Analysis of regional seismograms and 3D synthetic seismograms for the 2016-01-24 $M_{\rm w}$ 7.1 Iniskin earthquake in southern Alaska

Carl Tape, ctape@alaska.edu

Geophysical Institute, University of Alaska Fairbanks

Version 1: November 3, 2016
Version 2: November 6, 2016
Version 3: November 6, 2016
Version 4: November 29, 2016
Version 5: December 6, 2016
This document is downloadable as a pdf via the link listed in <i>Tape</i> (2016b).

Contents

1	Synthetic seismograms	2
	1.1 Description of wavefield simulation [copy of notes in <i>Tape</i> (2016a)]	2
	1.2 Synthetic seismograms in this report	3
2	Recorded seismograms	4
3	Analysis	4
	3.1 Analysis #1: Comparison of long-period data and synthetics \ldots	4
	3.2 Analysis #2: Check for clipping threshold \ldots	5
	3.3 Summary points	5
	3.4 Take-away points and questions	7
4	Summary of revisions to report	8
R	ferences	9

List of Tables

1	Number of stations in each category	2
2	81 stations with "good" seismograms, sorted by epicentral distance	10
3	81 stations with "good" seismograms, grouped by network	11
4	60 stations with "bad" seismograms, sorted by epicentral distance	12
5	60 stations with "bad" seismograms, grouped by network	13
6	Max-count values for stations with "good" seismograms	14
7	Max-count values for stations with "bad" seismograms	15

List of Figures

-		10
1	Map of simulation region used in this study	16
2	Map of stations	17
3	Map of stations in Cook Inlet region	18
4	Map of stations $\Delta < 250$ km with good records $\ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots$	19
5	Record section of good stations $(\Delta < 250 \text{ km}) \dots \dots \dots \dots \dots \dots \dots \dots \dots$	20
6	Map of stations $\Delta \ge 250$ km with good records	21
7	Record section of good stations ($\Delta \ge 250 \text{ km}$)	22
8	Map of stations with bad records	32

9	Record section of bad stations	33
10	Peak displacement vs distance for all good stations	41
11	Peak displacement vs distance for all good stations ($\Delta = 500-700$ km) \ldots .	42
12	Record section of bad stations	43

Overview

I perform two analyses to identify cases of seismogram clipping or other problems (e.g., data gaps) for the 2016-01-24 $M_{\rm w}$ 7.1 Iniskin, Alaska, earthquake. The first analysis is a comparison of synthetic and observed seismograms: three-component, displacement seismograms filtered between periods 4–80 s. The subset of 141 stations is limited to an oblique rectangular region that is 1200 km \times 600 km (Figures 1 and 2) and used in a seismic wavefield simulation with a three-dimensional seismic velocity model. I identify 60 out of 141 stations that are suspected of clipping or other problems. Of the 81 good stations, only 8 are within 250 km of the Iniskin epicenter, and all 8 stations are outside of Cook Inlet basin, which strongly amplifies ground motion (both in data and in synthetics). The second, much simpler, analysis is to identify clipping based on the maximum counts on the waveforms. The max-counts approach reveals general agreeement with the classification based on long-period data and synthetics. The analysis suggests that (1) some recorded waveforms that exceed clipping levels may still be usable for some modeling purposes, and (2) some recorded waveforms that appear to be suitable for modeling purposes should probably be discarded due to clipping at high frequencies. The identification of suspected stations, along with the waveform comparisons, may help network operators assess the possibility of unexpected performance during the $M_{\rm w}$ 7.1 slab earthquake.

Table 1:	Number	of stations in	each category,	separated b	oy epicentral	distance.	All 141	stations
are withi	n the sim	ulation region	of Figure 1.					

	$\Delta < 250~{\rm km}$	$\Delta \geq 250~\mathrm{km}$	all distances
"good" stations	8	73	81
"bad" stations	40	20	60
all stations	48	93	141

1 Synthetic seismograms

Synthetic seismograms were calculated from a wavefield simulation in a 3D seismic velocity model for Alaska. The details of the wavefield simulation are in *Tape* (2016a) and copied in Section 1.1. The synthetics from this report have some minor modifications, discussed in Section 1.2. The simulation region is shown in Figure 1; it is the same simulation used in *Tape* (2014) for the 1964-03-28 $M_{\rm w}$ 9.2 earthquake.

1.1 Description of wavefield simulation [copy of notes in Tape (2016a)]

For a zoomed-in version of this movie, please see https://youtu.be/KdiETNfyaUo Also: http://www.giseis.alaska.edu/input/carl/research/earthquakes/iniskin.html This is a 1200 km by 600 km oblique view of southern Alaska; some cities are labeled for reference: Kodiak (K), Homer (H), Kenai (K), Seward (S), Anchorage (A), Palmer (P), Cantwell (C), Nenana (N), and Fairbanks (F). This computer simulation shows a surface view of three-dimensional earthquake wave propagation of the magnitude 7.1 Iniskin earthquake on January 24, 2016; the epicenter is represented by the blue ball. The earthquake originated at about 120 km depth, within the subducting Pacific plate. The earthquake was felt over much of Alaska, from Anchorage to Fairbanks. The simulation demonstrates the complexity of the seismic wavefield that arises from realistic models of Earth structure. We see a striking effect due to the slow wave speeds within Cook Inlet sedimentary basin. The simulation was performed on the high-performance computing cluster at the University of Alaska Fairbanks, Research Computing Systems. The 3D wave propagation code is called SPECFEM3D (*Komatitsch et al.*, 2004). Credit: Carl Tape

A MESH. The finite element mesh was generated with the GEOCUBIT software (Casarotti), an extension of CUBIT software to geological structures. The unstructured mesh is designed to optimally handle slow wave speeds near the surface and faster wave speeds in the upper mantle. The mesh contains 4,696,704 hexahedral elements that are largest at the bottom of the mesh, at 400 km below sea level, and smallest at the topographic surface. There are 312 million gridpoints in the mesh; the gridpoint spacing at the surface is about 200 m. The topographic detail that is visible in the movie is the actual top surface of the mesh. Denali is within the simulation region. (You can see places where the topography influences the wavefield.)

Credits: Ulrika Cahayani Miller and Emanuele Casarotti

B STRUCTURE MODEL. The Earth structure model is that of *Eberhart-Phillips et al.* (2006), with an embedded model of Cook Inlet basin (*Shellenbaum et al.*, 2010). The effects of Cook Inlet basin (west of Anchorage) on the wavefield are prominent. The ocean layer is ignored but is not expected to influence the wavefield at these periods. Active faults of Alaska, including the Denali fault (M_w 7.9 on 2003-11-02), are plotted in white (*Koehler et al.*, 2012).

The model does not incorporate the shallowest structural models, such as the USGS Vs30 maps, which provide the shear-wave velocities in the uppermost 30 m (http://earthquake.usgs.gov/hazards/apps/vs30/predefined.php). The structure of Cook Inlet basin is modeled as the generic basin model of *Brocher* (2008). As far as I know, there is no publicly available model of the 1D or 3D seismic structure of Cook Inlet basin. (If there is, please let me know!)

C SOURCE MODEL. The earthquake is represented by a simple point-source model known as a moment tensor. The source-time function is approximated as a simple Gaussian function with a half duration of 2 seconds. At present (2016-01-26), seismologists are working to estimate a more complex and accurate source model for this earthquake; we anticipate using such a source model for future simulations.

Credits: Vipul Silwal and the Alaska Earthquake Center

- D COMPUTATION. The simulation used a time step of 0.006 s and iterated 44,000 time steps. The calculation took 10.0 hours on 240 cores (2400 CPU-hours) on the high-performance computing cluster at the University of Alaska Fairbanks, Research Computing Systems.
- E WHAT YOU SEE. The scalar field that is plotted is the simulated vertical component of ground velocity. The simulation keeps track of all three components of ground motion. (Alternatively one could plot ground displacement or acceleration.) The two pulses at the beginning correspond to the P wave and the S wave, which is followed by surface waves.

1.2 Synthetic seismograms in this report

The synthetic seismograms presented in this report are slightly different from those computed to make the movie discussed above. First, we use the origin time, hypocenter, and moment tensor from the GCMT catalog (*Ekström et al.*, 2012). Second, after comparing observed and synthetic seismograms, we apply a magnitude correction to the synthetic seismograms. The uncorrected magnitude is $M_{\rm w}$ 7.11. After cutting the scalar seismic moment in half, the corrected moment magnitude is $M_{\rm w}$ 6.91. (Note that the seismogram displacement is proportional to moment M_0 .)

At this stage, it is unclear why a lower magnitude is needed to fit the observed seismograms. One possibility could be that our simulation does not consider attenuation, which could be strong within Cook Inlet basin and other regions. Turning on attenuation would result in a larger magnitude in order to fit the observed seismic amplitudes. However, we are analyzing relatively long periods (4–80 s), where we might expect the effects of attenuation to be less pronounced. Another possibility for the magnitude correction is based on the source duration. Based on empirical scaling between moment and half duration, one would expect a half duration of 9.36 s for a point source with the magnitude of the Iniskin earthquake (and 7.43 s for the halved-moment earthquake). We used a half duration of 2.0 s in order to examine the influence of the regional structures on the shorter-period wavefield. It is possible that a longer source duration, or a more realistic finite-source model, would produce synthetic seismograms that would better match the observed amplitudes.

2 Recorded seismograms

Almost all seismograms and station metadata were retrieved from the IRIS Data Management Center. Seismograms were processed using ObsPy (*Beyreuther et al.*, 2010; *Megies et al.*, 2011; *Krischer et al.*, 2015). The main steps involved deconvolving of the instrument response to obtain velocity seismograms, rotating to E and N to account for the sensor azimuth, detrending, integrating to displacement, then bandpass filtering over the period range 4–80 s.

We also include seismograms from the Alaska Pipeline pump stations. The seismograms are retrieved from the Alaska Earthquake Center.

3 Analysis

3.1 Analysis #1: Comparison of long-period data and synthetics

My approach was to plot record sections with recorded and synthetic seismograms superimposed. My first goal was to confirm that at least some synthetic seismograms provided reasonable fits to observed seismograms. This provided a qualitative (and quantitative, if desired) check that the source model and 3D structure model could adequately model the seismic wavefield at periods 4–80 s. A comparison between recorded and synthetic peak displacements is shown in Figure 10.

With faith in the synthetic seismograms, I then identified the observed seismograms that exhibited suspicious deviations from synthetic seismograms. In the text below, I label each station simply as one of these:

- **bad**: stations having major discrepancies between recorded and 3D synthetic seismograms on at least one of three components (Z, E, N) for displacements filtered 4–80 s. The most likely source of the discrepancies is clipping from the $M_{\rm w}$ 7.1 earthquake, but there could be other factors, too.
- good: stations having no major discrepancies between recorded and 3D synthetic seismograms. It is still possible that there are problems at these stations, but they are not apparent in this analysis.

The identification of "major discrepancies" is primarily determined from the earlier portion of the seismogram, prior to the surface waves. For example, recorded seismograms at FLATS (network XV) stations overlying Nenana basin are only fit by synthetic seismograms for the pre-surface wave arrivals. Although there are major discrepancies between recorded and synthetic waveforms, the discrepancies can be attributed to overly simple synthetics (not to the data), which, in turn, are due to the lack of any Nenana basin in the 3D model. Keep in mind that for many purposes—e.g., volcanic monitoring for hypocentral location of small events—the station response at 4–80 s may not be so important. However, it is possible that a problematic response identified at 4–80 s could be indicative of a corrupted response at other frequencies, too.

I grouped the stations based on epicentral distance (Δ) less than or greater than 250 km (Table 1). This is an arbitrary choice.

3.2 Analysis #2: Check for clipping threshold

In Tables 6 and 7, I list the maximum of the absolute value counts on each channel for each station. For each station, the max value across all components is compared against a threshold value for the digitizer. I have assumed that all stations use a 24-bit digitizer except for GSN stations (COLA, KDAK), which use 26-bit digitizers. (Please email me if the number of bits for your digitizer is incorrectly listed.) The threshold value is $q = |2^{N-1}|$, where N is the number of bits in the digitizer.

As a proxy for the squareness of waves, I list the number of timesteps for which |c(t)| > 0.8q, where c(t) is the raw seismogram in counts. This allows one to easily identify clipping values that are a single spike versus a set of squared waveforms.

3.3 Summary points

- Figure 2 shows the spatial pattern of good (black) and bad (red) stations inside the simulation region. The overall pattern shows a "bad" region that extends from the earthquake 500 km eastward to Cordova and northward to approximately 62.5° latitude. The pattern is more apparent when taking into account the following anomalies:
 - (a) All volcano observatory stations (network AV; all of which were $\Delta \leq 250$ km) were bad (Table 5), including those that were in proximity to good stations. For example, the SALMON and TA sites west of Redoubt were good, whereas the AV sites further to the north, on the more-distant Spurr, were not.
 - (b) The closest pump stations, along the Richardson Highway south of Delta (Figure 2), were bad: PS09, PS10, PS11, PS12, VMT, with distances $\Delta = 400-600$ km (Table 5). Only the most distant pump stations inside the simulation region were good: PS07 and PS08, with distances $\Delta > 600$ km. Note that pump stations have strong-motion sensors as well.
 - (c) AT.PMR, at distance 305 km and azimuth 46° (Table 2), is good¹, and it is surrounded by bad stations (Figure 2).
 - (d) AK.BGLC, to the east and at distance 559 km, is bad² is surrounded by good stations (Figure 2).
- 2. The 81 good stations are shown in Figures 5 and 7. Keep in mind that some of these recordings may still be corrupted, but from this analysis I cannot say that they are bad.
- 3. The 60 bad stations are shown in Figure 9. Keep in mind that some of these recordings may still be scientifically useful, especially a shorter periods. (Use caution!)
- 4. Within 250 km of the $M_{\rm w}$ 7.1 Iniskin earthquake, most (40/48) broadband stations were bad, including all stations overlying the Cook Inlet basin, where amplification of ground motion occurred.

¹Raw waveforms indicate that AT.PMR might be clipped; see values in Table 6.

²Raw waveforms indicate that AK.BGLC might be clipped; see values in Table 7.

There were 20 stations from SALMON (network ZE; *Tape et al.* (2015)) operating at the time of the earthquake; all but ZE.GOOS were within 250 km of the epicenter. 16/20 were bad (Table 5), 3/20 were good, and 1/20 (ZE.WFLW) was outside the simulation region. All SALMON stations are direct-burial posthole sensors.

5. The 8/48 good stations within 250 km include (Figure 5): 4 from Transportable Array (TA.P18K, TA.O18K, TA.O19K, TA.N19K), 3 from SALMON (ZE.WFLS, ZE.HLC5, ZE.HLC3), and one from GSN (II.KDAK.10).

All 8 good stations $\Delta \leq 250$ km were west of Cook Inlet basin and were either direct-burial posthole sensors or borehole sensors (Table 2).

The closest TA stations were bad: TA.O20K (52 km) and TA.Q19K (94 km) (Table 4).

- 6. There were several bad stations at epicentral distances $\Delta \geq 250$ km (Table 4). It is unclear why some stations were bad whereas nearby stations were good. Factors such as sensor type, installation type, site conditions, influence of 3D structures (such as nearby basins), and source radiation pattern need to be considered.
- 7. For the two GSN stations in the simulation region (IU.COLA at 636 km, II.KDAK at 223 km), both COLA sensors (location 00 in borehole, location 10 at surface) were good³, the II.KDAK.10 surface sensor was good, and the II.KDAK.00 borehole sensor was (barely) bad (Figure 9, Part 5)⁴. Note that GSN stations also have strong motion sensors.
- 8. The good/bad classification based on long-period data and synthetics has general agreement with a clipping classification based on max-count values, though there are some differences.

Among the good stations (Table 6), several exceeded (or were very close to) the threshold. This means that the long-period waveform comparisons look good, but the seismogram exceeded the clipping threshold. One would want to be very cautious about using these waveforms.

Among the bad stations (Table 7), only AK.SWD and several AV stations did not exceed the threshold. Natalia Rupport wrote: "SWD may have had a bad component. The sensor was replaced in August."

- 9. The peak ground displacement (periods 4–80 s), in both the data and synthetics and on each component, occurred due north of the earthquake, at SALMON station ZE.HLC3 (Figure 10).
- 10. One of the largest real anomalies between data and synthetics is for the FLATS stations (network XV; *Tape and West* (2014)) that are within Nenana basin; see Figure 7, Parts 2-3. Since there is no model of Nenana basin within our 3D velocity model in the simulation, the synthetics provide a poor approximation to the real seismograms.

The amplitude anomaly for FLATS stations are also evident in Figures 10 and 11: see stations F1TN, F2TN, F3TN, F4TN, and F5MN on the horizontal components.

11. Stations to the east exhibit higher amplitudes and extended duration, as shown in Figure 7, Parts 8–10. These longer codas are in the synthetics, too, though not as pronounced as in the data. Most of the closer stations at these azimuths are bad (Figure 2). It is unclear what the origin of the high amplitudes to the east are. Possibly the source radiation and the effects of Cook Inlet basin (or some other 3D structure) are influential.

³The raw waveforms for COLA.10 show that the seismogram clearly clipped; see values in Table 6. Nevertheless, I identify it as a "good" station based on the comparison with synthetics.

 $^{^{4}\}mathrm{The}$ raw waveforms for KDAK.10 reveal only a few points that exceeded the clipping threshold; see values in Table 7.

12. 3D synthetic seismograms provide a useful tool for analyzing recorded seismograms for problems such as clipping. The better the source model and 3D structural model, the more useful the synthetic seismograms.

One should also perform the much simpler analysis of comparing the max-count values on the raw seismograms with thresholds from the digitizers, as in Tables 6 and 7.

3.4 Take-away points and questions

- 1. The goal is to determine which seismograms are not showing true ground motion. Clipping in the extreme form of squared waveforms that exceed the clipping threshold value of the digitizer—is one example. There are subtler cases of clipping where possibly part of a waveform—and at a particular frequency range—is accurate while another part is not.
- 2. How reliable is a waveform's shape and amplitude if it has been clipped? In other words, can it still be filtered at some period range and be used for modeling purposes?
- 3. Why does clipping occur at one station but not the other? Can we hope to understand this?
- 4. It seems possible to quantify the severity of clipping based on the number of points that exceed some fraction of the clipping threshold. (The clipping threshold will depend on the number of bits of the digitizer.) This could be useful in an operational setting, where rapid estimation of large-magnitude events is important.

4 Summary of revisions to report

• Version 2.

Almost all waveforms (all except pump station stations) are now extracted from IRIS DMC and processed using ObsPy. This led to revised results for KDAK, COLA, and POKR, among others. The revised results could be explained by two possibilities. (1) The metadata used in Version 1, which were obtained from the Alaska Earthquake Center (IRIS dataless seed \rightarrow Antelope database) via Matlab, could be different from the metadata obtained from IRIS via ObsPy. (2) The deconvolution used in Version 1 could have produced incorrect results, at least at some stations.

The sensor types are no longer visible in the tables (e.g., Table 2), since we do not have this information in the sac files extracted from IRIS. I may be able to include this information in a future version.

There are some discrepancies between waveform availability from IRIS and from AEC. I did not thoroughly examine these, but I did notice that some stations (e.g., TA.J25K, AK.RAG, AK.TBL, AK.SSN) are zero-amplitude data streams from AEC but are not available from IRIS. Hence these stations are categorized as bad stations in Version 1 but are not included in Version 2.

• Version 3.

In Version 2, Figure 2 was missing the beachball and also the stations outside the simulation region.

- Version 4.
 - Added the basin contours to Figure 2
 - $-\,$ Added the zoom-in map in Figure 3 $\,$
 - Added the sensor types in the tables (e.g., Table 2)
 - Added the record section in Figure 12

• Version 5.

- Added an analysis based on max-count values from raw seismograms: Tables 6 and 7 and Section 3.2
- Added Section 3.4
- Added Table 1

Acknowledgments

Thanks to the following people for providing feedback on earlier versions of this report: Natalia Ruppert, Bob Busby, Tyler Storm, Pete Davis, Katrin Hafner, Geoff Abers, Geoff Bainbridge, and Noel Barstow. Thanks to Vipul Silwal, Celso Alvizuri, and Lion Krischer for support with data retrieval and processing with ObsPy.

References

- Beyreuther, M., R. Barsch, L. Krischer, T. Megies, Y. Behr, and J. Wassermann (2010), ObsPy: A Python toolbox for seismology, *Seis. Res. Lett.*, 81(3), 530–533, doi:10.1785/gssrl.81.3.530.
- Brocher, T. M. (2008), Compressional and shear-wave velocity versus depth relations for common rock types in northern California, *Bull. Seis. Soc. Am.*, 98(2), 950–968.
- Eberhart-Phillips, D., D. H. Christensen, T. M. Brocher, R. Hansen, N. A. Ruppert, P. J. Haeussler, and G. A. Abers (2006), Imaging the transition from Aleutian subduction to Yakutat collision in central Alaska, with local earthquakes and active source data, *J. Geophys. Res.*, 111, B11303, doi:10.1029/2005JB004240.
- Ekström, G., M. Nettles, and A. M. Dziewoński (2012), The global GCMT project 2004–2010: Centroid-moment tensors for 13,017 earthquakes, *Phys. Earth Planet. Inter.*, 200-201, 1–9, doi:10.1016/j.pepi.2012.04.002.
- Koehler, R. D., R.-E. Farrell, P. A. C. Burns, and R. A. Combelick (2012), Quaternary faults and folds in Alaska: A digital database, Alaska Div. Geol. Geophys. Surv. Miscellaneous Publication 141, 31 p., 1 sheet, scale 1:3,700,000.
- Komatitsch, D., Q. Liu, J. Tromp, P. Süss, C. Stidham, and J. H. Shaw (2004), Simulations of ground motion in the Los Angeles basin based upon the spectral-element method, *Bull. Seis. Soc. Am.*, 94(1), 187–206, doi:10.1785/0120030077.
- Krischer, L., T. Mengies, R. Barsch, M. Beyreuther, T. Lecocq, C. Caudron, and J. Wassermann (2015), ObsPy: a bridge for seismology into the scientific Python ecosystem, *Computational Science & Discovery*, 8(1), 014003, doi:10.1088/1749-4699/8/1/014003.
- Megies, T., M. Beyreuther, R. Barsch, L. Krischer, and J. Wassermann (2011), ObsPy–What can it do for data centers and observatories, *Annals. Geophy.*, 54(1), 47–58, doi:10.4401/ag-4838.
- Shellenbaum, D. P., L. S. Gregersen, and P. R. Delaney (2010), Top Mesozoic unconformity depth map of the Cook Inlet Basin, Alaska, doi:10.14509/21961, Alaska Div. Geol. Geophys. Surv. Report of Investigation 2010-2, 1 sheet, scale 1:500,000, available at http://www.dggs. alaska.gov/pubs/id/21961 (last accessed 2016-10-30).
- Tape, C. (2014), Seismic wavefield simulations of earthquakes within a complex crustal model for Alaska, Abstract presented at the 2014 SSA Annual Meeting, Anchorage, Alaska, April 30
 May 2.
- Tape, C. (2016a), Magnitude 7.1 Alaska earthquake on January 24, 2016 (computer simulation), YouTube movie at https://youtu.be/E4RYnpIOoPw (last accessed 2016-10-08).
- Tape, C. (2016b), Analysis of regional seismograms and 3D synthetic seismograms for the 2016-01-24 Mw 7.1 Iniskin earthquake in southern Alaska, ScholarWorks@UA at http://hdl.handle. net/11122/6983 (last accessed November 3, 2016).
- Tape, C., and M. E. West (2014), Fault Locations and Alaska Tectonics from Seismicity, International Federation of Digital Seismograph Networks. Other/Seismic Network. doi:10.7914/ SN/ZE_2015.
- Tape, C., D. H. Christensen, and M. M. Driskell (2015), Southern Alaska Lithosphere and Mantle Observation Network, International Federation of Digital Seismograph Networks. Other/Seismic Network. doi:10.7914/SN/ZE_2015.

Table 2: 81 stations with "good" seismograms for the $M_{\rm w}$ 7.1 Iniskin earthquake. The list is sorted by epicentral distance: 8 are <250 km, 73 are \geq 250 km. These seismograms are shown in Figures 5 and 7.

net	sta loc	distance	azimuth	response_file
TA	019K	76.8 km	310.7 deg	Nanometrics Trillium 120 Sec Response/Quanterra
ZE	HLC3	94.8 km	359.8 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
TA	U18K	109.4 km	276.9 deg	Nanometrics Trillium 120 Sec Response/Quanterra
1 A 7 F	P18K	117.7 Km	251.0 deg	Nanometrics Irillium 120 Sec Response/Quanterra
TA	NIGK	136.2 km	331 0 deg	Nanometrics Trillium 120 Sec Pri Response/Quanter
ZE	WFLS	152.9 km	328.2 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
II	KDAK 10	222.7 km	169.4 deg	Nanometrics Trillium 120Posthole BB Seismometer
			0	
AT	OHAK	281.5 km	180.2 deg	STS-2/Trident
AT	PMR	305.4 km	46.0 deg	STS-2/Trident
AK	PPLA	355.3 km	8.9 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	SII	359.4 km	189.0 deg	Nanometrics Trillium 240 Sec Response sn400 and
TA	Q23K	392.9 km	92.2 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AI	CAST	393.0 km	92.2 deg	SIS-2/Irident
AK	EYAK	426.8 km	74.7 deg	Guralp CMG3T 120sec/Quanterra 330 LinearPhase B
AK	TRF	441.5 km	19.7 deg	Streckeisen STS-2 G3/Quanterra 330 Linear Phase
AK	KTH	441.6 km	15.3 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	SGA	456.1 km	75.5 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	CHI	459.3 km	198.7 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	RND	469.7 km	28.0 deg	Streckeisen STS-2 G3/Quanterra 330 Linear Phase
AK	GOAT	482.8 km	75.3 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	KAI	496.3 km	83.9 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	BMR	496.7 Km 499.1 km	70.4 deg	Nanometrics Irillium 120 Sec Response/Quanterra
AK	RPAW	499 3 km	12 9 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	HMT	505.8 km	78.7 deg	Nanometrics Trillium 120 Sec Response/Quanterra
TA	N25K	516.6 km	62.7 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	NICH	521.5 km	80.0 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	SUCK	531.8 km	82.0 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	BWN	534.9 km	21.2 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	BERG	537.1 km	78.2 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	PAX	549.7 km	45.9 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	GLD	550.6 Km	79 6 deg	Streckeisen STS-2 G3/Quanterra 330 Linear Phase
AK	KHIT	562.2 km	77.8 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	VRDI	563.5 km	68.8 deg	Nanometrics Trillium 240 Sec Response sn400 and
XV	FNN2	573.3 km	18.7 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	FNN1	577.1 km	19.7 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	FAPT	577.5 km	20.4 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	NEA2	582.1 km	20.2 deg	Nanometrics Trillium 120 Sec Response/Quanterra
XV	FPAP	583.6 km	20.0 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	WAX	584.1 km	77.9 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AV VV	FORN	505.1 Km 586 7 km	15.6 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	WBH	591.1 km	24.9 deg	Nanometrics Trillium 240 Sec Response sn400 and
XV	F2TN	592.8 km	19.5 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	F7TV	596.0 km	15.9 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	FTGH	596.9 km	20.8 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	F3TN	598.9 km	19.1 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	F6TP	601.9 km	17.0 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	F4TN	605.2 km	18.9 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
XV AV	F5MN DTDV	610.1 km	18.5 deg	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	CCB	614.0 km	70.3 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	HDA	614.8 km	29.7 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	KIAG	615.8 km	73.1 deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	BAL	618.3 km	71.9 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AT	MENT	621.5 km	51.1 deg	Trillium-240/Trident
TA	M26K	627.4 km	57.5 deg	Streckeisen STS-5A/Quanterra 330 Linear Phase Co
AK	RIDG	628.2 km	41.4 deg	Nanometrics Trillium 120 Sec Response/Quanterra
PS TA	PS08	630.4 km	29.4 deg	cmg3esp_60sec+q330_1D100c050
TA	TCOL	635 7 km	10.0 deg	Streckeisen SIS-SA/Quanterra 330 Linear Phase Co
TU	COLA 00	635.7 km	23.8 deg	Geotech KS-54000Borehole Seismometer
IU	COLA 10	635.7 km	23.8 deg	Streckeisen STS-2 High-gain
IU	COLA 10	635.7 km	23.8 deg	Streckeisen STS-2 High-gain
AK	MDM	636.1 km	22.0 deg	Nanometrics Trillium 120 Sec Response/Quanterra
TA	L26K	642.7 km	51.2 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	DOT	651.4 km	44.3 deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK TA	BARN	655.3 km	72.1 deg	Nanometrics Trillium 240 Sec Response sn400 and
I'A TA	FUKK	669.2 km	24.2 deg	Nanometrics Irillium 240 Sec Response sn400 and
1A PC	PS07	670 4 km	24.2 aeg	cmr3esp 30sec+r330 lb100c050
AK	SCRK	677.3 km	42.0 deg	Nanometrics Trillium 120 Sec Response/Quanterra
TA	M27K	679.3 km	59.8 deg	Nanometrics Trillium 120 Sec Response/Quanterra
CN	YUK2	712.5 km	66.3 deg	Guralp CMG3ESP_60sec/Taurus Standard 47k
TA	L27K	712.5 km	53.9 deg	Streckeisen STS-5A/Quanterra 330 Linear Phase Co
CN	BVCY	731.0 km	60.7 deg	Guralp CMG3ESP_NSN/Taurus Standard 47k
TA	H24K	731.5 km	19.7 deg	Streckeisen STS-5A/Quanterra 330 Linear Phase Co
CN	ruka	/32.5 km	66.6 deg	Guraip CMG3ESP_60sec/Taurus Standard 47k

Table 3: Same as Table 2, but here the stations are grouped by network. The lower set of AK stations are posthole sensors (MCK, PAX, NEA2, HDA, RIDG, MDM, DOT, SCRK).

net	sta	loc	distar	nce	azin	nuth	response_fil	Le			
AK	BAL		618.3	km	71.9	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	BARN		655.3	km	72.1	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	BERG		537.1	km	78.2	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	BMR		496.7	km	70.4	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	BPAW		499.3	km	12.9	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	BWN		534.9	km	21.2	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	CAST		413.6	km	8.2	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	CCB		614.8	km	25.1	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	CHI		459.3	km	198.7	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	EYAK		426.8	km	74.7	deg	Guralp CMG3	[_120sec/G	luant	erra	1 330 LinearPhase B
AK	GLB		550.8	km	65.9	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	GOAT		482.8	km	75.3	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	GRIN		557.5	km	79.6	deg	Streckeisen	STS-2 G3/	Quar/	nterr	a 330 Linear Phase
AK	HMT		505.8	km	78.7	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	KAI		496.3	km	83.9	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	KHIT		562.2	km	77.8	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	KIAG		615.8	km	73.1	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	KTH		441.6	km	15.3	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	NICH		521.5	km	80.0	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	PPLA		355.3	km	8.9	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	PTPK		614.6	km	70.3	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	RND		469.7	km	28.0	deg	Streckeisen	STS-2 G3/	Quar	nterr	a 330 Linear Phase
AK	SGA		456.1	km	75.5	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	SII		359.4	km	189.0	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	SUCK		531.8	km	82.0	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	TRF		441.5	km	19.7	deg	Streckeisen	STS-2 G3/	/Quar	terr	a 330 Linear Phase
AK	VRDI		563.5	km	68.8	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
AK	WAX		584.1	km	77.9	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	WRH		591.1	km	24.9	deg	Nanometrics	Trillium	240	Sec	Response sn400 and
						-0					
AK	MCK		499.1	km	25.4	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	PAX		549.7	km	45.9	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	NEA2		582.1	km.	20.2	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	HDA		614.8	km	29.7	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	RTDG		628.2	km	41.4	deg	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	MDM		636 1	km	22 0	der	Nanometrics	Trillium	120	Sec	Response/Quanterra
AK	DOT		651 4	km	44 3	der	Nanometrics	Trillium	120	Sec	Response/Quanterra
AV	SCBK		677 3	lem	12.0	dog	Nanomotrics	Trillium	120	Soc	Response /Quantorra
hit	Donar		011.0	itin	42.0	uсь	Nullometrics	111111000	120	Dec	nesponse, quanterra
ΔТ	MENT		621 5	km	51 1	dor	Trillium-240	/Trident			
AT	MTD		393.0	km	92.2	deg	STS-2/Trider	nt.			
ΔΤ	UHAK		281 5	km	180 2	der	STS-2/Trider	10			
AT.	DMD		305 /	lem	16 0	dog	STS=2/Tridor	10 1			
AI	I III		505.4	ĸш	40.0	ueg	SIS 2/IIIdei	10			
CN	BVCV		731 0	km	60 7	dor	Guraln CMG3	TOP NON/Ta		S+ 2	andard 47k
CN	BVCY		731.0	km km	60.7	deg	Guralp CMG3	ESP_NSN/Ta	urus	s Sta	andard 47k
CN CN CN	BVCY YUK2		731.0 712.5 732.5	km km	60.7 66.3	deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3	ESP_NSN/Ta ESP_60sec/	urus Taur	s Sta	andard 47k Standard 47k Standard 47k
CN CN CN	BVCY YUK2 YUK3		731.0 712.5 732.5	km km km	60.7 66.3 66.6	deg deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3	ESP_NSN/Ta ESP_60sec/ ESP_60sec/	urus Taur Taur	s Sta rus S rus S	andard 47k Standard 47k Standard 47k
CN CN CN	BVCY YUK2 YUK3	10	731.0 712.5 732.5	km km km	60.7 66.3 66.6	deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Nanometrics	ESP_NSN/Ta ESP_60sec/ ESP_60sec/	urus Taur Taur 1201	s Sta rus S rus S Posti	andard 47k Standard 47k Standard 47k nole BB Seismometer
CN CN CN II	BVCY YUK2 YUK3 KDAK	10	731.0 712.5 732.5 222.7	km km km	60.7 66.3 66.6 169.4	deg deg deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3 Nanometrics	ESP_NSN/Ta ESP_60sec/ ESP_60sec/ Trillium	urus Taur Taur 120F	s Sta rus S rus S Posth	andard 47k Standard 47k Standard 47k sole BB Seismometer
CN CN CN II	BVCY YUK2 YUK3 KDAK	10	731.0 712.5 732.5 222.7	km km km	60.7 66.3 66.6 169.4	deg deg deg deg	Guralp CMG31 Guralp CMG31 Guralp CMG33 Nanometrics	ESP_NSN/Ta ESP_60sec/ ESP_60sec/ Trillium	urus Taur Taur 120F	s Sta rus S rus S Posth	andard 47k Standard 47k Standard 47k sole BB Seismometer
CN CN II IU	BVCY YUK2 YUK3 KDAK COLA	10 00	731.0 712.5 732.5 222.7 635.7 635.7	km km km km	60.7 66.3 66.6 169.4 23.8 23.8	deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Nanometrics Geotech KS-5 Strackaisen	ESP_NSN/Ta ESP_60sec/ ESP_60sec/ Trillium 54000Boreh STS-2 Hic	urus Taur Taur 120H 10le	s Sta rus S rus S Posth Seis	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer
CN CN CN II IU IU	BVCY YUK2 YUK3 KDAK COLA COLA	10 00 10	731.0 712.5 732.5 222.7 635.7 635.7	km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8	deg deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG34 Nanometrics Geotech KS- Streckeisen	ESP_NSN/Ta ESP_60sec/ ESP_60sec/ Trillium 54000Boreh STS-2 Hig	Taur Taur Taur 120F ole gh-ga	s Sta rus S rus S Posth Seis ain	andard 47k Standard 47k Standard 47k Nole BB Seismometer Smometer
CN CN II IU IU IU	BVCY YUK2 YUK3 KDAK COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7	km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8	deg deg deg deg deg deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3 Nanometrics Geotech KS- Streckeisen Streckeisen	ESP_NSN/Ta ESP_60sec/ ESP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig	Taur Taur 1204 ole gh-ga gh-ga	Sta rus S rus S Posth Seis ain ain	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer
CN CN CN II IU IU IU	BVCY YUK2 YUK3 KDAK COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7	km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8	deg deg deg deg deg deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3 Nanometrics Geotech KS-5 Streckeisen Streckeisen	ESP_NSN/Ta ESP_60sec/ ESP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig	Taur Taur 120F tole gh-ga gh-ga	s Sta rus S rus S Posth Seis ain ain	andard 47k Standard 47k Standard 47k wole BB Seismometer smometer
CN CN CN II IU IU IU PS PS	BVCY YUK2 YUK3 KDAK COLA COLA COLA PS07 PS08	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7	km km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8 23.8	deg deg deg deg deg deg deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3 Nanometrics Geotech KS-5 Streckeisen Streckeisen cmg3esp_30se	ESP_NSN/Ta ESP_60sec/ SP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig ec+q330_lb	Taur Taur 120F 120F sh-ga gh-ga gh-ga	s Sta rus S Posth Seis ain ain :050	andard 47k Standard 47k Standard 47k sole BB Seismometer smometer
CN CN II IU IU IU PS PS	BVCY YUK2 YUK3 KDAK COLA COLA COLA PS07 PS08	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.4 630.4	km km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8 23.8 23.8 23.8	deg deg deg deg deg deg deg deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3 Nanometrics Geotech KS-5 Streckeisen Streckeisen cmg3esp_30se cmg3esp_60se	ESP_NSN/Ta SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig stS-2 Hig ac+q330_lb ac+q330_lb	Taur Taur 120F ole gh-ga gh-ga 0100c	s Sta rus S Posth Seis ain ain :050 :050	andard 47k Standard 47k Standard 47k nole BB Seismometer
CN CN II IU IU PS PS	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4	km km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8 20.3 29.4	deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-I Streckeisen Streckeisen cmg3esp_30se cmg3esp_60se	ESP_NSN/Ta ESP_60sec/ ESP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig ec+q330_lb ec+q330_lb	Taur Taur 120F 120F gh-ga gh-ga 0100c	Seis Seis Seis Ain 2050 2050	andard 47k Standard 47k Standard 47k wole BB Seismometer smometer
CN CN CN II IU IU IU PS PS TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA PS07 PS08 H24K L22K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5	km km km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7	deg deg deg deg deg deg deg deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3 Nanometrics Geotech KS- Streckeisen Streckeisen cmg3esp_60se Streckeisen	ESP_NSN/Ta SSP_60sec/ ESP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig ac+q330_lb ac+q330_lb STS-5A/Qu	Taur Taur 120F 120F 100c 100c	s Sta rus S rus S Posth Seis ain ain :050 :050	andard 47k Standard 47k Standard 47k mole BB Seismometer smometer 330 Linear Phase Co
CN CN CN II IU IU IU PS PS TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K L25K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3	km km km km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8 20.3 29.4 19.7 16.8	deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-5 Streckeisen Streckeisen cmg3esp_30se cmg3esp_60se Streckeisen Streckeisen	23P_NSN/Ta 23P_60sec/ 23P_60sec/ Trillium 54000Boreh 5TS-2 Hig 5TS-2 Hig 25TS-2 Hig 25TS-2 Hig 25TS-30_lb 5TS-5A/Qu 5TS-5A/Qu 5TS-5A/Qu	urus Taur Taur 120H ole gh-ga gh-ga 100c 100c 100c	Seis Seis Seis Seis Seis Seis Seis Seis	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co
CN CN CN II IU IU IU PS PS TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K I23K L26K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 642.7	km km km km km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2	deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-4 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics	SSP_NSN/TE SSP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig sc+q330_lb STS-5A/Qt STS-5A/Qt Trillium	urus Taur Taur 120F ole gh-ga gh-ga gh-ga 100c 100c 100c 120	s Sta rus S Posth Seis Ain Ain 2050 2050 2050 2070 2071 2071 2071 2071 2071 2071 207	andard 47k Standard 47k Standard 47k wole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra
CN CN CN II IU IU IU PS PS TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K 123K L26K L27K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 642.7 712.5	km km km km km km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3 Nanometrics Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen	23P_NSN/Ta 23P_60sec/ 33P_60sec/ Trillium 54000Boreh 54000Boreh 575-2 Hig 575-2 Hig 545-2 Hig 545-2 Hig 54000Boreh 5400 5400 5400 5400 5400 5400 5400 540	urus Taur Taur 120F ole gh-ga gh-ga 100c 100c 100c 120 aante aante	s Sta cus S Posth Seis ain ain c050 c050 erra Sec erra	andard 47k Standard 47k Standard 47k mole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co
CN CN CN II IU IU IU PS PS TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K 123K L26K L27K M26K L27K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 642.7 712.5 627.4 670.4	km km km km km km km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-5 Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Streckeisen Streckeisen	23P_NSN/Ta 23P_60sec/ 23P_60sec/ Trillium 54000Boreh 575-2 Hig 575-2 Hig 575-2 Hig 575-54/qt 575-54/qt 575-54/qt 575-54/qt	urus (Taur (Taur 120F (aole gh-ga gh-ga (100c (100c) (100c	s Sta sus S cus S Posth Seis ain ain co50 co50 corra sec sec sec sec sec sec sec sec	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co
CN CN CN II IU IU IU IU PS PS TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PSO7 PSO8 H24K L23K L26K L27K M26K M27K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 642.7 712.5 627.4 679.3 136	km km km km km km km km km km km km km k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-4 Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Streckeisen Nanometrics	23P_NSN/Tz 23P_60sec/ 33P_60sec/ Trillium 54000Boreh STS-2 Hig stS-2 Hig stS-2 Hig stS-5A/Qt Trillium STS-5A/Qt Trillium STS-5A/Qt Trillium	urus (Taur (Taur 120F alole gh-ga gh-ga (100 ante ante 120 120	s Sta rus S Posth Seis Ain Ain c050 c050 erra Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co
CN CN CN II IU IU IU IU PS PS TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA L2AK L26K L26K L27K M26K M27K N19K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 642.7 712.5 627.4 679.3 136.2	km km km km km km km km km km km km km	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8 331.0 202	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-I Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen	23P_NSN/Ta 23P_60sec/ 23P_60sec/ 23P_60sec/ Trillium 54000Boreh 5TS-2 Hig 5TS-2 Hig 5TS-2 Hig c+q330_lt c+q330_lt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-1000000000000000000000000000000000000	urus Taur Taur 120F cole gh-ga gh-ga ch100c ch100c aante aante 1200 1200	s Sta rus S Posth Seis ain ain c050 c050 erra serc sec Sec Sec Sec	andard 47k Standard 47k Standard 47k sole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co
CN CN CN II IU IU IU IU PS PS TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K L23K L27K M26K M27K N19K N25K O15K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 642.7 712.5 627.4 679.3 136.2 516.6	km km km km km km km km km km km km km k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8 331.0 62.7 276.6	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-I Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics	2SP_NSN/Ta 2SP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium	urus Taur Taur 120F sole gh-ga gh-ga sholo 100cc aante aante 120 120 120	s Sta cus S Posth Seis iin costo costo costo serra Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra
CN CN CN III IU IU IU IU FS PS TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K L23K L26K L27K M26K N19K N19K N25K O18K O18K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 642.7 712.5 627.4 679.3 136.2 516.6 109.4 776	km km km km km km km km km km km km km k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 59.8 331.0 62.7 276.9 216.9	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-4 Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics	SSP_NSN/Tz SSP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig stS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium Trillium	ante ante 1200 ante 1200 ante 1200 ante 1200 1200 1200	s Sta cus S Posth Seis in cost costh sein in cost sein sein sec sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra
CN CN CN II IU IU IU IU PS PS TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K L26K L27K M26K M27K N19K N25K O18K O19K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 627.4 679.3 642.7 712.5 627.4 679.3 516.6 109.4 76.8 2 516.6	km km km km km km km km km km km km km k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 29.4 19.7 16.8 51.2 53.9 57.5 59.8 331.0 62.7 276.9 310.7 276.9	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-4 Streckeisen Streckeisen Streckeisen Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics	23P_NSN/Ta 23P_60sec/ 23P_60sec/ 23P_60sec/ Trillium 54000Boreh 5TS-2 Hig 5TS-2 Hig 5TS-2 Hig 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 7Tillium Trillium Trillium Trillium	ante ante 1200 ante 1200 ante 120 120 120 120 120	s Sta rus S Posth Seis hin hin c@50 erra Sec Sec Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k standard 47k stole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra
CN CN CN II IU IU IU IU FS FS TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K L26K L27K M27K M27K N19K P18K 019K P18K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 634.3 662.7 712.5 634.3 136.2 516.6 67.4 679.3 136.2 516.6 109.4 76.8 1107.7	km km km km km km km km km km km km km k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8 331.0 7276.9 310.7 2251.0 23.2	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-4 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics	2SP_NSN/Tz 2SP_60sec/ 2SP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium Trillium Trillium Trillium	1201 1201 1201 1201 1201 1201 1201 1200 1200 1200 1200 1200 1200 1200 1200	s Sta rus S Posth Seis Ain Ain S@50 C@50 erra Sec Sec Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra S30 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra
CN CN CN II IU IU IU IU PS PS TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 630.4 630.4 731.5 634.3 642.7 712.5 662.4 677.4 679.3 516.6 6109.4 8 117.7 669.2	km km km km km km km km km km km km km k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8 331.0 62.7 226.9 2310.7 2251.0 24.2 25.0	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-4 Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics	SSP_NSN/Tz SSP_60sec/ SSP_60sec/ Trillium 54000Boreb STS-2 Hig STS-2 Hig stS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium Trillium Trillium	urus Taun Taun 120F ole gh-gg gh-gg flood 1000 1000 1000 1200 1200 1200 1200 120	s Sta rus S Posth Seis iin 3050 erra Sec Sec Sec Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra
CN CN CN II IU IU IU IU FPS FS TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 634.3 712.5 634.3 712.5 627.4 679.3 516.6 109.4 76.8 9.2 516.6 109.4 76.9 2 516.6 109.4	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8 31.0 276.9 310.7 276.9 310.7 276.9 251.0 24.2 24.2 24.2 24.2 24.2	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-4 Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Nanometrics	23P_NSN/Ta 23P_60sec/ 23P_60sec/ 23P_60sec/ Trillium 54000Boreh 5TS-2 Hig 5TS-2 Hig 5TS-2 Hig 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 7Tillium Trillium Trillium Trillium STS-4B/Qt 7541/iii	urus Taun Taun 120F ole gh-gg gh-gg 10000 1000 aante 1200 1200 1200 1200 1200 1200	s Sta rus S Posth Seis iin iin co50 co50 erra Sec Sec Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k standard 47k aole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra
CN CN CN II IU IU IU IU VPS PS TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 630.4 731.5 634.3 642.7 712.5 663.4 642.7 516.6 627.4 679.3 136.2 516.6 627.4 669.2 669.2 392.9	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 57.5 57.5 53.8 331.0 62.7 276.9 310.7 221.0 24.2 22.4.2 92.2 22.2	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-1 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Streckeisen Streckeisen	23P_NSN/Ta 23P_60sec/ 23P_60sec/ 23P_60sec/ Trillium 54000Boreh 515-2 Hig 515-2 Hig 515-2 Hig 515-5A/Qt 515-5A/Qt 515-5A/Qt 515-5A/Qt 71111um Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium	Taur Taur Taur 120F 100c 100c 100c 100c 120 120 120 120 120 120 120 120 120 120	s Sta rus S Posth Seis ain ain c050 c050 crra Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k Nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response Satura Response Satura Response Conterra Response Conterra Response Conterra Response Conterra Response Conterra Response Conterra Response Conterra Sol Linear Phase Co
CN CN CN II IU IU IU IU TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA PS07 PS08 H24K L26K M27K M26K M27K N19K N19K P0KR P0KR Q23K TCOL	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 731.5 627.4 731.5 627.4 712.5 516.6 679.3 136.2 516.6 979.3 136.2 516.6 99.3 136.2 516.6 99.4 709.4 8 109.4 7 709.4 8 709.4 700.4 700.4 700.4 700.4 700.4 700.4 700.4 700.4 700.4 700.4 700.4 70	ka k	60.7 66.3 66.6 169.4 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8 331.0 62.7 251.0 24.2 24.2 23.8	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Geotech KS-I Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Streckeisen Streckeisen	23P_NSN/Tz 23P_60sec/ 23P_60sec/ 23P_60sec/ Trillium 54000Boreh 5TS-2 Hig 5TS-2 Hig 5TS-5A/Qu 5TS-5A/Qu 7rillium 7rillium 7rillium 7rillium 7rillium 7rillium 7rillium 7rillium 7rillium 7rillium 7rillium 7rillium 7rillium	Taur Taur Taur Taur 120F 120F 120F 1200 1200 1200 1200 1200	s Sta rus S Posth Seis in ain 2050 erra Sec Sec Sec Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co
CN CN CN II IU IU IU IU IU IU IU IU TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 635.7 634.3 642.7 712.5 627.4 679.3 136.2 516.6 109.4 76.9 2 516.6 109.4 76.9 2 669.2 669.2 669.2 669.2 639.7 7 829.7 829.7 7 829.7	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 29.4 19.7 16.8 51.2 53.9 957.5 59.8 331.0 62.7 276.9 310.7 276.9 21.0 24.2 25.10 24.2 22.3 8	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3 Guralp CMG3 Guralp CMG3 Guralp CMG3 Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics	23P_NSN/Ta 23P_60sec/ 23P_60sec/ Trillium 54000Boreh STS-2 Hig 54000Boreh STS-2 Hig c+q330_lt c+q330_lt c+q330_lt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium STS-4P/Qt Trillium STS-4P/Qt Trillium	Taur Taur Taur 120F ole gh-gg gh-gg olo ole olo ole olo ole olo ole ole ole	s Sta rus S Posth Seis in cost Second Prra Second Sec	andard 47k Standard 47k Standard 47k toole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Cuanterra Response/Cuanterra Response/Cuanterra Response/Cuanterra
CN CN CN II IU IU IU PS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA PS07 PS08 H24K L25K L25K L25K N19K N25K N19K POKR POKR Q23K TCOL F1TN	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 136.2 515.6 642.7 712.5 516.6 679.3 136.2 515.6 679.3 136.2 515.7 669.2 392.9 635.7 558.7 558.7	ka k	60.7 66.3 66.6 169.4 23.8 23.8 20.3 29.4 19.7 16.8 51.2 55.9 57.5 59.8 331.0 62.7 276.9 27	deg deg deg deg deg deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Nanometrics Geotech KS-1 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics	2SP_NSN/Ta 2SP_SN/Ta 2SP_60sec/ 2SP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium Trillium STS-4B/Qt Trillium STS-4B/Qt Trillium STS-4B/Qt Trillium	1200 1200 1200 1000 1000 1000 1000 1000 1000 1200	Sta Stars S Posth Seis ain ain 2050 2050 2050 2050 2050 2050 2050 205	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response founterra 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co PH Response/Quanter
CN CN CN II IU IU IU IU PS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK3 VUK3 COLA COLA COLA COLA COLA COLA PSO7 PSO8 H24K L23K L26K M27K N19K M26K M26K N19K POKR POKR POKR TCOL F1TN F2TN	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 712.5 627.4 679.3 516.6 619.4 718.5 516.6 619.9 136.2 516.6 669.2 392.9 635.7 586.7 592.8	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 25.3 9 57.5 59.8 331.0 62.7 276.9 251.0 24.2 24.2 24.2 23.8 19.6 19.5 5.5 5.5 25.8 20.3 21.0 24.2 22.8 23.8 20.3 20.3 20.4 21.0 21.0 21.0 21.0 21.0 21.0 21.0 21.0	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics	2SP_NSN/Tz 2SP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig stS-2 Hig stS-5A/Qu Trillium STS-5A/Qu Trillium Trillium Trillium Trillium STS-5A/Qu Trillium Trillium STS-4B/Qu Trillium STS-4B/Qu Trillium	urrus Taur Taur 120H ole gh-ga gh-ga 0100c 1100c ante aante 120 120 120 120 120 120 120 120 120 120	s Sta sus S Posth Seis inn ain costo soco sec Sec Sec Sec Sec Sec Sec Sec Sec Sec S	andard 47k Standard 47k Standard 47k tole BB Seismometer smometer 330 Linear Phase Co Response/Quanterra Sa0 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co PH Response/Quanter PH Response/Quanter PH Response/Quanter
CN CN CN CN II IU IU IU IU PS PS TA TA TA TA TA TA TA TA TA TA TA TA XV XV XV XV	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 635.7 636.4 363.3 634.3 634.3 634.3 634.3 136.2 516.6 627.4 712.5 516.6 627.4 712.5 516.6 927.9 109.4 712.5 516.6 635.7 7 635.7 7 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 109.4 100.4 10	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 559.8 331.0 62.7 276.9 310.7 224.2 292.2 23.8 19.6 19.5 19.5	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen	23P_NSN/Ta 23P_60sec/ 23P_60sec/ 23P_60sec/ Trillium 54000Boreh 5TS-2 Hig 5TS-2 Hig 5TS-2 Hig c+q330_lt c+q330_lt 2TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium	1200 1200 1200 1200 1000 1200	s Sta rus S Posth Seis nin 2050 2050 2050 2050 2050 2050 2050 205	andard 47k Standard 47k Standard 47k standard 47k aole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra PH Response/Quanter
CN CN CN CN II IU IU IU IU FS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA PS07 PS08 H24K L25K L25K L25K L25K N19K N25K N19K N25K N19K POKR Q23K TCOL F1TN F2TN F3TN F4TN	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 670.4 630.4 731.5 6634.3 136.2 516.6 642.7 712.5 516.6 642.7 712.5 516.6 642.7 712.5 516.6 642.7 712.5 516.6 71.3 136.2 516.7 669.2 392.9 635.7 528.9 528.5 529.5 528.5 529.5 528.5 529.52	ka k	60.7 66.3 66.6 169.4 23.8 23.8 20.3 29.4 19.7 16.8 51.2 55.9 57.5 59.8 331.0 62.7 276.9 310.7 251.0 24.2 23.8 19.6 19.5 19.1 18.9 9.4	deg deg deg deg deg deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Nanometrics Geotech KS-1 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics	2SP_NSN/Ta 2SP_SNN/Ta 2SP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium Trillium STS-6A/Qt Trillium Trillium STS-4B/Qt Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium	urus Taur Taur 1201 ole gh-ga gh-ga 100 cole 120 120 120 120 120 120 120 120 120 120	Stars Struss S Fuss S Posth Seis inn 2050 2050 2050 2050 2050 2050 2050 20	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co PH Response/Quanter PH Response/Quanter PH Response/Quanter
CN CN CN CN II IU IU IU IU FS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK3 YUK3 KDAK COLA COLA COLA COLA COLA COLA PSO7 PSO8 H24K L27K N19K N25K O18K O19K N25K COLS F1TN F3TN F3TN F3TN	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 642.7 712.5 627.4 679.3 516.6 6109.4 771.5 516.6 6109.4 776.8 117.7 669.2 392.9 635.7 536.7 538.6 7 598.8 505.2 605.2 605.2 610.1	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8 331.0 62.7 276.9 251.0 24.2 23.8 19.6 19.5 19.5 19.5 19.5 19.5	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Guralp CMG3I Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics	2SP_NSN/Tz 2SP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-2 Hig stS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium STS-4B/Qt Trillium Trillium Trillium Trillium Trillium Trillium Trillium	1200 1200 1200 1200 1000 1000 1000 1000 1000 1200	Stars S rus S Posth Seis inn 2050 2050 2050 2077a Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanter PH Response/Quanter PH Response/Quanter PH Response/Quanter PH Response/Quanter
CN CN CN CN II IU IU IU VPS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 635.7 635.7 636.4 30.4 731.5 634.3 634.3 634.3 634.3 634.3 136.2 516.6 627.4 712.5 516.6 927.4 712.5 516.6 927.4 712.5 516.6 92.7 92.9 93.5 93.5 7 516.7 516	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 559.8 331.0 62.7 276.9 310.7 226.9 21.2 22.2 23.8 19.6 19.5 19.5 19.5 19.5 19.5 19.5 19.5 17.0 0 24.2 23.8 23.8 24.2 25.8 27.8 27.8 27.8 27.8 27.8 27.8 27.8 27	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Guralp CMG3I Nanometrics Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics	23P_NSN/Ta 23P_60sec/ 23P_60sec/ 23P_60sec/ Trillium 54000Boreh 5TS-2 Hig 5TS-2 Hig 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 5TS-5A/Qt 7Tillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium	urus Taur Taur 120H aole gh-gg d100 d000 ante ante 120 120 120 120 120 120 120 120 120 120	s Sta rus S Postl Seis iin iin iin iiin iiin iiiin iiiii iiiii iiiiii	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co Response/Quanter PH Response/Quanter PH Response/Quanter PH Response/Quanter PH Response/Quanter PH Response/Quanter
CN CN CN CN II IU IU VPS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K L25K L26K L27K M26K M27K M26K 018K 018K 018K POKR POKR POKR POKR POKR F1TN F5TN F45TN F67P F77W	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 670.4 630.4 731.5 6634.3 136.2 516.6 642.7 712.5 516.6 642.7 712.5 516.6 642.7 712.5 516.6 642.7 712.5 516.6 71.3 7 669.2 392.9 635.7 592.8 592.9 592.8 592.	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.9 57.5 59.8 331.0 62.7 276.9 310.7 251.0 24.2 23.8 19.6 19.5 19.1 18.9 19.15 19.1 18.9	deg deg deg deg deg deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics	2SP_NSN/Ta 2SP_SNN/Ta 2SP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium	Urrus Taur Taur 120H egh-gs gh-gs gh-gs allood 1000 ante 120 120 120 120 120 120 120 120 120 120	s Sta srus S Posth Seis inn inn informa Sec Sec Sec Sec Sec Sec Sec Sec Sec Sec	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co PH Response/Quanter PH Response/Quanter
CN CN CN CN U U U U U U U U U V S S S TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK3 YUK3 KDAK COLA COLA COLA COLA COLA COLA L20K L23K L23K L22K M22K M26K POKR POKR POKR POKR F3TN F3TN F4TN F6TP F6TP F7TV F8K	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 670.4 630.4 731.5 634.3 712.5 634.3 712.5 634.3 712.5 516.6 6109.4 76.8 117.7 669.2 392.9 635.7 586.7 592.8 505.2 610.1 601.9 596.0 585.1	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 25.3 9 57.5 59.8 31.0 62.7 276.9 251.0 24.2 23.8 19.6 19.5 19.1 18.9 19.5 19.5 17.0 15.9 15.9 26.2 27.0 27.0 27.0 27.0 27.0 27.0 27.0 27	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Guralp CMG3I Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics	2SP_NSN/Tz 2SP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-2 Hig sts-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium	Urus Taur Taur 120B ole gh-ga gh-ga gh-ga hood 1000 aante 1200 1200 1200 1200 1200 1200 1200 120	s Sta rus S Posth Seis nin 050 erra Seco Seco Seco Seco Seco Seco Seco Seco	andard 47k Standard 47k Standard 47k standard 47k tole BB Seismometer smometer 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co PH Response/Quanter PH Response/Quanter
CN CN CN II IU IU UU VPS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 635.7 636.4 731.5 634.3 634.3 634.3 634.3 634.3 136.2 516.6 637.4 712.5 516.6 637.4 712.5 516.6 634.3 136.2 516.6 93.4 716.5 516.7 5	ka k	60.7 66.3 66.6 169.4 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 55.8 331.0 62.7 276.9 310.7 226.9 310.7 224.2 23.8 19.6 19.5 19.5 19.5 19.5 19.5 19.5 19.5 19.5	deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics Nanometrics	2SP_NSN/Ta 2SP_SN/Ta 2SP_60sec/ 2SP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Q	Taur Taur 120F 120F 120F 120G 120G 120G 120G 120G 120G 120G 120G	s Status S crus S crus S costli Seis Section S	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co Response/Quanter PH Response/Quanter PH Response/Quanter
CN CN CN CN II IU IU VPS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K L25K L26K L27K M26K M27K M26K 018K 018K 018K POKR POKR POKR POKR POKR F1TN F5TN F45TN F67P F74T F34N F64P F04PT F04PT F04PT	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 670.4 630.4 731.5 6634.3 136.2 516.6 642.7 712.5 516.6 642.7 712.5 516.6 642.7 712.5 516.6 642.7 712.5 516.6 77.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 136.2 516.6 73.3 75.5 75.7 516.5 77.5 516.5 77.5 517.5 77.5 517.5 77.5 517.5 77.5 517.5 517.5 77.5 517.5 517.5 77.5 517.5 77.5 517.5 517.5 517.5 77.5 517.5	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 55.9 57.5 59.8 331.0 62.7 276.9 310.7 251.0 24.2 23.8 19.6 19.5 19.1 18.9 19.1 8.9 19.5 19.1 18.9 19.1 24.2 23.8 24.2 24.2 29.2 21.2 21.2 24.2 29.2 21.2 21.2 21.2 21.2 21.2 21.2 21	deg deg deg deg deg deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics	2SP_NSN/Ta 2SP_SON/Ta 2SP_60sec/ 2SP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium	Urus Taur Taur 120F allo ante 120 J ante 120 J ante 120 J 20 J 20 J 20 J 20 J 20 J 20 J 20 J	s Sta rus S Posth Seis Ain Seconda Sec	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co PH Response/Quanter PH Response/Quanter
CN CN CN III IU IU IU IU IU IU IU IU IU IU IU IU	BVCY YUK3 YUK3 KDAK COLA PS07 B205 B207 B208 M26K P0KR P0KR	10 00 10 10	731.0 712.5 732.5 222.7 635.7 712.5 635.7 712.5 635.7 712.5 635.7 712.5 635.7 712.5 635.7 712.5 635.7 7592.8 536.7 5392.8 5392.8 5395.7 5392.8 5395.7 5392.8 5395.7 5392.8 5395.7 5392.8 5395.7 5392.8 5395.7	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8 29.4 19.7 16.8 51.2 25.3 9 57.5 59.8 31.0 62.7 276.9 251.0 24.2 23.8 19.6 19.5 19.1 18.9 19.5 19.5 19.5 19.5 19.5 19.5 19.5 19	deg deg deg deg deg deg deg deg deg deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Guralp CMG3I Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics	SSP_NSN/Ta SSP_SSP_SSN/Ta SSP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium	Taur Taur Taur 1201 1201 1201 1201 1200 1200 1200 120	s Status S rus S Posth Seis Ann ain 2050 2050 2050 2050 2050 2050 2050 205	andard 47k Standard 47k Standard 47k standard 47k tole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co PH Response/Quanter PH Response/Quanter
CN CN CN CN II IU IU IU VPS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA PS07 PS08 H24K L27K L27K L27K L27K L27K N25K O18K O18K O18K O18K O18K POKR POKR	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 636.4 731.5 634.3 634.3 634.3 634.3 634.3 634.3 136.2 516.6 637.4 712.5 516.6 634.3 136.2 516.6 635.7 586.7 592.8 592.8 592.8 592.8 592.8 592.8 592.8 592.8 592.8 595.2 610.1 601.9 556.0 610.9 557.3 577.5 577.3 577.3 573.3 573.3 573.3 573.3 573.3 573.5	ka k	60.7 66.3 66.6 169.4 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8 331.0 62.7 276.9 310.7 226.9 21.2 24.2 292.2 23.8 19.6 19.5 19.5 19.5 19.5 19.5 19.5 19.5 19.5	deg deg deg deg deg deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics	SSP_NSN/Ta SSP_60sec/ SSP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-2 Hig STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt Trillium Trillium Trillium Trillium STS-4B/Qt Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium	Taur Taur Taur 1201 01e gh-gg 1000 1100 120 120 120 120 120 120 120 1	s Stats rus S Posth Seis inn inn 0500 soft soft soft soft soft soft soft soft	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanter PH Response/Quanter PH Response/Quanter
CN CN CN CN II IU IU VPS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA PS07 PS08 H24K L25K L26K L27K M26K N19K N25K O18K O18K POKR POKR	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 670.4 630.4 731.5 6634.3 136.2 516.6 642.7 712.5 516.6 642.7 712.5 516.6 642.7 712.5 516.6 642.7 712.5 516.6 77.3 136.2 516.6 9.2 392.9 635.7 592.8 59	ka k	60.7 66.3 66.6 169.4 23.8 23.8 20.3 29.4 19.7 16.8 51.2 59.8 331.0 62.7 276.9 310.7 251.0 24.2 23.8 19.6 19.5 19.1 18.9 19.1 8.9 15.8 20.4 19.5 19.1 18.9 19.1 24.2 23.8 24.2 23.8 24.2 24.2 23.8 24.2 24.2 25.2 24.2 23.8 24.2 24.2 25.2 24.2 27.6 9 24.2 27.6 9 24.2 23.8 24.4 24.2 24.2 24.2 23.8 24.4 24.2 24.2 24.2 25.5 24.4 24.2 24.2	deg deg deg deg deg deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Nanometrics Streckeisen Nanometrics	2SP_NSN/Ta 2SP_SON/Ta 2SP_60sec/ 2SP_60sec/ 2SP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium	urus Taun Taun 1201 iole sh-gs gh-gs ilooc ilooc aante aante 1200 iloo 240 iloo 2120 iloo 20 i 20 iloo 20 20 iloo 20 120 iloo 20 120 i 20 iloo	s States rus s Posth Seiss in min costo costh in costo costo costh in costo costh in costo costh in costo costh in costo costh in costo costh in costo costh in costo costh co	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co PH Response/Quanter PH Response/Quanter
CN CN CN III IU IU IU IU IU IU IU IU IU IU IU IU	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 712.5 635.7 712.5 635.7 712.5 635.7 712.5 635.7 712.5 635.7 712.5 635.7 712.5 735.6 73.5 735.7 635.7 712.5 735.7 735.5 735.7 735.5 735.7 735.5 735.7 735.5 735.7 735.5 735.7 735.5 735.7 735.5 735.7 735.7 735.7 735.7 735.7 735.7 735.7 735.7 757.7 757.8 757.7 757.8 757.7 757.8 757.7 757.8 757.7 757.8 757.7 757.8 757.7 757.8 757.7 757.8 757.7 757.8 757.7 757.8 757.7 757.8 757.7 757.8 757.7 7	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 23.8 29.4 19.7 16.8 51.2 25.3 9 57.5 59.8 31.0 62.7 276.9 251.0 24.2 23.8 19.6 19.5 19.1 18.9 19.5 19.5 19.5 19.5 19.5 19.5 19.5 19	deg	Guralp CMG3I Guralp CMG3I Guralp CMG3I Guralp CMG3I Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics	SSP_NSN/Ta SSP_SSP_SSN/Ta SSP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium	urus Taur Taur 1201 ole gh-ga gh-ga 100 100 120 120 120 120 120 120 120 120	States Steres Secondary States	andard 47k Standard 47k Standard 47k Standard 47k nole BB Seismometer smometer 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra 330 Linear Phase Co PH Response/Quanter PH Response/Quanter
CN CN CN CN II IU IU IU VPS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 636.4 731.5 634.3 634.3 634.3 634.3 634.3 634.3 634.3 136.2 516.6 637.4 712.5 516.6 927.4 712.5 516.6 93.3 136.2 516.9 94.8 598.9 605.2 592.8 592.8 592.8 592.8 595.9 605.2 610.1 601.9 595.0 610.9 595.0 595.7 517.5 577.3 583.6 577.3 577.5 577.3 577.5 577.3 577.5 577.3 577.5 577.3 577.5 577.3 577.5 577.3 577.5 577.3 577.5 577.3 577.5 57	ka k	60.7 66.3 66.6 169.4 23.8 23.8 20.3 29.4 19.7 16.8 51.2 53.9 57.5 59.8 331.0 62.7 276.9 310.7 224.2 24.2 24.2 24.2 23.8 19.6 19.5 19.5 19.5 19.5 19.5 19.5 19.5 19.5	deg deg deg deg deg deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics	SSP_NSN/Ta SSP_60sec/ SSP_60sec/ SSP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-2 Hig STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt STS-6A/Qt Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium Trillium	urus Taur Taur 1201 ole gh-gg 1000 ante 1200 ante 1200 ante 1200 ante 1200	States Second Se	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanter PH Response/Quanter PH Response/Quanter
CN CN CN CN II IU IU IU VPS PS TA TA TA TA TA TA TA TA TA TA TA TA TA	BVCY YUK2 YUK3 KDAK COLA COLA COLA COLA COLA COLA COLA L2K L2K L2K L2K L2K L2K L2K N19K N25K N19K N25K N19K N25K COLA COLA COLA COLA COLA COLA COLA COLA	10 00 10 10	731.0 712.5 732.5 222.7 635.7 635.7 635.7 635.7 635.7 635.7 670.4 630.4 731.5 6634.3 731.5 6634.3 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 5627.4 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 712.5 562.7 755.8 777.1 573.5 5777.1 573.5 5777.1 573.5 5777.1 573.5 577.1 573.5 577.1 573.5 577.1 573.5 577.1 573.5 577.1 573.5 577.1 573.5 774.5 577.5 577.1 573.5 774.5 577.5 577.1 573.5 577.5 577.1 573.5 577.5 577.1 573.5 577.5 577.1 573.5 577.5 577.1 573.5 577.5 577.1 573.5 577.5 577.1 577.5	ka k	60.7 66.3 66.6 169.4 23.8 23.8 23.8 20.3 29.4 19.7 16.8 51.2 59.8 331.0 62.7 276.9 277.0 276.9 277.0 276.9 277.0 277.0 276.9 277.0 270.0 277.0 270.0 2	deg deg deg deg deg deg deg deg deg deg	Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Guralp CMG33 Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Streckeisen Nanometrics Nanometrics Nanometrics Nanometrics Streckeisen Nanometrics Streckeisen Nanometrics	2SP_NSN/Ta 2SP_NSN/Ta 2SP_60sec/ 2SP_60sec/ 2SP_60sec/ Trillium 54000Boreh STS-2 Hig STS-2 Hig STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt STS-5A/Qt Trillium	urus Taun Taun 1207 001 207 1207 200 200 200 200 200 200 200 200 200	s States rus s Posth Seis: ain soco soco soco soco soco soco soco soc	andard 47k Standard 47k Standard 47k standard 47k nole BB Seismometer smometer 330 Linear Phase Co Response/Quanterra 330 Linear Phase Co Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra Response/Quanterra PH Response/Quanter PH Response/Quanter

Table 4: 60 stations with "bad" seismograms for the $M_{\rm w}$ 7.1 Iniskin earthquake. The list is sorted by epicentral distance: 40 are <250 km, 20 are \geq 250 km. These seismograms are shown in Figure 9.

net	sta	loc	distar	nce	azir	nuth	response_file	9				
AV	AU22		42.6	km	186.7	deg	CMG-6TD					
AV	AUSS		44.5	km	191.9	deg	CMG-6TD					
AV	AUWS		44.9	km	194.0	deg	CMG-6TD					
AV	AUJA		46.5	km	190.8	deg	CMG-6TD					
AV	AUSB		47.3	km	191.0	deg	CMG-6TD					
TA	020K		51.7	km	44.1	deg	Streckeisen S	STS-5A/Qu	ante	rra	330 Line	ar Phase Co
AV	RED		79.5	km	20.1	deg	CMG-6TD					
AK	HOM		91.7	km	95.8	deg	Streckeisen S	STS-5/Qua	nter	ra 3	330Linear	Phase Bel
AV	NCT		92.4	km	11.7	deg	CMG-6TD					
ТΑ	Q19K		93.9	km	193.3	deg	Streckeisen S	STS-5A/Qu	ante	rra	330 Line	ar Phase Co
ZE	KALS		95.2	km	43.9	deg	Nanometrics 1	rillium	120	Sec	PH Respo	nse/Quanter
ZE	NNIL		96.6	km	69.2	deg	Nanometrics 1	rillium	120	Sec	PH Respo	nse/Quanter
AV	RDDF		99.1	km	18.8	deg	CMG-6TD				1	
ZE	KALN		113.6	km	42.0	deg	Nanometrics 1	rillium	120	Sec	PH Respo	nse/Quanter
AK	CNP		117.4	km	101.4	deg	Nanometrics 1	rillium	240	Sec	Response	sn400 and
ZE	CL.AM		118.0	km	61.8	deg	Nanometrics T	[rillium	120	Sec	PH Respo	nse/Quanter
ZE	LTUY		131.3	km	65.5	deg	Nanometrics T	[rillium	120	Sec	PH Respo	nse/Quanter
AK	BRLK		132.9	km.	88.9	deg	Streckeisen S	STS-2 G3/	Ouan	terr	a 330 Li	near Phase
ZE	SALA		140 1	km	37.3	deg	Nanometrics T	Frillium	120	Sec	PH Respo	nse/Quanter
ZE	LTUX		140.8	km	70 1	deg	Nanometrics T	Trillium	120	Sec	PH Respo	nse/Quanter
ΔK	BRSE		142 2	km.	89.3	deg	Nanometrics 7	Trillium	240	Sec	Response	sn400 and
75			145 4	km	55 9	deg	Nanometrics 1	Trillium	120	Sec	PH Respo	nse/Auanter
75	NGKI		150 1	km km	16 5	deg	Nanometrics 1	Trillium	120	Sec	DH Respo	nse/Quanter
	CADN		163 1	km km	40.0	deg	Nanometrics 1	Trillium	120	Sec	Response	/Ouanterra
75	BING		166 2	km km	58 0	deg	Nanometrics 1	Trillium	120	Sec	DH Bogno	/quanteria
	GDUD		171 0	lem	10.0	dog	CMC_6TD	IIIIII uuu	120	Dec	III nespo	iise/ quaircer
75 75	CONC		170.0	lem.	24 6	dog	Nonomotrica T	[millium	120	Soc	DU Pogno	ngo/Quantor
	SDCC		19/ 0	lem.	24.0	dog	CMC_6TD	I I I I I I I I I I I I I I I I I I I	120	Dec	rn kespo	lise/ qualicer
AV	SFCG QTV		104.9	lem.	62 1	dog	Nonomotrica T	[millium	240	Soc	Pognongo	an400 and
AL ZE	MDEN		109.4	kill lem	62.1 E2 /	deg	Nanometrics I	ruillium	100	Sec	DU Pogno	sii400 allu
ᄶᅑ	VAUN		109.4	KIII lem	012 0	deg	CMC_CTD	riiium	120	sec	PH Respo	iise/quaiiter
AV 7E	LULTD		100 0	KIII lem	ZI3.Z	deg	Nenemetrica T		100	See	DU Bogno	nao (Overter
ᄶᅑ	VADII		190.0	KIII lem	40.9	deg	CMC_CTD	riiium	120	sec	PH Respo	iise/quaiiter
AV TA	NADU		201.4	KIII Jama	215.9	deg	Nemenaturi en T	····	100	.	D	/0
IA	UZZK CUD		213.3	Km lam	77.0	deg	Nanometrics I	ITILIUM	120	Sec	Response	/Quanterra
AR TT	ADAR	00	217.1	KIII lem	160 4	deg	Gurarp Chuses	DP_00Sec/	yuan olo	Coic	a SSU LI	near Phase
11 7E		00	222.1	KIII lem	109.4	deg	Nerometrica T	EUUUBOIEN Faillium	100	Self	DU Peare	nao (Overter
	JUDD		223.2	KIII Jama	24.2	deg	Nanometrics I		120	Sec	Pri nespo	
AK	FIRE		220.7	Km lam	40.0	deg	Nanometrics I	rillium Feedlideem	120	Sec	Response	/Quanterra
	HUPE		230.5	Km lam	50.0	deg	Nanometrics I	rillium Feedlideem	120	Sec	PH Respo	nse/Quanter
An	RCOI		245.1	кш	51.0	aeg	Nanometrics 1	rillium	120	Sec	Response	/quanterra
75	COOS		261 9	lem	11 2	dor	Nanometrics T	Frillium	120	Sec	DH Begno	ngo/Quantor
TΛ	MOOR		201.0	lzm	36.0	der	Streckeigen S		220 2n+0	rra	330 Line	ar Phase Co
٨ĸ	DWI		201.0	km km	63 5	deg	Nanometrice T	rillium	120	Sec	Beenonge	/Ouanterra
AK.	L ML		200.0	km km	52 8	deg	Nanometrics 1	Trillium	120	Sec	Response	/Quanterra
AV	CHU		326.7	lem	11 6	dog	Nanometrics 1	rrillium	120	Soc	Pogpongo	/Quanterra
AV	CUT		320.7	lem.	27.4	dog	Nanometrica T	Trillium	120	Soc	Posponse	/Quanterra
AV	SVI		353 3	lem.	27.4 A7 A	dog	Nanometrics 1	rillium	120	Sec	Pogpongo	/Qualiterra
AV	CIT		202.3 262 E	Kill Irm	47.4 67.1	deg	Nanometrics I	rillium Faillium	120	Sec	Response	/Quanterra
	GLI		305.5	kili lem	70 7	deg	Nanometrics I	rillium	240	Sec	Pogpongo	quanterra
AIZ	L T D		207.0	KIII Jama	TU.T	deg	Nanometrics I		240	Sec	Desponse	sli400 alid
AN	JOM		397.9	Km lam	51.0	deg	Nanometrics I	17111110M	240 100-	Dec	Response	sn400 and
PS	VMI		408.0	KM	65.7	aeg	cmg3esp_60sec	:+q330_1D	1000	050 0	D	10
AK			440.0	KM lama	66.3	aeg	Nanometrics 1	riiium	120	Sec	Response	/wuanterra
AK TA	KLU MO 4V		446.3	KM lama	b1.1	aeg	Nanometrics 1	riiium	240	Sec	Response	sn400 and (0)
TA	M24K		465.4	кт	52.6	deg	Nanometrics 1	rillium	120	Sec	ĸesponse	/wuanterra
PS	PS12		484.2	km	63.1	deg	cmg3esp_60sec	:+q330_1b	100c	@50		
PS	PS11		495.7	km	55.1	deg	cmg3esp_60sec	:+q330_1b	100c	@ 50	000 T ·	Dia C
TA	HARP		527.5	km	52.5	deg	Streckeisen S	51S-4B/Qu	ante	rra	330 Line	ar Phase Co
AK	BGLC		559.3	km	81.5	deg	Nanometrics 1	rillium	120	Sec	Kesponse	/Quanterra
PS	PS10		570.5	km	41.0	deg	cmg3t_100sec+	-q330_1b1	00c@	50		
PS	PS09		610.0	km	37.0	deg	cmg3esp_60sec	:+q330_lb	100c	@50		

Table 5: Same as Table 4, but here the stations are grouped by network. The lower set of AK stations are posthole sensors (HOM, CAPN, RC01, KNK, CUT, SAW).

net	sta	loc	distar	nce	azir	nuth	response_file
AK	SCM		397.9	km	51.8	deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	GLI		363.5	km	67.1	deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	FID		385.1	km	70.7	deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	BGLC		559.3	km	81.5	deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	BRSE		142.2	km	89.3	deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	KLU		446.3	km	61.1	deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	GHO		326.7	km	44.6	deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	PWL		299.5	km	63.5	deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	SLK		189.4	km	62.1	deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	CNP		117.4	km	101.4	deg	Nanometrics Trillium 240 Sec Response sn400 and
AK	BRLK		132.9	km	88.9	deg	Streckeisen STS-2 G3/Quanterra 330 Linear Phase
AK	SWD		217.1	km	77.9	deg	Guralp CMG3ESP 60sec/Quanterra 330 Linear Phase
AK	FIRE		228.7	km	46.0	deg	Nanometrics Trillium 120 Sec Response/Quanterra
٨ĸ			440 0	km	66.3	deg	Nanometrics Trillium 120 Sec Response/Quanterra
	511		110.0	11III	00.0	aug	Nanomoorrob Tritiram 120 boo Nobponbo, quantorra
٥ĸ	ном		91 7	km	95.8	dog	Streckeisen STS-5/Quanterra 3301 inear Phase Bel
٨ĸ	CAPN		163 1	km	45 0	deg	Nanometrics Trillium 120 Sec Response/Quanterra
AK	BC01		2/5 1	km	51 0	deg	Nanometrics Trillium 120 Sec Response/Quanterra
AV	KNK KNK		210.1	lem	52.9	dog	Nanometrics Trillium 120 Sec Response/Quanterra
AV	CUT		322.2	lrm	02.0 07 4	dog	Nanometrics Trillium 120 Sec Response/Quanterra
AV	GAM		353 3	lrm	27.4 A7 A	dog	Nanometrics Trillium 120 Sec Response/Quanterra
AN	SAW		555.5	KIII	47.4	ueg	Nanometrics fifitium 120 Sec Response/Quanterra
A 17	NOT		02 /	lem	11 7	dog	CMC-6TD
AV	NCI		92.4	kiii lem	10 0	deg	CMG-GTD
AV	RDDF		99.I	KII	10.0	aeg	
AV	RED		19.5	KII	20.1	aeg	
AV	SPCR		1/1.8	km	19.4	deg	CMG-6TD
AV	SPCG		184.9	km	21.2	deg	CMG-6TD
AV	KAKN		191.9	km	213.2	deg	CMG-6TD
AV	AUSB		47.3	km	191.0	deg	CMG-6TD
AV	AUWS		44.9	km	194.0	deg	CMG-6TD
AV	AUSS		44.5	km	191.9	deg	CMG-6TD
AV	AU22		42.6	km	186.7	deg	CMG-6TD
AV	KABU		201.4	km	215.9	deg	CMG-6TD
AV	AUJA		46.5	km	190.8	deg	CMG-6TD
AV	AUJA		46.5	km	190.8	deg	CMG-6TD
AV II	AUJA KDAK	00	46.5 222.7	km km	190.8 169.4	deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer
AV II	AUJA KDAK	00	46.5	km km	190.8 169.4	deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer
AV II PS	AUJA KDAK PS09	00	46.5 222.7 610.0	km km km	190.8 169.4 37.0	deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50
AV II PS PS	AUJA KDAK PS09 PS10	00	46.5 222.7 610.0 570.5	km km km	190.8 169.4 37.0 41.0	deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50
AV II PS PS PS	AUJA KDAK PS09 PS10 PS11	00	46.5 222.7 610.0 570.5 495.7	km km km km	190.8 169.4 37.0 41.0 55.1	deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50
AV II PS PS PS PS	AUJA KDAK PS09 PS10 PS11 PS12	00	46.5 222.7 610.0 570.5 495.7 484.2	km km km km km	190.8 169.4 37.0 41.0 55.1 63.1	deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50
AV II PS PS PS PS PS	AUJA KDAK PS09 PS10 PS11 PS12 VMT	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0	km km km km km km	190.8 169.4 37.0 41.0 55.1 63.1 65.7	deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50
AV II PS PS PS PS PS	AUJA KDAK PS09 PS10 PS11 PS12 VMT	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0	km km km km km km km	190.8 169.4 37.0 41.0 55.1 63.1 65.7	deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50
AV II PS PS PS PS TA	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7	km km km km km km km	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1	deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co
AV II PS PS PS PS TA TA	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3	km km km km km km km km km	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0	deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra
AV II PS PS PS PS TA TA TA	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5	km km km km km km km km km	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0 52.5	deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co
AV II PS PS PS PS TA TA TA TA	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6	km km km km km km km km km	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0 52.5 36.2	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co
AV II PS PS PS PS TA TA TA TA	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9	km km km km km km km km km	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0 52.5 36.2 193.3	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co
AV II PS PS PS PS TA TA TA TA TA	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4	km km km km km km km km km km km km	190.8 169.4 37.0 41.0 55.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co
AV II PS PS PS PS TA TA TA TA TA TA ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2	km km km km km km km km km km km	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec PH Response/Quanterra
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4	km km km km km km km km km km km km	190.8 169.4 37.0 41.0 55.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN CODS	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 93.9 465.4 95.2 189.4 261.9	km km km km km km km km km km km km km	190.8 169.4 37.0 41.0 55.1 65.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN G00D	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2	km km km km km km km km km km km km km k	190.8 169.4 37.0 41.0 55.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4 44.2 24.2	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN G00S JUDD	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2	km km km km km km km km km km km km km k	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4 44.2 24.2	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN G00S JUDD CONG	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2 179.0	km km km km km km km km km km km km km k	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4 44.2 24.2 34.6 27.2	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K M22K M24K KALS MPEN GOOS JUDD CONG SALA	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2 179.0 140.1	km km km km km km km km km km km km km k	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4 44.2 24.2 34.6 37.3	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN GOOS JUDD CONG SALA LTUX	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2 179.0 140.1 140.8	km km km km km km km km km km km km km k	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4 44.2 24.2 34.6 37.3 70.1 67.7	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN GOOS JUDD CONG SALA LTUX LTUX	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2 179.0 140.1 140.8 131.3	km km km km km km km km km km km km km k	190.8 169.4 37.0 41.0 55.1 63.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4 44.2 24.2 34.6 37.3 70.1 65.5	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN GO0S JUDD CONG SALA LTUX LTUY NNIL	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2 179.0 140.1 140.8 131.3 96.6	km km km km km km km km km km km km km k	190.8 169.4 37.0 41.0 55.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4 44.2 24.2 34.6 37.3 70.1 65.5 69.2	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN GOOS JUDD CONG SALA LTUX LTUY NNIL HOPE	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2 179.0 140.1 140.8 131.3 96.6 238.5	km km km km km km km km km km km km km k	190.8 169.4 37.0 41.0 55.1 65.7 44.1 66.0 52.5 36.2 193.3 52.6 43.9 53.4 44.2 24.2 34.6 37.3 70.1 65.5 69.2 56.8	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN GOOS JUDD CONG SALA LTUX LTUY NNIL HOPE NSKI	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 93.9 465.4 95.2 189.4 261.9 223.2 179.0 140.1 140.8 131.3 96.6 238.5 150.1	km km km km km km km km km km	$\begin{array}{c} 190.8\\ 169.4\\ 37.0\\ 41.0\\ 55.1\\ 63.1\\ 65.7\\ 44.1\\ 66.0\\ 52.5\\ 36.2\\ 193.3\\ 52.6\\ 43.9\\ 53.4\\ 44.2\\ 24.2\\ 24.2\\ 24.2\\ 24.2\\ 34.6\\ 37.3\\ 70.1\\ 65.5\\ 69.2\\ 56.8\\ 46.5\\ \end{array}$	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN G00D CONG SALA LTUX LTUY NNIL HOPE NSKI CLAM	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 93.9 465.4 95.2 189.4 261.9 223.2 179.0 140.1 140.8 131.3 96.6 238.5 150.1 118.0	km km km km km km km km km km	$\begin{array}{c} 190.8\\ 169.4\\ 37.0\\ 41.0\\ 55.1\\ 63.1\\ 65.7\\ 44.1\\ 66.0\\ 52.5\\ 36.2\\ 193.3\\ 52.6\\ 43.9\\ 53.4\\ 44.2\\ 24.2\\ 34.6\\ 37.3\\ 70.1\\ 65.5\\ 69.2\\ 56.8\\ 46.5\\ 61.8\\ \end{array}$	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS TA TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K M22K M24K KALS MPEN G00S JUDD CONG SALA LTUX NNIL HOPE NSKI CLAM KALN	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2 179.0 140.1 140.8 131.3 96.6 238.5 150.1 118.0 113.6	km km km km km km km km km km km km km k	$\begin{array}{c} 190.8\\ 169.4\\ 37.0\\ 41.0\\ 55.1\\ 65.7\\ 44.1\\ 66.0\\ 52.5\\ 36.2\\ 193.3\\ 52.6\\ 43.9\\ 53.4\\ 44.2\\ 24.2\\ 34.6\\ 37.3\\ 70.1\\ 65.5\\ 69.2\\ 56.8\\ 46.5\\ 61.8\\ 42.0\\ \end{array}$	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS PS TA TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K M22K M22K M22K KALS MPEN G00S JUDD CONG SALA LTUY NNIL HOPE NSKI CLAM KALN WHIP	00	$\begin{array}{r} 46.5\\ 222.7\\ 610.0\\ 570.5\\ 495.7\\ 484.2\\ 408.0\\ 51.7\\ 213.3\\ 527.5\\ 281.6\\ 93.9\\ 465.4\\ 95.2\\ 189.4\\ 261.9\\ 223.2\\ 179.0\\ 140.1\\ 140.8\\ 131.3\\ 96.6\\ 238.5\\ 150.1\\ 118.0\\ 113.6\\ 198.8\\ \end{array}$	km km km km km km km km km km km km km k	$\begin{array}{c} 190.8\\ 169.4\\ 37.0\\ 41.0\\ 55.1\\ 63.1\\ 65.7\\ 44.1\\ 66.0\\ 52.5\\ 36.2\\ 193.3\\ 52.6\\ 43.9\\ 53.4\\ 44.2\\ 24.2\\ 34.6\\ 37.3\\ 70.1\\ 65.5\\ 69.2\\ 56.8\\ 46.5\\ 61.8\\ 42.0\\ 45.9\end{array}$	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter
AV II PS PS PS PS PS TA TA TA TA TA TA ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE ZE	AUJA KDAK PS09 PS10 PS11 PS12 VMT 020K 022K HARP M22K Q19K M24K KALS MPEN GOOS JUDD CONG SALA LTUX LTUX LTUX LTUX NNIL HOREN SALA KALN WHIP SOLD	00	46.5 222.7 610.0 570.5 495.7 484.2 408.0 51.7 213.3 527.5 281.6 93.9 465.4 95.2 189.4 261.9 223.2 179.0 140.1 140.8 131.3 96.6 238.5 150.1 118.0 113.6 198.8 145.4	km km km km km km km km km km km km km k	$\begin{array}{c} 190.8\\ 169.4\\ 37.0\\ 41.0\\ 55.1\\ 63.1\\ 65.7\\ 44.1\\ 66.0\\ 52.5\\ 36.2\\ 193.3\\ 52.6\\ 43.9\\ 53.4\\ 44.2\\ 24.2\\ 34.6\\ 37.3\\ 70.1\\ 65.5\\ 69.2\\ 56.8\\ 46.2\\ 56.8\\ 42.0\\ 45.9\\ 55.9\end{array}$	deg deg deg deg deg deg deg deg deg deg	CMG-6TD Geotech KS-54000Borehole Seismometer cmg3esp_60sec+q330_lb100c@50 cmg3t_100sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 cmg3esp_60sec+q330_lb100c@50 Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec Response/Quanterra Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-4B/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Streckeisen STS-5A/Quanterra 330 Linear Phase Co Nanometrics Trillium 120 Sec PH Response/Quanter Nanometrics Trillium 120 Sec PH Response/Quanter

Table 6: Max counts $(\max[c(t)])$ on each component for the (good) stations in Table 2. The clipping column is the ratio of the max counts on any of the three components to the (threshold) value $q = |2^{N-1}|$ for the N-bit digitizer. The time steps columns show the number of time steps for which |c(t)| > 0.8q. This gives an indication of the severity of clipping and the likelihood of a seismogram having squared waveforms.

net	sta	loc channels	distance	azimuth	max count	s on each	component	ti	me step	s	clipp	oing	sensor
TA	019K	BHZ BHE BHN	76.8 km	310.7 deg	4993574	6219785	10102073	0	0	31	1.20	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
ZE	HLC3	HHZ HHE HHN	94.8 km	359.8 deg	6770713	6834158	9869933	7	6	191	1.18	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
ΤA	018K	BHZ BHE BHN	109.4 km	276.9 deg	1635492	2091133	5307763	0	0	0	0.63	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
ΤA	P18K	BHZ BHE BHN	117.7 km	251.0 deg	1186736	2216362	1756318	0	0	0	0.26	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
ZE	HLC5	HHZ HHE HHN	118.2 km	339.4 deg	3962796	5762139	9056947	0	0	76	1.08	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
TA	N19K	BHZ BHE BHN	136.2 km	331.0 deg	2109816	2968921	6142548	0	0	0	0.73	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
ZE	WFLS	HHZ HHE HHN	152.9 km	328.2 deg	1772405	2676596	4632839	0	0	0	0.55	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
11	KDAK	10 BHZ BHI BHZ	222.7 Km	169.4 deg	15971086	27746142	19511192	0	6	0	0.83	(26-D1t)	Nanometrics Irillium I20Posthole BB Seismometer
AI	DMD	DUZ DUE DUN	201.5 Km	160.2 deg	3037254	3259302	3/31011	20	47	0	1 01	(24-bit)	SIS=2/IFIGENT
AV AV	DDIA	BUZ BUE BUN	305.4 Km	40.0 deg	3775269	/171001	4/77089	30	4/	90	0.53	(24-DIL) (24-bit)	Nanomotrics Trillium 240 Soc Rosponso sp400 and
AK	STT	BHZ BHE BHN	359 4 km	189 0 deg	2044490	3448853	4475269	0	0	0	0.53	(24 bit) (24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
ТА	023K	BHZ BHE BHN	392.9 km	92.2 deg	2836806	3356220	3338121	ő	0	ő	0.40	(24 bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AT	MTD	BHZ BHE BHN	393.0 km	92.2 deg	3377971	4136842	4501946	Ő	0 0	Ő	0.54	(24-bit)	STS-2/Trident
AK	CAST	BHZ BHE BHN	413.6 km	8.2 deg	1264864	2430307	1429290	0	0	ō	0.29	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	EYAK	BHZ BHE BHN	426.8 km	74.7 deg	3876699	3968494	5500256	0	0	0	0.66	(24-bit)	Guralp CMG3T_120sec/Quanterra 330 LinearPhase B
AK	TRF	BHZ BHE BHN	441.5 km	19.7 deg	5270057	6116956	4377454	0	0	0	0.73	(24-bit)	Streckeisen STS-2 G3/Quanterra 330 Linear Phase
AK	KTH	BHZ BHE BHN	441.6 km	15.3 deg	2287505	2986624	3501217	0	0	0	0.42	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	SGA	BHZ BHE BHN	456.1 km	75.5 deg	2525113	5085220	6298988	0	0	0	0.75	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	CHI	BHZ BHE BHN	459.3 km	198.7 deg	1031582	1394809	1418865	0	0	0	0.17	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	RND	BHZ BHE BHN	469.7 km	28.0 deg	4433759	2830540	3094051	0	0	0	0.53	(24-bit)	Streckeisen STS-2 G3/Quanterra 330 Linear Phase
AK	GOAT	BHZ BHE BHN	482.8 km	75.3 deg	4037178	9736210	9727398	0	17	11	1.16	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	KAI	BHZ BHE BHN	496.3 km	83.9 deg	2749088	3513020	5649767	0	0	0	0.67	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	BMR	BHZ BHE BHN	496.7 km	70.4 deg	4192940	3416974	5840455	0	0	0	0.70	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	MCK	BHZ BHE BHN	499.1 km	25.4 deg	2643573	3205368	2709552	0	0	0	0.38	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	BPAW	BHZ BHE BHN	499.3 km	12.9 deg	1207542	2297163	1133343	0	0	0	0.27	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	HMT	BHZ BHE BHN	505.8 km	78.7 deg	2248984	7906942	6729974	0	21	1	0.94	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
TA	N25K	BHZ BHE BHN	516.6 km	62.7 deg	3696714	3390588	48/1282	0	0	0	0.58	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	NICH	BHZ BHE BHN	521.5 Km	80.0 deg	2268306	4181035	4/996/9	0	0	0	0.57	(24-bit)	Nanometrics Irillium 240 Sec Response sn400 and
AL	DUM	DIZ DIE DIN DUZ DUE DUN	531.0 Km	82.0 deg	2200730	2203043	3200030	0	0	0	0.39	(24-bit)	Nanometrics Irillium 120 Sec Response/Quanterra
AV	DEDC	DUZ DUE DUN	534.9 Km	21.2 deg	2206626	6072796	4752450	0	0	0	0.05	(24-DIL) (24-bit)	Nanometrics Trillium 120 Sec Response/Qualiteria
AK	DENG	BHZ BHE BHN	549 7 km	45 9 deg	2390020	3127233	3501598	0	0	0	0.72	(24-bit) (24-bit)	Nanometrics Trillium 120 Sec Response Sn400 and
AK	GLB	BHZ BHE BHN	550.8 km	65.9 deg	3084668	2486961	4752709	0	0	0	0.57	(24 bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	GRIN	BHZ BHE BHN	557.5 km	79.6 deg	2204443	3886586	3168592	Ő	0 0	Ő	0.46	(24-bit)	Streckeisen STS-2 G3/Quanterra 330 Linear Phase
AK	KHIT	BHZ BHE BHN	562.2 km	77.8 deg	2441041	3803426	3691923	ŏ	ő	ő	0.45	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	VRDI	BHZ BHE BHN	563.5 km	68.8 deg	2190139	2655067	4161792	0	0	0	0.50	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
XV	FNN2	HHZ HHE HHN	573.3 km	18.7 deg	3805498	7417033	6067250	0	53	0	0.88	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	FNN1	HHZ HHE HHN	577.1 km	19.7 deg	3339496	4703311	5521109	0	0	0	0.66	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	FAPT	HHZ HHE HHN	577.5 km	20.4 deg	1486649	5487928	3783485	0	0	0	0.65	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	NEA2	BHZ BHE BHN	582.1 km	20.2 deg	905426	1517160	1473710	0	0	0	0.18	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
XV	FPAP	HHZ HHE HHN	583.6 km	20.0 deg	1435465	3435538	3128969	0	0	0	0.41	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	WAX	BHZ BHE BHN	584.1 km	77.9 deg	2701299	4412952	4906949	0	0	0	0.58	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
XV	F8KN	HHZ HHE HHN	585.1 km	15.8 deg	1029430	1380373	838729	0	0	0	0.16	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	F1TN	HHZ HHE HHN	586.7 km	19.6 deg	3896753	5371291	5867679	0	0	0	0.70	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	WRH	BHZ BHE BHN	591.1 km	24.9 deg	1299357	1649393	1443699	0	0	0	0.20	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
XV	F2TN F7TV	HHZ HHE HHN	592.8 km	19.5 deg	4563562	5494747	6351782	0	0	0	0.76	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AV VV	FILV	UNZ UNE UNN	596.0 km	15.9 deg	1097046	15401300	2304040	0	0	0	0.41	(24-bit)	Nanometrics Irillium 120 Sec PH Response/Quanter
AV VV	FIGH	UNA UNE UNA	590.9 Km	20.8 deg	2476701	9700045	10007409	0	150	116	1 10	(24-DIL) (24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
XV XV	FGTP	HHZ HHE HHN	601 9 km	17.0 deg	2094830	3701429	3071734	0	152	0	0 44	(24-bit) (24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	F4TN	HHZ HHE HHN	605.2 km	18.9 deg	2794195	5226006	7638525	0	0	43	0.91	(24 bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
XV	F5MN	HHZ HHE HHN	610.1 km	18.5 deg	3513370	6085425	5170715	õ	0 0	0	0.73	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	PTPK	BHZ BHE BHN	614.6 km	70.3 deg	2991363	4369646	6806963	0	0	2	0.81	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	CCB	BHZ BHE BHN	614.8 km	25.1 deg	801127	913286	1084522	0	0	0	0.13	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	HDA	BHZ BHE BHN	614.8 km	29.7 deg	1369496	2255607	1982546	0	0	0	0.27	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	KIAG	BHZ BHE BHN	615.8 km	73.1 deg	2481809	3420196	3410497	0	0	0	0.41	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	BAL	BHZ BHE BHN	618.3 km	71.9 deg	1712380	1414496	4755714	0	0	0	0.57	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AT	MENT	BHZ BHE BHN	621.5 km	51.1 deg	2315762	3357072	3722823	0	0	0	0.44	(24-bit)	Trillium-240/Trident
ΤA	M26K	BHZ BHE BHN	627.4 km	57.5 deg	2095257	2261093	3400542	0	0	0	0.41	(24-bit)	Streckeisen STS-5A/Quanterra 330 Linear Phase Co
AK	RIDG	BHZ BHE BHN	628.2 km	41.4 deg	2809215	3982635	4403615	0	0	0	0.52	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
ΤA	123K	BHZ BHE BHN	634.3 km	16.8 deg	1304439	1755631	1979555	0	0	0	0.24	(24-bit)	Streckeisen STS-5A/Quanterra 330 Linear Phase Co
ΤA	TCOL	BHZ BHE BHN	635.7 km	23.8 deg	1524284	2275821	2687469	0	0	0	0.32	(24-bit)	Streckeisen STS-4B/Quanterra 330 Linear Phase Co
IU	COLA	00 BHZ BH1 BH2	635.7 km	23.8 deg	8000617	7851908	12872183	0	0	0	0.38	(26-bit)	Geotech KS-54000Borehole Seismometer
IU	COLA	10 BHZ BH1 BH2	635.7 km	23.8 deg	41135196	41847444	41523760	1082	1840	1763	1.25	(26-bit)	Streckeisen STS-2 High-gain
IU	COLA	10 HHZ HH1 HH2	635.7 km	23.8 deg	41572436	42427368	41653472	2694	4574	4369	1.26	(26-bit)	Streckeisen STS-2 High-gain
AK	MDM	BHZ BHE BHN	636.1 km	22.0 deg	1026647	1345987	892057	0	0	0	0.16	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
TA	L26K	BHZ BHE BHN	642.7 km	51.2 deg	1/68737	2312539	1900285	0	0	0	0.28	(24-bit)	Nanometrics Irillium 120 Sec Response/Quanterra
AK	ייסאס	BHZ BHE BHN	051.4 km	44.3 deg	3020518	2819958	4048787	0	0	0	0.48	(24-bit)	Nanometrics Irillium 120 Sec Response/Quanterra
AA TA	DARN	DIL DIE DIN BU7 DUE DUN	660 0 1mm	12.1 aeg	2100090 701107	1300000	1000042	0	0	0	0.20	(24-D1U)	Nanometrics Trillium 240 Sec Response sn400 and
TA TA	DOVE	OI BUT DUE DUN	660 0 1mm	24.2 aeg	1004677	1620074	302091 10FE979	0	0	0	0.10	(24-D1U)	Strockoison STS-/R/Quantary 220 Lincon Di C-
TH	SCRK	BHZ BHF BHN	677.3 km	42.0 deg	2504288	1530481	1748018	0	0	0	0.20	(24-bit)	Nanometrics Trillium 120 Sec Response/Duarterra
TA	M27K	BHZ BHE BHN	679.3 km	59.8 deg	1044502	2175968	2484399	0	0	0	0.30	(24-hi+)	Nanometrics Trillium 120 Sec Response/Qualterra
CN	YUK2	HHZ HHE HHN	712.5 km	66.3 deg	934500	1464833	2179060	0	ő	ő	0.26	(24-bit)	Guralp CMG3ESP 60sec/Taurus Standard 47k
TA	L27K	BHZ BHE BHN	712.5 km	53.9 deg	1189842	2019600	2089744	ő	ő	ő	0.25	(24-bit)	Streckeisen STS-5A/Quanterra 330 Linear Phase Co
CN	BVCY	HHZ HHE HHN	731.0 km	60.7 deg	1696808	2652490	2923999	õ	Ő	ő	0.35	(24-bit)	Guralp CMG3ESP NSN/Taurus Standard 47k
TA	H24K	BHZ BHE BHN	731.5 km	19.7 deg	1156005	1430587	840363	0	0	ō	0.17	(24-bit)	Streckeisen STS-5A/Quanterra 330 Linear Phase Co
CN	YUK3	HHZ HHE HHN	732.5 km	66.6 deg	861929	1079450	1669704	0	0	0	0.20	(24-bit)	Guralp CMG3ESP_60sec/Taurus Standard 47k

Table 7: Same as Table 6, but for the (bad) stations in Table 4.

net	sta	loc channels	distance	azimuth	max count	ts on each	component	t	ime ste	ps	clipp	oing	sensor
AV	AU22	BHZ BHE BHN	42.6 km	186.7 deg	19323768	20315818	21108362	1805	4668	4560	2.52	(24-bit)	CMG-6TD
AV	AUSS	BHZ BHE BHN	44.5 km	191.9 deg	7933789	8182647	8235565	1209	3997	3410	0.98	(24-bit)	CMG-6TD
AV	AUWS	BHZ BHE BHN	44.9 km	194.0 deg	8230455	8124577	8717011	1252	3060	3341	1.04	(24-bit)	CMG-6TD
AV	AUJA	BHZ BHE BHN	46.5 km	190.8 deg	8923872	8867864	9137270	1070	2996	2596	1.09	(24-bit)	CMG-6TD
AV	AUSB	BHZ BHE BHN	47.3 km	191.0 deg	8476498	9451856	8909572	683	2133	1447	1.13	(24-bit)	CMG-6TD
TA	020K	BHZ BHE BHN	51.7 km	44.1 deg	10813312	11000126	11243780	22784	22044	256	1.34	(24-bit)	Streckeisen STS-5A/Quanterra 330 Linear Phase Co
AV	RED	BHZ BHE BHN	79.5 km	20.1 deg	7880195	8102241	8533501	643	842	1043	1.02	(24-bit)	CMG-6TD
AK	HOM	BHZ BHE BHN	91.7 km	95.8 deg	10959492	11022347	11149573	508	838	1345	1.33	(24-bit)	Streckeisen STS-5/Quanterra 330Linear Phase Bel
AV	NCT	BHZ BHE BHN	92.4 km	11.7 deg	7703836	7707954	7737413	43	268	400	0.92	(24-bit)	CMG-6TD
TA	Q19K	BHZ BHE BHN	93.9 km	193.3 deg	6689711	10790829	10825120	0	515	314	1.29	(24-bit)	Streckeisen STS-5A/Quanterra 330 Linear Phase Co
ZE	KALS	HHZ HHE HHN	95.2 km	43.9 deg	9961735	9977602	10051769	13612	24834	2078	1.20	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
ZE	NNIL	HHZ HHE HHN	96.6 km	69.2 deg	10054811	10167287	10160085	234	771	957	1.21	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AV	RDDF	BHZ BHE BHN	99.1 km	18.8 deg	7899034	8407030	8287098	645	947	1357	1.00	(24-bit)	CMG-6TD
ZE	KALN	HHZ HHE HHN	113.6 km	42.0 deg	9769120	10079194	9973140	297	1964	2060	1.20	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	CNP	BHZ BHE BHN	117.4 km	101.4 deg	9145119	10135280	10050838	11	1047	334	1.21	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
ZE	CLAM	HHZ HHE HHN	118.0 km	61.8 deg	10279635	10251925	10221657	485	1166	2445	1.23	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
ZE	LTUY	HHZ HHE HHN	131.3 km	65.5 deg	10112214	10226253	10194548	836	2593	2847	1.22	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	BRLK	BHZ BHE BHN	132.9 km	88.9 deg	10330658	10762575	11561941	47	124	177	1.38	(24-bit)	Streckeisen STS-2 G3/Quanterra 330 Linear Phase
ZE	SALA	HHZ HHE HHN	140.1 km	37.3 deg	9920659	9938995	9998772	488	2089	2938	1.19	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
ZE	LTUX	HHZ HHE HHN	140.8 km	70.1 deg	10091564	10180096	10180324	847	1988	2464	1.21	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	BRSE	BHZ BHE BHN	142.2 km	89.3 deg	9967746	10088953	9826271	146	311	118	1.20	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
ZE	SOLD	HHZ HHE HHN	145.4 km	55.9 deg	10120190	10281287	10115145	1143	2566	4347	1.23	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
ZE	NSKI	HHZ HHE HHN	150.1 km	46.5 deg	10040845	10095251	10106053	1280	3479	4796	1.20	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	CAPN	BHZ BHE BHN	163.1 km	45.0 deg	10180374	10290691	10309986	644	2014	2169	1.23	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
ZE	BING	HHZ HHE HHN	166.2 km	58.0 deg	9942616	10027808	9979415	1268	2856	3664	1.20	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AV	SPCR	BHZ BHE BHN	171.8 km	19.4 deg	18090612	18888980	18548290	989	1842	1944	2.25	(24-bit)	CMG-6TD
ZE	CONG	HHZ HHE HHN	179.0 km	34.6 deg	9959691	9960502	10007680	919	3103	2800	1.19	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AV	SPCG	BHZ BHE BHN	184.9 km	21.2 deg	7711794	8170678	8118107	552	788	1370	0.97	(24-bit)	CMG-6TD
AK	SLK	BHZ BHE BHN	189.4 km	62.1 deg	9912796	10066462	10204113	210	166	612	1.22	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
ZE	MPEN	HHZ HHE HHN	189.4 km	53.4 deg	9895881	9955874	9759976	9560	5809	12586	1.19	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AV	KAKN	BHZ BHE BHN	191.9 km	213.2 deg	1875620	1958519	1922907	0	0	0	0.23	(24-bit)	CMG-6TD
ZE	WHIP	HHZ HHE HHN	198.8 km	45.9 deg	10123953	10186301	10190664	1599	4003	4318	1.21	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AV	KABU	BHZ BHE BHN	201.4 km	215.9 deg	7691637	7780275	7705017	304	751	449	0.93	(24-bit)	CMG-6TD
TA	022K	BHZ BHE BHN	213.3 km	66.0 deg	9979736	10133820	10204207	148	622	624	1.22	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	SWD	BHZ BHE BHN	217.1 km	77.9 deg	7642391	7760898	7833017	812	883	1147	0.93	(24-bit)	Guralp CMG3ESP_60sec/Quanterra 330 Linear Phase
II	KDAK	00 BHZ BH1 BH2	222.7 km	169.4 deg	26335556	46992228	33462612	0	33	13	1.40	(26-bit)	Geotech KS-54000Borehole Seismometer
ZE	JUDD	HHZ HHE HHN	223.2 km	24.2 deg	10040295	10149928	10145600	288	2249	2531	1.21	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	FIRE	BHZ BHE BHN	228.7 km	46.0 deg	9926648	10005040	10051611	643	2138	2053	1.20	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
ZE	HOPE	HHZ HHE HHN	238.5 km	56.8 deg	10166516	10114685	10134948	203	294	517	1.21	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
AK	RC01	BHZ BHE BHN	245.1 km	51.0 deg	9930968	9882576	10018562	463	593	210	1.19	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
ZE	GOOS	HHZ HHE HHN	261.9 km	44.2 deg	10036371	10284943	10099604	558	2474	2051	1.23	(24-bit)	Nanometrics Trillium 120 Sec PH Response/Quanter
ΤA	M22K	BHZ BHE BHN	281.6 km	36.2 deg	10302726	10379137	10273044	21185	72	55	1.24	(24-bit)	Streckeisen STS-4B/Quanterra 330 Linear Phase Co
AK	PWL	BHZ BHE BHN	299.5 km	63.5 deg	9904307	10008714	9930796	358	618	687	1.19	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	KNK	BHZ BHE BHN	322.2 km	52.8 deg	10059242	10288186	10172936	82	262	114	1.23	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	GHO	BHZ BHE BHN	326.7 km	44.6 deg	9794124	9809809	9791499	30	171	733	1.17	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	CUT	BHZ BHE BHN	337.5 km	27.4 deg	7516079	9911685	9897670	33	338	370	1.18	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	SAW	BHZ BHE BHN	353.3 km	47.4 deg	9799024	9950483	9948441	44	212	210	1.19	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	GLI	BHZ BHE BHN	363.5 km	67.1 deg	9952728	9871144	9887031	337	42	313	1.19	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	FID	BHZ BHE BHN	385.1 km	70.7 deg	7883288	8867035	10060070	3	42	183	1.20	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	SCM	BHZ BHE BHN	397.9 km	51.8 deg	9881385	9810633	10033545	476	536	407	1.20	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
AK	DIV	BHZ BHE BHN	440.0 km	66.3 deg	6272481	4939321	9976108	0	0	36	1.19	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
AK	KLU	BHZ BHE BHN	446.3 km	61.1 deg	9801925	8587380	9881473	146	24	194	1.18	(24-bit)	Nanometrics Trillium 240 Sec Response sn400 and
TA	M24K	BHZ BHE BHN	465.4 km	52.6 deg	10024595	9991435	10022105	112	427	558	1.20	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra
TA	HARP	BHZ BHE BHN	527.5 km	52.5 deg	10084469	10234152	10235990	7288	354	17562	1.22	(24-bit)	Streckeisen STS-4B/Quanterra 330 Linear Phase Co
AK	BGLC	BHZ BHE BHN	559.3 km	81.5 deg	5548518	9779350	8676843	0	25	24	1.17	(24-bit)	Nanometrics Trillium 120 Sec Response/Quanterra



Figure 1: Map of simulation region used in this study. Only broadband stations within this 1200 km \times 600 km region were analyzed. The image shows a snapshot of the wavefield simulation in *Tape* (2016a).



Figure 2: Map of broadband stations recording the 2016-01-24 $M_{\rm w}$ 7.1 Iniskin, Alaska, earthquake. The 1200 km × 600 km simulation region (Figure 1) is outlined in black. White: stations outside the simulation region; Black: 81 "good" stations inside the simulation region with no apparent problems; Red: 60 "bad" stations inside the simulation region. The beachball is the source mechanism from the GCMT catalog (*Ekström et al.*, 2012), which lists a depth of 111 km. The blue curve denotes the lateral extent of slab seismicity. Contours of Cook Inlet basin (*Shellenbaum et al.*, 2010) are plotted just northeast of the earthquake. See Figure 3 for a zoom-in on the Cook Inlet region.



Figure 3: Zoom-in on Figure 2.



Figure 4: Map of 8 stations used in the record section in Figure 5. Note that all stations are to the northwest, whereas no station are to the northeast, where Cook Inlet basin is.



Figure 5: All 8 stations within 250 km of the Iniskin earthquake and having recorded seismograms that we deem to be good. Observed (blue) and synthetic (red) seismograms are filtered with periods 4–80 s, shown for all three components, and **sorted by station azimuth**, starting from the south. See Figure 9 for rejected stations.



Figure 6: Map of 73 stations used in the record section in Figure 7.

2016-01-24 10:29:47 + 450.00 s; OHAK max -3.30e-03 m at t = 59.7 s

BHE BHN BHZ HHE HHN HHZ [m, T = 4.0–80.0 s (0.01–0.25 Hz)] event C201601241030A (2016–01–24, M7.1, –153.3, 59.8, z : 24 / 219 seismograms (70 stations) ordered by azimuth, norm –-> none



Figure 7: [CONTINUED ON FOLLOWING PAGES] All 73 stations ≥ 250 km of the Iniskin earthquake and having recorded seismograms that we deem to be good. No amplitude normalization (including for geometrical spreading) has been applied. Observed (blue) and synthetic (red) seismograms are filtered with periods 4–80 s, shown for all three components, and **sorted by station azimuth**, starting from the south. See Figure 9 for rejected stations.

2016-01-24 10:29:47 + 450.00 s; F7TV max 2.08e-03 m at t = 175.3 s

BHE BHN BHZ HHE HHN HHZ [m, T = 4.0–80.0 s (0.01–0.25 Hz)] event C201601241030A (2016–01–24, M7.1, –153.3, 59.8, z = 24 / 219 seismograms (70 stations) ordered by azimuth, norm –-> none



Figure 7, Part 2: station azimuths 15°-19° (FLATS/XV stations at bottom)

2016-01-24 10:29:47 + 450.00 s; F1TN max 5.04e-03 m at t = 170.4 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0-80.0 s (0.01-0.25 Hz)] event C201601241030A (2016-01-24, M7.1, -153.3, 59.8, z = 24 / 219 seismograms (70 stations) ordered by azimuth, norm --> none



Figure 7, Part 3: station azimuths 19°–20° (FLATS/XV stations at top)

2016-01-24 10:29:47 + 450.00 s; FTGH max 2.11e-03 m at t = 175.5 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0-80.0 s (0.01-0.25 Hz)] event C201601241030A (2016-01-24, M7.1, -153.3, 59.8, z 24 / 219 seismograms (70 stations) ordered by azimuth, norm --> none



Figure 7, Part 4: station azimuths $20^{\circ}-24^{\circ}$

2016–01–24 10:29:47 + 450.00 s; POKR max –1.53e–03 m at t = 201.1 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0–80.0 s (0.01–0.25 Hz)] event C201601241030A (2016–01–24, M7.1, –153.3, 59.8, z 24 / 219 seismograms (70 stations) ordered by azimuth, norm –-> none



Figure 7, Part 5: station azimuths $24^{\circ}-41^{\circ}$

2016-01-24 10:29:47 + 450.00 s; SCRK max 1.60e-03 m at t = 189.9 s

BHE BHN BHZ HHE HHN HHZ [m, T = 4.0–80.0 s (0.01–0.25 Hz)] event C201601241030A (2016–01–24, M7.1, –153.3, 59.8, z = 24 / 219 seismograms (70 stations) ordered by azimuth, norm –-> none



Figure 7, Part 6: station azimuths $41^\circ – 57^\circ$

2016-01-24 10:29:47 + 450.00 s; M27K max -1.54e-03 m at t = 205.4 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0-80.0 s (0.01-0.25 Hz)] event C201601241030A (2016-01-24, M7.1, -153.3, 59.8, z = 24 / 219 seismograms (70 stations) ordered by azimuth, norm --> none



Figure 7, Part 7: station azimuths $59^{\circ}-70^{\circ}$

2016-01-24 10:29:47 + 450.00 s; BMR max -1.93e-03 m at t = 155.4 s





Figure 7, Part 8: station azimuths $70^{\circ}-77^{\circ}$

2016-01-24 10:29:47 + 450.00 s; WAX max -1.62e-03 m at t = 180.9 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0-80.0 s (0.01-0.25 Hz)] event C201601241030A (2016-01-24, M7.1, -153.3, 59.8, z = 24 / 219 seismograms (70 stations) ordered by azimuth, norm --> none



Figure 7, Part 9: station azimuths 77°–92° (large amplitudes and extended duration)



Figure 7, Part 10: station azimuths 92 (large amplitudes and extended duration)



Figure 8: Map of 60 stations used in the record section in Figure 9. These are the stations with "bad" seismograms for the $M_{\rm w}$ 7.1 Iniskin earthquake.

2016–01–24 10:29:47 + 450.00 s; AU22 max 1.55e–02 m at t = 41.4 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0–80.0 s (0.01–0.25 Hz)] event C201601241030A (2016–01–24, M7.1, –153.3, 59.8, z =



Figure 9: [CONTINUED ON FOLLOWING PAGES] All 60 stations having recorded seismograms that we deem to be bad (Table 4). Observed (blue) and synthetic (red) seismograms are filtered with periods 4–80 s, shown for all three components, and sorted by station azimuth, starting from the south. Stations are sorted by epicentral distance. Each pair of seismograms is normalized based on the maximum value within either seismogram.

2016–01–24 10:29:47 + 450.00 s; NCT max 6.92e–03 m at t = 20.0 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0–80.0 s (0.01–0.25 Hz)] event C201601241030A (2016–01–24, M7.1, –153.3, 59.8, z = 24 / 180 seismograms (60 stations) ordered by distance, norm --> max(abs(d_i))



Figure 9, Part 2: station distances 92–118 km

2016-01-24 10:29:47 + 450.00 s; LTUY max -3.38e-02 m at t = 68.1 s

BHE BHN BHZ HHE HHN HHZ [m, T = 4.0–80.0 s (0.01–0.25 Hz)] event C201601241030A (2016–01–24, M7.1, –153.3, 59.8, z = 24 / 180 seismograms (60 stations) ordered by distance, norm --> max(abs(d_i))



Figure 9, Part 3: station distances 131–163 km

2016-01-24 10:29:47 + 450.00 s; BING max -2.83e-02 m at t = 97.3 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0-80.0 s (0.01-0.25 Hz)] event C201601241030A (2016-01-24, M7.1, -153.3, 59.8, z = 24 / 180 seismograms (60 stations) ordered by distance, norm --> max(abs(d_i))



Figure 9, Part 4: station distances 166–198 km

2016–01–24 10:29:47 + 450.00 s; KABU max 2.84e–03 m at t = 48.3 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0–80.0 s (0.01–0.25 Hz)] event C201601241030A (2016–01–24, M7.1, –153.3, 59.8, z 24 / 180 seismograms (60 stations) ordered by distance, norm --> max(abs(d_i))



Figure 9, Part 5: station distances 201–244 km

2016-01-24 10:29:47 + 450.00 s; GOOS max -2.27e-02 m at t = 75.7 s





Figure 9, Part 6: station distances 261–362 km

2016-01-24 10:29:47 + 450.00 s; FID max 4.06e-02 m at t = 92.0 s





Figure 9, Part 7: station distances 384–494 km

2016-01-24 10:29:47 + 450.00 s; HARP max -2.57e-02 m at t = 152.2 s BHE BHN BHZ HHE HHN HHZ [m, T = 4.0-80.0 s (0.01-0.25 Hz)] event C201601241030A (2016-01-24, M7.1, -153.3, 59.8, z = 24 / 180 seismograms (60 stations) ordered by distance, norm --> max(abs(d_i))



Figure 9, Part 8: station distances 526-608 km



Figure 10: Comparison between peak displacements of data and synthetics for seismograms filtered between periods 4–80 s. Data amplitudes are plotted as blue dots, synthetic amplitudes are plotted as red dots, and a vertical bar connects the two. Although the plot is in terms of distance, we note that the amplitudes also depend on station azimuth, due to the influences of the source radiation pattern and to the presence of 3D structures between the source and stations. See zoomed-in view in Figure 11. Seismograms are shown in Figures 5 and 7.



Figure 11: Same as Figure 10, but zoomed in on the epicentral distances between 500 km and 700 km.

2016-01-24 10:29:47 + 450.00 s; AU22 max -9.33e+06 m/s at t = 109.3 s BH1 BH2 BHE BHN BHZ HHE HHN HHZ [m/s, --] event 2016012410303740 (2016-01-24, M7.1, -153.3, 59.8, z = 110.7 km) 21 / 165 seismograms (55 stations) ordered by distance, norm --> max(abs(d_i))

AV.AU22BHE (186, 43 km)		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	MMMWW	MMM	www.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.AU22BHN (186, 43 km)		-vww.Wi	MMMM	MMMM	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	MM	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.AU22BHZ (186, 43 km)		-nmmmill	MMM	· MMM	ww/~~~//	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.AUSSBHE (191, 44 km)		-vm/~mm/	MMMM	www.www.	Mmmm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	MMMM	\sim
AV.AUSSBHN (191, 44 km)		-mmmm	MMMM	MMMM	MMMM	mmm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.AUSSBHZ (191, 44 km)		-MMMMM	MMMM	www.	m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.AUWSBHE (193, 45 km)		-MM Minh	MMMMM	MMMM	Mmm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	MM	~~
AV.AUWSBHN (193, 45 km)		-vwwwMM	MMMM	MMMM	vv Mr Mrs	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	^∿\^
AV.AUWSBHZ (193, 45 km)		-Mr MM	MMMM	MMMM	www.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.AUJABHE (190, 46 km)		-mmmmm	MMM	MMM	MMM	······	Mmm	\sim
AV.AUJABHN (190, 46 km)		-vwww.wv	MmmM	MMM	1. Mm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.AUJABHZ (190, 46 km)		-~~MMM	LWWWWW	\/////////////////////////////////////	MM	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.AUSBBHE (190, 47 km)		Minin	MMM	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	MM	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~	\sim
AV.AUSBBHN (190, 47 km)		~~~~M////	MMM	MMM	·/···//···	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.AUSBBHZ (190, 47 km)		-MMMM	wwww	//////////////////////////////////////	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
TA.O20KBHE (44, 52 km)	_	Marin	·····					
TA.O20KBHN (44, 52 km)	_							
TA.O20KBHZ (44, 52 km)	_	VW						
AV.REDBHE (20, 79 km)		-MMM M	mmmm	www	Mmm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\sim
AV.REDBHN (20, 79 km)		-~~MM/MM	Mmmm	MM. M.		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~
AV.REDBHZ (20, 79 km)		-MMm	hhyp	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~
		· · ·						
-5	0 0	50	100	150 20 Time (s)	0 250	300	350	400

Figure 12: [CONTINUED ON FOLLOWING PAGES] All 60 stations (minus 5 pump stations: VMT, PS09, PS10, PS11, PS12) having recorded seismograms that we deem to be bad, based on comparisons between data and synthetics (Table 4). Here we plot the observed seismograms only: velocity, no removal of instrument response, no rotation to EN, and causally low-pass-filtered $T \ge 4$ s. These waveforms provide a more clear picture of the behavior of the instruments, in comparison with the filtered displacement seismograms in Figure 9. The seismograms are ordered by epicentral distance. Each seismogram is normalized based on the maximum value of the seismogram.



Figure 12, Part 2



Figure 12, Part 3



Figure 12, Part 4



Figure 12, Part 5



Figure 12, Part 6



Figure 12, Part 7



Figure 12, Part 8