Orienting Broadband Sensors

True North (geographic North) is the convention for orienting sensors in what’s known as passive experiments, i.e. generally recording earthquakes, as opposed to controlled sources. You must know the declination angle between true North and magnetic North at the station site and you must know how to properly correct for the declination. If you do not know this, find someone who does; otherwise use magnetic North and make sure you write that on the Installation Sheet. (You will use this information later to construct accurate metadata for the station.)

Generally you will draw a properly oriented line on the concrete pad or patio block on which you will subsequently place the sensor. The line will guide you to orient the sensor. Using a compass, you must determine the direction to true north and then scribe a line (permanent marker pen and a straight edge will do) on the sensor pad. Please indicate which end of the line is north. You will need an East/West line if you are installing an STS-2 and using its aligning rod which fits into a hole on the side of the STS-2 and should be oriented so that the rod points eastward. Guralp sensors have ‘pins’ for orientation alignment to a North/South line: the brass pin at the base of the sensor should point north; the stainless steel pin should point south. The letter ‘N’ should be inscribed on the base of the Guralp sensor below the brass pin, which is simply one of the screws attaching the sensor’s cylindrical case to its base.

Once the sensor is oriented, have someone else in the field party independently check your work.

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