

Summary of Key Briefing Points:1030-1130am MST January 23, 2016

Current Conditions as of Saturday 12Z 23 January

Tropics and Midlatitudes

Over the Tropical Pacific:

- Convection: Convection is muted in the region 165-140W, 0-5N this morning.
- Active convection located 5-10°Longitude west of Christmas Island on the Eq.
- Active convection located in a extended zonal band from 140W eastward, near 5°N.
- SPCZ convection remains very active
- Low level 850 mb circulation at 6Z Sat continues to show a well defined cyclonic center located slightly south of the equatorward, 155E-175W. This low pressure/large scale cyclonic disturbance continues to propagating westward.
- The 6Z Sat analysis indicates poleward a extended zonal band of divergent flow in the sector from 0-10N in the 160E-130W. The eastern portion is tied to the active ITCZ, the western band is tied to the slowly westward shifting convection that has been tied to the large scale cyclonic circulation at 850mb.
- Jetstream: Large scale 250 mb winds over the NPAC at 06Z Sat shows a strong polar jet centered at 30N, with a jet core speed of 170 kt from 160E-160W. Weaker flow downstream, with a split into a subtropical branch and a northern branch near 130W.
--- the subtropical branch in EPac somewhat weak, but distinct. has entrance region near 140W, and 12Z Fri analyzed peak winds near 90kt along 20N, 140-110W.

--- the northern polar branch has a trough near 130W, that is carrying a cyclonic event toward NCA.

Over CA:

- First wave of rainfall today has been moderate, with generally less than 1" 24-hr totals (ending Fri morning). A second storm, evident by the common cloud in the 12Z satellite, is expected to reintensify rains this evening.

--- 8 & 5-Station CADWR monitoring indicates *above normal accumulation* WY at 113% and 118% of normal as of 22 January..

Tropical Outlook

- By 00Z Sunday 24 Jan, two distinct active regions of convection, one west of CI, the other in the ITCZ from 140W eastward. A minimum of outflow/convection fcst fro GFS 18hr run in the 160W-150W.
 - The 18hr lead forecast from 06Z 23 Jan run is consistent with prior runs, and other models---- Confidence is therefore high for quiet convection in flight mission area
 - Confidence is also high because of the large scale circulation feature that is organizing this convective event is forecast to propagate westward
- Consistent with yesterday's guidance, models indicate that the drying in the region from Hawaii to near at least 10N on Saturday will continue Sunday Jan 24. This is apparently linked to a southward penetration of upper level westerly flow, and a strengthening of the low level trades in the region
 - Confidence in the suppression of convection in the longitude band of Hawaii, and in the region 0-5N during Saturday is high, and until Sunday morning HLT.
 - 06Z GFS indicates some modest strengthening of convection/upper level outflow in the flight mission area by Sunday 2PM local HT.
- 06Z GFS indicates a more significant increase in convection and outflow in the mission region on Monday. That is based on 60hr forecast, and cross checking with other models, and updated initializations is needed.

--- *in summary, the preliminary indication from GFS 0z Sat fcsts is that Monday would be a more favorable convective regime for flight missions than Sunday. Sunday morning HL time would still have damped convection in flight mission domain.*

- Looking ahead toward middle of next week, we find a considerable fcst model agreement on a large scale picture for the equatorial Pacific convection:
 - that convection will continue to mainly reside 0N-5N, aside from the the SPCZ activity (which itself is east of the normal location that continues in the SH)
 - that little convection is expected to develop in the next south of the Eq, in the band 150W-110 W week .
 - *that a G-IV flight campaign launched from HNL rather than Tahiti makes the best sense for next week, at least as per Friday forecast guidance.*

Midlatitude Outlook

Short Term:

- A storm is expected to bring heavy rains and winds to mostly northern CA and the central-northern Sierra. manily over the next 24 hours.
- Precipitation in the coastal range north of SFO, and in the Sierras expected to be near 5" for this storm thru Sunday morning.
- Mostly dry conditions expected Sunday through early week for CA
- A strong snowstorm and icestorm is also expected to develop in the US midatlantic region, likely to deliver 2-3' snowfall from Washington DC to southern NY. Blizzard conditions expected in the Baltimore-Washington metro area late Fri thru Sat.
- The GFS longer lead forecast, for lead times of 6 days, have been anticipating this event. Skill has been high...making this an excellent case to examine the effect of El Nino using the parallel model runs of the GEFS Reforecast model
- Is this potential MidAtlantic Blizzard being made more likely owing to El Nino?
 - NOAA PSD analysis of historical linkages gives evidence for such a linkage:
http://www.esrl.noaa.gov/psd/csi/images/NOAA_AttributionTeam_SnowstormReport.pdf

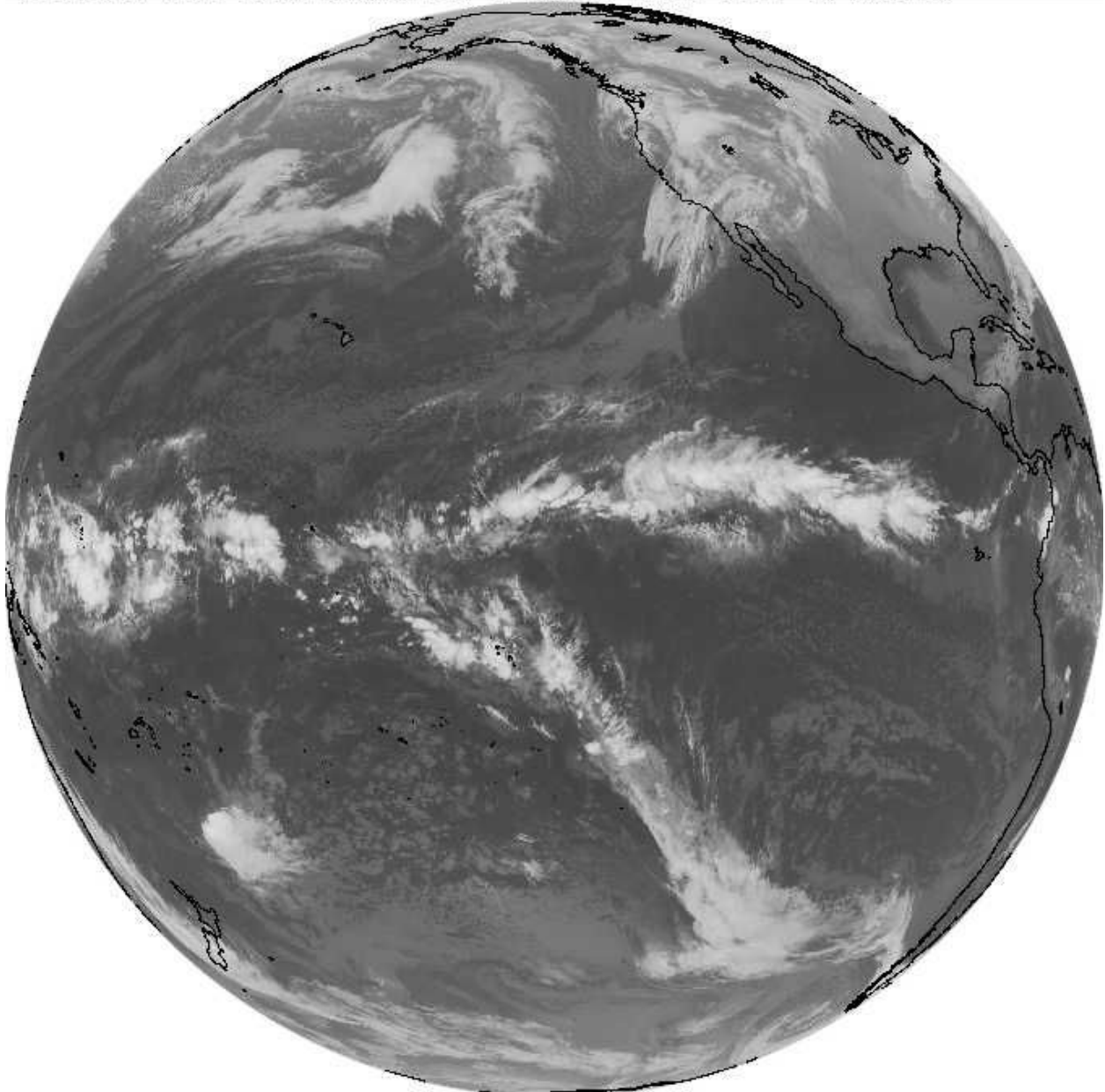
Medium - Long Term:

- High confidence that CA will be mostly dry in the period 24 Jan thru Thu 28 Jan.
 - GEFS ensemble in strong agreement to 168 hr lead (Thur 28 Jan) for a transient Ridge on the Pacific coast.

- Days 7-10 indicates a flattening of the West Coast ridge, exposing CA to intrusions of moisture
 - moderate confidence of a return to wetter conditions for CA from Fri 28 Feb thru Sun 31 Jan
- Will keep close eye on future forecast as to the threat of CA storms in the first week of February (days 11-15 in the forecasts...), as the Global Hawk is set to deploy Tuesday Feb 2.
- GFS ensemble shows strong subtropical jet impinging the West Coast in the long range (valid 2 February)...storms are likely to be embedded in this pattern, though the daily synoptic details cannot be discerned at this time.

Saturday 12Z January 23 GOES West IR Image

GOES WEST FULL DISK LONGWAVE IR 23 JAN 16 12:00 SSEC: UW-MADISON



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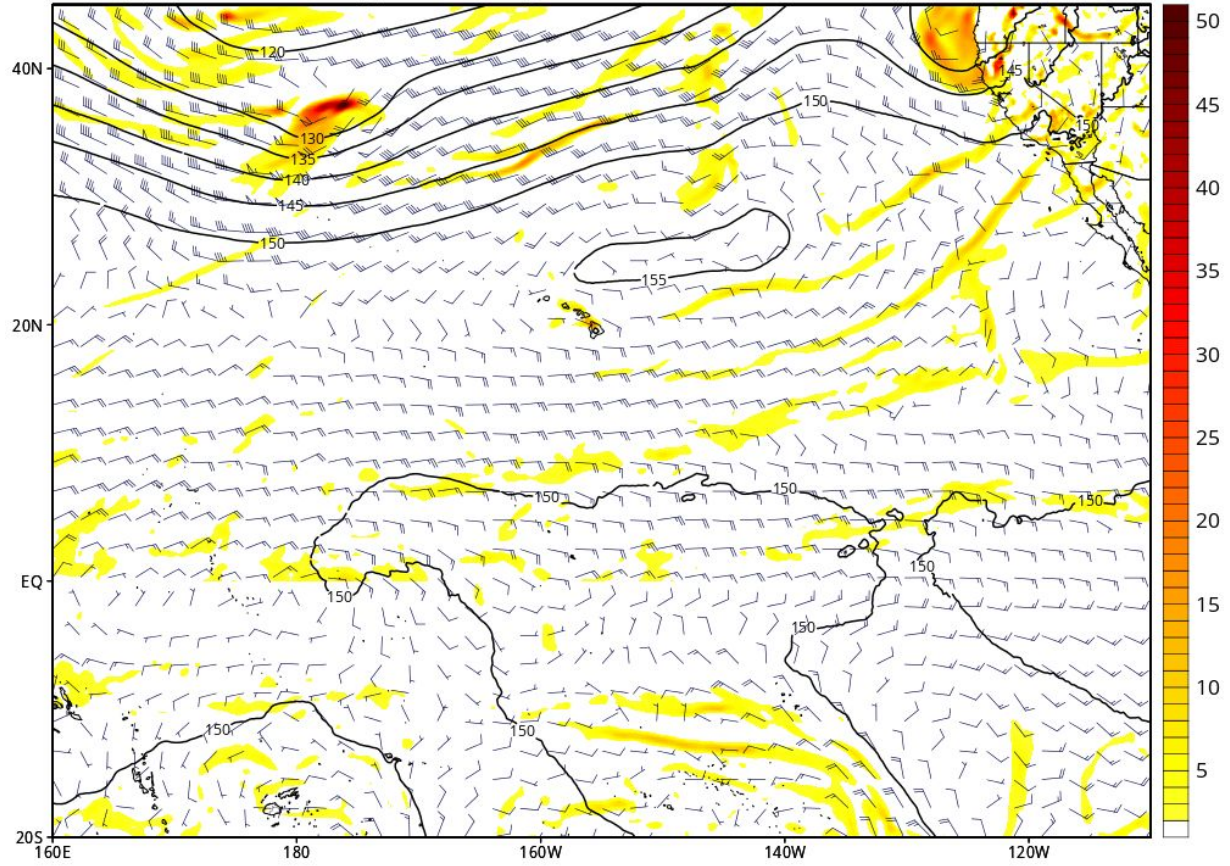
McIDAS

GFS 6Z Friday 23 January Analysis : 850 mb pressure and winds

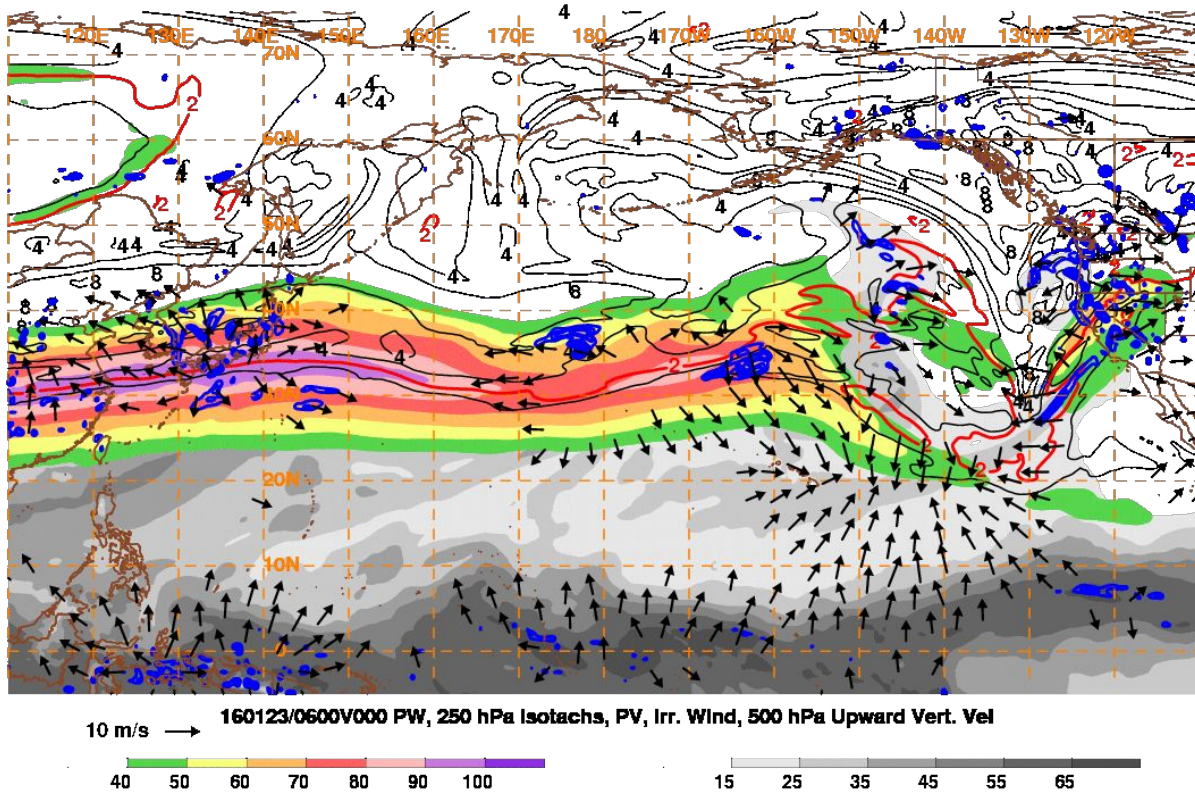
GFS 850mb Geopotential Height (dam), Cyclonic Vorticity (10^6 s^{-1} , shaded), and Wind (kt)

Init: 06z Jan 23 2016 Forecast Hour: [6] valid at 12z Sat, Jan 23 2016

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GFS 06Z Saturday 23 January Analysis

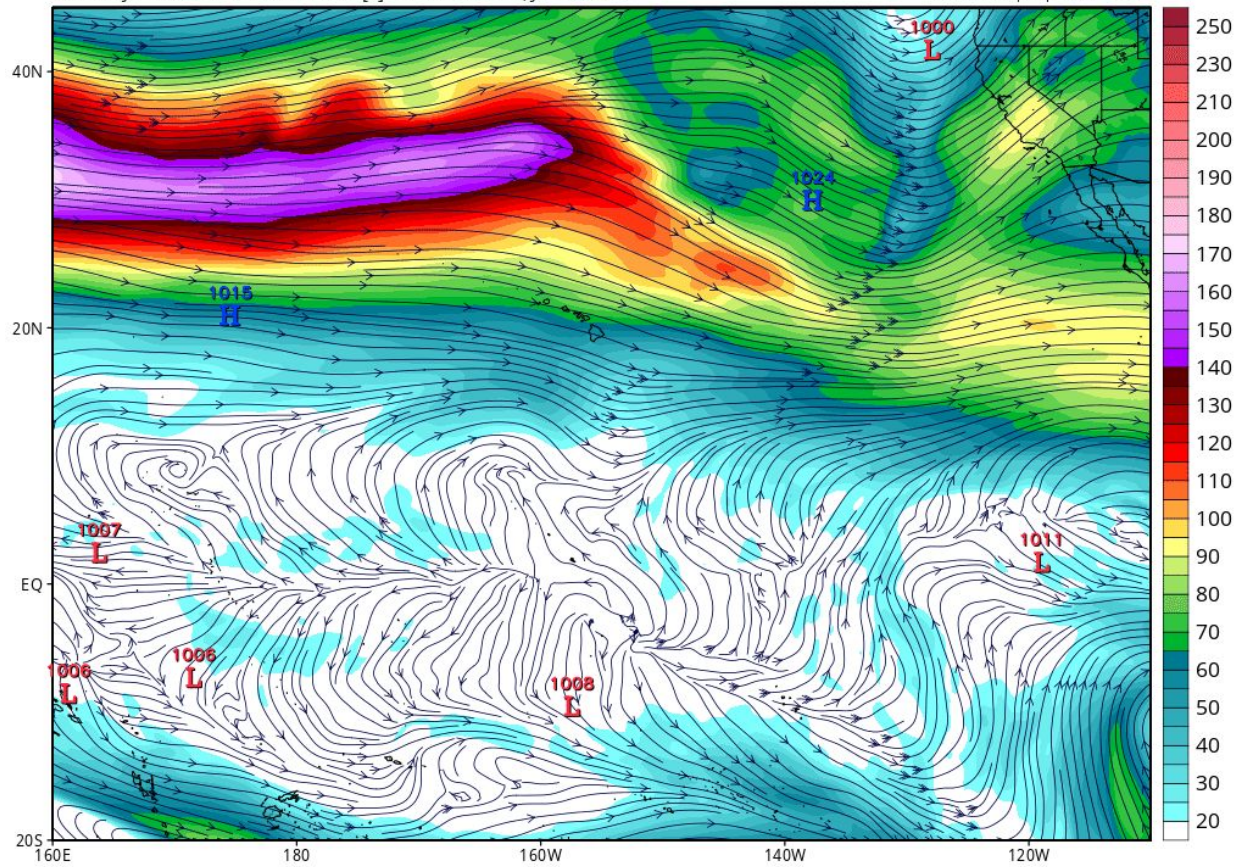


GFS 06Z Saturday 23 January Analysis : 200 mb isotachs and streamlines

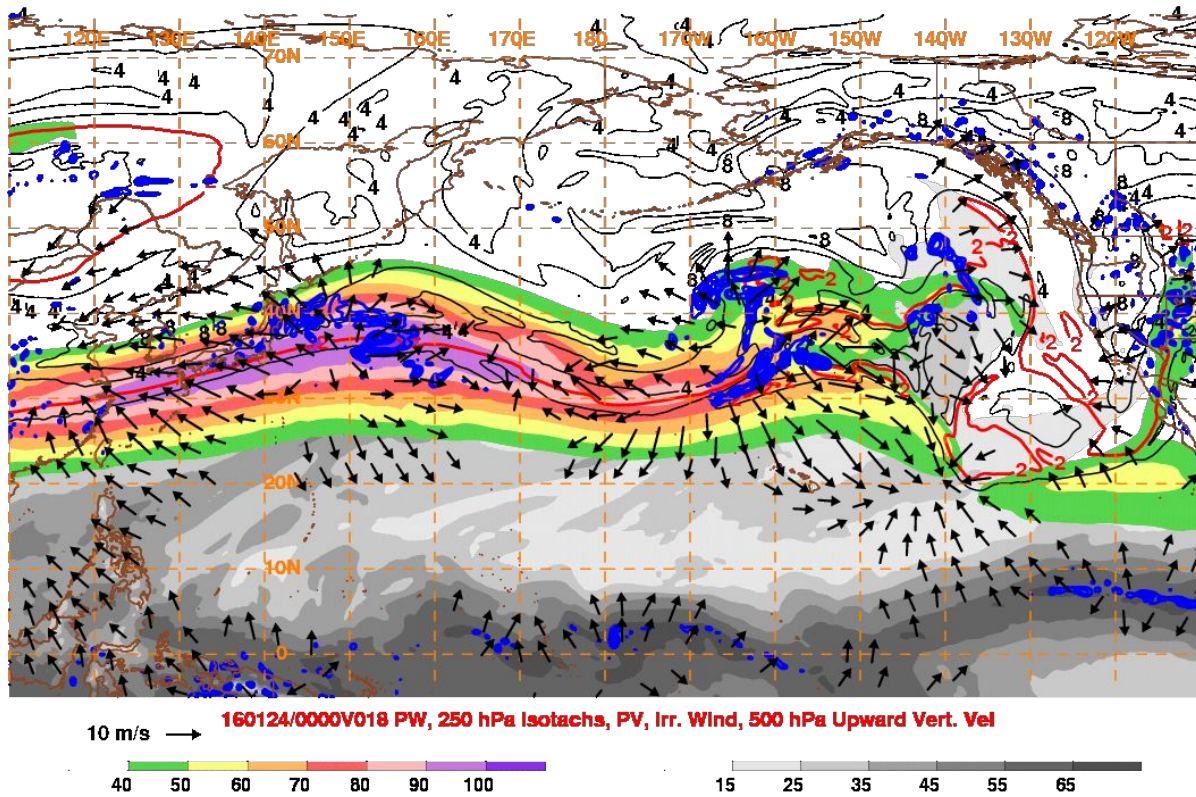
GFS 200mb Wind Speed/Streamlines (kt) & MSLP Extrema (mb)

Init: 06z Jan 23 2016 Forecast Hour: [0] valid at 06z Sat, Jan 23 2016

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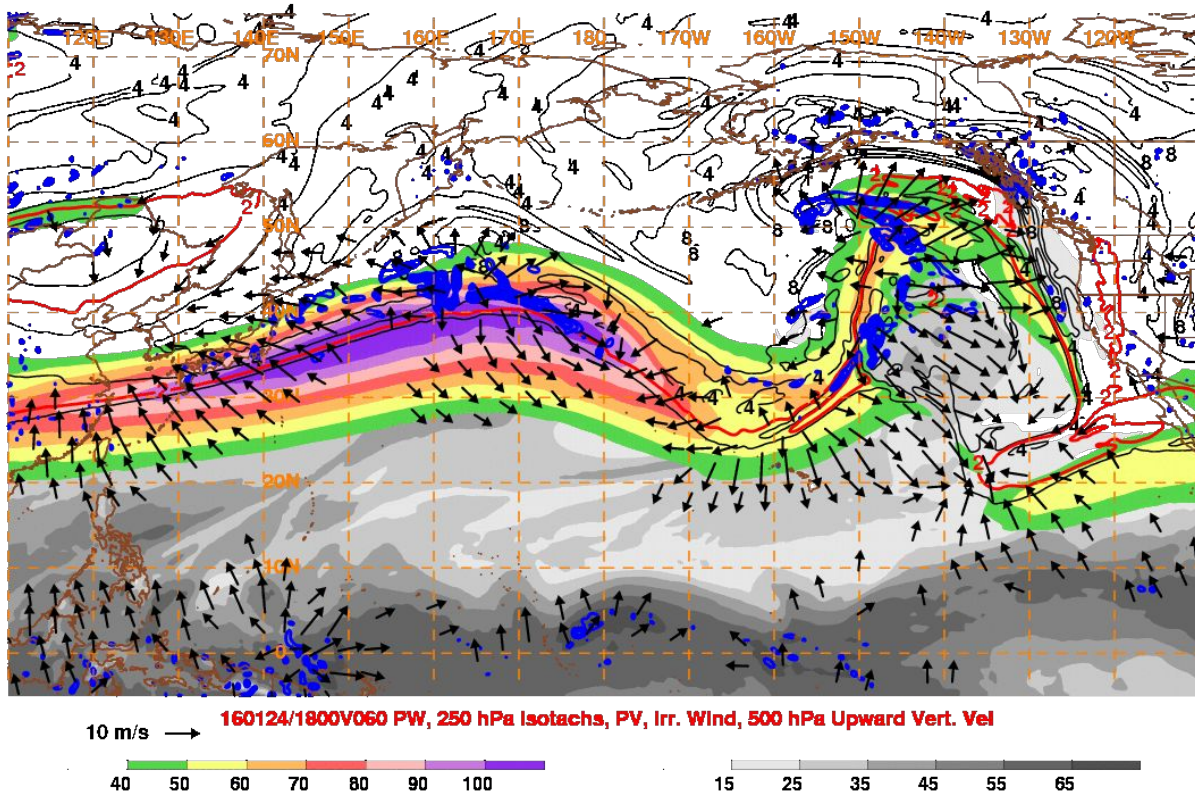


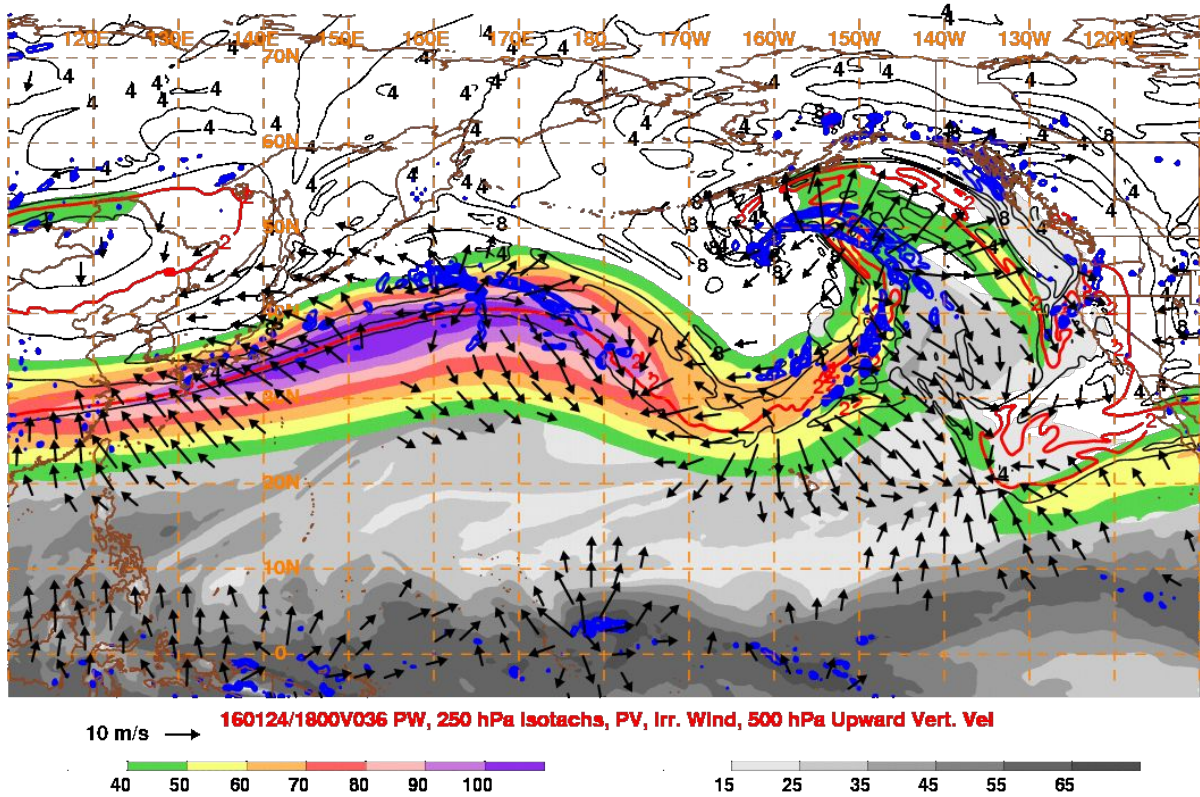
GFS 18-hr Fcst Valid 00Z 24 January Sunday



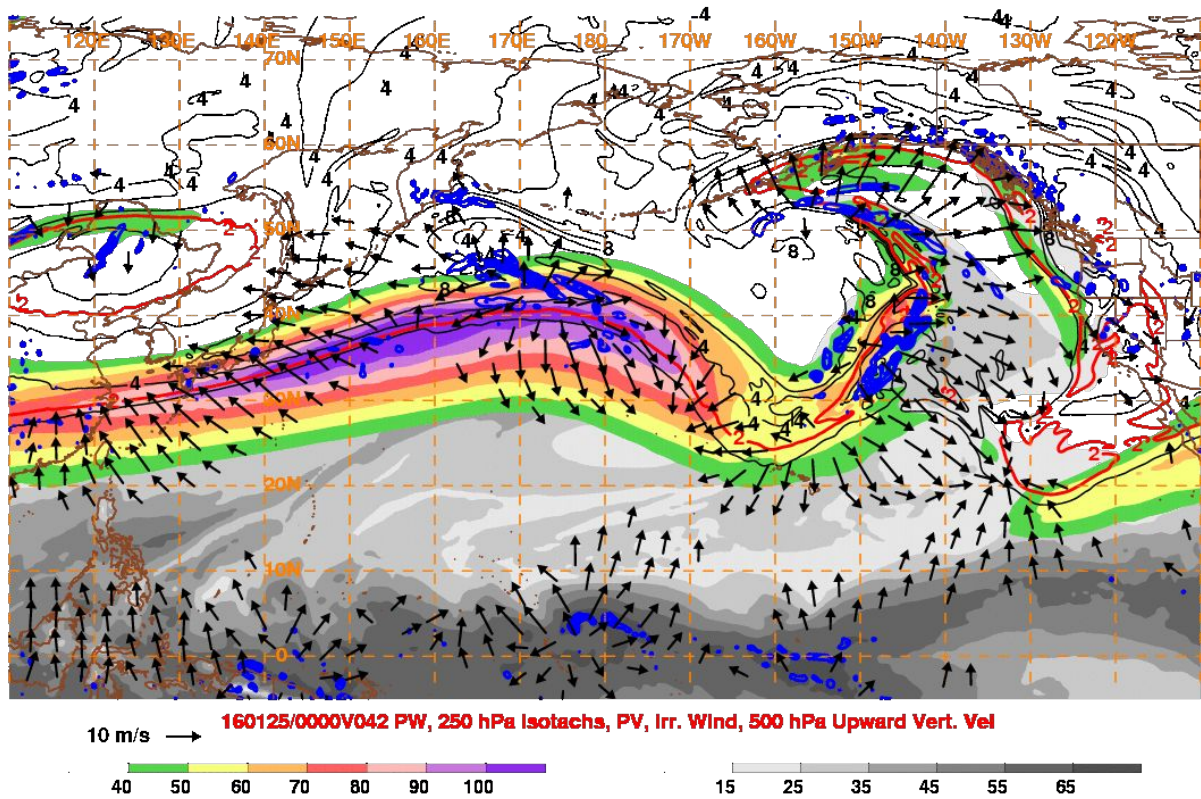
From Earlier Initialization of GFS (06Z 22 Jan)

GFS 60-hr Fcst Valid 18Z 24 January Sunday

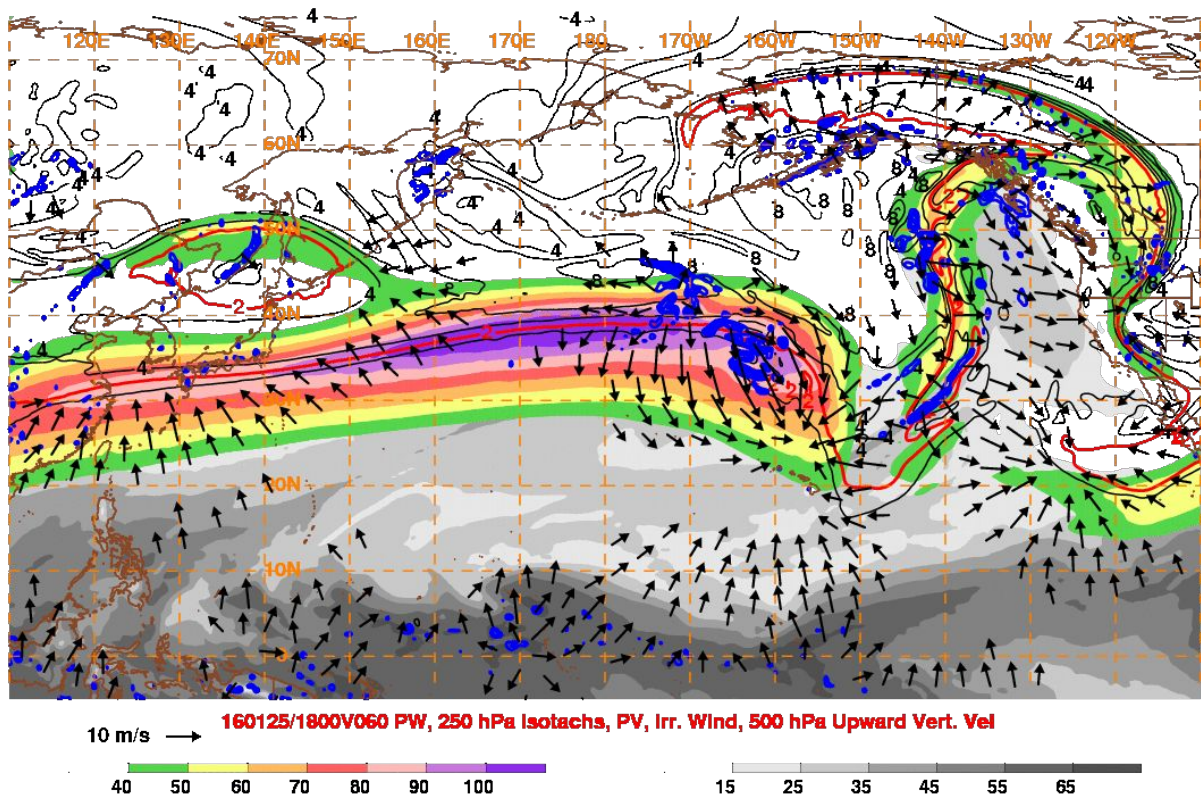




GFS 42-hr Fcst Valid 00Z 25 January Monday (2pm local HT Sunday)



GFS 60-hr Fcst Valid 18Z 25 January Monday (8am local HT Monday)

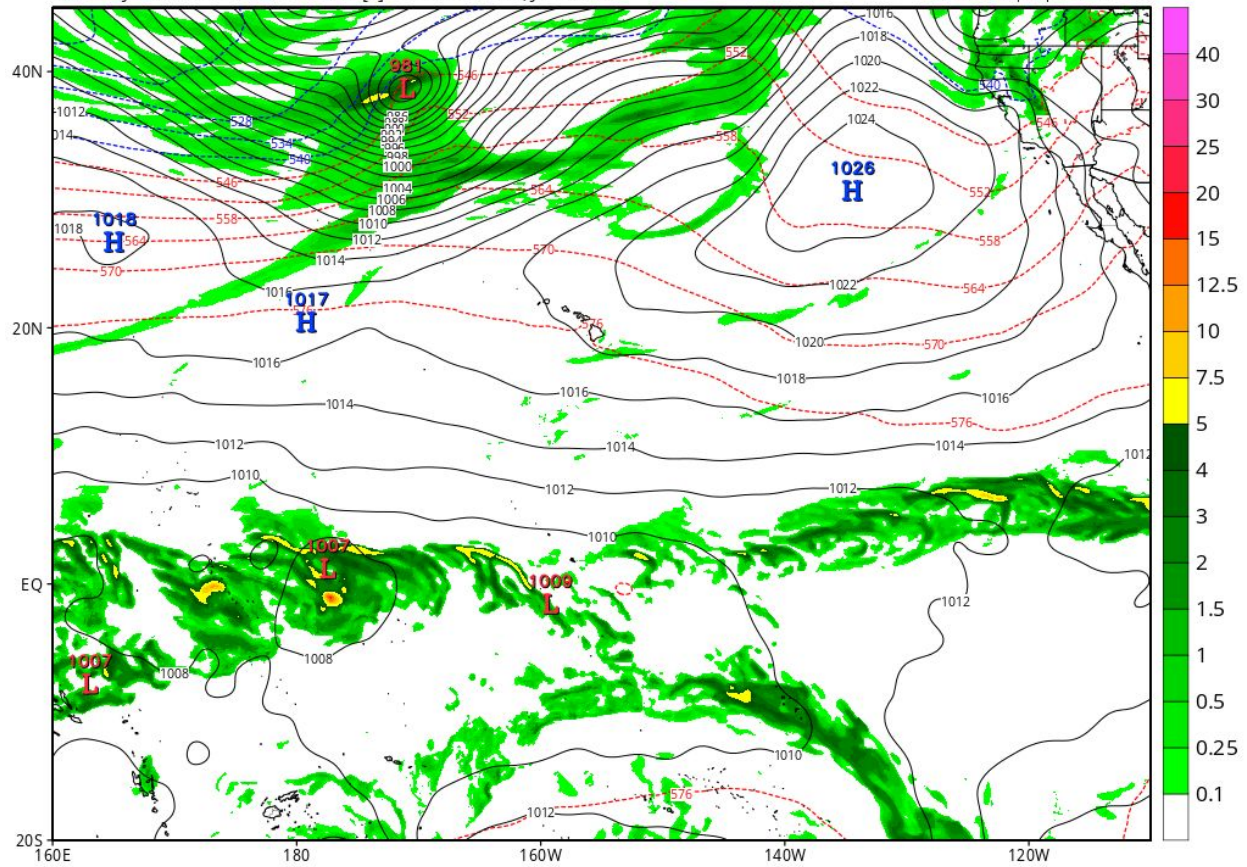


GFS 6-HR Forecast Valid 18Z Saturday 23 January

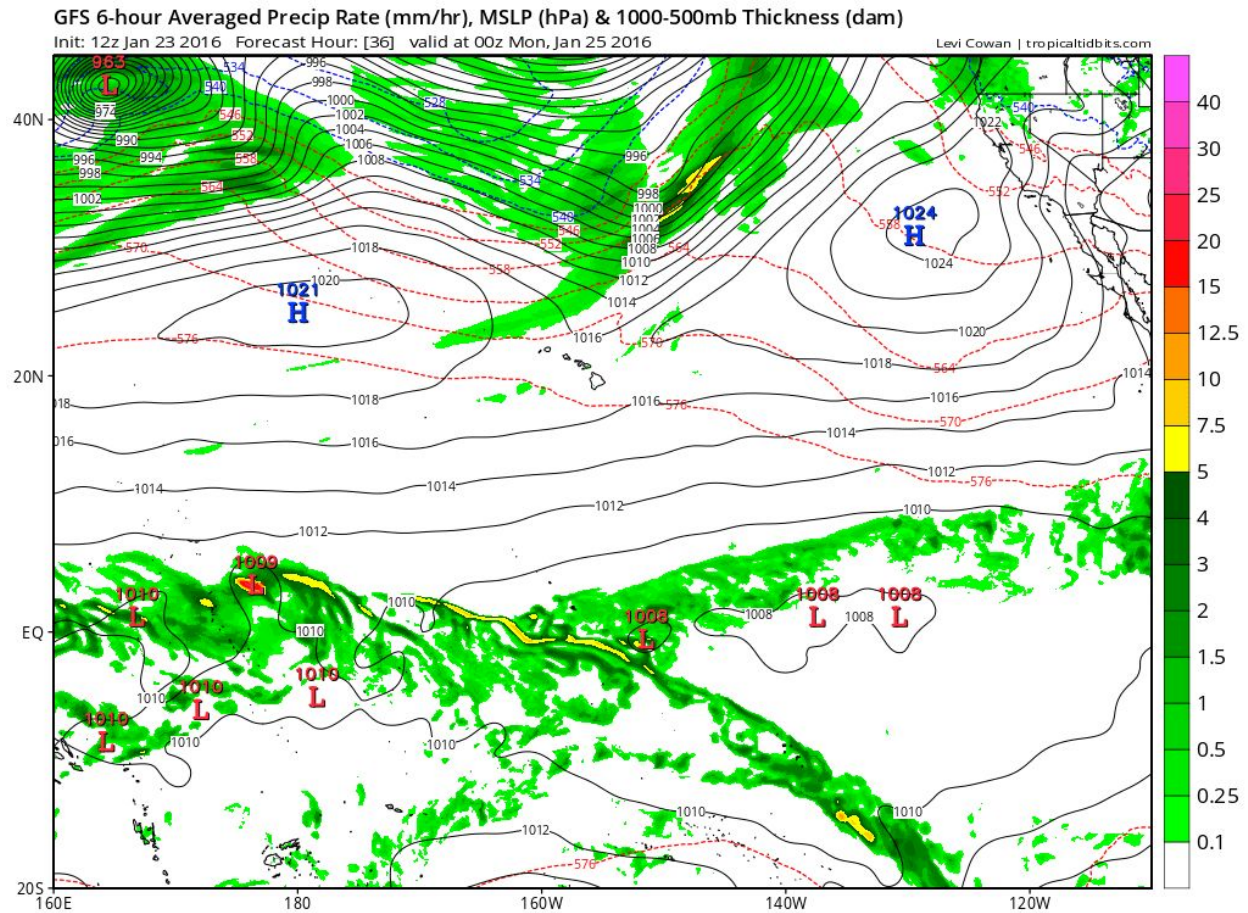
GFS 6-hour Averaged Precip Rate (mm/hr), MSLP (hPa) & 1000-500mb Thickness (dam)

Init: 12z Jan 23 2016 Forecast Hour: [6] valid at 18z Sat, Jan 23 2016

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GFS 36-HR Forecast Valid 00Z Monday 25 January (2PM HT Sunday 24 Jan)

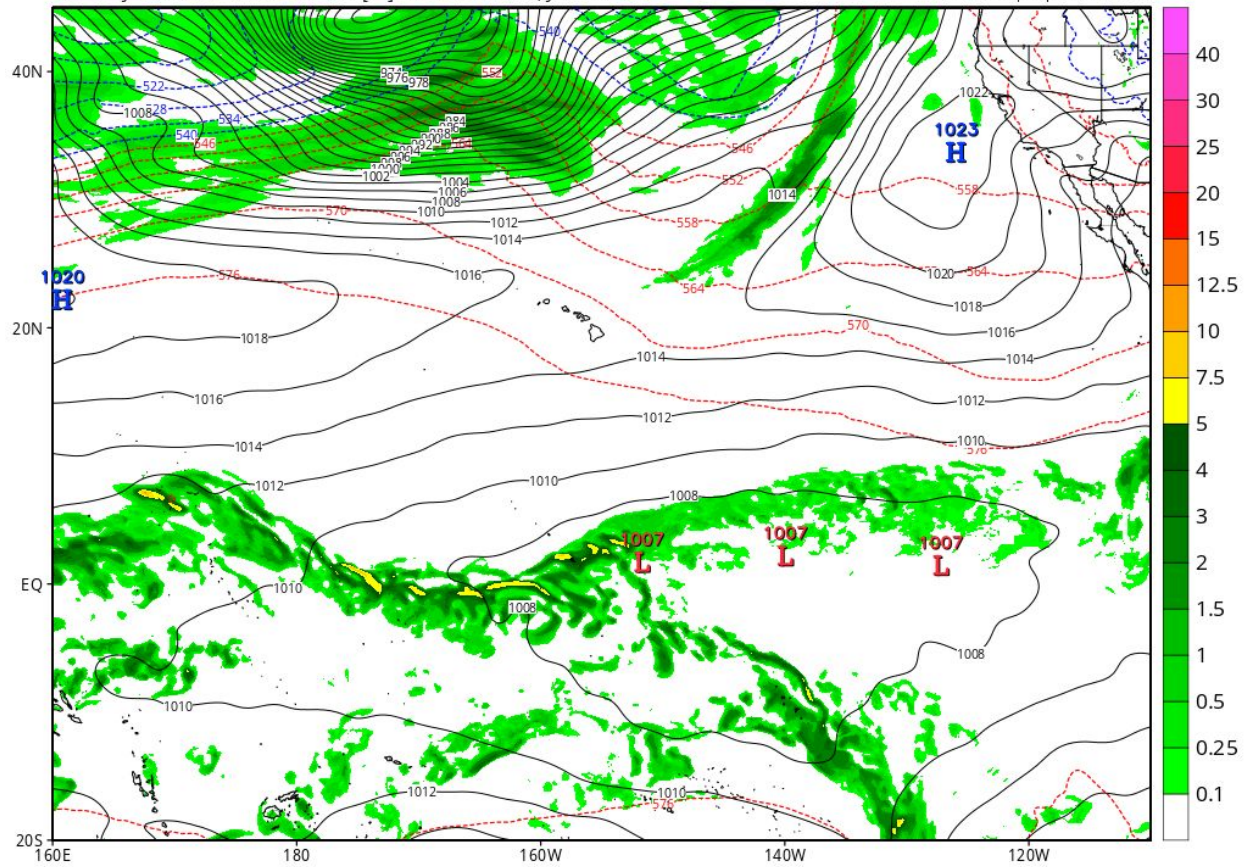


GFS 60-HR Forecast Valid 00Z Tue 26 January : SLP/Pcprn (2PM Monday HT)

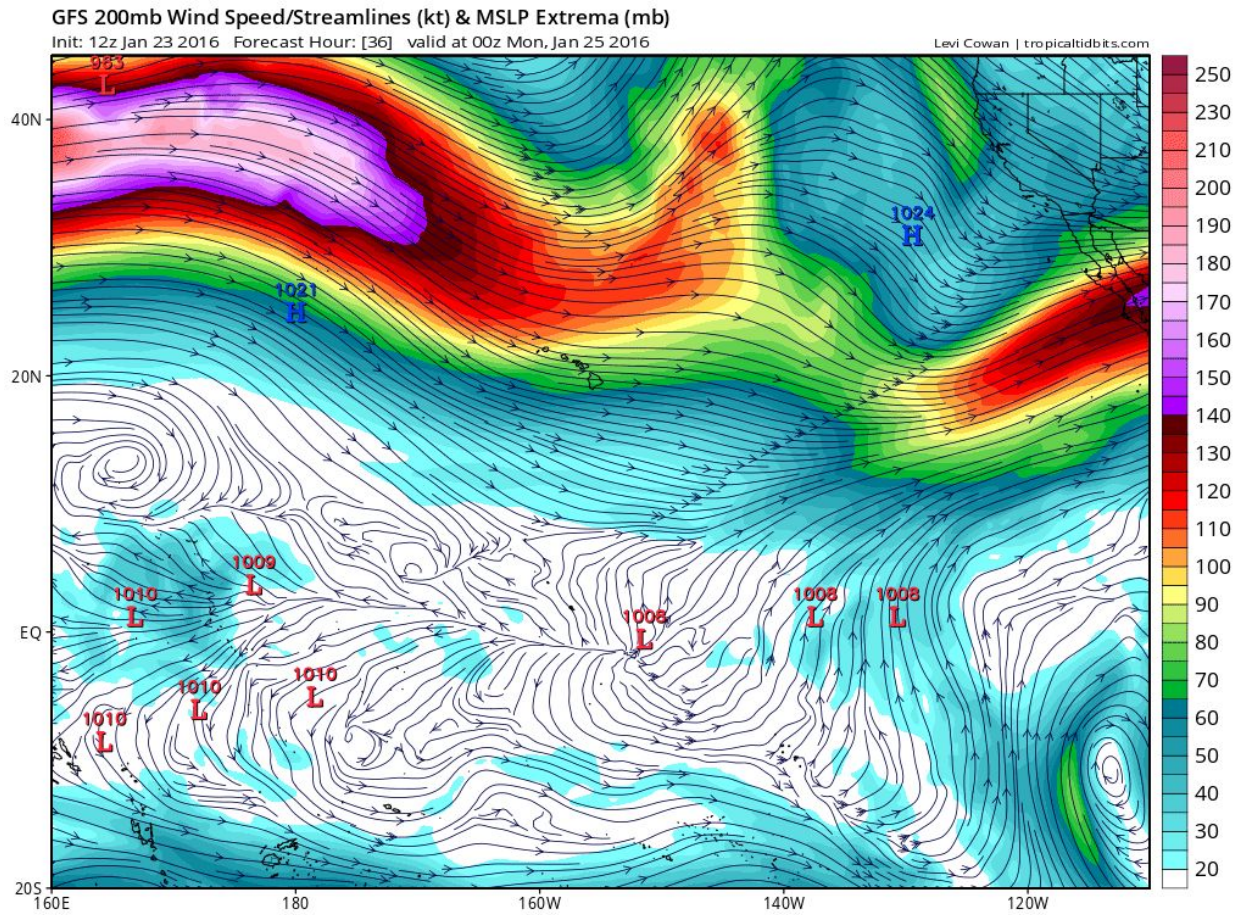
GFS 6-hour Averaged Precip Rate (mm/hr), MSLP (hPa) & 1000-500mb Thickness (dam)

Init: 12z Jan 23 2016 Forecast Hour: [60] valid at 00z Tue, Jan 26 2016

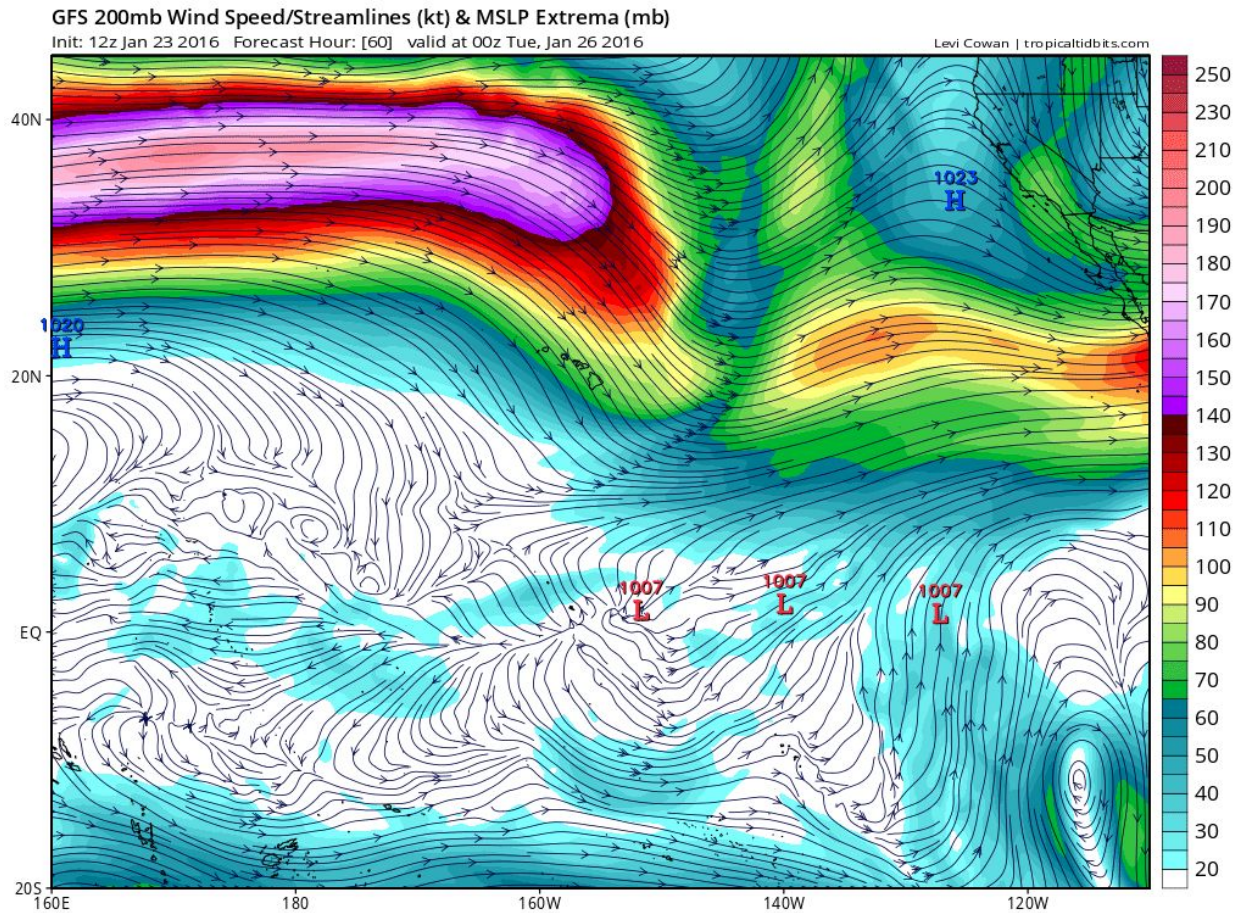
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GFS 36-HR Forecast Valid 00Z Monday 25 January: 200mb

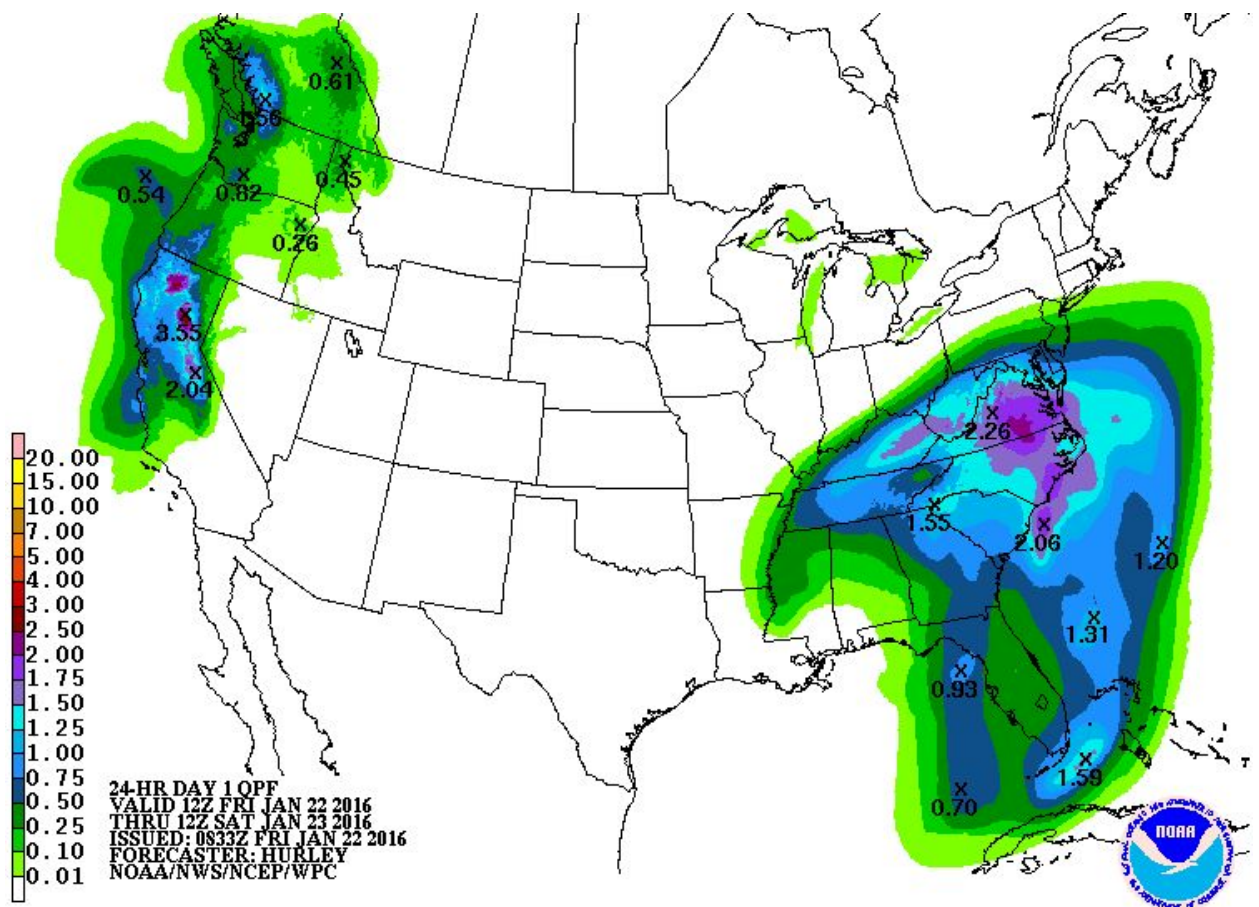


GFS 60-HR Forecast Valid 00Z Tuesday 26 January: 200mb

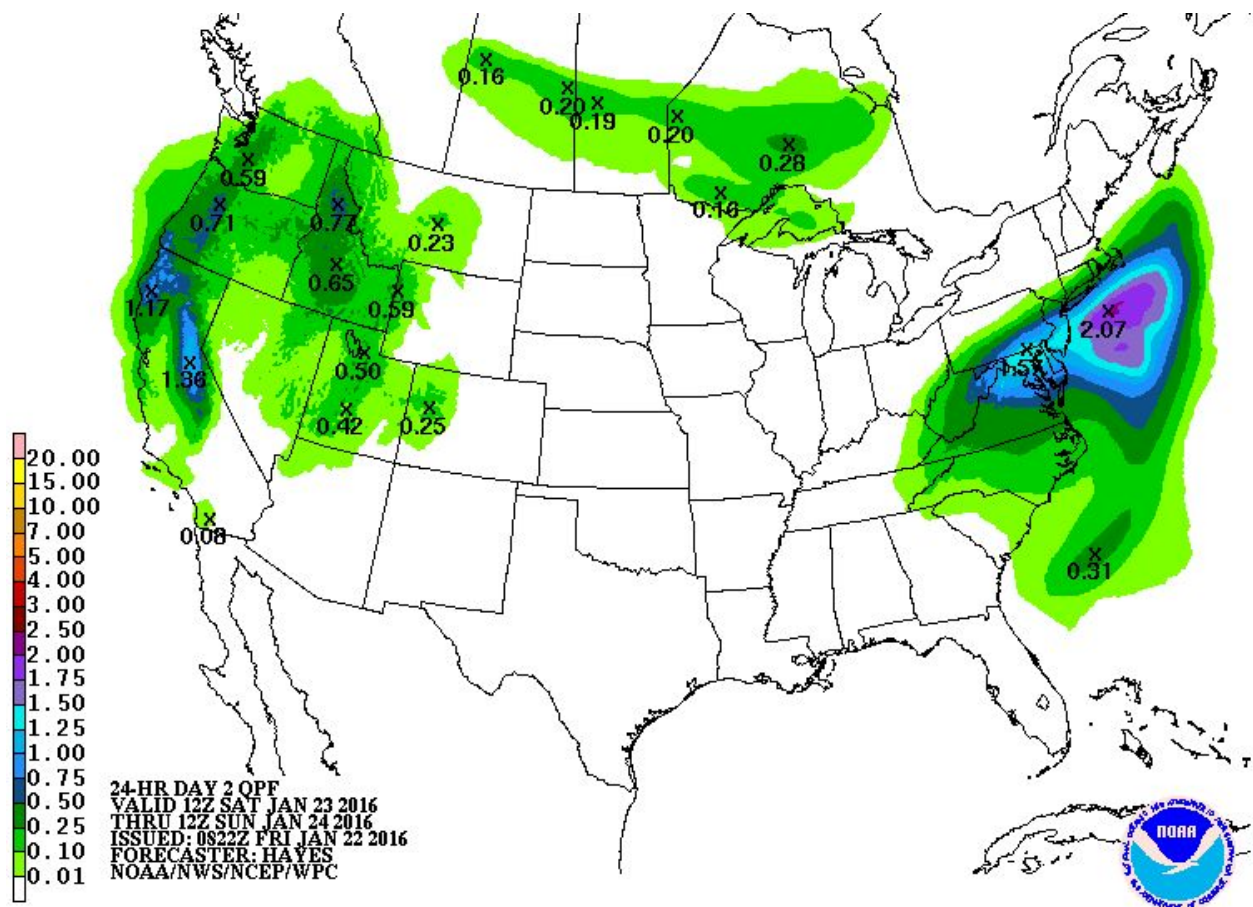


Short Range NWS Official Outlook

NOAA Weather Prediction Center 24-hr Pcpn Total: 12Z Fri- 12Z Sat Jan 23

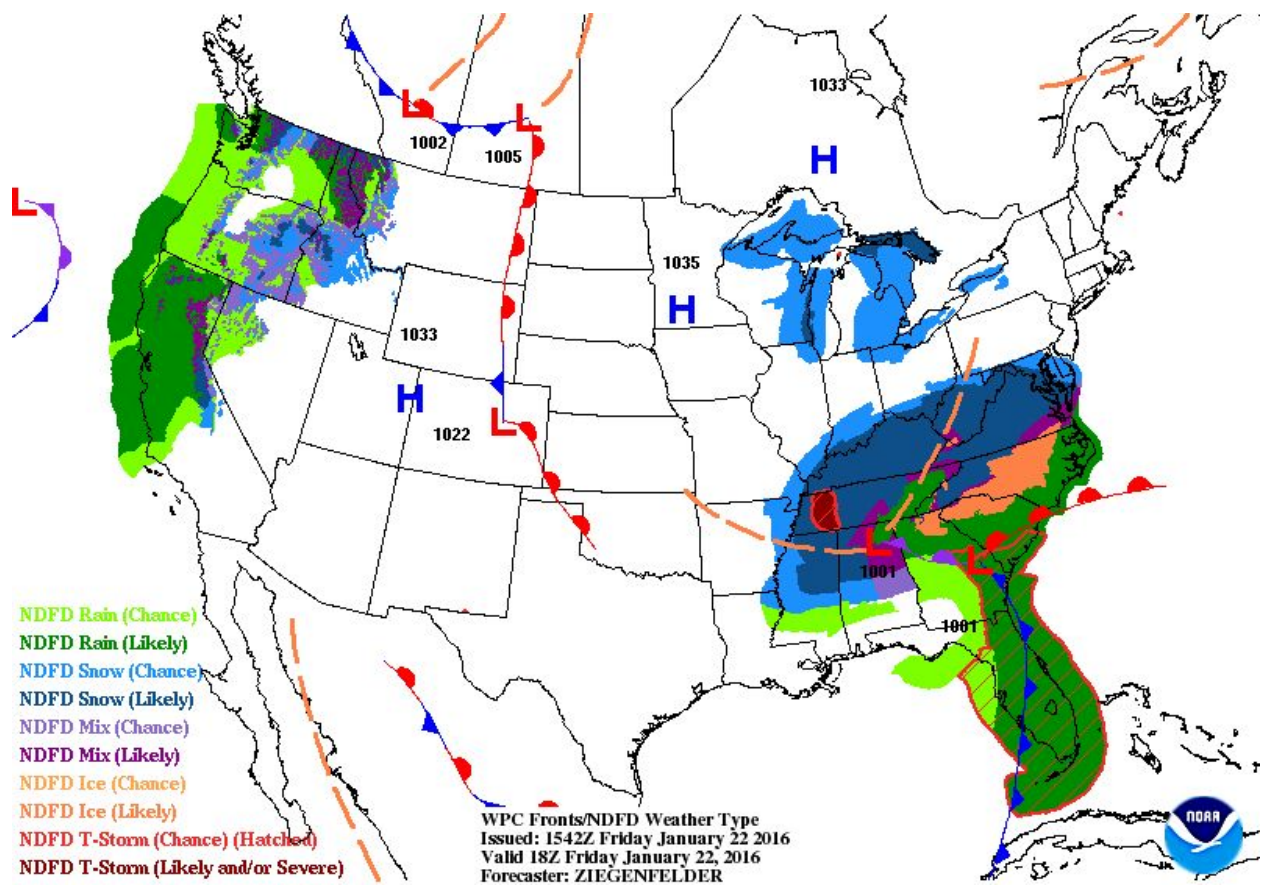


**NOAA Weather Prediction Center 24-hr Total Pcpn Outlook: 12Z Sat- 12Z Sun
Jan 24**

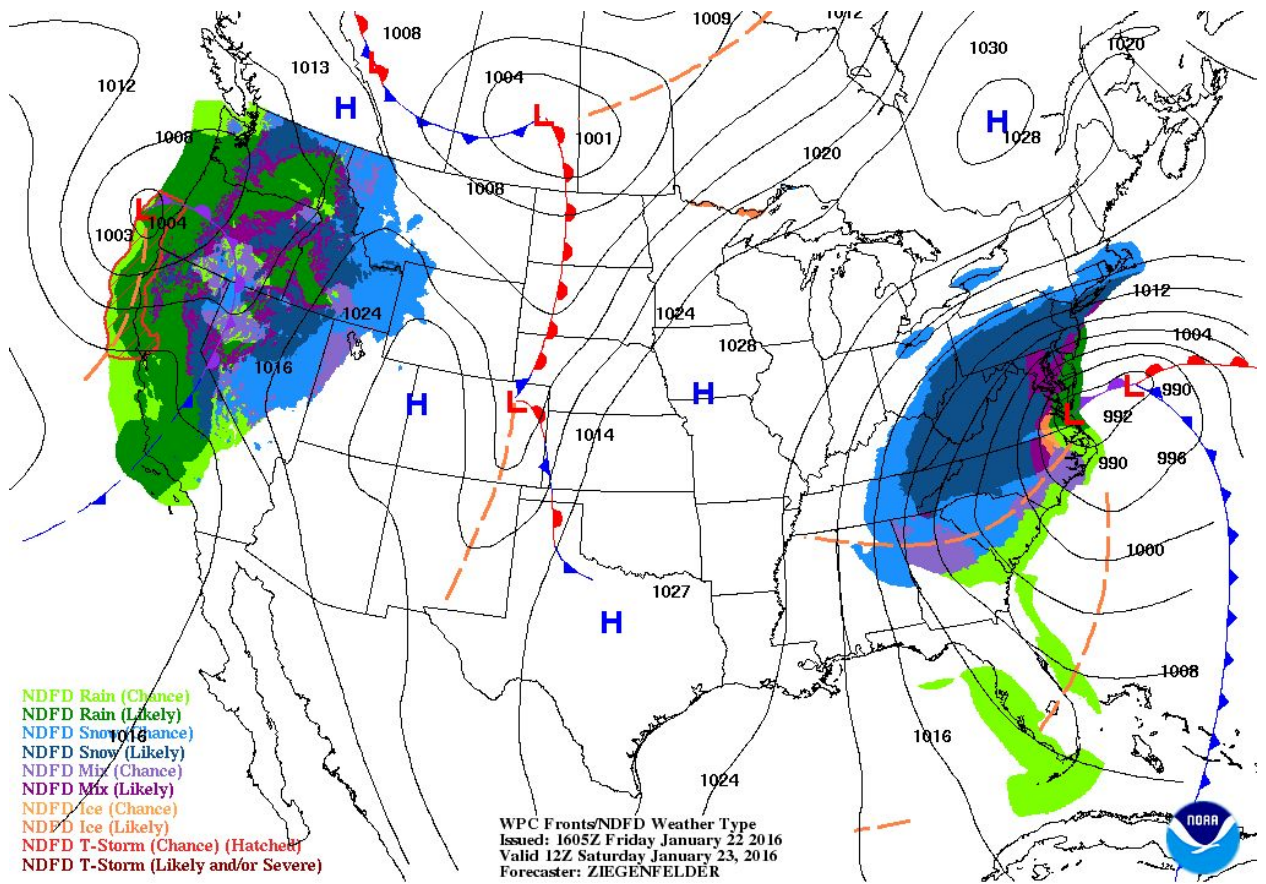


Short Range NWS Official US Outlook

NOAA Weather Prediction Center 6-hr Outlook: Valid 12Z Fri Jan 22



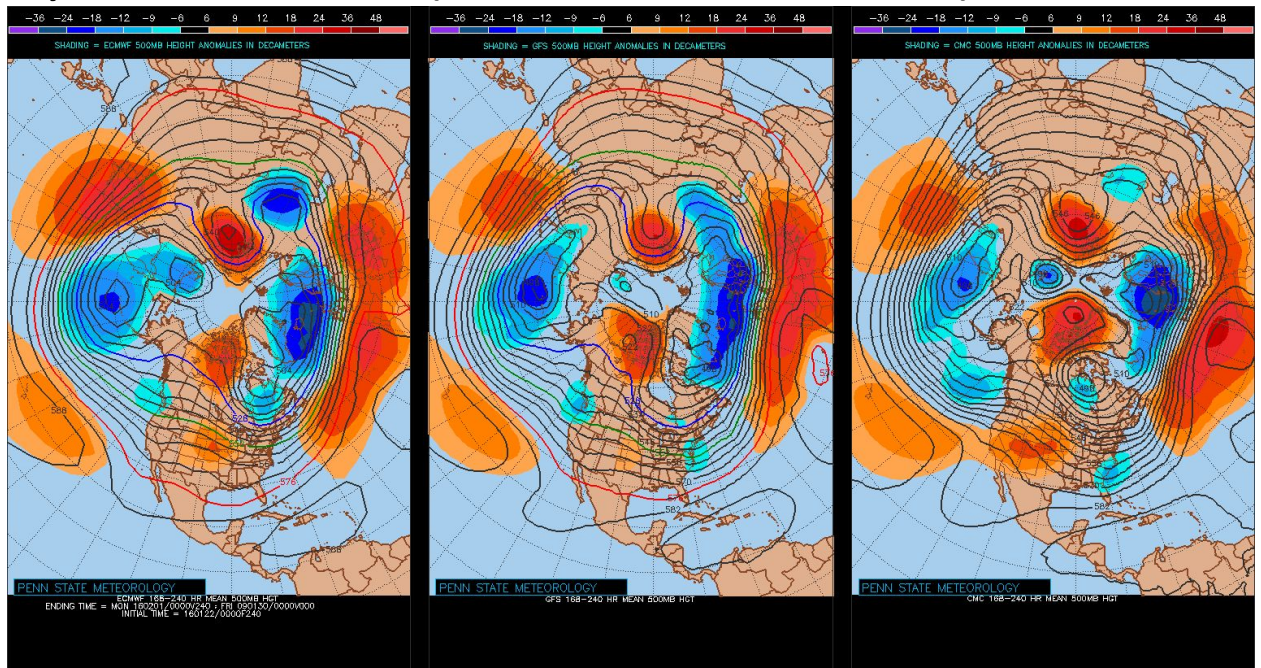
NOAA Weather Prediction Center 24-hr Outlook: Valid 12Z Sat Jan 22



Medium - Long Range Forecast

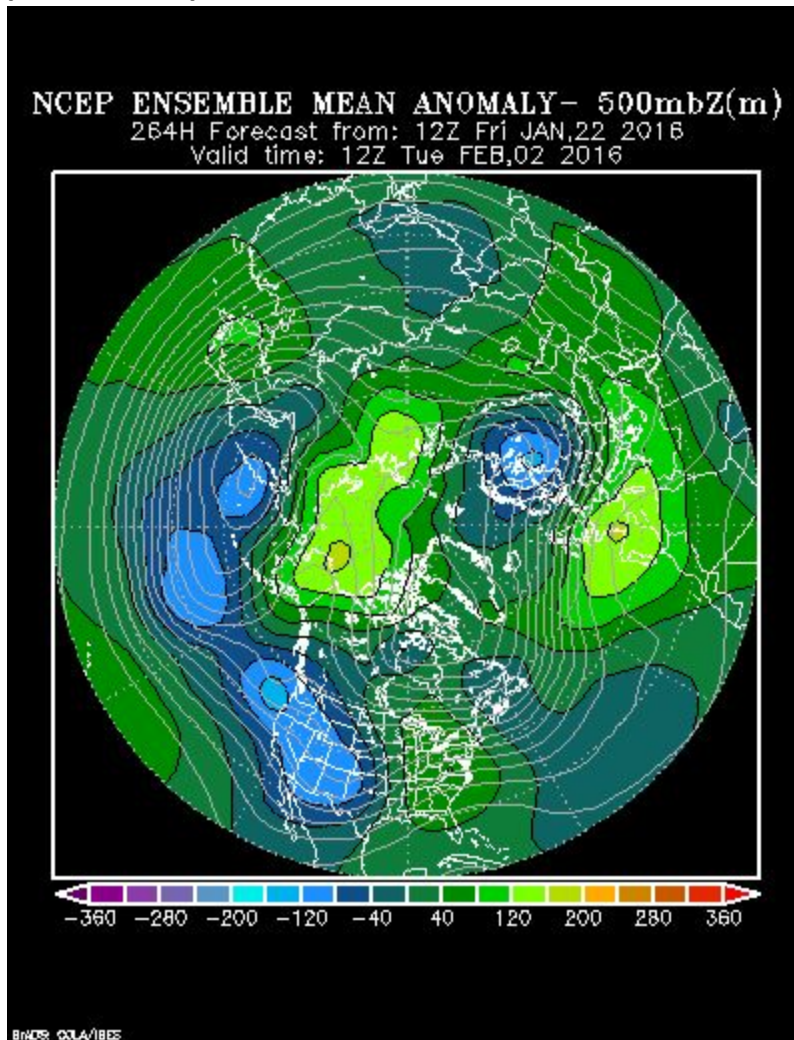
3 Model Intercomparison Deterministic Fcsts of 500Z/anomalies :

Day 7-10 Mean/anomalies (from 00Z Fri 22 Jan initializations)



Day 11 Ensemble Mean 500Z Forecast

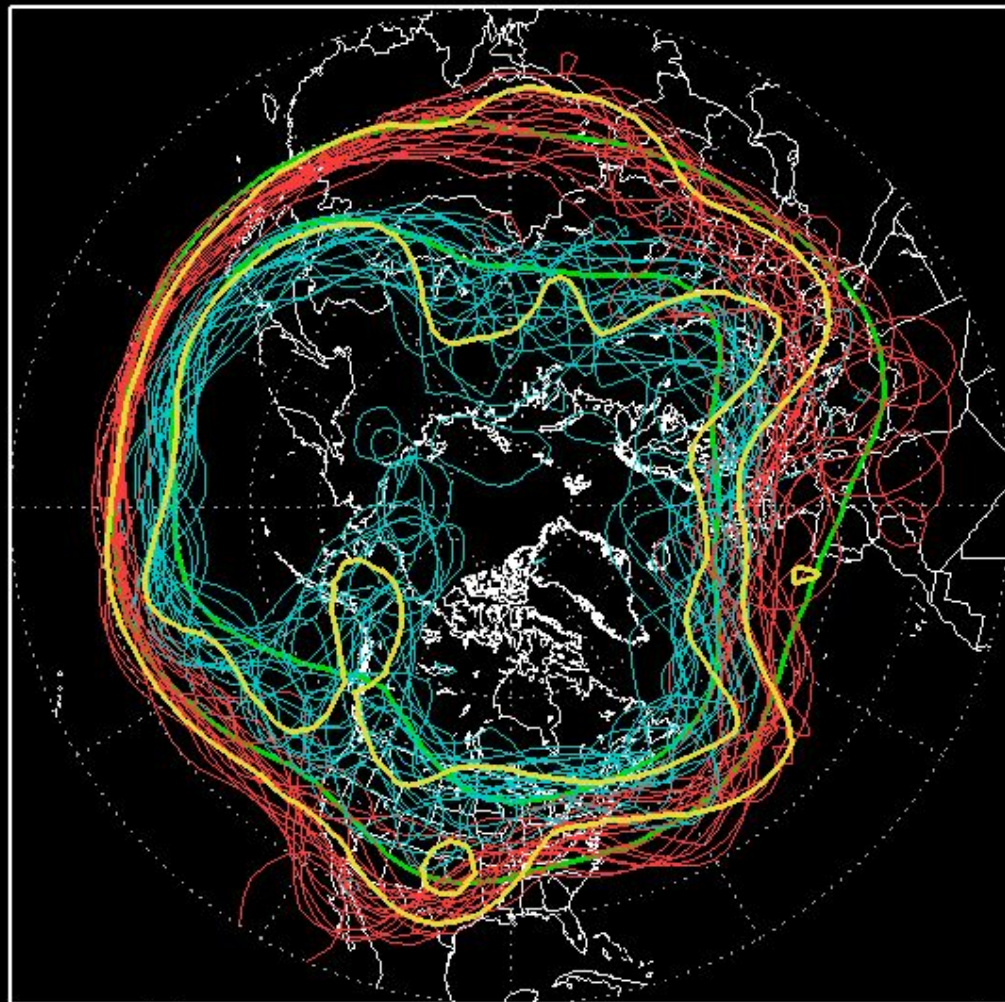
**NCEP GEFS Ensemble 500 mb Height and Anomalies Valid 12Z Feb 2
(264 Hr Fcst)**



Day 11 Ensemble Mean 500Z Forecast Uncertainty

**NCEP GEFS Individual Runs 500 mb Height Valid 12Z Feb 2
(264 Hr Fcst)**

NCEP ENSEMBLE 500mb Z
264H Forecast from: 12Z Fri JAN,22 2016
Valid time: 12Z Tue FEB,02 2016

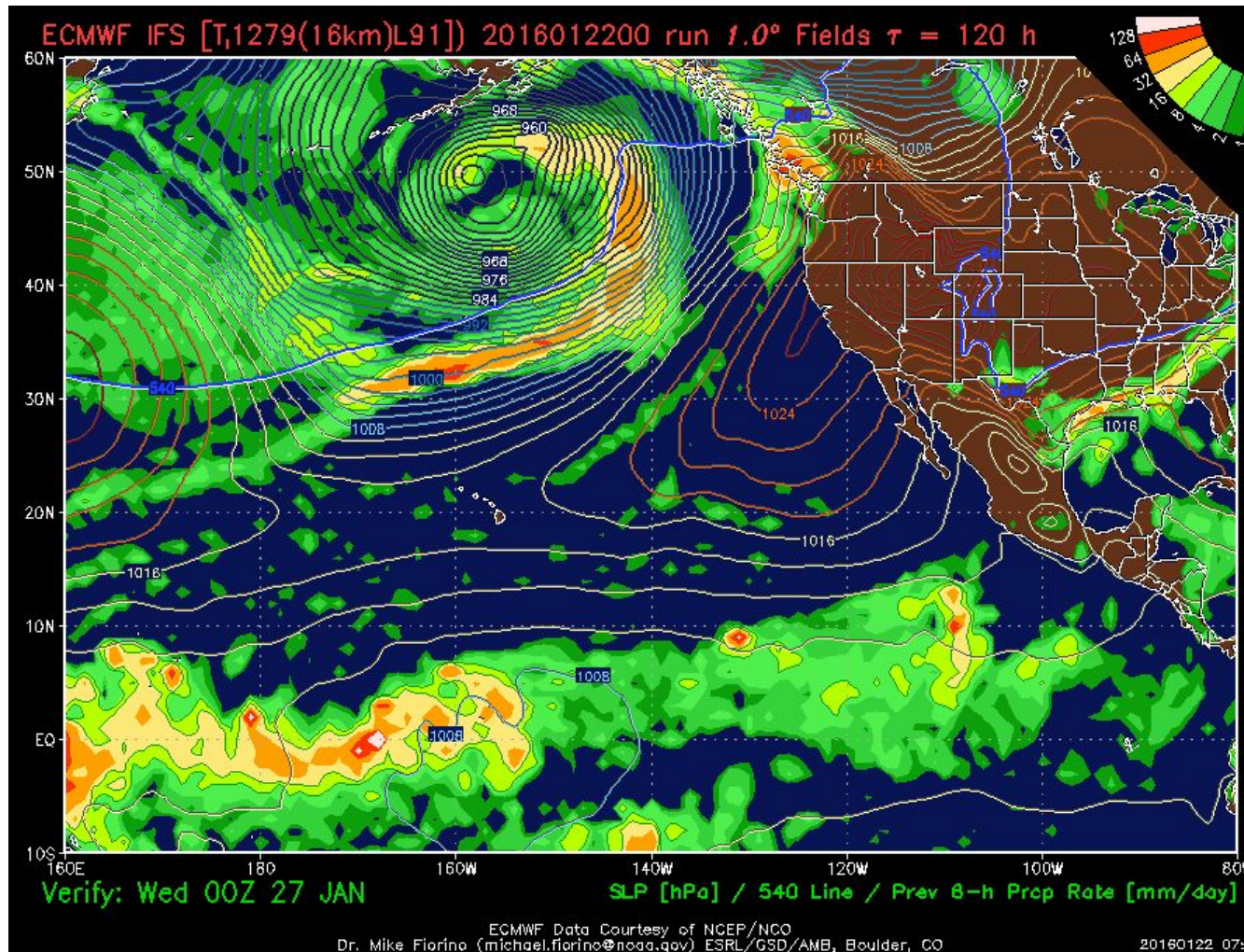


00z Runs:(21)

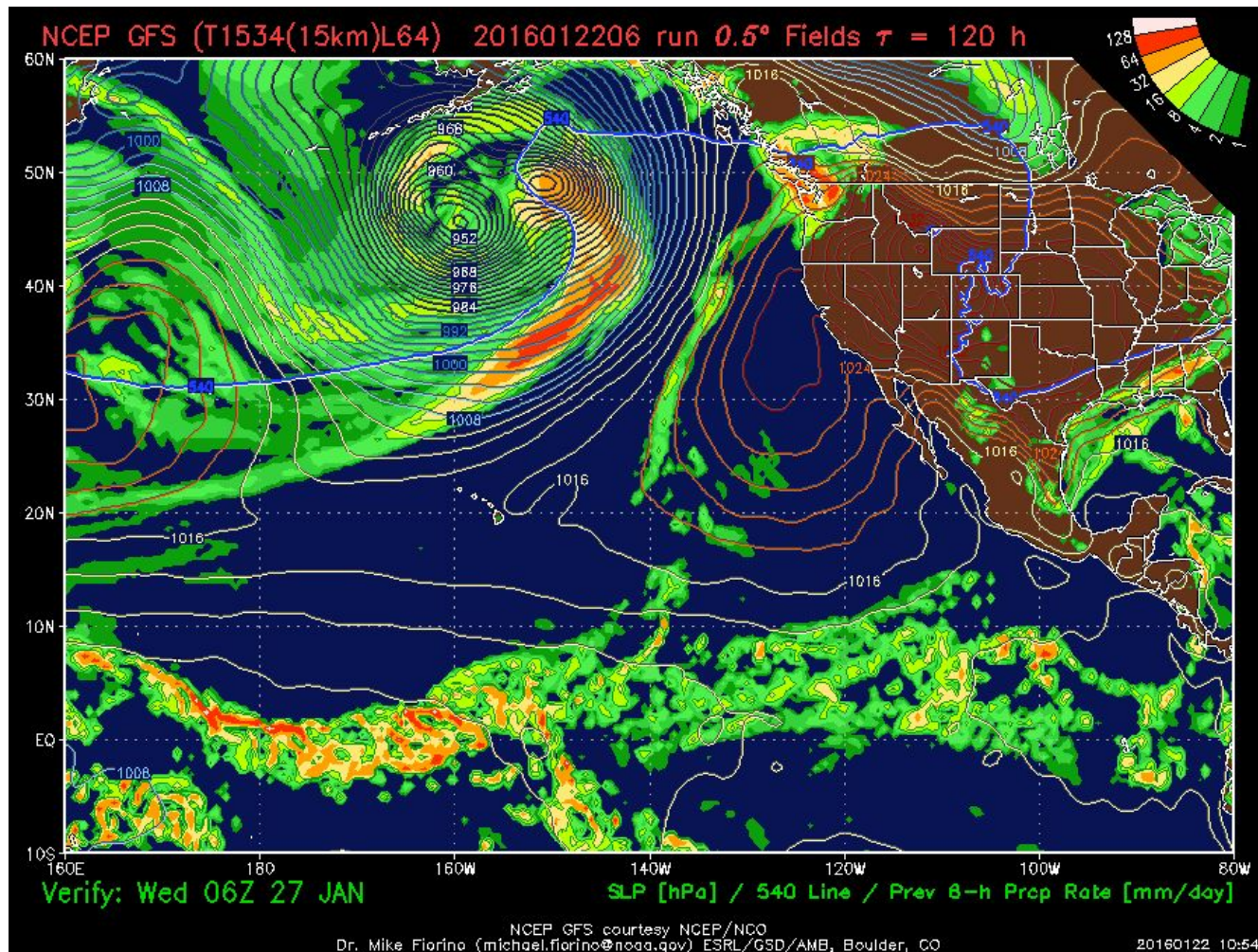
12z Runs:(0)

5400m 5640m Cntrl 00z Cntrl 12z CLIM

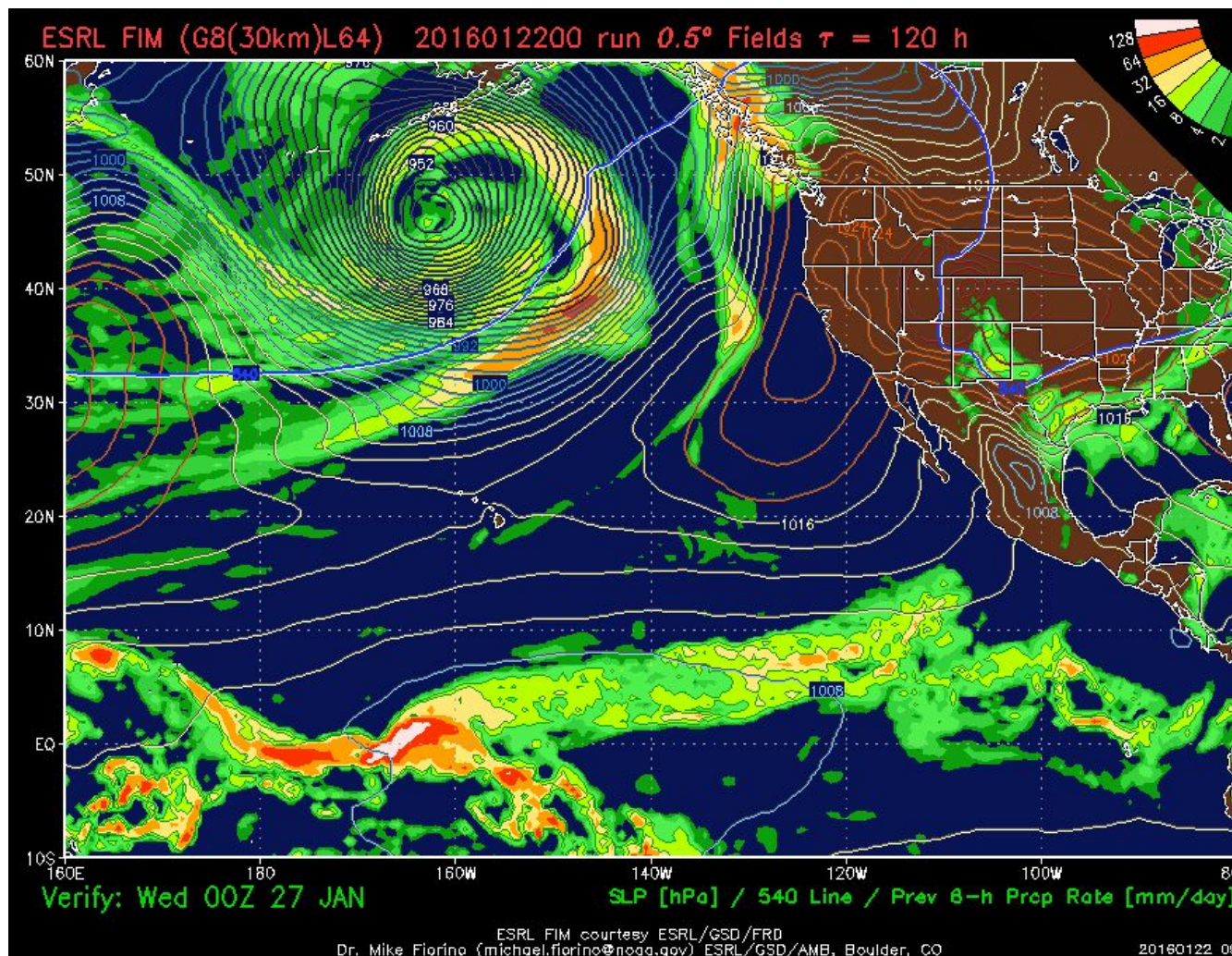
ECMWF Fcst for 00Z Wed 27 Jan (from 00Z Friday Run)



NCEP Fcst for 06Z Wed 27 Jan (from 06Z Friday Run)



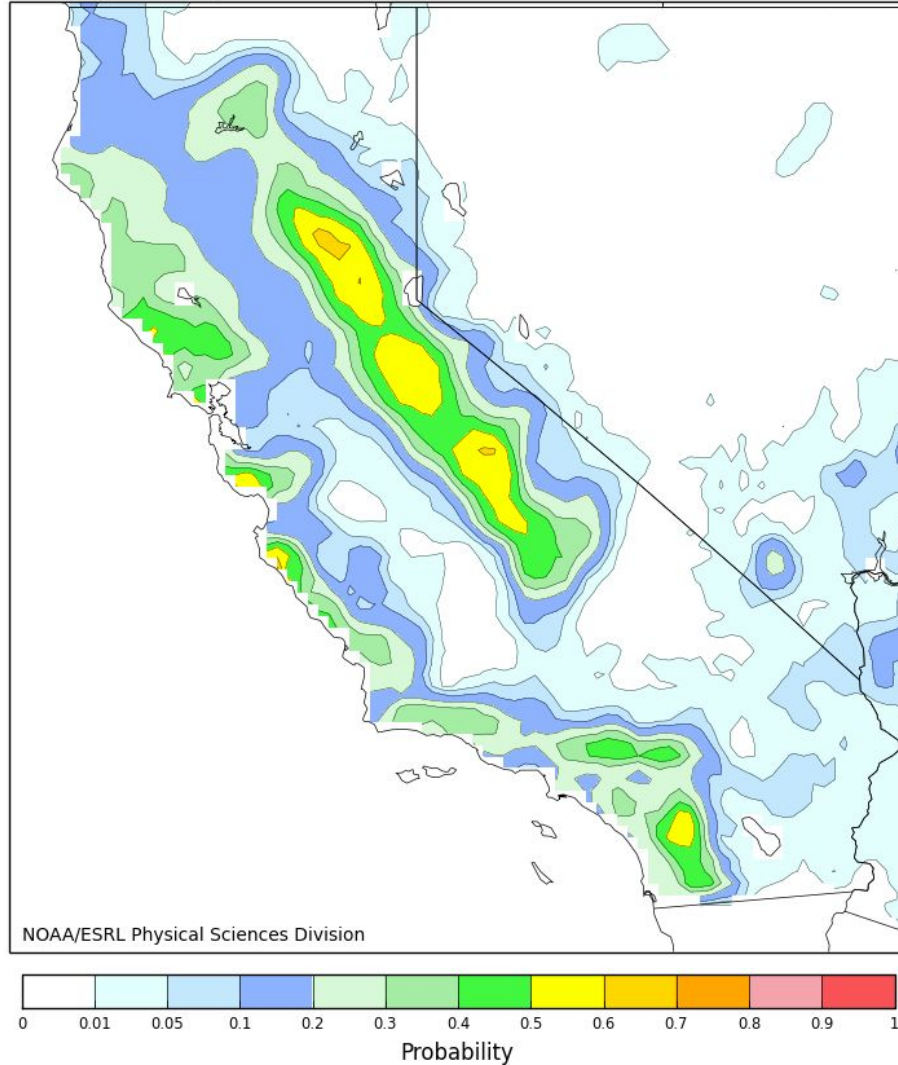
ESRL-FIM Fcst for 00Z Wednesday 27 Jan (from 00Z Friday Run)



ESRL-Calibrated Reforecast Pcpn :
Day 6-10 Fcst for 00z Wednesday -00z Mon February 1

(from the 00Z Friday ensembles of the experimental reforecast system)

120-240hr fcst from 00Z Fri Jan 22. Valid 00Z Wed Jan 27 - 00Z Mon Feb 01
Probability of Precip > 50mm. CSGD. 2002-2013 CCPA and Reforecast2 Calibration.



ESRL-Calibrated Reforecast Fractional Change in % Compared to Climo :
Day 6-10 Fcst for 00z Wednesday -00z Mon February 1

(from the 00Z Friday ensembles of the experimental reforecast system)

120-240hr fcst from 00Z Fri Jan 22. Valid 00Z Wed Jan 27 - 00Z Mon Feb 01
Ratio. Forecast/Climo Prob of Precip > 50mm. CSGD.

