

# The Multi-Sensor Worldwide Ocean Winds (MWOW) Visualization Portal

<https://wow.jpl.nasa.gov/data-portal/>

## Tutorial on use: The MWOW Team

***First Meeting with Stakeholders: 2025 – 09 – 22***

***Follow-up tutorial: 2025 - 11 - 19***

***Svetla Hristova-Veleva, Bryan Stiles, Brian Knosp, Eddie Arevalo***

*Jet Propulsion Laboratory, California Institute of Technology*

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Bryan Stiles: [bryan.w.stiles@jpl.nasa.gov](mailto:bryan.w.stiles@jpl.nasa.gov)

# Outline:

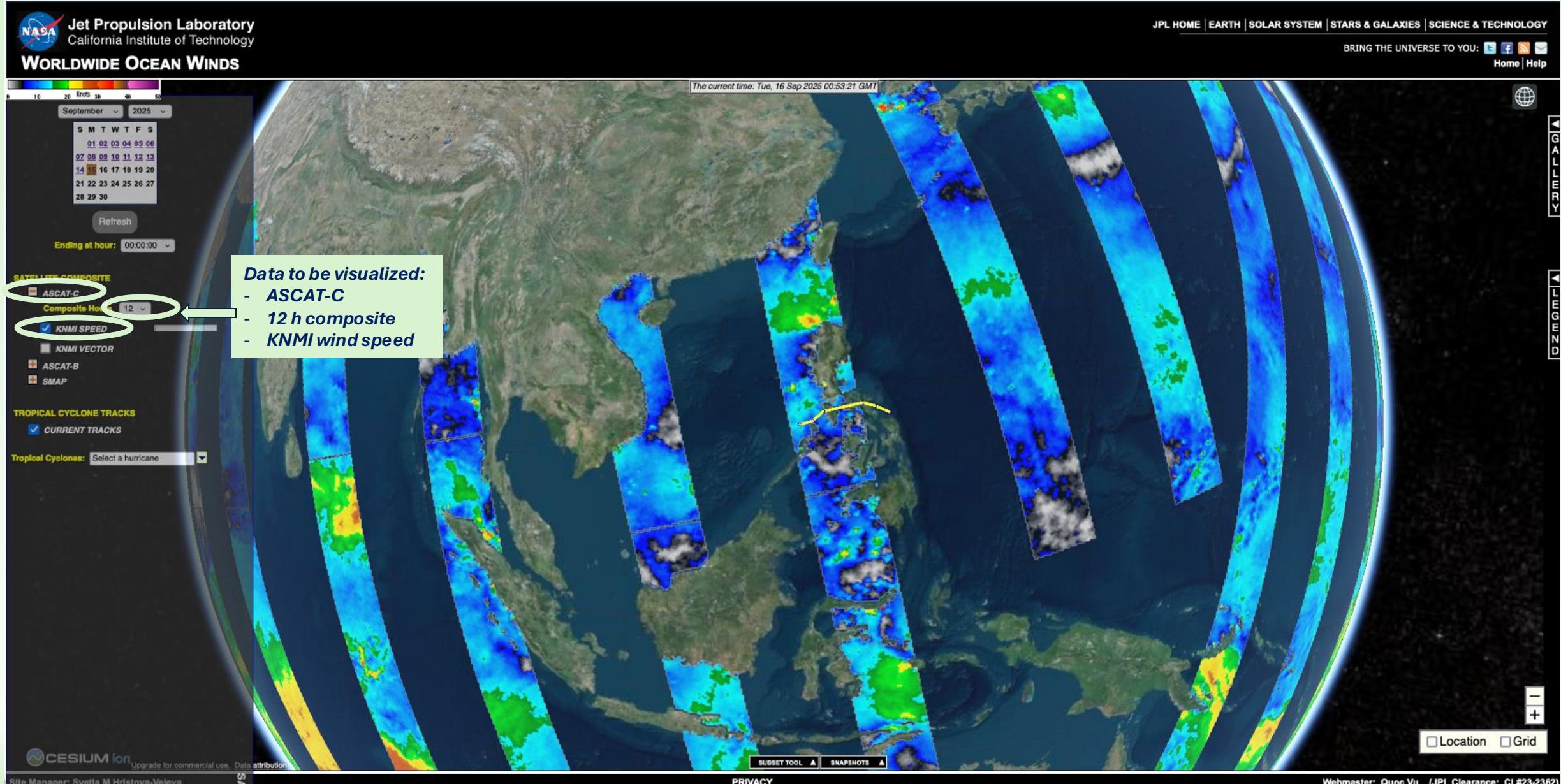
- **How to navigate the MWOW portal (<https://wow.jpl.nasa.gov/data-portal/>):** **Slides 3-24**
- **Exploring the 6-hourly coverage over a 24 hour period:** **Slides 25-35**
- **Other Portal features:** **Slides 36-38**
- **Hurricane Investigations:** **Slides 39-54**

# Navigating the MWOW portal

## Note:

- The full set of the envisioned V0 products, from 7 instruments, is currently available for the period 07/01/2025 – 07/05/2025
- After exploring the menus, the immediate First Step is to navigate to 07/05/2025

# The portal opens with visualization of the latest available ASCAT-C 12-hour composited image



# The portal opens with visualization of the latest available ASCAT-C 12-hour composited image

**Features:**

The current time: Tue, 16 Sep 2025 00:53:21 GMT

Menu to change the world view

Callendar to navigate in time

The Refresh button to take you to the needed year/month/day. Note: no need to use it when changing just the “Ending at hour”

Menu to select the required ending hour of the composited image

Menu to select the required length for compositing data

Ability to change transparency of displayed product to see other products underneath

List of instruments with available data

Ability to display the tracks of current Tropical Cyclones

Menu to select, from a global dataset, the Tropical Cyclones of interest; Database is organized by: year / ocean basin / TC names (alphabetical order)

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Gallery

Legend

SATELLITE-COMPOSITE

- ASCAT-C
- Composite Hours: 12
- KNMI SPEED
- KNMI VECTOR
- ASCAT-B
- SMAP

TROPICAL CYCLONE TRACKS

- CURRENT TRACKS

Tropical Cyclones: Select a hurricane

CESIUM ion Upgrade for commercial use. Data attribution

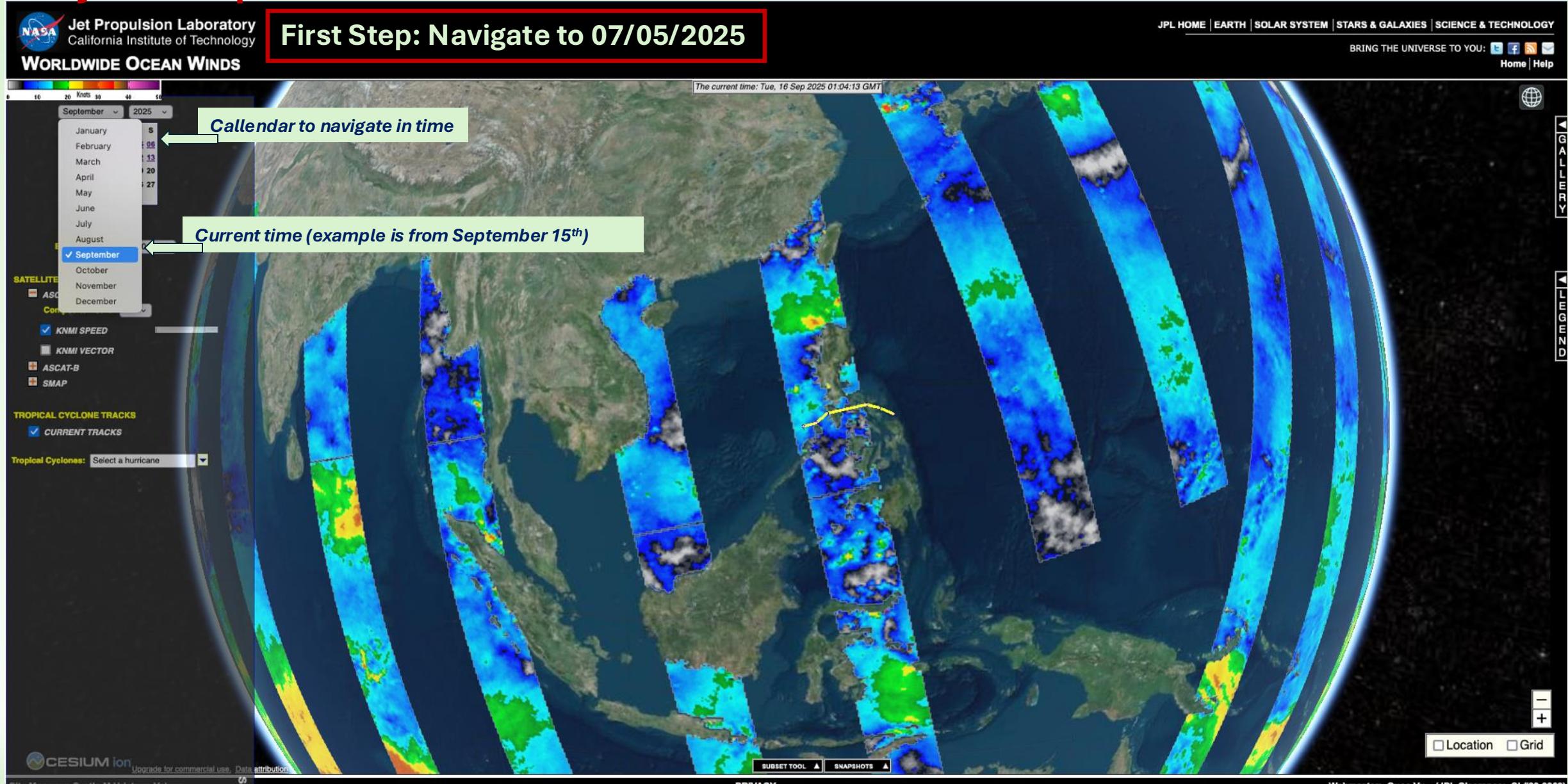
Location Grid

Site Manager: Svetla M Hristova-Veleva

PRIVACY

Webmaster: Quoc Vu (JPL Clearance: CL#23-2362)

The full set of the envisioned V0 products, from 7 instruments, is currently available only for the period 07/01/2025 – 07/05/2025







January  
February  
March  
April  
May  
June

**July**

August  
September  
October  
November  
December

**WOR**

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**CEAN WINDS**

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***Navigate in time to July 15th 2025 – (same day as current day, but in July)***

**Refresh**

***THEN Hit the Refresh button to take you to JULY 15<sup>th</sup> 2025***

Ending at hour: 00:00:00

**SATELLITE-COMPOSITE**

**ASCAT-C**

Composite Hours 12

**KNMI SPEED**

**KNMI VECTOR**

**ASCAT-B**

**SMAP**

**TROPICAL CYCLONE TRACKS**

**CURRENT TRACKS**

Tropical Cyclones: Select a hurricane

Site Manager: Svetla M Hristova-Veleva

S

PRIVACY

Location  Grid

-  
+

**CESIUM ion** Upgrade for commercial use. Data attribution

Webmaster: Quoc Vu (JPL Clearance: CL#23-2362)



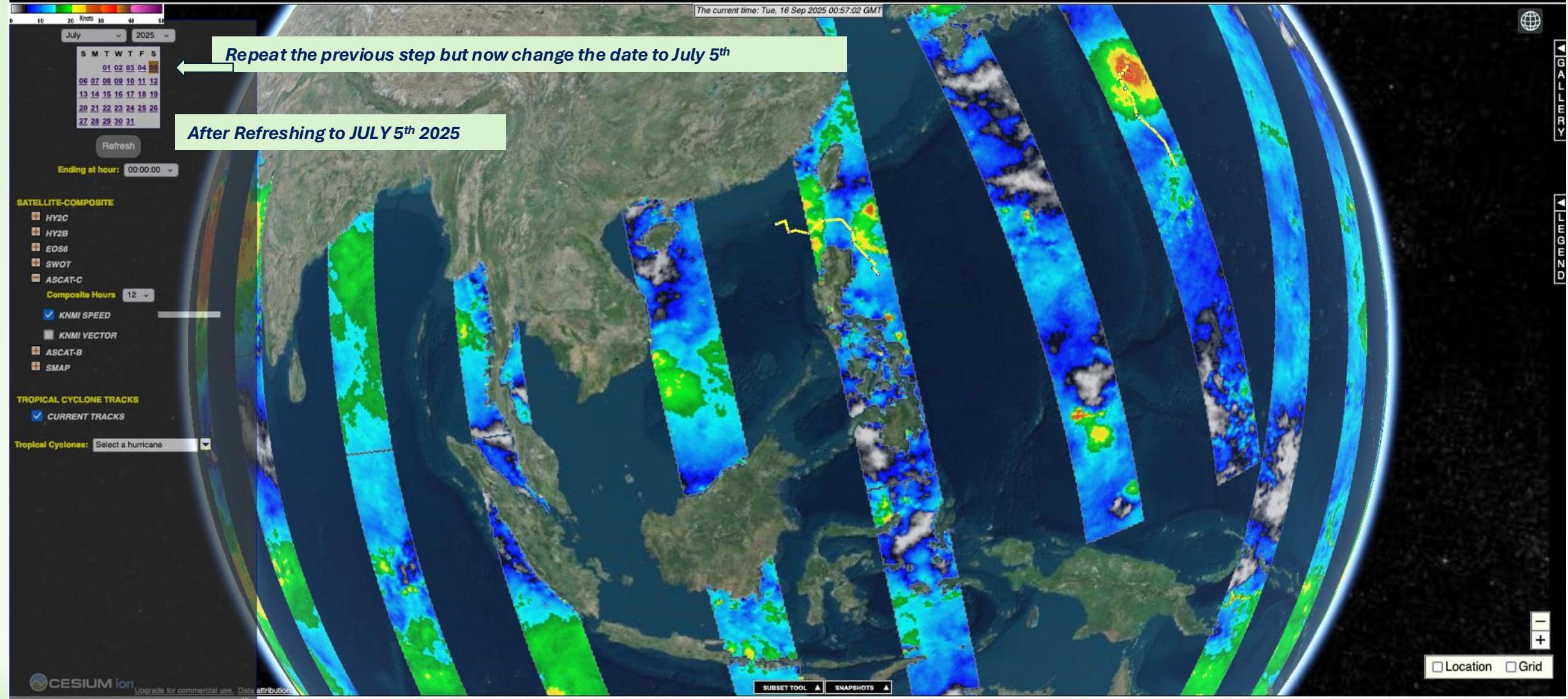
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## WORLDWIDE OCEAN WINDS



Refresh

Ending at hour:

✓ 00:00:00

01:00:00

02:00:00

03:00:00

04:00:00

05:00:00

06:00:00

07:00:00

08:00:00

09:00:00

10:00:00

11:00:00

12:00:00

13:00:00

14:00:00

15:00:00

16:00:00

17:00:00

18:00:00

19:00:00

20:00:00

21:00:00

22:00:00

23:00:00

### SATELLITE-COMPOSITE

- HY2C
- HY2B
- EOS6
- SWOT
- ASCAT-C

Composite Hours

- KNMI SPEED
- KNMI VECTOR

- ASCAT-B
- SMAP

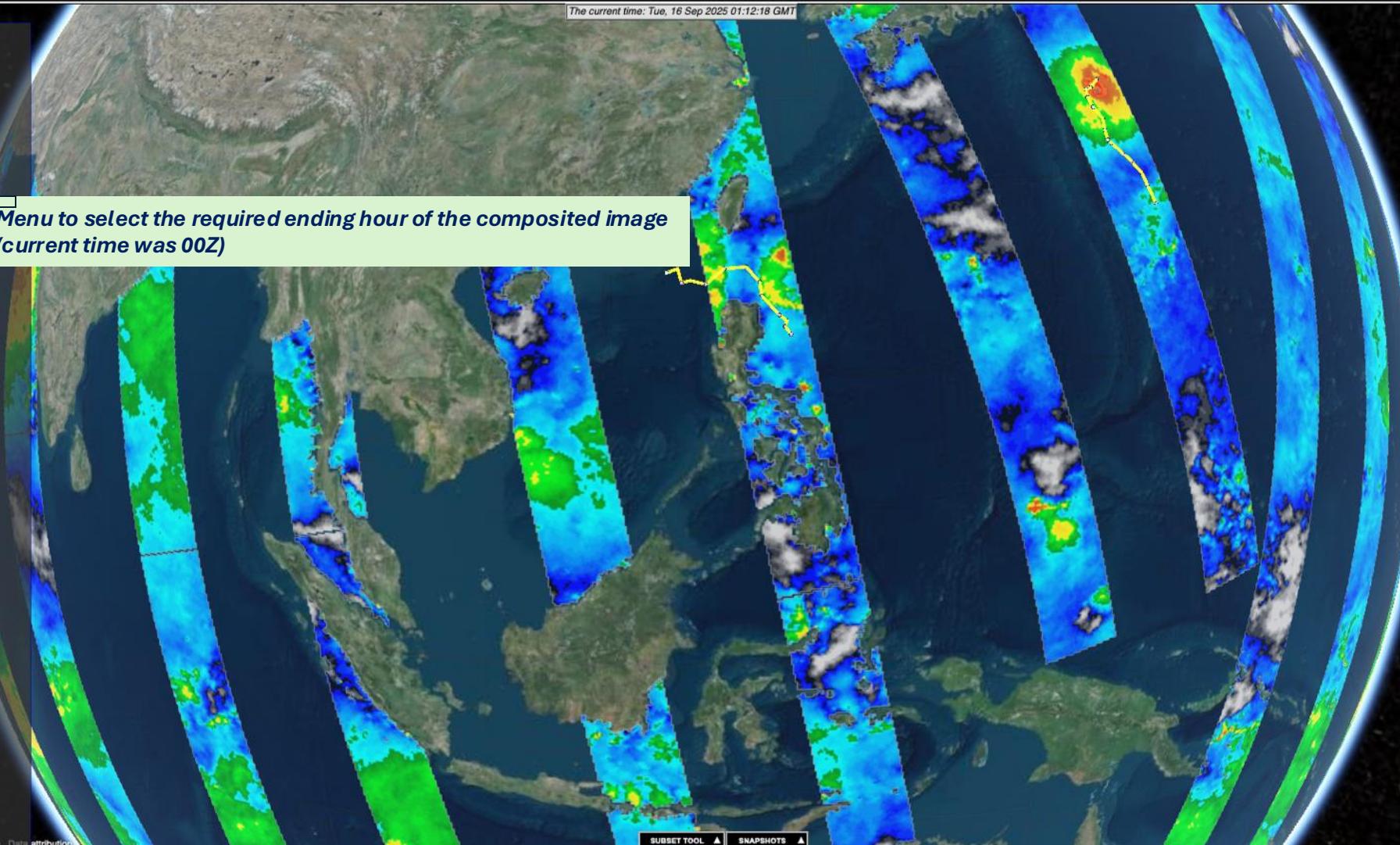
### TROPICAL CYCLONE TRACKS

CURRENT TRACKS

Tropical Cyclones: Select a track

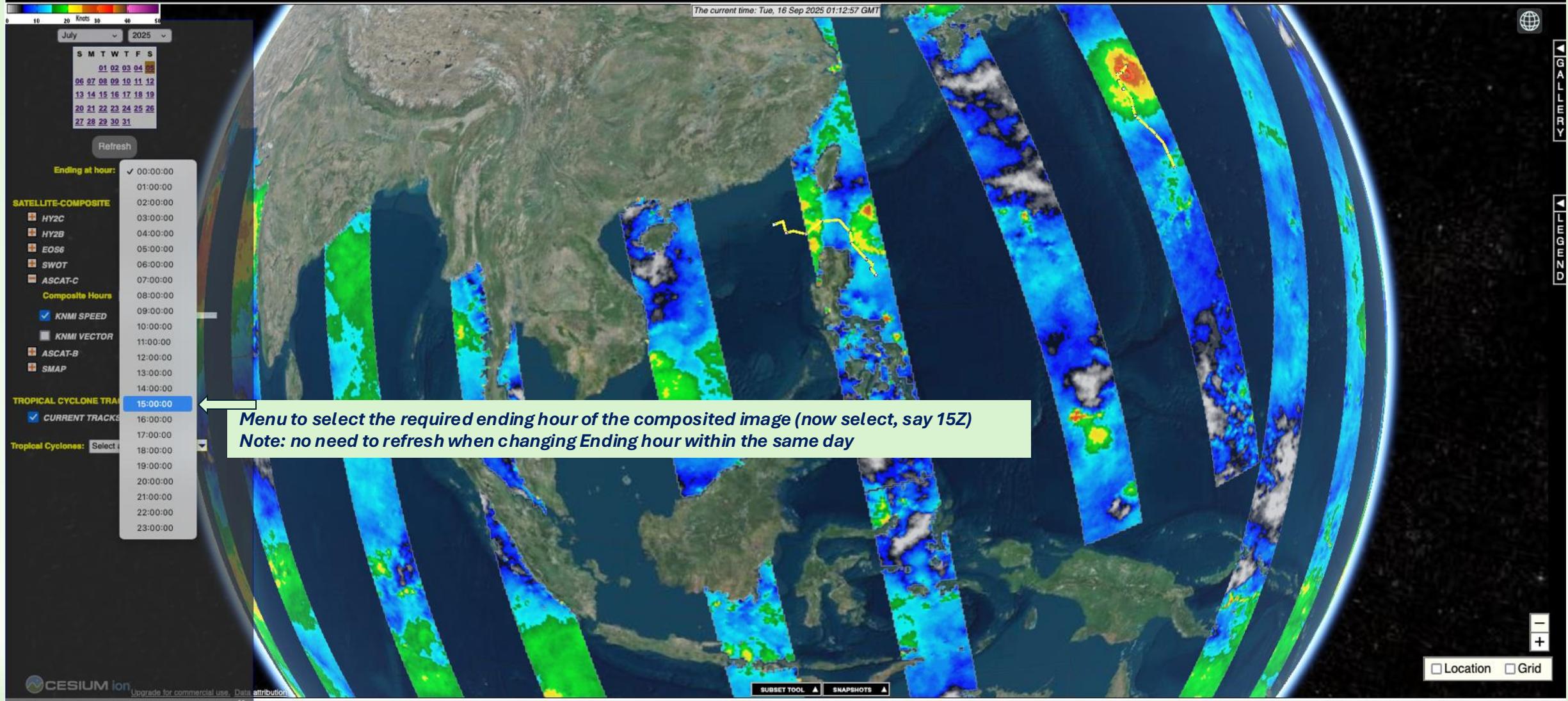
- 18:00:00
- 19:00:00
- 20:00:00
- 21:00:00
- 22:00:00
- 23:00:00

**Menu to select the required ending hour of the composited image  
(current time was 00Z)**





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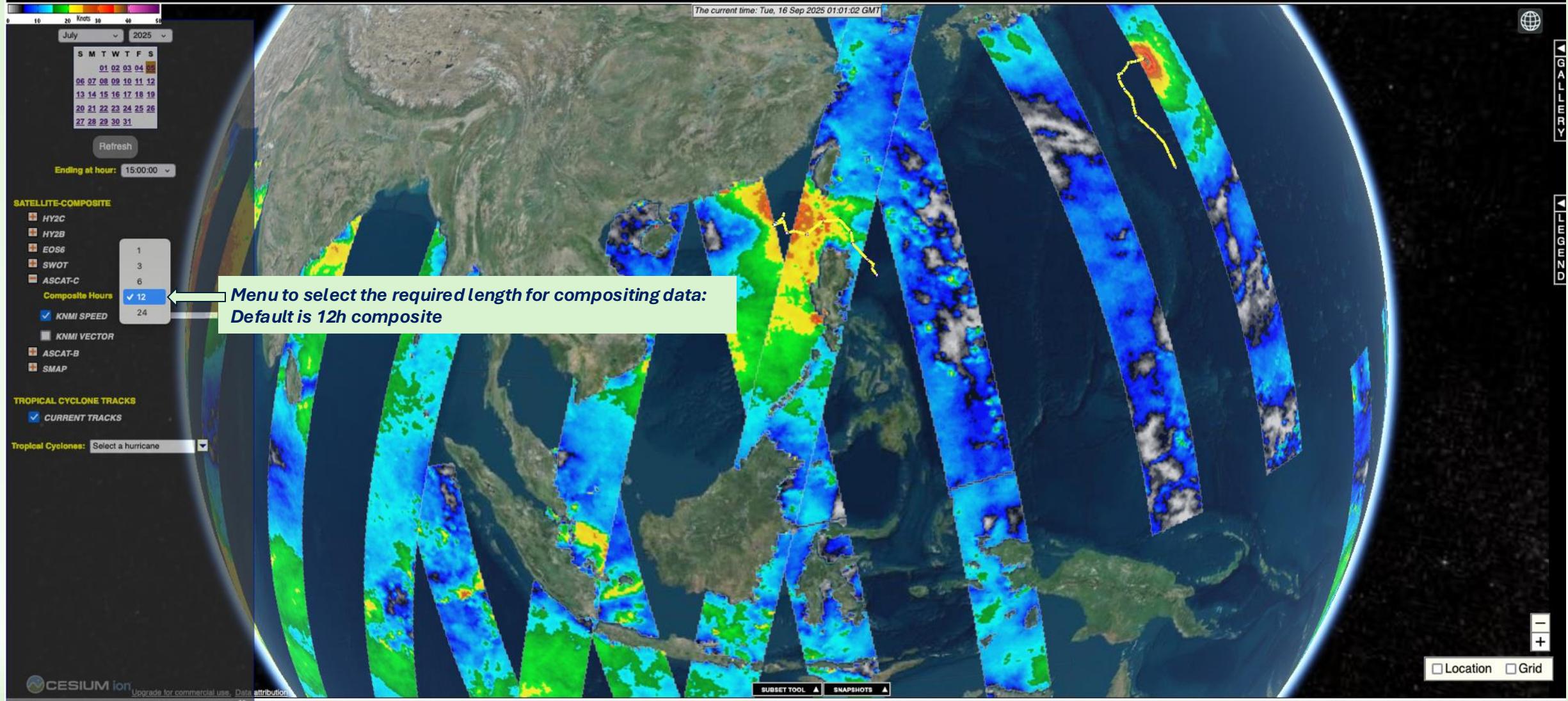
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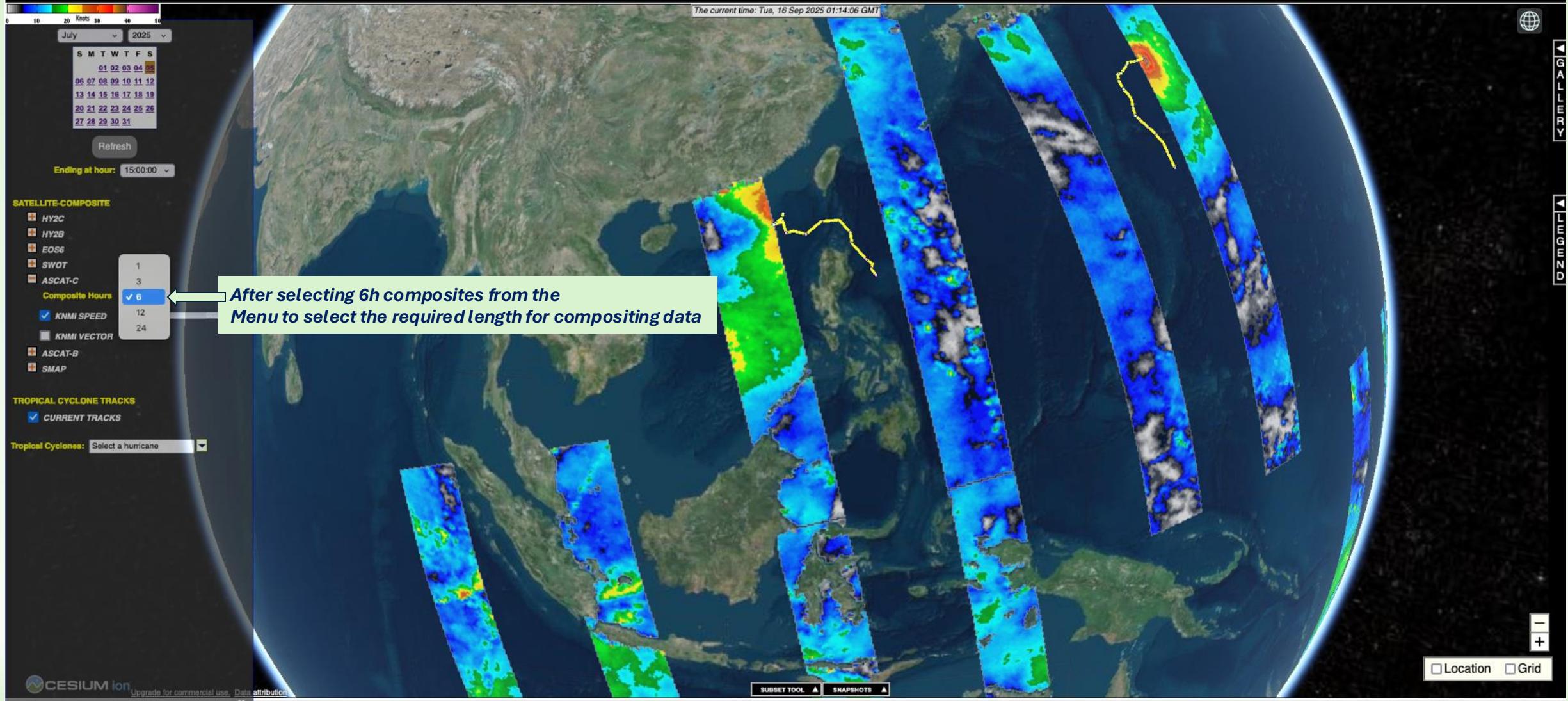
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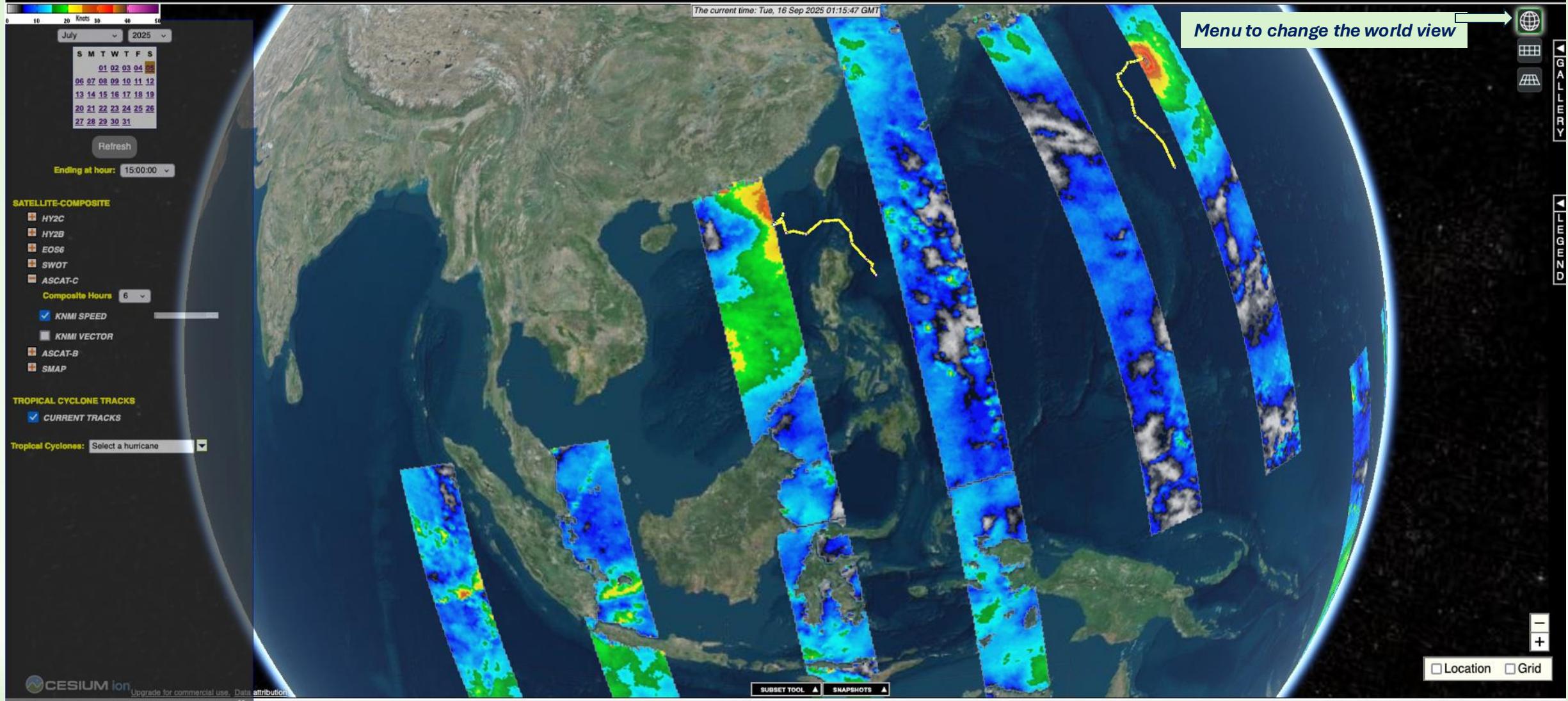
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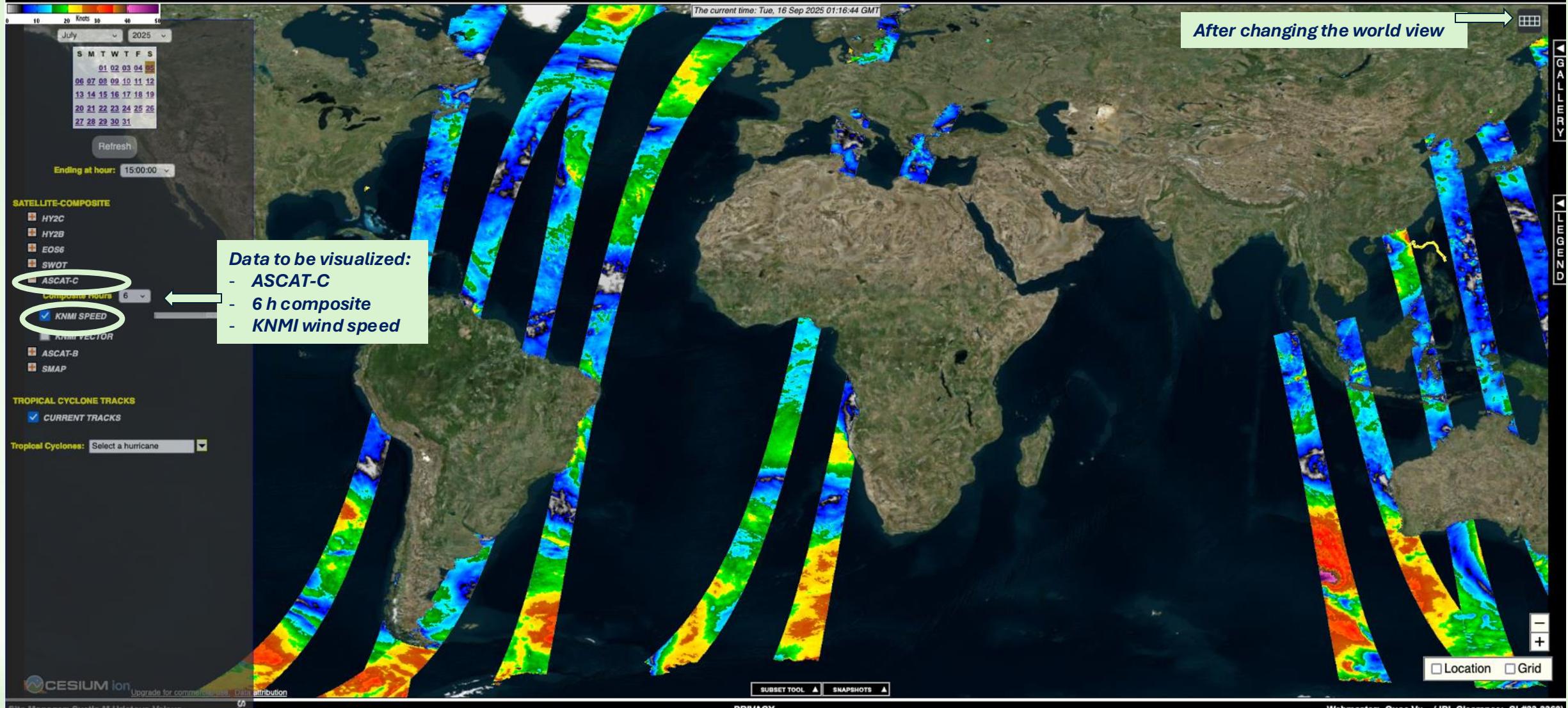
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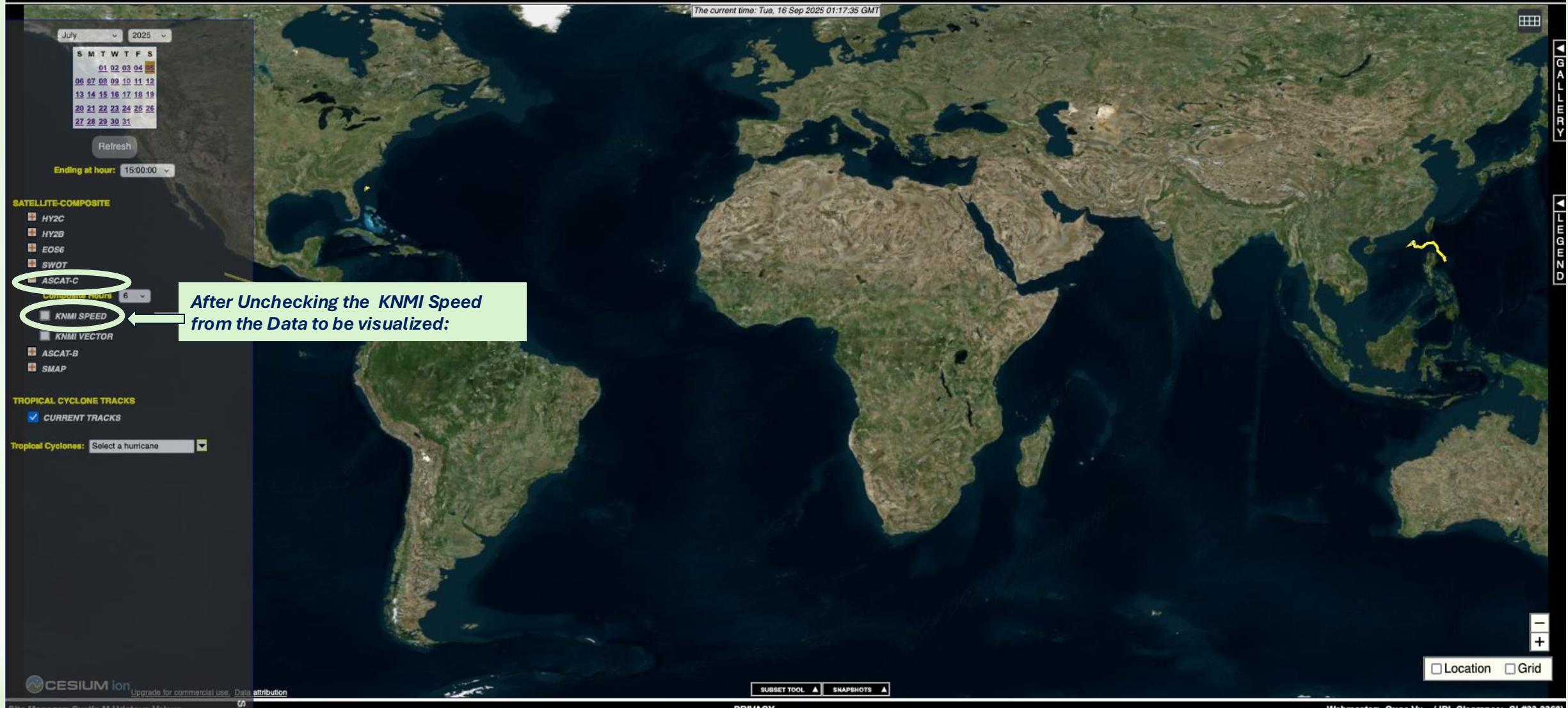
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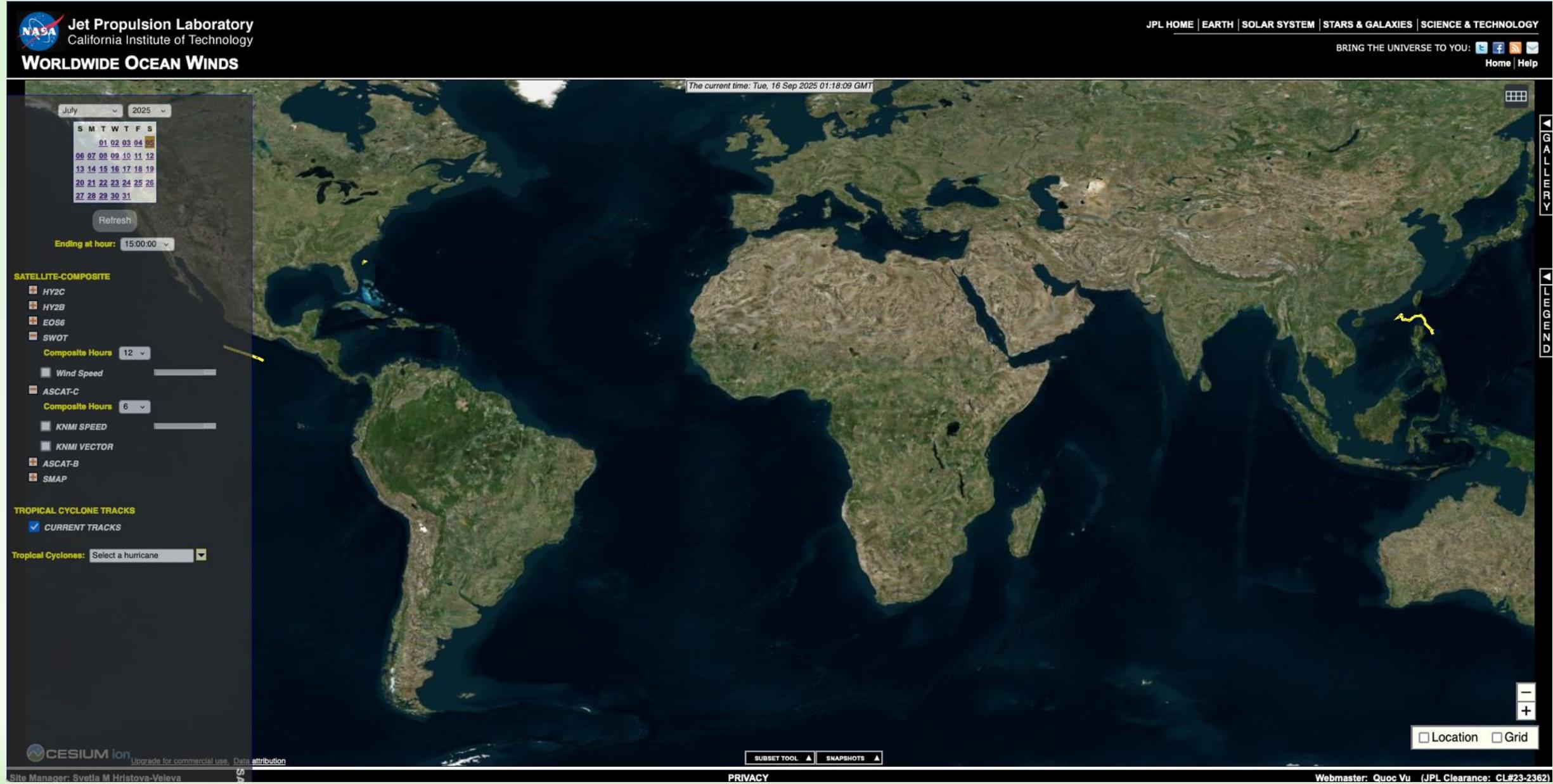
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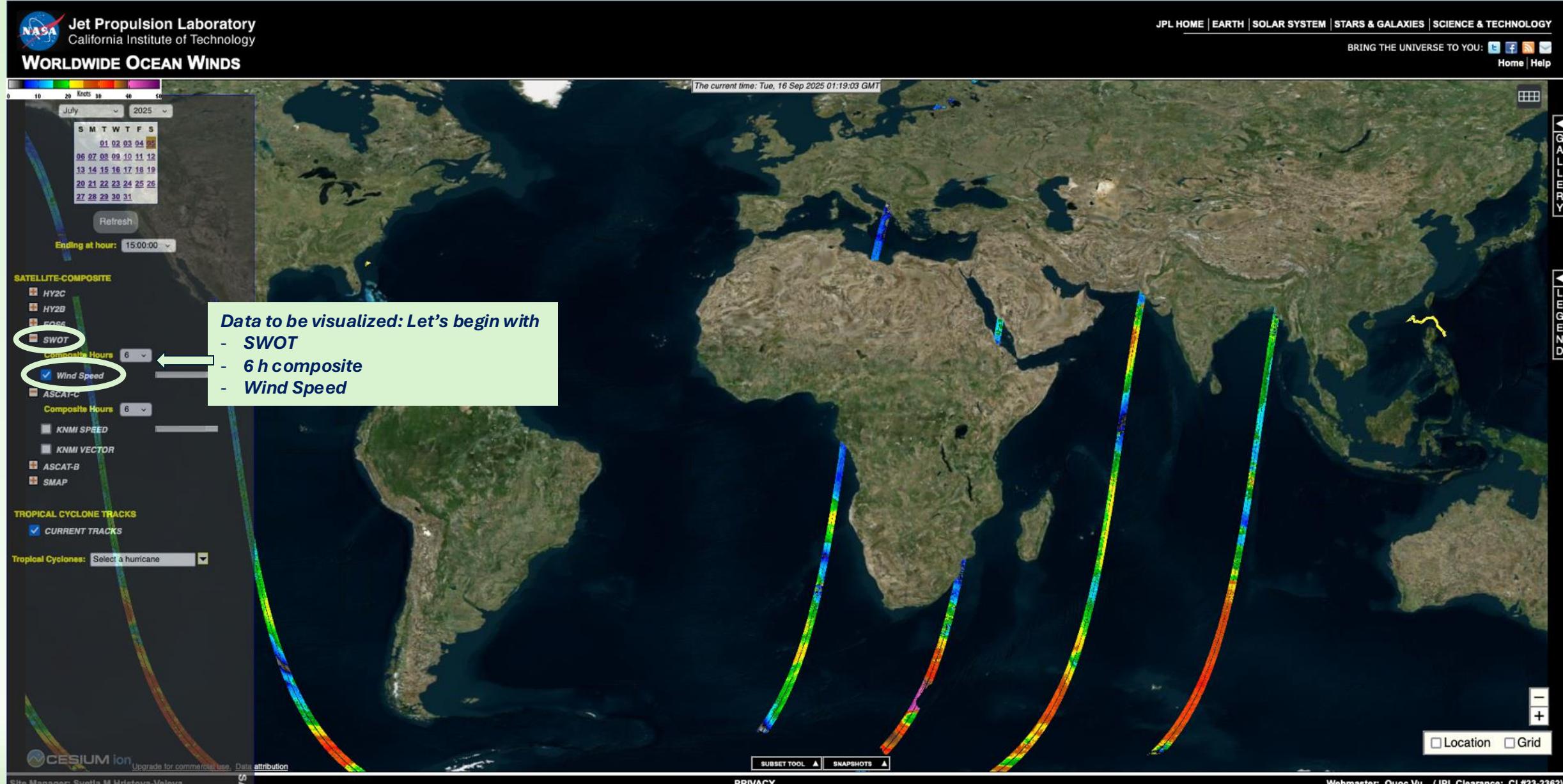


# Now we are ready to start displaying different datasets:



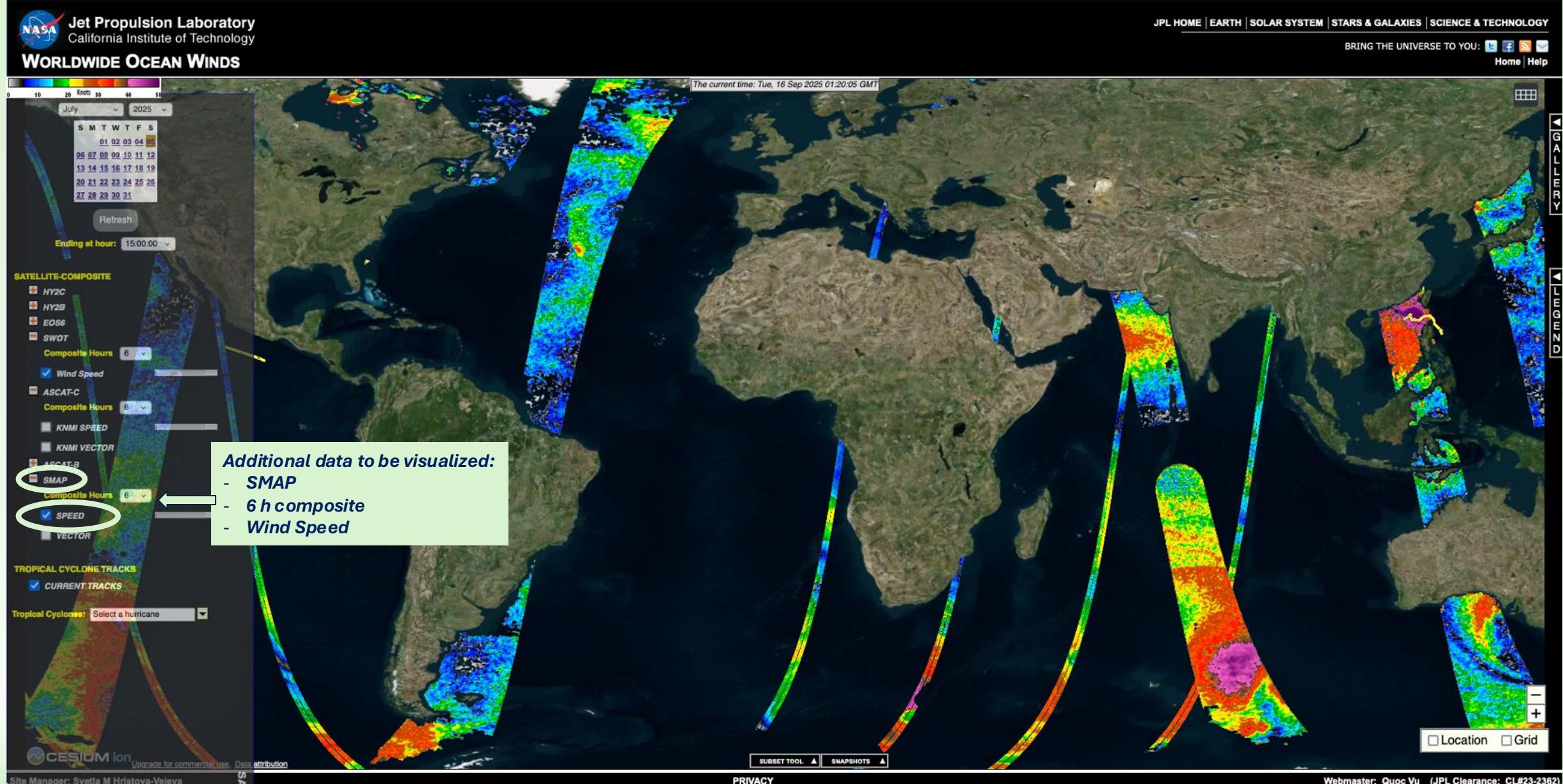
# Now we are ready to start displaying different datasets:

## SWOT



# Now we are ready to start displaying different datasets:

## SWOT + SMAP



# Now we are ready to start displaying different datasets:

## SWOT + SMAP + EOS-6

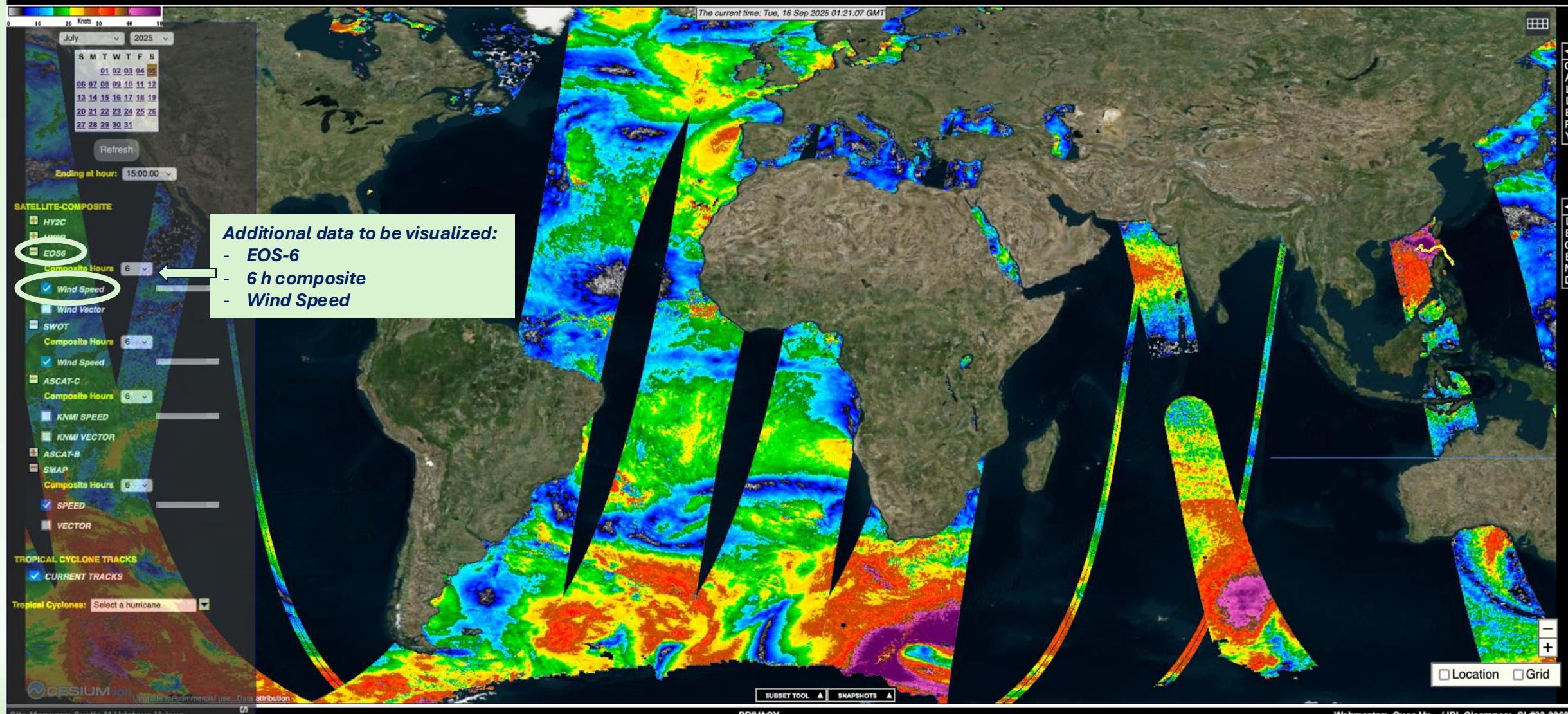
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# Now we are ready to start displaying different datasets: SWOT + SMAP + EOS-6 + HY2B

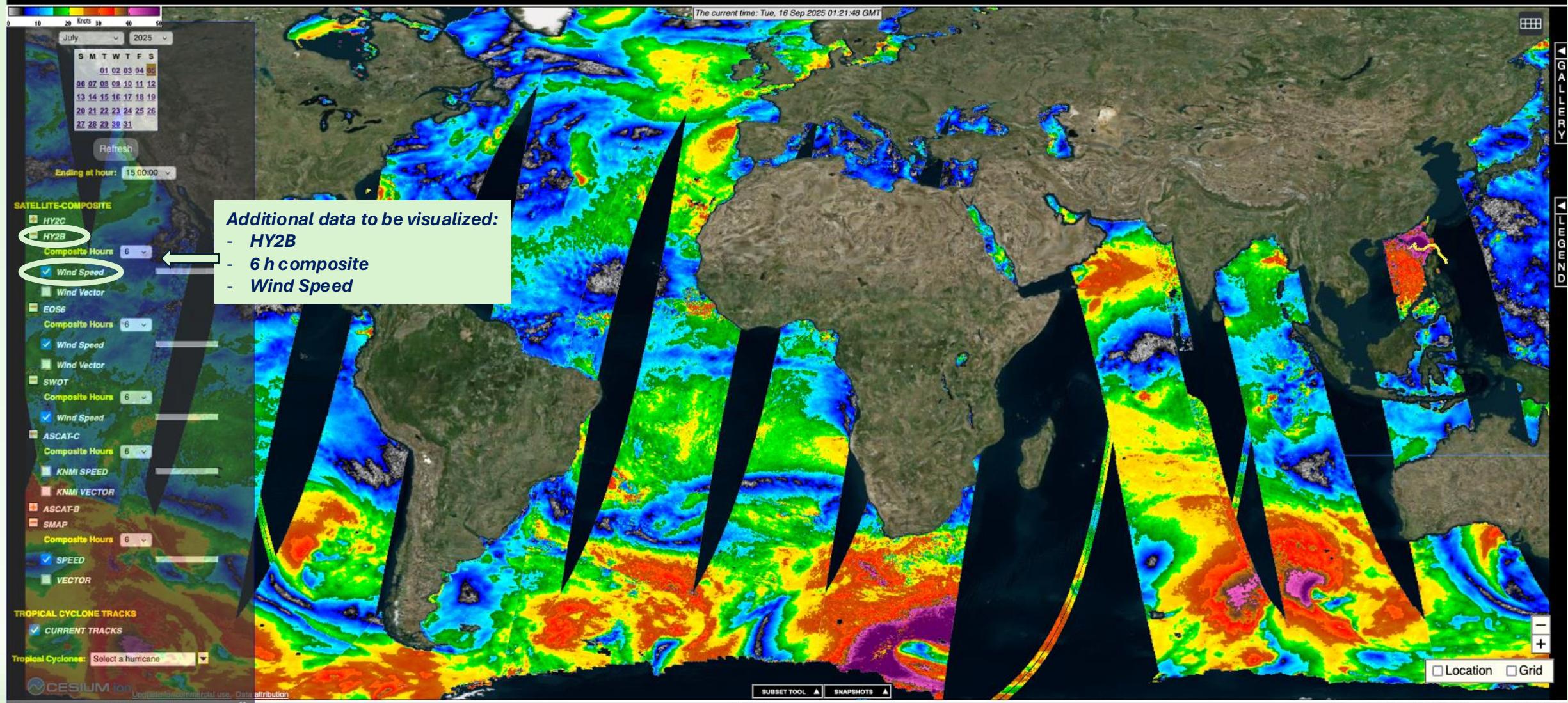
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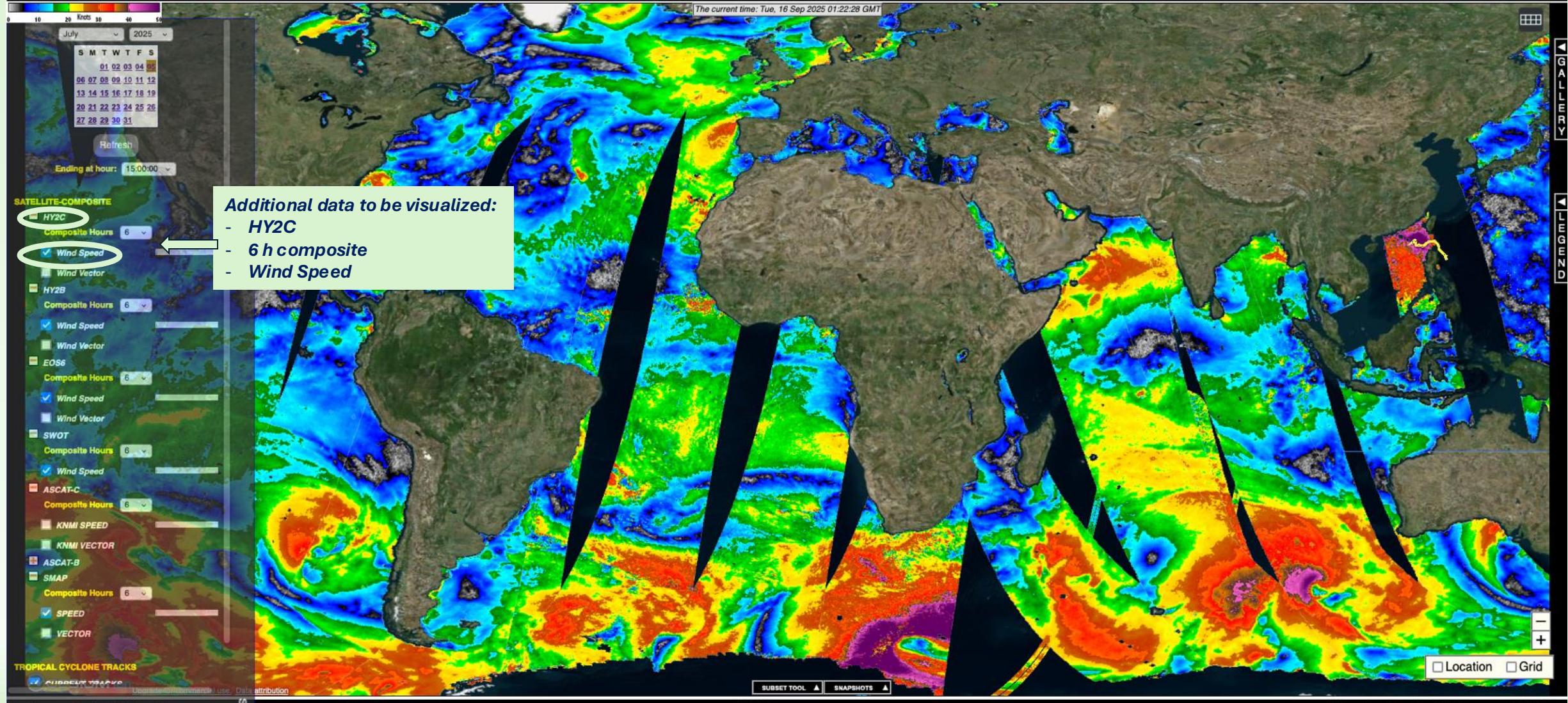
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# Now we are ready to start displaying different datasets: SWOT + SMAP + EOS-6 + HY2B + HY2C

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# Now we are ready to start displaying different datasets: SWOT + SMAP + EOS-6 + HY2B + HY2C + ASCAT-B

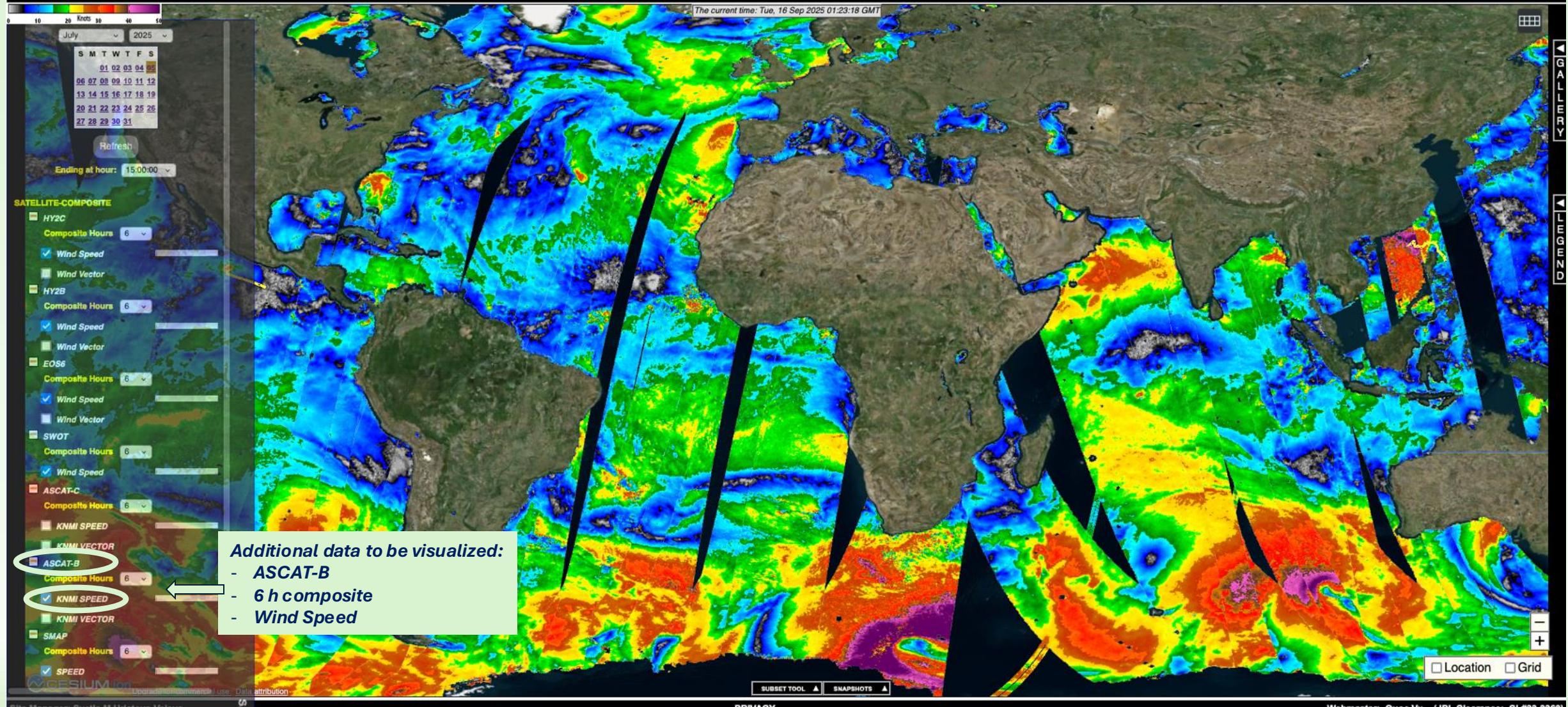
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# Now we are ready to start displaying different datasets:

## SWOT + SMAP + EOS-6 + HY2B + HY2C + ASCAT-B + ASCAT-C

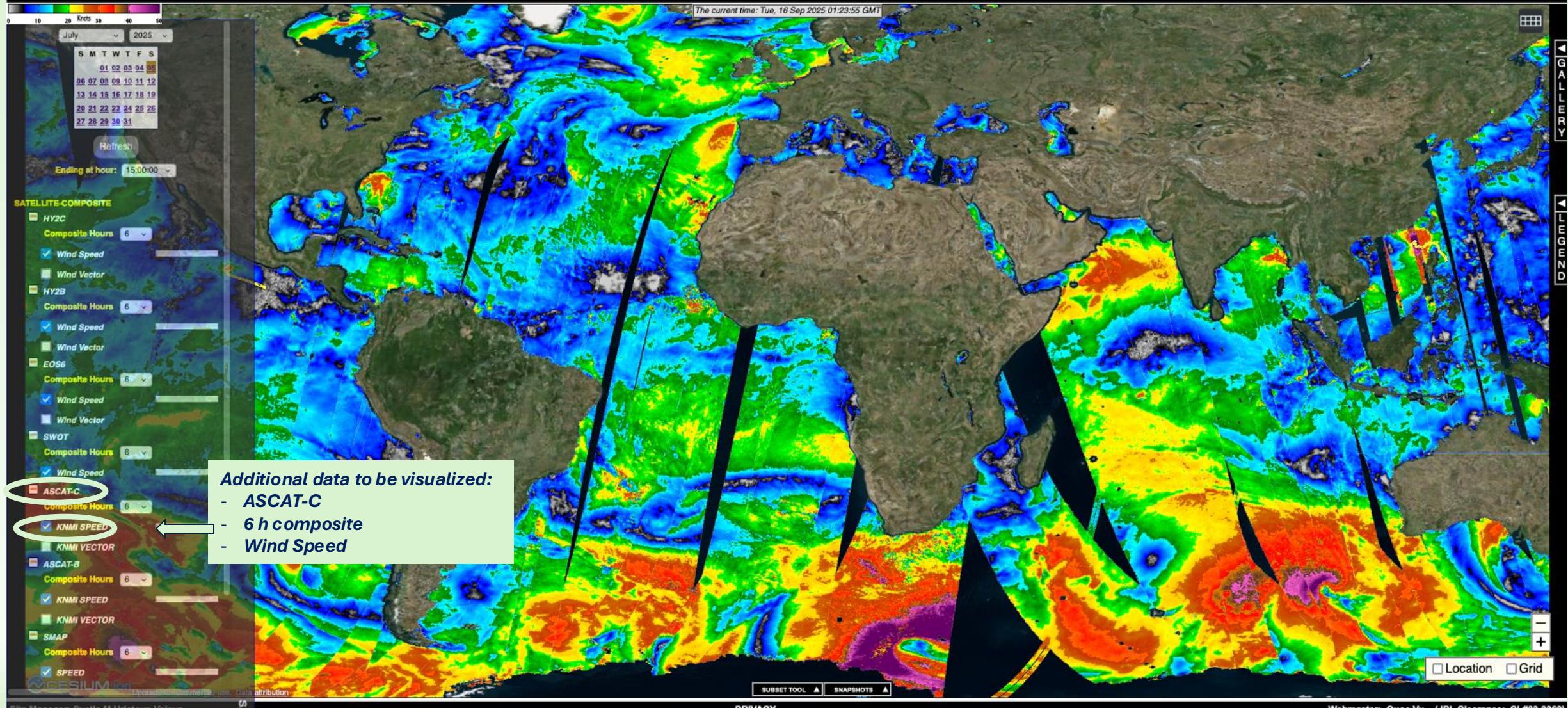
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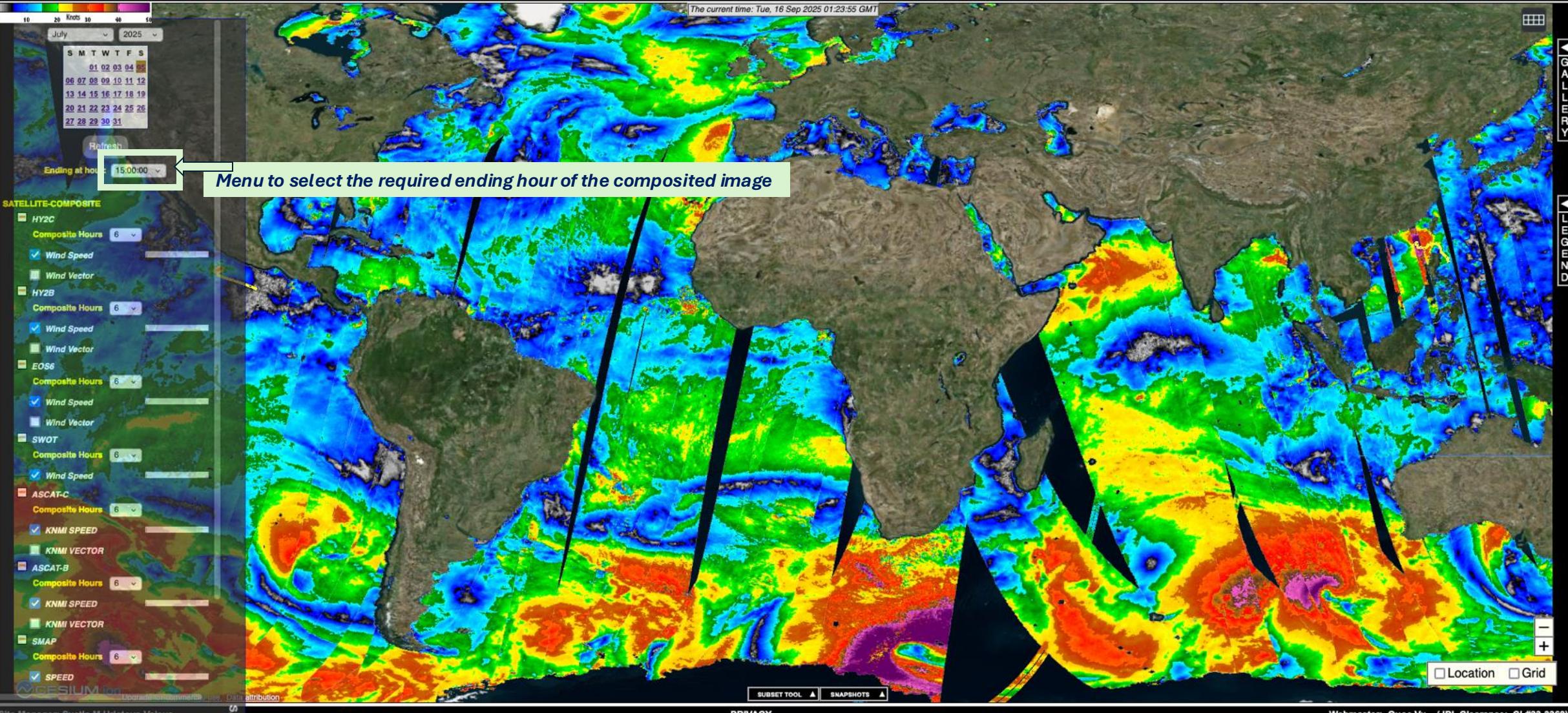
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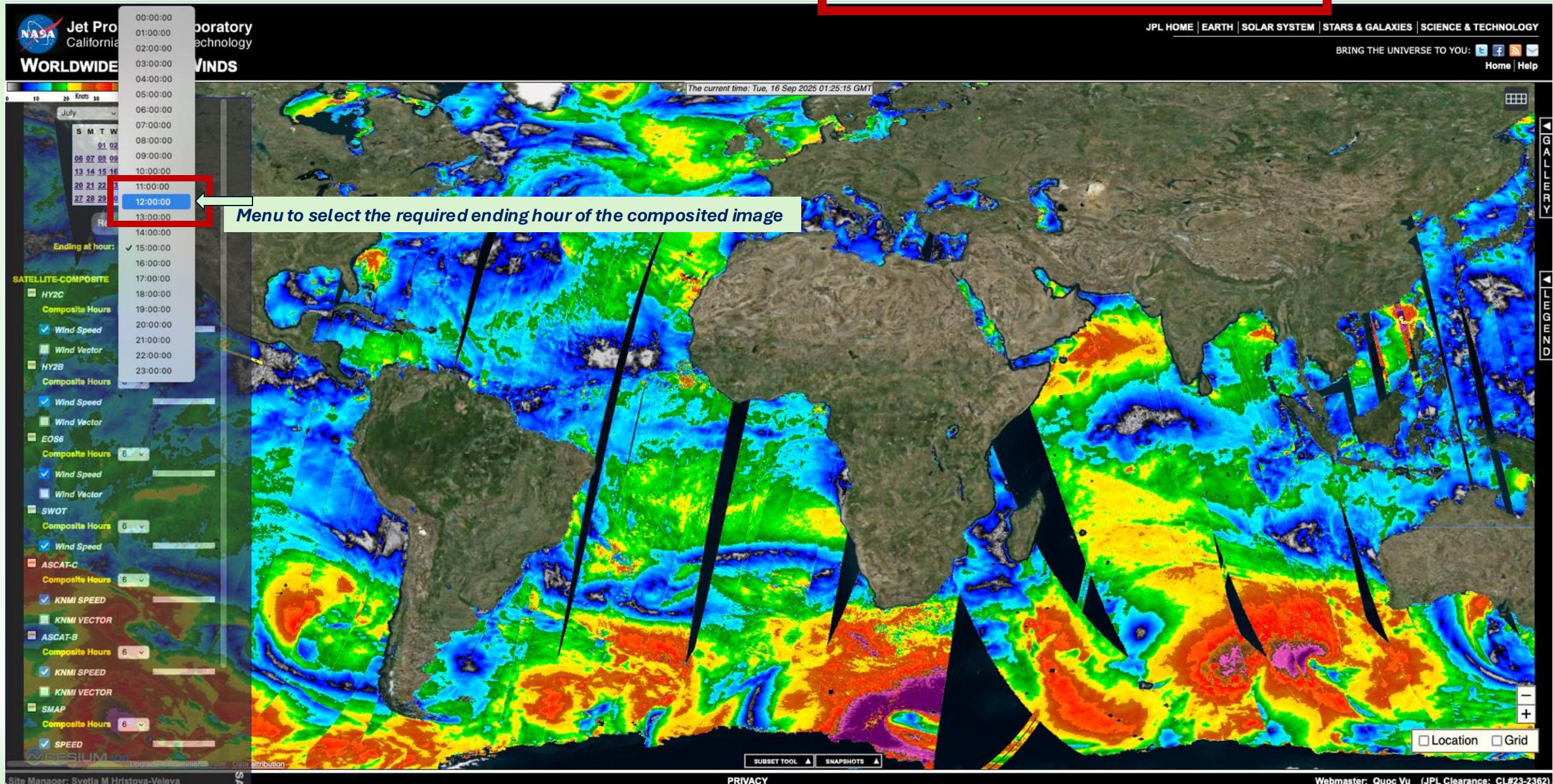


**Now we are ready  
to explore the evolution  
of the wind composites over time (say 1 day)  
by changing the ending hour of the composites**

# Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites



Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: Change the 15Z to, say, 12Z



Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: Now at 12Z on 07/05/2025

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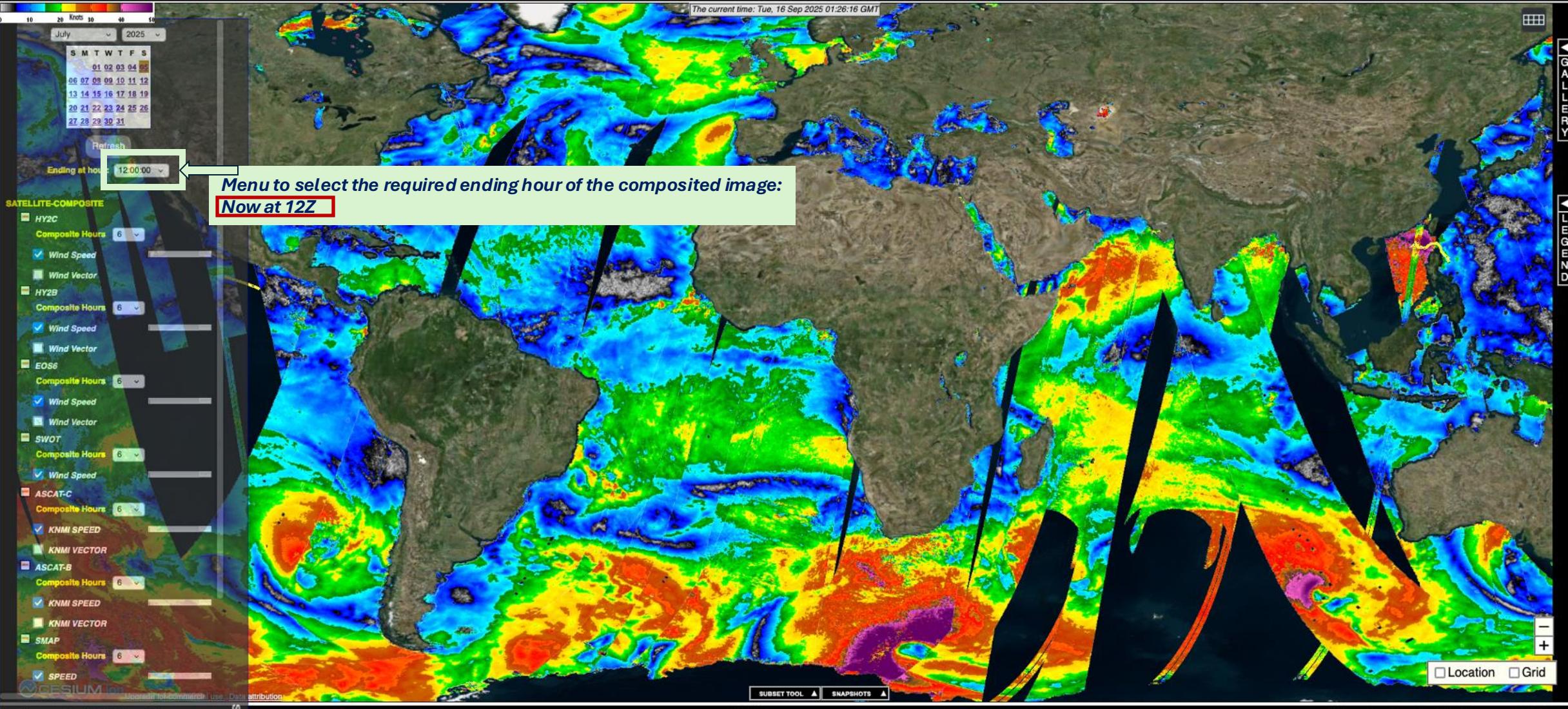
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Menu to select the required ending hour of the composited image:  
Now at 12Z



Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: Now at 09Z on 07/05/2025

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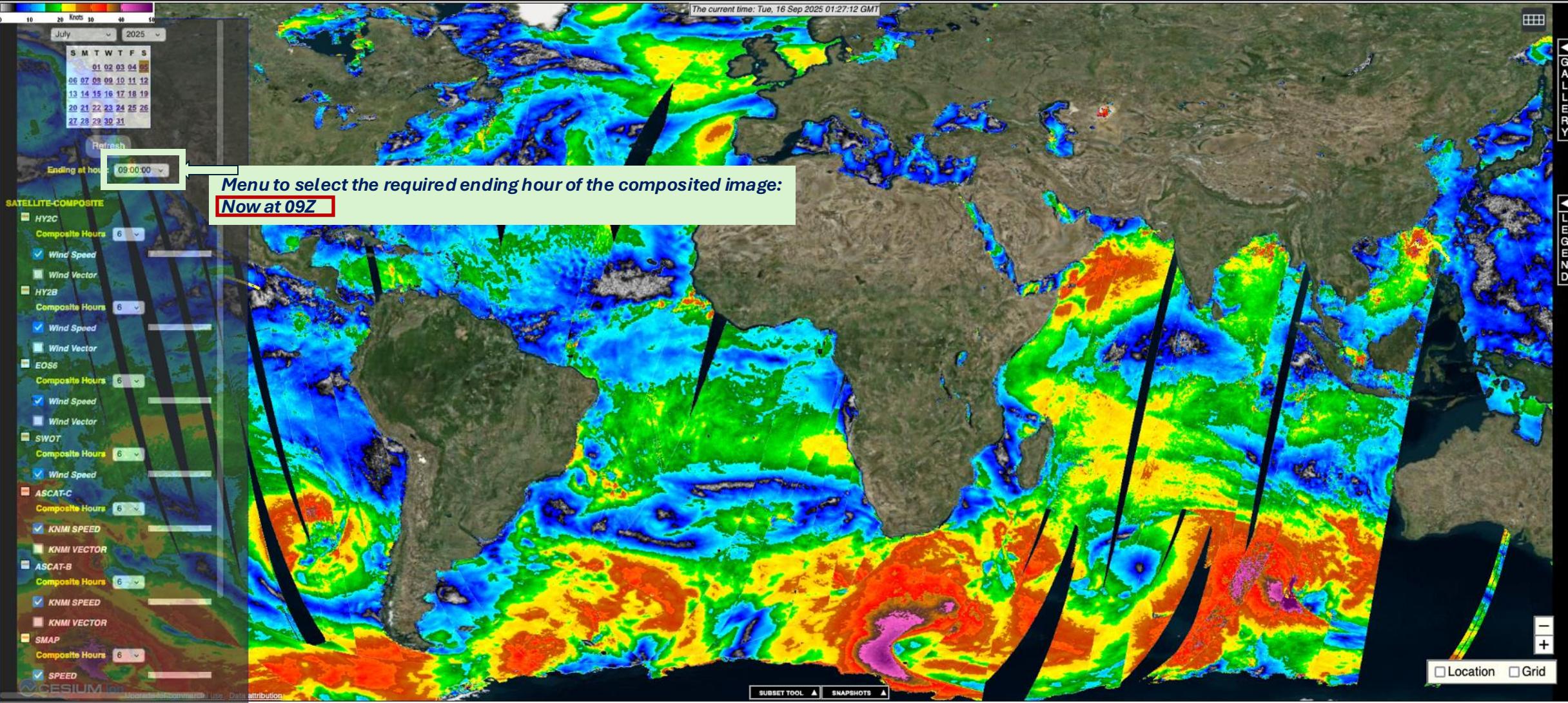
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Menu to select the required ending hour of the composited image:  
Now at 09Z



Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: Now at 06Z on 07/05/2025

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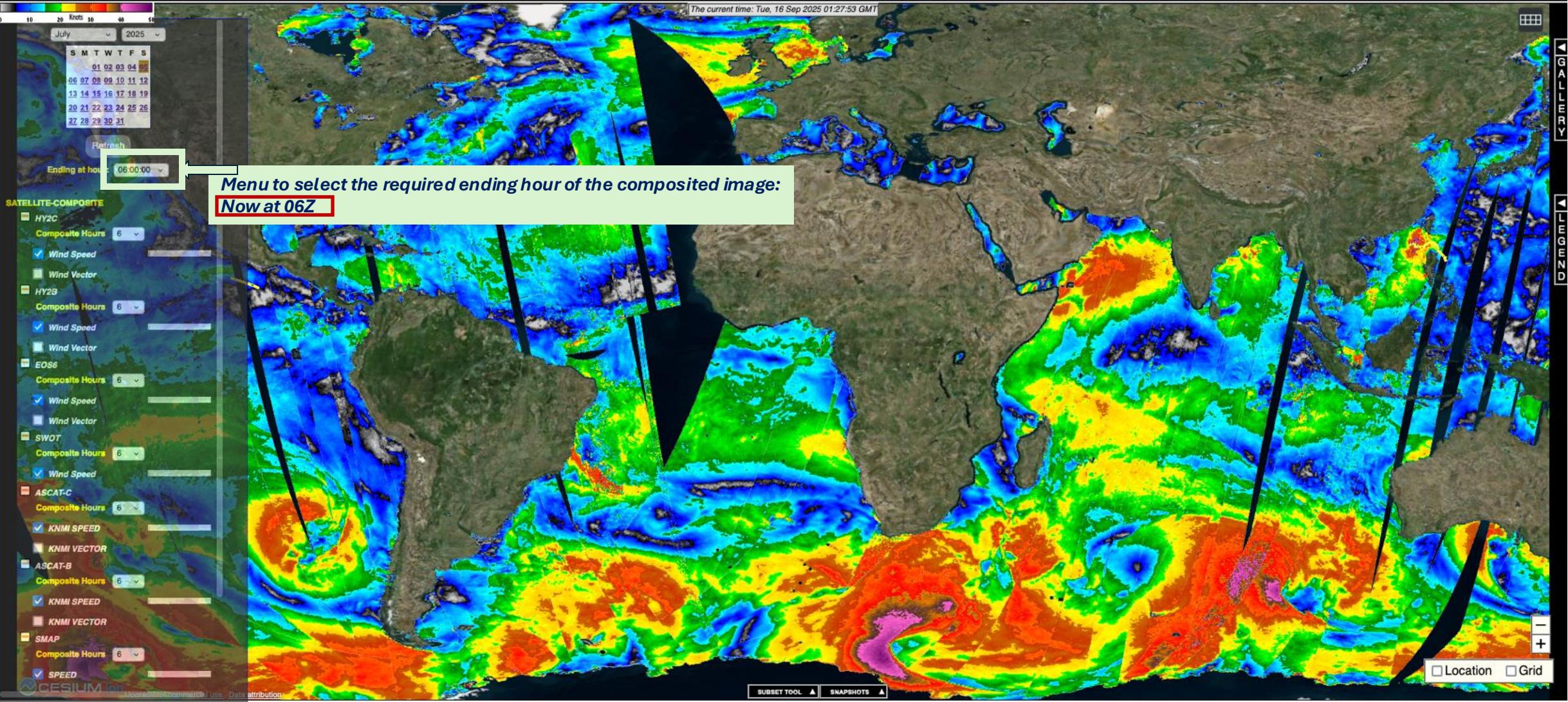
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Menu to select the required ending hour of the composited image:  
Now at 06Z



Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: Now at 03Z on 07/05/2025

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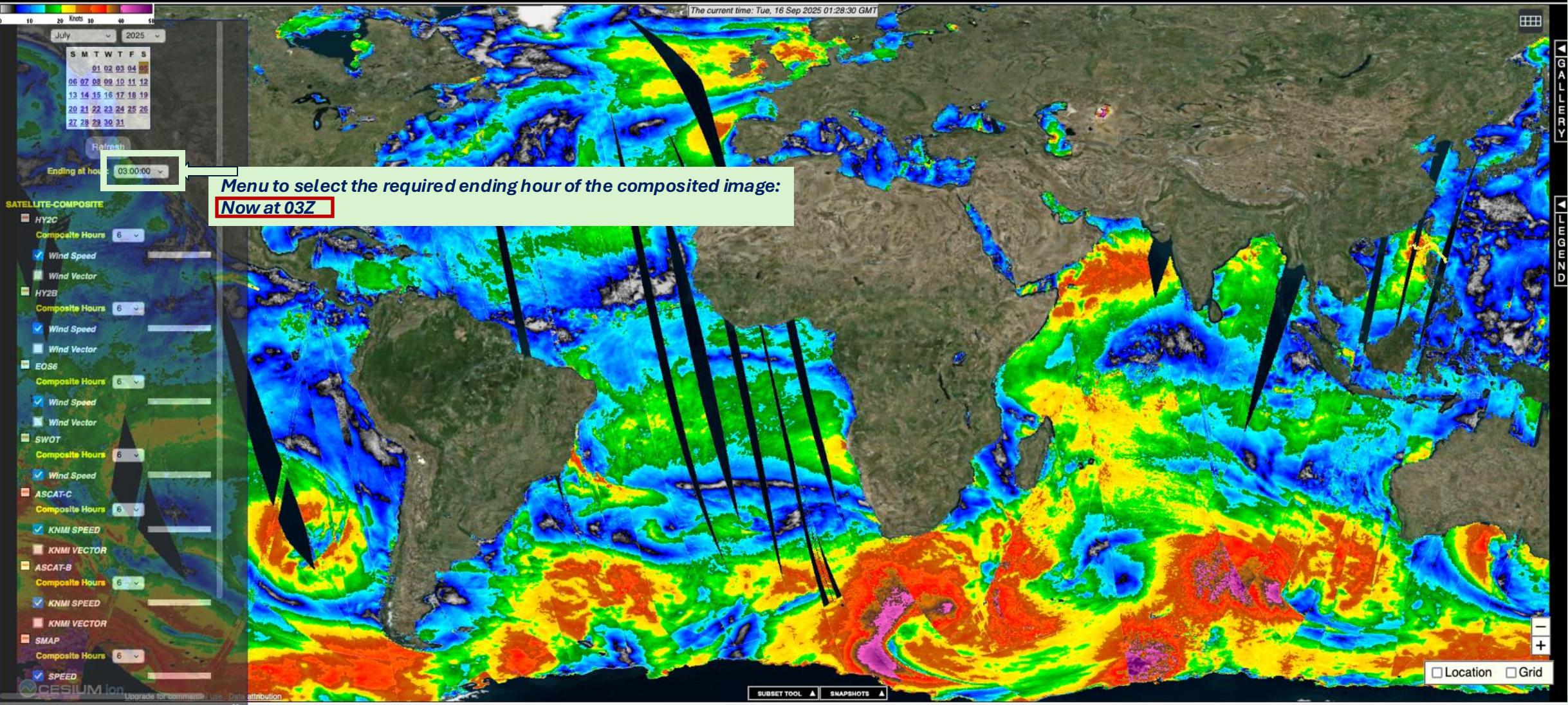
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Menu to select the required ending hour of the composited image:  
Now at 03Z



Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: Now at 00Z on 07/05/2025

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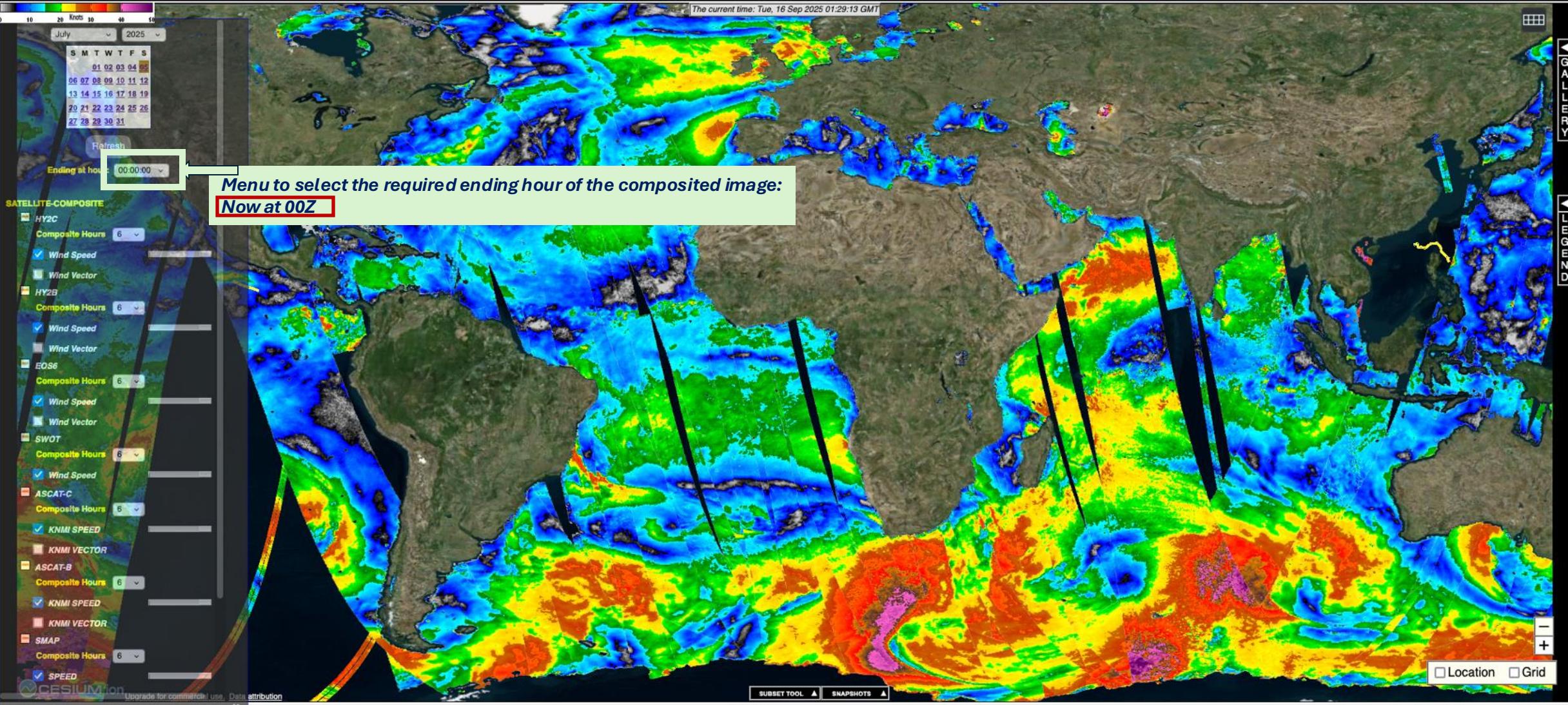
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Menu to select the required ending hour of the composited image:  
Now at 00Z



Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: Now at 21Z on 07/04/2025

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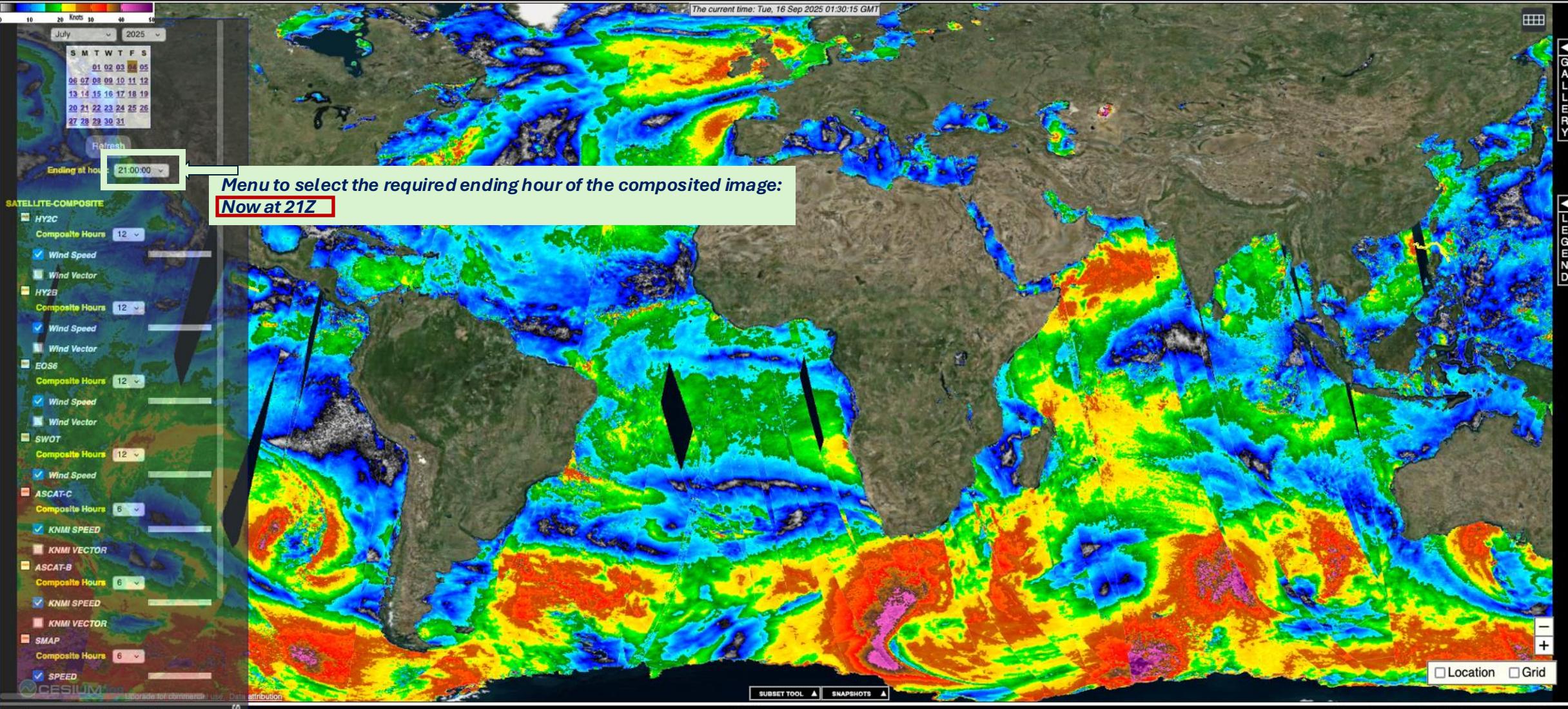
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Menu to select the required ending hour of the composited image:  
Now at 21Z



Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: Now at 18Z on 07/04/2025

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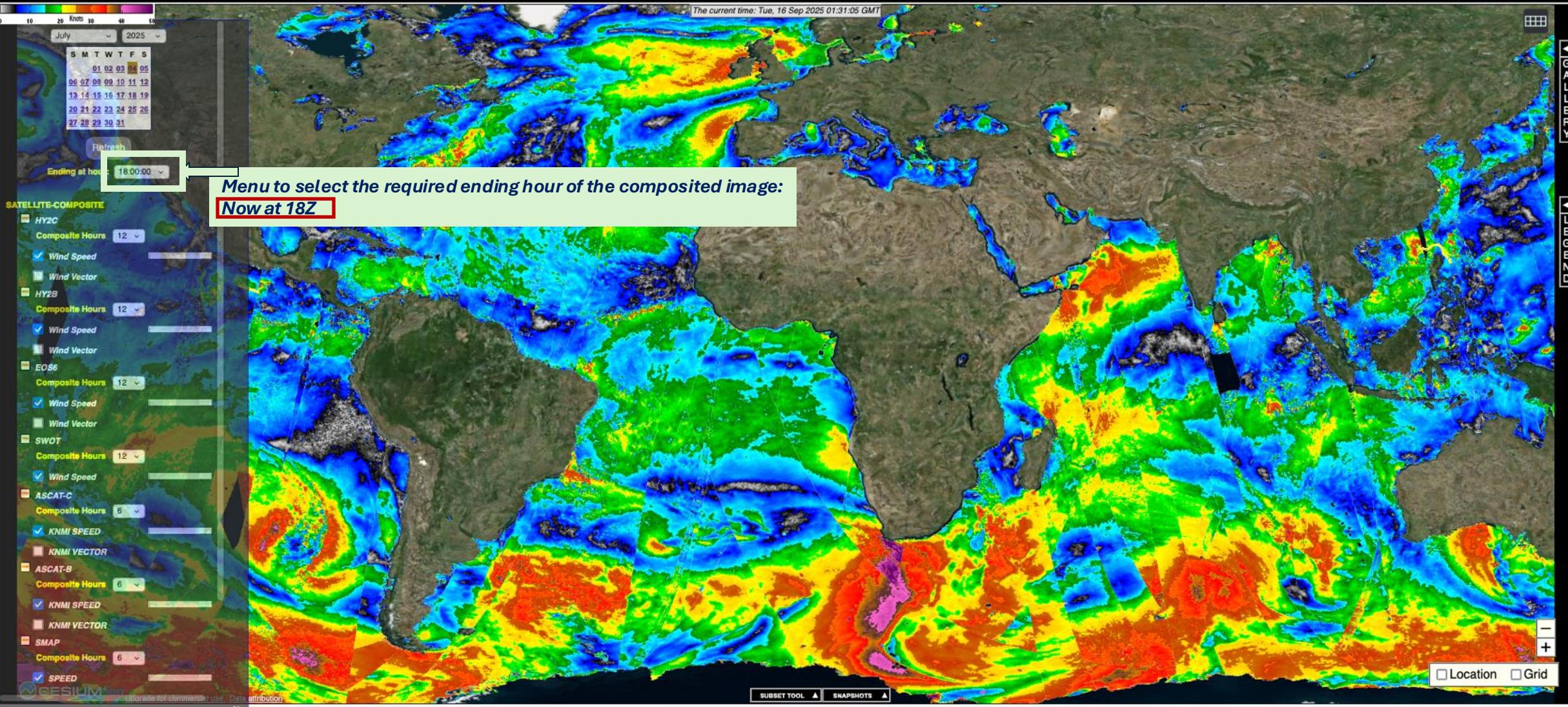
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Menu to select the required ending hour of the composited image:  
Now at 18Z

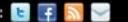


Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: Now at 15Z on 07/04/2025

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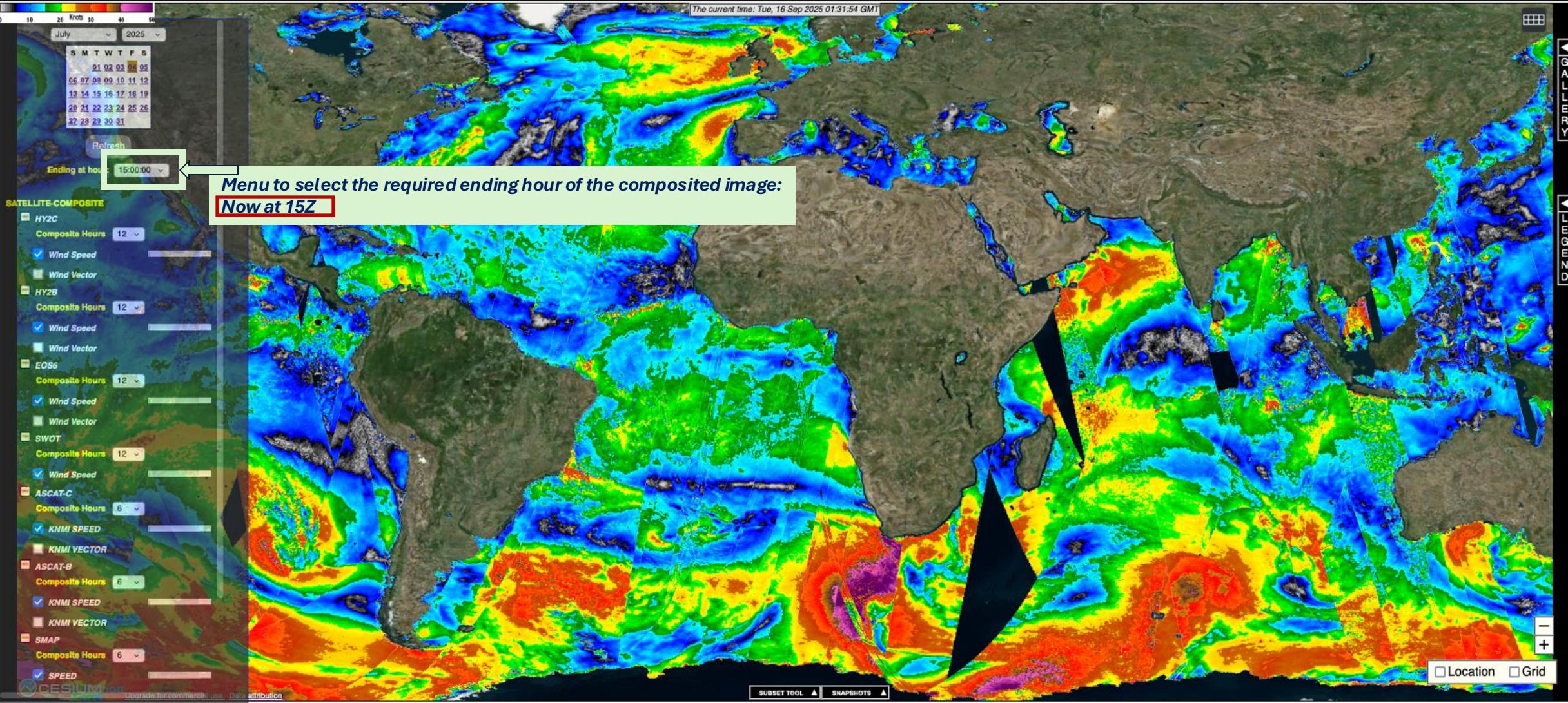
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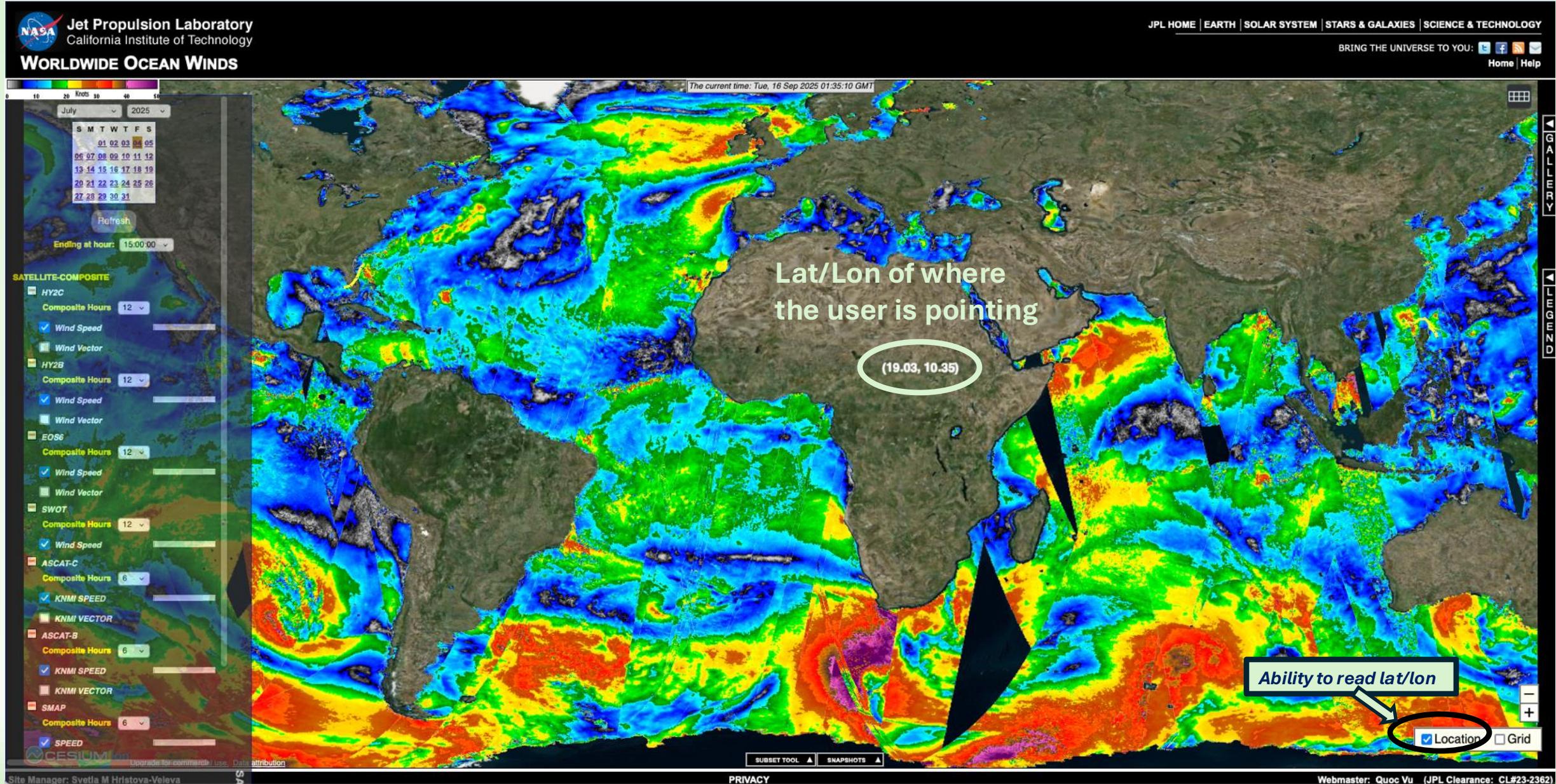
Menu to select the required ending hour of the composited image:  
Now at 15Z



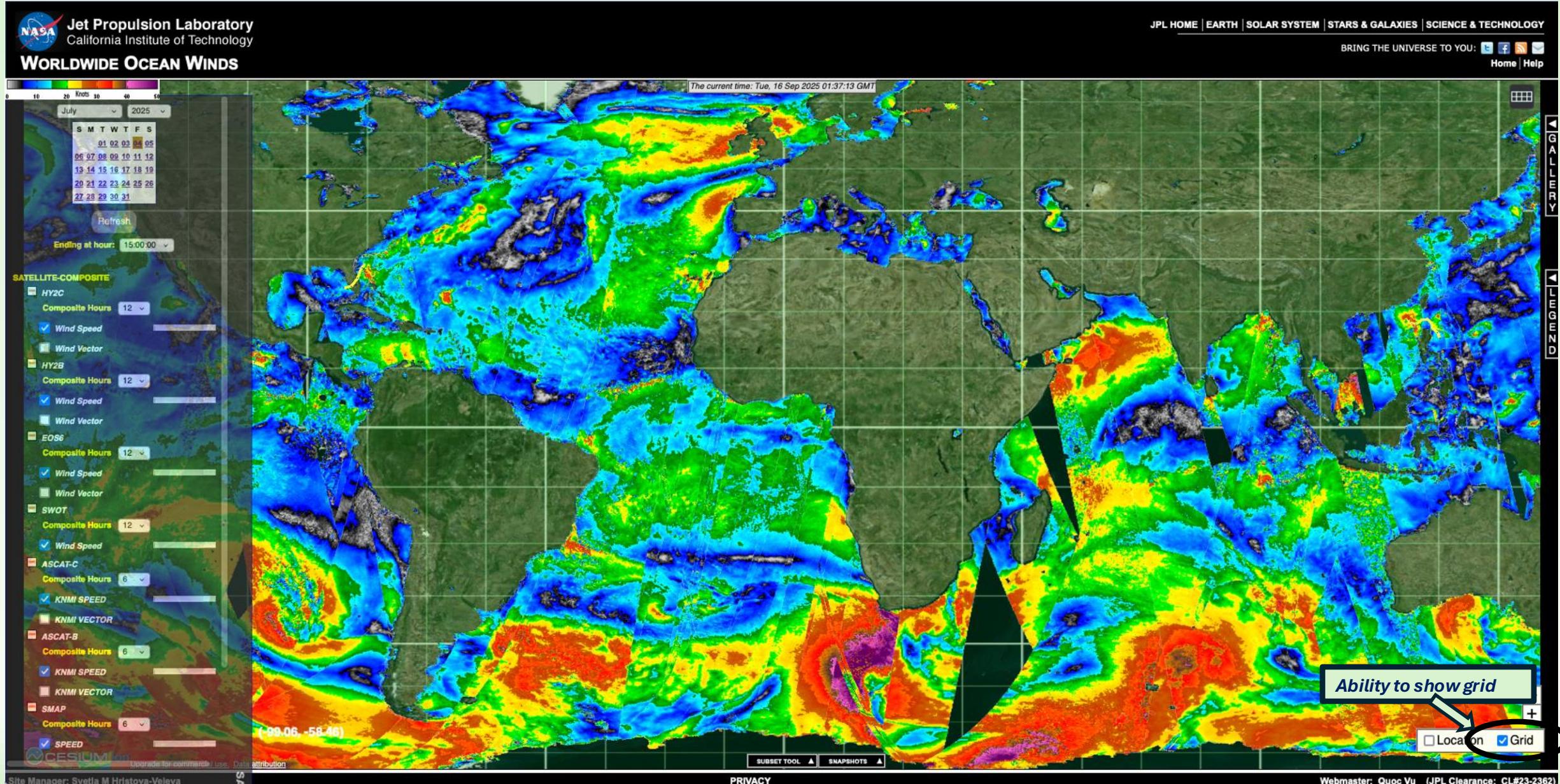
## **Other Features of the Portal:**

- Location**
- Grid**

# Other Features of the portal: Location



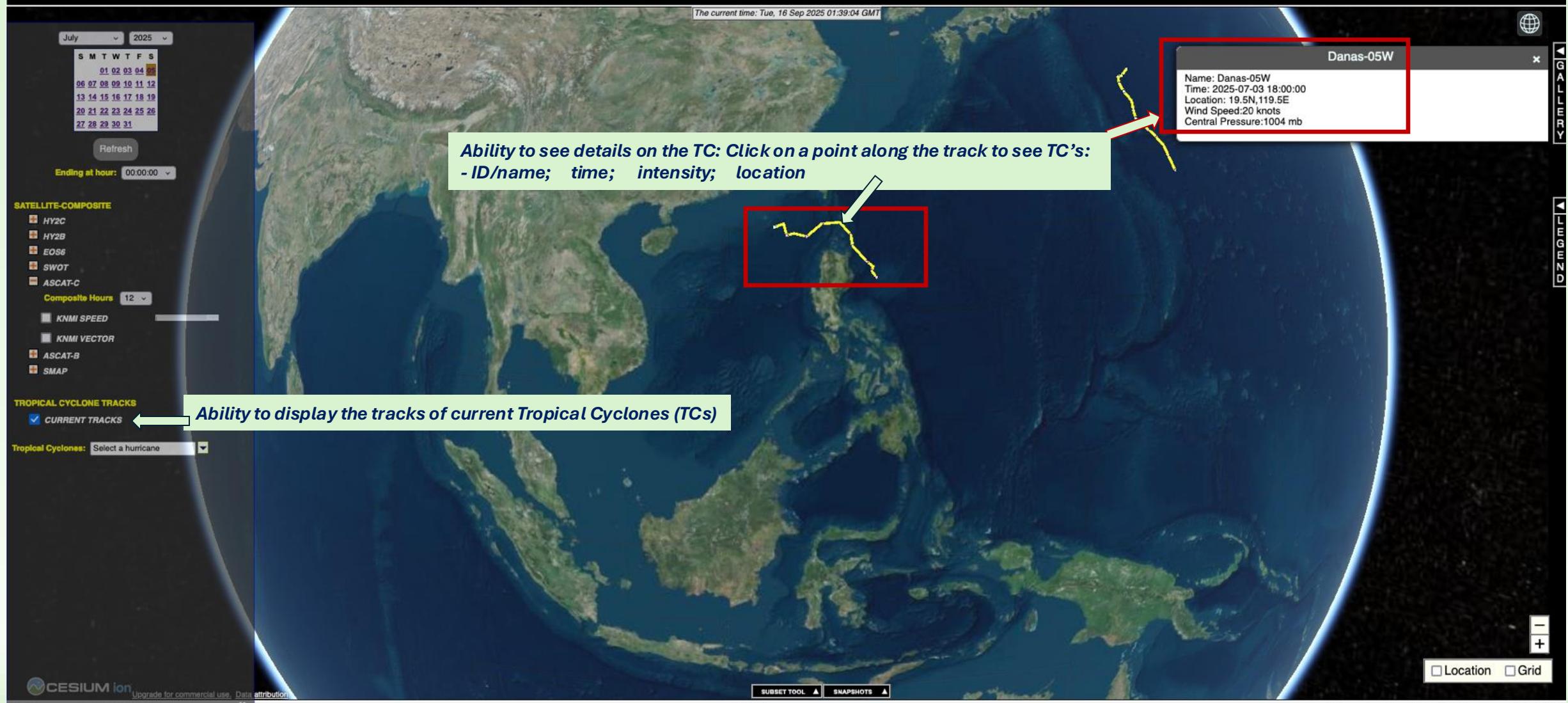
# Other Features of the portal: Grid visualization



# Hurricane Investigations



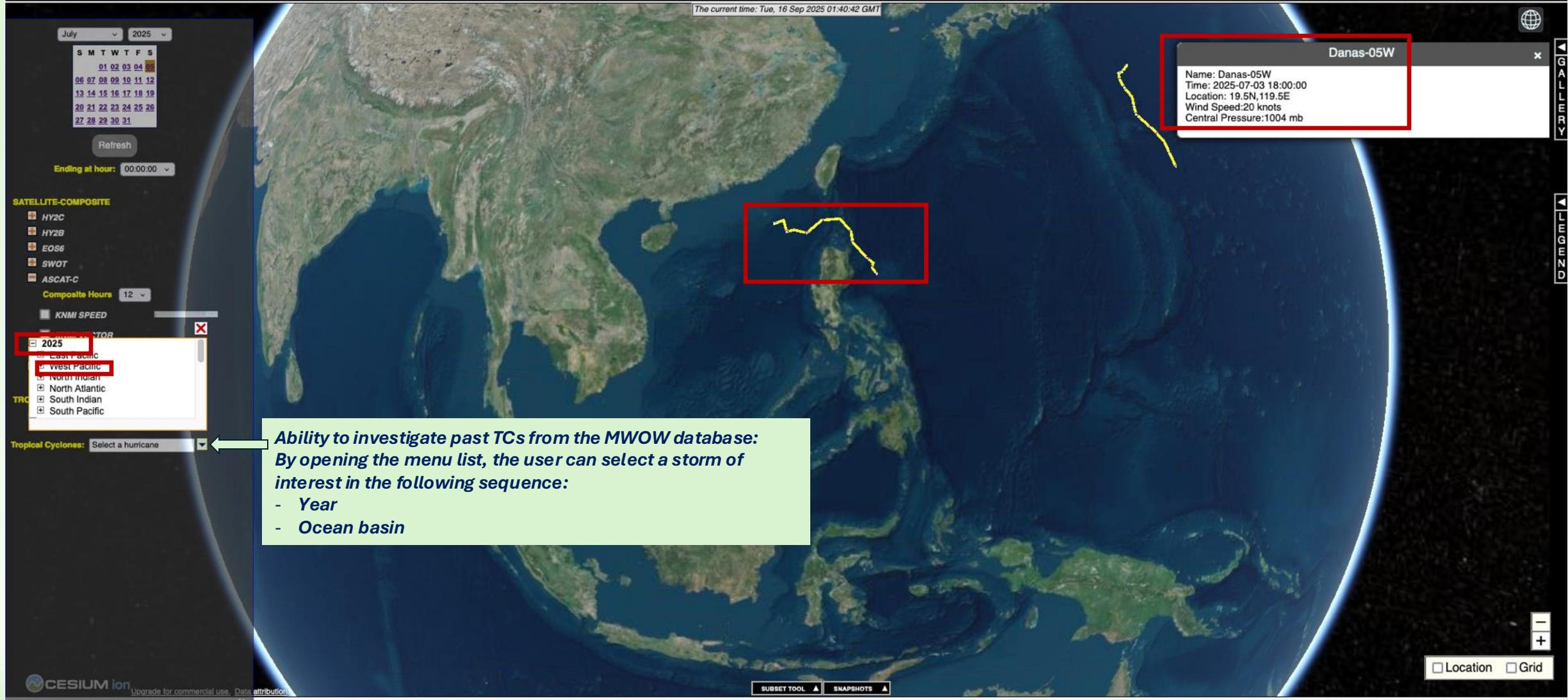
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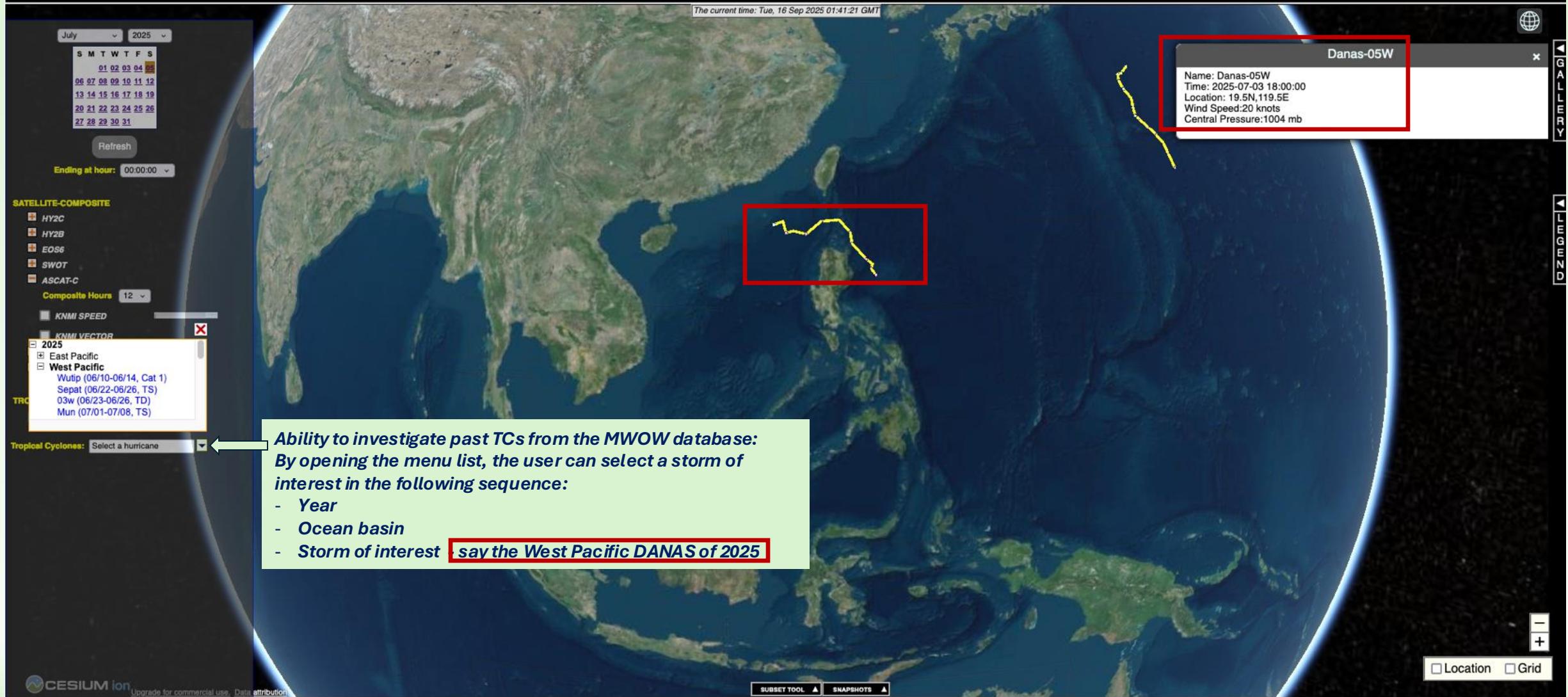






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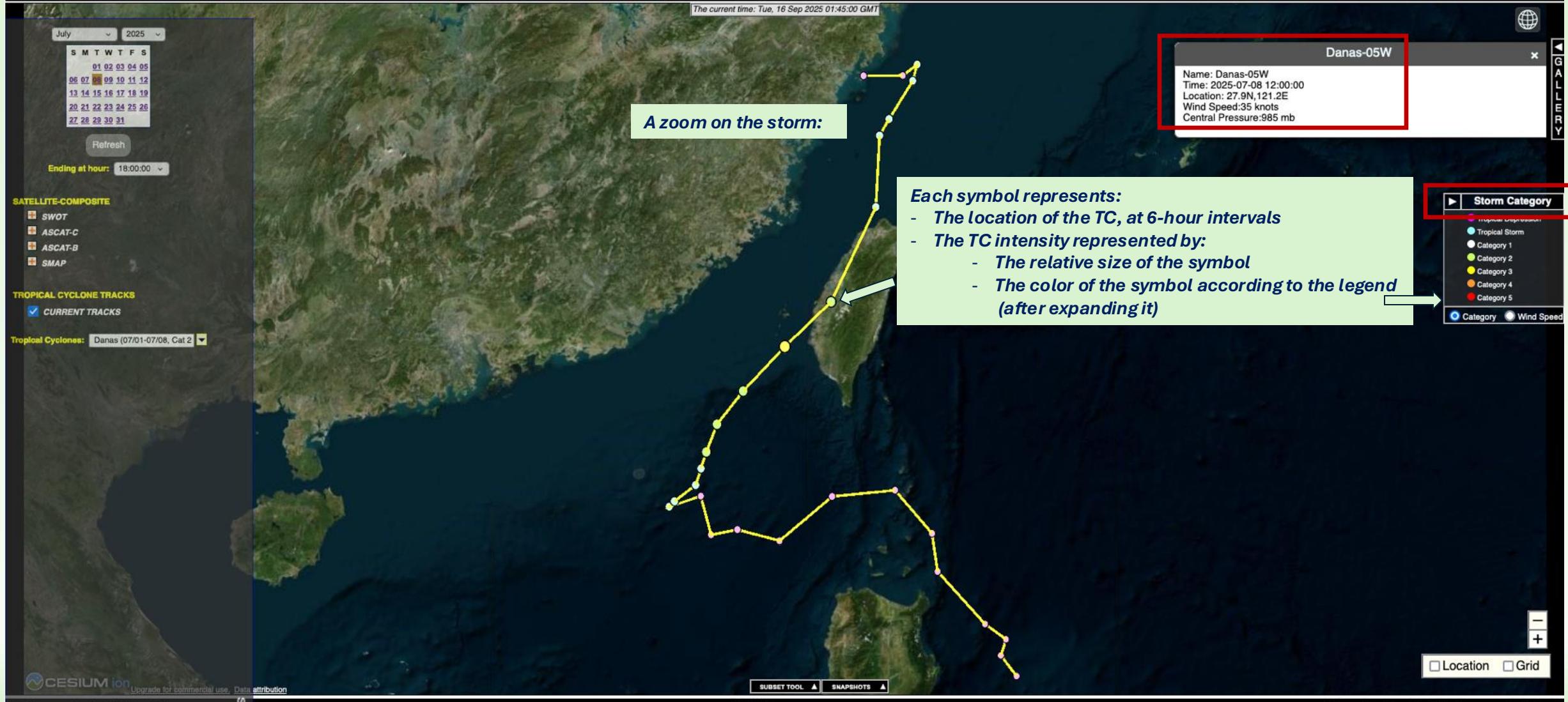
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**Let's move to the North Atlantic**

**And explore observations of Category 5 Hurricane Erin of 2025**

**See the full track**

after selecting from the menu list:

- Year == 2025
- Ocean basin == North Atlantic
- Storm of interest == **Erin of 2025**

2bf73c74-e7ef-4c92-a192-77690c0c17f8

Name: Erin-05L  
Time: 2025-08-16 18:00:00  
Location: 19.8N, -63.4W  
Wind Speed:140 knots  
Central Pressure:915 mb

Early Forecast  
 Late Forecast  
 Ensemble Forecast

Storm Category

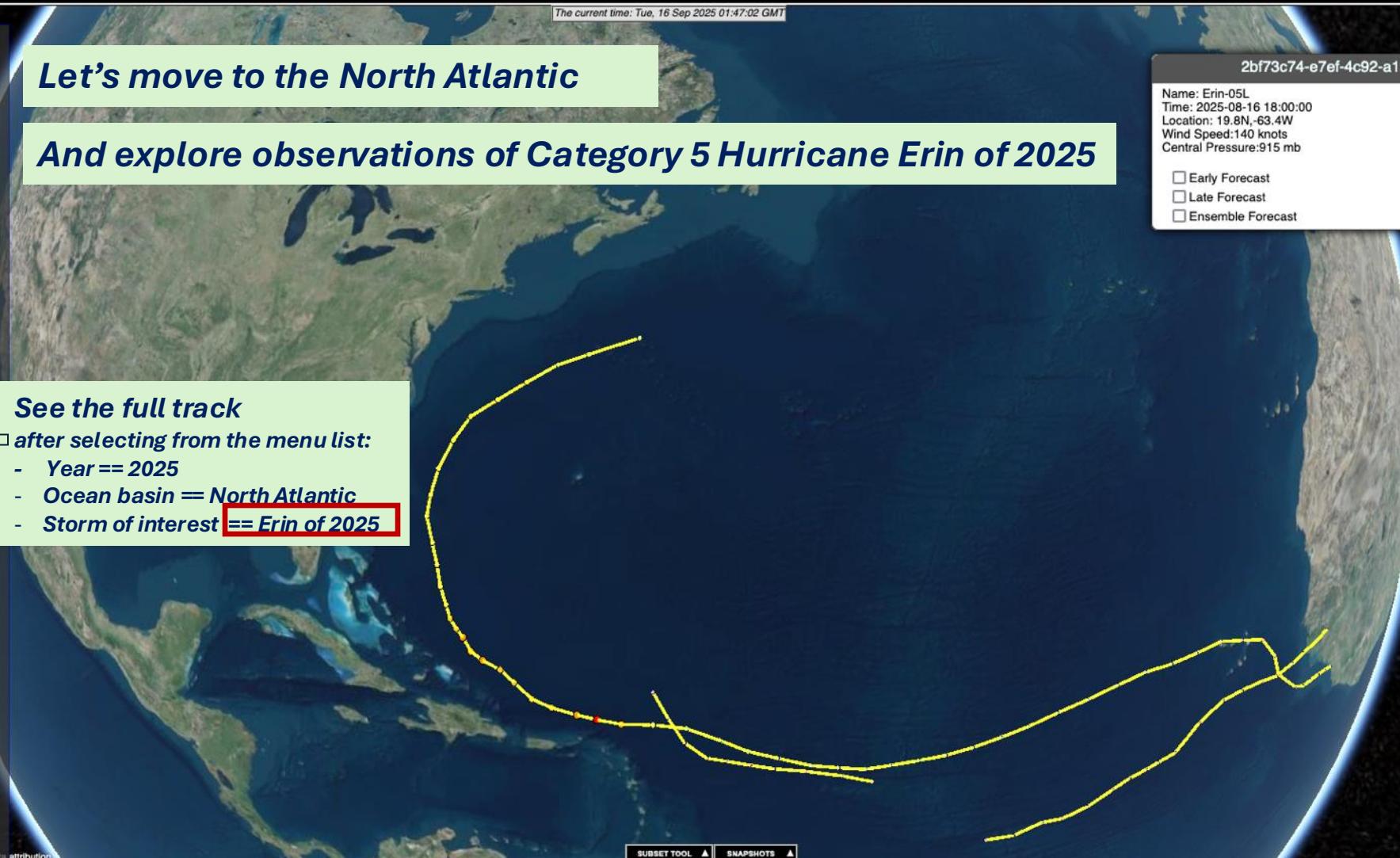
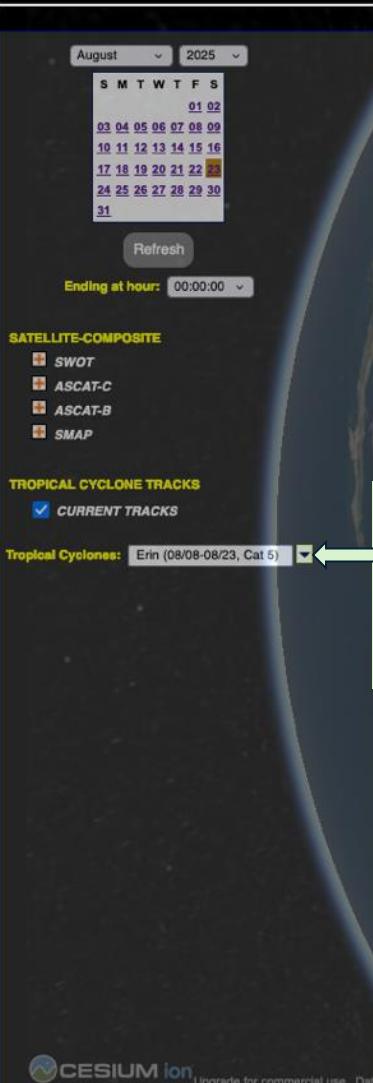
- Tropical Depression
- Tropical Storm
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

Category  Wind Speed

Expanded legend



Location  Grid



# **Let's move to the North Atlantic**

*And explore observations of Category 5 Hurricane Erin of 2025*

2bf73c74-e7ef-4c92-a192-77690c0c17f8

Name: Erin-05L

Time: 2025-08-16 18:00:00

Location: 10.0N, 88.4W  
Wind Speed: 140 km/sec

Wind Speed: 140 mph  
Central Pressure: 913

### Early Forecast

Early Forecast

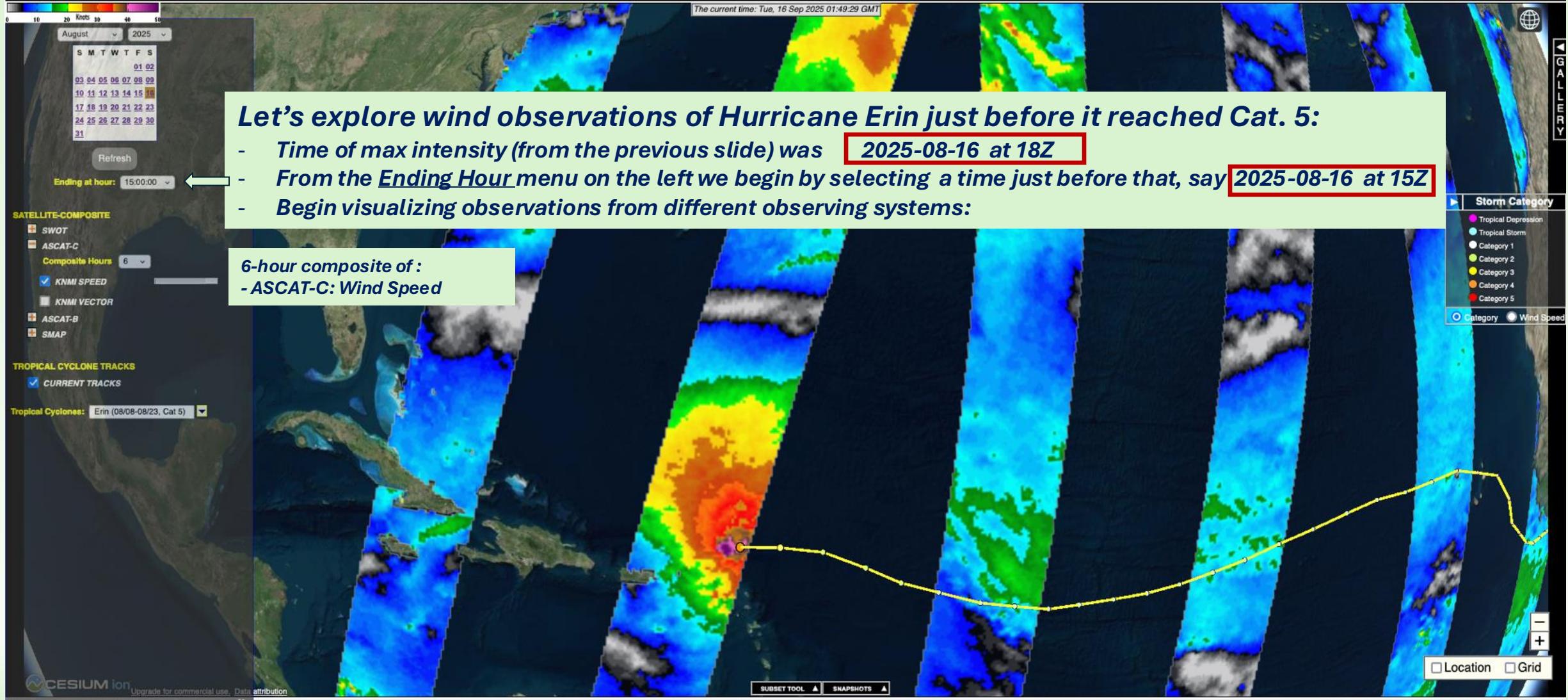
Ensemble Forecast

Ensemble Form

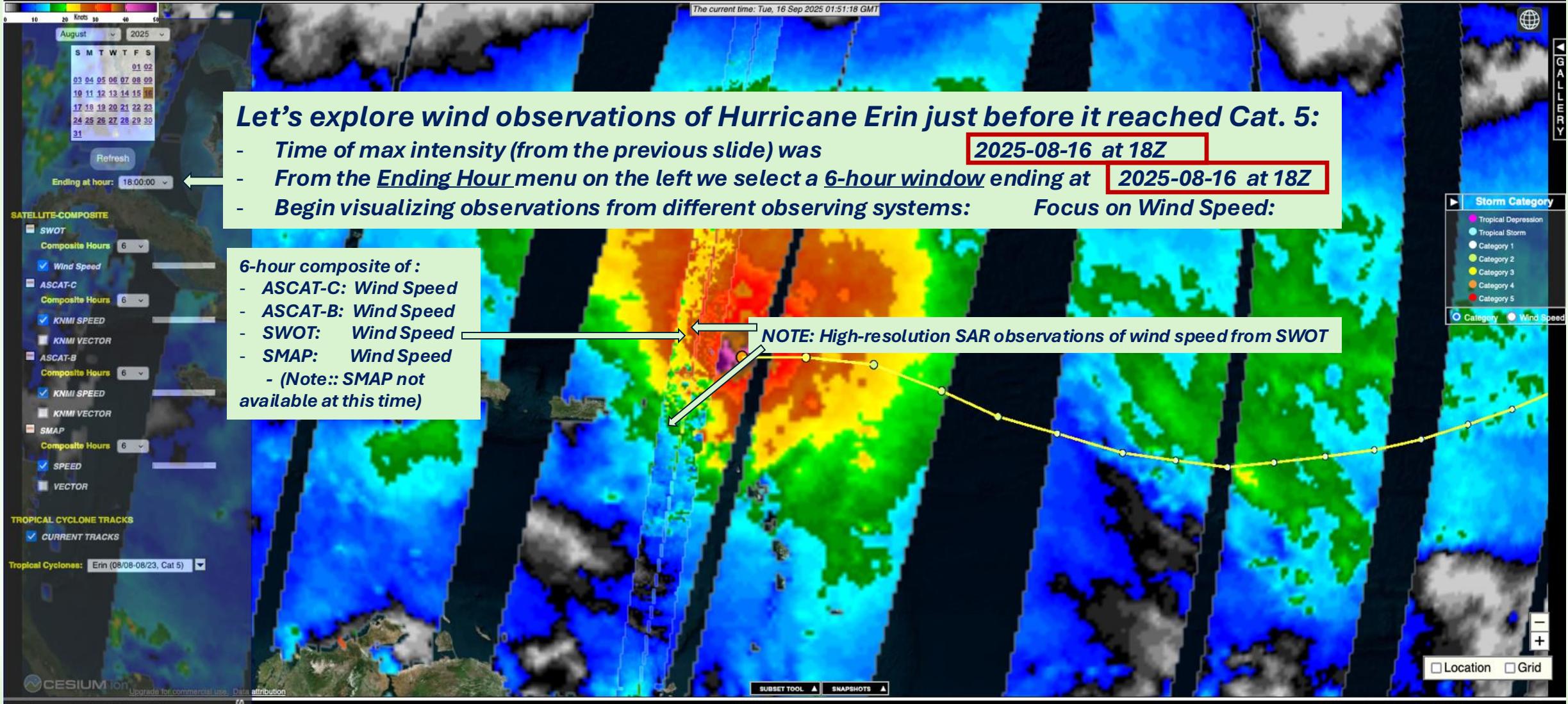
**The time of the highest TC intensity is:  
2025-08-16: at 18Z**

Let's find the time when Erin reached Cat.

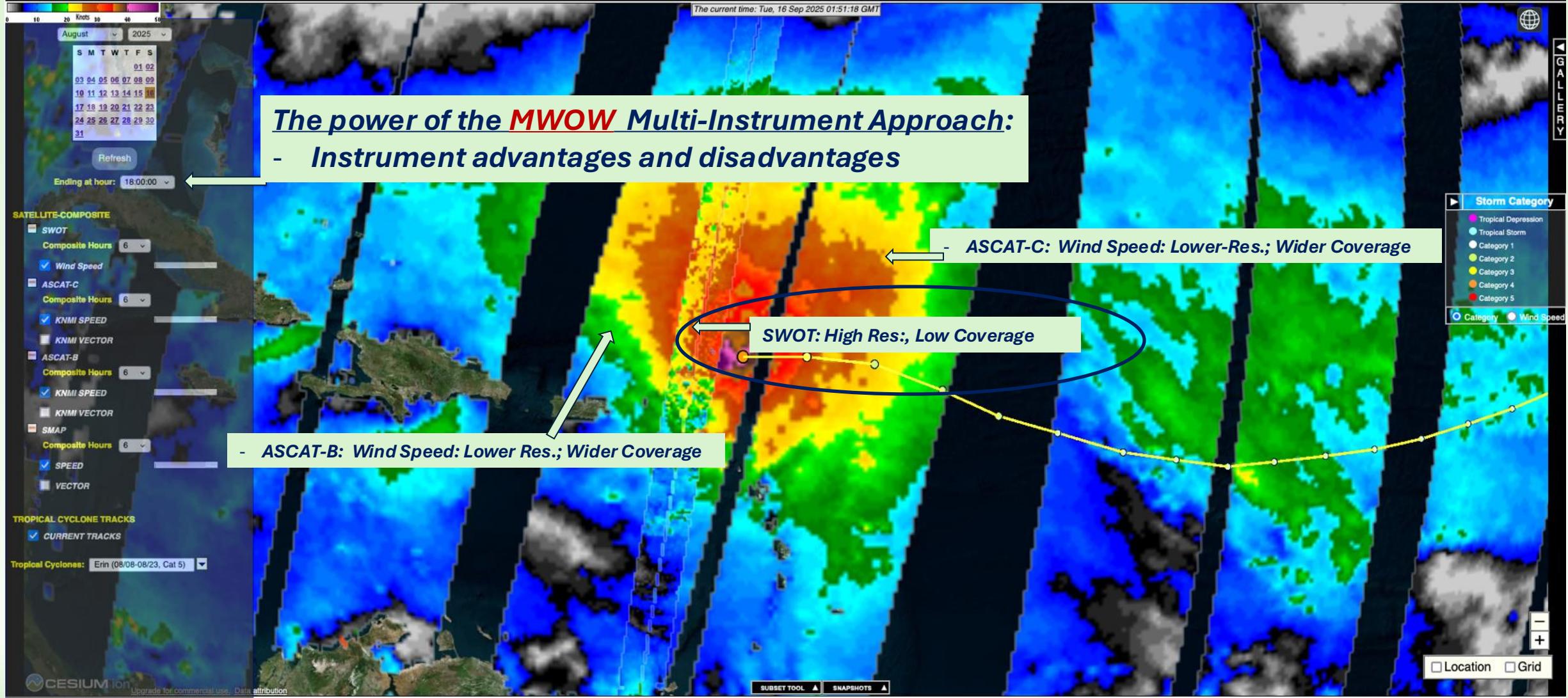
- Click on red symbol (Cat. 5)
- Check the time from the Information Box above



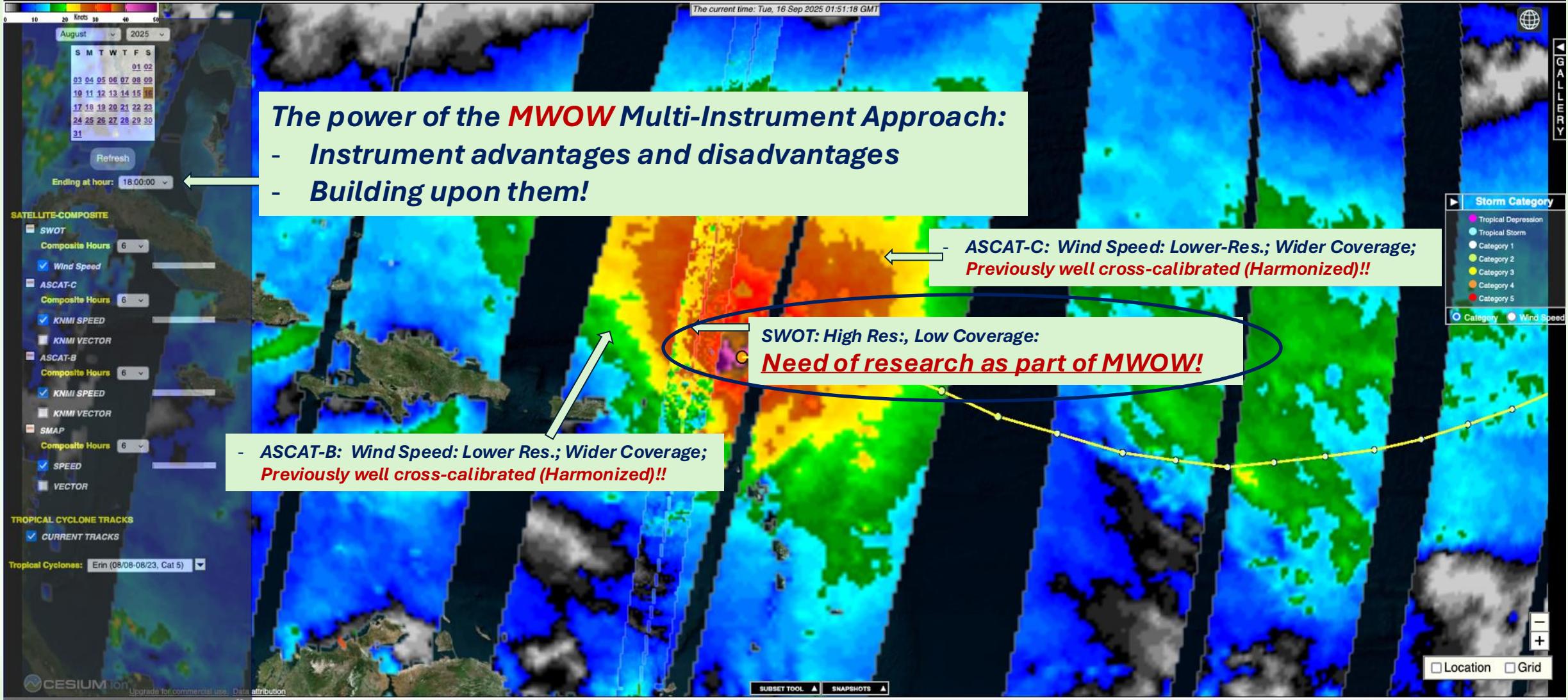
## ZOOM on Wind Speed Observations of Category 5 Hurricane Erin of 2025:



## ZOOM on Wind Speed Observations of Category 5 Hurricane Erin of 2025:

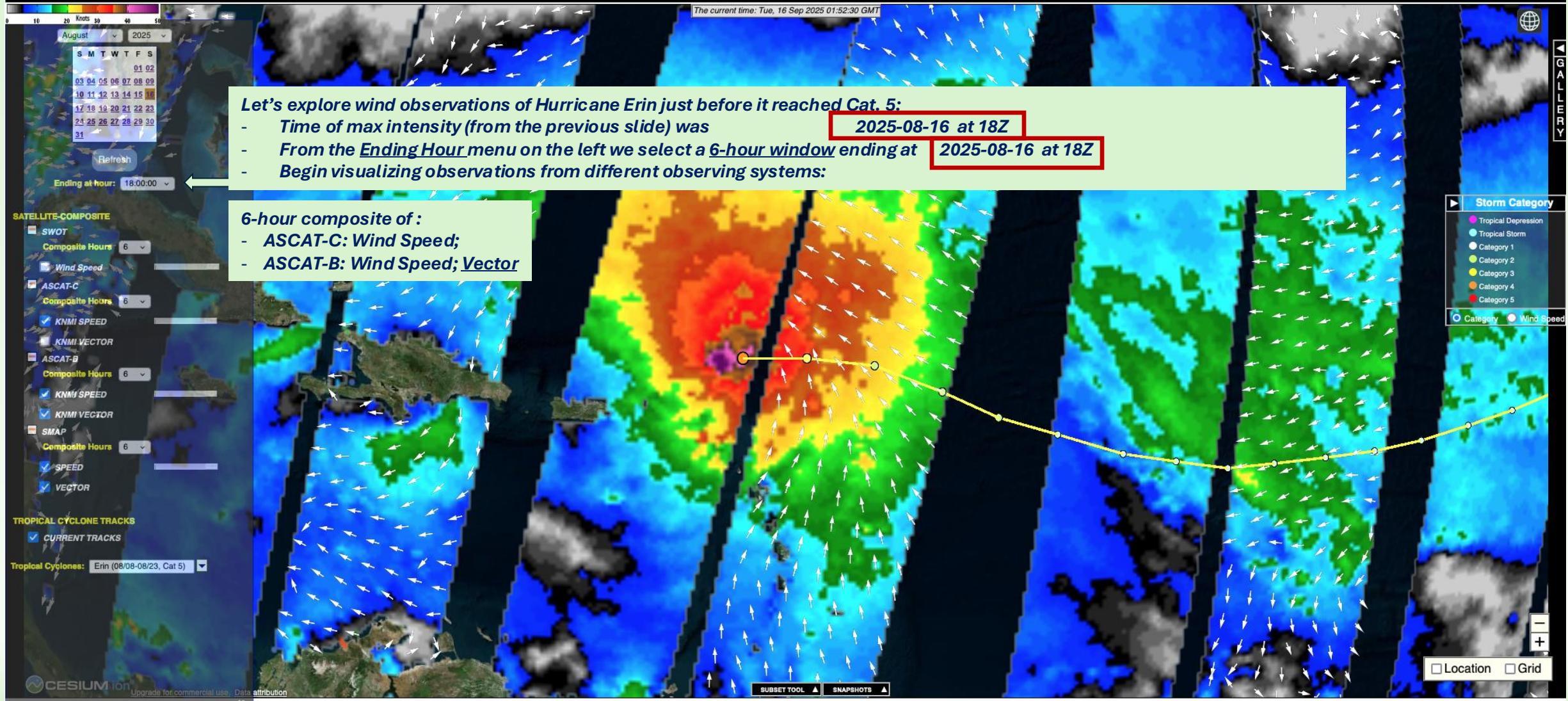


## ZOOM on Wind Speed Observations of Category 5 Hurricane Erin of 2025:



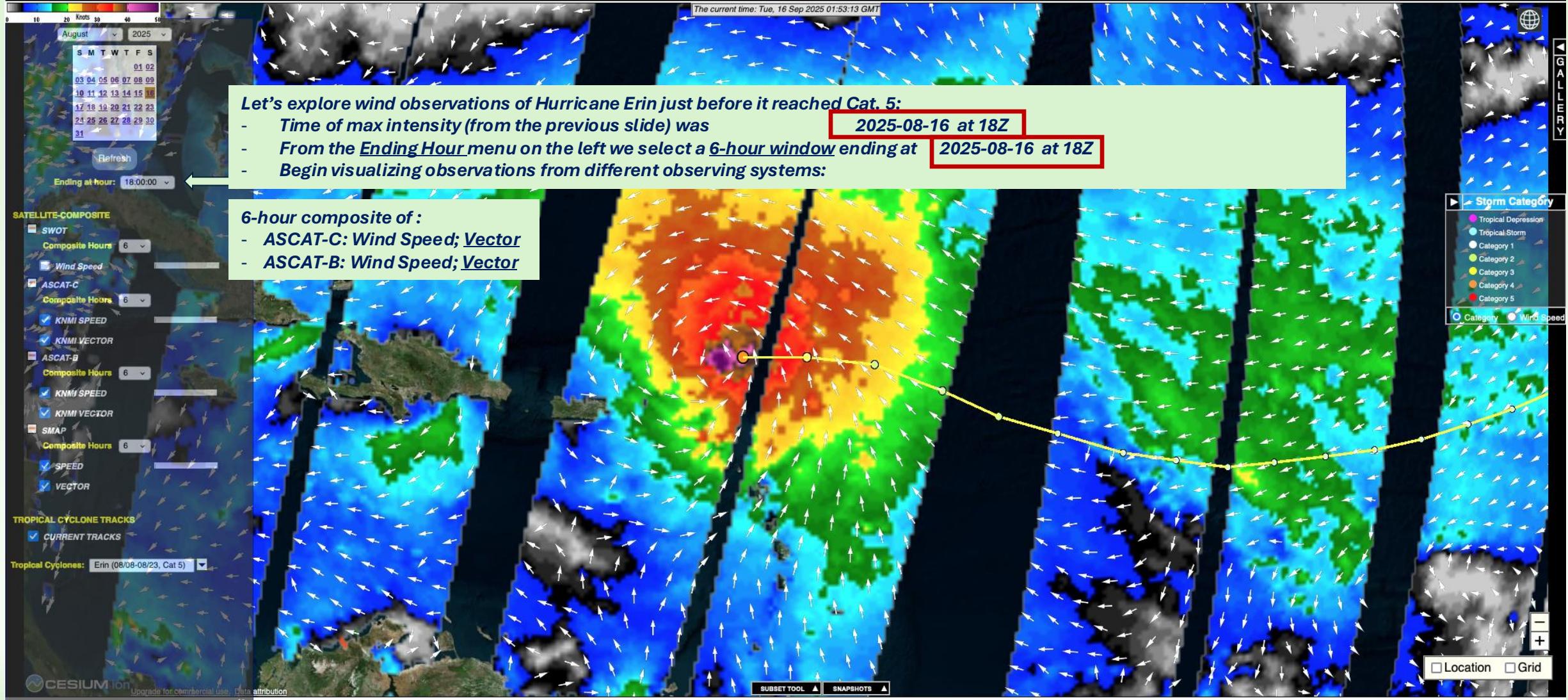


## ZOOM on Wind VECTOR Observations of Category 5 Hurricane Erin of 2025:



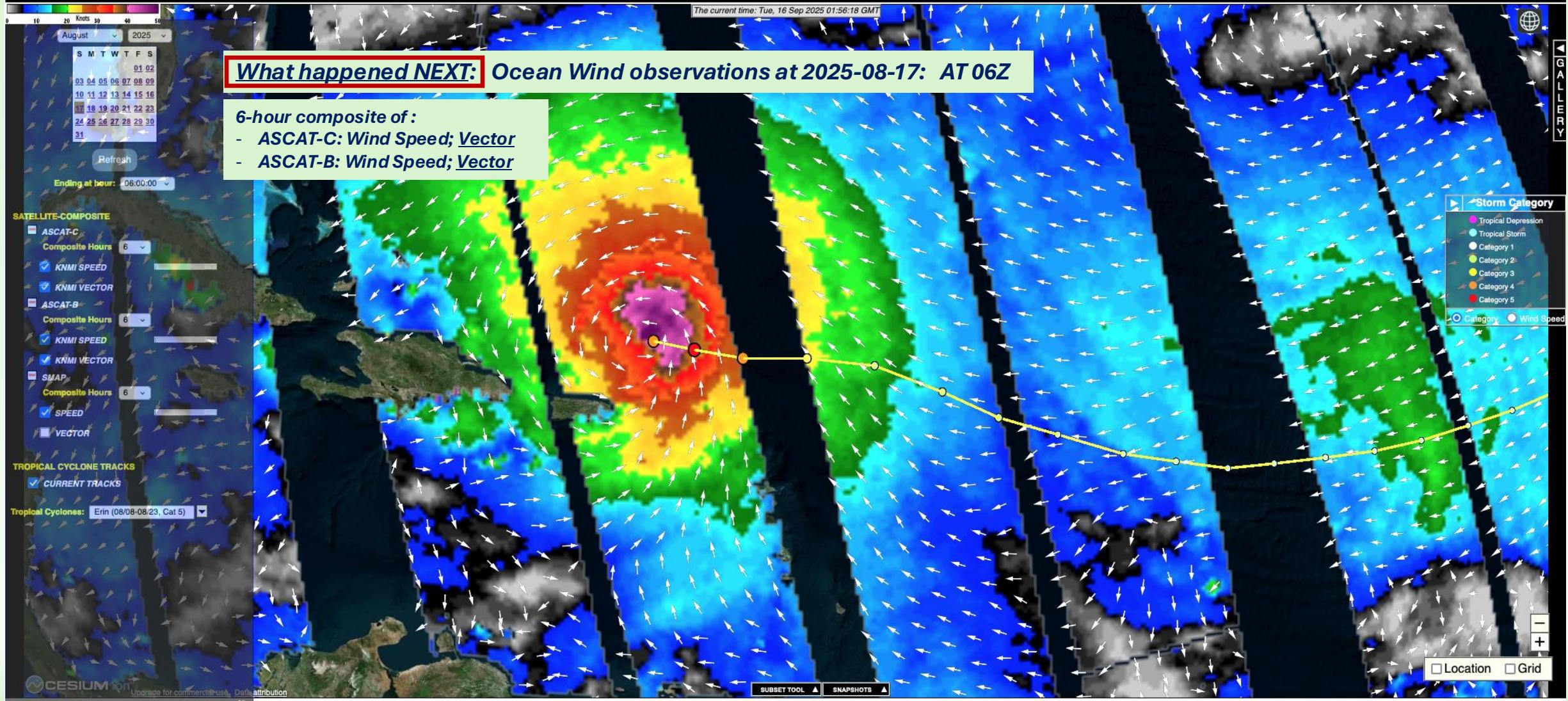


## ZOOM on Wind VECTOR Observations of Category 5 Hurricane Erin of 2025:





## ZOOM on Wind VECTOR Observations of Category 5 Hurricane Erin of 2025:



# Background