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NEAR AND MID-INFRARED IMAGES OF THE MASSIVE STAR-FORMING COMPLEX G 9.62+0.19

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A near- and mid-infrared study of the star-formation complex G 9.62+0.19 is presented. It includes photometrically calibrated images through wide-band *JHK* and narrow-band Brγ, H_2, and 12.5 μm filters. The observations were made at Las Campanas, La Silla and the Observatorio Astronómico Nacional–San Pedro Mártir observatories.

We found evidence of two embedded young clusters of O–B5 stars associated with the radio components B and C, the latter a compact and an ultracompact H II region. Evidence is presented of a third, more dispersed cluster of more luminous infrared stars located at the southern edge of the cloud complex. A large fraction of the stellar members of each cluster exhibit significant infrared excess. We confirm the detection of a very red ($H-K = 5.2$) near-infrared source immersed in the molecular hot core (component F) and report the presence of a mid-infrared counterpart (see Figures 1 and 2). The derived IR luminosity suggests that the embedded young star is of a spectral type B3. An H_2 shocked gas knot, probably an obscured Herbig-Haro object, was found associated with the blue-shifted lobe of the high-velocity molecular outflow originating deep in this core. No IR sources were found at the position of the radio components D and E. These observations support the idea that the several components of the G 9.62+0.19 complex appear to be at different evolutionary stages.

The full details of this work will appear in a forthcoming paper.

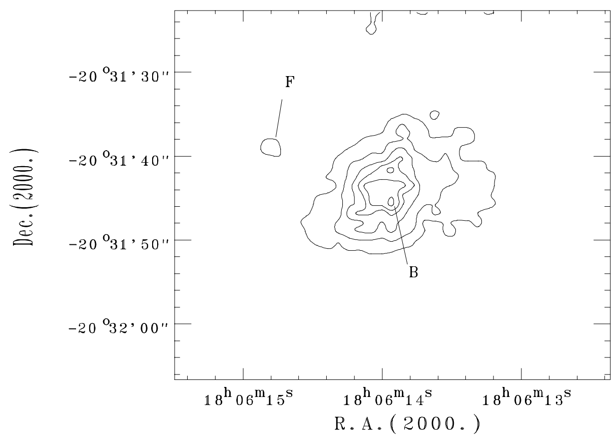

Fig. 1. Contour map at 12.5 μm of G 9.62+0.19 where the radio H II region B and the hot molecular core F are labeled.

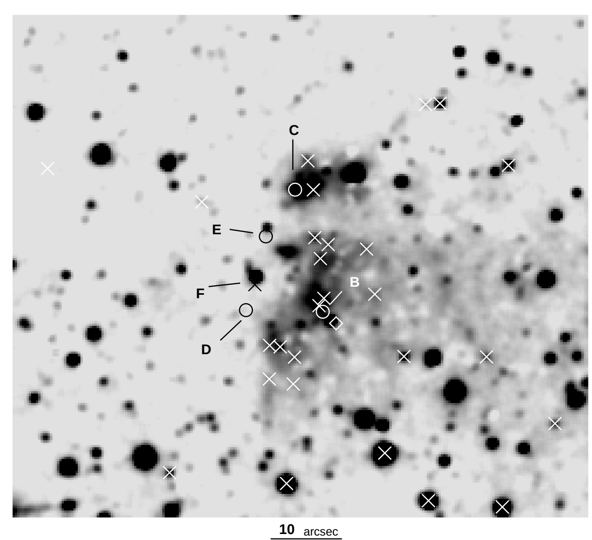

Fig. 2. *K*-band image of the central region of G 9.62+0.19 ($89'' \times 89''$), indicating the position of the UC HIIs (open circles), the hot core (black cross), and of the sources with IR excesses (white cross). The diamond indicates the peak position of the extended mid-IR source. North is to the top, East to the left.

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