**SWIFT-UVOT-CALDB-09-R04**
Date Original Submitted: 28th October 2005
Prepared by: Tracey Poole
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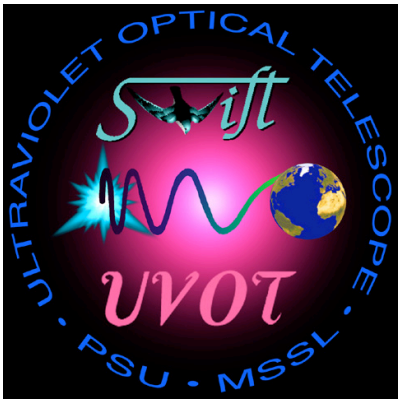
Revised by: Alice Breeveld
Pages Changed: All
Comments:




# SWIFT UVOT CALDB RELEASE NOTE

SWIFT-UVOT-CALDB-09_R04: Quickmag

## 0. Summary: :

This product provides the in-orbit quickmag results for the 7 lenticular filters of the UVOT.

## 1. Component Files:

| FILE NAME | VALID DATE | RELEASE DATE | VERSION |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

## 2. Scope of Document:

This document contains a description of the quickmag calibration analysis performed to produce the quickmag calibration products for the UVOT calibration database.

## 3. Changes:

This is the third release of the in-orbit quickmag results, following changes to the UV effective area curves and zero points.

## 4. Reason For Update:

An update was undertaken to make sure that everything is consistent.

## 5. Expected Updates:

Further updates will follow any updates in effective area.

## 6. Caveat Emptor:

## 7. Data Used:

No in-flight swift data were used.

## 8. Description of Analysis:

43 standard stars spectra ranging form o5v to k3iv with $M_v$=0, were obtained from Pickles (1998, PASP, **110**, 863). The standard star spectra were normalized by folding them through Landolt effective area curves (from Landolt, 1992, AJ, **104**, 340) and setting $M_v$=0. The normalized spectra were then convolved with the in-orbit effective area curves (uvot_caldb_effectiveareas_10wa.doc) to calculate in-orbit predicted count rates ($cts_1$). These count rates were then converted for stars with $M_v$=10 using

$$cts_2 = cts_1 \times 10.0^{0.4(mag_1 - mag_2)},$$

where $mag_1$ is 0, and $mag_2$ is 10. The results of $cts_2$ for different spectral type stars can be seen in Table 1.

| Star | V | B | U | UVW1 | UVM2 | UVW2 | White |
|---|---|---|---|---|---|---|---|
| **o5v** | 1.466937E+03 | 6.334023E+03 | 1.224953E+04 | 4.763957E+03 | 1.681618E+03 | 3.872618E+03 | 3.776022E+04 |
| **o9v** | 1.465272E+03 | 6.049343E+03 | 1.120025E+04 | 9.730007E+03 | 6.944013E+03 | 1.265534E+04 | 6.159279E+04 |
| **b0v** | 1.468157E+03 | 6.115647E+03 | 1.043308E+04 | 9.459905E+03 | 6.911864E+03 | 1.273392E+04 | 6.048562E+04 |
| **b57v** | 1.463239E+03 | 5.086133E+03 | 4.389729E+03 | 2.554472E+03 | 1.646109E+03 | 2.877099E+03 | 2.219453E+04 |
| **b9v** | 1.461537E+03 | 4.661645E+03 | 2.916234E+03 | 1.205385E+03 | 6.870976E+02 | 1.133959E+03 | 1.448531E+04 |
| **a0v** | 1.466134E+03 | 4.424964E+03 | 2.273354E+03 | 9.105707E+02 | 5.161378E+02 | 8.217282E+02 | 1.244541E+04 |
| **a5v** | 1.465990E+03 | 3.878675E+03 | 1.839972E+03 | 5.143043E+02 | 2.415664E+02 | 3.640898E+02 | 9.854978E+03 |
| **a7v** | 1.459916E+03 | 3.720974E+03 | 1.779758E+03 | 4.804148E+02 | 2.085820E+02 | 3.040817E+02 | 9.471100E+03 |
| **f0v** | 1.455961E+03 | 3.381702E+03 | 1.737615E+03 | 3.598433E+02 | 1.318843E+02 | 1.789429E+02 | 8.621572E+03 |
| **f5v** | 1.452174E+03 | 2.919885E+03 | 1.674168E+03 | 2.427366E+02 | 5.555839E+01 | 7.444604E+01 | 7.664453E+03 |
| **f8v** | 1.447205E+03 | 2.699073E+03 | 1.399998E+03 | 1.782099E+02 | 2.598009E+01 | 4.316384E+01 | 7.014304E+03 |
| **g0v** | 1.445758E+03 | 2.631630E+03 | 1.277281E+03 | 1.467065E+02 | 1.519516E+01 | 3.188439E+01 | 6.733869E+03 |
| **g2v** | 1.442805E+03 | 2.478870E+03 | 1.154187E+03 | 1.354328E+02 | 1.397399E+01 | 2.963994E+01 | 6.453015E+03 |
| **g5v** | 1.442603E+03 | 2.358299E+03 | 9.928330E+02 | 1.171470E+02 | 1.263970E+01 | 2.657443E+01 | 6.135020E+03 |
| **g8v** | 1.437225E+03 | 2.226832E+03 | 8.789737E+02 | 9.707567E+01 | 6.492108E+00 | 1.980997E+01 | 5.858466E+03 |
| **k0v** | 1.432597E+03 | 2.183650E+03 | 7.824602E+02 | 7.633412E+01 | 3.755239E+00 | 1.567440E+01 | 5.687915E+03 |
| **k5v** | 1.400841E+03 | 1.480622E+03 | 2.632089E+02 | 2.804677E+01 | 2.785168E-01 | 7.186615E+00 | 4.549378E+03 |
| **k7v** | 1.405716E+03 | 1.253557E+03 | 2.289972E+02 | 2.346625E+01 | 1.431446E-01 | 6.376235E+00 | 4.337793E+03 |
| **m0v** | 1.407054E+03 | 1.320634E+03 | 2.168431E+02 | 2.247242E+01 | 1.026004E-01 | 6.310566E+00 | 4.415832E+03 |
| **m5v** | 1.435040E+03 | 8.940806E+02 | 1.264110E+02 | 1.580786E+01 | 5.193254E-02 | 5.985654E+00 | 4.309684E+03 |
| **b5i** | 1.465163E+03 | 4.711992E+03 | 5.687825E+03 | 2.652557E+03 | 1.442253E+03 | 2.398454E+03 | 2.251693E+04 |
| **a2i** | 1.462442E+03 | 4.052249E+03 | 2.622557E+03 | 5.381551E+02 | 2.060204E+02 | 3.388217E+02 | 1.076526E+04 |
| **f5i** | 1.446180E+03 | 3.507470E+03 | 1.325115E+03 | 1.479574E+02 | 2.255476E+01 | 4.037352E+01 | 7.644736E+03 |
| **g5i** | 1.435886E+03 | 1.630443E+03 | 3.997641E+02 | 4.379757E+01 | 2.021452E+00 | 9.847794E+00 | 4.692273E+03 |
| **k4i** | 1.399276E+03 | 9.133621E+02 | 1.067747E+02 | 1.643549E+01 | 9.241821E-02 | 5.140853E+00 | 3.884254E+03 |
| **m2i** | 1.399192E+03 | 8.398528E+02 | 8.150710E+01 | 1.411162E+01 | 4.624227E-02 | 4.939899E+00 | 3.963395E+03 |
| **b5ii** | 1.463429E+03 | 5.006894E+03 | 5.704119E+03 | 2.707590E+03 | 1.372576E+03 | 2.418291E+03 | 2.301999E+04 |
| **f2ii** | 1.454255E+03 | 3.279427E+03 | 1.327764E+03 | 2.202014E+02 | 6.620324E+01 | 9.145318E+01 | 7.668608E+03 |
| **g5ii** | 1.435091E+03 | 1.915698E+03 | 6.470205E+02 | 6.918788E+01 | 3.499753E+00 | 1.454918E+01 | 5.268907E+03 |
| **k34ii** | 1.410467E+03 | 1.159885E+03 | 1.199222E+02 | 1.846031E+01 | 8.023365E-02 | 5.463485E+00 | 4.042107E+03 |
| **m3ii** | 1.406637E+03 | 9.181916E+02 | 8.092847E+01 | 1.430490E+01 | 3.764951E-02 | 5.034170E+00 | 4.002243E+03 |
| **o8iii** | 1.467904E+03 | 6.079633E+03 | 1.144981E+04 | 6.189588E+03 | 2.831267E+03 | 5.986800E+03 | 4.336377E+04 |
| **b5iii** | 1.461909E+03 | 5.147662E+03 | 4.893301E+03 | 2.858854E+03 | 1.832672E+03 | 3.117169E+03 | 2.379880E+04 |
| **a5iii** | 1.465083E+03 | 3.810213E+03 | 1.768891E+03 | 4.576777E+02 | 2.042519E+02 | 2.945501E+02 | 9.465595E+03 |
| **f5iii** | 1.448680E+03 | 3.016329E+03 | 1.505198E+03 | 2.510098E+02 | 9.207698E+01 | 1.194248E+02 | 7.682080E+03 |
| **g5iii** | 1.433935E+03 | 1.951125E+03 | 6.401355E+02 | 7.475280E+01 | 7.366873E+00 | 1.725015E+01 | 5.320979E+03 |
| **k5iii** | 1.405374E+03 | 1.170232E+03 | 1.305401E+02 | 1.895215E+01 | 8.765671E-02 | 5.630328E+00 | 4.120303E+03 |
| **m5iii** | 1.420022E+03 | 1.060239E+03 | 1.561498E+02 | 1.885107E+01 | 6.709394E-02 | 6.149227E+00 | 4.472744E+03 |
| **b6iv** | 1.460330E+03 | 4.973936E+03 | 3.824893E+03 | 2.132652E+03 | 1.316026E+03 | 2.324302E+03 | 1.969463E+04 |
| **a47iv** | 1.462292E+03 | 4.192397E+03 | 1.958909E+03 | 5.223910E+02 | 2.400821E+02 | 3.537549E+02 | 1.026659E+04 |
| **f5iv** | 1.448612E+03 | 3.094227E+03 | 1.649008E+03 | 2.626756E+02 | 6.596437E+01 | 8.910184E+01 | 7.901590E+03 |
| **g5iv** | 1.439007E+03 | 2.220221E+03 | 8.713108E+02 | 9.518495E+01 | 6.043422E+00 | 1.953989E+01 | 5.830541E+03 |
| **k3iv** | 1.420650E+03 | 1.473346E+03 | 2.573369E+02 | 2.970036E+01 | 2.878335E-01 | 7.356353E+00 | 4.454116E+03 |

**Table 1 - Results of $cts_2$ (in counts per second) for different spectral type stars with $M_v$=10.**