Situational Awareness in Alaska
The role for USArray

Michael West
State Seismologist

Natural gas fires following
The M7.1 Iniskin earthquake
January 2016

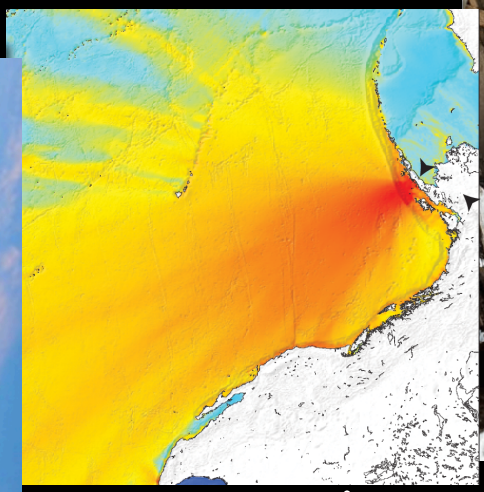
UNIVERSITY OF ALASKA FAIRBANKS

ALASKA EARTHQUAKE CENTER

ASHSC Alaska Seismic Hazards Safety Commission

Photo: Kenai Fire Department

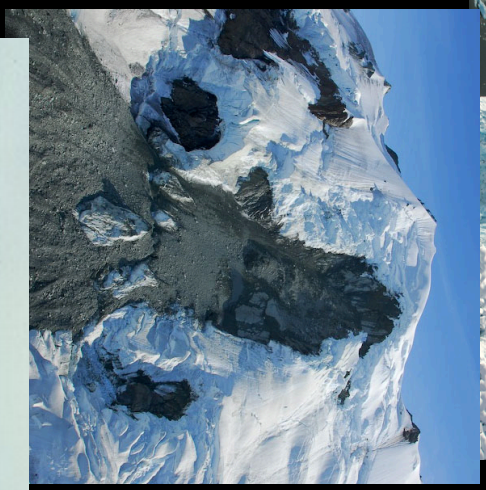
volcano



tsunami

earthquake

mining

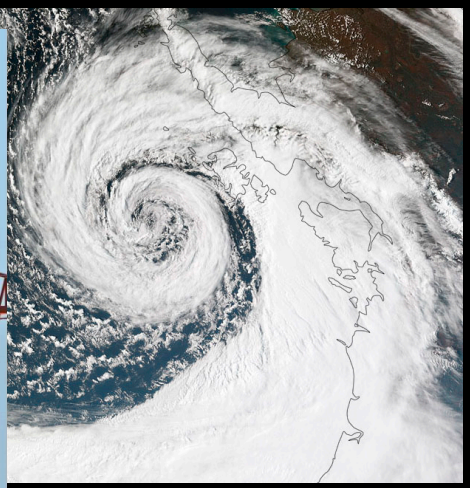


landslide

glacier

oil/gas

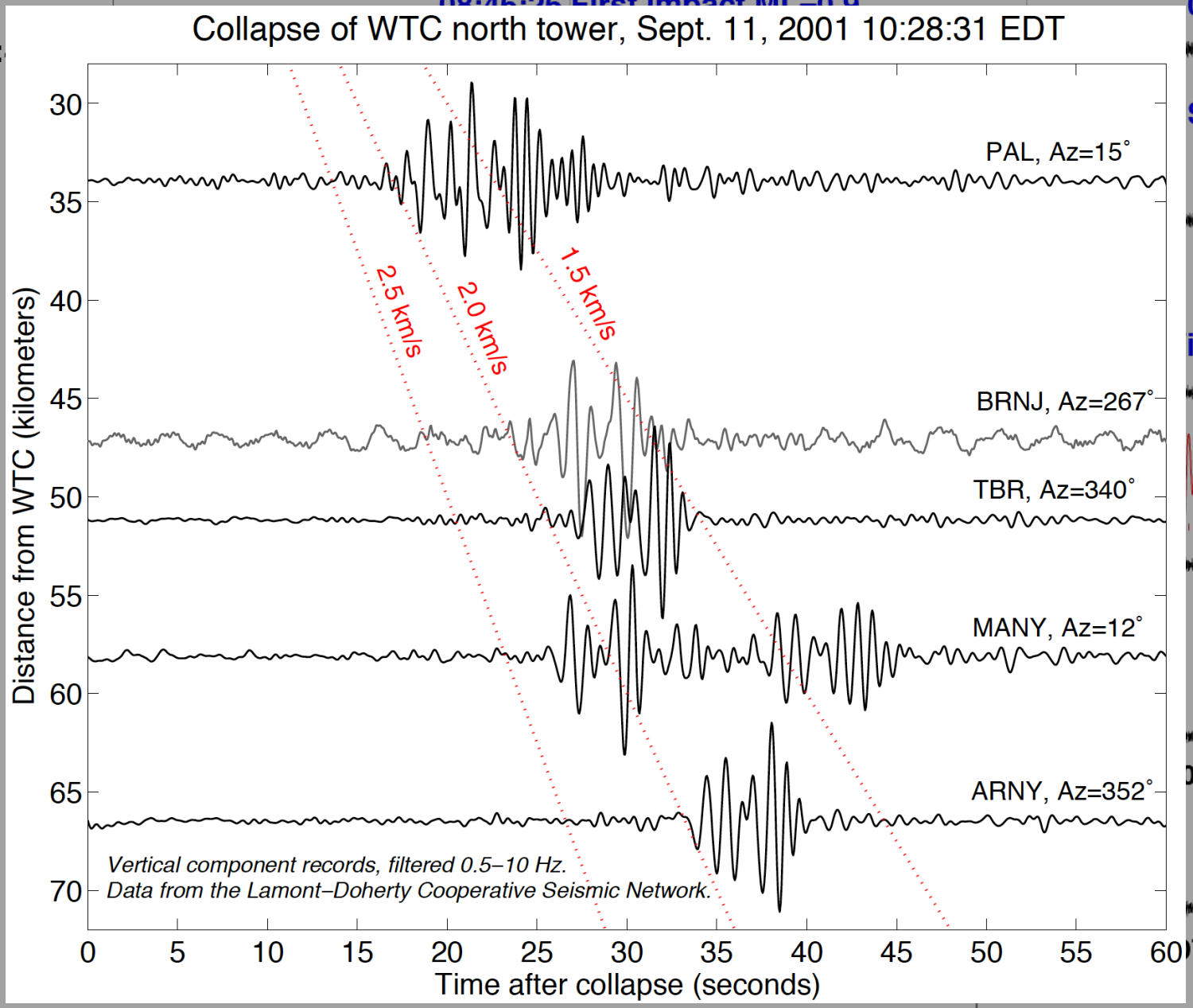
transportation

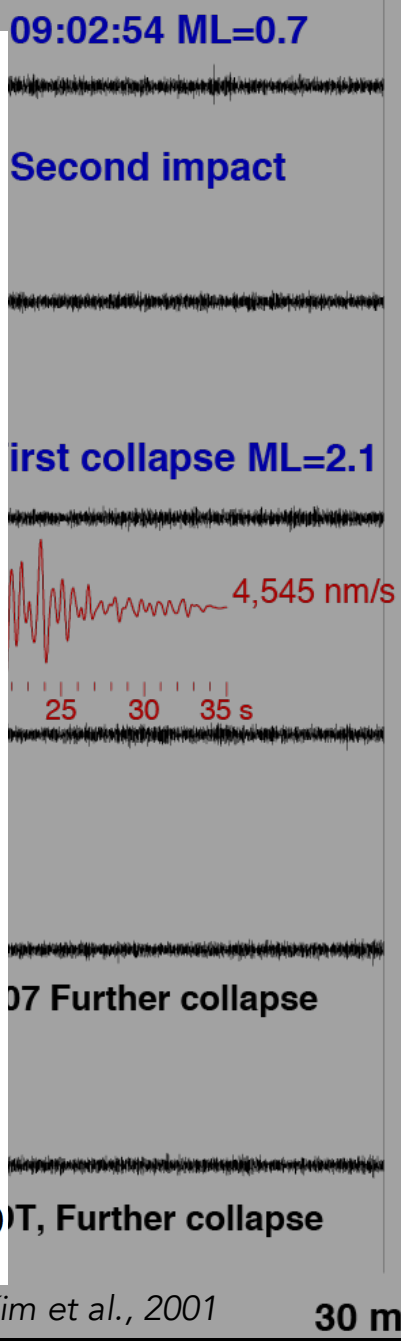


storm

Situational awareness

September 11

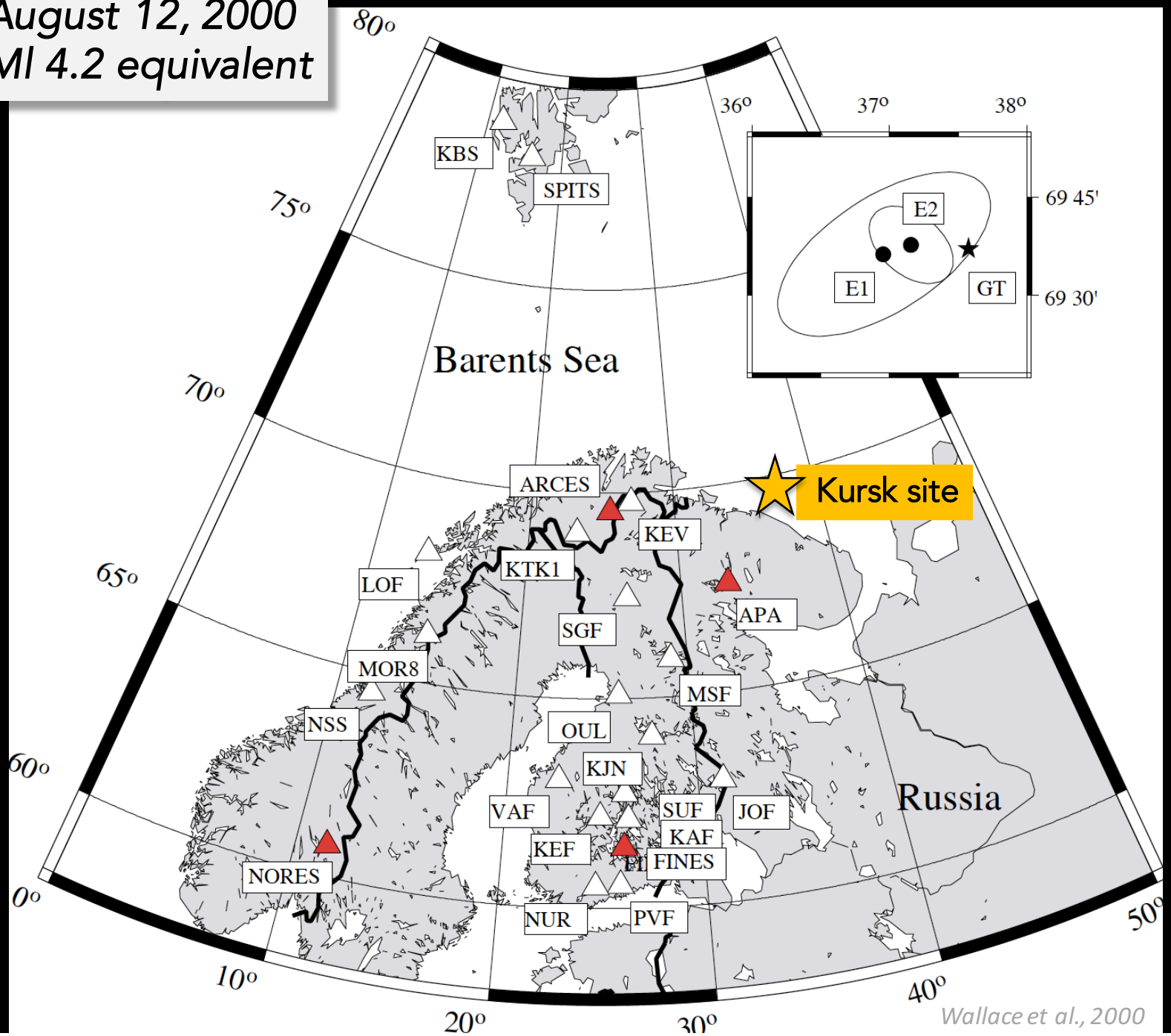




Kim et al., 2001

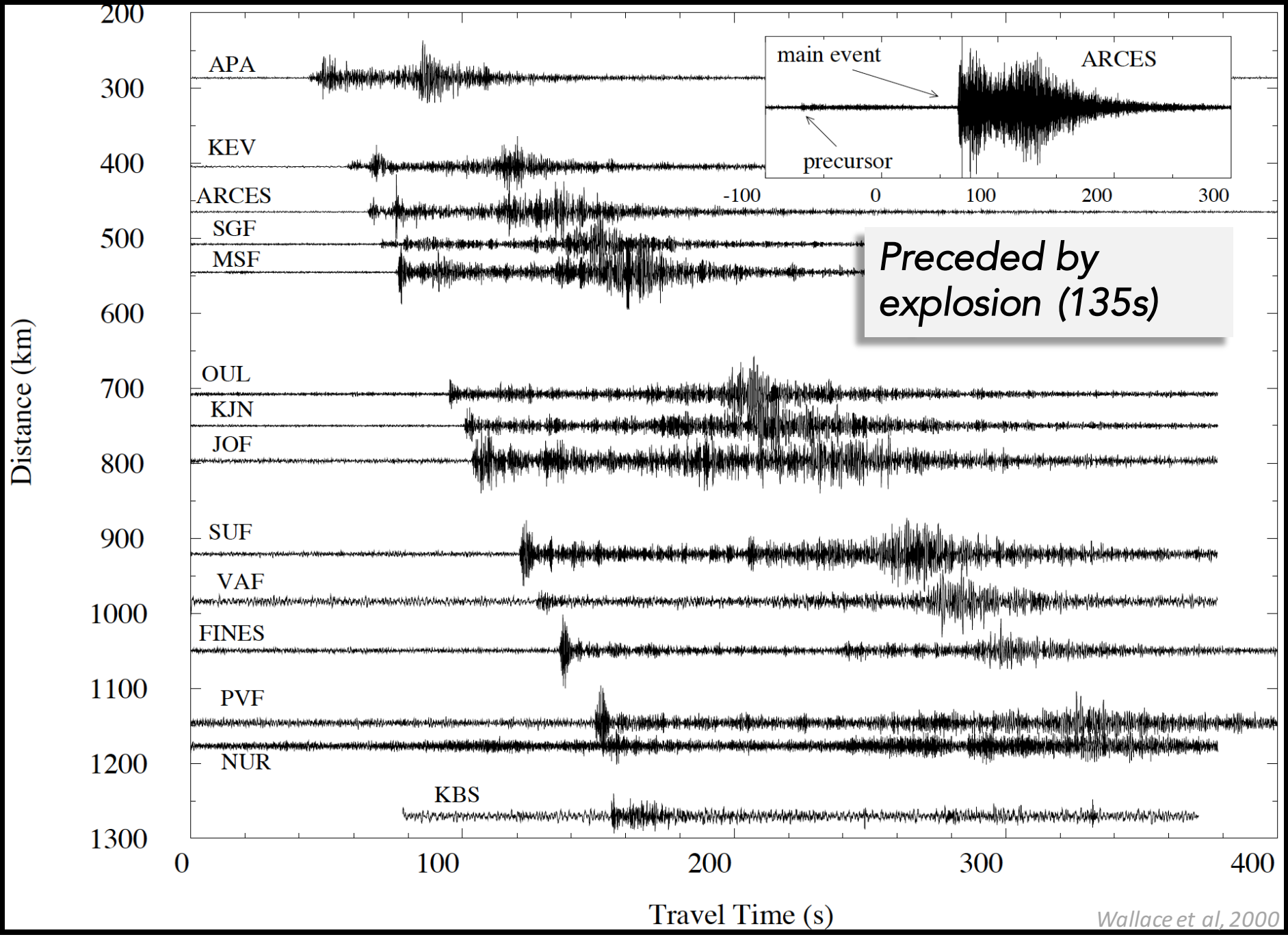
Kursk submarine

August 12, 2000
Ml 4.2 equivalent



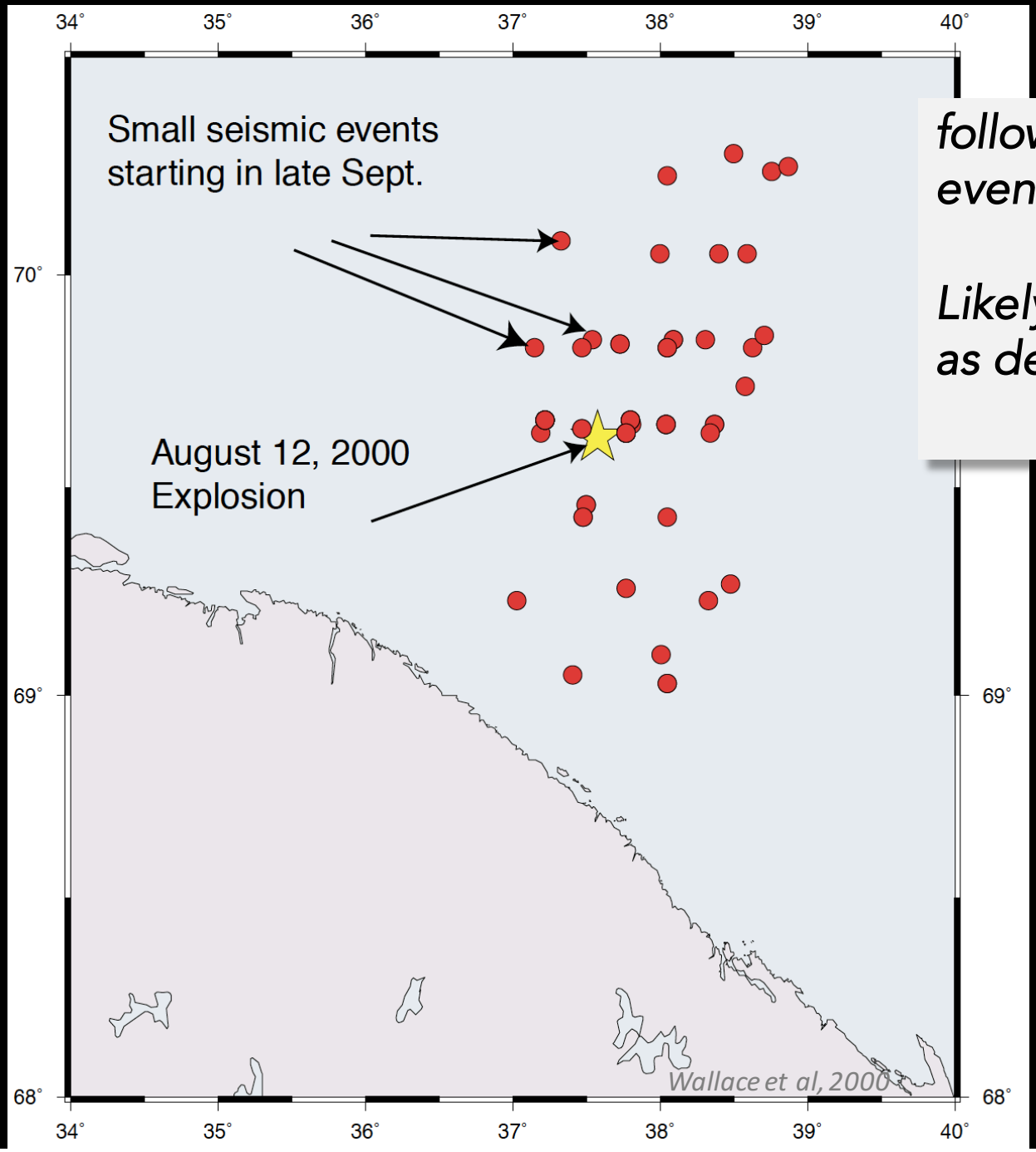
Wallace et al., 2000

Kursk submarine



Wallace et al, 2000

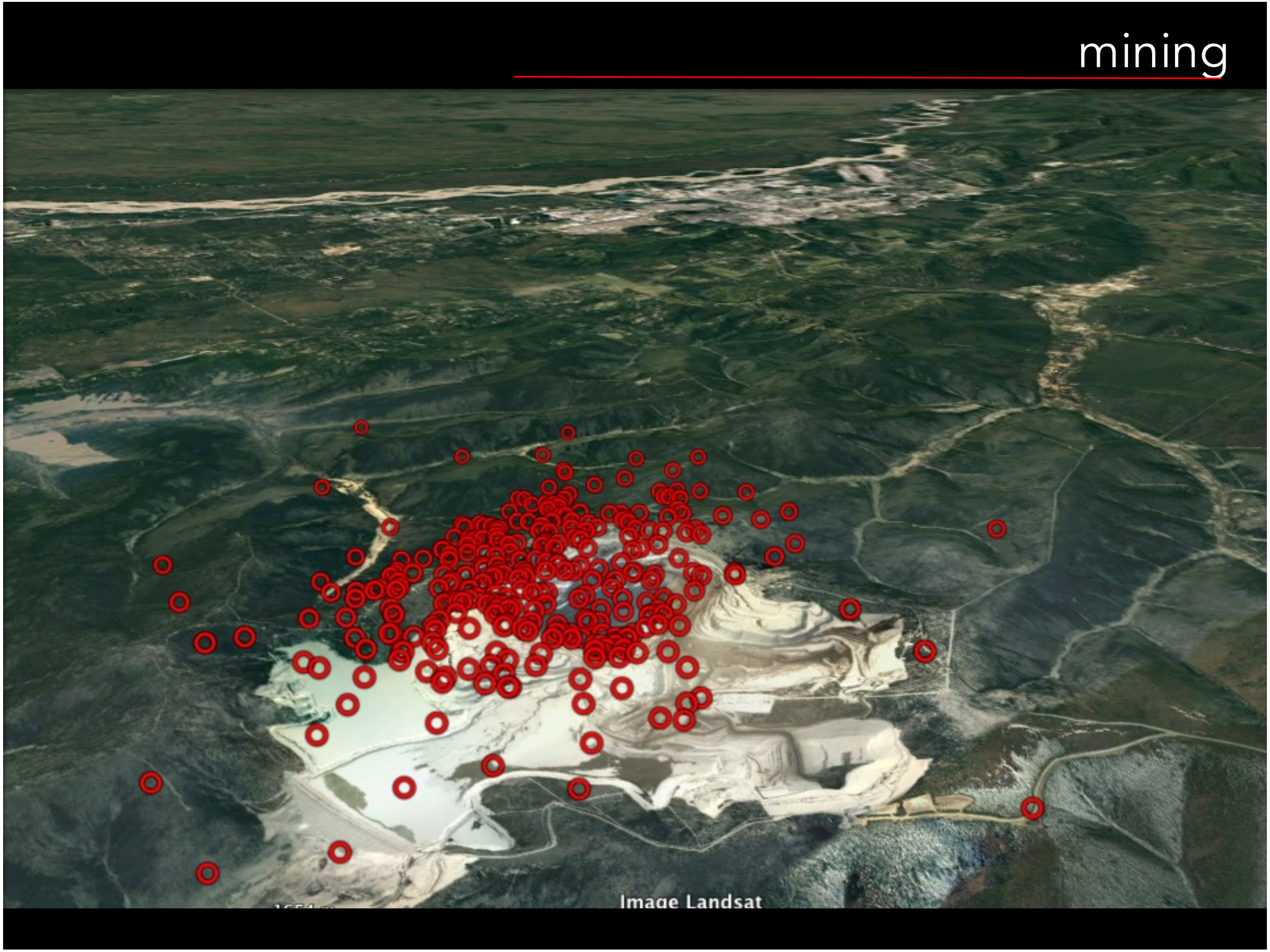
Kursk submarine



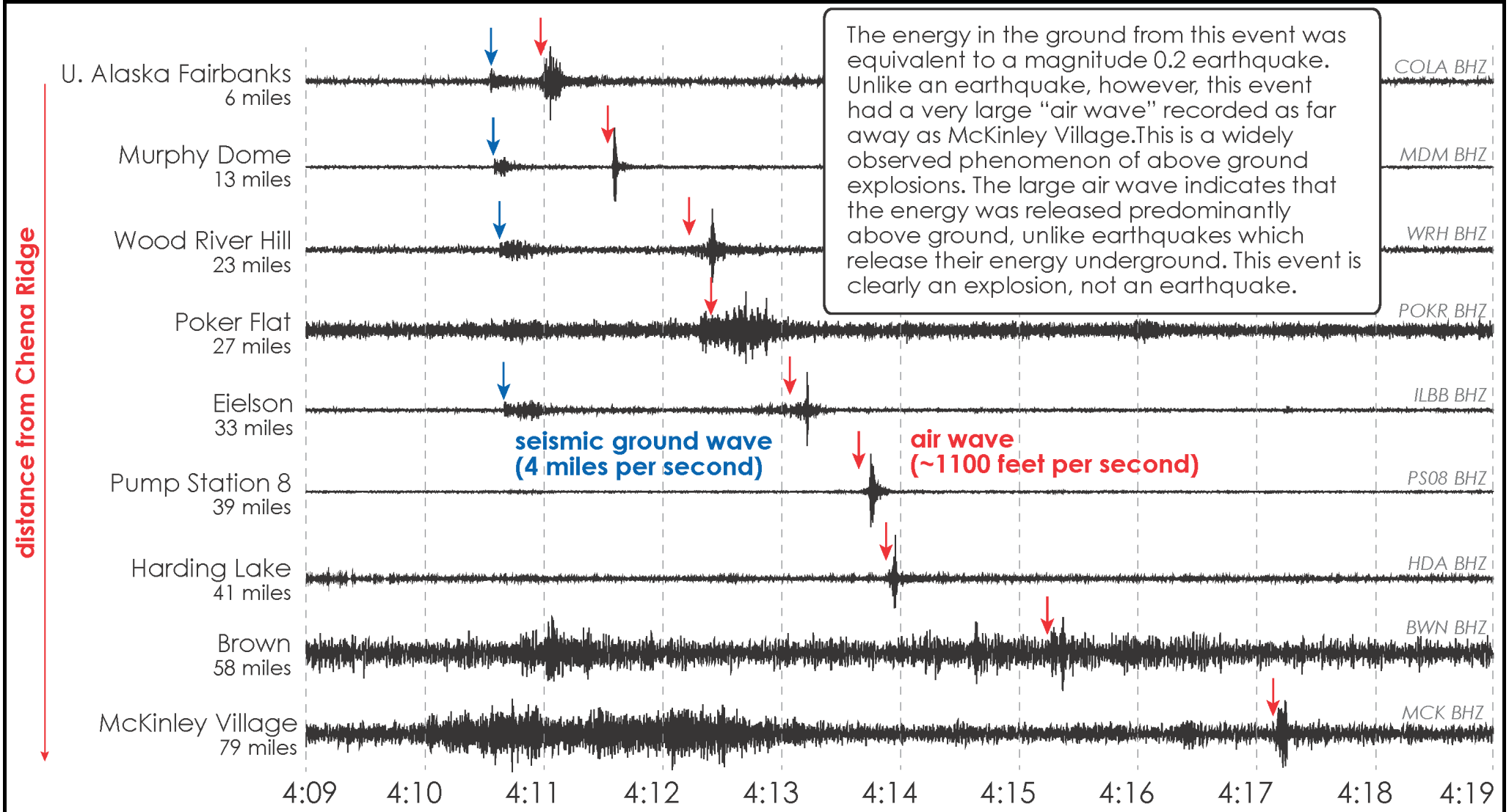
followed by suspicious events in aseismic region

Likely depth charges used as deterrent (CNN)

mining



chemical explosions

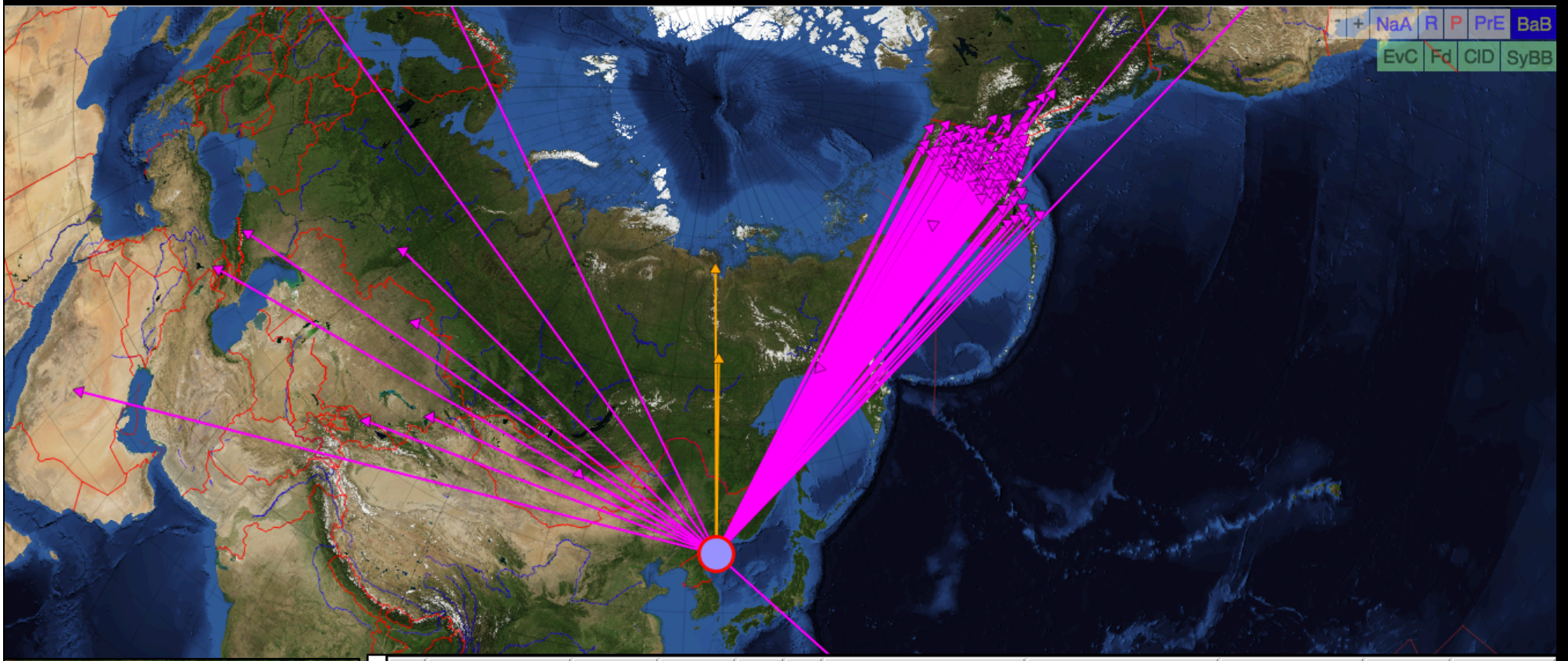


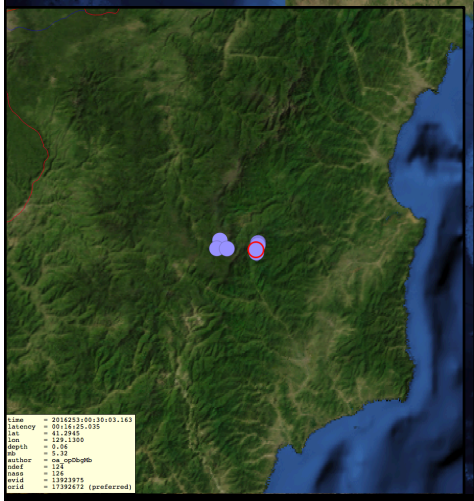
Prepared by Michael West
Alaska State Seismologist
Alaska Earthquake Information Center

February 02, 2013
Alaska Standard Time (PM)

scaled by trace
bandpass filtered 1-10 Hz

North Korea





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origin time	evid	ndef	R	prefauth	mag	region
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2016-253 (09 Sep) 00:28:45 UTC	13923973	28	r	AK:natasha	1.1 ML	CENTRAL ALASKA
2016-253 (09 Sep) 00:03:45 UTC	13923967	25		oa_opDbgMb	5.7 Mb	CORDOBA PROVINCE, ARGENTINA
2016-252 (08 Sep) 23:51:20 UTC	13923963	39	r	AK:kozyreva	1.4 ML	SOUTHERN ALASKA
2016-252 (08 Sep) 23:45:14 UTC	13923842	21	r	AK:qc	1.1 ML	SOUTHEASTERN ALASKA
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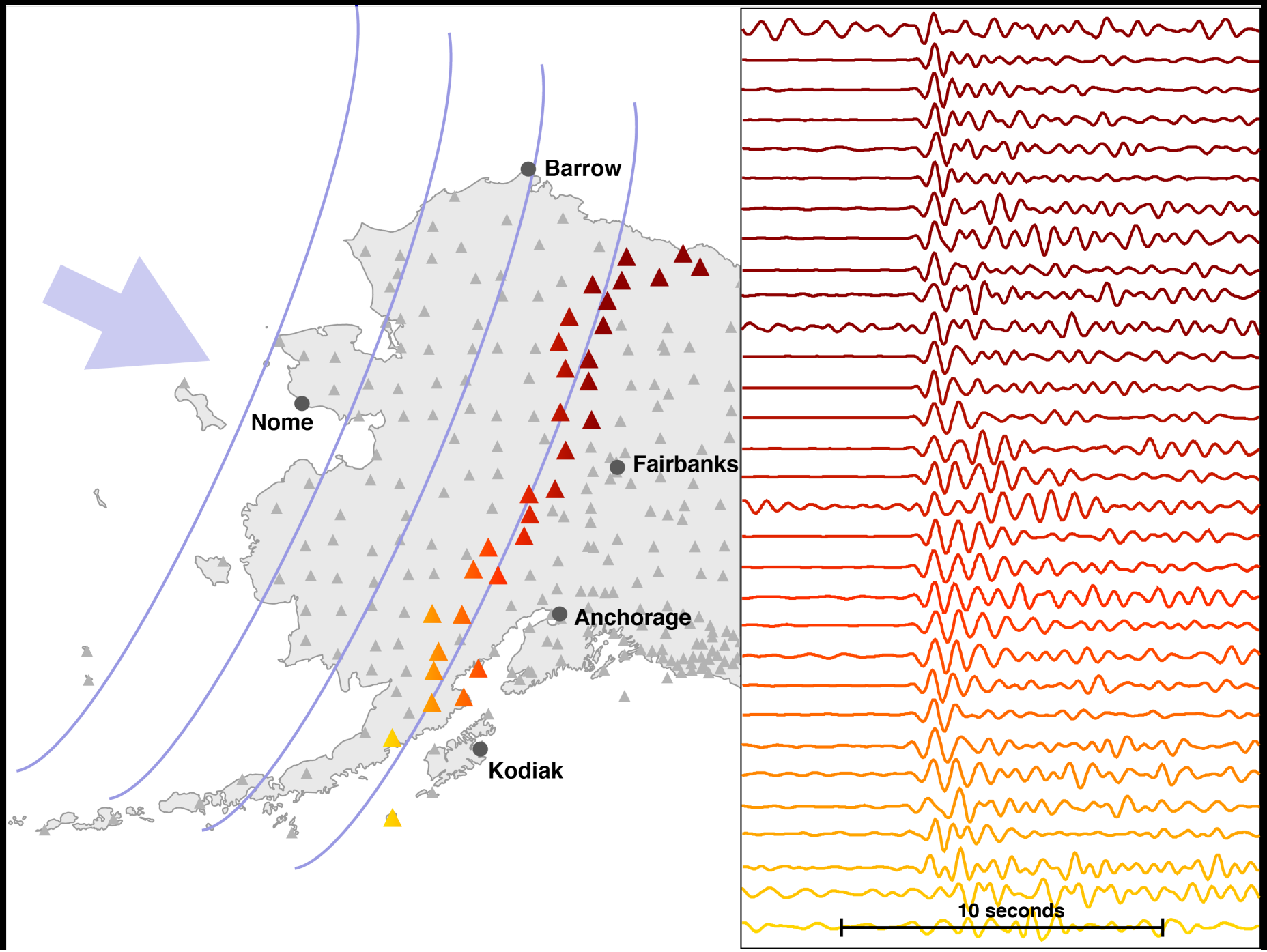
2016-252 (08 Sep) 23:35:06 UTC	13923966	0		USGS	4.6 Mb	NICOBAR ISLANDS, INDIA REGION

North Korea



Ice jam flooding

Galena, Alaska, May 2013

Ice jam flooding

courtesy of Alaska Department of Public Safety

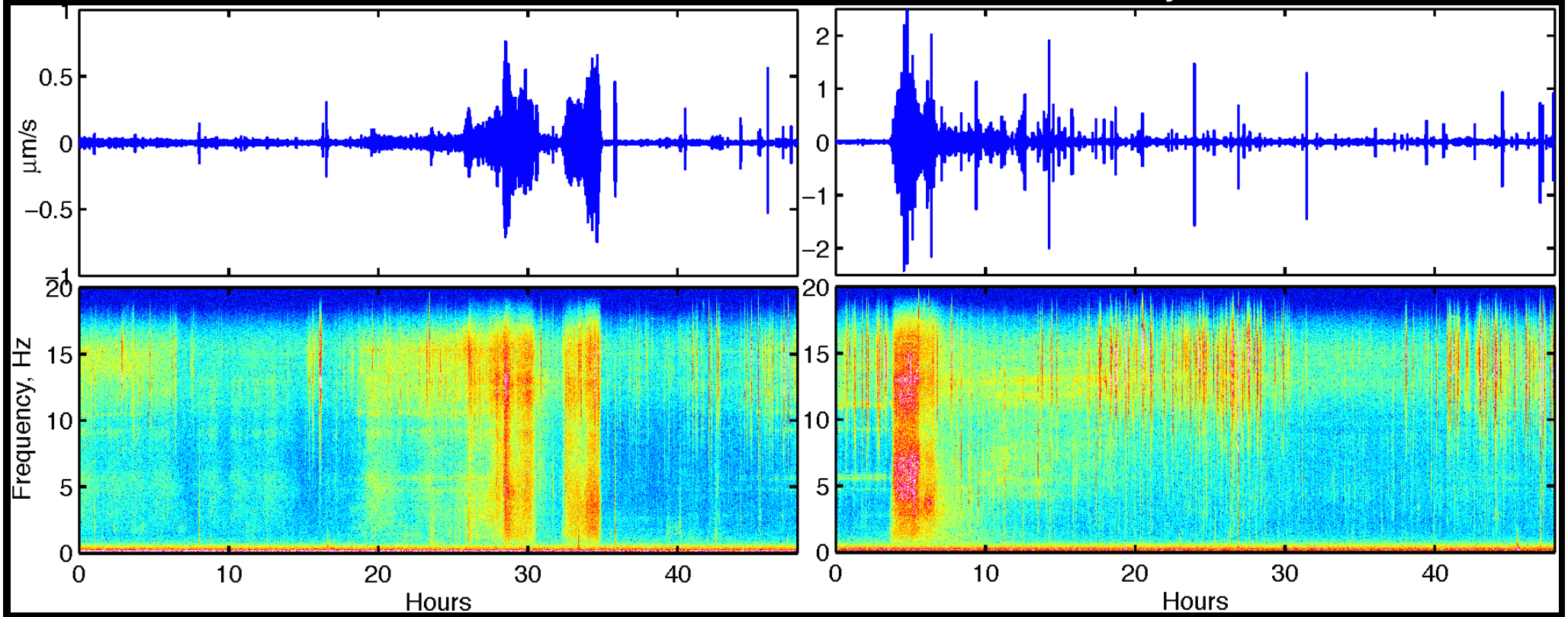
Ice jam flooding

ice jam formation

May 3-4, 2009

ice jam failure

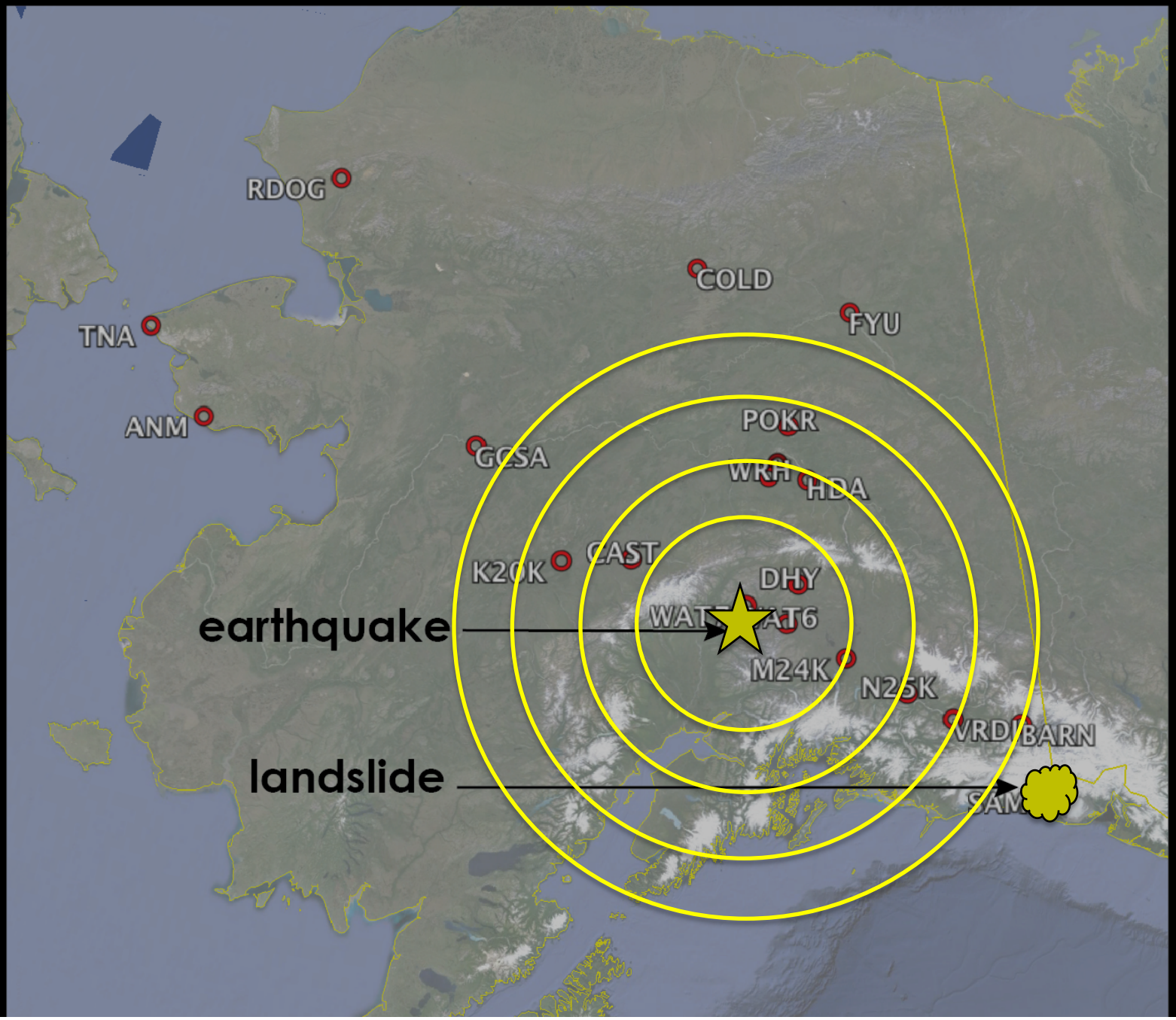
May 7-8, 2009



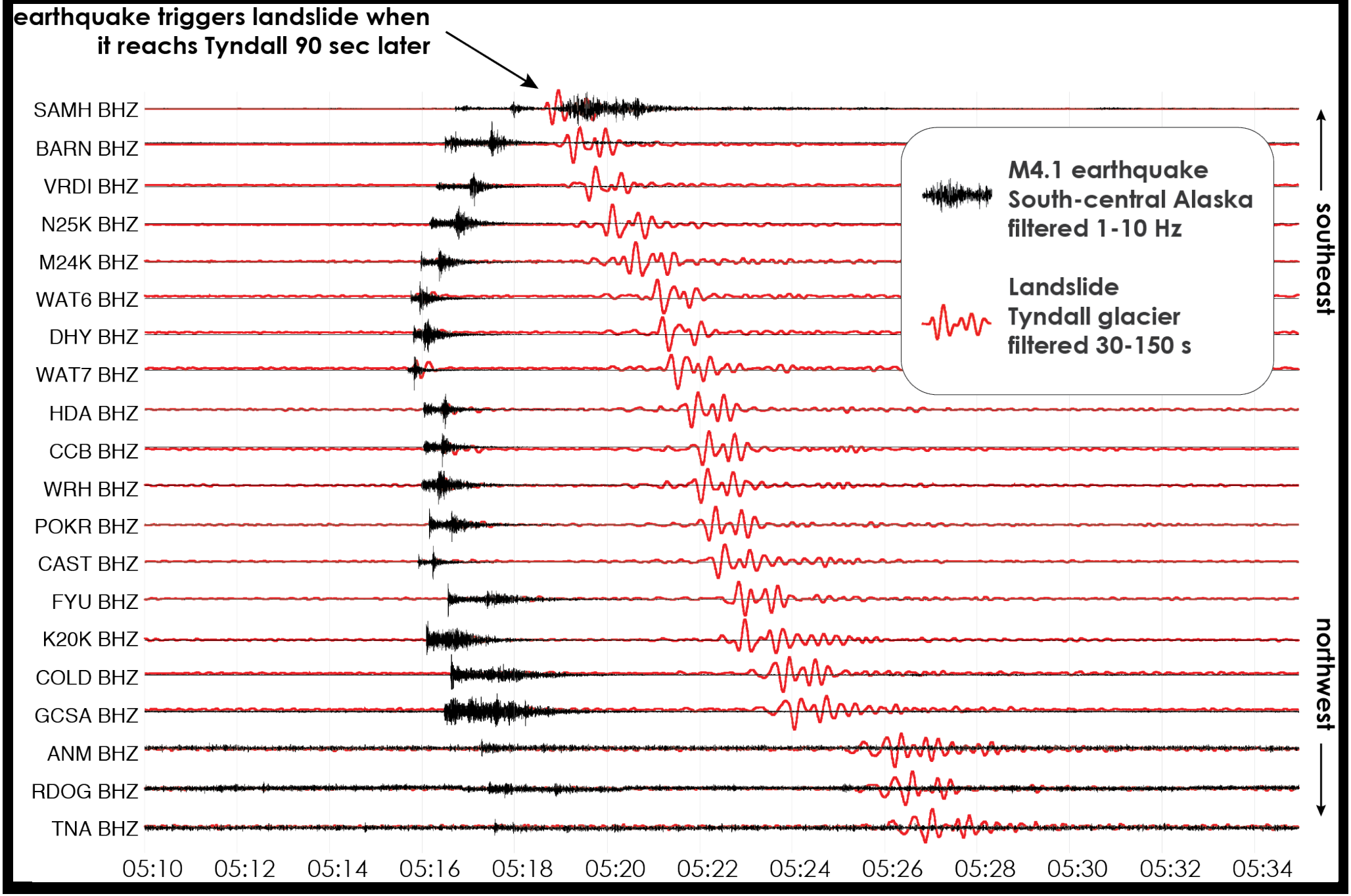
landslide tsunami

landslide tsunami

landslide tsunami



landslide tsunami



good strategy
good science
good stewardship

earthquake

glacier

storm

tsunami

landslide

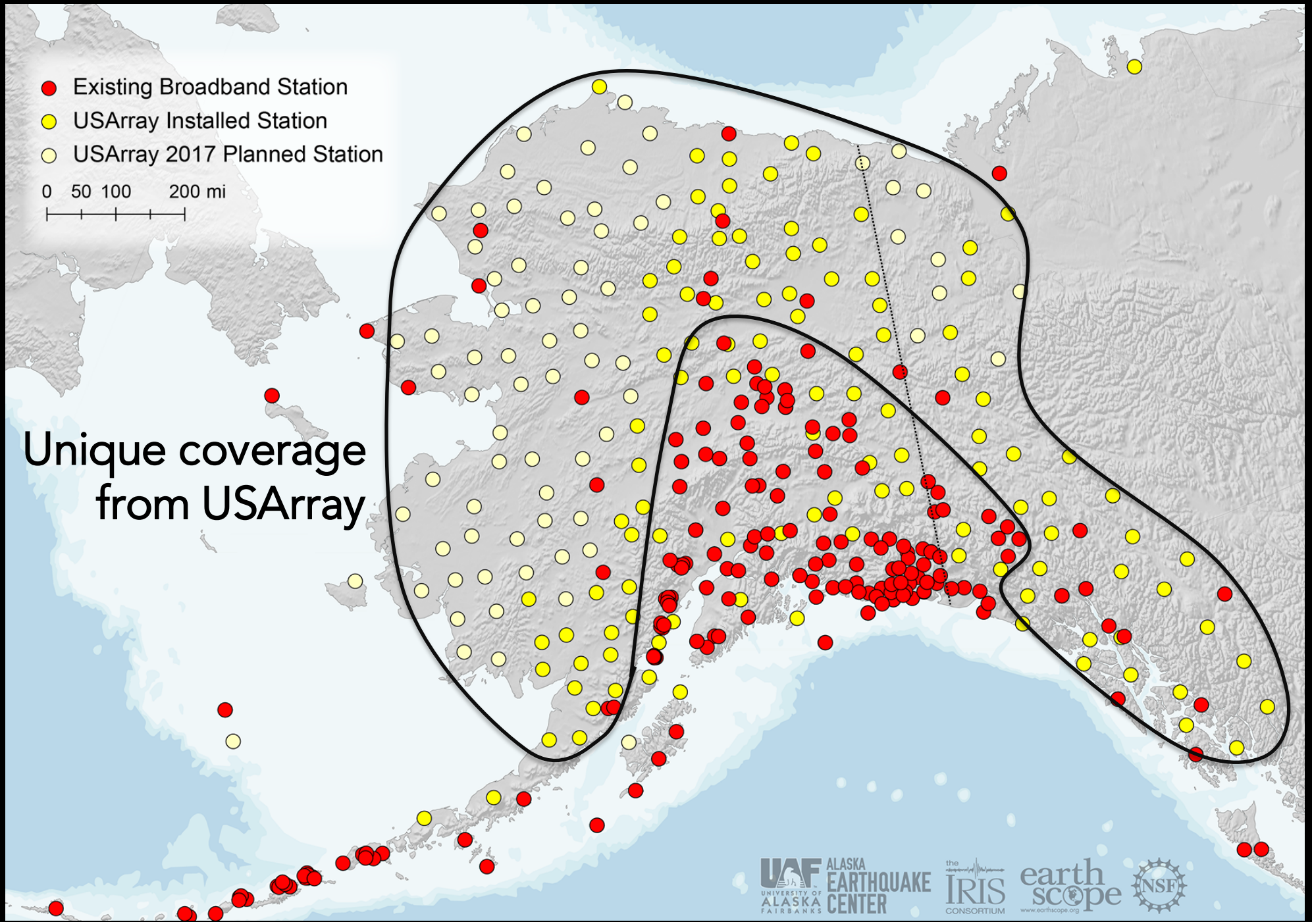
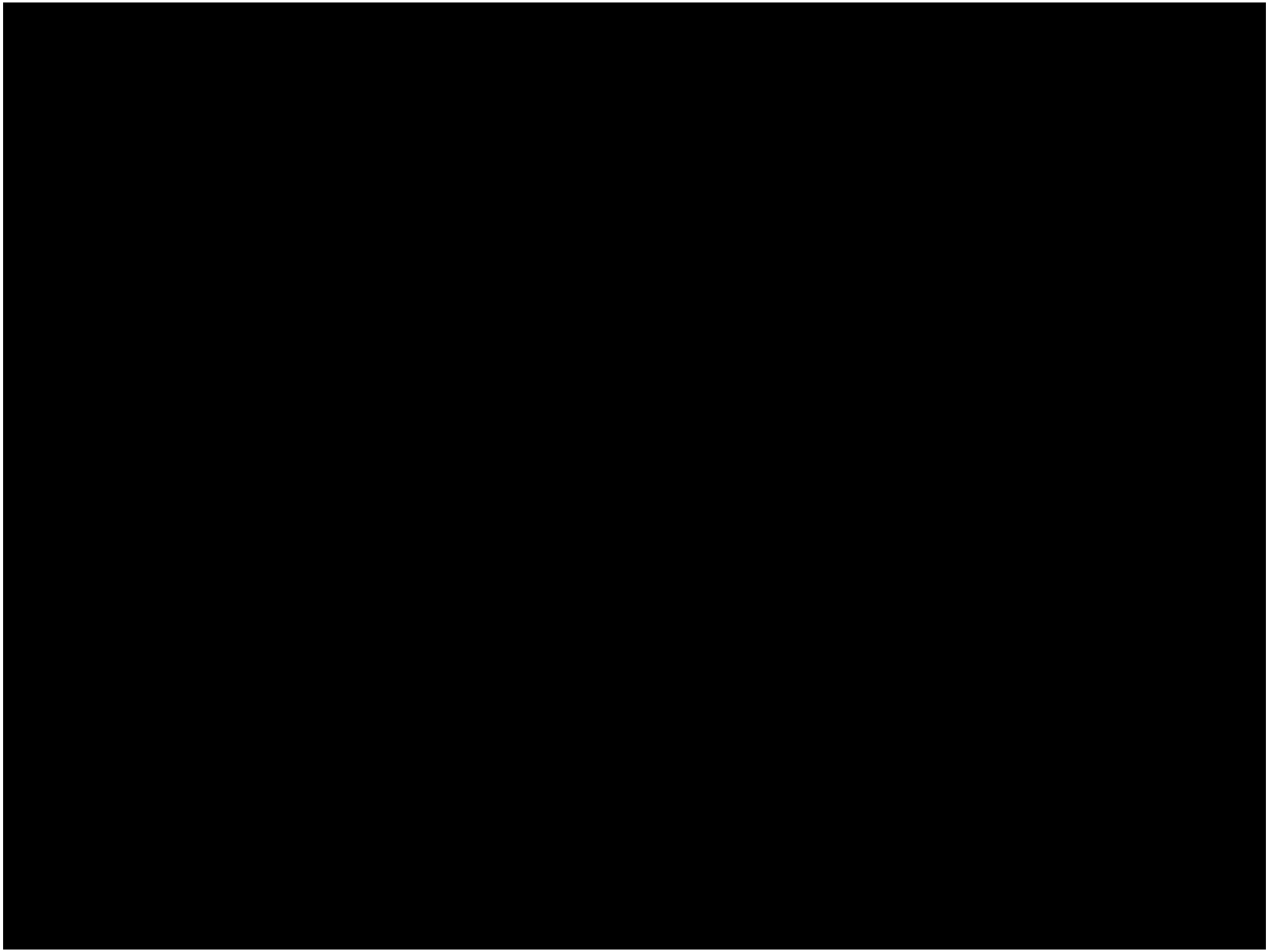
transportation

volcano

mining

oil/gas

coverage


Existing Broadband Station
USArray Installed Station
USArray 2017 Planned Station
0 50 100 200 mi
Unique coverage from USArray
UAF UNIVERSITY OF ALASKA FAIRBANKS
ALASKA EARTHQUAKE CENTER
the IRIS CONSORTIUM
earth scope
www.earthscope.org
NSF