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Arctic Oscillation and Polar Vortex Analysis and Forecasts

February 23, 2026

Dr. Judah Cohen from Atmospheric and Environmental Research (AER) embarked on an experimental process of regular research, review, and analysis of the Arctic Oscillation (AO) and Polar Vortex (PV). This analysis is intended to provide researchers and practitioners real-time insights on one of North America's and Europe's leading drivers for extreme and persistent temperature patterns.

During the winter schedule the blog is updated once every week. Snow accumulation forecasts replace precipitation forecasts. Also, there is renewed emphasis on ice and snow boundary conditions and their influence on hemispheric weather. In late Spring, we transition to a spring/summer schedule, which is once every two weeks. Snow accumulation forecasts will be replaced by precipitation forecasts. Also, there will be less emphasis on ice and snow boundary conditions and their influence on hemispheric weather.

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Summary

- The Arctic Oscillation (AO) is currently near neutral and is predicted to remain close to neutral as pressure/geopotential height anomalies across the Arctic are currently mostly negative and are predicted to turn mostly mixed the next two weeks. The North Atlantic Oscillation (NAO) is currently positive with negative pressure/geopotential height anomalies across Greenland, and the NAO is predicted to remain positive to strongly postive the next two weeks as pressure/geopotential height anomalies are predicted to remain mostly negative across Greenland the next two weeks.
- Troughing/negative geopotential height anomalies across Greenland will support ridging/positive geopotential height anomalies initially across Southern Europe expanding northward next week across much of Europe. This pattern will favor normal to above normal temperatures across most of Europe including the United Kingdom (UK) the next two weeks with the biggets exception being normal to below normal temperatures across the far Northeastern Europe corner of Europe this week due to low geopotential heights.
- The general pattern across Asia over the next two weeks is ridging/positive geopotential height anomalies across the Central Arctic supporting troughing/negative geopotential height anomalies across Northern Asia this week and then into East Asia next week with more ridging across Southern Asia. This pattern favors mostly normal to above normal temperatures across much of Asia including Eastern Siberia with normal to below normal

temperatures across much of Russia and next week into Northeast Asia including Eastern China.

- This week ridging/positive geopotential height anomalies centered near the Aleutians will support troughing/negative geopotential height anomalies across Alaska, and much of Canada while ridging in the Western United States (US) will support troughing in the Eastern US. However next week, strenghtening ridging/positive geopotential height anomalies in the Central Arctic will suppress geopotential heights across much of Canada. This patten will support normal to below normal temperatures in Alaska, much of Canda and the Eastern US with normal to above normal temperatures across the Western US and the Canadian Maritimes. However next week colder temperatures will deepen across much of Alaska, Canada and could spread across the Northeastern US as well.
- Polar vortex (PV) is undergoing a stetched PV this week but then some uncertainty on what follows but the end is near. My thoughts are below.
- If my flight is not canceled tomorrow, expect disruptions in publishing of the blog next week.

Plain Language Summary

So far this winter, cold temperatures have dominated Scandinavia, Northeastern Europe, much of Russia, Northeastern Asia, Alaska, much of Canada and the Northeastern US (see **Figure**). In contrast mild temperatures have dominated Western and Southern Europe, Western, Central and Southeastern Asia, Eastern Siberia, Northeast Canada and the Western US (see **Figure**). The forecast for the next two weeks can be summarized as more of the same with cold predicted from Russia into Northeast Asia, Alaska, Canada and likely the Northeastern US. The one exception is Northeastern Europe, where persistent cold is predicted to be in retreat (see **Figures 3, 6** and **9**). The polar vortex (PV) has so far this winter been ping ponging between circular and strong or a Candian Warming, which favor relatively mild temperatures mostly in eastern North America and Asia and stretched or more elongated that favors cold temperatures in East Asia and eastern North America. At least one more stretched PV this week following the recent Canadian Warming. I am still looking for one more stetched PV in early March but most model forecasts are then suggesting a PV split. That should shake up the pattern.

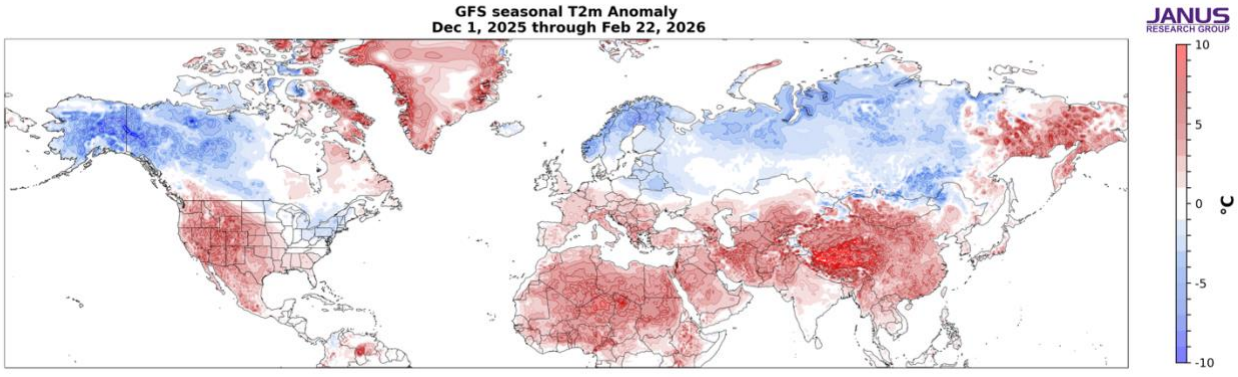

Figure. Estimate of the observed surface temperatures (°C; shading) from 01 Dec 2025 to 22 Feb 2026 based on GFS initializations and the GFS forecast from the 23 Feb 2026 run.

Impacts

Der mentsh trakht un got lakht. Sounds like German but is a Yiddish proverb that translates as man plans and God laughs. I thought that I would be writing this week's blog from Germany but a higher power (Mother Nature, Ol' Man Winter?) had other plans for me. Still hoping to leave later this week but who knows.

Obviously I need to start with the 800 pound gorilla in the room, the Northeastern US blizzard. I have shared previously the meme how when I was a younger career scientist, Greenland blocking got me most excited but as I matured I anticipated with interest Ural blocking much more. The same now can be true of a polar vortex (PV) split and a PV stretch. No stratospheric event gets weather social media more excited than a PV split but if you are a winter weather enthusiast in the Eastern US you should be more excited by the lowly PV stretch than the much more flamboyant PV split. And this winter and especially this storm should convince you. Providence, RI blew past its previous snowfall record from one storm and the same could be said for the state of Rhode Island and maybe even Massachusetts (24 hour record). Clearly no PV split and we have a deep trough over Greenland so the opposite of Greenland blocking.

You know the drill, I first discuss the two-week forecast for the mid-tropospheric circulation, which helps set the table for what I am expecting with the PV and our weather, though for the most part less suspense with the PV going forward. Once again, for most of the two weeks the mid-tropospheric circulation is characterized by low pressure centered near the North Pole and high-pressure ridging floating around the mid- to high-latitudes (see **Figure i**). This week the dominant high latitude blocking will be centered in the North Pacific sector. Currently the models have the North Pacific blocking first near the Aleutians and then drifting westward towards Eastern Siberia and then into the Central Arctic. Then next week ridging should increase over Europe. That coupled with troughing over Siberia, I believe is favorable for disrupting the PV further. It could favor yet one last PV stretch but then the mdoels predict a PV split as discussed below.

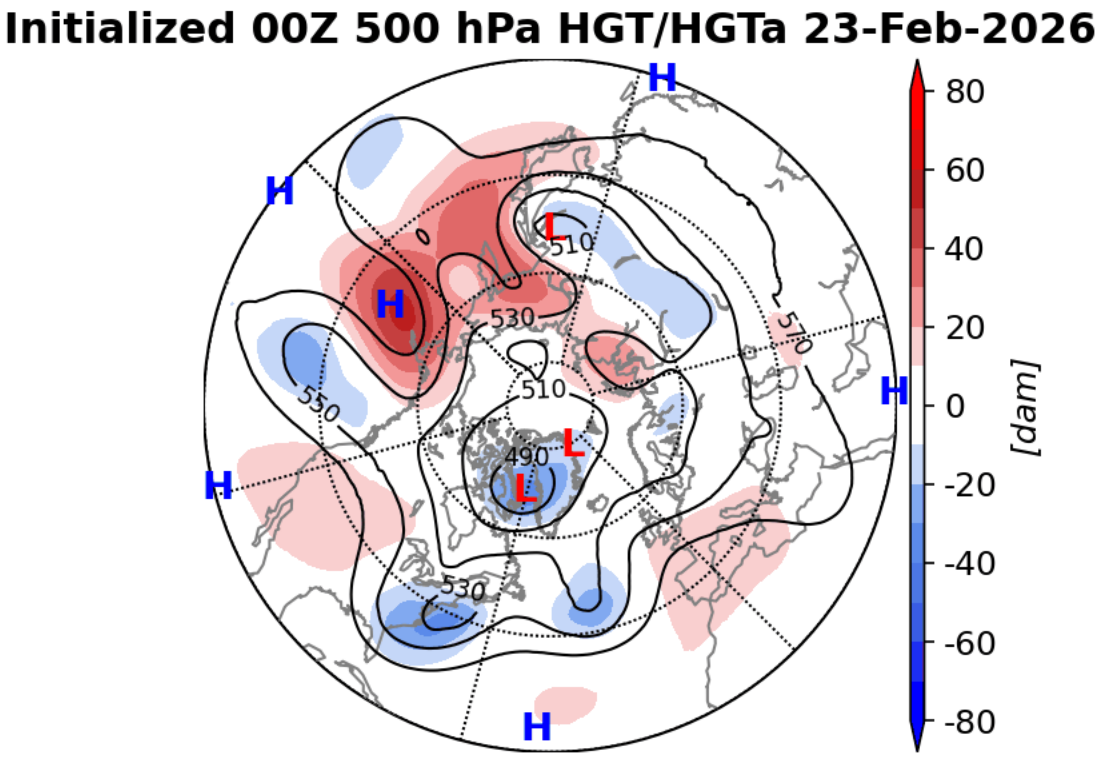

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Figure i. Initialized 500 mb geopotential heights (dam; contours) and decameter anomalies (dam; shading) across the Northern Hemisphere for 9 Feb 2026 and forecasted from 23 Feb 2026 and forecasted from 24 Feb 2026 to 10 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS model.

Figure ii presents the latest polar vortex (PV) animation. Initially the PV is elongated or stretched from Western Asia to Canada. This stretched PV looks much shallower than other previous PV stretches that extend from Siberia deep into Canada and even the US that has been so frequent the past two winters. But as I showed in last week's blog the stretch at 100 hPa is more extensive and digs into the Eastern US. As I mentioned last week, in all of our studies we identified and defined stretched PVs in the lower stratosphere (100hPa) and not the mid-stratosphere (10hPa). I feel that this stretched PV is related to the historical blizzard here in the Northeastern US and the cold temperatures to follow this week. It could be that the overall weak PV and climatologically the PV is steadily weakening, so the mid-stratospheric PV just lacks the energy to follow through with this latest stretch as it did earlier in the winter with a much more energetic PV.

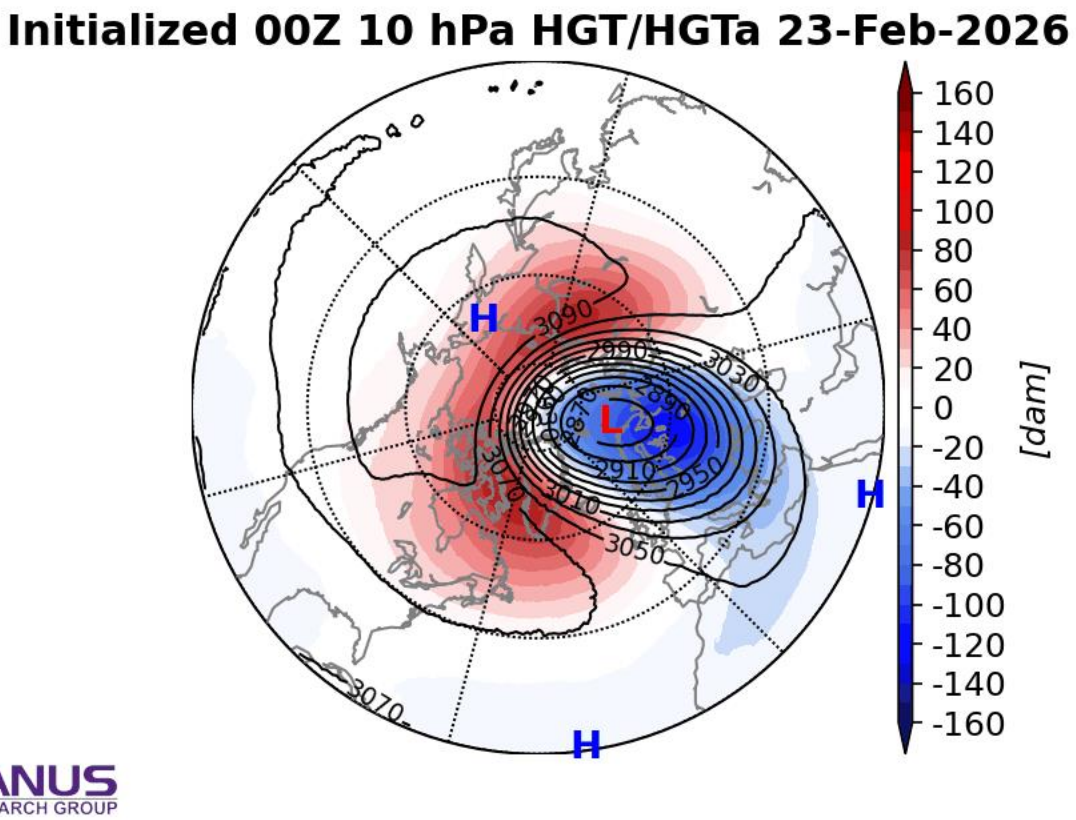

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Figure ii. Forecasted average 10 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere for 23 Feb 2026 and forecasted from 24 Feb 2026 to 10 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS model.

Then I believe that there will be one more PV stretch in early March. You can see it briefly in the animation in **Figure ii** and I believe in **Figure 12b**. **Figure 12b** looks stretchy to me on its way to PV splitting. Another signal that keeps me believing that we have one more stretched PV this season (after this week) is the predicted cold air outbreak into Northeast Asia this week. That is usually the precursor to a stretched PV that delivers cold air east of the Rockies across North America one to two weeks later.

Another cold air outbreak into the Northeastern US is consistent with a stretched PV and not at the onset of a PV split as I shared in the blog post of 24 November 2025 in the table. Also cold over Siberia into Northeast Asia and cold stretching from Alaska, through Western Canada and finally the Northeastern US is the temperature pattern most closely associated with PV stretches. But I admit I am using some poetic license here.

So as I have been doing of late, I present the wave diagnostics in **Figure iii**. So once again currently, wave energy goes up and east over Asia, reflects off the stratospheric PV (or at least a reflective layer in the polar stratosphere) and then heads down and east over North America where the energy (see **Figure iiia**) is re-absorbed amplifying the standing wave over North

America and delivers cold air south across North America including the Eastern US. It even suggests an eastward tilting wave with the trough over North America tilting eastward to connect with the stratospheric PV. Though I admit it is not clear cut.

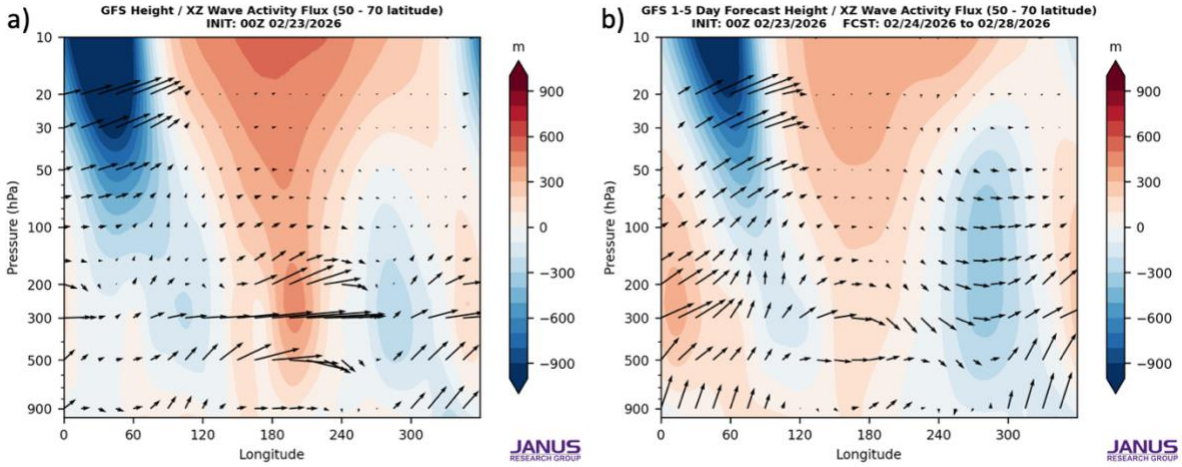

Figure iii. **a)** Observed longitude-height cross section of geopotential eddy height anomalies (shading) and wave activity flux (vectors) for 23 February 2026 **b)** same as **a)** but forecast from 24 February through 28 February 2026. The forecast is from the 00Z 23 February 2026 GFS operational.

Then wave reflection continues for the rest of the week as seen in **Figure iiib**. Yet again this whole week, wave energy goes up and east over Asia, reflects off the stratospheric PV (or at least a reflective layer in the polar stratosphere) and then heads down and east over North America where the energy is re-absorbed amplifying the standing wave over North America and delivers cold air south across North America including the Eastern US. Now I did not show the wave diagnostics for next week as it is not obvious from the plot. But the wave energy diagnostics are based on last night's GFS, which really didn't show PV stretching nor the cold air into the Northeastern US consistent with all the ensembles of the European, Canadian or even the GEFS. Therefore I believe the GFS is not handling the cold air for the first week of March and the associated atmospheric dynamics. Though ti si looking better on the 12Z run.

After the brief PV stretch of early March all the models are predicting a PV split as seen in **Figure iv**. Our research has shown that a PV stretch often transitions to a sudden stratospheric warming (SSW - defined as a reversal of the wind from westerly to easterly at 60°N and 10 hPa). So my description of the evolution of the PV over the next two weeks has support. I fully expect that as the PV transitions from a PV stretch to a PV split, it will finally warm up in the Eastern US and could last a while. Instead when an SSW occurs cold temperatures are favored across Northern Asia and Northern Europe. This doesn't always work out, but If you look at the predicted flow around the major PV center over the Urals, it suggests easterly flow across Northern Europe. It has been cold in Northeastern Europe but not so much in Western Europe. So we shall see if maybe the cold can penetrate further west after the PV split. But I am just speculating. Trying my best to give hope to UK winter weather enthusiasts, but admittedly this is very late in the winter season.

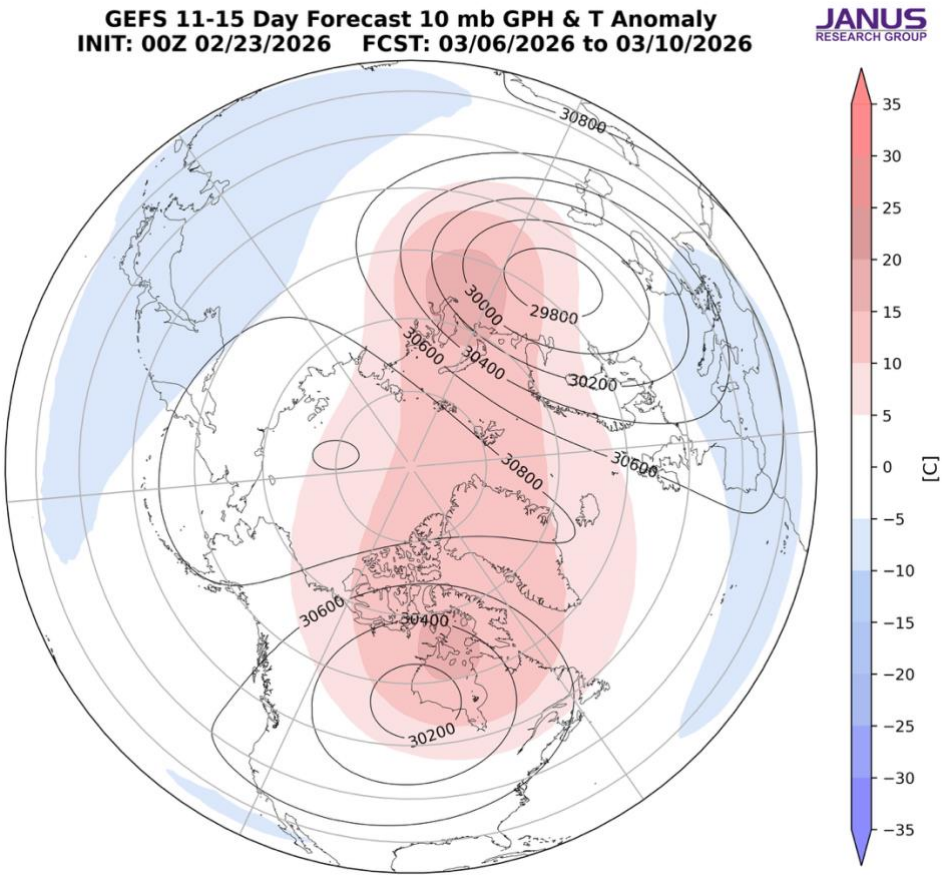

Figure iv. Predicted 10 mb geopotential heights (dam; contours) and temperature anomalies (°C; shading) across the Northern Hemisphere averaged from 6 Mar to 10 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

It often does turn colder in the Eastern US, about two weeks after the PV split but that puts us not only well into meteorological spring but also astronomical spring. The cold is tempered by the sun and snowstorms are instead rainstorms and are favored towards higher elevations. But the way this winter has gone, I wouldn't be surprised if winter has one last surprised for the Northeastern US.

In honor of the historical blizzard here in the Northeastern US, I present an updated snowfall anomaly plot for the Northern Hemisphere. It does not include todays Nor'easter. Besides the positive anomalies at the high latitudes, we can observe positive anoamlies in the Eastern US, the Pyrenees, the western Alps, Sweden Finland, Eastern Europe and the Baltics, to my eye at least parts of Germany and Poland. Snow deficits still exist in the eastern Alps, the Tibetan Plateau and the higher elevations fo the Western US, with some exceptions.

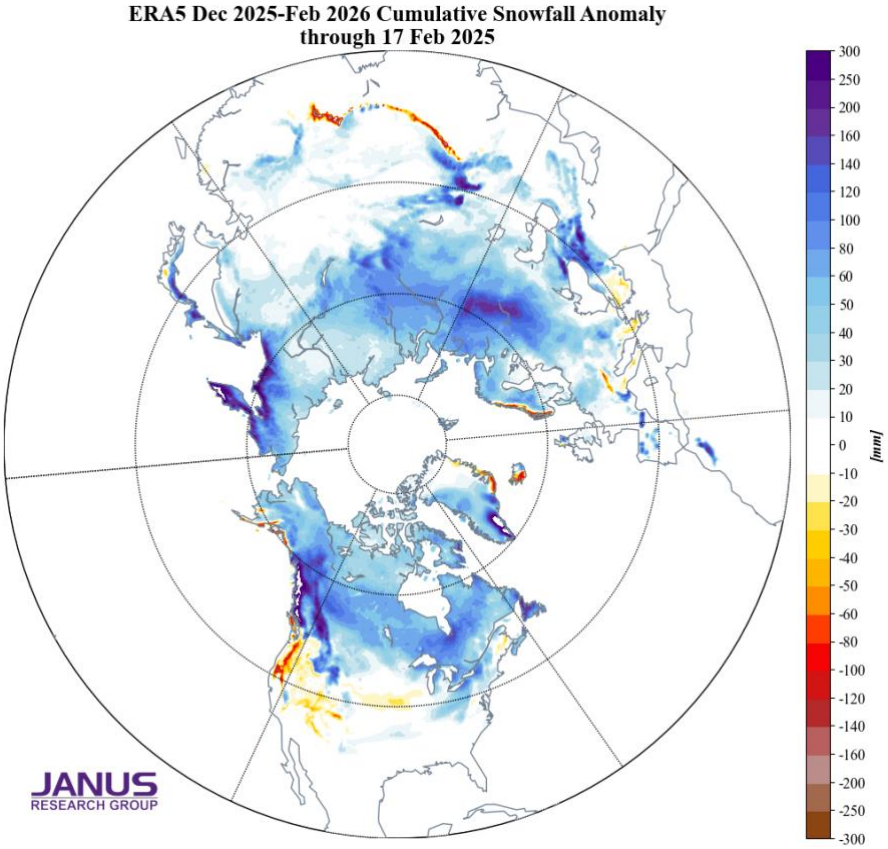

Figure i. Snowfall anomalies (°C; shading) from 1 Dec 2025 to 17 Feb 2026. The data based on ERA5 reanalysis.

In conclusion, no need to impersonate Monty Hall from "Let's Make a Deal." But let's recap. The three PV doors are: door number one - the reflective layer in the stratosphere that gave rise to the stretched PV also protects the PV from subsequent upwelling energy from the troposphere and allows the PV to strengthen. The second door is, though there is short-term strengthening of the PV, high-latitude blocking resumes its assault on the PV and we see more stretched PVs and/or Canadian Warmings (that often transition to stretched PVs) until finally there is knockout punch and a true sudden stratospheric warming (SSW) either in January or February. And finally, the third scenario is that the stretched PVs just keep repeating for much of the winter punctuated or separated by a relatively strong PV and or Canadian warmings.

I have since the late fall favored door number three or what I like to call a "rinse, lather, repeat" PV and weather pattern all winter. Basically, alternating stretched PVs and relaxation to a more circular PV and oscillating or alternating cold and mild periods for East Asia and or North America, that can feature some wild temperature swings. The PV and winter weather chose door number three or this pattern of "rinse, lather, repeat" has gone the entire length of winter 2025/26 with one last stretched PV possible next week.

Next month is spring and looks like one more stretched PV then followed by an PV split/SSW, regardless if you agree with me. Could still be more stretched PVs, so I will be on the look out. I think probably not, but the SSW could end up being the Final Warming similar to last winter. Kind of poetic to have an SSW/stretched PV sandwich with SSWs in the fall and spring bookending a winter full of stretched PVs. PV showing off I guess.

Near-Term

This week

The AO is predicted to be near neutral this week **(Figure 1**) with mixed geopotential height anomalies currently across the Arctic and mixed geopotential height anomalies across the mid-latitudes of the NH (**Figure 2**). With predicted negative geopotential height anomalies across Greenland (**Figure 2**), the NAO is predicted to be postive this week.

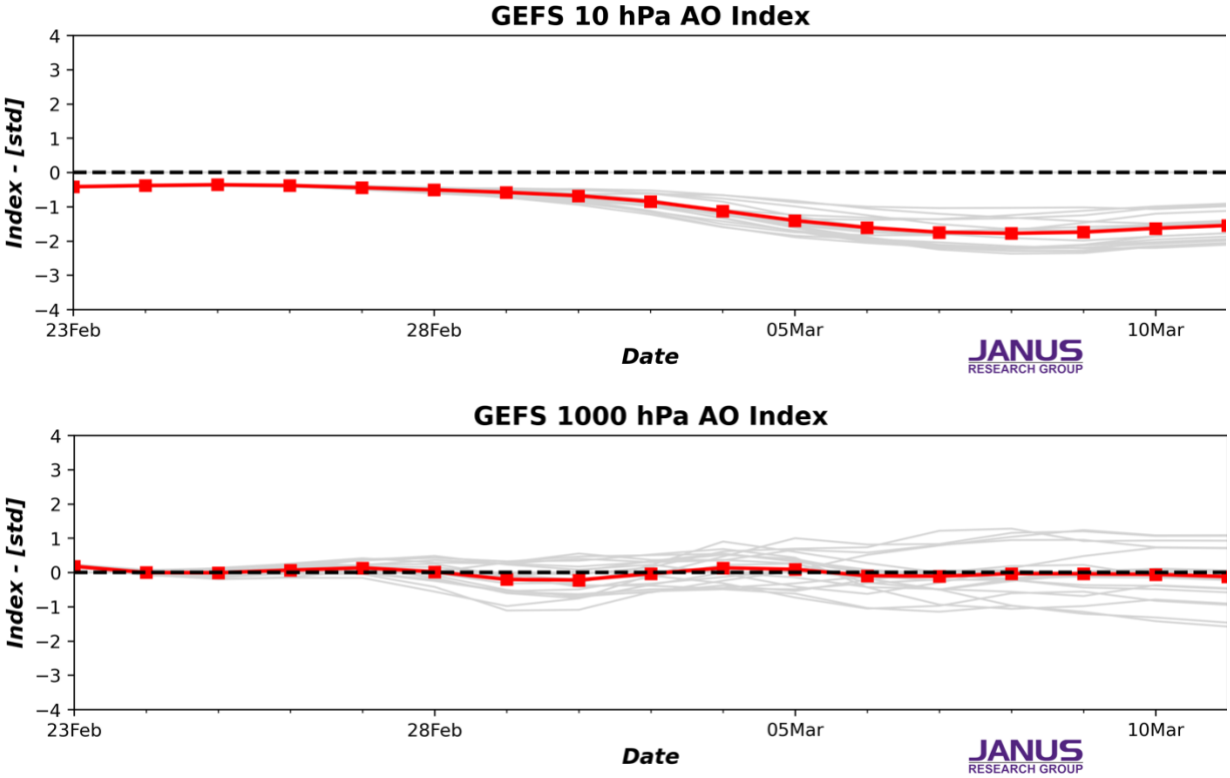

Figure 1. The predicted daily-mean AO at a) 10 hPa and b) 1000 hPa from the 00Z 23 Feb 2026 GFS ensemble. Gray lines indicate the AO index from each individual ensemble member, with the ensemble mean AO index given by the red line with squares.

The predicted pattern this week across Europe is ridging/positive geopotential height anomalies across Western and Central Europe with troughing/negative geopotential height anomalies across Eastern Europe (**Figure 2).** This pattern will support normal to above normal temperatures across much of Europe including the UK, however northerly flow will support

normal to below temperatures across across Northeastern Europe this week (**Figure 3**). This week the general pattern across Asia is ridging/positive geopotential height anomalies across the north slope of Siberia will support troughing/negative geopotential height anomalies across much of Siberia with more ridging across Southern Asia this week (**Figure 2**). This pattern favors normal to below normal temperatures across much of Siberia with normal to above normal temperatures across most of Asia including Eastern Siberia this week **(Figure 3**).

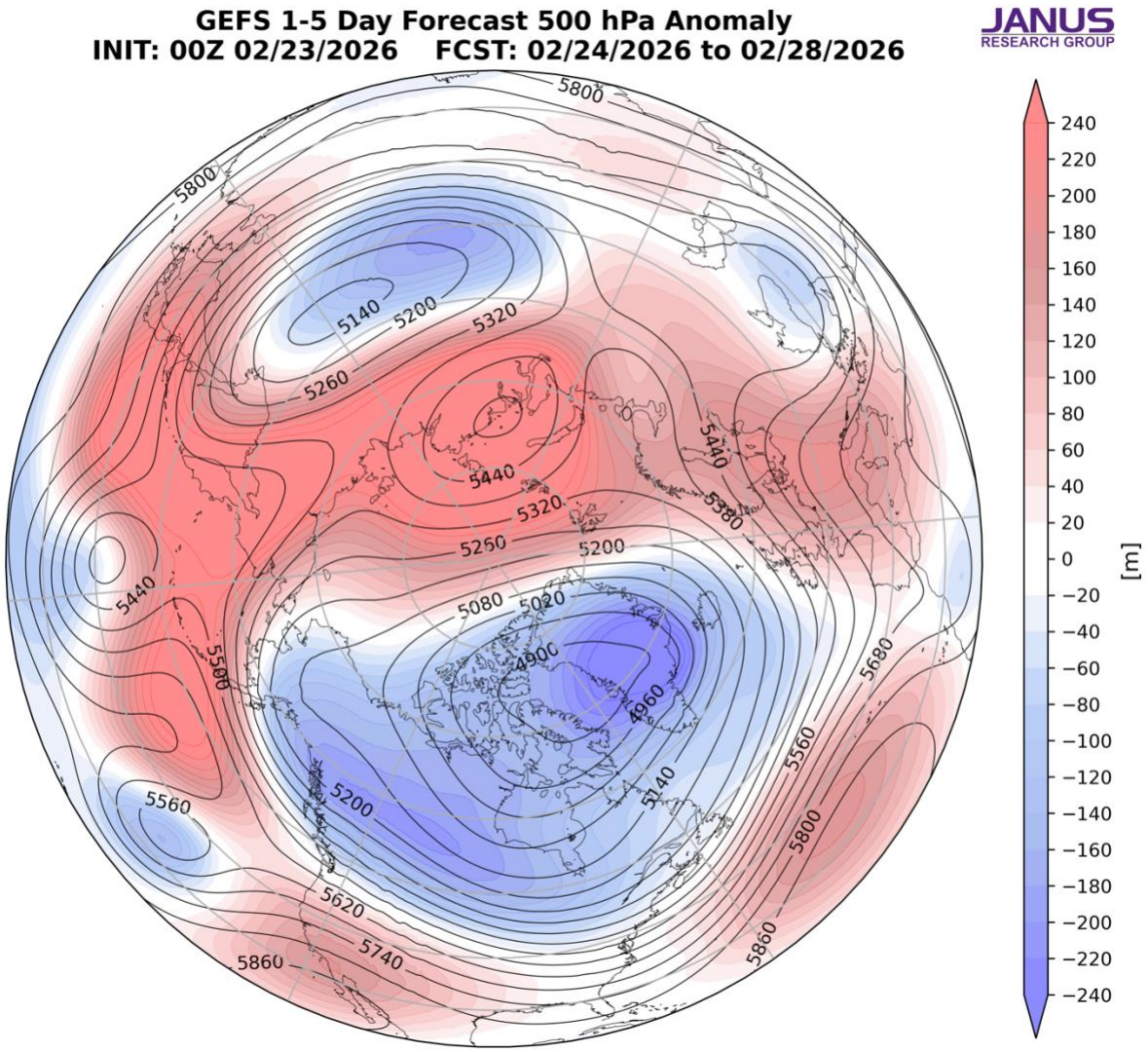

Figure 2. Forecasted average 500 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere from 24 Feb 2026 to 28 Feb 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

This week centered near the Aleutians will support troughing/negative geopotential height anomalies Alaska and Canada while separate ridging in the Western US will support troughing in the Eastern US ridging/positive geopotential height anomalies across Eastern Canada and the Eastern US this week (**Figure 2**). This patten will favor normal to above

normal temperatures across the Canadian Maritimes and the Western US with normal to below normal temperatures across Alaska, muich of Canada and the Eastern US this week (**Figure 3**).

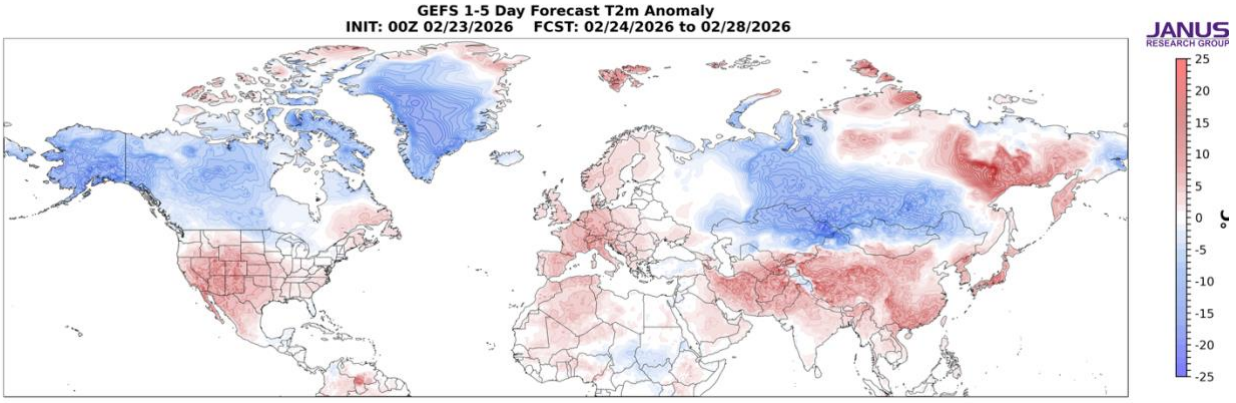

Figure 3. Forecasted surface temperature anomalies (°C; shading) from 24 Feb 2026 to 28 Feb 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

Troughing and/or cold temperatures will support new snowfall across parts of Turkey the Caucuses, Kazakhstan and Siberia while milder temperatures will support snowmelt across the Alps, Scandinavia, the Baltic States, Eastern Europe, Western Russia and parts of Siberia this week (**Figure 4**). Troughing and/or cold temperatures will support new snowfall across northern Alaska, the higher elevations of Western Canada, the Canadian Plains, the higher elevations of the Northwestern US while milder temperatures will support snowmelt across parts of Southern Canada and the Northeastern US this week (**Figure 4**).

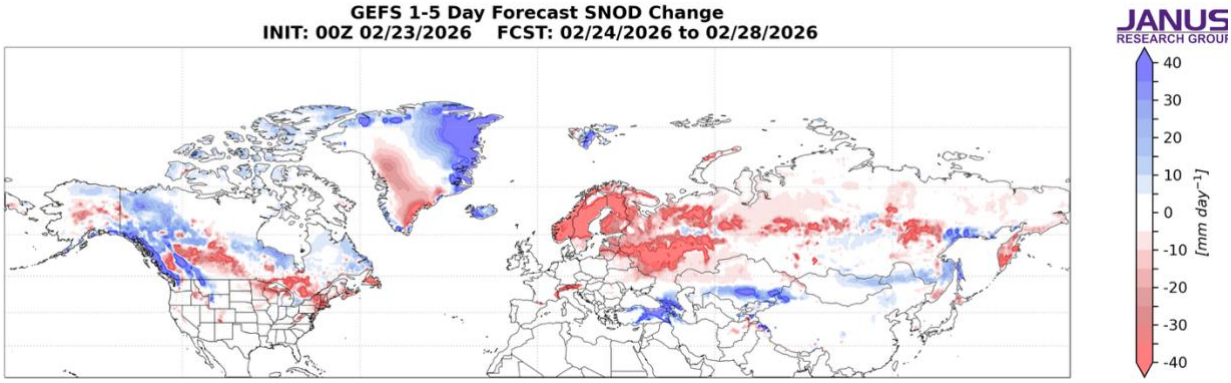

Figure 4. Forecasted snowfall (mm/day; shading) from 24 Feb 2026 to 28 Feb 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

Near-Mid Term

Next week

With geopotential height anomalies remaining mostly mixed across the Arctic and with mixed geopotential height anomalies across the mid-latitudes this period (**Figure 5**), the AO will likely stay close to neutral this period (**Figure 1**). With mostly negative pressure/geopotential height anomalies across Greenland (**Figure 5**), the NAO will likely be positive this period.

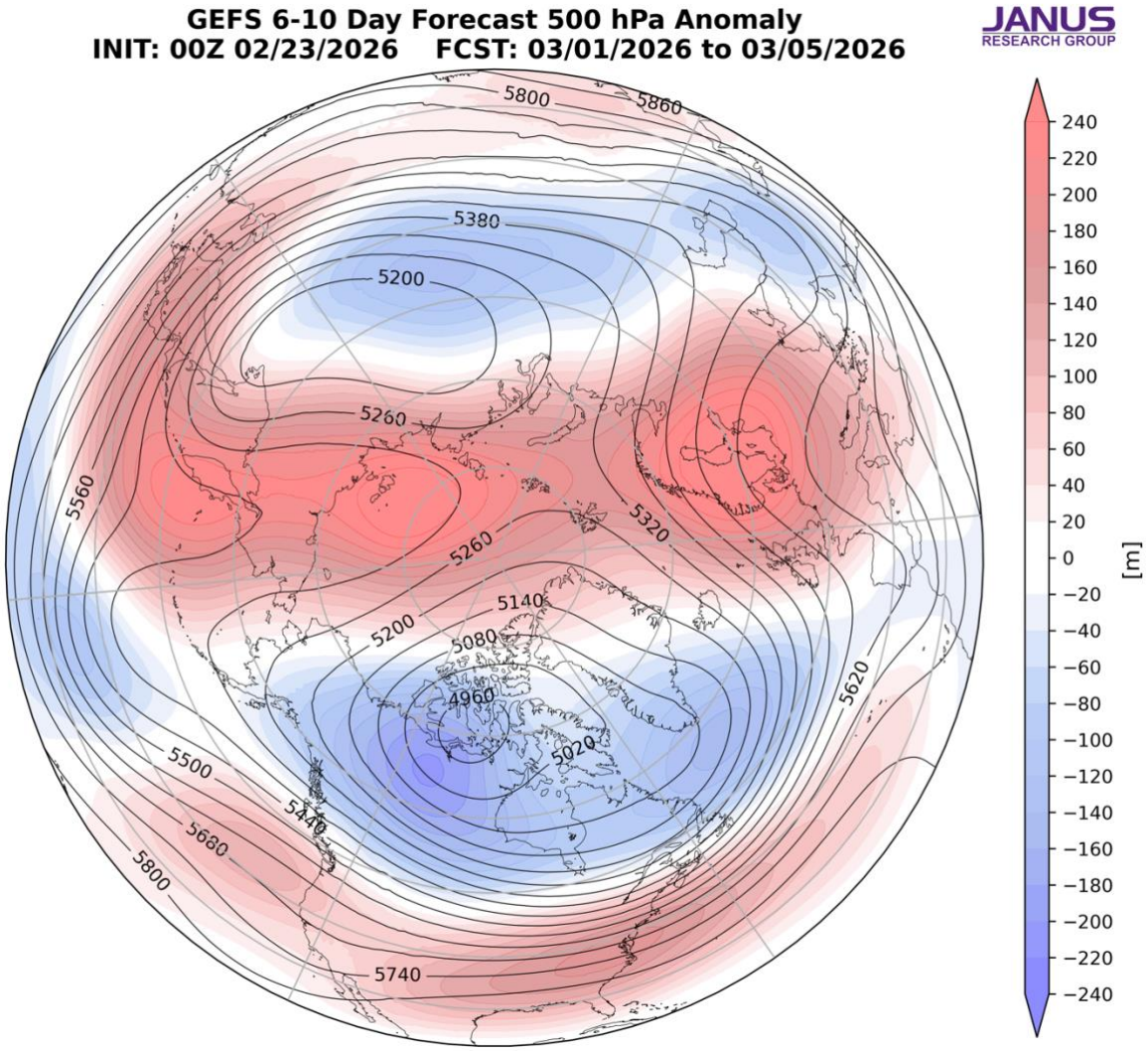

Figure 5. Forecasted average 500 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere from 01 Mar 2026 to 05 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

The persistent troughing/negative geopotential height anomalies across Greenland will support widespread ridging/positive geopotential height anomalies across Europe this period (**Figure 5**). The pattern will support widespread normal to above normal temperatures across Europe including the UK this period (**Figure 6**). Across Asia

ridging/positive geopotential height anomalies centered over the Laptev Sea will support troughing/negative geopotential height anomalies across most of Siberia and into Northeast Asia while European ridging will support troughing in the Middle East (**Figure 5**). This pattern favors widespread normal to above normal temperatures widespread across much of Asia especially Central and Eastern Asia including Eastern Siberia with normal to below normal temperatures across much of Siberiia into Northeast Asia and the Middle East this period (**Figure 6**).

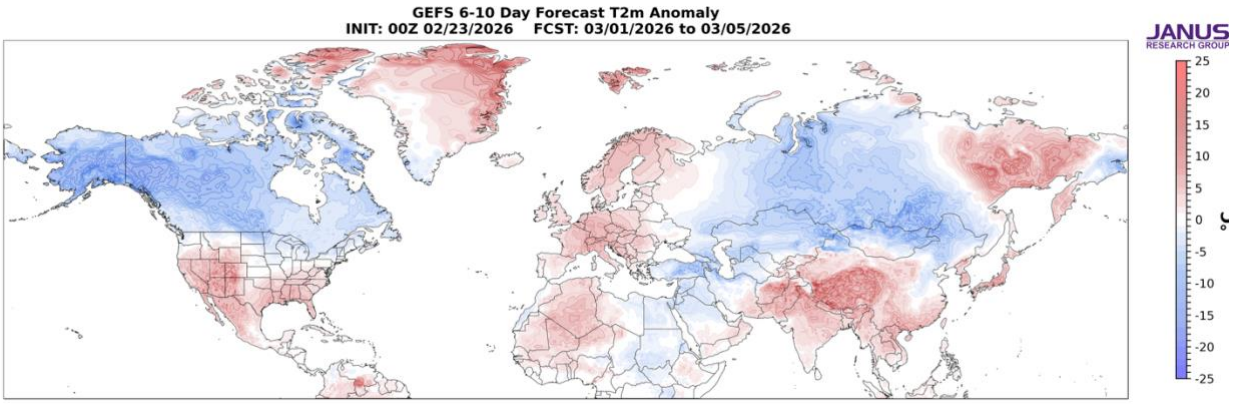

Figure 6. Forecasted surface temperature anomalies (°C; shading) from 01 Mar 2026 to 05 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

Ridging/positive geopotential height anomalies in the Arctic and in the Gulf of Alaska will support deep troughing/negative geopotential height anomalies across Alaska, much of Canada and into the Northern US but with more ridging in the Western US this period (**Figure 5**). This pattern will favor normal to below normal temperatures across Alaska, much of Canada and the Northcentral and Northeastern US with normal to above normal temperatures mostly limited to the Western and Southern US (**Figure 6**).

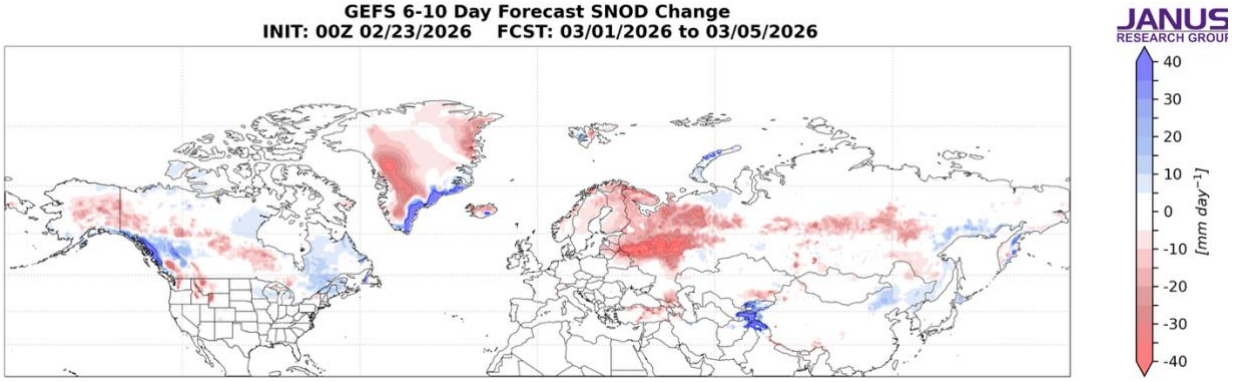

Figure 7. Forecasted snowfall rate (mm/day; shading) from 01 Mar 2026 to 05 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

Troughing and/or cold temperatures will support new snowfall in parts of Siberia, Northeast Asia and the Tibetan Plateaus while milder temperatures will support snowmelt in parts of Scandinavia, Eastern Europe, Western Russia, and parts fo Siberia this period (**Figure 7**).

Troughing and/or cold temperatures will support new snowfall in Western and Southern Canada and the New England while milder temperatures will support snowmelt in Central Canada and the Western US this period (**Figure 7**).

Mid Term

Week Two

With predicted mostly mixed geopotential height anomalies across the Arctic and mixed geopotential height anomalies across the mid-latitudes this period (**Figure 8**), the AO will likely be close to neutral this period (**Figure 1**). With predicted weak and mixed pressure/geopotential height anomalies across Greenland (**Figure 8**), the NAO will likely remain near neutral to positive this period.

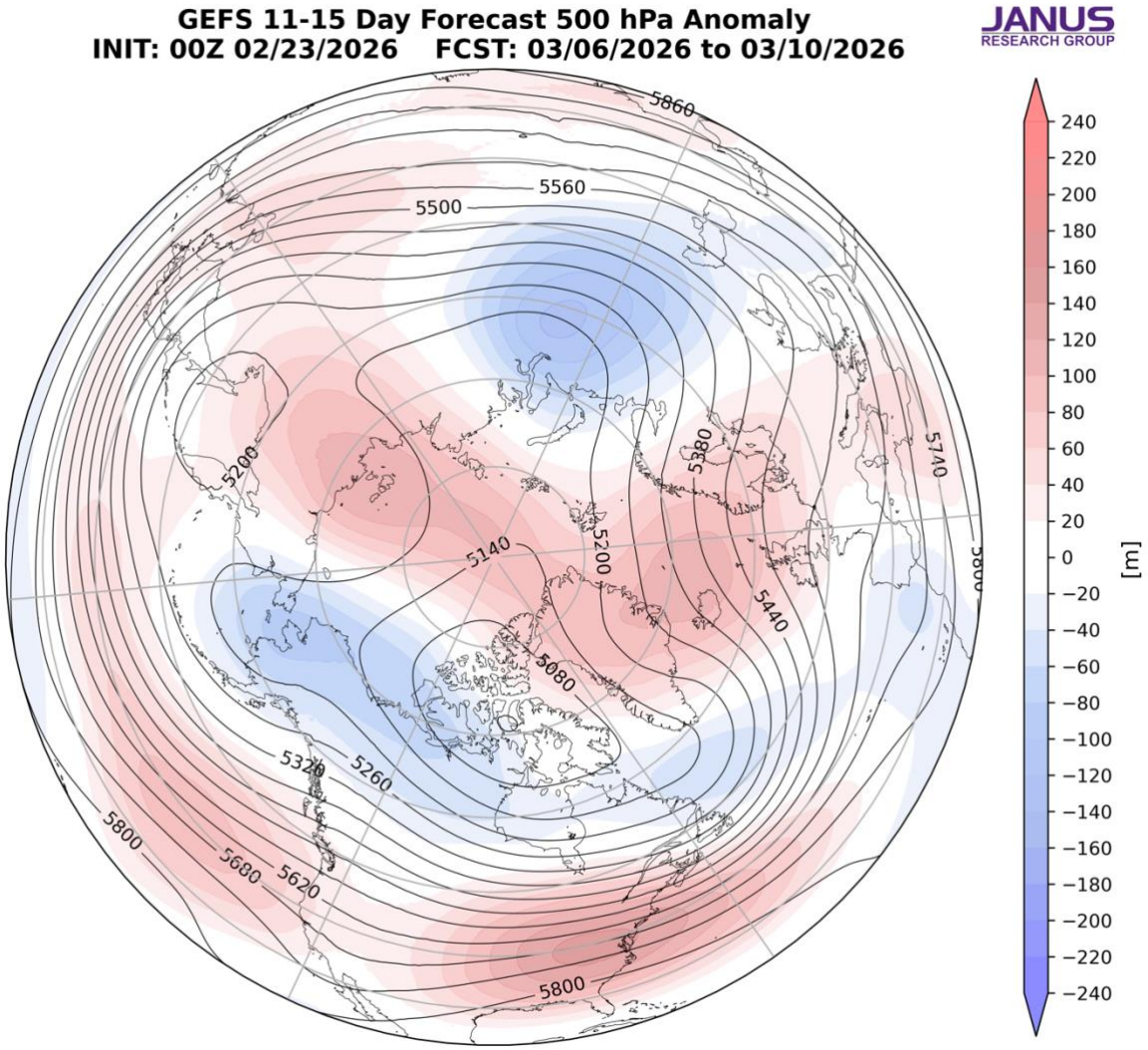

Figure 8. Forecasted average 500 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere from 06 Mar to 10 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

Weak troughing/negative geopotential height anomalies across across Greenland will continue to support ridging/positive geopotential height anomalies widespread across Europe with weak troughing/negative geopotential height anomalies across the Iberian Penninsula this period (**Figure 8**). This pattern should favor widepsread normal to above normal temperatures across much of Europe including the UK with with normal to below normal temperatures limited to Northeastern Scandinavia this period (**Figures 9**). Predicted ridging/positive geopotential height anomalies across Eastern Siberia and the Central Arctic will support troughing/negative geopotential height anomalies across Northern and Northeastern and even Eastern Asia (**Figure 8**). This pattern favors normal to below normal temperatures across much of Siberia and into Northeastern and Eastern Asia with normal to above normal temperatures widespread across Asia including Eastern Siberia, Central Asia and the Tibetan Plateau this period (**Figure 9**).

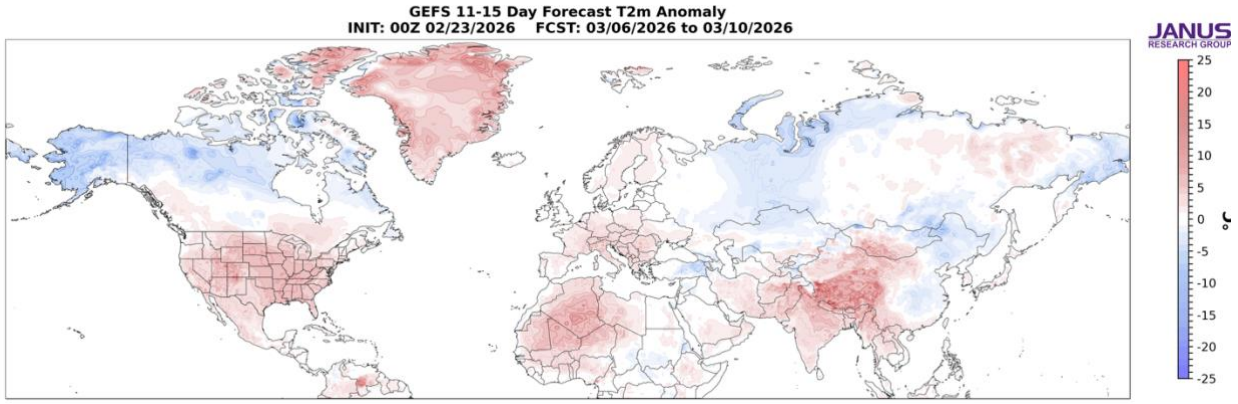

Figure 9. Forecasted surface temperature anomalies (°C; shading) from 06 Mar to 10 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

Persistent ridging/positive geopotential height anomalies over Eastern Siberia and the Cenral Arctic are predicted to anchor troughing/negative geopotential height anomalies across Alaska and Canada with more ridging across the US this period (**Figure 8**). This pattern supports normal to below normal temperatures across Alaska, Northern and Eastern Canada and the Northeastern US with normal to above normal temperatures across Southwestern Canada and the Western and Southern US this period (**Figure 9**).

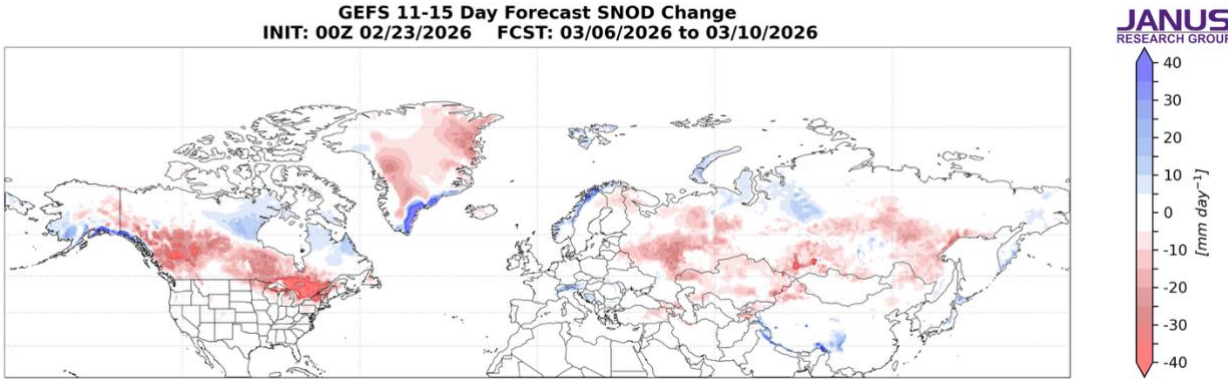

Figure 10. Forecasted snowfall (mm/day; shading) from 06 Mar to 10 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

Troughing and/or cold temperatures will support some possible new snowfall in the Alps, parts of Norway, parts of Siberia and the Tibetan Plateau while milder temperatures will support snowmelt in parts of Scandinavia, Western Russia, Kazakhstan and Southern Siberia this period (**Figure 10**). Troughing and/or cold temperatures will support new snowfall across across western Alaska, Northern and Eastern Canada while milder temperatures will support snowmelt in eastern Alaska, Western and Southern Canada, the Great Lakes and the Northeastern US this period (**Figure 10**).

Longer Term

30–day

Today's polar cap geopotential height anomalies (PCHs) plot currently shows warm/positive PCHs throughout the stratosphere and the troposphere (**Figure 11**). Then next week warm/positive PCHs are predicted to persist in the tropospher and especially the stratosphere.

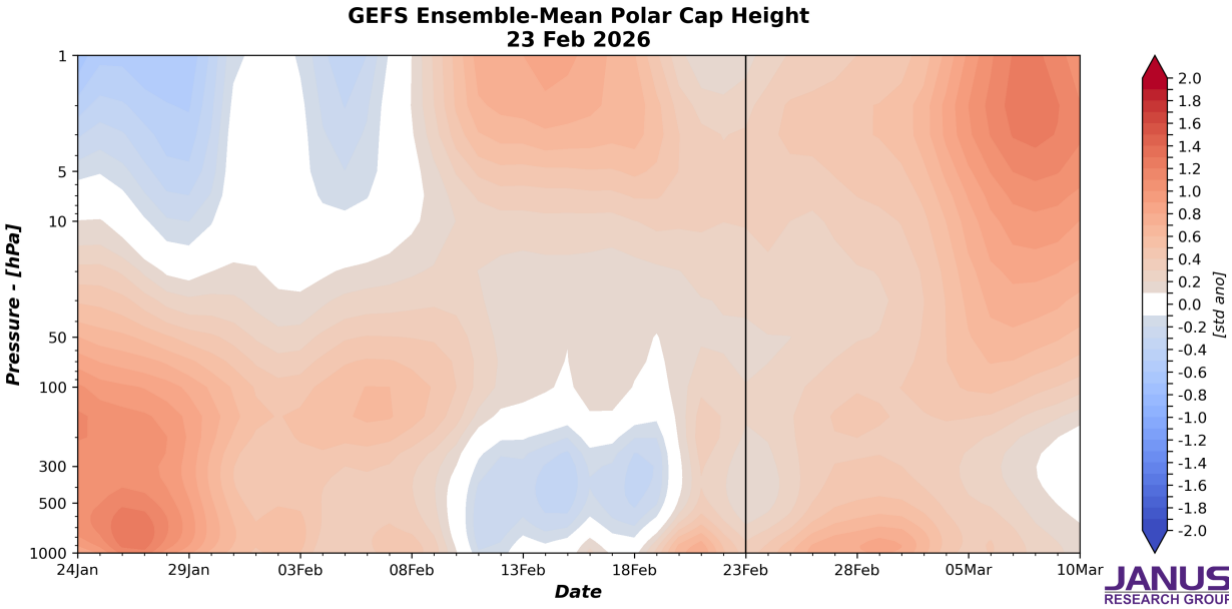

Figure 11. Observed and predicted daily polar cap height (i.e., area-averaged geopotential heights poleward of 60°N) standardized anomalies. The forecast is from the 00Z 23 Feb 2026 GFS ensemble.

The predicted warm/postive PCHs in the lower troposphere this week (**Figure 11**) are consistent with the predicted near neutral AO (surface temperature anomalies more than pressure fields are cosnsistent with warm/positive PCHs) this week (**Figure 1**). Then next week the forecast of warm/positive PCHs in the lower troposphere (**Figure 11**) are consistent with a near neutral AO (**Figure 1**). However with warm/positive PCHs to the lower trospphere both weeks could bias the AO negative.

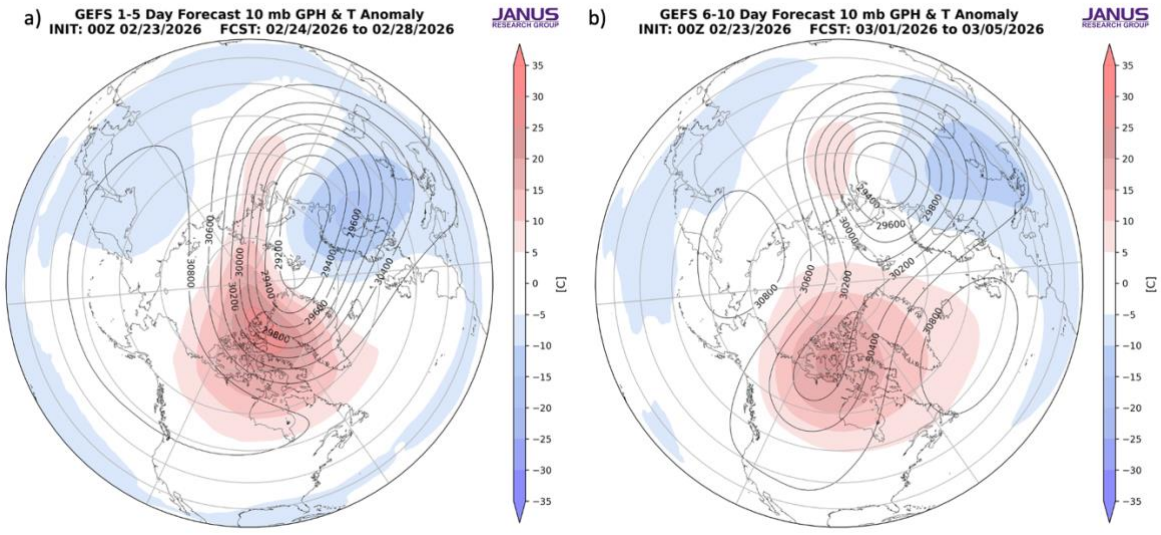

Figure 12. Predicted 10 mb geopotential heights (dam; contours) and temperature anomalies (°C; shading) across the Northern Hemisphere averaged from 24 Feb to 28 Feb 2026. (b) Same as (a) except forecasted averaged from 1 Mar to 5 Mar 2026. The forecasts are from the 00Z 23 Feb 2026 GFS ensemble.

This week the polar vortex (PV) is elongated in shape from the Urals to Eastern Canada with the main PV center over the Barents-Kara Seas with relatively cold temperatures focused over Eastern Europe and with high pressure centered over the Dateline and relatively warm temperatures across the Arctic and Northern Canada in the polar stratosphere (**Figure 12a**). Though the PV does not appear to elongate into the Eastern US it does when looking at 100 hPa as I showed last week. Then during the first week of March, the PV center is predicted to form to PV centers with one center over the Urals and elongate towards Canada with high pressure centered over Eastern Siberia with cold temperatures over Western Asia with relatively warm temperatures stretching across Canada and Greenland in the polar stratosphere (**Figure 12b**). This to me resembles the PV stretching one last time before transitioning to a possible PV split. The stratospheric AO in **Figure 1** this week is predicted to remain close to neutral or negative and then go more strongly negative next week.

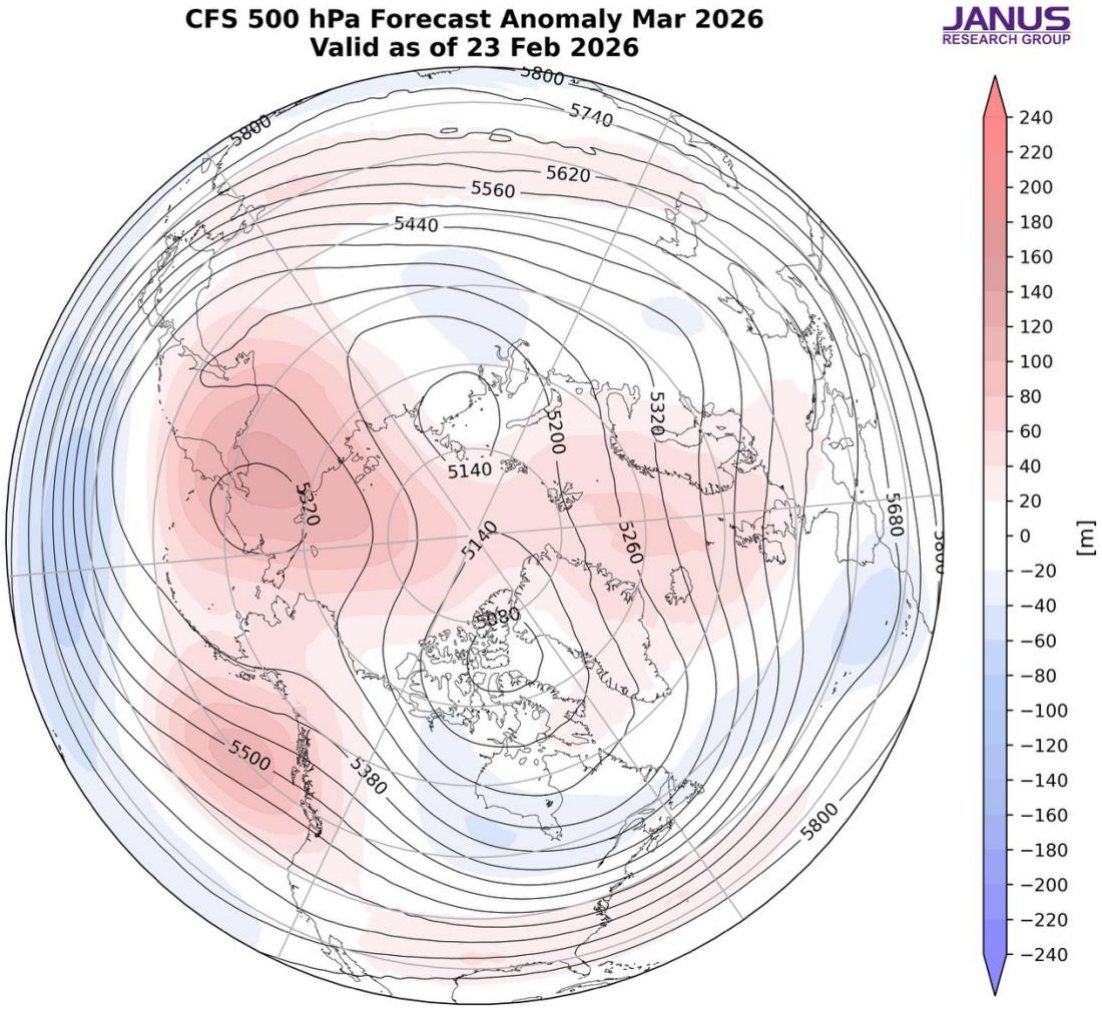

Figure 13. Forecasted average 500 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere for Mar 2026. The forecasts are from the 00Z 23 Feb 2025 CFS.

I include in this week's blog the monthly 500 hPa geopotential heights (**Figure 13**) and surface temperatures for March (**Figure 14**) from the Climate Forecast System (CFS; the plots represent yesterday's four ensemble members). I do want to emphasize unless I say otherwise, I find the CFS forecasts of low confidence and most often don't match my own thinking. The forecast for the troposphere is ridging across Greenland to Iceland and Scandinavia, Eastern Siberia, the Gulf of Alaska and the Southeastern US with troughing centered near Portugla, across Northern and into Northeastern Asia, Eastern Canada and the Northeastern US (**Figure 13**). This pattern favors seasonable to relatively warm temperatures across Europe, Southern, Central and Eastern Asia, including the Middle East, eastern China the Tibetan Plateau, Pakistan and Afghanistan, Eastern Siberia, Western Canada and the Western US with seasonable to relatively cool temperatures across Eastern Europe, Western Russia, Siberia, Northeast Asia, Alaska, Central and Eastern Canada and the Eastern US (**Figure 14**).

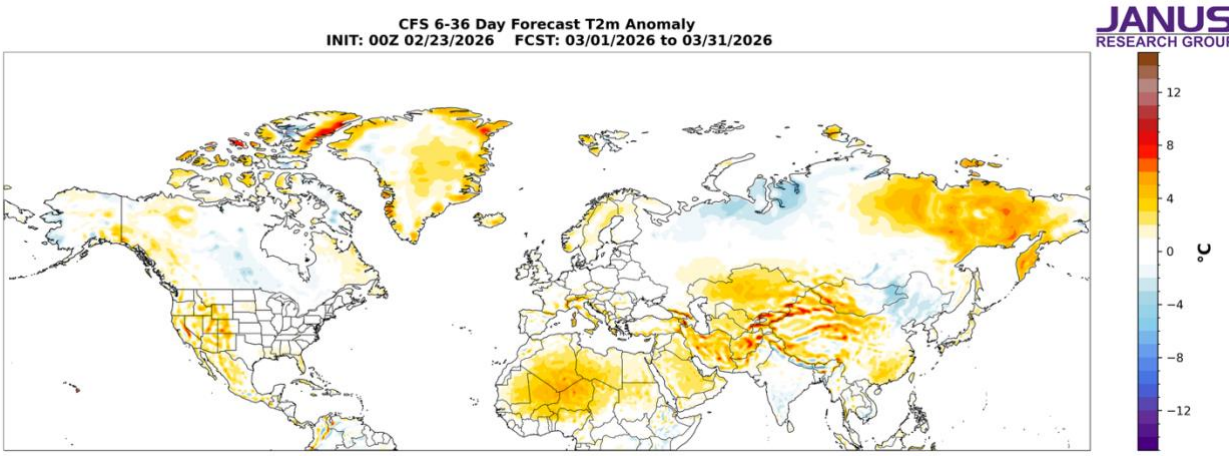

Figure 14. Forecasted average surface temperature anomalies (°C; shading) across the Northern Hemisphere for Mar 2026. The forecasts are from the CFS 00Z 23 Feb 2025.

Boundary Forcings

Arctic Sea Ice

I am and will continue to watch Arctic sea ice. Current conditions are shown in **Figure 15**. It has been shown that less sea ice in the North Atlantic sector of the Arctic weakens the polar vortex while less sea ice in the North Pacific sector strengthens the polar vortex. Arctic sea ice anomalies continue to show a strong focus or weighting of negative anomalies towards the North Atlantic sector relative to the North Pacific sector and this is a robust signal of an overall weaker PV this winter. The negative anomalies are distributed between the Eurasian sector, i.e., Barents Kara Seas and the North American sector, now mostly in Baffin Bay (see **Figure 15**). Therefore, I

do think that low sea ice in the Barents-Kara Seas has supported Barents-Kara Seas blocking this past January but low sea ice near Greenland could be supporting blocking in the region as well. Large negative sea ice anomalies have also developed in the Sea of Okhotsk and could be a result of but also supporting blocking in the region.

Figure 15. Arctic sea ice cover extent for 22 Feb 2026. White depicts ice covered areas and the orange contour the climatological extent of Arctic sea ice for the date. Plot taken from: https://nsidc.org/sea-ice-today

SSTs/El Niño/Southern Oscillation

Equatorial Pacific sea surface temperatures (SSTs) anomalies are below normal, along the equatorial Pacific (**Figure 15**) consistent with La Niña conditions for much of the winter, however warming has appeared near the South American coast and could be a sign of a developing El Niño conditions. Observed SSTs across the NH remain well above normal especially in the North Pacific and much of the North Atlantic, though below normal SSTs exist regionally especially in the South Pacific. The very warm SSTs in both ocean basins could be supporting the predicted blocking in both basins.

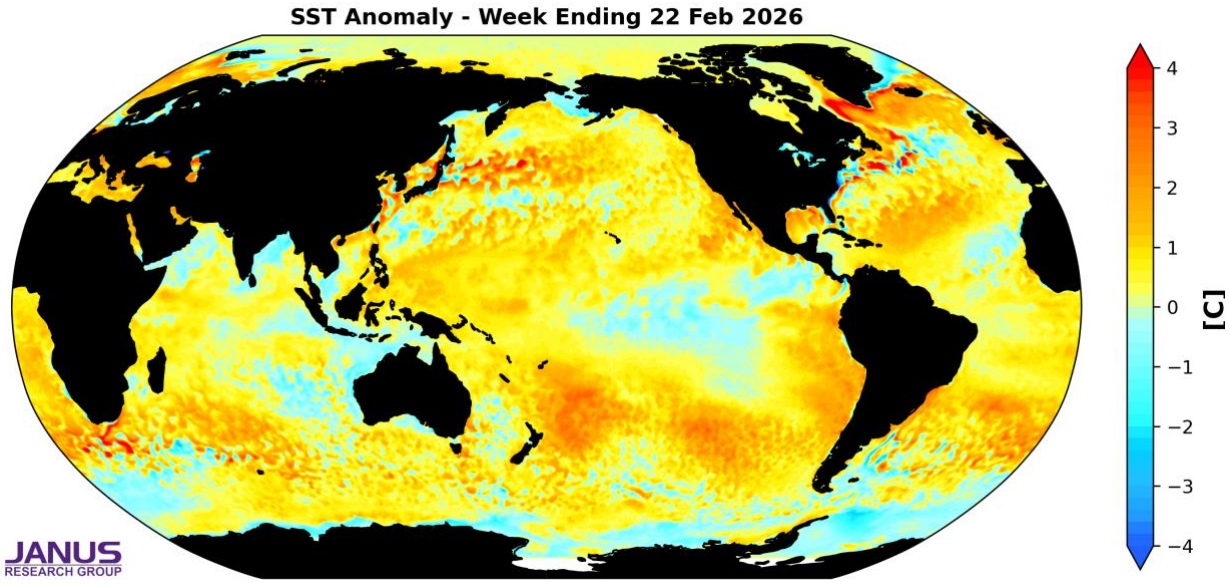

Figure 16. The latest daily-mean global SST anomalies for week ending 23 Feb 2026.

Madden Julian Oscillation

Currently the Madden Julian Oscillation (MJO) is currently weak where no phase is favored (**Figure 17**) and the forecasts are for the MJO to once again emerge into phases seven and eight (**Figure 17**). Phases seven and eight favor troughing near the Aleutians, ridging across Canada and troughing in the US. Therefore, it seems that the MJO I shaving little influence on North American weather this week and next week. But admittedly this is outside of my expertise.

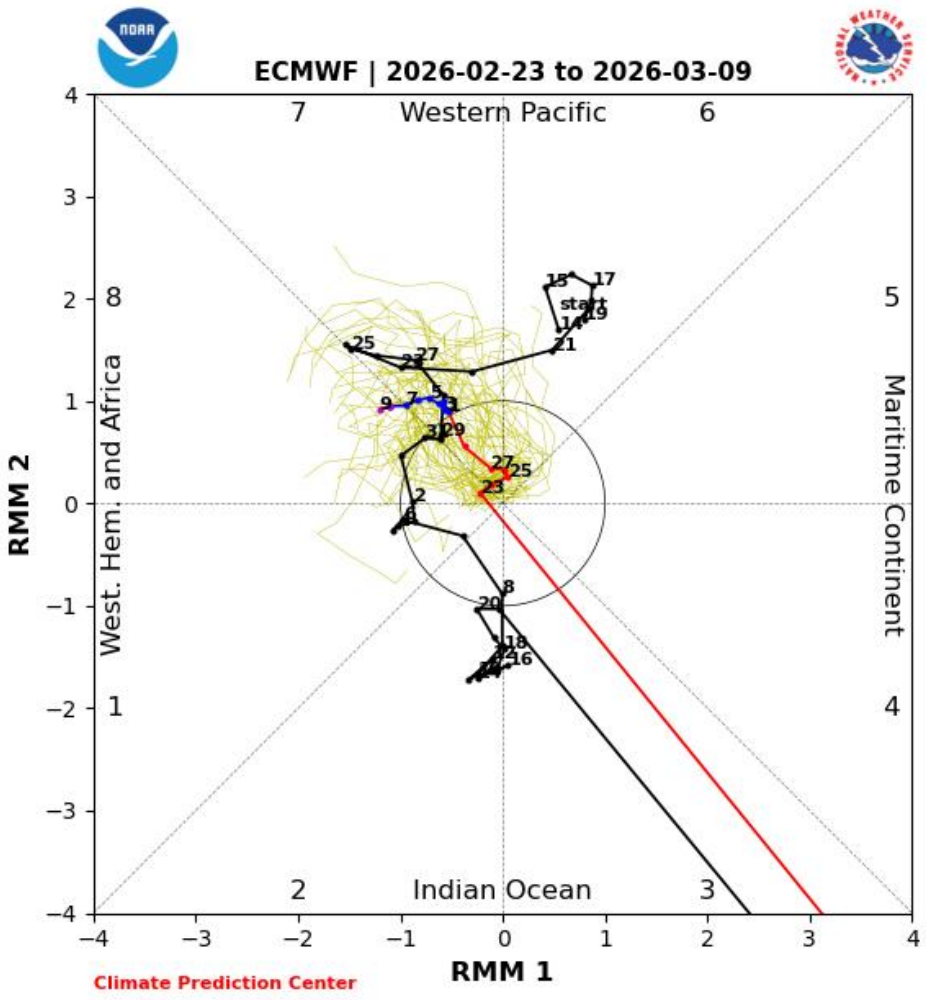

Figure 17. Past and forecast values of the MJO index. Forecast values from the 00Z 17 Feb 2026 ECMWF model. Yellow lines indicate individual ensemble-member forecasts, with the green line showing the ensemble-mean. A measure of the model 'spread' is denoted by the gray shading. Sector numbers indicate the phase of the MJO, with geographical labels indicating where anomalous convection occurs during that phase. Image source https://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/CLIVAR/ecmf.shtml

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