

## **Jupiter's Red Oval: a Sign of Global Climate Change?**

**Imke de Pater**, P. Marcus, X. Asay-Davis, M. Wong (UCB), and C. Go (Phil)

Univ. of California, Berkeley, CA 94720; Univ. of San Carlos, Philippines. imke@berkeley.edu

Between 1997 and 2000 the three large white ovals just south of the Great Red Spot (FA, dE, and BC) merged and formed the white oval BA. In late 2005 the oval BA turned red, and is now known as the (little) Red Oval. We observed the Red Oval with HST to investigate whether its reddening may be connected to a global climate change, predicted to happen periodically (~70 years) by P. Marcus (2004). Since Jupiter received more sunlight on its equator than at the poles, one might expect the equator to be hotter than the polar regions. Voyager showed that the effective temperature is similar, however, suggestive of a process that redistributed the heat in an efficient way. Such a redistribution of heat can be caused by small storm systems, like the white ovals on Jupiter. If ovals at a particular latitude band merge, heat will no longer be transferred from the equator to pole across that latitude band, which results in a heating and cooling above and below that band, respectively. Could this process be responsible for the reddening of the oval? We will also comment on the observations obtained over recent months by amateur and professional astronomers: there appears to be a "global upheaval" of Jupiter's atmosphere.