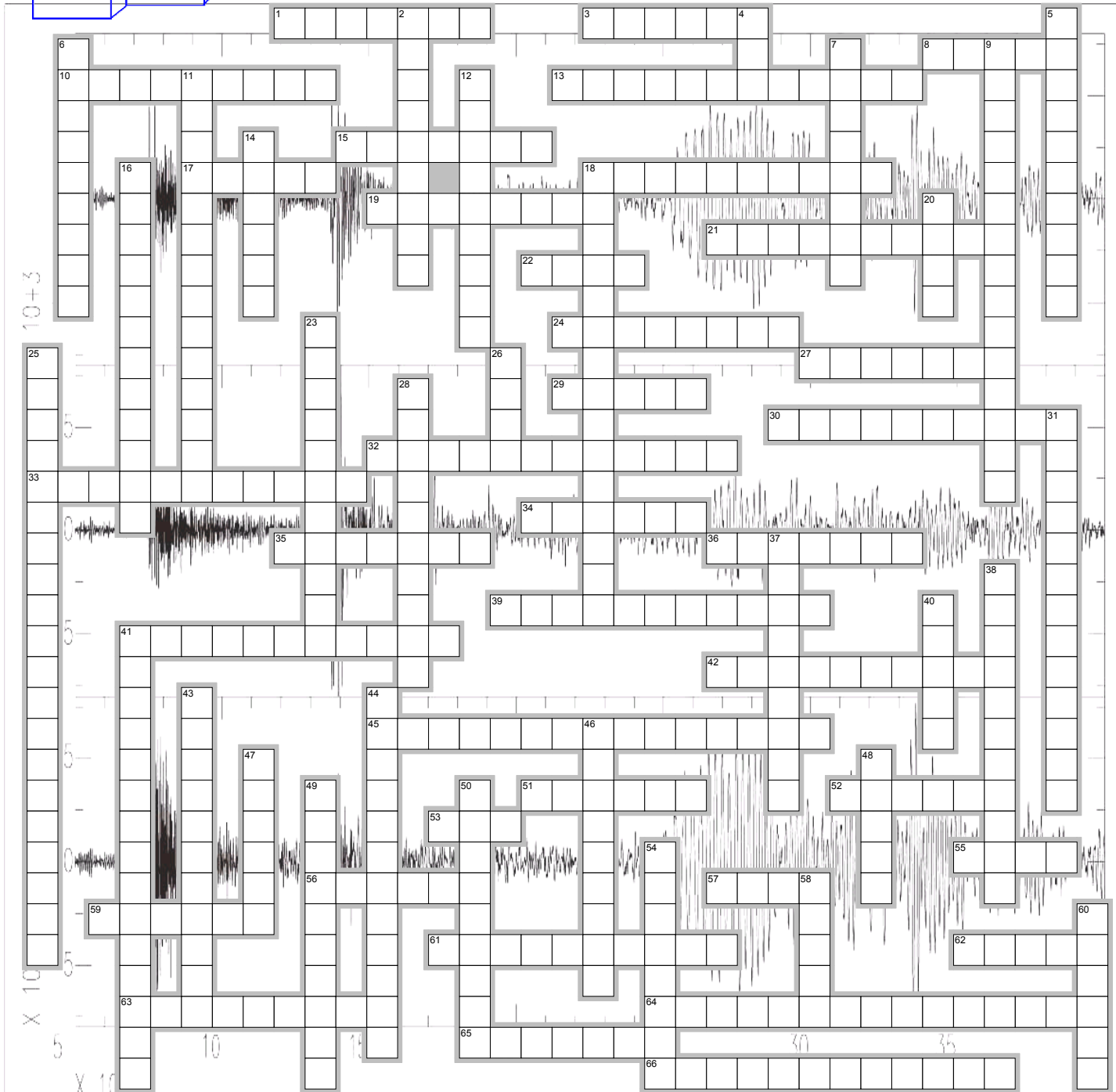


# SEISMOLOGY

SDSU Department of Geological Sciences, November, 2007



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## Across

1. The mass per unit volume of a substance, commonly expressed in grams per cubic centimeter.
3. The time interval between successive crests in a sinusoidal wave train.
8. An ordered arrangement of seismometers or geophones, the data from which feeds into a central receiver.
10. The maximum height of a wave crest or depth of a trough.
13. (3 words) A fault in which the relative displacement is along the direction of dip of the fault plane; the offset is either normal or reverse.
15. An area of fault surface that is resistant to slip because of geometrical or structural changes.
17. (2 words) Also called shear, secondary, rotational, tangential, equivoluminal, distortional, transverse, or shake wave.
18. The occurrence of earthquakes in space and time.
19. (2 words) A major type of surface wave having a horizontal motion that is shear or transverse to the direction of propagation.
21. (2 words) The area on the Earth's surface protected from seismic wave arrivals.
22. The odds of an earthquake occurring and causing damage within a given time interval and region.

24. (2 words) A seismic wave that can travel through the interior of the earth. P-waves and S-waves.
27. The appearance of seismic energy on a seismic record.
29. The unit of frequency equal to 1 cycle per second, or 2 PI radians per second.
30. A more or less continuous motion in the Earth that is unrelated to an earthquake and that has a period of 1.0 to 9.0 seconds. It is caused by a variety of natural and artificial agents.
32. (2 words) Dextral fault
33. (2 words) A fault along which slip has occurred in recent geological time, or where earthquake foci are located.
34. The main bulk of the Earth, between the crust and the core, ranging from depths of about 40 to 3470 kilometers. It is composed of dense silicate rocks and divided into a number of concentric shells.
35. Loss of energy in wave motion due to transfer into heat by frictional forces.
36. To bounce back from a surface that represents an acoustic impedance contrast.
39. The sensor part of the seismograph usually a suspended pendulum.
41. (2 words) Sinistral fault
42. (2 words) The plane that most closely coincides with the rupture surface of a fault.
45. (2 words) The slip on the fault has components both along the dip and along the strike of the fault.
51. The layout of seismometer or geophone groups from which data from a single shot (the explosive charge) are recorded simultaneously.
52. A measure of earthquake size related to the leverage of the forces (couples) across the area of the fault slip. The rigidity of the rock times the area of faulting times the amount of slip. Dimensions are dyne-cm (or Newton-meters).
53. A narrow geological depression found in strike-slip fault zones.
55. The innermost layers of the Earth.
56. A free or standing wave oscillation of the surface of water in an enclosed basin that is initiated by earthquakes.
57. The relative motion of one face of a fault relative to the other.
59. The geometrical deformation or change in shape of a body. The change in an angle, length, area, or volume divided by the original value.
61. The forecasting in time, place, and magnitude of an earthquake; the forecasting of strong ground motions.
62. A zone of fractures or breaks in rocks where movements occur.
63. (2 words) Outer liquid shell of the Earth's core, probably iron with some oxygen; inner radius, 1221 kilometers, outer radius, 3480 kilometers.
64. An earthquake having a magnitude of 2 or less on the Richter scale.
65. A series of huge ocean waves caused by a rapid, large-scale disturbance of the sea water, such as a major earthquake beneath the seabed that causes large vertical movements.
66. (2 words) A fault along which it is mechanically feasible for sudden slip to occur.

## Down

2. (2 words) Central solid region of the Earth's core, probably mostly iron; radius about 1221 kilometers, discovered by Inge Lehmann in 1936.
4. The angle by which a rock layer or fault plane deviates from the horizontal. The angle is measured in a plane perpendicular to the strike.
5. The subsurface location (focus) at which the energy of an earthquake is released.
6. A measure of the amount of energy released during an earthquake. It may be expressed using the Richter scale.
7. Time interval between the first and last peaks of strong ground motion above a specified amplitude.
9. (2 words) The rock above the fault plane (the "hanging" wall) moves up and over the rock below ("foot" wall).
11. (2 words) A line connecting points on the Earth's surface at which earthquake intensity is the same. It is usually a closed curve around the epicenter.
12. The point on the earth's surface directly above the focus (hypocentre) of an earthquake.
14. A situation that has the possibility of occurring.
16. (2 words) Continental margin characterized by earthquakes and volcanic activity
18. The study of earthquakes and their relationships with faults.
20. The concluding train of seismic waves that follows the principal waves from an earthquake.
23. (2 words) A dip-slip fault in which the rock above the fault plane has moved downward to the rock below.
25. (2 words) Earthquake with its focus within a tectonic plate.
26. Region where the crust has split apart.
28. (2 words) An area in an earthquake-prone region where there is a below-average release of seismic energy.
31. The division of a town or county into smaller areas according to their variation in seismic hazard.
37. Number of oscillations per unit time; unit is Hertz (Hz), which equals 1 cycle per second.
38. The reduction in amplitude of a wave with time or distance traveled.
40. A cliff or steep slope formed by displacement of the ground surface.
41. (3 words) Any layer in the Earth in which seismic wave velocities are lower than in the layers above and below.
43. (2 words) A reverse fault in which the upper rocks above the fault plane move up and over the lower rocks at an angle of 30 or less so that older strata are placed over younger.
44. Tightly packed. Composed of particles that are not easily separated.
46. An earthquake that is smaller than, and precedes, a "mainshock".
47. A crustal block of rock generally long and narrow, that has dropped down along boundary faults relative to the adjacent rocks.
48. In a fault zone, crushed, sheared, and powdered rock altered to clay.
49. The study of earthquakes, seismic sources, and wave propagation through the Earth.
50. Imaginary surface or line that joins points at which the waves from a source are in phase.
54. An area with no record of earthquakes.
58. (2 words) Also called primary, longitudinal, irrotational, push, pressure, dilatational, compressional, or push-pull wave.
60. A measure of the forces acting on a body in units of force per unit area.