Observations and Simulations of the Jovian Anticyclone BA and its interaction with the Great Red Spot

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We present preliminary results on the observations of the interaction of anticyclone BA with the Great Red Spot (GRS) in Jupiter, as well as its dynamical properties. BA is one of the biggest anticyclones in Jupiter, located at a latitude of 34 deg S, with a longitudinal dimension of 11 deg, and a meridional extension of 7 deg. This atmospheric formation has drawn much attention in the last year due to its colour change, and to the GRS-BA conjunction which took place in July 2006. About six months before its conjunction with the GRS, BA developed a ring of red clouds in its interior. After the colour change, we measured the geometric albedo of the BA and the GRS by using broadband standard Johnson-Bessell BVRI photometric filters with the 60cm Cassegrain telescope at Esteve Duran Observatory. By measuring the (R-I) and (B-V) geometric albedo colour indices, we determined that the BA hue was similar to the GRS' after the colour change. Before the GRS-BA conjunction actually happened, it was noted that during the conjunction BA could be disrupted by the GRS, but this did not happen. Nevertheless we have been able to detect some dynamical interactions. First of all, the drift velocity of BA accelerated from +2.2ms-1 to +3ms-1 right after the conjunction of the BA and GRS centres. The GRS mean zonal velocity remained unchanged. We were also able to detect alterations in BA's aspect ratio during the conjunction. All these dynamical interactions, as well as the dynamical properties of BA itself are being simulated using EPIC, a numerical model which works in isentropic coordinates, and solves the fully non-linear hydrostatic equations for the horizontal velocity components of a rotating planetary atmosphere.