Minor-bodies science with the J-PAS/J-PLUS photometric surveys

M. De Prá[1] and J. Carvano[1]

[1]Observatorio Nacional -Rio de Janeiro, Brazil

The JPAS/J-PLUS is a joint Spanish-Brazilian project that aims to map an area of the sky of 8000 square degrees, in order to measure, with unprecedented accuracy, the redshifts of a large sample of extragalactic objects up magnitude 23. It involves the installation of two telescopes on the Javalambre Mountains, in Spain. The T250 telescope will have an aperture of 250 cm and will be equipped with a camera with a 3 square degree field of view and will use a set of 56 filters (54 narrow band + 2 wide band) covering the 0.3–1.0 micron range, while the T80 telescope (presently on commissioning phase) will have a camera with 2 square degree field of view and will use a set of 12 narrow and intermediate band filters covering the same wavelength range. During its execution, the surveys will also observe a large number of minor Solar System bodies. For those objects, the differential of JPAS/J-PLUS with respect to other large photometric survey is the number and position of the filters used, which will allow a better identification of some taxonomic classes that are not well defined only with SDSS-like filter systems. In particular, the JPAS/J-PLUS data set will allow a robust identification of the 0.7 micron water alteration band that characterize the Ch class in Bus taxonomy. Thus, with JPAS/J-PLUS it will be possible to map the occurrence of water alteration in the present Solar System, which in turn will allow us to put further constraints of the presence of volatiles and of heating processes in the early Solar System. Also, although the survey cadence is not optimized for the discovery of minor bodies, J-PAS/J-PLUS can give an important contribution to the effort of expanding the known population of asteroids and TNOs. We will discuss also the expected efficiency of the J-PLUS/J-PAS surveys in finding minor bodies.