BlipMap for Dummies

Get the best out of the forecast

Ramy Yanetz
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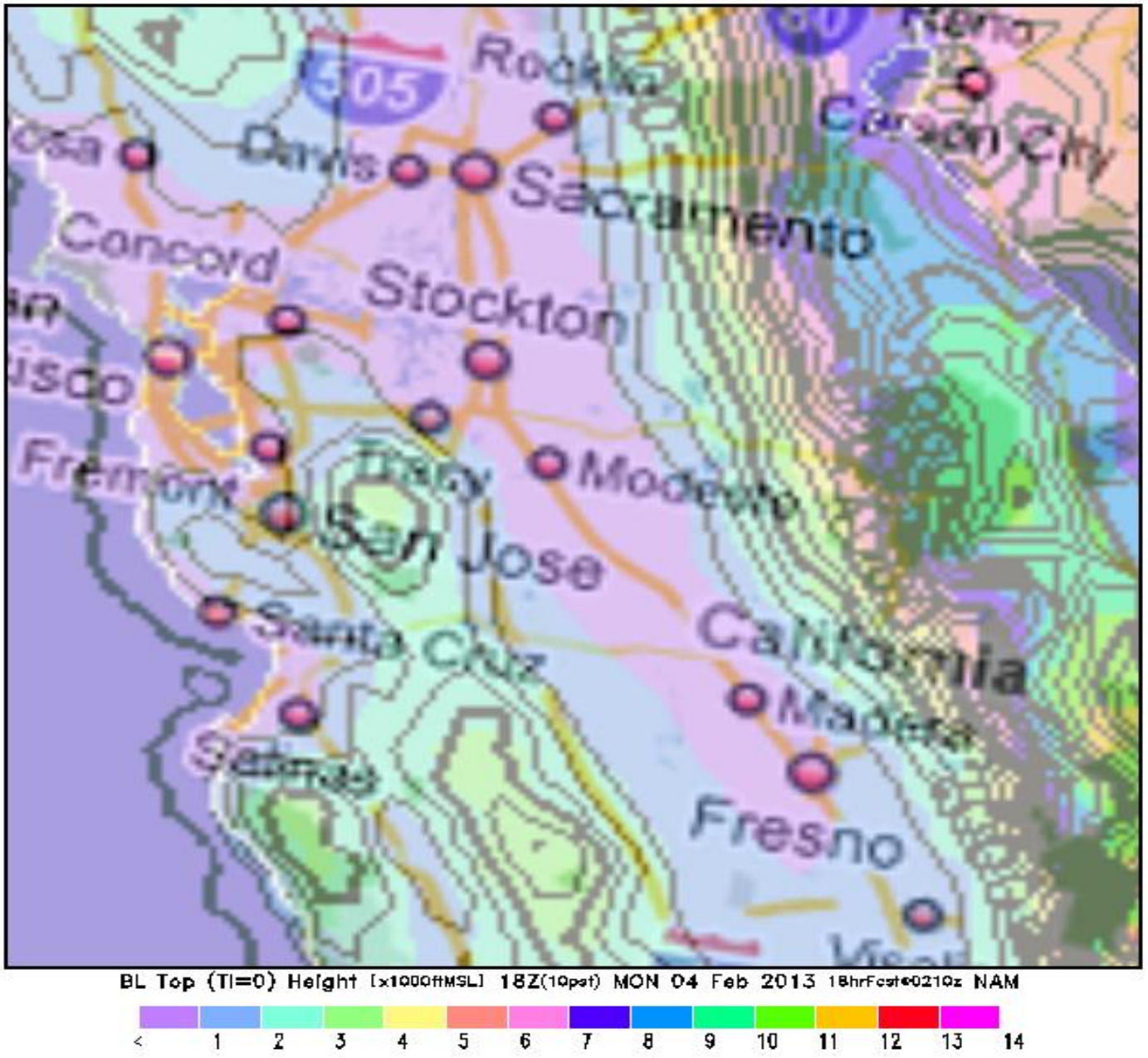
Getting Started

- First time Registration required (free)
- The following blipmap products are available:
  - NAM Model
  - RAP (RUC) Model
  - RASP
  - Blipspot
- Additional tools such as the UniViewer and iphone apps are also available and are helpful to get started. Those tools can provide:
  - single point of access to all maps and parameters.
  - maps overlays for better orientation
  - additional forecast times

Univiewer Screen Shot with overlay



Blipmap Advantages

- The following opinions and recommendations are mostly based on 10 + years experience in the California coastal ranges (Hollister, Byron, Avenal, Williams) as well as the Great Basin.
- When used and interpreted correctly, Blipmaps proved to be an excellent tool for accurately forecasting soaring conditions up to 3 days in advance
- While an excellent soaring forecast tool, blipmap does not forecast other weather features such as rain, hail, thunderstorms, and general weather patterns and as such should be used in conjunctions with other conventional tools such the NWS/NOAA Zone and Area Forecast Discussions for sanity check and safety.
- The key is to look at the right set of blipmap models and parameters and interpret them correctly. One should not try to assess the soaring conditions based on a single parameter.
- It is not as complicated as it sounds! To keep it simple I will be focusing only on the tools, models and parameters I find most useful.

How accurate blipmap really is?

- In over 90% of the days the max altitude achieved is within few hundreds feet from forecast!
- It also accurately predicts the location of best lift, convergence lines, clouds and cloud bases, as well as high clouds and overcast.
- In addition it accurately predicts wave location and strength.
- It is also a valuable tool for predicting upcoming great conditions as well as poor conditions up to 3 days in advance, resulting in much higher success ratio when using it as a planning tool to determine when and where to go flying.

NAM Model

- Available up to 3 days in advance
- The most accurate model
- Best for checking top of lift (BLTop), cu potential, cloudbase, wind and overcast up to 3 days in advance
- Easiest map to read due to best color scale
- Tendency to be overly optimistic in the longer term
  - If it indicates conditions which looks to good to be true, it probably is
  - If it indicates poor weather, it will most likely be true
- Inaccurate for the valley, Unless it is a post frontal unstable day.
- Map refreshes every 6 hours
- last run is the 9hrs forecast

Blipmap Parameters

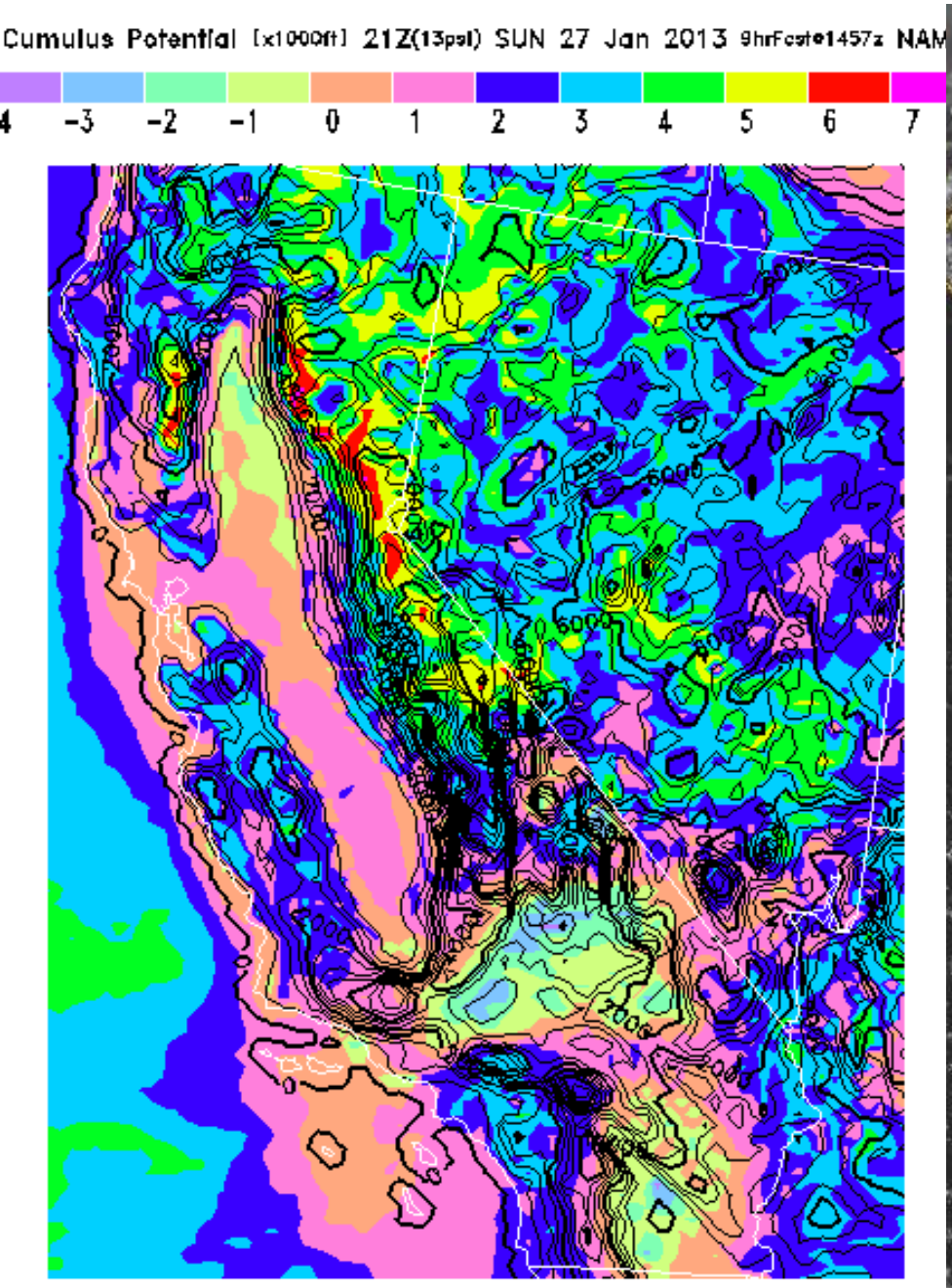
- Altitude is color coded. The classic coloring provides better color contrast than the fix coloring, but the legend is not fixed, and can change from run to run.
- **BLTop** – Max height of blue thermals. More accurate for the mountains. If it looks overly optimistic a good rule of thumb is to subtract 1000 ft per day from BLTop. Current forecast is usually very accurate. If cu are predicted, you can skip this parameter.
- **Hcrit** – Expected max altitude - usually more accurate for flatlands, not for convergence induced thermals over the mountains. Use this parameter instead of BLTop with the RASP model.

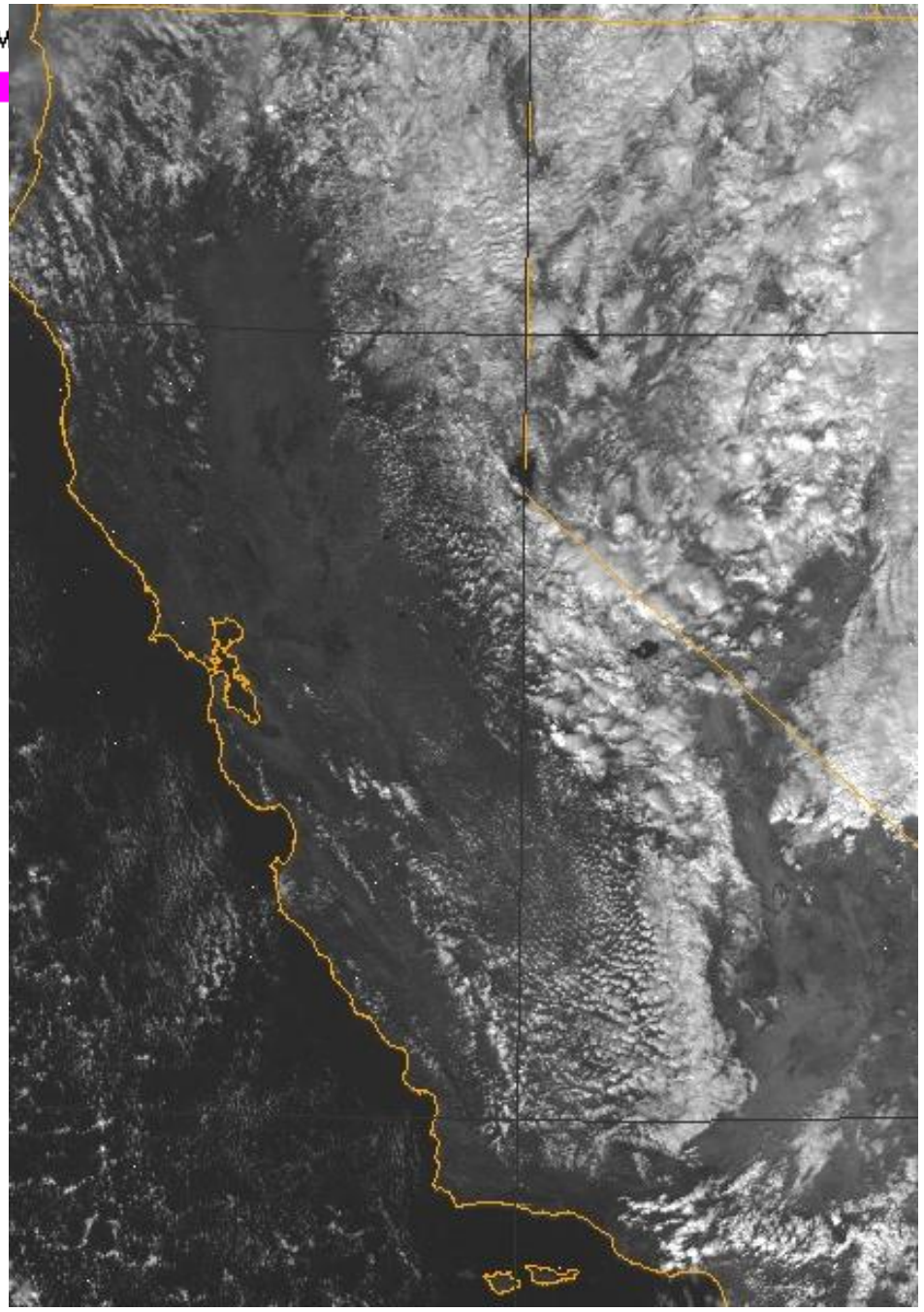
Blipmap Parameters

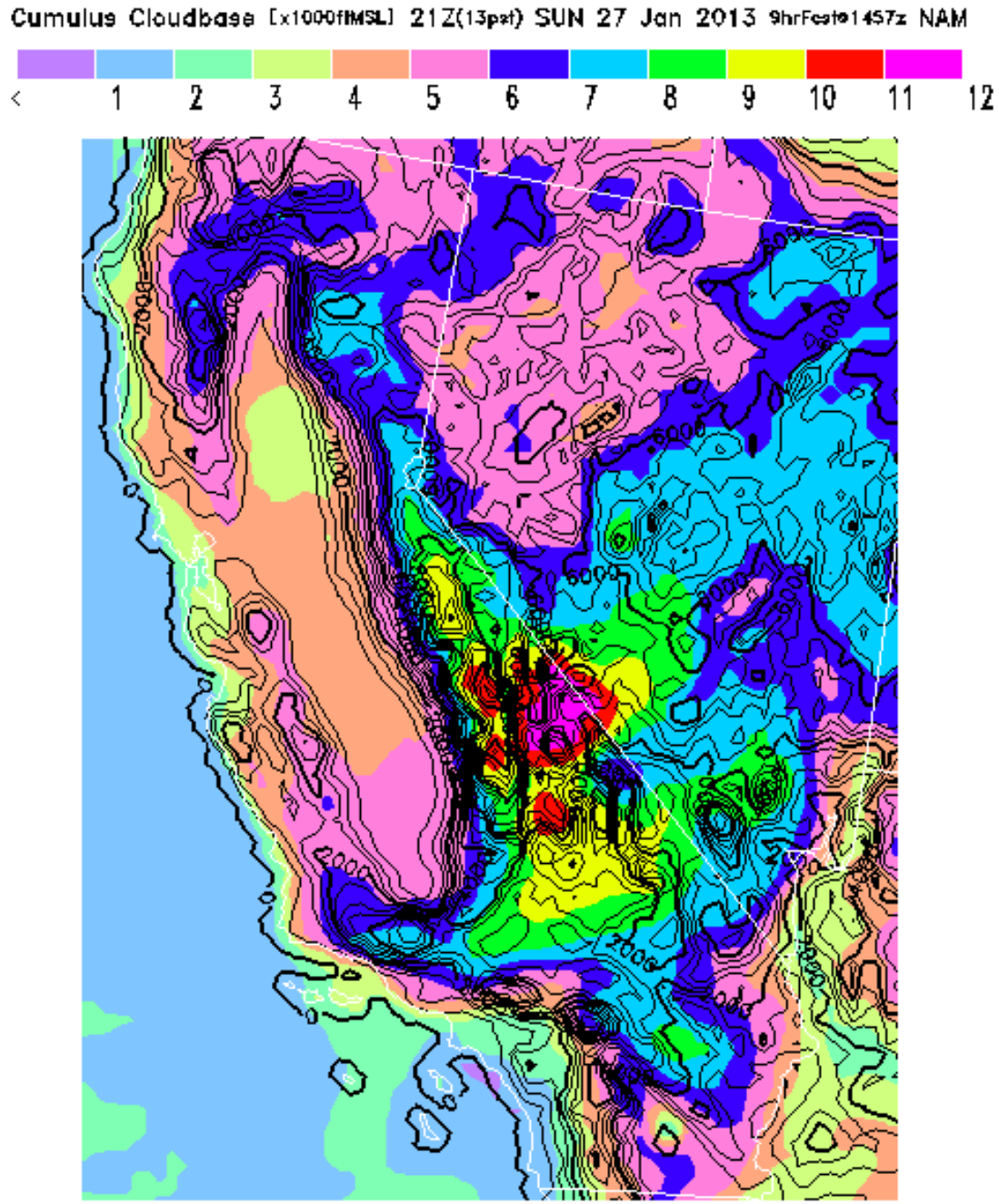
- **Cumulus Potential** – Very reliable. Zero and above indicates good chance for cu, the higher the number the higher the chances and the taller the cu. some locations will have cu even with -1, while other may need to have at least +1. above 3 indicates potential for OD.
- **Cumulus Cloudbase** – Cloudbase height, only meaningful in areas where cumulus potential is positive. Accurate for most areas but usually indicates worst case scenario.
- **Composite** cumulus cloudbase where potential > 0 – combining both parameters but color contrast is poor.
- **Total cloud cover** – A very reliable indicator for high clouds. Large white area (100%) indicates high likelihood of some level of overcast. Could be thin high clouds or total overcast.

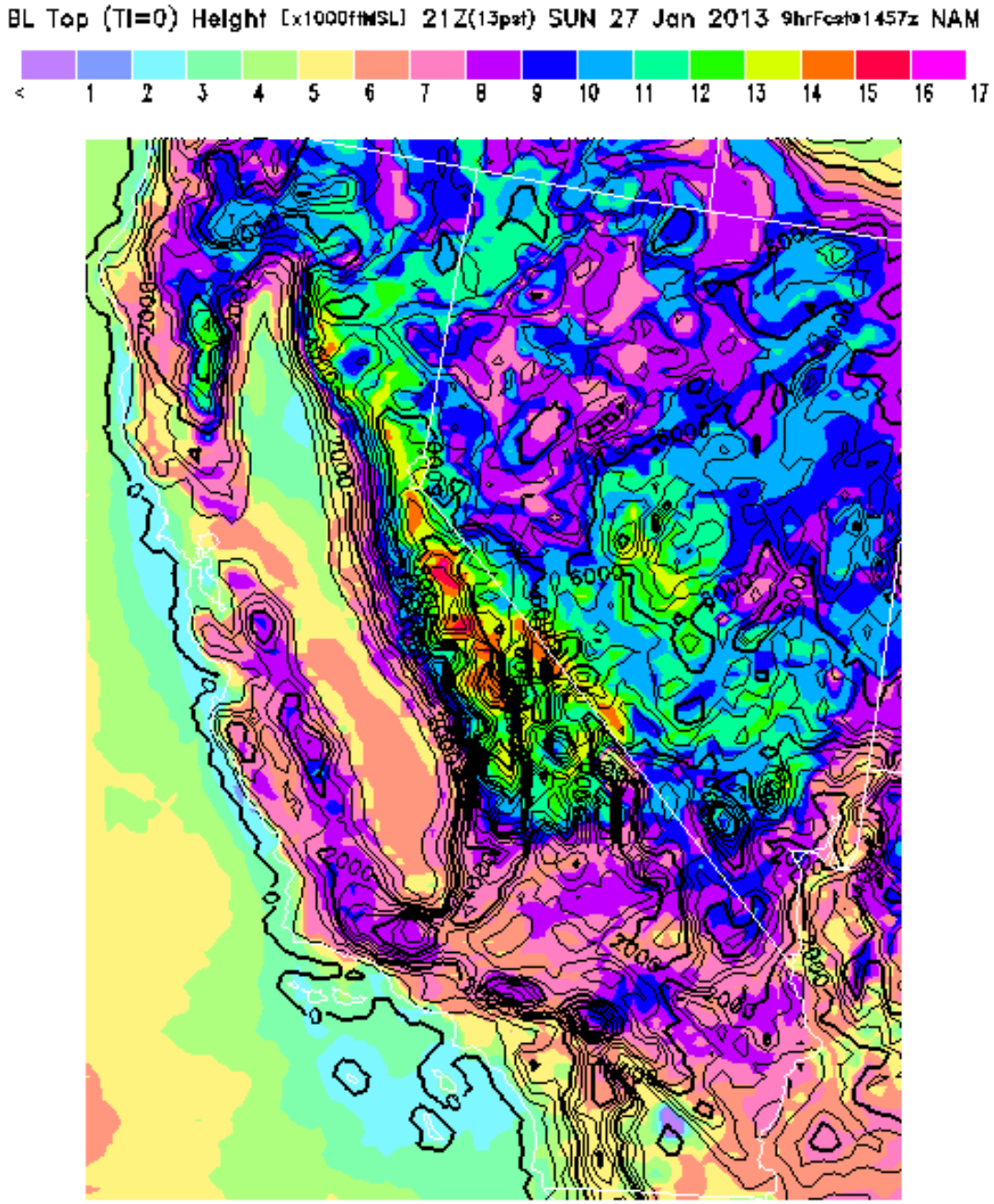
Blipmap Parameters

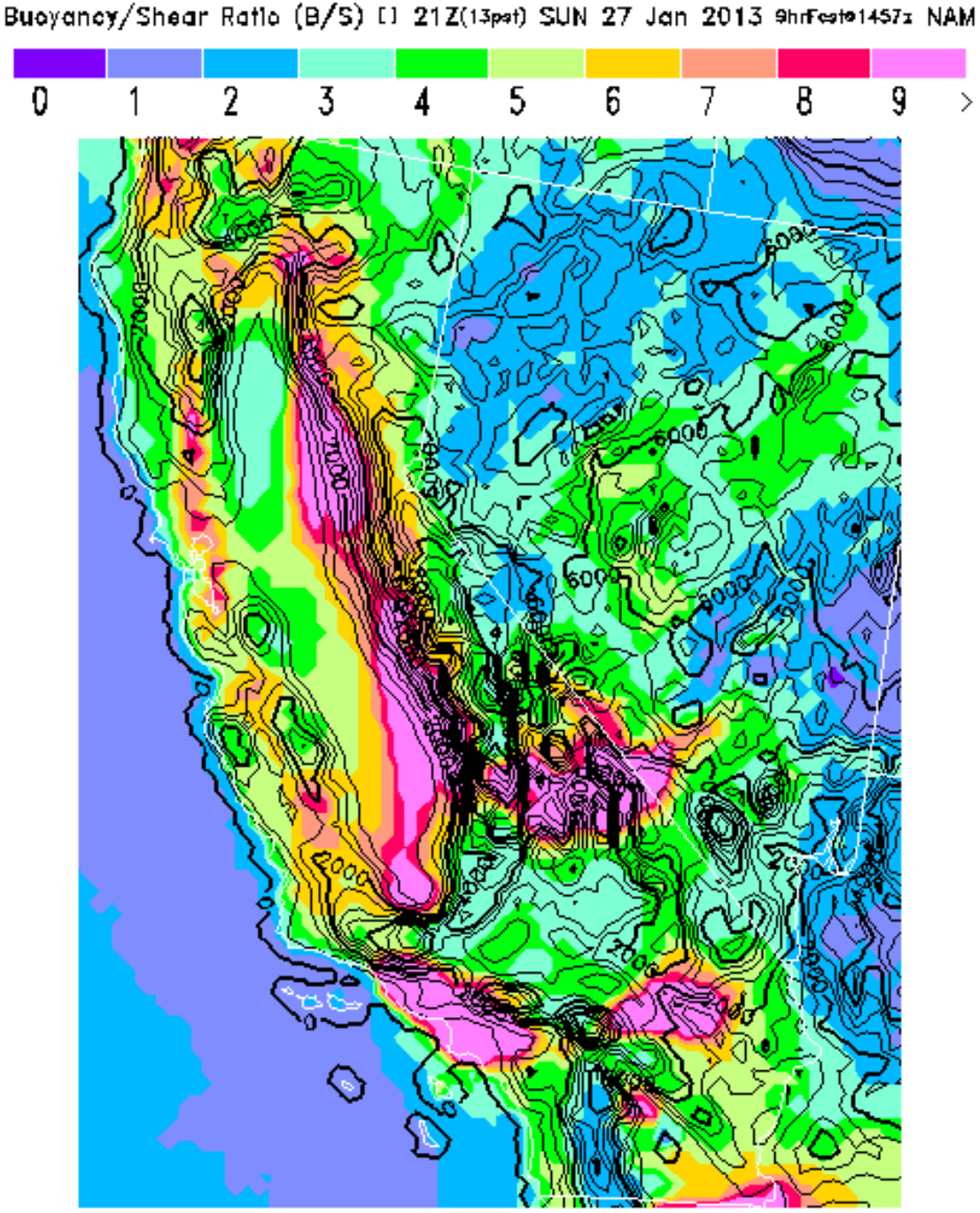
- **OD potential** – Similar to cumulus potential, can indicate areas of potential OD. Not very accurate. Use cumulus potential instead.
- **BLMax Up/Down (convergence)** – Indicates the area and strength of the convergence (50 and above indicates strong convergence). Usually it correlates with BLTop anyway, but can be used to determine how dominating the convergence will be, and if it moves during the day. Most useful and accurate with the higher resolution RASP.
- **Wind speed and direction** – The average wind speed and direction in the boundary layer

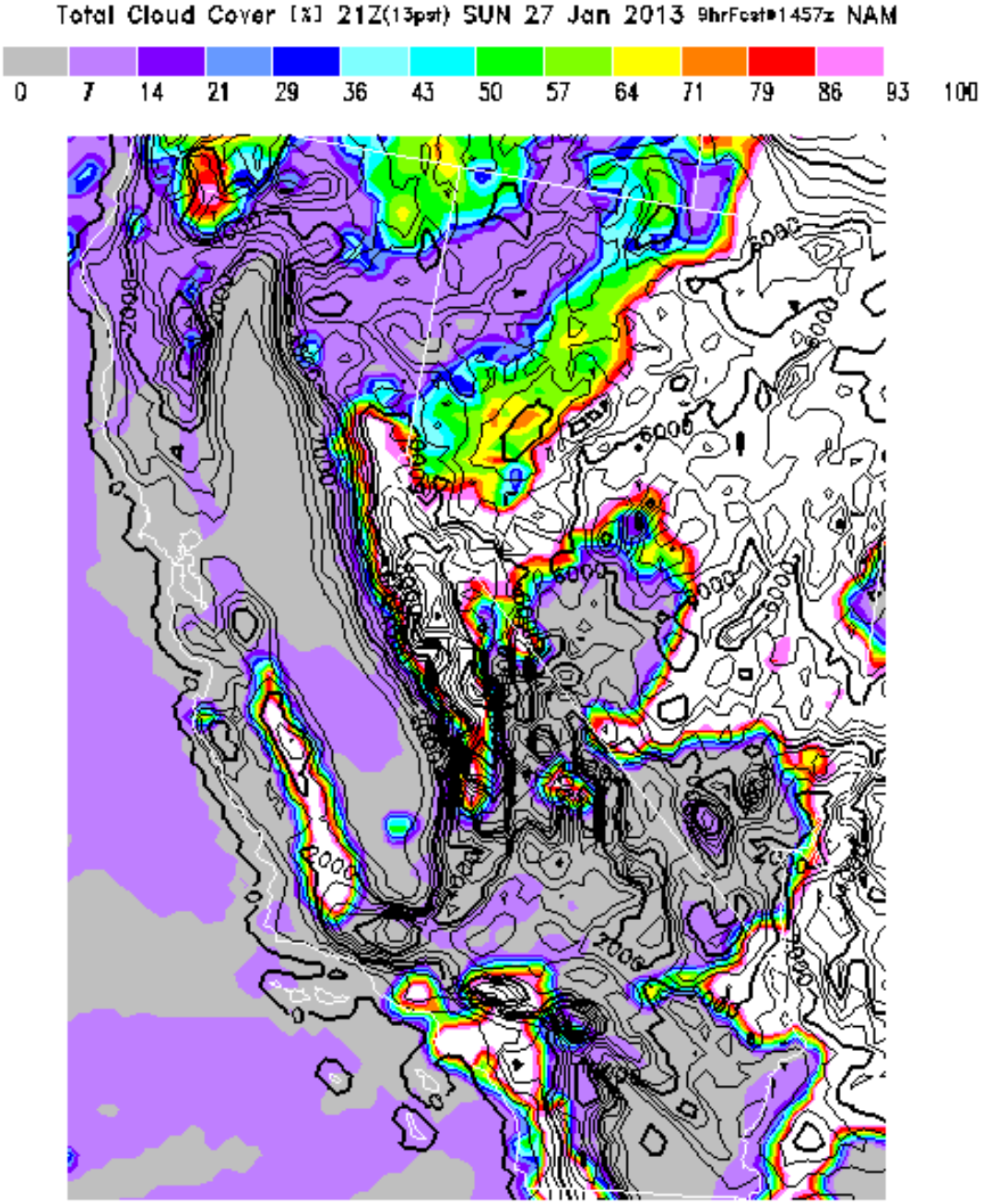

Cumulus Potential [x1000ft] 21Z(13pst) SUN 27 Jan 2013 9hrFcst@1457z NAM
-4 -3 -2 -1 0 1 2 3 4 5 6 7

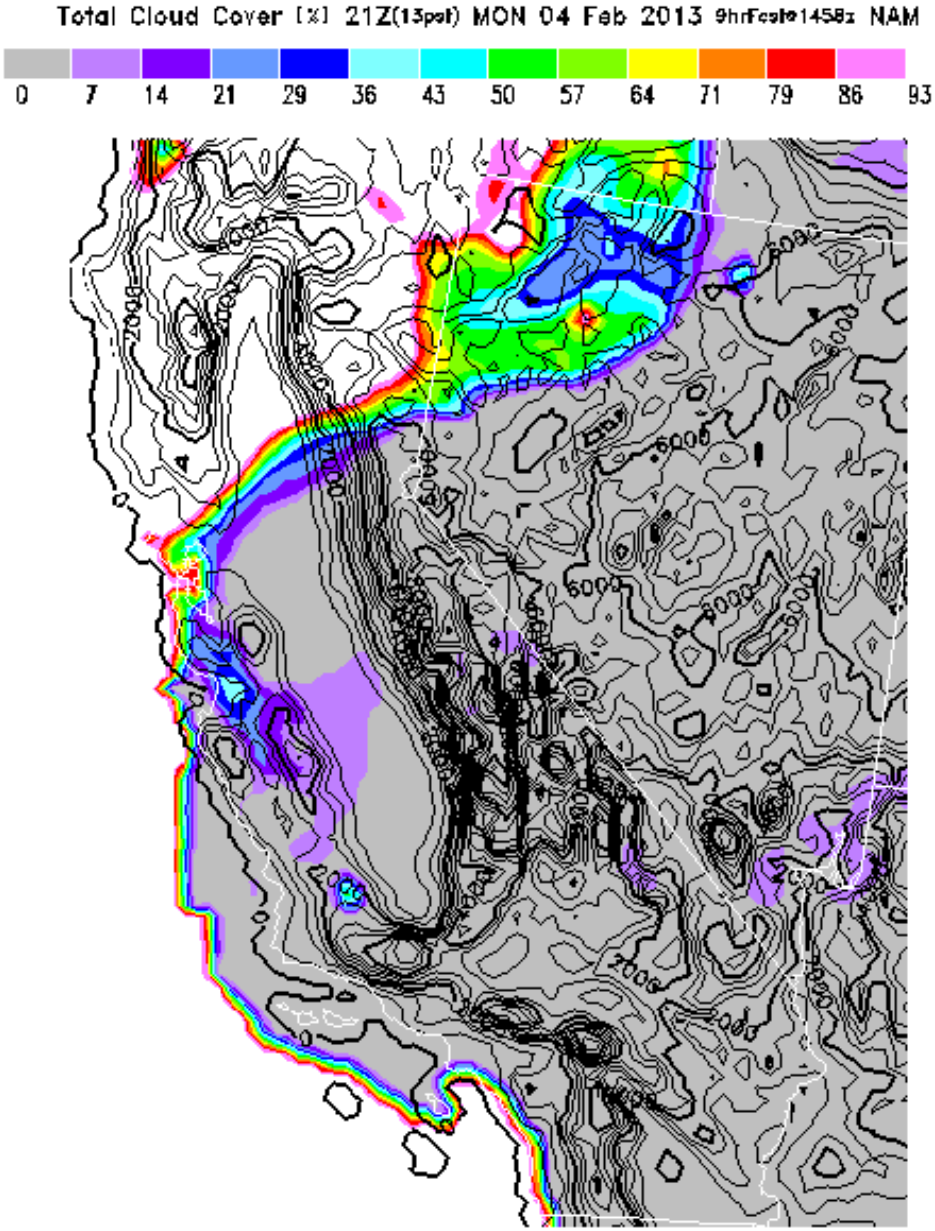


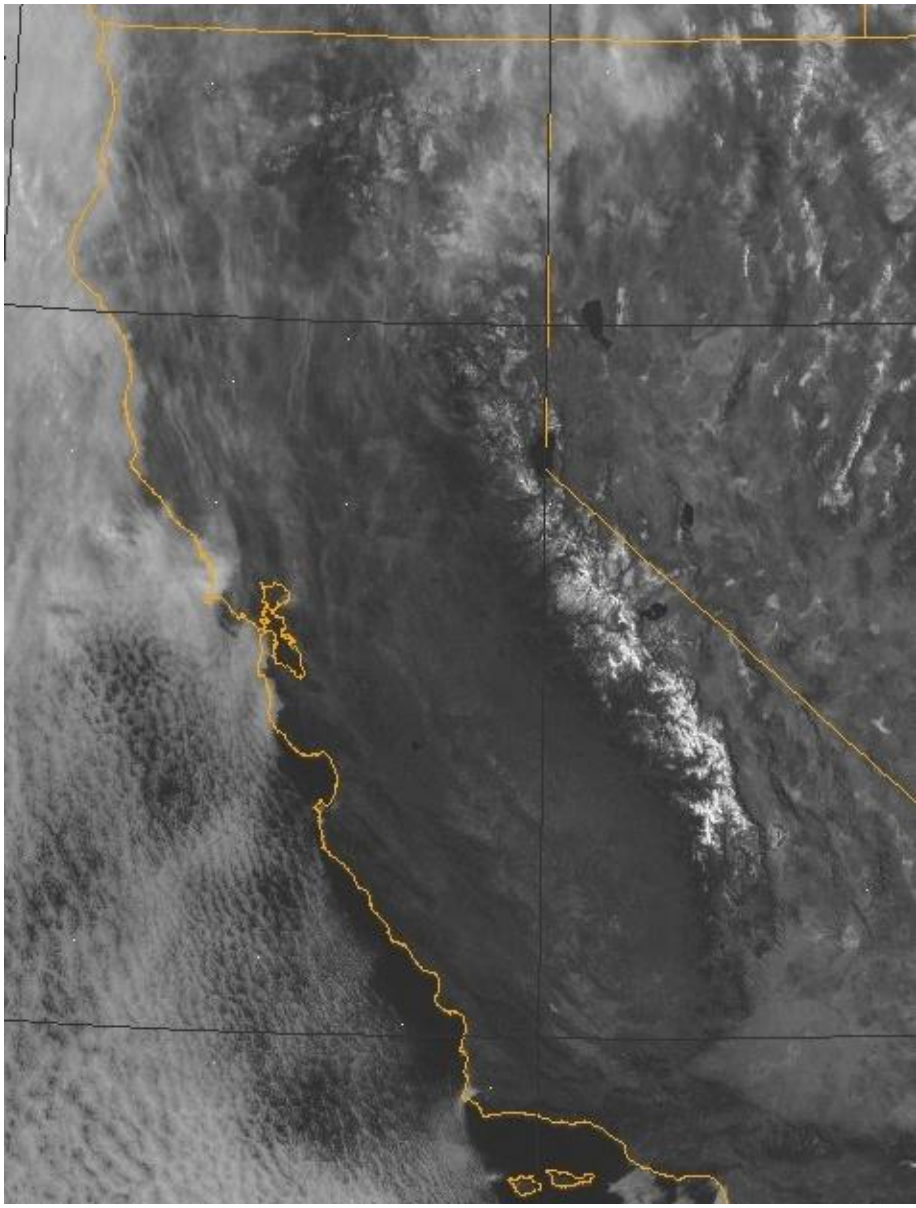

Cumulus Cloudbase [x1000ftMSL] 21Z(13pst) SUN 27 Jan 2013 9hrFcst@1457z NAM
< 1 2 3 4 5 6 7 8 9 10 11 12


BL Top (TI=0) Height [x1000ftMSL] 21Z(13pst) SUN 27 Jan 2013 9hrFcst@1457z NAM
< 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17


Buoyancy/Shear Ratio (B/S) [] 21Z(13pst) SUN 27 Jan 2013 9hrFcst@1457z NAM
0 1 2 3 4 5 6 7 8 9 >
6000
7000
8000


Total Cloud Cover [%] 21Z(13pst) SUN 27 Jan 2013 9hrFcst@1457z NAM
0 7 14 21 29 36 43 50 57 64 71 79 86 93 100


Total Cloud Cover [%] 21Z(13pst) MON 04 Feb 2013 9hrFcst@1458z NAM
0 7 14 21 29 36 43 50 57 64 71 79 86 93



Other Blipmap Parameters

In addition to the parameters already mentioned, the following parameters may also be useful:

- Thermal Updraft Velocity (W) - It can give you an idea of the expected average climb rate but it has significantly lower resolution and is not very accurate.
- Hgt variable – Thermal height variability – indicating how sensitive BLTop is to surface temperature. The higher the number the bigger deviation in BLTop is expected with temperature changes. So high numbers means the day has the potential to be much better or much worth with small changes in temperature.
- B/S – Buoyancy/shear ratio. Low numbers (below 5) indicates potential choppy thermals. Usually not significant when cus are presented.

RAP(RUC) Model

- Available for current day only
- Available only in the morning
- Multiple time predictions (5 times per day)
- Refreshes every 3 hours
- Last run is the 6hrs forecast
- More pessimistic and less accurate than NAM for our area

Blipspots

- For the actual numeric values for a specific spot, click on a spot in the UniViewer or use blipspot site (Available only for specific areas)

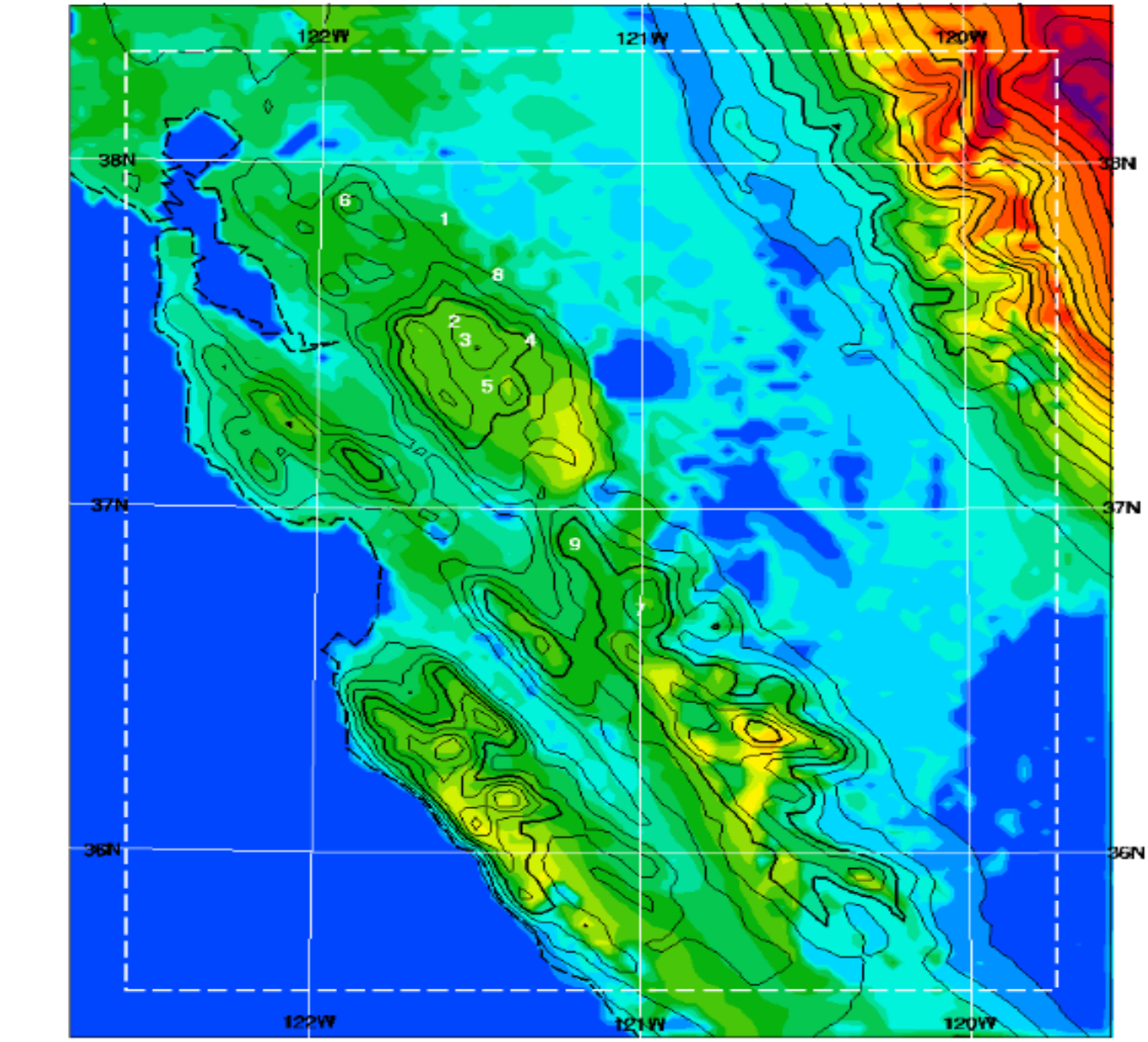
RASP Blipmaps

- Available the prior evening and up to 2 days ahead
- Much higher resolution: 3KM and 750m
- Best for determining exact area of best lift, convergence (BL Max Up/Down) and wave
- BLTop usually overly optimistic, so use Hcrit instead. Less reliable than NAM.
- Clouds parameters are not as accurate as NAM. Cu potential is pessimistic while Cu base is optimistic and may indicate best case scenario.
- Color contrast usually not as good as NAM
- From the above reasons it is best to use RASP for location of lift and NAM for altitude

Height of Critical Updraft Strength (Hcrit)

Valid 1300 PST (2100Z) SAT 26 Jan 2013 [9hrFcst@1428z]

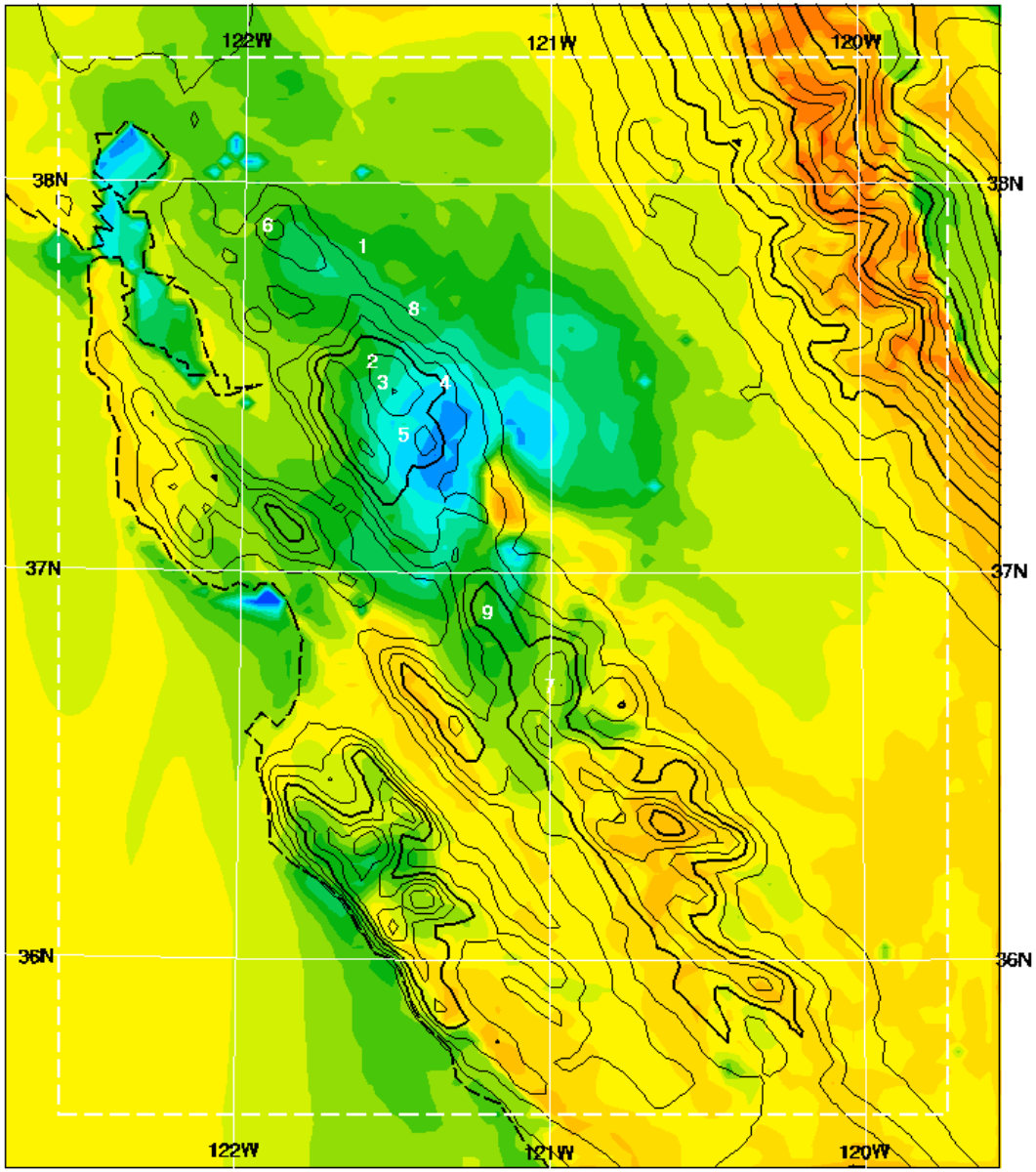
DrJack BLIPMAP from RASP 3.0km ETA Tdif WRF-ARW model



Cu Potential

Valid 1300 PST (2100Z) SAT 26 Jan 2013 [9hrFcst@1428z]

DrJack BLIPMAP from RASP 3.0km ETA Tdif WRF-ARW model



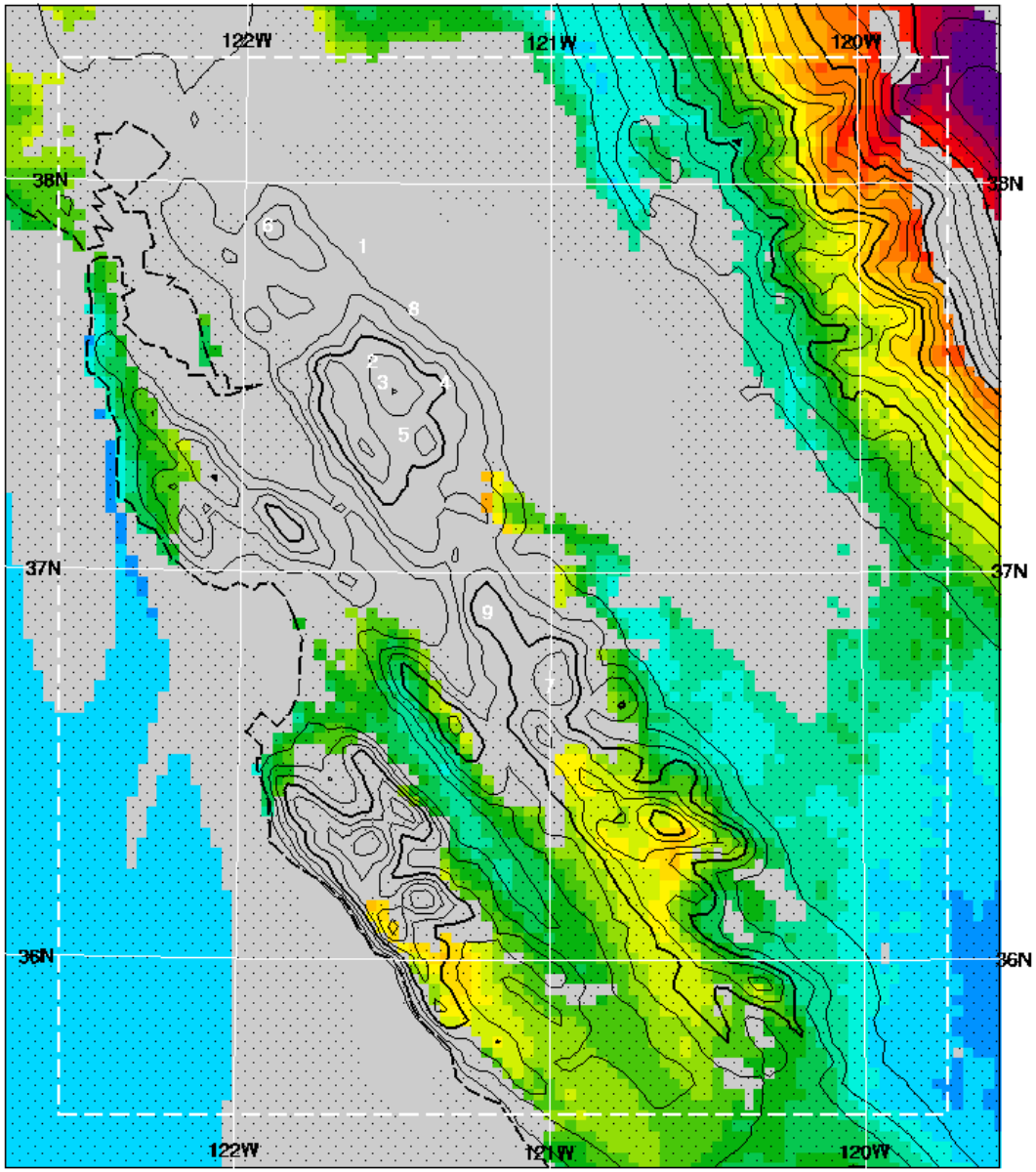
Terrain contours: 500 ft

FIXED [ft] COLOR -5000 -3500 -2000 -500 1000 2500 4000 FIXED [ft] COLOR

Cu Cloudbase where Cu Potential > 0

Valid 1300 PST (2100Z) SAT 26 Jan 2013 [9hrFcst@1428z]

Stipple shows cloud formation potential uncertainty of +/- 1000 ft



Terrain contours: 500 ft

FIXED [ft] COLOR

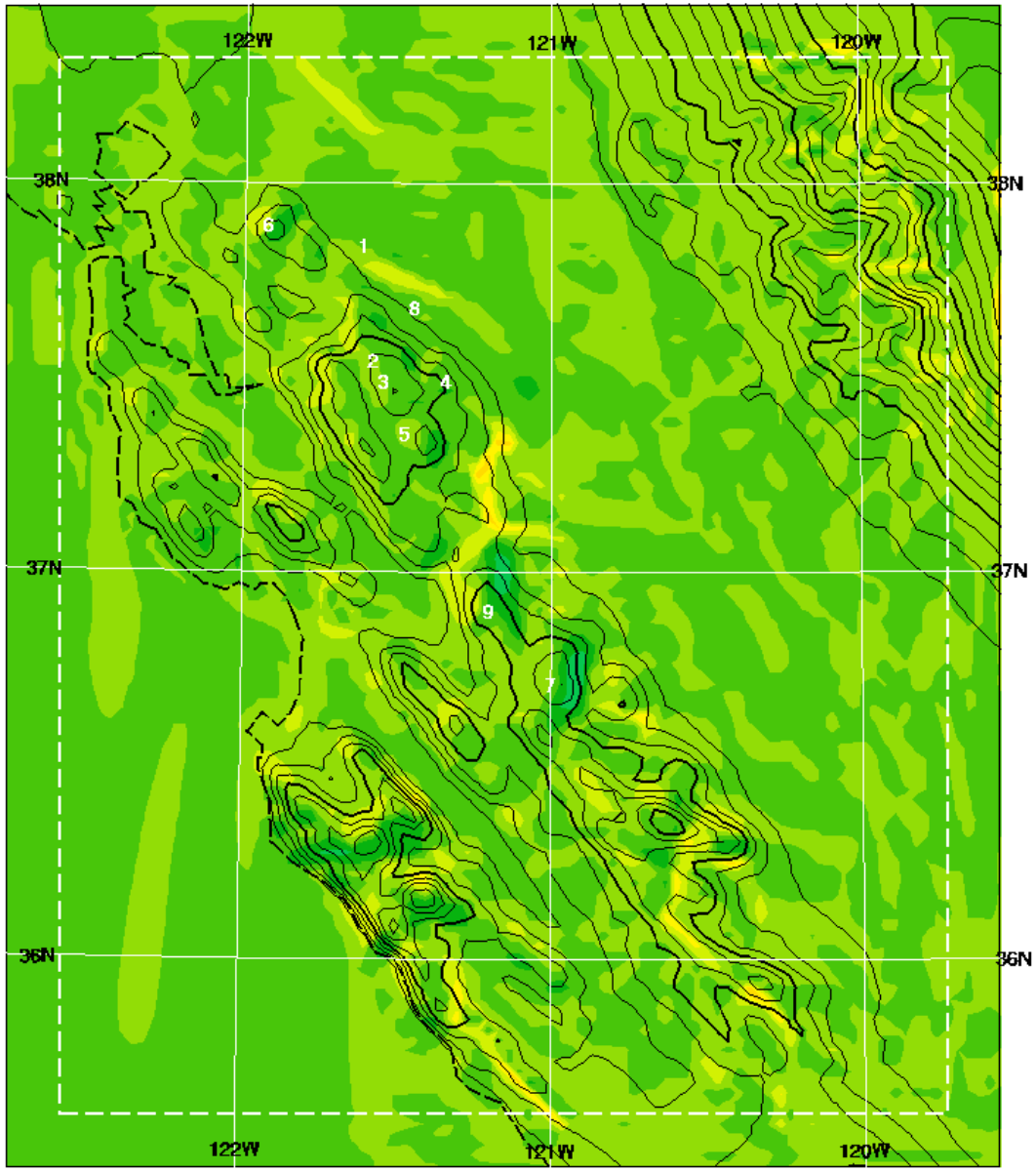
0 1500 3000 4500 6000 7500 9000

FIXED [ft] COLOR

BL Max. Up/Down Motion

Valid 1300 PST (2100Z) SAT 26 Jan 2013 [9hrFcst@1428z]

DrJack BLIPMAP from RASP 3.0km ETA Tdif WRF-ARW model



Terrain contours: 500 ft

FIXED [cm/s] COLOR

-200 -150 -100 -50 0 50 100 150 200 250 300

FIXED [cm/s] COLOR

How to use blipmaps

- Check the NAM forecast up to 3 days in advance.
- May be overly optimistic in the longer range, the shorter the forecast range the more accurate
  - New/next day forecasts are typically available after 6:30 PM.
  - Saturday's forecast is available Wednesday evening.
- Compare each day to determine the trend
- Make sure you are looking at the correct day and time.
  - The forecast day and period is indicated on the top. Look at the 1PM (21Z) forecasts.
  - Latest forecast (9hrs for NAM and RASP, 6hrs for RAP) is usually available around 9AM

How to use blipmaps (continue)

- Check the NAM BLTop (Height of Boundary Layer Top) which indicates how high you can get in blue thermals.
- Check NAM Cumulus potential and Cumulus Cloudbase. Note that cloudbase altitude is only valid if cumulus potential is positive.
- Check the “Total Cloud Cover” parameter. White (100%) indicates high clouds or overcast.
- Check wind speed and direction.
- On the prior evening check also RASP blipmap for higher resolution, especially for location of best lift and convergence lines.
- On the morning of the flight check also the RAP(RUC) model for sanity check. The more consistency between the models the higher the reliability of the forecast. If there are big discrepancies, a good rule of thumb is to average their values.

How to use blipmaps (continue)

- Determine best XC route for the day.
- For the Diablo range look for at least 6000 ft BLTop. Will most likely require high tow on blue days.
- If NAM predicts good cu potential (cu potential > 0) and cloud base of at least 4000ft it is likely going to be a good local/valley day.
- Determine best time to launch. Typically no later than noon, and as early as 10AM if the 10AM RASP indicates good lift.
- It is a good idea to compare actual results with the forecast using the “PreviousDay” links, to help fine tuning the forecast to your area

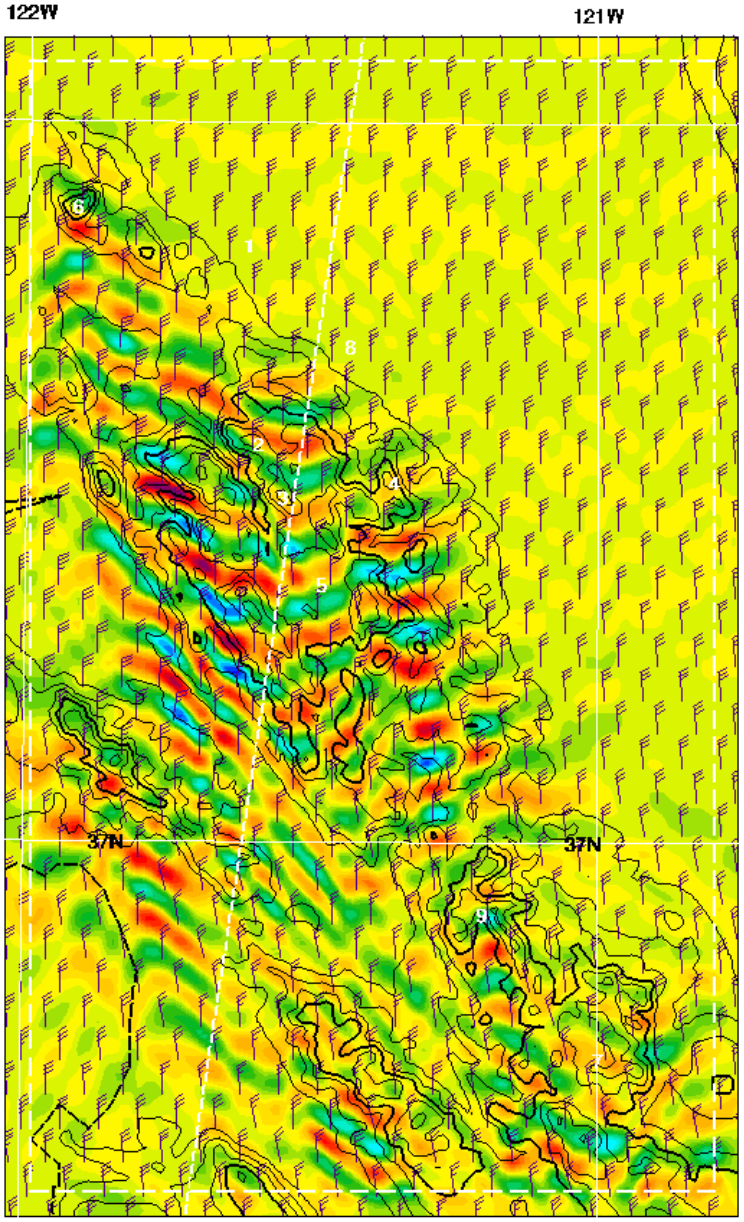
Using RASP for wave prediction

- Check for winds above 15 knots from North or SW (Ignore all the thermal related parameters)
- Check RASP wave parameters, especially the 750m model (available late in the prior evening)
- 3km resolution will show much weaker wave due to averaging
- Check the vertical velocities and cross sections.
- Should be over 100 cm/s (2 knots) for a usable wave (note that color scale is not constant)

Vertical Velocity & Wind [kt] at 700mb

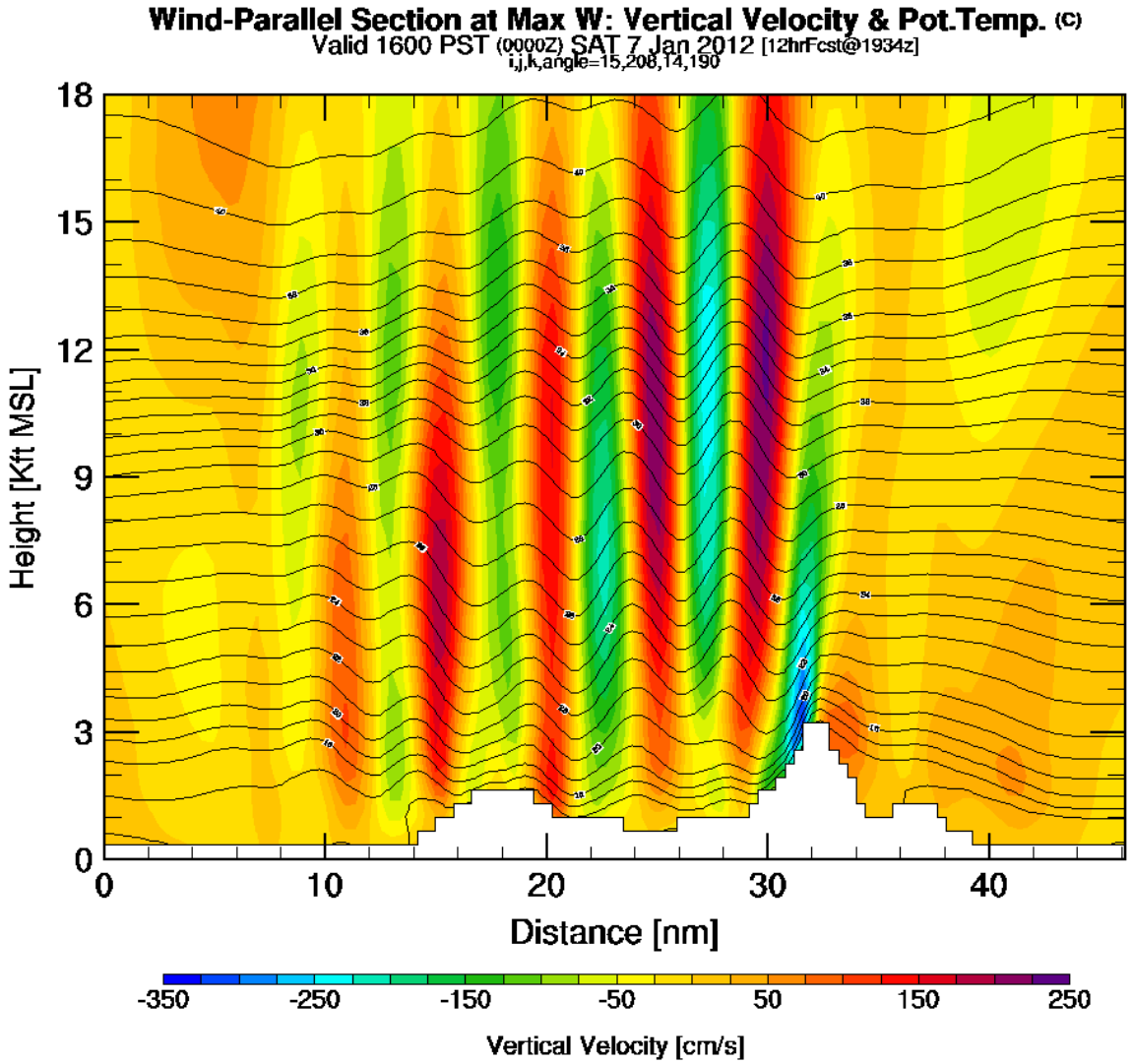
Valid 1300 PST (2100Z) SAT 7 Jan 2012 [9hrFcst@1708z]

boxWmax=358@36.95,-121.63,1500m



[cm/s] -300 -225 -150 -75 0 75 150 225 300 [cm/s]

Forecasting wave: Wave cross section



Resources

- NAM: http://www.drjack.info/BLIP/ETA/CANV/
- RUC/RAP: http://www.drjack.info/BLIP/RUC/CANV/
- Byron RASP: http://www.norcalsoaring.org/BLIP/BYRON/index.html
- Avenal RASP: http://soaravenal.com/RASP/index.php
- UniViewer: http://www.drjack.info/BLIP/univiewer.html
- Iphone blipmap viewer: www.darryl-ramm.com/iBLIP/
- Iphone RASP viewer: http://www.darryl-ramm.com/iRASP/
- Iphone RASP App - RASP