The Ground-Based leg for our ISO PNe: NIR–Imaging

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Two ISO projects of scientists in Innsbruck deal with spatially resolved investigations of planetary nebulae in the infrared. Imaging in the NIR (1.0 – 2.4μm) is not possible with ISO and the spatial resolution and the limiting flux of the new surveys (DeNIS and 2MASS) will be insufficient for most of our objects.
However, data from this wavelength domain is necessary, since there is the transition zone of the gas–dominated to the dust–dominated radiation.
We present here the results of *"follow–up"* observations to fill the wavelength gap between ISOCAM and optical data for a set of southern PNe. The high spatial resolution allows us detailed studies of the properties of the nebulae in the wavelength ranges of the J, H and K_s bands. Additionally I band data from DeNIS is already available for some of the objects.
In the NIR here is a domination mainly by the hydrogen of the nebula. There are also almost no forbidden lines of heavy elements contributing significantly to the total flux. Thus the behaviour in transition from thin to dense regions in the nebula is totally different from that of optical wide band images, which are dominated by forbidden lines. Combining this data with narrow band images in optical hydrogen, helium and oxygen lines (e.g. Balick, 1987, *Astron. J.* **94**, 671; Schwarz et al. 1992, *Astron. & Astrophys. Suppl. Ser.* **96**, 23) allows to extract the non–line components of the radiation field as a function of the location in the nebulae. As an example, we found that most of the bright knots in K_s are coincident with bright [OIII] and [NII] features. This is especially true for K 1-10, north of the center, were the even much deeper J and H images show hardly anything, while there are quite bright knots in K_s. Since there are only hydrogen and helium lines in that very band, we suspect to see features of relatively hot dust.
Spatially resolved observations, however, do not only allow more detailed modelling, but also provide better information about the contamination of the red (in the visual highly reddened) stellar contribution to the total flux. Such a contamination has possibly influenced the photometries as given by e.g. Pena & Torres-Peimbert (1987, *Rev. Mex. Astron. Astrofis.* **14**, 534), Whitelock (1985, *Mon. Not. R. Astron. Soc.* **213**, 59) and Kwok et al. (1986, *Astrophys. J.* **303**, 451). This may reduce the scatter of the population in NIR color–color plots suited for identification of new objects from the huge data sets of the surveys.

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