

## QUICK INFO: TSUNAMI TRAVEL TIME CALCULATION

For more info, see *TTT\_README\_aug2023.pdf* or  
*TTT\_calc\_ttt\_auto\_README\_feb22.pdf* in *TTT Package folder*

### PLOT INSTRUCTIONS

1. Open *ttt\_calc32.exe* or *ttt\_calc64.exe*, double click the *TTT\_CALC32* or *TTT\_CALC64* icon on desktop
2. Follow directions in screen shot to the right, e.g., input
  - map title < 50 characters
  - latitude, longitude
  - location of plots to be made (Pacific)
  - output travel times (or arrival times)
  - bathy file to use (10-min grid for fast plot; 2 min-grid for most accurate (takes longer))
  - plot sea level stations, plot historical seismicity
3. The script will
  - create a binary grid file of tsunami travel times (or arrival times)
  - output file of tsunami arrival or travel times at user-input locations
  - create up to 3 tsunami travel time plots (in .png format and .ps format). Plots are Pacific, regional, local map boundaries
4. Plot files are found in *TTT\_examples* under folder *TTT\_AUTO\_XXXXXXX*, where *XXXXXX* corresponds to plot time (hrmnsec)
5. Example is source at NWS Pago Pago office. 20-min bathymetry is used and plots are made for the entire Pacific Ocean, near the source, and the SW Pacific region. 3 tsunami travel time maps automatically produced (.png format)

TTT CALC 09/2020

## Tsunami Travel Time Calculator

INTERNATIONAL TSUNAMI INFORMATION CENTER  
WWW.TSUNAMIWAVE.ORG

Input information stored in TTT\_Input.txt  
Output stored in C:\TTT Package\Examples

Please Enter Title You Would Like For Map:

Source Latitude (decimal degrees, N(+), S(-)):

Source Longitude (decimal degrees, E(+), W(-)):

Please Select Region the Ocean Event is Occurring in:

Pacific Ocean Selected,  
Please Select Zoomed PO Region to Plot:

Please Note: Output times at locations  
arrival times are calculated correctly only for events years 1970-2038)

Select What You Would Like Outputted

Select bathymetry grid file to use,  
15min recommended for fast run.

Options are (arc min): 60, 30, 20, 15, 10, 5, 2, 1:

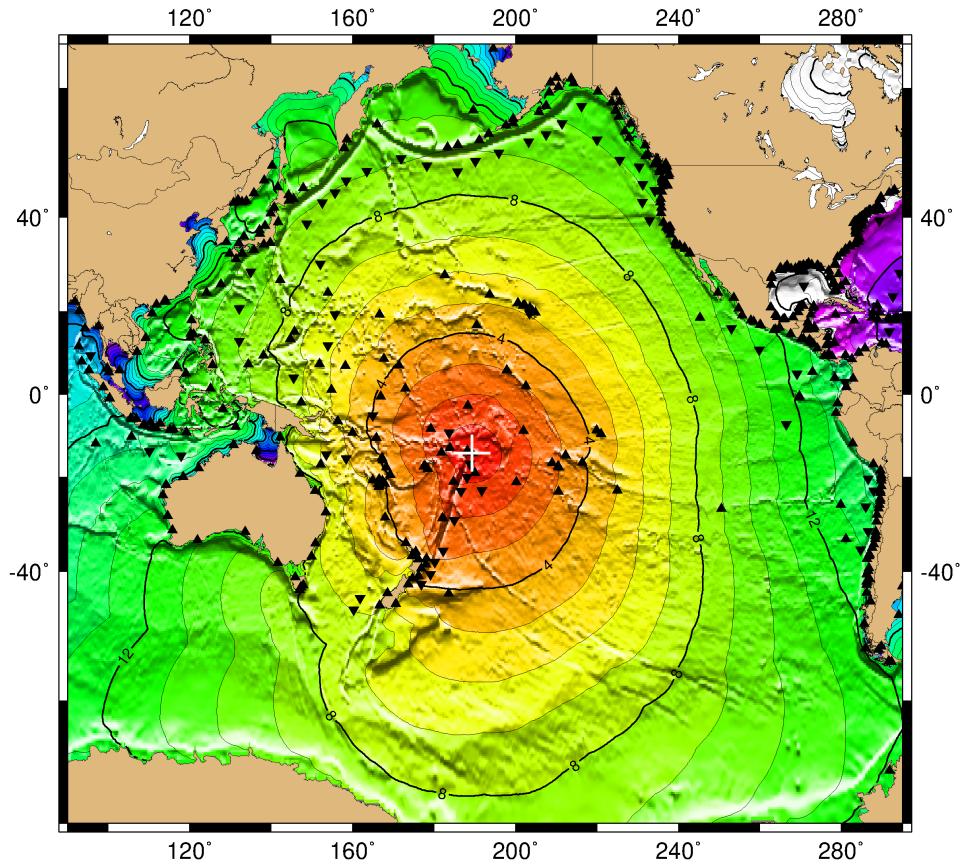
Plot Sea Level Stations?

Plot Historical Earthquakes? (Centennial List)

### Notes:

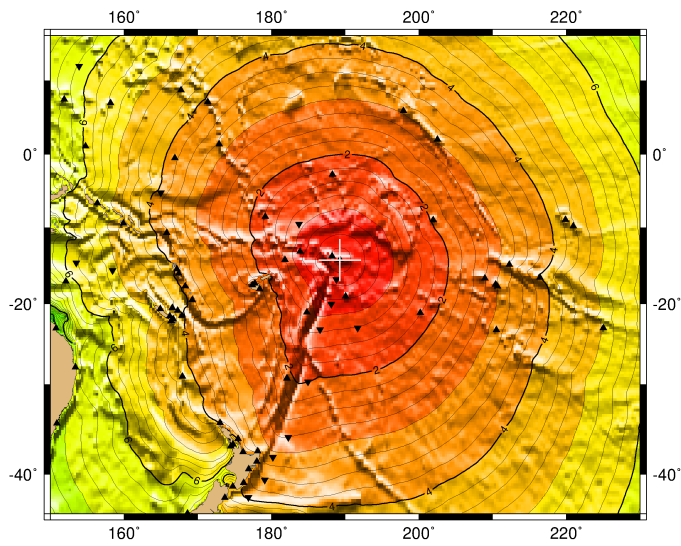
- Tsunami travel times are calculated from sea floor bathymetry. Therefore, they are estimates predicting the arrival time. The actual time may differ by 10s of minutes
- For local tsunamis, because the source is near, calculated tsunami travel times using the actual epicenter may over- or under-estimate because of uncertainties in the near-source bathymetry and nature of the earthquake rupture.

### Pago Pago



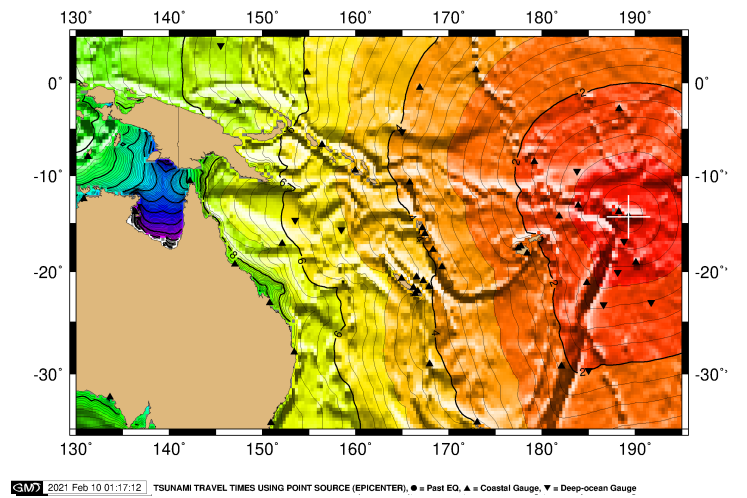
GM7 | 2021 Feb 10 01:17:11 | TSUNAMI TRAVEL TIMES USING POINT SOURCE (EPICENTER), ● = Past EQ, ▲ = Coastal Gauge, ▼ = Deep-ocean Gauge

### Pago Pago



GM7 | 2021 Feb 10 01:17:11 | TSUNAMI TRAVEL TIMES USING POINT SOURCE (EPICENTER), ● = Past EQ, ▲ = Coastal Gauge, ▼ = Deep-ocean Gauge

### Southwest Pacific



GM7 | 2021 Feb 10 01:17:12 | TSUNAMI TRAVEL TIMES USING POINT SOURCE (EPICENTER), ● = Past EQ, ▲ = Coastal Gauge, ▼ = Deep-ocean Gauge