Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST12 th, January, 2007

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 13th, January, 2007- 00z 15th, 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 with its center at 15°S 15°E with a cutoff high at the Mozambique channel also it has a sharp ridge with a zonal axis extending to the Indian ocean.The prevailing flow is anticyclonic. At T+ 48 Hrs the high pressure system has been divided into two with one centre at 16°S 17°E this center has slightly shifted to the west and the second center at 16°S 46°E over Madagascar, this implies that the high pressure has covered a bigger area and the flow is still anticyclonic. At T+72 Hrs the high pressure system is divided into two cells which are far apart one being in the Atlantic ocean and the second one in the Indian ocean.The general pattern of wind flow for the consecutive three days over the Southern Africa at this level is anticyclonic flow.
At 500hpa the pattern shows that the St Helena high pressure in the Atlantic ocean has its center is at 22°S 02°E with a southeast axis extending to the eastern coast of South Africa and the Mascarine high pressure in the Indian ocean has its center at15°S 61°E, between the two cells there is a back hanging trough from the south with a southeasterly axis, convergence can be seen over northern Zambia, DR Congo and western part of Tanzania. A T+48 the systems indicate that the St Helena high pressure center is at at 24°S 09°W with a ridge which has southeast axis extending to the eastern coast of South Africa in the Indian ocean. The Mascarine high pressure centre has moved westwards to 18°S 56°E with its southeast axis ridge extending upto central Tanzania, there is a trough with a cuoff low between the two high pressure cells and the convergence which was over northern Zambia, DR Congo and western part of Tanzania has shifted to southern DR. Congo. At T+72 the St Helena high pressure has its center at 24°S 09°W with its southeast ridge axis extending upto the southeastern coast of South Africa in the Indian ocean. The Mascarine high pressure centre in the Indian ocean has moved further to the east and has its cutoff high at 16°S 51°E with a southeast ridge axis extending upto the southwestern highlands of Tanzania, the back hanging trough from the south with a

cutoff low are between the two high pressure cells located at southeast of Madagascar and the convergence over southern DR. Congo is still there also there is a cyclonic circulation over central Mozambique this shows that the meridional arm of the ITCZ is slant due to the st Helena ridge which has pushed its southern part to the east.

At 850 hPa the St Helena high pressure in the Atlantic ocean has its centre at 25°S 09°W and the Mascarine high pressure in the Indian ocean has its center is at 32°S 58°E, between St Helena high and the Mascarine high is a narrow back hanging trough from the south which is located in South Africa and Namibia with a southeasterly axis, cyclonic circulation areas can be seen over Angola and northern coast of Mozambique otherwise there is a strong convergence over central Uganda. At T + 48 Hrs the St Helena high pressure is stationary with a northerly ridge but the Mascarine high pressure centre is shifting eastward and its center is at 34°S 67°E with a westward ridge axis extending upto 20°E 35°S the narrow trough has become bigger and is occupying a wide area due to the relaxation of the st. Helena high, the cyclonic circulation areas can be seen over the coast of Angola and Mozambique channel , otherwise the strong convergence is still over central Uganda. At T+72 Hrs the pressure systems are stationary and system has not changed much, the only change is the Mascarine ridge which has relaxed and the strong convergence which has shifted to the south of lake Victoria in Tanzania.

Therefore is a resemblance in the patterns of UK- Met, ECMWF and GFS models because 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 and the three models I mentioned above show similarity.

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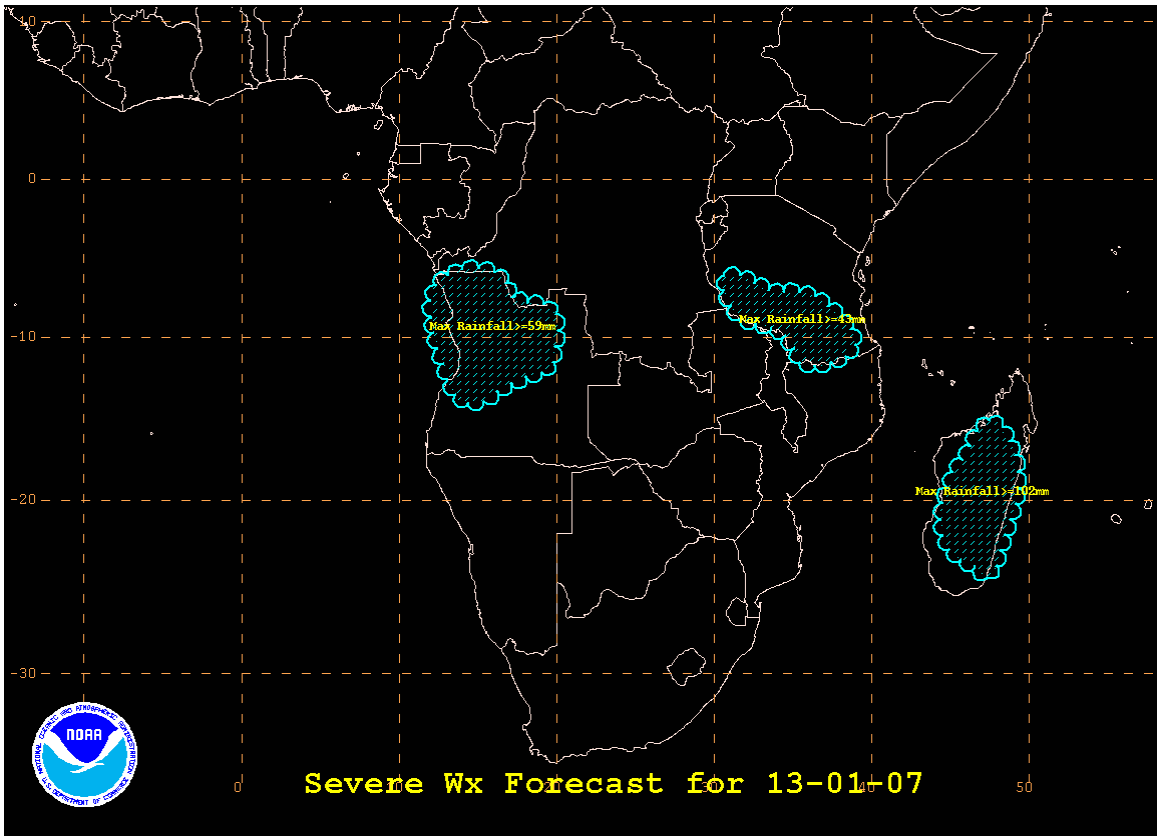
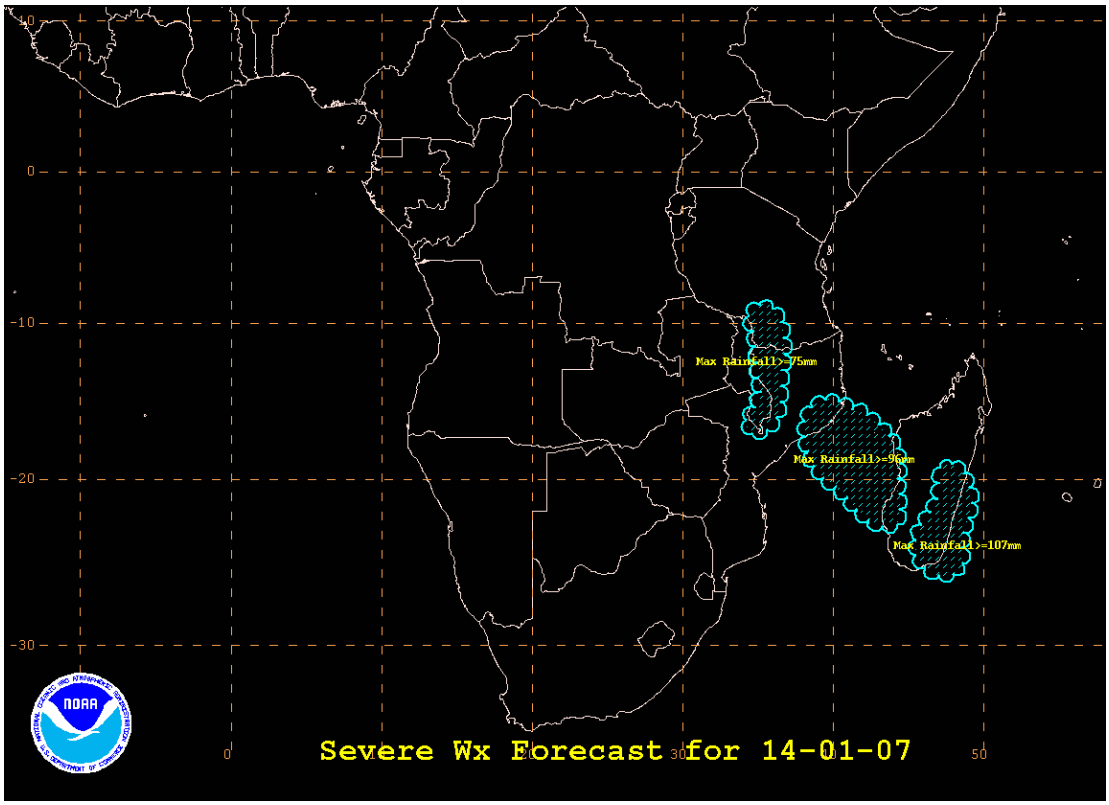
FORECAST MAP FOR DAY1



FORECAST FOR DAY2



FORECAST FOR DAY 3