h 01m **Lat: - 7.7 °** **Long: -81.3 °** **Depth: 49.0 km**

Ms:(5.4) **mb: 5.8** **Mw:** **Region: Northern margin**

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	206.0°*	40.0°*	-51.6°*
Plane B:	340.0°*	59.8°*	-117.5°*

	Trend	Plunge
Axe P:	201.0°	63.0°
Axe T:	90.0°	11.0°
Axe X:	250.0°	30.0°
Axe Y:	117.0°	50.0°
Axe Z:	355.0°	24.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 02h 01m **Lat: - 7.31°** **Long: -81.27°** **Depth: 19.0 km**

Ms:(5.4) **mb: 5.8** **Mw:** **Region: Northern margin**

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 0.45xE25 dyn.cm

Source-Time function: 1 s

Comment: Wave form.

SEISMIC EVENT N°: 027 **DATE: AUG 20 1965**

Time: 09h 42m **Lat: -19.0 °** **Long: -69.1 °** **Depth: 129.0 km**

Ms: **mb: 6.5** **Mw:** **Region: Perú-Chile boundary**

Reference: Tellería, J. L. (1970).

	Strike	Dip	Slip
Plane A:	320.0°	78.0°	-54.1°
Plane B:	66.0°	37.6°	-160.1°

	Trend	Plunge
Axe P:	265.9°*	45.0°*
Axe T:	22.9°*	24.4°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 09h 42m **Lat: -18.9 °** **Long: -69.0°** **Depth: 128.0 km**

Ms: **mb:(6.5)** **Mw:** **Region: Perú-Chile boundary**

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	333.0°*	80.0°*	-100.9°*
Plane B:	201.0°*	14.8°*	-43.0°*

	Trend	Plunge
Axe P:	228.0°	51.0°
Axe T:	72.0°	35.0°
Axe X:	241.0°	7.0°
Axe Y:	120.0°	76.0°
Axe Z:	333.0°	12.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation

Time: 09h 42m Lat: -18.9 ° Long: -69.0 ° Depth: 128.0 km

Ms: mb: 6.0 Mw: Region: Perú-Chile boundary

Reference: Stauder, W. (1973).

	Strike	Dip	Slip
Plane A:	326.0°*	80.0°*	-103.4°*
Plane B:	200.0°*	16.7°*	-37.2°*

	Trend	Plunge
Axe P:	220.0°	52.0°
Axe T:	67.0°	34.0°
Axe X:	235.0°	8.0°
Axe Y:	115.0°	74.0°
Axe Z:	327.0°	13.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 028 DATE: SEP 17 1965

Time:(11h 13m) Lat: - 1.5 ° Long: -77.7 ° Depth: 191.0 km

Ms: mb:(6.0) Mw: Region: Perú-Ecuador boundary

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	319.0°*	82.0°*	-77.9°*
Plane B:	82.0°*	14.5°*	-146.2°*

	Trend	Plunge
Axe P:	242.0°	52.0°
Axe T:	38.0°	36.0°
Axe X:	229.0°	8.0°
Axe Y:	352.0°	76.0°
Axe Z:	137.0°	12.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 11h 13m Lat: - 1.4 ° Long: -77.6 ° Depth: 190.0 km

Ms: mb: 6.0 Mw: Region: Perú-Ecuador boundary

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	312.0°*	76.0°*	-86.5°*
Plane B:	118.0°*	14.4°*	-103.6°*

	Trend	Plunge
Axe P:	226.7°	59.0°
Axe T:	39.0°	30.0°
Axe X:	18.0°	74.0°
Axe Y:	225.0°	14.0°
Axe Z:	133.0°	7.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 029 **DATE: NOV 03 1965**

Time:(01h 39m) Lat: - 9.1 ° Long: -71.4 ° Depth: 593.0 km

Ms: mb:(6.2) Mw: Region: Perú-Brasil boundary

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	169.0°*	50.0°*	-90.0°*
Plane B:	349.0°*	40.0°*	-90.0°*

	Trend	Plunge
Axe P:	79.0°	85.0°
Axe T:	259.0°	5.0°
Axe X:	259.0°	50.0°
Axe Y:	79.0°	40.0°
Axe Z:	169.0°	0.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

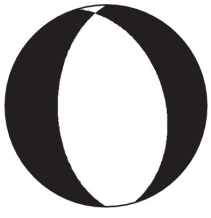
Time: 01h 39m Lat: - 9.1 ° Long: -71.3 ° Depth: 593.0 km

Ms: mb: 6.2 Mw: Region: Perú-Brasil boundary

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	180.0°*	50.0°*	-79.6°*
Plane B:	344.0°*	41.0°*	-102.2°*

	Trend	Plunge
Axe P:	143.0°	81.0°
Axe T:	263.0°	5.0°
Axe X:	266.0°	50.0°
Axe Y:	89.0°	39.0°
Axe Z:	353.0°	7.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 030 **DATE: DEC 30 1965**

Time: 06h 16m **Lat: -16.6 °** **Long: -71.1 °** **Depth: 112.0 km**

Ms:(6.0) **mb:(5.7)** **Mw:** **Region: Southern andes**

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	344.0°*	83.0°*	-86.6°*
Plane B:	138.0°*	7.8°*	-115.8°*

	Trend	Plunge
Axe P:	257.0°	51.0°
Axe T:	70.0°	38.0°
Axe X:	252.0°	6.0°
Axe Y:	45.0°	83.0°
Axe Z:	163.0°	3.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 031 DATE: MAY 01 1966

Time:(16h 22m) Lat: - 8.4 ° Long: -74.3 ° Depth: 154.0 km

Ms:(6.8) mb:(5.8) Mw: Region: Central subandes

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	233.0°*	23.0°*	-55.0°*
Plane B:	16.0°*	71.0°*	-104.0°*

	Trend	Plunge
Axe P:	263.0°	60.0°
Axe T:	118.0°	25.0°
Axe X:	286.0°	19.0°
Axe Y:	148.0°	66.0°
Axe Z:	21.0°	15.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 16h 22m Lat: - 8.5 ° Long: -74.3 ° Depth: 165.0 km

Ms:(6.8) mb: 5.7 Mw: Region: Central subandes

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	244.0°*	26.0°*	-39.0°*
Plane B:	10.0°*	74.0°*	-110.8°*

	Trend	Plunge
Axe P:	251.0°	54.0°
Axe T:	117.0°	27.0°
Axe X:	279.0°	15.0°
Axe Y:	157.0°	63.0°
Axe Z:	15.0°	22.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 032 **DATE: JUN 07 1966**

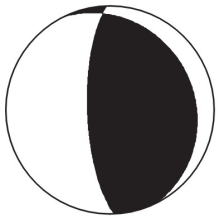
Time: 00h 59m Lat: -14.9 ° Long: -75.8 ° Depth: 48.0 km

Ms:(6.3) mb: 5.6 Mw: Region: Southern margin

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	178.0°*	72.0°*	97.0°*
Plane B:	334.0°*	19.6°*	67.2°*

	Trend	Plunge
Axe P:	262.0°	27.0°
Axe T:	104.0°	61.0°
Axe X:	90.0°	17.0°
Axe Y:	240.0°	71.0°
Axe Z:	357.0°	9.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

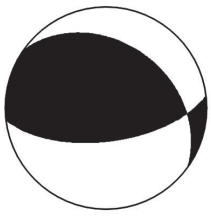
Time: 00h 59m Lat: -14.89° Long: -75.84° Depth: 48.0 km

Ms:(6.3) mb: 6.5 Mw: Region: Southern margin

Reference: Huaco, D. (1976).

	Strike	Dip	Slip
Plane A:	83.0°	63.0°	67.1°
Plane B:	306.0°	34.9°	127.4°

	Trend	Plunge
Axe P:	189.6°*	15.0°*
Axe T:	313.5°*	64.3°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 2.40xE25 dyn.cm

Source-Time function: Fault Length: 40 km

Comment: P-wave first motion / S-wave polaritation.

Time: 00h 59m Lat: -14.82° Long: -75.87° Depth: 18.0 km

Ms: 6.2 mb: 5.6 Mw: Region: Southern margin

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 2.85xE25 dyn.cm

Source-Time function: 5 s

Comment: Wave form.

SEISMIC EVENT N°: 033 **DATE: OCT 17 1966**

Time: 21h 41m **Lat: -10.7 °** **Long: -78.7 °** **Depth: 38.0 km**

Ms: **mb: 6.3** **Mw:** **Region: Central margin**

Reference: Lejsek, K. (1971).

	Strike	Dip	Slip
Plane A:	47.0°	76.0°	180.0°
Plane B:	137.0°	90.0°	14.0°

	Trend	Plunge
Axe P:	271.1°*	9.8°*
Axe T:	2.9°*	9.8°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

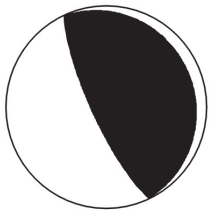
Time: 21h 41m **Lat: -10.92°** **Long: -78.79°** **Depth: 10-30 km**

Ms: 8.0 **mb:(6.3)** **Mw:** **Region: Central margin**

Reference: Abe, K. (1972).

	Strike	Dip	Slip
Plane A:	335.0°	12.0°	90.0°
Plane B:	155.0°*	78.0°*	90.0°*

	Trend	Plunge
Axe P:	245.0°*	33.0°*
Axe T:	65.0°*	57.0°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 20xE27 dyn.cm

Source-Time function:

Comment: Wave form.

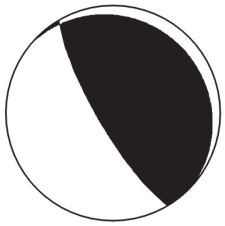
Time: 21h 41m Lat: -10.7 ° Long: -78.7 ° Depth: 38.0 km

Ms: mb: 6.3 Mw: Region: Southern margin

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	149.5°*	78.0°*	93.6°*
Plane B:	312.5°*	12.5°*	73.4°*

	Trend	Plunge
Axe P:	236.0°	33.0°
Axe T:	64.0°	57.0°
Axe X:	60.0°	12.0°
Axe Y:	220.0°	77.0°
Axe Z:	329.0°	4.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

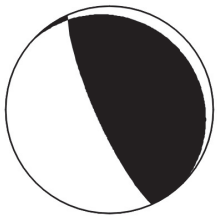
Time: 21h 41m Lat: -10.74° Long: -78.63° Depth: 38.0 km

Ms: mb: 7.5 Mw: Region: Southern margin

Reference: Huaco, D. (1976).

	Strike	Dip	Slip
Plane A:	313.0°	12.0°	67.5°
Plane B:	156.0°	78.9°	94.7°

	Trend	Plunge
Axe P:	242.0°*	33.8°*
Axe T:	71.9°*	55.8°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 2.55xE28 dyn.cm

Source-Time function: Fault Length: 170 km

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 034 DATE: FEB 15 1967

Time: 16h 11m Lat: - 9.0 ° Long: -71.3 ° Depth: 597.0 km

Ms: 6.2 mb:(4.5) Mw: Region: Perú-Brasil boundary

Reference: Tellería, J. L. (1970).

	Strike	Dip	Slip
Plane A:	345.5°	38.0°	-91.6°
Plane B:	167.5°	52.0°	-88.8°

	Trend	Plunge
Axe P:	84.6°*	82.9°*
Axe T:	256.6°*	7.0°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time:(16h 46m) Lat: - 9.0 ° Long: -71.3 ° Depth: 597.0 km

Ms: mb:(4.5) Mw: Region: Perú-Brasil boundary

Reference: Isacks, B. & Molnar, P. (1971).

	Strike	Dip	Slip
Plane A:	170.0°*	50.0°*	-87.4°*
Plane B:	346.0°*	40.0°*	-93.0°*

	Trend	Plunge
Axe P:	102.0°	85.0°
Axe T:	256.0°	4.0°
Axe X:	254.0°	50.0°
Axe Y:	78.0°	38.0°
Axe Z:	348.0°	2.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

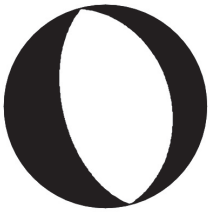
Time: 16h 11m Lat: - 9.0 ° Long: -71.3 ° Depth: 597.0 km

Ms: mb: 6.2 Mw: Region: Perú-Brasil boundary

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	166.0°*	55.0°*	-90.0°*
Plane B:	346.0°*	35.0°*	-90.0°*

	Trend	Plunge
Axe P:	77.0°	80.0°
Axe T:	257.0°	10.0°
Axe X:	77.0°	35.0°
Axe Y:	257.0°	55.0°
Axe Z:	347.0°	0.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 035 **DATE: MAY 15 1967**

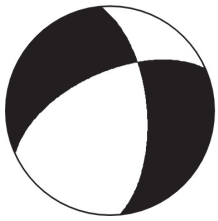
Time: 17h 08m **Lat: -10.23°** **Long: -74.6 °** **Depth: 116.0 km**

Ms: **mb: 5.0** **Mw:** **Region: Central subandes**

Reference: Petersen, E. (1976).

	Strike	Dip	Slip
Plane A:	355.0°	61.0°	-144.6°*
Plane B:	246.0°	59.6°	-34.2°*

	Trend	Plunge
Axe P:	209.0°	42.0°
Axe T:	120.0°	0.0°
Axe X:		
Axe Y:		
Axe Z:	32.0°	56.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 036 **DATE: JUN 21 1967**

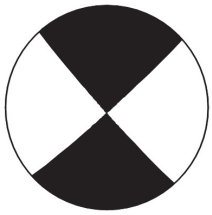
Time: 06h 49m **Lat: - 2.25°** **Long: -77.75°** **Depth: 62.0 km**

Ms: 6.0 **mb: 5.4** **Mw:** **Region: Perú-Ecuador boundary**

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:	48.0°*	87.0°*	177.0°*
Plane B:	138.0°*	87.0°*	3.0°*

	Trend	Plunge
Axe P:	93.0°	3.0°
Axe T:	3.0°*	2.1°*
Axe X:	48.0°	2.0°
Axe Y:	138.0°	2.0°
Axe Z:	.0°	.0°



Seismic Moment (Mo):

Source-Time function:

Comment: Wave form.

SEISMIC EVENT N°: 037 **DATE: AUG 09 1967**

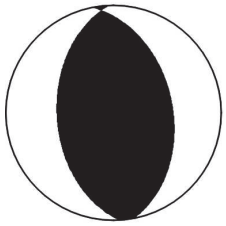
Time: 07h 14m **Lat: - 8.45°** **Long: -73.83°** **Depth: 42.0 km**

Ms: **mb: 5.1** **Mw:** **Region: Central subandes**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	177.0°*	46.0°*	95.6°*
Plane B:	349.0°*	44.3°*	84.3°*

	Trend	Plunge
Axe P:	262.0°	0.0°
Axe T:	160.0°	84.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 038 **DATE: AUG 23 1967**

Time: 09h 21m **Lat: - 4.3 °** **Long: -81.5 °** **Depth: 19.0 km**

Ms: 4.0 **mb: 5.0** **Mw:** **Region: Northern margin**

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	223.0°*	66.0°*	158.7°*
Plane B:	322.0°*	70.6°*	25.5°*

	Trend	Plunge
Axe P:	92.0°	5.0°
Axe T:	184.0°	28.0°
Axe X:		
Axe Y:		
Axe Z:	352.0°	62.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

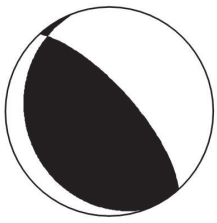
Time: 09h 21m **Lat: - 4.3 °** **Long: -81.56°** **Depth: 19.0 km**

Ms: **mb: 5.1** **Mw:** **Region: Northern margin**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	160.0°*	20.0°*	110.8°*
Plane B:	318.0°*	71.4°*	82.6°*

	Trend	Plunge
Axe P:	53.0°	26.0°
Axe T:	216.0°	63.0°
Axe X:	227.0°	20.0°
Axe Y:	69.0°	74.0°
Axe Z:	320.0°	6.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 039 **DATE: SEP 03 1967**

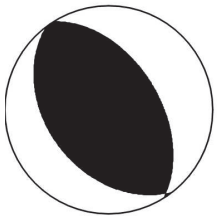
Time: 21h 07m **Lat: -10.6 °** **Long: -79.8 °** **Depth: 38.0 km**

Ms: **mb:(6.5)** **Mw:** **Region: Central margin**

Reference: Tellería, J. L. (1970).

	Strike	Dip	Slip
Plane A:	328.5°	50.0°	94.2°
Plane B:	142.0°	40.0°	85.0°

	Trend	Plunge
Axe P:	55.5°*	4.9°*
Axe T:	268.8°*	84.1°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

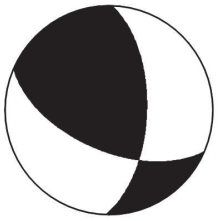
Time: 21h 07m **Lat: -10.69°** **Long: -79.84°** **Depth: 38.0 km**

Ms: 6.7 **mb: 6.5** **Mw:** **Region: Central margin**

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	2.0°*	60.0°*	142.5°*
Plane B:	113.0°*	58.2°*	36.0°*

	Trend	Plunge
Axe P:	57.0°	2.0°
Axe T:	325.0°	49.0°
Axe X:	270.0°	30.0°
Axe Y:	23.0°	34.0°
Axe Z:	150.0°	41.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 21h 07m Lat: -10.59° Long: -79.67° Depth: 36.0 km

Ms: 6.8 mb: 6.2 Mw: Region: Central margin

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 39.22xE25 dyn.cm

Source-Time function: 5 s

Comment: Wave form.

SEISMIC EVENT N°: 040 **DATE: SEP 27 1967**

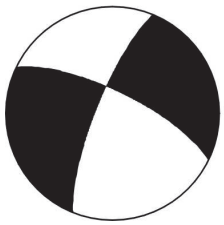
Time: 06h 02m **Lat: - 7.3 °** **Long: -81.3 °** **Depth: 16-37 km**

Ms: 4.2 **mb: 5.1** **Mw:** **Region: Northern margin**

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	296.0°*	73.0°*	-166.5°*
Plane B:	202.0°*	77.1°*	-17.5°*

	Trend	Plunge
Axe P:	159.0°	21.0°
Axe T:	249.0°	3.0°
Axe X:		
Axe Y:		
Axe Z:	346.0°	76.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 06h 02m **Lat: - 7.25°** **Long: -81.37°** **Depth: 16.0 km**

Ms: **mb: 4.9** **Mw:** **Region: Northern margin**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	322.0°*	74.0°*	-98.0°*
Plane B:	169.0°*	18.0°*	-64.1°*

	Trend	Plunge
Axe P:	220.0°	60.0°
Axe T:	58.0°	28.0°
Axe X:	231.0°	16.0°
Axe Y:	79.0°	78.0°
Axe Z:	323.0°	6.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 041 **DATE: OCT 11 1967**

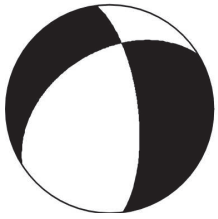
Time: 20h 28m **Lat: -10.3 °** **Long: -71.1 °** **Depth: 590.0 km**

Ms: **mb:(5.8)** **Mw:** **Region: Perú-Brasil boundary**

Reference: Petersen, E. (1976).

	Strike	Dip	Slip
Plane A:	238.0°*	44.0°*	-33.0°*
Plane B:	353.0°*	67.8°*	-129.0°*

	Trend	Plunge
Axe P:	218.0°	51.0°
Axe T:	111.0°	13.0°
Axe X:		
Axe Y:		
Axe Z:	0.0°	36.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 042 **DATE: NOV 04 1967**

Time: 16h 26m **Lat: - 2.8 °** **Long: -77.7 °** **Depth: 59.0 km**

Ms: **mb: 6.0** **Mw:** **Region: Perú-Ecuador boundary**

Reference: Lejsek, K.(1971).

	Strike	Dip	Slip
Plane A:	233.0°	80.0°	-130.9°
Plane B:	131.6°	42.0°	-15.0°

	Trend	Plunge
Axe P:	105.5°*	40.5°*
Axe T:	353.4°*	23.8°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 043 **DATE: MAY 09 1968**

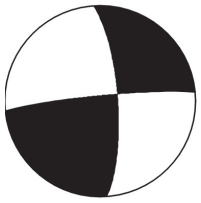
Time: 12h 52m **Lat: - 5.31°** **Long: -81.72°** **Depth: 34.0 km**

Ms: 2.1 **mb: 4.2** **Mw:** **Region: Northern margin**

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	356.0°*	75.0°*	5.0°*
Plane B:	264.6°*	85.0°*	165.0°*

	Trend	Plunge
Axe P:	311.0°	6.8°
Axe T:	219.0°	14.3°
Axe X:		
Axe Y:		
Axe Z:	14.0°	75.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 12h 52m **Lat: - 5.29°** **Long: -81.79°** **Depth: 34.0 km**

Ms: **mb: 5.6** **Mw:** **Region: Northern margin**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	148.0°*	26.0°*	-77.4°*
Plane B:	314.0°*	64.7°*	-96.1°*

	Trend	Plunge
Axe P:	212.0°	70.0°
Axe T:	49.0°	20.0°
Axe X:	224.0°	27.0°
Axe Y:	59.0°	69.0°
Axe Z:	316.0°	7.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 044 **DATE: JUN 19 1968**

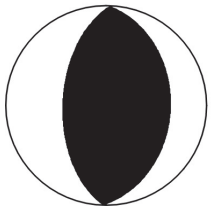
Time: 08h 13m Lat: - 5.5 ° Long: -77.2 ° Depth: 89.0 km

Ms:(6.9) mb: 6.4 Mw: Region: Northern subandes

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	182.0°*	54.0°*	90.0°*
Plane B:	2.0°*	36.0°*	90.0°*

	Trend	Plunge
Axe P:	272.0°	9.0°
Axe T:	92.0°	81.0°
Axe X:	95.0°	36.0°
Axe Y:	267.0°	54.0°
Axe Z:	2.0°	4.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 08h 13m Lat: - 5.55° Long: -77.20° Depth: 23.0 km

Ms: 6.9 mb: 6.1 Mw: Region: Northern subandes

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 16.17xE25 dyn.cm

Source-Time function: 10 s

Comment: Wave form.

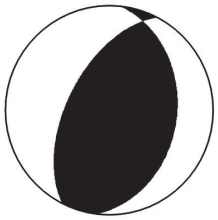
Time: 08h 13m Lat: - 5.55° Long: -77.20° Depth: 20.0 km

Ms:(6.9) mb: 6.1 Mw: Region: Northern subandes

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	7.0°*	35.0°*	73.4°*
Plane B:	207.0°*	56.7°*	101.3°*

	Trend	Plunge
Axe P:	284.3°	11.4°
Axe T:	150.2°	73.8°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 1.96xE26 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 045 **DATE: JUN 20 1968**

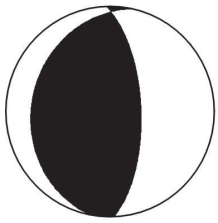
Time: 02h 38m **Lat: - 5.51°** **Long: -77.30°** **Depth: 33.0 km**

Ms:(5.7) **mb: 5.8** **Mw:** **Region: Northern subandes**

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:	192.0°*	25.0°*	102.7°*
Plane B:	358.0°*	65.7°*	84.1°*

	Trend	Plunge
Axe P:	92.0°	19.0°
Axe T:	256.5°	68.8°
Axe X:	92.0°	64.0°
Axe Y:	272.0°	26.0°
Axe Z:		



Seismic Moment (Mo): 0.59xE25 dyn.cm

Source-Time function: 2 s

Comment: Wave form.

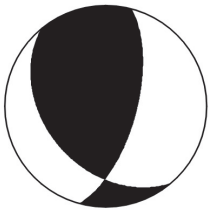
Time: 02h 38m **Lat: - 5.51°** **Long: -77.30°** **Depth: 33.0 km**

Ms:(5.7) **mb: 5.8** **Mw:** **Region: Northern subandes**

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	15.0°*	65.0°*	121.0°*
Plane B:	140.0°*	39.0°*	42.0°*

	Trend	Plunge
Axe P:	82.8°	12.5°
Axe T:	330.4°	60.8°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 4.95xE24 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 046 **DATE: JUL 30 1968**

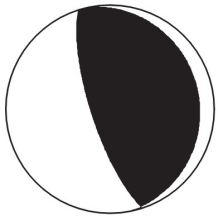
Time: 20h 38m Lat: - 6.9 ° Long: -80.4 ° Depth: 37.0 km

Ms:(6.4) mb: 5.8 Mw: Region: Northern margin

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	162.0°*	75.0°*	87.9°*
Plane B:	350.0°*	15.1°*	97.7°*

	Trend	Plunge
Axe P:	254.0°	30.0°
Axe T:	72.0°	60.0°
Axe X:	256.0°	75.0°
Axe Y:	73.0°	15.0°
Axe Z:	163.0°	1.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 20h 38m Lat: - 6.93° Long: -80.45° Depth: 36.0 km

Ms: 5.9 mb: 5.8 Mw: Region: Northern margin

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	222.0°*	84.0°*	161.5°*
Plane B:	314.0°*	71.6°*	6.3°*

	Trend	Plunge
Axe P:	269.0°	8.6°
Axe T:	176.5°	17.0°
Axe X:		
Axe Y:		
Axe Z:	17.0°	69.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 20h 38m Lat: - 6.9 ° Long: -80.4 ° Depth: 22.0 km

Ms: 6.4 mb:(5.8) Mw: Region: Northern margin

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 3.74xE25 dyn.cm

Source-Time function:

Comment: Wave form.

SEISMIC EVENT N°: 047 **DATE: AUG 27 1968**

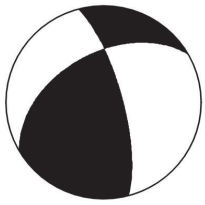
Time: 05h 17m **Lat: - 8.90°** **Long: -72.89°** **Depth: 26.0 km**

Ms: 3.9 **mb: 4.9** **Mw:** **Region: Perú-Brasil boundary**

Reference: Assumpçâo, M. & Suárez, G. (1988).

	Strike	Dip	Slip
Plane A:	240.0°	48.0°	157.0°
Plane B:	345.0°*	74.0°*	44.0°*

	Trend	Plunge
Axe P:	107.0°	15.0°
Axe T:	212.0°	43.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 048 **DATE: SEP 06 1968**

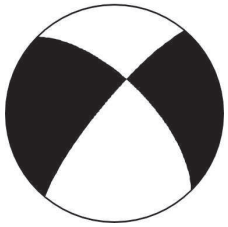
Time: 07h 49m Lat: - 5.77° Long: -80.26° Depth: 97.0 km

Ms: 4.7 mb: 5.3 Mw: Region: Northern coast

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	315.0°*	65.0°*	-168.0°*
Plane B:	220.0°*	79.4°*	-25.5°*

	Trend	Plunge
Axe P:	175.0°	25.0°
Axe T:	270.0°	10.0°
Axe X:		
Axe Y:		
Axe Z:	22.0°	64.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

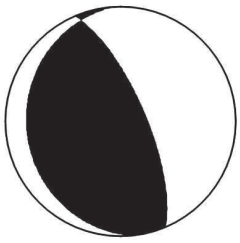
Time: 07h 49m Lat: - 5.78° Long: -80.20° Depth: 97.0 km

Ms: mb: 5.3 Mw: Region: Northern coast

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	337.0°*	72.0°*	84.3°*
Plane B:	175.0°*	18.9°*	107.1°*

	Trend	Plunge
Axe P:	72.0°	27.0°
Axe T:	237.0°	63.0°
Axe X:	247.0°	19.0°
Axe Y:	89.0°	74.0°
Axe Z:	339.0°	5.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 049 **DATE: SEP 09 1968**

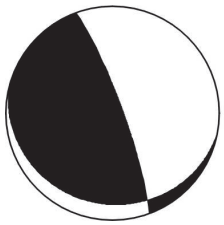
Time: 00h 37m **Lat: - 8.7 °** **Long: -74.5 °** **Depth: 120.0 km**

Ms: **mb: 6.0** **Mw:** **Region: Central subandes**

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	340.0°*	82.0°*	103.6°*
Plane B:	100.0°*	15.7°*	31.8°*

	Trend	Plunge
Axe P:	57.0°	36.0°
Axe T:	265.0°	51.0°
Axe X:	7.0°	74.0°
Axe Y:	249.0°	8.0°
Axe Z:	157.0°	14.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 050 **DATE: SEP 28 1968**

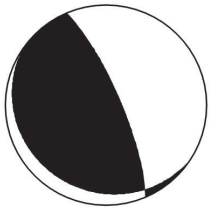
Time: 13h 53m **Lat: -13.21°** **Long: -76.3 °** **Depth: 70.0 km**

Ms:(6.0) **mb: 6.4** **Mw:** **Region: Central coast**

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	337.0°*	78.0°*	98.2°*
Plane B:	123.0°*	14.4°*	56.8°*

	Trend	Plunge
Axe P:	59.0°	32.0°
Axe T:	257.0°	57.0°
Axe X:	31.0°	75.0°
Axe Y:	246.0°	12.0°
Axe Z:	154.0°	8.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

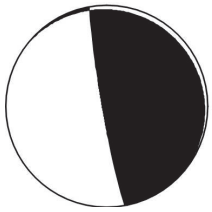
Time: 13h 53m **Lat: -13.16°** **Long: -76.38°** **Depth: 70.0 km**

Ms:(6.0) **mb: 6.0** **Mw:** **Region: Central coast**

Reference: Huaco, D. (1976).

	Strike	Dip	Slip
Plane A:	170.0°	86.0°	93.6°
Plane B:	308.0°	5.4°	48.1°

	Trend	Plunge
Axe P:	256.6°*	48.9°*
Axe T:	83.9°*	48.9°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 6.00xE25 dyn.cm

Source-Time function: **Fault Length: 20 km**

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 051 **DATE: OCT 31 1968**

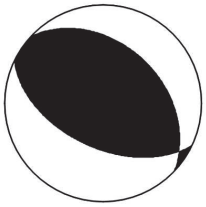
Time: 09h 15m Lat: -16.4 ° Long: -73.4 ° Depth: 67.0 km

Ms: mb: 5.7 Mw: Region: Southern coast

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	115.0°*	52.5°*	78.0°*
Plane B:	314.0°*	39.1°*	105.0°*

	Trend	Plunge
Axe P:	214.0°	6.0°
Axe T:	336.0°	78.0°
Axe X:	225.0°	50.0°
Axe Y:	25.0°	38.0°
Axe Z:	123.0°	10.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time:(09h 15m) Lat: -16.38° Long: -73.44° Depth: 37.0 km

Ms: mb:(5.7) Mw: Region: Southern coast

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 1.04xE25 dyn.cm

Source-Time function: 1 s

Comment: Wave form.

SEISMIC EVENT N°: 052 **DATE: DEC 01 1968**

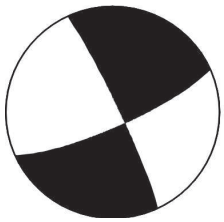
Time: 13h 14m **Lat: -10.54°** **Long: -74.81°** **Depth: 33.0 km**

Ms:(5.6) **mb: 5.4** **Mw:** **Region: Central subandes**

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:	335.0°*	85.0°*	-11.3°*
Plane B:	66.0°*	78.7°*	-174.9°*

	Trend	Plunge
Axe P:	289.0°	10.0°
Axe T:	20.9°*	4.4°*
Axe X:	335.0°	10.0°
Axe Y:	244.0°	4.0°
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: Wave form.

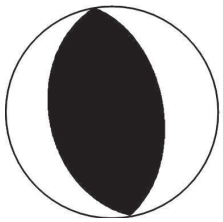
Time: 13h 14m **Lat: -10.54°** **Long: -74.81°** **Depth: 18.0 km**

Ms:(5.6) **mb: 5.4** **Mw:** **Region: Central subandes**

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	169.0°*	40.0°*	88.5°*
Plane B:	351.0°*	50.0°*	91.3°*

	Trend	Plunge
Axe P:	80.8°	5.0°
Axe T:	270.0°	85.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 5.75xE24 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 053 DATE: FEB 04 1969

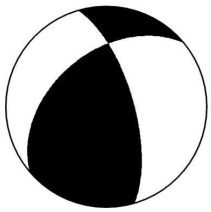
Time: 04h 10m Lat: - 8.2 ° Long: -80.2 ° Depth: 16.0 km

Ms:(5.9) mb: 6.0 Mw: Region: Northern margin

Reference: Wagner, D. (1972).

	Strike	Dip	Slip
Plane A:	344.0°*	68.0°*	49.9°*
Plane B:	230.0°*	44.8°*	147.9°*

	Trend	Plunge
Axe P:	101.0°	15.0°
Axe T:	210.0°	50.0°
Axe X:	140.0°	47.0°
Axe Y:	254.0°	21.0°
Axe Z:	360.0°	36.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

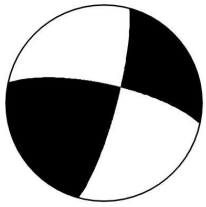
Time: 04h 10m Lat: - 8.23° Long: -80.16° Depth: 27.0 km

Ms: 6.4 mb: 6.0 Mw: Region: Northern margin

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	282.0°*	74.0°*	169.3°*
Plane B:	15.0°*	79.7°*	16.3°*

	Trend	Plunge
Axe P:	150.0°	4.0°
Axe T:	241.0°	16.0°
Axe X:		
Axe Y:		
Axe Z:	35.0°	74.0°



Seismic Moment (Mo):

Source-Time function:

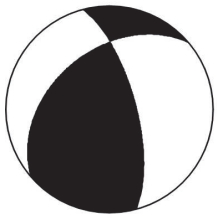
Comment: P-wave first motion.

Ms:(5.9) mb: 5.9 Mw: Region: Northern margin

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	345.0°*	69.0°*	52.7°*
Plane B:	230.0°*	42.0°*	147.9°*

	Trend	Plunge
Axe P:	101.0°	15.0°
Axe T:	210.0°	50.0°
Axe X:	140.0°	47.0°
Axe Y:	254.0°	21.0°
Axe Z:	360.0°	36.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 04h 10m Lat: - 8.07° Long: -80.09° Depth: 41.0 km

Ms: 5.9 mb: 5.9 Mw: Region: Northern margin

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 2.13xE25 dyn.cm

Source-Time function: 2 s

Comment: Wave form.

SEISMIC EVENT N°: 054 **DATE: MAY 28 1969**

Time:(13h 30m) **Lat: - 2.1 °** **Long: -76.9 °** **Depth: 163.0 km**

Ms: 5.4 **mb: 5.5** **Mw:** **Region: Perú-Ecuador boundary**

Reference: Pennington, W. (1981).

	Strike	Dip	Slip
Plane A:	303.0°*	80.0°*	-90.0°*
Plane B:	123.0°*	10.0°*	-90.0°*

	Trend	Plunge
Axe P:	213.0°	55.0°
Axe T:	33.0°	35.0°
Axe X:	33.0°	80.0°
Axe Y:	213.0°	10.0°
Axe Z:	303.0°	0.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 055 **DATE: JUL 19 1969**

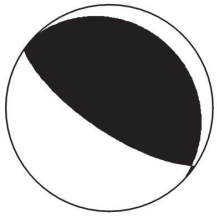
Time: 04h 54m Lat: -17.3 ° Long: -72.5 ° Depth: 54.0 km

Ms:(5.7) mb: 5.9 Mw: Region: Southern margin

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	316.0°*	18.0°*	101.4°*
Plane B:	124.0°*	72.0°*	86.0°*

	Trend	Plunge
Axe P:	217.0°	27.0°
Axe T:	30.0°	63.0°
Axe X:	225.0°	72.0°
Axe Y:	35.0°	18.0°
Axe Z:	125.0°	3.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

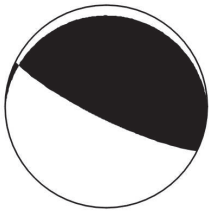
Time: 04h 54m Lat: -17.3 ° Long: -72.0 ° Depth: 54.0 km

Ms:(5.7) mb: 5.9 Mw: Region: Southern margin

Reference: Huaco, D. (1976).

	Strike	Dip	Slip
Plane A:	116.0°	80.0°	94.8°
Plane B:	270.0°	11.1°	64.4°

	Trend	Plunge
Axe P:	201.8°*	34.8°*
Axe T:	32.0°*	54.8°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 1.92xE25 dyn.cm

Source-Time function: Fault Length: 16 km

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 056 **DATE: JUL 24 1969**

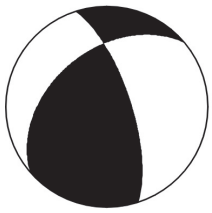
Time: 02h 59m **Lat: -11.9 °** **Long: -75.1 °** **Depth: 1.0 km**

Ms:(5.7) **mb: 5.9** **Mw:** **Region: Central andes**

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	342.0°*	70.7°*	50.8°*
Plane B:	230.0°*	43.0°*	151.0°*

	Trend	Plunge
Axe P:	99.0°	15.0°
Axe T:	206.0°	48.0°
Axe X:	138.0°	45.0°
Axe Y:	250.0°	20.0°
Axe Z:	357.0°	38.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

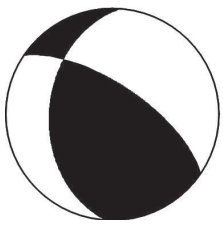
Time: 02h 59m **Lat: -11.9 °** **Long: -75.1 °** **Depth: 1.0 km**

Ms:(5.7) **mb: 5.9** **Mw:** **Region: Central andes**

Reference: Huaco, D. (1976).

	Strike	Dip	Slip
Plane A:	184.0°	40.0°	143.0°
Plane B:	304.0°	67.0°	56.0°

	Trend	Plunge
Axe P:	58.1°*	15.6°*
Axe T:	171.2°*	54.6°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 8.4xE23 dyn.cm

Source-Time function: **Fault Length: 7 km**

Comment: P-wave first motion / S-wave polaritation.

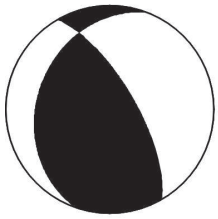
Time: 02h 59m Lat: -11.84° Long: -75.10° Depth: 6.0 km

Ms:(5.8) mb: 5.9 Mw: Region: Central andes

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	200.0°*	30.0°*	135.9°*
Plane B:	330.0°*	70.0°*	67.5°*

	Trend	Plunge
Axe P:	77.0°	23.0°
Axe T:	205.8°	55.9°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 1.81xE25 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 057 DATE: OCT 01 1969

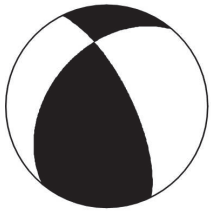
Time: 05h 05m Lat: -11.9 ° Long: -75.1 ° Depth: 4.0 km

Ms:(6.2) mb: 5.9 Mw: Region: Central andes

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	334.0°*	70.0°*	52.5°*
Plane B:	220.0°*	42.0°*	149.0°*

	Trend	Plunge
Axe P:	91.0°	15.0°
Axe T:	198.0°	48.0°
Axe X:	130.0°	45.0°
Axe Y:	242.0°	20.0°
Axe Z:	349.0°	38.0°



Seismic Moment (Mo):

Source-Time function: 2 s

Comment: P-wave first motion / S-wave polaritation.

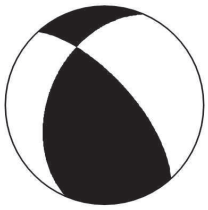
Time: 05h 05m Lat: -11.9 ° Long: -75.1 ° Depth: 4.0 km

Ms:(6.2) mb: 5.9 Mw: Region: Central andes

Reference: Huaco, D. (1976).

	Strike	Dip	Slip
Plane A:	203.0°	43.0°	147.0°
Plane B:	318.0°	68.0°	52.0°

	Trend	Plunge
Axe P:	74.9°*	14.9°*
Axe T:	184.1°*	50.9°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 2.69xE25 dyn.cm

Source-Time function: Fault Length: 16 km

Comment: P-wave first motion / S-wave polaritation.

Time: 05h 05m Lat: -11.75° Long: -75.15° Depth: 14.0 km

Ms: 6.3 mb: 5.8 Mw: Region: Central andes

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 4.02xE25 dyn.cm

Source-Time function: 2 s

Comment: Wave form.

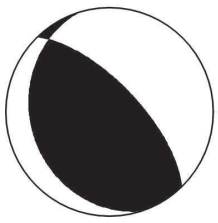
Time: 05h 05m Lat: -11.75° Long: -75.15° Depth: 5.0 km

Ms:(6.2) mb: 5.8 Mw: Region: Central andes

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	316.0°*	68.0°*	79.0°*
Plane B:	162.0°*	24.0°*	114.0°*

	Trend	Plunge
Axe P:	52.6°	21.9°
Axe T:	207.4°	66.1°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 9.84xE25 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 058 **DATE: FEB 14 1970**

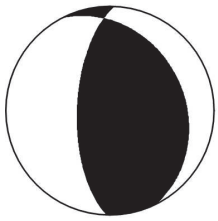
Time: 11h 17m Lat: - 9.9 ° Long: -75.6 ° Depth: 35.0 km

Ms:(5.4) mb: 5.9 Mw: Region: Central subandes

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	182.0°*	64.0°*	103.0°*
Plane B:	334.0°*	29.0°*	65.0°*

	Trend	Plunge
Axe P:	264.0°	17.0°
Axe T:	124.0°	68.0°
Axe X:	95.0°	27.0°
Axe Y:	245.0°	60.0°
Axe Z:	358.0°	13.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

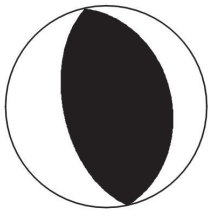
Time: 11h 17m Lat: - 9.84° Long: -75.55° Depth: 28.0 km

Ms:(5.4) mb: 5.8 Mw: Region: Central subandes

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	168.0°*	55.0°*	91.0°*
Plane B:	347.0°*	35.0°*	89.2°*

	Trend	Plunge
Axe P:	260.0°	9.0°
Axe T:	80.0°	81.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 9.71xE24 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 059 **DATE: MAR 31 1970**

Time: 08h 50m **Lat: - 5.68°** **Long: -80.14°** **Depth: 69-90 km**

Ms: 5.4 **mb: 5.6** **Mw:** **Region: Northern coast**

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	274.0°*	70.0°*	-14.3°*
Plane B:	9.0°*	76.5°*	-159.4°*

	Trend	Plunge
Axe P:	234.0°	24.0°
Axe T:	141.0°	4.0°
Axe X:		
Axe Y:		
Axe Z:	48.0°	66.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

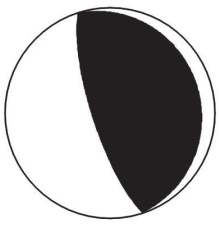
Time: 08h 50m **Lat: - 5.73°** **Long: -80.13°** **Depth: 90.0 km**

Ms:(5.0) **mb: 5.4** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	162.0°*	76.0°*	89.5°*
Plane B:	344.0°*	14.0°*	91.9°*

	Trend	Plunge
Axe P:	254.0°	30.0°
Axe T:	72.0°	60.0°
Axe X:	256.0°	75.0°
Axe Y:	73.0°	15.0°
Axe Z:	163.0°	1.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 060 **DATE: MAY 31 1970**

Time: 20h 23m Lat: - 9.36° Long: -78.87° Depth: 40.0 km

Ms: 7.8 mb:(6.6) Mw: Region: Northern margin

Reference: Abe, K. (1972).

	Strike	Dip	Slip
Plane A:	340.0°	53.0°	-90.0°
Plane B:	160.0°*	37.0°*	-90.0°*

	Trend	Plunge
Axe P:	250.0°*	82.0°*
Axe T:	70.0°*	8.0°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 10xE27 dyn.cm

Source-Time function:

Comment: Wave form.

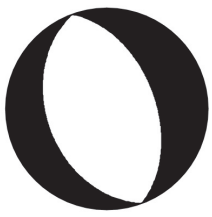
Time: 20h 33m Lat: - 9.36° Long: -78.87° Depth: 43.0 km

Ms:(7.8) mb: 6.6 Mw: Region: Northern margin

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	340.0°*	50.0°*	-90.0°*
Plane B:	160.0°*	40.0°*	-90.0°*

	Trend	Plunge
Axe P:	250.0°	85.0°
Axe T:	70.0°	5.0°
Axe X:	250.0°	40.0°
Axe Y:	70.0°	50.0°
Axe Z:	340.0°	0.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 20h 23m Lat: - 9.17° Long: -78.8 ° Depth: 70.0 km

Ms: 7.8 mb: 6.6 Mw: Region: Northern margin

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	183.0°*	68.0°*	-76.3°*
Plane B:	330.0°*	25.7°*	-120.3°*

	Trend	Plunge
Axe P:	115.0°	64.0°
Axe T:	262.0°	21.0°
Axe X:		
Axe Y:		
Axe Z:	357.0°	14.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 061 DATE: JUN 02 1970

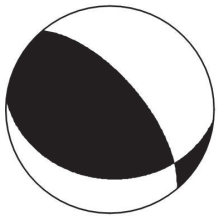
Time: 01h 37m Lat: - 9.3 ° Long: -79.0 ° Depth: 49.0 km

Ms:(5.4) mb: 5.7 Mw: Region: Northern margin

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	320.0°*	65.0°*	112.9°*
Plane B:	95.0°*	33.4°*	50.1°*

	Trend	Plunge
Axe P:	33.0°	17.0°
Axe T:	267.0°	63.0°
Axe X:	230.0°	25.0°
Axe Y:	5.0°	57.0°
Axe Z:	130.0°	21.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

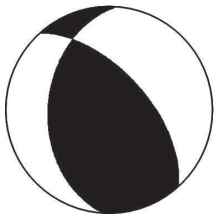
Time: 01h 37m Lat: - 9.76° Long: -78.8 ° Depth: 58.0 km

Ms: 5.6 mb: 5.7 Mw: Region: Northern margin

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	184.0°*	40.0°*	128.4°*
Plane B:	318.0°*	60.0°*	62.5°*

	Trend	Plunge
Axe P:	67.0°	11.0°
Axe T:	180.0°	64.0°
Axe X:		
Axe Y:		
Axe Z:	330.0°	28.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 01h 37m Lat: - 9.3 ° Long: -79.0 ° Depth: 59.0 km

Ms:(5.4) mb: 5.7 Mw: Region: Northern margin

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 0.47xE25 dyn.cm

Source-Time function:

Comment: Wave form.

SEISMIC EVENT N°: 062 **DATE: JUN 04 1970**

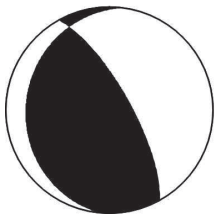
Time: 04h 09m Lat: - 9.8 ° Long: -78.6 ° Depth: 57.0 km

Ms:(6.2) mb: 5.8 Mw: Region: Northern margin

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	331.0°*	73.4°*	78.7°*
Plane B:	186.0°*	20.0°*	123.3°*

	Trend	Plunge
Axe P:	70.0°	28.0°
Axe T:	223.0°	59.0°
Axe X:	100.0°	70.0°
Axe Y:	240.0°	16.0°
Axe Z:	334.0°	12.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

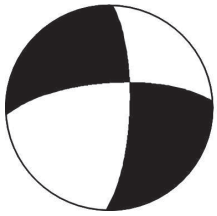
Time: 04h 09m Lat: - 9.9 ° Long: -78.7 ° Depth: 50.0 km

Ms:(6.2) mb: 5.8 Mw: Region: Northern margin

Reference: Petersen, E. (1976).

	Strike	Dip	Slip
Plane A:	2.0°	74.0°	-160.0°*
Plane B:	266.0°	70.0°	-17.0°*

	Trend	Plunge
Axe P:	225.0°	24.0°
Axe T:	134.0°	0.0°
Axe X:		
Axe Y:		
Axe Z:	41.0°	66.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

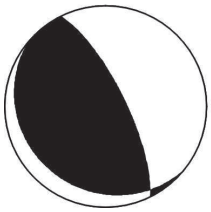
Time: 04h 09m Lat: - 9.8 ° Long: -78.63° Depth: 57.0 km

Ms: 5.9 mb: 5.8 Mw: Region: Northern margin

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	334.0°*	74.0°*	97.7°*
Plane B:	128.0°*	17.7°*	65.1°*

	Trend	Plunge
Axe P:	58.0°	28.0°
Axe T:	255.0°	60.0°
Axe X:		
Axe Y:		
Axe Z:	153.0°	12.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 04h 09m Lat: - 9.88° Long: -78.69° Depth: 50.0 km

Ms: 6.0 mb:(5.8) Mw: Region: Northern margin

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 5.54xE25 dyn.cm

Source-Time function: 6 s

Comment: Wave form.

SEISMIC EVENT N°: 063 **DATE: JUN 17 1970**

Time: 04h 44m **Lat: -15.8 °** **Long: -71.8 °** **Depth: 91.0 km**

Ms: **mb: 5.9** **Mw:** **Region: Southern andes**

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	310.0°*	80.0°*	-90.0°*
Plane B:	130.0°*	10.0°*	-90.0°*

	Trend	Plunge
Axe P:	219.0°	55.0°
Axe T:	41.0°	35.0°
Axe X:	220.0°	10.0°
Axe Y:	45.0°	80.0°
Axe Z:	310.0°	1.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 064 **DATE: JUN 21 1970**

Time: 15h 13m **Lat: - 9.9 °** **Long: -78.6 °** **Depth: 80.0 km**

Ms: **mb: 5.3** **Mw:** **Region: Central margin**

Reference: Petersen, E. (1976).

	Strike	Dip	Slip
Plane A:	225.0°	76.0°	-23.5°*
Plane B:	321.0°	67.0°	-164.8°*

	Trend	Plunge
Axe P:	181.0°	26.0°
Axe T:	274.0°	6.0°
Axe X:		
Axe Y:		
Axe Z:	14.0°	64.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 065 **DATE: JUL 02 1970**

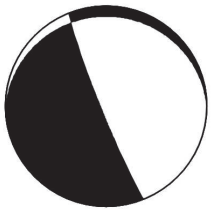
Time: 00h 45m **Lat: -10.1 °** **Long: -78.6 °** **Depth: 62.0 km**

Ms:(5.3) **mb: 5.8** **Mw:** **Region: Central margin**

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	270.0°*	11.0°*	-157.6°*
Plane B:	158.0°*	85.8°*	-79.8°*

	Trend	Plunge
Axe P:	79.0°	48.0°
Axe T:	239.0°	40.0°
Axe X:	180.0°	79.0°
Axe Y:	68.0°	4.0°
Axe Z:	337.0°	10.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 00h 45m **Lat: -10.14°** **Long: -78.60°** **Depth: 46.0 km**

Ms:(5.3) **mb: 5.8** **Mw:** **Region: Central margin**

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 1.46xE25 dyn.cm

Source-Time function: 1 s

Comment: Wave form.

SEISMIC EVENT N°: 066 **DATE: JUL 31 1970**

Time:(17h 00m) **Lat: - 1.5 °** **Long: -72.6 °** **Depth: 653.0 km**

Ms:(7.0) **mb:** **Mw:** **Region: Perú-Colombia boundary**

Reference: Mendiguren, J. (1973).

	Strike	Dip	Slip
Plane A:	148.0°*	60.0°*	-100.3°*
Plane B:	348.0°*	32.0°*	-73.0°*

	Trend	Plunge
Axe P:	32.0°	75.0°
Axe T:	244.0°	12.0°
Axe X:	58.0°	32.0°
Axe Y:	255.0°	58.0°
Axe Z:	153.0°	8.0°

Seismic Moment (Mo):

Source-Time function:

Comment: Wave form.

SEISMIC EVENT N°: 067 **DATE: DEC 10 1970**

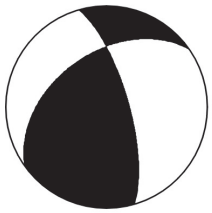
Time: 04h 34m Lat: - 4.0 ° Long: -80.7 ° Depth: (15.0)km

Ms:(7.1) mb: 6.5 Mw: Region: Northern coast

Reference: Huaco, D. (1973).

	Strike	Dip	Slip
Plane A:	235.0°	45.0°	154.0°
Plane B:	344.0°	72.0°	48.0°

	Trend	Plunge
Axe P:	103.5°*	16.3°*
Axe T:	211.0°*	46.0°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

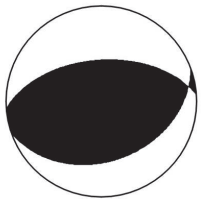
Time: 04h 34m Lat: - 4.0 ° Long: -80.7 ° Depth: 25.0 km

Ms:(7.1) mb: 6.3 Mw: Region: Northern coast

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	266.0°*	54.0°*	99.6°*
Plane B:	70.0°*	37.0°*	77.0°*

	Trend	Plunge
Axe P:	348.0°	9.0°
Axe T:	209.0°	78.0°
Axe X:	175.0°	35.0°
Axe Y:	338.0°	54.0°
Axe Z:	79.0°	8.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

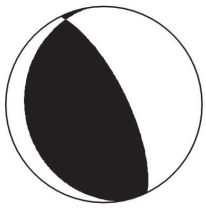
Time: 04h 34m Lat: - 3.97° Long: -80.66° Depth: 15.0 km

Ms:(7.1) mb: 6.3 Mw: Region: Northern coast

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	170.0°*	20.0°*	105.0°*
Plane B:	334.0°*	71.0°*	85.0°*

	Trend	Plunge
Axe P:	68.0°	26.0°
Axe T:	235.0°	64.0°
Axe X:	240.0°	18.0°
Axe Y:	112.0°	60.0°
Axe Z:	338.0°	5.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

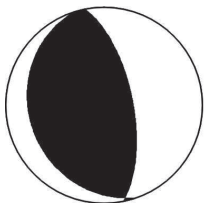
Time: 04h 34m Lat: - 4.0 ° Long: -80.7 ° Depth: 16.0 km

Ms:(7.1) mb:(6.3) Mw: Region: Northern coast

Reference: Pennington, W. (1981).

	Strike	Dip	Slip
Plane A:	160.0°*	24.0°*	90.9°*
Plane B:	349.0°*	66.0°*	89.6°*

	Trend	Plunge
Axe P:	69.0°	21.0°
Axe T:	249.0°	69.0°
Axe X:	69.0°	66.0°
Axe Y:	249.0°	24.0°
Axe Z:	339.0°	0.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 04h 34m Lat: - 3.97° Long: -80.66° Depth: 42.0 km

Ms: 7.6 mb: 6.3 Mw: Region: Northern coast

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 56.82xE25 dyn.cm

Source-Time function: 10 s

Comment: Wave form.

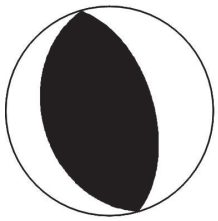
Time: 04h 34m Lat: - 3.97° Long: -80.66° Depth: 32.0 km

Ms:(7.1) mb: 6.3 Mw: Region: Northern coast

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	164.0°*	35.0°*	90.0°*
Plane B:	344.0°*	55.0°*	90.0°*

	Trend	Plunge
Axe P:	73.0°	10.0°
Axe T:	253.0°	80.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 6.76xE26 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 068 **DATE: DEC 10 1970**

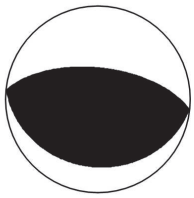
Time: 05h 32m **Lat: - 3.95°** **Long: -80.76°** **Depth: 67.0 km**

Ms: **mb: 5.2** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	267.0°*	62.0°*	86.0°*
Plane B:	96.0°*	28.0°*	98.0°*

	Trend	Plunge
Axe P:	0.0°	17.0°
Axe T:	167.0°	73.0°
Axe X:	177.0°	32.0°
Axe Y:	8.0°	63.0°
Axe Z:	269.0°	4.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 069 **DATE: DEC 10 1970**

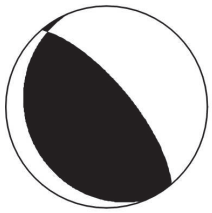
Time: 17h 29m **Lat: - 3.99°** **Long: -80.84°** **Depth: 52.0 km**

Ms: **mb: 5.0** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	157.0°*	20.0°*	106.0°*
Plane B:	320.0°*	71.0°*	84.0°*

	Trend	Plunge
Axe P:	55.0°	26.0°
Axe T:	224.0°	64.0°
Axe X:	231.0°	19.0°
Axe Y:	62.0°	74.0°
Axe Z:	321.0°	3.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 070 **DATE: DEC 10 1970**

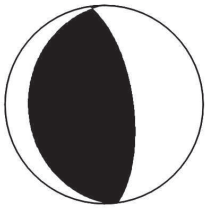
Time: 19h 50m **Lat: - 4.16°** **Long: -80.73°** **Depth: 58.0 km**

Ms: **mb: 5.0** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	178.0°*	24.0°*	95.5°*
Plane B:	352.0°*	66.0°*	87.6°*

	Trend	Plunge
Axe P:	83.0°	21.0°
Axe T:	257.0°	68.0°
Axe X:	261.0°	24.0°
Axe Y:	86.0°	71.0°
Axe Z:	353.0°	2.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 071 **DATE: DEC 10 1970**

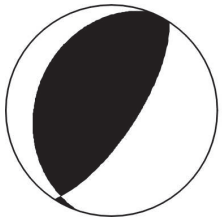
Time: 21h 46m **Lat: - 3.96°** **Long: -80.8 °** **Depth: 71.0 km**

Ms: **mb: 5.0** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	199.0°*	28.0°*	135.0°*
Plane B:	33.0°*	71.0°*	69.0°*

	Trend	Plunge
Axe P:	77.0°	23.0°
Axe T:	211.0°	57.0°
Axe X:	241.0°	19.0°
Axe Y:	112.0°	60.0°
Axe Z:	339.0°	20.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 072 **DATE: DEC 11 1970**

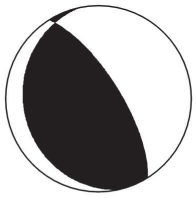
Time: 10h 24m **Lat: - 3.98°** **Long: -80.79°** **Depth: 34.0 km**

Ms:(5.4) **mb: 5.4** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	168.0°*	20.0°*	109.0°*
Plane B:	328.0°*	71.0°*	83.0°*

	Trend	Plunge
Axe P:	63.0°	26.0°
Axe T:	228.0°	64.0°
Axe X:	239.0°	20.0°
Axe Y:	78.0°	74.0°
Axe Z:	330.0°	6.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 073 **DATE: DEC 15 1970**

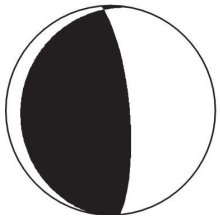
Time: 21h 15m **Lat: - 3.96°** **Long: -80.8 °** **Depth: 41.0 km**

Ms: **mb: 5.1** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	190.0°*	15.0°*	104.5°*
Plane B:	355.0°*	75.5°*	86.0°*

	Trend	Plunge
Axe P:	90.0°	31.0°
Axe T:	258.0°	60.0°
Axe X:	265.0°	17.0°
Axe Y:	106.0°	77.0°
Axe Z:	356.0°	5.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 074 **DATE: DEC 21 1970**

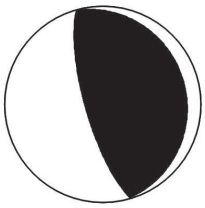
Time: 07h 33m **Lat: - 3.90°** **Long: -80.78°** **Depth: 41.0 km**

Ms: **mb: 5.1** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	164.0°*	75.0°*	89.5°*
Plane B:	346.0°*	15.0°*	92.0°*

	Trend	Plunge
Axe P:	254.0°	30.0°
Axe T:	73.0°	60.0°
Axe X:	255.0°	75.0°
Axe Y:	74.0°	13.0°
Axe Z:	164.0°	1.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 075 **DATE: DEC 29 1970**

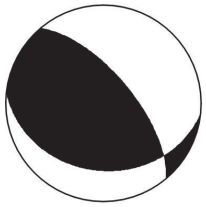
Time: 08h 02m **Lat: - 3.94°** **Long: -80.92°** **Depth: 56.0 km**

Ms:(5.2) **mb: 5.7** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	320.0°*	66.0°*	111.0°*
Plane B:	96.0°*	32.0°*	51.0°*

	Trend	Plunge
Axe P:	33.0°	17.0°
Axe T:	266.0°	63.0°
Axe X:	230.0°	26.0°
Axe Y:	4.0°	58.0°
Axe Z:	130.0°	21.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 076 DATE: MAR 27 1971

Time: 00h 53m Lat: - 7.47° Long: -81.6 ° Depth: 29-34 km

Ms: 4.9 mb: 5.4 Mw: Region: Northern margin

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	292.0°*	76.0°*	-8.2°*
Plane B:	24.0°*	82.0°*	-166.0°*

	Trend	Plunge
Axe P:	247.0°	16.0°
Axe T:	157.0°	3.0°
Axe X:		
Axe Y:		
Axe Z:	56.0°	73.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

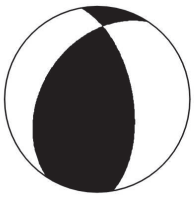
Time: 00h 53m Lat: - 7.50° Long: -81.67° Depth: 34.0 km

Ms:(4.8) mb: 5.3 Mw: Region: Northern margin

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	213.0°*	40.0°*	125.5°*
Plane B:	350.0°*	58.5°*	64.0°*

	Trend	Plunge
Axe P:	97.0°	11.0°
Axe T:	210.0°	65.0°
Axe X:	125.0°	50.0°
Axe Y:	257.0°	29.0°
Axe Z:	3.0°	24.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 077 DATE: MAY 17 1971

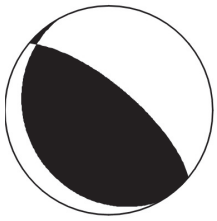
Time: 11h 04m Lat: - 1.6 ° Long: -77.7 ° Depth: 176.0 km

Ms: mb: 5.7 Mw: Region: Perú-Ecuador boundary

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	150.0°*	20.0°*	109.0°*
Plane B:	310.0°*	71.0°*	83.0°*

	Trend	Plunge
Axe P:	45.0°	26.0°
Axe T:	209.0°	63.0°
Axe X:	220.0°	19.0°
Axe Y:	60.0°	70.0°
Axe Z:	312.0°	6.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time:(11h 04m) Lat: - 1.6 ° Long: -77.7 ° Depth: 173.0 km

Ms:(6.5) mb: Mw: Region: Perú-Ecuador boundary

Reference: Pennington, W. (1981).

	Strike	Dip	Slip
Plane A:	192.0°*	24.0°*	-34.4°*
Plane B:	314.0°*	76.7°*	-110.2°*

	Trend	Plunge
Axe P:	200.0°	54.0°
Axe T:	60.0°	28.0°
Axe X:	225.0°	24.0°
Axe Y:	104.0°	65.0°
Axe Z:	320.0°	21.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 078 **DATE: JUN 11 1971**

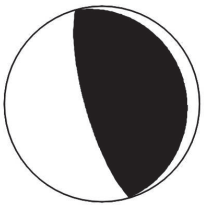
Time: 01h 32m **Lat: - 4.17°** **Long: -80.65°** **Depth: 45.0 km**

Ms: **mb: 5.5** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	164.0°*	76.0°*	89.8°*
Plane B:	345.0°*	14.0°*	91.0°*

	Trend	Plunge
Axe P:	254.0°	31.0°
Axe T:	74.0°	60.0°
Axe X:	254.0°	76.0°
Axe Y:	74.0°	13.0°
Axe Z:	164.0°	0.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 079 **DATE: JUL 27 1971**

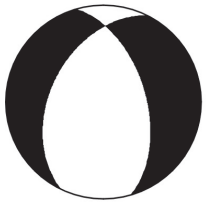
Time: 02h 02m Lat: - 2.7 ° Long: -77.4 ° Depth: 135.0 km

Ms:(7.5) mb: 6.3 Mw: Region: Perú-Ecuador boundary

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	206.0°*	44.0°*	-59.0°*
Plane B:	344.0°*	54.0°*	-118.0°*

	Trend	Plunge
Axe P:	194.0°	65.0°
Axe T:	94.0°	4.0°
Axe X:	253.0°	36.0°
Axe Y:	118.0°	44.0°
Axe Z:	2.0°	24.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 02h 02m Lat: - 2.8 ° Long: -77.4 ° Depth: 121.0 km

Ms:(7.5) mb:(6.3) Mw: Region: Perú-Ecuador boundary

Reference: Pennington, W. (1981).

	Strike	Dip	Slip
Plane A:	152.0°*	38.0°*	-75.6°*
Plane B:	314.0°*	53.4°*	-101.0°*

	Trend	Plunge
Axe P:	183.0°	78.0°
Axe T:	52.0°	8.0°
Axe X:	223.0°	36.0°
Axe Y:	57.0°	53.0°
Axe Z:	318.0°	7.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 080 DATE: OCT 15 1971

Time: 10h 33m Lat: -14.1 ° Long: -73.3 ° Depth: 54.0 km

Ms: mb: 5.7 Mw: Region: Southern andes

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	314.0°*	70.0°*	11.6°*
Plane B:	220.0°*	79.0°*	159.6°*

	Trend	Plunge
Axe P:	268.0°	6.0°
Axe T:	175.0°	22.0°
Axe X:	130.0°	15.0°
Axe Y:	225.0°	18.0°
Axe Z:	2.0°	66.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 10h 33m Lat: -14.2 ° Long: -73.45° Depth: 8.0 km

Ms: mb: 5.7 Mw: Region: Southern andes

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	216.0°*	78.0°*	166.0°*
Plane B:	309.0°*	76.0°*	12.5°*

	Trend	Plunge
Axe P:	264.1°	1.0°
Axe T:	174.1°	18.1°
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 2.98xE24 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 081 **DATE: OCT 28 1971**

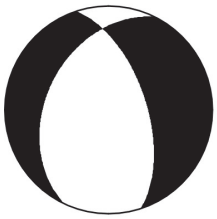
Time: 06h 30m **Lat: - 3.87°** **Long: -80.68°** **Depth: 46.0 km**

Ms: **mb: 5.2** **Mw:** **Region: Northern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	342.0°*	60.0°*	-115.8°*
Plane B:	206.0°*	38.8°*	53.0°*

	Trend	Plunge
Axe P:	206.0°	65.0°
Axe T:	90.0°	11.0°
Axe X:	250.0°	30.0°
Axe Y:	118.0°	49.0°
Axe Z:	356.0°	24.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion

SEISMIC EVENT N°: 082 **DATE: JAN 12 1972**

Time: 09h 59m **Lat: - 6.9 °** **Long: -71.8 °** **Depth: 580.0 km**

Ms: **mb:** **Mw:** **Region: Perú-Brasil boundary**

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	160.0°*	62.0°*	-102.0°*
Plane B:	4.0°*	30.0°*	-69.0°*

	Trend	Plunge
Axe P:	43.0°	70.0°
Axe T:	259.0°	16.0°
Axe X:	70.0°	28.0°
Axe Y:	275.0°	60.0°
Axe Z:	166.0°	11.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

SEISMIC EVENT N°: 083 **DATE: MAR 20 1972**

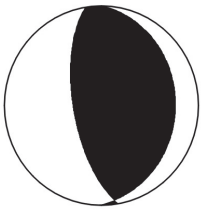
Time: 07h 33m **Lat: - 6.8 °** **Long: -76.8 °** **Depth: 64.0 km**

Ms: **mb: 6.1** **Mw:** **Region: Northern subandes**

Reference: Stauder, W. (1975).

	Strike	Dip	Slip
Plane A:	170.0°*	66.0°*	85.0°*
Plane B:	2.0°*	24.5°*	101.0°*

	Trend	Plunge
Axe P:	263.0°	20.0°
Axe T:	70.0°	69.0°
Axe X:	265.0°	65.0°
Axe Y:	80.0°	25.0°
Axe Z:	171.0°	2.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / S-wave polaritation.

Time: 07h 33m **Lat: - 6.79°** **Long: -76.76°** **Depth: 33.0 km**

Ms: 6.5 **mb:** **Mw:** **Region: Northern subandes**

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:			
Plane B:			

	Trend	Plunge
Axe P:		
Axe T:		
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 3.02xE25 dyn.cm

Source-Time function: 2 s

Comment: Wave form.

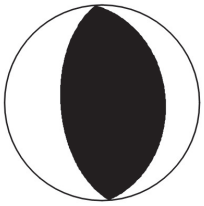
Time: 07h 33m Lat: - 6.79° Long: -76.76° Depth: 38.0 km

Ms: mb: 6.1 Mw: Region: Northern subandes

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	176.0°*	55.0°*	90.0°*
Plane B:	356.0°*	35.0°*	90.0°*

	Trend	Plunge
Axe P:	267.0°	10.0°
Axe T:	87.0°	80.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 4.23xE25 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 084 **DATE: SEP 04 1972**

Time: 23h 32m **Lat: - 3.78°** **Long: -80.67°** **Depth: 35.0 km**

Ms: **mb: 5.5** **Mw:** **Region: Northern margin**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	306.0°*	70.0°*	-94.5°*
Plane B:	139.0°*	20.5°*	-77.8°*

	Trend	Plunge
Axe P:	208.0°	65.0°
Axe T:	40.0°	25.0°
Axe X:	217.0°	25.0°
Axe Y:	47.0°	70.0°
Axe Z:	308.0°	5.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 085 **DATE: MAY 30 1973**

Time: (04h 38m) **Lat: - 2.3 °** **Long: -78.5 °** **Depth: 107.0 km**

Ms: **mb: 5.7** **Mw:** **Region: Perú-Ecuador boundary**

Reference: Pennington, W. (1981).

	Strike	Dip	Slip
Plane A:	178.0°*	22.0°*	-64.7°*
Plane B:	331.0°*	70.0°*	-99.8°*

	Trend	Plunge
Axe P:	225.0°	63.0°
Axe T:	68.0°	24.0°
Axe X:	242.0°	20.0°
Axe Y:	88.0°	67.0°
Axe Z:	335.0°	9.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 086 **DATE: AUG 07 1973**

Time: 02h 05m **Lat: - 7.19°** **Long: -80.77°** **Depth: 35.0 km**

Ms: 4.2 **mb: 5.1** **Mw:** **Region: Northern margin**

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	216.0°*	84.0°*	161.5°*
Plane B:	308.0°*	72.0°*	6.0°*

	Trend	Plunge
Axe P:	261.0°	9.0°
Axe T:	171.0°	17.0°
Axe X:		
Axe Y:		
Axe Z:	10.0°	77.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

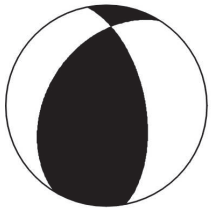
Time: 02h 05m **Lat: - 7.19°** **Long: -80.83°** **Depth: 35.0 km**

Ms: **mb: 5.1** **Mw:** **Region: Northern margin**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	212.0°*	40.0°*	125.5°*
Plane B:	349.0°*	58.5°*	64.0°*

	Trend	Plunge
Axe P:	97.0°	10.0°
Axe T:	210.0°	66.0°
Axe X:	125.0°	50.0°
Axe Y:	257.0°	29.0°
Axe Z:	3.0°	24.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 087 **DATE: NOV 09 1973**

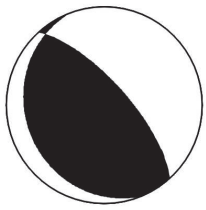
Time: 22h 41m **Lat: - 3.94°** **Long: -80.96°** **Depth: 19.0 km**

Ms: **mb: 5.6** **Mw:** **Region: Northern margin**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	158.0°*	20.0°*	109.0°*
Plane B:	318.0°*	71.0°*	83.0°*

	Trend	Plunge
Axe P:	53.0°	26.0°
Axe T:	217.0°	63.0°
Axe X:	227.0°	20.0°
Axe Y:	69.0°	74.0°
Axe Z:	320.0°	6.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion

SEISMIC EVENT N°: 088 **DATE: JAN 05 1974**

Time: 08h 33m Lat: -12.42° Long: -76.31° Depth: 93.0 km

Ms: 6.6 mb:(6.3) Mw: Region: Central coast

Reference: Spence, W. et al. (1979).

	Strike	Dip	Slip
Plane A:	356.0°	40.0°	-54.5°*
Plane B:	133.0°	58.0°	-116.0°*

	Trend	Plunge
Axe P:	352.0°	67.0°
Axe T:	240.0°	10.0°
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 08h 33m Lat: -12.30 Long: -76.3 Depth: 98.0 km

Ms: 6.6 mb: Mw: Region: Central coast

Reference: Astiz et al (1988)

	Strike	Dip	Slip
Plane A:	18.0°*	55.0°*	-65.0°*
Plane B:	237.0°*	42.0°*	-59.0°*

	Trend	Plunge
Axe P:	342.0°	68.0°
Axe T:	90.0°	7.0°
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-ware first motion

Time: 08h 33m Lat: -12.42° Long: -76.31° Depth: 93.0 km

Ms: 6.6 mb:(6.3) Mw: Region: Central coast

Reference: Lay, T. et al. (1989).

	Strike	Dip	Slip
Plane A:	18.0°	55.0°	-65.0°
Plane B:	159.0°*	42.0°*	-121.0°*

	Trend	Plunge
Axe P:	342.6°*	68.6°*
Axe T:	90.5°*	6.9°*
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: Wave form.

SEISMIC EVENT N°: 089 **DATE: JUN 09 1974**

Time: 10h 41m **Lat: - 5.8 °** **Long: -80.9 °** **Depth: 44-52 km**

Ms: 4.2 **mb: 5.1** **Mw:** **Region: Northern coast**

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	310.0°*	68.0°*	-177.0°*
Plane B:	219.0°*	87.5°*	-22.0°*

	Trend	Plunge
Axe P:	173.0°	17.0°
Axe T:	267.0°	13.0°
Axe X:		
Axe Y:		
Axe Z:	36.0°	69.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion

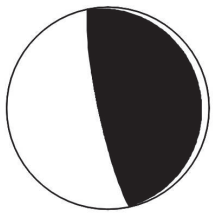
Time: 10h 41m **Lat: - 5.78°** **Long: -81.00°** **Depth: 44.0 km**

Ms: **mb: 5.1** **Mw:** **Region: Nothern coast**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	168.0°*	82.0°*	89.7°*
Plane B:	350.0°*	8.0°*	92.0°*

	Trend	Plunge
Axe P:	258.0°	37.0°
Axe T:	77.0°	53.0°
Axe X:	261.0°	81.0°
Axe Y:	78.0°	13.0°
Axe Z:	168.0°	1.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 090 **DATE: JUN 09 1974**

Time: 14h 16m **Lat: - 5.77°** **Long: -81.5 °** **Depth: 30-50 km**

Ms: 5.6 **mb: 5.7** **Mw:** **Region: Northern margin**

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	307.0°*	82.0°*	-7.0°*
Plane B:	38.0°*	83.0°*	-172 0°*

	Trend	Plunge
Axe P:	262.0°	11.0°
Axe T:	172.0°	1.0°
Axe X:		
Axe Y:		
Axe Z:	75.0°	77.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

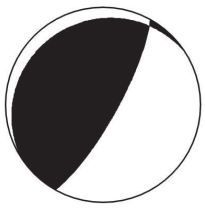
Time: 14h 16m **Lat: - 5.77°** **Long: -81.0 °** **Depth: 36.0 km**

Ms: **mb: 5.6** **Mw:** **Region: Northern margin**

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	29.0°*	78.0°*	83.4°*
Plane B:	238.0°*	14.0°*	118.3°*

	Trend	Plunge
Axe P:	124.0°	33.0°
Axe T:	290.0°	57.0°
Axe X:	141.0°	77.0°
Axe Y:	299.0°	107.0°
Axe Z:	31.0°	6.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 091 DATE: OCT 02 1974

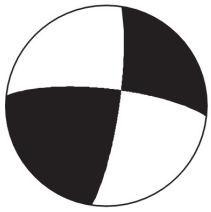
Time: 02h 55m Lat: - 5.88° Long: -81.1 ° Depth: 5-7 km

Ms: 5.6 mb: 5.7 Mw: Region: Northern margin

Reference: Huaco, D. (1977).

	Strike	Dip	Slip
Plane A:	276.0°*	76.0°*	169.8°*
Plane B:	8.5°*	80.0°*	14.0°*

	Trend	Plunge
Axe P:	141.0°	3.0°
Axe T:	232.0°	17.0°
Axe X:		
Axe Y:		
Axe Z:	40.0°	65.0°



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

Time: 02h 55m Lat: - 5.88° Long: -81.10° Depth: 7.0 km

Ms:(5.6) mb: 5.6 Mw: Region: Northern margin

Reference: Ocola, L. et al. (1979).

	Strike	Dip	Slip
Plane A:	182.0°*	19.0°*	-68.0°*
Plane B:	339.0°*	72.4°*	-97.0°*

	Trend	Plunge
Axe P:	238.0°	62.0°
Axe T:	75.0°	27.0°
Axe X:	249.0°	16.0°
Axe Y:	90.0°	73.0°
Axe Z:	340.0°	6.0°

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 092 **DATE: OCT 03 1974**

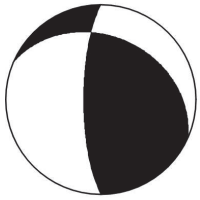
Time: 14h 21m **Lat: -12.2 °** **Long: -77.6 °** **Depth: 21.0 km**

Ms: 7.6 **mb: 6.3** **Mw:** **Region: Central margin**

Reference: Spence, W. et al. (1976).

	Strike	Dip	Slip
Plane A:	180.0°	75.0°	120.0°*
Plane B:	294.0°	33.0°	28.0°*

	Trend	Plunge
Axe P:	247.0°*	24.0°*
Axe T:	124.0°*	51.0°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

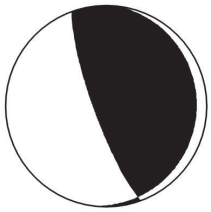
Time: 14h 21m **Lat: -12.39°** **Long: -77.66°** **Depth: 27.0 km**

Ms: 7.8 **mb:(6.6)** **Mw:** **Region: Central margin**

Reference: Spence, W. et al. (1979).

	Strike	Dip	Slip
Plane A:	160.0°	80.0°	85.2°*
Plane B:	6.0°	11.0°	115.6°*

	Trend	Plunge
Axe P:	254.0°	35.0°
Axe T:	64.0°	55.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

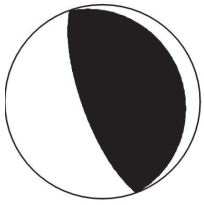
Time:(14h 21m) Lat: -12.39° Long: -77.66° Depth: 10-25 km

Ms: 7.8 mb:(6.6) Mw: Region: Central margin

Reference: Beck, S. & Ruff, L. (1989).

	Strike	Dip	Slip
Plane A:	340.0°	17.0°	90.0°
Plane B:	160.0°*	73.0°*	90.0°*

	Trend	Plunge
Axe P:	250.0°*	28.0°*
Axe T:	70.0°*	62.0°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo): 9.0xE27 dyn.cm

Source-Time function: 45 - 50 s Fault Length: 240 km

Comment: Wave form.

SEISMIC EVENT N°: 093 **DATE: NOV 09 1974**

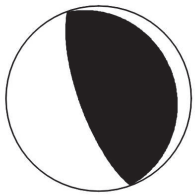
Time:(12h 59m) **Lat: -12.64°** **Long: -77.56°** **Depth: 20-25 km**

Ms: 7.2 **mb:(6.0)** **Mw:** **Region: Central margin**

Reference: Beck, S. & Ruff, L. (1989).

	Strike	Dip	Slip
Plane A:	340.0°	17.0°	90.0°
Plane B:	160.0°*	73.0°*	90.0°*

	Trend	Plunge
Axe P:	250.0°*	28.0°*
Axe T:	70.0°*	62.0°*
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function: 10 s

Comment: Wave form.

SEISMIC EVENT N°: 094 DATE: MAY 15 1976

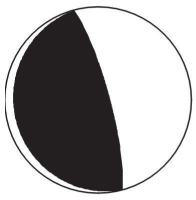
Time: 21h 55m Lat: -11.62° Long: -74.45° Depth: 18.0 km

Ms: 6.5 mb: 5.9 Mw: Region: Central subandes

Reference: Chinn, D. & Isacks, B. (1983).

	Strike	Dip	Slip
Plane A:	345.0°*	80.0°*	90.0°*
Plane B:	165.0°*	10.0°*	90.0°*

	Trend	Plunge
Axe P:	75.0°	35.0°
Axe T:	255.0°*	55.0°*
Axe X:	72.0°	80.0°
Axe Y:	252.0°	10.0°
Axe Z:		



Seismic Moment (Mo): 8.91xE25 dyn.cm

Source-Time function: 5 s

Comment: Wave form.

Time: 21h 55m Lat: -11.62° Long: -74.45° Depth: 18.0 km

Ms:(6.5) mb: 5.9 Mw: Region: Central subandes

Reference: Suárez, G. et al. (1983).

	Strike	Dip	Slip
Plane A:	324.0°*	75.0°*	148.5°*
Plane B:	63.0°*	60.0°*	17.4°*

	Trend	Plunge
Axe P:	16.5°	9.1°
Axe T:	281.2°	32.0°
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo): 1.25xE26 dyn.cm

Source-Time function:

Comment: P-wave first motion and wave form.

SEISMIC EVENT N°: 095 **DATE: NOV 11 1982**

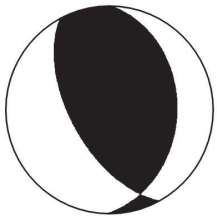
Time: 04h 27m **Lat: -10.61°** **Long: -74.69°** **Depth: 14.0 km**

Ms: **mb: 6.3** **Mw:** **Region: Central subandes**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	2.0°*	35.0°*	116.0°*
Plane B:	151.0°*	59.0°*	73.0°*

	Trend	Plunge
Axe P:	252.0°	14.0°
Axe T:	24.0°	70.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-Tensor.

SEISMIC EVENT N°: 096 **DATE: JUN 03 1984**

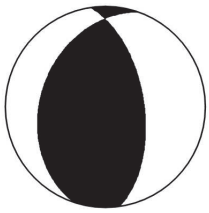
Time: 04h 10m **Lat: - 7.8 °** **Long: -76.78°** **Depth: 34.0 km**

Ms: **mb: 5.3** **Mw:** **Region: Northern subandes**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	199.0°*	35.0°*	113.0°*
Plane B:	351.5°*	58.0°*	74.6°*

	Trend	Plunge
Axe P:	92.0°	12.0°
Axe T:	224.0°	72.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-Tensor.

SEISMIC EVENT N°: 097 **DATE: JUN 05 1984**

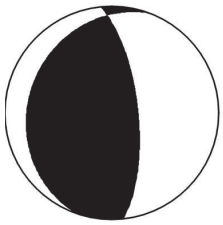
Time: 04h 15m **Lat: - 7.82°** **Long: -76.71°** **Depth: 25.0 km**

Ms: **mb: 5.8** **Mw:** **Region: Northern subandes**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	354.0°*	70.0°*	80.5°*
Plane B:	200.0°*	22.0°*	114.0°*

	Trend	Plunge
Axe P:	91.0°	25.0°
Axe T:	248.0°	64.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-Tensor.

SEISMIC EVENT N°: 098 **DATE: JUL 26 1985**

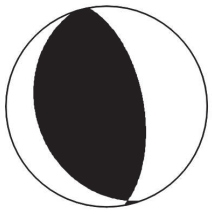
Time: 17h 56m **Lat: - 5.38°** **Long: -78.65°** **Depth: 18.0 km**

Ms: **mb: 5.3** **Mw:** **Region: Northern andes**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	350.0°*	60.0°*	95.0°*
Plane B:	160.0°*	30.4°*	81.4°*

	Trend	Plunge
Axe P:	77.0°	14.0°
Axe T:	274.0°	75.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-Tensor.

SEISMIC EVENT N°: 099 **DATE: AUG 13 1985**

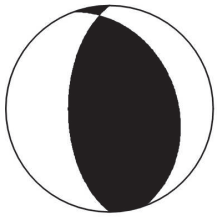
Time: 05h 29m **Lat: -15.04°** **Long: -75.47°** **Depth: 25.0 km**

Ms: **mb: 5.4** **Mw:** **Region: Southern coast**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	180.0°*	57.0°*	101.0°*
Plane B:	340.0°*	35.0°*	73.0°*

	Trend	Plunge
Axe P:	262.0°	11.0°
Axe T:	124.0°	76.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-Tensor.

SEISMIC EVENT N°: 100 **DATE: APR 05 1986**

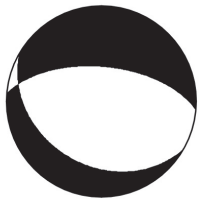
Time: 20h 14m Lat: -13.41° Long: -71.78° Depth: 51.0 km

Ms: mb: 5.3 Mw: Region: Southern andes

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	275.0°*	60.0°*	-103.0°*
Plane B:	120.0°*	33.0°*	-68.0°*

	Trend	Plunge
Axe P:	152.0°	70.0°
Axe T:	14.0°	15.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-Tensor.

Time: 20h 14m Lat: -13.41° Long: -71.94° Depth: 15.0 km

Ms: mb: 5.4 Mw: Region: Southern andes

Reference: Tavera, H. (1993a).

	Strike	Dip	Slip
Plane A:	123.0°	49.5°	-16.7°
Plane B:	224.0°	77.4°	-138.3°

	Trend	Plunge
Axe P:	92.1°	37.8°
Axe T:	347.7°	17.8°
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 101 **DATE: NOV 15 1987**

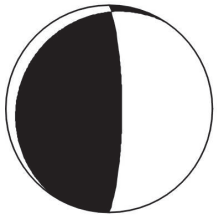
Time: 22h 00m **Lat: - 9.43°** **Long: -75.66°** **Depth: 32.0 km**

Ms: **mb: 5.4** **Mw:** **Region: Central subandes**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	0.0°*	80.0°*	83.3°*
Plane B:	214.0°*	12.0°*	123.4°*

	Trend	Plunge
Axe P:	95.0°	34.0°
Axe T:	262.0°	55.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-Tensor.

SEISMIC EVENT N°: 102 **DATE: APR 12 1988**

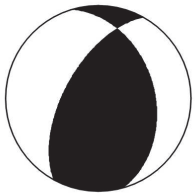
Time: 15h 26m **Lat: - 2.79°** **Long: -77.65°** **Depth: 27.0 km**

Ms: **mb: 5.5** **Mw:** **Region: Perú-Ecuador boundary**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	344.0°*	39.0°*	52.0°*
Plane B:	209.0°*	60.0°*	116.0°*

	Trend	Plunge
Axe P:	281.0°	12.0°
Axe T:	162.0°	66.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-tensor.

SEISMIC EVENT N°: 103 **DATE: MAY 04 1989**

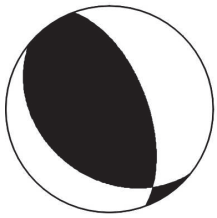
Time: 10h 30m **Lat: - 6.61°** **Long: -75.76°** **Depth: 36.0 km**

Ms: **mb: 5.5** **Mw:** **Region: Northern subandes**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	340.0°*	60.0°*	107.4°*
Plane B:	128.0°*	34.0°*	62.7°*

	Trend	Plunge
Axe P:	57.0°	12.0°
Axe T:	287.0°	72.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-Tensor.

SEISMIC EVENT N°: 104 **DATE: MAY 30 1990**

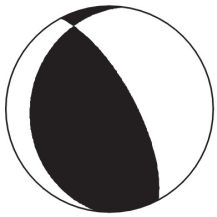
Time: 02h 34m **Lat: - 6.02°** **Long: -77.23°** **Depth: 24.0 km**

Ms: **mb: 6.1** **Mw:** **Region: Northern subandes**

Reference: Assumpçâo, M. (1992).

	Strike	Dip	Slip
Plane A:	332.0°*	70.0°*	76.5°*
Plane B:	187.0°*	24.0°*	122.6°*

	Trend	Plunge
Axe P:	73.0°	24.0°
Axe T:	223.0°	62.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion / Centroid-Moment-Tensor.

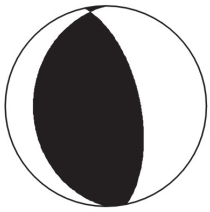
Time: 02h 34m **Lat: - 6.01°** **Long: -77.22°** **Depth: 24.2 km**

Ms: 6.5 **mb: 6.2** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	348.0°	62.0°	84.3°
Plane B:	180.0°	28.5°	100.6°

	Trend	Plunge
Axe P:	82.2°	16.8°
Axe T:	244.6°	72.4°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 105 **DATE: MAY 30 1990**

Time: 16h 49m **Lat: - 6.01°** **Long: -77.12°** **Depth: 21.5 km**

Ms: 5.1 **mb: 5.4** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	6.5°	67.8°	-96.6°
Plane B:	203.5°	23.1°	-74.3°

	Trend	Plunge
Axe P:	264.7°	66.6°
Axe T:	101.5°	22.5°
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 106 **DATE: JUN 06 1990**

Time: 02h 01m **Lat: - 6.13°** **Long: -77.2 °** **Depth: 25.3 km**

Ms: 5.0 **mb: 5.1** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	42.4°	72.3°	131.4°
Plane B:	151.3°	44.4°	25.7°

	Trend	Plunge
Axe P:	103.0°	16.8°
Axe T:	354.8°	46.0°
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 107 **DATE: JUN 09 1990**

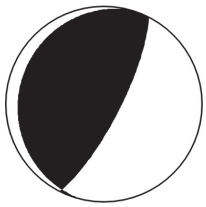
Time: 01h 14m **Lat: - 6.06°** **Long: -77.13°** **Depth: 25.6 km**

Ms: 4.9 **mb: 5.5** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	27.0°	77.0°	93.0°
Plane B:	194.0°	13.3°	77.3°

	Trend	Plunge
Axe P:	114.5°	31.9°
Axe T:	301.0°	57.9°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 108 **DATE: APR 04 1991**

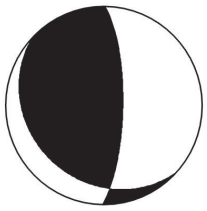
Time: 15h 23m **Lat: - 6.03°** **Long: -77.13°** **Depth: 20.7 km**

Ms: 6.3 **mb: 6.0** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	1.0°	74.0°	107.6°
Plane B:	132.0°	23.6°	43.5°

	Trend	Plunge
Axe P:	77.1°	26.9°
Axe T:	294.4°	57.4°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 109 **DATE: APR 04 1991**

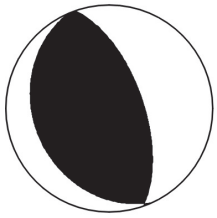
Time: 16h 08m **Lat: - 5.99°** **Long: -77.08°** **Depth: 28.7 km**

Ms: **mb: 5.2** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	341.0°	63.0°	92.7°
Plane B:	155.0°	27.1°	84.7°

	Trend	Plunge
Axe P:	69.0°	18.0°
Axe T:	257.2°	71.9°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 110 **DATE: APR 05 1991**

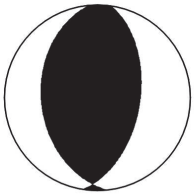
Time: 04h 19m **Lat: - 5.98°** **Long: -77.09°** **Depth: 19.8 km**

Ms: 6.8 **mb: 6.5** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	9.0°	52.0°	99.4°
Plane B:	174.0°	39.0°	78.2°

	Trend	Plunge
Axe P:	92.3°	6.6°
Axe T:	321.0°	80.1°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 111 **DATE: APR 05 1991**

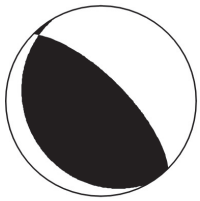
Time: 05h 01m **Lat: - 5.81°** **Long: -77.33°** **Depth: 24.1 km**

Ms: **mb: 5.5** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	315.0°	70.0°	84.8°
Plane B:	150.0°	20.6°	104.1°

	Trend	Plunge
Axe P:	49.1°	24.8°
Axe T:	216.3°	64.6°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 112 **DATE: APR 05 1991**

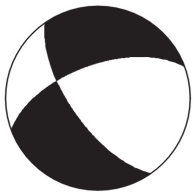
Time: 17h 13m **Lat: - 6.0 °** **Long: -77.0 °** **Depth: 42.7 km**

Ms: **mb: 5.2** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	250.0°	60.0°	-151.8°
Plane B:	145.0°	65.9°	-33.2°

	Trend	Plunge
Axe P:	105.5°	40.0°
Axe T:	198.6°	3.7°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 113 **DATE: APR 06 1991**

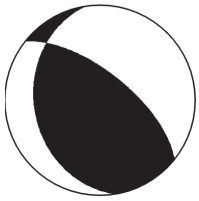
Time: 14h 21m **Lat: - 6.04°** **Long: -76.9 °** **Depth: 40.3 km**

Ms: **mb: 5.1** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	308.5°	66.0°	69.9°
Plane B:	170.5°	30.9°	127.7°

	Trend	Plunge
Axe P:	53.4°	18.6°
Axe T:	185.6°	63.4°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 114 **DATE: APR 07 1991**

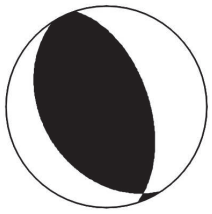
Time: 23h 16m **Lat: - 6.04°** **Long: -77.18°** **Depth: 33.0 km**

Ms: **mb: 5.0** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	342.0°	55.0°	98.7°
Plane B:	147.0°	35.9°	77.8°

	Trend	Plunge
Axe P:	65.0°	9.6°
Axe T:	283.1°	78.0°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 115 **DATE: APR 12 1991**

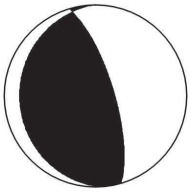
Time: 03h 50m **Lat: - 5.75°** **Long: -77.05°** **Depth: 33.0 km**

Ms: 4.5 **mb: 5.2** **Mw:** **Region: Northern subandes**

Reference: Tavera, H. (1993b).

	Strike	Dip	Slip
Plane A:	343.5°	73.0°	85.5°
Plane B:	178.5°	17.6°	104.3°

	Trend	Plunge
Axe P:	77.1°	27.9°
Axe T:	246.8°	61.7°
Axe X:		
Axe Y:		
Axe Z:		



Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.

SEISMIC EVENT N°: 116 **DATE: APR 18 1993**

Time: 09h 16m **Lat: -11.75°** **Long: -76.62°** **Depth: 94.0 km**

Ms: **mb:5.7-5.8Mw:** **Region: Central coast**

Reference: Tavera, H. (1993c).

	Strike	Dip	Slip
Plane A:	8.0°	55.0°	-98.7°
Plane B:	203.0°	35.9°	-77.8°

	Trend	Plunge
Axe P:	246.9°	78.0°
Axe T:	104.3°	9.6°
Axe X:		
Axe Y:		
Axe Z:		

Seismic Moment (Mo):

Source-Time function:

Comment: P-wave first motion.