

- Saturday September 20 weather briefing for ARISE Fairbanks, AK mission region -

\*\* Target area of the day: open water/ice edge portions of 70-77N and 135-155W \*\*

Current synoptic overview and short range forecast for next flight day Sunday Sept. 21:

A large ridge of high pressure (central pressure > 1024hPa) will remain established over the Pole and down to around 80N along 150W. Further south over Alaska, a vertically stacked low pressure system will weaken and fill. A broad elongated trough of low pressure will then take shape during the day Sunday along and adjacent of the northern coastlines stretched from the Beaufort Sea west to the East Siberian Sea. This elongated east-west cyclonic flow region will be the focus of precipitating deeper cloud layers. Towards the end of the day Sunday and going towards the next flight day Monday, heights and pressures will fall further. This will initially occur over the Chukchi Sea, but will then progress eastward along the coastline. The wind regime will continue to be mainly easterly in the lowest few kilometers between 71-76N off the Alaskan coast with speeds less than 30kts. At, and inland from the north coast, these will be westerly winds on the poleward side of the elongated trough. A ribbon of tropopause heights lowering to about 7.5-8.0km can be expected along the north coast and then curving down over the center of the state.

On Sunday, the GEOS-5 NASA model expects widespread and multi-layer cloud decks within and near the target region. There is one notable exception, a clearer profile should potentially exist (as discussed with R. Cullather) just west and northwest of Banks Island. Specifically, this clearer profile (lacking mid and high level mixed phase and cirrus decks) should be located between 73-76N and 126-131W. Indeed, there may also be a thin band in this clearer belt with little stratus/stratocumulus undercast, as well.

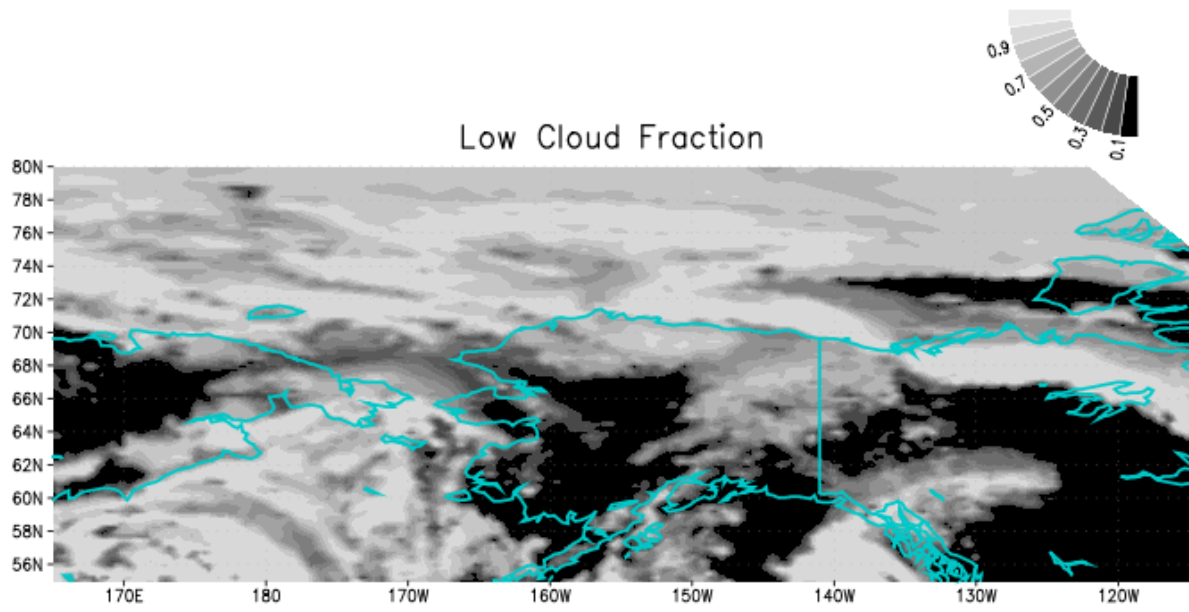
Outlook for succeeding flight day Monday Sept. 22:

As mentioned in the short range outlook, a polar low will deepen along the western part of the existing elongated trough. This low will deepen fairly rapidly and come ashore the northwest tip of Alaska on Monday. This will overspread deep precipitating clouds from northwest Alaska to north-central Alaska during the day Monday. Opportunity for a clearer scene will be possible further east away from the effects of this polar low, namely from 138-148W and 70-73N. There should be widespread low overcast area-wide during the day Monday. Except near the polar low, a generally light wind

profile can be expected in the target area eastern Beaufort Sea. Tropopause temperatures over the eastern Beaufort Sea will be 8.5-9.5km.

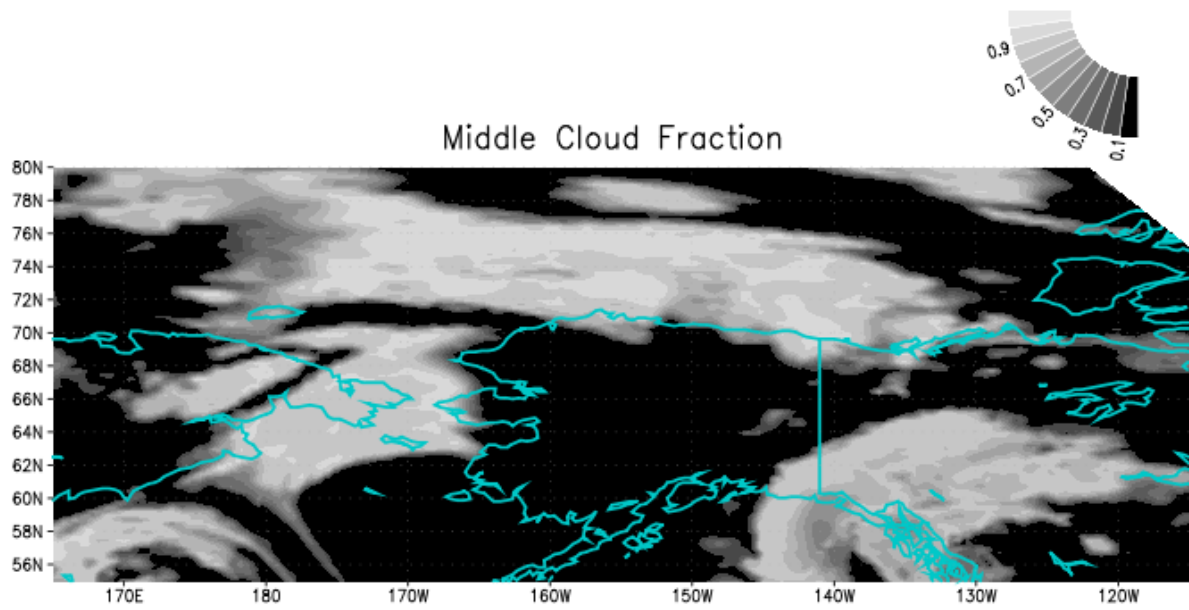
Gary Partyka  
NASA GSFC Global Modeling and Assimilation Office

NASA/GMAO - GEOS-5 Forecast Initialized on 00z 2014-09-19

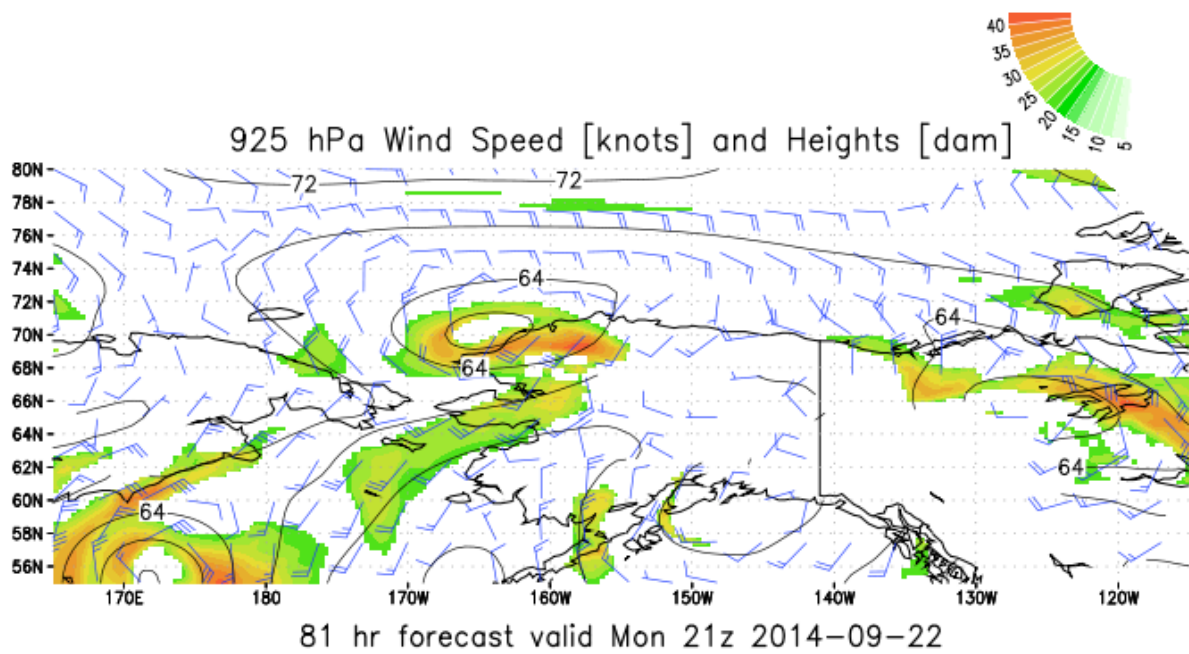
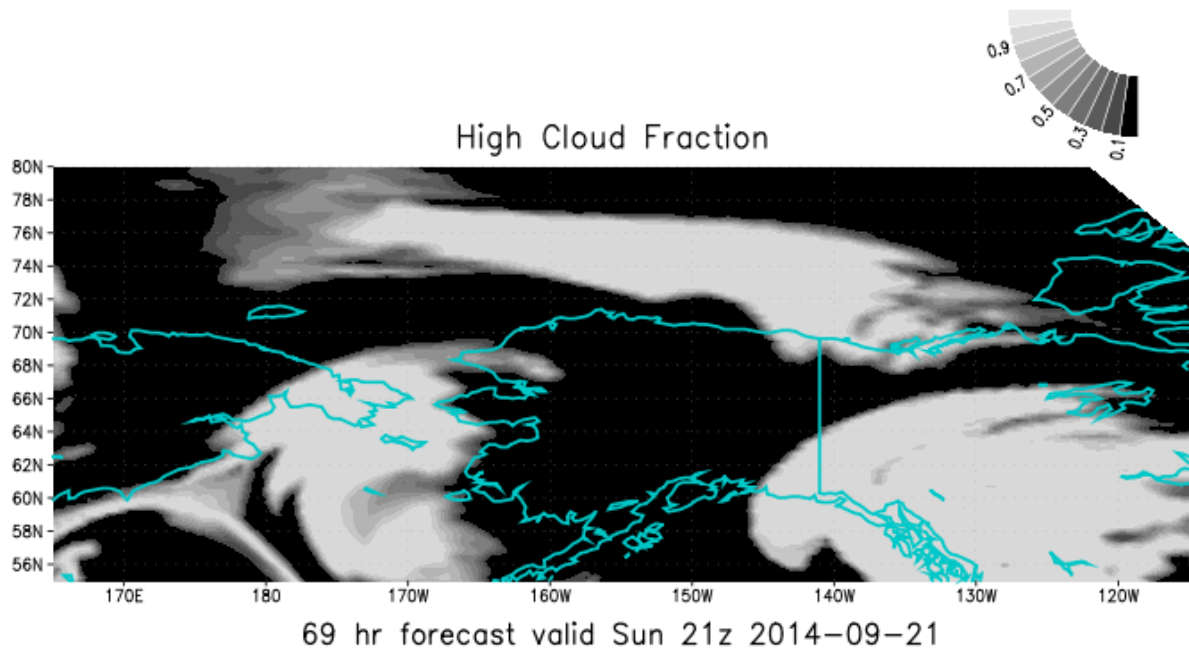


69 hr forecast valid Sun 21z 2014-09-21

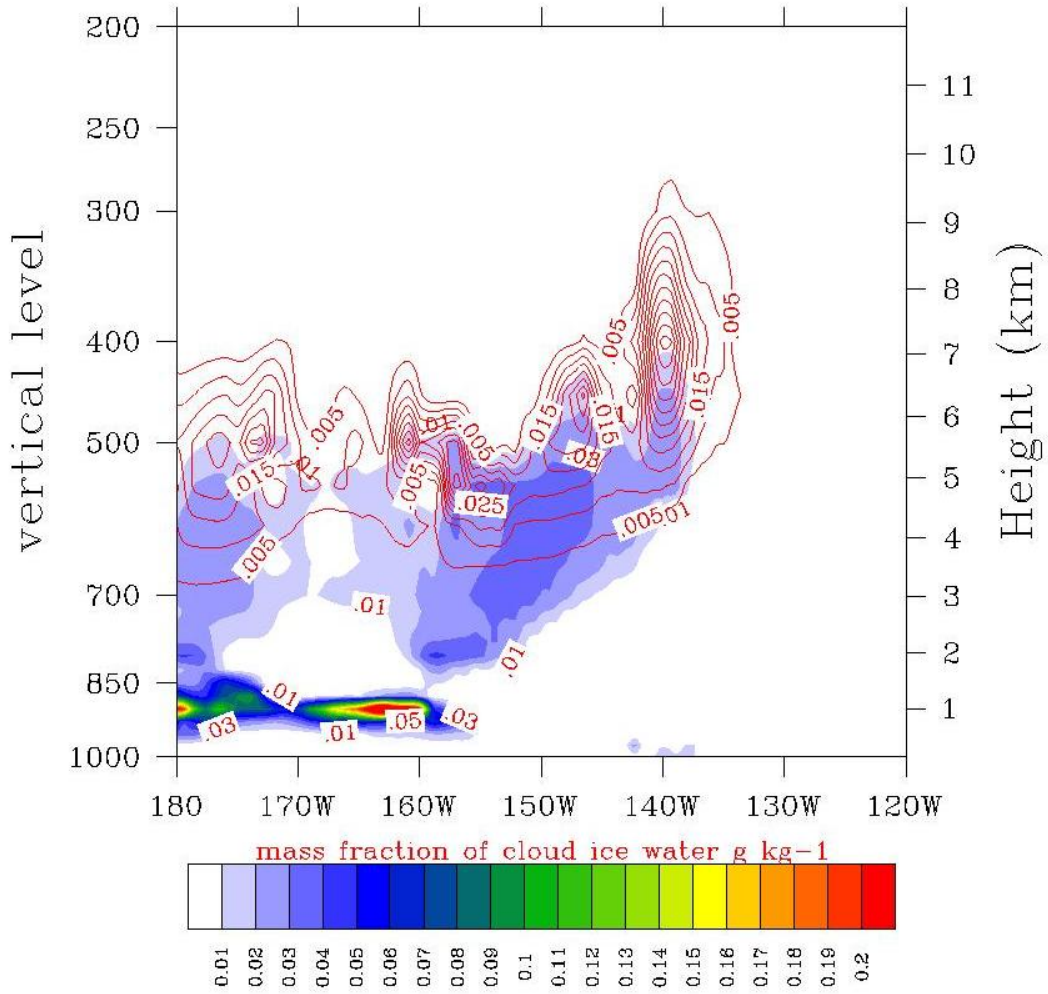
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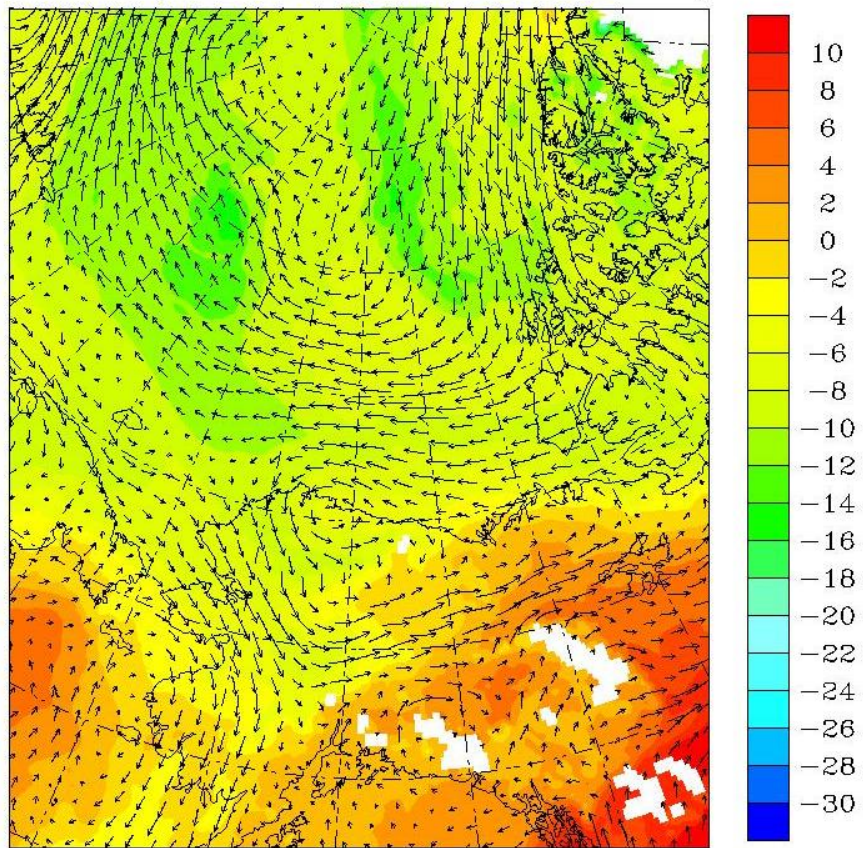


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air temperature at 850 hPa C



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