

Sunday September 21 weather briefing for ARISE, Fairbanks Alaska mission region

**** target area of the day: satellite underpass tracks in the area of 70-77N and 135-155W ****

Current synoptic overview and short range forecast for the next flight day, Monday Sept. 22:

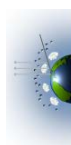
The Northern Coast of Alaska and Beaufort Sea will be located in the left-front quadrant of increasing mid-level jet stream energy coming ashore the central part of Alaska. This will allow a mean trough of low pressure to develop over the entire target region. On Monday, a leading polar low will come ashore the northwestern portion of Alaska. This low will overspread clouds and precipitation east to about 150W along the North Coast and Beaufort Sea. Further east on Monday, a stripe of deep multi-layer clouds and precipitation is expected with an older broad area of low pressure between 73-75N and 130-150W. Winds aloft will generally be westerly and stronger west of 150W while east of this, wind speeds will be much weaker. This puts the target area within the zone of lighter winds. Between 1-2km, easterly winds of 30-40kts will be found on a band from 74-76N and 130-140W. Tropopause heights will be fairly uniform at around 8.0km near and in the target area. Right near the vicinity of the polar low coming ashore northwest Alaska, these heights will be somewhat lower, 6.5-7.0km.

Between the older low pressure system over the eastern Beaufort Sea and the incoming polar low over northwest Alaska, much of the region will be found within low, middle, and high cloud decks. Between 70-73N, there will be a maximum mixed phase and ice clouds along 160W. An opportunity for profiles devoid of ice cirrus clouds may be present between 145-150W. Here, there should just be broken or overcast low level liquid phase clouds below 2km.

Outlook for succeeding flight day, Tuesday Sept. 23:

The mid-level jet stream energy coming into central Alaska will continue to carve out a low pressure trough over the Arctic district of northern Alaska and the Beaufort Sea. The mean position of surface low pressure will shift a bit eastward. The more compact polar low over Northwest Alaska Monday will become absorbed into more of a broader 992hPa low pressure complex further downstream on Tuesday, centered on 74N and 145W. This broad low will be accompanied by continued widespread cloudiness and generally light to moderate stratiform precipitation.

Gary Partyka
NASA GSFC Global Modeling and Assimilation Office

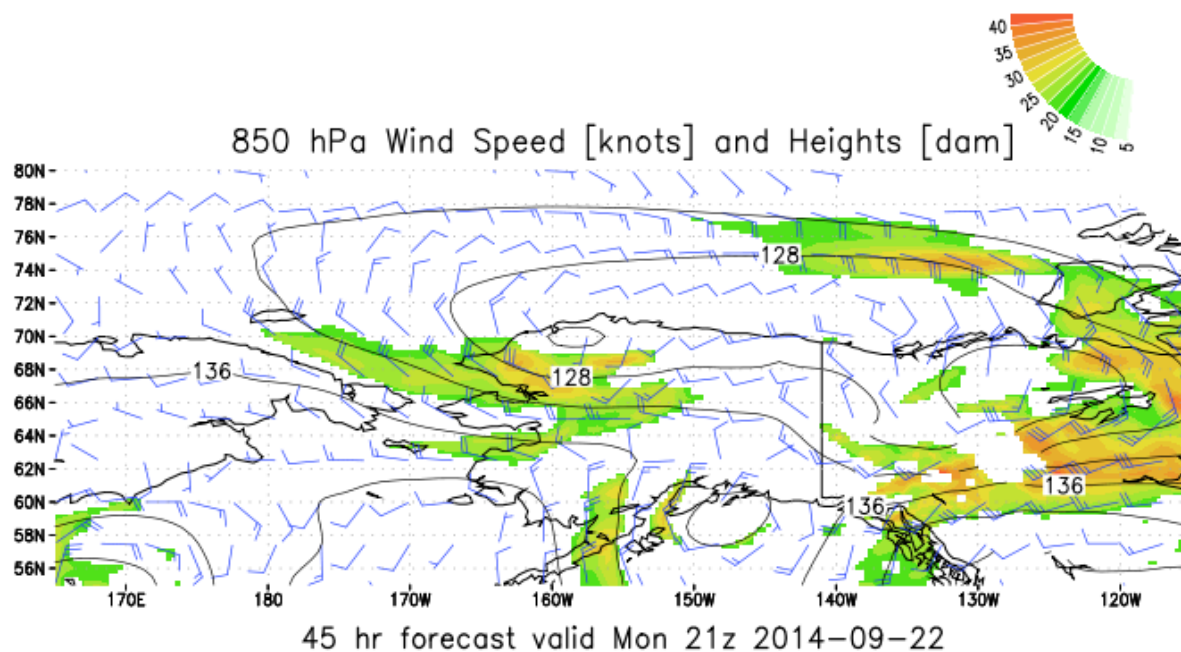


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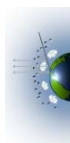
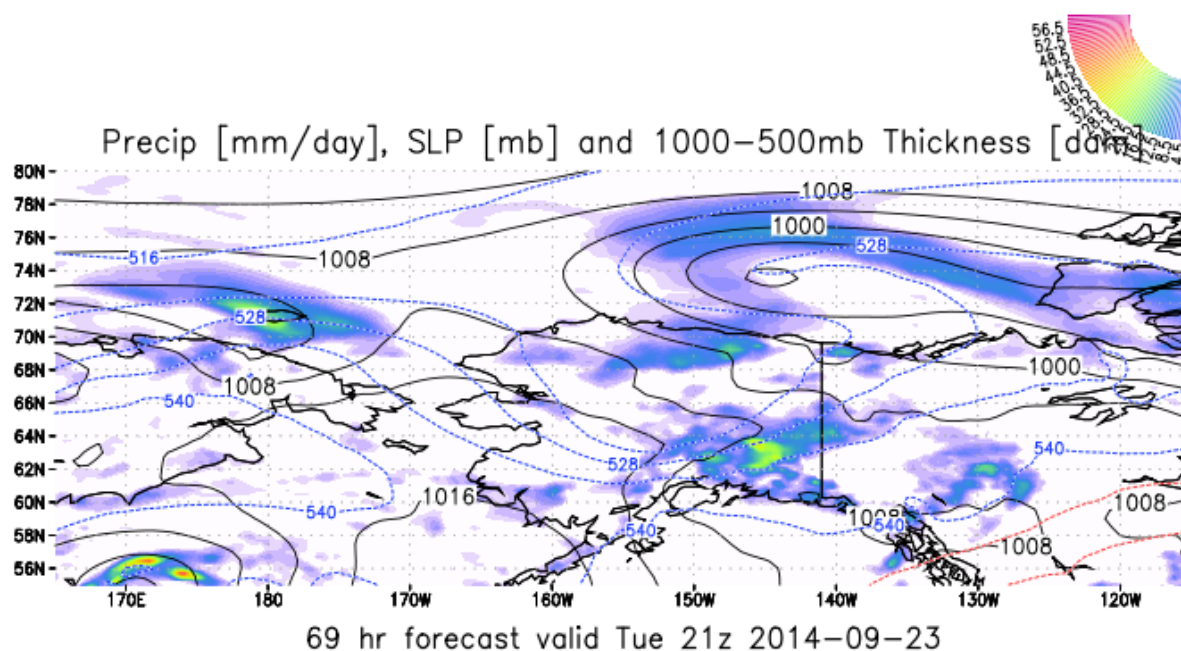
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NASA/GMAO - GEOS-5 Forecast Initialized on 00z 2014-09-21



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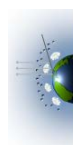
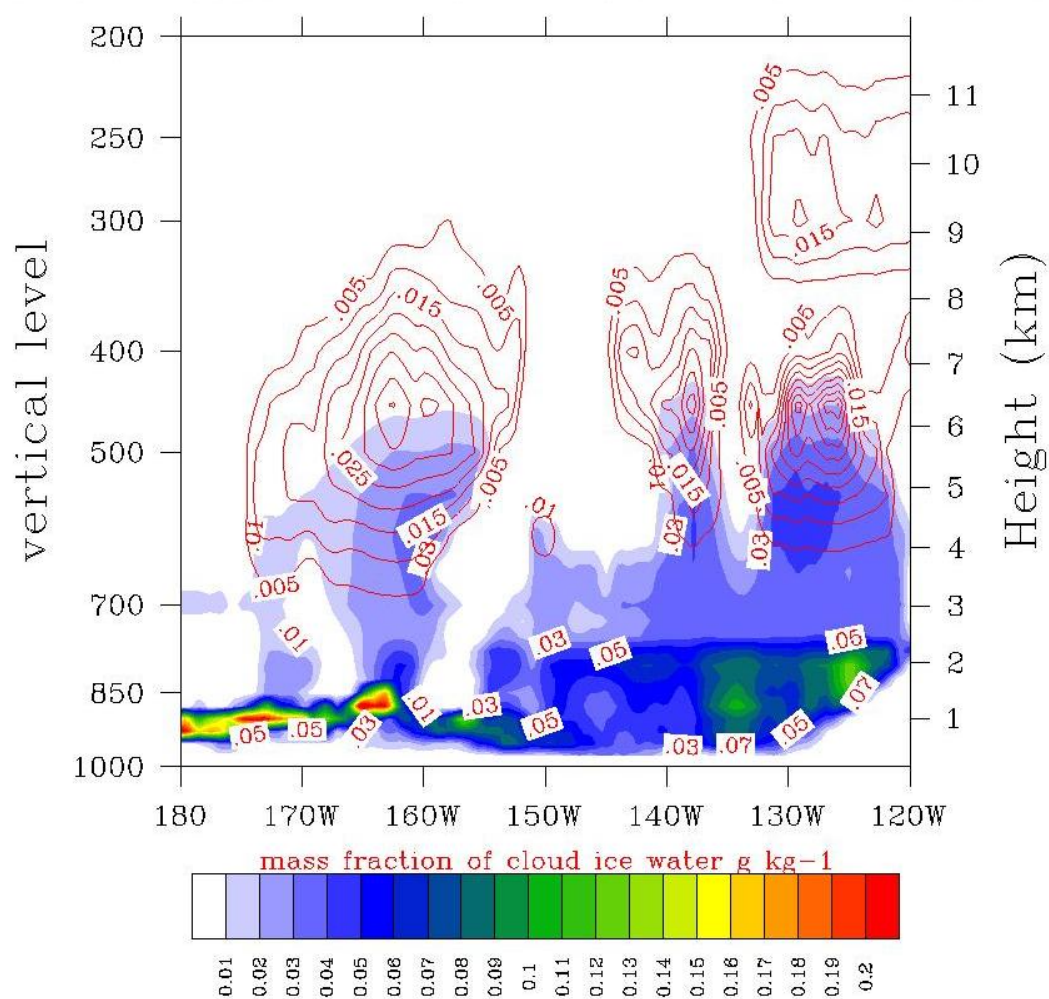


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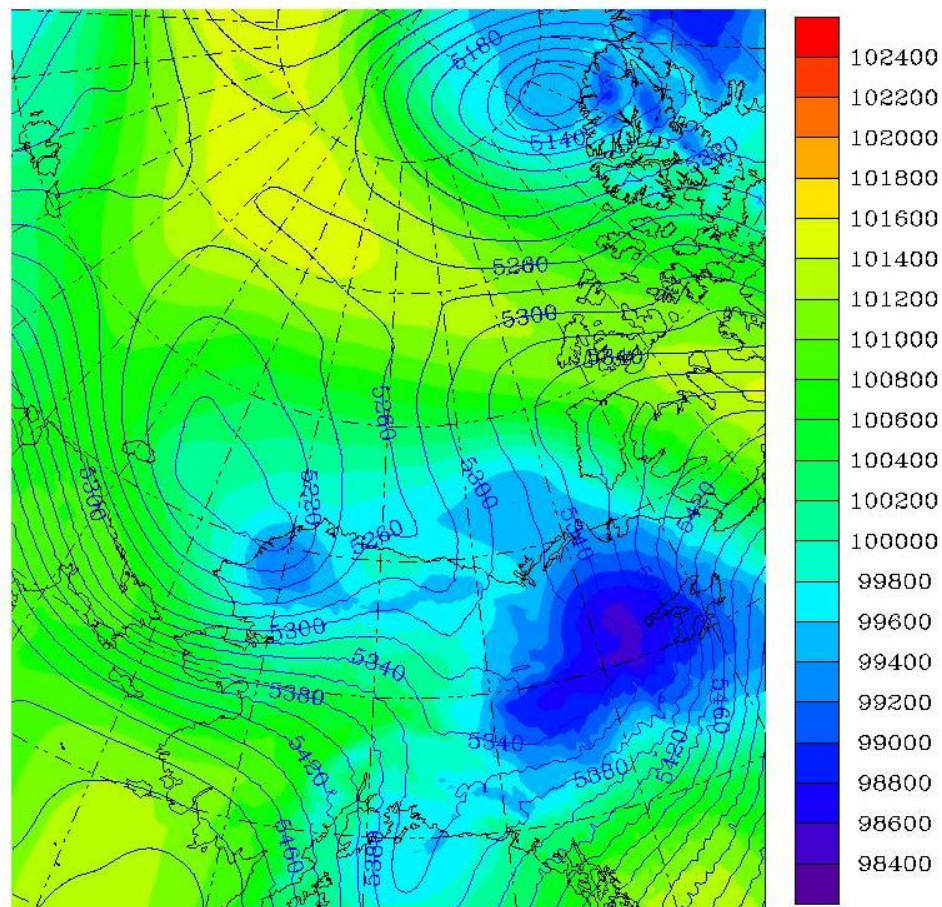
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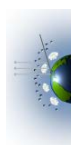


sea level pressure

Pa



height at 500 hPa m



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