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Arctic Oscillation and Polar Vortex Analysis and Forecasts

February 9, 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 negative and is predicted to positive next week and then remain slightly positive to to neutral as pressure/geopotential height anomalies across the Arctic are currently mostly positive and are predicted to turn mostly negative to mixed the next two weeks. The North Atlantic Oscillation (NAO) is currently neutral with mixed pressure/geopotential height anomalies dominant across Greenland, and the NAO is predicted to remain mostly negative the next two weeks as pressure/geopotential height anomalies are predicted to turn mostly positive across Greenland the next two weeks.
- The dominant pattern across Europe the next two weeks is troughing/negative geopotential height anomalies across Northern Europe and ridging/positive geopotential height anomalies across Southern Europe the next two weeks. This mostly zonal pattern will favor normal to above normal temperatures across much of Europe including the United Kingdom (UK) with normal to below normal temperatures mostly limited to Scandinavia due to low geopotential heights the next two weeks.
- Over the next two weeks ridging/positive geopotential height anomalies will dominant Asia with troughing/negative geopotential height anomalies mostly limited to Northern Siberia. This pattern favors mostly normal to above normal temperatures across much of Asia with normal to above normal temperatures mostly limited to Northern Siberia.
- The general pattern across North America the next two weeks is deepening

troughing/negative geopotential height anomalies Alaska, Western Canada and the Western United States (US) with ridging/positive geopotential height anomalies across across eastern Canada and the Eastern US. However next week troughing will become more widespread across Canada and the Northern US. This patten will support normal to below normal temperatures starting in Alaska and spreading across Western Canda and the Western US with normal to above normal temperatures across Eastern Canada and the Eastern US. Then next week colder temperatures will spread across much of Canada and the Northeastern US.

- Polar vortex (PV) is undergoing a bigger disruption than all winter that is looking like a Canadian warming but what comes next? My thoughts below.
- Due to travel, expect disruptions in publishing of the blog.

Plain Language Summary

So far this winter, cold temperatures have dominated Scandinavia, Northeastern Europe, much of Russia, 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 a retraction of the cold across Eurasia, including Northeastern Europe, and eastern North America thanks to weakening high-laittude blocking (see **Figures 3** and **6**). The polar vortex (PV) has so far this winter been ping ponging between circular and strong, which favors relatively mild temperatures mostly in North America and Asia and stretched or more elongated that favors cold temperatueers in East Asia and eastern North America. However a larger PV disruption is predicted for next week that is related to the pattern change across the Northern Hemisphere (NH). Possibly the largest change will be cooler temperatures in western North America and milder temperatures in eastern North America (see **Figure 9**). I am still expecting that this wil be followed up a stretched PV that should return realtively colder weather to Eastern Canada and the Northeastern US.

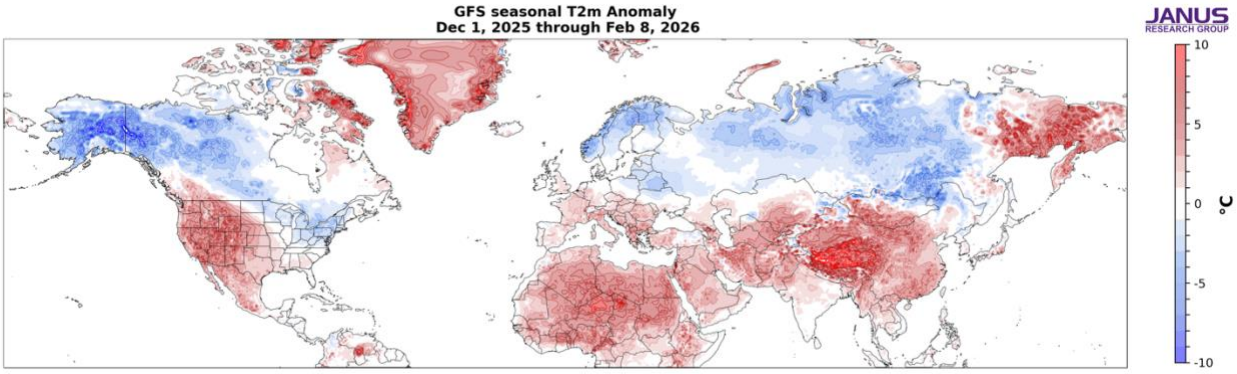

Figure. Estimate of the observed surface temperatures (°C; shading) from 01 Dec 2025 to 8 Feb 2026 based on GFS initializations and the GFS forecast from the 9 Feb 2026 run.

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Impacts

I will be traveling the next three weeks in a row so there will definitely be disruptions to publishing of the blog. Next week I am planning on traveling to the happiest place on earth (not Japan, which might be my happiest place with the crazy amount of snow). Then it is on to Germany for a conference and some meetings on the relationship between a warming Arctic and mid-latitude weather. A hot topic of late given the abundance of cold and snow (not everywhere of course).

As has been my habit all winter, 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. 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**). Overall over the next two weeks we see less high-latitude blocking than we have seen for much of the winter. Initially the dominant high latitude blocking will be centered near Greenland. Greenland blocking is consistent with a Canadian Warming. However next week the Greenland blocking will weaken and instead high latitude blocking will become focused near the Aleutians. Currently the models have the North Pacific blocking drifting westward first toward the Dateline and then eventually Eastern Siberia. Also important in my opinion is predicted Ural high pressure ridging the end of next week. So far the models are predicting that feature to be transient. This week and into next week there is troughing centered near the Urals. I think observed Ural troughing instead of Ural ridging significantly contributed the models backing off earlier predicions of a polar vortex split. The predicted return of Ural ridging opens the door for more PV weakening. Therefore a sudden stratospheric warming (SSW - defined as a reversal of the wind from westerly to easterly at 60°N and 10 hPa) now seems unlikely in February.

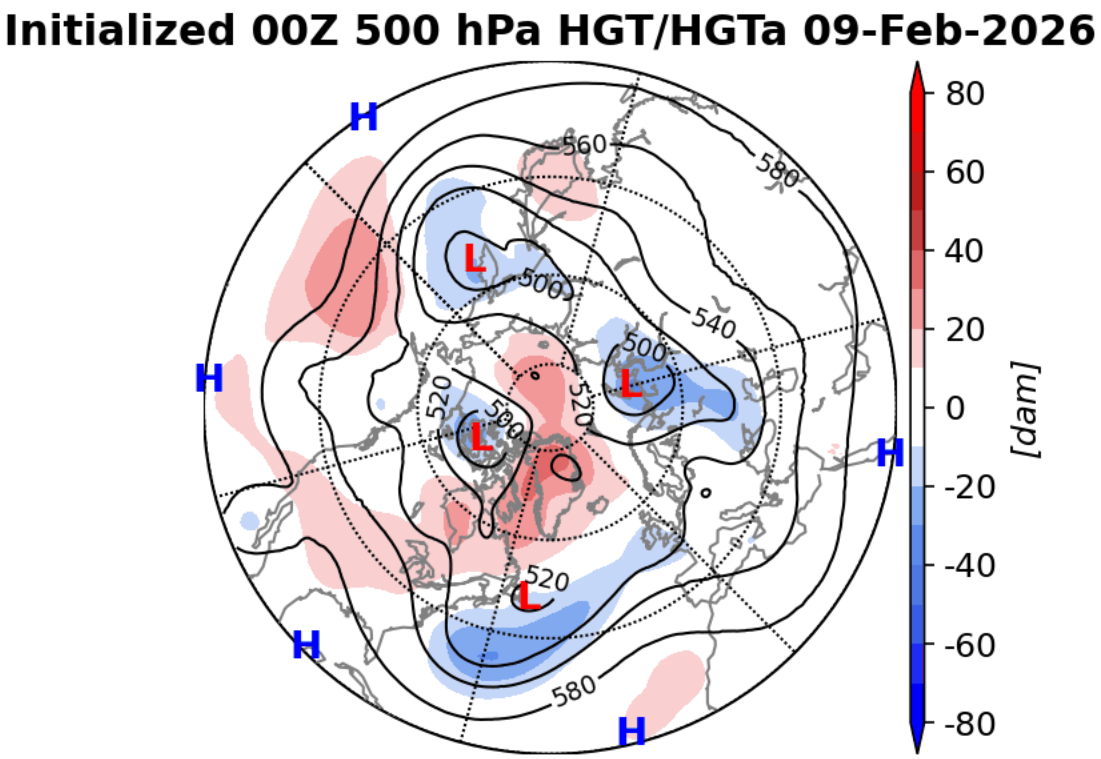

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Figure i. Initialized 500 mb geopotential heights (dam; contours) and decameter anomalies (dam; shading) across the Northern Hemisphere for 9 Feb 2026 and forecasted from 10 Feb 2026 to 24 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS model ensemble.

Fgure ii presents the latest polar vortex (PV) animation. We see the PV coming out of the latest stretched PV that is related to the big snows and cold in Japan and delivered the extreme cold and some snow to the Northeastern US. The PV is transitioning to a larger PV disruption. Though earlier models were converging on a PV split, all models are now unanimously predicting a Canadian Warming in my opinion. The high pressure center and the maximum warming in the polar stratosphere is not predicted to settle close to the North Pole but rather across Northern Canada (**Figure ii** and also see **Figure 12b**). I think the strongest surface signature of Canadian Warmings is ridging and strong warming in Eastern Canada that often bleeds into the Eastern US. On the flip side this allows for troughing, cooler and wetter weather to enter western North America. This should bring some welcome snows to the higher elevations of the Western US where it is so desperately needed. It is often associated with colder weather in Northern Europe.

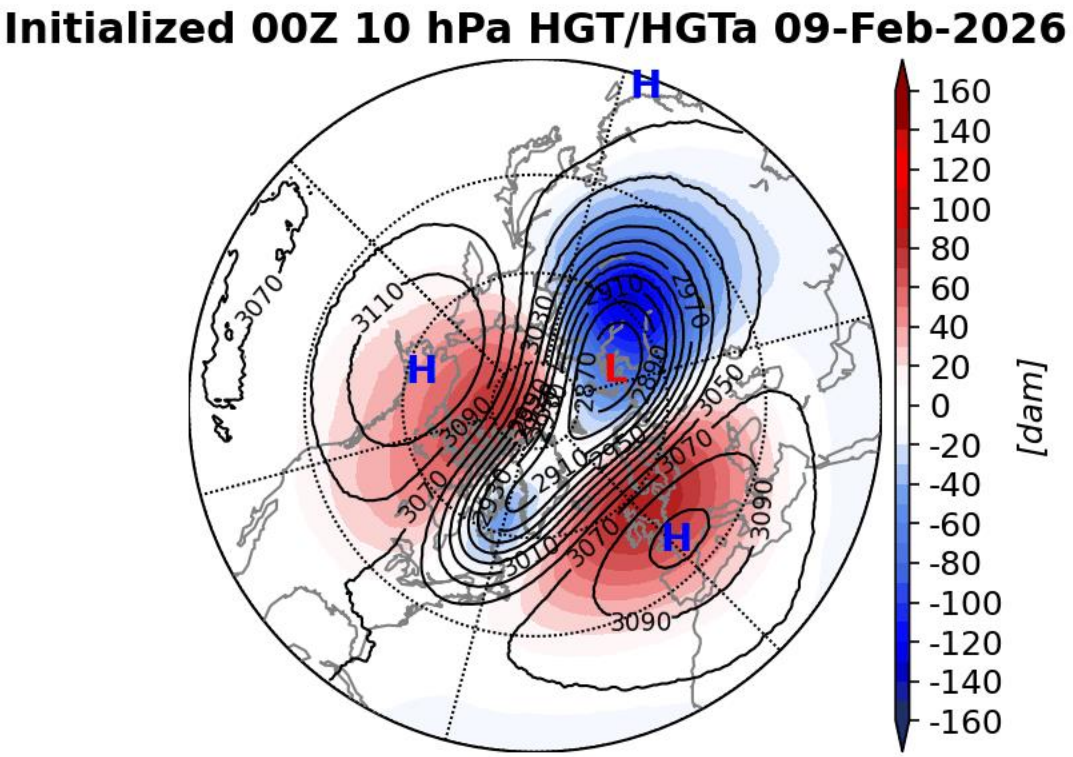

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Figure ii. Forecasted average 10 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere for 09 Feb 2026 and forecasted from 10 Feb 2026 to 24 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS model ensemble.

As I discussed last week, I think of Canadian warmings more of a transitory stage and as we showed Canadian warmings overwhelmingly transition to either SSWs or stretched PVs. An SSW seems possible and is at least suggested in some model forecasts. However I continue to favor yet another stretched PV, the timing being either late February or early March. The impression from most of the ensembles and in **Figure ii** (at least to me) is that at the end of the forecasts the PV resembles a coiled spring ready to release. For much of February and for the next two weeks, the PV has been elongated and stretched though the orientation switches from Asia to Canada to Asia to Europe. But at the end of the animation the PV becomes more wound up and circular in shape and I expect it will then release and stetch once again towards North America.

It seems to me that both SSWs and Canadian Warmings create a supportive environment for wave reflection and therefore stretched PVs. That is whay I am expecting the Canadian Warming to be followed by a stetched PV. Therefore this is why analyzing the wave diagnostics has been illuminating this winter. Once again I present the wave diagnistics in **Figure iiia**. Interestingly despite the Canadian Warming, the diagnostics continue to display wave reflection next week and into the third week of February. So after a pause this week (not shown) once again next 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. This is then repeated for the third week of February as seen in **Figure iiib**. What is different about this wave reflection from previous events this winter, a lack of eastward tilting waves over North America and no obvious connection between the PV and troughing in the troposphere. Also the trough axis over North America is shifted west compared to previous events but by the third week of February the troughing does extend eastward and suggests cold air initially confined to western North America sliding east. I do want to emphasize that these diagnistics can be very volatile and could change quite a bit over the coming days.

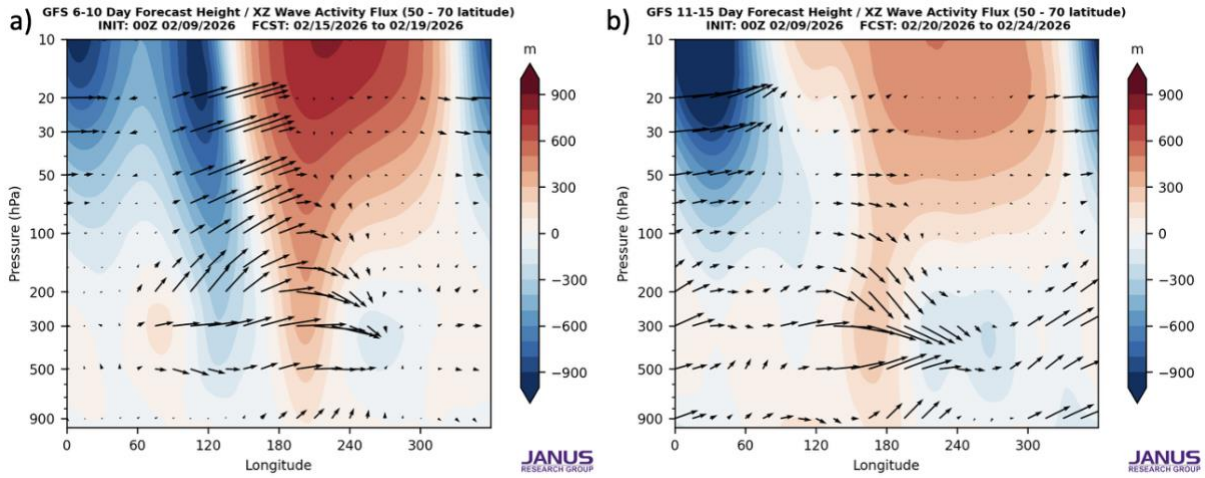

Figure iv. **a)** Predicted longitude-height cross section of geopotential eddy height anomalies (shading) and wave activity flux (vectors) for 15 February through 19 February 2026 **b)** same as **a)** but forecast from 20 February through 24 February 2026. The forecast is from the 00Z 9 February 2026 GFS operational.

I would expect that by next week we should see the wave diagnistics and or PV to resemble more of the wave reflection/stretched PV we have seen for much of the winter. But no guarantees and I think my expectations are wrong then we will see more of a SSW type of PV disruption. The difference may come down to the persistence of Ural ridging.

I will conclude with today's vertical Wave Activity Flux (WAFz) from the troposphere to the stratosphere or poleward heat transport in the stratosphere in **Figure iv**, which can be quickly summarized of as unremarkable. Some alternating positive and negative pulses more representative of wave reflection/PV stretching rather than an SSW or strong PV.

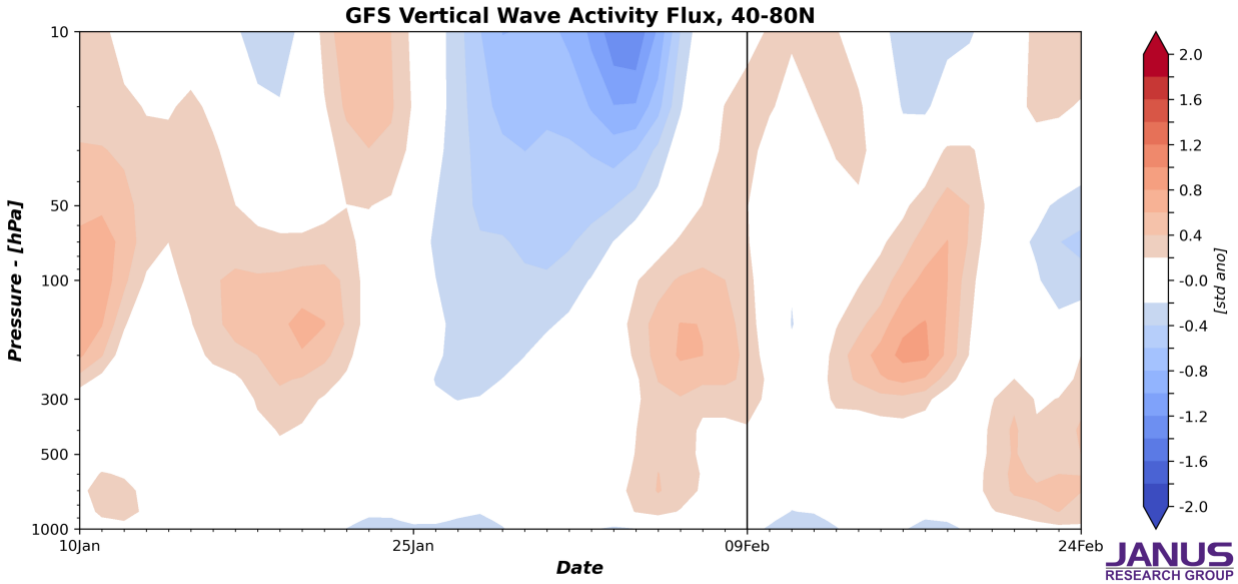

Figure iv. Observed and predicted daily vertical component of the wave activity flux (WAFz) standardized anomalies, averaged poleward of 40-80°N. The forecast is from the 00Z 09 Feb 2026 GFS ensemble.

In conclusion as I have been doing all winter I will end with my Monty Hall from "Let's Make a Deal" impression. The three 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 for the foreseeable future. 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. Eventually the pattern could transition to either door number one, persistently strong PV or door number two, a major SSW. Only three weeks left of winter and I did believe for a while that door number one can be disgarded and now I include door number two for the remainder of the winter (28 Feb).

So I expect that we will observe one more stretched PV or be in the early stages of a stretched PV by the end of February. So the upcoming predicted pattern flip of cold Western US and mild Eastern US is not permanent in my opinion. I expect in late February or early March the pattern to resort to the domiant pattern of the winter - mild Western US and cold Eastern US, even if briefly. This would be consistent with a stretched PV while the PV is overall weak. If the PV transitions to an SSW or

even a strong PV that could favor the relative cold to returning to the Western US. But it is important to keep in mind cold in March is very different from cold in January and snows become increasingly elevation dependent.

The biggest wild card is how the PV disruption, which according to the polar cap geopotential height anomalies (PCHs) shown in **Figure 11** is predicted to peak this weekend, translates to the lower troposphere. Presumably it will be related to an increase once again in high-latitude blocking. Does that take the form of Alaskan blocking and/or Greenland blocking or something else could drive the weather for the first half of March. So not a lock in my mind where it turns cold in March.

Near-Term

This week

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

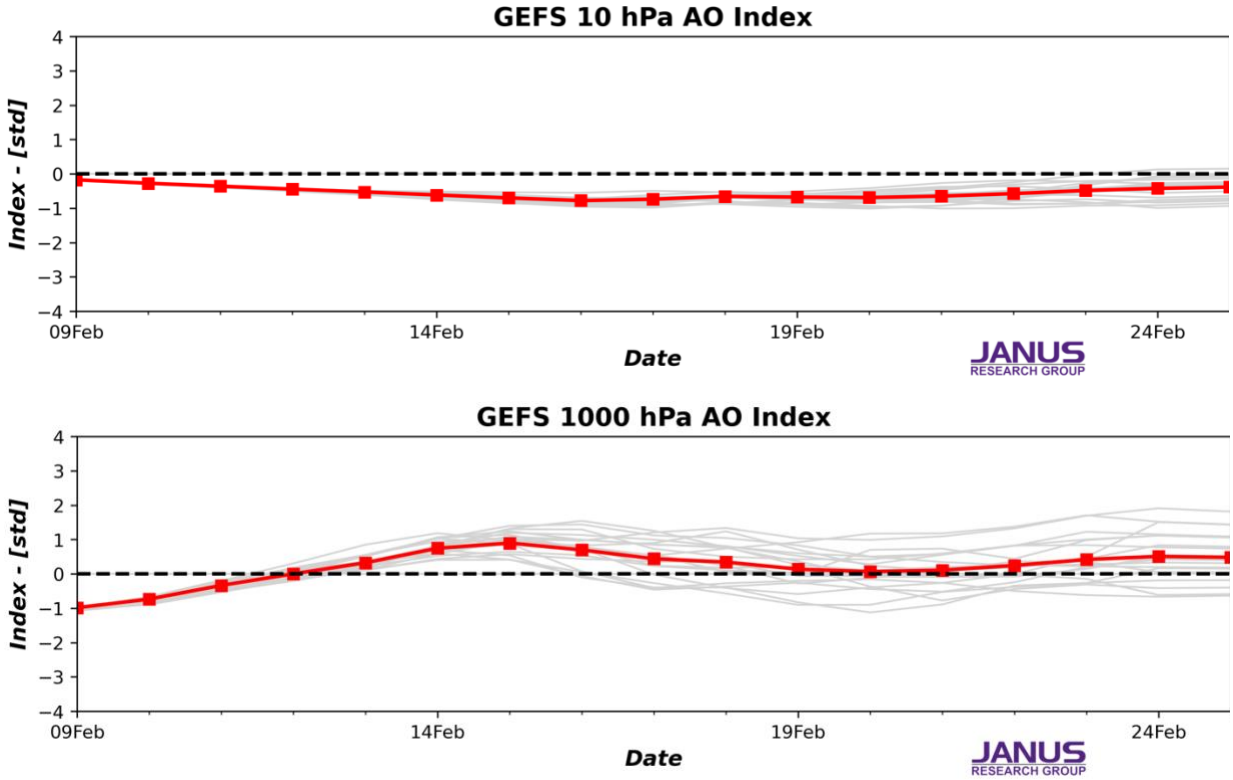

Figure 1. The predicted daily-mean AO at a) 10 hPa and b) 1000 hPa from the 00Z 09 Feb 2026 GFS ensemble. Gray lines indicate the AO index from each individual ensemble member, with the ensemble mean AO index given by the red line with squares.

The predicted pattern this week across Europe is ridging/positive geopotential height anomalies across Southern Europe with troughing/negative geopotential height anomalies across Northern Europe (**Figure 2).** This pattern will support normal to above normal temperatures across Southern and Central Europe including the UK, however low geopotential heights will support normal to below temperatures across across Scandinavia week (**Figure 3**). This week the general pattern across Asia is ridging/positive geopotential height anomalies across much of Asia centered on Central Asia with troughing/negative geopotential height anomalies across most of Northern Siberia and centered on the Urals this week (**Figure 2**). This pattern favors normal to below normal temperatures across much of Northern Siberia and near the Urals with normal to above normal temperatures across most of Asia this week **(Figure 3**).

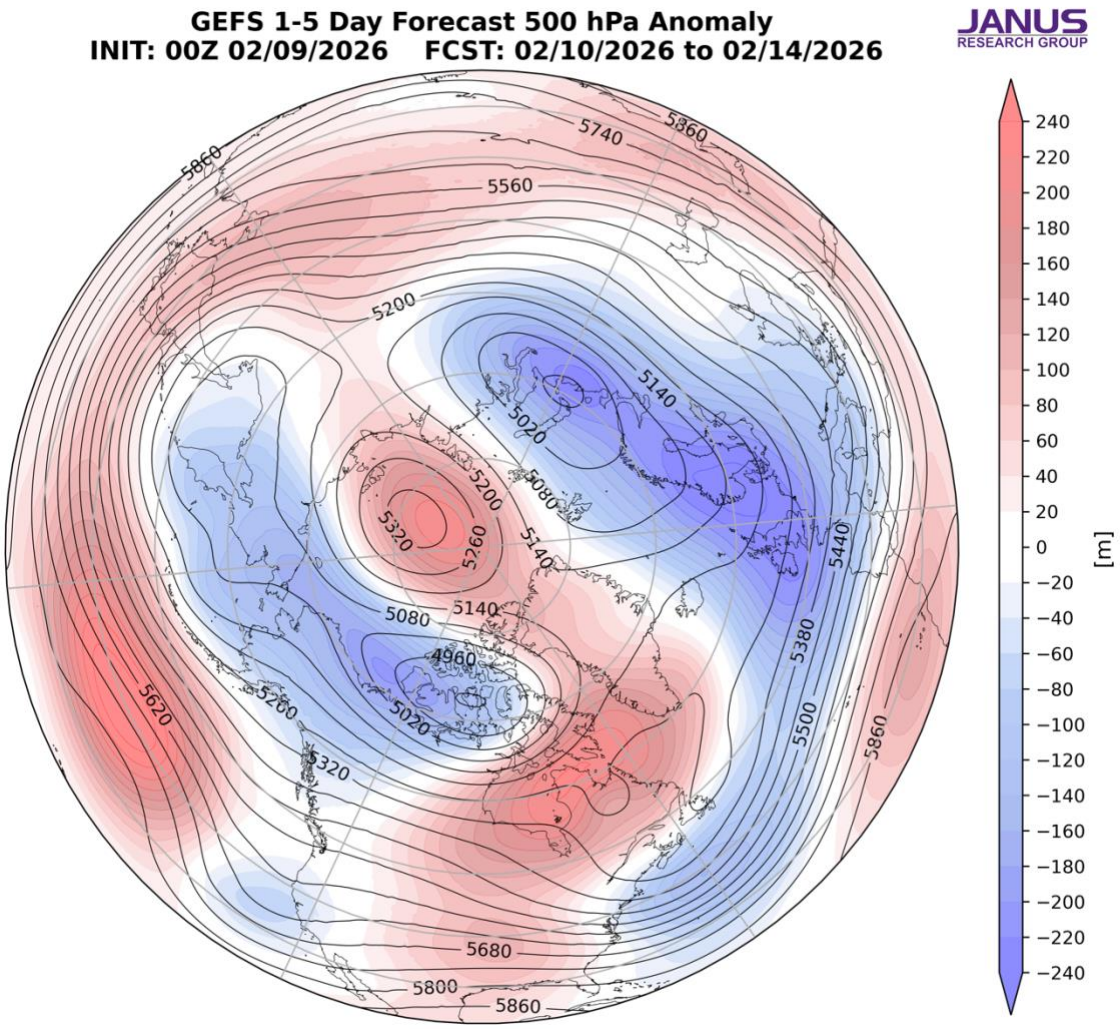

Figure 2. Forecasted average 500 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere from 10 Feb 2026 to 14 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS ensemble.

This week begins a pattern change across North America with deepening troughing/negative geopotential height anomalies across Western US, Western Canada and Alaska that will support building 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 much of Canada and the US with normal to below normal temperatures limited to Alaska, Northwestern Canada and the Northeastern US this week (**Figure 3**).

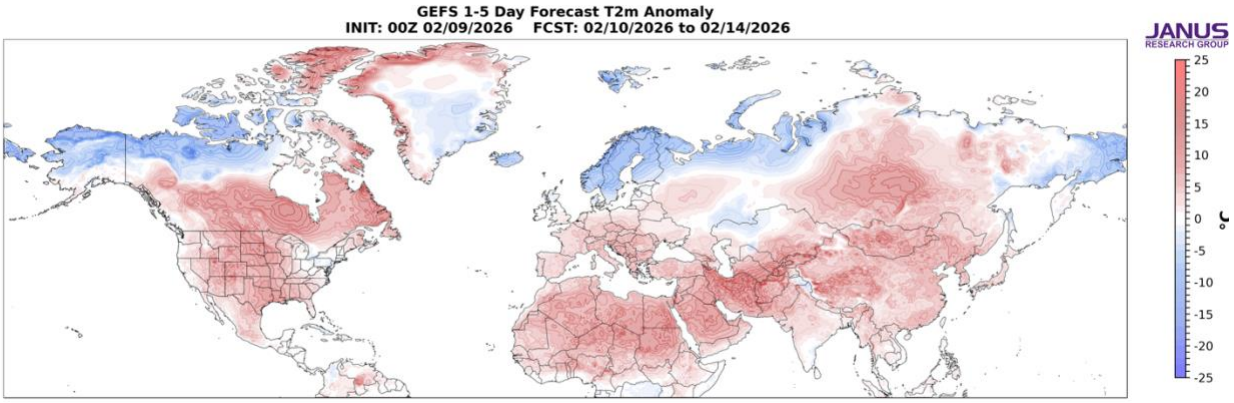

Figure 3. Forecasted surface temperature anomalies (°C; shading) from 10 Feb 2026 to 14 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS ensemble.

Troughing and/or cold temperatures will support new snowfall across the Alps, Scandinavia, Siberia and Central Asia while milder temperatures will support snowmelt across the Baltic States, Northeastern Europe, Western Russia and parts of southern Siberia this week (**Figure 4**). Troughing and/or cold temperatures will support new snowfall across Alaska, Northern and the higher elevations of the West Coast of Canada while milder temperatures will support snowmelt across parts of Southern Canada, the Southern Plains and the Northeastern US this week (**Figure 4**).

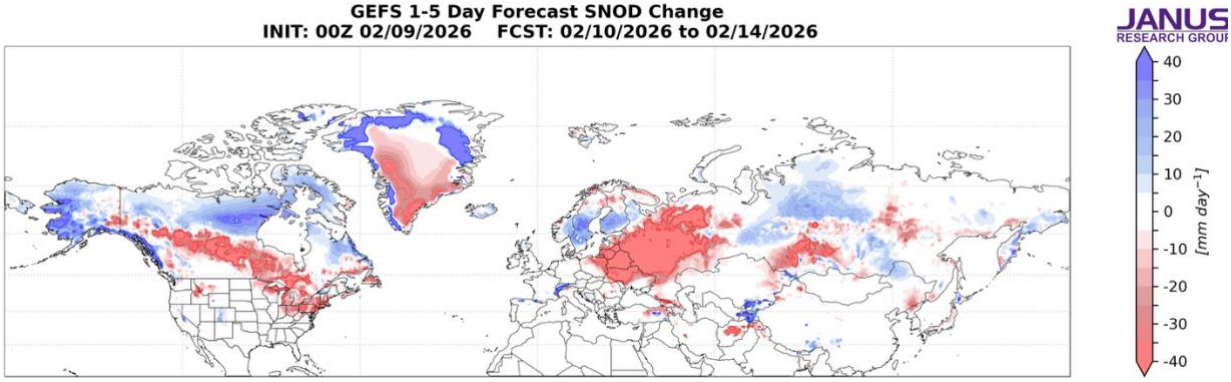

Figure 4. Forecasted snowfall (mm/day; shading) from 10 Feb 2026 to 14 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS ensemble.

Near-Mid Term

Next week

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

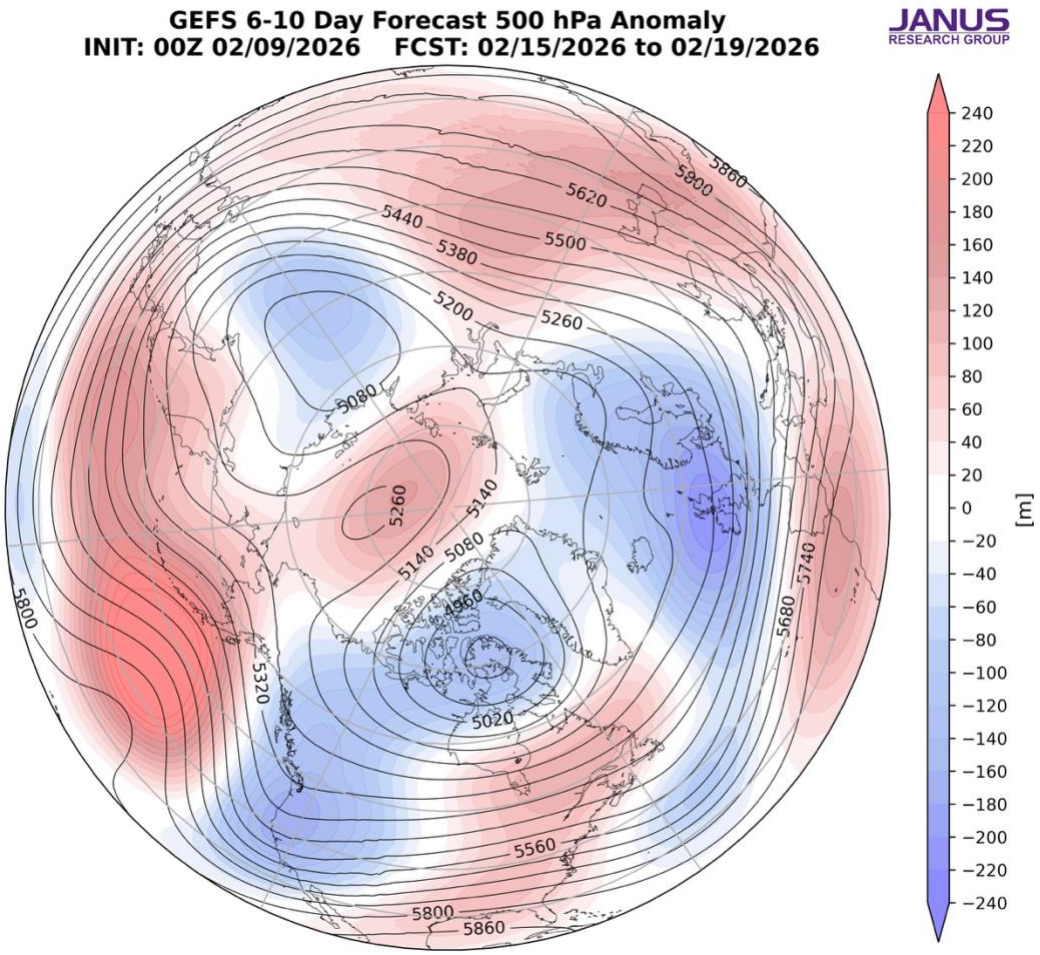

Figure 5. Forecasted average 500 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere from 15 Feb to 19 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS ensemble.

A persistent quasi-zonal flow across Euroe is predicted with ridging/positive geopotential height anomalies across Southern Europe with troughing/negative geopotential height anomalies across Northern Europe this period (**Figure 5**). The pattern will support normal to above normal temperatures across Southern and Central Europe including the UK with normal to below normal temperatures mostly limited to Scandinavia under low heights this period (**Figure 6**). Across Asia ridging/positive geopotential height anomalies will dominate

Asia centered near the Urals will support troughing/negative geopotential height anomalies across most of Siberia (**Figure 5**). This pattern favors widespread normal to above normal temperatures widespread across much of Asia especially Western Asia with normal to below normal temperatures limited to Siberia this period (**Figure 6**).

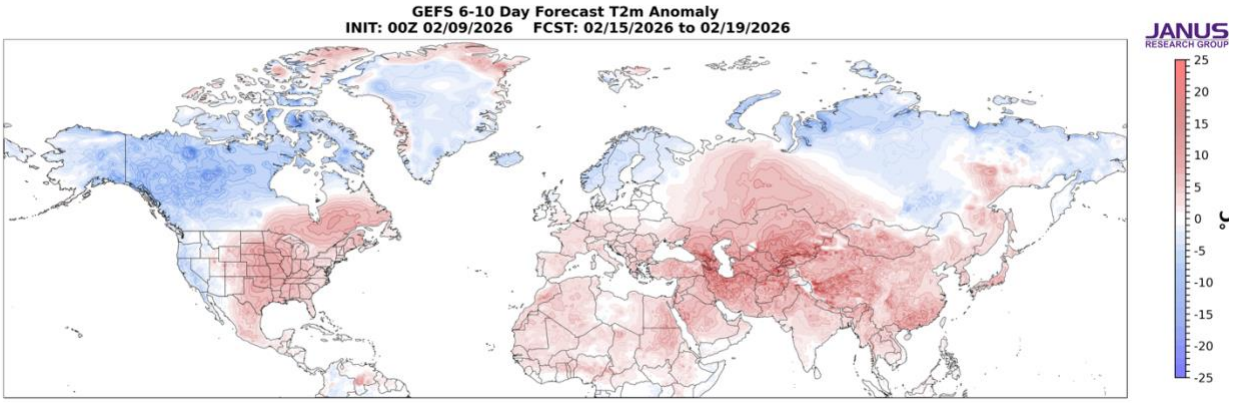

Figure 6. Forecasted surface temperature anomalies (°C; shading) from 15 Feb to 19 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS ensemble.

Troughing/negative geopotential height anomalies wil continue to deepen across western North America as ridging/positive geopotential height anomalies builds across eastern North America this period (**Figure 5**). This pattern will favor normal to below normal temperatures across Alaska, Western Canada and the Western US with normal to above normal temperatures across Eastern Canada and the Eastern US (**Figure 6**).

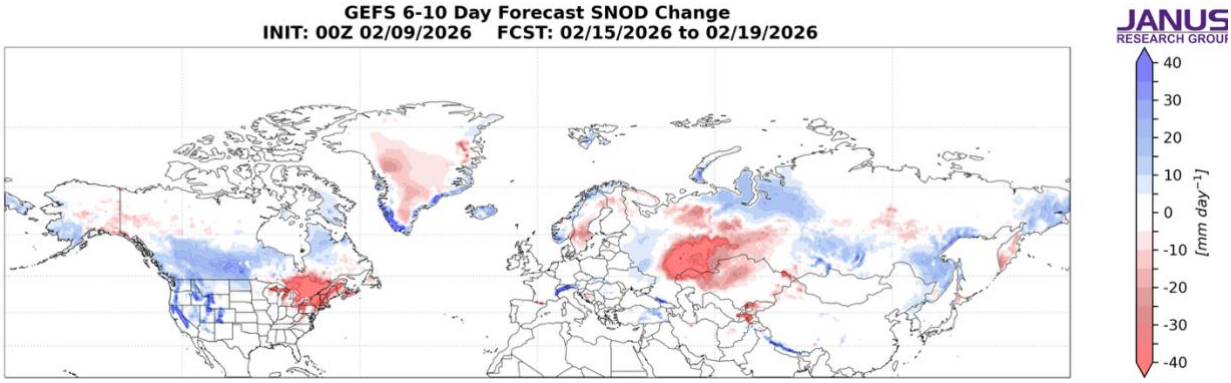

Figure 7. Forecasted snowfall rate (mm/day; shading) from 15 Feb to 19 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS ensemble.

Troughing and/or cold temperatures will support new snowfall in the Alps, Turkey, parts of Siberia and the Tibetan Plateaus while milder temperatures will support snowmelt in parts of Western Russia, Kazakhstan and parts of Central Asia this period (**Figure 7**). Troughing and/or cold temperatures will support new snowfall in southwestern Alaska, Western and Southern Canada and the higher elevations of the Western US while milder temperatures will support snowmelt in Southeastern Canada and the Northeastern 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 positive pressure/geopotential height anomalies across Greenland (**Figure 8**), the NAO will likely remain near neutral this period.

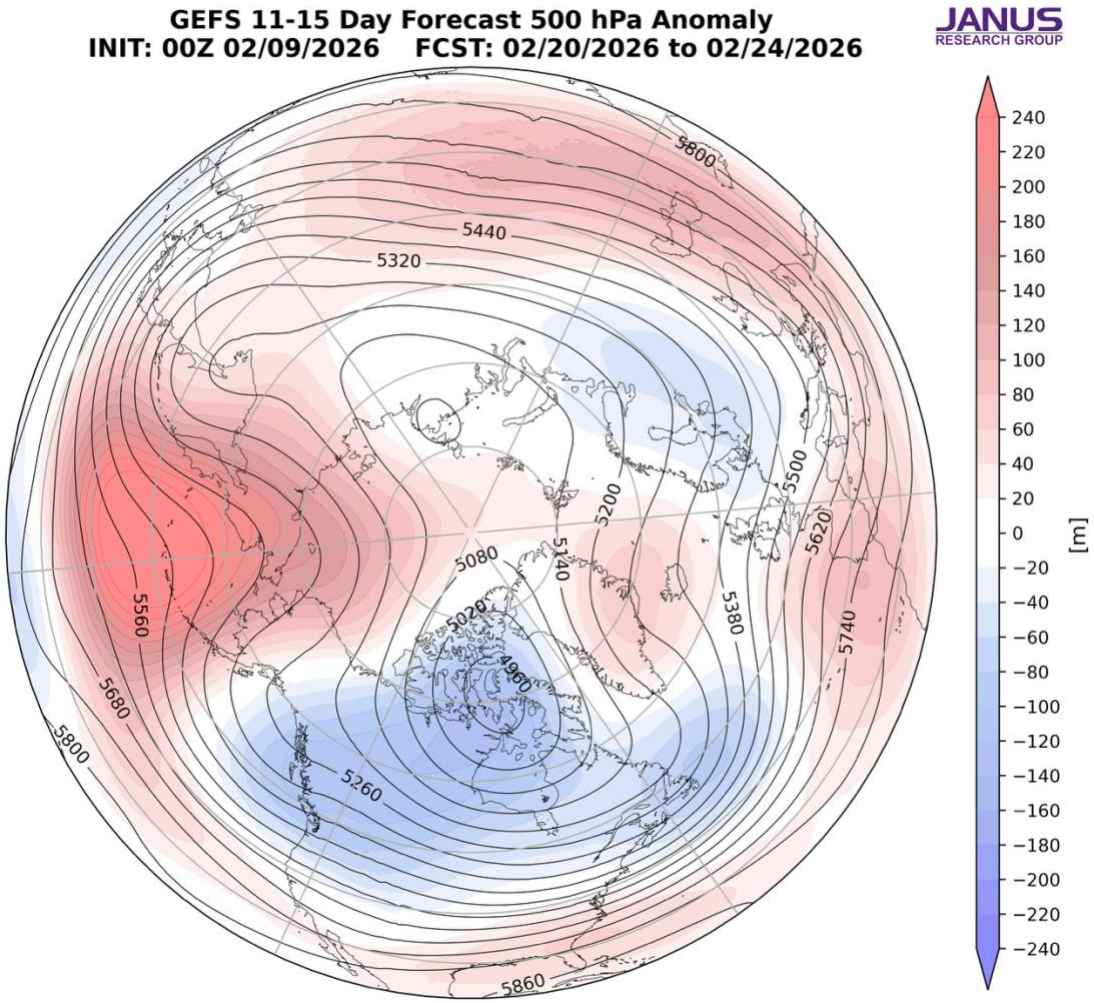

Figure 8. Forecasted average 500 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere from 20 Feb to 24 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS ensemble.

Weak ridging/positive geopotential height anomalies across Greenland will support troughing/negative geopotential height anomalies across Northern Europe with ridging/positive geopotential height anomalies centered across Western Europe this period (**Figure 8**). This pattern should favor normal to below normal temperatures across Scandinavia and the Baltic

States with normal to above normal temperatures across Western and Southern Europe including the UK this period (**Figures 9**). Yet again this period ridging/positive geopotential height anomalies will dominate Asia with troughing/negative geopotential height anomalies limited to Northern Asia (**Figure 8**). This pattern favors normal to below normal temperatures across far Northern Asia with normal to above normal temperatures widespread across Asia including the Middle East and the Tibetan Plateau this period (**Figure 9**).

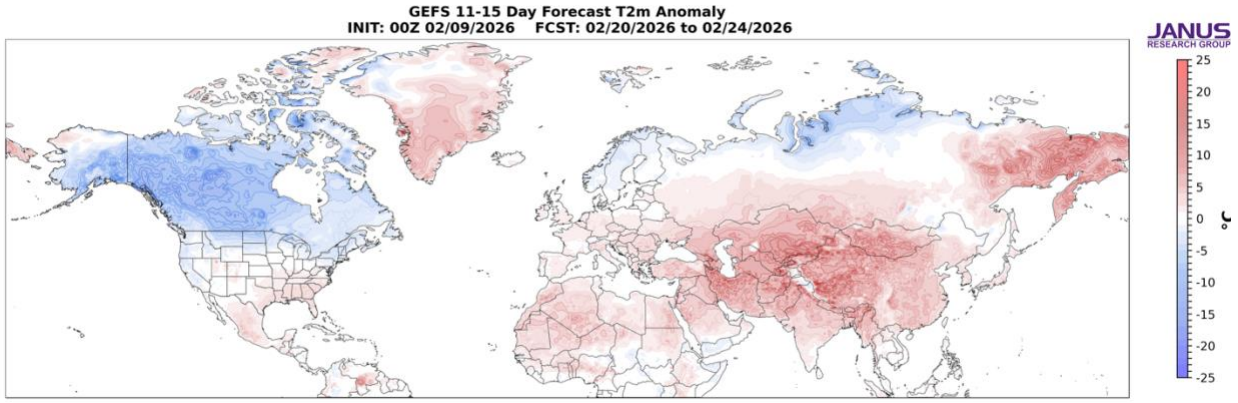

Figure 9. Forecasted surface temperature anomalies (°C; shading) from 20 Feb to 24 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS ensemble.

Ridging/positive geopotential height anomalies is predicted to consolidate around the Dateline supporting expansive troughing/negative geopotential height anomalies across Canada with more ridging across the Southern US this period (**Figure 8**). This pattern supports normal to below normal temperatures across Alaska, much of Canada and the Northern US with normal to above normal temperatures across the Southeastern US this period (**Figure 9**).

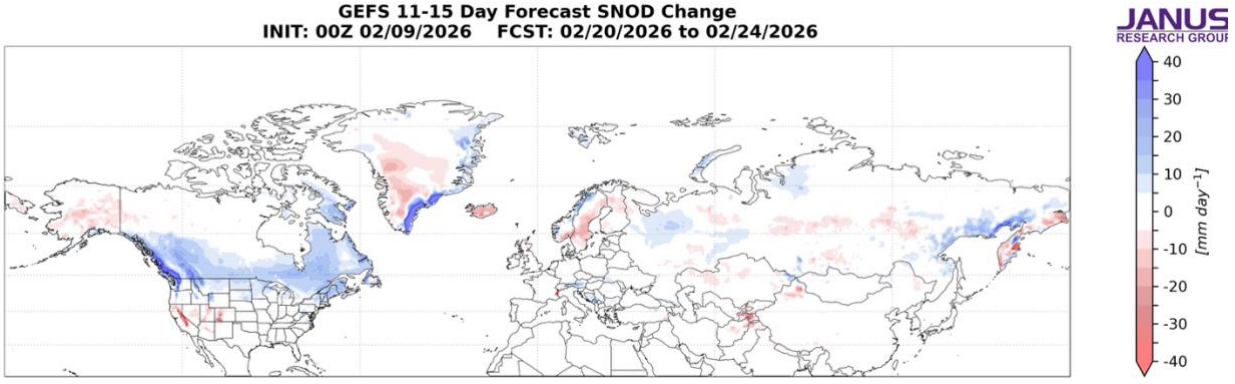

Figure 10. Forecasted snowfall (mm/day; shading) from 20 Feb to 24 Feb 2026. The forecasts are from the 00Z 09 Feb 2026 GFS ensemble.

Troughing and/or cold temperatures will support some possible new snowfall in parts of Scandinavia, the Alps and parts of Siberia while milder temperatures will support snowmelt in

parts of Scandinavia and Southern Siberia this period (**Figure 10**). Troughing and/or cold temperatures will support new snowfall across Southern Canada and the Northern US while milder temperatures will support snowmelt in Alaska and the higher elevations of the Southwestern US this period (**Figure 10**).

Longer Term

30–day

Today's polar cap geopotential height anomalies (PCHs) plot currently shows warm/positive PCHs in the throughout the stratosphere and the troposphere (**Figure 11**). Then later this week and into next week tropospheric PCHs will flip cold/negative while PCHs in the stratosphere are predicted to persist warm/positive. In the third week of Febraury, warm/positive PCHs are predicted to descend from the stratosphere to the troposphere.

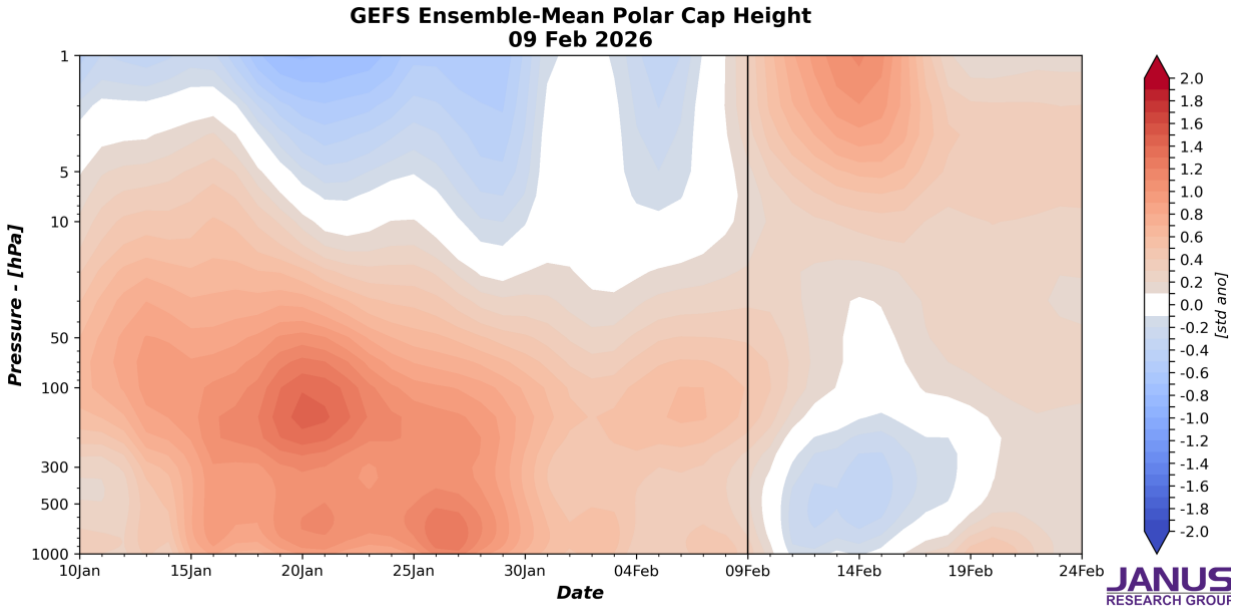

Figure 11. Observed and predicted daily polar cap height (i.e., area-averaged geopotential heights poleward of 60°N) standardized anomalies. The forecast is from the 00Z 09 Feb 2026 GFS ensemble.

The predicted warm/positive PCHs in the lower troposphere this week (**Figure 11**) are consistent with the predicted negative AO this week (**Figure 1**). Then next week the forecast of cold/negative PCHs in the lower troposphere (**Figure 11**) are consistent with a positive AO (**Figure 1**). However with the return of warm/positive PCHs to the trospphere the third week of February could bias the AO negative.

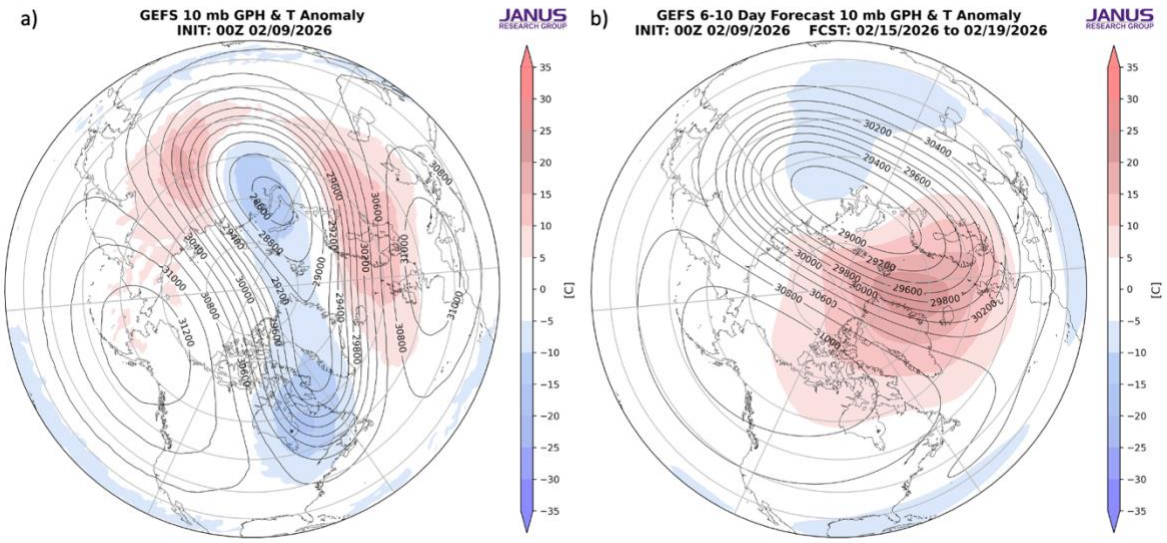

Figure 12. (a) Observed 10 mb geopotential heights (dam; contours) and temperature anomalies (°C; shading) across the Northern Hemisphere averaged for 9 Feb 2026. (b) Same as (a) except forecasted averaged from 15 Feb to 19 Feb 2026. The forecasts are from the 00Z 09 February 2026 GFS model ensemble.

Currently the polar vortex (PV) remains elongated in shape from the Urals to eastern North America with the main PV center over the Urals with relatively cold temperatures focused inside the stretched PV from the Urals to eastern North America and with high pressure centered near Alaska and relatively warm temperatures across the North Atlantic sector and Siberia in the polar stratosphere (**Figure 12a**). Then during mid-February the PV center is predicted to reamin over the Barents-Kara Seas with high pressure centered over Alaska and into Northern Canada with cold temperatures over Central Asia with relatively warm temperatures stretching across the North Atlantic sector of the Arctic in the polar stratosphere (**Figure 12b**). This resembles a bigger PV disruption that to me best resembles a Canadian Warming. The stratospheric AO in **Figure 1** this week and next week is predicted to remain close to neutral or negative.

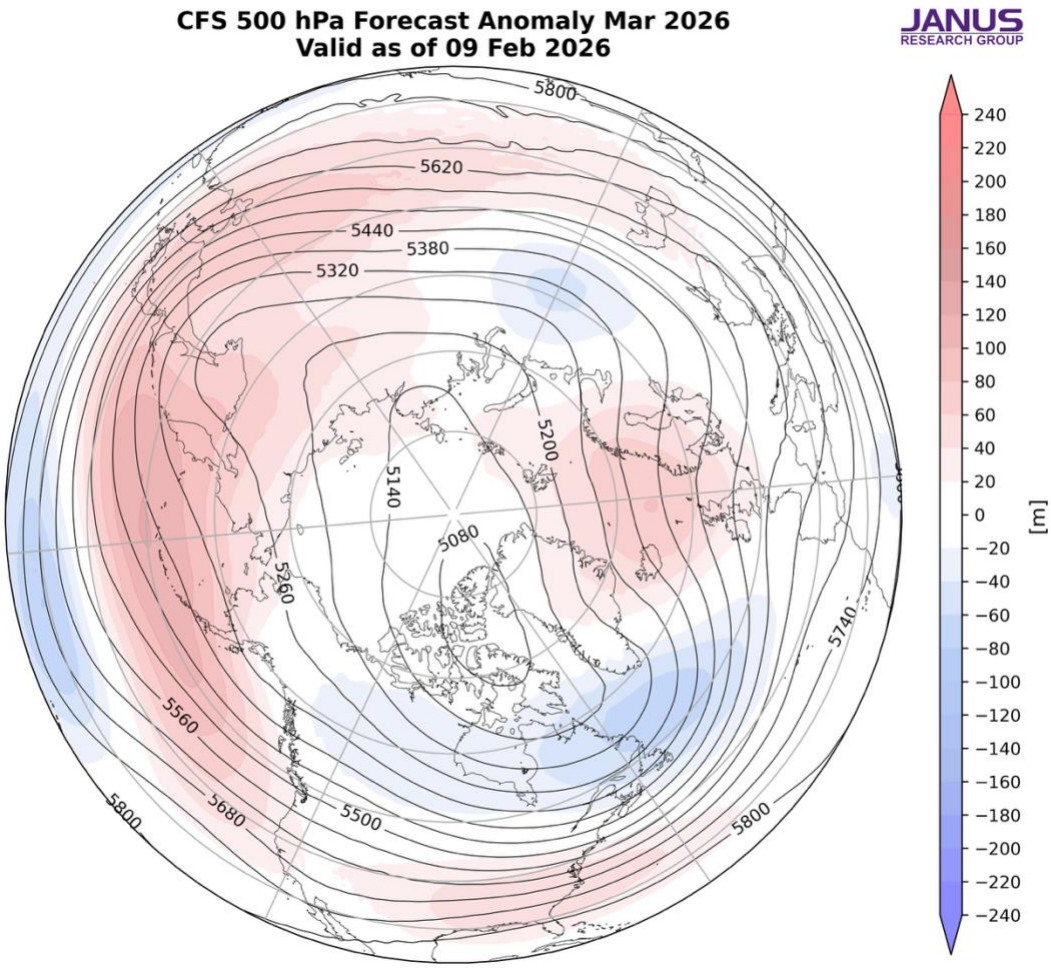

Figure 13. Forecasted average 500 mb geopotential heights (dam; contours) and geopotential height anomalies (m; shading) across the Northern Hemisphere for Mar 2026. The forecasts are from the 00Z 09 Feb 2025 CFS.

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 stretching from Greenland and Iceland to Scandinavia, East Asia, the Dateline to the Aleutians and the Southteastern US with troughing centred on the Urals, across Northern Asia, much of Canada and the Northeastern US (**Figure 13**). This pattern favors seasonable to relatively warm temperatures across Southern Europe, Southern, Central and Eastern Asia, including the Middle East, eastern China the Tibetan Plateau, Pakistan and Afghanistan, Eastern Siberia and the Western and Southern US with seasonable to relatively cool temperatures across Northern Europe, Western Russia, Alaska, much of Canada and the Northeastern US (**Figure 14**).

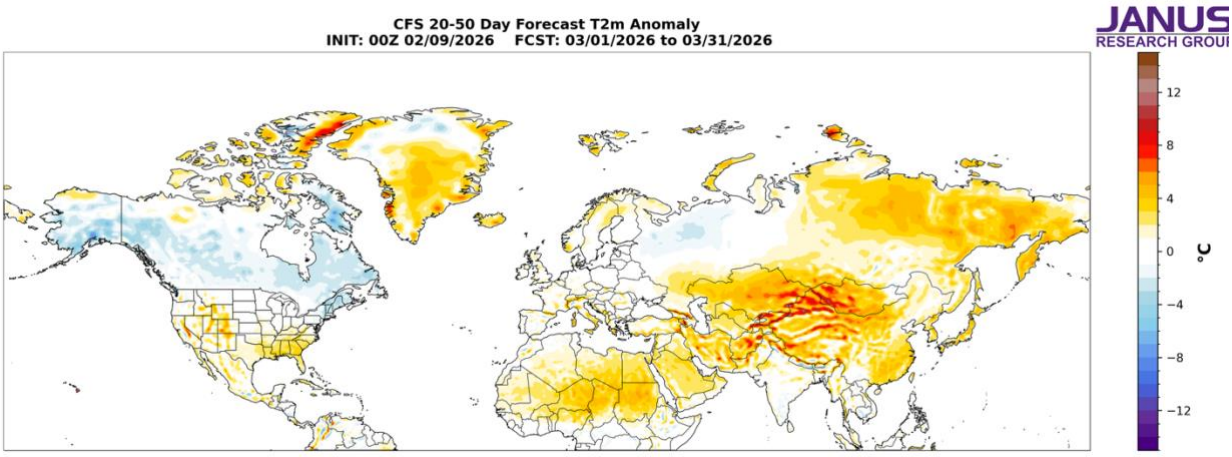

Figure 14. Forecasted average surface temperature anomalies (°C; shading) across the Northern Hemisphere for Mar 2026. The forecasts are from the CFS 00Z 09 Feb 2025.

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 08 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 colas 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.

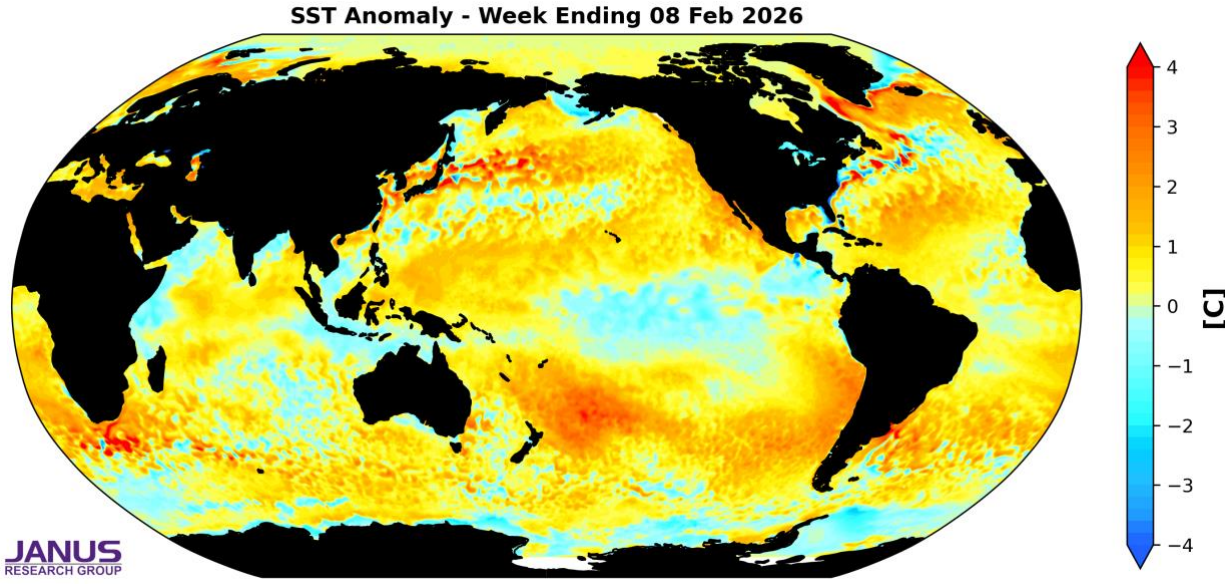

Figure 16. The latest daily-mean global SST anomalies for week ending 08 Feb 2026.

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 emerge into phase two, then three before once again weakening to where no phase is favored (**Figure 17**). Phases two and three favor ridging in the Eastern US with troughing in western North America. Therefore, it seems that the MJO could be having some influence on North American weather this week and into next week. But admittedly this is outside of my expertise.

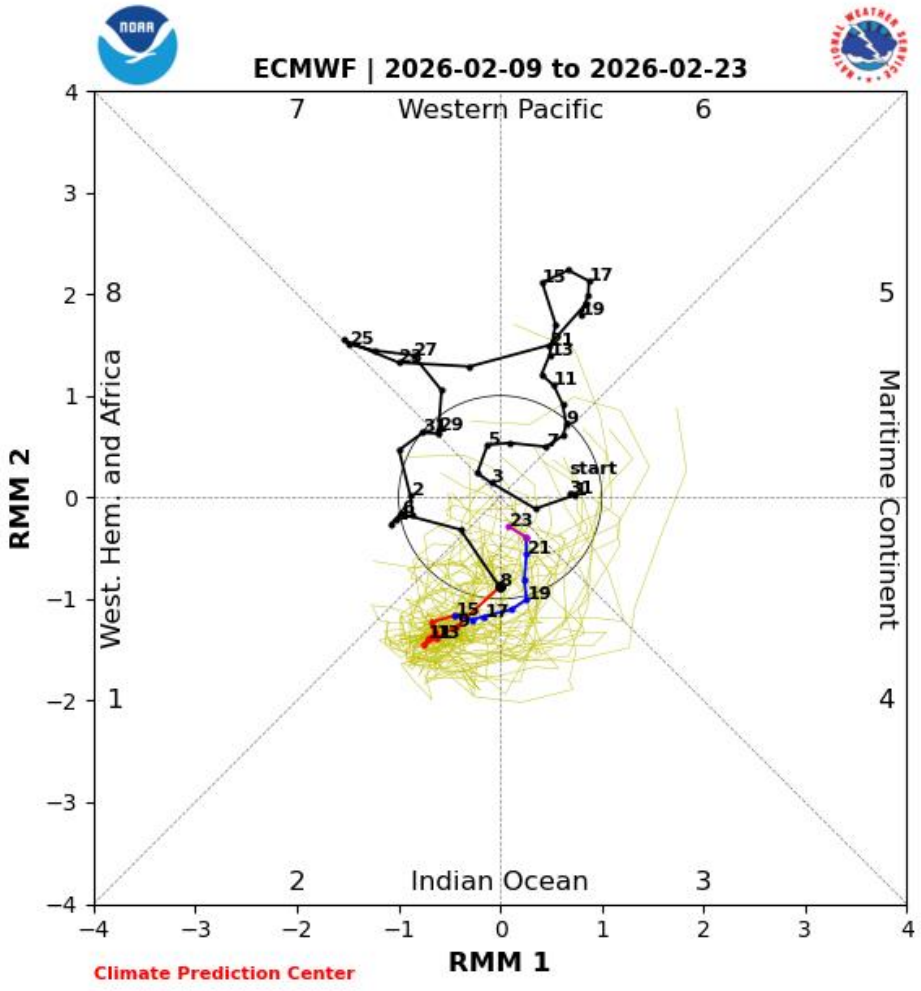

Figure 17. Past and forecast values of the MJO index. Forecast values from the 00Z 09 Feb 2026 ECMWF model. Yellow lines indicate individual ensemble-member forecasts, with the green line showing the ensemble-mean. A measure of the model 'spread' is denoted by the gray shading. Sector numbers indicate 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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We appreciate your taking the time to read the public Arctic Oscillation blog from Dr. Judah Cohen and the AER Seasonal Forecasting team.

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