

Jet Propulsion Laboratory
California Institute of Technology

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

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Outline:

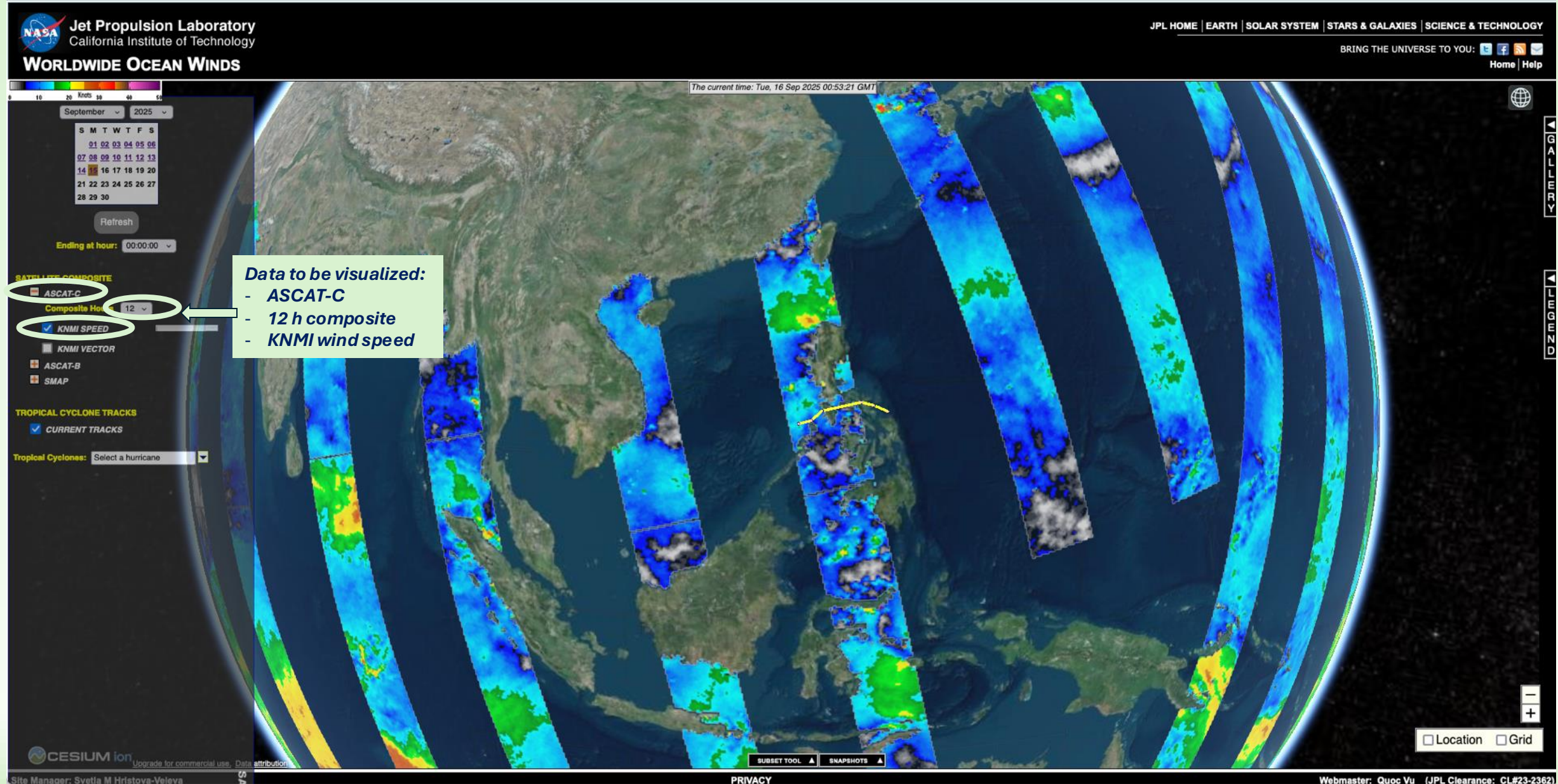
- **How to navigate the MWOW portal (<https://wow.jpl.nasa.gov/data-portal/>):** **Slides 3-24**
- **Exploring the 6-hourly coverage over a 24 hour period:** **Slides 25-35**
- **Other Portal features:** **Slides 36-38**
- **Hurricane Investigations:** **Slides 39-54**

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

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WORLDWIDE OCEAN WINDS

0 10 20 30 40 50

Knots

September 2025

S	M	T	W	T	F	S
01	02	03	04	05	06	
07	08	09	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Refresh

Ending at hour: 00:00:00

☐ ASCAT-C

Composite Hours 12

☒ KNMI SPEED

☐ KNMI VECTOR

☐ ASCAT-B

☐ SMAP

TROPICAL CYCLONE TRACKS

☒ CURRENT TRACKS

Tropical Cyclones: Select a hurricane

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)



Legend

Location

Grid

CESIUM ion

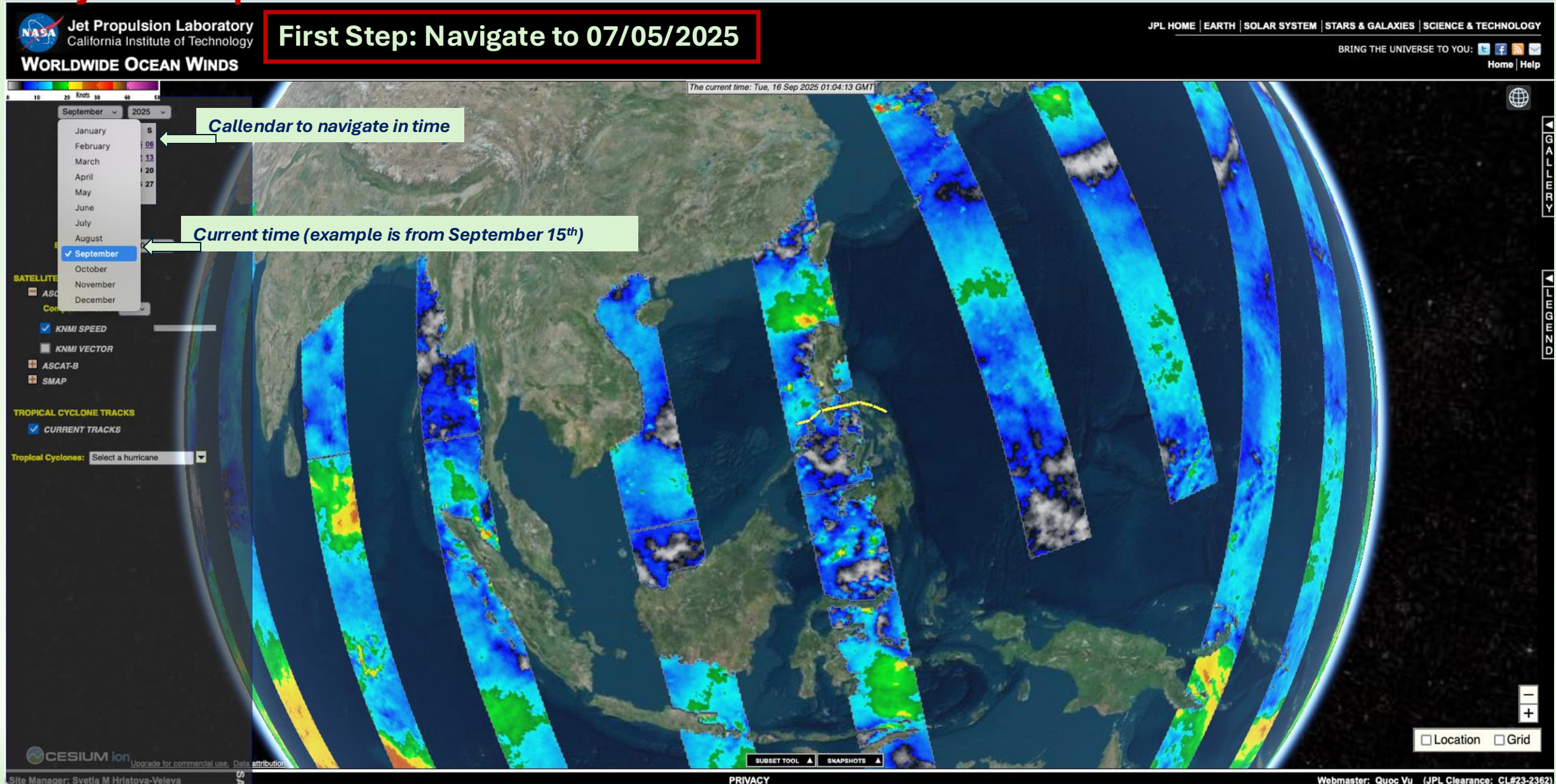
Upgrade for commercial use, Data attribution

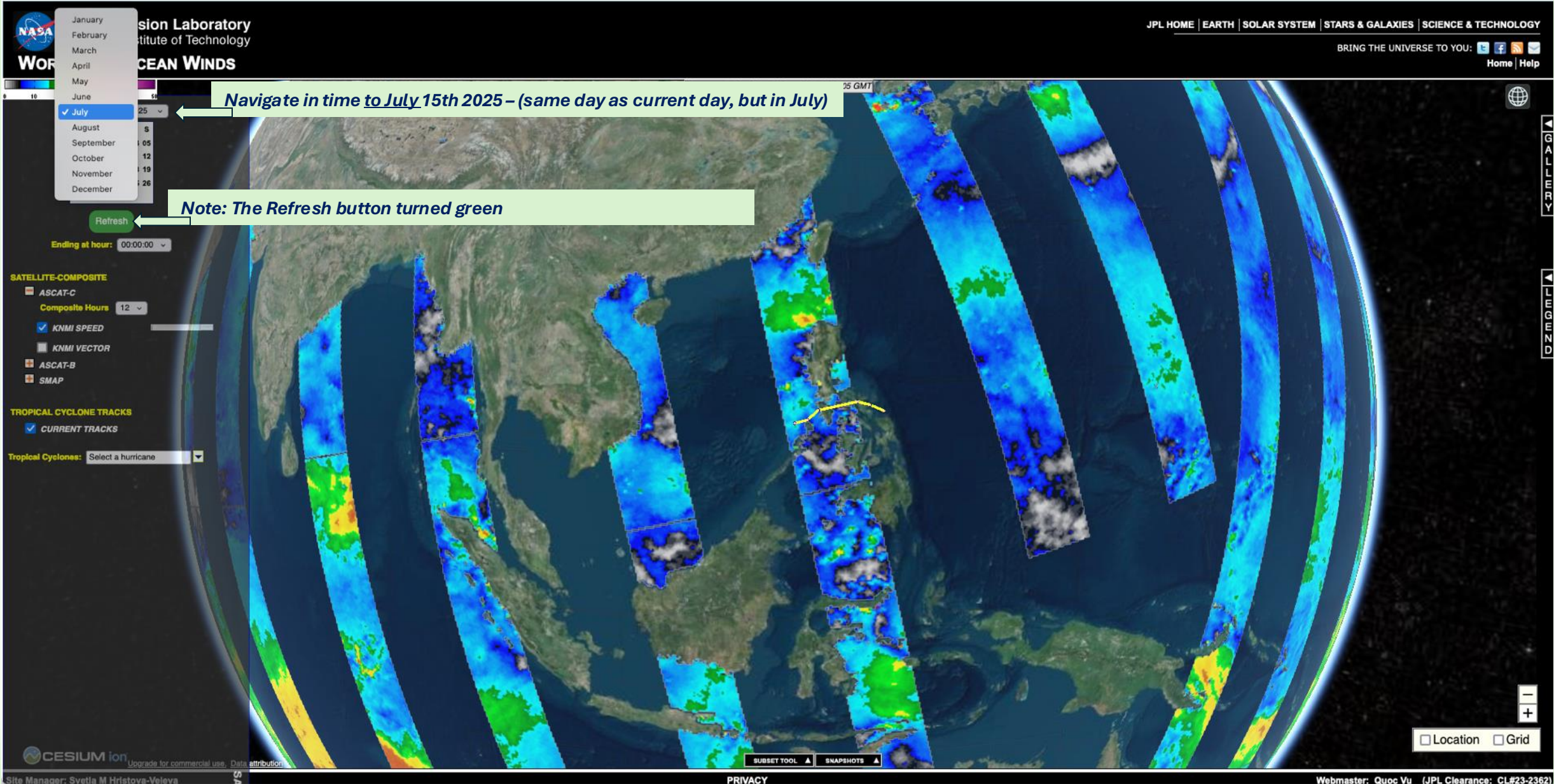
Site Manager: Svetla M Hristova-Velleva

PRIVACY

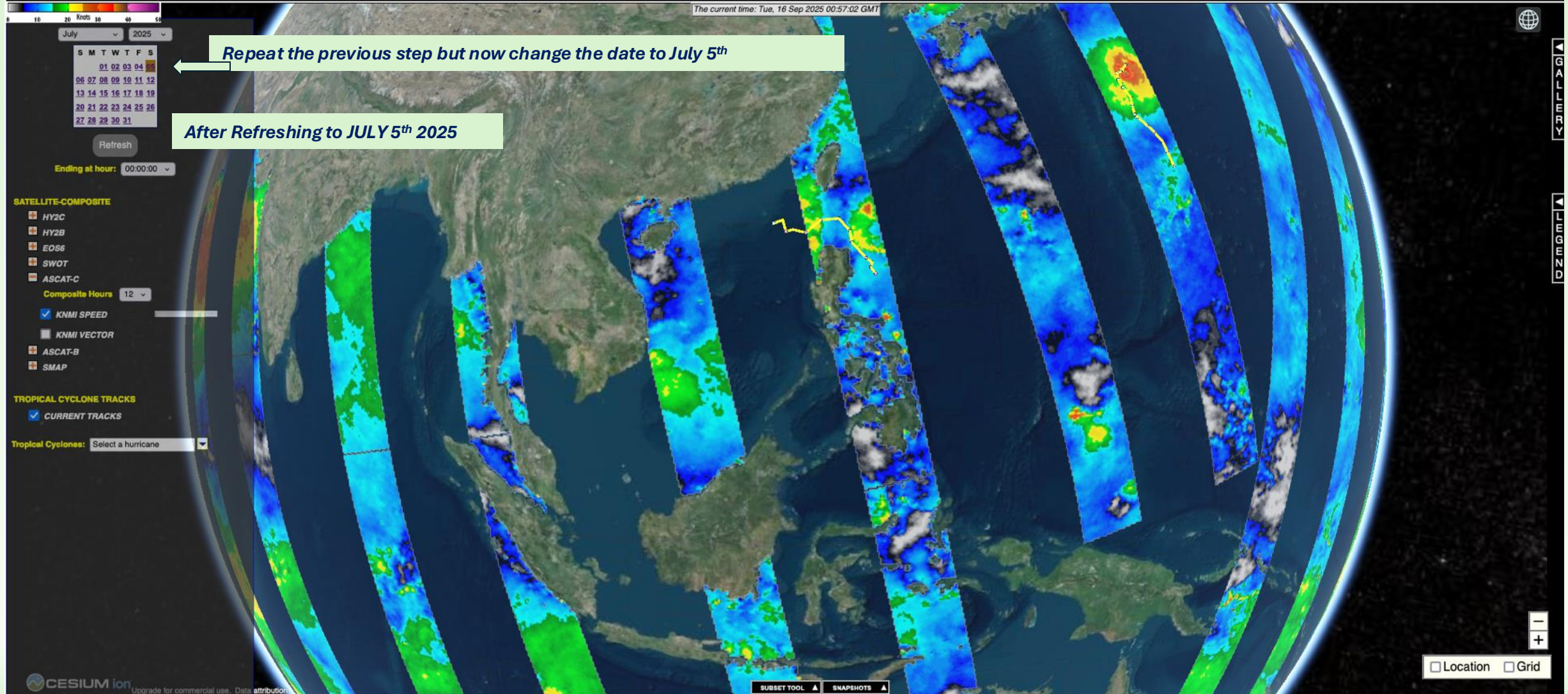
Webmaster: Quoc Vu (JPL Clearance: CL#23-2362)

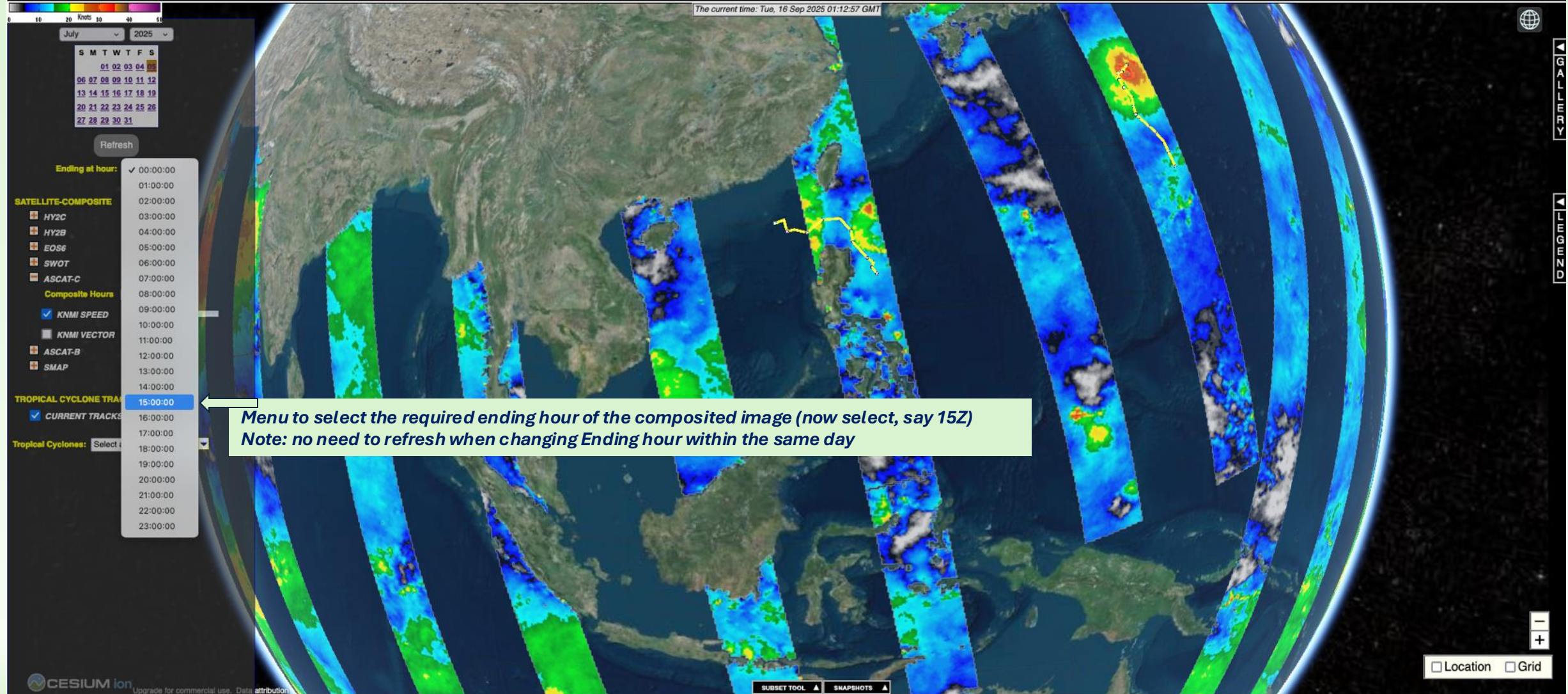
The full set of the envisioned V0 products, from 7 instruments, is currently available only for the period 07/01/2025 – 07/05/2025



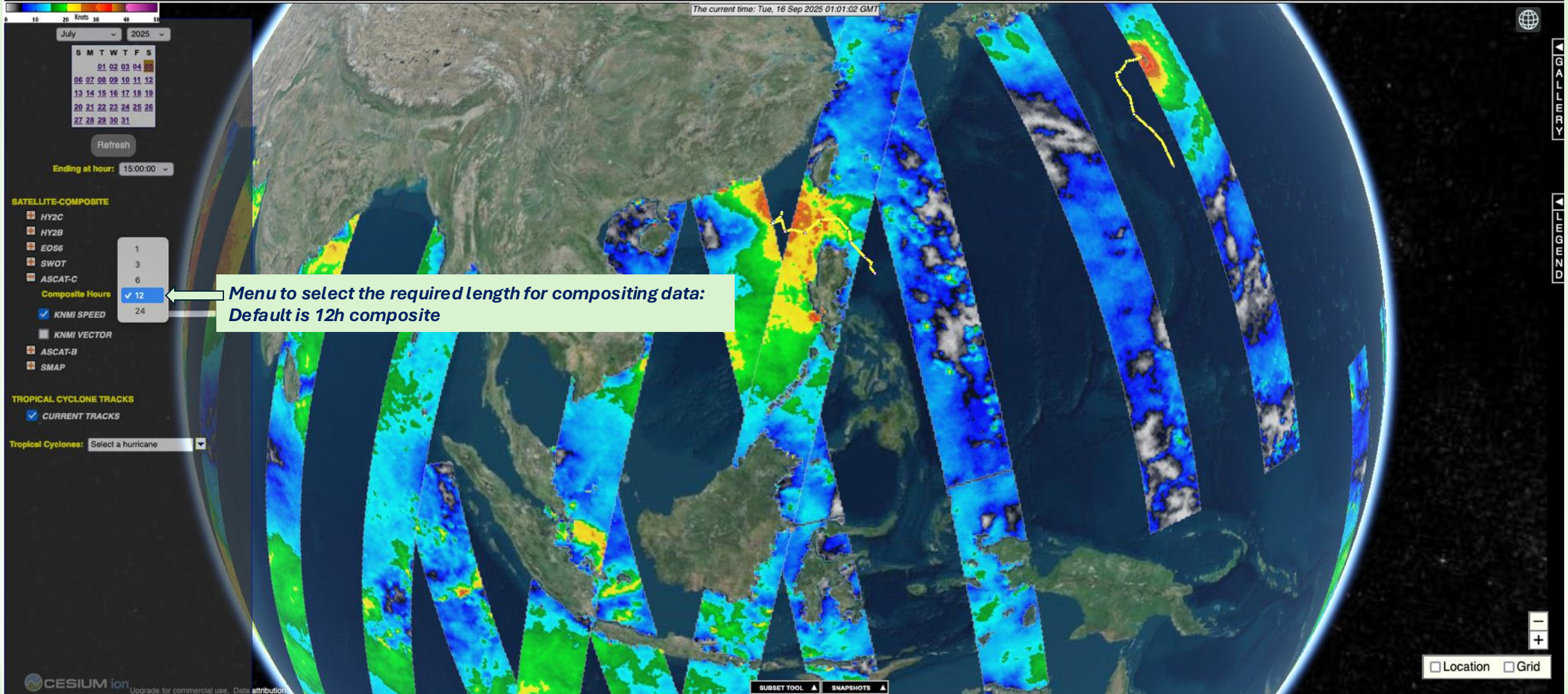






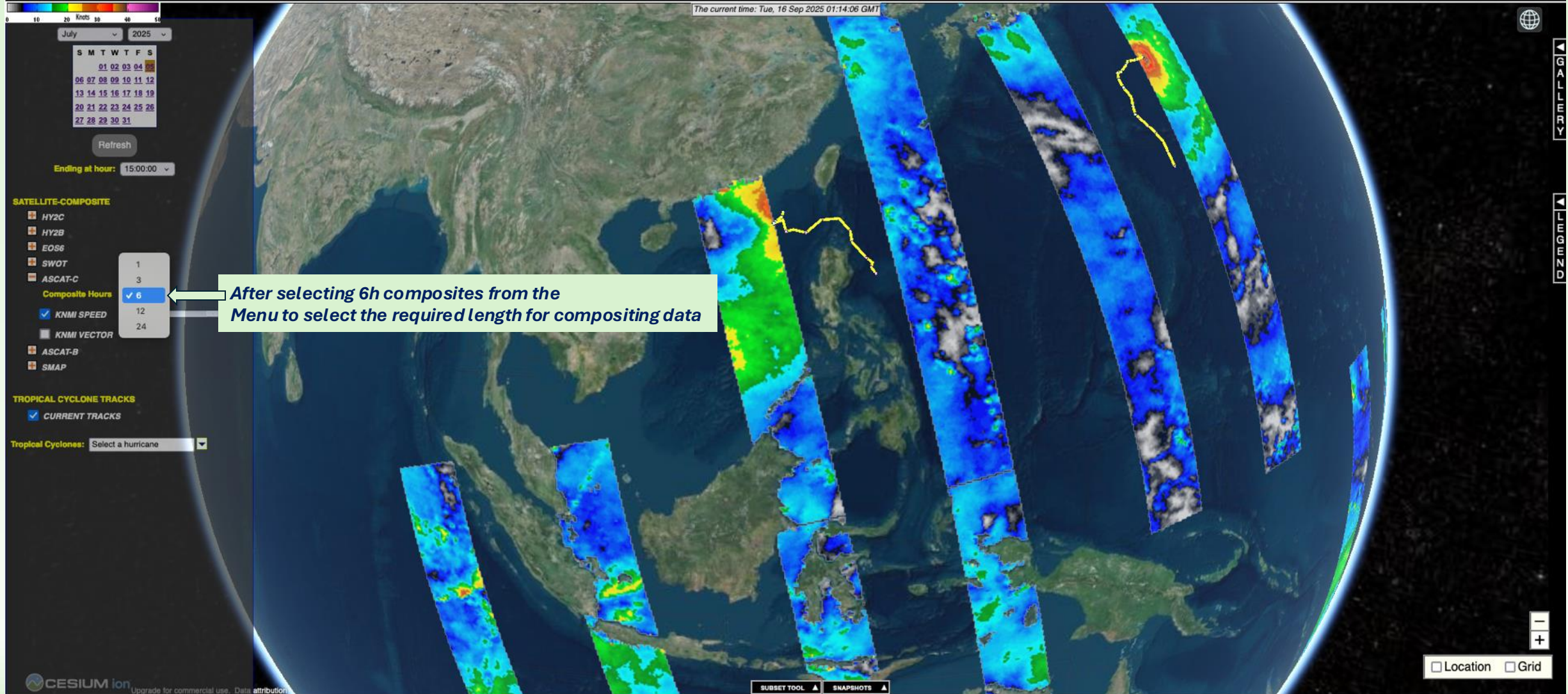


WORLDWIDE OCEAN WINDS





WORLDWIDE OCEAN WINDS



July 2025

S	M	T	W	T	F	S
			01	02	03	04
06	07	08	09	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Ending at hour: 15:00:00

SATELLITE-COMPOSITE


- HY2C
- HY2B
- EOS6
- SWOT
- ASCA7

Composite Hours 6

- ☒ KNMI SPEED
- ☐ KNMI VECTOR
- ☐ ASCAT-B
- ☐ SMAP

TROPICAL CYCLONE TRACKS

- ✓ CURRENT TRACKS**

Tropical Cyclones: Select a hurricane 

The current time: Tue, 16 Sep 2025 01:15:47 GMT

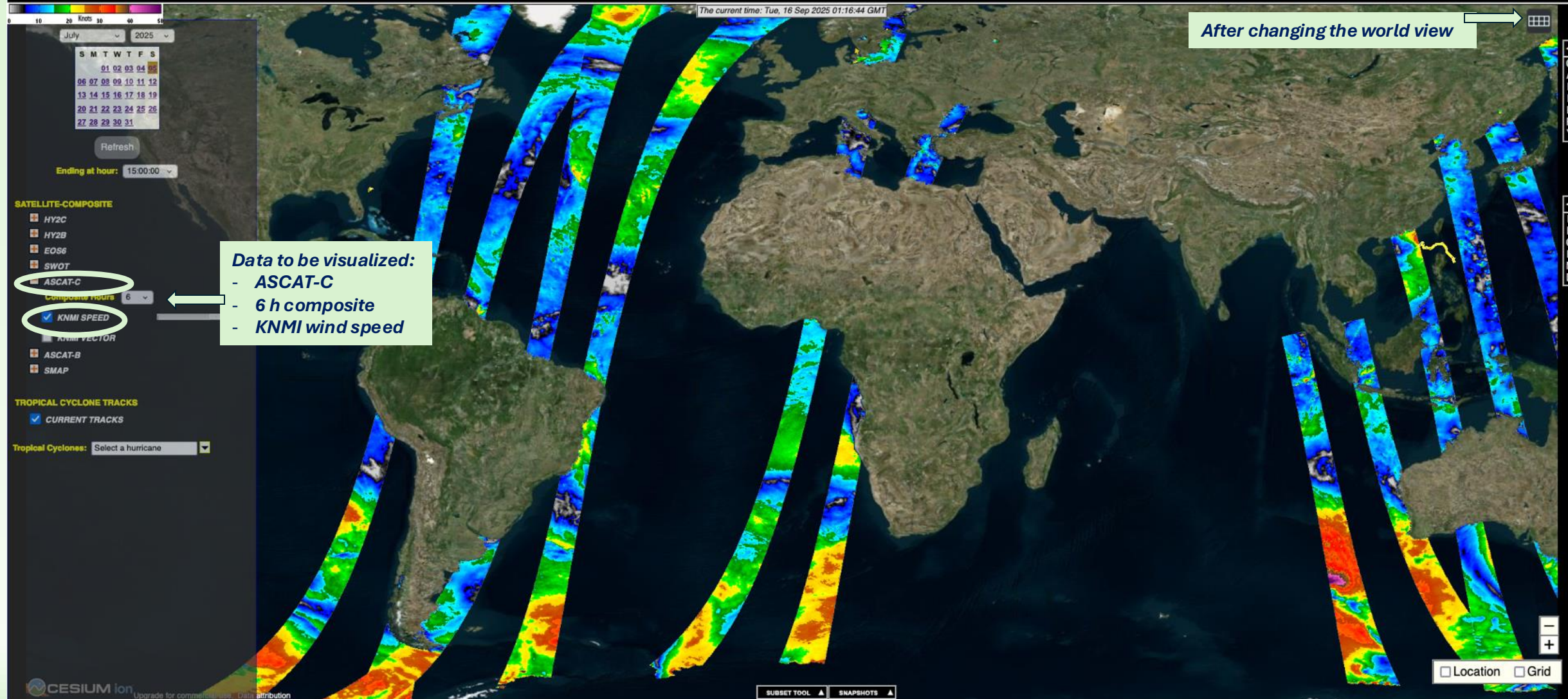
Menu to change the world view



GALLERY

LEGEND

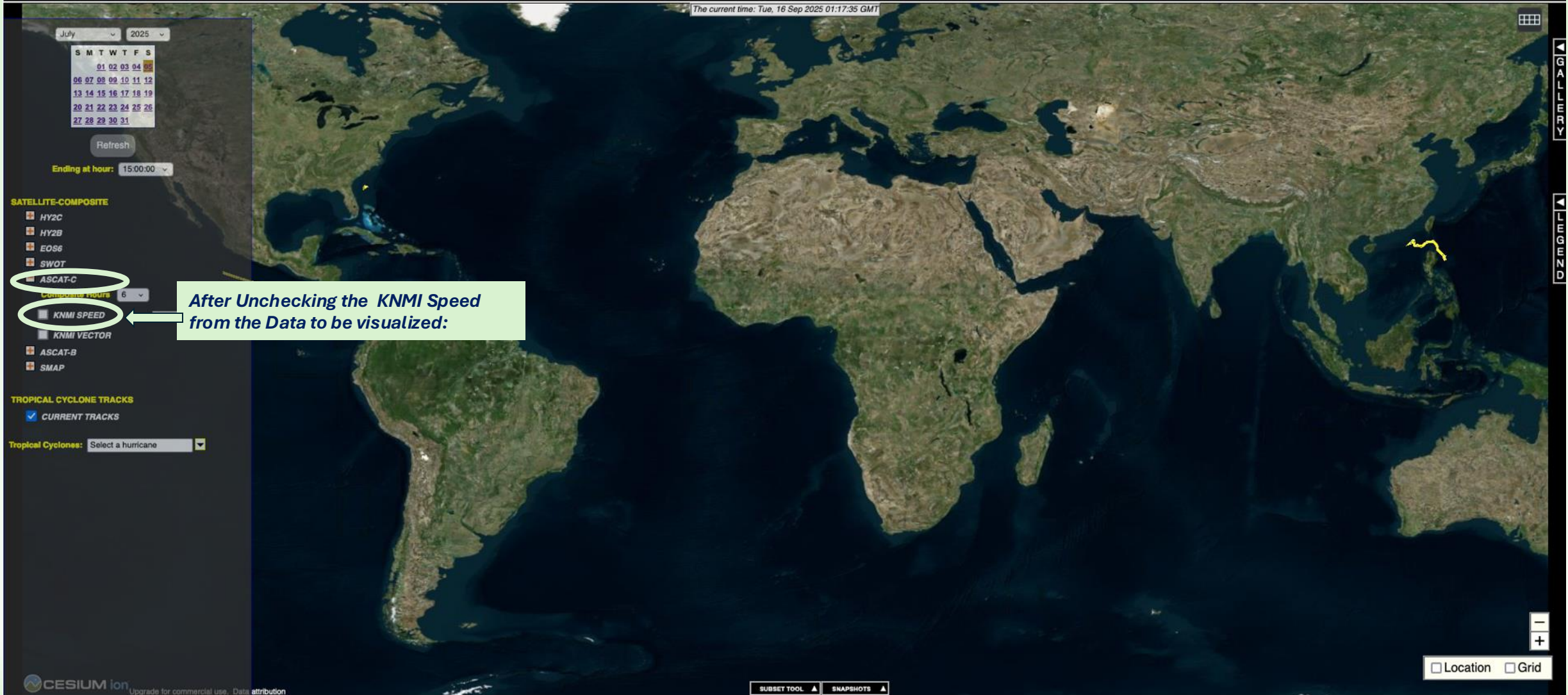
☐ Location ☐ Grid



Data to be visualized:

- ASCAT-C
- 6 h composite
- KNMI wind speed

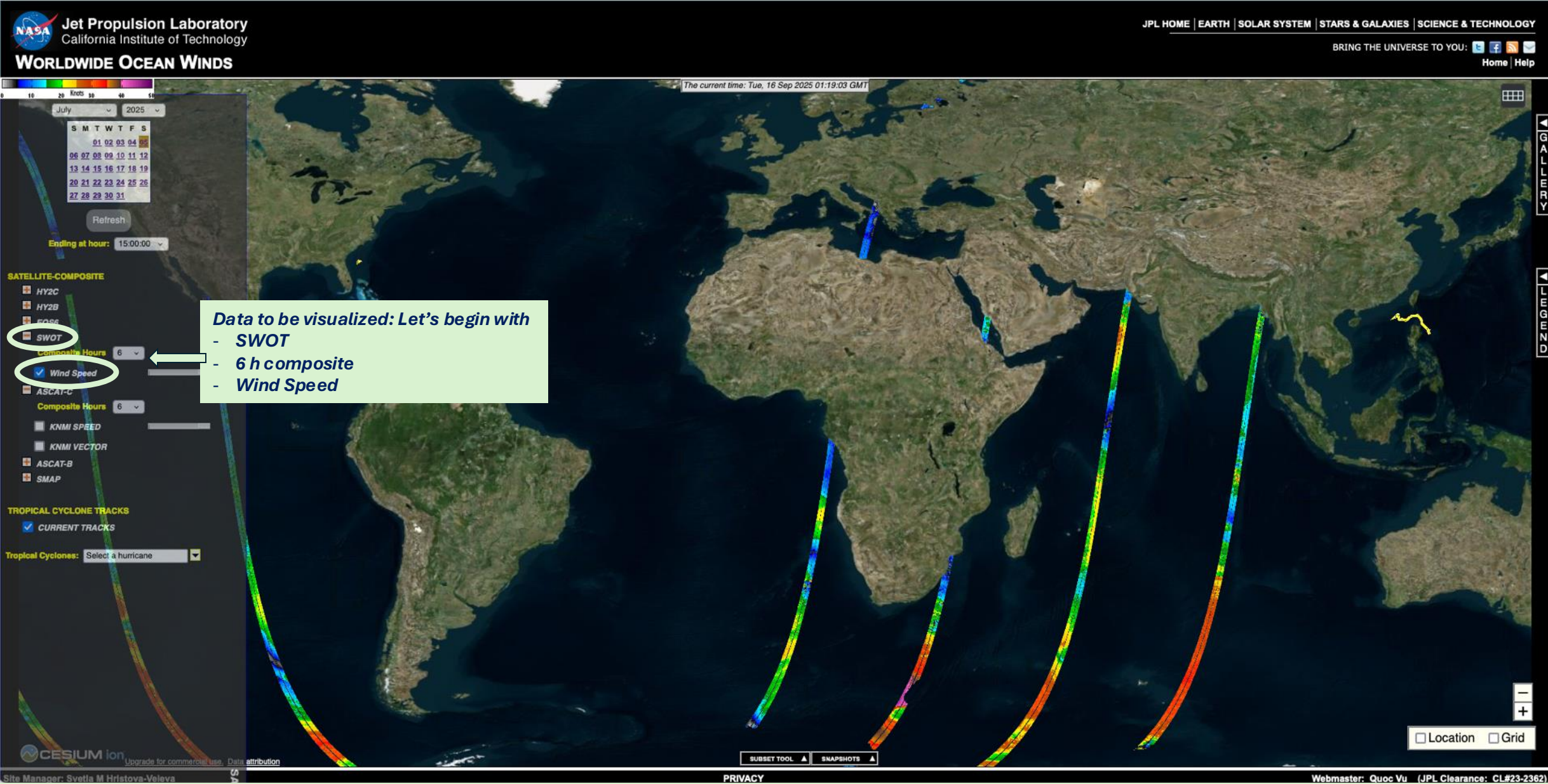
WORLDWIDE OCEAN WINDS



After Unchecking the KNMI Speed from the Data to be visualized:

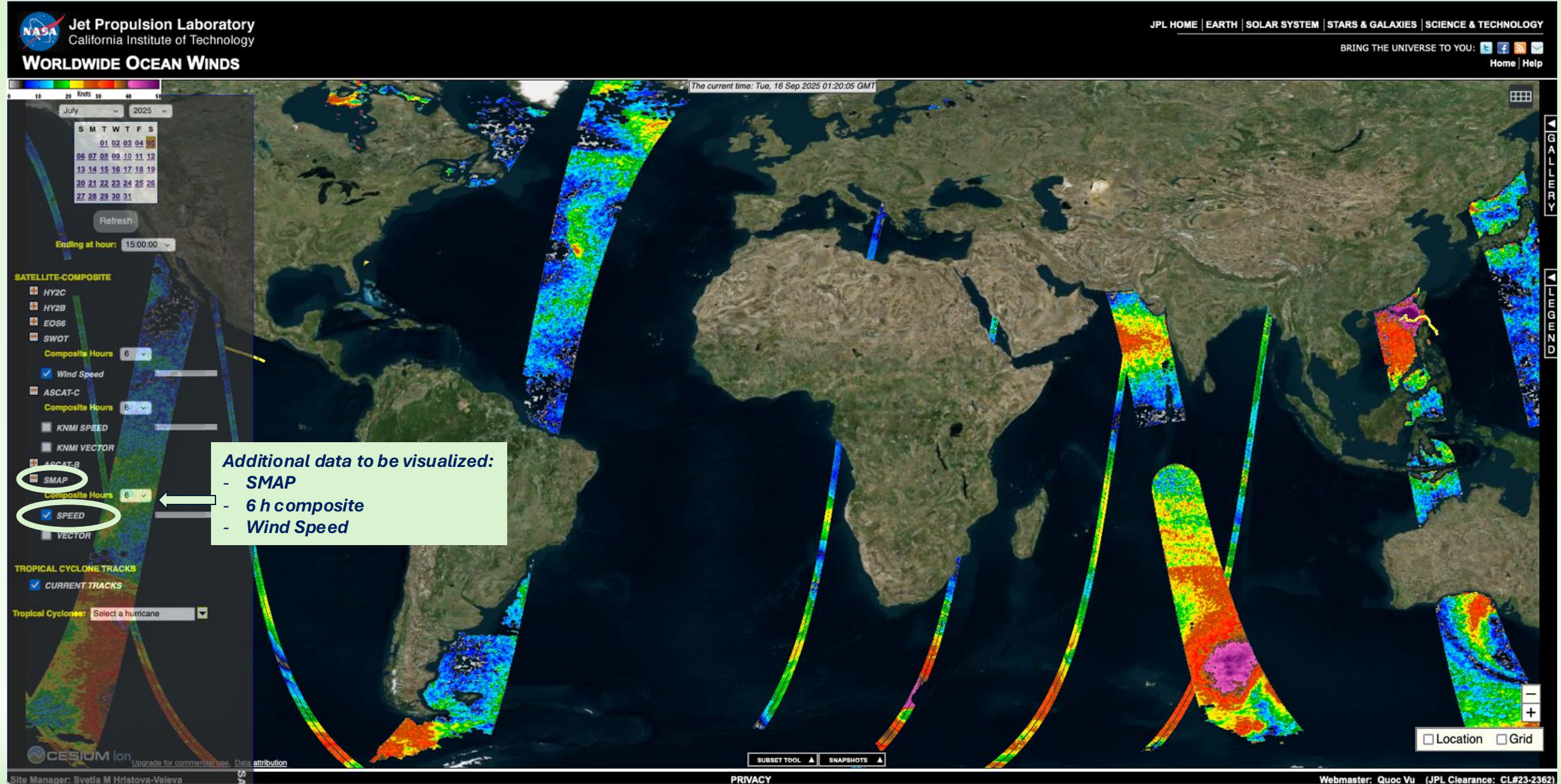
Now we are ready to start displaying different datasets:

SWOT



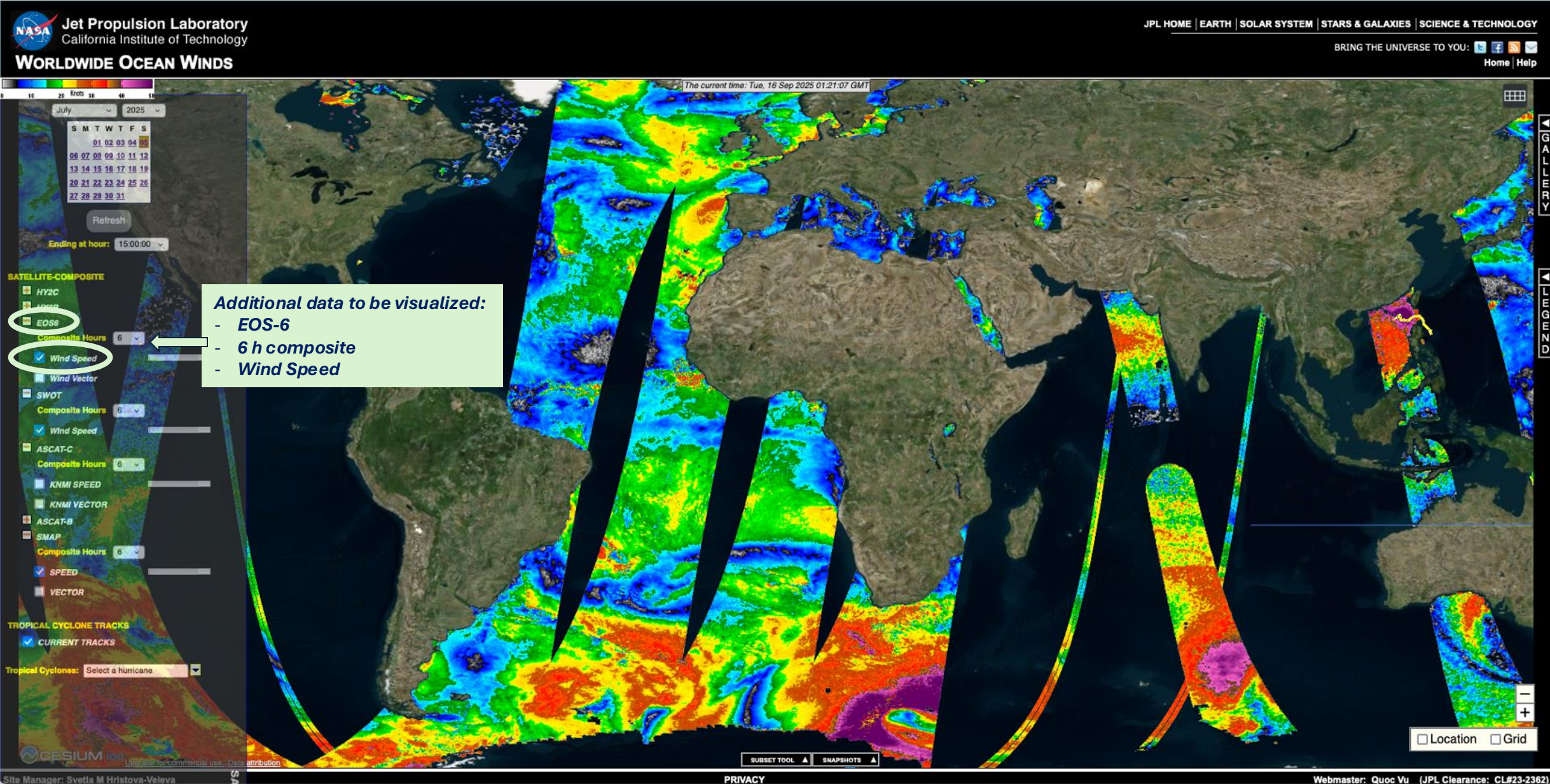
Now we are ready to start displaying different datasets:

SWOT + SMAP



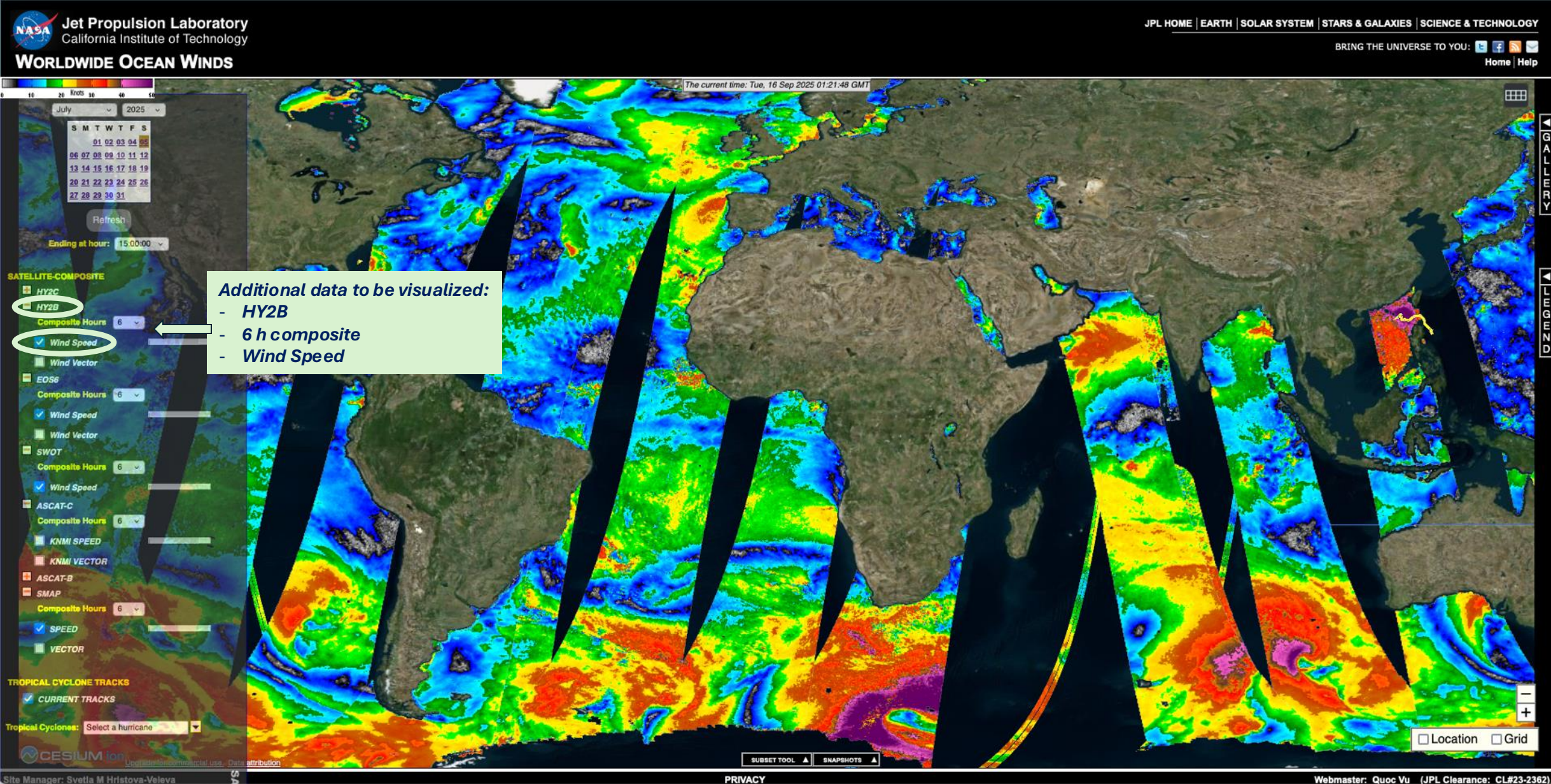
Now we are ready to start displaying different datasets:

SWOT + SMAP + EOS-6



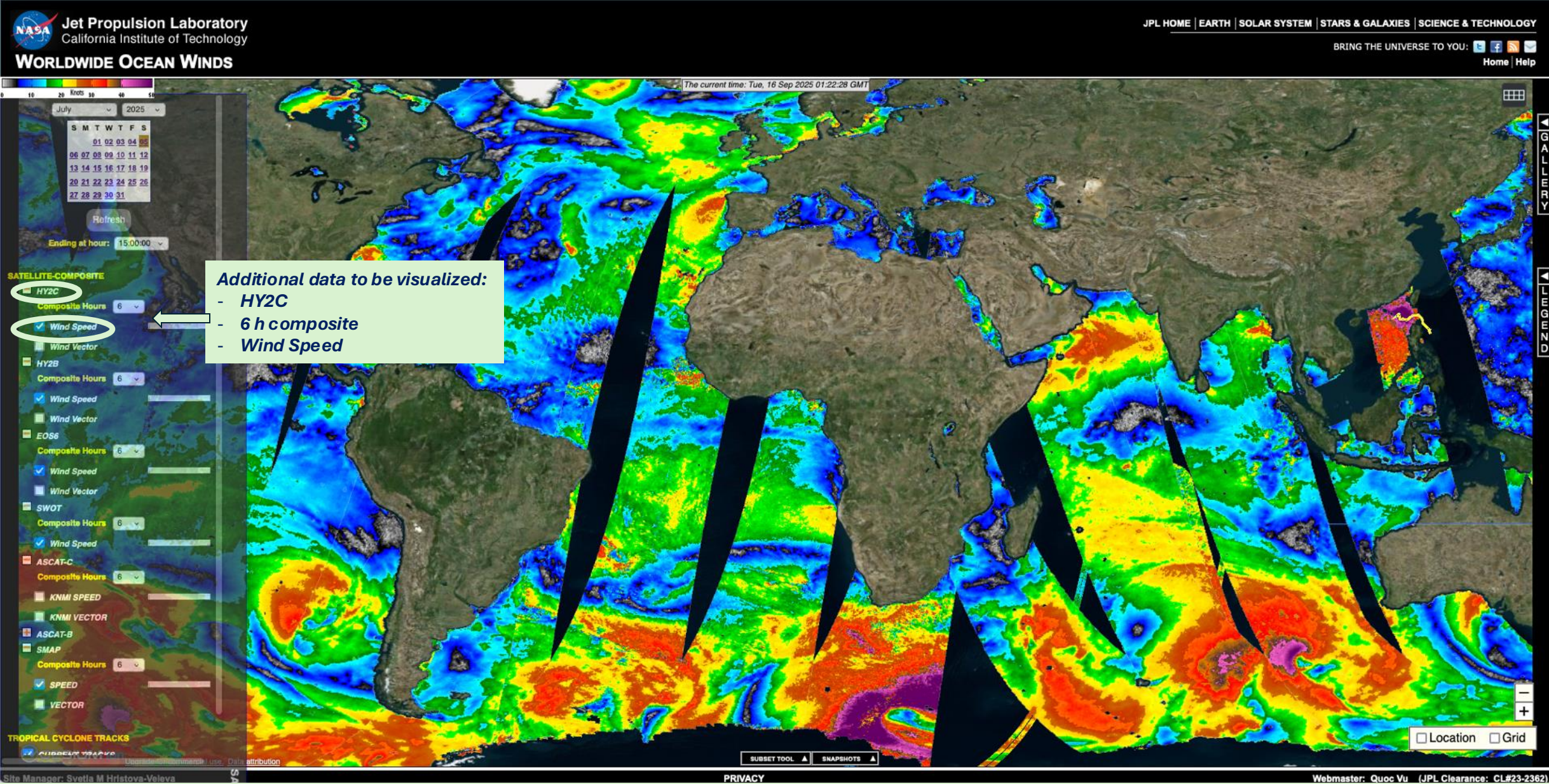
Now we are ready to start displaying different datasets:

SWOT + SMAP + EOS-6 + HY2B



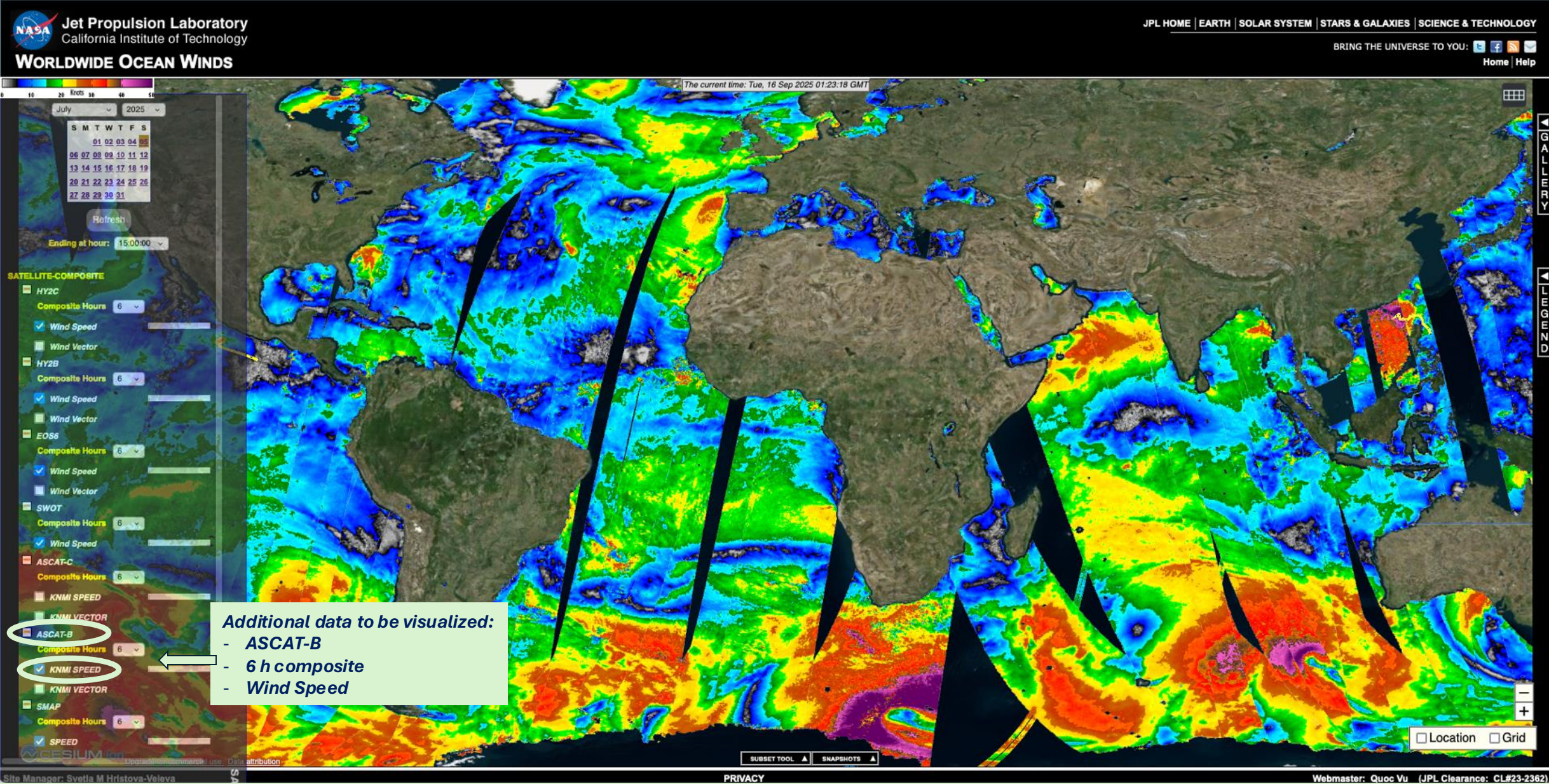
Now we are ready to start displaying different datasets:

SWOT + SMAP + EOS-6 + HY2B + HY2C



Now we are ready to start displaying different datasets:

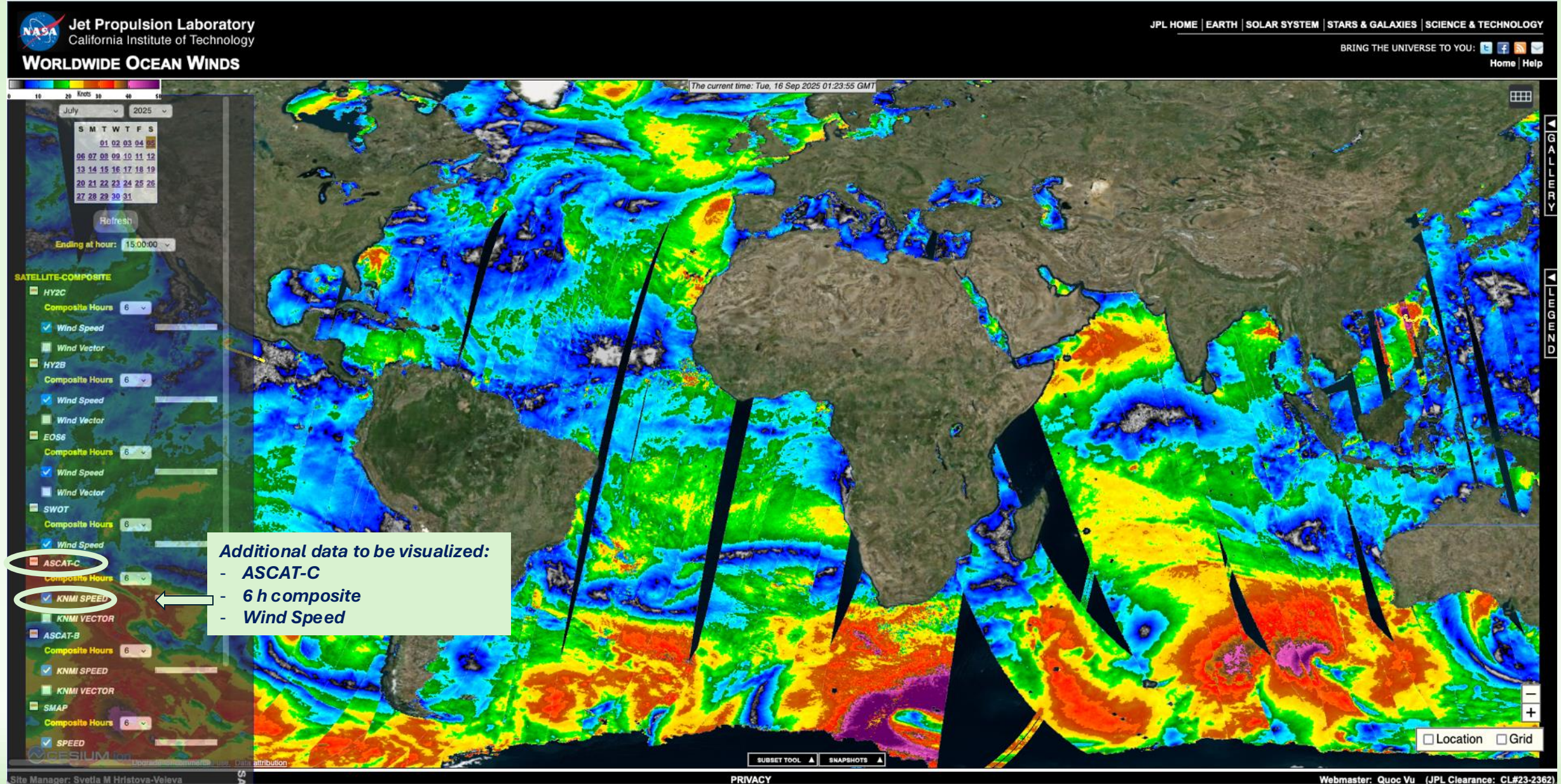
SWOT + SMAP + EOS-6 + HY2B + HY2C + ASCAT-B



Additional data to be visualized:

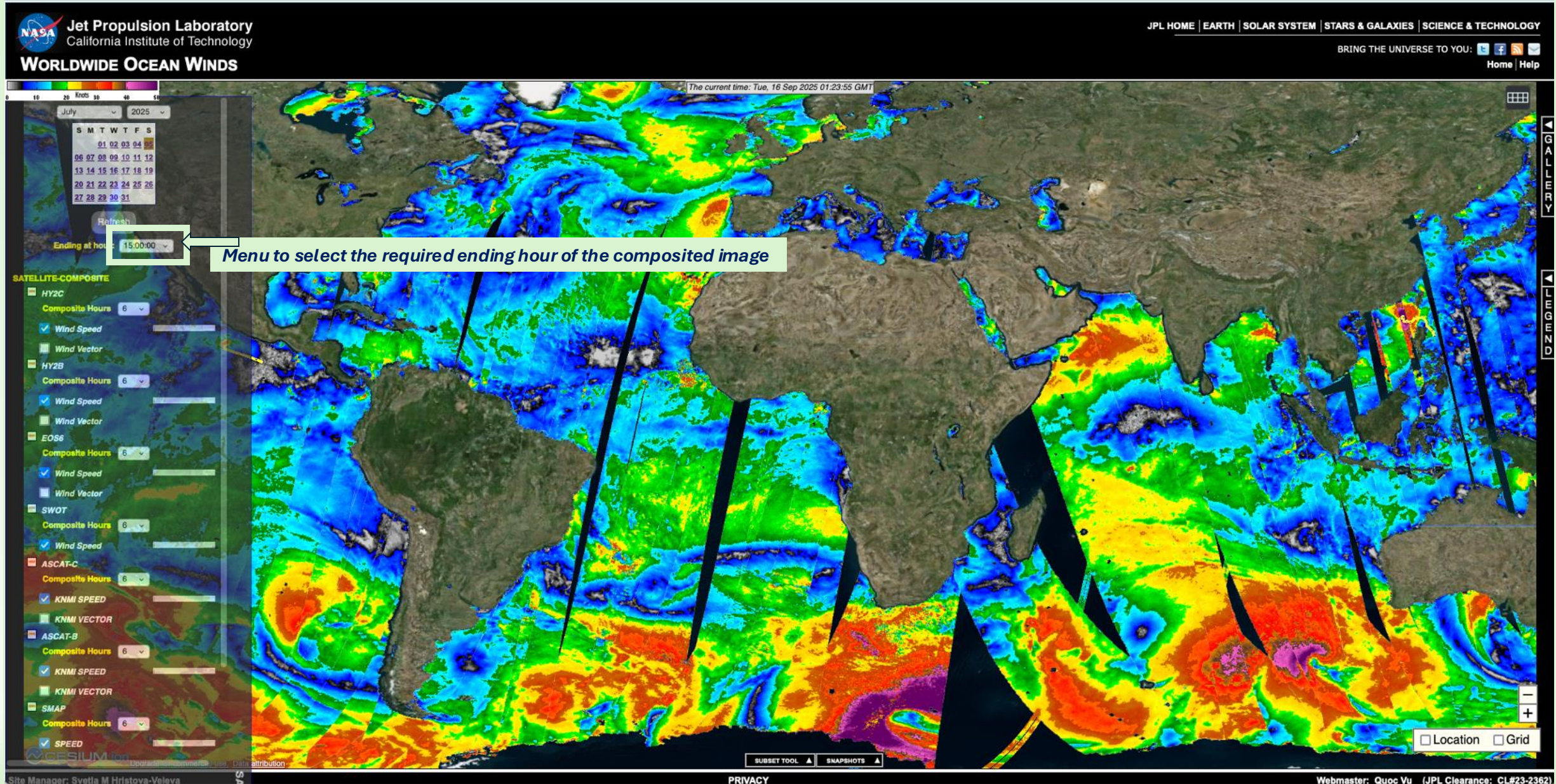
- ASCAT-B
- 6 h composite
- Wind Speed

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

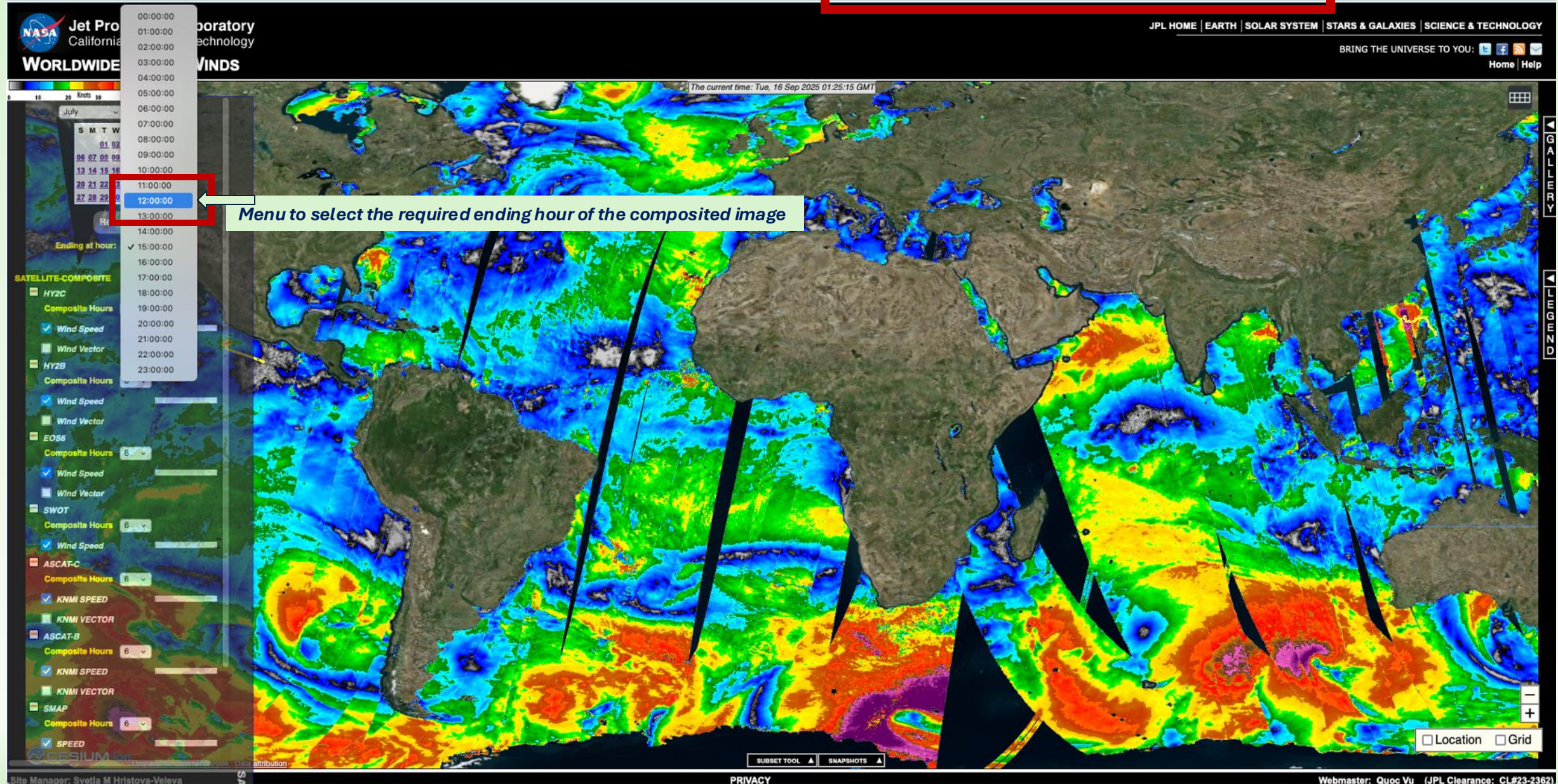


**Now we are ready
to explore the evolution
of the wind composites over time (say 1 day)
by changing the ending hour of the composites**

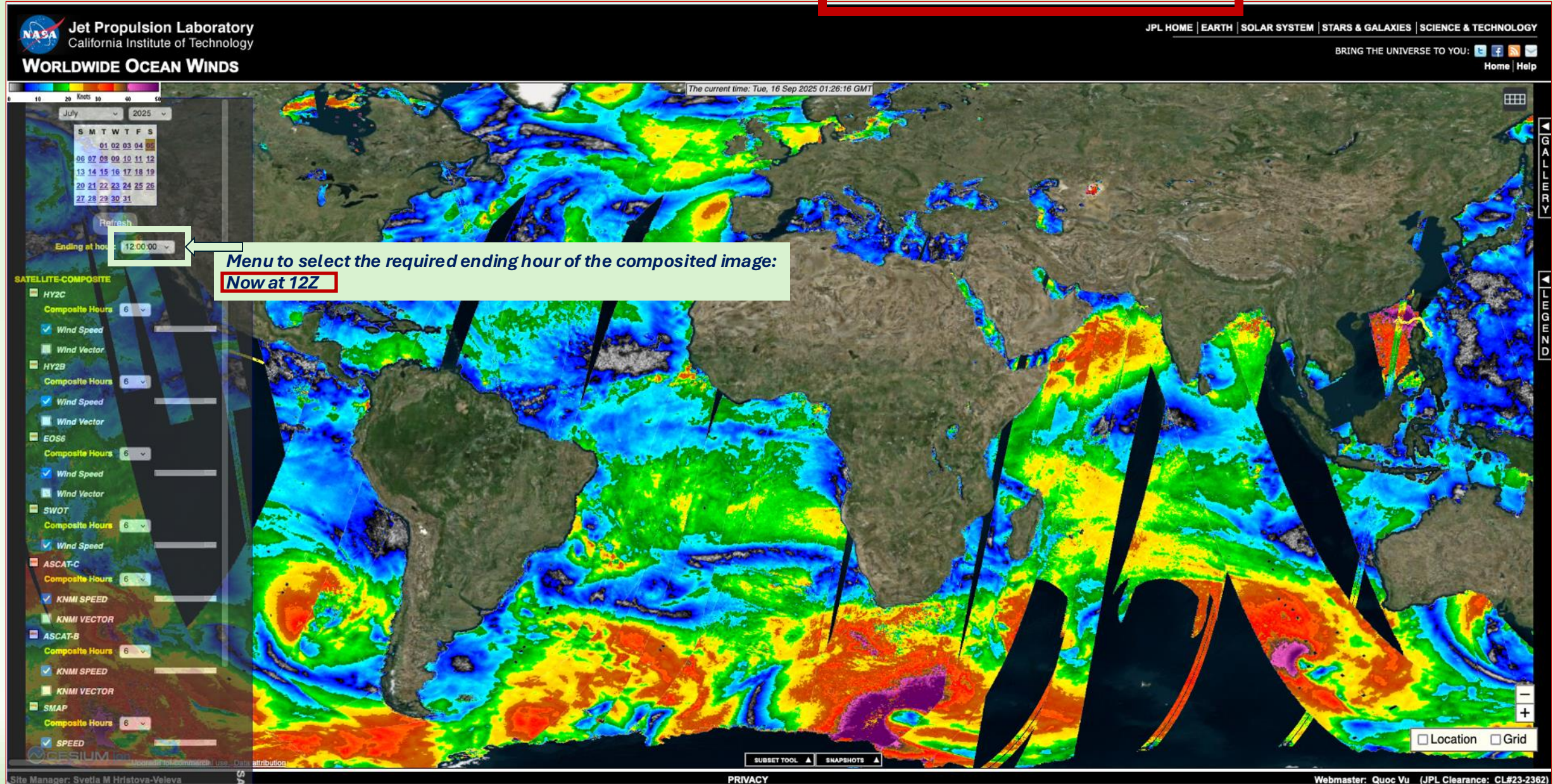
Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites



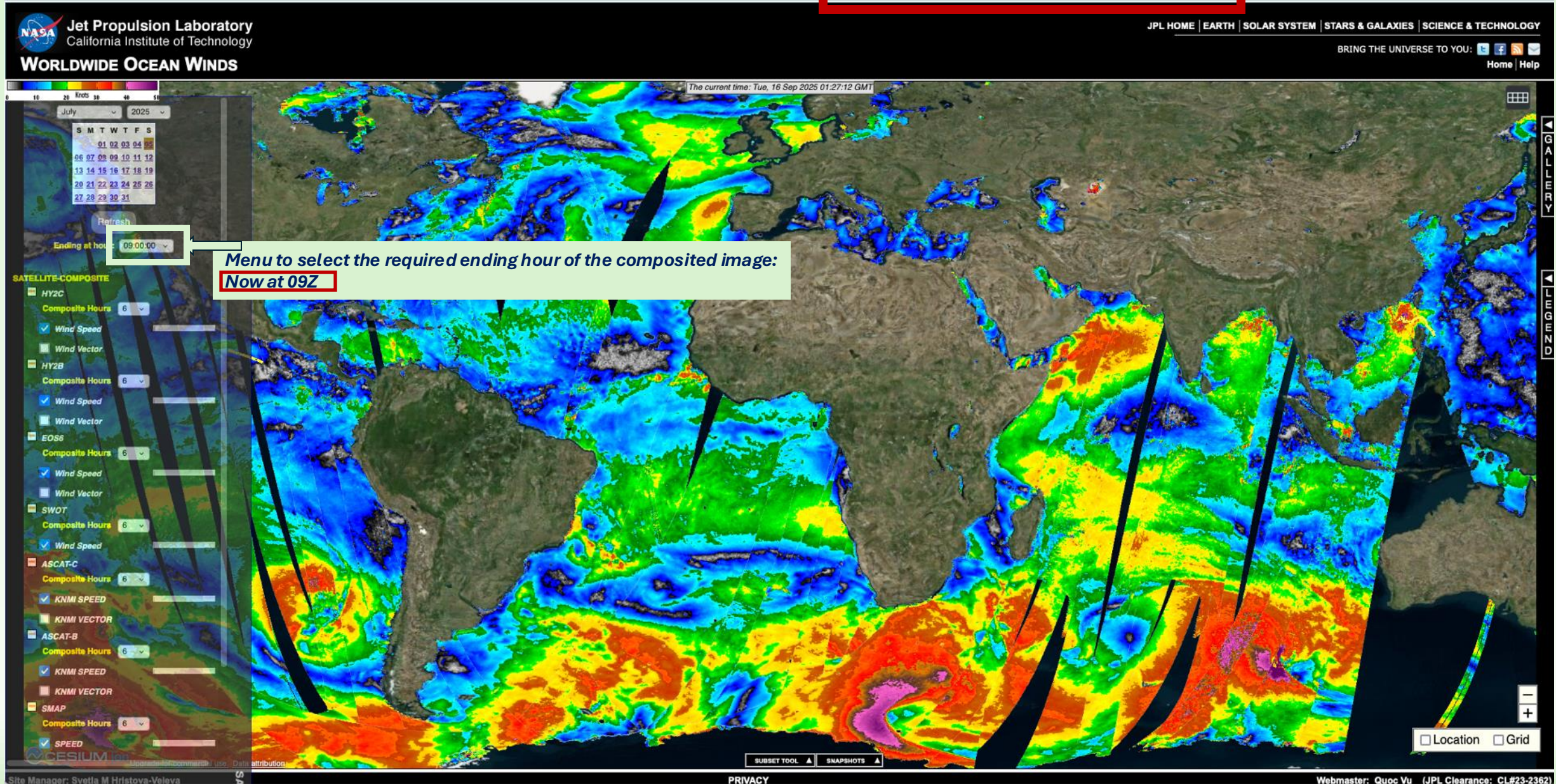
Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: **Change the 15Z to, say, 12Z**



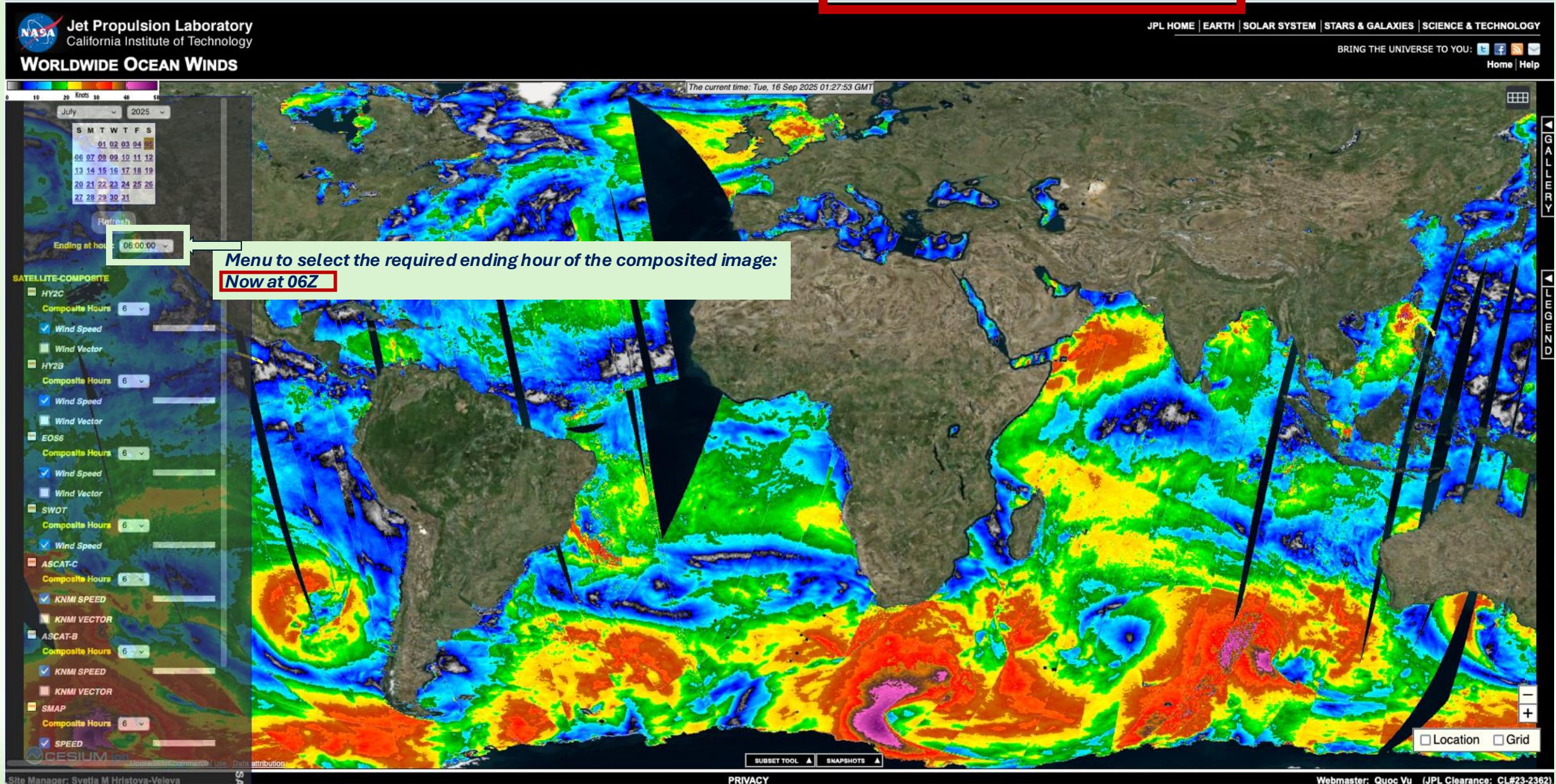
Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: **Now at 12Z on 07/05/2025**



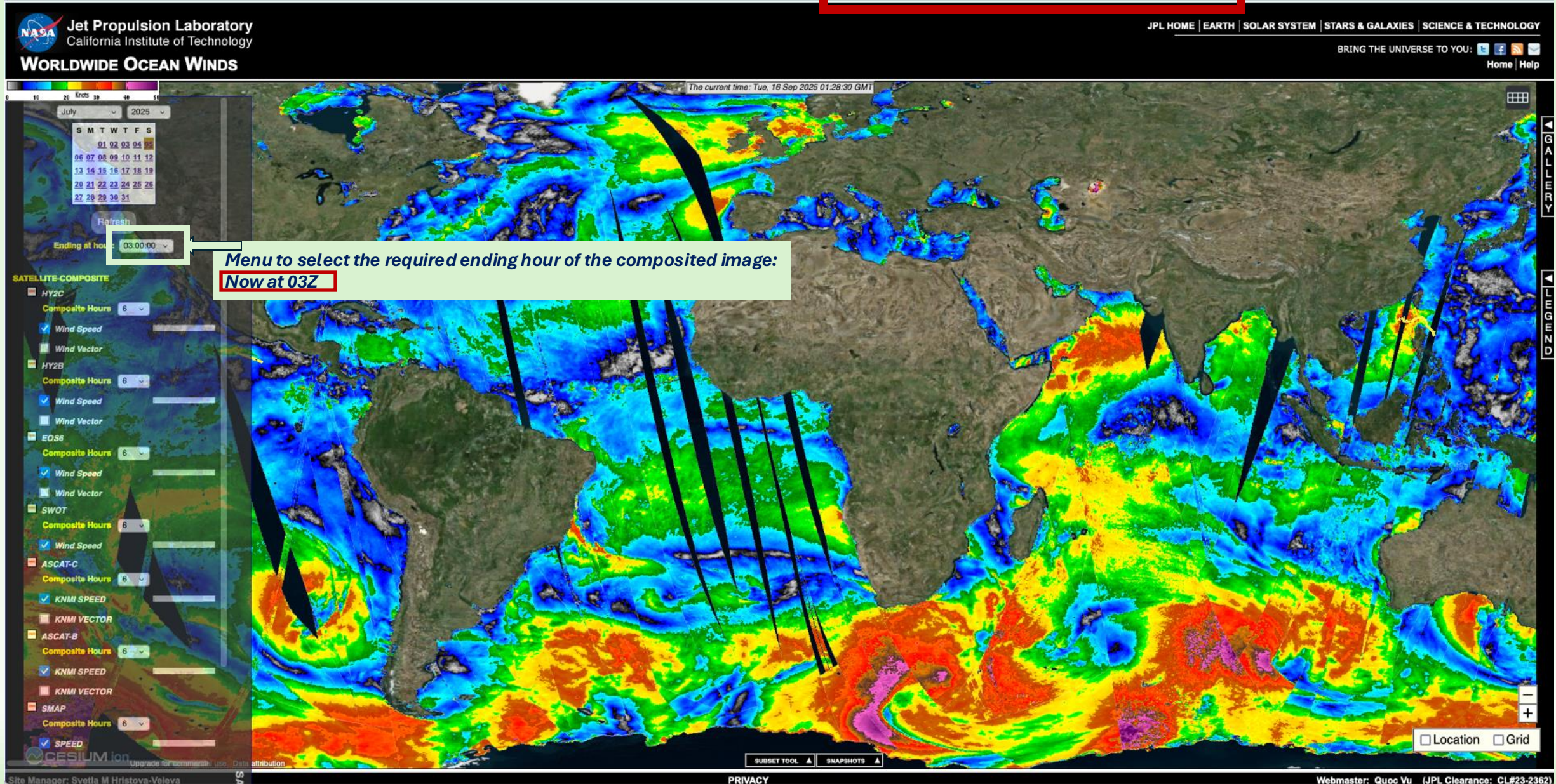
Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: **Now at 09Z** on 07/05/2025



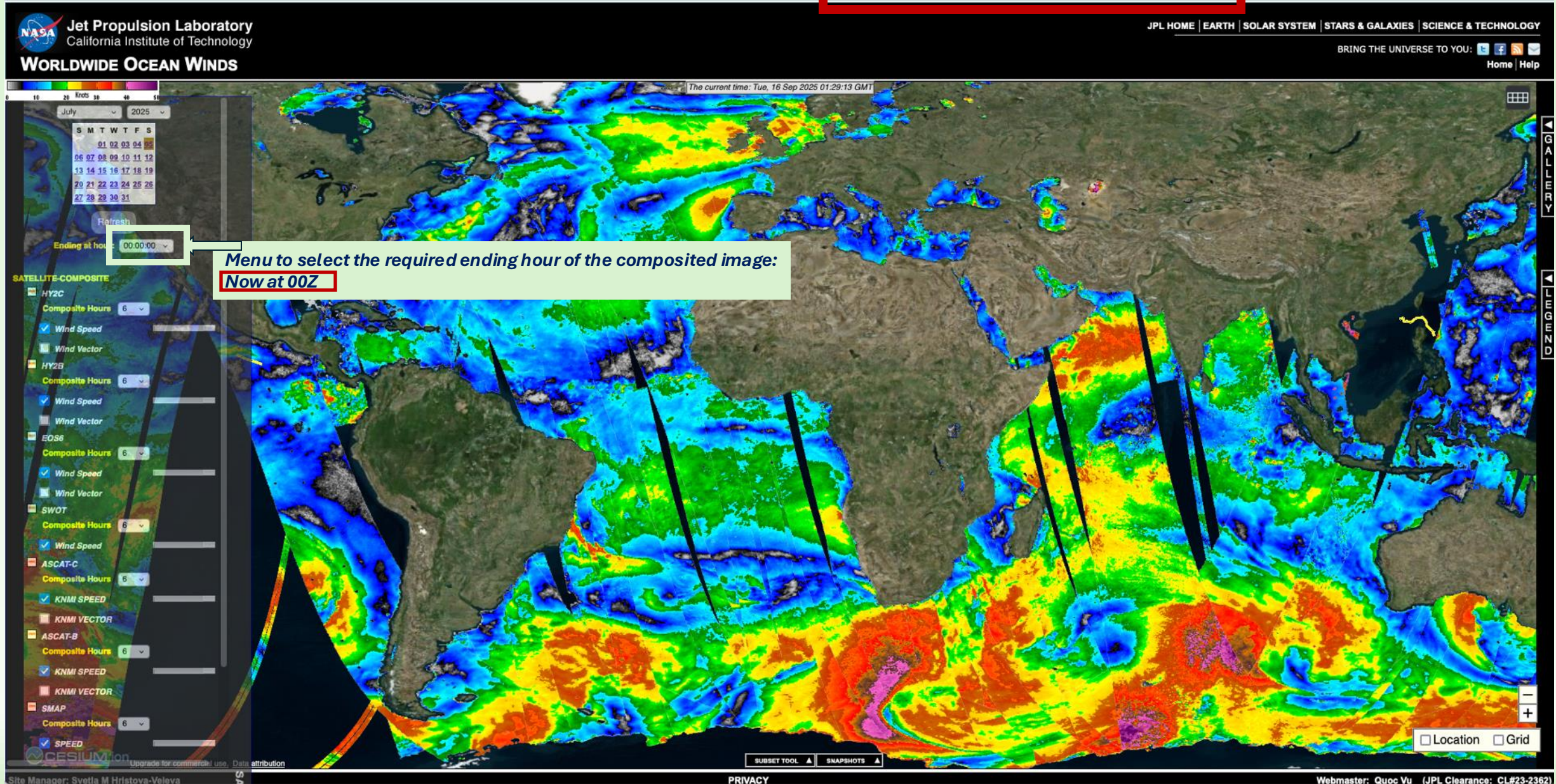
Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: **Now at 06Z on 07/05/2025**



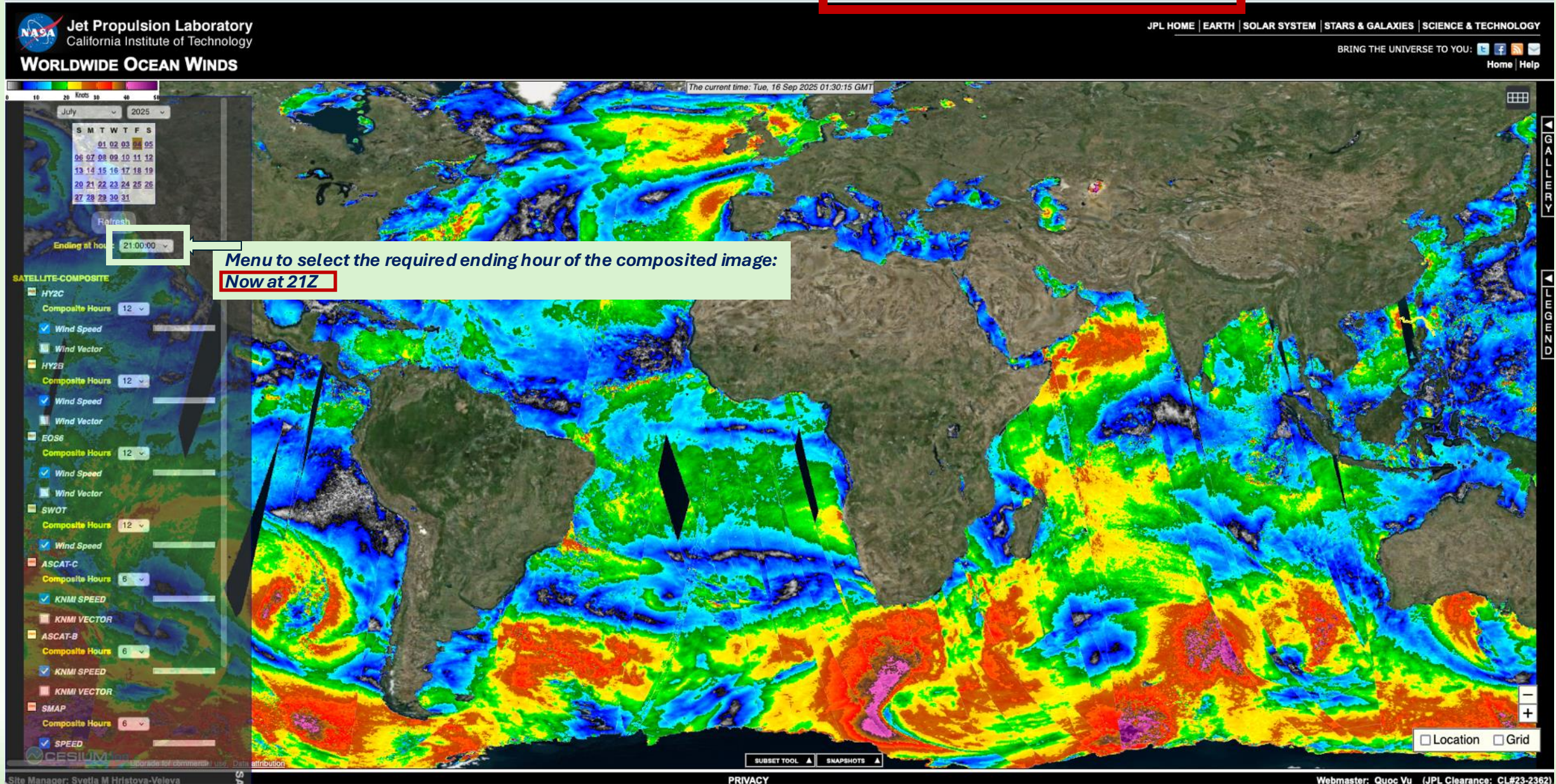
Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: **Now at 03Z on 07/05/2025**



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**



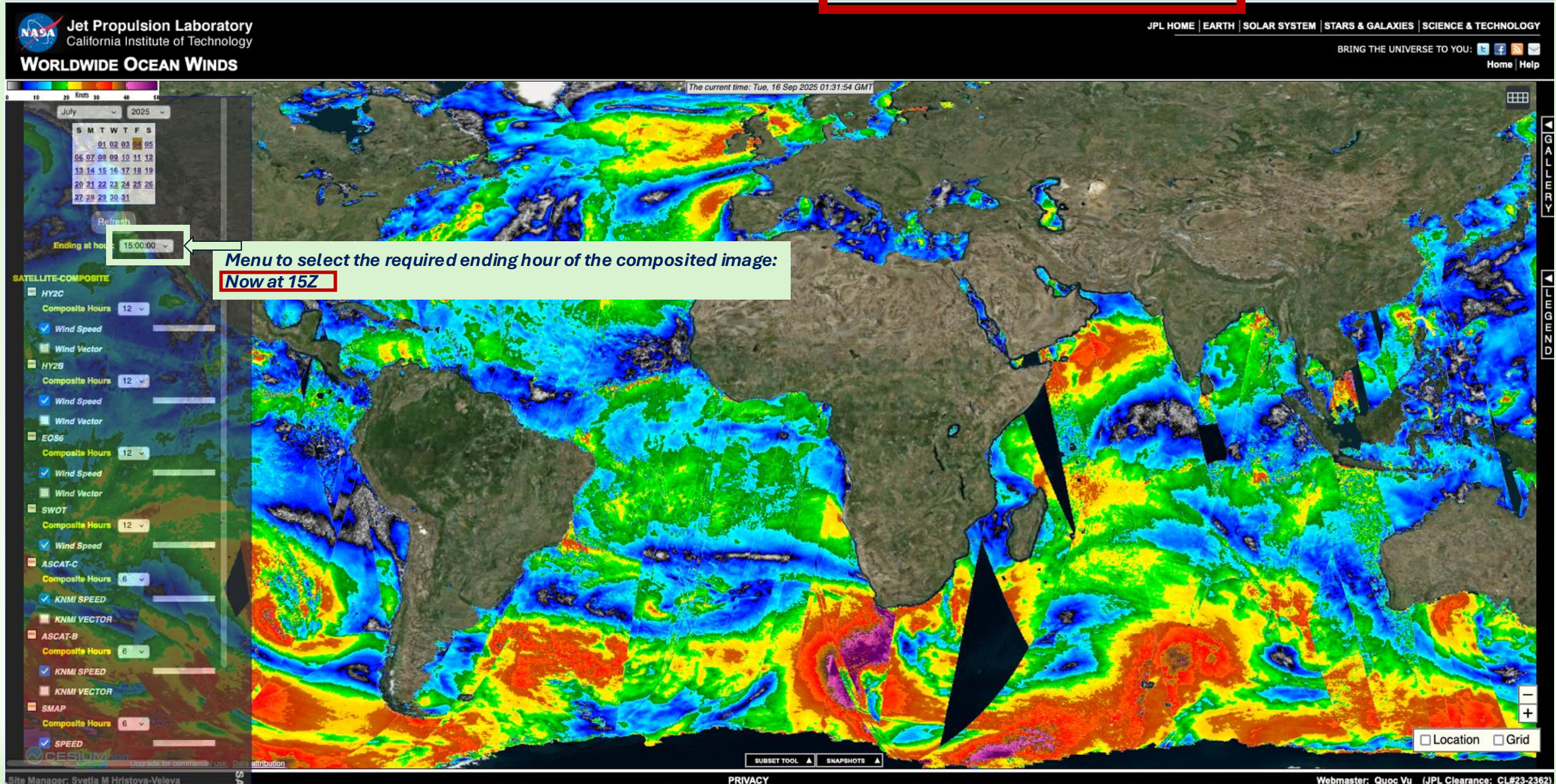
Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: **Now at 21Z on 07/04/2025**



Now at 18Z on 07/04/2025

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

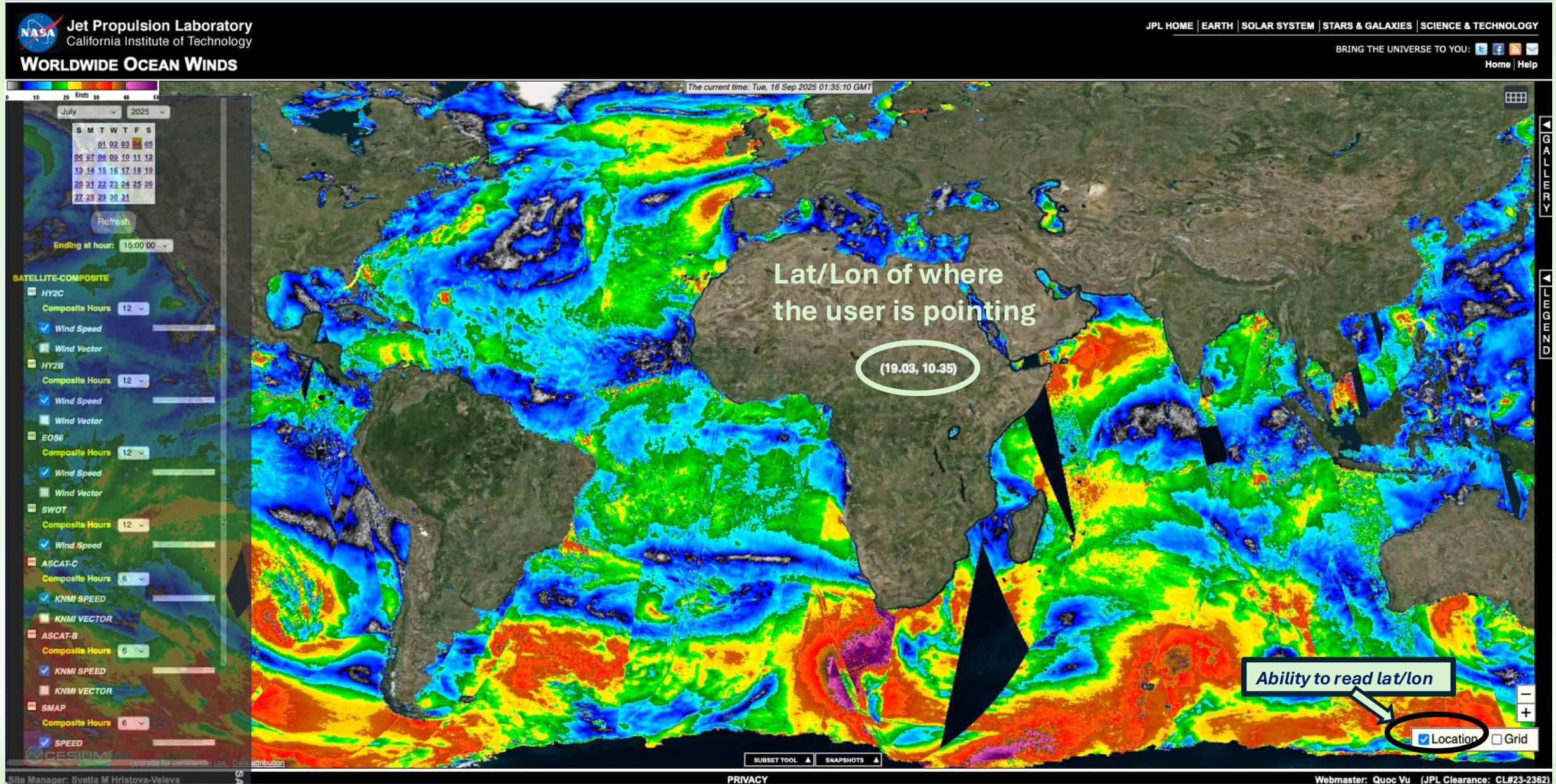
Now we are ready to explore the evolution of the wind composites over time by changing the ending hour of the composites: **Now at 15Z on 07/04/2025**



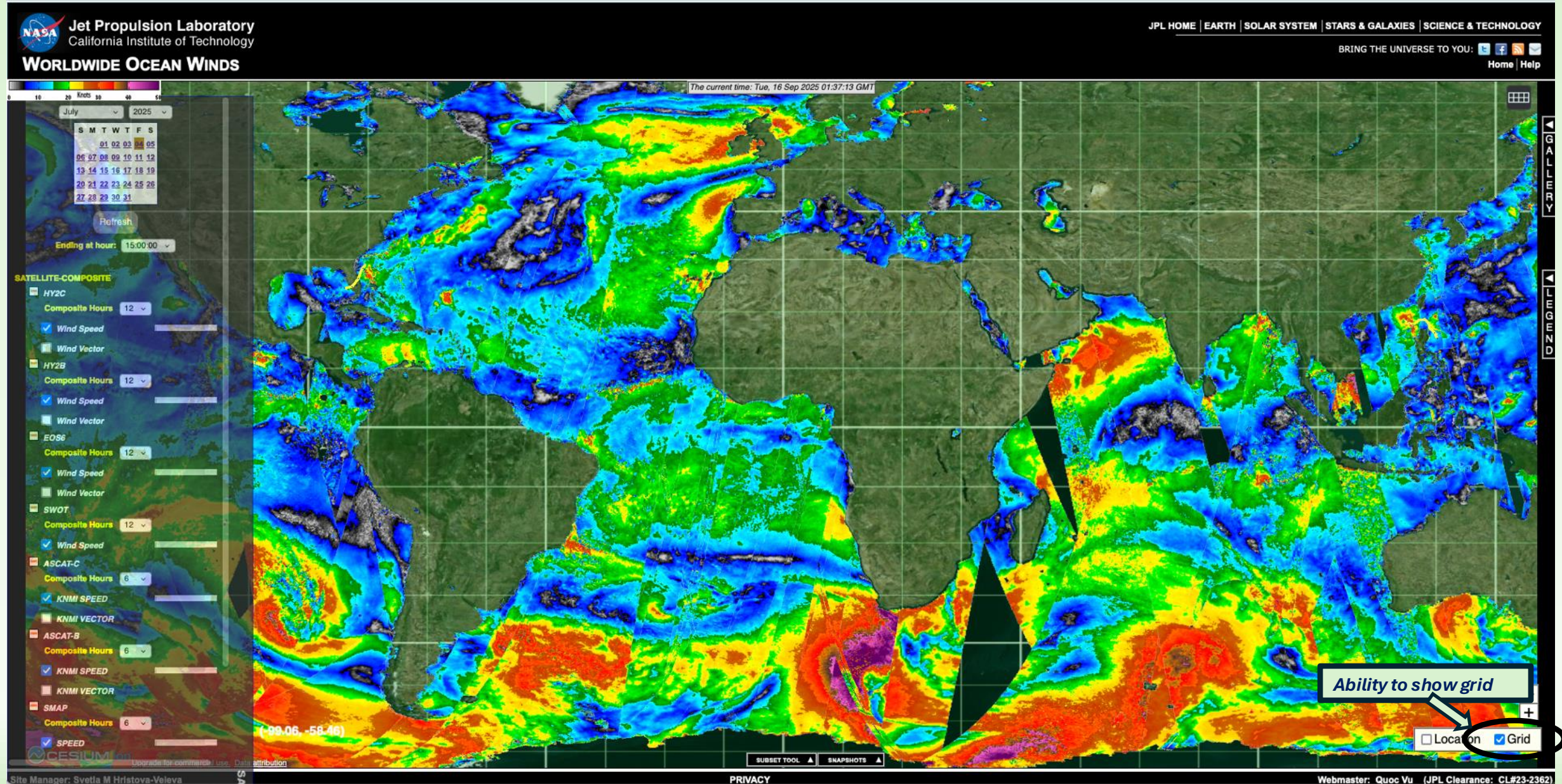
Other Features of the Portal:

- Location**
- Grid**

Other Features of the portal: Location



Other Features of the portal: Grid visualization



Hurricane Investigations

The current time: Tue, 16 Sep 2025 01:39:04 GMT

July 2025

S	M	T	W	T	F	S
	01	02	03	04		
06	07	08	09	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Refresh

Ending at hour: 00:00:00

SATELLITE-COMPOSITE

☒ HY2C

☒ HY2B

☒ EOS6

☒ SWOT

☒ ASCAT-C

Composite Hours 12

☒ KNMI SPEED

☒ KNMI VECTOR

☒ ASCAT-B

☒ SMAP

TROPICAL CYCLONE TRACKS

☒ CURRENT TRACKS

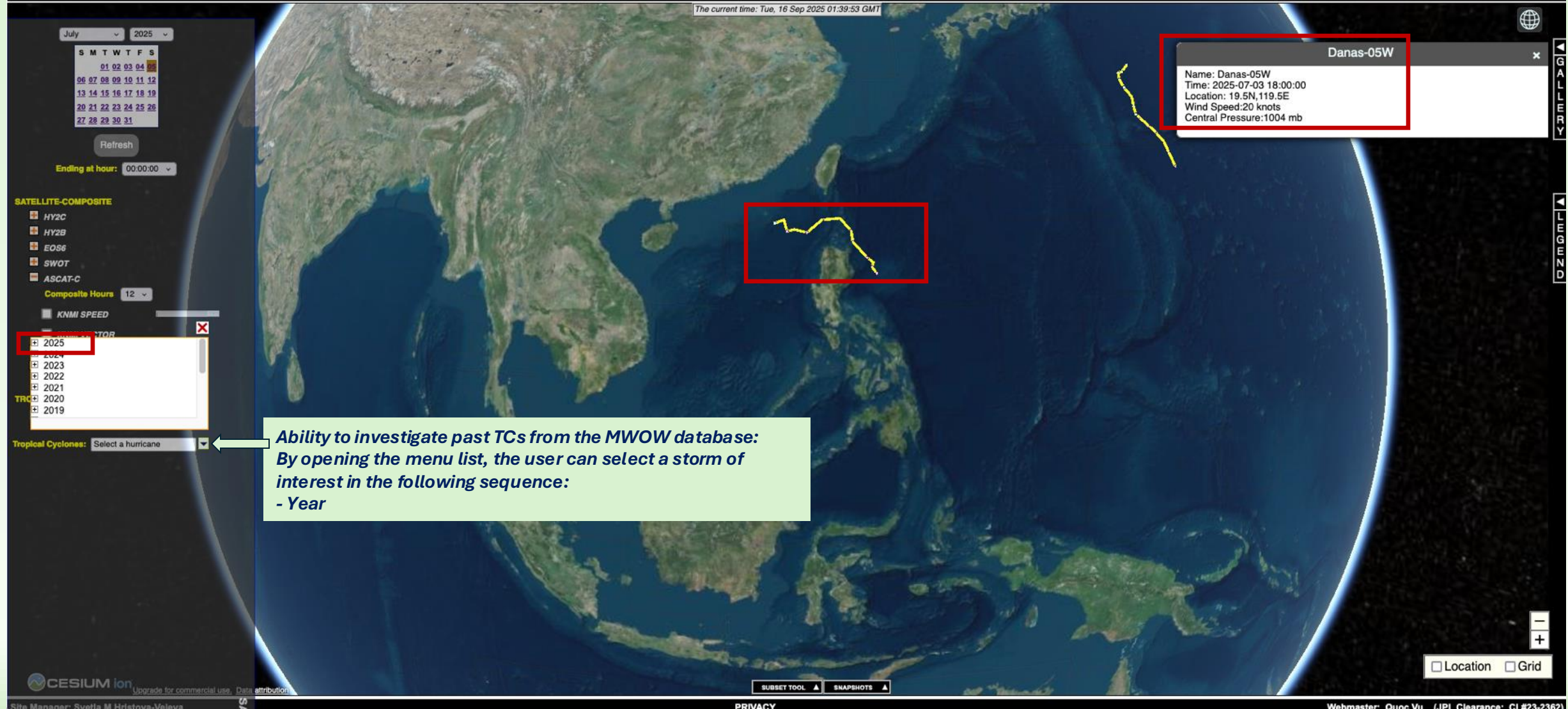
Tropical Cyclones: Select a hurricane

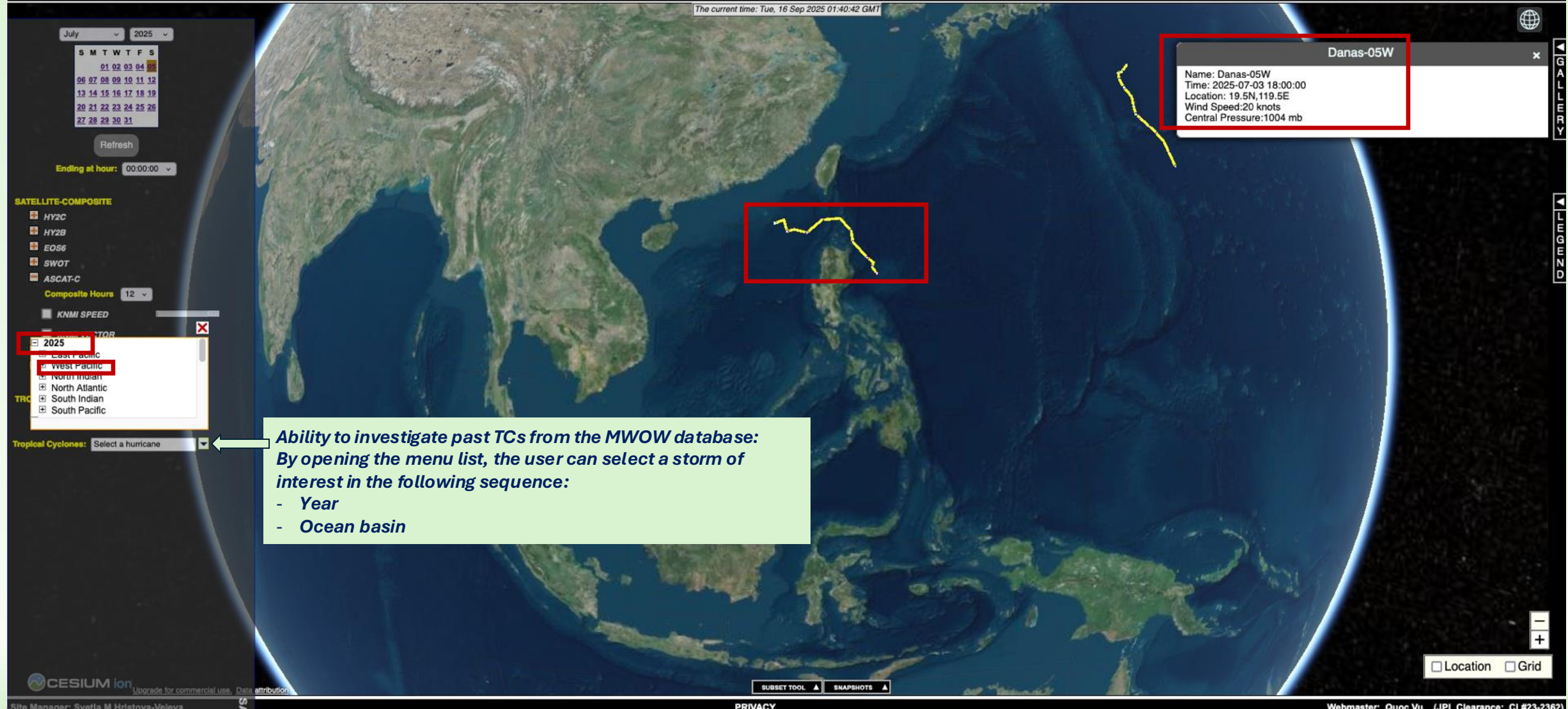
Ability to see details on the TC: Click on a point along the track to see TC's:
- ID/name; time; intensity; location

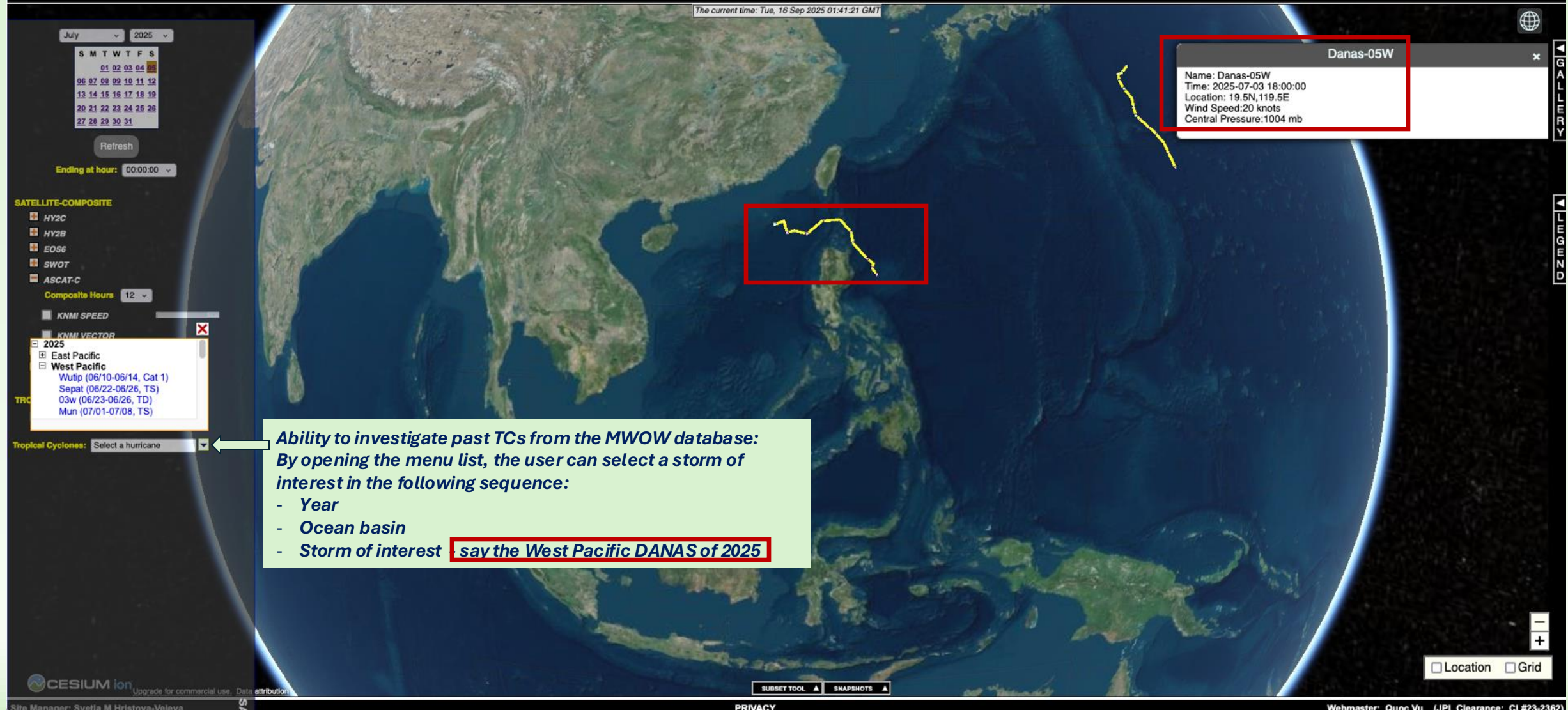
Danas-05W

Name: Danas-05W
Time: 2025-07-03 18:00:00
Location: 19.5N, 119.5E
Wind Speed: 20 knots
Central Pressure: 1004 mb

Ability to display the tracks of current Tropical Cyclones (TCs)











The current time: Tue, 16 Sep 2025 01:47:02 GMT

Let's move to the North Atlantic

And explore observations of Category 5 Hurricane Erin of 2025

August 2025

S	M	T	W	T	F	S
					01	02
03	04	05	06	07	08	09
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Refresh

Ending at hour: 00:00:00

SATELLITE-COMPOSITE

- ☐ SWOT
- ☐ ASCAT-C
- ☐ ASCAT-B
- ☐ SMAP

TROPICAL CYCLONE TRACKS

- ☒ CURRENT TRACKS

Tropical Cyclones: Erin (08/08-08/23, Cat 5)

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

The current time: Tue, 16 Sep 2025 01:47:02 GMT

Let's move to the North Atlantic

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

Name: Erin-05L
Time: 2025-08-16 18:00:00
Location: 16.0N 86.0W
Wind Speed: 140 knots
Central Pressure: 915

☐ Early Forecast
☐ Late Forecast
☐ Ensemble Forecast

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

Let's find the time when Erin reached Cat. 5:

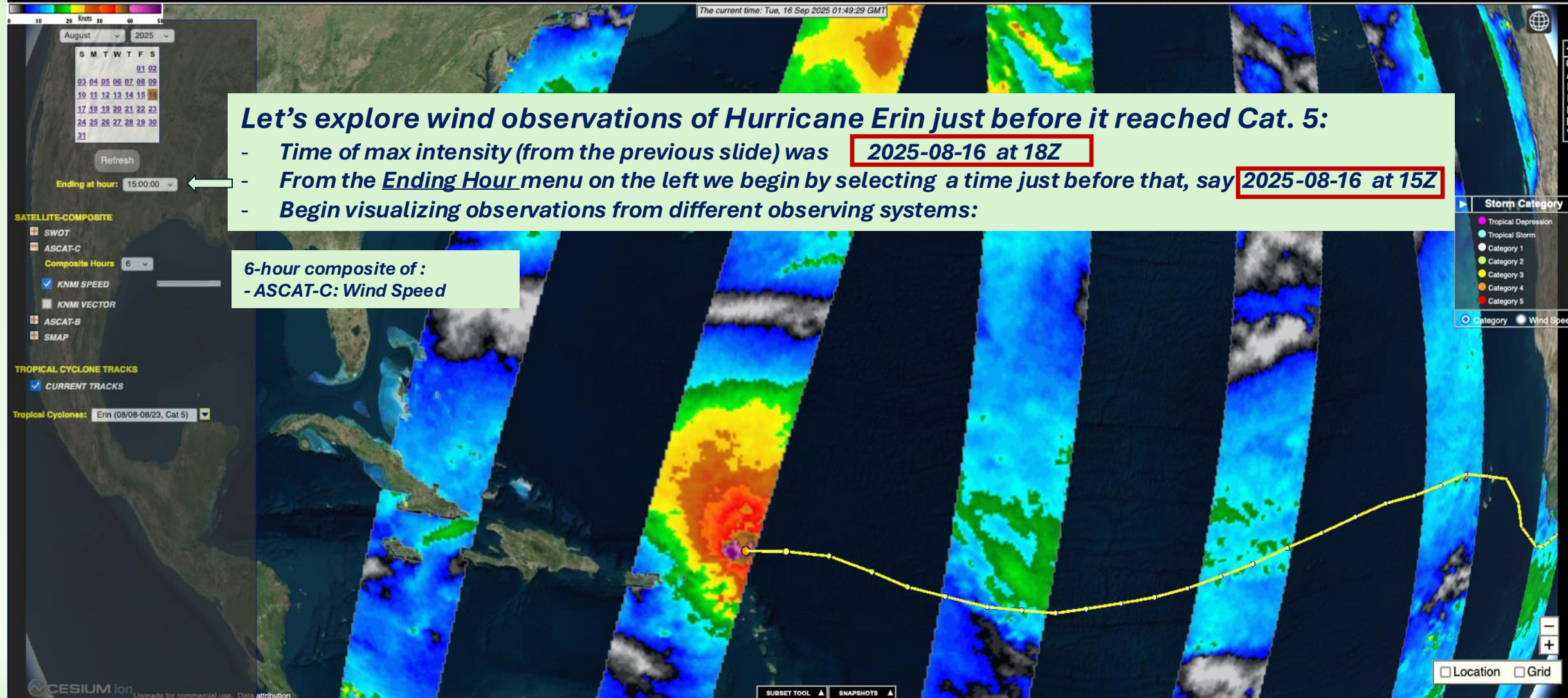
- Click on red symbol (Cat. 5)
- Check the time from the Information Box above

Storm Category

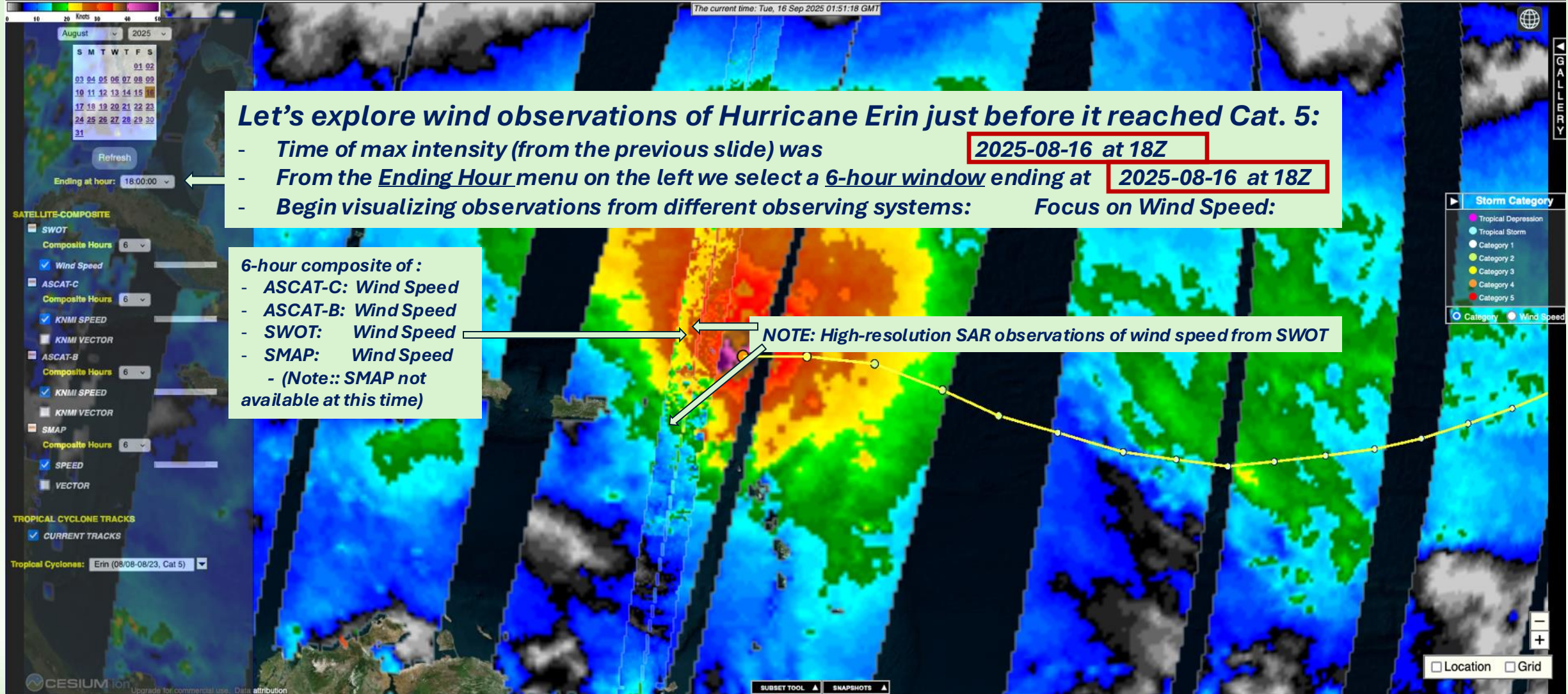
-  Tropical Depression
-  Tropical Storm
-  Category 1
-  Category 2
-  Category 3
-  Category 4
-  Category 5

☒ Category ☐ Wind Speed

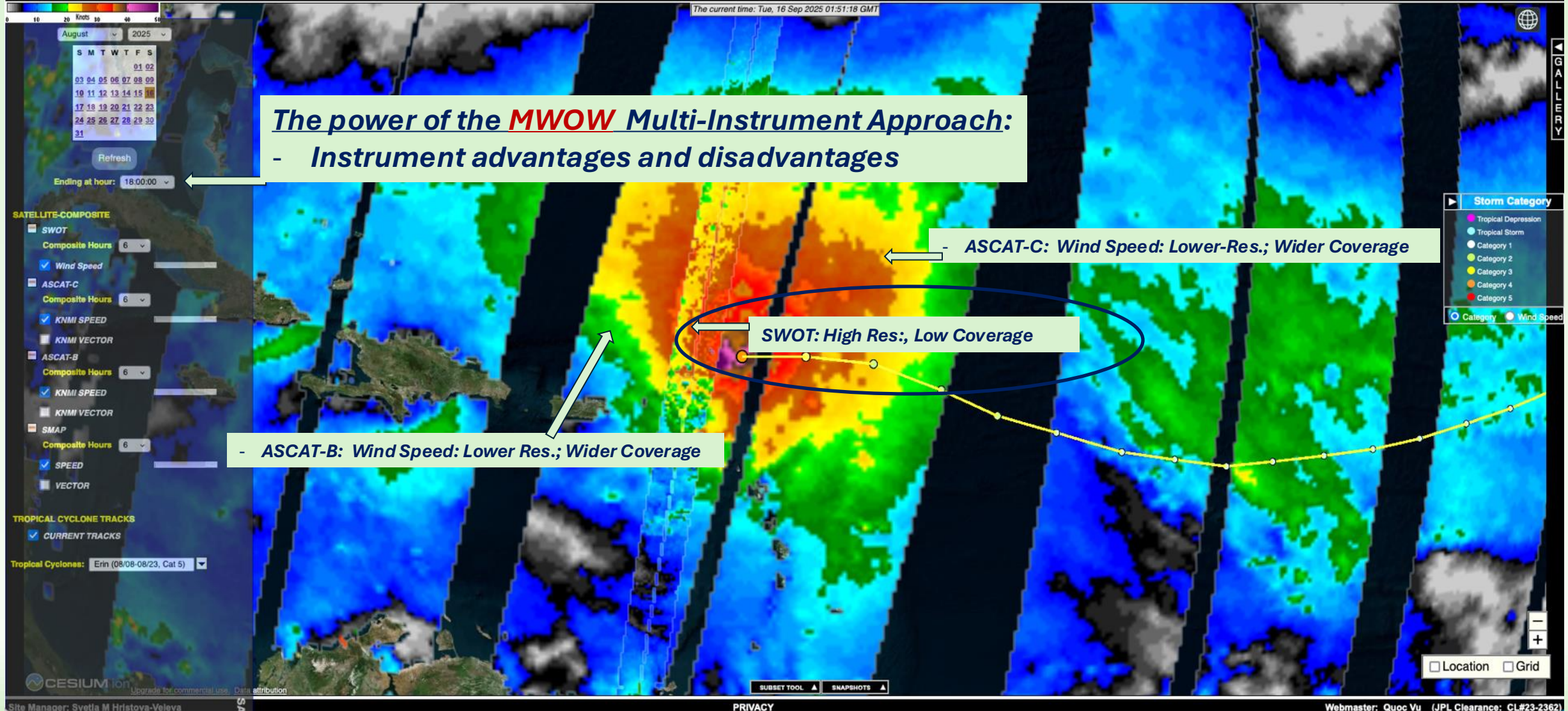
☐ Location ☐ Grid



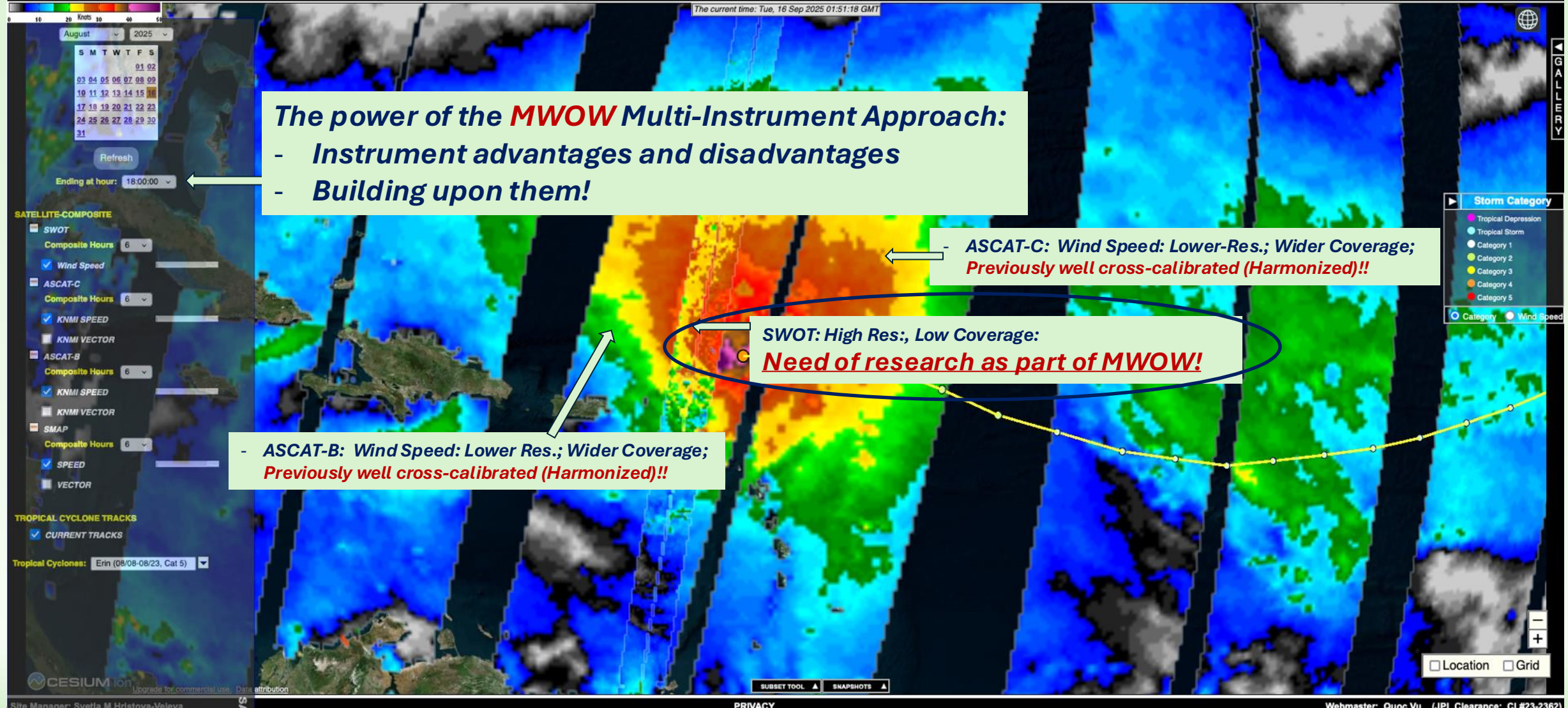
ZOOM on Wind Speed Observations of Category 5 Hurricane Erin of 2025:



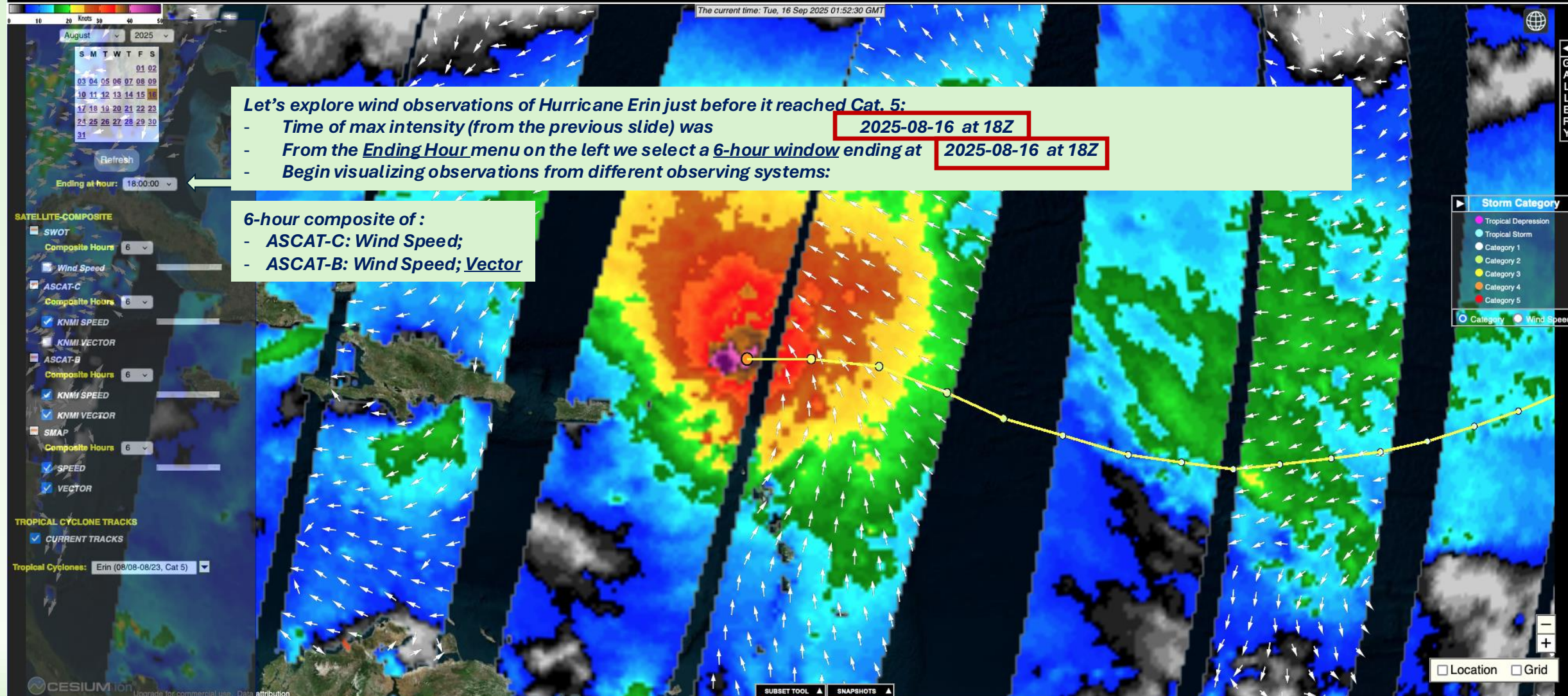
ZOOM on **Wind Speed** Observations of Category 5 Hurricane Erin of 2025:



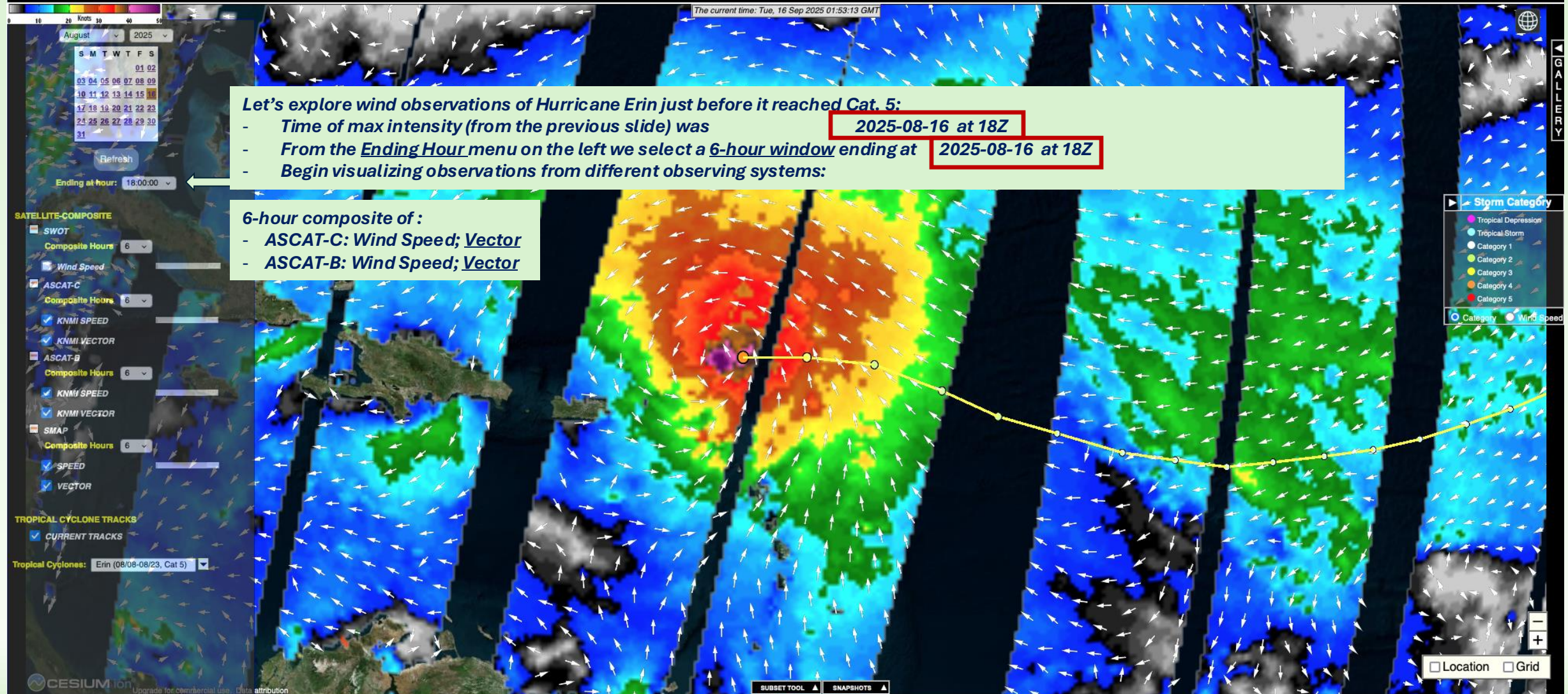
ZOOM on Wind Speed Observations of Category 5 Hurricane Erin of 2025:



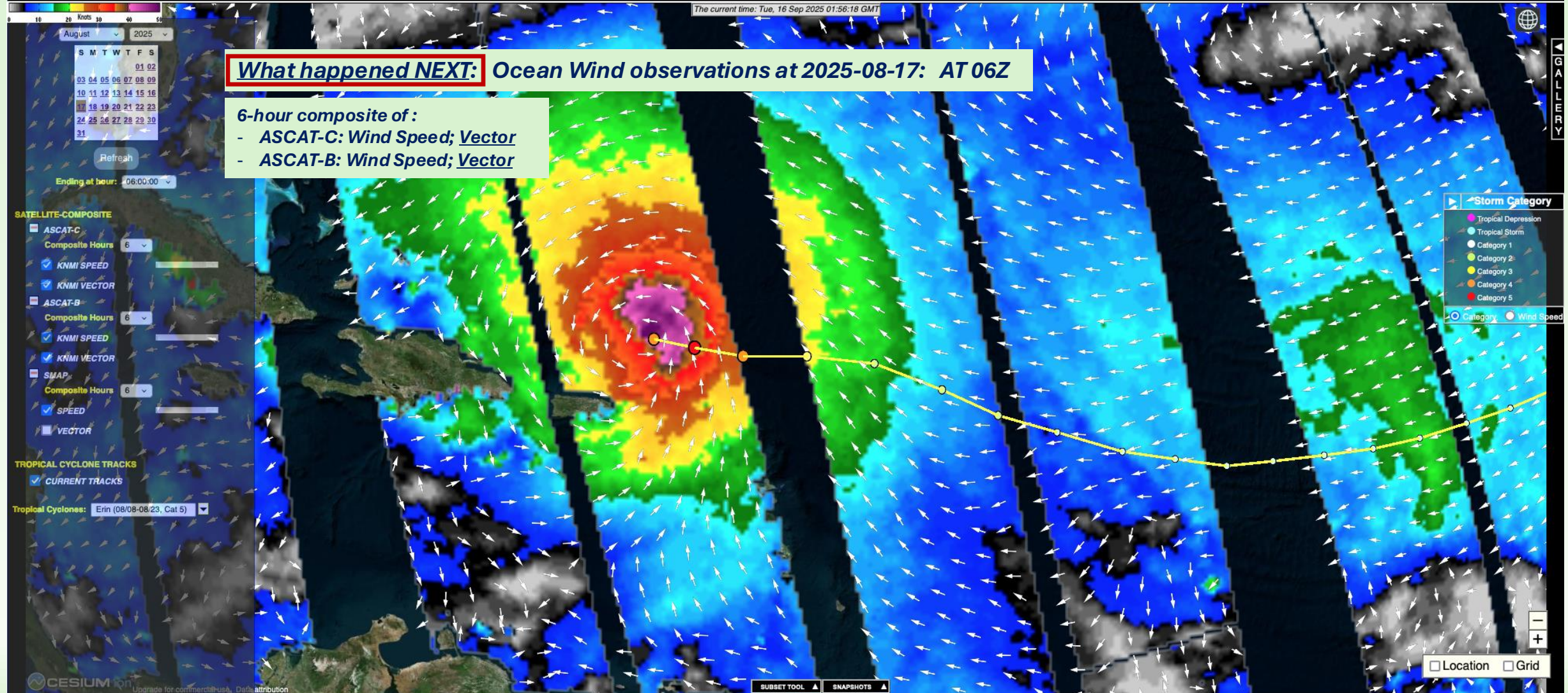
ZOOM on Wind VECTOR Observations of Category 5 Hurricane Erin of 2025:



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