Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 29th, 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: 00Z 30th, January, 2007- 00z 01st, February 2007

At T+24, the general pattern at 200hpa over Southern Africa (South of the Equator) is showing that the St Helena high has split into two cells with centers located at 20°S 3°E and 12°S 20°E, and is causing subsiding motion over most parts of Namibia, Angola stretching into northern Zambia. The Mascarene high has also split into two cells, with the cell located at 17°S 52°E inducing subsiding air motion over northern Madagascar, northern Mozambique, Tanzania and the other cell located at 34°S 41°E inducing subsiding air motion over areas to the south of Madagascar. The remaining parts of the sub continent, which are South Africa, Botswana stretching into southern Madagascar, are under unstable atmosphere due to a back hanging westerly trough from the south with its northwest axis lying at 20°S 20°E and its southeast axis lying at 60°S 30°E. At T+ 48 hrs the two cells of the St Helena high have merged and the centre of this high is located at 20°S 4°E. This high has relaxed its ridge over the sub continent slightly such that it is causing subsiding air motion mainly over Angola. The two cells of the Mascarene high have shifted to 12°S 30°E and 16°S 45°E, inducing subsidence over northern Madagascar and the northeastern parts of the sub continent. The top part of the back hanging westerly trough has shifted to the west such that its northwest axis lie at 17°S 14°E and its southeast axis lie at 60°S 42°E, and is causing instability over southern Angola, Namibia, South Africa stretching into southern Mozambique. At T+72 Hrs the only significant change is that the westerly trough has slightly shifted to the east, such that the instability it is causing is confined to western Botswana stretching into the southeastern parts of the sub continent.

At 500hpa, the St Helena high has its center at 29°S 8°W, and is ridging into the extreme western parts of the sub continent, causing subsiding motion over these areas. The Mascarene high has split into two cells with centers at 20°S 58°E and 33°S 50°E, causing subsiding motion over northern Madagascar. The rest of the sub continent is under unstable atmosphere caused by a trough with closed circulations located at 18°S 21°E,

23°S 40°E and at 8°S 43°E. At T+48 hrs the centre of the St Helena high has not changed significantly, but it has extended its ridge further eastwards such that the ridge lies over South Africa, Namibia and western Botswana inducing subsiding air motion. Otherwise there is no significant change over the rest of the sub continent. At T+72 hrs the centre of the St Helena high has shifted to 22°S 10°E, inducing subsiding air motion over South Africa, Botswana, Namibia and southern Angola. The two cells of the Mascarene high are located at 21°S 38°E and at 35°S 40°E, causing subsiding motion over the eastern parts of the sub continent. The remaining parts of the sub continent, which are northern Angola stretching into western Zambia are under unstable atmosphere due to a trough with a closed circulation at 14°S 21°E.

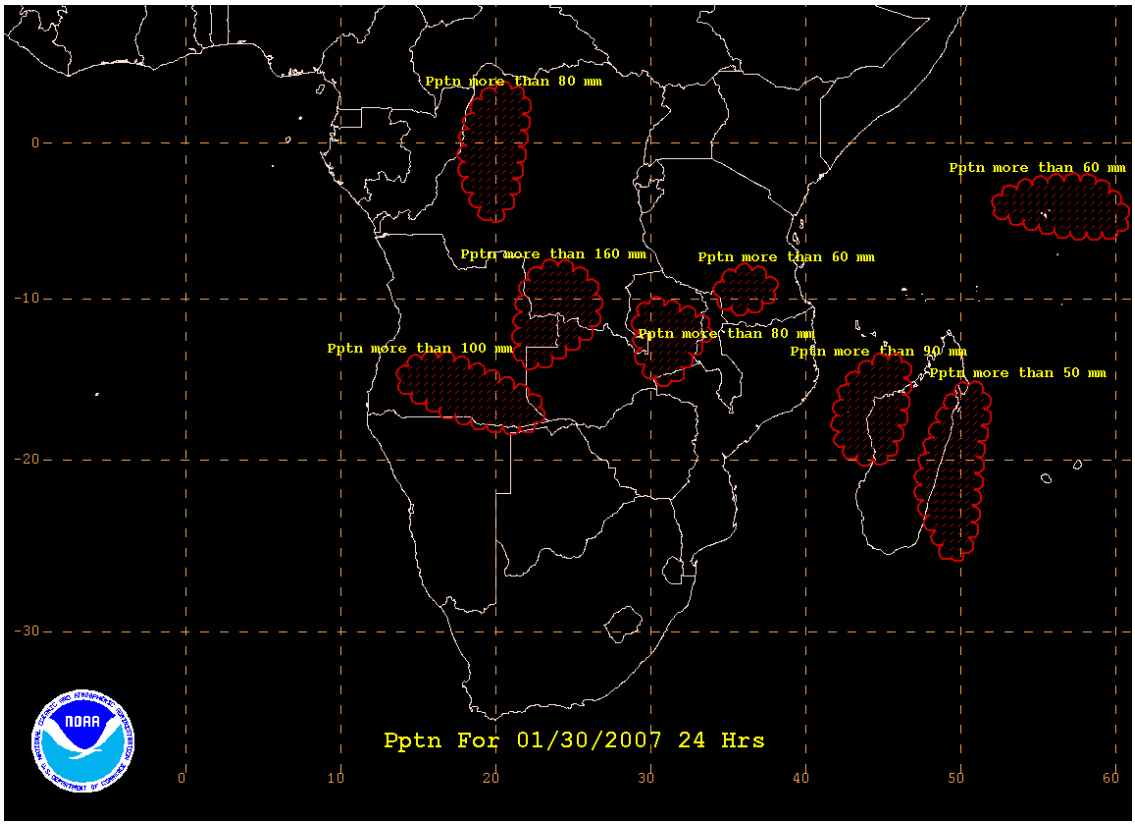
At 850 hPa, T + 24 Hrs St. Helena high has its centre at 29°S 05°W. The Mascarene high has its centre at 34°S 61°E with a cutoff high over north of Madagascar in the Indian ocean, between these two cells the St. Helena high and the Mascarene high there is a trough from the south associated with a front, the trough is in phase with the meridional arm of the ITCZ, Areas of convergence can be seen over northern Tanzania due to the influence of Lake Victoria and cyclonic circulations can be seen over northern South Africa, southern Angola, Mozambique channel and 12°S 63°E.

At T + 48 Hrs St. Helena's high centre has shifted to the west 30°S 25°W with a cutoff high at 38°S 30°E in the Indian ocean. The Mascarene high has its centre at 34°S 64°E with a cutoff high over north of Madagascar in the Indian ocean, between these two cells the St. Helena high and the Mascarene high there is a shallow back hanging trough from the south associated with a front, the meridional arm of the ITCZ, can be seen and identified by cyclonic circulations over South Africa and Namibia boarder and southern Angola, other cyclonic circulations can be seen over the Mozambique channel and 14°S 62°E. Area of convergence can still be seen over northern Tanzania due to the influence of Lake Victoria.

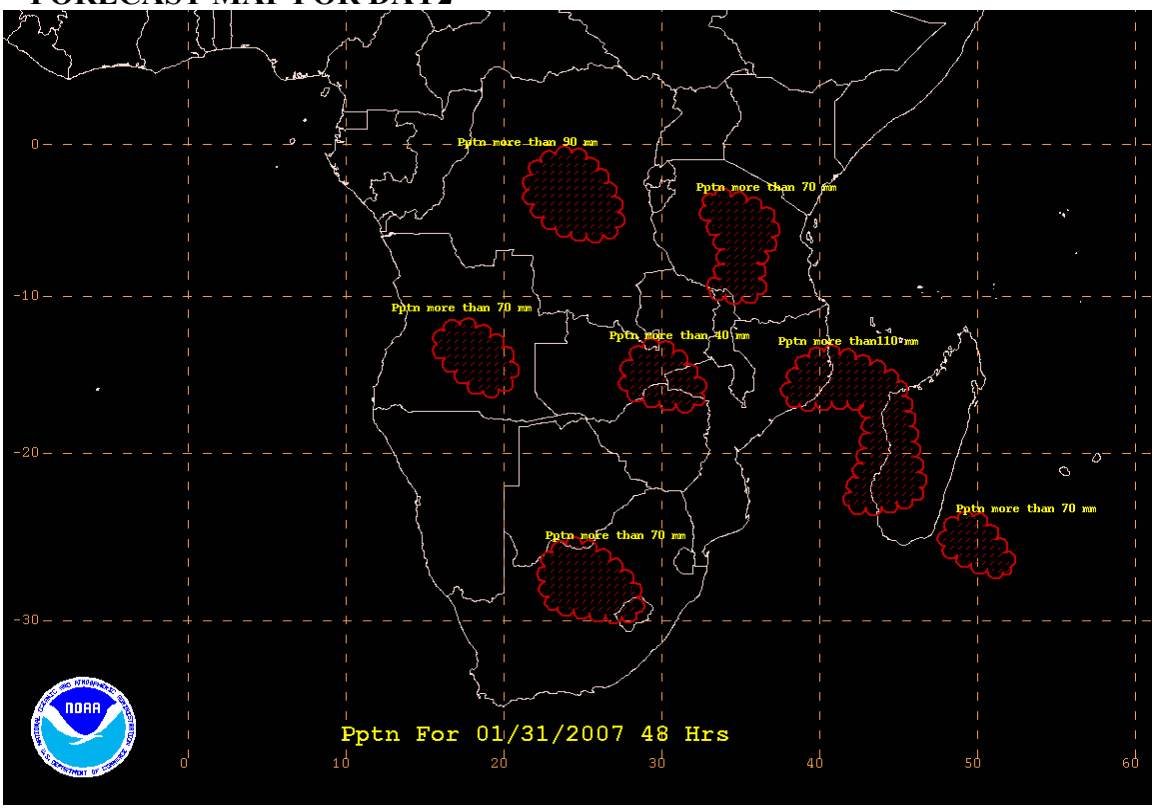
At T + 72 Hrs St. Helena's high centre has slightly shifted to the east 27°S 15°W. The Mascarene high has shifted further to the east and its centre is located at 32°S 70°E with a southeast curved axis over eastern part of South Africa and Mozambique and another axis over eastern Madagascar ecnclosing a cyclonic circulation over the Mozambique channel, between the St. Helena high and the Mascarene high is a deep trough from the south associated with a front, this trough is in phase with the meridional arm of the ITCZ identified by cyclonic circulations over Angola, another cyclonic circulation can be seen over the Mozambique channel and 17°S 61°E. Area of convergence has shifted to central Uganda the reason is still the same due to the influence of Lake Victoria.

Generally there 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 mentioned above show similarity meaning that the season has not changed over most countries.

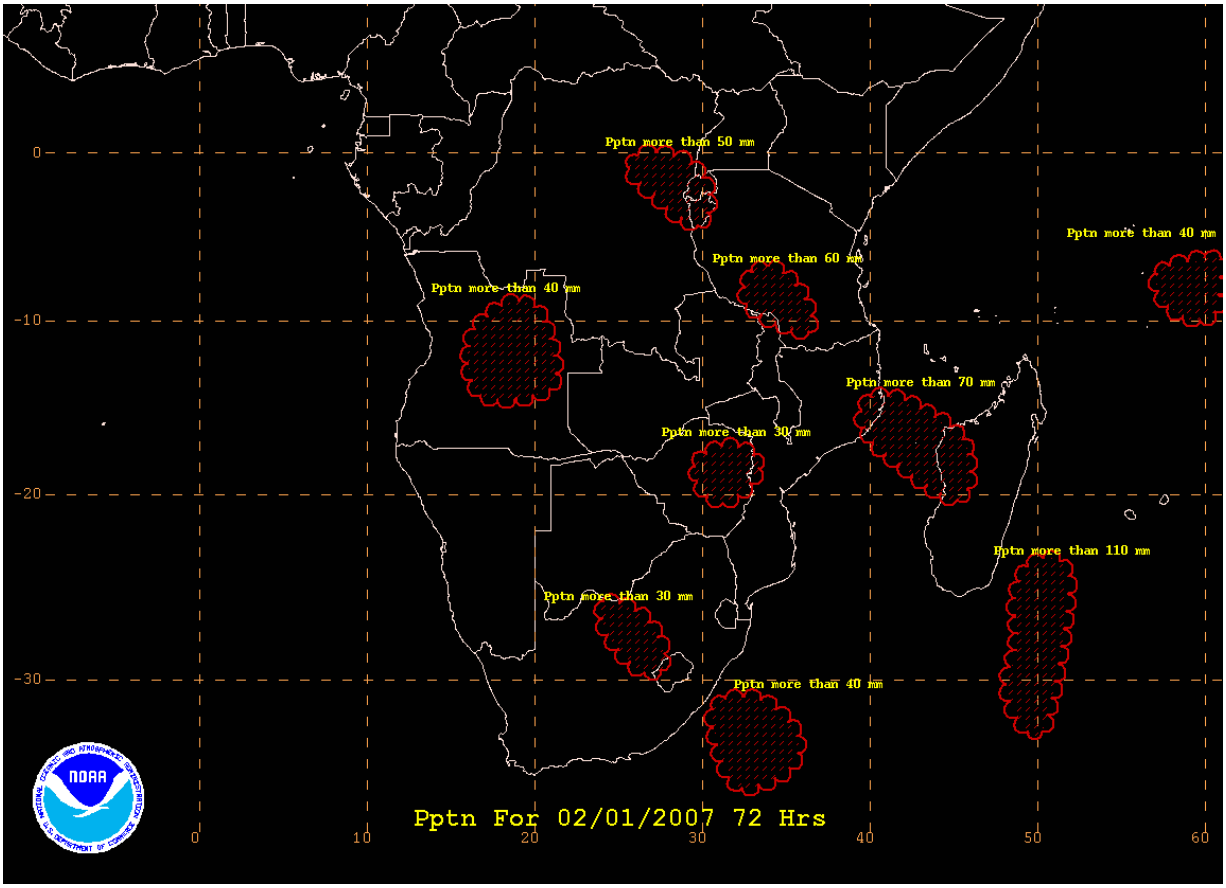
FORECASTMAPFORDAY1



FORECAST MAP FOR DAY2



FORECAST FOR DAY 3



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