Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 30th March 2007

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

FORECAST DISCUSSION 14H00 EST 29th March 2007
Valid: 00Z 31st March 2007- 00Z 02nd April 2007.

Highlights**:** *MODERATE TROPICAL STORM 22°S (JAYA), centered near 13,4°S 66,3°E at 301200Z with 994hPa pressure at the center, moving westward at 5 kt.*
JAYA has tracked westward at 08 knots over the past six hours intensifying from Tropical Depression to Moderate Tropical Storm. In the next 48 hrs JAYA is expected to maintain quasi-stationary with no significant change in the intensity due to decreasing poleward outflow and the blocking system established by the four cells of the Mascarene high. At T+72 hrs the system is expected to take a slight west-northwestward turn has the cells of the Mascarene high shifts eastward and the *ridge reorients. The resulting steering flow becomes more meridional*.

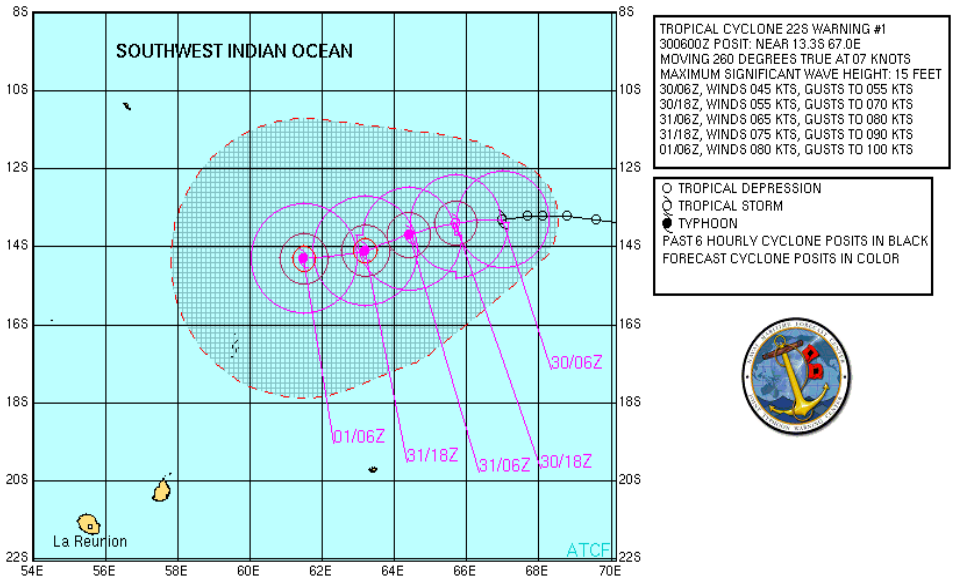
At T+24 hrs, the general flow pattern at 200hpa over Southern Africa (South of the Equator) as shown by the GFS, ECMWF and UK-MET models, is a trough over southeastern parts of the sub continent stretching into southwestern Botswana, with westerly to northwesterly winds of up to 65 KT. The models show a shallow trough over central Mozambique stretching into Zambia, causing convergence. Convergence is also seen to the further east of the coast of Kenya, where there is a low. There is a high pressure system centered at 18°S 11°E throwing a ridge over the most of the sub continent. Another ridge is lying at 18°S 69°E. At T+48 hrs, convergence over the southeastern parts of the sub continent is maintained. The shallow trough which was over central Mozambique stretching into Zambia has shifted to the Mozambican Channel, causing convergence over these areas. The westerly to northwesterly winds of up to 65 KT is maintained. Elsewhere the general flow pattern is similar to that at T+24 hrs. At T+72 hrs, the trough over the southeastern parts of the sub continent has slightly shifted eastward and weakened in amplitude, and its winds over the southeaster parts of the sub continent have weakened also. Elsewhere the general flow pattern prevails.

At 500mb, the GFS, UKMET and the ECMWF models are in agreement that the Moderate tropical Storm JAYA centered near 12°S 64°E is lying between the four cells

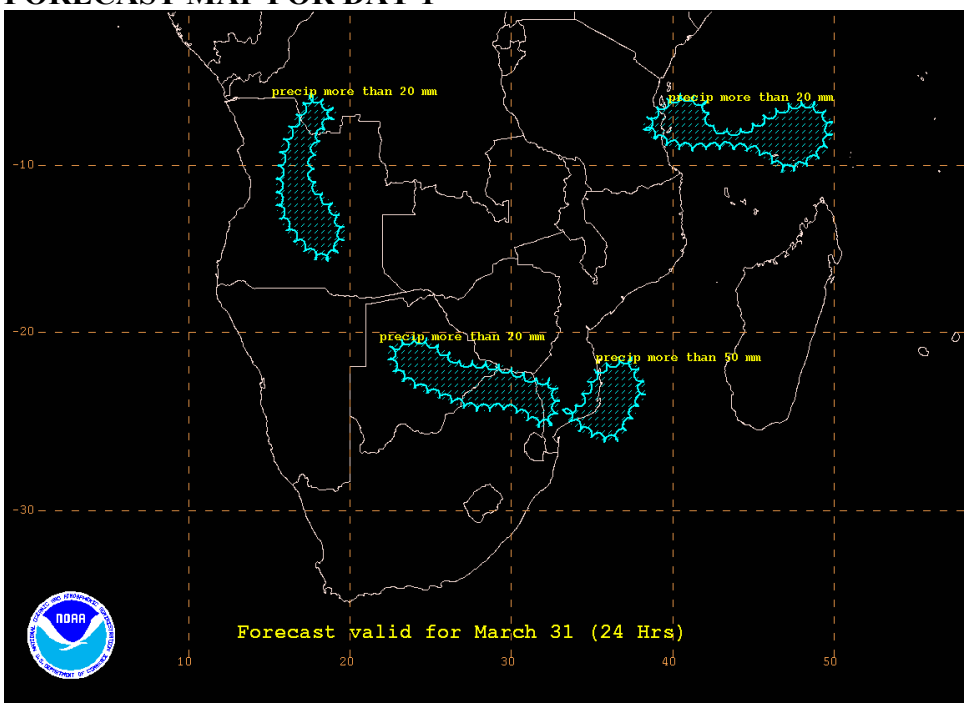
of the Mascarene high pressure system, two of them centered at 5°S 70°E and at 22°S 63°E, and the other two cells are centered at 5°S 49°E and at 15°S 39°E, throwing a ridge over the northeastern parts of the sub continent, hence divergence. There is a trough over southeastern part of the sub continent, causing convergence over areas which are to the east of 20^{o}E longitude but south of 20^{o}S latitude. The St Helena high with two cells centered at 28°S 13°E and at 19°S 8°E is ridging into most of the western coast of the sub continent. At T+48 hrs, the three models show that the trough which was over the southeastern part of the sub continent slightly shifts eastwards, stretching into southwestern Zimbabwe and causing convergence over northeastern Botswana, northeastern South Africa, southern Zimbabwe and southern Mozambique. The Moderate Tropical Storm JAYA has slightly shifted westward to 10°S 60°E. Divergence prevails over the rest of the sub continent. At T+72 hrs, the Moderate tropical Storm JAYA takes a slight west-northwestward turn has the cells of the Mascarene high shifts eastward and the ridge reorients. The trough over the southeastern part of the sub continent is maintained, weakening, has the St Helene high shifted southeastward causing onshore flow over eastern South Africa. The ECMWF model is in agreement with GFS and UK Met OFFICE that divergence is maintained over the rest of the sub continent. The 5700m and 5870m height contours of the 500mb heights of the GFS ensemble prediction system, at T+24 hours, show good agreement in the location of the trough over the southeastern parts of the sub continent but a huge spread over Botswana, northwestern Namibia, central and southern Mozambique implying that there is a high uncertainty in the location of shallow trough and stretching of the trough over the southeastern parts of the sub continent into southwestern Zimbabwe. This pattern continues up to T+72 hours where there is a large spread within the ensemble mean of the spaghetti diagrams of 50mm/6hrs precipitation isolines over southern Mozambique coast and northeastern South Africa, denoting uncertainty in the intensity of the rainfall.

At 850mb, TC 22s is lying near 12°S 65°E and its linking the easterly trough which is causing convergence over areas which are to the north of 9^{o}S latitude. Convergence can also be seen over the extreme southeast of the Mozambican Channel, to the west of the western coast of Namibia and South Africa, where there are lows. The rest of the sub continent is under a ridge of the Mascarene high centered at 32°S 35°E. At T+48 hrs, convergence to the east of the Mozambican Channel and over the areas which are to the north of 9^{o}S latitude is maintained. The TC 22S which was near 12°S 65°E slightly shifted westward to 12°S 61°E. The low which where to the west of the coast of Namibia and South Africa has filled up, as the St Helene high shifted eastward but is hardly ridging the southwestern parts of the sub continent. The rest of the sub continent is under a ridge of Mascarene high. At T+72 hrs, there is no significant change in the general flow pattern, except that the Moderate tropical Storm is shifting west-northwestward and the low to the east of the Mozambican Channel has deepened. There is a trough to the southeastern coast of South Africa, causing convergence over these areas. The three models are in agreement that divergence prevails over the rest parts of the sub continent. The ensemble products show that the probability of 10 m wind speeds to exceed 20 KT over the southern Mozambique Channel is 30 to 65% at T+24 hrs falling from T+48 hrs up to T+72 hrs.

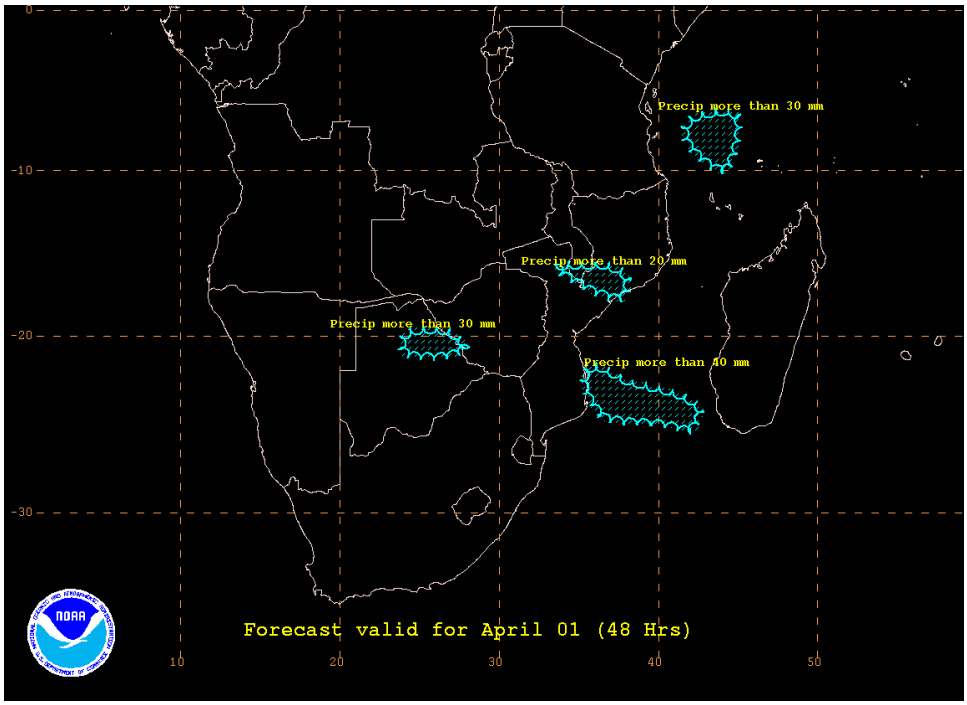
MODERATE TROPICAL STORM JAYA TRACK AS ISSUED BY JTWC



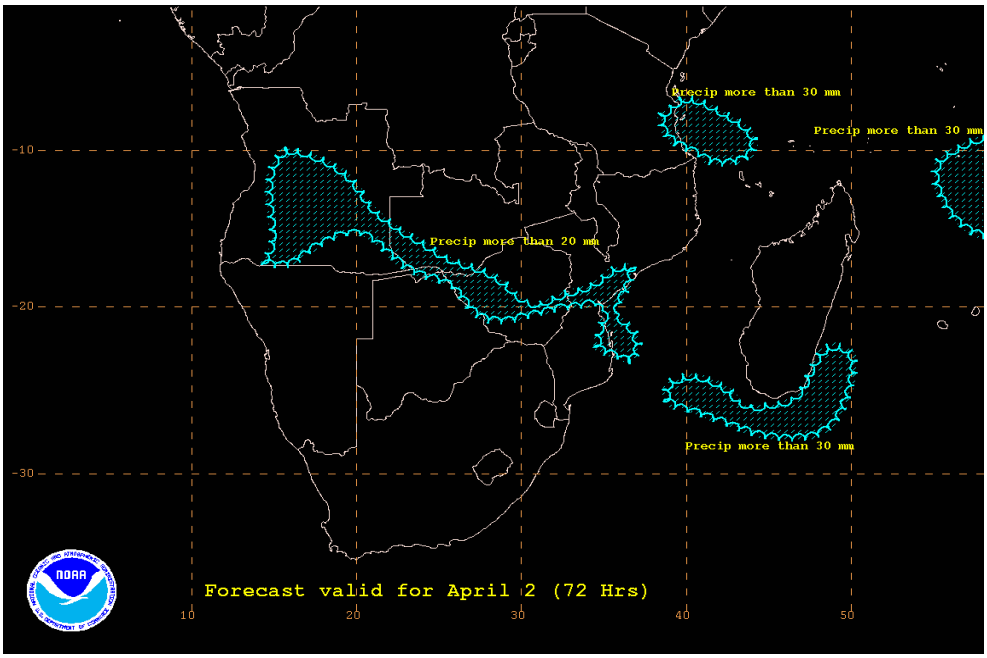
FORECAST MAP FOR DAY 1



FORECAST MAP FOR DAY 2



FORECAST MAP FOR DAY 3



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