

# MagEIS Calibration Factors: Electron Main Rates

June 18, 2021

Table 1 through Table 13 provide energy channel definitions and flux conversion factors for the merged main rate electron channels on both Probes. Note the valid time ranges indicated in the table captions. These tables represent all of the unique combinations of LOW, M75 and HIGH unit lookup tables that were used throughout the mission. For completeness, we also provide the analogous set of tables for the M35 unit (Table 14 to Table 17), which was not used in the merged product.

**Probe A (LOW/M75/HIGH)**

Table 1: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe A. Valid from 19 Sep 2012 00:00:00 to 04 Oct 2012 19:00:00. Main rate LUT IDs (LOW/M75/HIGH): 16385/24577/29697.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 23           | 10 (19,29)                           | 43                  | 3.610E-02                                  | 3.610E-03                     | 1.6                     |
| 2    | LOW-P2   | 38           | 9 (34,43)                            | 24                  | 2.639E-02                                  | 2.932E-03                     | 0.9                     |
| 3    | LOW-P3   | 58           | 13 (52,65)                           | 22                  | 3.721E-02                                  | 2.862E-03                     | 0.6                     |
| 4    | LOW-P4   | 82           | 16 (74,90)                           | 19                  | 3.848E-02                                  | 2.435E-03                     | 0.4                     |
| 5    | LOW-P5   | 110          | 20 (101,121)                         | 18                  | 4.498E-02                                  | 2.249E-03                     | 0.4                     |
| 6    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 7    | LOW-P6   | 145          | 22 (135,157)                         | 15                  | 3.920E-02                                  | 1.782E-03                     | 1.0                     |
| 8    | M75-P1   | 152          | 46 (129,175)                         | 30                  | 1.840E-01                                  | 4.000E-03                     | 2.1                     |
| 9    | LOW-P7   | 182          | 23 (172,195)                         | 13                  | 3.933E-02                                  | 1.710E-03                     | 0.9                     |
| 10   | LOW-P8   | 221          | 26 (208,234)                         | 12                  | 3.433E-02                                  | 1.320E-03                     | 0.9                     |
| 11   | M75-P2   | 240          | 59 (210,269)                         | 25                  | 2.040E-01                                  | 3.458E-03                     | 1.5                     |
| 12   | M75-P3   | 338          | 72 (298,370)                         | 21                  | 2.141E-01                                  | 2.974E-03                     | 0.9                     |
| 13   | M75-P4   | 460          | 77 (415,492)                         | 17                  | 2.005E-01                                  | 2.604E-03                     | 0.7                     |
| 14   | M75-P5   | 597          | 87 (545,632)                         | 15                  | 1.913E-01                                  | 2.199E-03                     | 1.0                     |
| 15   | M75-P6   | 741          | 92 (692,784)                         | 12                  | 1.740E-01                                  | 1.891E-03                     | 1.0                     |
| 16   | M75-P7   | 879          | 100 (830,930)                        | 11                  | 1.517E-01                                  | 1.517E-03                     | 0.9                     |
| 17   | M75-P8   | 1042         | 94 (985,1079)                        | 9                   | 1.380E-01                                  | 1.468E-03                     | 1.3                     |
| 18   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 19   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 20   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 21   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 22   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 23   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 24   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |

Table 2: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe A. Valid from 04 Oct 2012 19:00:00 to 24 Feb 2013 00:00:00. Main rate LUT IDs (LOW/M75/HIGH): 16385/24578/29698.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 23           | 10 (19,29)                           | 43                  | 3.610E-02                                  | 3.610E-03                     | 1.6                     |
| 2    | LOW-P2   | 38           | 9 (34,43)                            | 24                  | 2.639E-02                                  | 2.932E-03                     | 0.9                     |
| 3    | LOW-P3   | 58           | 13 (52,65)                           | 22                  | 3.721E-02                                  | 2.862E-03                     | 0.6                     |
| 4    | LOW-P4   | 82           | 16 (74,90)                           | 19                  | 3.848E-02                                  | 2.435E-03                     | 0.4                     |
| 5    | LOW-P5   | 110          | 20 (101,121)                         | 18                  | 4.498E-02                                  | 2.249E-03                     | 0.4                     |
| 6    | LOW-P6   | 145          | 22 (135,157)                         | 15                  | 3.920E-02                                  | 1.782E-03                     | 1.0                     |
| 7    | LOW-P7   | 182          | 23 (172,195)                         | 13                  | 3.933E-02                                  | 1.710E-03                     | 0.9                     |
| 8    | LOW-P8   | 221          | 26 (208,234)                         | 12                  | 3.433E-02                                  | 1.320E-03                     | 0.9                     |
| 9    | M75-P2   | 222          | 27 (205,232)                         | 12                  | 8.520E-02                                  | 3.156E-03                     | 1.3                     |
| 10   | M75-P2   | 249          | 30 (230,260)                         | 12                  | 1.040E-01                                  | 3.467E-03                     | 1.1                     |
| 11   | M75-P3   | 323          | 36 (298,334)                         | 11                  | 9.929E-02                                  | 2.758E-03                     | 0.9                     |
| 12   | M75-P3   | 354          | 36 (330,366)                         | 10                  | 1.018E-01                                  | 2.828E-03                     | 0.9                     |
| 13   | M75-P4   | 460          | 71 (415,486)                         | 15                  | 1.890E-01                                  | 2.662E-03                     | 0.9                     |
| 14   | M75-P5   | 584          | 86 (539,625)                         | 15                  | 1.844E-01                                  | 2.144E-03                     | 0.9                     |
| 15   | M75-P6   | 741          | 83 (692,775)                         | 11                  | 1.671E-01                                  | 2.013E-03                     | 0.9                     |
| 16   | M75-P7   | 879          | 99 (821,920)                         | 11                  | 1.457E-01                                  | 1.472E-03                     | 0.9                     |
| 17   | HIGH-P0  | 1016         | 414 (926,1340)                       | 41                  | 1.440E+00                                  | 3.478E-03                     | 6.1                     |
| 18   | M75-P8   | 1031         | 105 (974,1079)                       | 10                  | 1.380E-01                                  | 1.314E-03                     | 1.4                     |
| 19   | HIGH-P1  | 1575         | 449 (1403,1852)                      | 29                  | 3.690E-01                                  | 8.218E-04                     | 2.7                     |
| 20   | HIGH-P1  | 1728         | 320 (1575,1895)                      | 19                  | 4.020E-01                                  | 1.256E-03                     | 2.0                     |
| 21   | HIGH-P2  | 2280         | 481 (2078,2559)                      | 21                  | 1.010E+00                                  | 2.100E-03                     | 2.4                     |
| 22   | HIGH-P2  | 2680         | 621 (2387,3008)                      | 23                  | 1.190E+00                                  | 1.916E-03                     | 2.5                     |
| 23   | HIGH-P3  | 3703         | 702 (3455,4157)                      | 19                  | 1.700E+00                                  | 2.422E-03                     | 5.9                     |
| 24   | HIGH-P3  | 4062         | 962 (3703,4665)                      | 24                  | 2.280E+00                                  | 2.370E-03                     | 4.2                     |

Table 3: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe A. Valid from 24 Feb 2013 00:00:00 to 31 Mar 2013 00:00:00. Main rate LUT IDs (LOW/M75/HIGH): 16385/24577/29698.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 23           | 10 (19,29)                           | 43                  | 3.610E-02                                  | 3.610E-03                     | 1.6                     |
| 2    | LOW-P2   | 38           | 9 (34,43)                            | 24                  | 2.639E-02                                  | 2.932E-03                     | 0.9                     |
| 3    | LOW-P3   | 58           | 13 (52,65)                           | 22                  | 3.721E-02                                  | 2.862E-03                     | 0.6                     |
| 4    | LOW-P4   | 82           | 16 (74,90)                           | 19                  | 3.848E-02                                  | 2.435E-03                     | 0.4                     |
| 5    | LOW-P5   | 110          | 20 (101,121)                         | 18                  | 4.498E-02                                  | 2.249E-03                     | 0.4                     |
| 6    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 7    | LOW-P6   | 145          | 22 (135,157)                         | 15                  | 3.920E-02                                  | 1.782E-03                     | 1.0                     |
| 8    | M75-P1   | 152          | 46 (129,175)                         | 30                  | 1.840E-01                                  | 4.000E-03                     | 2.1                     |
| 9    | LOW-P7   | 182          | 23 (172,195)                         | 13                  | 3.933E-02                                  | 1.710E-03                     | 0.9                     |
| 10   | LOW-P8   | 221          | 26 (208,234)                         | 12                  | 3.433E-02                                  | 1.320E-03                     | 0.9                     |
| 11   | M75-P2   | 240          | 59 (210,269)                         | 25                  | 2.040E-01                                  | 3.458E-03                     | 1.5                     |
| 12   | M75-P3   | 338          | 72 (298,370)                         | 21                  | 2.141E-01                                  | 2.974E-03                     | 0.9                     |
| 13   | M75-P4   | 460          | 77 (415,492)                         | 17                  | 2.005E-01                                  | 2.604E-03                     | 0.7                     |
| 14   | M75-P5   | 597          | 87 (545,632)                         | 15                  | 1.913E-01                                  | 2.199E-03                     | 1.0                     |
| 15   | M75-P6   | 741          | 92 (692,784)                         | 12                  | 1.740E-01                                  | 1.891E-03                     | 1.0                     |
| 16   | M75-P7   | 879          | 100 (830,930)                        | 11                  | 1.517E-01                                  | 1.517E-03                     | 0.9                     |
| 17   | HIGH-P0  | 1016         | 414 (926,1340)                       | 41                  | 1.440E+00                                  | 3.478E-03                     | 6.1                     |
| 18   | M75-P8   | 1042         | 94 (985,1079)                        | 9                   | 1.380E-01                                  | 1.468E-03                     | 1.3                     |
| 19   | HIGH-P1  | 1575         | 449 (1403,1852)                      | 29                  | 3.690E-01                                  | 8.218E-04                     | 2.7                     |
| 20   | HIGH-P1  | 1728         | 320 (1575,1895)                      | 19                  | 4.020E-01                                  | 1.256E-03                     | 2.0                     |
| 21   | HIGH-P2  | 2280         | 481 (2078,2559)                      | 21                  | 1.010E+00                                  | 2.100E-03                     | 2.4                     |
| 22   | HIGH-P2  | 2680         | 621 (2387,3008)                      | 23                  | 1.190E+00                                  | 1.916E-03                     | 2.5                     |
| 23   | HIGH-P3  | 3703         | 702 (3455,4157)                      | 19                  | 1.700E+00                                  | 2.422E-03                     | 5.9                     |
| 24   | HIGH-P3  | 4062         | 962 (3703,4665)                      | 24                  | 2.280E+00                                  | 2.370E-03                     | 4.2                     |

Table 4: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe A. Valid from 31 Mar 2013 00:00:00 to 03 Aug 2013 00:00:00. Main rate LUT IDs (LOW/M75/HIGH): 16386/24579/29699.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 20           | 9 (16,25)                            | 45                  | 3.210E-02                                  | 3.567E-03                     | 1.5                     |
| 2    | LOW-P2   | 32           | 11 (27,38)                           | 34                  | 3.630E-02                                  | 3.300E-03                     | 1.2                     |
| 3    | LOW-P3   | 54           | 12 (48,60)                           | 22                  | 3.625E-02                                  | 3.021E-03                     | 0.6                     |
| 4    | LOW-P4   | 80           | 14 (73,87)                           | 17                  | 3.291E-02                                  | 2.420E-03                     | 0.5                     |
| 5    | LOW-P5   | 108          | 22 (97,119)                          | 20                  | 4.953E-02                                  | 2.282E-03                     | 0.6                     |
| 6    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 7    | M75-P1   | 142          | 41 (120,161)                         | 29                  | 1.630E-01                                  | 3.976E-03                     | 2.2                     |
| 8    | LOW-P6   | 143          | 23 (132,155)                         | 16                  | 4.430E-02                                  | 1.926E-03                     | 0.5                     |
| 9    | LOW-P7   | 184          | 25 (172,197)                         | 14                  | 4.220E-02                                  | 1.688E-03                     | 1.3                     |
| 10   | LOW-P8   | 226          | 29 (213,242)                         | 13                  | 4.064E-02                                  | 1.401E-03                     | 0.8                     |
| 11   | M75-P2   | 235          | 55 (205,260)                         | 23                  | 1.880E-01                                  | 3.418E-03                     | 1.3                     |
| 12   | M75-P3   | 346          | 70 (309,379)                         | 20                  | 2.158E-01                                  | 3.083E-03                     | 0.9                     |
| 13   | M75-P4   | 470          | 89 (420,509)                         | 19                  | 2.381E-01                                  | 2.675E-03                     | 0.9                     |
| 14   | M75-P5   | 597          | 94 (545,639)                         | 16                  | 2.104E-01                                  | 2.238E-03                     | 0.7                     |
| 15   | M75-P6   | 749          | 101 (692,793)                        | 13                  | 2.040E-01                                  | 2.020E-03                     | 1.1                     |
| 16   | M75-P7   | 909          | 123 (840,963)                        | 14                  | 1.970E-01                                  | 1.602E-03                     | 1.3                     |
| 17   | HIGH-P0  | 1016         | 383 (926,1309)                       | 38                  | 1.620E+00                                  | 4.230E-03                     | 6.5                     |
| 18   | M75-P8   | 1079         | 135 (1007,1142)                      | 13                  | 1.690E-01                                  | 1.252E-03                     | 1.0                     |
| 19   | HIGH-P1  | 1575         | 449 (1403,1852)                      | 29                  | 4.180E-01                                  | 9.310E-04                     | 2.9                     |
| 20   | HIGH-P1  | 1728         | 364 (1575,1939)                      | 21                  | 4.660E-01                                  | 1.280E-03                     | 2.2                     |
| 21   | HIGH-P2  | 2280         | 481 (2078,2559)                      | 21                  | 9.480E-01                                  | 1.971E-03                     | 2.6                     |
| 22   | HIGH-P2  | 2680         | 691 (2387,3078)                      | 26                  | 1.210E+00                                  | 1.751E-03                     | 2.4                     |
| 23   | HIGH-P3  | 3790         | 621 (3536,4157)                      | 16                  | 1.640E+00                                  | 2.641E-03                     | 4.3                     |
| 24   | HIGH-P3  | 4157         | 985 (3790,4775)                      | 24                  | 2.080E+00                                  | 2.112E-03                     | 5.4                     |

Table 5: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe A. Valid from 03 Aug 2013 00:00:00 to 14 Oct 2019 14:27:00. Main rate LUT IDs (LOW/M75/HIGH): 16386/24579/29699.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 20           | 9 (16,25)                            | 45                  | 3.210E-02                                  | 3.567E-03                     | 1.5                     |
| 2    | LOW-P2   | 32           | 11 (27,38)                           | 34                  | 3.630E-02                                  | 3.300E-03                     | 1.2                     |
| 3    | LOW-P3   | 54           | 12 (48,60)                           | 22                  | 3.625E-02                                  | 3.021E-03                     | 0.6                     |
| 4    | LOW-P4   | 80           | 14 (73,87)                           | 17                  | 3.291E-02                                  | 2.420E-03                     | 0.5                     |
| 5    | LOW-P5   | 108          | 22 (97,119)                          | 20                  | 4.953E-02                                  | 2.282E-03                     | 0.6                     |
| 6    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 7    | M75-P1   | 142          | 41 (120,161)                         | 29                  | 1.630E-01                                  | 3.976E-03                     | 2.2                     |
| 8    | LOW-P6   | 143          | 23 (132,155)                         | 16                  | 4.430E-02                                  | 1.926E-03                     | 0.5                     |
| 9    | LOW-P7   | 184          | 25 (172,197)                         | 14                  | 4.220E-02                                  | 1.688E-03                     | 1.3                     |
| 10   | LOW-P8   | 226          | 29 (213,242)                         | 13                  | 4.064E-02                                  | 1.401E-03                     | 0.8                     |
| 11   | M75-P2   | 235          | 55 (205,260)                         | 23                  | 1.880E-01                                  | 3.418E-03                     | 1.3                     |
| 12   | M75-P3   | 346          | 70 (309,379)                         | 20                  | 2.158E-01                                  | 3.083E-03                     | 0.9                     |
| 13   | M75-P4   | 470          | 89 (420,509)                         | 19                  | 2.381E-01                                  | 2.675E-03                     | 0.9                     |
| 14   | M75-P5   | 597          | 94 (545,639)                         | 16                  | 2.104E-01                                  | 2.238E-03                     | 0.7                     |
| 15   | M75-P6   | 749          | 101 (692,793)                        | 13                  | 2.040E-01                                  | 2.020E-03                     | 1.1                     |
| 16   | M75-P7   | 909          | 123 (840,963)                        | 14                  | 1.970E-01                                  | 1.602E-03                     | 1.3                     |
| 17   | HIGH-P0  | 970          | 374 (905,1279)                       | 39                  | 3.120E+00                                  | 8.342E-03                     | 6.1                     |
| 18   | M75-P8   | 1079         | 135 (1007,1142)                      | 13                  | 1.690E-01                                  | 1.252E-03                     | 1.0                     |
| 19   | HIGH-P1  | 1504         | 317 (1371,1688)                      | 21                  | 1.010E+00                                  | 3.186E-03                     | 2.7                     |
| 20   | HIGH-P1  | 1688         | 391 (1504,1895)                      | 23                  | 1.570E+00                                  | 4.015E-03                     | 1.7                     |
| 21   | HIGH-P2  | 2333         | 422 (2078,2500)                      | 18                  | 1.950E+00                                  | 4.621E-03                     | 2.7                     |
| 22   | HIGH-P2  | 2619         | 745 (2333,3078)                      | 28                  | 2.710E+00                                  | 3.638E-03                     | 2.8                     |
| 23   | HIGH-P3  | 3790         | 621 (3536,4157)                      | 16                  | 1.410E+00                                  | 2.271E-03                     | 5.3                     |
| 24   | HIGH-P3  | 4254         | 897 (3878,4775)                      | 21                  | 2.570E+00                                  | 2.865E-03                     | 5.9                     |

**Probe B (LOW/M75/HIGH)**



Table 6: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 19 Sep 2012 00:00:00 to 28 Sep 2012 16:00:00. Main rate LUT IDs (LOW/M75/HIGH): 17408/25600/31744.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 28           | 5 (25,30)                            | 17                  | 1.617E-02                                  | 3.300E-03                     | 0.9                     |
| 2    | LOW-P2   | 39           | 7 (35,42)                            | 18                  | 2.268E-02                                  | 3.240E-03                     | 0.6                     |
| 3    | LOW-P3   | 60           | 9 (55,65)                            | 16                  | 2.555E-02                                  | 2.689E-03                     | 0.7                     |
| 4    | LOW-P4   | 78           | 11 (72,83)                           | 15                  | 2.856E-02                                  | 2.505E-03                     | 0.4                     |
| 5    | LOW-P5   | 100          | 15 (92,107)                          | 15                  | 3.296E-02                                  | 2.183E-03                     | 0.3                     |
| 6    | LOW-P6   | 129          | 16 (121,137)                         | 12                  | 3.137E-02                                  | 1.961E-03                     | 0.7                     |
| 7    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 8    | LOW-P7   | 166          | 23 (153,176)                         | 14                  | 3.820E-02                                  | 1.661E-03                     | 1.2                     |
| 9    | LOW-P8   | 201          | 18 (193,211)                         | 9                   | 2.850E-02                                  | 1.583E-03                     | 1.0                     |
| 10   | M75-P1   | X            | X                                    | X                   | X  | X                             | X                       |
| 11   | M75-P2   | X            | X                                    | X                   | X  | X                             | X                       |
| 12   | M75-P3   | X            | X                                    | X                   | X  | X                             | X                       |
| 13   | M75-P4   | X            | X                                    | X                   | X  | X                             | X                       |
| 14   | M75-P5   | X            | X                                    | X                   | X  | X                             | X                       |
| 15   | M75-P6   | X            | X                                    | X                   | X  | X                             | X                       |
| 16   | M75-P7   | X            | X                                    | X                   | X  | X                             | X                       |
| 17   | M75-P8   | X            | X                                    | X                   | X  | X                             | X                       |
| 18   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 19   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 20   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 21   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 22   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 23   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 24   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |

Table 7: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 28 Sep 2012 16:00:00 to 04 Oct 2012 16:30:00. Main rate LUT IDs (LOW/M75/HIGH): 17408/25601/31745.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 28           | 5 (25,30)                            | 17                  | 1.617E-02                                  | 3.300E-03                     | 0.9                     |
| 2    | LOW-P2   | 39           | 7 (35,42)                            | 18                  | 2.268E-02                                  | 3.240E-03                     | 0.6                     |
| 3    | LOW-P3   | 60           | 9 (55,65)                            | 16                  | 2.555E-02                                  | 2.689E-03                     | 0.7                     |
| 4    | LOW-P4   | 78           | 11 (72,83)                           | 15                  | 2.856E-02                                  | 2.505E-03                     | 0.4                     |
| 5    | LOW-P5   | 100          | 15 (92,107)                          | 15                  | 3.296E-02                                  | 2.183E-03                     | 0.3                     |
| 6    | LOW-P6   | 129          | 16 (121,137)                         | 12                  | 3.137E-02                                  | 1.961E-03                     | 0.7                     |
| 7    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 8    | LOW-P7   | 166          | 23 (153,176)                         | 14                  | 3.820E-02                                  | 1.661E-03                     | 1.2                     |
| 9    | M75-P1   | 169          | 55 (141,196)                         | 33                  | 2.040E-01                                  | 3.709E-03                     | 2.1                     |
| 10   | LOW-P8   | 201          | 18 (193,211)                         | 9                   | 2.850E-02                                  | 1.583E-03                     | 1.0                     |
| 11   | M75-P2   | 249          | 47 (222,269)                         | 19                  | 1.670E-01                                  | 3.553E-03                     | 1.3                     |
| 12   | M75-P3   | 350          | 62 (312,374)                         | 18                  | 1.870E-01                                  | 3.016E-03                     | 1.0                     |
| 13   | M75-P4   | 465          | 68 (424,492)                         | 15                  | 1.683E-01                                  | 2.475E-03                     | 0.7                     |
| 14   | M75-P5   | 584          | 73 (545,618)                         | 13                  | 1.542E-01                                  | 2.112E-03                     | 1.0                     |
| 15   | M75-P6   | 733          | 75 (692,767)                         | 10                  | 1.531E-01                                  | 2.041E-03                     | 0.8                     |
| 16   | M75-P7   | 869          | 88 (821,909)                         | 10                  | 1.209E-01                                  | 1.374E-03                     | 0.9                     |
| 17   | M75-P8   | 1031         | 92 (974,1066)                        | 9                   | 1.160E-01                                  | 1.261E-03                     | 1.4                     |
| 18   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 19   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 20   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 21   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 22   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 23   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |
| 24   | HIGH-PXX | X            | X                                    | X                   | X  | X                             | X                       |

Table 8: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 04 Oct 2012 16:30:00 to 17 Oct 2012 00:00:00. Main rate LUT IDs (LOW/M75/HIGH): 17408/25601/31746.

| CH<br># | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|---------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0       | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1       | LOW-P1   | 28           | 5 (25,30)                            | 17                  | 1.617E-02                                  | 3.300E-03                     | 0.9                     |
| 2       | LOW-P2   | 39           | 7 (35,42)                            | 18                  | 2.268E-02                                  | 3.240E-03                     | 0.6                     |
| 3       | LOW-P3   | 60           | 9 (55,65)                            | 16                  | 2.555E-02                                  | 2.689E-03                     | 0.7                     |
| 4       | LOW-P4   | 78           | 11 (72,83)                           | 15                  | 2.856E-02                                  | 2.505E-03                     | 0.4                     |
| 5       | LOW-P5   | 100          | 15 (92,107)                          | 15                  | 3.296E-02                                  | 2.183E-03                     | 0.3                     |
| 6       | LOW-P6   | 129          | 16 (121,137)                         | 12                  | 3.137E-02                                  | 1.961E-03                     | 0.7                     |
| 7       | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 8       | LOW-P7   | 166          | 23 (153,176)                         | 14                  | 3.820E-02                                  | 1.661E-03                     | 1.2                     |
| 9       | M75-P1   | 169          | 55 (141,196)                         | 33                  | 2.040E-01                                  | 3.709E-03                     | 2.1                     |
| 10      | LOW-P8   | 201          | 18 (193,211)                         | 9                   | 2.850E-02                                  | 1.583E-03                     | 1.0                     |
| 11      | M75-P2   | 249          | 47 (222,269)                         | 19                  | 1.670E-01                                  | 3.553E-03                     | 1.3                     |
| 12      | M75-P3   | 350          | 62 (312,374)                         | 18                  | 1.870E-01                                  | 3.016E-03                     | 1.0                     |
| 13      | M75-P4   | 465          | 68 (424,492)                         | 15                  | 1.683E-01                                  | 2.475E-03                     | 0.7                     |
| 14      | M75-P5   | 584          | 73 (545,618)                         | 13                  | 1.542E-01                                  | 2.112E-03                     | 1.0                     |
| 15      | M75-P6   | 733          | 75 (692,767)                         | 10                  | 1.531E-01                                  | 2.041E-03                     | 0.8                     |
| 16      | M75-P7   | 869          | 88 (821,909)                         | 10                  | 1.209E-01                                  | 1.374E-03                     | 0.9                     |
| 17      | HIGH-P0  | 1016         | 435 (905,1340)                       | 43                  | 3.890E+00                                  | 8.943E-03                     | 5.3                     |
| 18      | M75-P8   | 1031         | 92 (974,1066)                        | 9                   | 1.160E-01                                  | 1.261E-03                     | 1.4                     |
| 19      | HIGH-P1  | 1575         | 252 (1436,1688)                      | 16                  | 2.130E+00                                  | 8.452E-03                     | 1.8                     |
| 20      | HIGH-P1  | 1768         | 327 (1612,1939)                      | 18                  | 1.870E+00                                  | 5.719E-03                     | 2.0                     |
| 21      | HIGH-P2  | 2443         | 565 (2177,2742)                      | 23                  | 1.000E+00                                  | 1.770E-03                     | 2.6                     |
| 22      | HIGH-P2  | 2806         | 650 (2500,3150)                      | 23                  | 1.040E+00                                  | 1.600E-03                     | 2.6                     |
| 23      | HIGH-P3  | 3703         | 702 (3455,4157)                      | 19                  | 7.830E-01                                  | 1.115E-03                     | 6.5                     |
| 24      | HIGH-P3  | 4062         | 769 (3790,4559)                      | 19                  | 9.740E-01                                  | 1.267E-03                     | 5.3                     |

Table 9: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 17 Oct 2012 00:00:00 to 24 Oct 2012 00:00:00. Main rate LUT IDs (LOW/M75/HIGH): 18433/25601/31746.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 23           | 7 (20,27)                            | 30                  | 2.688E-02                                  | 3.840E-03                     | 1.0                     |
| 2    | LOW-P2   | 37           | 9 (32,41)                            | 24                  | 2.980E-02                                  | 3.311E-03                     | 0.7                     |
| 3    | LOW-P3   | 55           | 9 (50,60)                            | 17                  | 2.647E-02                                  | 2.816E-03                     | 0.4                     |
| 4    | LOW-P4   | 77           | 11 (71,82)                           | 15                  | 2.864E-02                                  | 2.535E-03                     | 0.5                     |
| 5    | LOW-P5   | 103          | 14 (96,110)                          | 13                  | 3.232E-02                                  | 2.342E-03                     | 0.5                     |
| 6    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 7    | LOW-P6   | 134          | 19 (124,143)                         | 14                  | 3.970E-02                                  | 2.089E-03                     | 0.7                     |
| 8    | LOW-P7   | 168          | 27 (155,182)                         | 16                  | 4.196E-02                                  | 1.554E-03                     | 0.6                     |
| 9    | M75-P1   | 169          | 55 (141,196)                         | 33                  | 2.040E-01                                  | 3.709E-03                     | 2.1                     |
| 10   | LOW-P8   | 199          | 21 (190,211)                         | 11                  | 2.640E-02                                  | 1.257E-03                     | 1.4                     |
| 11   | M75-P2   | 249          | 47 (222,269)                         | 19                  | 1.670E-01                                  | 3.553E-03                     | 1.3                     |
| 12   | M75-P3   | 350          | 62 (312,374)                         | 18                  | 1.870E-01                                  | 3.016E-03                     | 1.0                     |
| 13   | M75-P4   | 465          | 68 (424,492)                         | 15                  | 1.683E-01                                  | 2.475E-03                     | 0.7                     |
| 14   | M75-P5   | 584          | 73 (545,618)                         | 13                  | 1.542E-01                                  | 2.112E-03                     | 1.0                     |
| 15   | M75-P6   | 733          | 75 (692,767)                         | 10                  | 1.531E-01                                  | 2.041E-03                     | 0.8                     |
| 16   | M75-P7   | 869          | 88 (821,909)                         | 10                  | 1.209E-01                                  | 1.374E-03                     | 0.9                     |
| 17   | HIGH-P0  | 1016         | 435 (905,1340)                       | 43                  | 3.890E+00                                  | 8.943E-03                     | 5.3                     |
| 18   | M75-P8   | 1031         | 92 (974,1066)                        | 9                   | 1.160E-01                                  | 1.261E-03                     | 1.4                     |
| 19   | HIGH-P1  | 1575         | 252 (1436,1688)                      | 16                  | 2.130E+00                                  | 8.452E-03                     | 1.8                     |
| 20   | HIGH-P1  | 1768         | 327 (1612,1939)                      | 18                  | 1.870E+00                                  | 5.719E-03                     | 2.0                     |
| 21   | HIGH-P2  | 2443         | 565 (2177,2742)                      | 23                  | 1.000E+00                                  | 1.770E-03                     | 2.6                     |
| 22   | HIGH-P2  | 2806         | 650 (2500,3150)                      | 23                  | 1.040E+00                                  | 1.600E-03                     | 2.6                     |
| 23   | HIGH-P3  | 3703         | 702 (3455,4157)                      | 19                  | 7.830E-01                                  | 1.115E-03                     | 6.5                     |
| 24   | HIGH-P3  | 4062         | 769 (3790,4559)                      | 19                  | 9.740E-01                                  | 1.267E-03                     | 5.3                     |

Table 10: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 24 Oct 2012 00:00:00 to 24 Feb 2013 00:00:00. Main rate LUT IDs (LOW/M75/HIGH): 18433/26626/31746.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 23           | 7 (20,27)                            | 30                  | 2.688E-02                                  | 3.840E-03                     | 1.0                     |
| 2    | LOW-P2   | 37           | 9 (32,41)                            | 24                  | 2.980E-02                                  | 3.311E-03                     | 0.7                     |
| 3    | LOW-P3   | 55           | 9 (50,60)                            | 17                  | 2.647E-02                                  | 2.816E-03                     | 0.4                     |
| 4    | LOW-P4   | 77           | 11 (71,82)                           | 15                  | 2.864E-02                                  | 2.535E-03                     | 0.5                     |
| 5    | LOW-P5   | 103          | 14 (96,110)                          | 13                  | 3.232E-02                                  | 2.342E-03                     | 0.5                     |
| 6    | LOW-P6   | 134          | 19 (124,143)                         | 14                  | 3.970E-02                                  | 2.089E-03                     | 0.7                     |
| 7    | LOW-P7   | 168          | 27 (155,182)                         | 16                  | 4.196E-02                                  | 1.554E-03                     | 0.6                     |
| 8    | LOW-P8   | 199          | 21 (190,211)                         | 11                  | 2.640E-02                                  | 1.257E-03                     | 1.4                     |
| 9    | M75-P2   | 217          | 26 (198,224)                         | 12                  | 9.250E-02                                  | 3.558E-03                     | 1.8                     |
| 10   | M75-P2   | 249          | 47 (222,269)                         | 19                  | 1.670E-01                                  | 3.553E-03                     | 1.3                     |
| 11   | M75-P3   | 334          | 30 (312,342)                         | 9                   | 8.549E-02                                  | 2.850E-03                     | 0.8                     |
| 12   | M75-P3   | 362          | 36 (338,374)                         | 10                  | 1.003E-01                                  | 2.786E-03                     | 0.8                     |
| 13   | M75-P4   | 465          | 68 (424,492)                         | 15                  | 1.683E-01                                  | 2.475E-03                     | 0.7                     |
| 14   | M75-P5   | 584          | 73 (545,618)                         | 13                  | 1.542E-01                                  | 2.112E-03                     | 1.0                     |
| 15   | M75-P6   | 733          | 75 (692,767)                         | 10                  | 1.531E-01                                  | 2.041E-03                     | 0.8                     |
| 16   | M75-P7   | 869          | 88 (821,909)                         | 10                  | 1.209E-01                                  | 1.374E-03                     | 0.9                     |
| 17   | HIGH-P0  | 1016         | 435 (905,1340)                       | 43                  | 3.890E+00                                  | 8.943E-03                     | 5.3                     |
| 18   | M75-P8   | 1031         | 92 (974,1066)                        | 9                   | 1.160E-01                                  | 1.261E-03                     | 1.4                     |
| 19   | HIGH-P1  | 1575         | 252 (1436,1688)                      | 16                  | 2.130E+00                                  | 8.452E-03                     | 1.8                     |
| 20   | HIGH-P1  | 1768         | 327 (1612,1939)                      | 18                  | 1.870E+00                                  | 5.719E-03                     | 2.0                     |
| 21   | HIGH-P2  | 2443         | 565 (2177,2742)                      | 23                  | 1.000E+00                                  | 1.770E-03                     | 2.6                     |
| 22   | HIGH-P2  | 2806         | 650 (2500,3150)                      | 23                  | 1.040E+00                                  | 1.600E-03                     | 2.6                     |
| 23   | HIGH-P3  | 3703         | 702 (3455,4157)                      | 19                  | 7.830E-01                                  | 1.115E-03                     | 6.5                     |
| 24   | HIGH-P3  | 4062         | 769 (3790,4559)                      | 19                  | 9.740E-01                                  | 1.267E-03                     | 5.3                     |

Table 11: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 24 Feb 2013 00:00:00 to 31 Mar 2013 00:00:00. Main rate LUT IDs (LOW/M75/HIGH): 18433/25601/31746.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 23           | 7 (20,27)                            | 30                  | 2.688E-02                                  | 3.840E-03                     | 1.0                     |
| 2    | LOW-P2   | 37           | 9 (32,41)                            | 24                  | 2.980E-02                                  | 3.311E-03                     | 0.7                     |
| 3    | LOW-P3   | 55           | 9 (50,60)                            | 17                  | 2.647E-02                                  | 2.816E-03                     | 0.4                     |
| 4    | LOW-P4   | 77           | 11 (71,82)                           | 15                  | 2.864E-02                                  | 2.535E-03                     | 0.5                     |
| 5    | LOW-P5   | 103          | 14 (96,110)                          | 13                  | 3.232E-02                                  | 2.342E-03                     | 0.5                     |
| 6    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 7    | LOW-P6   | 134          | 19 (124,143)                         | 14                  | 3.970E-02                                  | 2.089E-03                     | 0.7                     |
| 8    | LOW-P7   | 168          | 27 (155,182)                         | 16                  | 4.196E-02                                  | 1.554E-03                     | 0.6                     |
| 9    | M75-P1   | 169          | 55 (141,196)                         | 33                  | 2.040E-01                                  | 3.709E-03                     | 2.1                     |
| 10   | LOW-P8   | 199          | 21 (190,211)                         | 11                  | 2.640E-02                                  | 1.257E-03                     | 1.4                     |
| 11   | M75-P2   | 249          | 47 (222,269)                         | 19                  | 1.670E-01                                  | 3.553E-03                     | 1.3                     |
| 12   | M75-P3   | 350          | 62 (312,374)                         | 18                  | 1.870E-01                                  | 3.016E-03                     | 1.0                     |
| 13   | M75-P4   | 465          | 68 (424,492)                         | 15                  | 1.683E-01                                  | 2.475E-03                     | 0.7                     |
| 14   | M75-P5   | 584          | 73 (545,618)                         | 13                  | 1.542E-01                                  | 2.112E-03                     | 1.0                     |
| 15   | M75-P6   | 733          | 75 (692,767)                         | 10                  | 1.531E-01                                  | 2.041E-03                     | 0.8                     |
| 16   | M75-P7   | 869          | 88 (821,909)                         | 10                  | 1.209E-01                                  | 1.374E-03                     | 0.9                     |
| 17   | HIGH-P0  | 1016         | 435 (905,1340)                       | 43                  | 3.890E+00                                  | 8.943E-03                     | 5.3                     |
| 18   | M75-P8   | 1031         | 92 (974,1066)                        | 9                   | 1.160E-01                                  | 1.261E-03                     | 1.4                     |
| 19   | HIGH-P1  | 1575         | 252 (1436,1688)                      | 16                  | 2.130E+00                                  | 8.452E-03                     | 1.8                     |
| 20   | HIGH-P1  | 1768         | 327 (1612,1939)                      | 18                  | 1.870E+00                                  | 5.719E-03                     | 2.0                     |
| 21   | HIGH-P2  | 2443         | 565 (2177,2742)                      | 23                  | 1.000E+00                                  | 1.770E-03                     | 2.6                     |
| 22   | HIGH-P2  | 2806         | 650 (2500,3150)                      | 23                  | 1.040E+00                                  | 1.600E-03                     | 2.6                     |
| 23   | HIGH-P3  | 3703         | 702 (3455,4157)                      | 19                  | 7.830E-01                                  | 1.115E-03                     | 6.5                     |
| 24   | HIGH-P3  | 4062         | 769 (3790,4559)                      | 19                  | 9.740E-01                                  | 1.267E-03                     | 5.3                     |

Table 12: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 31 Mar 2013 00:00:00 to 03 Aug 2013 00:00:00. Main rate LUT IDs (LOW/M75/HIGH): 18434/26627/31747.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 24           | 7 (21,28)                            | 29                  | 2.570E-02                                  | 3.671E-03                     | 1.0                     |
| 2    | LOW-P2   | 33           | 10 (28,38)                           | 30                  | 3.620E-02                                  | 3.620E-03                     | 1.2                     |
| 3    | LOW-P3   | 54           | 14 (48,62)                           | 26                  | 4.022E-02                                  | 2.873E-03                     | 0.8                     |
| 4    | LOW-P4   | 75           | 14 (68,82)                           | 18                  | 3.298E-02                                  | 2.425E-03                     | 0.8                     |
| 5    | LOW-P5   | 102          | 15 (94,109)                          | 15                  | 3.511E-02                                  | 2.341E-03                     | 0.4                     |
| 6    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 7    | LOW-P6   | 132          | 21 (122,143)                         | 16                  | 3.936E-02                                  | 1.874E-03                     | 0.4                     |
| 8    | M75-P1   | 154          | 50 (127,177)                         | 32                  | 1.980E-01                                  | 3.960E-03                     | 2.2                     |
| 9    | LOW-P7   | 168          | 25 (157,182)                         | 15                  | 4.140E-02                                  | 1.656E-03                     | 1.2                     |
| 10   | LOW-P8   | 208          | 31 (195,226)                         | 15                  | 4.442E-02                                  | 1.433E-03                     | 0.9                     |
| 11   | M75-P2   | 246          | 49 (217,266)                         | 20                  | 1.680E-01                                  | 3.429E-03                     | 1.2                     |
| 12   | M75-P3   | 354          | 75 (312,387)                         | 21                  | 2.274E-01                                  | 3.032E-03                     | 0.9                     |
| 13   | M75-P4   | 470          | 85 (424,509)                         | 18                  | 2.164E-01                                  | 2.546E-03                     | 0.9                     |
| 14   | M75-P5   | 604          | 81 (558,639)                         | 13                  | 1.834E-01                                  | 2.264E-03                     | 0.8                     |
| 15   | M75-P6   | 749          | 101 (692,793)                        | 13                  | 1.923E-01                                  | 1.904E-03                     | 0.9                     |
| 16   | M75-P7   | 899          | 112 (840,952)                        | 12                  | 1.793E-01                                  | 1.601E-03                     | 0.8                     |
| 17   | HIGH-P0  | 992          | 374 (905,1279)                       | 38                  | 3.570E+00                                  | 9.545E-03                     | 5.2                     |
| 18   | M75-P8   | 1054         | 120 (996,1116)                       | 11                  | 1.646E-01                                  | 1.372E-03                     | 0.7                     |
| 19   | HIGH-P1  | 1504         | 241 (1371,1612)                      | 16                  | 1.360E+00                                  | 5.643E-03                     | 3.3                     |
| 20   | HIGH-P1  | 1688         | 400 (1539,1939)                      | 24                  | 2.980E+00                                  | 7.450E-03                     | 1.6                     |
| 21   | HIGH-P2  | 2387         | 442 (2177,2619)                      | 19                  | 7.390E-01                                  | 1.672E-03                     | 2.5                     |
| 22   | HIGH-P2  | 2680         | 763 (2387,3150)                      | 28                  | 1.230E+00                                  | 1.612E-03                     | 2.4                     |
| 23   | HIGH-P3  | 3703         | 702 (3455,4157)                      | 19                  | 6.920E-01                                  | 9.858E-04                     | 6.5                     |
| 24   | HIGH-P3  | 4062         | 985 (3790,4775)                      | 24                  | 1.180E+00                                  | 1.198E-03                     | 5.6                     |

Table 13: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 03 Aug 2013 00:00:00 to 16 Jul 2019 16:58:00. Main rate LUT IDs (LOW/M75/HIGH): 18434/26627/31747.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | LOW-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | LOW-P1   | 24           | 7 (21,28)                            | 29                  | 2.570E-02                                  | 3.671E-03                     | 1.0                     |
| 2    | LOW-P2   | 33           | 10 (28,38)                           | 30                  | 3.620E-02                                  | 3.620E-03                     | 1.2                     |
| 3    | LOW-P3   | 54           | 14 (48,62)                           | 26                  | 4.022E-02                                  | 2.873E-03                     | 0.8                     |
| 4    | LOW-P4   | 75           | 14 (68,82)                           | 18                  | 3.298E-02                                  | 2.425E-03                     | 0.8                     |
| 5    | LOW-P5   | 102          | 15 (94,109)                          | 15                  | 3.511E-02                                  | 2.341E-03                     | 0.4                     |
| 6    | M75-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 7    | LOW-P6   | 132          | 21 (122,143)                         | 16                  | 3.936E-02                                  | 1.874E-03                     | 0.4                     |
| 8    | M75-P1   | 154          | 50 (127,177)                         | 32                  | 1.980E-01                                  | 3.960E-03                     | 2.2                     |
| 9    | LOW-P7   | 168          | 25 (157,182)                         | 15                  | 4.140E-02                                  | 1.656E-03                     | 1.2                     |
| 10   | LOW-P8   | 208          | 31 (195,226)                         | 15                  | 4.442E-02                                  | 1.433E-03                     | 0.9                     |
| 11   | M75-P2   | 246          | 49 (217,266)                         | 20                  | 1.680E-01                                  | 3.429E-03                     | 1.2                     |
| 12   | M75-P3   | 354          | 75 (312,387)                         | 21                  | 2.274E-01                                  | 3.032E-03                     | 0.9                     |
| 13   | M75-P4   | 470          | 85 (424,509)                         | 18                  | 2.164E-01                                  | 2.546E-03                     | 0.9                     |
| 14   | M75-P5   | 604          | 81 (558,639)                         | 13                  | 1.834E-01                                  | 2.264E-03                     | 0.8                     |
| 15   | M75-P6   | 749          | 101 (692,793)                        | 13                  | 1.923E-01                                  | 1.904E-03                     | 0.9                     |
| 16   | M75-P7   | 899          | 112 (840,952)                        | 12                  | 1.793E-01                                  | 1.601E-03                     | 0.8                     |
| 17   | HIGH-P0  | 992          | 374 (905,1279)                       | 38                  | 3.590E+00                                  | 9.599E-03                     | 5.2                     |
| 18   | M75-P8   | 1054         | 120 (996,1116)                       | 11                  | 1.646E-01                                  | 1.372E-03                     | 0.7                     |
| 19   | HIGH-P1  | 1504         | 241 (1371,1612)                      | 16                  | 1.360E+00                                  | 5.643E-03                     | 3.3                     |
| 20   | HIGH-P1  | 1688         | 400 (1539,1939)                      | 24                  | 2.980E+00                                  | 7.450E-03                     | 1.6                     |
| 21   | HIGH-P2  | 2280         | 365 (2078,2443)                      | 16                  | 2.140E+00                                  | 5.863E-03                     | 1.9                     |
| 22   | HIGH-P2  | 2619         | 745 (2333,3078)                      | 28                  | 4.710E+00                                  | 6.322E-03                     | 2.1                     |
| 23   | HIGH-P3  | 3618         | 502 (3376,3878)                      | 14                  | 2.730E+00                                  | 5.438E-03                     | 3.8                     |
| 24   | HIGH-P3  | 3969         | 941 (3618,4559)                      | 24                  | 4.910E+00                                  | 5.218E-03                     | 4.1                     |



## Probe A (M35)

Table 14: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe A. Valid from 25 Sep 2012 05:30:00 to 03 Apr 2013 00:00:00. Main rate LUT IDs (M35): 20482.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | M35-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | M35-P1   | 156          | 40 (135,175)                         | 26                  | 1.540E-01                                  | 3.850E-03                     | 1.8                     |
| 2    | M35-P2   | 243          | 52 (214,266)                         | 21                  | 1.760E-01                                  | 3.385E-03                     | 1.2                     |
| 3    | M35-P3   | 338          | 57 (305,362)                         | 17                  | 1.659E-01                                  | 2.911E-03                     | 0.8                     |
| 4    | M35-P4   | 449          | 65 (410,475)                         | 14                  | 1.785E-01                                  | 2.746E-03                     | 0.7                     |
| 5    | M35-P5   | 558          | 69 (515,584)                         | 12                  | 1.538E-01                                  | 2.229E-03                     | 0.7                     |
| 6    | M35-P6   | 708          | 88 (661,749)                         | 12                  | 1.636E-01                                  | 1.859E-03                     | 0.6                     |
| 7    | M35-P7   | 859          | 87 (802,889)                         | 10                  | 1.390E-01                                  | 1.598E-03                     | 1.1                     |
| 8    | M35-P8   | 1019         | 92 (974,1066)                        | 9                   | 1.260E-01                                  | 1.370E-03                     | 1.0                     |

Table 15: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe A. Valid from 03 Apr 2013 00:00:00 to 14 Oct 2019 14:27:00. Main rate LUT IDs (M35): 20483.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | M35-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | M35-P1   | 138          | 40 (116,156)                         | 29                  | 1.490E-01                                  | 3.725E-03                     | 2.1                     |
| 2    | M35-P2   | 224          | 60 (191,251)                         | 27                  | 2.030E-01                                  | 3.383E-03                     | 1.4                     |
| 3    | M35-P3   | 330          | 63 (295,358)                         | 19                  | 1.930E-01                                  | 3.063E-03                     | 1.1                     |
| 4    | M35-P4   | 444          | 80 (401,481)                         | 18                  | 2.097E-01                                  | 2.621E-03                     | 0.8                     |
| 5    | M35-P5   | 584          | 73 (545,618)                         | 13                  | 1.637E-01                                  | 2.242E-03                     | 0.5                     |
| 6    | M35-P6   | 724          | 106 (661,767)                        | 15                  | 2.050E-01                                  | 1.934E-03                     | 1.1                     |
| 7    | M35-P7   | 879          | 109 (821,930)                        | 12                  | 1.669E-01                                  | 1.531E-03                     | 0.7                     |
| 8    | M35-P8   | 1042         | 118 (985,1103)                       | 11                  | 1.440E-01                                  | 1.220E-03                     | 1.1                     |

## Probe B (M35)

Table 16: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 19 Sep 2012 00:00:00 to 03 Apr 2013 00:00:00. Main rate LUT IDs (M35): 38912.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | M35-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | M35-P1   | 167          | 45 (142,187)                         | 27                  | 1.860E-01                                  | 4.133E-03                     | 1.9                     |
| 2    | M35-P2   | 254          | 48 (227,275)                         | 19                  | 1.850E-01                                  | 3.854E-03                     | 1.2                     |
| 3    | M35-P3   | 358          | 60 (323,383)                         | 17                  | 1.950E-01                                  | 3.250E-03                     | 1.1                     |
| 4    | M35-P4   | 475          | 75 (434,509)                         | 16                  | 2.035E-01                                  | 2.713E-03                     | 0.7                     |
| 5    | M35-P5   | 604          | 81 (558,639)                         | 13                  | 1.828E-01                                  | 2.257E-03                     | 0.6                     |
| 6    | M35-P6   | 749          | 84 (700,784)                         | 11                  | 1.540E-01                                  | 1.833E-03                     | 1.0                     |
| 7    | M35-P7   | 889          | 90 (840,930)                         | 10                  | 1.525E-01                                  | 1.694E-03                     | 0.7                     |
| 8    | M35-P8   | 1054         | 107 (996,1103)                       | 10                  | 1.440E-01                                  | 1.346E-03                     | 1.0                     |

Table 17: Energy/Flux Calibration Factors for the Merged Electron Channels on Probe B. Valid from 03 Apr 2013 00:00:00 to 16 Jul 2019 16:58:00. Main rate LUT IDs (M35): 38913.

| CH # | UNIT-PIX | $E$<br>[keV] | $\Delta E (E_{lo}, E_{hi})$<br>[keV] | $\Delta E/E$<br>[%] | $G_0 \Delta E$<br>[cm <sup>2</sup> sr keV] | $G_0$<br>[cm <sup>2</sup> sr] | $\Delta G_0/G_0$<br>[%] |
|------|----------|--------------|--------------------------------------|---------------------|--|-------------------------------|-------------------------|
| 0    | M35-P0   | X            | X                                    | X                   | X  | X                             | X                       |
| 1    | M35-P1   | 158          | 44 (133,177)                         | 28                  | 1.870E-01                                  | 4.250E-03                     | 2.1                     |
| 2    | M35-P2   | 251          | 53 (222,275)                         | 21                  | 2.030E-01                                  | 3.830E-03                     | 1.3                     |
| 3    | M35-P3   | 358          | 68 (319,387)                         | 19                  | 2.122E-01                                  | 3.121E-03                     | 1.0                     |
| 4    | M35-P4   | 475          | 75 (434,509)                         | 16                  | 2.035E-01                                  | 2.713E-03                     | 0.7                     |
| 5    | M35-P5   | 597          | 74 (558,632)                         | 12                  | 1.580E-01                                  | 2.135E-03                     | 1.0                     |
| 6    | M35-P6   | 741          | 92 (692,784)                         | 12                  | 1.729E-01                                  | 1.879E-03                     | 0.6                     |
| 7    | M35-P7   | 879          | 100 (830,930)                        | 11                  | 1.650E-01                                  | 1.650E-03                     | 1.1                     |
| 8    | M35-P8   | 1054         | 120 (996,1116)                       | 11                  | 1.495E-01                                  | 1.246E-03                     | 0.8                     |