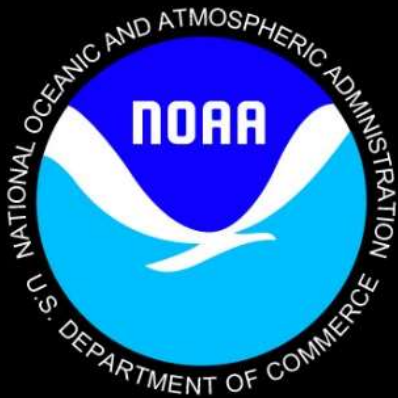


Visualizing Destructive Tsunamis



Nathan Becker

NOAA/NWS/Pacific Tsunami Warning Center

Leon Geschwind

NOAA/NOS/Office for Coastal Management

Animation Library Details

- 10 tsunamis (so far) covering 18th to 21st Centuries
- Mastered at 8k (8192 x 4096) at 60 FPS
- 48 hours of simulated time - waves wrap the sphere
- Consistent color scheme across all animations



Search datasets

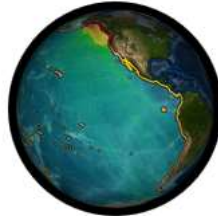
Submit

Categories ▾

Live Programs

Search Results

Datasets found for "tsunami historical series": 9



Tsunami Historical Series: Alaska - 1964 Mar. 22, 2016

Duration: Mar. 28, 1964 to Mar. 30, 1964

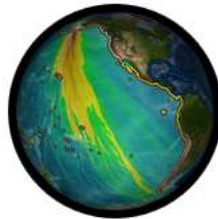
Keywords: Model, Oceans, Bathymetry, Vorticity, Waves, Tsunamis, Earthquakes

Themes: Major Events, Natural Disasters

Dataset Contact: Nathan Becker, NOAA Pacific Tsunami Warning Center, Nathan.Becker@noaa.gov

Dataset Developer: Dailin Wang, NOAA Pacific Tsunami Warning Center

Visualization Developer: Nathan Becker, NOAA Pacific Tsunami Warning Center, Nathan.Becker@noaa.gov



Tsunami Historical Series: Aleutian Islands - 1946 Mar. 29, 2016

Duration: Apr. 01, 1946 to Apr. 03, 1946

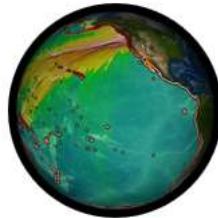
Keywords: Model, Oceans, Bathymetry, Alaska, Hawaii, Waves, Tsunamis, Earthquakes

Themes: Major Events, Natural Disasters

Dataset Contact: Nathan Becker, NOAA Pacific Tsunami Warning Center, Nathan.Becker@noaa.gov

Dataset Developer: Dailin Wang, NOAA Pacific Tsunami Warning Center

Visualization Developer: Nathan Becker, NOAA Pacific Tsunami Warning Center, Nathan.Becker@noaa.gov



Tsunami Historical Series: Cascadia - 1700 Jan. 21, 2016

Keywords: Model, Oceans, Cascadia, Bathymetry, Waves, Tsunamis, Earthquakes

Themes: Natural Disasters, Major Events

Dataset Contact: Nathan Becker, NOAA Pacific Tsunami Warning Center, Nathan.Becker@noaa.gov

Dataset Developer: Dailin Wang, NOAA Pacific Tsunami Warning Center

Visualization Developer: Nathan Becker, NOAA Pacific Tsunami Warning Center, Nathan.Becker@noaa.gov



Tsunami Historical Series: Chile - 1960 Jun. 01, 2016

Duration: May. 22, 1960 to May. 24, 1960

Keywords: Model, Oceans, Chile, Bathymetry, Waves, Tsunamis, Earthquakes

Dataset Contact: Nathan Becker, NOAA Pacific Tsunami Warning Center, Nathan.Becker@noaa.gov

Dataset Developer: Dailin Wang, NOAA Pacific Tsunami Warning Center

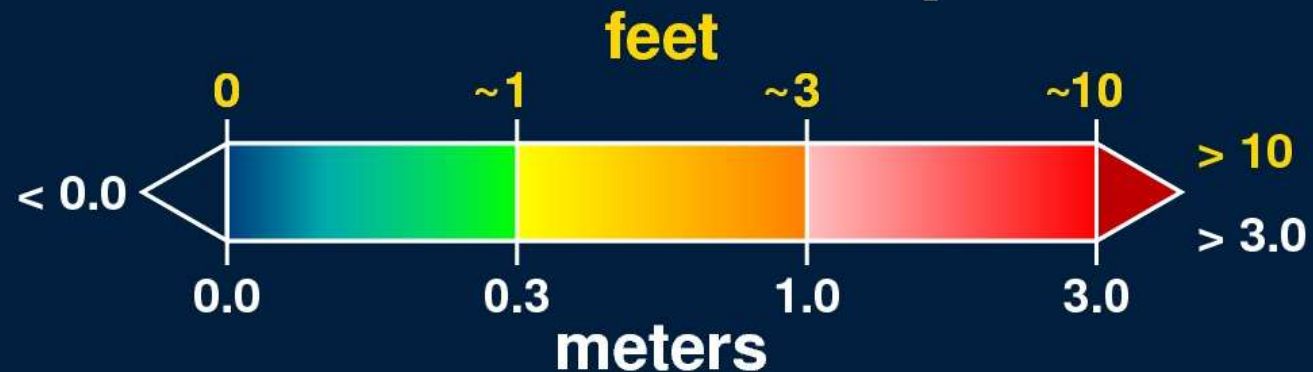
Search for
tsunami
historical
series
or
PTWC

Picture-in-Picture

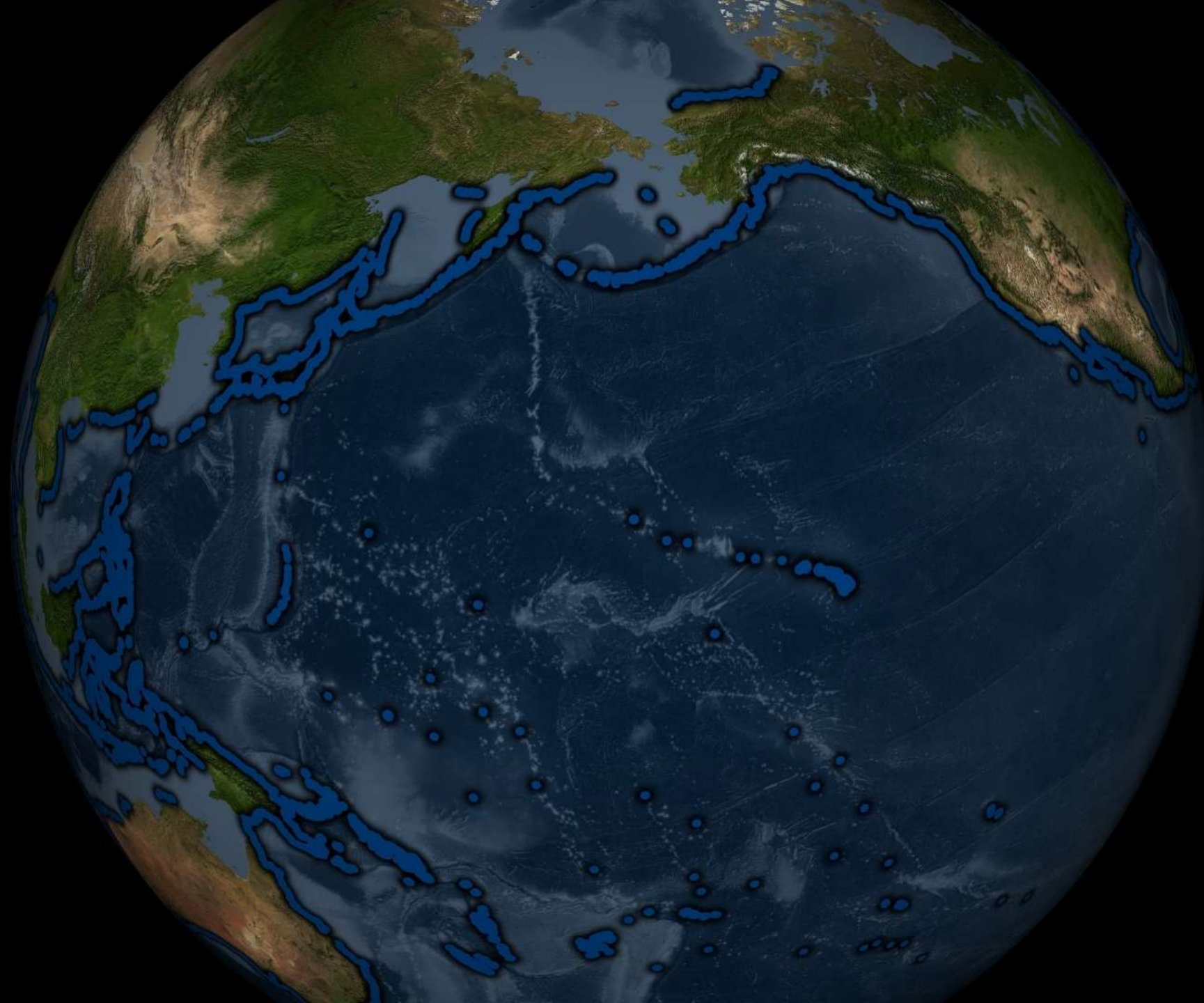
Elapsed
Time:
00 hr
00 min

UTC:
2011
11 Mar
05:46 Z

Tsunami Wave Amplitude:



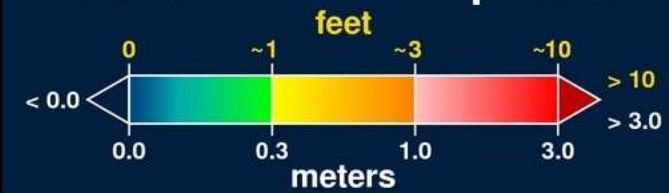
Starting point



Elapsed
Time:
00 hr
00 min

UTC:
2011
11 Mar
05:46 Z

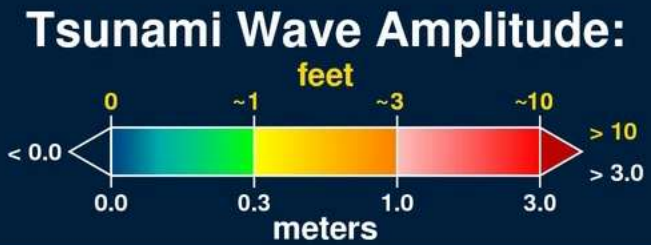
Tsunami Wave Amplitude:



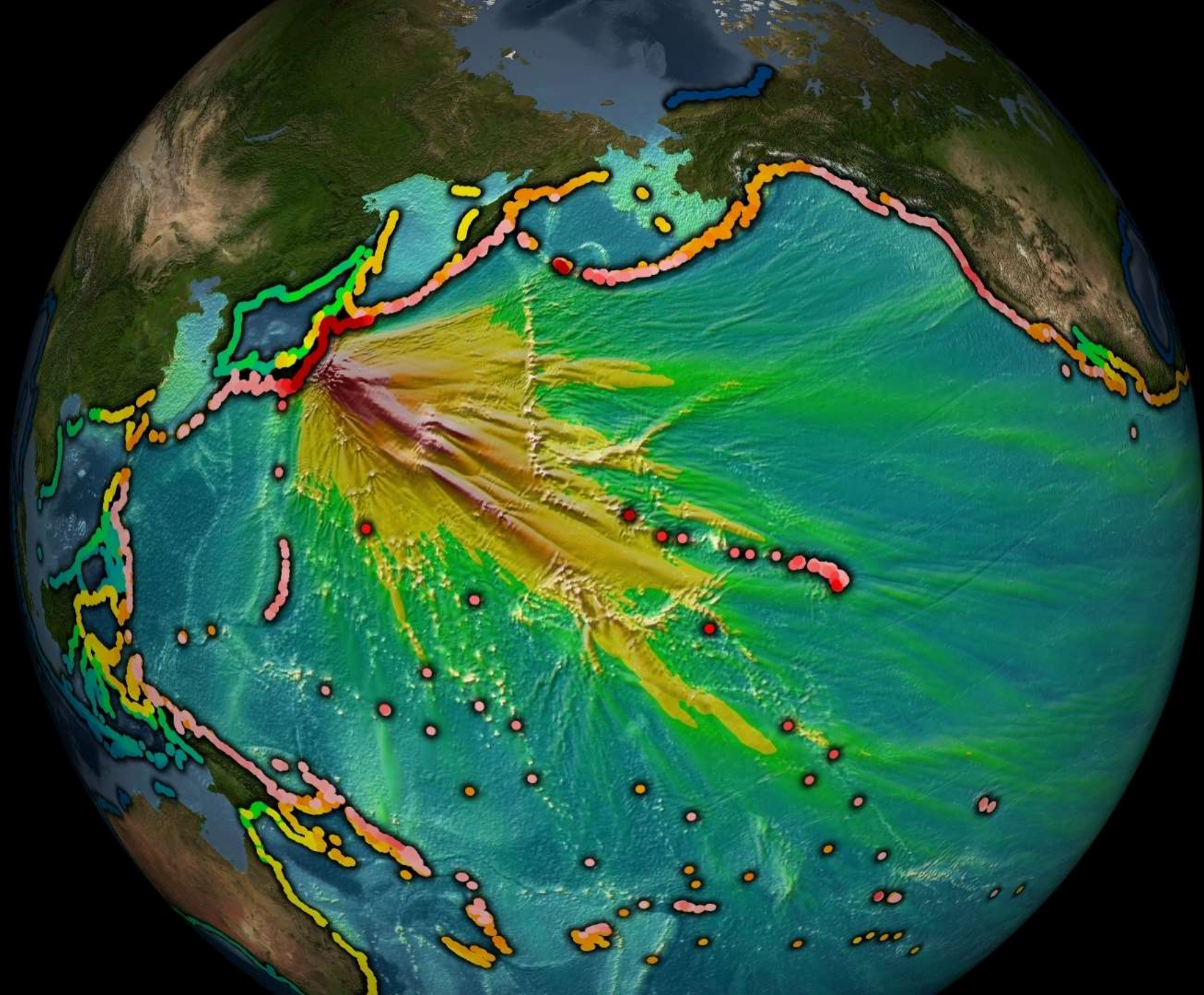
Japan 2011

Elapsed
Time:
00 hr
01 min

UTC:
2011
11 Mar
05:47 Z



Energy Map



Elapsed Time:
48 hr
00 min

UTC:
2011
13 Mar
05:46 Z

Tsunami Wave Amplitude:

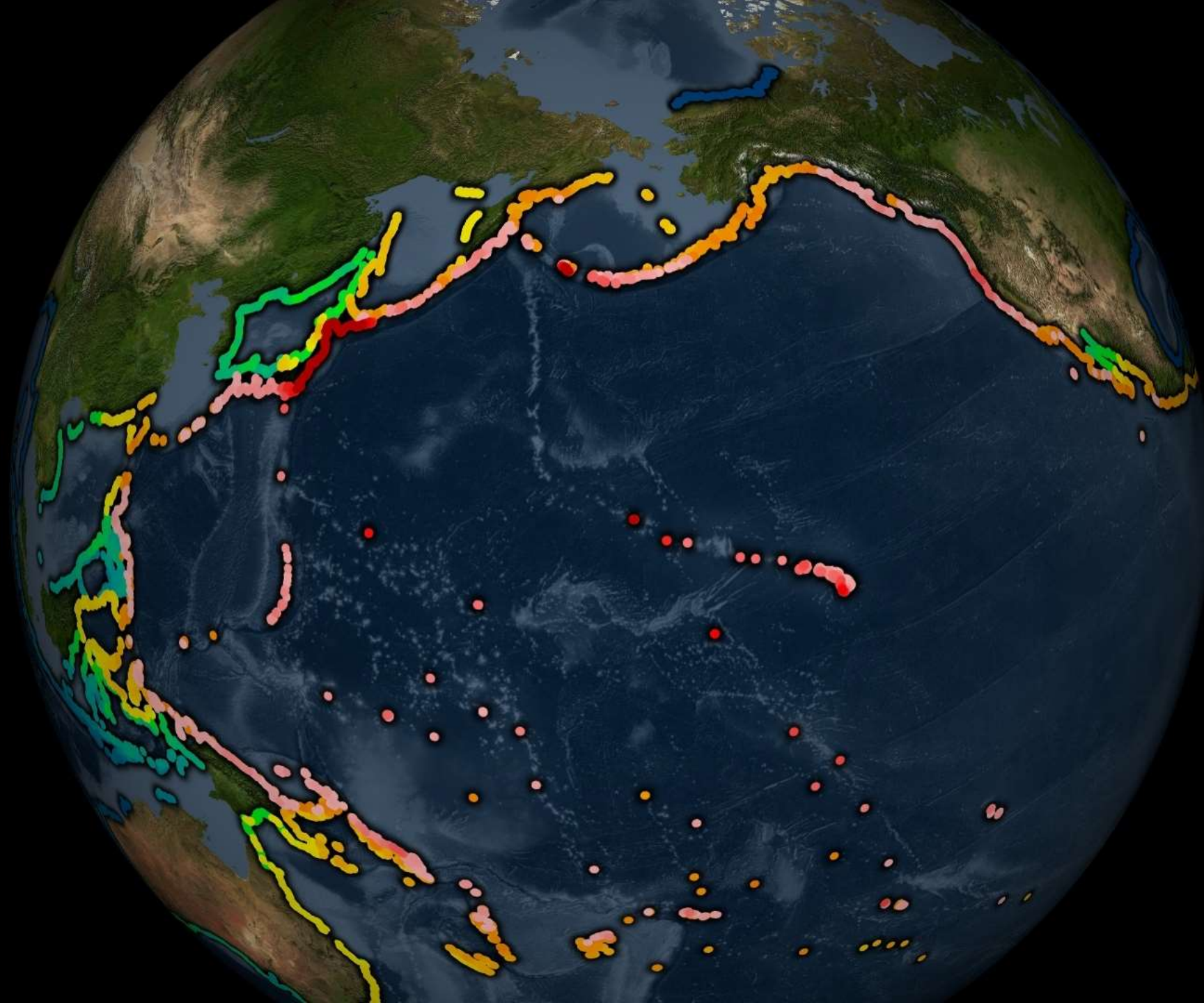
feet

< 0.0 0 ~1 ~3 ~10 > 10

0.0 0.3 1.0 3.0 > 3.0

meters

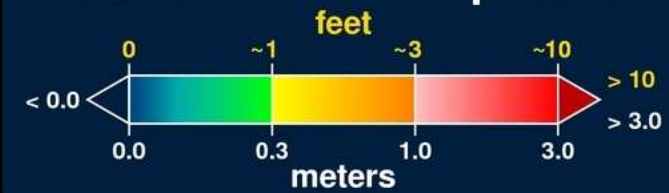
Coastal Runup



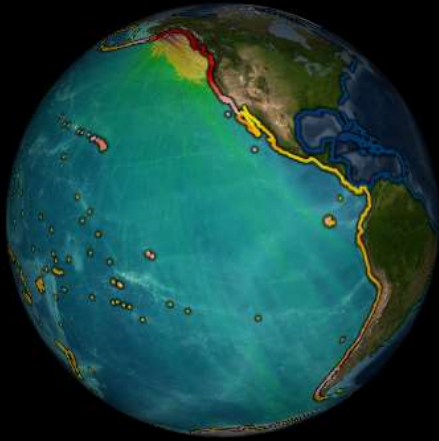
Elapsed
Time:
48 hr
00 min

UTC:
2011
13 Mar
05:46 Z

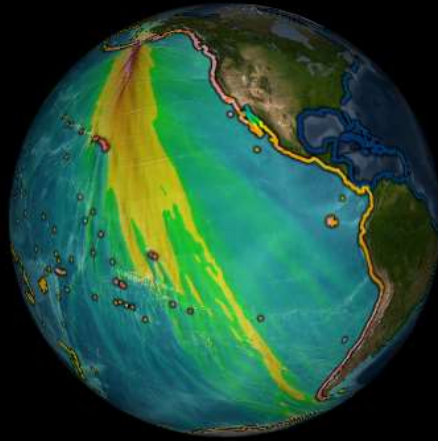
Tsunami Wave Amplitude:



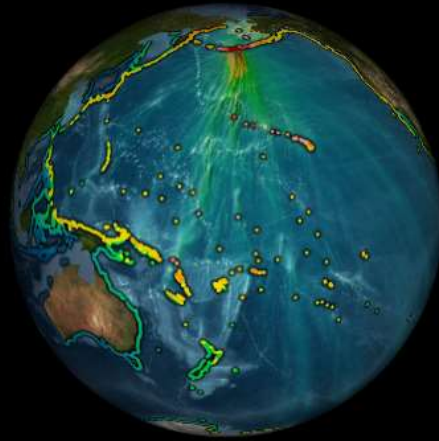
Alaska
1964



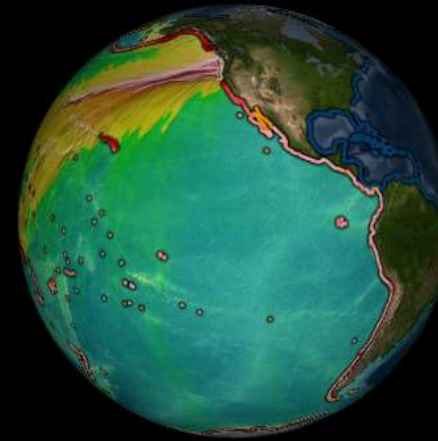
Aleutian Is.
1946



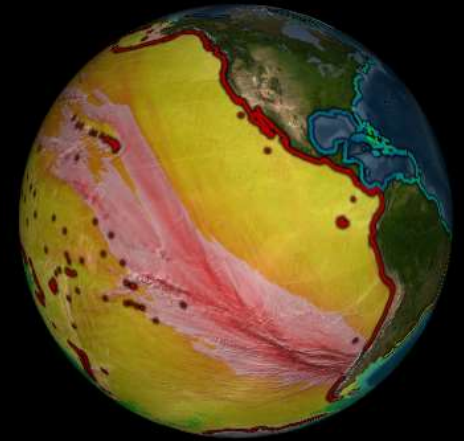
Aleutian Is.
1957



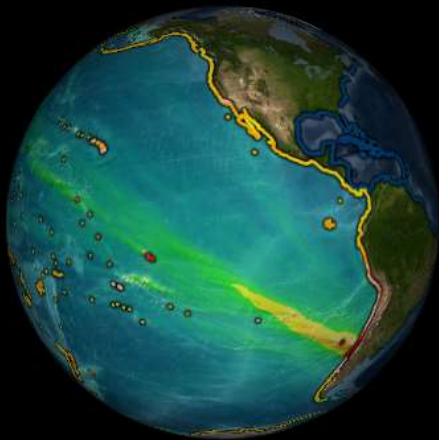
Cascadia
1700



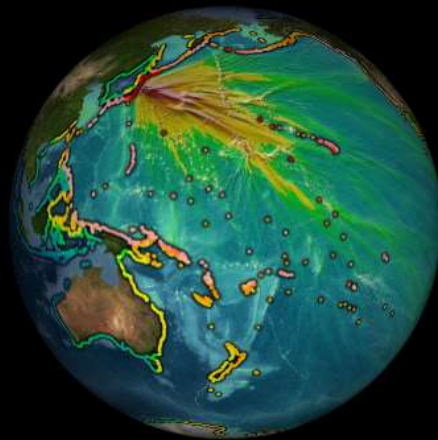
Chile
1960



Chile
2010



Japan
2011



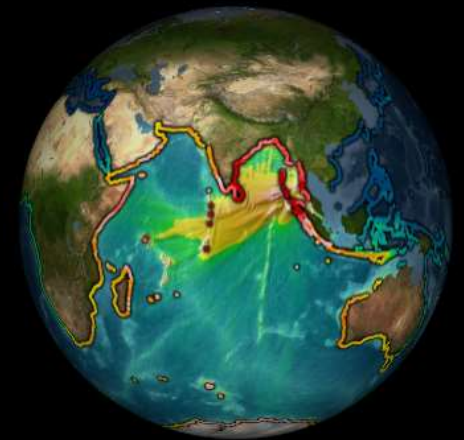
Lisbon
1755



Samoa
2009



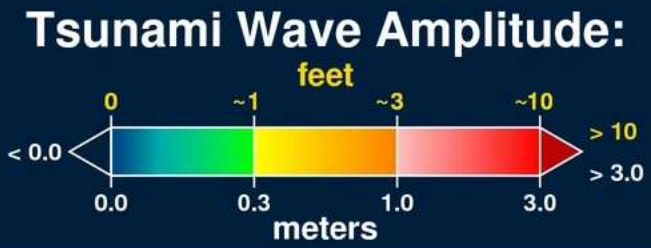
Sumatra
2004



Samoa 2009

Elapsed
Time:
00 hr
01 min

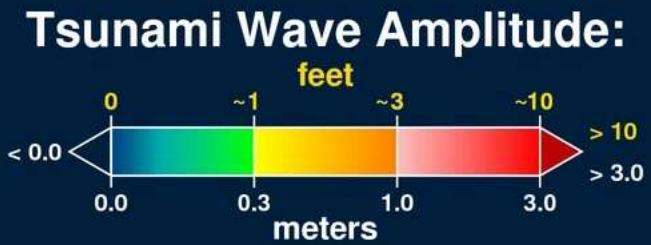
UTC:
2009
29 Sep
17:49 Z



Sumatra 2004

Elapsed
Time:
00 hr
01 min

UTC:
2004
26 Dec
00:59 Z

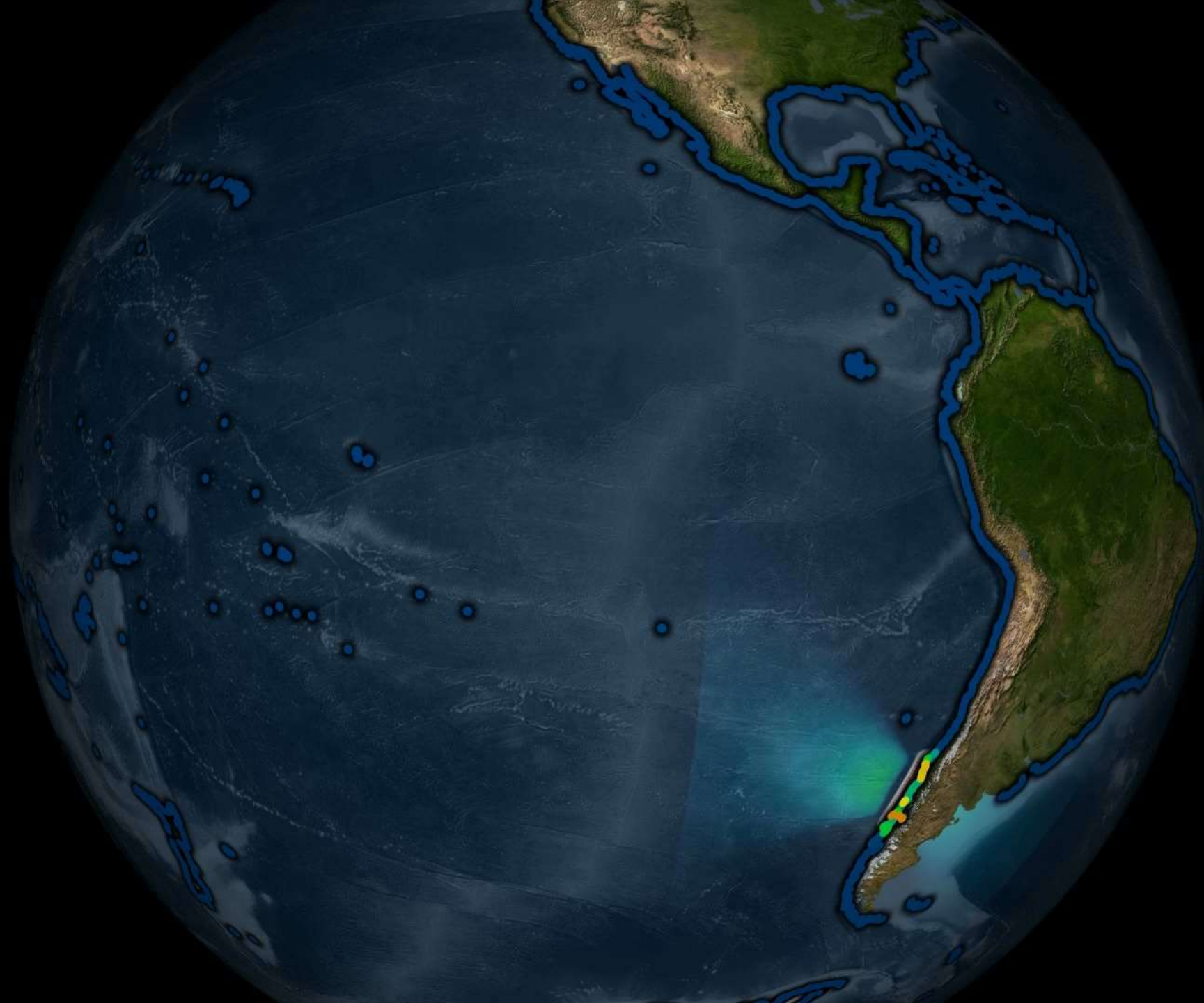
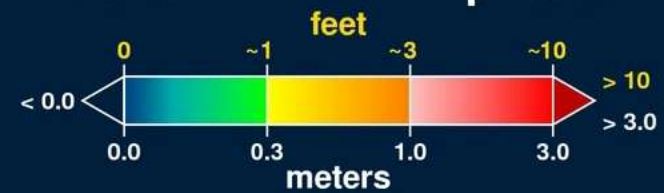


Chile 1960

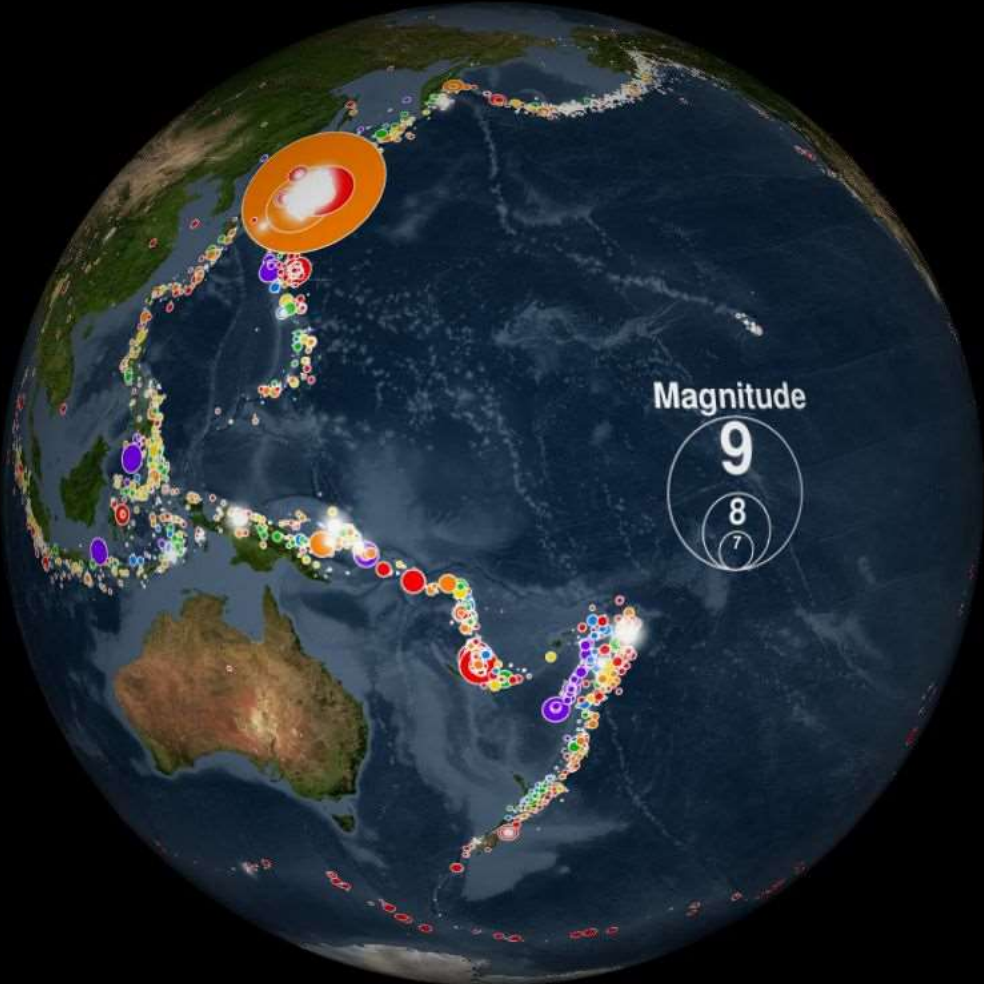
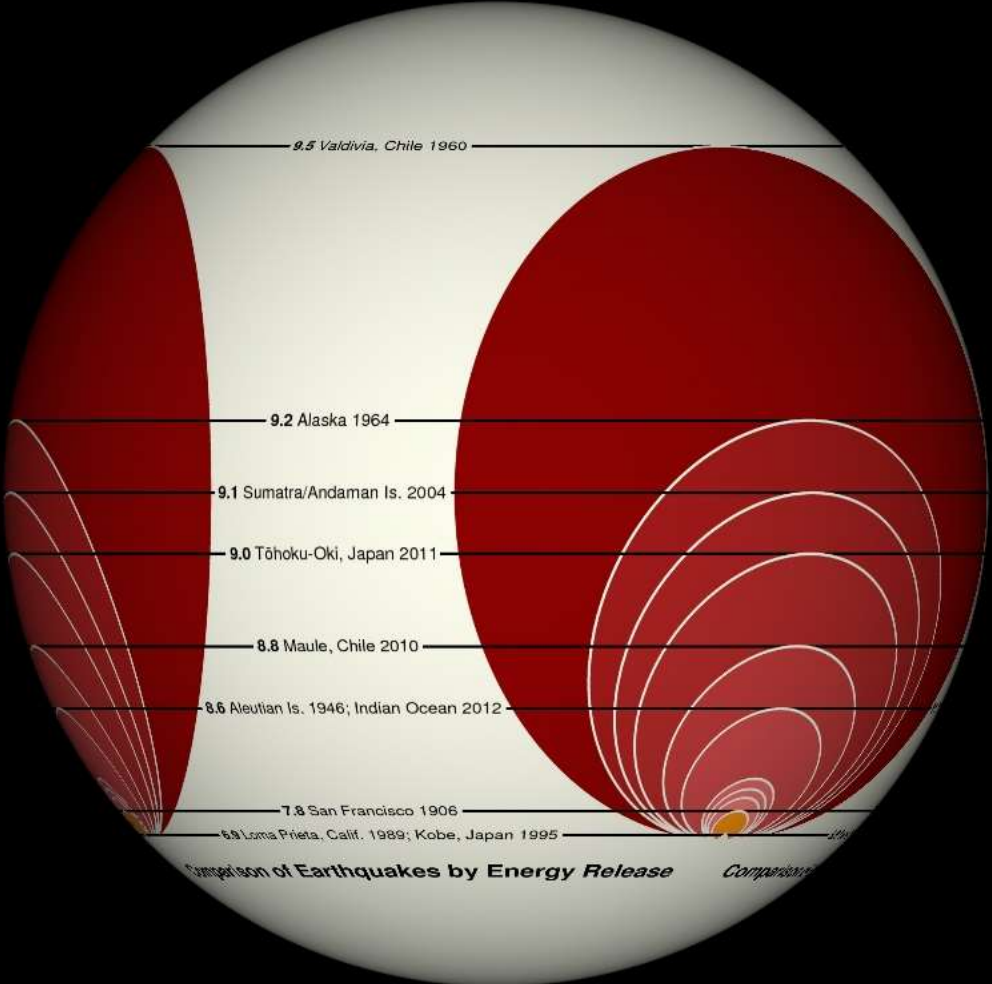
Elapsed
Time:
00 hr
01 min

UTC:
1960
22 May
19:12 Z

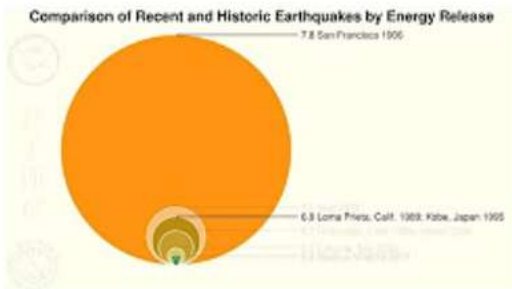
Tsunami Wave Amplitude:



Earthquake Animations Too!



www.youtube.com/user/PacificTWC

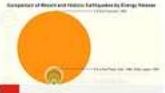


NOAA Science-on-a-Sphere Companion Videos

PacificTWC • 12 videos • 149 views • Last updated on Mar 25, 2017


Companion "flat earth" animations for PTWC's contributions to NOAA Science-on-a-Sphere exhibits

<http://sos.noaa.gov/Datasets/search.php?q=ptwc>

- 1



Perspective: a graphical comparison of earthquake energy release
 by PacificTWC

1:53

- 2



Earthquakes of the First 15 Years of the 21st Century
 by PacificTWC

3:50

- 3


Tsunami Forecast Model Animation: Alaska 1964
 by PacificTWC

1:27

- 4


Tsunami Forecast Model Animation: Aleutian Islands 1946
 by PacificTWC

1:50

- 5


Tsunami Forecast Model Animation: Aleutian Islands 1957
 by PacificTWC

1:50

Final Thoughts

- A comprehensive, consistent library of tsunami animations allows for side-by-side comparison of these complex global phenomena
- Such a library also helps prepare audiences and docents for future tsunami presentations, including those given in real-time