

XXXIst GENERAL ASSEMBLY

RESOLUTIONS PRESENTED TO THE XXXIst GENERAL ASSEMBLY

RESOLUTION B4

On the use of a standard photometric system in ultraviolet (UV) astronomy

Proposed by the IAU Division B WG 'Ultraviolet Astronomy'

The XXXI General Assembly of the International Astronomical Union,

noting

1. that access to UV data is fundamental in many areas of astrophysical research,
2. that the rapid evolution and standardization of space technologies together with the scarcity of large UV observatories is creating a new generation of UV astronomers developing small, project oriented satellites,
3. that there is no standard photometric system established at ultraviolet wavelengths (90-350 nm),
4. that the lack of UV standards of reference would hamper the reproducibility of the observations and, therefore, does not satisfy the requirements of the scientific method,
5. that the exchange of information between researchers becomes very difficult and a significant fraction of the UV data may get misused or lost for the astronomical community, at large,

recognizing

6. that it is necessary to define common grounds to facilitate comparing and contrasting data from different UV missions,

recommends

7. that the following photometric bands passes (see the precise definition in [1]) are used as reference for data exchange in UV photometry:
 - a. UV1 from 91 nm to 110 nm.
 - b. UV2 from 125 nm to 140 nm (alike [CsI photocathode + F125LP(CaF₂)]- [CsI photocathode + F125LP(BaF₂)]).
 - c. UV3 from 140 nm to 180 nm (similar to the FUV band implemented in the UV mission Galaxy Evolution Explorer – GALEX-).
 - d. UV4 from 180 nm to 210 nm.
 - e. UV5 from 210 nm to 230 nm.
 - f. UV6 from 230 nm to 280 nm (similar to F250W filter implemented in the Advanced Camera System on board the Hubble Space Telescope).

- g. UV7 from 280 nm to 350 nm (similar to F330W filter implemented in the Advanced Camera System on board the Hubble Space Telescope).
- 8. that the UV spectrophotometric standards defined in the Vega system by the HST are used for the photometric calibration
- 9. that spectrophotometric UV data or photometric UV data obtained in other bands are post processed to provide synthetic photometry in the abovementioned bands.

References

- [1] https://www.iau.org/static/science/scientific_bodies/working_groups/267/report-uva-wg-20200730.pdf