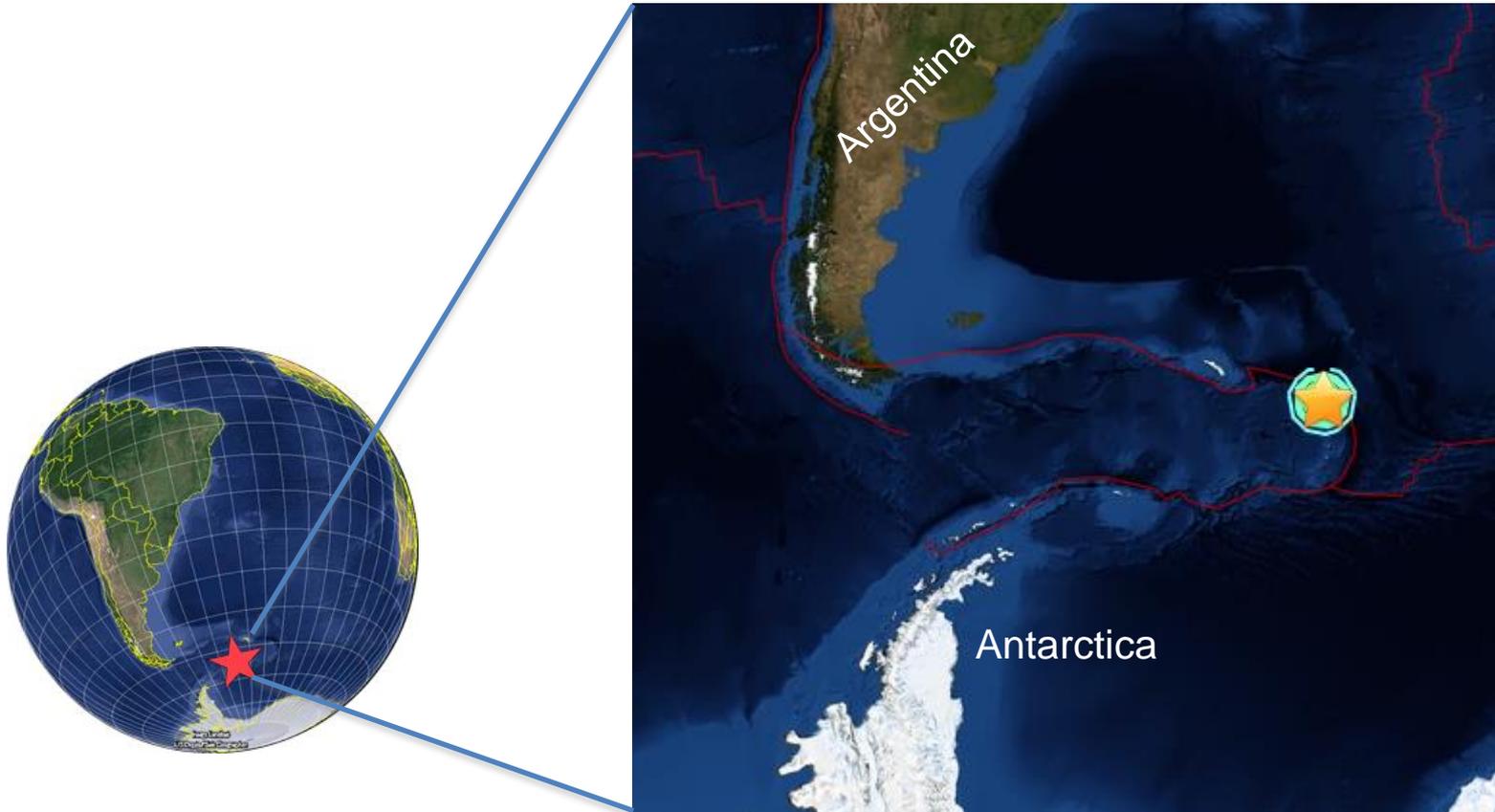


Magnitude 7.2 SOUTH SANDWICH ISLANDS

Saturday, May 28, 2016 at 09:46:59 UTC

A magnitude 7.2 earthquake occurred in the South Sandwich Islands, an uninhabited British territory off the coast of Argentina in the southern Atlantic Ocean.



Epicenter from U.S. Geological Survey

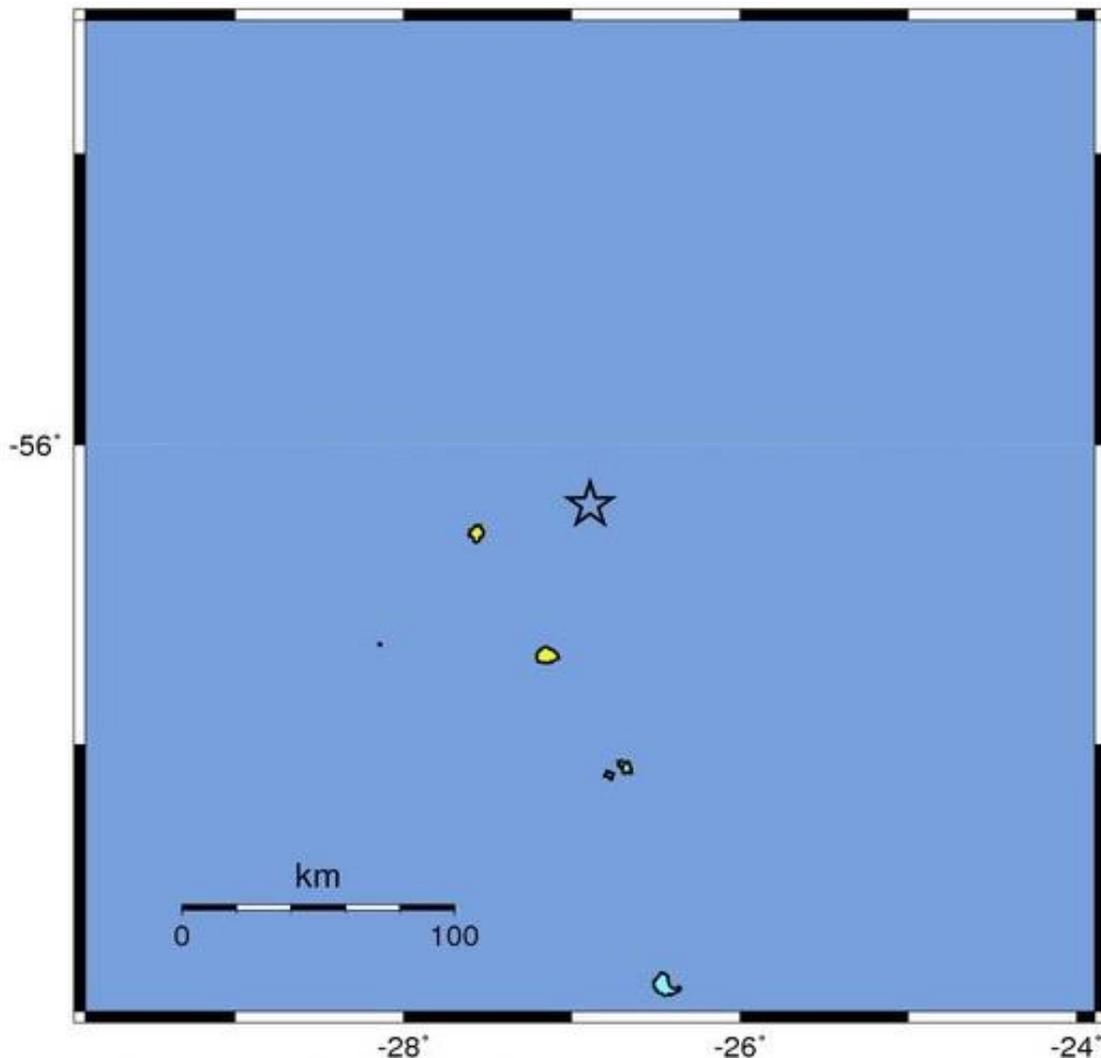
Magnitude 7.2 SOUTH SANDWICH ISLANDS

Saturday, May 28, 2016 at 09:46:59 UTC

The Modified-Mercalli Intensity scale is a twelve-stage scale, from I to XII, that indicates the severity of ground shaking.

The area nearest the epicenter experienced strong shaking.

Modified Mercalli Intensity	Perceived Shaking
X	Extreme
IX	Violent
VIII	Severe
VII	Very Strong
VI	Strong
V	Moderate
IV	Light
II-III	Weak
I	Not Felt



Magnitude 7.2 SOUTH SANDWICH ISLANDS

Saturday, May 28, 2016 at 09:46:59 UTC

USGS PAGER

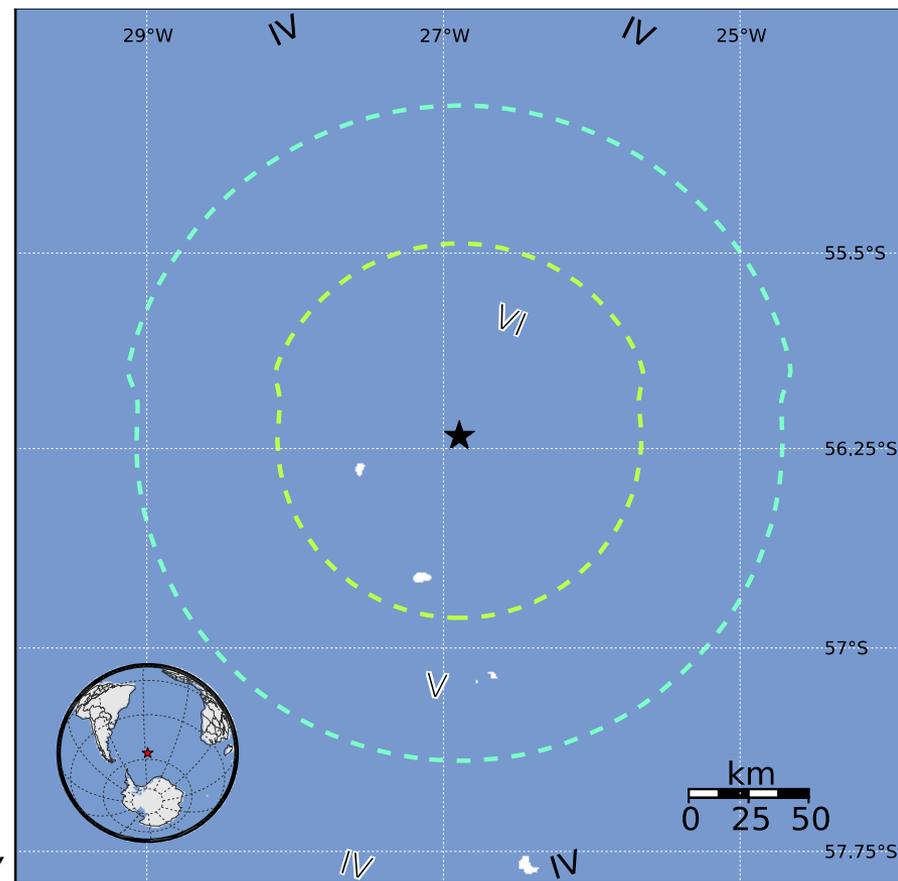
Population Exposed to Earthquake Shaking

The USGS PAGER map shows the population exposed to different Modified Mercalli Intensity (MMI) levels.

The USGS estimates that no cities experienced shaking from this earthquake. Likely, only scientists at nearby research stations felt this earthquake.

The color coded contour lines outline regions of MMI intensity. The total population exposure to a given MMI value is obtained by summing the population between the contour lines. The estimated population exposure to each MMI Intensity is shown in the table below.

Image courtesy of the US Geological Survey

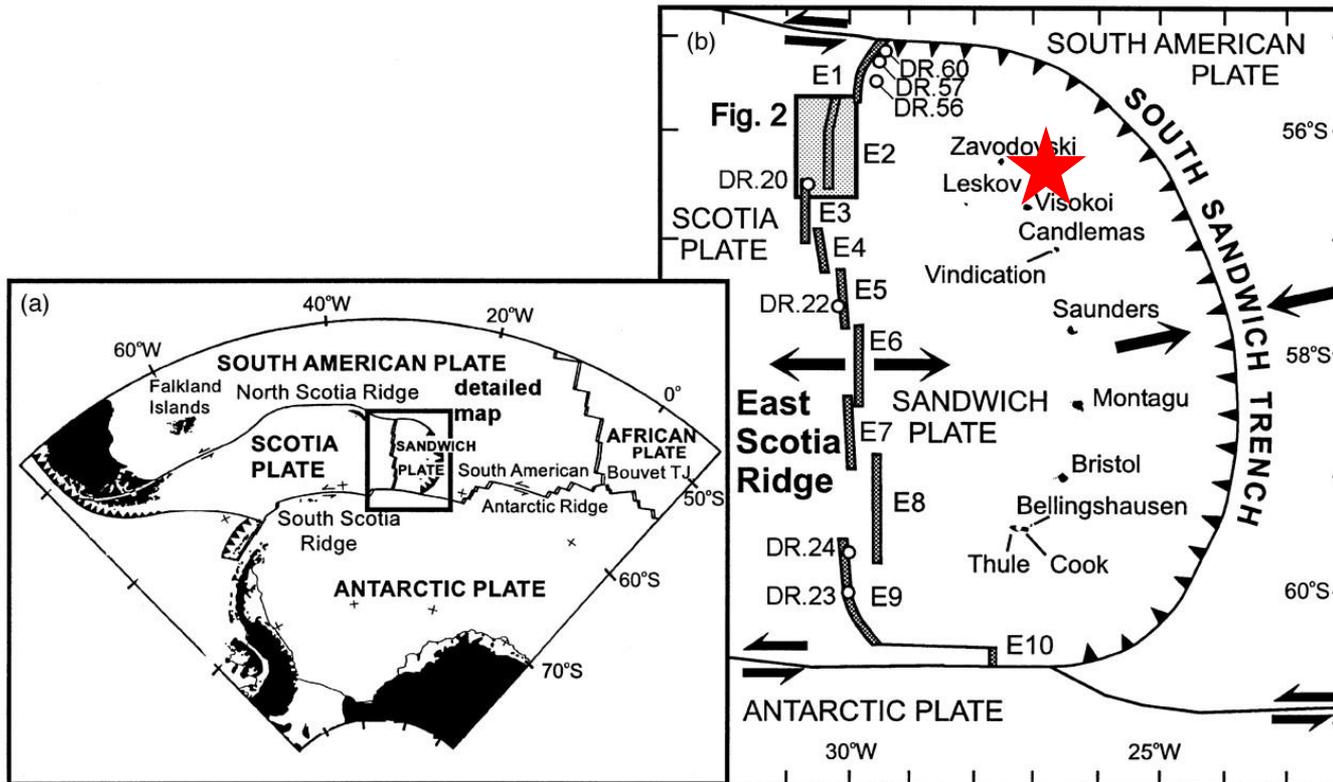


Estimated Modified Mercalli Intensity	I	II-III	IV	V	VI	VII	VIII	IX	X
Est. Population Exposure	--*	--*	--*	0k	0k	0k	0k	0k	0k
Perceived Shaking	Not Felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme

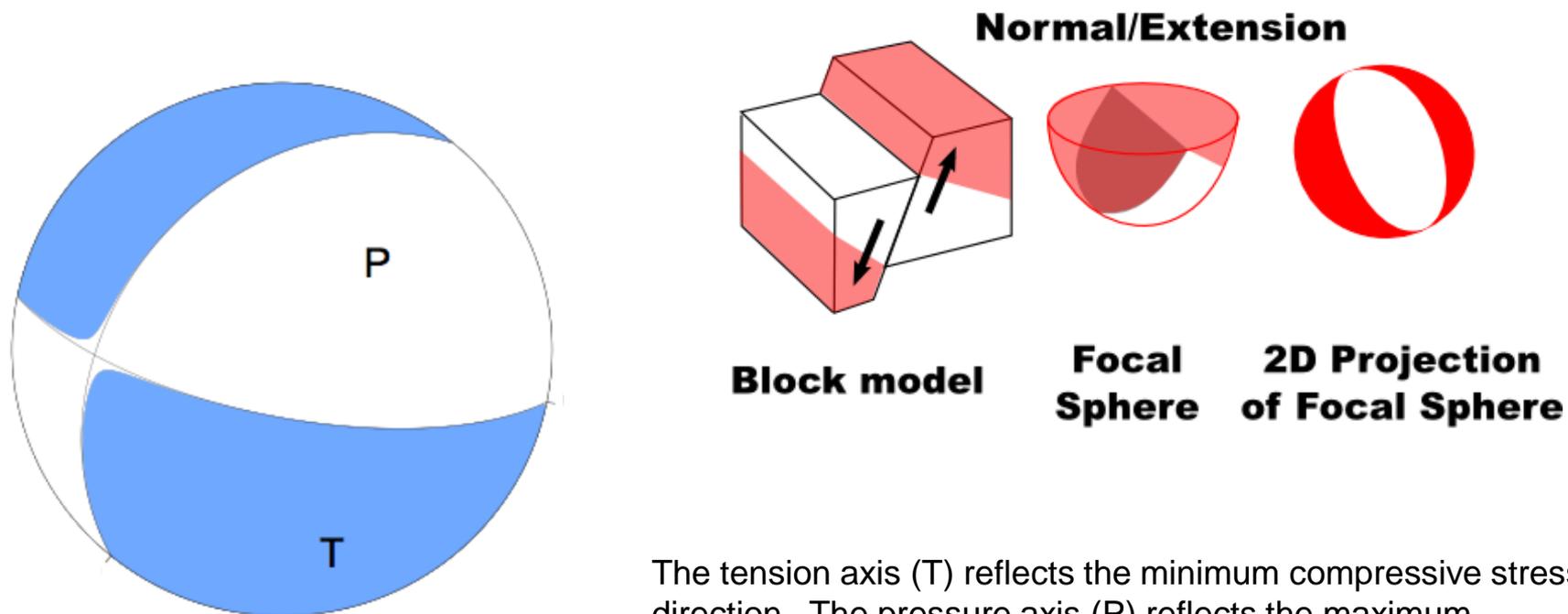
Magnitude 7.2 SOUTH SANDWICH ISLANDS

Saturday, May 28, 2016 at 09:46:59 UTC

According to the USGS, the earthquake epicenter (red star) is located 58 km (36.0 mi) NNE of Visokoi Island near the convergent plate boundary where the South American Plate subducts beneath the Sandwich Plate. In the region of this earthquake, the South America Plate subducts at a rate of ~ 7 cm/yr.



According to the USGS: “Focal mechanisms indicate that the earthquake resulted from oblique-normal faulting on either an east-striking, steeply-dipping fault, or on a southwest-striking, moderately-dipping fault. Slip on a fault of either orientation would accommodate the down-dip extension of the South American slab that is implied by the normal-component of the faulting solution.”

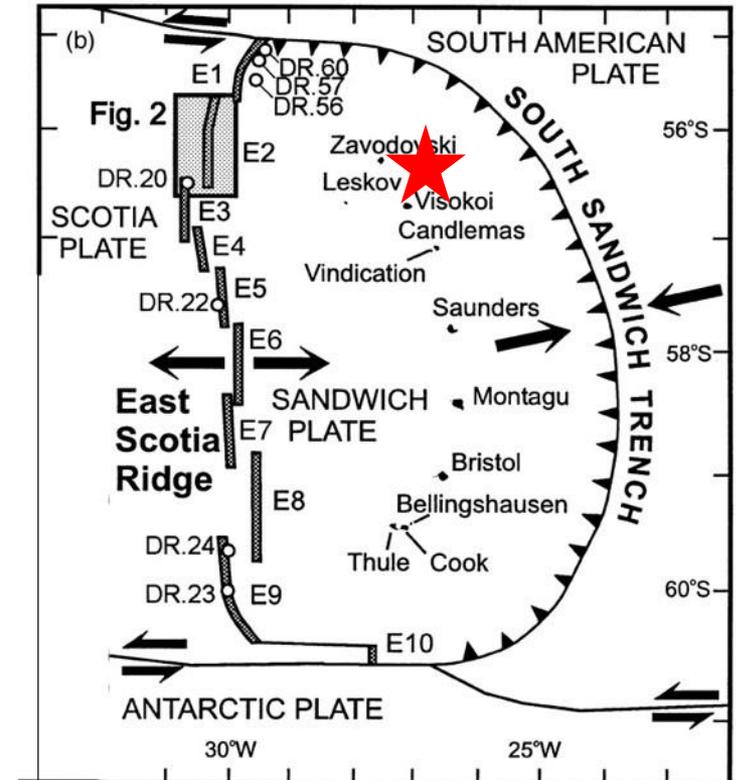
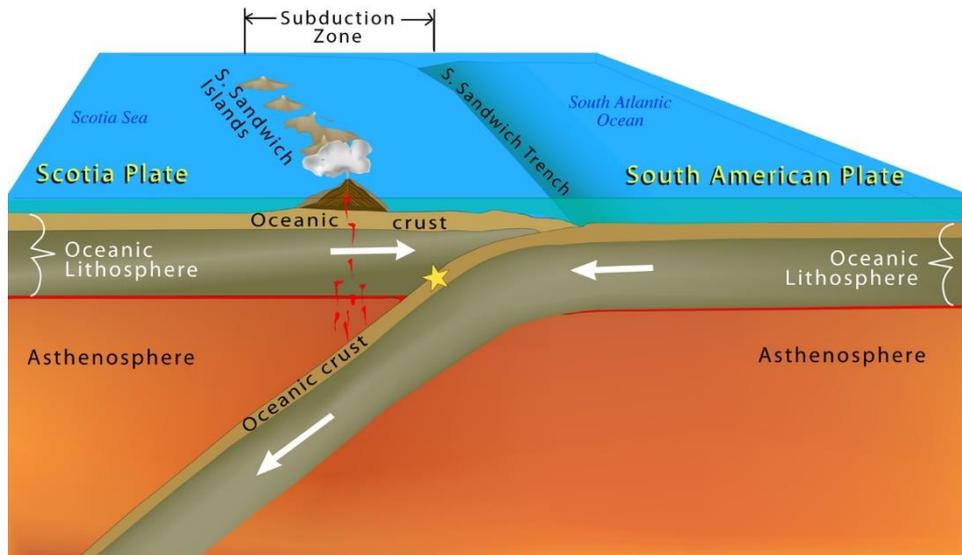


The tension axis (T) reflects the minimum compressive stress direction. The pressure axis (P) reflects the maximum compressive stress direction.

Magnitude 7.2 SOUTH SANDWICH ISLANDS

Saturday, May 28, 2016 at 09:46:59 UTC

Given the 72.7 km depth of the hypocenter and the normal-faulting focal mechanism, this earthquake likely occurred within the upper portion of the subducting South American Plate rather than on the plate boundary interface.



Excerpt from IRIS animation
on ocean-ocean subduction

(“Subduction zone—
Kermedec Trench & Vanuatu Islands”)



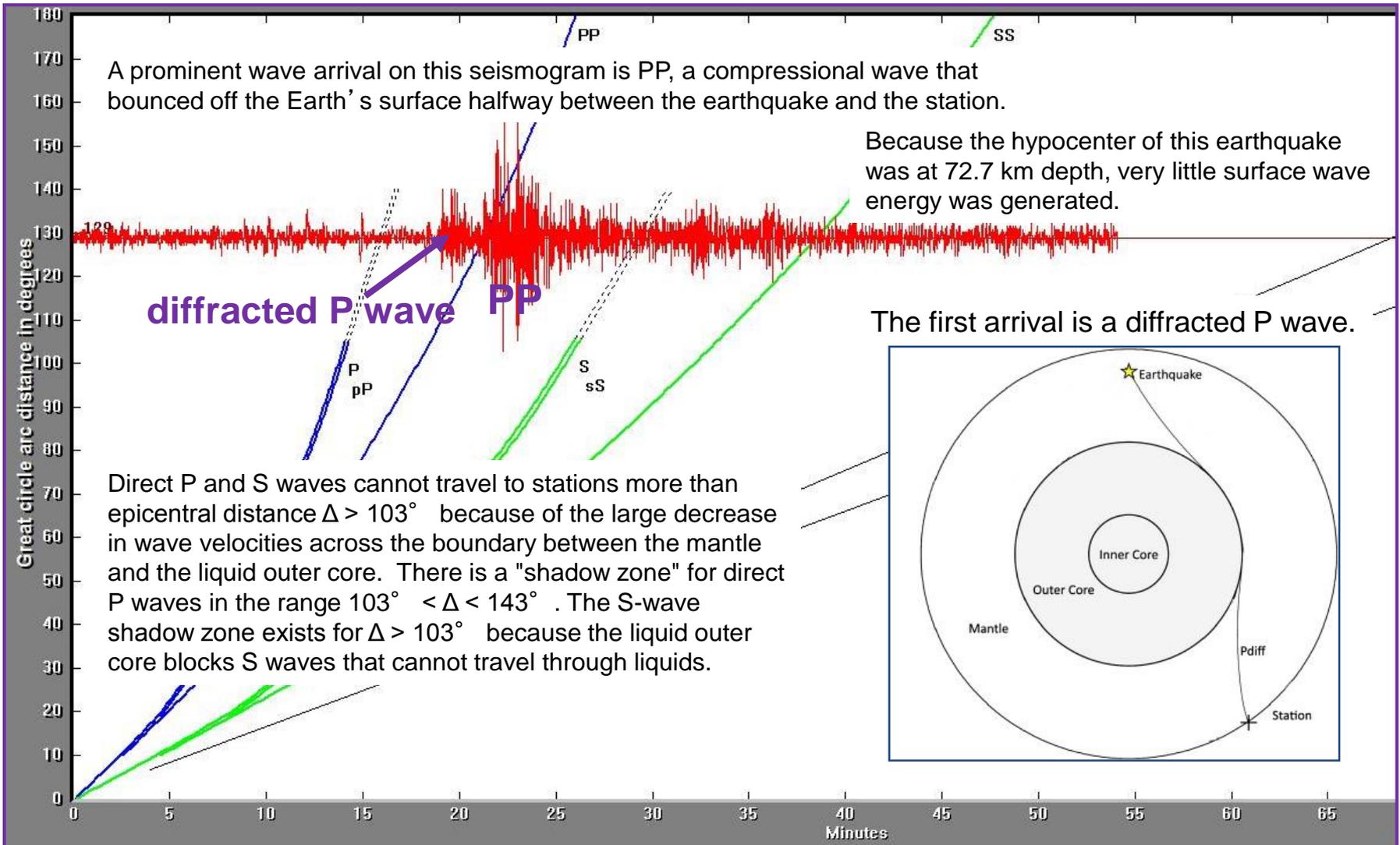
To see entire video
url is at the end
of this short.

Exploring earthquakes in ocean-ocean subduction zones

Magnitude 7.2 SOUTH SANDWICH ISLANDS

Saturday, May 28, 2016 at 09:46:59 UTC

The record of the earthquake on the University of Portland seismometer (UPOR) is illustrated below. Portland is 14,352 km (8919 miles, 129.3°) from the location of this earthquake.



Animation explaining the seismic shadow zone.

Epicentral distance is the angle formed by the intersection of the line from the earthquake to Earth's center with the line from the observing point to the Earth's center.

S waves are seen up to a distance of 104° from an earthquake, but direct S waves are not recorded after this distance.

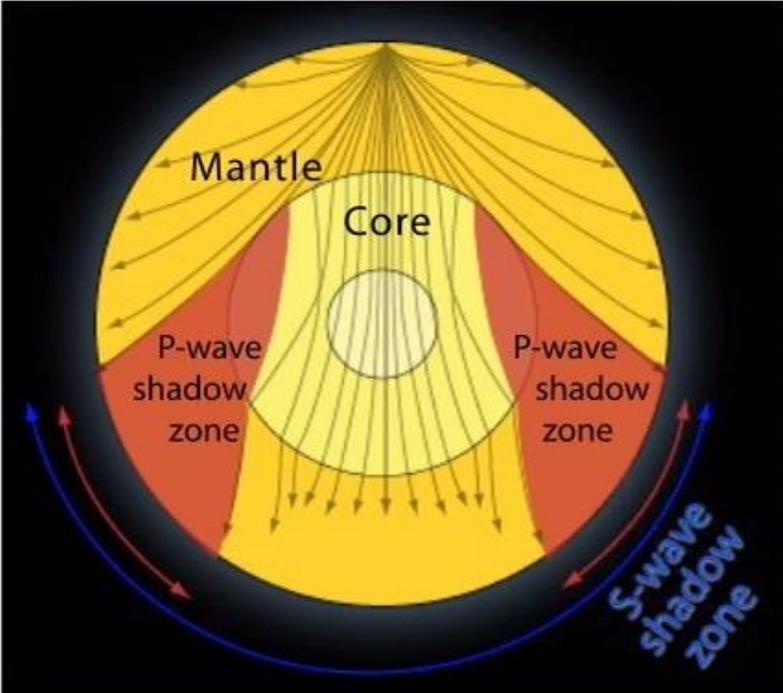
P waves also have a shadow zone between 104° and 143°

1.ShadowZones_640_med

File Edit View Window Help

 **Seismic Shadow Zones** 

How the mantle and core were determined using the arrival times of direct P and S body waves



P waves (primary) are compressive waves that travel through solids & liquids.

S waves (secondary) are shear waves that travel through solids only.

Mantle

Core

P-wave shadow zone

P-wave shadow zone

S-wave shadow zone

00:00:00



Teachable Moments are a service of

The Incorporated Research Institutions for Seismology
Education & Public Outreach
and
The University of Portland

Please send feedback to tkb@iris.edu

