RESOLUTION B1

on guidelines for the designations and specifications of optical and infrared astronomical photometric passbands.

Proposed by IAU Commission 25

The XXVIII General Assembly of the International Astronomical Union,

noting

that considerable confusion has existed and continues to exist in the defining and naming of photometric passbands of all spectral widths in the visible and infrared regions of the electromagnetic spectrum,

considering

that minimizing such confusion has been a long-time goal of members of Commission 25 [e.g., see remarks by Wesselink and by Greaves in Transactions of the IAU, VII, pp. 267-273 (1950)],

recommends

1. that proposers of new passband systems should check the IAU Commission 25 website and links therein, especially to http://ulisse.pd.astro.it/Astro/ADPS/ (extended version of the paper by Moro and Munari 2000, A&AS 147, 361) to ascertain what passband names have already been used, before creating designations for new passbands.*

2. that names for new passbands should avoid relatively well known designations, such as UBVRIJHKLMNQ, and the designations ZJHKLMNQ should be used henceforth to refer exclusively to the terrestrial atmospheric windows in the near and intermediate infrared (see Young et al. A&AS, 105, 259-279; Milone & Young (2005), PASP, 117, 485-502). #

3. that any publication presenting the new passbands should contain the following information, to aid in transformations and standardizations:

a) a measure of central wavelength which is not flux-dependent, such as the pivot wavelength, or mean photon wavelength, as defined, for example, in Bessell & Murphy (2012), PASP, 124, 140-157;
b) an indication of bandwidth, such as FWHM;
c) the spectral profile of the passband, unless it is completely symmetrical, as, for example, triangular passbands, when this shape and the domain in which this is the case (wavelength or wave number/frequency) are stipulated;
d) a clear statement on whether the passband profile includes the spectral sensitivity curve of the detector or not, and, if so, the characteristics of the detector;
e) the temperature at which these specifications apply;

f) such other details (for example, roll-off, pinhole and leakage specifications) as may be needed to obtain a closely matching filter from manufacturers.

4. that a copy of this resolution should be sent to all editors of astronomical and other journals which publish papers relating to astronomical photometry.

* Well known and accepted nomenclature also appears in the Drilling and Landolt chapter in Cox's "Allen's Astrophysical Quantities", 4th edition, 2000, page 386, Table 15.5, and other information on basic systems appears in V. Straizys' "Multicolor Stellar Photometry" volume, 1995 (second printing), (see http://www.itpa.lt/MulticolorStellarPhotometry), among other sources.

For example, "Y" and "iz" are designations that have been applied to passbands in the 1 micro-m (Z) atmospheric window.