

CO 2–1 Mapping of WR16 with AST/RO

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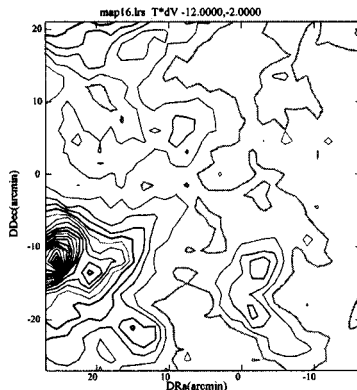
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Abstract. Massive stars have profound effects on their surroundings, influencing them by their energetic stellar winds, and finally by supernova explosions. We present a CO 2–1 map of the surroundings of the Wolf-Rayet star WR16, taken with AST/RO at the South Pole, which shows some of these effects.

Marston et al. (1999) directly detected a cocoon of molecular gas in the CO 1–0 rotational line around the WN8 star WR16. They also presented evidence that that this material was in fact ejected from the star itself rather than being swept-up gas from the interstellar medium, but their study was limited by the relatively small extent of the CO map. We present an expanded map in CO 2–1 of the vicinity of WR16, on a square grid with 1.5' spacing, with the star at the origin of the map. There is a small cavity around the star, consistent with that seen in the CO 1–0 map, surrounded by molecular material. At the outside of the map, there are a number of much brighter clumps, which might be fragments of a wind-blown shell from an earlier phase of the star's evolution.



References

Marston, A. P., et al. 1999, *ApJ*, 518, 769