

Title: A Modeling Study of the On-Going Drought and Heat Wave over the United States

Authors: Schubert, S., H. Wang, R. Koster, and M. Suarez

Submitted to AMS

Abstract

Ensembles of AGCM experiments have been conducted to examine the causes of the on-going drought and heat wave affecting much of the United States. The results show that the drought and hot temperatures that have been especially severe over Texas and parts of Mexico since late 2010 are the result of a combination of SST forcing from both the tropical Pacific and the tropical Atlantic, with the latter playing a particularly important role during later half of the summer of 2011, and the warm SSTs off the East Coast contributing to the warm conditions along the East Coast. An extension of the model simulations into the summer of 2012 suggests that the warm conditions are again primarily driven by SST forcing - despite the return of the tropical Pacific to neutral conditions. The results of additional experiments currently being conducted to separate the influences of the 2012 SST anomalies in the various ocean basins will be discussed.