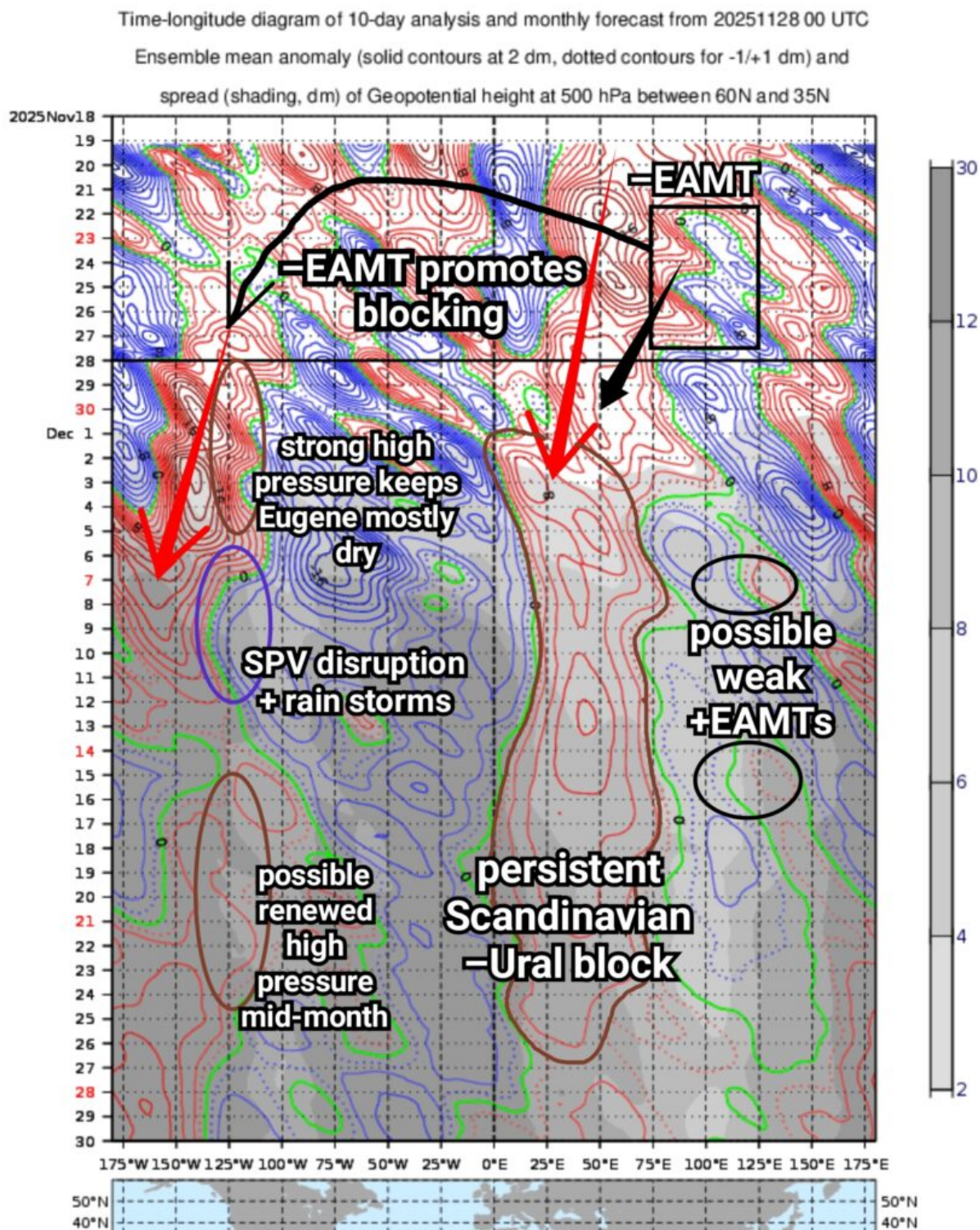


Unlike last month, I wasn't able to put together a plain language forecast. I apologize for that, but please bear with me as I have tried to explain some of the more technical terms below.

- (ECMWF time-longitude Hovmöller)

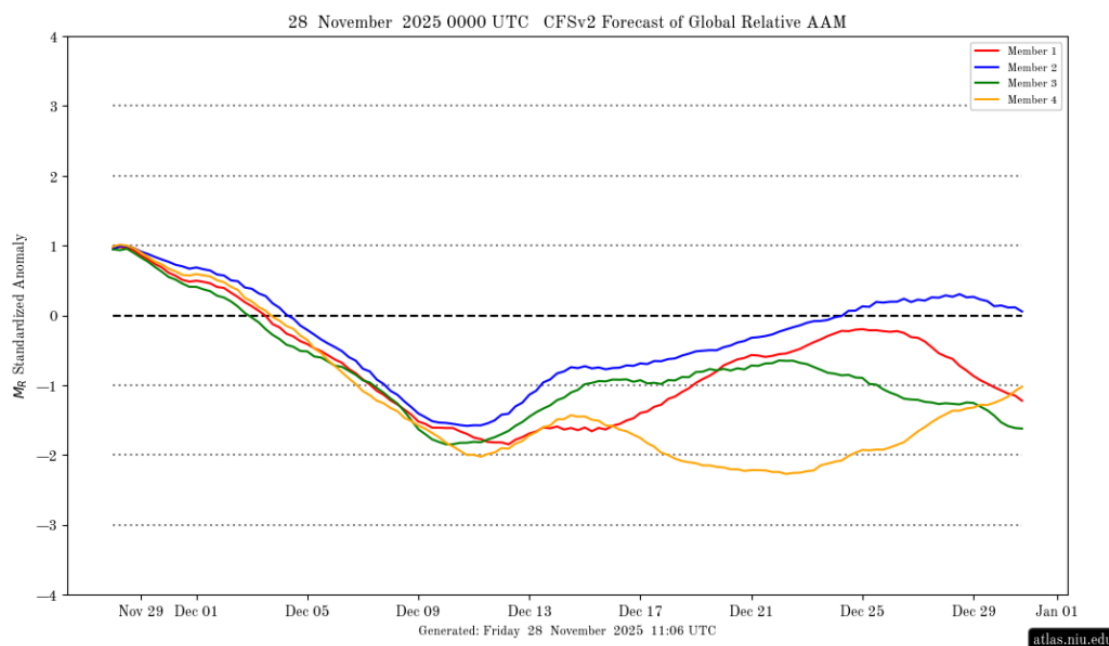


Strong Rossby wave flow is quickly giving way to a persistent **blocking regime** and **Rossby wavebreaking**.

Ural Basin high pressure regressing towards Scandinavia will induce a **blocking regime** and **Rossby wavebreaking** over North America.

So, over the next 4–5 weeks I would expect an alternating series of extended **ridges and troughs**. The current lengthy period of high pressure (**ridging**), for example, will get further extended, bringing us **mostly dry weather** for another **four days**.

- (**CFSv2 Global Relative AAM**)



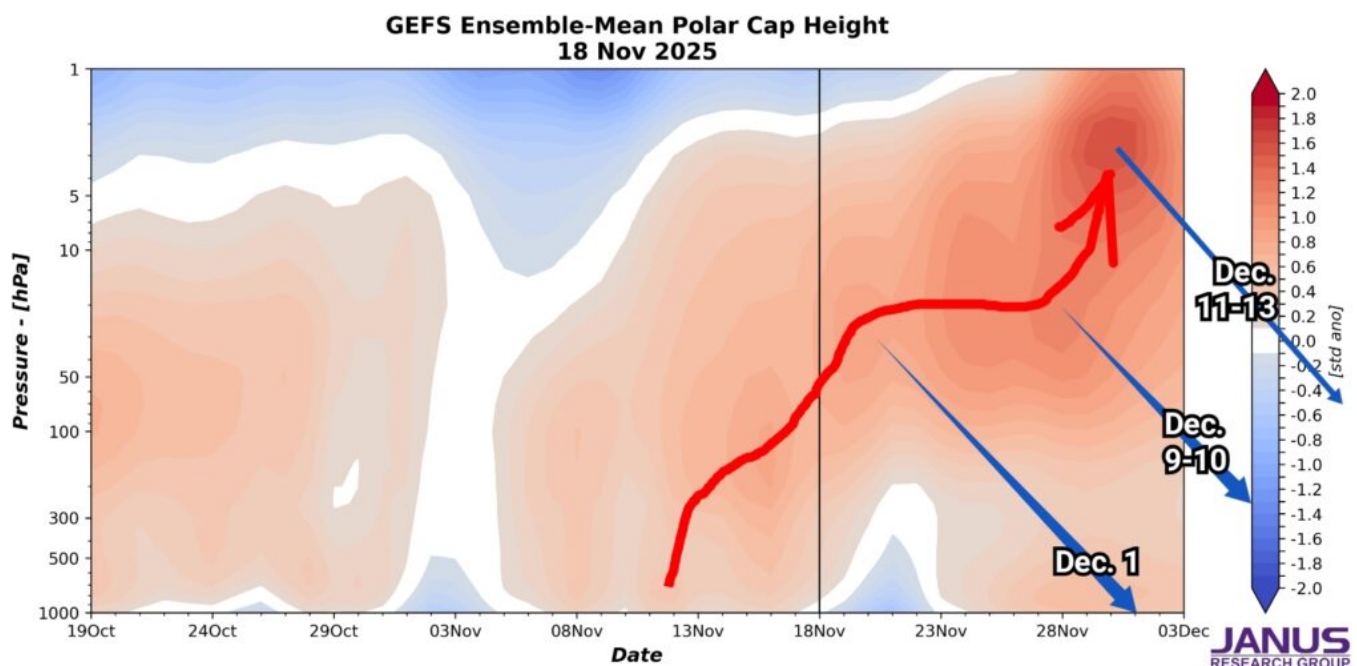
Atmospheric angular momentum (AAM, i.e. average global wind speeds) has reached a peak and is quickly declining. Meanwhile, eastward progression of the tropical **Madden-Julian Oscillation (MJO)** will slow down soon and bring us some much needed rainfall starting around **Friday, December 5**.

Negative **east Asian mountain torque (-EAMT)**, lower **AAM**, and

Rossby wavebreaking will all dovetail with the **major stratospheric polar vortex (SPV) disruption** currently underway to probably extend that period of rainfall for **several days**, with the coldest weather around **Dec. 11–13**.

POLAR VORTEX (SPV) FORECAST

- (**GEFS mean polar cap heights**)



On Nov. 18, **Dr. Judah Cohen** (see link in the credits below) suggested that the long-awaited late November **SPV disruption** could involve a stretched polar vortex and “**wave reflection**” event. More recently he said he’s all in and this is exactly what is currently happening.

(A “**wave reflection**” occurs when a single wave or plume of high pressure gains enough altitude to take a big swipe at the lower **SPV**, but doesn’t quite have enough energy to cleanly split the vortex. This is called a “**Wave-1**” disruption, whereas a “**Wave-2**” pattern disrupts the **SPV** from both sides of the Arctic Basin.)

Something I noticed early on is the possibility of **FOUR STAGES**, so here I added some predictions for when the latter three disruption stages will affect Lane County.

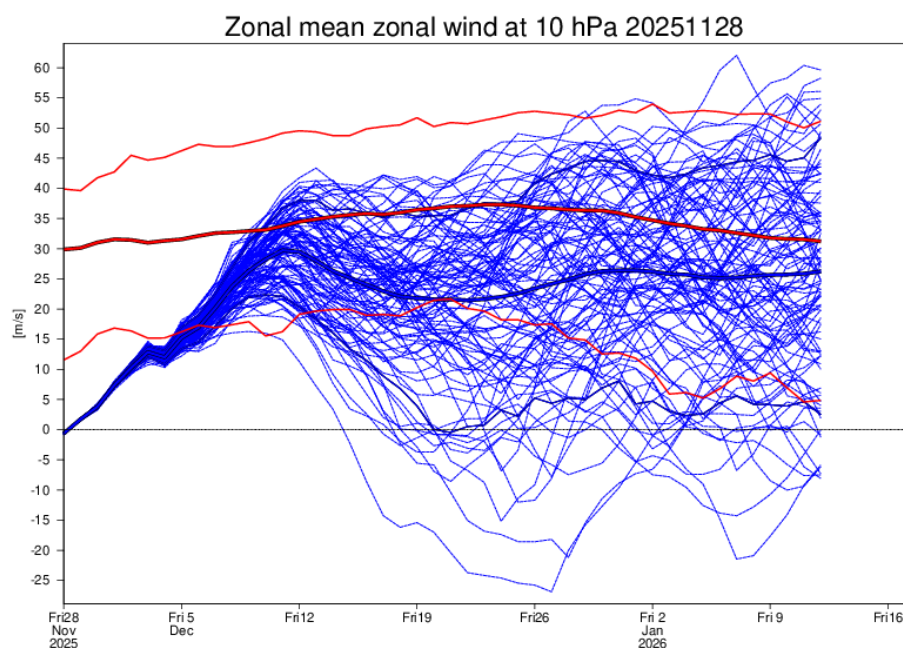
NOTE that the 4th stage is currently underway and recently crossed the line into a “**sudden stratospheric warming**” (**SSW**) event in which the **SPV** stopped flowing east (clockwise from above) around the Arctic Circle and started flowing the other way.

Because this occurred for more than 24 hours straight, this event is considered a “**major SSW**”.

With **La Niña** reaching a peak in the last week and generally still promoting easterly equatorial trade winds, and with **easterly QBO** winds in the tropical stratosphere, the **SPV** will likely remain weaker than average for several weeks.

Thus, the prospect for a **Wave-2 major SSW** sometime in the next 3–6 weeks seems quite good.

- (**10 hPa zonal winds**)



The 46-member ECMWF ensemble (EPS) mean prediction for SPV

zonal wind speeds at 60° N. shows the next **SPV disruption cycle** getting initiated (briefly) around Dec. 4–5 at the lower levels.

But the main disruption has consistently shown up around **Dec. 11–13** just as the **SPV** should be nearing its average strength for this time of year.

Peak disruption should occur roughly **Dec. 14–16**. And adding 13–14 days gets us to roughly **Dec. 27–30**. So, that's about when I would expect **significant winter impacts** on the Northwest.

You can also faintly discern another **SPV zonal wind downturn** near the end of December.

As **@Aigle_e** tweeted several days ago, it is... “IMPORTANT to take a step back and not just look at your OWN country when making a long-term forecast.”

“Zooming out and looking further ahead, we see a strong **Greenland–Scandinavia dipole**, [which is] well-documented in the literature as a precursor to a **major SSW**.”

[That **Greenland–Scandinavia dipole** is very prominent near the center of the **time-longitude Hovmöller** diagram (first chart above).]

GRAPHICS CREDITS

- (chart #1) **ECMWF** (European Center for Medium-Range Forecasting)
- (chart #2) **Dr. Victor Gensini** at Northern Illinois University
- (chart #3) **Dr. Judah Cohen** at Arctic Environmental Research, a subsidiary of JANUS Research Group (by permission)

And, here is the post Judah made on Nov. 20 predicting that

the current **SPV disruption** would be a “**wave reflection**” event—

<https://x.com/judah47/status/1991598893604434019>

- (chart #4) **ECMWF** (European Center for Medium-Range Forecasting)