

# Debris Flow-2007/2008 Event Log

## IOP-3

Lat: 33.94933 N      Lon: -118.44217 W      Alt: 43 m      Truck HD: 107 deg  
 Date/Time SR1 ready for operation: 4 January 2008 0840 UTC  
 Radar Calibration Offset=0.0

*Note taker: David Jorgensen (NSSL) and Ken Howard (NSSL)*

Time (UTC)	Event
0800	Arrived on site, leveled truck and got all systems up OK
0840	Began data collection. Small scatter showers SE of LA. Otherwise no warm frontal rain has developed or is evident with 100 km of radar. Regional WSR-88D loop depicts showers slowly developing but further NW than initial prog'd. Oxnard forecast discussion states that precipitation 'will likely hold off until around dawn'. Will continue with operations despite delay.
0930	No change. Vision line of strata cu forming to the southwest.
1040	No change. GC growing stronger in dBT
1102	Weak showers developing in SW quad at 100 KM. Also evident on regional WSR-88D mosaic and possibly associated with a leading short wave?
1231	Weak showers developing 20 km west of burn areas. Showers moving west at 30 kts well ahead of frontal line of developing showers (see regional loop)
1320	Southern end of frontal system continues to have difficult sustaining precipitation. Very weak showers develop and dissipate ahead of the line as they move ashore.
1336	GC weakening onshore slight increase of sea clutter.
1341	From NWS Oxnard forecast discussion "There has been very little development ahead of the system this morning and most areas remain rain free at this time. Despite this initial hiccup the forecast is still on track for today. Actually at this time the mdls have underdone a major portion of the storm 35.5/128.3 where satellite sensors indicate a growing area of 1+ inch per hour rainfall and a 200 mph jet. This could well bring heavy rain to the central coast late this morning or about 6 hours earlier than previously thought. This area will have to be watched. "
1444	Winds have increased significantly in the last hour as confirmed by a rapid increase in sea clutter.
1500	Crew change Jorgensen now taking logs
1613	Some weak echo just north of burn area dbZ is about 25
1736	A few more weak echoes are now appearing over land north of the burn areas
1742	Releveled truck again. The passenger side was maybe 0.05 deg too low and the front was pitched down ~0.05. Just lowered the right front jack just a little to level the truck.
1825	Large mass of weak echo from the burn areas northward now evident on the lower tilts
1845	Larger mass of weak echo now moving in from the west at range ~100 km
1853	Light rain shower at site

1915	Light precip over burn area dbz ~20-25
1947	Weak precip band oriented E-W along Santa Monica mountain range
2112	Minor precip in burn areas, however, clutter filter is too aggressive. Impressive sea clutter suggesting strong winds
2156	Clutter filter continues to be too aggressive over burn areas.
2211	Persistent drizzle at radar. Interesting SW to NE banding of precipitation across central California. Heaviest rains are occurring at the intersection of the bands and higher terrain embedded in general orographic flow.
2240	Area of widespread precip increasing with light precip occurring over burn areas.
2254	Dave added 10 g of fuel to saddle tanks.
2332	Light to isolate mod precip continues over burn areas. Malibu .07 Cicel Ranch .08 in last hour with Browns and Alsio Canyon at .16/hr
2340	A VPR would be of interest for the last hour. Possibly suggesting the development BB ref structure.
2343	Three distinct SW to NE band moving SE. Enhanced precipitation associated with bands and topography. Interesting features and clear a precip modulator. Current think southern most bands will impact burn area in next hour
2348	Definite BB structure
2353	Areas of mod precip increasing
0007	Actual rain has started at the radar.
0017	First band evident on SMARTR and is associated with moderate precip over major top features.
0038	The velocity fields show fairly dramatic upslope impingement (backing with height) on burn areas. Velocity magnitudes increasing in last 45 minutes. A great case to assess a orographic enhancement mask (OPEM). Also a case where satellite QPE techniques would likely fail.
0047	Mod precip burn areas with Circle Ranch reporting .24 in last hour
0100	Impressive orph lift west of burn areas. A major band continues to slide south into area
0107	Approaching 1 in/hr accumulations along coastal mounts near Santa Barbara.
0116	Wet mountain effect over burn areas. Difficult challenge to sort through QC'd moderate reflectivity and actual rainfall. Local gauge bias adjustment absolutely necessary for QPE.
0136	Very impressive flow impinging on burn areas as evident from velocity field.
0200	Crew shift – Jorgensen operating
0210	Bright band to ~38 dBZ evident on upper tilts
0225	Burn area reflectivities to ~45 – debris flow warning issued by NWS at 0115 UTC
0226	Backing up raw data files from wdssiif to laptop
0259	Wind at site has picked up quite a bit – SR1 is shaking a bit
0330	E-W band of 40+ dBZ echo now clear of burn areas – Echoes weakening to the west of the burn areas
0354	Bright band on upper tilts eroding from the west
0447	Moderate rain (40-45 dbz) now back over the burn areas
0500	Crew shift – Howard operating
0514	Strong wind at site continues – SR1 shaking and impacted by occasional rain

	soaked tumble weeds
0530	Second band approaching burn area
0621	Band across burn areas with moderate rain (40-45 dbz)
0703	Band passing over site. Strong gusty winds. Watched aircraft abort landings as wind gusts exceed 50 (estimate)
0720	Strong winds continue with band passage. Estimate sustained 30 mph. SR1 shaking. Two more aircraft abort their landing. Amazed they continue to let aircraft attempt landings.
0730	Regional radar composite depicts one more band could possibly impact burn area.
0740	Given wind gusts severe under catchments by gauges likely
0740	6h rain totals Circle X ranch 3.22;Malibu 2.06;Cheeseboro 1.23 – most of LA proper >.5 with >3in in foothills east of LA
0741	Two more aircraft abort landings – wind gusts exceeding 45 possibly higher
0754	Another abort – winds decreasing slightly
0800	Next band less organized and diffuse. Moderate rainfall east of LAX associated with current band. Valley rainfall amounts exceeding .25/hr. Suggest this is actually on the low side due to under catchments
0820	Winds slightly subsiding. Reflectivity area decreasing in extent as band continues to move SE
0850	Next band moving over burn area, not well organized with light to occasional moderate precip
0856	Winds increasing.
0940	Latest band becomes better organized as it moves over burn areas
1023	Crew change – Jorgensen returns
1100	Rain decreasing rapidly going west of the burn areas – showery type precip max dbz only ~25 on the lower tilts
1102	Sea clutter within 20 km of the site stronger on the lowest couple of tilts
1103	NWS flash flood warning issued at 1011 UTC (2:11 AM) expires at 8 AM. Probably will continue data collection until then
1219	Echoes over burn area and to the west of the burn areas totally clear – shutting down IRIS
1220	Backing up raw files to laptop from wdssiif computer