

# Seismic Energy Forecast for World

2025 October 08-16-20 - potential earthquake or eruption  
in World

Version: 0

First Revision: 2025-10-03 10:57:48

Last Revision: Rev. 0 - 2025-10-03 10:57

# Index

---

1. Revision History

2. Explanation of Terms and Concepts

3. Forecasts

3.1 M 75+ Seismic Energy Forecast (possible earthquake or eruption), res:1 day, UTC  
(focus: cycle2)

3.2 Validation Quality Check

4. Features Used For Magnitude

5. Astronomical Features Used

6. Summary and Conclusion

7. Attribution and Disclaimers

# 1. Revision History

---

Vers ion	Date	Aut hor	Description
0	2025-10-03 10:57:48	MF	Seismic Energy Forecast for Potential Earthquake or Eruption in World
	first emission		

## 2. Explanation of Terms and Concepts

---

### About Features used to produce this forecast

We produced this forecast using the following specific source:

1. astronomical solar system data (same day - 0 shift)
2. seismic sensor GPS data (60 days shift)
3. tropospheric data (60 days shift)

The Purpose it to demonstrate the validity of using GPS + TROPO data several week before a seismic event.

Time series sharpness achievable by astronomical data only can be up to 7 days.

This study demonstrate that using augmented data in past geophysical observations can rise the time line sharpness up to 24 hrs and more.

---

### About Graph system

*Note: **trend** graph*

Forecast graph and tables refer to a base value, against it.

For instance if a value of 37 per latitude is the base line and graph value is 0% it means that the location estimated for that period of time is UNDER 37.

Another example is for magnitude graph, with baseline Mw 7.0, 0% means no risk detected, and 100% means high risk detected

---

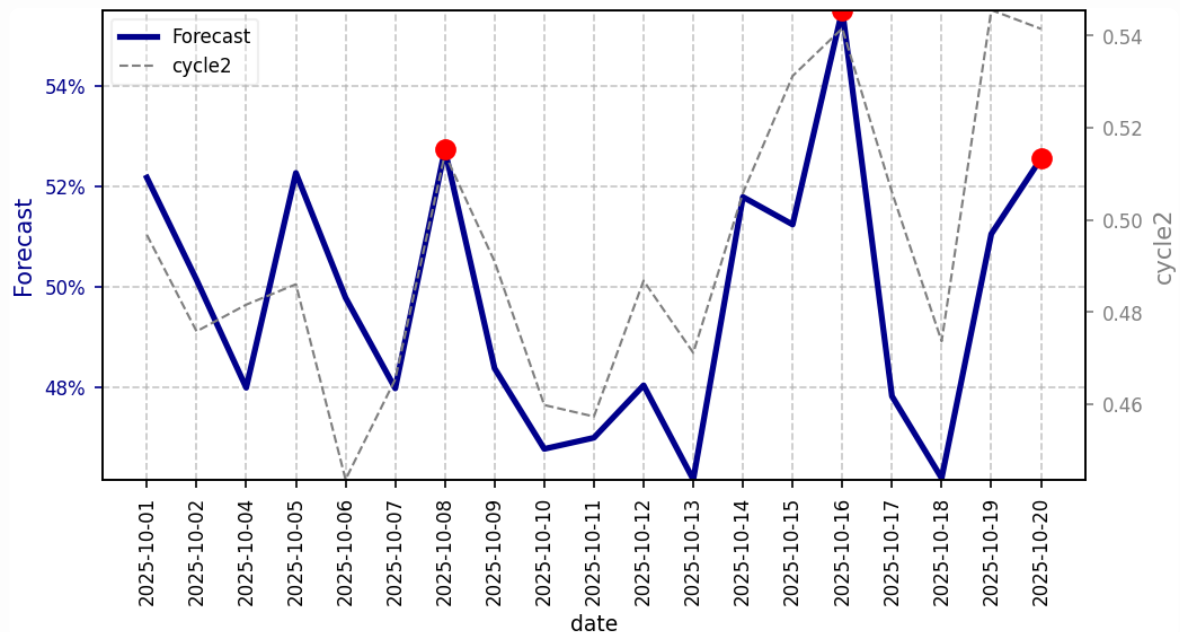
### About Time Slot

*Note: each date point represent **the beginning of the time slot***

For instance if a forecast time point is on 2025-01-01 and the graph resolution is 7 days, it's a forecast for 2025-01-01 until 2025-01-06 (UTC)

### 3. Forecasts

#### 3.1 M 75+ Seismic Energy Forecast (possible earthquake or eruption), res:1 day, UTC (focus: cycle2)



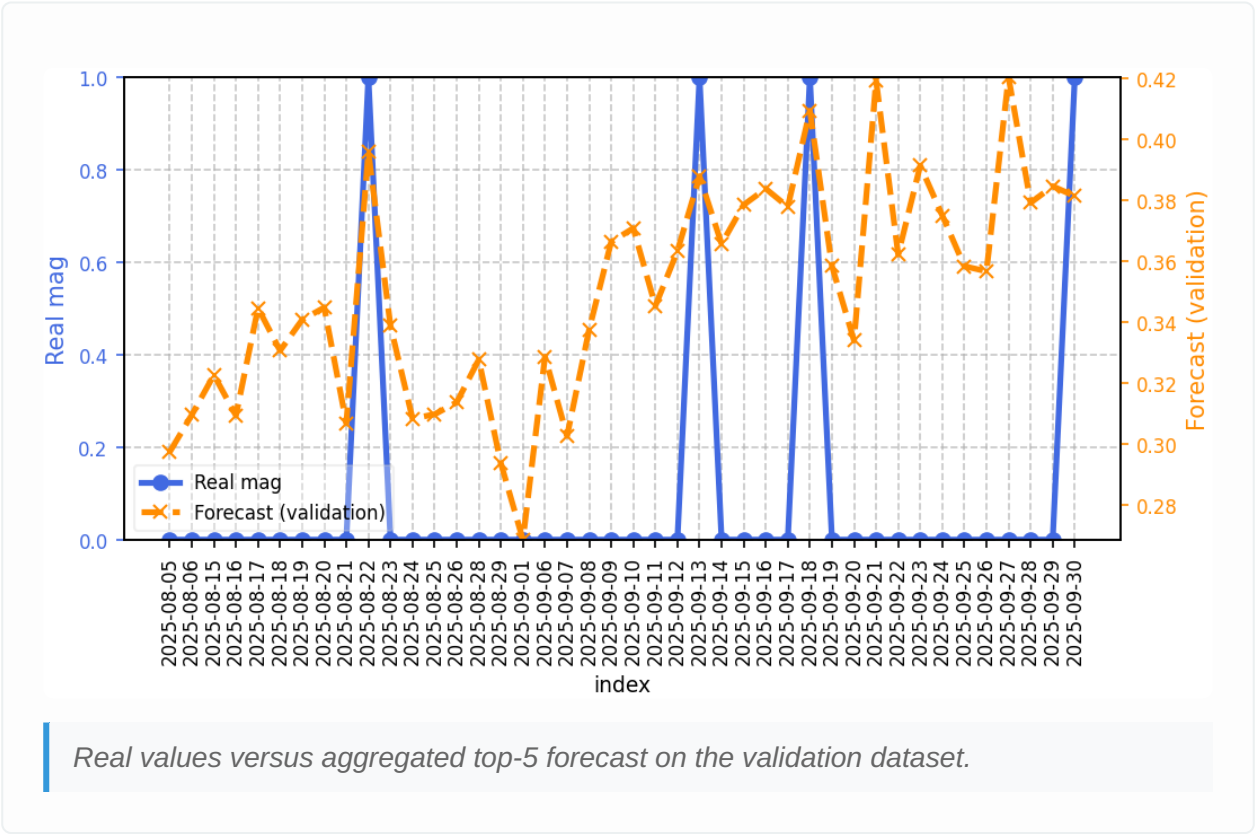
#### ⚠ Higher Risk Detected for Following Dates:

- 1. from 2025-10-16 to 2025-10-17 (UTC) - Risk Value: 0.555
- 2. from 2025-10-08 to 2025-10-09 (UTC) - Risk Value: 0.527
- 3. from 2025-10-20 to 2025-10-21 (UTC) - Risk Value: 0.526

Each date represent the BEGINNING of time slot

This seismic energy forecast highlights potential earthquakes or eruptions in World.

### 3.2 Validation Quality Check



## 4. Features Used For Magnitude

---

### Combined Features Analysis Report - trialsetGPS\_20251003-102950

---

**Generated:** 2025-10-03T20:33:25.405240 **Cycles Analyzed:** explore, cycle1, cycle2, cycle3, cycle4

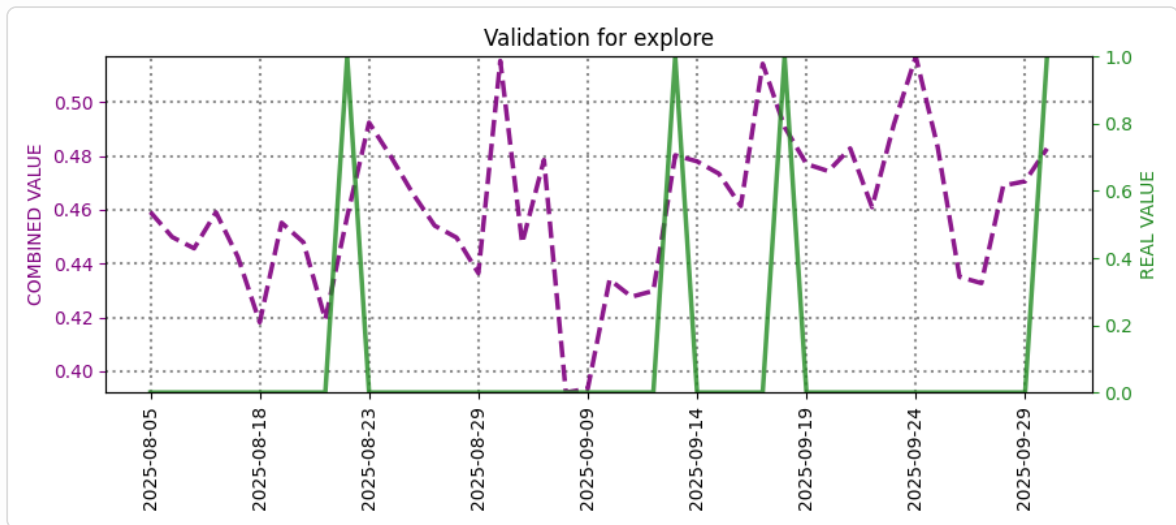
## EXPLORE Analysis

### Trial Statistics

Metric	Min	Max	Average
Hyperopt Loss (lower is better)	0.57	0.85	0.71
Metric Score (f1) (lower is better)	0.68	0.72	0.70

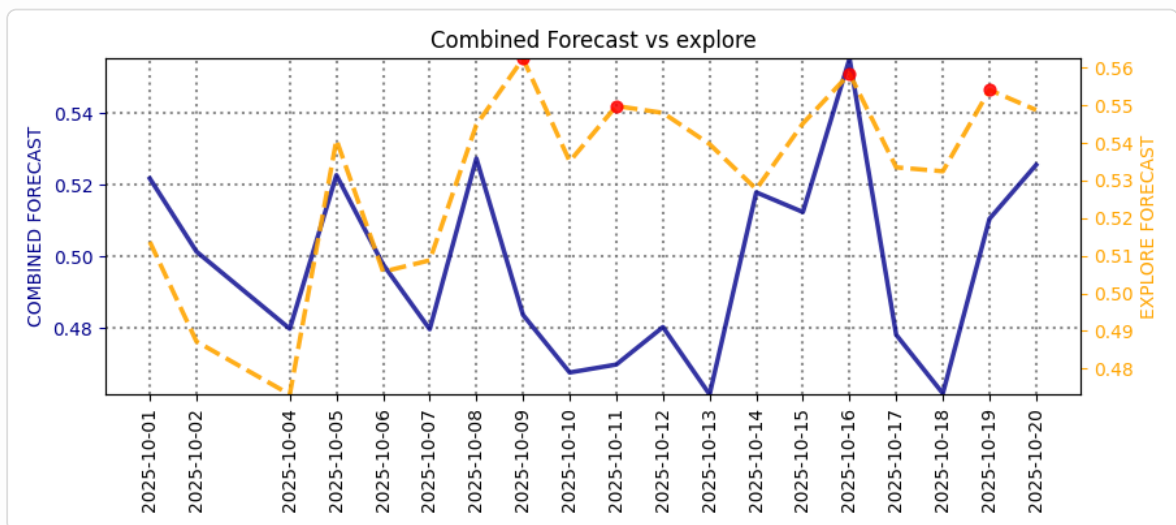
### Validation Analysis

Best trial validation for this cycle contrasted with real values.



### Forecast Analysis

Best trial forecast for this cycle versus the combined forecast.





## Complete Dataset Overview

*Analysis of ALL features present in the source files*

	Astro	Tropo	Pos
Count	15	55	51
Percentage	12.1%	44.4%	41.1%

## Summary Insights

Complete Dataset:

- **Astronomical data** represents 12.1% of all features (15 features)
  - **Tropospheric data** represents 44.4% of all features (55 features)
  - **Position/GPS data** represents 41.1% of all features (51 features)
  - **Target variables** represent 1.6% of all features (2 features)
  - **Dominant category in complete dataset:** Tropo features
-

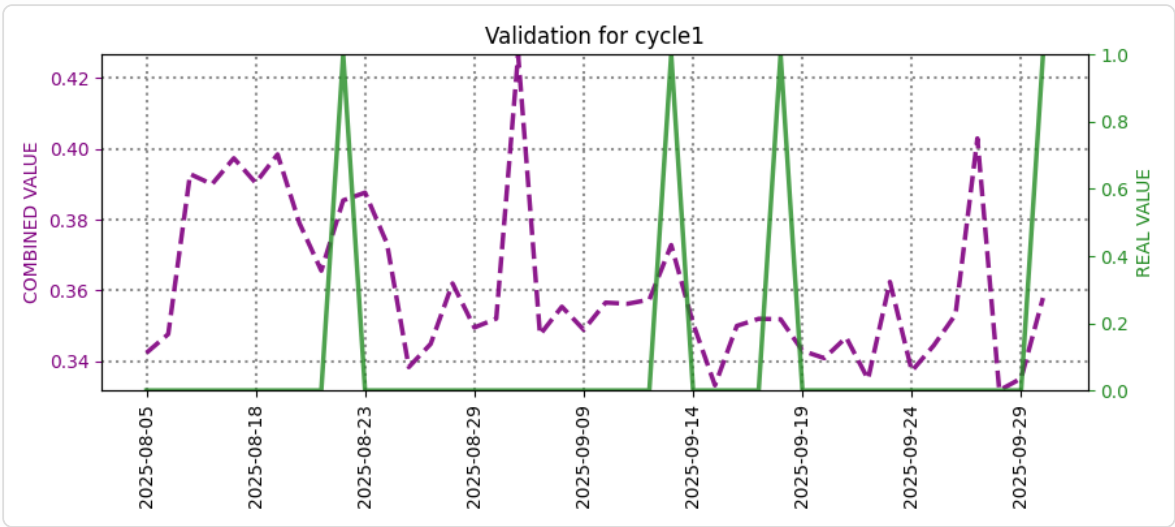
## CYCLE1 Analysis

### Trial Statistics

Metric	Min	Max	Average
Hyperopt Loss (lower is better)	0.59	0.76	0.68
Metric Score (f1) (lower is better)	0.71	0.76	0.74

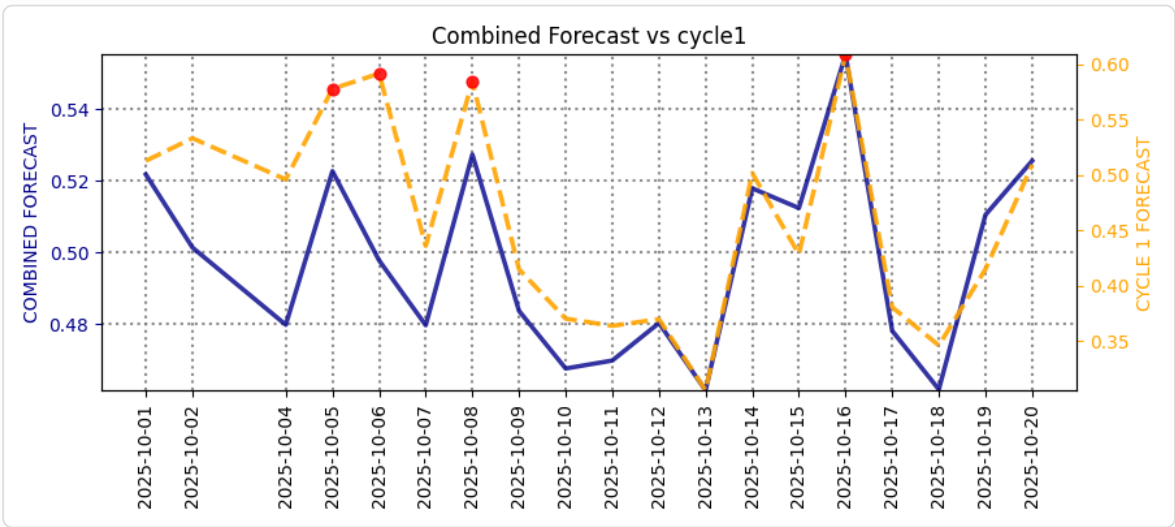
### Validation Analysis

Best trial validation for this cycle contrasted with real values.



### Forecast Analysis

Best trial forecast for this cycle versus the combined forecast.



## Complete Dataset Overview

*Analysis of ALL features present in the source files*

	Astro	Tropo	Pos
Count	13	46	59
Percentage	10.7%	38.0%	48.8%

## Summary Insights

Complete Dataset:

- **Astronomical data** represents 10.7% of all features (13 features)
  - **Tropospheric data** represents 38.0% of all features (46 features)
  - **Position/GPS data** represents 48.8% of all features (59 features)
  - **Target variables** represent 1.7% of all features (2 features)
  - **Dominant category in complete dataset:** Pos features
-

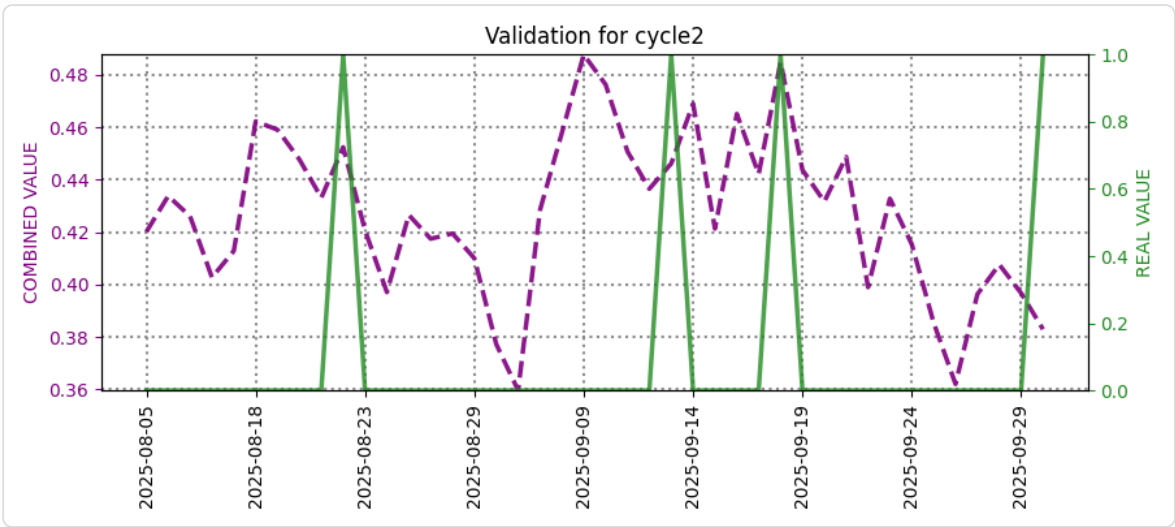
## CYCLE2 Analysis

### Trial Statistics

Metric	Min	Max	Average
Hyperopt Loss (lower is better)	0.56	0.80	0.68
Metric Score (f1) (lower is better)	0.68	0.76	0.73

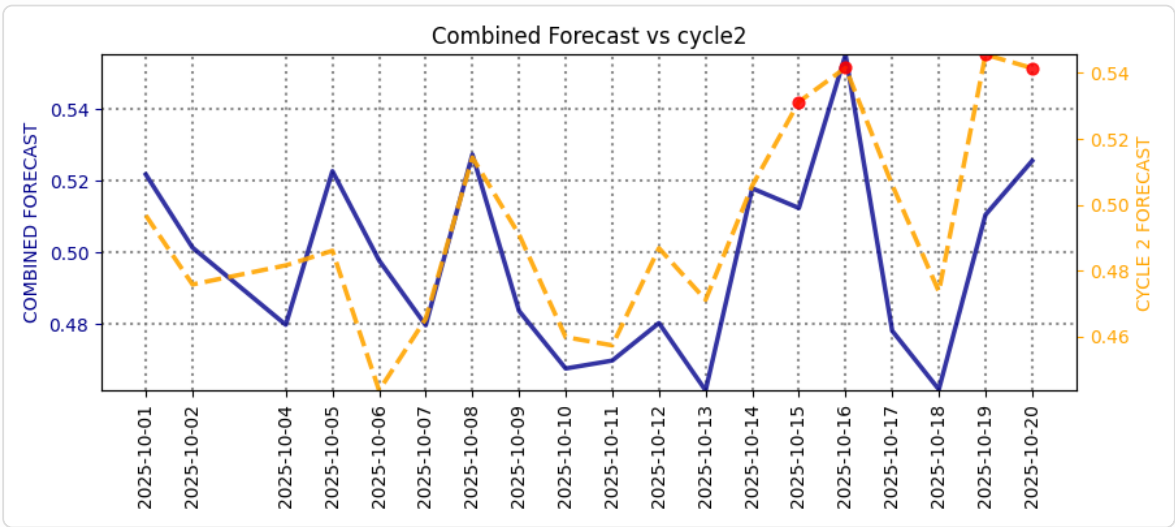
### Validation Analysis

Best trial validation for this cycle contrasted with real values.



### Forecast Analysis

Best trial forecast for this cycle versus the combined forecast.



## Complete Dataset Overview

Analysis of ALL features present in the source files

	Astro	Tropo	Pos
Count	27	45	44
Percentage	22.7%	37.8%	37.0%

## Summary Insights

Complete Dataset:

- **Astronomical data** represents 22.7% of all features (27 features)
  - **Tropospheric data** represents 37.8% of all features (45 features)
  - **Position/GPS data** represents 37.0% of all features (44 features)
  - **Target variables** represent 1.7% of all features (2 features)
  - **Dominant category in complete dataset:** Tropo features
-

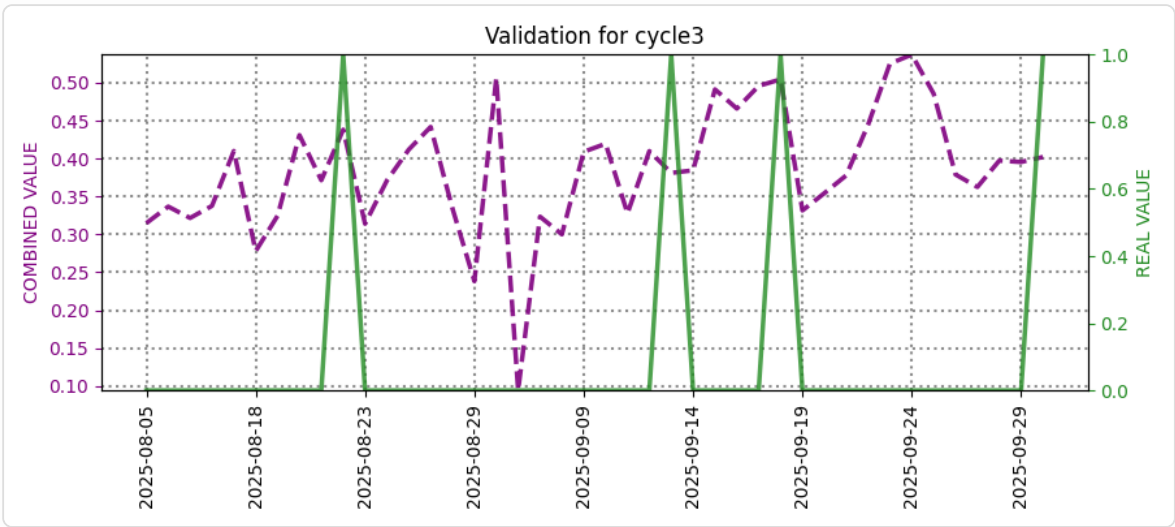
## CYCLE3 Analysis

### Trial Statistics

Metric	Min	Max	Average
Hyperopt Loss (lower is better)	0.54	0.82	0.67
Metric Score (f1) (lower is better)	0.68	0.76	0.73

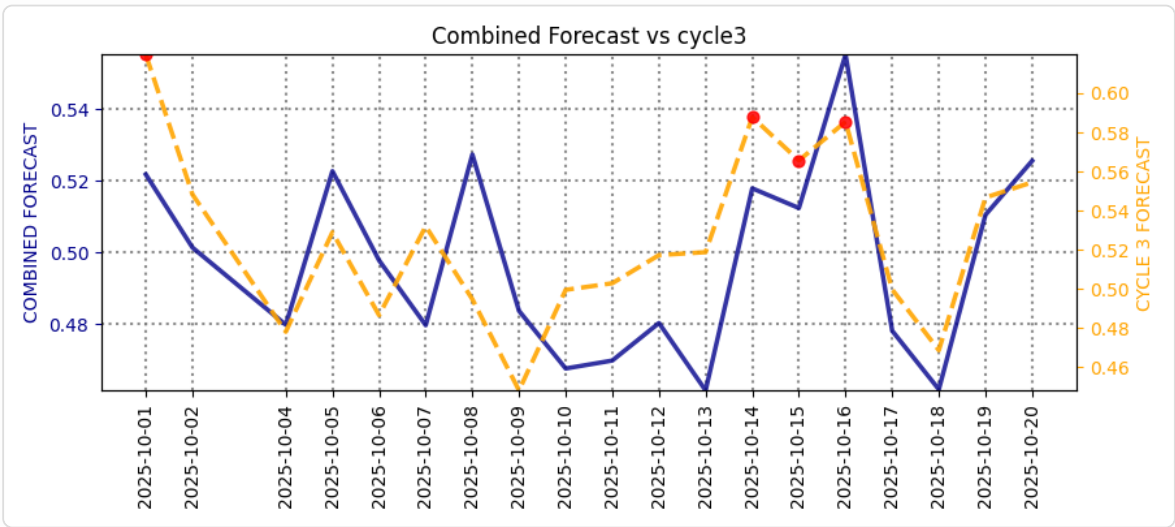
### Validation Analysis

Best trial validation for this cycle contrasted with real values.



### Forecast Analysis

Best trial forecast for this cycle versus the combined forecast.



## Complete Dataset Overview

Analysis of ALL features present in the source files

	Astro	Tropo	Pos
Count	22	48	42
Percentage	19.1%	41.7%	36.5%

## Summary Insights

Complete Dataset:

- **Astronomical data** represents 19.1% of all features (22 features)
  - **Tropospheric data** represents 41.7% of all features (48 features)
  - **Position/GPS data** represents 36.5% of all features (42 features)
  - **Target variables** represent 1.7% of all features (2 features)
  - **Dominant category in complete dataset:** Tropo features
-

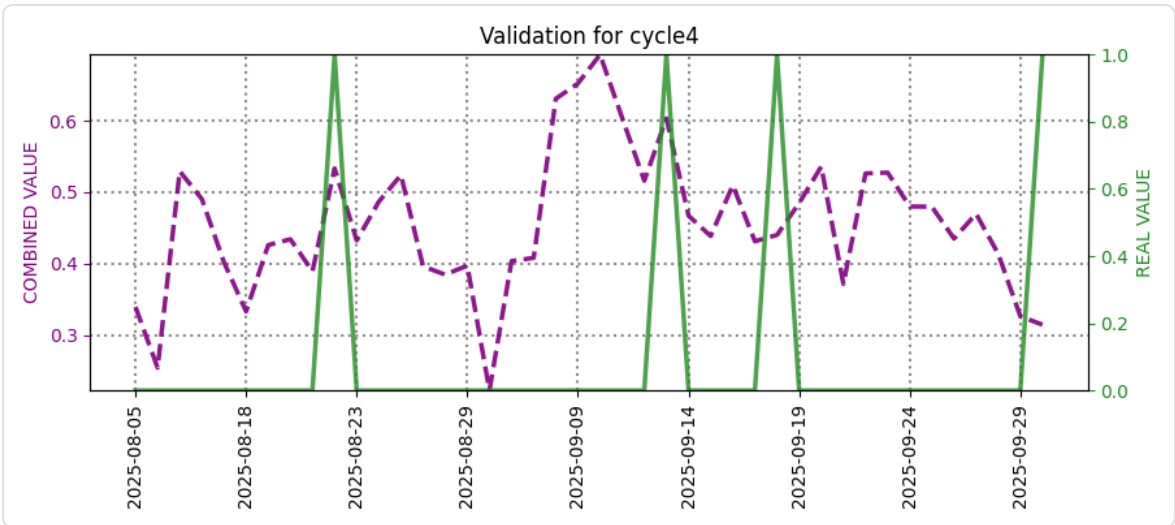
## CYCLE4 Analysis

### Trial Statistics

Metric	Min	Max	Average
Hyperopt Loss (lower is better)	0.66	0.82	0.75
Metric Score (f1) (lower is better)	0.70	0.76	0.74

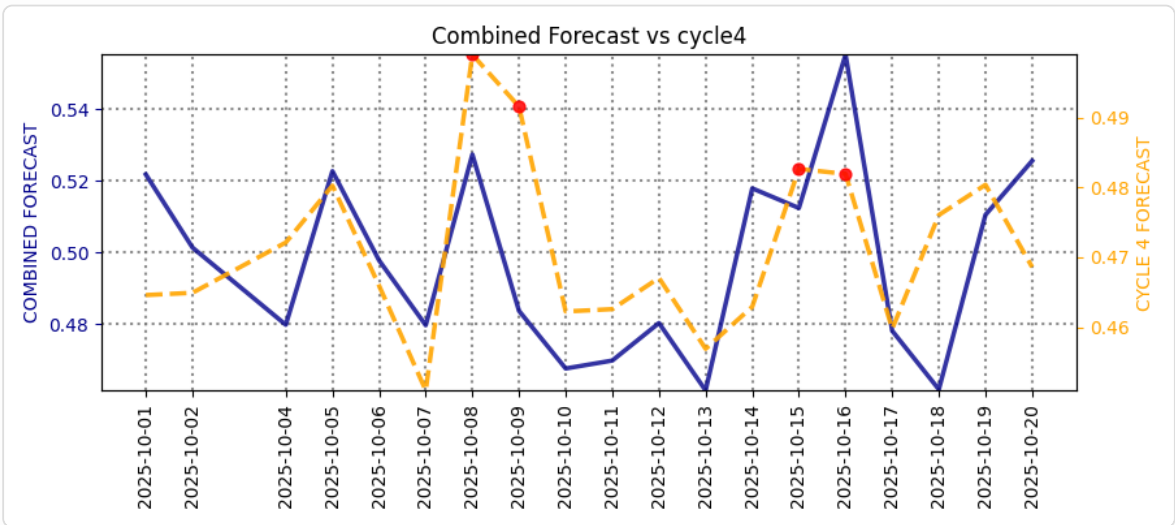
### Validation Analysis

Best trial validation for this cycle contrasted with real values.



### Forecast Analysis

Best trial forecast for this cycle versus the combined forecast.





## Complete Dataset Overview

*Analysis of ALL features present in the source files*

	Astro	Tropo	Pos
Count	36	38	45
Percentage	29.5%	31.1%	36.9%

## Summary Insights

Complete Dataset:

- **Astronomical data** represents 29.5% of all features (36 features)
- **Tropospheric data** represents 31.1% of all features (38 features)
- **Position/GPS data** represents 36.9% of all features (45 features)
- **Target variables** represent 1.6% of all features (2 features)
- **Dominant category in complete dataset:** Pos features

Cross-Cycle Summary

Cycle	Best Trial	GPS Features	Tropo Features	Astro Features	Hyperopt Loss	Metric Score (f1)	Hybrid Score
explore	64	51	55	15	0.57	0.68	0.62
cycle1	4	59	46	13	0.59	0.71	0.65
cycle2	32	44	45	27	0.56	0.68	0.62
cycle3	53	42	48	22	0.60	0.69	0.65
cycle4	16	45	38	36	0.66	0.75	0.71

## 5. Astronomical Features Used

### Astronomical Features Used per Cycle - trialsetGPS\_20251003-102950

**Focus cycle:** cycle2

Cycle	Loss	Hybrid	Bodies	Observers	Ephemerides	Operations
explore	0.57	0.62	101955, 2015tg387, 502, 699	geo_19.4326;-99.1332;0	az, dec_rate, el, lunar_presence, solar_presence	max, min
cycle1	0.59	0.65	101955, 136199, 2015tg387, 699	geo_19.4326;-99.1332;0	el, ra_rate, suntargetpa	max
<b>cycle2</b>	<b>0.56</b>	<b>0.62</b>	<b>101955, 199, 502</b>	<b>geo_19.4326;-99.1332;0, geo_27.9881;86.925;0</b>	<b>az, dec_rate, lunar_presence, suntargetpa, velocitypa</b>	<b>max, min</b>
cycle3	0.60	0.65	101955, 299, 301, 502, 599	geo_19.4326;-99.1332;0	az, delta_rate, ra_rate, solar_presence, suntargetpa	max, min
cycle4	0.66	0.71	101955, 2012vp113, 299, 699	geo_19.4326;-99.1332;0, geo_35.6895;139.6917;0	az, dec_rate, delta_rate, el, lunar_presence, solar_presence	max, min

*Bodies are represented by their NAIF ID (unique identifiers for celestial bodies from NASA/JPL); observers use geo\_lat;lon;height schema. Ephemerides are Horizons fields; operations are aggregations like min/max.*

## 6. Summary and Conclusion

---

### Summary of Findings

Elevated seismic energy suggests potential earthquakes or eruptions in World.  
Peak dates: 2025-10-08, 2025-10-16, 2025-10-20 (UTC).

### Conclusions

Increased seismic energy indicates potential earthquakes or eruptions for  
2025-10-08, 2025-10-16, 2025-10-20 in World.

Even if the risk appears slight or moderate, preparation is necessary because the epicenter could be near your location. A separate report is required to estimate its position. AI-generated reports may create false alarms or underestimate the risks. Do not use this report to make important decisions. This work is for research purposes only.

## 7. Attribution and Disclaimers

---

### Data Sources

- Seismic data utilized in this report is sourced from the **USGS Earthquake Catalog** and the **Japan Meteorological Agency (JMA)**.
- Planetary ephemeris data provided by **NASA/JPL Horizons System**.
- All tropo + gps positional data provided by **NASA/JPL**

### Disclaimer of Liability

This report is generated for research and informational purposes only. The forecasts presented are based on statistical models and historical data; they are not deterministic predictions. The authors and distributors of this report assume no liability for any actions taken or decisions made based on the information contained herein.

### Responsibility Statement

The analysis and conclusions represent the best judgment of our research team based on the available data. This is not an official warning or alert. For official information, please consult your local government and geological survey authorities.