

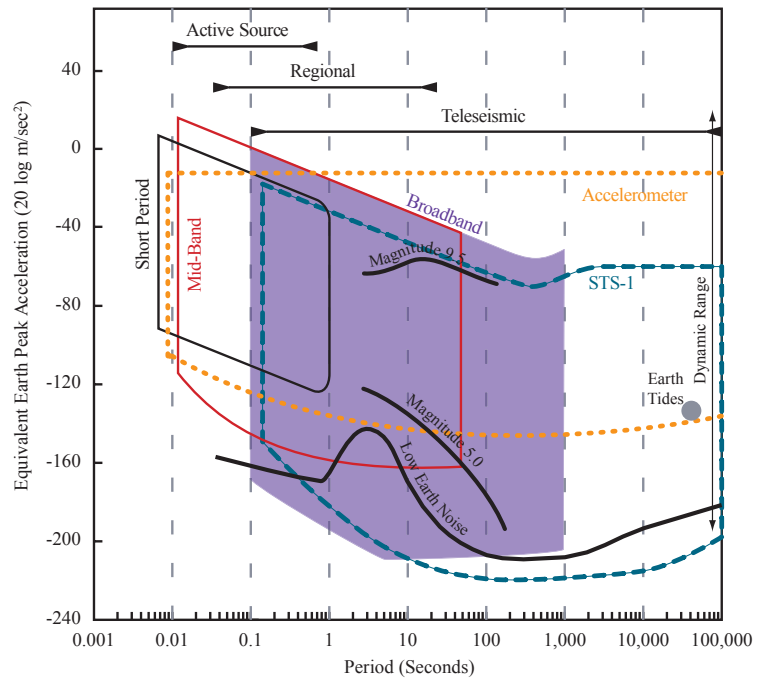
Program for Array Seismic Studies of the Continental Lithosphere

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The PASSCAL Sensors

The IRIS PASSCAL Instrument Center maintains sensor pools for both PASSCAL and USArray Flexible Array experiments. The equipment is loaned to research scientists to investigate Earth's structure, deformation, and history. PASSCAL experiments typically target questions of Earth structure and history ranging from the uppermost crust down to the deep interior, using both artificial and natural sources of seismic energy. Data from PASSCAL experiments also illuminate short-term deformation processes: earthquakes, volcanic eruptions, and tremor episodes. Recently, questions about Earth's climate and glacial processes are being investigated. Flexible Array instruments are being used to increase resolution of key areas within the larger USArray Transportable Array.

Sensors available for loan to principal investigators range from broadband three-component seismometers to high-frequency, single-component geophones. Broadband deployments typically record continuously for several years, most often as arrays of stand-alone stations. Earthquakes and other seismic sources recorded during the experiments provide data



Sensor Inventory

Sensor Type	PASSCAL	Flexible Array
Broadband	450	121
Mid-Band	100	
Short-Period	190	100
High-Frequency	420	
Single Component High-Frequency	3000	1610

for mapping Earth structure on a variety of scales, as well as investigating regional and global tectonics. Active-source experiments use a large number of closely-spaced stations programmed to record artificial energy sources at high sample rates over the course of days or weeks. The high-frequency sources and close station spacing of these experiments can resolve fine structure of the crust and upper mantle and yield clues to their long-term history.

