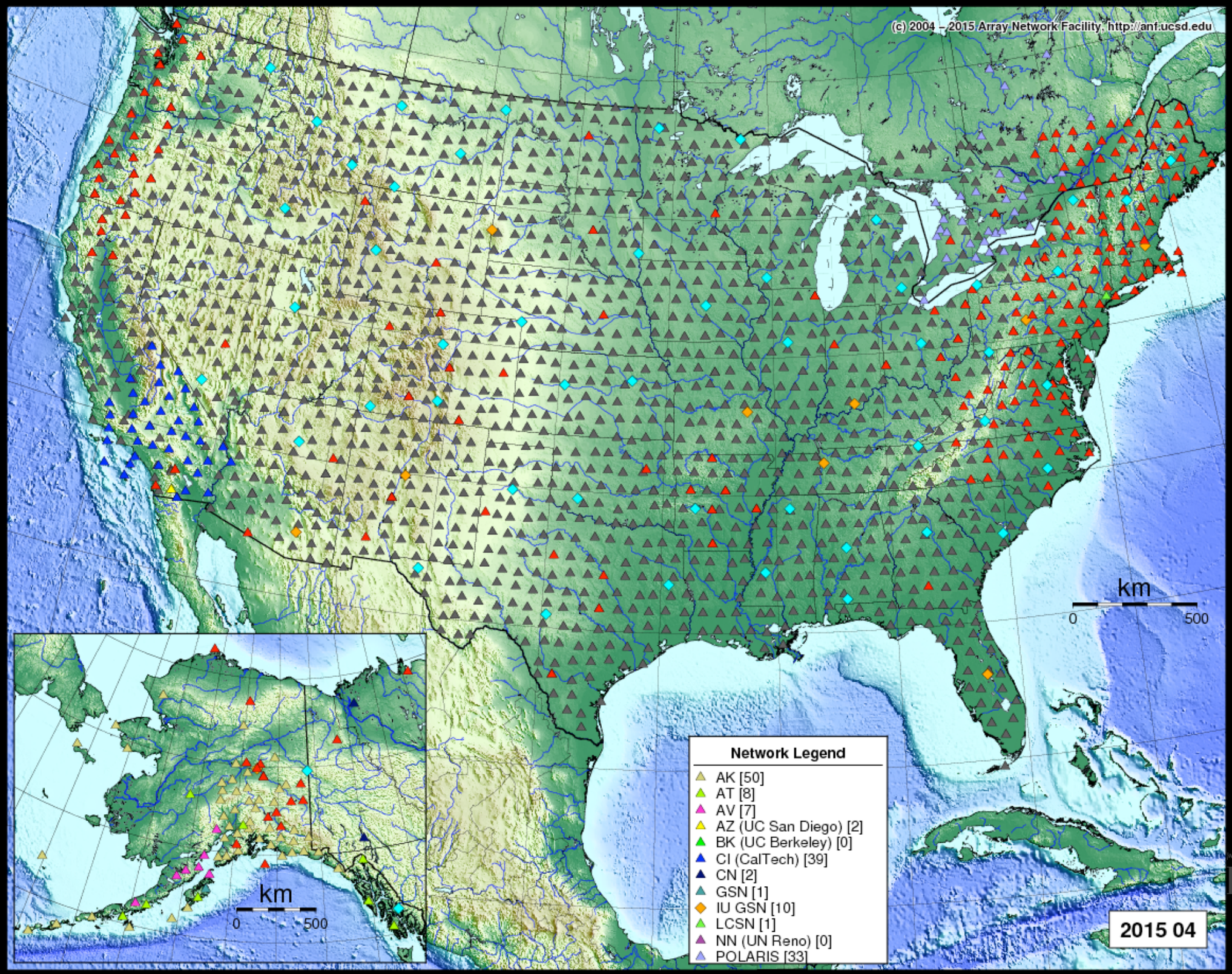
JUAN REYES - JENNIFER EAKINS

MONITORING TOOLS

National Geophysical Networks in Latin America
Santiago, Chile - May 26, 2015

earthscope Array Network Facility IRIS NSF

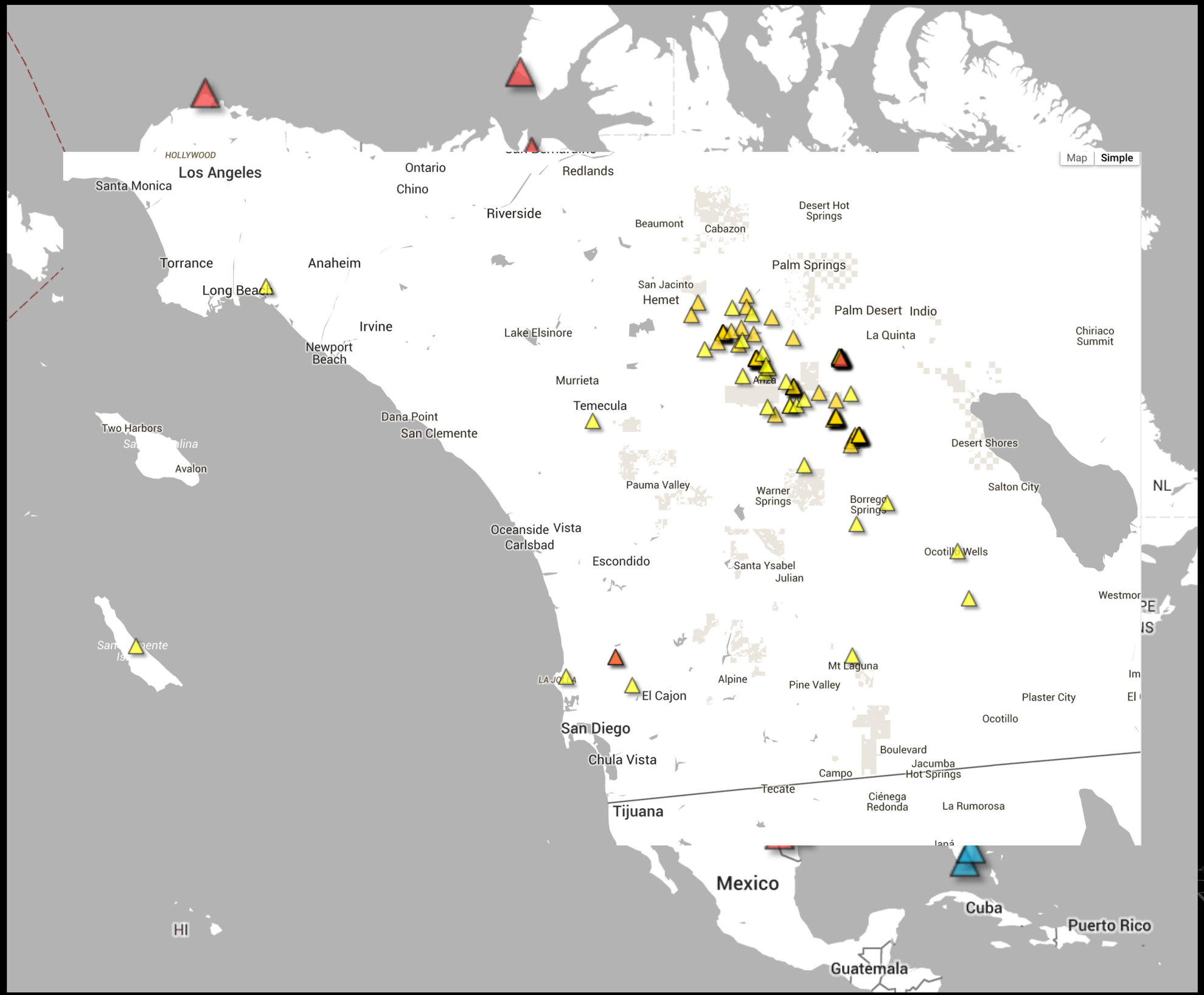
TRANSPORTABLE ARRAY



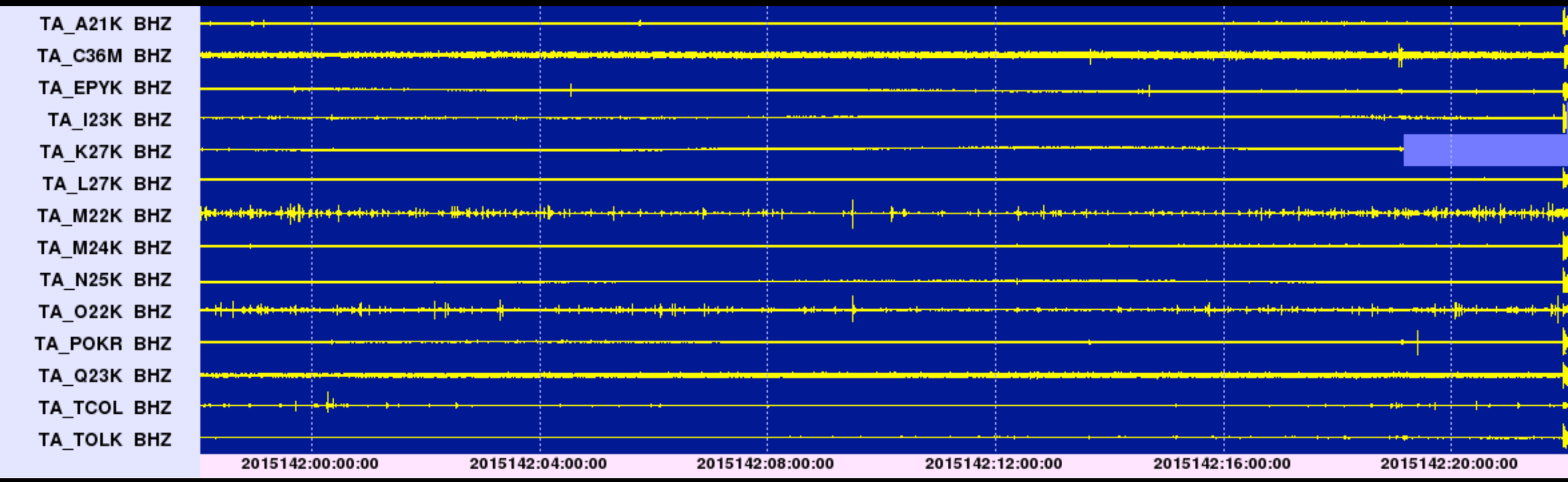
CENTRAL AND EASTERN UNITED STATES NETWORK

- As the USArray Transportable Array entered the central and eastern United States, several Federal agencies (National Science Foundation, United States Geological Survey, United States Nuclear Regulatory Commission, and Department of Energy) recognized the unique opportunity to retain seismometers in this region beyond the original timeline of the deployed TA footprint.

PRIMARY DATA COLLECTION SITES



SEISMIC TRACES



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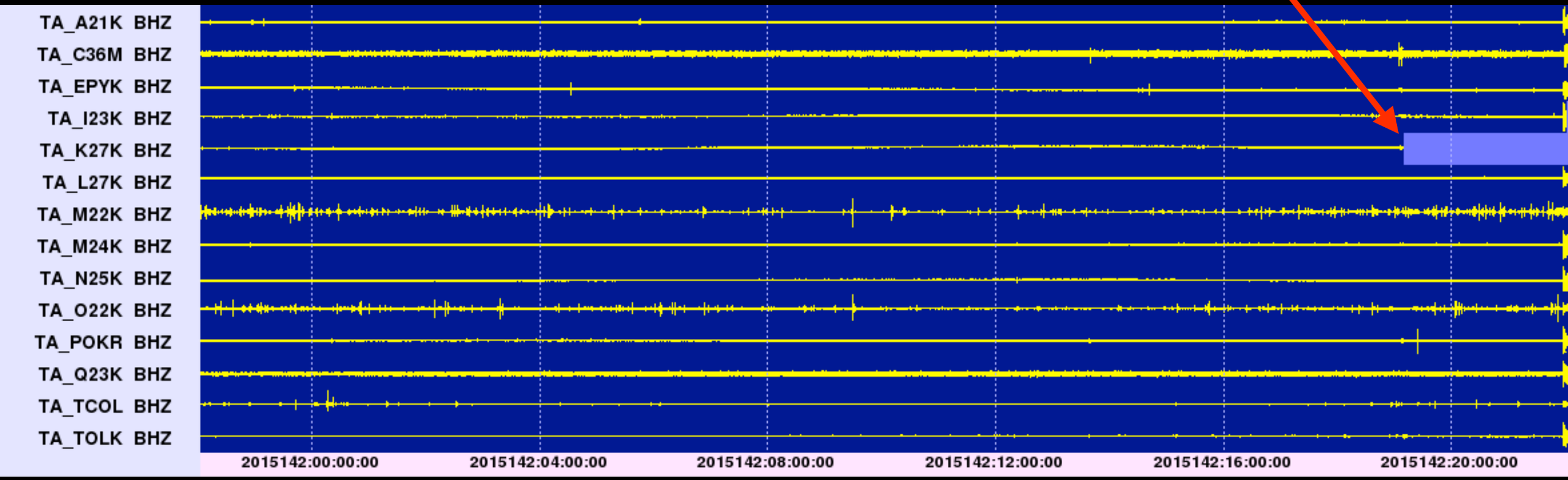
SEISMIC TRACES



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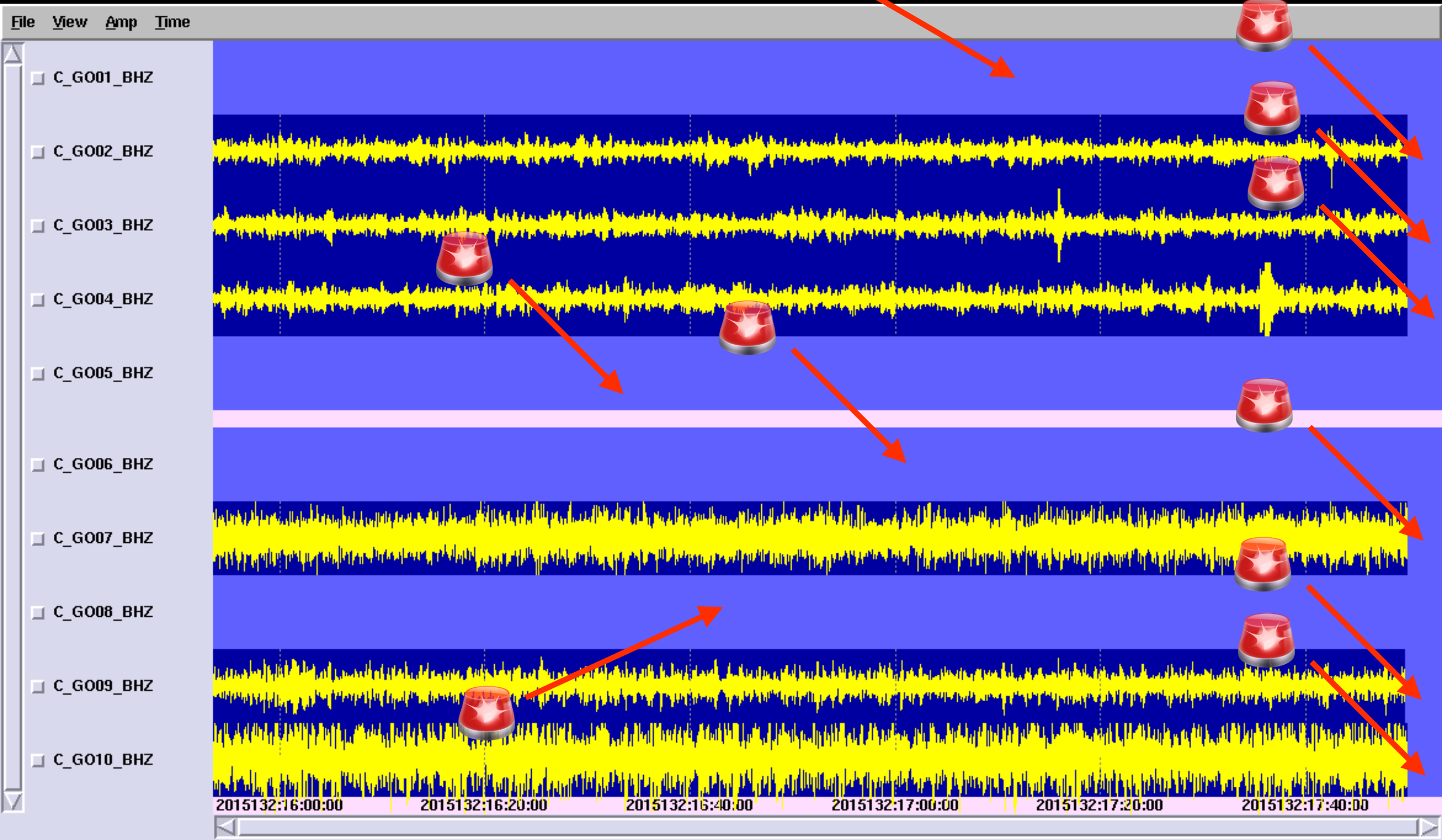
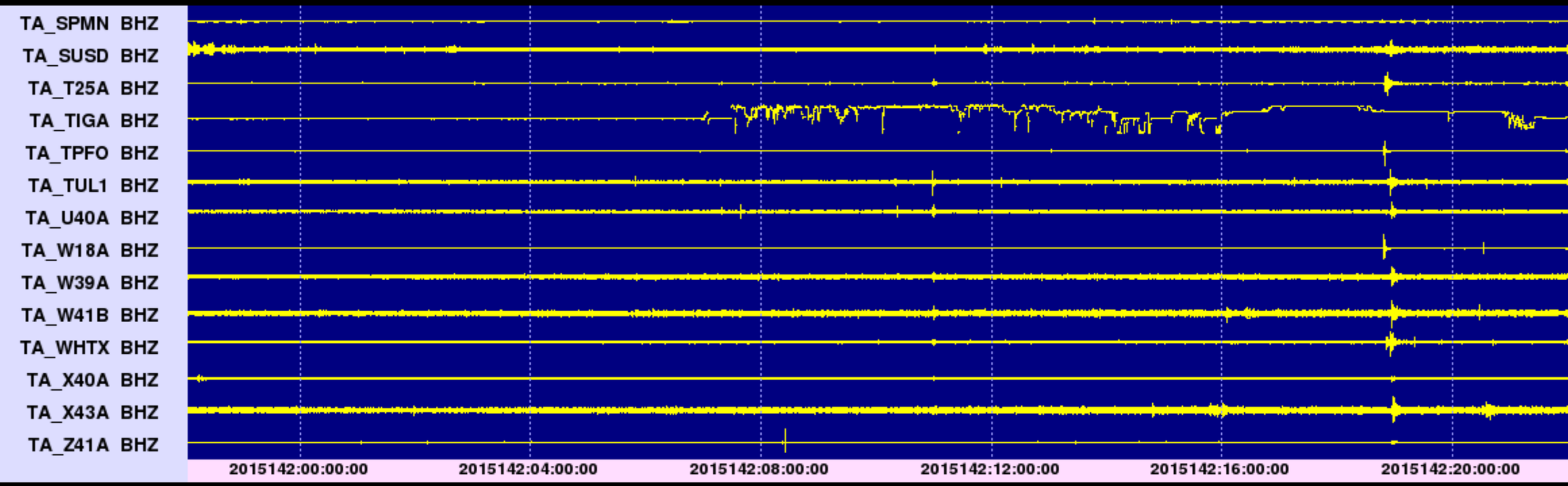
PROBLEMS


File View Amp Time
C_GO01_BHZ
C_GO02_BHZ
C_GO03_BHZ
C_GO04_BHZ
C_GO05_BHZ
C_GO06_BHZ
C_GO07_BHZ
C_GO08_BHZ
C_GO09_BHZ
C_GO10_BHZ
2015132:16:00:00
2015132:16:20:00
2015132:16:40:00
2015132:17:00:00
2015132:17:20:00
2015132:17:40:00

REAL-TIME TRACES



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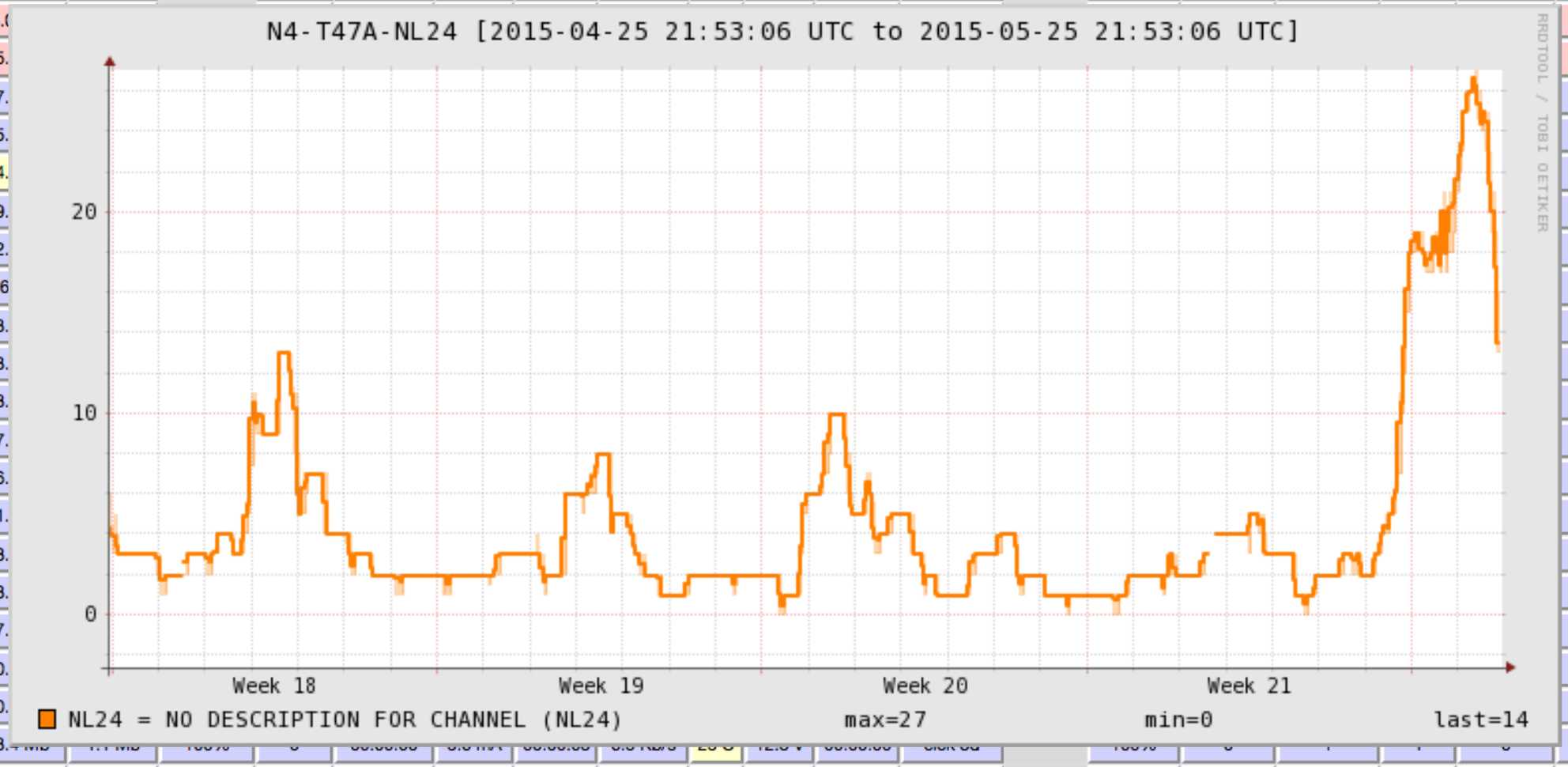
XX_BGAN BHE
XX_BGAN BHN
XX_BGAN BHZ
XX_BGAN LCC
XX_BGAN LCE
XX_BGAN LCE_EP
XX_BGAN LCL
XX_BGAN LCO_EP
XX_BGAN LCQ
XX_BGAN LDF_EP
XX_BGAN LDM_EP
XX_BGAN LDO_EP
XX_BGAN LEP_EP
XX_BGAN LHE
XX_BGAN LHN
XX_BGAN LHZ
XX_BGAN LIM_EP
XX_BGAN LKM_EP
XX_BGAN LPL
XX_BGAN QBD
XX_BGAN QBP
XX_BGAN QDG
XX_BGAN QDL
XX_BGAN QDR
XX_BGAN QEF
XX_BGAN QG1
XX_BGAN QGD
XX_BGAN QID
XX_BGAN QLD
XX_BGAN QPD
XX_BGAN QRD
XX_BGAN QRT
XX_BGAN QTH
XX_BGAN QTP
XX_BGAN QWD
XX_BGAN VCO
XX_BGAN VEA
XX_BGAN VEC
XX_BGAN VEP
XX_BGAN VKI
XX_BGAN VM1
XX_BGAN VM2
XX_BGAN VM3
XX_BGAN VPB
XX_BGAN VTW

STATION STATUS

Station	Reserve battery	24h R Bytes	24h W Bytes	Comms Effic	Clock Drift	GPS Latency	Current	Latency	I/O Rate	Temp	Voltage	24h gaps	GPS quality	GPS status	Clock Quality	24h IP Cycles	24h Link Cycles	24hPOC	24h Reboots	Buffer Full	RunTime	Thruput
N4_E43A	1	62.1 Mb	1.0 Mb	-	1	00:00:00	7.4 mA	03:32:34	0.0 Kb/s	11 C	12.9 V	00:00:00	elck 3d ilck	-	100%	5	6	27	0	8%	-01:16:21	0.0
N4_T42B	1	5.(																		85%	-01:15:25	0.0
N4_Y49A	1	65.																		0%	-00:00:04	0.8
N4_G40A	1	77.																		0%	03:11:20	1.0
N4_735B	1	75.																		0%	04:04:50	1.0
N4_R53A	1	64.																		0%	02:45:29	1.0
N4_T35B	1	69.																		0%	09:21:13	1.0
N4_N33B	1	72.																		0%	09:29:48	1.0
N4_Y57A	1	116																		0%	01:27:00	1.0
N4_O52A	1	73.																		0%	00:27:44	1.0
N4_250A	1	73.																		0%	01:28:16	1.0
N4_352A	1	78.																		0%	03:59:31	1.0
N4_P40B	1	67.																		0%	05:34:10	0.8
N4_255A	1	66.																		0%	00:21:45	1.0
N4_S51A	1	81.																		0%	01:09:38	1.0
N4_Z51A	1	98.																		0%	02:10:50	1.0
N4_N35B	1	78.																		0%	13:46:51	1.0
N4_060A	1	77.																		0%	08:06:04	1.0
N4_061Z	1	70.																		0%	04:08:12	1.0
N4_143B	1	80.																		0%	13:50:23	1.0
N4_146B	1	73.																		0%	23:59:15	1.0
N4_152A	1	76.5 Mb	1.2 Mb	100%	0	00:00:00	5.8 mA	00:00:03	7.2 Kb/s	24 C	12.6 V	00:00:00	elck 3d	-	100%	0	2	1	0	0%	09:16:59	1.0
N4_154A	1	73.7 Mb	1.2 Mb	89%	0	00:00:00	5.4 mA	00:00:03	6.2 Kb/s	30 C	13.3 V	00:00:00	elck 3d	-	100%	0	2	1	0	0%	20:18:44	1.0



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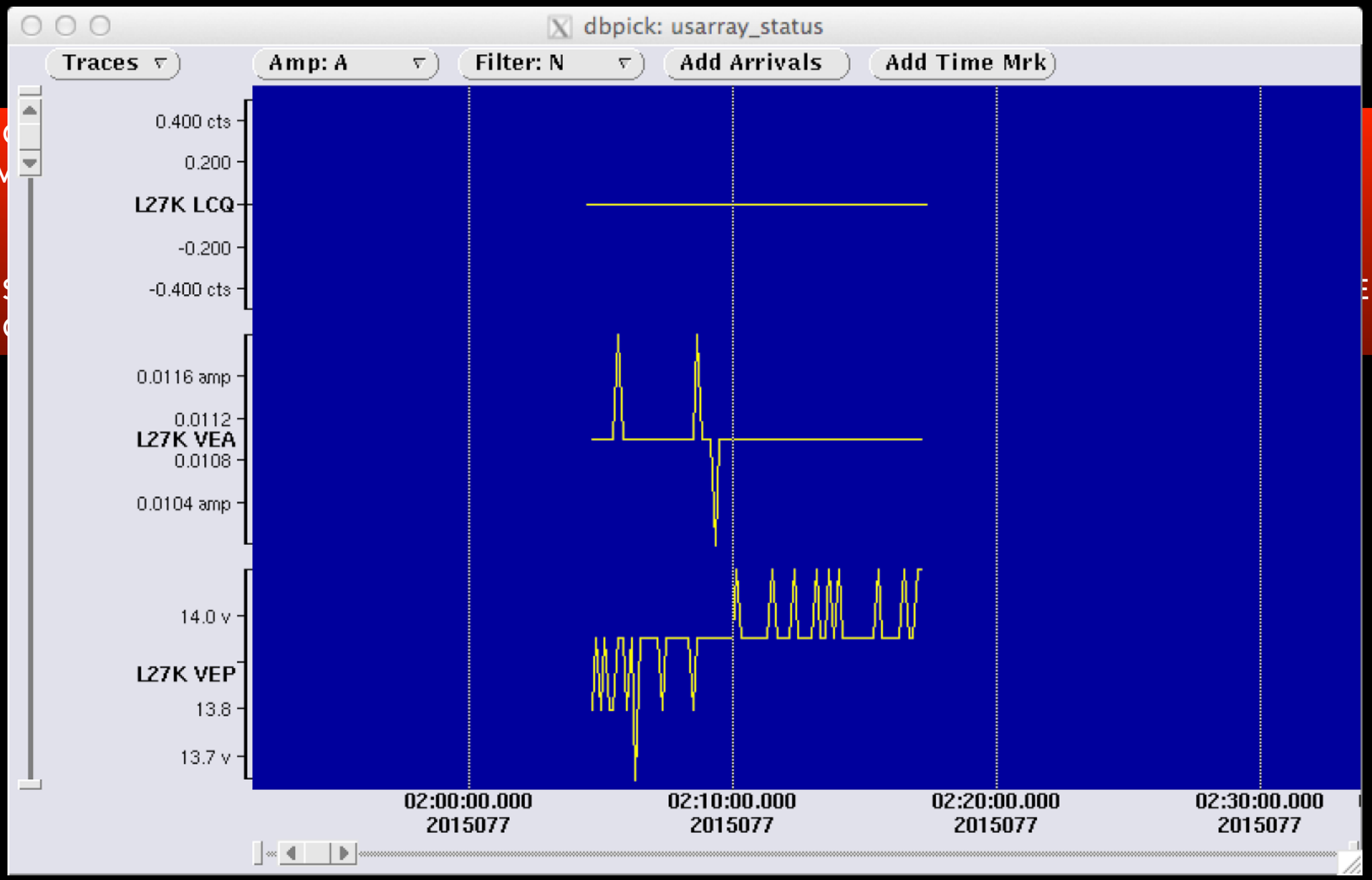
GRO STATIONS

Array Network Facility

ALARMS



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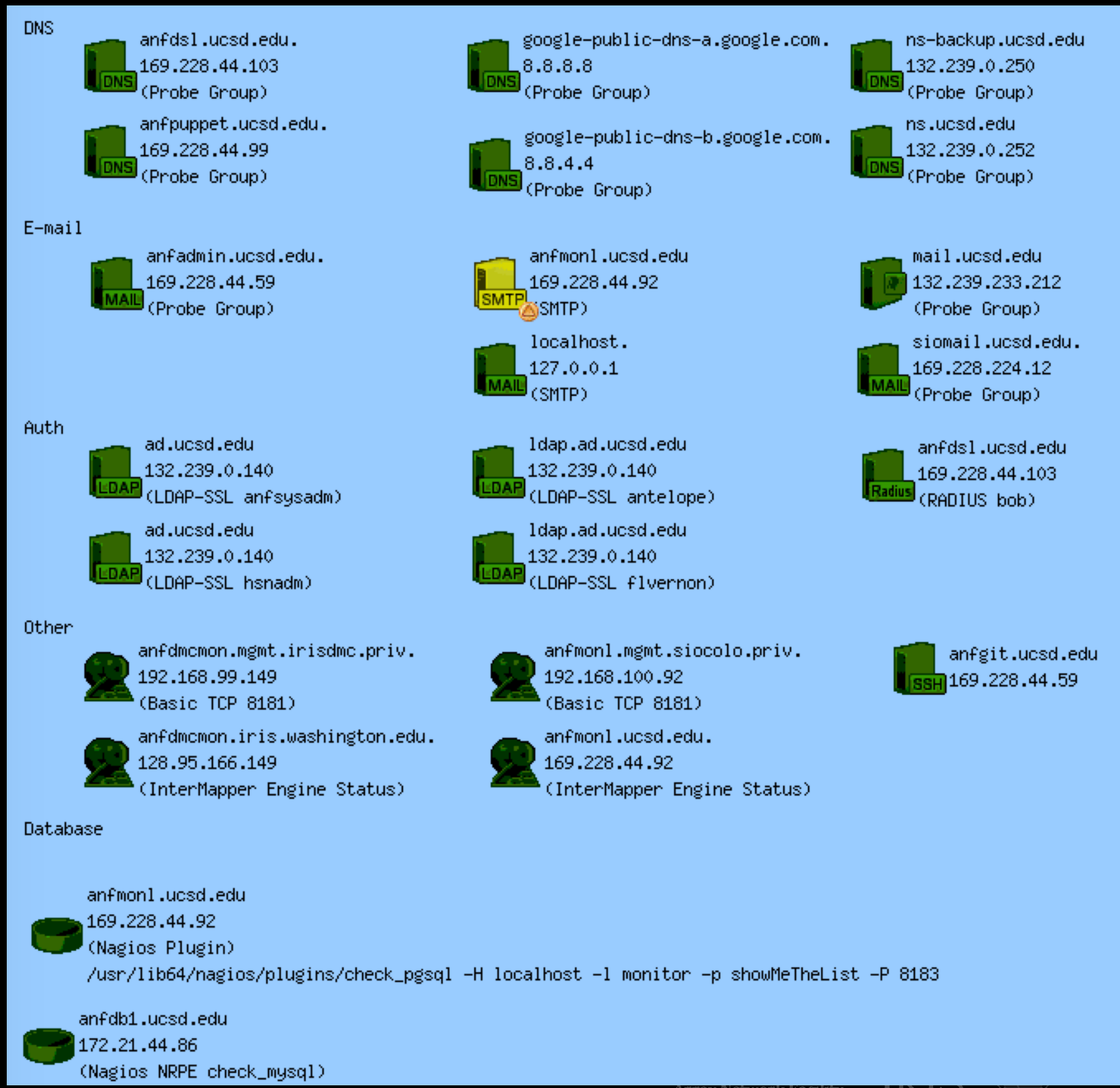
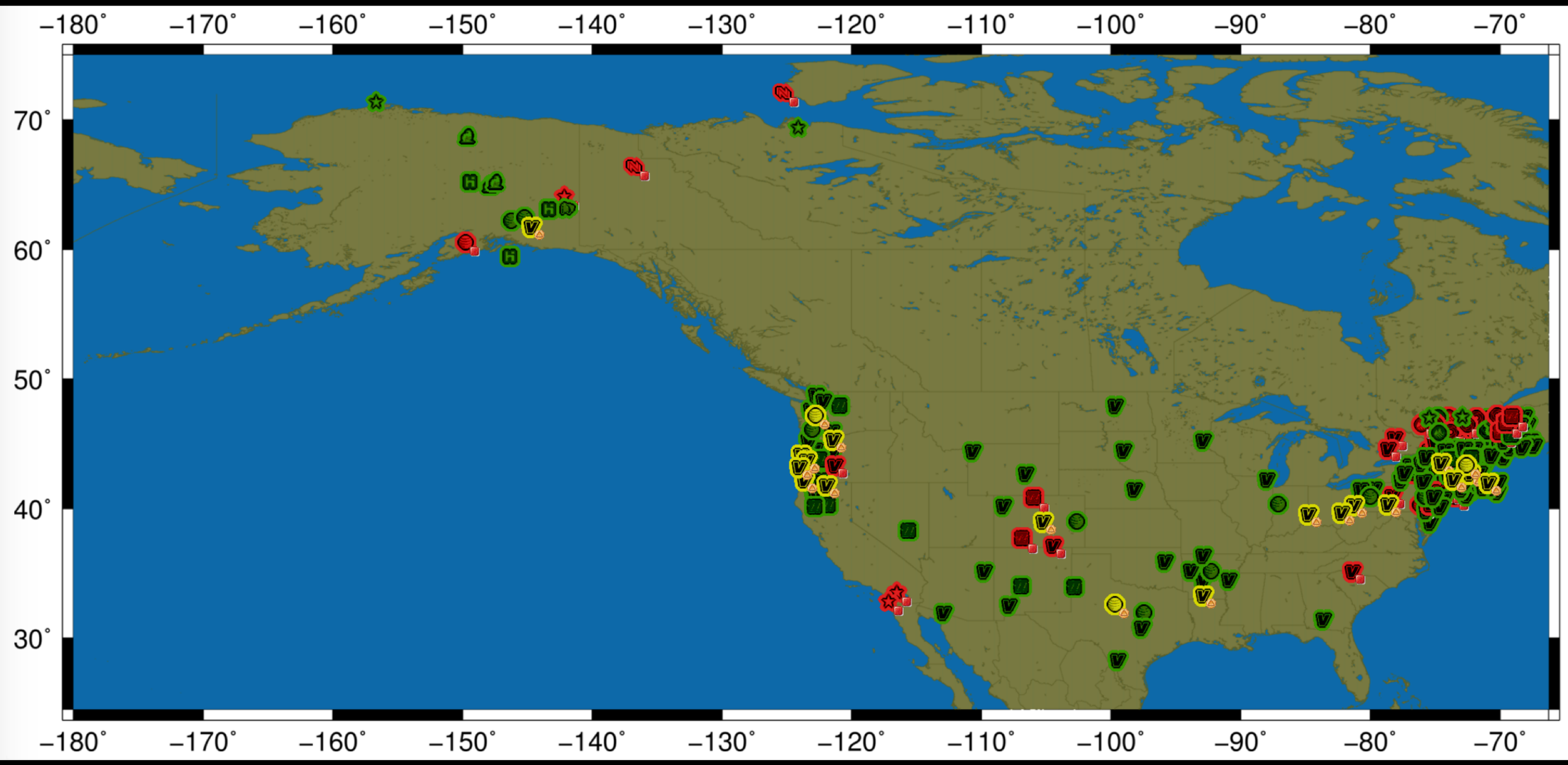
INTERMAPPER

NETWORK MONITORING, MAPPING, AND ALERTING TOOL THAT HELPS NETWORK ADMINISTRATORS MANAGE AND MAINTAIN HEALTHY IT ENVIRONMENTS.



Array Network Facility

INTERMAPPER



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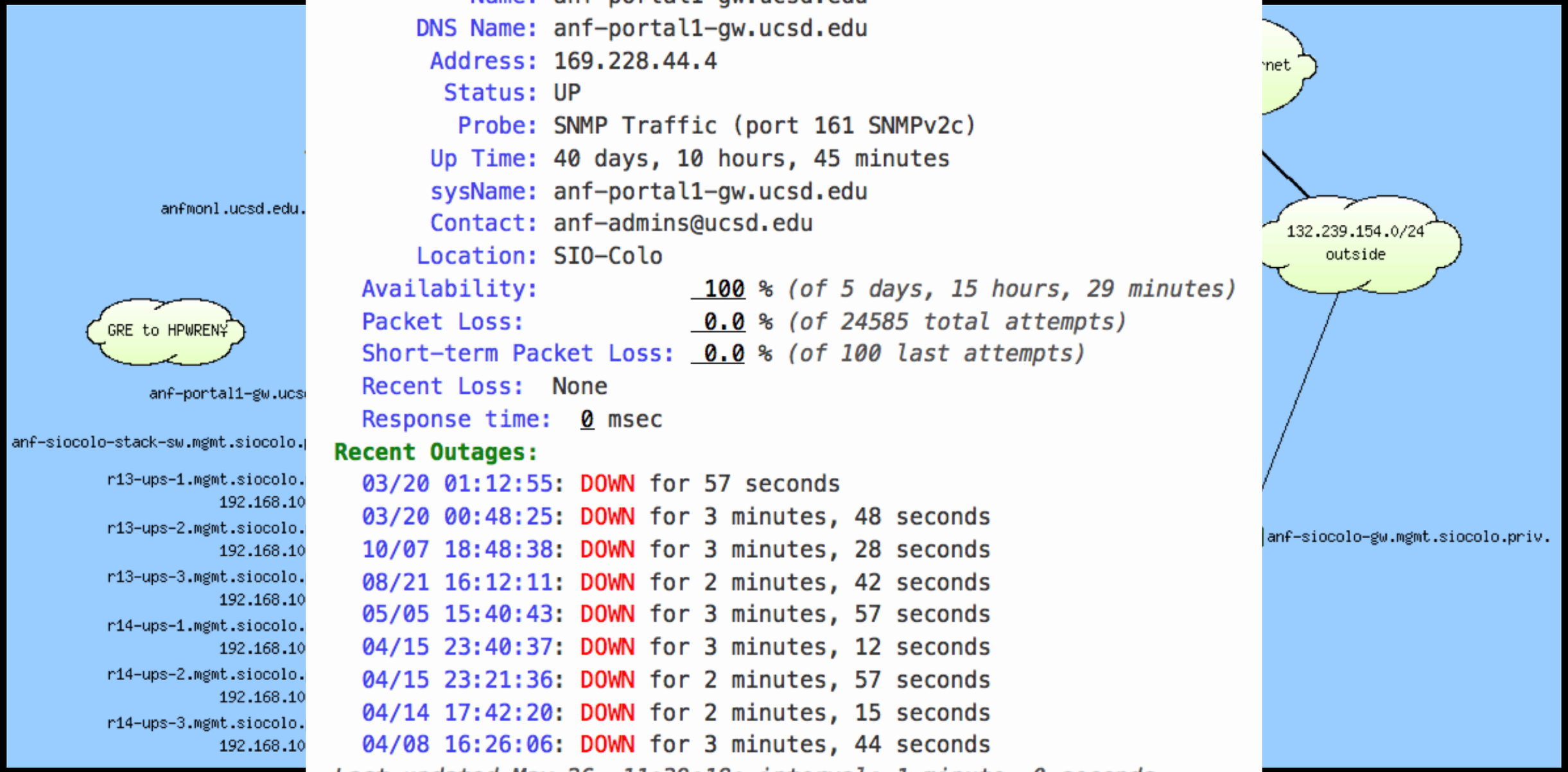
INTERMAPPER



Device Status

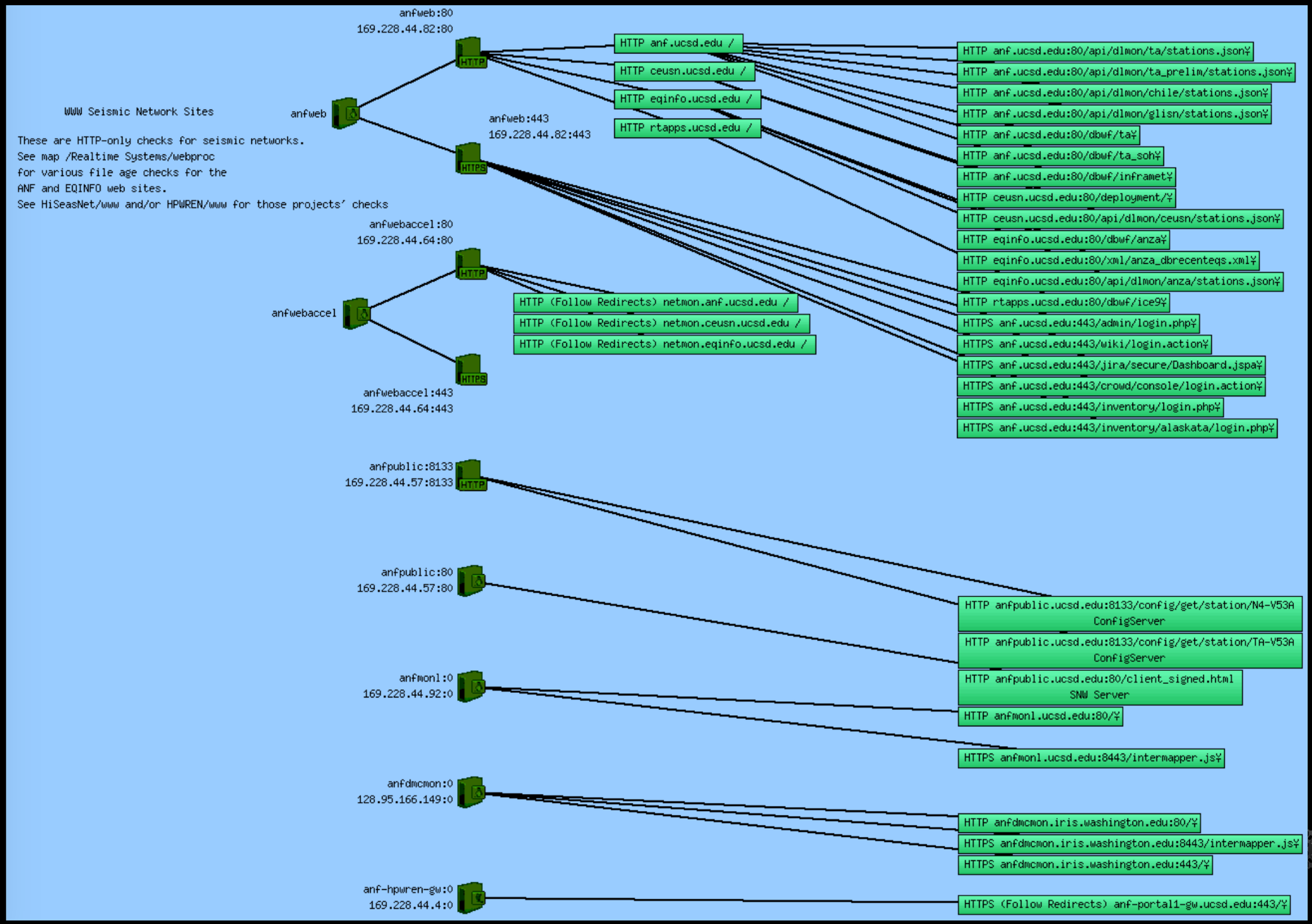
Name:	anf-portal1-gw.ucsd.edu
DNS Name:	anf-portal1-gw.ucsd.edu
Address:	169.228.44.4
Status:	UP
Probe:	SNMP Traffic (port 161 SNMPv2c)
Up Time:	40 days, 10 hours, 45 minutes
sysName:	anf-portal1-gw.ucsd.edu
Contact:	anf-admins@ucsd.edu
Location:	SIO-Colo
Availability:	100 % *(of 5 days, 15 hours, 29 minutes)*
Packet Loss:	0.0 % *(of 24585 total attempts)*
Short-term Packet Loss:	0.0 % *(of 100 last attempts)*
Recent Loss:	None
Response time:	0 msec

Recent Outages:

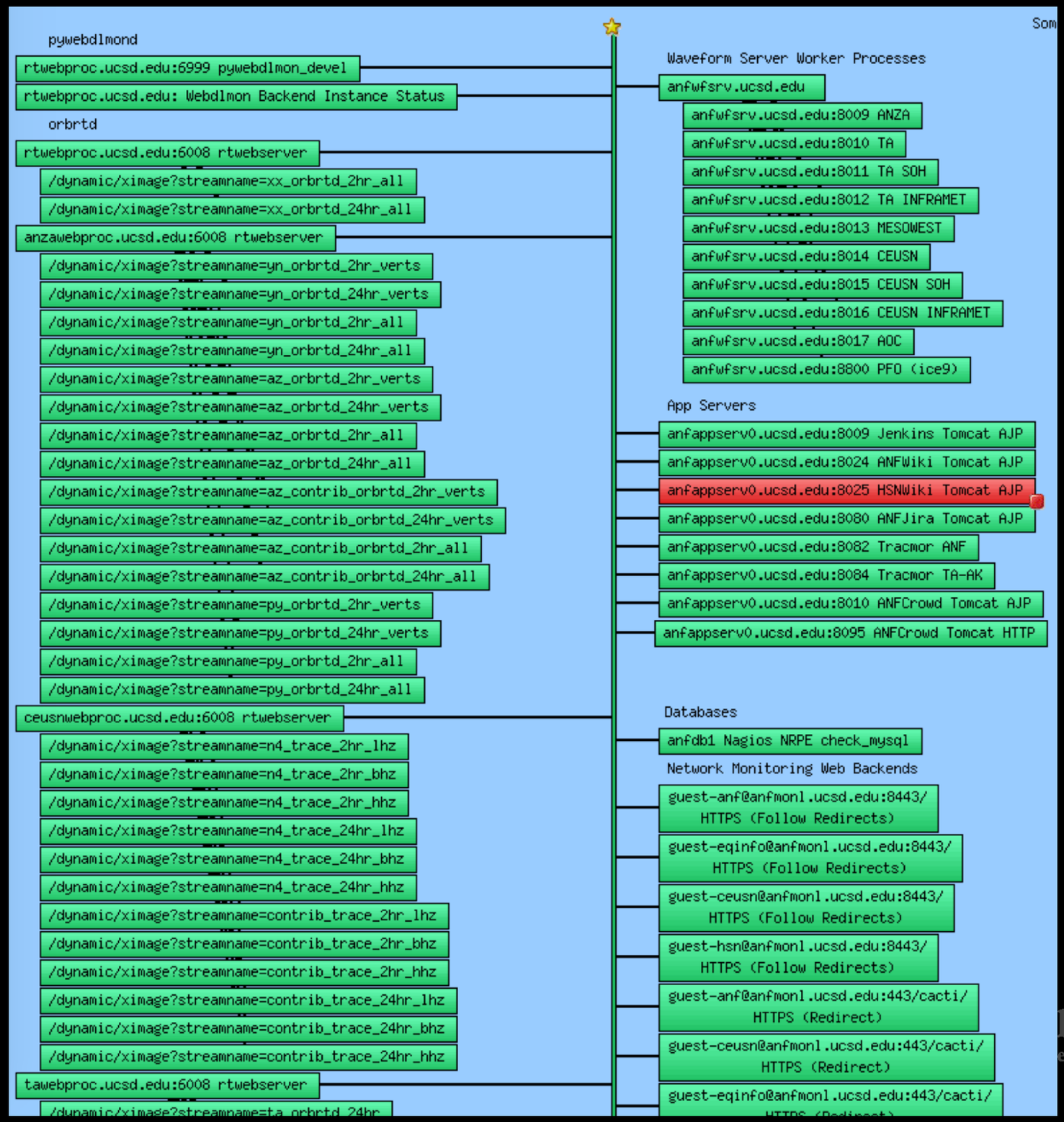
03/20 01:12:55: DOWN for 57 seconds
03/20 00:48:25: DOWN for 3 minutes, 48 seconds
10/07 18:48:38: DOWN for 3 minutes, 28 seconds
08/21 16:12:11: DOWN for 2 minutes, 42 seconds
05/05 15:40:43: DOWN for 3 minutes, 57 seconds
04/15 23:40:37: DOWN for 3 minutes, 12 seconds
04/15 23:21:36: DOWN for 2 minutes, 57 seconds
04/14 17:42:20: DOWN for 2 minutes, 15 seconds
04/08 16:26:06: DOWN for 3 minutes, 44 seconds

Last updated May 26, 11:39:18; interval: 1 minute, 0 seconds

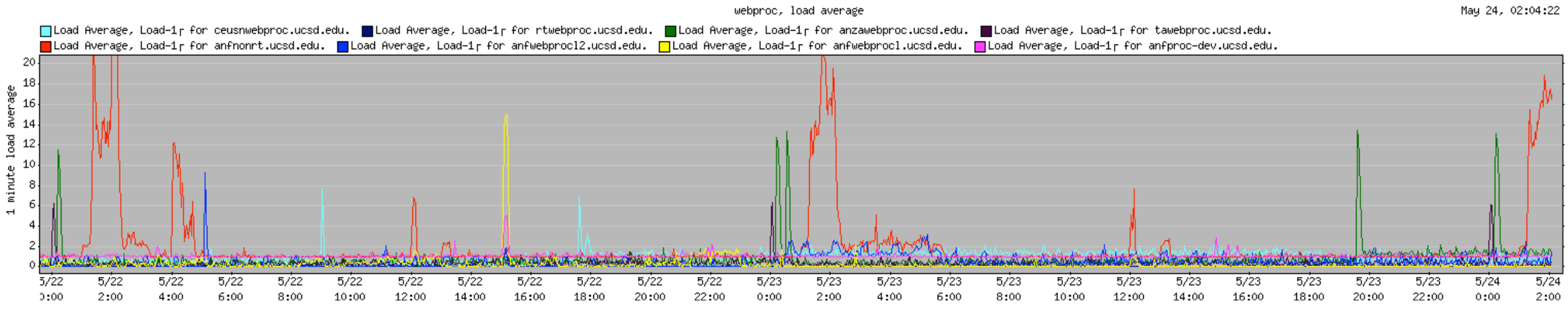
INTERMAPPER

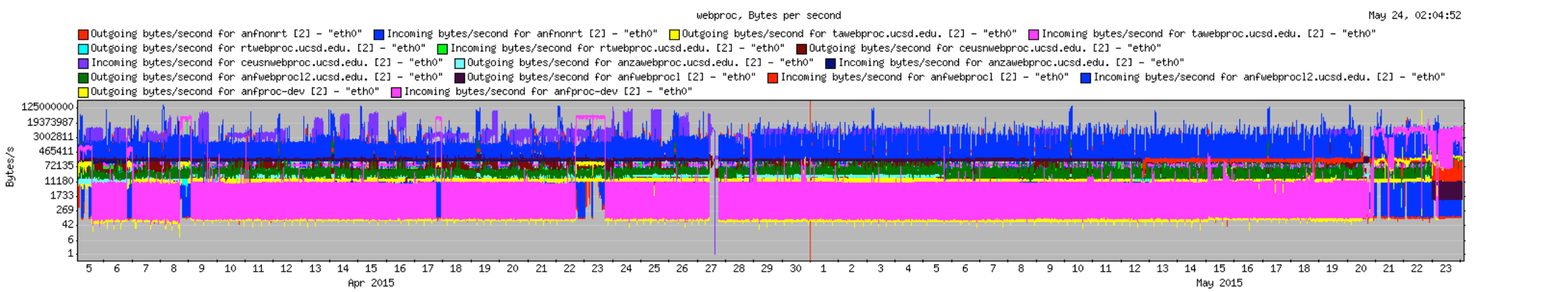


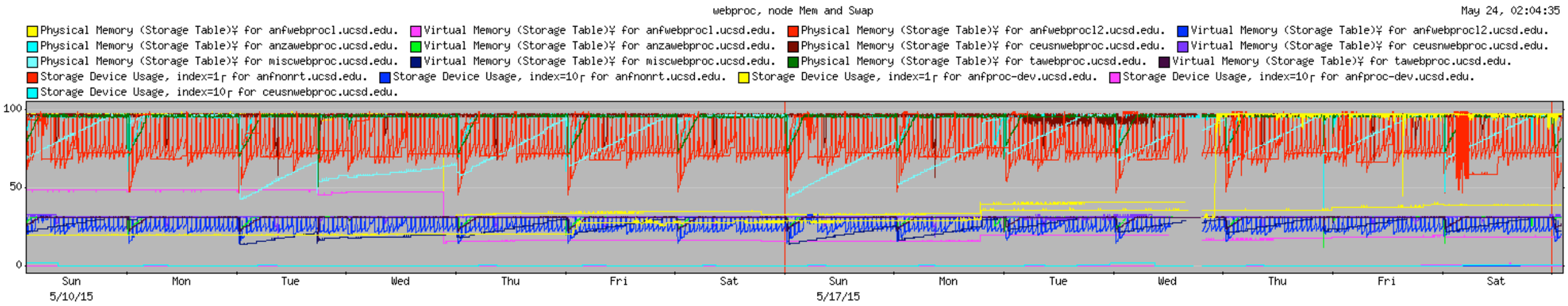
INTERMAPPER



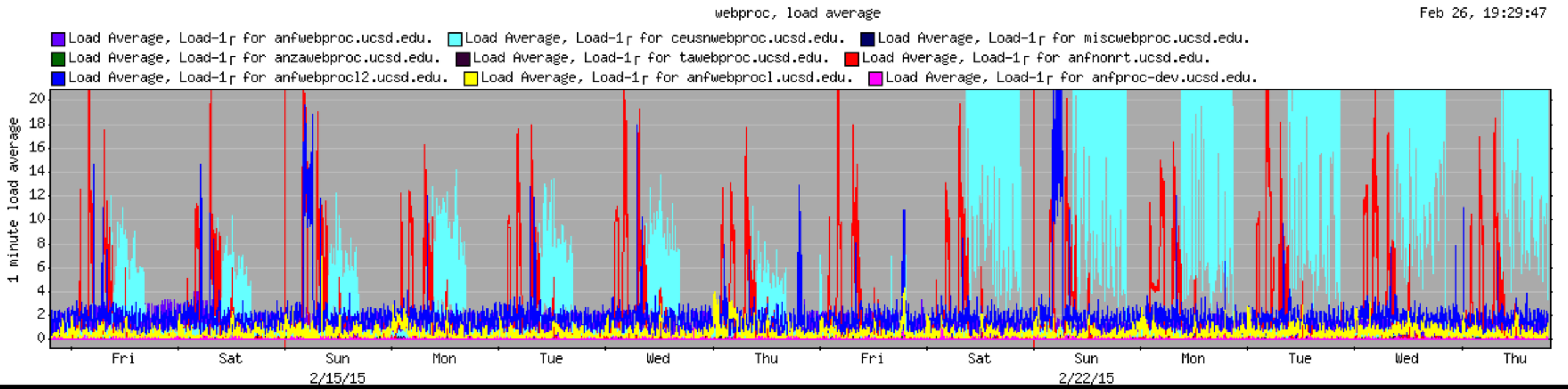
MONITORING OF SERVERS







PREVENTING PROBLEMS



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DLEVENTS

usarray View100

File Edit View Options Graphics Help

ok X TA_M61A

0

dlname	time	dlevtype	dlcomment
TA_M61A	5/27/2014 (147) 18:53:03.11523	annc_change	Annc structure changed for TA_M61A. Using anfacq anfdmcacq ceus
TA_M61A	6/03/2013 (154) 6:30:01.57200	massrecenter	Sending massrecenter cmd with 0x1 for 8.000000 secs.
TA_M61A	7/13/2013 (194) 6:17:01.72100	massrecenter	Sending massrecenter cmd with 0x1 for 8.000000 secs.
TA_M61A	11/13/2013 (317) 15:18:04.53900	massrecenter	Sending massrecenter cmd with 0x1 for 8.000000 secs.
TA_M61A	3/22/2014 (081) 15:17:02.44200	massrecenter	Sending massrecenter cmd with 0x1 for 8.000000 secs.
TA_M61A	6/26/2014 (177) 18:17:31.81700	massrecenter	Sending massrecenter cmd with 0x1 for 8.000000 secs.
TA_M61A	12/10/2013 (344) 14:12:48.14400	sensor_cal	LOG Calibration start waveform=0x2, amplitude=4, duration=7200,
TA_M61A	12/13/2013 (347) 6:17:42.13700	sensor_cal	LOG Calibration start waveform=0x2, amplitude=4, duration=7200,
TA_M61A	3/26/2015 (085) 18:37:52.16100	sensor_cal	LOG Calibration start waveform=0x2, amplitude=4, duration=7200,
TA_M61A	3/26/2015 (085) 21:18:27.16100	sensor_cal	LOG Calibration start waveform=0x2, amplitude=4, duration=7200,
TA_M61A	6/03/2013 (154) 4:38:03.34500	service	UMSG ip = 127.0.0.1, msg = ANF confirmed this is M61A. Acq soon
TA_M61A	5/27/2014 (147) 18:52:51.98400	service	UMSG ip = 127.0.0.1, msg = Changing POC/annc structure. -- ANF
TA_M61A	5/25/2015 (145) 14:14:16.73900	service	UMSG ip = 10.172.53.5, msg = 2015-05-25 1305 Z, Removal team on
TA_M61A	5/25/2015 (145) 14:15:16.93900	service	UMSG ip = 10.172.53.5, msg = 2015-05-25 1354 Z, Unseal the vaul
TA_M61A	5/25/2015 (145) 14:16:17.30500	service	UMSG ip = 10.172.53.5, msg = 2015-05-25 1417 Z, Power down site

15

Dismiss

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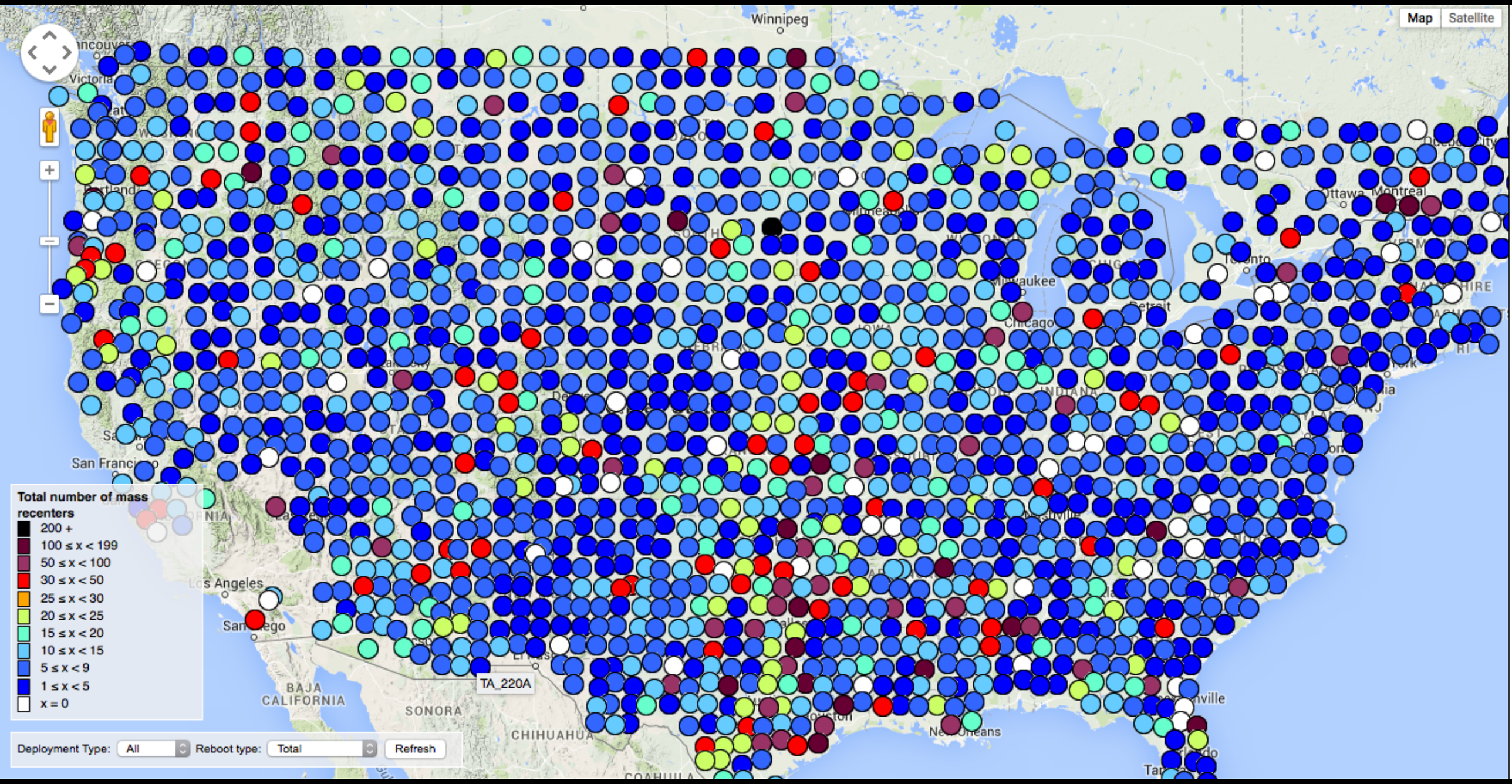
MASS RECENTERS



WIKI

anf.ucsd.edu/wiki/display/CHILE/Stations+GO+topology

ANF Array Network Facility | Array Network Facility wiki | Spaces | People | Browse | Create | Search

Search

- How To's
- Antelope Network Topology
- Server Network Topology
- **Stations GO topology**
- Web products
- CSN visit April 2015

Chile / Chile Project Home

Stations GO topology

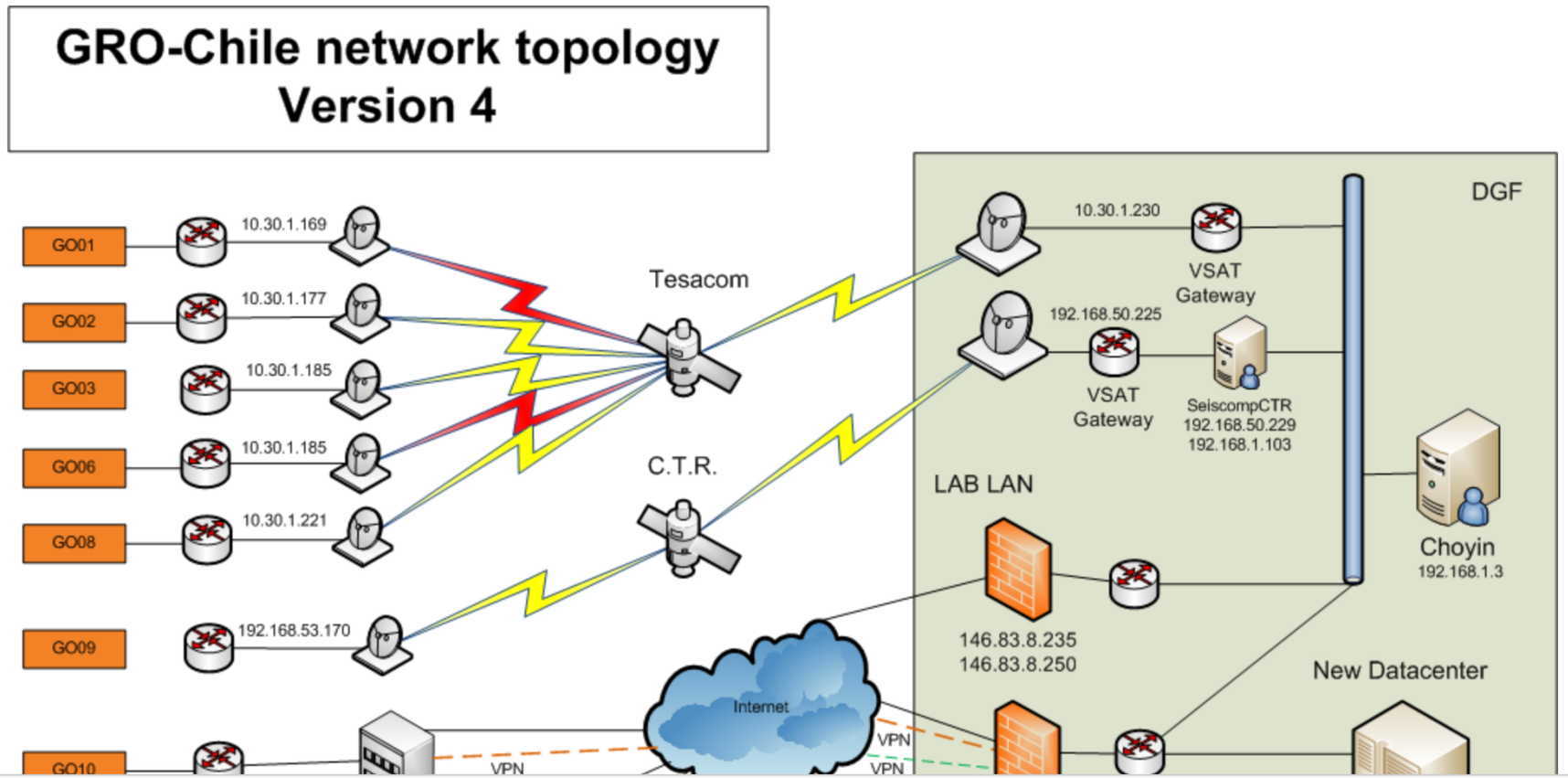
Edit | Share | Tools

2 Added by Juan Reyes, last edited by Juan Reyes on Apr 21, 2015

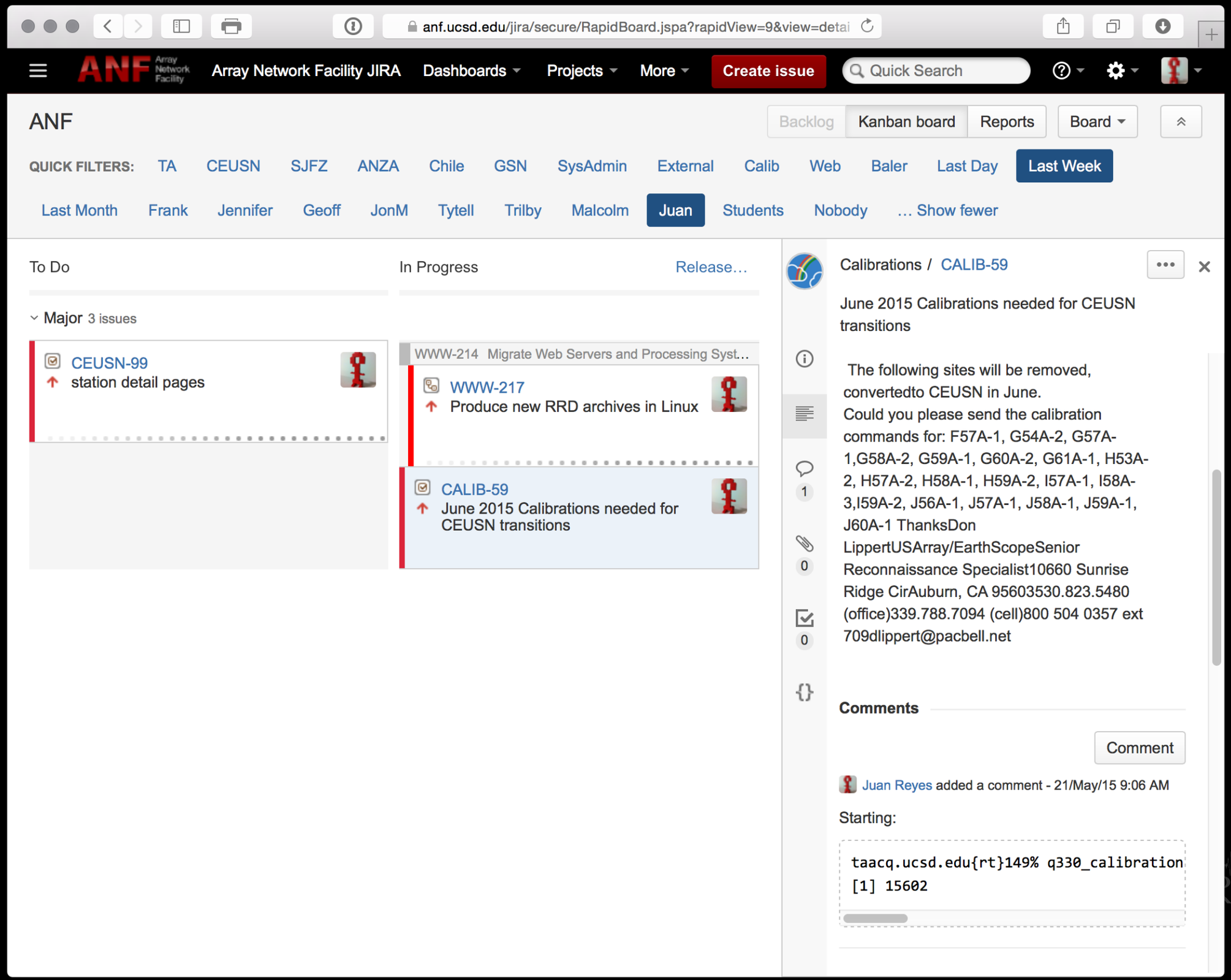
Diagram describing the different ways the stations are connected to the realtime system.

VSD original file:

Network_drawing_150421_rev4-1.vsd



TRACKING WORK



STATION PAGES

anf.ucsd.edu/stations/TA/TOLK

Station TA TOLK

Summary | Waveforms | SOH | IRIS PDF data | Events | Reports

Summary

DOWNLOAD DATALESS SEED
DATALESS.TA_TOLK (229 kB)
Created on: 2014-11-17 08:01:10 UTC

Data latency	18.000 seconds
Most recent packet in Orb	2015-05-26 03:04:42
Oldest packet in Orb	2015-05-24 18:05:32

Network	TA - EarthScope Transportable Array Seismic Network
Location	Toolik Lake Research Station, AK, USA
Coordinates	68.64 N, -149.57 E
Elevation	0.76 km

USArray Ondate	2011-08-14	USArray Offdate	active
Equipment Installation Date	2011-08-13	Equipment Removal Date	active
ANF Certification Date	2011-08-20	ANF Decommission Date	active

Comms

Type	Provider	Power	Duty cycle	Ondate	Offdate
Regular Internet	UAF Network	N/A	N/A	2011-08-17	active

Instrument

Datalogger Type	ID tag	Sensor Type	ID	Ondate	Offdate	Channels
Quanterra Q330	3670	Guralp CMG-3T	T34269	2011-08-14	active	BHE, BHN, BHZ, LHE, LHN, LHZ, UHE, UHN, UHZ, VHE, VHN, VHZ
Quanterra Q330	3670	Guralp CMG-3T	T3H15	2011-08-14	active	BHE_01, BHN_01, BHZ_01, LHE_01, LHN_01, LHZ_01, UHE_01, UHN_01, UHZ_01, VHE_01, VHN_01, VHZ_01
Quanterra Q330	116940	Hyperion Microbarometer	H110240113	2011-08-14	active	BDF_EP, LDF_EP
Quanterra Q330	116940	Setra 278 microbarometer	4547911	2011-08-14	active	BDO_EP, LDO_EP

Infrasound

Sensors Installed	Channel Codes	Ondate	Offdate
MEMS Barometric Pressure Gauge	LDM_EP	2011-08-14	active
NCPA Infrasound Microphone	BDF_EP, LDF_EP	2011-08-14	active
SETRA Absolute Microbarometer	BDO_EP, LDO_EP	2011-08-14	active

CEUSN

ceusn.ucsd.edu/kiosk/

Map | Satellite | Basic

network
commtype
provider
datalogger
sensor

Last Update:
00:00:10

Network	(Total)
N4	135
TA	55
US	39
LD	20
IU	10
CO	6
AG	3
NE	8
NM	6
EP	1
OK	4
PE	4
IM	2
SC	1

Calgary
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Toronto
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MINNESOTA
Minneapolis
SOUTH DAKOTA
WISCONSIN
MICHIGAN
Milwaukee
Detroit
Chicago
IDAHO
WYOMING
IOWA
NEBRASKA
NEW YORK
MAINE
VERMONT
MASSACHUSETTS
CT
RI
Salt Lake City
Denver
United States
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
New York
Philadelphia
NJ
MARYLAND
DE
WEST VIRGINIA
Washington
UTAH
COLORADO
KANSAS
MISSOURI
KENTUCKY
VIRGINIA
Nashville
TENNESSEE
NORTH CAROLINA
Charlotte
Albuquerque
OKLAHOMA
ARKANSAS
ARIZONA
Phoenix
NEW MEXICO
Atlanta
SOUTH CAROLINA
MISSISSIPPI
ALABAMA
GEORGIA
Tucson
El Paso
Dallas
TEXAS
Austin
Houston
San Antonio
LOUISIANA
New Orleans
Jacksonville
Orlando
Tampa
FLORIDA
Miami
The Bahamas
Havana
Bermuda
BAJA CALIFORNIA
SONORA
CHIHUAHUA
COAHUILA
NUEVO LEON
Monterrey
BAJA CALIFORNIA SUR
SINALOA
DURANGO
TAMAULIPAS
Mexico
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200 km
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CEUSN

ceusn.ucsd.edu/kiosk/

Map | Satellite | Basic

network
commtype
provider
datalogger
sensor

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QUEBEC
MONTANA
NORTH DAKOTA
MINNESOTA
Minneapolis
SOUTH DAKOTA
WISCONSIN
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OHIO
PENNSYLVANIA
MARYLAND
WEST VIRGINIA
Washington
KENTUCKY
VIRGINIA
MISSOURI
Nashville
TENNESSEE
NORTH CAROLINA
Charlotte
Atlanta
SOUTH CAROLINA
MISSISSIPPI
ALABAMA
GEORGIA
Jacksonville
Orlando
Tampa
FLORIDA
Miami
The Bahamas
Havana
Bermuda
Las Vegas
Albuquerque
ARIZONA
Phoenix
NEW MEXICO
Tucson
El Paso
OKLAHOMA
ARKANSAS
Dallas
TEXAS
Austin
San Antonio
Houston
LOUISIANA
New Orleans
BAJA CALIFORNIA
SONORA
CHIHUAHUA
COAHUILA
NUEVO LEON
Monterrey
BAJA CALIFORNIA SUR
SINALOA
DURANGO
TAMAULIPAS
Mexico

Last Update:
00:01:58

Commtype	(Total)
cell_modem	133
orb2orb	56
slink2orb	104
vsat	1

Google
Map data ©2015 Google, INEGI | 200 km | Terms of Use

CEUSN

ceusn.ucsd.edu/kiosk/

Map | Satellite | Basic

network
commtype
provider
datalogger
sensor

Calgary
Regina
Winnipeg
ONTARIO
QUEBEC
MONTANA
NORTH DAKOTA
MINNESOTA
Minneapolis
SOUTH DAKOTA
WISCONSIN
MICHIGAN
Milwaukee
Chicago
Detroit
Toronto
Ottawa
Montreal
Quebec City
NEW BRUNSWICK
PRINCE EDWARD ISLAND
NOVA SCOTIA
MAINE
VERMONT
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CT
RI
IDAHO
WYOMING
IOWA
NEBRASKA
Salt Lake City
Denver
United States
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COLORADO
KANSAS
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
Philadelphia
New York
NJ
MARYLAND
DE
WEST VIRGINIA
Washington
MISSOURI
KENTUCKY
VIRGINIA
Nashville
TENNESSEE
NORTH CAROLINA
Charlotte
Atlanta
SOUTH CAROLINA
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ARIZONA
Phoenix
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Orlando
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Miami
The Bahamas
Havana
Bermuda
BAJA CALIFORNIA
SONORA
CHIHUAHUA
COAHUILA
NUEVO LEON
Monterrey
BAJA CALIFORNIA SUR
SINALOA
DURANGO
TAMAULIPAS
Mexico
Google

Last Update:
00:02:23

Provider	(Total)
Verizon Wireless	126
Antelope ORB	160
AT&T	7
Wild Blue Comms	1

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Map | Satellite | Basic

network
commtype
provider
datalogger
sensor

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MINNESOTA
Minneapolis
SOUTH DAKOTA
WISCONSIN
MICHIGAN
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Chicago
Detroit
Toronto
Ottawa
Montreal
Quebec City
NEW BRUNSWICK
PRINCE EDWARD ISLAND
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NEBRASKA
Salt Lake City
Denver
United States
UTAH
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KANSAS
ILLINOIS
INDIANA
OHIO
M52A
PENNSYLVANIA
MISSOURI
KENTUCKY
WEST VIRGINIA
MARYLAND
DE
NJ
Washington
VIRGINIA
Nashville
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SOUTH CAROLINA
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Mexico

Last Update:
00:02:40

Datalogger	(Total)
Quanterra Q330	135
unknown	159

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Map | Satellite | Basic

network
commtype
provider
datalogger
sensor

Last Update:
00:03:06

Sensor	(Total)
trillium1	12
setra	134
sts2	64
unknown	159
sts25	6
cmg	37
episensor	20
trillium2	16
titan	6

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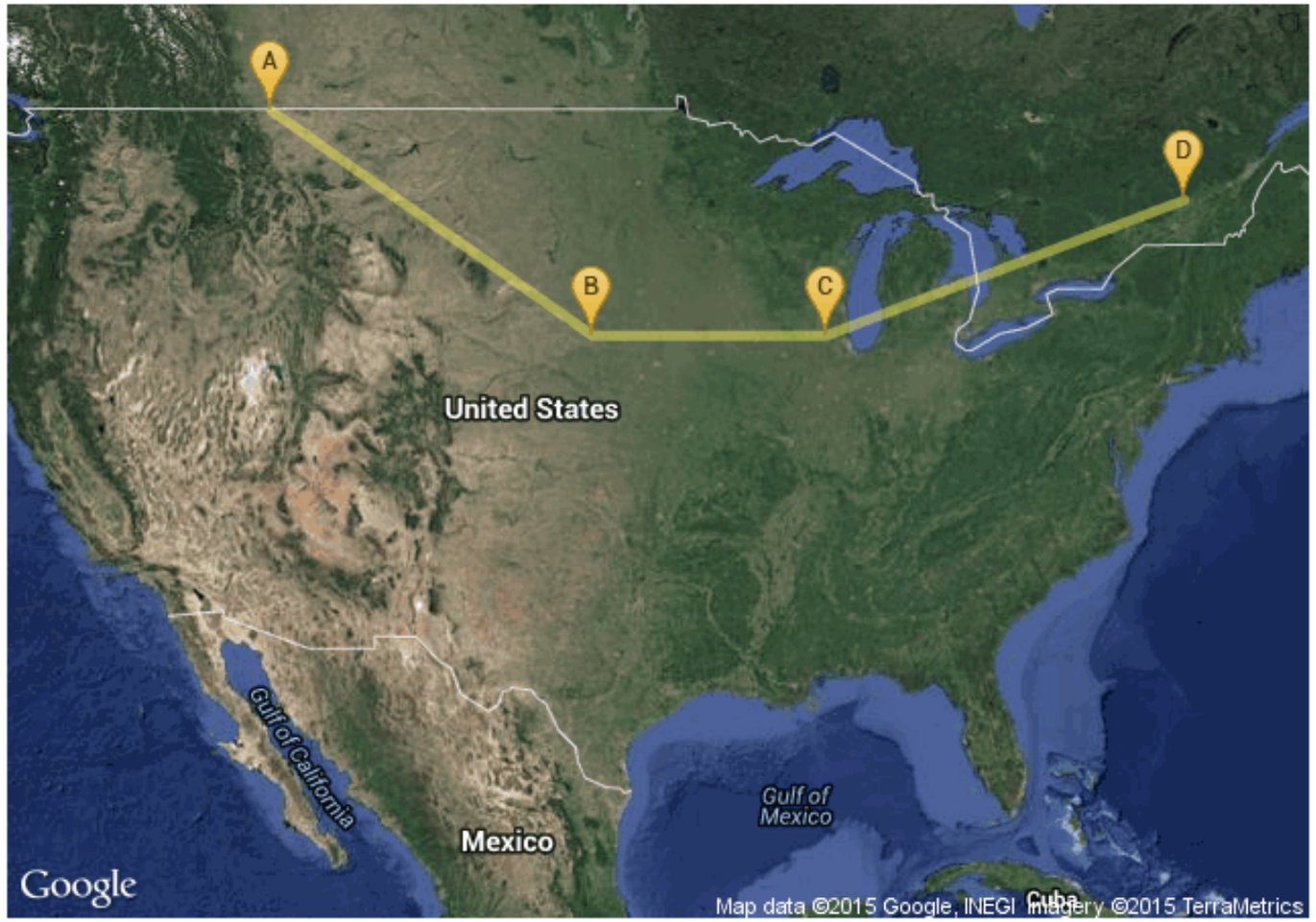
INSTRUMENT HISTORY

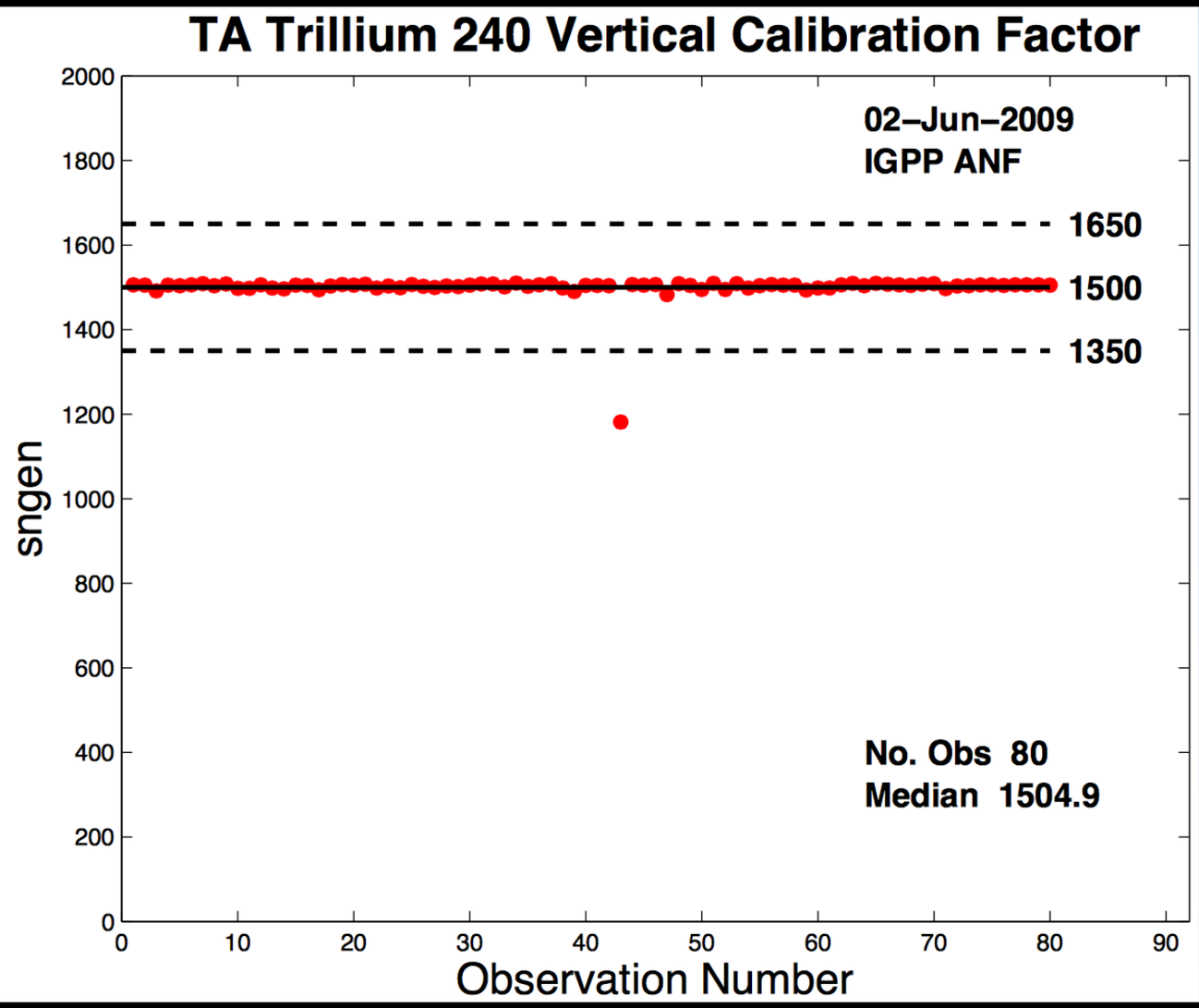
Sensors | Digitizers

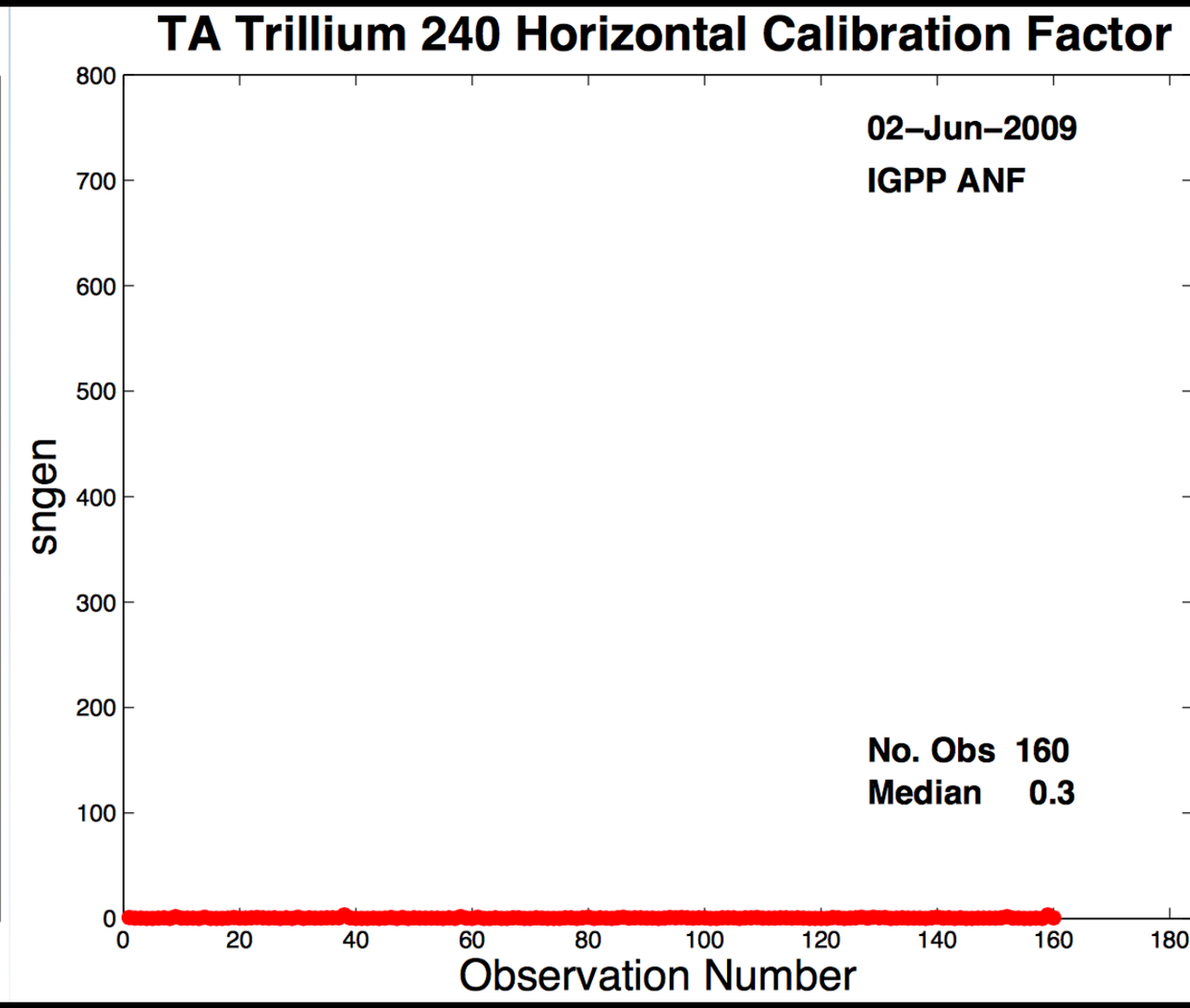
Sensor serial code: 60706 or station code: Show on map? Go!

		Sep/2007																										
		13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9
60706	A15A	702																										
	L31A																											
	L43A																											
	E58A																											



CALIBRATIONS





earthscope Array Network Facility IRIS NSF

THANK YOU