Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 29th, December, 2006

AFRICA DESK
CLIMATE PREDICTION CENTER
National Centers for Environmental predictions
National Weather Service
NOAA
Camp Springs MD 20746

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Valid 12:00Z 30th, December 2006 - 00z 01st, January 2007

At T+24, the general pattern at 200hpa over the Southern Africa (South of the Equator) shows a strong anticyclone or high pressure system centered at about 20°S 15°E also at the Mozambique channel there is an anticyclone positioned at 27°S 35°E, to the north east of Madagascar at 11°S 60°E there is another anticyclone. The prevailing flow south of 23°S in the Atlantic ocean is westerly becoming southerly to westerly in the Indian ocean, at a speed of 30 to 125 knots, and the trough south of South Africa its axis is southeast . At T+ 48 Hrs the high pressure system centre has been divided into two, one centre at 18°S 10°E and the second one at 30°S 45°E and the trough has slightly moved to the east and its axis is still southeast, the anticyclone which was to the north east of Madagascar has moved westward to 10°S 50°E. At T+72 Hrs the high pressure system is still having two centers position at 20°S 09°E and the second one at 22°S 38°E, and the anticyclone north east of Madagascar has moved again to the southwest to 12°S 47°E, and the trough has slightly moved to the east and it is now south of the Mozambique channel and its axis is southerly. The wind flow over the Southern Africa at this level is anticyclone at a speed of 30 to 125 knots. The ECMWF and the UK-Met models show similar pattern which resemble with the GFS model.

At 500hpa the pattern shows that most areas are under the influence of low pressure and the flow over the southern part is southwesterly west of 20°E and northwesterly to the east meaning a trough with southerly axis at 20°E.The St Helena high pressure in the Atlantic ocean, can clearly be seen and its center is at 23°S 07°W, the Mascarine high pressure in the Indian ocean has its center at 32°S 54°E, and it has a cutoff high over the the Mozambique channel at 20°S 39°E the position of the zonal part of the ITCZ is still south of the equator. A T+48 the systems indicate that The St Helena high pressure in the Atlantic ocean, has moved to the east with its center at 23°S 03°W, the Mascarine high pressure in the Indian ocean, shows clearly that it has moved to the east with its center at 33°S 67°E, and it has a cutoff high over the southern Madagascar, to the northeast of

Madagascar there is a cyclonic circulation indicating a developing tropical cyclone such circulation can also be seen in Zimbabwe, the trough between St Helena high and the Mascarine high has a southerly axis and in phase with the meridional arm of the ITCZ also it has slightly moved to the east, this shows that there is an eastwards propagation of the systems. At T+72 there is a slight eastward shift of the system though St Helena high and the Mascarine high have maintained the position of their centers. The trough between St Helena high and the Mascarine high has a southeasterly axis and it has moved to the east, the cyclonic circulation to the northeast of Madagascar indicating a developing tropical cyclone is still there also such circulation can be seen in Zimbabwe and southern Madagascar, The UK- Met and ECMWF models indicate similar situation.

At 850hpa the St Helena high pressure in the Atlantic ocean has its centre at 29°S 12°W in the Atlantic ocean and the Mascarine high pressure in the Indian ocean has its center at 30°S 65°E, between St Helena high and the Mascarine high is a trough from the south with a southeast axis associated with a front in the eastern part of South Africa and south of the Mzambique channel, the trough is in phase with the meridional arm of the ITCZ, over northeast of Madagascar there is a cyclonic circulation implying another tropical cyclone otherwise we have the zonal part of the ITCZ existing over Tanzania, Zambia, Malawi, Mozambique and Zimbabwe as convergence shows over the area, diffluence flow pattern can be seen over the western parts of South Africa, Namibia and southern Angola. A T + 48 Hrs the St Helena high pressure in the Atlantic ocean has its centre at 28°S 12°W in the Atlantic ocean it occupies a smaller area with a ridge extending southeastwards and the Mascarine high pressure in the Indian ocean has its center at 33°S 67°E, between St Helena high and the Mascarine high is a trough from the south with a southeast axis associated with a front in the southeastern part of South Africa and south of the Mzambique channel, the trough has slightly moved to the east, the position of the ITCZ has moved further south due to the intensification of the Arabian ridge, otherwise convergence can be seen over Tanzania, Congo and Gabon. At T+72 Hrs the St Helena high pressure in the Atlantic ocean has maintained its position and it has a ridge extending eastwards also it is in phase with the Mascarine high pressure in the Indian ocean which has moved eastwards to 30°S 69°E, between St Helena high and the Mascarine high is the trough from the south which has also moved eastwards to south of the Mozambique channel with a southwest axis associated with a front, the cyclonic circulation (tropical cyclone) over northeast of Madagascar has become deep with wind speed of about 20 to 45 knots and it has slightly moved to the south, also there is a cyclonic circulation over central Malawi and eastern part of Zambia which might cause destruction of buildings and properties, most pats of South Africa including Namibia are under the influence of the St. Helena high so no active weather will be expected over the region, generally for the consecutive three days the 200hpa shows anticyclonic circulation while at lower levels the general flow is cyclonic which means there is a vertical motion in the area. There is a resemblance in the patterns of UK- Met, ECMWF and GFS models.

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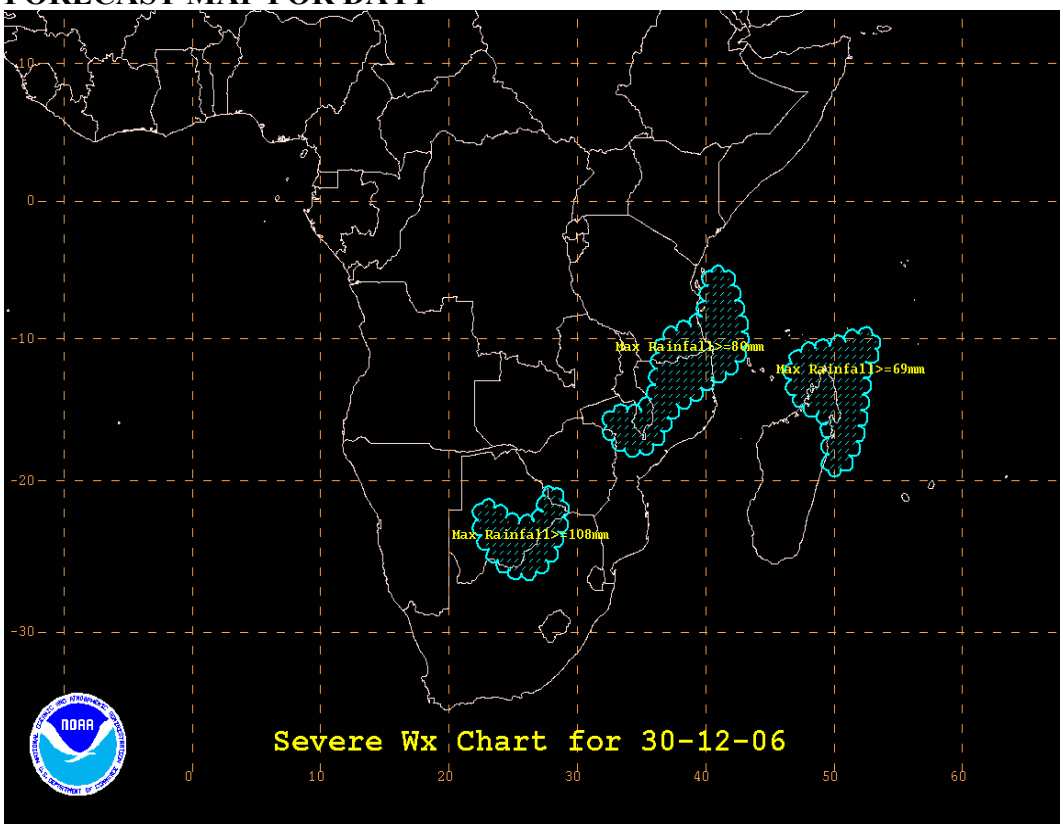
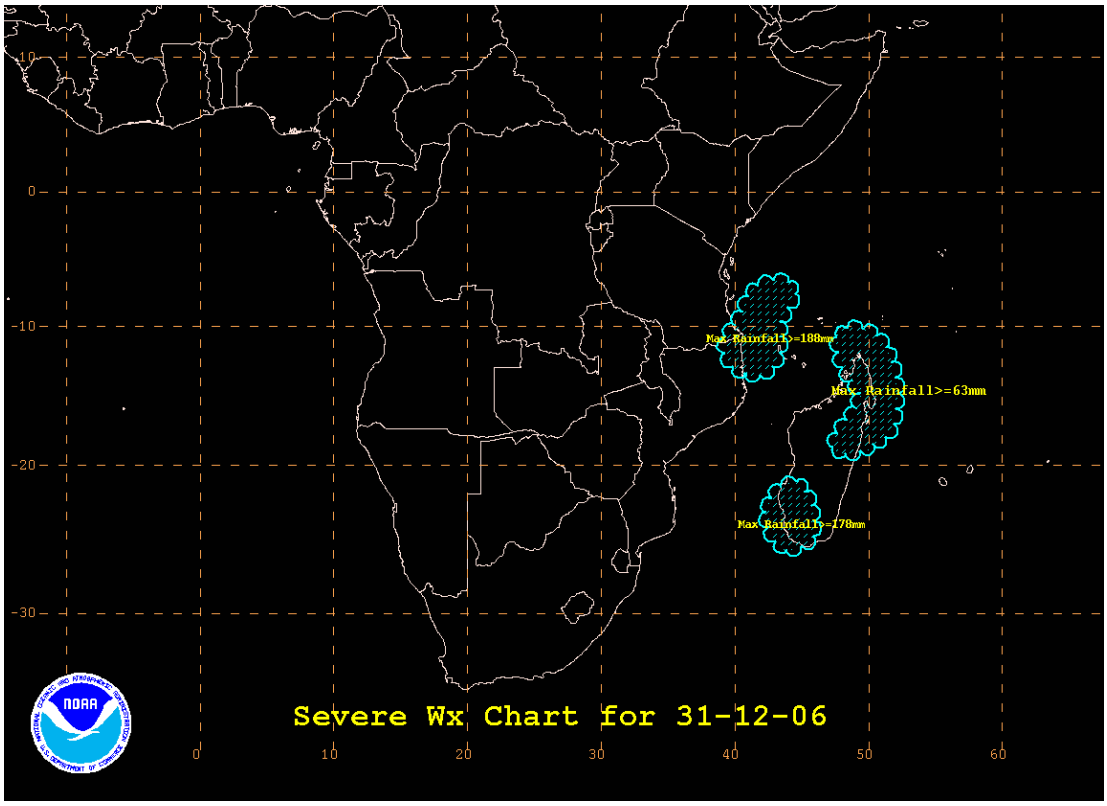
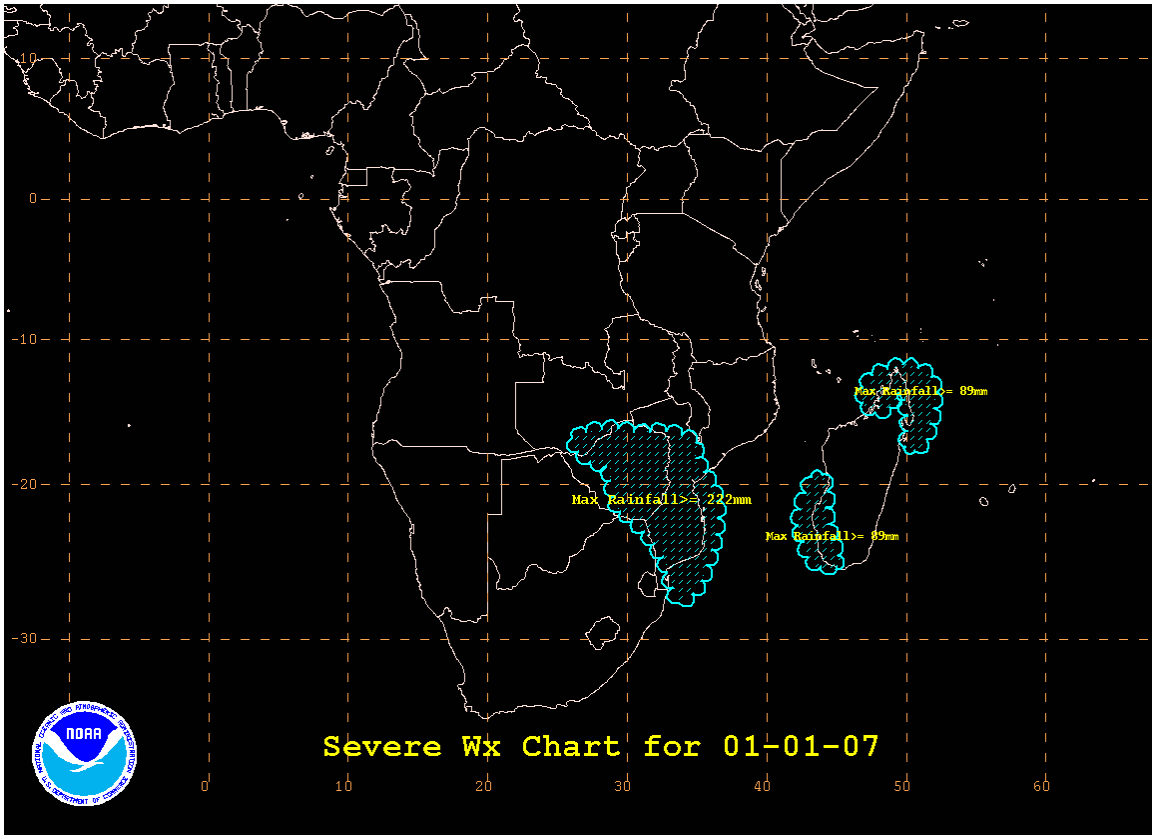
FORECAST MAP FOR DAY1



FORECAST FOR DAY2



FORECAST FOR DAY 3


10
0
-10
-20
-30
Max Rainfall>= 89mm
Max Rainfall>= 222mm
Max Rainfall>= 89mm
Severe Wx Chart for 01-01-07
0
10
20
30
40
50
60