

# Debris Flow-2007/2008 Event Log

## IOP-7

Lat: 33.94933 N      Lon: -118.44217 W      Alt: 43 m      Truck HD: 100 deg  
 Date/Time SR1 ready for operation: 27 January 2008 0000 UTC

*Note taker: JJ Gourley (NSSL) and Ken Howard (NSSL)*

Time (UTC)	Event
2330	Arrived on site. All systems functional and normal.
0000	First data volume
0005	Several narrow band of light precip rapidly forming moving across bay towards burn areas.
0017	Possibly light showers moving over burn areas.
0047	A series of bands orientate roughly NW to SE moving in bay and over burn areas. Reflectivity currently less than 35. However, the bands are becoming more defined and increasing intensity with each volume scan.
0050	Visible satellite images show a series of bands moving towards the coasts. The low, looking at the sat loops, appears to be bottoming and accelerating eastward .
0102	Bands are becoming less linear and more cellular with ref increasing to upper 30s.
0104	Misting at radar.
0125	Several cells increasing in strength just south of burn areas. Cells continue to move north. Showers visible from radar.
0137	Light showers over burn areas. Stronger
0140	No additional activity is evident in Bay. Storms inland increasing in strength slightly over burn area.
0150	Weak shower activity out of burn areas. Additional activity moving into southern Bay.
0155	Sea clutter increasing
0210	Dinner break
0310	Deep convection currently occupies all of the bay with the passage of several cells over the burn areas. Big Rock Mesa .04 in last hour
0315	Cloud to Cloud Lightning west associated with cells 10km east form radar.
0317	Storms continue increase in intensity and more cellular in comparison to board area of reflectivity over gulf
0330	Activity over the gulf very laminar with patched areas of elevated reflectivity ranging from 35 to 40 . As these areas move inland they become more cellular and more intense with reflectivity's surpassing 50s in cores Clearly the orographics are focusing the convection and subsequently intense rainfall.
0331	Pronounced BB forming on Bay side
0335	Inland cores exceeding 55 dBZ. Nice contrast between bay and inland activity.
0340	Interesting minimum of activity over LA basin. Again the terrain is modulation the coverage and intensity of activity.
0350	Activity over Bay becoming more globular and larger patches of reflectivity's 35-

	45. BB feature becoming more well defined with increasing thickness. Cells inland over complex terrain very intense with the current exception of the burn areas.
0351	Light rain at radar.
0407	No significant reflectivity in burn areas rather very stratiform with patches of reflectivity 30-40 dBZ. Concerned that Qc is removing too much
0414	Double banding with BB feature
0420	Elevated reflectivity in eastern burn area. The better areas are east of burn areas with large patches of 35-45 dBZ.
0437	Rainfalls >.20 1 hour over burn areas based near by gauges.
0440	The board area of stratiform with patches of higher reflectivity presence in the Bay during the last two hour has consolidated a more defined narrow band extending inland from Pt Dume into the Bay. During the last 30 minutes the band has been focused on the area adjacent to and encompassing the burn areas. Expected substantial increase in rainfall rates as this band strengthens and persists over burn areas and further inland
0450	The impingement of band on the coast has increased in width with areas on either side of Malibu likely experiencing heavy rainfall. Hourly rates ending 450 remain below .15 in burn and adjacent areas.
0455	Winds becoming gusty at radar with light to occasional moderate rainfall at radar.
0500	BB feature increased in depth significantly – warm rain microphysical feature
0505	Rainfall 3 amounts exceeding .20 inches with gauges located in Pt Dume and Malibu areas. A nearly solid areas of reflectivity > 35 is current impinging on the coast of the burn areas.
0510	0 Isodop evident in reflectivity field CREF.
0513	VERY strong southerly flow in burn areas. Vel field are folded. Winds increasing at radar with moderate rain
0525	Sat connection slowing...possible as a result of the3 intense rain at radar.
0530	Winds and rainfall increasing . Zero Isodop parallel to coast of burn areas. Area of 35-40 dBZ plowing into coast and inland. Coastal gauges exceeding .25 hourly rate. Spepul Cyn .36 in last hour followed by Lechuza Patrol with .32.
0604	3H rainfall amount in Burn area exceeding .50 inches.
0610	During eth last hour a fairly significant impulse moved from the south and across the bur areas. Based on the velocity field this impulse may be tied to a wind maximum. The impulse was associated with increase region of reflectivity and subsequent rainfall. As the impulse moved inland rainfall rates increased with 3H amounts approaching 1in along the higher terrain. Impulse/Wind max continues to travel inland with a reflect minimum in its wake over the Bay
0620	North Bay reflectivity area adjacent to the burn areas has decreased in both area coverage and intensity. Additional band forming in south bay area north of Catalina Island. Both Sat and rgnl radar loops suggest decreased in activity over the next couple hours? LOL
0639	Area in the eastern bay area increasing and high reflectivity's moving the along the coast as well as inland between radar and Malibu. Heaviest activity east of burn areas. Gusty winds and occasional moderate rainfall continues at radar (associated

	with band).
0708	Gusty winds and light to occasional moderate rainfall continue at radar associated with area now completely on shore and moving NE. Extending from Santa Barbara to Long Beach an extensive area of moderate reflectivity moving across the coast and inland. This area is shifting eastward
0730	An area moderate reflectivity moving over burn areas as larger area continues to shift eastward
0750	Rainfall amount across burn area no exceeding on each since the event began. Topanga Cyn no longer reporting.
0800	JJ arrived at radar site
0827	Highest area of reflectivity (~ 45 dBZ) is just now centered on the burn areas. In general, the precipitation hasn't taken on a cellular look, but appears more stratiform with enhanced regions. Air temperature is warmer tonight, and the winds are stronger. Also, noted the raindrops seem smaller than before which is consistent with rain that has more of a tropical connection.
0834	High elevation angle velocity plots are interesting. They show the "S curve" indicating winds veering with height, shear, thus the possibility of rotating storms given instability. Forecast suggests more unstable air will arrive in the morning.
0844	I noticed with this scan that there's a missing section, only a few azimuths, that seems to advance 30° or so with each tilt. Not sure what would cause that, but will need to keep an eye on it.
0846	Elongated band of ~ 40 dBZ extends from roughly Catalina Island all the way to burn areas. It is likely that this moderate precipitation will fall steadily for the coming hours.
0855	The previously seen rotating wedge of missing data hasn't appeared again. At the radar site, steady rain continues to fall. Drops appear to be very small.
0857	Rotating wedge is back. I'll check radar loops in a moment to see if perhaps its just a display issue with iris.
0908	Connection to internet very slow. Also noticed at higher tilts that the reflectivity in the brightband (~45 dBZ) is nearly the same right above surface. Thus, melting and then growth in the warm air may be occurring.
0916	Intensity of rainfall has picked up at radar site. Examination of the radar loop shows no wedges. Thus, I think the missing data wedges are specific to the iris display and are not in the raw data which is a good thing. The loop also indicated a back edge to the precipitation making a W-E shift. It will be interesting to see if this continues.
0925	Rain gauge data from MLB indicate 0.9" has already fallen since this IOP began.
0927	Am rather surprised by the lull in the reflectivity seen over the ocean. It appears as though a back edge to the precip formed and then advanced very quickly from W-E. Initial look at data beyond the back edge looks more scattered than the widespread rainfall currently overhead.
0937	Almost all precip has moved inland.
0940	Activity over the ocean now has more of a cellular appearance. In addition, at ~ 100 km to the W, there is a very thin, intense line of high reflectivity seen at the lower elevation angles.
0950	Thin line making good progress toward the E. Echoes with more of a cellular look

	are forming ahead of the line and will likely impact the burn regions.
0953	A quick look at the MLB rain gauge accumulation plot shows that 0.5"/hr rate occurred with the widespread rain that was occurring earlier.
1016	Rain has begun to fall again at radar site from newly developed shower activity. Line to the W continues its eastward migration.
1022	Reflectivity in the developing cells is increasing, with max values near 40 dBZ.
1047	Echo intensities have diminished, now down to 30 dBZ.
1050	Thin line still making progress E. Max reflectivity is around 40 dBZ. Another linear feature has formed to the S of the main one.
1125	Precip continues to wind down. No rain at radar site. A look at regional radar composite shows bulk of precip moving inland. Just a few waves of light precip will impact the burn areas the next several hours. Overall, things are quieting down.
1131	Rain falling at radar site again.
1141	Shape of echoes seems to be the same as the coastline by Malibu. Will examine a loop to see if that shape is coincidence or perhaps a result of the land/sea interface and orographics.
1145	The latest band to impact the burn area more of a W-E orientation and is moving almost due N. Recent echoes have been moving toward the NE or even ENE.
1208	Receiving light precip at radar site.
	<p>SOUTHWEST CALIFORNIA AREA FORECAST DISCUSSION  NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA  330 AM PST SUN JAN 27 2008</p> <p>.SHORT TERM...</p> <p>UPPER LOW IS CURRENTLY SPINNING AT 31.50/130 WHICH ANNOYINGLY IS ABOUT 100 MILES WEST OF WHERE BOTH THE NAM AND AND THE GFS INITIALIZED IT. THE OTHER MAJOR FEATURE IS A DRY SLOT WRAPPED AROUND THE LOW. THIS DRY SLOT IS NOW MOVING INTO THE CENTRAL COAST AND WILL SLOWLY WORK ITS WAY EASTWARD. AHEAD OF THE DRY SLOT LOW LEVEL MOIST INFLOW IS KEEPING A STEADY RAIN GOING. LATER THIS MORNING THE RAIN WILL TRANSITION TO A MORE SHOWERY NATURE AS THE MOISTURE PLUME MOVES AWAY AND THE COLD CORE LOW MOVES OVER.</p> <p>WRF BUFR SOUNDING SHOW THAT THIS IS GOING TO BE AN INTERESTING DAY. AT 22Z KSBA SHOWS AN LI OF -4 WITH 818 CAPE AND A TRIGGER TEMP OF ONLY 54 WHICH IS AS CLOSE TO AUTO-CONVECTIVE AS IT GETS AROUND HERE. EXPECT THERE WILL BE A FEW SEVERE TSTMS. BUFR SOUNDING SHOWS THE POTENTIAL FOR ALL MANOR OF SEVERE WEATHER SVR WINDS...HAIL...AND WITH VERY NICE LOW LEVEL HELICITY TORNADOES AND WATERSPOUTS ARE NOT OUT OF THE QUESTIONS. THE SEVERE WEATHER IS MOST LIKELY FROM POINT CONCEPTION TO OXNARD AS THIS IS THE MOST LIKELY TRACK OF THE UPPER LOW.</p> <p>STORM TOTALS FOR THIS SYSTEM WILL RUN 2 TO 4 INCHES ALONG THE COASTS WITH 3 TO 5 INCHES ALONG THE SOUTH FACING SLOPES. FAVORED LOCATIONS IN THE MOUNTAINS COULD SEE ABOUT 7 INCHES OF RAIN WITH THIS EVENT. HOWEVER...DUE TO THE SHOWERY NATURE OF THIS SYSTEM RAINFALL AMOUNTS WILL BE VERY VARIABLE THROUGHOUT THE AREA. ANY THUNDERSTORM THAT FORMS TODAY WILL LIKELY PRODUCE HIGH INTENSITY RAINFALL WHICH COULD PRODUCE A FLASH FLOOD ANYWHERE...NOT JUST THE</p>

	<p>BURN AREAS.</p> <p>BECAUSE OF THE SOUTH FLOW SNOW LEVELS WILL START OUT AT OR ABOVE 7000 FEET IN FACT CURRENT ACARS SHOWS THE Z LVL AROUND 9000 FEET. AS THE COLD UPPER LOW APPROACHES THE SNOW LEVEL WILL FALL TO 5000 FEET IN THE AFTERNOON AND THEN TO 4000 FEET OVERNIGHT. THE MOST SNOW WILL FALL THIS AFTERNOON.</p>
1210	Rainbands having a NW-SE orientation have been forming out over the ocean about 50 km out and then making landfall. Rainfall rates are considerably lighter than what they were at the beginning of this IOP.
1241	Light showery activity continues, but reflectivities are generally < 20 dBZ.
1308	Will need to make a decision soon if we should shutdown for a few hours until the rain starts back up. There's no rain coming in the next couple of hours at least.
1334	Very light shower activity is developing over the ocean.
1351	Water vapor loop shows dry air wrapped around upper low into S CA. The deep tropical moisture plume was shunted much further S. I think the forecast was anticipating the upper low to tap into the moisture, but this didn't appear to happen in S CA. However, as SPC mentioned, the dry air intrusion/removal of clouds may lead to better instability for the daytime hours.
1400	Shift Change - Drizzle at radar Given that FF warnings are still current will hold off ending IOP
1435	Light showery activity with burn areas. Small area o showers developing near Long Beach, otherwise nothing.
1514	Cloud deck becoming scattered with large patches of blue with direct sunshine reach the ground. Could possible dictate an earlier to start convection?
1520	SC Increasing – Very light scattered showers in burn areas.
1524	Rgnl NEXRAD mosaic depicting widespread convection forming along back edge of dry slot. The convection is expanding and rapidly moving towards CA coast north of Santa Barbara. Satellite loops suggests trajectories of convection to reach LA basin in the next 2-3 hours. Sunshine continues to break though a decreasing
1530	Scatter light showers forming in area of Pt Dume.
1600	Area of scatter showers is growing to the west of Oxnard.
1650	Activity increasing in strength west of Oxnard. Activity continues to move eastward with southern development. Light scattered showers continue over burn areas.
1708	<p>SOUTHWEST CALIFORNIA AREA FORECAST DISCUSSION  NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA  900 AM PST SUN JAN 27 2008</p> <p>UPDATE FOR SHORT TERM WITH NEW LONG TERM FORECAST...</p> <p>...SEVERE WEATHER POSSIBLE TODAY...MAINLY THIS AFTERNOON...ALONG WITH THE THREAT FOR SOME FLOODING OF LOW LYING URBAN AREAS...SMALL RIVERS AND STEAMS...</p> <p>UPDATE...  SIGNIFICANT RAINS FELL OVERNIGHT WITH WIDESPREAD AMOUNTS IN EXCESS OF AN INCH ALONG THE LOWER COASTAL SLOPES OF THE SOUTH FACING</p>

	<p>FOOTHILLS. IN THE MOUNTAINS...THERE WERE NUMEROUS REPORTS OF RAINFALL IN EXCESS OF 2 INCHES WITH LOCAL AMOUNTS OF 4 INCHES OR SLIGHTLY MORE. IN ADDITION...OVERNIGHT...FREEZING LEVELS ROSE TO 7000 TO 8000 FEET...WHICH INCREASED THE MELTING FROM RECENT SNOWS. THE COMBINATION OF WET SOILS...RECENT HEAVY RAINS...AND SNOW MELT IS PUTTING A LOT OF WATER INTO THE RUN OFF SYSTEM OF LOCAL WATERWAYS. ANY ADDITIONAL HEAVY RAINS WILL RESULT MOSTLY IN ADDITIONAL RAPID RUN OFF. WITH RAINFALL RATES OF 1.5 INCHES OR MORE POSSIBLE WITH THE THUNDERSTORMS EXPECTED TODAY...THE POTENTIAL FOR FLASH FLOODING WITH ANY THUNDERSTORM ACTIVITY IS MUCH HIGHER THAN NORMAL. THUS...THERE IS REAL CONCERN FOR FLOODING AND MUDFLOWS TODAY...EVEN OUTSIDE OF RECENT BURN AREAS.</p>
1736	<p>N-S band straddling the coast currently over Oxnard is progressing eastward. The band has narrow but of increasing intensity core of &gt;35 dBZ. Light showers continue over burn areas.</p>
1750	<p>The band is expanding and becoming more intense with larger areas of &gt;30dBZ as it approaches Pt Dume.</p>
1750	<p>MESOSCALE DISCUSSION 0090  NWS STORM PREDICTION CENTER NORMAN OK  1139 AM CST SUN JAN 27 2008</p> <p>AREAS AFFECTED...CNTRL/SRN CALIFORNIA COASTAL AREAS  CONCERNING...SEVERE POTENTIAL...WATCH POSSIBLE</p> <p>VALID 271739Z - 271945Z</p> <p>TRENDS ARE BEING MONITORED FOR AN INCREASING SEVERE THREAT AND THE POSSIBILITY OF A WW.</p> <p>ONGOING THUNDERSTORMS...APPROACHING COASTAL AREAS NEAR/SOUTH OF MONTEREY...APPEAR TO BE OCCURRING WHERE A MID-LEVEL CYCLONIC VORTICITY CENTER CONTRIBUTED TO UPWARD VERTICAL MOTION AND DESTABILIZATION NEAR THE POINT OF OCCLUSION OF A WEAK OFFSHORE FRONTAL ZONE. AS THE OCCLUDING PROCESS CONTINUES...AND THE MID-LEVEL CIRCULATION WEAKENS/LIFTS NORTHEASTWARD...THE STORMS PROBABLY WILL WEAKEN AS THEY SPREAD INLAND DURING THE NEXT FEW HOURS.</p> <p>HOWEVER...DEEPENING CONVECTION IS EVIDENT IN AN ARCING BAND SOUTHWARD ALONG THE FRONTAL ZONE...TO WEST OF POINT CONCEPTION...ON INTO THE PACIFIC. WHILE MID-LEVEL SUBSIDENCE IN THE DRY SLOT BETWEEN COUPLED POLAR AND SUBTROPICAL JETS IS LIKELY SUPPRESSING THE DEVELOPMENT OF STORMS NOW...IT APPEARS A SECONDARY CYCLONIC VORTICITY CENTER...ROUGHLY 200 MILES SOUTHWEST OF VANDENBERG AFB...COULD ENHANCE DEVELOPMENT ALONG THE FRONT AS EARLY AS 19-21Z. THIS APPEARS MOST LIKELY ALONG COASTAL AREAS NEAR/EAST OF SANTA BARBARA INTO THE OXNARD VICINITY...BEFORE SLOWLY ADVANCING TOWARD THE LOS ANGELES BASIN LATER THIS AFTERNOON.</p> <p>BREAKS IN CLOUD COVER ACROSS THIS REGION SHOULD BECOME SUFFICIENT FOR WEAK BOUNDARY LAYER BASED DESTABILIZATION WITH CAPE ON THE ORDER OF 500 J/KG. IN THE PRESENCE OF STRONG DEEP LAYER SHEAR... THE ENVIRONMENT IS EXPECTED TO BECOME SUPPORTIVE OF ISOLATED</p>

	SUPERCELLS. AND...OROGRAPHICALLY BACKED WINDS SOUTHWEST OF THE COASTAL RANGES MAY ENLARGE LOW-LEVEL HODOGRAPHS SUFFICIENTLY FOR ISOLATED TORNADOES.
1804	Band continues to move east and inland with increasing intensity inland and slight decrease over ocean. System continues to straddle the coast with additional development SW toward the islands. Front edge is now impacting western burn area with light showers
1827	Light showers across both burn areas as band expands and continues eastward. Intensity greatest on shore
1832	Winds becoming gusty with rapid increase in low level cloud.
1842	Area from Pt Dume to Santa Barbara rapidly intensifying and spreading in coverage. Activity has also increase significantly across the entire bay. Burn areas likely experiencing light to moderate showers associated with band flowing across point.
1845	Assessing Velocity couplets associated with cells south of Pt Dume.
1855	Call to NWS to report weak rotation with cell south of Malibu. NWS stated that KVTX is out and they are depending on SMARTR for radar coverage. Discussed strong southerly flow against foothills and increase of reflectivity in burn areas
1900	Rotational couplets increasing in strength. Moderate rainfall likely occurring with Band over burn areas. Areas of greater than 40 dBZ expanding behind initial line. Winds southerly and becoming gusty. Light Drizzle. Rain curtain approaching beach.
1905	All cells on leading edge of line have associated vel couplets which are increasing in strength as they move eastward.
1910	Lechuza Patrol .20/hr; Agura .12/hr Velocity 0 Isodop center on burn areas through 10 degree. VERY strong SW flow across burn areas
1919	Tremendous shear with low to mid clouds overhead of radar
1920	Lechuza Patrol .28/hr
1922	Velocity field is being too heavily QC'd. Winds increasing at radar.
1925	Precipitation decreasing rapidly over burn areas.
1936	Light rain at radar
1940	Velocity couplets associated with small cells direct west of radar
1950	BB feature forming. Burn areas experiencing weak showers associated with northern end of band which extends south across the central bay to south of Long Beach. Large area of moderate reflectivity in southern bay
2000	Moderate rain at radar.
2005	Very pronounced BB feature
2005	Band continues to increase in intensity with a nearly contiguous solid N-S core of >40 dBZ through the center at low levels,
2015	Rainfall intensity increasing at radar as high reflectivity line moves approaches overhead
2023	Heavy rain with occasional pea size hail
2025	Severe attenuation
2029	Light rainfall – some attenuation
2032	Eva Air? 757 missed approach
2035	Partial clearing west. Burn areas have light precip possibly

2036	China Air 747 missed approach...nearly clipped wing
2028	Storms increasing intensity as they interact with terrain
2043	Moderate rain at radar with increasing winds. Activity decreasing west with light residual showers over burn areas
2052	Activity continues to decrease west to east.
2059	Increasing SC.
2055	Lunch break.
2359	We learned at our lunch break that the operational KVTX had gone down and Oxnard forecasters have been relying on SR1 for operational use. Unfortunately, we had a data outage for < 1 hr. After some debugging we found the culprit to be too many files in the /usr/iris_data subfolders on the sigmet computer. Those must be wiped as mentioned in the tutorial. We also decided to end this IOP because the forecast precip will be showery, quite a bit different than what we saw with IOP8.
2340	Ken arrived on site. All systems require reboot after SIGMET product disk filled and system failed.
2350	Spoke with Eric at NWS and outlined three areas of concern. Near and north of Malibu, cells direct north of the radar and cell emerging from the blockage area
0000	Malibu cell has well defined rotation couplet and vertical continuity. Called NWS. They will extend warning for that area
0007	A line of small intense cells traversing eastern burn area. The cells are training from the SW to the NE becoming 'severe' as move inland.
0012	Basically every cell over 45 dBZ has a rotational couplet in the lower
0017	Malibu cell(s) continue to be severe followed by cells north of Pt Dume
	<p><b>BULLETIN - EAS ACTIVATION REQUESTED</b>  <b>SEVERE THUNDERSTORM WARNING</b>  <b>NATIONAL WEATHER SERVICE SAN JOAQUIN VALLEY CA</b>  <b>417 PM PST SUN JAN 27 2008</b></p> <p>THE NATIONAL WEATHER SERVICE IN HANFORD CA HAS ISSUED A</p> <p>* SEVERE THUNDERSTORM WARNING FOR...  WEST CENTRAL TULARE COUNTY IN CENTRAL CALIFORNIA...  THIS INCLUDES THE CITY OF VISALIA...</p> <p>* UNTIL 500 PM PST</p> <p>* AT 407 PM PST...NATIONAL WEATHER SERVICE DOPPLER RADAR INDICATED A SEVERE THUNDERSTORM. THIS STORM WAS LOCATED NEAR FARMERSVILLE...OR ABOUT 5 MILES SOUTH OF VISALIA...AND MOVING NORTH AT 35 MPH.</p> <p>* THE SEVERE THUNDERSTORM WILL BE NEAR...  WOODLAKE BY 425 PM PST...</p>



0101	Main line of thunderstorms showing signs of weakening now as it continues to move further inland to the NE.
0113	Two small cells, which are relatively isolated, remain to the N. Severity seems about constant, and their evolution should be watched now that they are disparate.
0458	We've allowed the radar to run with the understanding that the impact on the burn area was likely to be minimal. The fact that KVTX is still down means the Oxnard NWS office has been using SR1 for operational purposes. Upon returning to the radar at ~0330, I discovered we lost our satellite connection. It took quite some time for the receiver to lock back on to the satellite. It even stowed itself at one point. In any case, there is a moderate line of showers from the burn areas extending to the NE. In addition, there are some isolated cells inland NE through E of the radar site. Max reflectivities ~ 45-50 dBZ in the cores.
0509	Just took a look at the synoptic/mesoscale situation. Regional radar and satellite loops show a broad area of rain to the W of the radar site moving W-E. It looks like this is associated with a mesoscale low pressure system that will eventually be quickly followed by dry air. Thus, it seems likely that the passage of precip with this feature will spell the end of the bulk of the rain with this IOP.
0517	Showers have moved out of the burn areas. Some new echoes have popped up due W of the radar.
0527	<p>Excerpt from recent Oxnard discussion: THE LAST THING TO WATCH IS A VORT LOBE 33.6/121.8. IT HAD COOLING TOP EARLIER BUT NOT IS WARMING. JUST RECENTLY IT TOOK A MORE NORTHERLY TURN. THIS VORT LOBE WILL LIKELY PRODUCE ANOTHER ROUND OF SHOWERS FOR MOST OF THE AREA AROUND MIDNIGHT.</p> <p>Believe this is the same feature previously discussed on satellite imagery. Current thinking is that drying/subsidence will follow this feature resulting in an end to possible impacts on the burn areas.</p>
0602	Shower activity very weak under radar umbrella. There is a SW-NE oriented line just to the N of the radar with reflectivity values ~ 25 dBZ. Organized precip out W not yet making an appearance on SR1 radar.
0622	Just now starting to see echoes at far range associated with mesoscale feature.
0636	Reflectivity at far W edge of radar umbrella is as high as 40 dBZ.
0707	<p>FLOOD WATCH NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA 1031 PM PST SUN JAN 27 2008</p> <p>...FLASH FLOOD WATCH REMAINS IN EFFECT UNTIL 3 AM PST MONDAY FOR ALL OF SANTA BARBARA...VENTURA...AND LOS ANGELES COUNTIES...</p> <p>SHOWERS WILL CONTINUE...HEAVY AT TIMES FOR MUCH OF THE NIGHT. RAINFALL RATES WILL AVERAGE ONE QUARTER TO ONE HALF PER HOUR...BUT RATES AS HIGH AS ONE INCH PER HOUR ARE POSSIBLE. SUCH HIGH INTENSITY RAINFALL WILL BE ESPECIALLY PROBLEMATIC FOR BURN AREAS...SINCE INTENSE</p>

	DOWNPOURS...EVEN THOSE LASTING LESS THAN 30 MINUTES COULD CREATE SIGNIFICANT DEBRIS FLOWS IN AND BELOW BURN AREAS.
0709	Moist unstable air impinging on S facing slopes resulting in some decent rainrates over the burn areas. Main bulk of precip is still to the W. Suspect we might get as much as 0.5-1" from this last system.
0739	KVTX is back up. Status message said it was down due to COMMS problems. Loop of reflectivity from KVTX shows precip already E of Santa Barbara and on top of Oxnard. Velocity shows the echoes are moving easterly, so they should be on the move tonight, as opposed to the southerly or even southeasterly flow that sustains the precipitation longer.
0759	Stratiform precipitation just now entering burn areas. Majority of raining region is situated over land and not ocean this time.
0827	Light stratiform precipitation encompassing both burn areas.
0857	Moderate precipitation occurring in western burn area. BB feature forming.
0908	Areas of moderate precipitation are increasing within large area of stratiform precipitation especailly along the coasts and inland along southwest facing slopes.
0910	Surfaces winds becoming gusty with near surface flow from the SW.
	<p>FLASH FLOOD WARNING  NATIONAL WEATHER SERVICE SAN DIEGO CA  1231 AM PST MON JAN 28 2008</p> <p>THE NATIONAL WEATHER SERVICE IN SAN DIEGO HAS ISSUED A</p> <p>* FLASH FLOOD WARNING FOR...  SOUTHWESTERN SAN BERNARDINO COUNTY IN SOUTHWEST CALIFORNIA...</p> <p>* UNTIL 230 AM PST</p> <p>* AT 1224 AM PST...NATIONAL WEATHER SERVICE DOPPLER RADAR INDICATED  FLASH FLOODING FROM HEAVY RAIN OVER WATERMAN CANYON IN THE VICINITY  OF CRESTLINE...RIM FOREST...AND THE NORTHERN CITY LIMITS OF SAN BERNARDINO.</p> <p>RUNOFF WILL BE MOVING DOWN WATERMAN CANYON AND ITS DRAINAGE BASIN. EROSION MAY EFFECT PARTS OF HIGHWAY 18 BETWEEN CRESTLINE AND WATERMAN  CANYON ROAD...AND COULD REACH THE NORTHERN CITY LIMITS OF THE CITY OF  SAN BERNARDINO IN THE VICINITY OF WATERMAN CANYON.</p> <p>DEBRIS FLOWS...INCLUDING MUD AND ROCK SLIDES...ARE POSSIBLE WITH THIS  STORM. MUD SLIDES AND ROCK SLIDES CAN POTENTIALLY TRAP AND KILL PEOPLE CAUGHT IN THEIR PATH.</p>
0918	An areas of moderate precipitation is increasing while straddling the coast the areas continues to move east from Pt Dume towards Malibu. This area of moderate precipitation continues to impact the burn areas beginning initially with the western area and currently in the eastern area. Additional development is occurring south along the coast extending back to south of Pt. Dume.
0930	Additional areas of light to moderate stratiform precipitation is developing west of

	Santa Barbara. These are not being reflected in the radar loops as a result of aggressive QC. Clearly and annoyingly present in the dBZ field.
0935	Areas of moderate precipitation have moved east of burn areas.
0941	Surface winds continue to be gusty at radar. Additional moderate precipitation developing along coasts south of burn areas and to the S
0943	Light precipitation at radar
0956	Small but moderate to heavy cells developing west and southwest of burn areas near Pt Dume. Cells moving east and entering burn area.
1005	As with previous hour a area of moderate precipitation straddles coastal area transecting burn areas extending from just west of Pt Dume to Malibu. Band is moving east
1014	Occasional burst of moderate precipitation at radar with gusty winds. No lightning or thunder. BB feature. New areas of stratiform precipitation continue to develop across bay and west. New areas developing N of Pt. Dume and rapidly expanding into burn areas.
1020	Nearly a solid region of stratiform mixed with moderate precipitation extends from NE of Pt Dume along the coast across burn areas to the east of Malibu.
1035	Solid region still holding together progressing east out of burn areas. No additional activity is developing west that could impact burn areas at this time. Strong gust winds and bursts of moderate precipitation occurring at radar.
1050	New cells forming SW of Pt. Dume 5-10 km
1056	Strong winds. Radar rocking.
1100	Small but intense cell with moderate precip moving into burn area from SW.
1142	Activity nearly clear of burn areas. Will continue to monitor until 12 UTC.
1200	While activity continues to persist in the south bay area, activity continues to move E to NE. hence does not pose a threat to burn areas. Will conclude IOP