

THE UV-EXCESS SURVEY OF THE NORTHERN GALACTIC PLANE

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The UV-Excess Survey of the Northern Galactic Plane (UVEX) images a 10x185 wide band, centered on the Galactic Equator, in four optical bands (U,g,r,HeI5875) down to ~21st-22nd magnitude (~20th in HeI5875) using the 2.5m Isaac Newton Telescope on La Palma. See Groot et al., 2009 for a full description of the survey.

The aim of UVEX is to extract a homogeneous sample of stellar remnants in our Milky Way, including evolved stars and binaries, white dwarfs, subdwarf B stars, symbiotic stars, Cataclysmic variables and AM CVn stars. In the plane of the Milky Way these intrinsically blue, low-luminosity populations of objects are visible against a background of higher luminosity, more distant and therefore more reddened (main-sequence) objects.

Through an automatic field-to-field algorithm a catalog of 13128 blue UV-excess sources is selected from the colour-colour and colour-magnitude diagrams of the first 203 square degrees of UVEX data (Verbeek et al., 2010 in prep.). Spectroscopic follow-up of 115 UV-excess sources shows that this sample contains DA and DAB white dwarfs, subdwarfs, T Tauri stars, red dwarf-white dwarf binaries, a QSO at redshift $z \sim 2.16$ and $H\alpha$ emission line stars such as Cataclysmic Variables. Cross-matching the selected UV-excess sources with other catalogs shows that only two percent of the sources was previously known, so UVEX is extracting a large number of unknown sources.

Together with IPHAS (r,i, $H\alpha$) and VPHAS+ (u,g,r,i, $H\alpha$, Southern sky), UVEX (currently 38 percent complete) forms the European Galactic Plane surveys (EGAPS). A full scale optical, multicolour, digital, photon-noise limited survey covering the full Galactic Plane. EGAPS will contain the digital multicolour (six bands) information of ~1 billion objects in our Milky Way. This EGAPS data will be used for several studies, e.g. a high quality proper motion study in the Galactic Plane and a 3D dust map of our Milky Way on arcsec scale.

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