Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 10th April 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 11th April 2007- 00Z 13th April 2007.

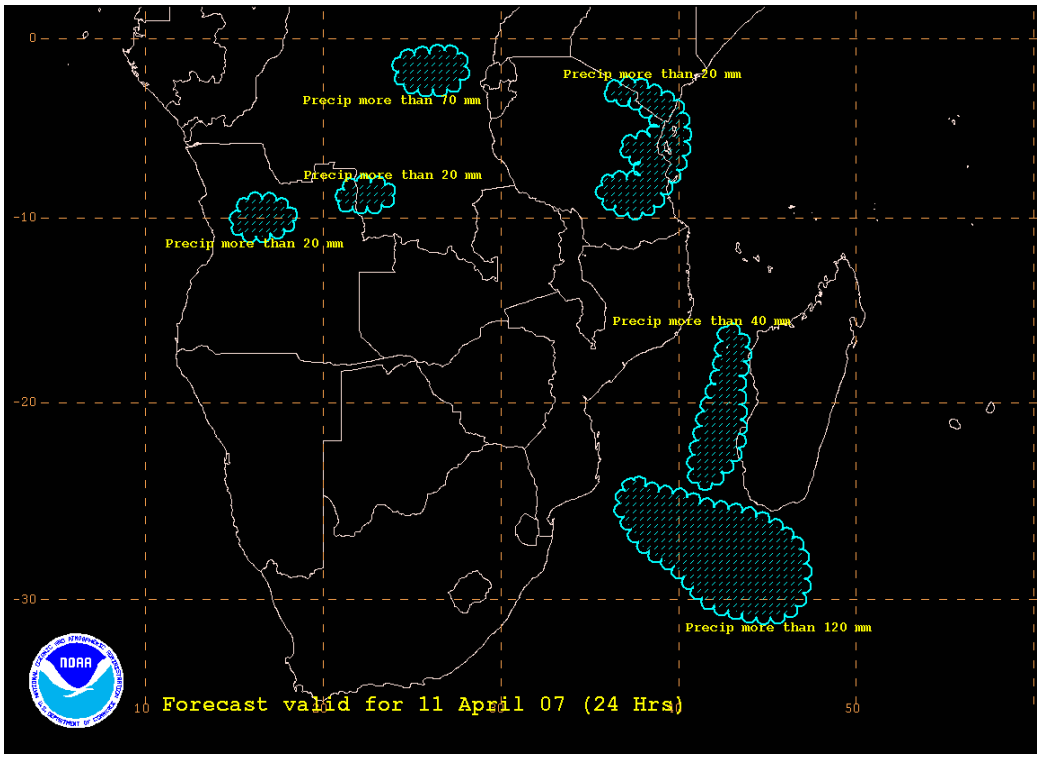
At 200mb, the GFS, ECMWF and UK-MET models show the following general flow pattern over Southern Africa (South of the Equator). There is a trough over western Zambia stretching into southern Mozambique, hence convergence. There is another trough just approaching the western coast of South Africa. There is a low to the far north of Madagascar (7°S 51°E) inducing convergence over these areas also. Two high pressure systems have their centers located over northeastern Madagascar (18°S 49°E) and over northwestern Angola (10°S 15°E), and they are causing divergence over the rest of the sub continent. At T+48 hrs, the troughs have shifted slightly eastwards, and the low to the north of Madagascar has shifted slightly westwards. Due to the eastward shift of the troughs, southwestern Namibia stretching into western South Africa and eastern Zambia stretching into the Mozambique Channel are under convergence. Elsewhere divergence prevails even though the centers of the anticyclones have slightly shifted eastwards. At T+72 hrs, the troughs have shifted further eastwards such that southern Namibia and most of South Africa are under convergence. The low to the north of Madagascar has moved further westwards to near Mozambique/Tanzania coast (10°S 11°E) and the short wave trough which was over eastern Zambia has shifted to northern Mozambique, and has linked up with the low. The rest of the sub continent is under divergence.

At 500mb, the GFS models show a trough over the southern Mozambican Channel, stretching into central Zambia, with a closed circulation at 28°S 39°E. There is another trough to the west of the southwestern coast of the sub continent, causing convergence over these areas. An Equatorial warm core low lying to the east of the coast of Tanzania (6°S 44°E) is causing convergence over these areas. The three models show the Mascarene high centered at 20°S 55°E, hardly ridging the eastern parts of the sub continent but blocking the deepening of the trough with a closed circulation. The St

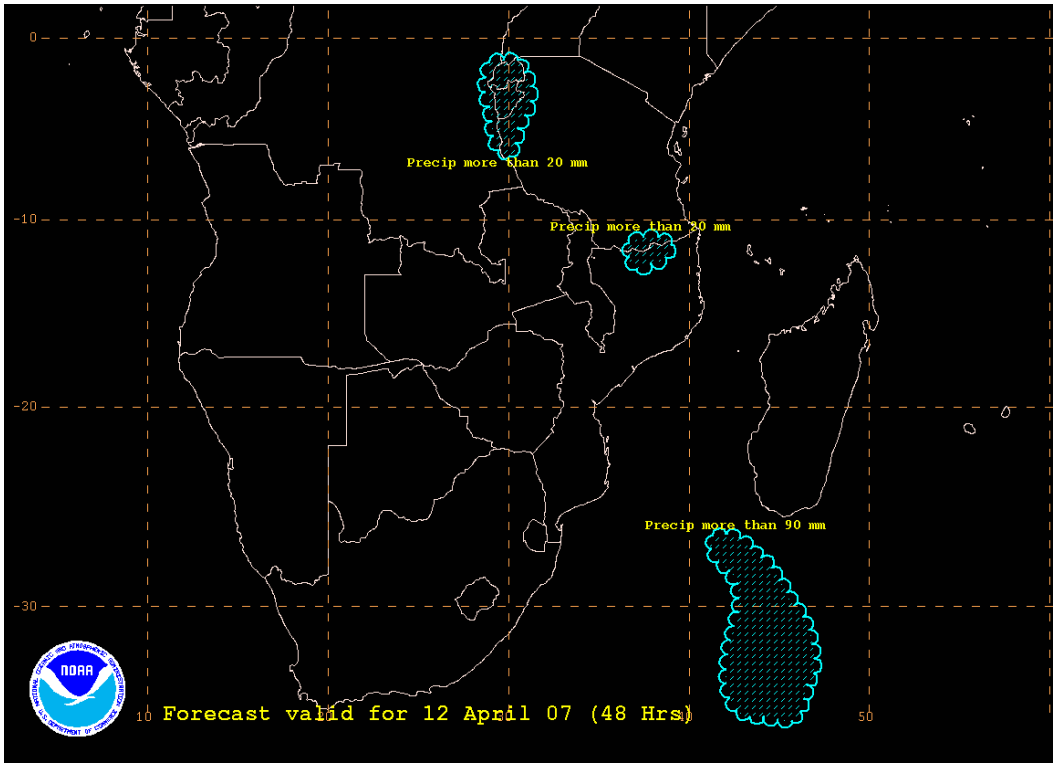
Helena high has two cells with centers located at 28°S 19°W and at 10°S 2°E, ridging into most of the sub continent. At T+48 hrs, the three models show that the trough over southern Mozambican Channel has shifted southeastwards, weakening in amplitude. The trough which was to the west of the southwestern coast of the sub continent slightly shifts eastward. Convergence to the east coast of Tanzania is maintained and the Equatorial warm core low has shifted westward. Convergence can also be seen over northern Namibia/Botswana border and eastern Angola, where there is a shallow trough. The models also show that the ridges of the Mascarene and the St Helena highs prevails over the rest of the sub continent, hence divergence. At T+72 hrs, the trough which was over the southwestern coast of the sub continent has shifted eastward, hence convergence over southeastern Namibia and South Africa. The trough which was over the southeastern Mozambican Channel has weakened, and the low which was over the coast of Tanzania has filled up as the Mascarene high has shifted westward, throwing a ridge over the most of the western parts of the sub continent. For the ECMWF and UK METT OFFICE models the low over the coast of Tanzania still prevails. The rest of the sub continent is under divergence. The ensemble members of the GFS show a huge spread of the 5700m and 5870m height contours over Angola/Zambia border, central D.R. Congo and eastern Tanzania T+24 up to T+72, which implies uncertainty in the position and stretching of the trough over central Mozambique and the low over the coast Tanzania.

At 850mb, there is a deep low lying over southern Mozambican Channel near 27°S 39°E; hence intense thundershowers are expected to continue over central and southern Mozambican Channel and over the southwestern coast of Madagascar. A trough over southwestern parts of the sub continent is causing convergence over the western South Africa. The St Helene high with its center located at 35°S 10°E is ridging into most of the western coast of the sub continent. The Mascarene high is centered at 40°S 51°E and is throwing a ridge over the rest of the sub continent. At T+48 hrs, the deep low which was over southern Mozambican Channel has filled up, forming a shallow trough but intense thundershowers and strong winds are expected to persist to the south of the Mozambican Channel and also over the southwestern extreme of the coast of Madagascar, but some reduction over southern Mozambican Channel. The trough which was over southwestern parts of the sub continent has shifted eastward, causing convergence over central South Africa. Convergence is also seen over Namibia (slight convergence) and the western coast of Angola, where there is a low. Another low is lying to the further northeast of Madagascar, slightly shifting westward. The St Helen high is hardly ridging the western coast of the sub continent. Divergence prevails over the rest of the sub continent. At T+72 hrs, the shallow trough to the south of the Mozambican Channel has shifted southeastward, reducing its effect over southern Mozambican Channel. The trough which was over the southern coast of the sub continent has shifted to the southeast, causing convergence over northeastern South Africa and southern Mozambique. There is a low over northeastern D.R. Congo causing convergence over these areas. Convergence western Namibia and the low to the northeast of Madagascar is maintained. Divergence prevails over the rest of the sub continent. There is a reasonable agreement between the ensemble products of the 50 mm isolines of 6 hourly total precipitations over southern Mozambican Channel and southwestern Madagascar, up to T+48 hrs.

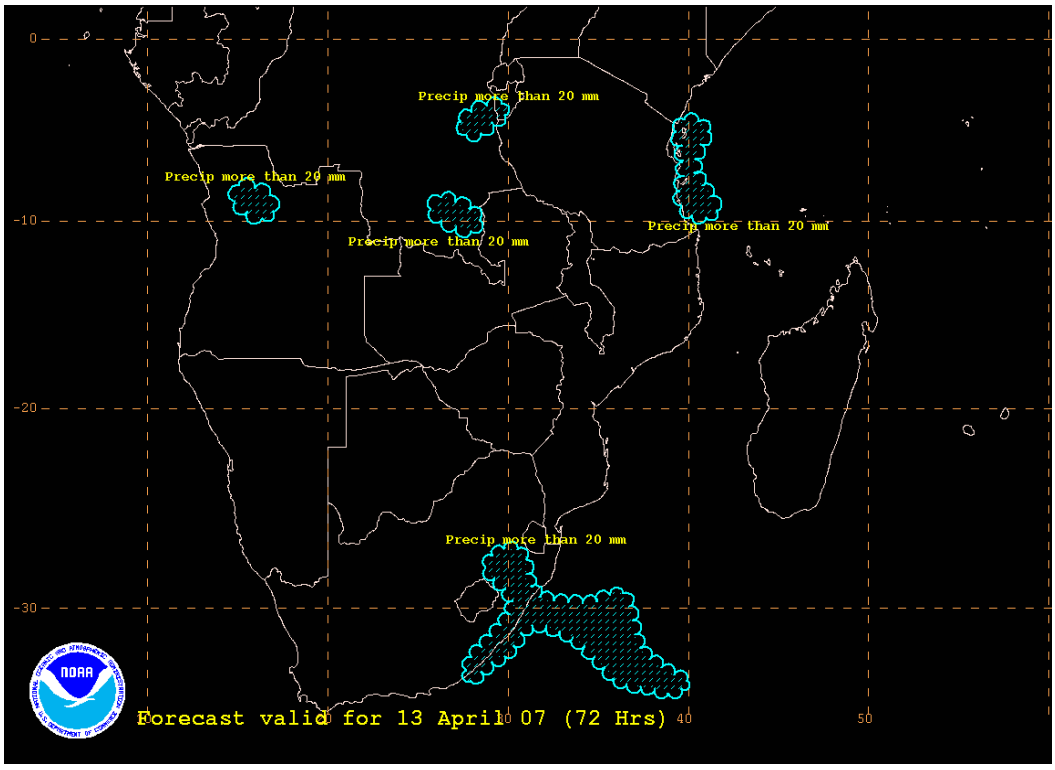
FORECAST MAP FOR DAY 1



FORECAST MAP FOR DAY 2



FORECAST MAP FOR DAY 3



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