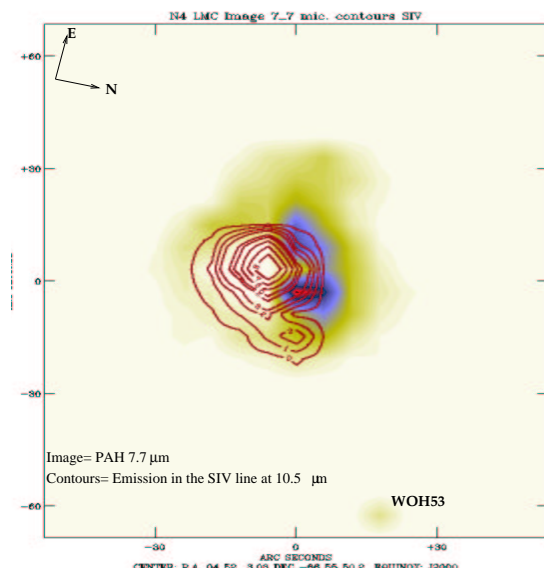




We present the analysis of ISOCAM-CVF spectro–imaging and J,H and K photometry data of the HII region complex N4 in the Large Magellanic Cloud (LMC). We apply a dust features – gas lines – continuum fitting technique on the whole ISOCAM-CVF data cube, which allows the production of images in each single emission and therefore a detailed analysis of dust (both continuum and bands), and ionized gas. The NIR photometry provides, for the first time, complementary information on the stellar content of N4.

The MIR (5–17  $\mu\text{m}$ ) spectral characteristics of N4 are very similar to what has been observed in Galactic HII region complexes: strong PAH bands and significant continuum in its PDR; weak PAH bands, strong dust continuum and fine structure lines from the ionized gas, in the HII region; weak dust features with almost no continuum from the outskirts of the molecular cloud. The images in the single 7.7  $\mu\text{m}$  band and SIV (10.5  $\mu\text{m}$ ) (fig.1), obtained with our fitting technique, clearly shows that the HII region core is completely devoid of PAHs. On the other hand, the ionized gas arises almost completely in the dust cavity where the two main exciting stars (#2, #3 in fig. 2) of N4 are located. We find that what mostly affects dust is not the metallicity, but destruction by the hard and high Interstellar Radiation field. This mechanism is more efficient on smaller dust particles/molecules, thus affecting the dust size distribution.

The NIR analysis of the stellar content of N4 reveals 6 point sources (labeled in the NIR composite map). Objects #2, #3, #5 and #6 are reddened O MS stars. Stars #1 and #4 have large IR excess, colors not corresponding to reddened young MS stars and J band brightness corresponding to Class I and/or Herbig Ae/Be objects candidates. Star #1 is most probably a non resolved multiple compact young massive system. Star #4 has the largest IR excess of the sample. It has IR characteristics of a massive young stellar object (YSO's) similar to N122 in 30Dor.



Map from Lorentzian fit of the 7.7  $\mu\text{m}$  PAH band. Contours: image from Gaussian fit of the SIV (10.5  $\mu\text{m}$ ) line.

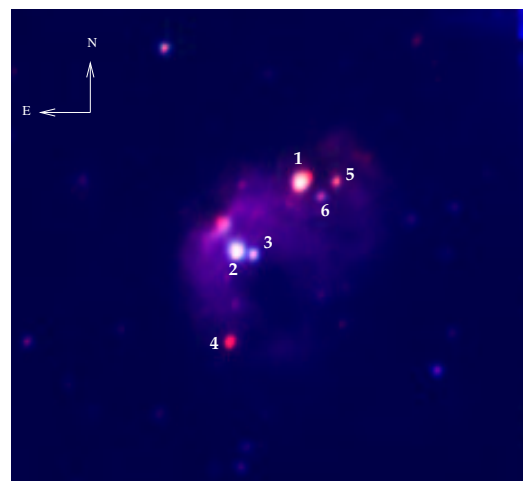


Figure2. NIR Composite map of N4: red is K, green is H and blue is J. Point sources identified as stars are numbered.