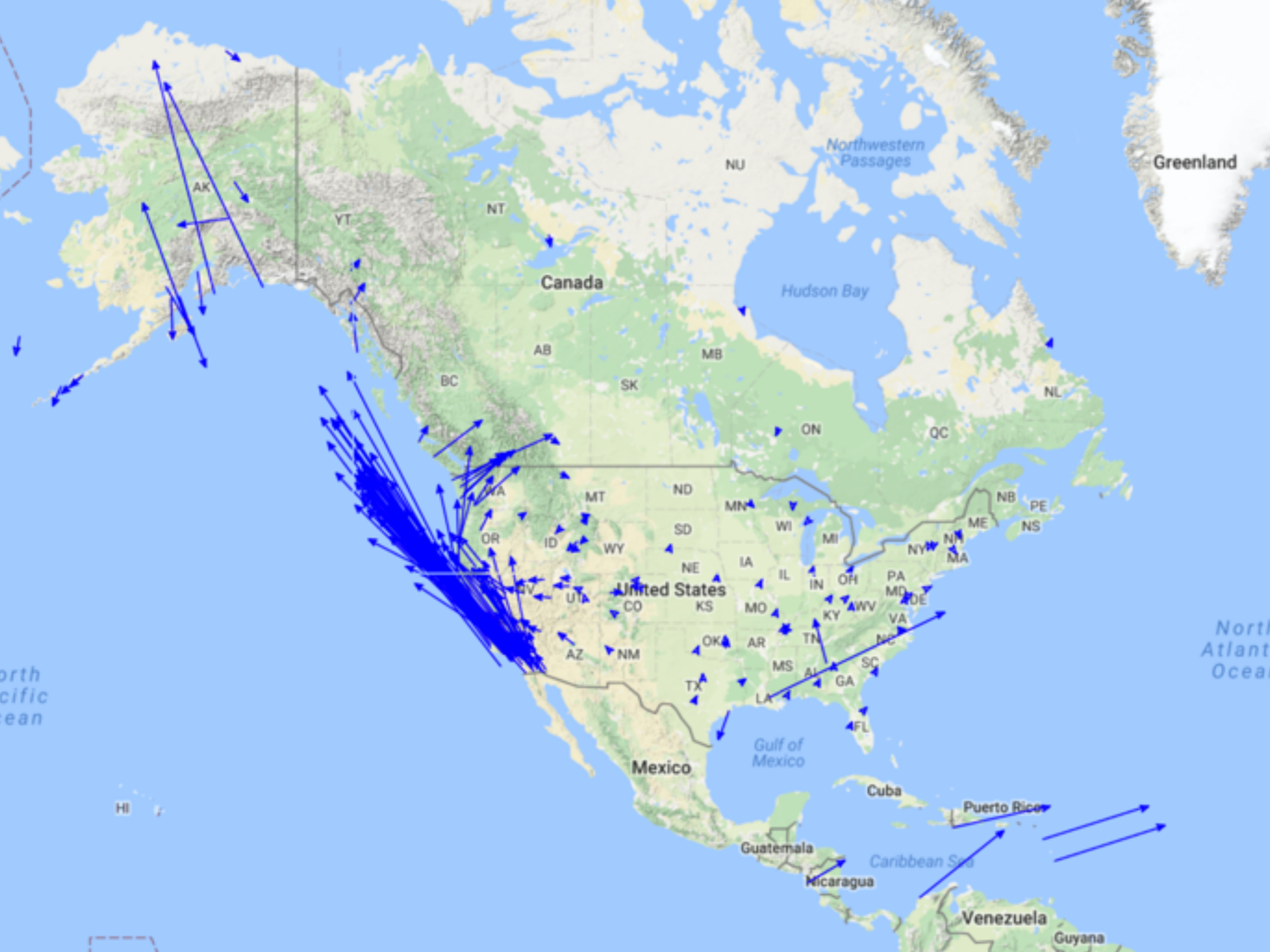


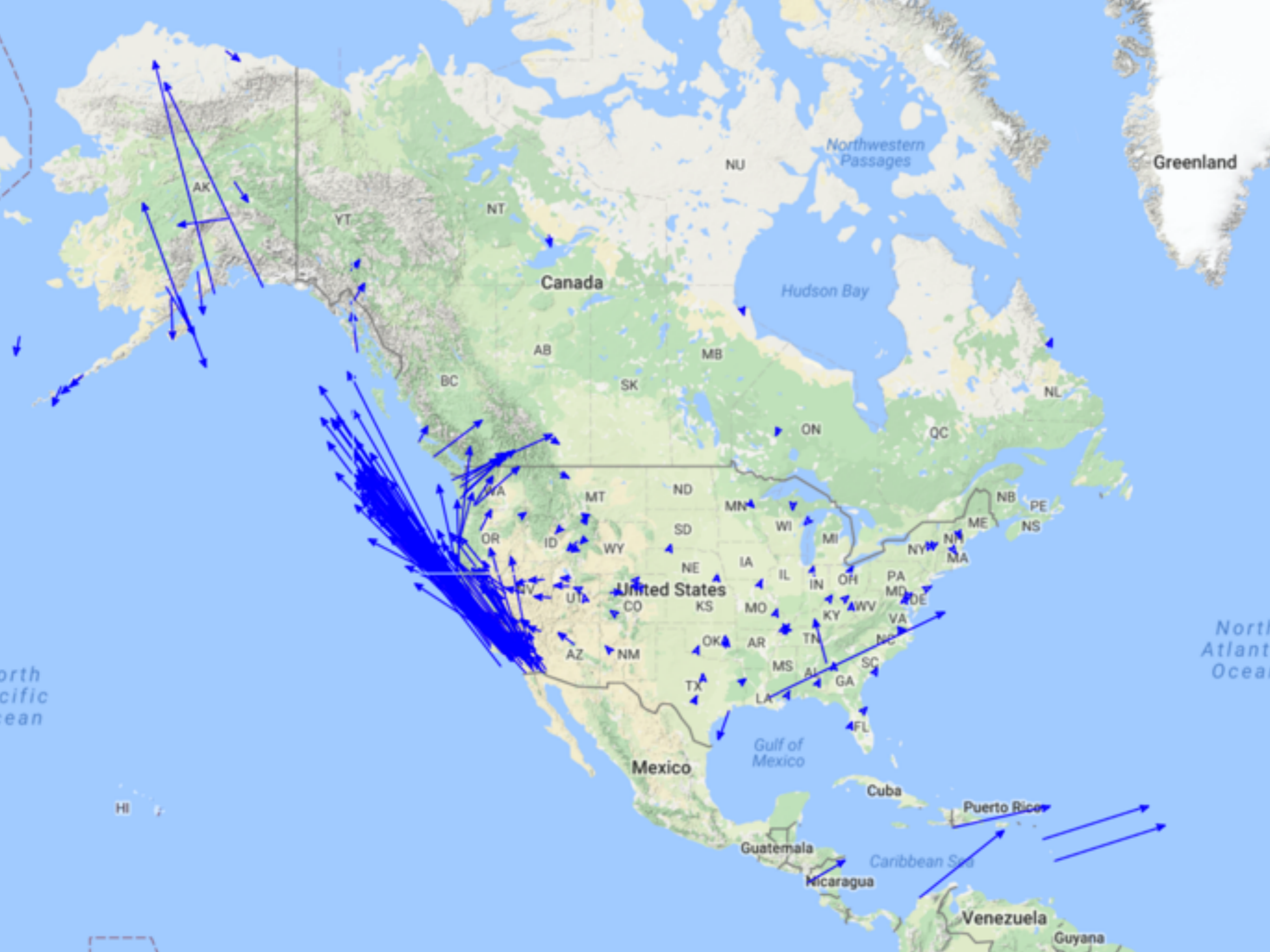


**OUT TO LUNCH: EXPLORING GROUND MOTIONS
WITH THE UNAVCO VELOCITY VIEWER**

Shelley Olds, UNAVCO







[home](#) > [software](#) > [visualization](#) > [gps velocity viewer](#)

GPS Velocity Viewer

Software

- [Help with Software](#)
- **[Visualization](#)**
 - **[GPS Velocity Viewer](#)**
 - [About Reference Frames](#)
 - [Jules Verne Voyager](#)
 - [Earth](#)
 - [PaleoEarth](#)
 - [GEM GSRM](#)
 - [Google Earth](#)
 - [All Sites](#)
 - [Permanent Sites](#)
 - [Campaign Sites](#)
 - [PBO Sites](#)
 - [PBO Velocity Field](#)
 - [Polar Sites](#)
 - [U-Plotter](#)
 - [Documentation](#)
 - [Data Archive Plotter](#)

Map
Satellite

GNSS velocity vectors

GNSS Data source:

Display vectors

Vector color:

Vector length (scaling):

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:

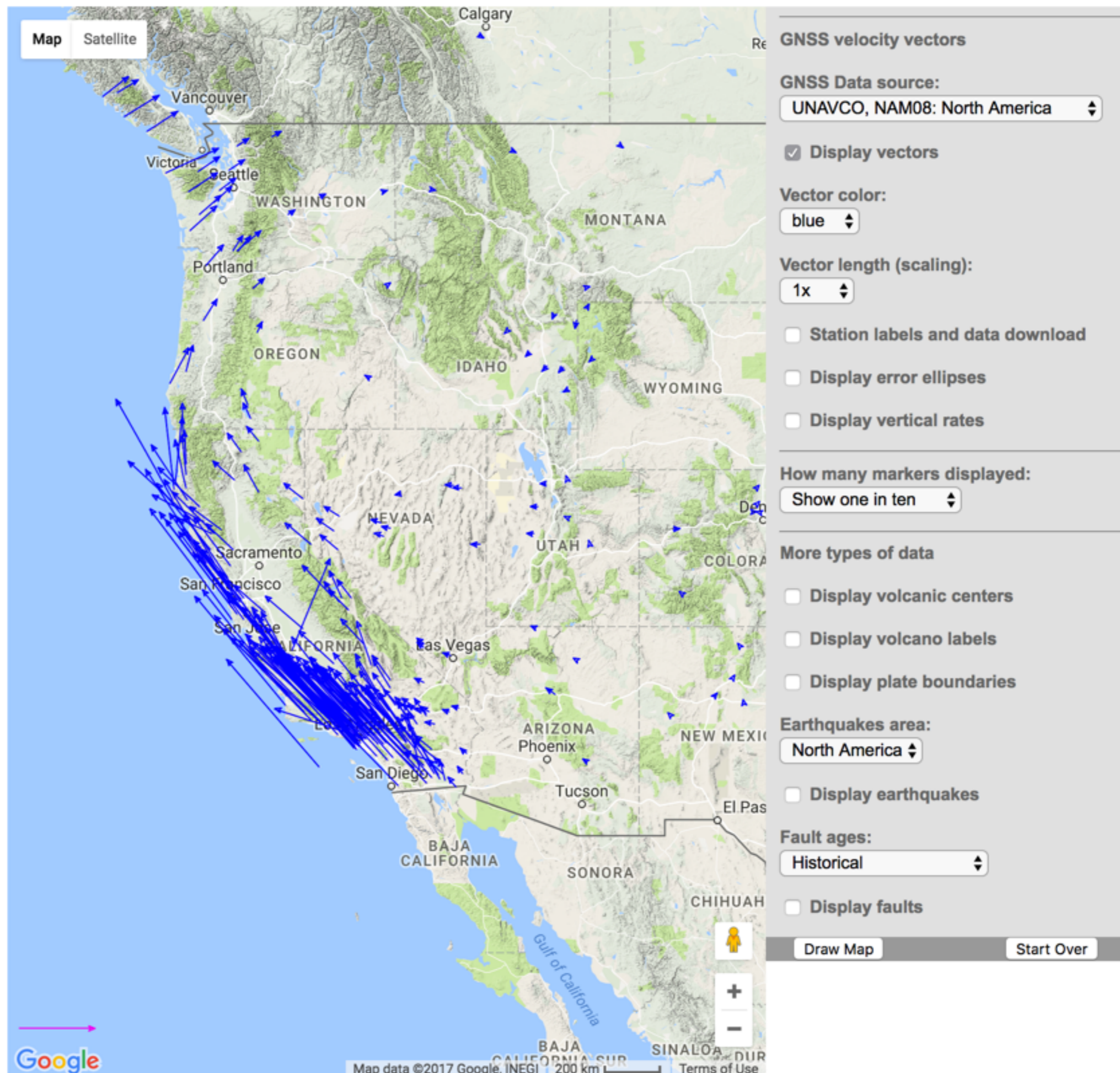
Display earthquakes

• Help with Software

• Visualization

• **GPS Velocity Viewer**

- About Reference Frames
- Jules Verne Voyager
- Earth
- PaleoEarth
- GEM GSRM
- Google Earth
- All Sites
- Permanent Sites
- Campaign Sites
- PBO Sites
- PBO Velocity Field
- Polar Sites
- U-Plotter
- Documentation
- Data Archive Plotter

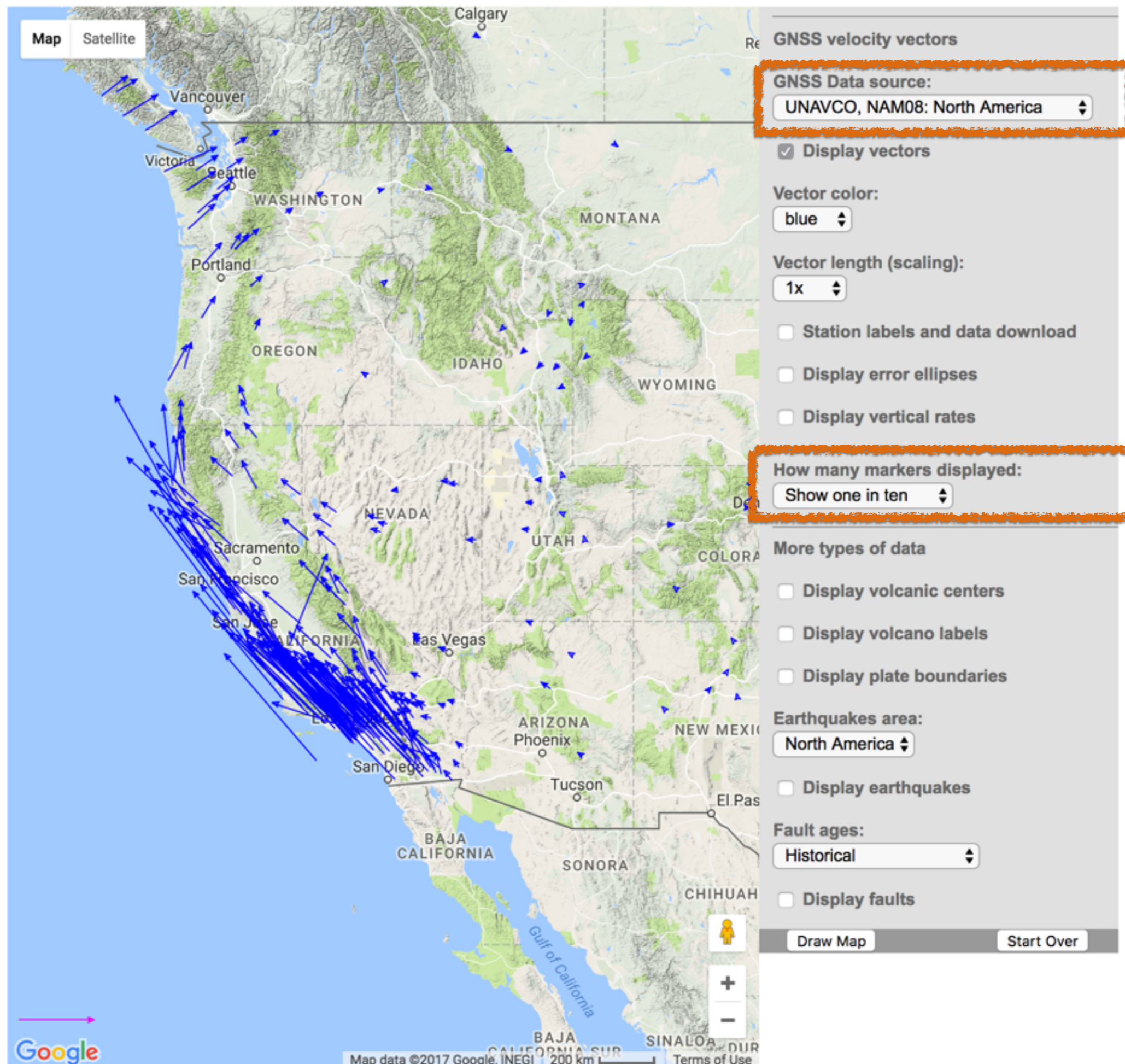


• Help with Software

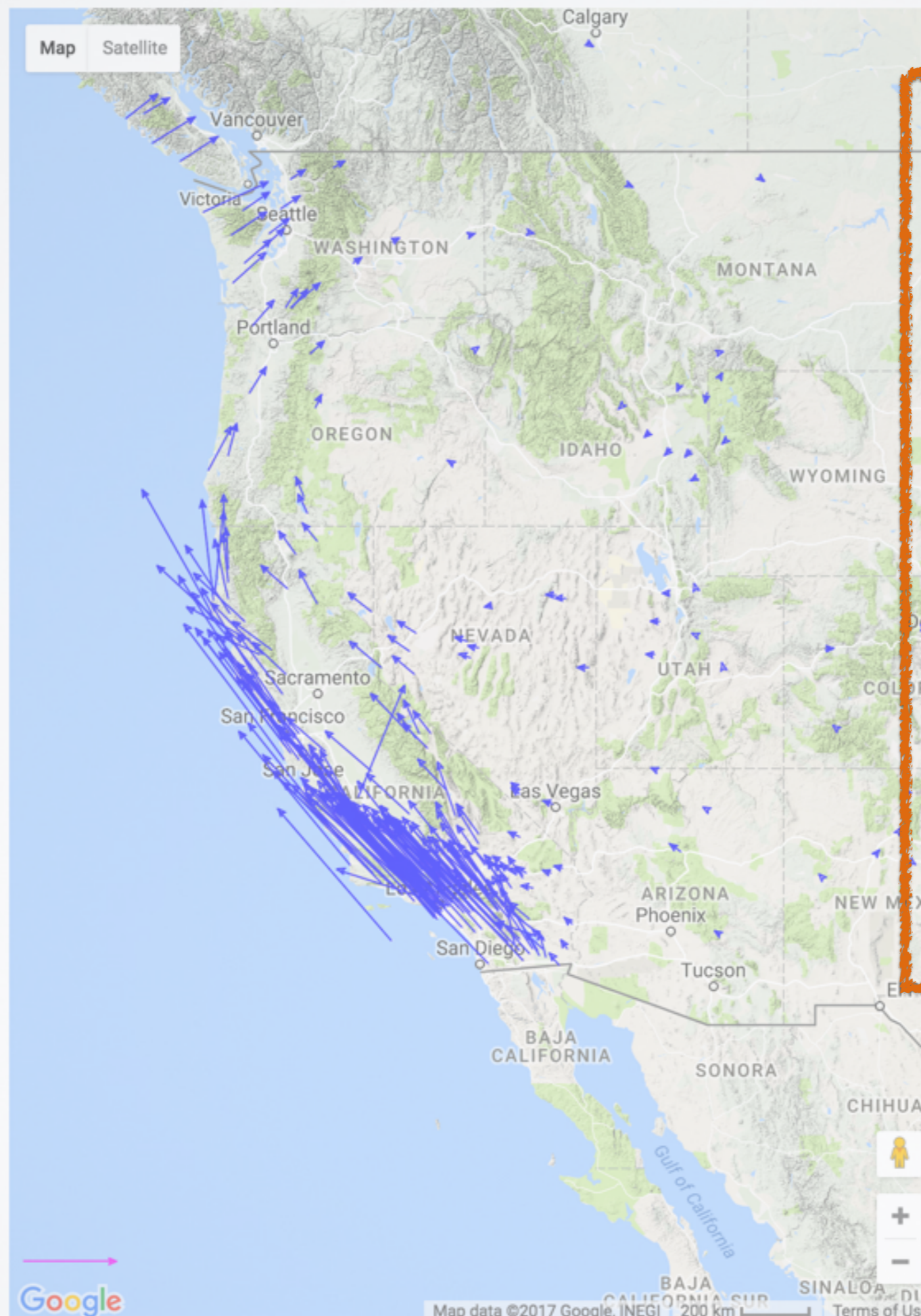
• Visualization

• GPS Velocity Viewer

- About Reference Frames
- Jules Verne Voyager
- Earth
- PaleoEarth
- GEM GSRM
- Google Earth
- All Sites
- Permanent Sites
- Campaign Sites
- PBO Sites
- PBO Velocity Field
- Polar Sites
- U-Plotter
- Documentation
- Data Archive Plotter



- Help with Software
- **Visualization**
 - **GPS Velocity Viewer**
 - About Reference Frames
 - Jules Verne Voyager
 - Earth
 - PaleoEarth
 - GEM GSRM
 - Google Earth
 - All Sites
 - Permanent Sites
 - Campaign Sites
 - PBO Sites
 - PBO Velocity Field
 - Polar Sites
- U-Plotter
- Documentation
- Data Archive Plotter



GNSS velocity vectors

GNSS Data source:

- UNAVCO, NAM08: North America
- UNAVCO, IGS08: no net rotation
- GEM GSRM No net rotation
- GEM GSRM Africa
- GEM GSRM Antarctica
- GEM GSRM Arabia
- GEM GSRM Australia
- GEM GSRM Caribbean
- GEM GSRM Cocos
- GEM GSRM Eurasia
- GEM GSRM India
- GEM GSRM Juan de Fuca
- GEM GSRM Nazca
- GEM GSRM North America
- GEM GSRM Pacific
- GEM GSRM Philippine Sea
- GEM GSRM Scotia
- GEM GSRM South America
- GSRM model velocity global (IGS08)
- GSRM model velocity North American
- GSRM model velocity Pacific
- GSRM model velocity Juan de Fuca

Display volcano labels

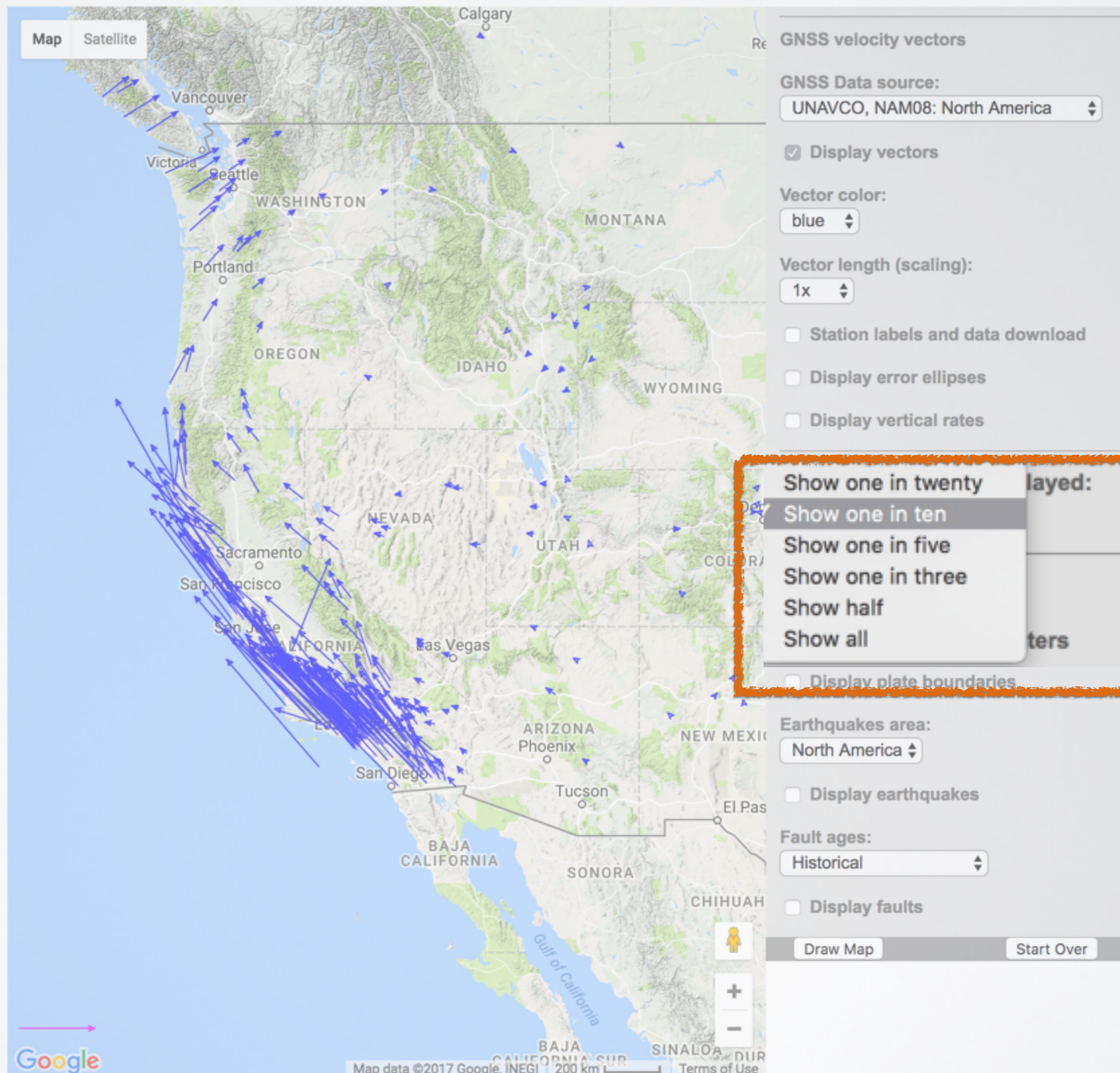
Display plate boundaries

Earthquakes area:

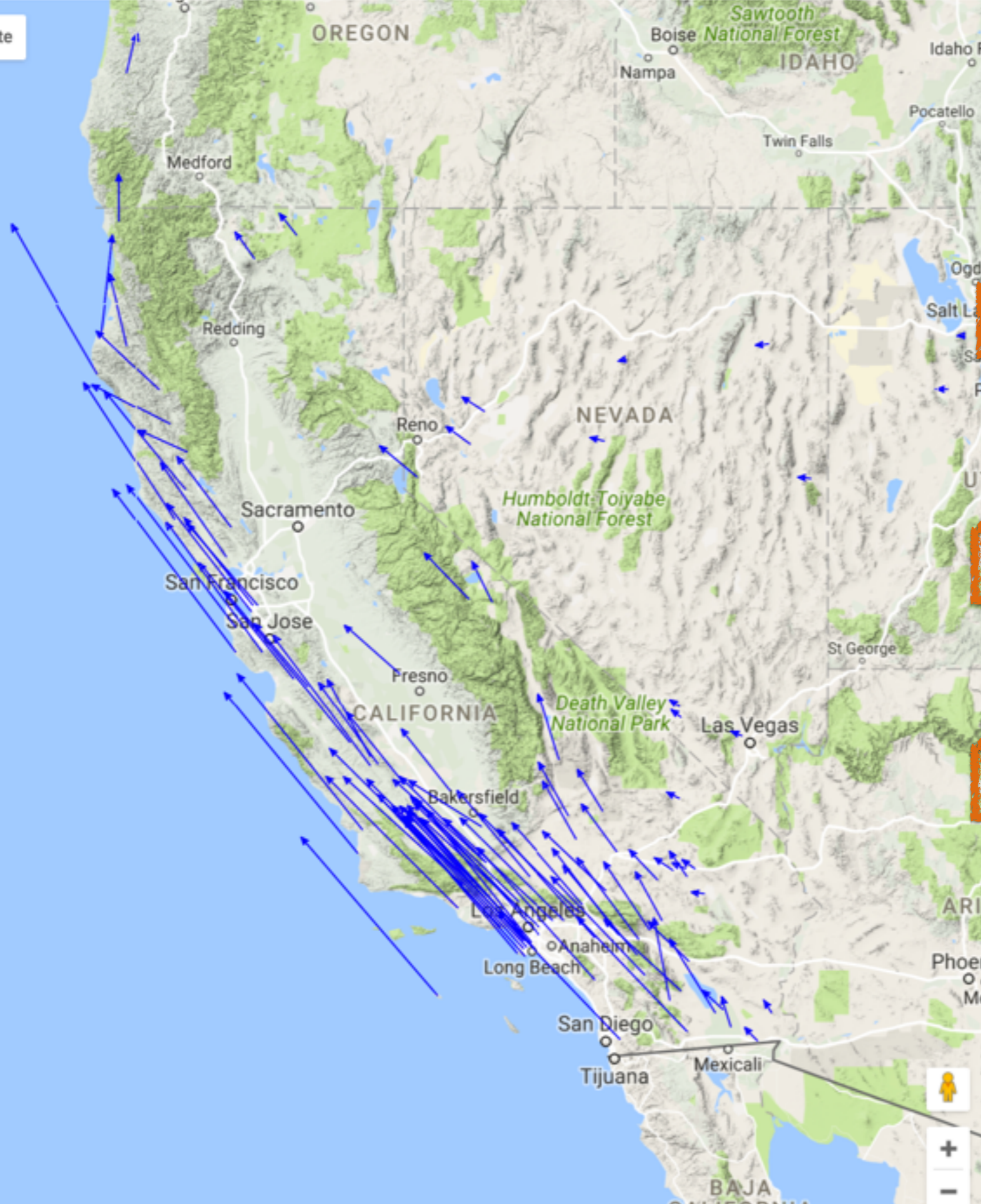
Display earthquakes



- Help with Software
- **Visualization**
- **GPS Velocity Viewer**
- About Reference Frames
- Jules Verne Voyager
- Earth
- PaleoEarth
- GEM GSRM
- Google Earth
- All Sites
- Permanent Sites
- Campaign Sites
- PBO Sites
- PBO Velocity Field
- Polar Sites
- U-Plotter
- Documentation
- Data Archive Plotter



Map Satellite



GNSS velocity vectors

GNSS Data source:
 UNAVCO, NAM08: North America

Display vectors

Vector color:
 blue

Vector length (scaling):
 0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
 Show one in five

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
 North America

Display earthquakes

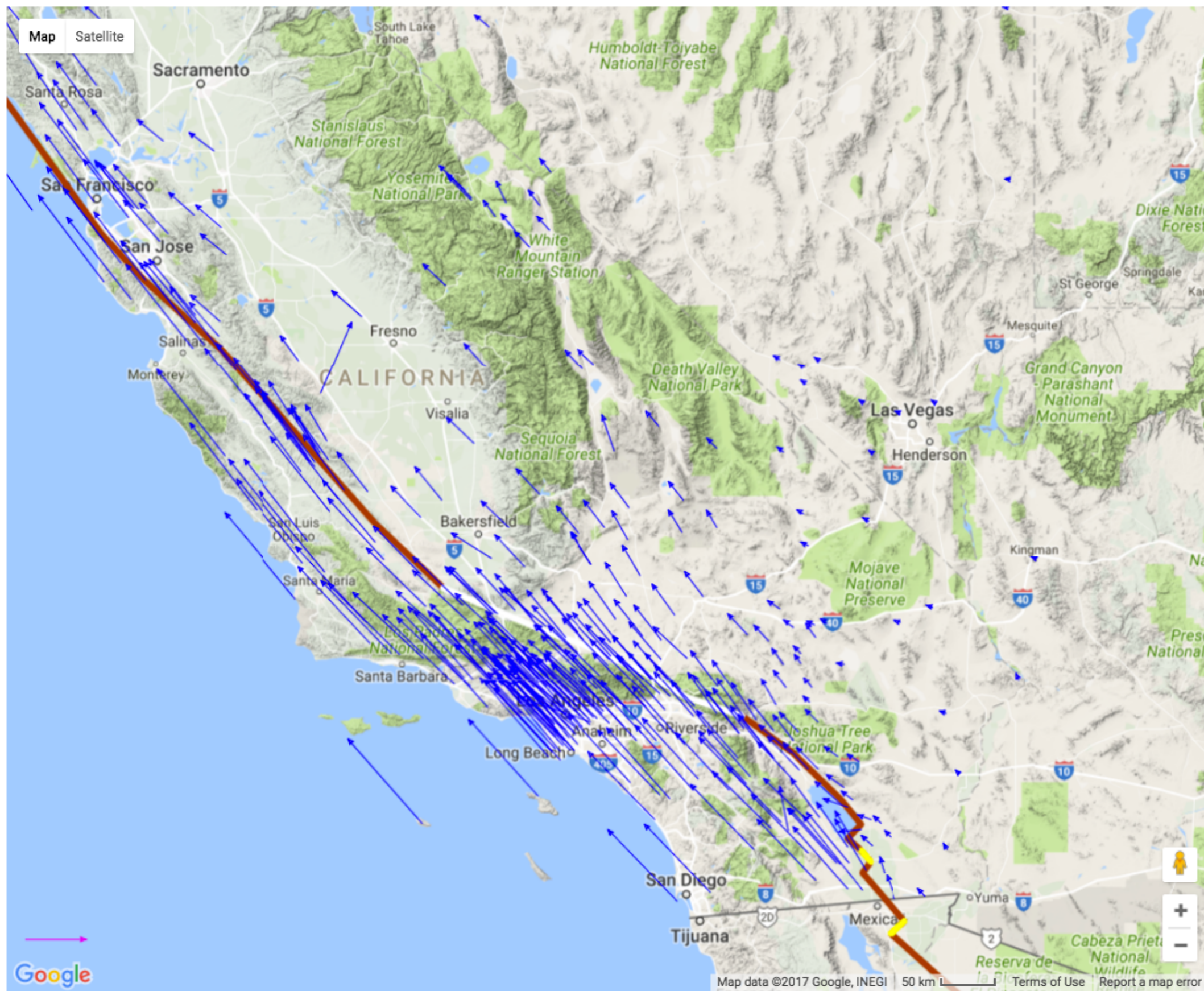
Fault ages:
 Historical

Display faults

Draw Map Start Over



GPS Velocity Viewer



GNSS velocity vectors

GNSS Data source:
UNAVCO, NAM08: North America

Display vectors

Vector color:
blue

Vector length (scaling):
0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show one in five

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
North America

Display earthquakes

Fault ages:
Historical

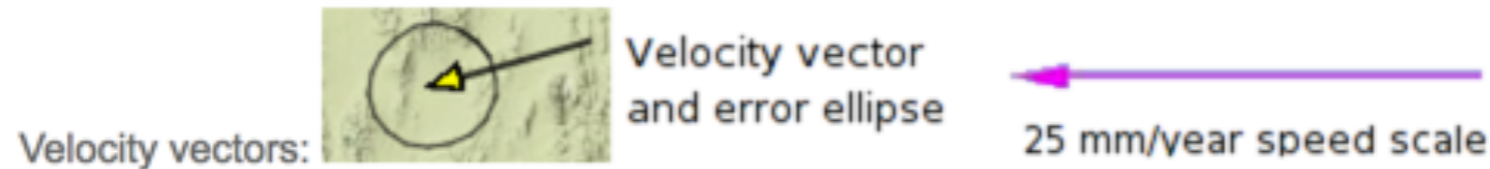
Display faults

[Draw Map](#) [Start Over](#)

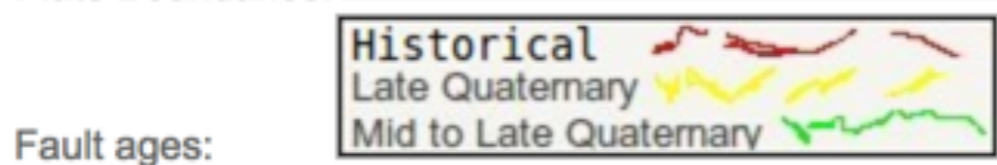
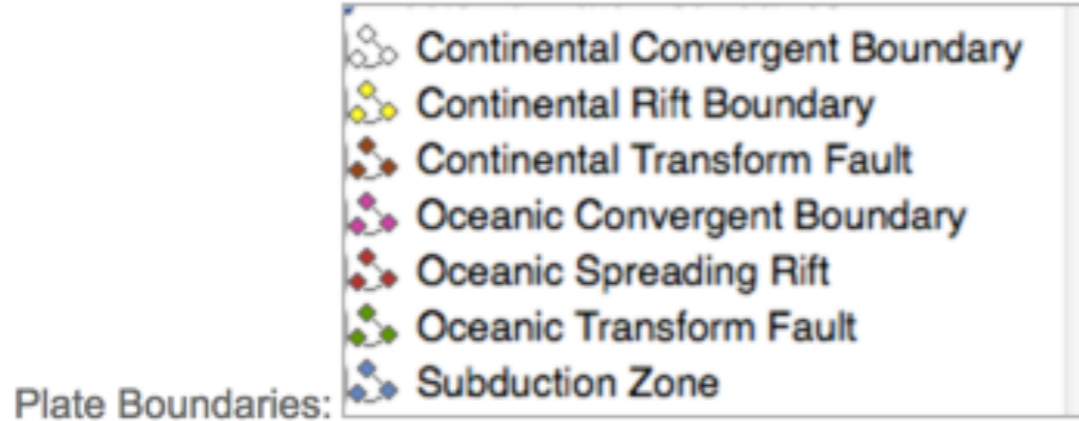
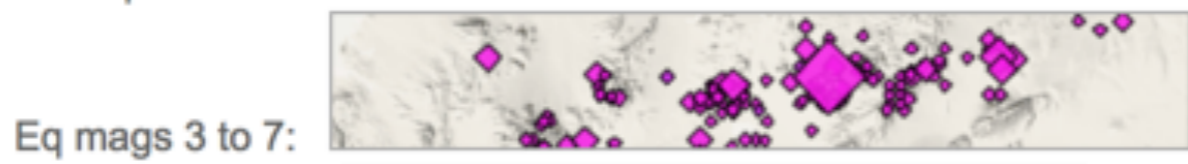


Key

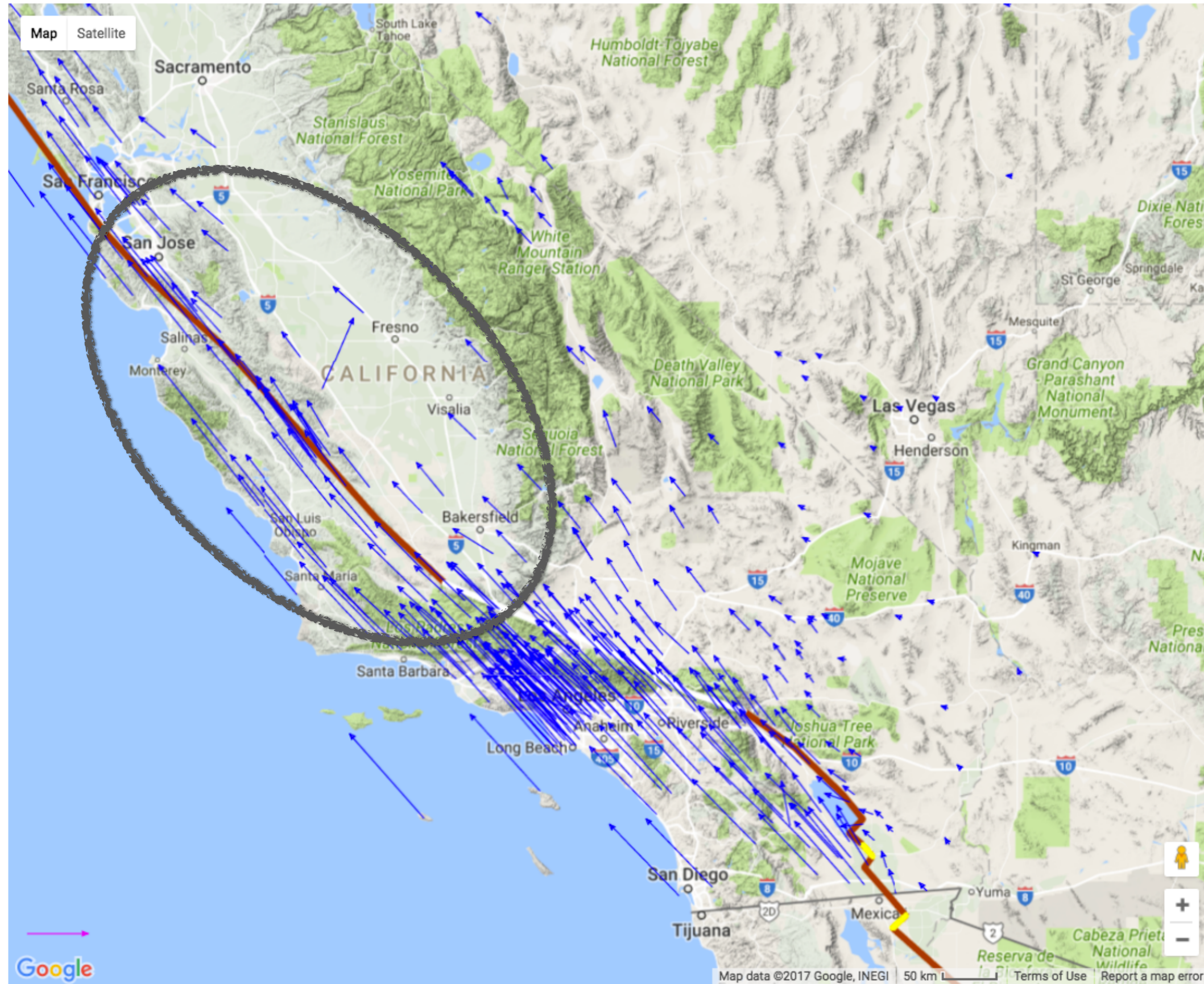
GNSS data symbols:



Other symbols:



GPS Velocity Viewer



GNSS velocity vectors

GNSS Data source:
UNAVCO, NAM08: North America

Display vectors

Vector color:
blue

Vector length (scaling):
0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show one in five

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
North America

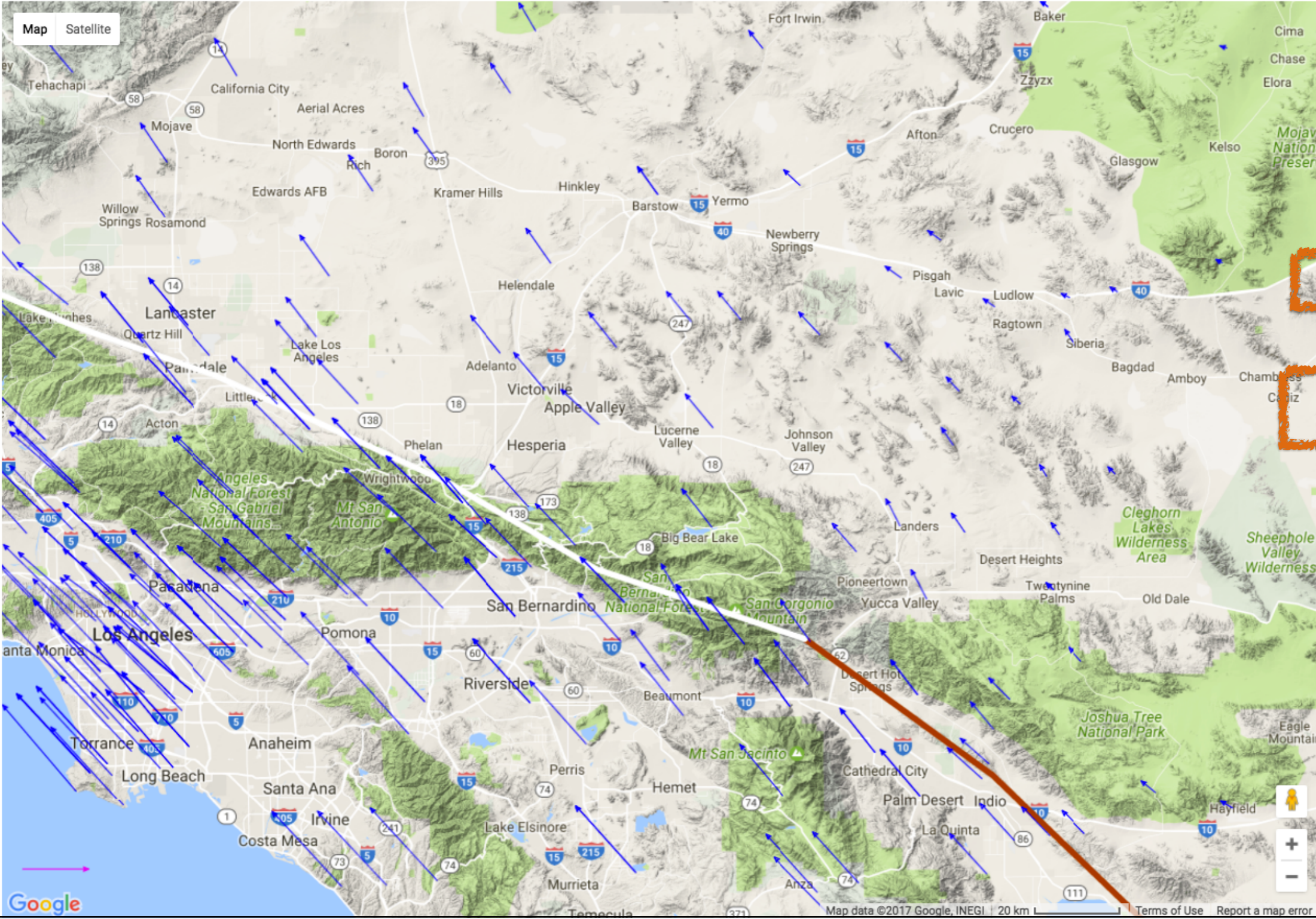
Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over

GPS Velocity Viewer



GNSS velocity vectors

GNSS Data source:
UNAVCO, NAM08: North America

Display vectors

Vector color:
blue

Vector length (scaling):
0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show one in three

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
North America

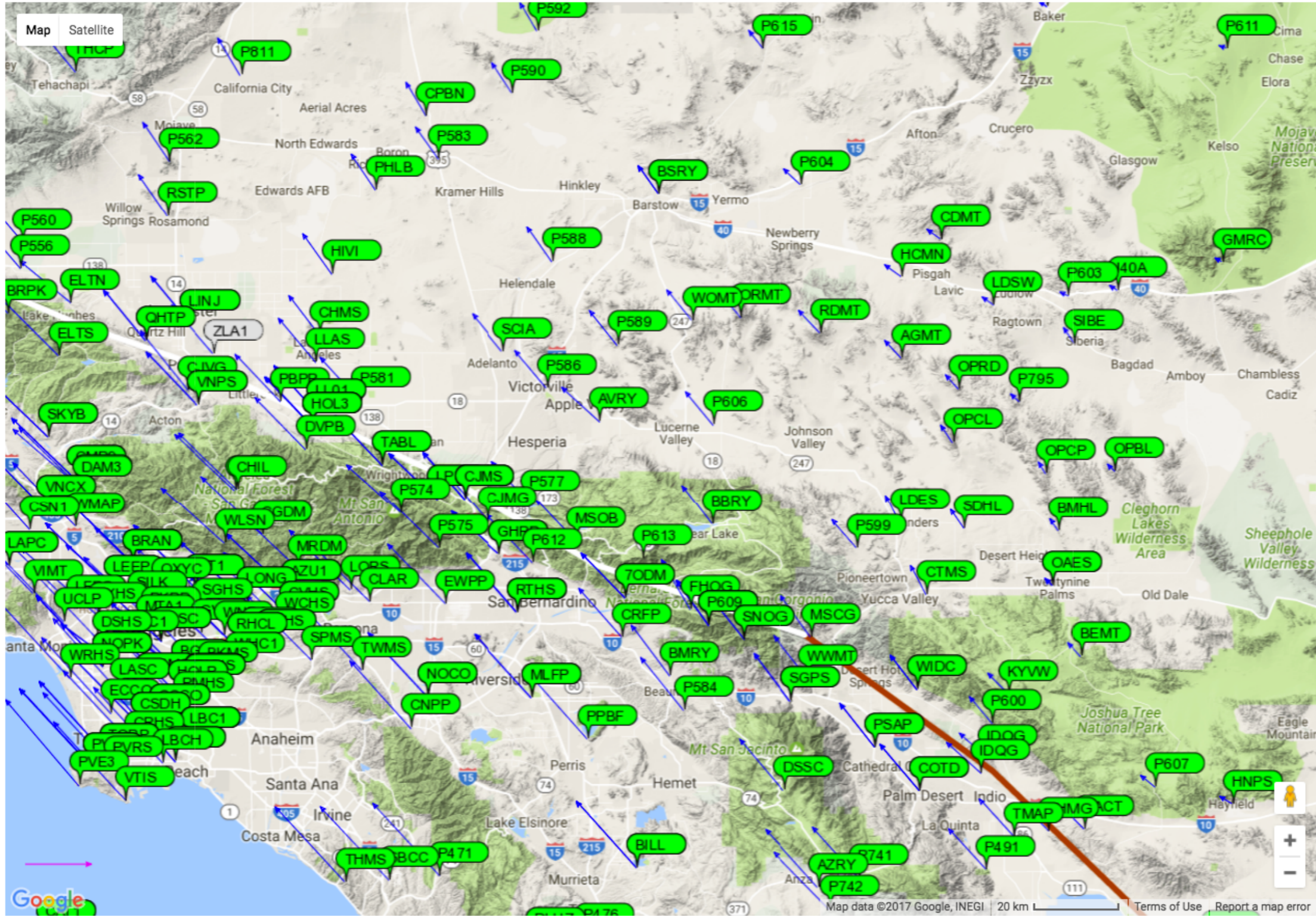
Display earthquakes

Fault ages:
Historical

Display faults

Draw Map **Start Over**

GPS Velocity Viewer



GNSS velocity vectors

GNSS Data source:
UNAVCO, NAM08: North America

Display vectors

Vector color:
blue

Vector length (scaling):
0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show one in three

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:

North America

Display earthquakes

Fault ages:

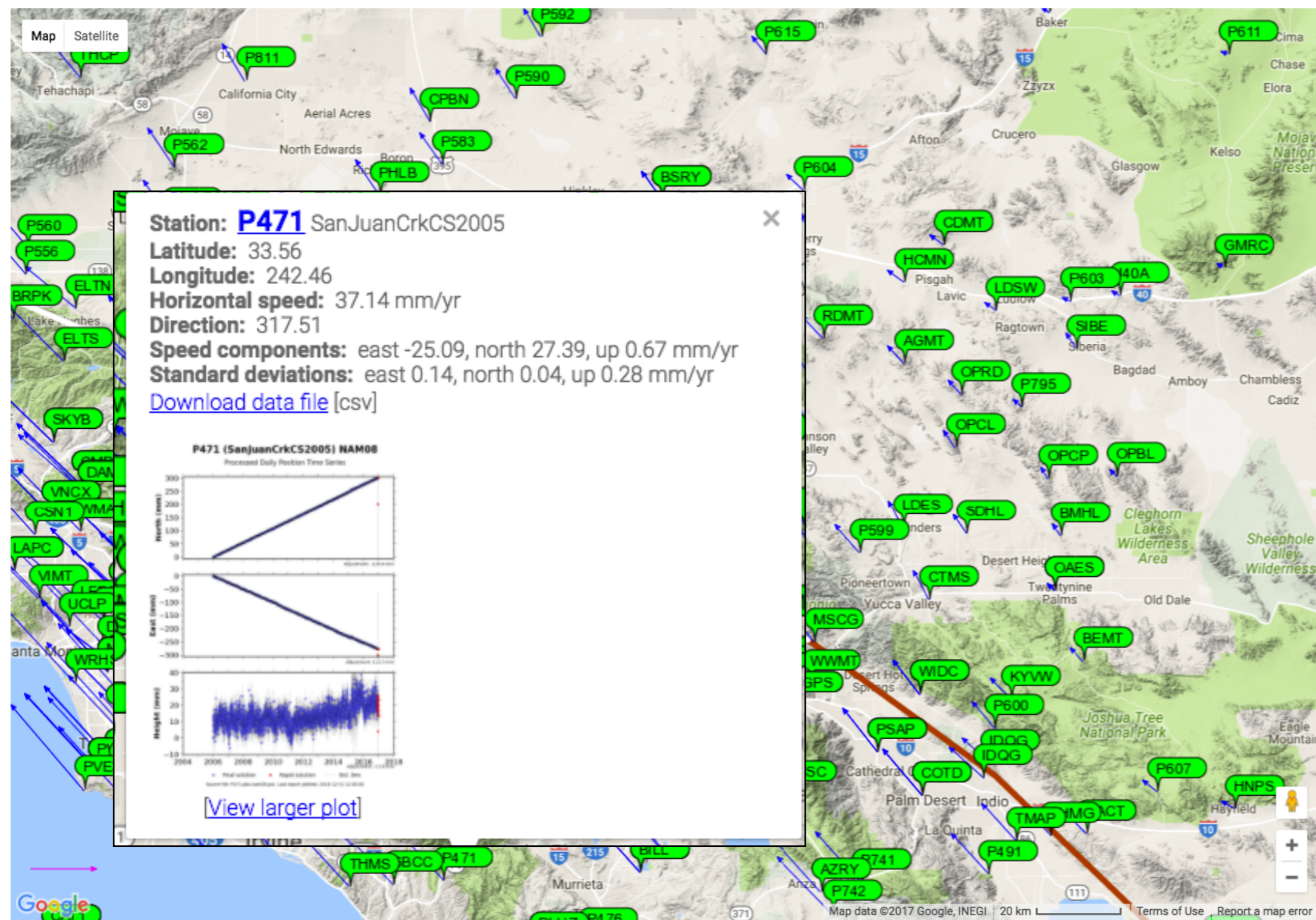
Historical

Display faults

Draw Map

Start Over





GNSS velocity vectors

GNSS Data source:
 UNAVCO, NAM08: North America

Display vectors

Vector color:
 blue

Vector length (scaling):
 0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
 Show one in three

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
 North America

Display earthquakes

Fault ages:
 Historical

Display faults

Draw Map Start Over

Station: P471 SanJuanCrkCS2005

Latitude: 33.56
 Longitude: 242.46
 Horizontal speed: 37.14 mm/yr
 Direction: 317.51
 Speed components: east -25.09, north 27.39, up 0.67 mm/yr
 Standard deviations: east 0.14, north 0.04, up 0.28 mm/yr
[Download data file \[csv\]](#)

P471 (SanJuanCrkCS2005) NAM08
 Processed Daily Position Time Series

North (mm)

East (mm)

Height (mm)

2004 2006 2008 2010 2012 2014 2016 2018

[View larger plot](#)

Station: **P471** SanJuanCrkCS2005

Latitude: 33.56

Longitude: 242.46

Horizontal speed: 37.14 mm/yr

Direction: 317.51

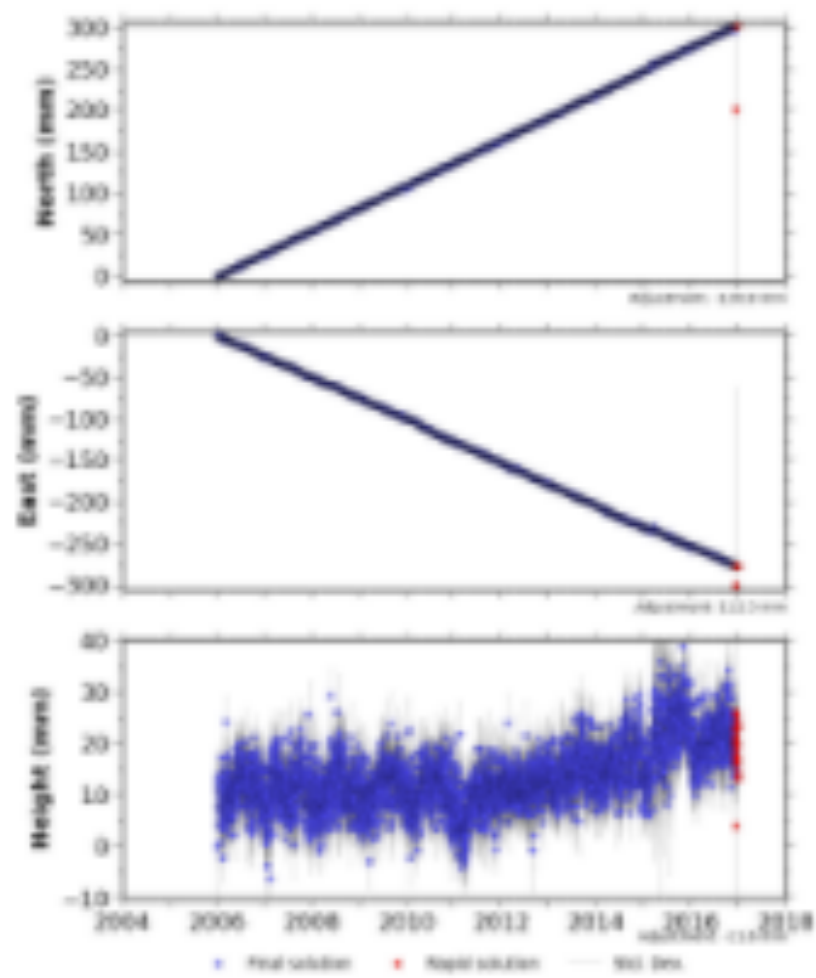
Speed components: east -25.09, north 27.39, up 0.67 mm/yr

Standard deviations: east 0.14, north 0.04, up 0.28 mm/yr

[Download data file \[csv\]](#)

P471 (SanJuanCrkCS2005) NAM08

Processed Daily Position Time Series



[View larger plot](#)



GNSS velocity vectors

GNSS Data source:
UNAVCO, NAM08: North America

Display vectors

Vector color:
blue

Vector length (scaling):
0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show one in three

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
North America

Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over

Station: **P471** SanJuanCrkCS2005

Latitude: 33.56

Longitude: -117.46

Horizontal speed

Direction: 31

Speed component

Standard deviation

Download data

P471 (SanJuanCrkCS2005)

Processed Data

WLSN

BRAN

LEEP/OKYC 1

SILK

WFB1

LASC

ECCO

CSDH

CRHS

LBC1

EDVRS

LBOH

VTIS

View la



home > instrumentation > networks > pbo > overview > P471

P471 - Overview | PBO Station Page

- Overview
- Data Products
- Station Health
- Maintenance
- Photos

Instrumentation

- Help with Instrumentation
- **Network Monitoring**
 - PBO Networks
 - PBO GPS Network
 - PBO Strainmeter Network
 - PBO Seismic Network
 - PBO Network State of Health
 - PBO Network Maintenance
 - Polar Networks
 - ANET
 - GNET
 - Polar Networks State of Health
 - NASA-GGN
 - COCONet
 - TLALOCNet
 - Real-Time GPS Subnets
 - PBO GPS
 - COCONet
 - TLALOCNet
 - Principal Investigator Stations

Related Links

- [PBO Project Overview](#)

P471 Station Overview



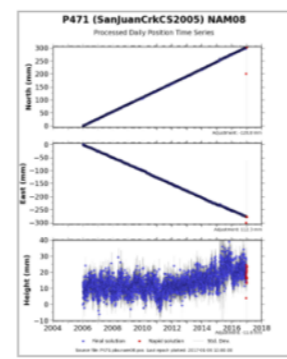
Station Type: GPS

Station Information	
Station Status:	Installed/Operable
Station ID:	P471
Station Name:	SanJuanCrkCS2005
Location (City, State):	San Juan Capistrano, CA
Monument Type:	DDBM
Station Install Date:	2005-07-27

Station Data	
IGS Site Log:	Text File
Installation Report:	BIRT Report
Time Series Data:	NAM08 CSV IGS08 CSV
Time Series Plot Viewer:	Nearby GPS Plots
Realtime Dataflow:	Available
Meteorologic Plots:	Not Available

Colocated Instruments	
None	

Station Position



GPS Monument Coordinates

Approximate Geographic Coordinates

lat/lon/elev (d/d/m)*:	33.56213	-117.54087	175
------------------------	----------	------------	-----

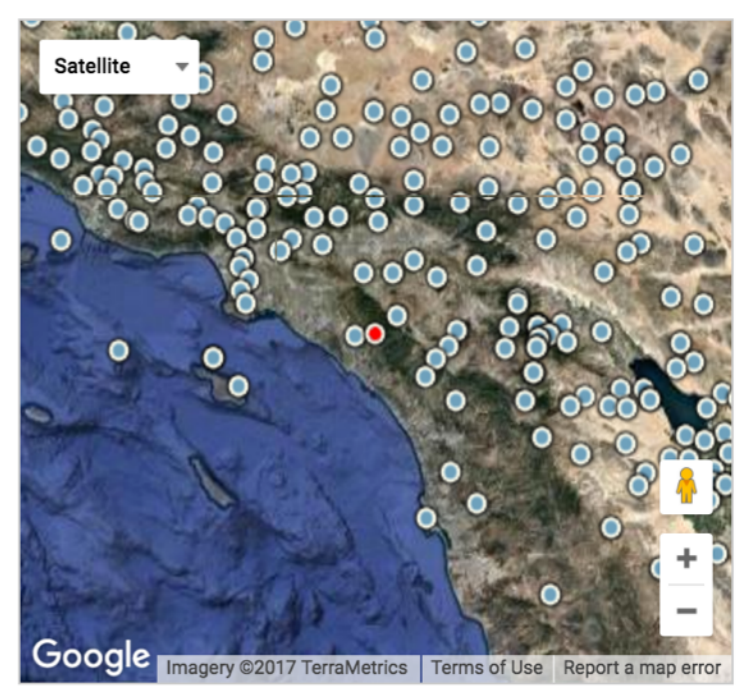
IGS08 Reference Frame

X/Y/Z (m/m/m):	-2460056.9654	-4717506.8045	3506174.8721
Ref Epoch**:	2016.434		

*Approximate latitude and longitude are in decimal degrees and elevation is in meters, where "elevation" is the vertical topocentric distance from the reference ellipsoid to the antenna reference point (ARP). See [CORS](#) for legal positions.

** Station position based on the most recent full 7 days of final orbit solutions available, with the reported epoch being the middle day of this 7 day period.

Nearby Stations Map



Local Weather Data

METAR: KL10	DATE: unavailable
COND: unavailable	TEMP: unavailable
HUMIDITY: unavailable	WIND: unavailable

Station: **P471** SanJuanCrkCS2005

Latitude: 33.56

Longitude: 242.46

Horizontal speed: 37.14 mm/yr

Direction: 317.51

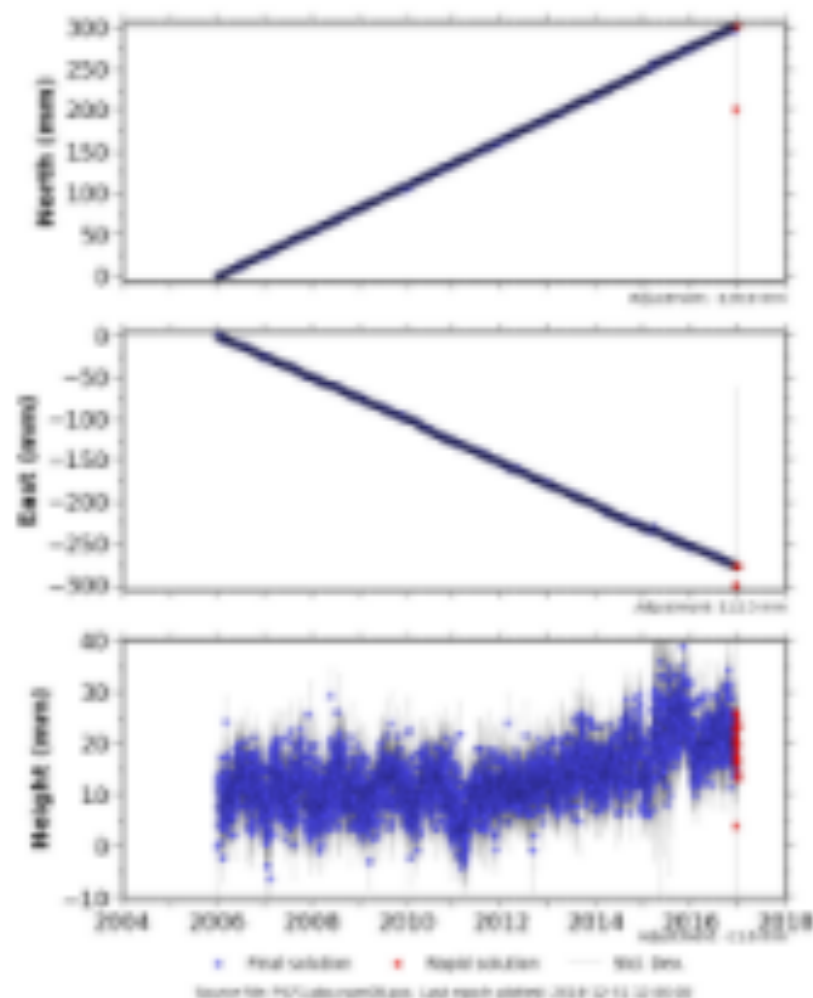
Speed components: east -25.09, north 27.39, up 0.67 mm/yr

Standard deviations: east 0.14, north 0.04, up 0.28 mm/yr

[Download data file \[csv\]](#)

P471 (SanJuanCrkCS2005) NAM08

Processed Daily Position Time Series



[View larger plot](#)



GNSS velocity vectors

GNSS Data source: UNAVCO, NAM08: North America

Display vectors

Vector color: blue

Vector length (scaling): 0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed: Show one in three

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area: North America

Display earthquakes

Fault ages: Historical

Display faults

Draw Map Start Over

Station: **P471** SanJuanCrkCS2005

Latitude: 33.56

Longitude: 242.46

Horizontal speed: 37.14 mm/yr

Direction: 317.51

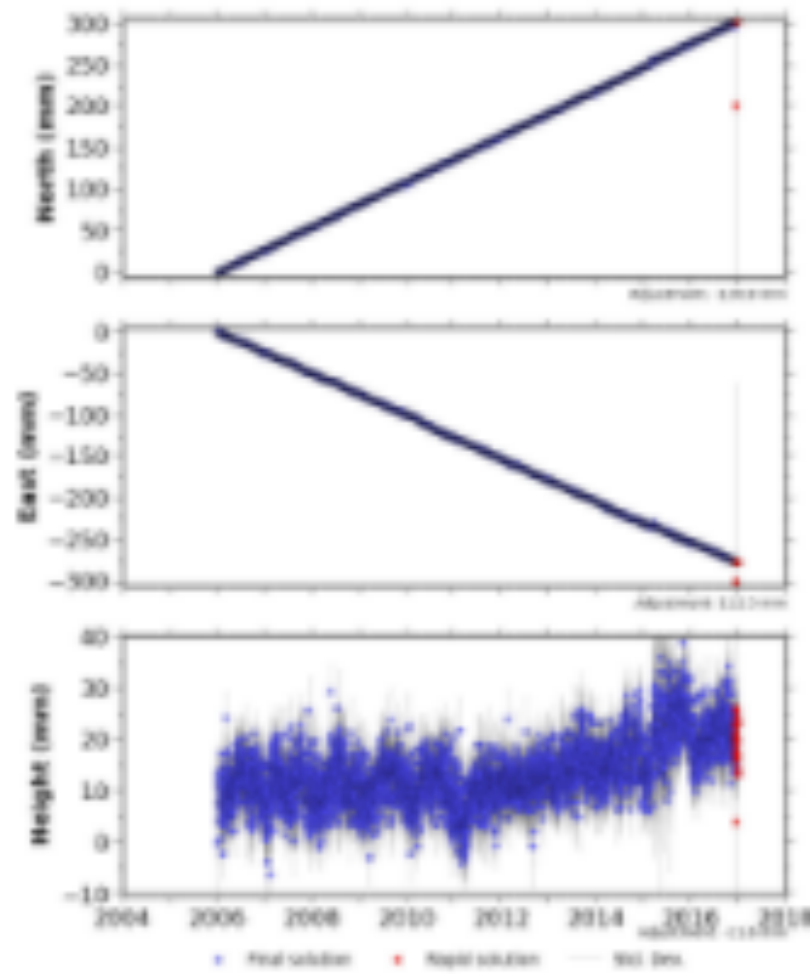
Speed components: east -25.09, north 27.39, up 0.67 mm/yr

Standard deviations: east 0.14, north 0.04, up 0.28 mm/yr

[Download data file \[csv\]](#)

P471 (SanJuanCrkCS2005) NAM08

Processed Daily Position Time Series



[View larger plot](#)



GNSS velocity vectors

GNSS Data source:

UNAVCO, NAM08: North America

Display vectors

Vector color:

blue

Vector length (scaling):

0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:

Show one in three

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:

North America

Display earthquakes

Fault ages:

Historical

Display faults

Draw Map

Start Over



Map error

Station: **P471** SanJuanCrkCS2005

Latitude: 33.56

Longitude: 242.46

Horizontal speed: 37.14 mm/yr

Direction: 317.51

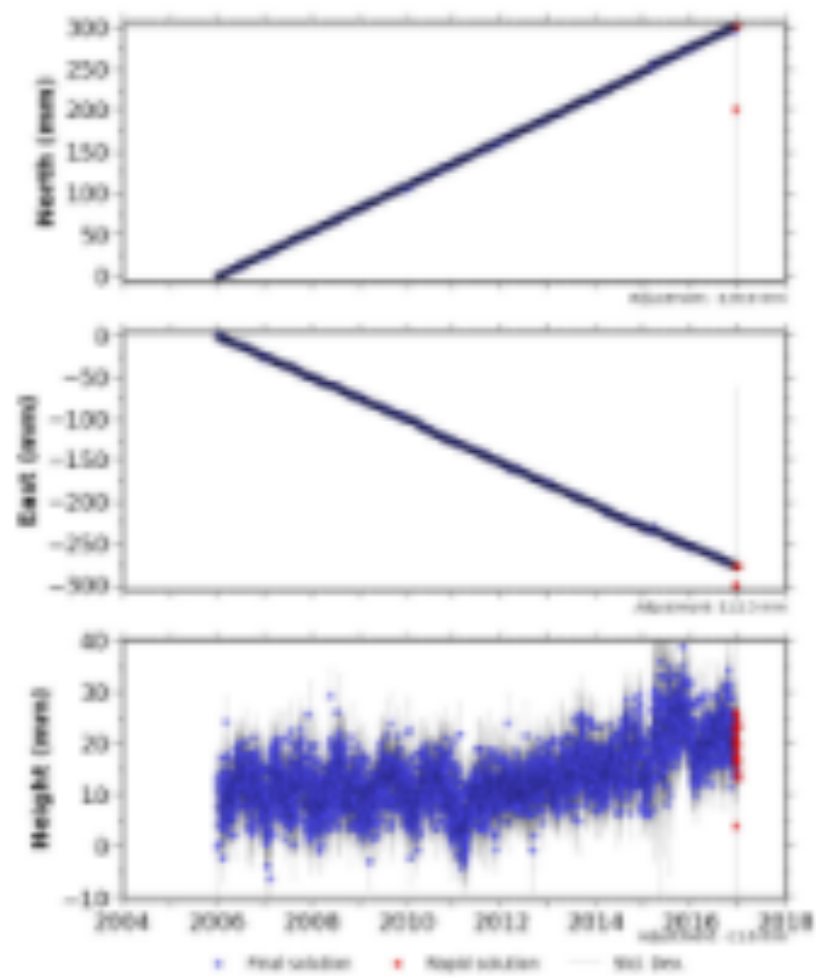
Speed components: east -25.09, north 27.39, up 0.67 mm/yr

Standard deviations: east 0.14, north 0.04, up 0.28 mm/yr

[Download data file \[csv\]](#)

P471 (SanJuanCrkCS2005) NAM08

Processed Daily Position Time Series



[View larger plot](#)



GNSS velocity vectors

GNSS Data source:

UNAVCO, NAM08: North America

Display vectors

Vector color:

blue

Vector length (scaling):

0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:

Show one in three

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:

North America

Display earthquakes

Fault ages:

Historical

Display faults

Draw Map

Start Over



Map error

Station: **P471** SanJuanCrkCS2005

Latitude: 33.56

Longitude: 242.46

Horizontal speed: 37.14

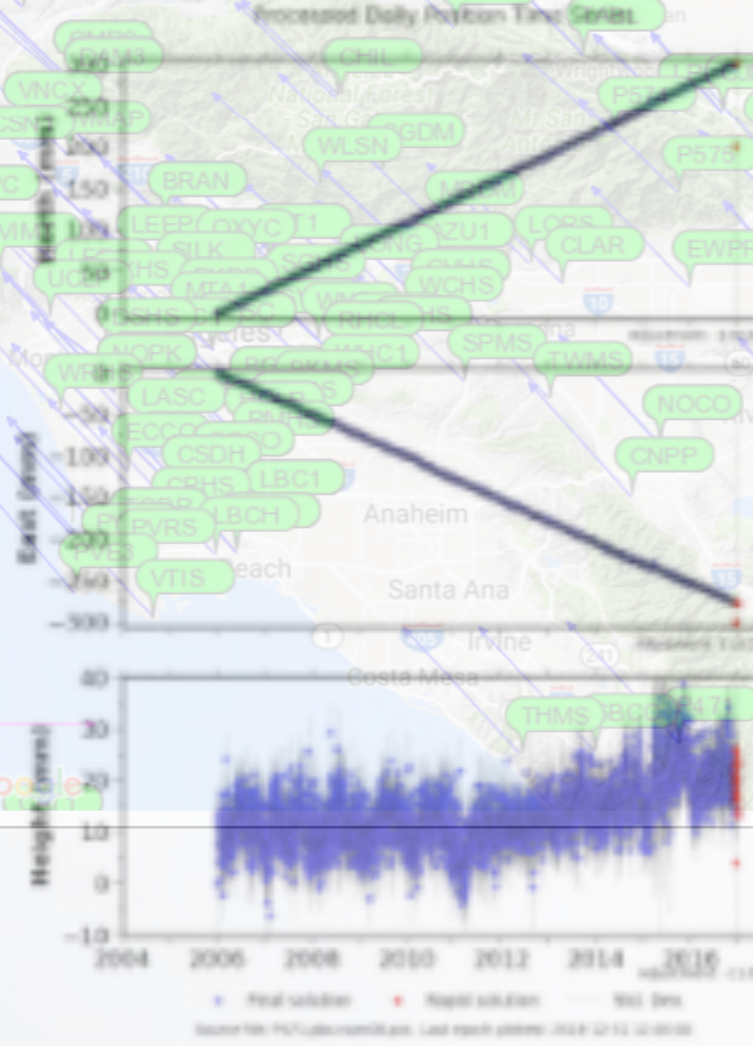
Direction: 317.51

Speed components: east

Standard deviations: ea

[Download data file \[csv\]](#)

P471 (SanJuanCrkCS2005) NAM08



[View larger plot](#)

PBO Station Position Time Series.

Format Version, 1.2.0

Reference Frame, NAM08

4-character ID, P471

Station name, SanJuanCrkCS2005

Begin Date, 2006-01-10

End Date, 2017-01-06

Release Date, 2017-01-08

Source file, P471.pbo.nam08.pos

Offset from source file, 120.78 mm North, -112.26 mm East, 11.58 mm Vertical

Reference position, 33.5621253085 North Latitude, -117.5408655946 East Longitude, 174.76550 meters elevation

Date, North (mm), East (mm), Vertical (mm), North Std. Deviation (mm), East Std.

Deviation (mm), Vertical Std. Deviation (mm), Quality,

2006-01-10	0.00	0.00	0.00	3.5	3.39	15.71	repro
2006-01-11	1.48	0.05	11.04	1.4	1.26	5.33	repro
2006-01-12	0.40	-0.52	13.82	1.23	1.12	4.69	repro
2006-01-13	0.46	-0.69	11.89	1.22	1.11	4.7	repro
2006-01-14	-0.66	-0.60	4.19	1.59	1.44	6.07	repro
2006-01-15	0.21	-1.51	13.31	1.44	1.31	5.46	repro
2006-01-16	-0.20	-1.26	12.53	1.47	1.33	5.59	repro
2006-01-17	1.05	-0.48	8.09	1.31	1.22	4.95	repro
2006-01-18	0.72	-0.88	11.12	1.38	1.24	5.31	repro
2006-01-19	1.86	-0.96	10.42	1.54	1.39	5.89	repro
2006-01-20	1.23	-1.30	6.49	1.25	1.13	4.76	repro
2006-01-21	0.94	-1.16	9.97	1.15	1.04	4.37	repro
2006-01-22	1.07	-1.71	7.30	1.21	1.08	4.57	repro
2006-01-23	1.26	-0.08	4.57	1.3	1.15	4.87	repro
2006-01-24	1.79	1.75	7.66	1.39	1.26	5.29	repro
2006-01-25	1.47	-2.54	11.97	1.85	1.77	7.91	repro
2006-01-26	1.69	-1.07	0.84	1.33	1.23	5.11	repro
2006-01-27	1.64	-1.80	7.76	1.29	1.19	4.98	repro
2006-01-28	2.27	-1.70	9.01	1.25	1.15	4.83	repro
2006-01-29	1.17	-1.69	3.71	1.31	1.19	5.02	repro
2006-01-30	1.74	-1.59	6.89	1.27	1.16	4.9	repro
2006-01-31	1.65	-1.07	13.41	1.45	1.31	5.53	repro
2006-02-01	1.61	-2.78	17.08	1.32	1.21	5.12	repro
2006-02-02	2.36	-2.83	8.62	1.24	1.13	4.76	repro
2006-02-03	1.87	-2.36	10.30	1.25	1.14	4.82	repro
2006-02-04	2.35	-2.84	8.71	1.24	1.12	4.77	repro
2006-02-05	2.35	-3.60	8.89	1.36	1.23	5.28	repro
2006-02-06	2.65	-3.03	10.68	1.23	1.12	4.79	repro
2006-02-07	1.99	-2.84	8.37	1.15	1.04	4.49	repro

GNSS velocity vectors

GNSS Data source:

UNAVCO, NAM08: North America

Station: **P471** SanJuanCrkCS2005

Latitude: 33.56

Longitude: 242.46

Horizontal speed: 37.14 mm/yr

Direction: 317.51

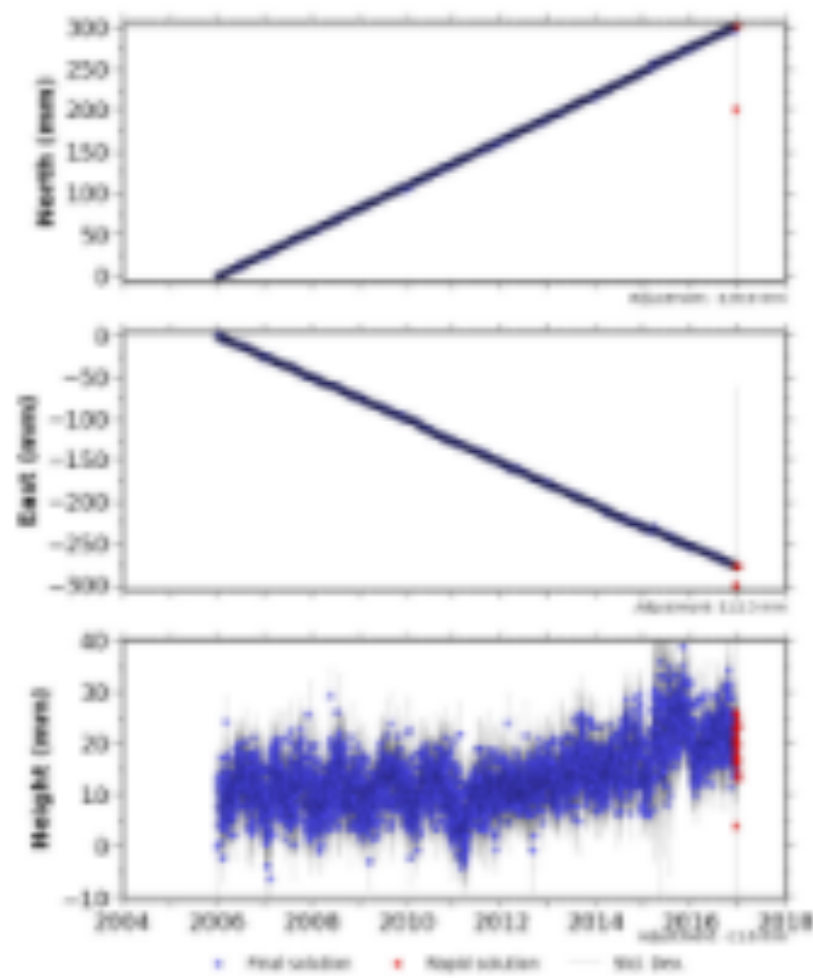
Speed components: east -25.09, north 27.39, up 0.67 mm/yr

Standard deviations: east 0.14, north 0.04, up 0.28 mm/yr

[Download data file \[csv\]](#)

P471 (SanJuanCrkCS2005) NAM08

Processed Daily Position Time Series



[View larger plot](#)



GNSS velocity vectors

GNSS Data source: UNAVCO, NAM08: North America

Display vectors

Vector color: blue

Vector length (scaling): 0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed: Show one in three

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area: North America

Display earthquakes

Fault ages: Historical

Display faults

Draw Map Start Over

Station: **P471** SanJuanCrkCS2005

Latitude: 33.56

Longitude: 242.46

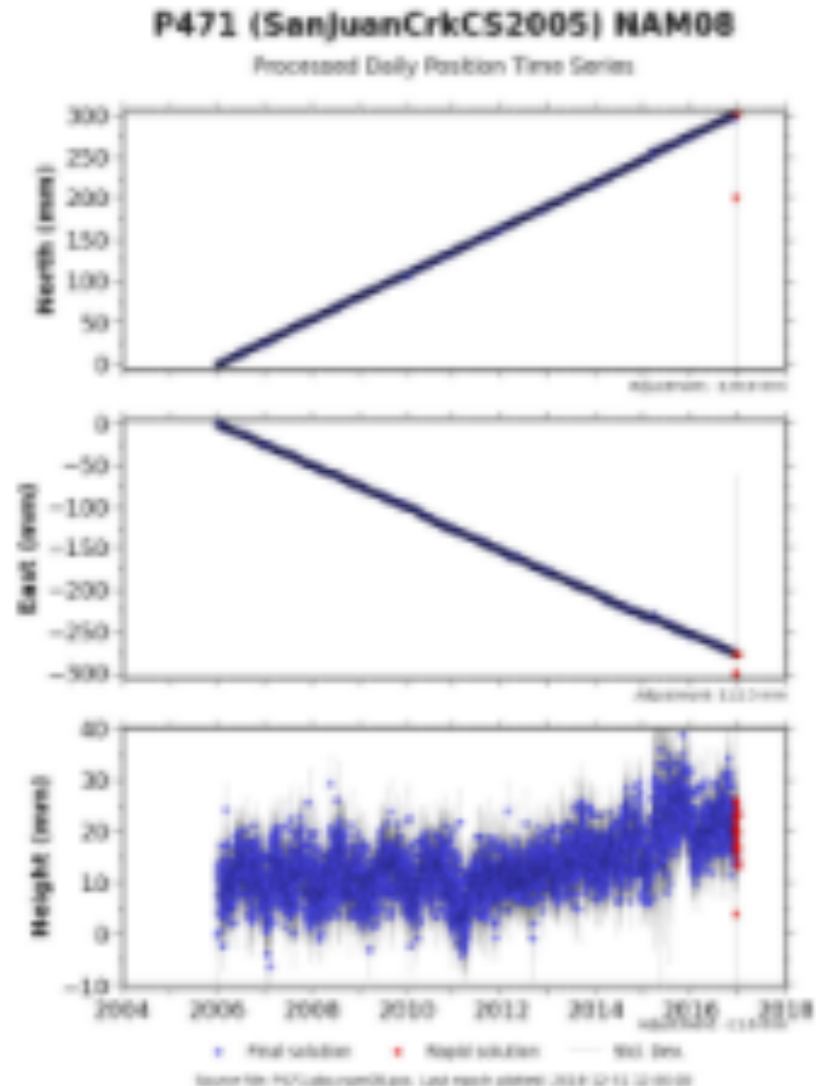
Horizontal speed: 37.14 mm/yr

Direction: 317.51

Speed components: east -25.09, north 27.39, up 0.67 mm/yr

Standard deviations: east 0.14, north 0.04, up 0.28 mm/yr

[Download data file \[csv\]](#)



[View larger plot](#)



GNSS velocity vectors

GNSS Data source: UNAVCO, NAM08: North America

Display vectors

Vector color: blue

Vector length (scaling): 0.5x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed: Show one in three

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area: North America

Display earthquakes

Fault ages: Historical

Display faults

Draw Map Start Over

Station: **P471** SanJuanCrkCS2005

Latitude: 33.56

Longitude: -117.46

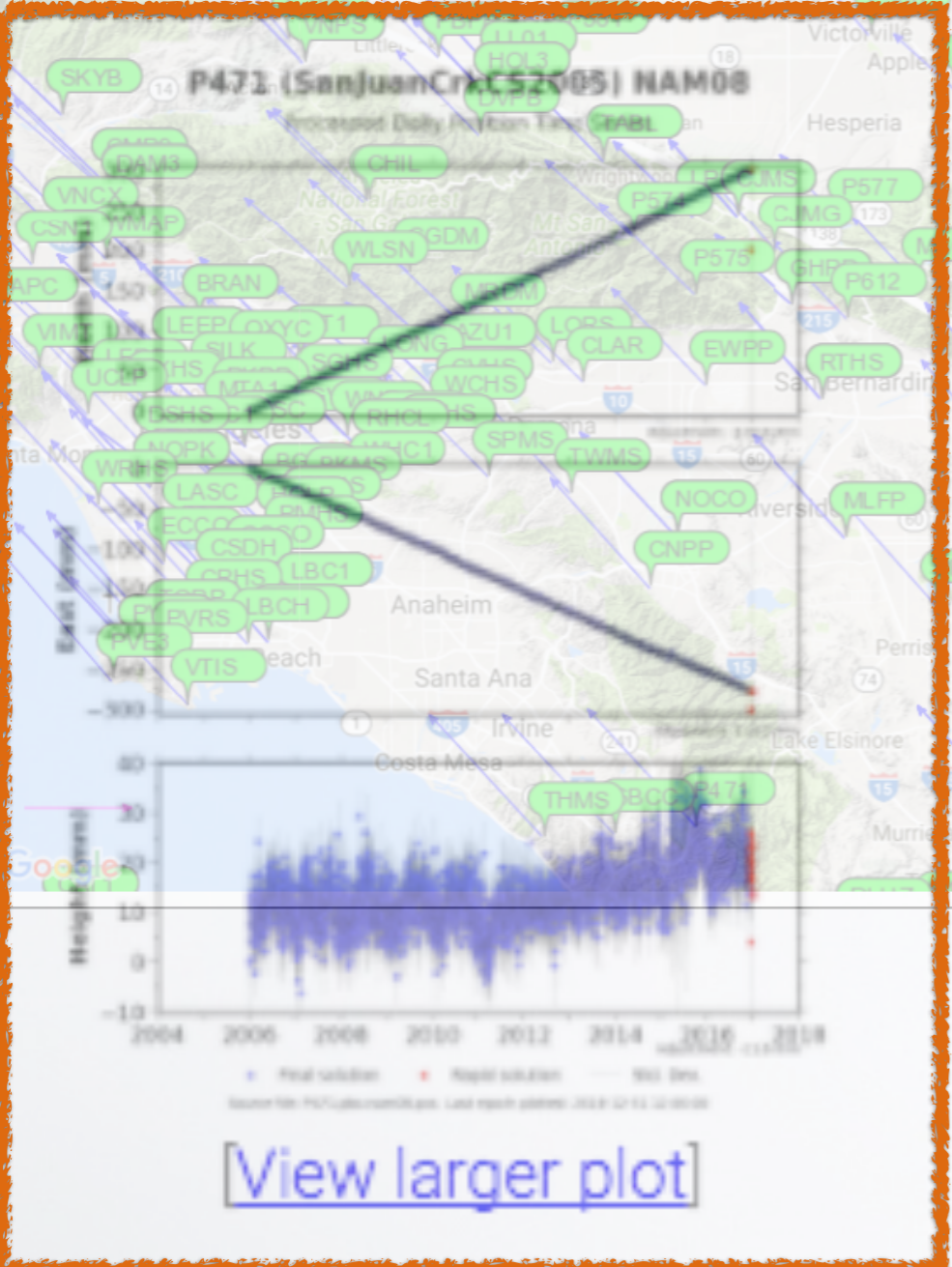
Horizontal speed: 37.14 mm/yr

Direction: 317.51

Speed components: east -25.09, north 28.11

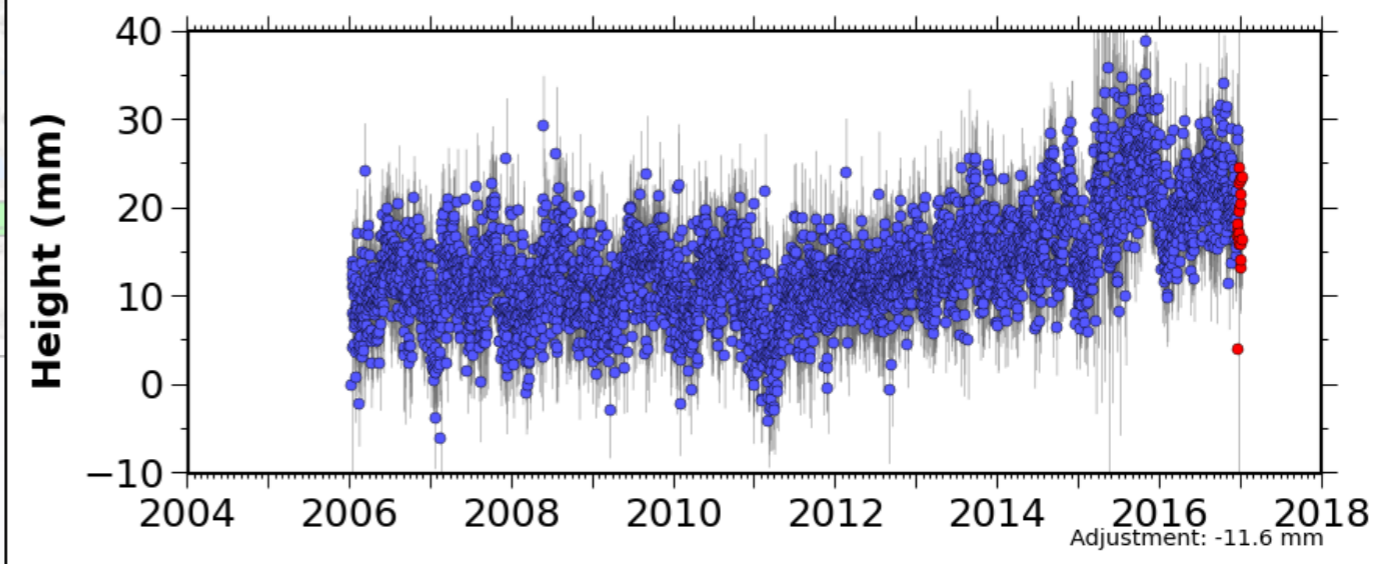
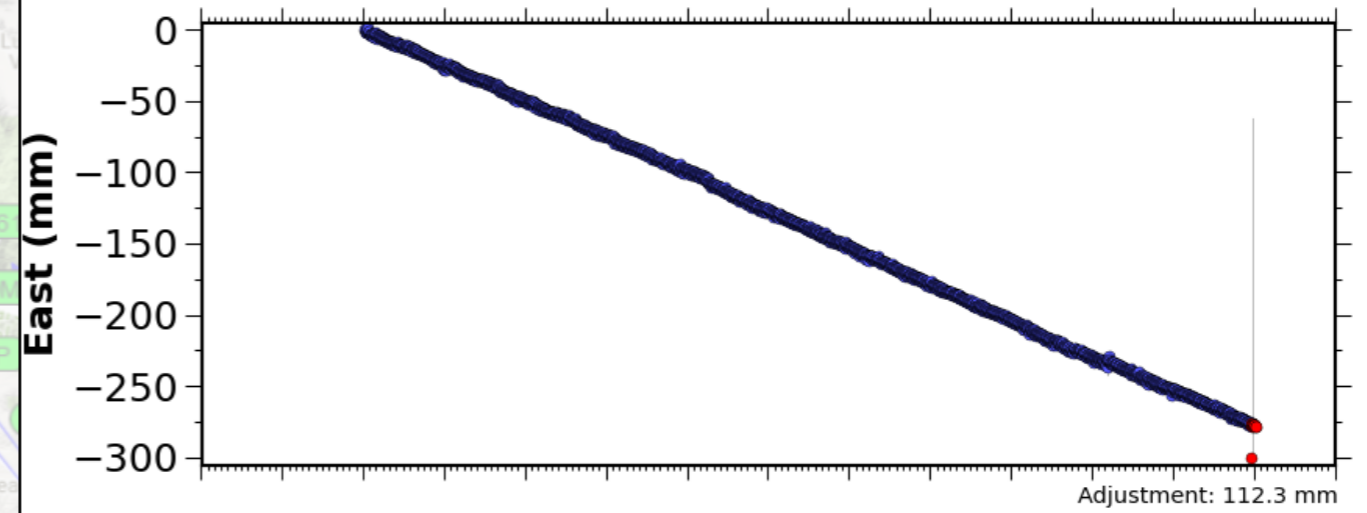
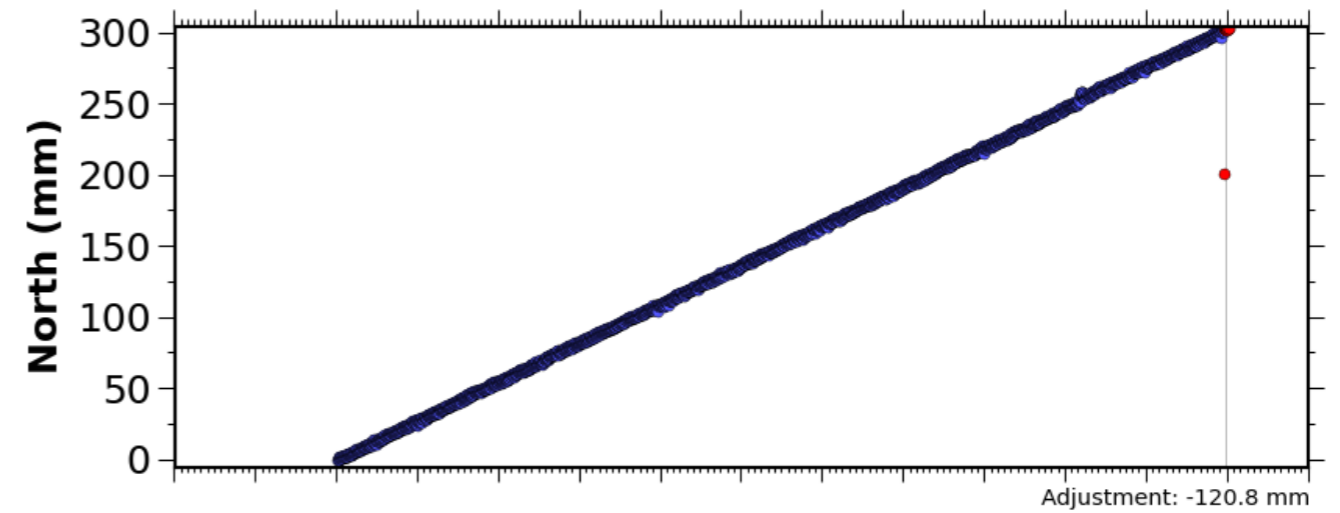
Standard deviations: east 0.14, north 0.14

[Download data file \[csv\]](#)



P471 (SanJuanCrkCS2005) NAM08

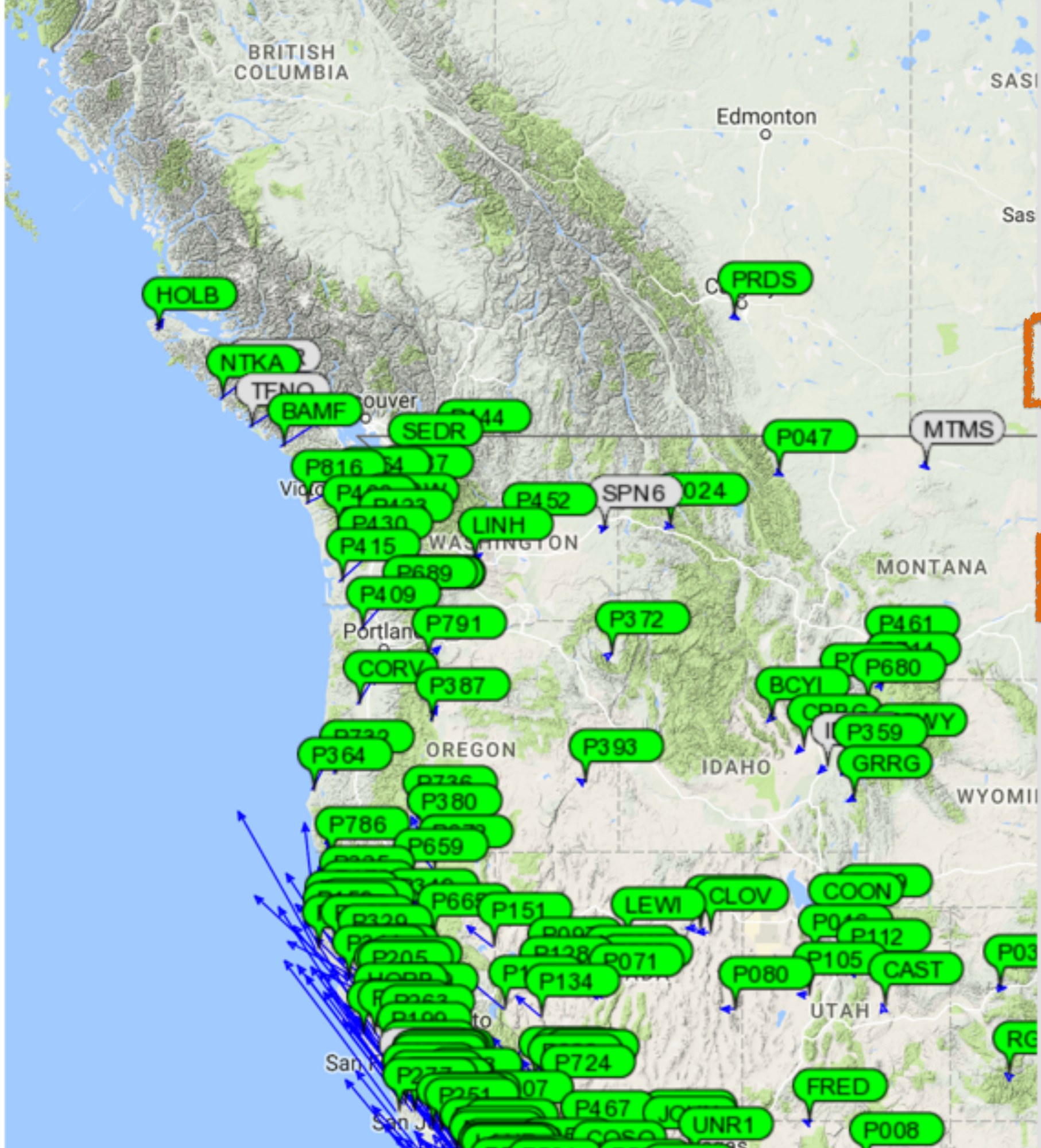
Processed Daily Position Time Series



● Final solution
 ● Rapid solution
 — Std. Dev.

Source file: P471.pbo.nam08.pos Last epoch plotted: 2017-01-06 12:00:00

- Moving to Cascadia



GNSS Data source:
 UNAVCO, NAM08: North America

Display vectors

Vector color:
 blue

Vector length (scaling):
 1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
 Show one in ten

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
 North America

Display earthquakes

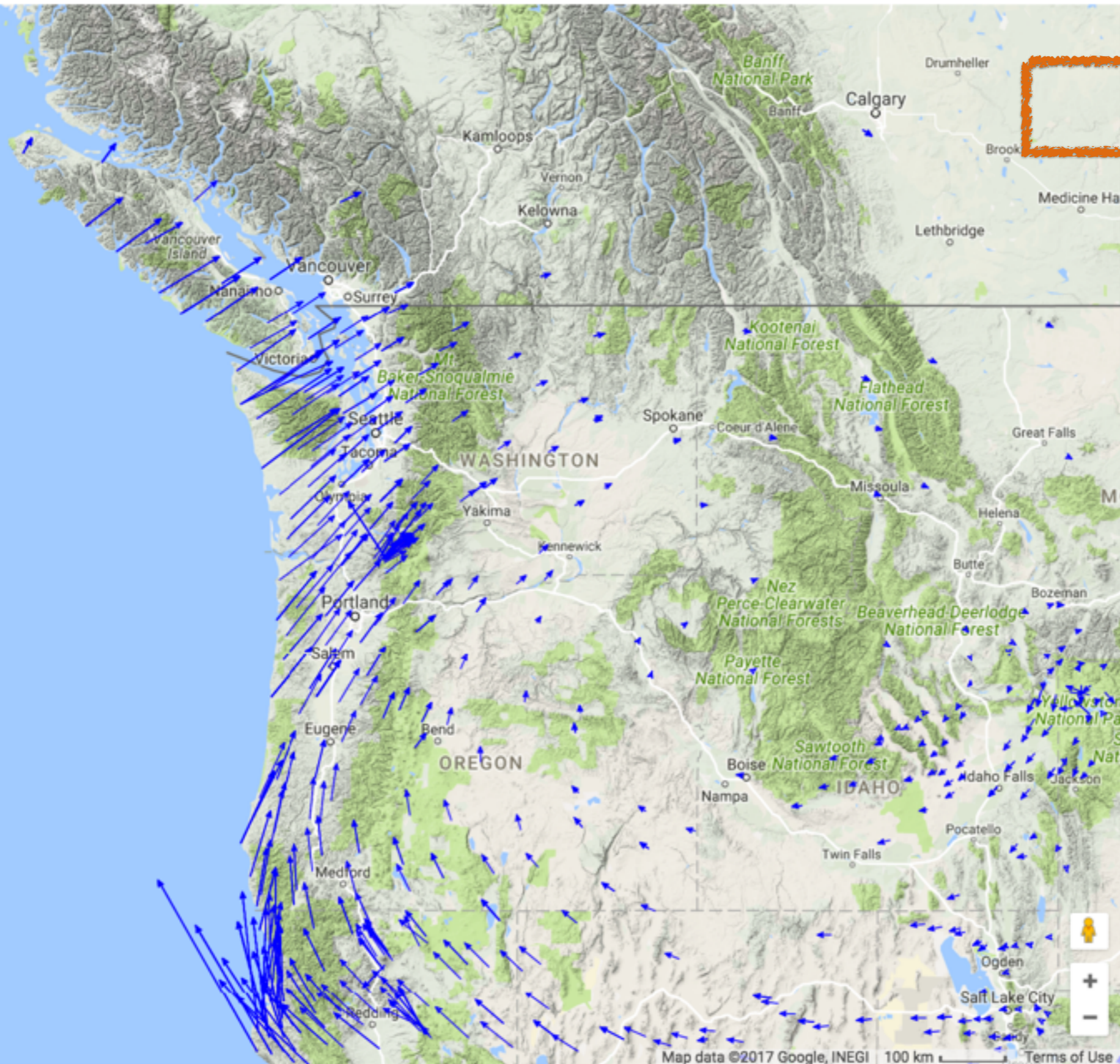
Fault ages:
 Historical

Display faults

DIFFERENT DATA SOURCES

1. UNAVCO NAM08
2. UNAVCO IGS 08
3. GEM GSREM (worldwide) North America
4. GEM GSREM (worldwide) NNR
5. GEM GSREM (worldwide) NNR
6. worldwide modeled

Map Satellite



GNSS velocity vectors

GNSS Data source:
UNAVCO, NAM08: North America

Display vectors

Vector color:
blue

Vector length (scaling):
1x

- Station labels and data download
- Display error ellipses
- Display vertical rates

How many markers displayed:
Show all

- More types of data
- Display volcanic centers
 - Display volcano labels
 - Display plate boundaries

Earthquakes area:
North America

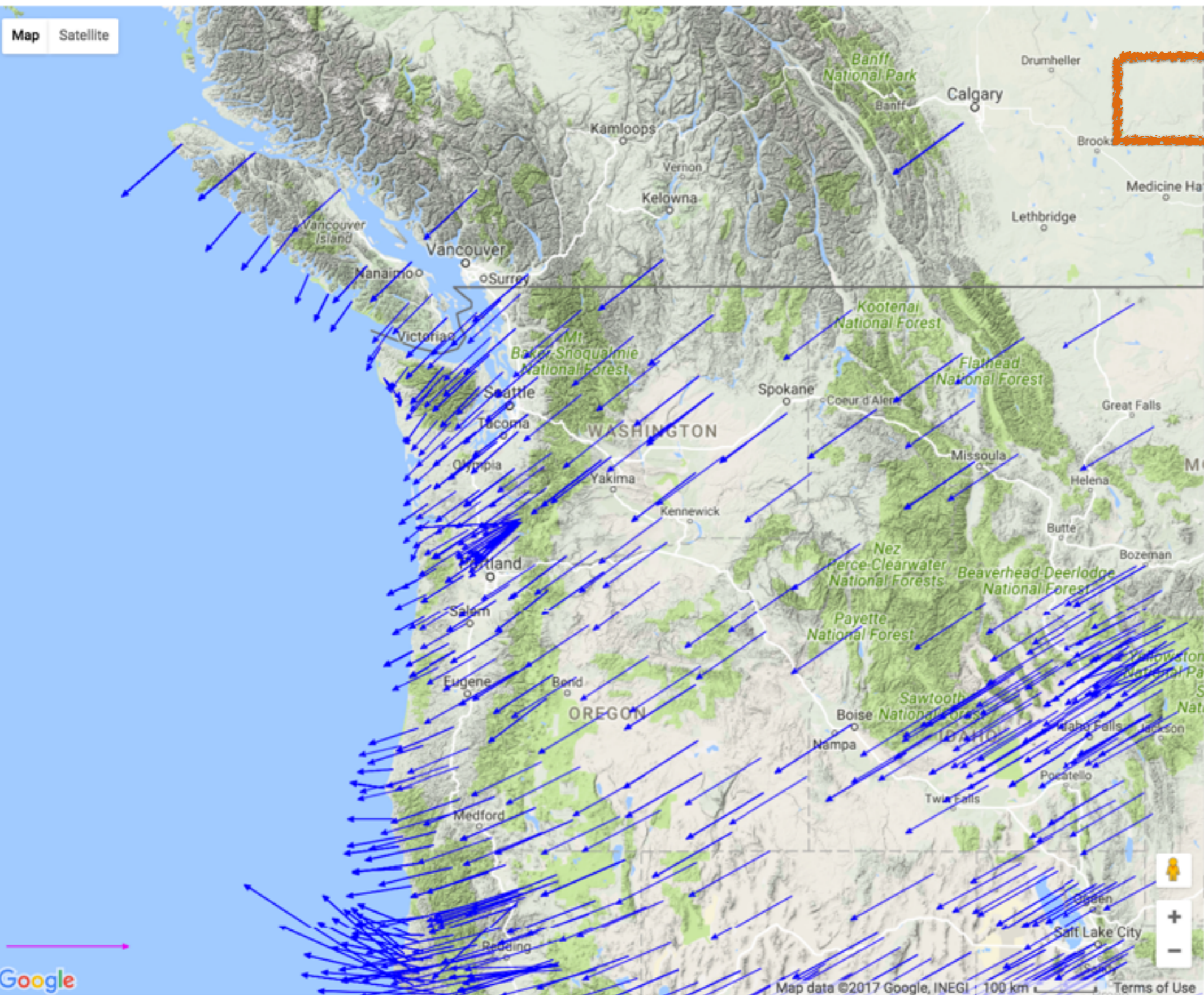
Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over





Map Satellite

GNSS velocity vectors

GNSS Data source:
UNAVCO, IGS08: no net rotation

Display vectors

Vector color:
blue

Vector length (scaling):
1x

- Station labels and data download
- Display error ellipses
- Display vertical rates

How many markers displayed:
Show all

- #### More types of data
- Display volcanic centers
 - Display volcano labels
 - Display plate boundaries

Earthquakes area:
North America

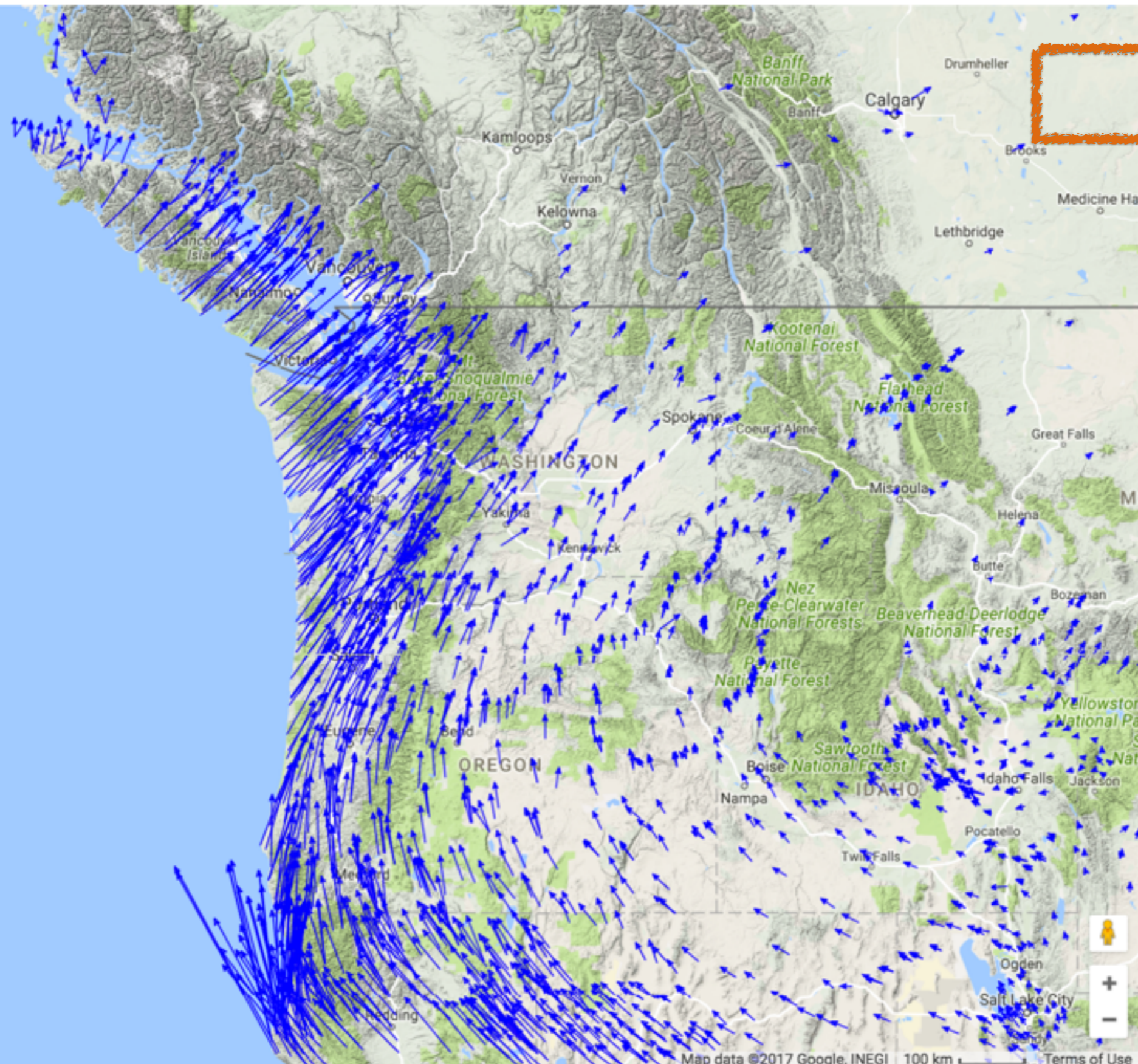
- Display earthquakes

Fault ages:
Historical

- Display faults

Draw Map Start Over

Map Satellite



GNSS velocity vectors

GNSS Data source:
GEM GSRM North America

Display vectors

Vector color:
blue

Vector length (scaling):
1x

- Station labels and data download
- Display error ellipses
- Display vertical rates

How many markers displayed:
Show all

- More types of data
- Display volcanic centers
 - Display volcano labels
 - Display plate boundaries

Earthquakes area:
North America

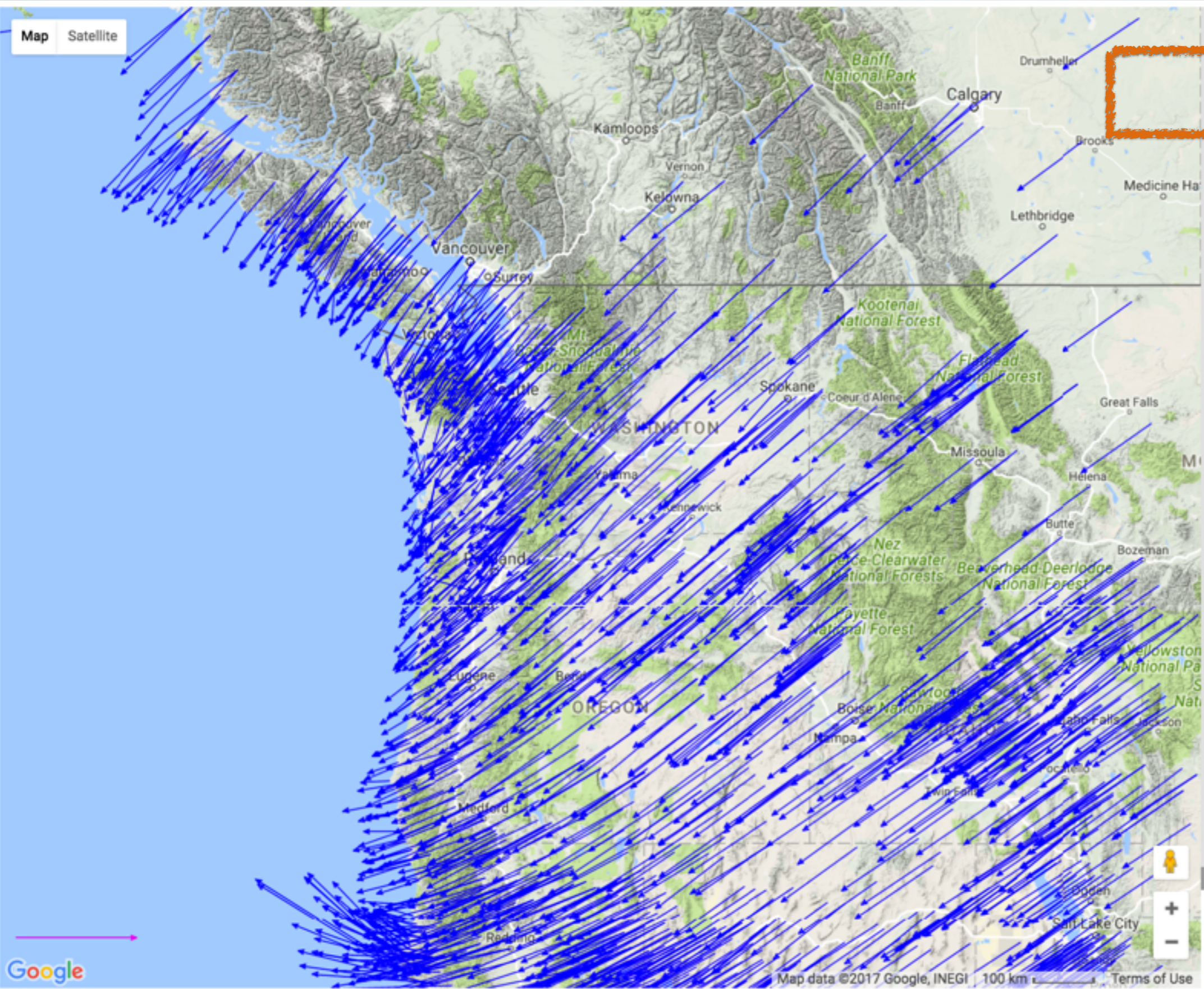
Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over





GNSS velocity vectors

GNSS Data source:
GEM GSRM No net rotation

Display vectors

Vector color:
blue

Vector length (scaling):
1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show all

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
North America

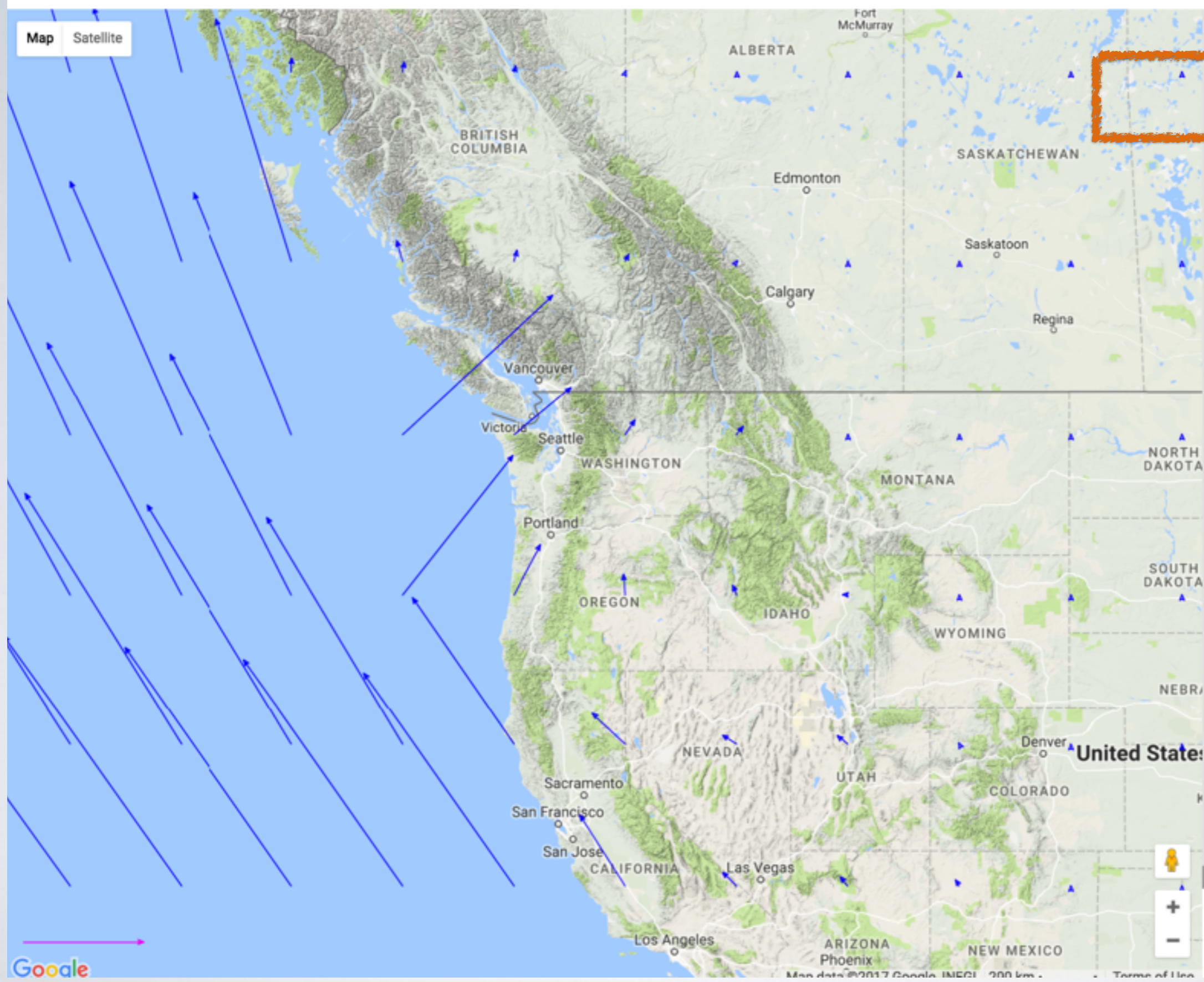
Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over

Map Satellite



GNSS velocity vectors

GNSS Data source:

GRSM model velocity North American

Display vectors

Vector color:

blue

Vector length (scaling):

1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:

Show all

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:

North America

Display earthquakes

Fault ages:

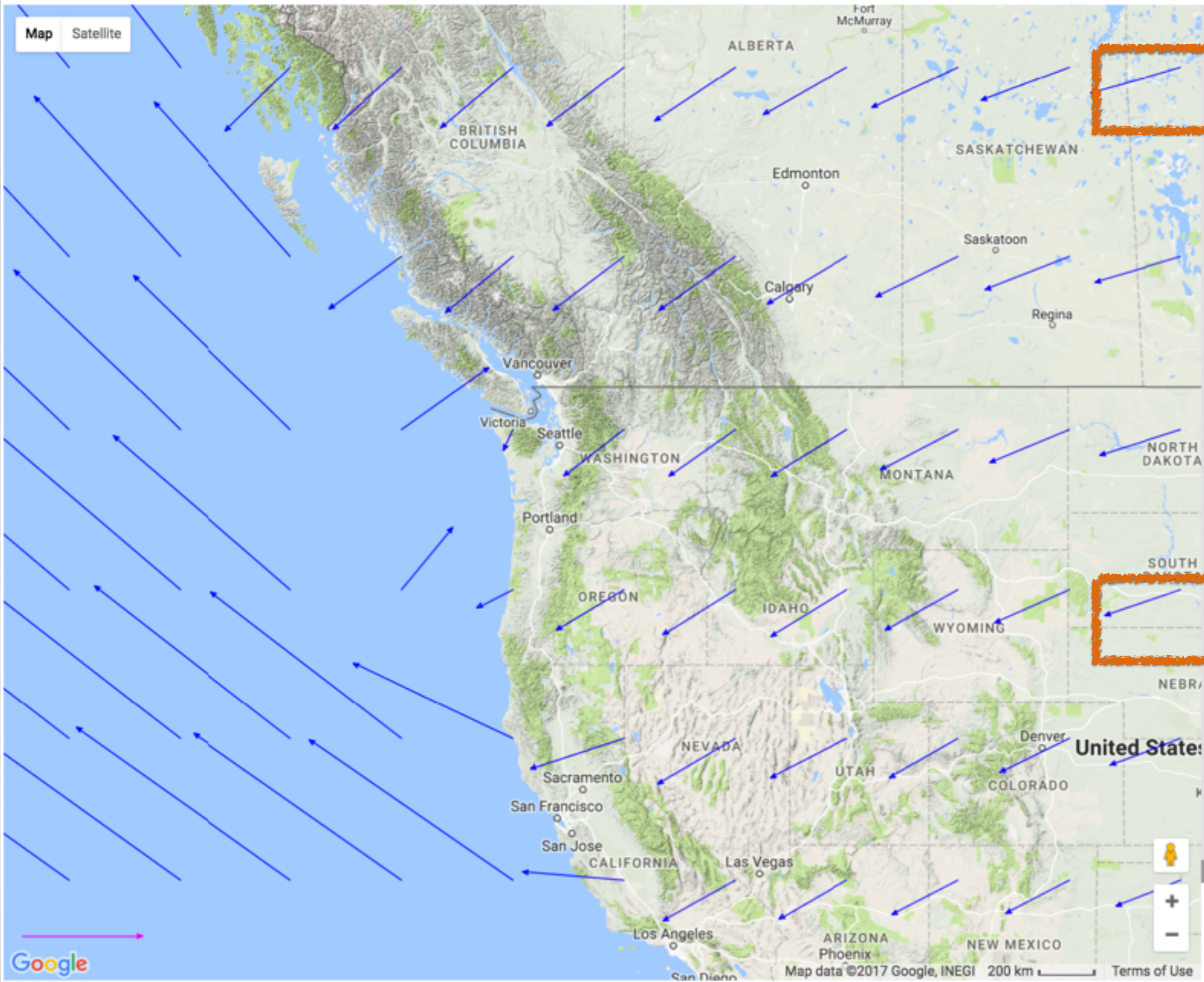
Historical

Display faults

Draw Map

Start Over

Map Satellite



GNSS velocity vectors

GNSS Data source:

GSRM model velocity global (IGS08)

Display vectors

Vector color:

blue

Vector length (scaling):

1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:

Show all

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:

North America

Display earthquakes

Fault ages:

Historical

Display faults

Draw Map

Start Over

Map Satellite



GNSS velocity vectors

GNSS Data source:
 GSRM model velocity global (IGS08) ▾

Display vectors

Vector color:
 blue ▾

Vector length (scaling):
 1x ▾

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
 Show all ▾

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

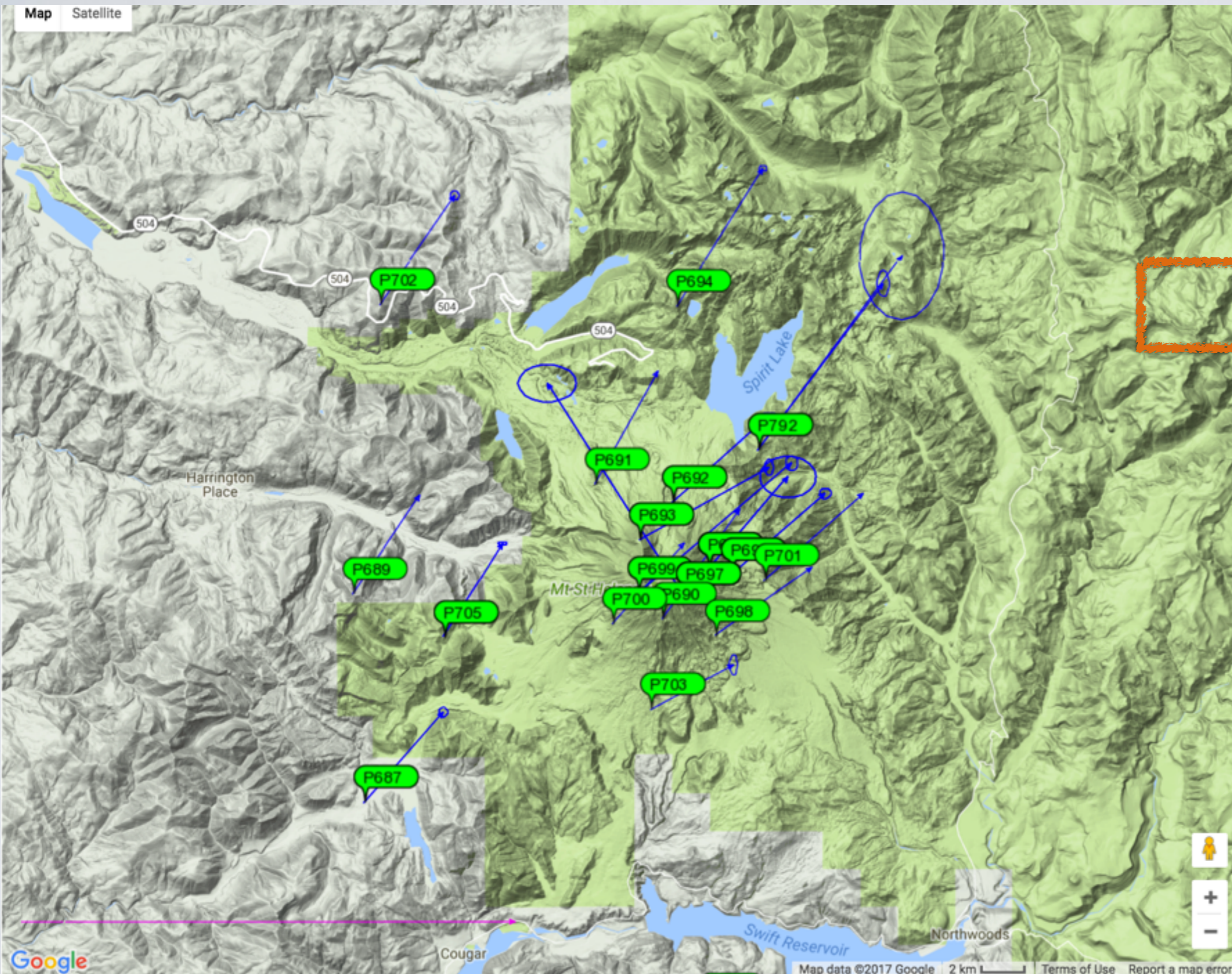
North America ▾

Display earthquakes

Fault ages:
 Historical ▾

Display faults

Draw Map Start Over



GNSS velocity vectors

GNSS Data source:
UNAVCO, NAM08: North America

Display vectors

Vector color:
blue

Vector length (scaling):
4x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show all

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
Global

Display earthquakes

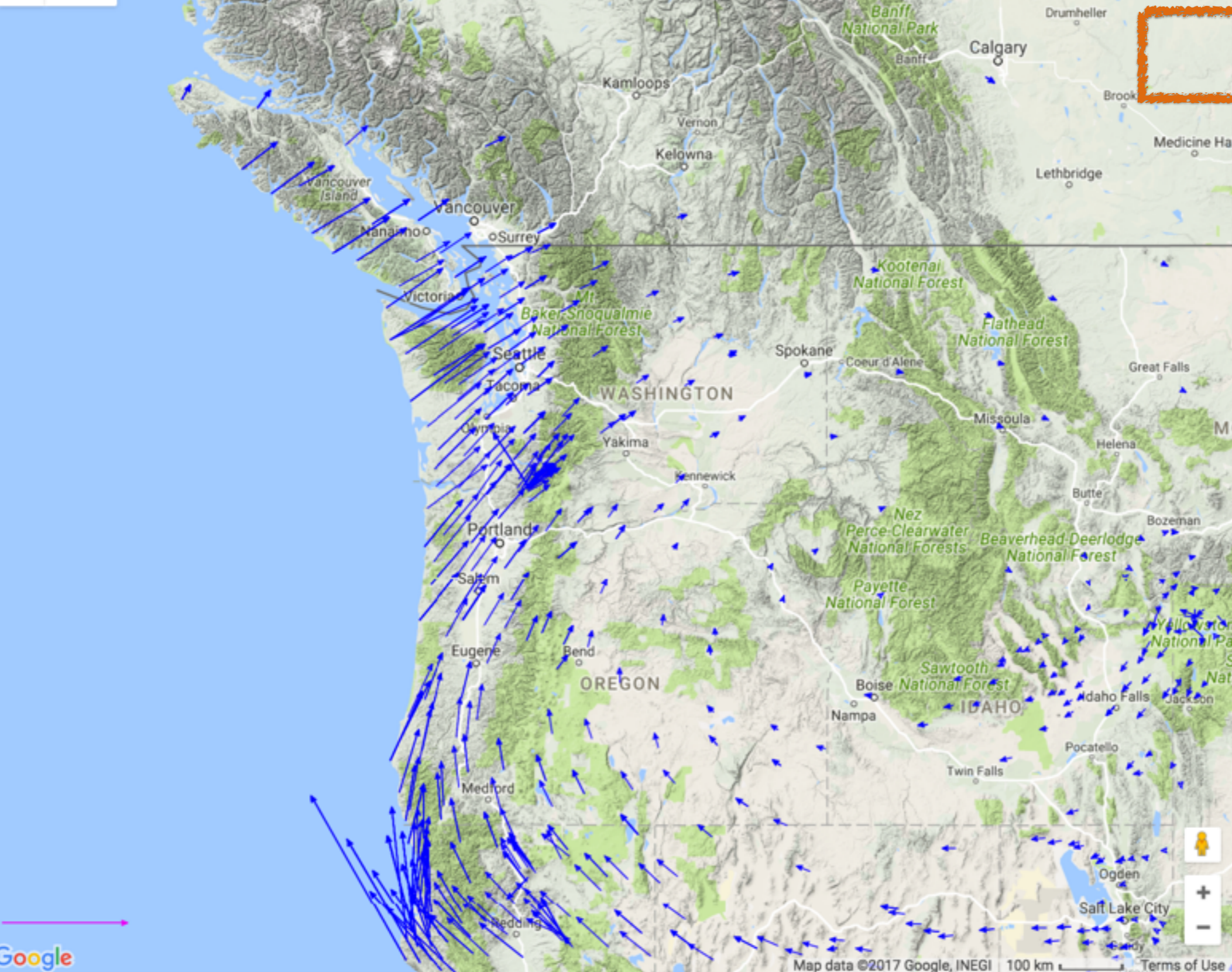
Fault ages:
Historical

Display faults

Draw Map **Start Over**



Map Satellite



GNSS velocity vectors

GNSS Data source:
UNAVCO, NAM08: North America

Display vectors

Vector color:
blue

Vector length (scaling):
1x

- Station labels and data download
- Display error ellipses
- Display vertical rates

How many markers displayed:
Show all

- More types of data
- Display volcanic centers
 - Display volcano labels
 - Display plate boundaries

Earthquakes area:
North America

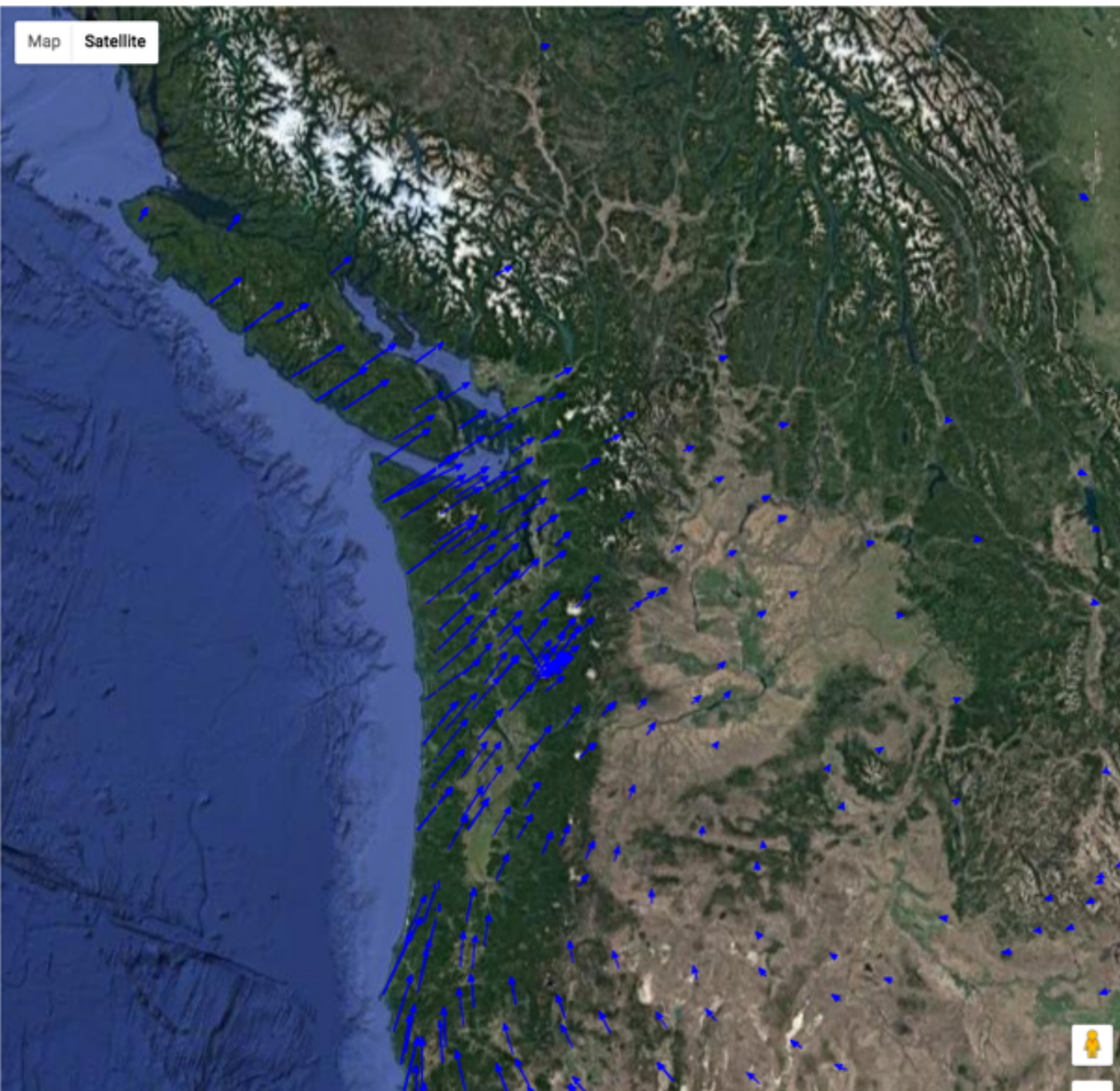
Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over

Map Satellite



GNSS velocity vectors

Source: AM08: North America

Color: white

- green
- black
- red
- blue
- yellow
- ✓ white
- purple

Vector length (scaling): 1x

- Station labels and data download
- Display error ellipses
- Display vertical rates

How many markers displayed: Show all

- #### More types of data
- Display volcanic centers
 - Display volcano labels
 - Display plate boundaries

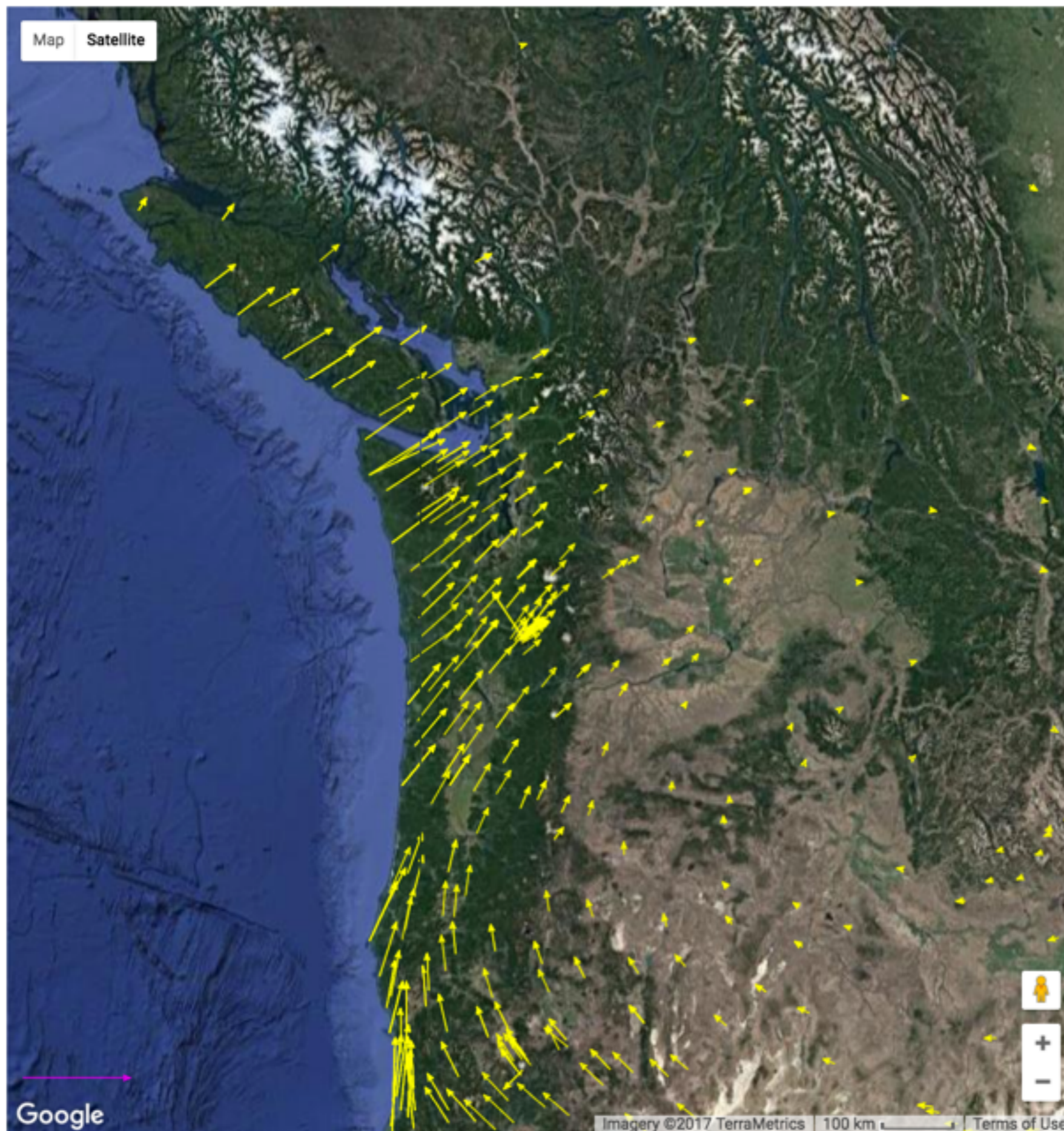
Earthquakes area: North America

- Display earthquakes

Fault ages: Historical

- Display faults

Draw Map Start Over



GNSS velocity vectors

GNSS Data source:

UNAVCO, NAM08: North America

Display vectors

Vector color:

yellow

Vector length (scaling):

1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:

Show all

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:

North America

Display earthquakes

Fault ages:

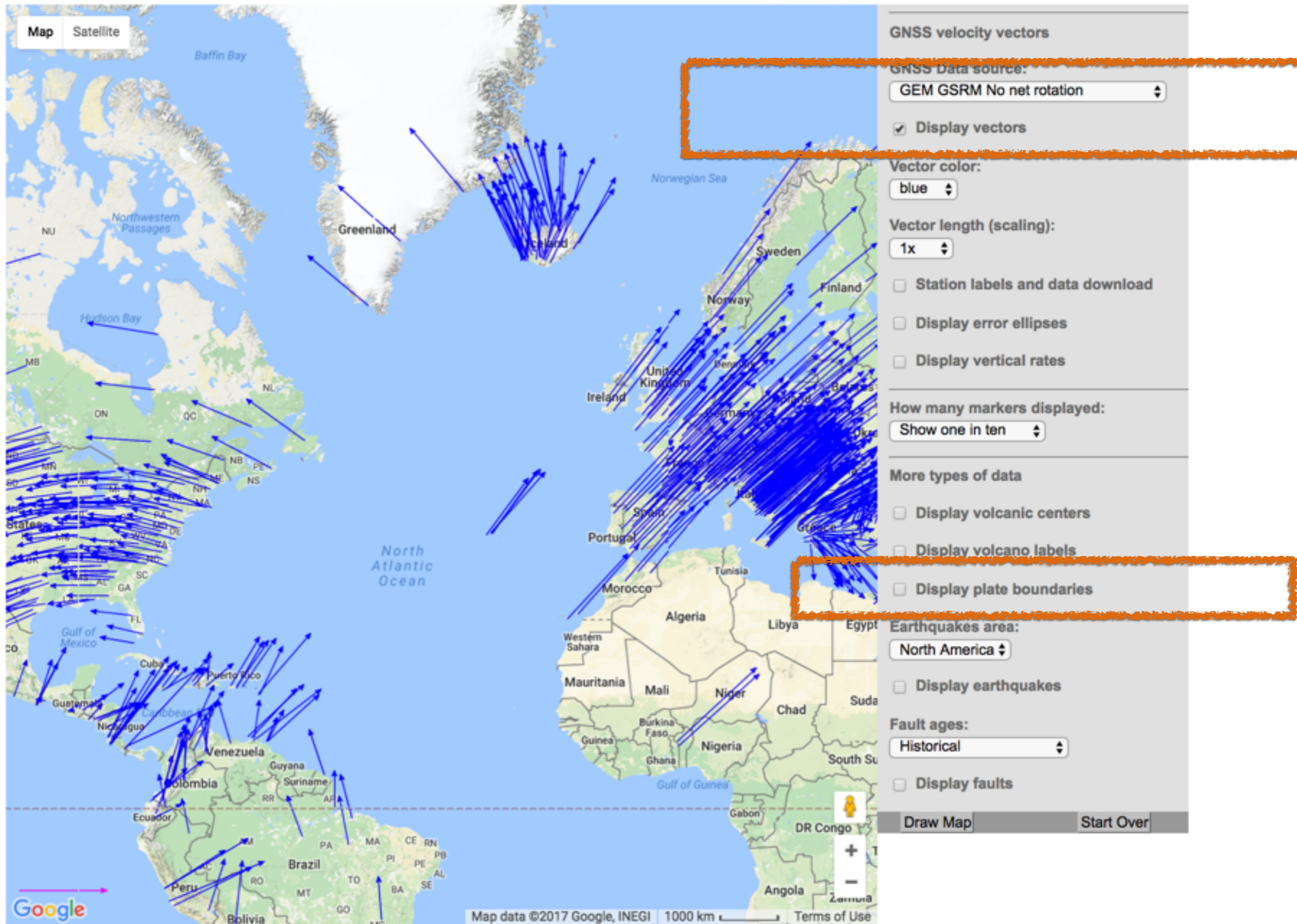
Historical

Display faults

Draw Map

Start Over

GPS Velocity Viewer



GPS Velocity Viewer



GNSS velocity vectors

GNSS Data source:
GEM GSRM No net rotation

Display vectors

Vector color:
blue

Vector length (scaling):
1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show one in ten

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
North America

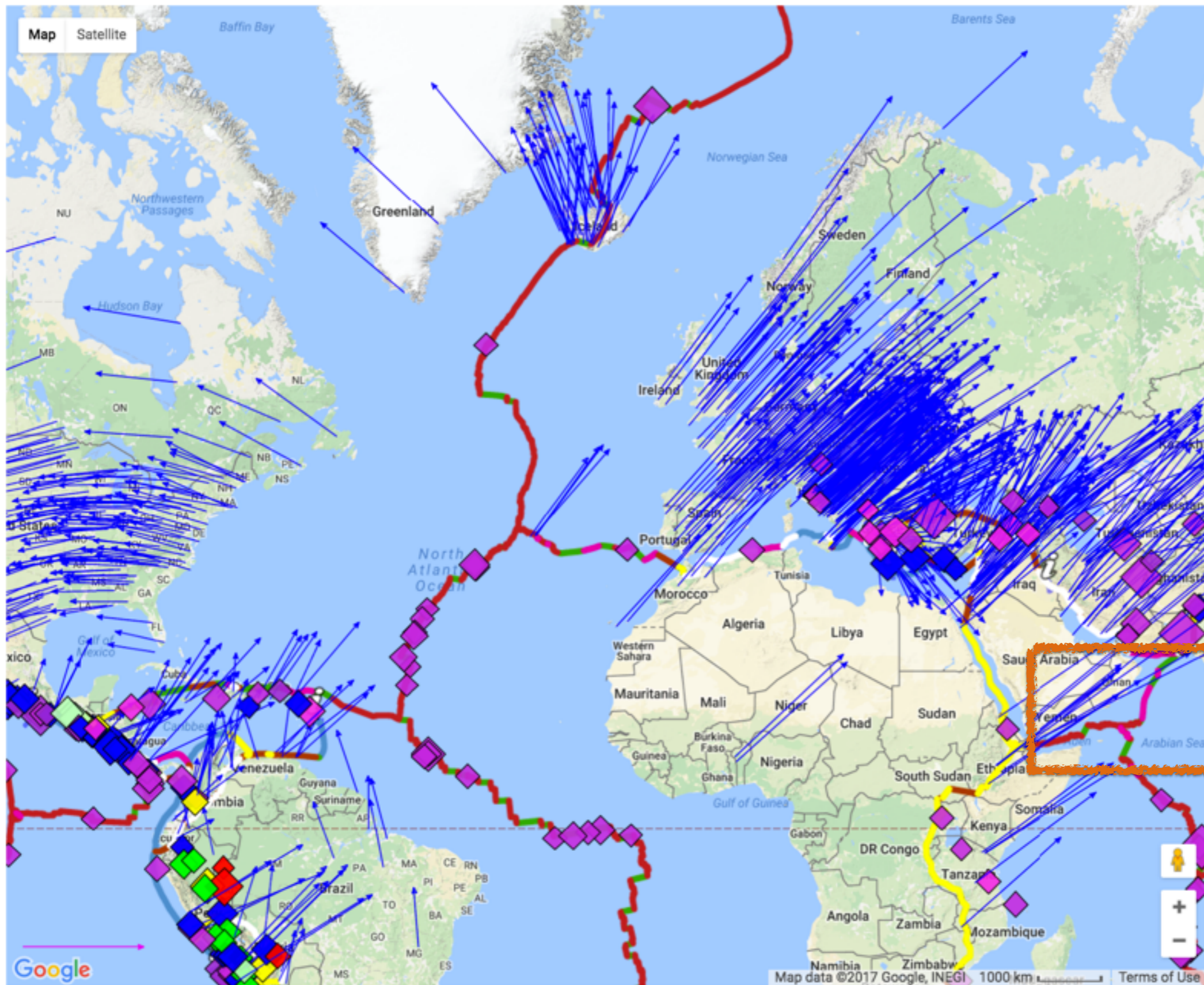
Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over





GNSS velocity vectors

GNSS Data source:

Display vectors

Vector color:

Vector length (scaling):

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

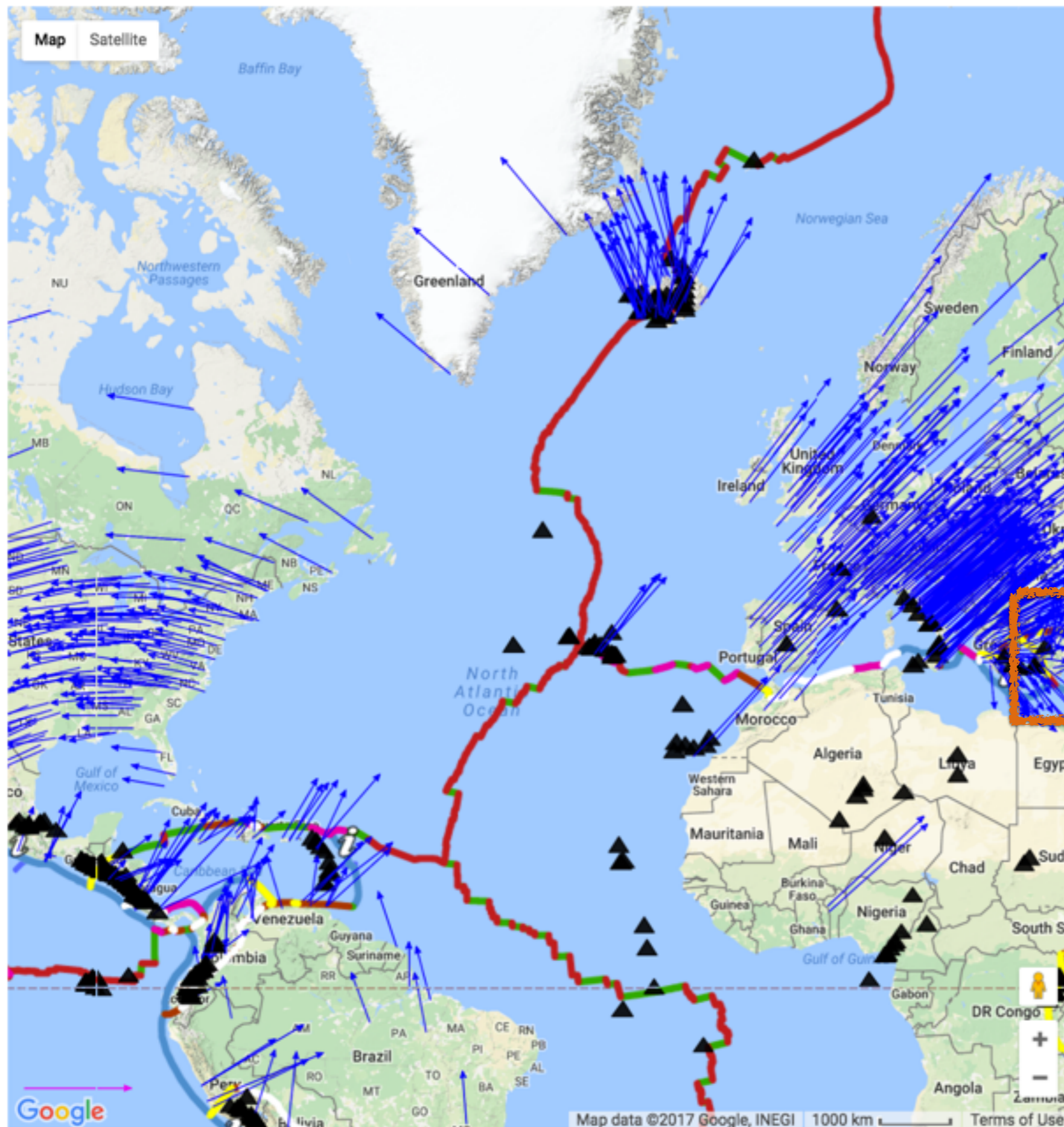
Earthquakes area:

Display earthquakes

Time range:

Display faults

GPS Velocity Viewer



GNSS velocity vectors

GNSS Data source:
GEM GSRM No net rotation

Display vectors

Vector color:
blue

Vector length (scaling):
1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show one in ten

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

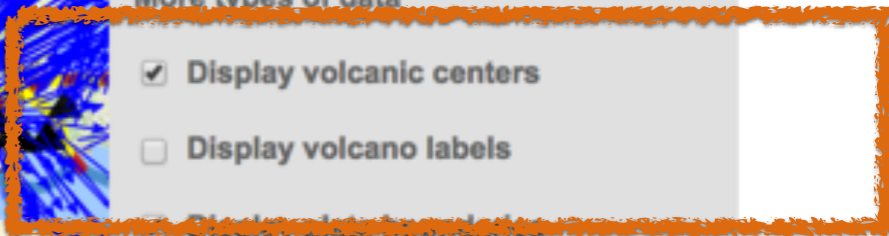
Earthquakes area:
North America

Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over



GPS Velocity Viewer



GNSS velocity vectors

GNSS Data source:
GEM GSRM No net rotation

Display vectors

Vector color:
blue

Vector length (scaling):
1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show one in ten

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

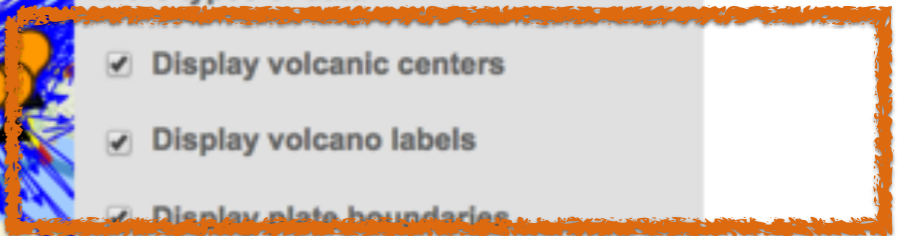
Earthquakes area:
North America

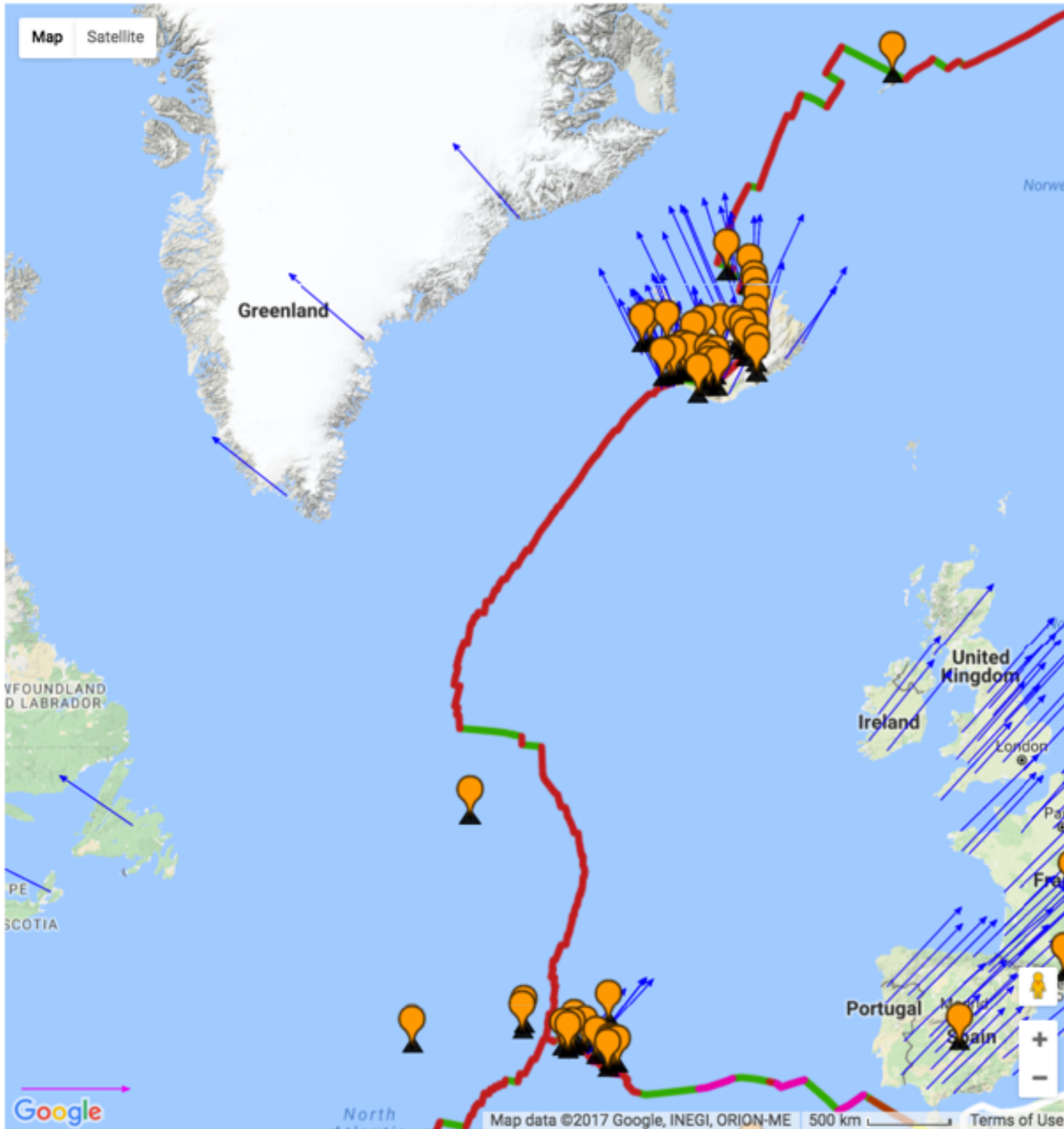
Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over





GNSS velocity vectors

GNSS Data source:

GEM GSRM No net rotation

Display vectors

Vector color:

blue

Vector length (scaling):

1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:

Show one in ten

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:

North America

Display earthquakes

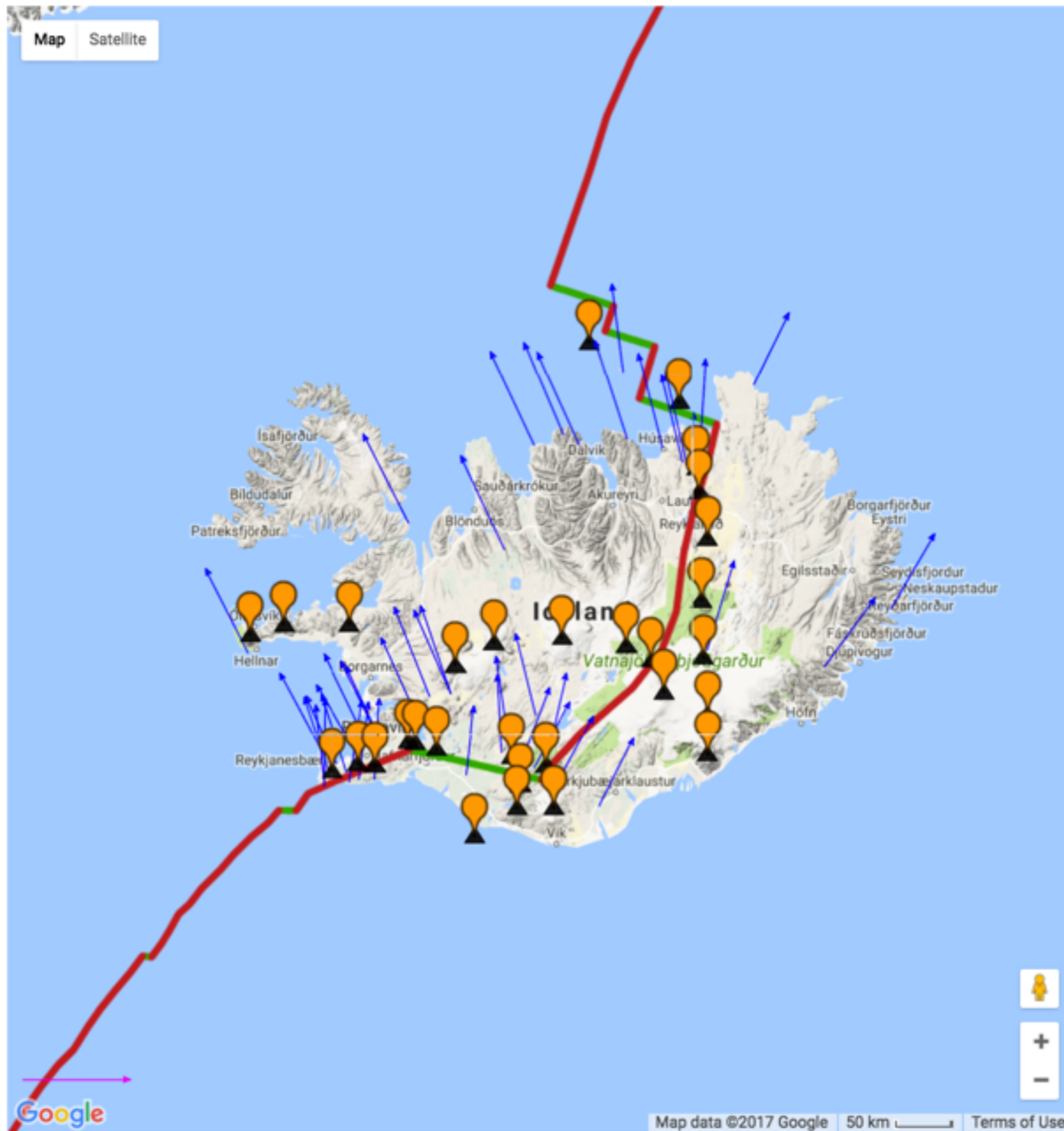
Fault ages:

Historical

Display faults

Draw Map

Start Over



Map Satellite

GNSS velocity vectors

GNSS Data source:
GEM GSRM No net rotation

Display vectors

Vector color:
blue

Vector length (scaling):
1x

- Station labels and data download
- Display error ellipses
- Display vertical rates

How many markers displayed:
Show one in ten

More types of data

- Display volcanic centers
- Display volcano labels
- Display plate boundaries

Earthquakes area:

North America
 Display earthquakes

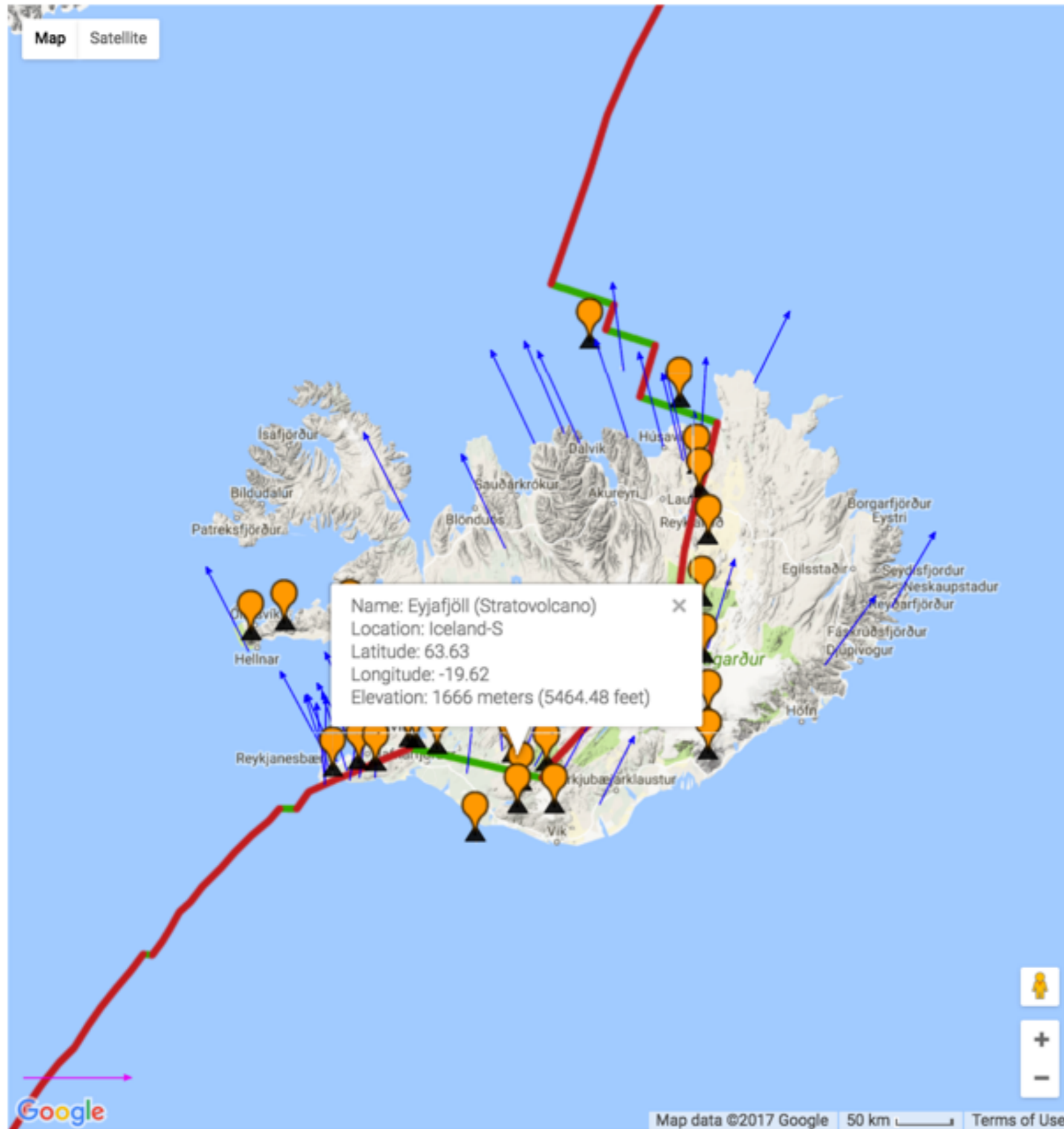
Fault ages:

Historical
 Display faults

Draw Map

Start Over





GNSS velocity vectors

GNSS Data source:

GEM GSRM No net rotation

Display vectors

Vector color:

blue

Vector length (scaling):

1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:

Show one in ten

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:

North America

Display earthquakes

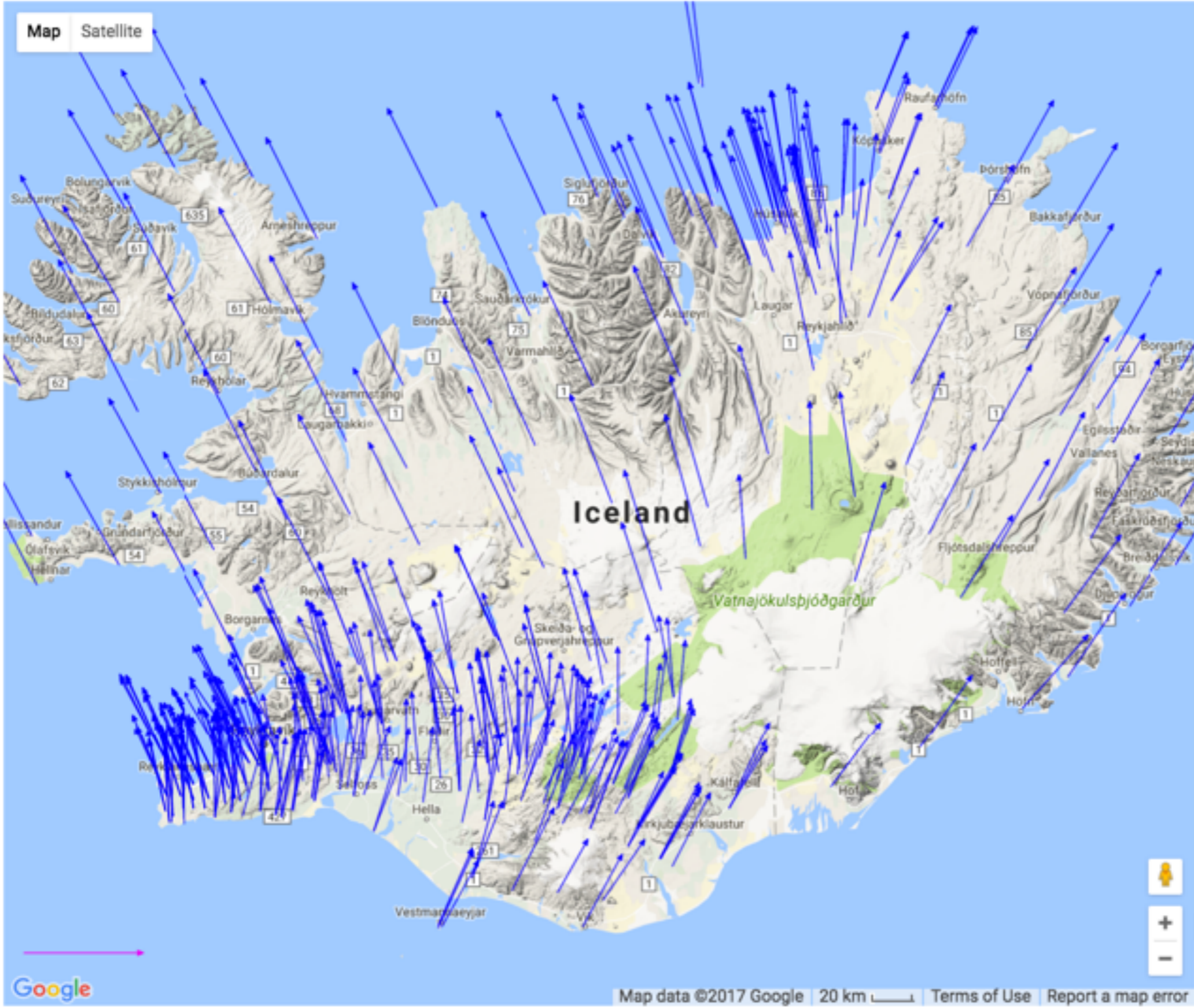
Fault ages:

Historical

Display faults

Draw Map

Start Over



GNSS velocity vectors

GNSS Data source:
GEM GSRM No net rotation

Display vectors

Vector color:
blue

Vector length (scaling):
1x

Station labels and data download

Display error ellipses

Display vertical rates

How many markers displayed:
Show all

More types of data

Display volcanic centers

Display volcano labels

Display plate boundaries

Earthquakes area:
Global

Display earthquakes

Fault ages:
Historical

Display faults

Draw Map Start Over

BRIEF REVIEW

- UNAVCO GPS Velocity Viewer - shows ground motion at each GPS location
 - Google Search: UNAVCO GPS Velocity Viewer
- We looked at each tool choices to add and hide layers
- We briefly looked at the vectors for each plate boundary types & different reference frames