**Table S1:** AMS results of all presented samples with their respective errors and masses.

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| **GIS-AMS size series** | |  |  |  |  |
| **POC#3** | **AMS ID** | **Standard type** | **F14Cm** | **±** | **mm [µg C]** |
|  | COL1000.0.0.31 | POC#3 | 0.0196 | 0.0023 | 12.10 |
|  | COL1000.0.0.33 | POC#3 | 0.0073 | 0.0006 | 35.59 |
|  | COL1000.0.0.36 | POC#3 | 0.0778 | 0.0246 | 3.55 |
|  | COL1000.0.0.37 | POC#3 | 0.0053 | 0.0005 | 40.57 |
|  | COL1000.0.0.38 | POC#3 | 0.0075 | 0.0010 | 22.54 |
|  | COL1000.0.0.39 | POC#3 | 0.0510 | 0.0071 | 5.80 |
|  | COL1000.0.0.40 | POC#3 | 0.0188 | 0.0034 | 9.66 |
|  | COL1000.0.0.41 | POC#3 | 0.0179 | 0.0020 | 14.36 |
|  | COL1000.0.0.44 | POC#3 | 0.0207 | 0.0016 | 17.32 |
|  | COL1000.0.0.45 | POC#3 | 0.0070 | 0.0004 | 50.07 |
|  | COL1000.0.0.46 | POC#3 | 0.0219 | 0.0025 | 10.48 |
|  | COL1000.0.0.48 | POC#3 | 0.0659 | 0.0054 | 7.64 |
|  | COL1000.0.0.49 | POC#3 | 0.0101 | 0.0008 | 33.34 |
|  | COL1000.0.0.51 | POC#3 | 0.0241 | 0.0027 | 13.64 |
|  | COL1000.0.0.52 | POC#3 | 0.0433 | 0.0055 | 7.89 |
|  | COL1000.0.0.53 | POC#3 | 0.0048 | 0.0004 | 48.88 |
|  | COL1000.0.0.56 | POC#3 | 0.0411 | 0.0070 | 5.46 |
|  | COL1000.0.0.57 | POC#3 | 0.0762 | 0.0091 | 5.88 |
|  | COL1000.0.0.58 | POC#3 | 0.0081 | 0.0010 | 21.59 |
|  | COL1000.0.0.59 | POC#3 | 0.0084 | 0.0008 | 32.27 |
|  | COL1000.0.0.60 | POC#3 | 0.0041 | 0.0004 | 49.71 |
|  | COL1000.0.0.61 | POC#3 | 0.0238 | 0.0035 | 7.28 |
|  | COL1000.0.0.64 | POC#3 | 0.0542 | 0.0026 | 21.24 |
|  | COL1000.0.0.65 | POC#3 | 0.0072 | 0.0021 | 8.98 |
|  | COL1000.0.0.67 | POC#3 | 0.0279 | 0.0021 | 18.15 |
|  | COL1000.0.0.70 | POC#3 | 0.0106 | 0.0009 | 26.81 |
|  | COL1000.0.0.71 | POC#3 | 0.0088 | 0.0013 | 16.61 |
|  | COL1000.0.0.72 | POC#3 | 0.0130 | 0.0013 | 18.03 |
|  | COL1000.0.0.73 | POC#3 | 0.0332 | 0.0068 | 5.20 |
|  | COL1000.0.0.74 | POC#3 | 0.0537 | 0.0240 | 4.24 |
|  | COL1000.0.0.75 | POC#3 | 0.0347 | 0.0057 | 8.71 |
|  | COL1000.0.0.76 | POC#3 | 0.0276 | 0.0013 | 32.03 |
|  | COL1000.0.0.77 | POC#3 | 0.0089 | 0.0008 | 26.46 |
|  | COL 1000.0.0.99 | POC#3 | 0.0119 | 0.0024 | 9.80 |
|  | COL 1000.0.0.100 | POC#3 | 0.0269 | 0.0078 | 5.00 |
|  | COL 1000.0.0.101 | POC#3 | 0.0428 | 0.0111 | 4.50 |
|  | COL 1000.0.0.102 | POC#3 | 0.0316 | 0.0079 | 5.00 |
|  | COL 1000.0.0.103 | POC#3 | 0.0159 | 0.0040 | 6.60 |
|  | COL 1000.0.0.104 | POC#3 | 0.0357 | 0.0103 | 4.70 |
|  | COL 1000.0.0.105 | POC#3 | 0.0272 | 0.0192 | 4.00 |
|  | COL 1000.0.0.106 | POC#3 | 0.0386 | 0.0103 | 4.60 |
|  | COL 1000.0.0.107 | POC#3 | 0.0203 | 0.0064 | 5.60 |
|  | COL 1000.0.0.108 | POC#3 | 0.0041 | 0.0003 | 51.70 |

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| **Ox-II** | **AMS ID** | **Standard type** | **F14Cm** | **±** | | **mm [µg C]** |
|  | COL1002.0.0.19 | Ox-II | 1.3008 | 0.0216 | 18.15 | |
|  | COL1002.0.0.20 | Ox-II | 1.3389 | 0.0228 | 22.42 | |
|  | COL1002.0.0.21 | Ox-II | 1.3799 | 0.0396 | 7.04 | |
|  | COL1002.0.0.22 | Ox-II | 1.2149 | 0.1386 | 2.79 | |
|  | COL1002.0.0.23 | Ox-II | 1.2643 | 0.0383 | 7.44 | |
|  | COL1002.0.0.24 | Ox-II | 1.3428 | 0.0226 | 23.61 | |
|  | COL1002.0.0.25 | Ox-II | 1.3152 | 0.0627 | 5.62 | |
|  | COL1002.0.0.26 | Ox-II | 1.3409 | 0.0260 | 15.78 | |
|  | COL1002.0.0.27 | Ox-II | 1.3500 | 0.0336 | 8.80 | |
|  | COL1002.0.0.31 | Ox-II | 1.3596 | 0.0068 | 48.64 | |
|  | COL1002.0.0.34 | Ox-II | 1.3697 | 0.0370 | 5.27 | |
|  | COL1002.0.0.35 | Ox-II | 1.3341 | 0.0113 | 22.78 | |
|  | COL1002.0.0.36 | Ox-II | 1.3597 | 0.0174 | 13.52 | |
|  | COL1002.0.0.37 | Ox-II | 1.3317 | 0.0092 | 26.69 | |
|  | COL1002.0.0.38 | Ox-II | 1.3472 | 0.0108 | 24.32 | |
|  | COL1002.0.0.39 | Ox-II | 1.3526 | 0.0166 | 11.98 | |
|  | COL1002.0.0.40 | Ox-II | 1.3344 | 0.0105 | 32.39 | |
|  | COL1002.0.0.41 | Ox-II | 1.3487 | 0.0112 | 26.46 | |
|  | COL1002.0.0.43 | Ox-II | 1.3337 | 0.0287 | 5.84 | |
|  | COL1002.0.0.44 | Ox-II | 1.3437 | 0.0094 | 52.91 | |
|  | COL 1002.0.0.60 | Ox-II | 1.3065 | 0.0735 | 3.00 | |
|  | COL 1002.0.0.61 | Ox-II | 1.3640 | 0.1465 | 1.90 | |
|  | COL 1002.0.0.63 | Ox-II | 1.1158 | 0.1887 | 2.10 | |
|  | COL 1002.0.0.64 | Ox-II | 1.6154 | 0.1478 | 1.20 | |
|  | COL 1002.0.0.66 | Ox-II | 0.8890 | 0.6287 | 1.70 | |
|  | COL 1002.0.0.67 | Ox-II | 1.3659 | 0.2680 | 2.50 | |

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| **Aliquots from 1 mg** | |  |  |  |  |
| **POC#3** | **AMS ID** | **Standard type** | **F14Cm** | **±** | **mm [µg C]** |
|  | COL1000.0.0.79a | POC#3 | 0.0055 | 0.0006 | 25.86 |
|  | COL1000.0.0.79b | POC#3 | 0.0038 | 0.0007 | 21.47 |
|  | COL1000.0.0.79c | POC#3 | 0.0029 | 0.0007 | 19.10 |
|  | COL1000.0.0.79d | POC#3 | 0.0113 | 0.0040 | 7.06 |
|  | COL1000.0.0.79e | POC#3 | 0.0019 | 0.0000 | 9.16 |
|  | COL1000.0.0.79f | POC#3 | 0.0150 | 0.0061 | 6.18 |
|  | COL1000.0.0.79g | POC#3 | 0.0133 | 0.0077 | 5.59 |
|  | COL1000.0.0.78a | POC#3 | 0.0064 | 0.0008 | 46.98 |
|  | COL1000.0.0.78b | POC#3 | 0.0026 | 0.0003 | 20.17 |
|  | COL1000.0.0.78c | POC#3 | 0.0024 | 0.0006 | 21.83 |
|  | COL1000.0.0.78d | POC#3 | 0.0027 | 0.0006 | 11.86 |
|  | COL1000.0.0.78e | POC#3 | 0.0109 | 0.0018 | 5.34 |
|  | COL1000.0.0.78f | POC#3 | 0.0178 | 0.0079 | 3.74 |
|  | COL1000.0.0.78g | POC#3 | 0.0855 | 0.0349 | 2.82 |

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| **EA-GIS-AMS** | |  |  |  |  |
| **Sn boats (POC#3)** | **AMS ID** | **Standard type** | **F14Cm** | **±** | **mm [µg C]** |
|  | COL1000.0.0.0.1 | POC#3 | 0.0877 | 0.0172 | 3.52 |
|  | COL1000.0.0.0.2 | POC#3 | 0.0398 | 0.0054 | 6.16 |
|  | COL1000.0.0.0.3 | POC#3 | 0.0355 | 0.0034 | 8.80 |
|  | COL1000.0.0.0.4 | POC#3 | 0.0153 | 0.0020 | 21.12 |
|  | COL1000.0.0.0.5 | POC#3 | 0.0173 | 0.0018 | 26.40 |
|  | COL1000.0.0.0.6 | POC#3 | 0.0116 | 0.0012 | 32.56 |
|  | COL1000.0.0.0.7 | POC#3 | 0.0127 | 0.0012 | 52.80 |

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| **Sn capsules (POC#3)** | **AMS ID** | **Standard type** | **F14Cm** | **±** | **mm [µg C]** |
|  | COL1000.0.0.0.8 | POC#3 | 0.0593 | 0.0093 | 3.52 |
|  | COL1000.0.0.0.9 | POC#3 | 0.0684 | 0.0190 | 5.28 |
|  | COL1000.0.0.0.10 | POC#3 | 0.0535 | 0.0060 | 9.68 |
|  | COL1000.0.0.0.11 | POC#3 | 0.0200 | 0.0020 | 21.12 |
|  | COL1000.0.0.0.12 | POC#3 | 0.0337 | 0.0051 | 27.28 |
|  | COL1000.0.0.0.13 | POC#3 | 0.0163 | 0.0017 | 31.68 |
|  | COL1000.0.0.0.14 | POC#3 | 0.0090 | 0.0010 | 52.80 |

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| **Ag capsules (POC#3)** | **AMS ID** | **Standard type** | **F14Cm** | **±** | **mm [µg C]** |
|  | COL1000.0.0.0.15 |  | 0.5492 | 0.0322 | 3.52 |
|  | COL1000.0.0.0.16 |  | 0.1921 | 0.0293 | 5.28 |
|  | COL1000.0.0.0.17 |  | 0.2924 | 0.0142 | 10.56 |
|  | COL1000.0.0.0.18 |  | 0.2707 | 0.0156 | 20.24 |
|  | COL1000.0.0.0.19 |  | 0.3093 | 0.0107 | 26.40 |
|  | COL1000.0.0.0.20 |  | 0.3394 | 0.0234 | 31.68 |