



ICG/PTWS Steering Committee Meeting
March 6-8, 2023
UNESCO Headquarters, Paris, France

PTWC TSP Report

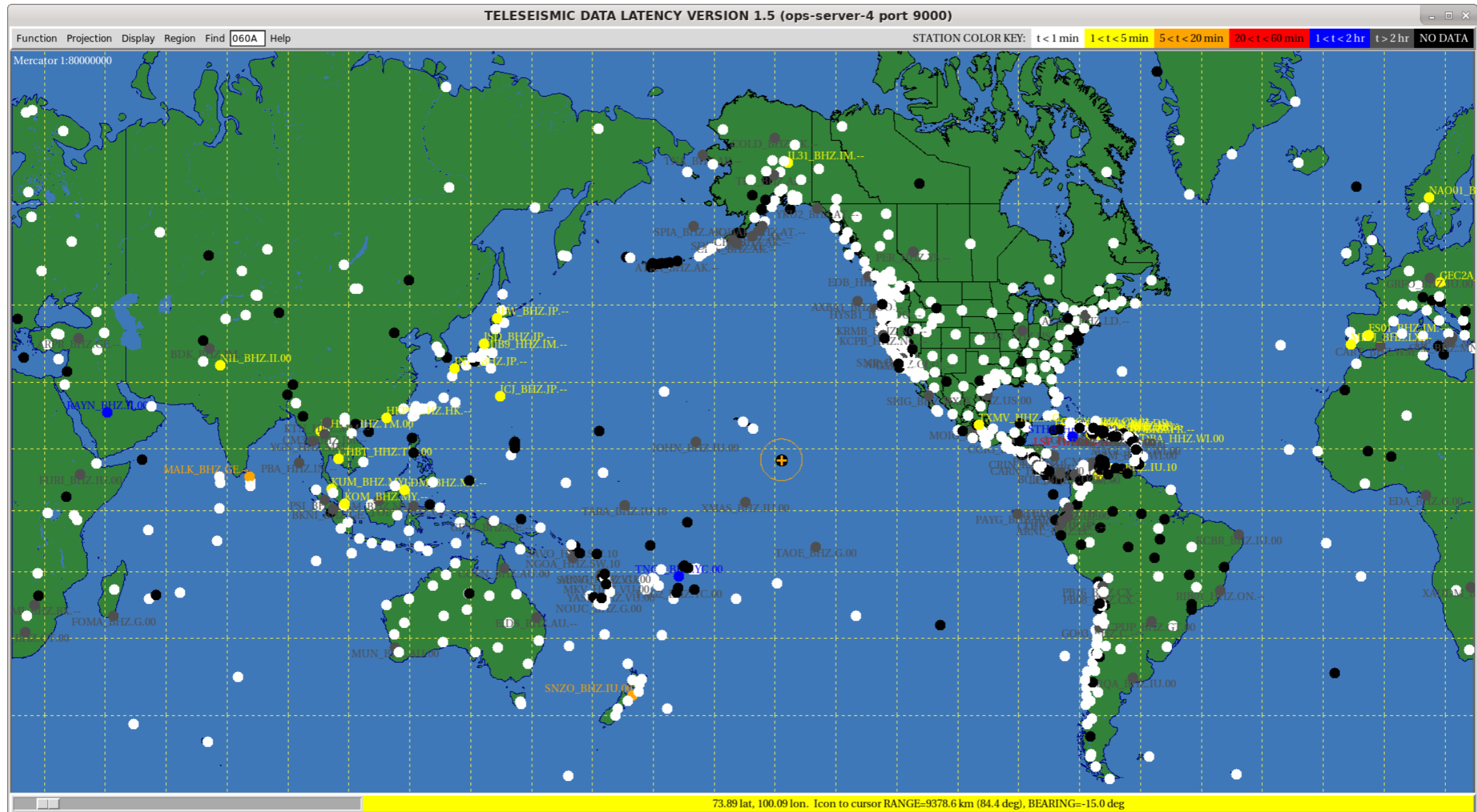
Chip McCreery, PTWC Director
charles.mccreery@noaa.gov
808-725-6301



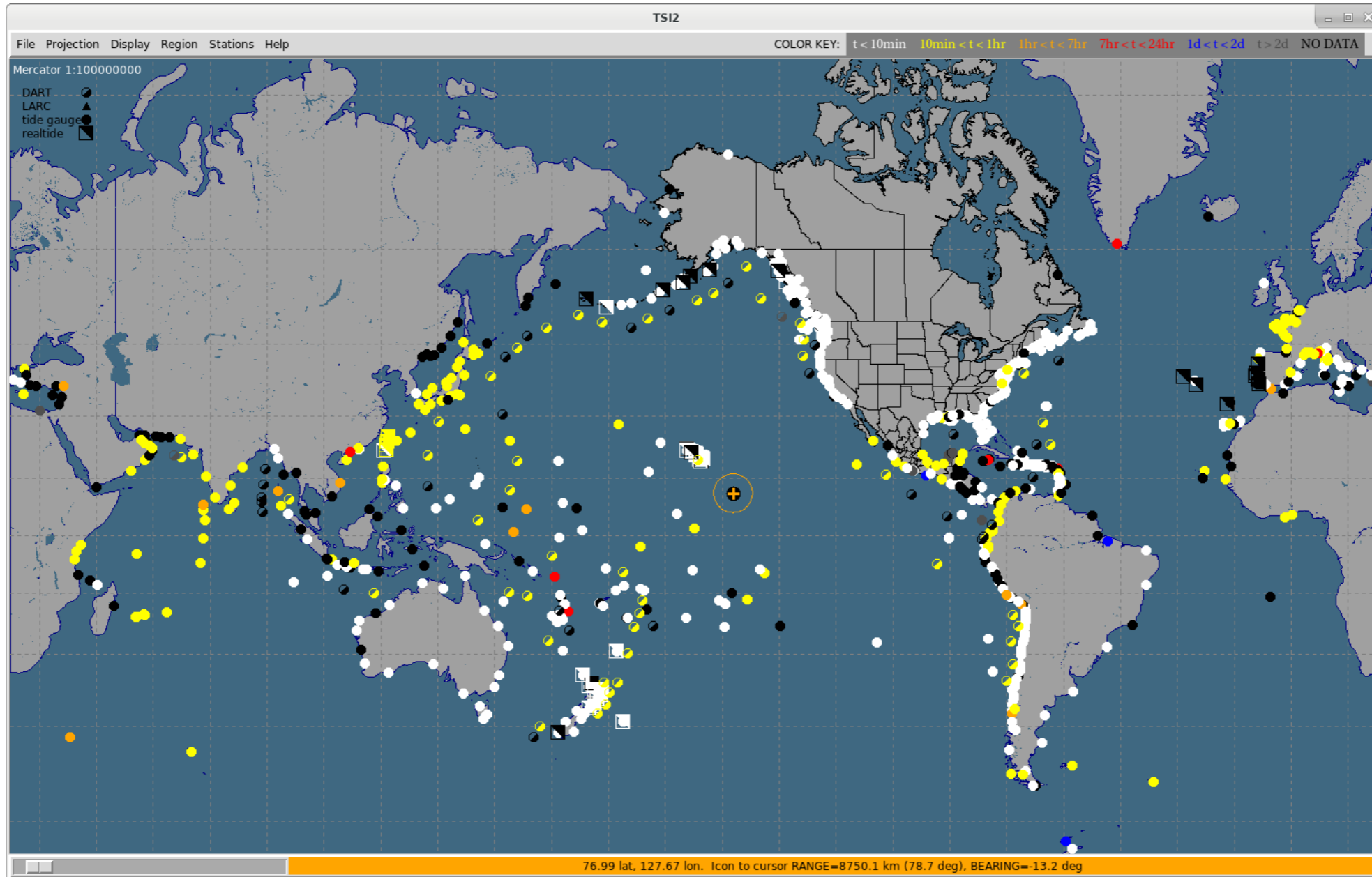
PTWC Current Staff

- ❑ **Director:** Charles McCreery
- ❑ **Science Officer:** Stuart Weinstein
- ❑ **Electronic Systems Analyst:** Earl Jerome ← **New Position**
- ❑ **Administrative Assistant:** Vacant
- ❑ **Duty Scientists:** Dailin Wang, David Walsh,
Nathan Becker, Kanoa Koyanagi,
Stan Goosby, Andrei Natarov,
Jonathan Weiss, **3 Vacant**
- ❑ **IT Specialist:** Aaron Beers ← **New Position**
- ❑ **IT Contractor:** Sean Gleason
- ❑ **Electronics Technician:** Lynn Kaisan

PTWC Current Seismic Data



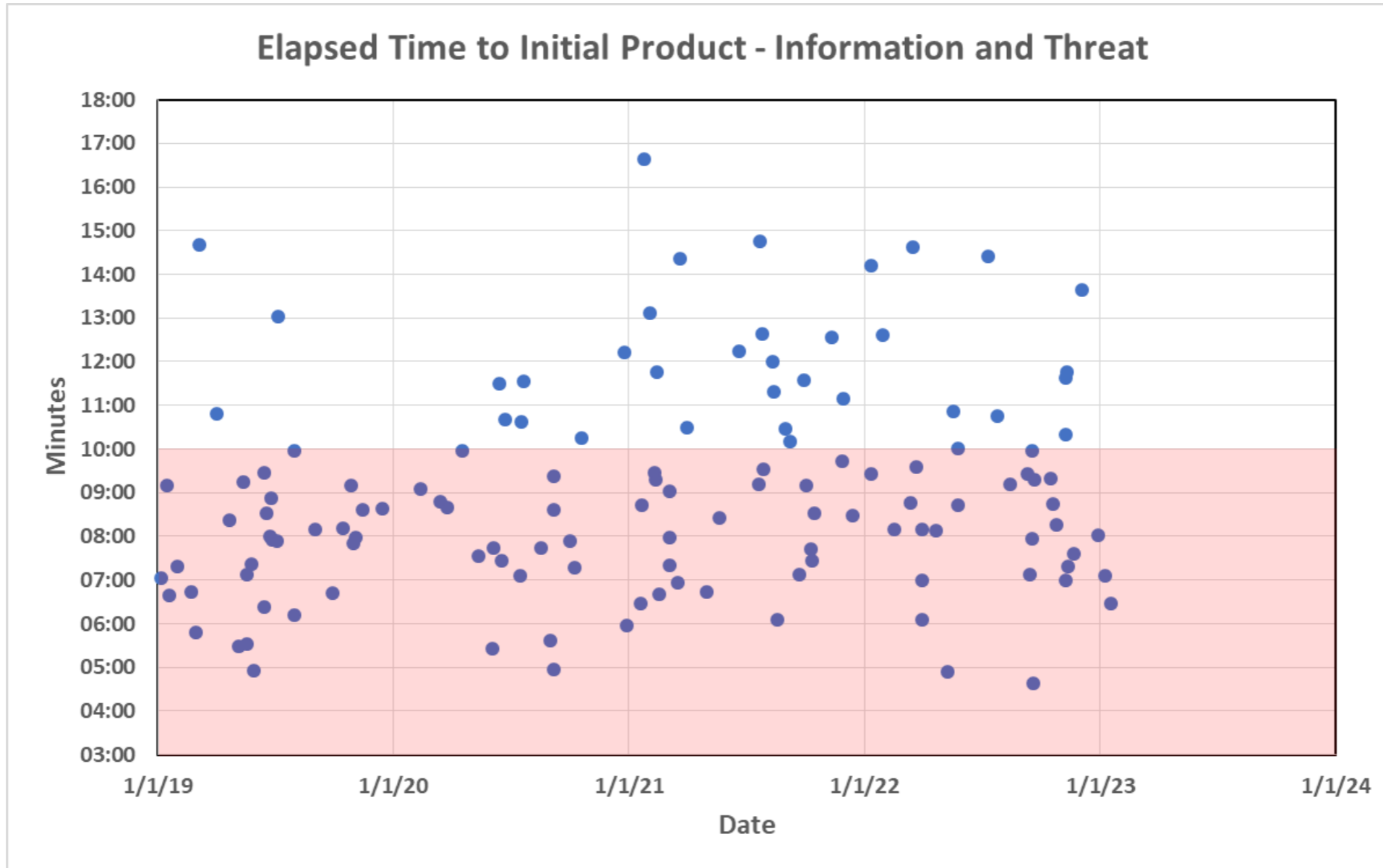
PTWC Current Sea Level Data



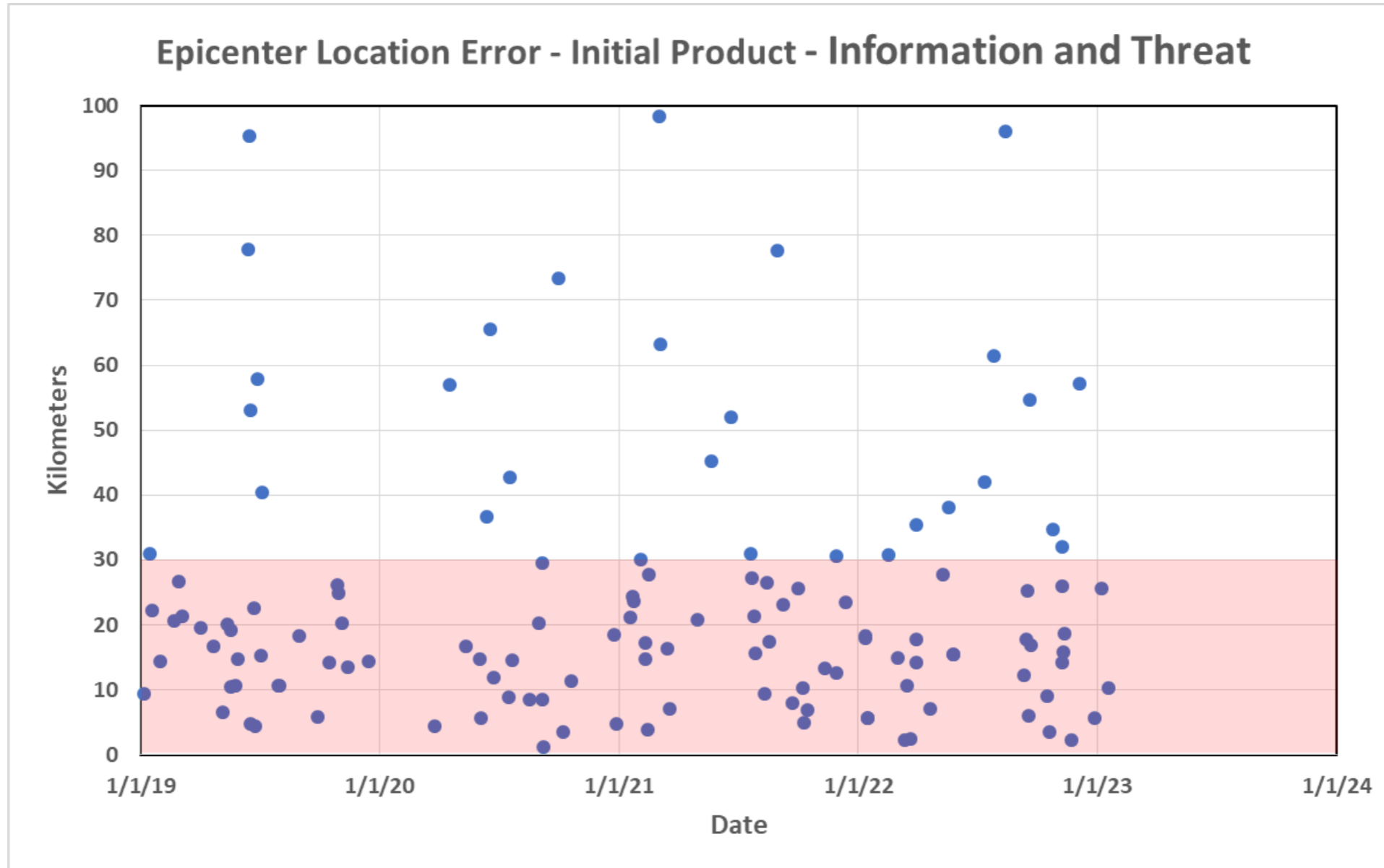
Events Since the Last ICG/PTWS Meeting

- **28 Tsunami Information Statements**
- **13 Tsunami Threat Sequences**
 - 12/14/21 – Mw 7.3 Flores Sea (7 cm)
 - 01/15/22 – Mw *.* Hunga Tonga Volcano (16 m)
 - 03/16/22 – Mw 7.3 Japan (30 cm)
 - 03/31/22 – Mw 7.0 Loyalty Islands (5 cm)
 - 05/19/22 – Mw 6.9 Macquarie Islands (-)
 - 09/10/22 – Mw 7.6 Papua New Guinea (-)
 - 09/18/22 – Mw 6.9 Taiwan (-)
 - 09/19/22 – Mw 7.6 Mexico (79 cm)
 - 10/20/22 – Mw 6.7 Panama (-)
 - 11/11/22 – Mw 7.3 Tonga (12 cm)
 - 11/22/22 – Mw 7.0 Solomon Islands (3 cm)
 - 01/08/23 – Mw 7.0 Vanuatu (-)

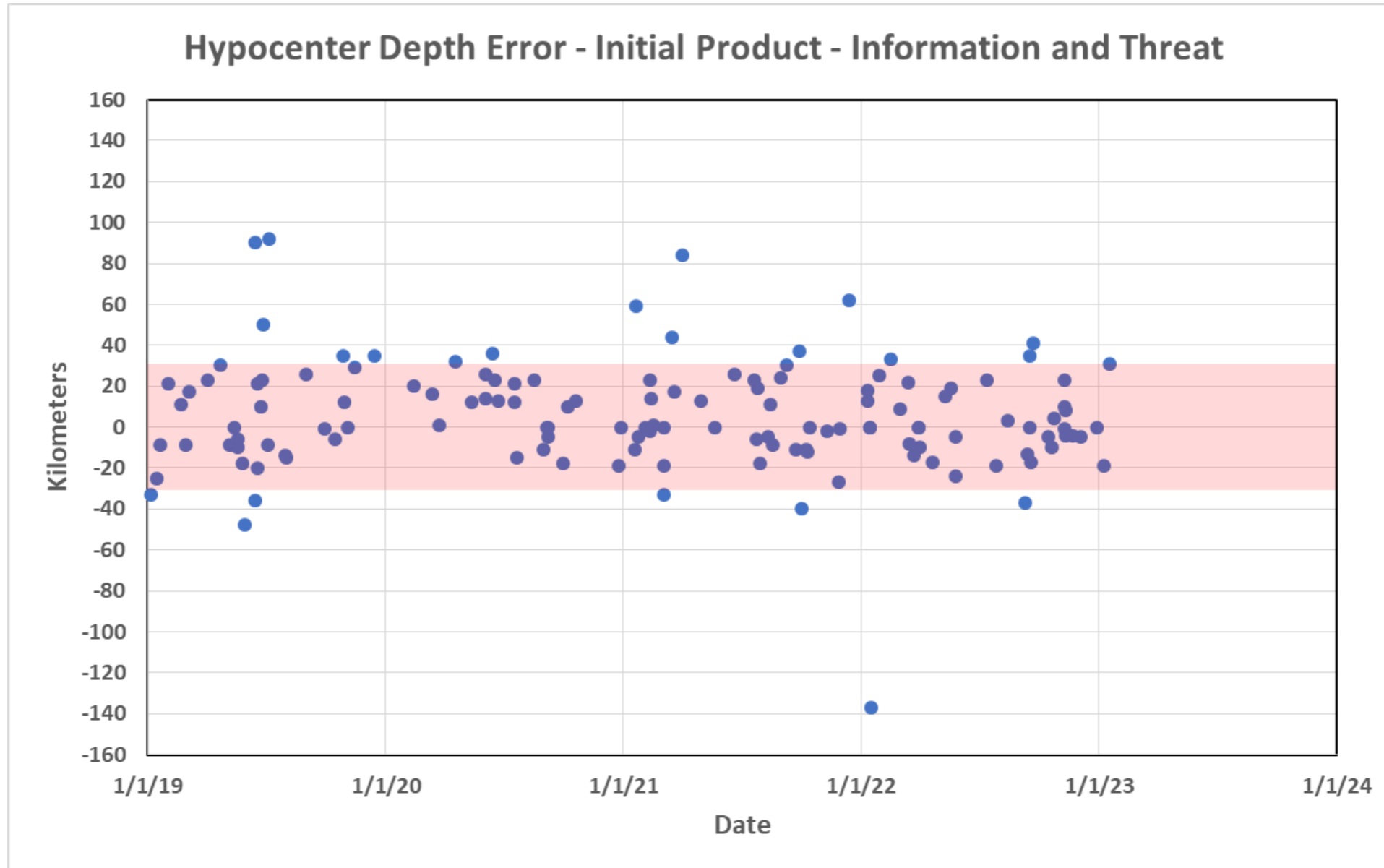
TSP Key Performance Indicators from GSDD



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Hunga Tonga Hunga Ha`apai Volcano



- **PTWC alerted by signal on Nukualofa Gauge (gauge was alarmed)**
- **12 Messages Issued (but with some dissemination problems)**
- **Tsunami waves were generated and observed globally**
- **Generation mechanism still being studied (atmospheric pressure wave)**
- **PTWC, with guidance from WG2 Task Team on HTHH developed and implemented new products in case of another similar tsunami from HTHH**
 - **Briefings conducted**
 - **Manual published**
 - **Exercise held**
- **CaribeWave 23 Exercise – Mt Pelee Volcano Tsunami**
- **TOWS Task Team on Tsunamis Generated by Volcanoes (TGV) has produced a comprehensive report with recommendations for addressing TGVs**

Communications Testing



- ❑ **Monthly scheduled tests were conducted with no problems reported.**
- ❑ **Quarterly unscheduled tests were not conducted but they will resume before the next ICG.**

Upcoming Product Changes

- ❑ **Initial Threat Message – Countries and territories in alphabetical order**
- ❑ **ETAs grouped by Country or Territory**
- ❑ **Observations grouped by Country or Territory**
- ❑ **Observations tagged by Type – Middle-to-Peak, Middle-to-Trough, Half Peak-to-Trough**
- ❑ **Add language about small possibility of a local tsunami in Tsunami Information Statements?**
- ❑ **Base initial alerts on travel time or model versus on distance (e.g., ETA within an hour versus areas within 300 km, or on preliminary RIFT forecast versus within 300 km)?**
- ❑ **A few new requested ETA forecast points**

Country Lists are Alphabetical



TSUNAMI THREAT FORECAST

- * TSUNAMI WAVES REACHING MORE THAN 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

PERU.

- * TSUNAMI WAVES REACHING 1 TO 3 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE ALONG SOME COASTS OF

ECUADOR... FIJI... FRENCH POLYNESIA... HAWAII...
KIRIBATI... NEW ZEALAND... NIUE... PITCAIRN ISLANDS...
TONGA... AND VANUATU.

- * TSUNAMI WAVES REACHING 0.3 TO 1 METERS ABOVE THE TIDE LEVEL ARE POSSIBLE FOR SOME COASTS OF

AMERICAN SAMOA... ANTARCTICA... AUSTRALIA... CHILE...
CHUUK... COLOMBIA... COOK ISLANDS... COSTA RICA... EL
SALVADOR... GUAM... GUATEMALA... HONDURAS... HOWLAND AND
BAKER... INDONESIA... JAPAN... JARVIS ISLAND... JOHNSTON
ATOLL... KERMADEC ISLANDS... KOSRAE... MARSHALL ISLANDS...
MEXICO... MIDWAY ISLAND... NAURU... NICARAGUA... NORTHERN
MARIANAS... NORTHWESTERN HAWAIIAN ISLANDS... PALAU...
PALMYRA ISLAND... PANAMA... PAPUA NEW GUINEA...
PHILIPPINES... POHNPEI... RUSSIA... SAMOA... SOLOMON
ISLANDS... TAIWAN... TOKELAU... TUVALU... WAKE ISLAND...
AND WALLIS AND FUTUNA.

Delete “Less than 0.3 meter” Section



* TSUNAMI WAVES ARE FORECAST TO BE LESS THAN 0.3 METERS ABOVE
THE TIDE LEVEL FOR THE COASTS OF

BRUNEI... CHINA... MALAYSIA... VIETNAM... AND YAP.

ETAs Grouped by Country



ESTIMATED TIMES OF ARRIVAL

* ESTIMATED TIMES OF ARRIVAL -ETA- OF THE INITIAL TSUNAMI WAVE FOR PLACES WITHIN THREATENED REGIONS ARE GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION	COORDINATES	ETA (UTC)

FRENCH POLYNESIA		
HIVA OA	10.0S 139.0W	0224 02/24
RAPA ITI	27.6S 144.3W	0320 02/24
TUBUAI	23.3S 149.5W	0358 02/24
PAPEETE	17.5S 149.6W	0409 02/24
MEXICO		
ENSENADA	31.8N 116.8W	0245 02/24
SAN FELIPE	31.0N 114.8W	0416 02/24
KIRIBATI		
FLINT ISLAND	11.4S 151.8W	0412 02/24
MALDEN ISLAND	3.9S 154.9W	0436 02/24
CHRISTMAS ISLAND	2.0N 157.5W	0514 02/24
KANTON ISLAND	2.8S 171.7W	0654 02/24
TARAWA ISLAND	1.5N 173.0E	0951 02/24
COOK ISLANDS		
PENRYN ISLAND	8.9S 157.8W	0457 02/24
RAROTONGA	21.2S 159.8W	0522 02/24
PUKAPUKA ISLAND	10.8S 165.9W	0612 02/24

Observations Grouped by Country



TSUNAMI OBSERVATIONS

- * THE FOLLOWING ARE TSUNAMI WAVE OBSERVATIONS FROM COASTAL AND/OR DEEP-OCEAN SEA LEVEL GAUGES AT THE INDICATED LOCATIONS. THE MAXIMUM TSUNAMI AMPLITUDE IS MEASURED WITH RESPECT TO THE NORMAL TIDE LEVEL.
- * MEASUREMENT TYPE INDICATES WHAT WAS MEASURED ON THE GAUGE.
 CR - TIDE LEVEL TO THE MAXIMUM TSUNAMI CREST
 TR - TIDE LEVEL TO THE MAXIMUM TSUNAMI TROUGH
 HF - HALF OF THE MAXIMUM TSUNAMI CREST-TO-TROUGH OR TROUGH-TO-CREST
- * THE TIME SHOWN INDICATES THE TIME OF THE RESPECTIVE MAXIMUM CREST OR MAXIMUM TROUGH OR THE TIME HALFWAY BETWEEN THE MAXIMUM CREST-TO-TROUGH OR TROUGH-TO-CREST

GAUGE LOCATION	COORDINATES		TIME	TSUNAMI		MEAS
	LAT	LON	(UTC)	AMPLITUDE		TYPE
USA-CALIFORNIA						
LA JOLLA	32.9N	117.3W	0315	0.89M/	2.9FT	HF
FRENCH POLYNESIA						
NUKU HIVA MARQUESAS	8.9S	140.1W	0242	1.72M/	5.6FT	CR
HIVA OA MARQUESAS	9.8S	139.0W	0233	1.87M/	6.1FT	HF
CHILE						
PUERTO AGUIRRE	45.2S	73.5W	0229	1.02M/	3.4FT	TR
ANCUD	41.9S	73.8W	2259	0.96M/	3.2FT	HF
EASTER	27.2S	109.4W	2240	1.74M/	5.7FT	HF
QUEULE	39.4S	73.2W	2237	1.10M/	3.6FT	HF
BAHIA MANSA	40.6S	73.7W	2231	0.83M/	2.7FT	CR

Observation Type is Noted



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Upcoming Improvements



- ❑ **Additional South Pacific seismic data**
- ❑ **Incorporating GNS data for more rapid, accurate Mw**
- ❑ **Faster RIFT server for faster forecast**
- ❑ **US TWC alignment for seamless backup**
- ❑ **SMARTcable project for more deep ocean sensors (looking way ahead)**
- ❑ **Procedures/Products for any TGV (Tsunamis Generated by Volcanoes)**
- ❑ **Procedures/Products other non-seismically-generated tsunamis**
- ❑ **Maritime Products**



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Thank You
