HVC131 + 1-200: A COLLISION OF A HIGH VELOCITY CLOUD WITH THE GALACTIC PLANE

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We report HI observations from Effelsberg, using the 100-m radiotelescope of the Max-Planck Institut fur Radioastronomie, which show evidences of a High Velocity Cloud (HVC) - Galaxy collision, in a region around $l = 131°$, $b = +1°$. They show a) a HVC, named HVC131 + 1-200; b) a hole in the gas distribution at velocities around $v \approx -12$ km/s; c) a HI shell surrounding the hole and d) intermediate velocity gas in the velocity range $-30 < v < -25$ km/s. All these features are found in the same region of the sky

We believe that a possible interpretation for all these phenomena is that they were produced by a collision of HVC131 + 1-200 with the galactic plane. The consequences of such a collision, predicted by several authors (Tenorio-Tagle, 1987; Meyerdierks, 1991; Comeron & Torra, 1992), are the formation of a) a forward shock moving into the galactic gas ahead; b) a dense layer of shocked gas between the HVC and the galactic gas; and c) a cavity which, due to the thermal energy originated in the forward shock, will be filled with hot low density gas and will expand laterally. All these effects are present in the studied region in the form of the mentioned features.

REFERENCES:

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