

Supplementary Table S1

| # | Lab. Code   | Location                    | Dating technique | <sup>14</sup> C Age (BP) | Calibrated age BC/AD   | Reference |
|---|-------------|-----------------------------|------------------|--------------------------|--|-----------|
| 1 | SOAN-9091   | Kuektanar mouth, furnace #2 | LSC              | 1250 ± 65                | 68.3% probability<br>676AD (42.1%) 776AD<br>786AD (19.0%) 830AD<br>854AD (7.1%) 873AD<br>95.4% probability<br>654AD (92.7%) 895AD<br>924AD (2.7%) 950AD                        | [30]      |
| 2 | NSKA 00832  | Kuektanar mouth, furnace #2 | AMS              | 1368 ± 42                | 68.3% probability<br>608AD (7.4%) 620AD<br>638AD (53.7%) 680AD<br>748AD (7.2%) 758AD<br>95.4% probability<br>600AD (78.7%) 706AD<br>737AD (16.8%) 774AD                        | [30]      |
| 3 | Le-11999    | Kuektanar mouth, furnace #3 | LSC              | 1970 ± 170               | 68.3% probability<br>176BC (68.3%) 244AD<br>95.4% probability<br>386BC (95.4%) 410AD   | [31]      |
| 4 | SOAN-5040   | Kuektanar mouth, furnace #3 | LSC              | 1775 ± 35                | 68.3% probability<br>238AD (18.0%) 259AD<br>279AD (50.3%) 334AD<br>95.4% probability<br>212AD (95.4%) 380AD  | [71]      |
| 5 | Le-11997    | Kuektanar mouth, furnace #3 | LSC              | 1650 ± 80                | 68.3% probability<br>263AD (3.9%) 275AD<br>346AD (48.7%) 481AD<br>492AD (15.6%) 536AD<br>95.4% probability<br>240AD (95.4%) 575AD  | [31]      |
| 6 | IAAA-171076 | Kuektanar mouth, furnace #3 | AMC              | 1540 ± 20                | 68.3% probability<br>481AD (7.9%) 492AD<br>536AD (60.4%) 574AD<br>95.4% probability<br>436AD (10.8%) 464AD<br>475AD (13.4%) 501AD<br>508AD (1.5%) 516AD<br>529AD (69.8%) 594AD | [47]      |
| 7 | NSKA 00833  | Kuektanar mouth, furnace #3 | AMS              | 1515 ± 33                | 68.3% probability<br>542AD (68.3%) 600AD<br>95.4% probability<br>436AD (6.1%) 464AD<br>475AD (6.8%) 501AD<br>508AD (1.1%) 516AD<br>530AD (81.5%) 640AD                         | [30]      |
| 8 | Le-11994    | Kuektanar mouth, furnace #4 | LSC              | 2190 ± 250               | 68.3% probability<br>541BC (67.3%) 81AD<br>98AD (1.0%) 110AD<br>95.4% probability<br>826BC (95.4%) 360AD   | [31]      |

|    |                            |                             |     |            |   |      |
|----|----------------------------|-----------------------------|-----|------------|---|------|
| 9  | Le-11992                   | Kuektanar mouth, furnace #4 | LSC | 2020 ± 150 | 68.3% probability<br>336BC (0.9%) 330BC<br>198BC (65.2%) 167AD<br>186AD (2.2%) 202AD<br>95.4% probability<br>393BC (92.8%) 259AD<br>279AD (2.7%) 334AD  | [31] |
| 10 | Le-11993                   | Kuektanar mouth, furnace #4 | LSC | 1840 ± 180 | 68.3% probability<br>33BC (2.1%) 16BC<br>6AD (66.1%) 410AD<br>95.4% probability<br>350BC (1.5%) 308BC<br>207BC (94.0%) 589AD  | [31] |
| 11 | NTU <sub>AMS</sub> -5803   | Kuektanar mouth, furnace #4 | AMC | 1743 ± 69  | 68.3% probability<br>244AD (67.2%) 384AD<br>398AD (1.0%) 400AD<br>95.4% probability<br>127AD (93.8%) 435AD<br>465AD (0.5%) 474AD<br>502AD (0.2%) 506AD<br>516AD (0.8%) 530AD                        | [31] |
| 12 | NTU <sub>AMS</sub> -5800-1 | Kuektanar mouth, furnace #4 | AMS | 1710 ± 60  | 68.3% probability<br>252AD (18.5%) 290AD<br>320AD (49.8%) 414AD<br>95.4% probability<br>219AD (89.5%) 440AD<br>455AD (2.1%) 478AD<br>496AD (3.8%) 534AD   | [31] |
| 13 | Le-11828                   | Kuektanar mouth, furnace #4 | LSC | 1680 ± 50  | 68.3% probability<br>258AD (11.3%) 280AD<br>332AD (56.9%) 425AD<br>95.4% probability<br>248AD (17.2%) 298AD<br>306AD (65.7%) 442AD<br>448AD (4.9%) 480AD<br>494AD (7.7%) 536AD                      | [31] |
| 14 | Le-11995                   | Kuektanar mouth, furnace #4 | LSC | 1680 ± 45  | 68.3% probability<br>260AD (10.3%) 278AD<br>338AD (57.9%) 422AD<br>95.4% probability<br>248AD (16.7%) 297AD<br>308AD (69.0%) 440AD<br>453AD (3.5%) 478AD<br>495AD (6.2%) 534AD                      | [31] |
| 15 | NTU <sub>AMS</sub> -5802   | Kuektanar mouth, furnace #4 | AMS | 1666 ± 62  | 68.3% probability<br>259AD (8.1%) 279AD<br>335AD (48.3%) 436AD<br>464AD (3.7%) 475AD<br>500AD (3.0%) 509AD<br>515AD (5.2%) 530AD<br>95.4% probability<br>248AD (13.7%) 298AD<br>306AD (81.8%) 544AD | [31] |

|    |                            |                                 |     |           |  |            |
|----|----------------------------|---------------------------------|-----|-----------|--|------------|
| 16 | Le-11996                   | Kuektanar mouth, furnace #4     | LSC | 1660 ± 70 | 68.3% probability<br>260AD ( 6.6%) 278AD<br>336AD (42.0%) 440AD<br>456AD ( 7.0%) 478AD<br>496AD (12.6%) 534AD<br>95.4% probability<br>246AD (95.4%) 552AD                        | [31]       |
| 17 | NTU <sub>AMS</sub> -5801-1 | Kuektanar mouth, furnace #4     | AMS | 1614 ± 60 | 68.3% probability<br>412AD (68.3%) 540AD<br>95.4% probability<br>260AD ( 2.6%) 278AD<br>337AD (92.9%) 583AD  | [31]       |
| 18 | Le-11825                   | Kuektanar mouth, furnace #4     | LSC | 1610 ± 30 | 68.3% probability<br>418AD (17.9%) 440AD<br>454AD (19.0%) 478AD<br>496AD (31.3%) 534AD<br>95.4% probability<br>412AD (95.4%) 542AD   | [31]       |
| 19 | IGAN <sub>AMS</sub> 5012   | Turgun                          | AMS | 1270 ± 70 | 68.3% probability<br>665AD (53.4%) 775AD<br>788AD (14.9%) 826AD<br>95.4% probability<br>645AD (93.4%) 895AD<br>924AD ( 2.0%) 950AD   | [30]       |
| 20 | Le-12001                   | Yustyd valley, left river bank  | LSC | 1630 ± 50 | 68.3% probability<br>404AD (42.9%) 482AD<br>490AD (25.4%) 537AD<br>95.4% probability<br>260AD ( 3.0%) 278AD<br>340AD (92.5%) 557AD   | [39]       |
| 21 | IGAN <sub>AMS</sub> 7165   | Yustyd valley, left river bank  | AMS | 1565 ± 20 | 68.3% probability<br>436AD (24.0%) 464AD<br>476AD (23.2%) 500AD<br>510AD ( 2.6%) 514AD<br>530AD (18.4%) 550AD<br>95.4% probability<br>432AD (95.4%) 560AD                        | This paper |
| 22 | IAAA-171075                | Yustyd valley, left river bank  | AMS | 1540 ± 20 | 68.3% probability<br>481AD ( 7.9%) 492AD<br>536AD (60.4%) 574AD<br>95.4% probability<br>436AD (10.8%) 464AD<br>475AD (13.4%) 501AD<br>508AD ( 1.5%) 516AD<br>529AD (69.8%) 594AD | [47]       |
| 23 | IAAA-171074                | Yustyd valley, left river bank  | AMS | 1510 ± 20 | 68.3% probability<br>556AD (68.3%) 590AD<br>95.4% probability<br>541AD (95.4%) 604AD   | [47]       |
| 24 | N/A                        | Yustyd valley, right river bank | LSC | 1830 ± 40 | 68.3% probability<br>130AD ( 5.9%) 144AD<br>155AD (56.5%) 250AD<br>296AD ( 5.9%) 309AD<br>95.4% probability<br>120AD (77.8%) 259AD<br>278AD (17.6%) 334AD                        | [70]       |

|    |                            |                                 |     |            |   |            |
|----|----------------------------|---------------------------------|-----|------------|---|------------|
| 25 | Le-12003                   | Yustyd valley, left river bank  | LSC | 2230 ± 80  | 68.3% probability<br>390BC (68.3%) 197BC<br>95.4% probability<br>456BC (0.5%) 442BC<br>418BC (95.0%) 46BC   | [39]       |
| 26 | Le-12004                   | Yustyd valley, left river bank  | LSC | 1910 ± 110 | 68.3% probability<br>36BC (4.4%) 14BC<br>4AD (63.9%) 240AD<br>95.4% probability<br>166BC (95.4%) 380AD  | [39]       |
| 27 | Le-12002                   | Yustyd valley, left river bank  | LSC | 1860 ± 125 | 68.3% probability<br>22AD (56.1%) 260AD<br>278AD (12.2%) 338AD<br>95.4% probability<br>166BC (95.3%) 433AD<br>521AD (0.1%) 526AD  | [39]       |
| 28 | NTU <sub>AMS</sub> -5804-1 | Yustyd valley, right river bank | AMS | 1792 ± 61  | 68.3% probability<br>204AD (68.3%) 360AD<br>95.4% probability<br>124AD (95.4%) 405AD  | [39]       |
| 29 | NTU <sub>AMS</sub> -5805-1 | Yustyd valley, right river bank | AMS | 1731 ± 59  | 68.3% probability<br>250AD (22.5%) 294AD<br>314AD (45.8%) 402AD<br>95.4% probability<br>206AD (93.8%) 436AD<br>464AD (0.5%) 475AD<br>500AD (0.4%) 508AD<br>515AD (0.8%) 530AD | [39]       |
| 30 | IGAN <sub>AMS</sub> 7166   | Yustyd valley, left river bank  | AMS | 1720 ± 20  | 68.3% probability<br>258AD (20.9%) 280AD<br>333AD (47.4%) 380AD<br>95.4% probability<br>254AD (26.9%) 287AD<br>324AD (68.6%) 406AD  | This paper |

Available radiocarbon ages for charcoals from iron smelting furnaces in the Kosh-Agach ferrous metallurgy province. All of the dates were calibrated using OxCal v4.4.4 program [53] and the IntCal20 calibration curve [54]. Applied techniques: LSC = liquid scintillation; AMS = accelerated mass spectrometry.