附表1 主量元素(%)及微量元素(10-6)测试结果

Table 1 Main elements (%) and trace elements (10-6) test results

| 样品编号 | 类型 | SiO2 | TiO2 | Al2O3 | *T*Fe2O3 | MnO | MgO | CaO | Na2O | K2O | P2O5 | LOI | SUM | Li | Be | Sc | V | Cr | Co | Ni | Cu | Zn | Ga | Rb | Sr | Y |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8-8 | Ⅱ | 51.5 | 5.3 | 25.6 | 2.1 | 0 | 1.2 | 0.3 | 1.3 | 3 | 0.1 | 8.3 | 98.8 | 30 | 7.4 | 42.3 | 457.5 | 246.4 | 25.1 | 67.6 | 210 | 87.7 | 50.3 | 97.2 | 403.6 | 59.3 |
| 8-14 | Ⅰ | 42.5 | 6.1 | 33.5 | 1.8 | 0 | 0.5 | 0.2 | 0.7 | 0.4 | 0.2 | 12.8 | 98.8 | 161.9 | 6.8 | 53 | 517.8 | 272.3 | 42.6 | 156.8 | 289.4 | 118.4 | 54.9 | 12.1 | 603.9 | 71.2 |
| 8-15 | Ⅰ | 30.6 | 3.1 | 15.1 | 22 | 0 | 0.8 | 0.1 | 0.8 | 1.3 | 0.1 | 26 | 99.8 | 28.2 | 3 | 24.6 | 329.3 | 131.2 | 47.5 | 99.2 | 108.5 | 83.8 | 27 | 50.6 | 243.9 | 45.5 |
| 8-16 | Ⅰ | 43.9 | 3.9 | 31.6 | 4.8 | 0 | 0.8 | 0.1 | 0.5 | 0.8 | 0 | 13.3 | 99.9 | 74.5 | 2.5 | 29.7 | 367 | 168.1 | 7.4 | 28.3 | 187.6 | 36.6 | 34.5 | 25.6 | 150.3 | 41.4 |
| 8-17 | Ⅰ | 44.9 | 4.8 | 20.5 | 10 | 0 | 1 | 0.1 | 1.2 | 1.9 | 0.1 | 14.7 | 99.4 | 29.8 | 3.9 | 40.1 | 427.5 | 173.7 | 93.6 | 85.9 | 167.1 | 188.6 | 43.3 | 68.6 | 406.9 | 76.7 |
| 8-19 | Ⅰ | 54.3 | 4.7 | 20.7 | 2.5 | 0.1 | 1.2 | 1.8 | 1.9 | 1.8 | 0.4 | 10 | 99.4 | 21 | 3.5 | 28.6 | 360.9 | 195.4 | 31.2 | 69.3 | 196.1 | 177.7 | 39.1 | 68.7 | 413.9 | 50.2 |
| 8-45 | Ⅰ | 39.2 | 4.5 | 22.1 | 15.1 | 0.1 | 2 | 0.7 | 0.7 | 1.7 | 0.4 | 12.9 | 99.4 | 53.5 | 3.4 | 34.4 | 422.4 | 111 | 84.1 | 138.3 | 245.5 | 191.4 | 42.7 | 58.1 | 508.5 | 69.1 |
| 8-50 | Ⅲ | 47.9 | 4.2 | 22.5 | 7.7 | 0 | 2 | 0.6 | 0.6 | 1.6 | 0.3 | 12.5 | 99.9 | 67.6 | 3.6 | 32.7 | 352 | 182.6 | 36.3 | 89.5 | 179.7 | 169.2 | 41.5 | 50.6 | 455.6 | 55.2 |
| 8-51 | Ⅱ | 47.6 | 3.9 | 25.3 | 3.9 | 0 | 1.4 | 0.3 | 0.6 | 2.2 | 0.1 | 14.5 | 99.9 | 67.2 | 4.1 | 30.1 | 265.8 | 151.1 | 18.3 | 57.7 | 143.9 | 97.6 | 46.1 | 69 | 524.4 | 46 |
| 8-52 | Ⅰ | 45.2 | 0.5 | 23.4 | 11.2 | 0.4 | 2.4 | 0.7 | 0.5 | 3.3 | 0.2 | 11.9 | 99.8 | 13.9 | 3.2 | 16.1 | 77.8 | 13.2 | 14 | 19 | 11.6 | 86.3 | 29.8 | 85.8 | 406.3 | 29.5 |
| 8-56 | Ⅱ | 50.2 | 3.4 | 17.9 | 11.6 | 0.1 | 2.5 | 1.6 | 1 | 2.2 | 0.4 | 8.8 | 99.4 | 36.4 | 3.5 | 26.2 | 313.9 | 109.4 | 45.7 | 98.7 | 148 | 162.3 | 32.2 | 76.2 | 432.6 | 46.1 |
| 8-66 | Ⅲ | 40.3 | 5.1 | 14.9 | 20.6 | 0.1 | 3.6 | 3.6 | 0.8 | 0.6 | 0.5 | 9.2 | 99.3 | 51.7 | 2.9 | 26.6 | 414.5 | 272.9 | 54 | 78.7 | 178 | 206.7 | 30.8 | 23.5 | 251.6 | 43.1 |
| 8-79 | Ⅱ | 44.9 | 6.2 | 25.8 | 7.3 | 0 | 1.7 | 0.6 | 0.3 | 2.9 | 0.1 | 9.1 | 99 | 46.3 | 4.9 | 43.7 | 526.4 | 209.2 | 36.7 | 98.3 | 273.6 | 181.9 | 50.4 | 85.4 | 466.3 | 64.7 |
| 8-80 | Ⅱ | 48.1 | 2.8 | 18.1 | 14.1 | 0.1 | 3 | 1.9 | 0.2 | 2 | 0.7 | 8.3 | 99.2 | 40.3 | 3.8 | 26.3 | 251 | 151.2 | 50.5 | 125.1 | 150.8 | 141.7 | 34.3 | 69.6 | 300 | 51.7 |
| 8-84 | Ⅲ | 42.4 | 3.8 | 14.8 | 19.2 | 0.1 | 2 | 5.6 | 0.1 | 1.3 | 0.4 | 9.3 | 99.1 | 46.2 | 2.7 | 25.8 | 318.8 | 176.1 | 46.3 | 131 | 148.3 | 122.3 | 29.9 | 34.7 | 239.3 | 43.9 |
| 8-86 | Ⅰ | 20.3 | 0.3 | 13.2 | 1.6 | 0.3 | 0.3 | 31 | 0.1 | 2.6 | 0 | 28 | 97.9 | 3.8 | 1.2 | 9.9 | 22.9 | 4.3 | 5.2 | 8.4 | 11.2 | 74.7 | 13.2 | 40.7 | 398.8 | 41.8 |
| 8-87 | Ⅱ | 52.1 | 1.8 | 13.7 | 10.1 | 0.1 | 1.1 | 6.9 | 0.1 | 2.5 | 0.4 | 9.3 | 98.2 | 23.7 | 3.2 | 17.2 | 139.5 | 55.2 | 39.4 | 59.2 | 98.2 | 127.6 | 23.6 | 78.5 | 231.3 | 37 |
| J-4 | Ⅲ | 42 | 7.8 | 34.5 | 1.1 | 0 | 0.1 | 0.4 | 0.2 | 0.9 | 0.3 | 11.9 | 99.3 | 74.1 | 3.8 | 30.6 | 507.1 | 133.1 | 5.4 | 71.8 | 212.8 | 15.2 | 26.7 | 21.6 | 235.2 | 273.3 |
| J-5 | Ⅰ | 25.1 | 2.6 | 23.4 | 36 | 0.1 | 1.5 | 0.2 | 0.1 | 0.7 | 0.3 | 6.8 | 96.9 | 41.9 | 1.7 | 24 | 957.1 | 108.4 | 25.3 | 170.4 | 288.4 | 102.3 | 66.7 | 14.6 | 201.7 | 143.5 |
| J-6 | Ⅰ | 42.4 | 3 | 36.6 | 3.1 | 0 | 0.2 | 0.2 | 0.2 | 0.3 | 0.1 | 12.9 | 98.9 | 96.1 | 2.5 | 25.6 | 272.2 | 77.2 | 9.6 | 161.2 | 235.5 | 25.6 | 25.8 | 8.1 | 120.2 | 59.6 |
| J-7 | Ⅲ | 41.3 | 7.9 | 35 | 1.6 | 0 | 0.1 | 0.3 | 0.2 | 0.2 | 0.2 | 12.6 | 99.3 | 83.8 | 2.9 | 30.7 | 326.5 | 94.4 | 2.6 | 68.4 | 75.3 | 18.2 | 33.4 | 5.3 | 203 | 29.4 |
| J-8 | Ⅰ | 39.5 | 10.7 | 34.9 | 1.4 | 0 | 0.2 | 0.2 | 0.2 | 0.4 | 0.1 | 12.2 | 99.7 | 197.8 | 2.5 | 51.8 | 428 | 66.5 | 10.4 | 442.7 | 284.9 | 24 | 23.2 | 11 | 97.1 | 32.5 |
| J-9 | Ⅰ | 34.2 | 2.9 | 41.5 | 5.5 | 0 | 0.2 | 0.1 | 0.2 | 7.1 | 0 | 7.5 | 99.4 | 3.9 | 1.5 | 20.6 | 277.4 | 165.5 | 12.2 | 308.4 | 156.1 | 15.9 | 22.2 | 128.9 | 93.7 | 9.3 |
| J-10 | Ⅰ | 15.4 | 11.4 | 54.2 | 5.3 | 0 | 0.3 | 0.2 | 0.2 | 2.4 | 0.1 | 9.9 | 99.3 | 7.9 | 1.5 | 40.7 | 264 | 158.9 | 2.7 | 46.9 | 305.2 | 25 | 40.3 | 40.5 | 92.3 | 12.6 |
| J-11 | Ⅰ | 16.1 | 14.4 | 38.5 | 10.1 | 0 | 0.1 | 0.1 | 0.2 | 2.7 | 0.1 | 12.4 | 94.7 | 15.8 | 2.2 | 125.8 | 569 | 1036.8 | 6.8 | 76.1 | 255.3 | 16.4 | 68 | 52.1 | 142.5 | 18.1 |
| J-12 | Ⅰ | 20.4 | 2.2 | 17.1 | 12.6 | 0 | 0.2 | 0.1 | 0.1 | 0.6 | 0.1 | 43.6 | 97 | 71.1 | 5.5 | 23.2 | 383.9 | 473 | 53.5 | 55.5 | 65.6 | 18.9 | 38.9 | 19.1 | 102.4 | 65.6 |
| J-13 | Ⅱ | 39.8 | 4.4 | 21.2 | 17.2 | 0.1 | 1.7 | 1.3 | 0.4 | 1 | 0.8 | 10.7 | 98.7 | 39.8 | 4.1 | 32.5 | 362.2 | 95.6 | 38.2 | 62.1 | 221.9 | 180.2 | 37.9 | 43.7 | 261.2 | 67.2 |
| J-15 | Ⅲ | 18.4 | 1.7 | 7.4 | 4.8 | 0.5 | 0.4 | 35.2 | 1.4 | 0.6 | 0.2 | 28.4 | 99 | 5.1 | 1.4 | 10.7 | 167.6 | 260.5 | 14.1 | 36.7 | 59.2 | 93.4 | 12.7 | 16.9 | 342.5 | 20.2 |
| J-23 | Ⅱ | 51.2 | 4.9 | 25.8 | 3.6 | 0 | 0.9 | 0.5 | 0.6 | 3.2 | 0.1 | 8.5 | 99.2 | 13 | 5.9 | 29.1 | 434.8 | 130.6 | 17.3 | 40.4 | 277.1 | 97.6 | 45.3 | 105.3 | 434.2 | 38.7 |
| J-27 | Ⅱ | 43.2 | 3.3 | 16.8 | 17.6 | 0.3 | 1.2 | 0.6 | 0.6 | 1.1 | 0.2 | 13.8 | 98.8 | 28.6 | 3.5 | 25 | 282.7 | 121.6 | 35.9 | 67 | 103.6 | 130.9 | 28.9 | 41.2 | 256.9 | 46.4 |
| J-28 | Ⅲ | 50 | 4.5 | 20.6 | 10.8 | 0.2 | 0.8 | 0.5 | 0.7 | 2.2 | 0.1 | 8.6 | 99 | 17.5 | 5 | 32.3 | 362.9 | 88.8 | 38.3 | 45.7 | 220.7 | 169.3 | 39.7 | 80.2 | 389.1 | 77.6 |
| J-33 | Ⅱ | 45.8 | 4.9 | 31.7 | 3.1 | 0 | 0.7 | 0.4 | 0.8 | 1.4 | 0 | 10.5 | 99.2 | 54.5 | 4.6 | 28 | 334.3 | 72.8 | 21 | 52.7 | 196.8 | 27.2 | 44.9 | 42.2 | 418 | 39 |
| J-34 | Ⅱ | 44.6 | 3.9 | 20.2 | 12.1 | 0.1 | 1.5 | 1.4 | 1.2 | 1.1 | 0.5 | 12.3 | 99.1 | 34.5 | 3.5 | 31.7 | 316.1 | 126.6 | 55.6 | 83 | 173.3 | 164.9 | 34.7 | 42.9 | 375.3 | 53.7 |
| J-35 | Ⅲ | 42.7 | 4 | 20 | 12.1 | 0 | 0.7 | 0.4 | 0.7 | 1.6 | 0.2 | 16.6 | 99.2 | 32.7 | 3.2 | 30.7 | 313 | 116.7 | 87.8 | 118.9 | 178.7 | 170.9 | 32.3 | 62.7 | 325.8 | 57.5 |
| J-38 | Ⅰ | 71.5 | 0.4 | 16.8 | 2.1 | 0 | 0.7 | 0.4 | 0.9 | 2.5 | 0.1 | 3.8 | 99.2 | 5 | 3.5 | 8 | 31.5 | 9.7 | 10 | 20.7 | 20.1 | 46.5 | 20.9 | 75.1 | 324 | 42.3 |
| J-39 | Ⅰ | 62.1 | 0.4 | 13.3 | 10.6 | 0.1 | 1.5 | 1 | 0.8 | 1.8 | 0.4 | 7.5 | 99.4 | 10.4 | 2.8 | 7.6 | 29.5 | 14.4 | 13.4 | 27.7 | 16.7 | 64.4 | 16.3 | 50.7 | 262 | 81.3 |
| J-48 | Ⅲ | 18.1 | 1.4 | 5.7 | 42.4 | 0.7 | 2.3 | 1.3 | 0.2 | 0.3 | 0.2 | 25.5 | 98.1 | 13.5 | 2 | 15.4 | 139.8 | 43.5 | 80.9 | 51.9 | 62.5 | 131.1 | 10.4 | 11 | 92.7 | 36.7 |
| J-49 | Ⅱ | 55.5 | 3.7 | 26.2 | 1.9 | 0 | 0.8 | 0.2 | 0.9 | 3.1 | 0.1 | 7.4 | 99.7 | 18.5 | 5.1 | 23.2 | 370.5 | 113.8 | 14 | 57.7 | 274.8 | 17.3 | 37.9 | 91.9 | 484.8 | 58.1 |
| J-50 | Ⅱ | 18 | 0.9 | 4.8 | 36.6 | 0.5 | 3.7 | 6 | 0.3 | 0.3 | 0.3 | 27.1 | 98.4 | 15 | 2.5 | 11.1 | 87 | 47.3 | 9.6 | 16.5 | 30.4 | 53.2 | 8.1 | 9.1 | 198.5 | 32.3 |
| J-51 | Ⅲ | 29.4 | 2.1 | 10 | 23.2 | 0.3 | 3.4 | 10.4 | 0.7 | 0.6 | 0.3 | 19 | 99.5 | 16.4 | 1.8 | 12.5 | 172.3 | 877.9 | 50.9 | 127.5 | 69.9 | 121.5 | 17.1 | 20.5 | 368.5 | 24.3 |
| J-53 | Ⅱ | 47.7 | 7.1 | 29.1 | 2.1 | 0 | 1 | 0.4 | 1.1 | 3.1 | 0.1 | 8 | 99.7 | 22.9 | 4.9 | 31.2 | 484.5 | 193.5 | 12.1 | 83.2 | 335.5 | 63.3 | 47 | 93.3 | 648.6 | 59 |
| J-54 | Ⅲ | 9.4 | 1.2 | 5 | 44.7 | 0.5 | 4.5 | 4.8 | 0.5 | 0.3 | 0.5 | 27.9 | 99.4 | 7.9 | 2.4 | 7.6 | 102 | 465.2 | 38.7 | 86.5 | 46.6 | 129.2 | 8.3 | 9.4 | 120.7 | 17.2 |
| J-55 | Ⅲ | 33.5 | 2.4 | 12.9 | 21.8 | 0.4 | 2.6 | 4.3 | 1.2 | 1.2 | 0.5 | 17.1 | 97.9 | 9.3 | 2.7 | 16.8 | 180.8 | 192.8 | 35.6 | 74.1 | 128.2 | 118.7 | 22.1 | 41 | 311.5 | 42.7 |
| J-56 | Ⅲ | 52.7 | 4.7 | 21.7 | 4 | 0 | 1.6 | 89.4 | 2.8 | 2.4 | 0.5 | 7.8 | 99.8 | 8.9 | 3.3 | 24 | 382.6 | 510.8 | 19.8 | 71.1 | 150.4 | 68.9 | 35.5 | 79.1 | 462.4 | 35.7 |
| Z1-3 | Ⅲ |  |  |  |  |  |  |  |  |  |  |  |  | 26.1 | 3.1 | 35.8 | 413 | 45.7 | 162 | 101.5 | 308.4 | 567.9 | 33.2 | 30.1 | 239.6 | 45.6 |
| Z1-4 | Ⅰ |  |  |  |  |  |  |  |  |  |  |  |  | 165.5 | 8.2 | 32.2 | 280.6 | 57 | 44.6 | 184.8 | 323 | 56.5 | 64.5 | 8.4 | 185.4 | 91.8 |
| Z1-7 | Ⅰ |  |  |  |  |  |  |  |  |  |  |  |  | 146.5 | 9.1 | 41.6 | 478 | 78.7 | 20.9 | 110.2 | 365.3 | 127.3 | 63.8 | 5.7 | 247.9 | 48.2 |
| Z1-11 | Ⅱ |  |  |  |  |  |  |  |  |  |  |  |  | 70.5 | 5.6 | 17.7 | 227.3 | 42 | 42.4 | 70.8 | 220.1 | 99.2 | 27.3 | 23.4 | 170.2 | 52 |
| Z1-13 | Ⅲ | 50.1 | 2.8 | 17.7 | 9 | 0.1 | 0.7 | 0.5 | 2.9 | 2.2 | 0.3 | 13.5 | 99.8 | 13.4 | 2.7 | 22.4 | 202.3 | 66.5 | 36.4 | 60.5 | 174.4 | 147.8 | 31.2 | 66.6 | 530.4 | 45.7 |
| Z1-14 | Ⅲ | 22.4 | 1 | 6 | 13.2 | 0.4 | 4.1 | 22.8 | 0.8 | 0.6 | 0.2 | 27.6 | 99 | 15.5 | 1.9 | 11.4 | 111.7 | 53.1 | 20.2 | 42.6 | 25.9 | 66.8 | 10.9 | 21.5 | 946.5 | 35.9 |
| Z1-16 | Ⅲ |  |  |  |  |  |  |  |  |  |  |  |  | 4.9 | 1.9 | 7.4 | 108 | 46.2 | 16.2 | 30.9 | 37.5 | 76.3 | 13.1 | 19.6 | 1780.7 | 15.2 |
| Z1-17 | Ⅱ |  |  |  |  |  |  |  |  |  |  |  |  | 14.8 | 7.8 | 24 | 302.5 | 80.3 | 90.9 | 93.1 | 168.9 | 251 | 43.4 | 82.6 | 558.6 | 104.6 |
| Z1-18 | Ⅲ |  |  |  |  |  |  |  |  |  |  |  |  | 15.2 | 2.7 | 16.3 | 176.5 | 94.5 | 33.8 | 51.1 | 47 | 120.5 | 15.7 | 19.3 | 355.2 | 32 |
| Z1-23 | Ⅲ |  |  |  |  |  |  |  |  |  |  |  |  | 13.7 | 3 | 9.9 | 97.9 | 29.4 | 38.8 | 55 | 55.6 | 59.7 | 10.5 | 9.4 | 316.4 | 25.5 |
| Z1-25 | Ⅰ | 48.5 | 1 | 25.1 | 5.1 | 0 | 1.1 | 0.2 | 0.9 | 1 | 0.1 | 16.2 | 99.2 | 88.1 | 11.9 | 7.5 | 112 | 15.8 | 17.7 | 56.9 | 67.4 | 71.3 | 58.4 | 35.1 | 402.5 | 232.7 |
| Z1-29 | Ⅲ |  |  |  |  |  |  |  |  |  |  |  |  | 12.4 | 2.3 | 12.8 | 142.3 | 105.4 | 37.1 | 55 | 56.3 | 96.8 | 13.2 | 10.8 | 250.1 | 22.6 |
| Z1-33 | Ⅲ |  |  |  |  |  |  |  |  |  |  |  |  | 22 | 2.6 | 17.4 | 253.1 | 148.2 | 48.1 | 73.9 | 143.2 | 144.7 | 25.4 | 25.2 | 257.2 | 36 |
| Z1-36 | Ⅱ | 35.5 | 2.7 | 14.7 | 12.2 | 0 | 1 | 0.1 | 0.8 | 1.7 | 0.1 | 30.4 | 99.4 | 15.7 | 3.3 | 24.2 | 321.8 | 142.6 | 40 | 72.3 | 97 | 98.6 | 24.2 | 58.8 | 298.5 | 44.4 |
| Z1-37 | Ⅲ | 37.5 | 0.8 | 7.1 | 21 | 0.3 | 4.8 | 8.5 | 1.2 | 0.1 | 0.2 | 18.2 | 99.7 | 18.3 | 0.8 | 10.7 | 95.5 | 33.5 | 31.5 | 73.7 | 39.3 | 45.3 | 14.2 | 2.8 | 192.1 | 17.8 |
| Z1-40 | Ⅲ |  |  |  |  |  |  |  |  |  |  |  |  | 24.1 | 2.4 | 25.3 | 297.3 | 154.1 | 41 | 83.4 | 137.9 | 131.9 | 25.4 | 29.9 | 304 | 38 |
| Z1-43 | Ⅲ | 17.3 | 1.1 | 5.1 | 36.9 | 0.6 | 5.1 | 5.5 | 0.4 | 0.3 | 0.4 | 27.3 | 99.9 | 12.6 | 2.9 | 13.2 | 113.5 | 48.7 | 18.5 | 34.5 | 46.9 | 48.3 | 8.8 | 8.4 | 154.4 | 27.6 |
| Z1-45 | Ⅱ |  |  |  |  |  |  |  |  |  |  |  |  | 18.4 | 2.1 | 18.6 | 277.2 | 78.7 | 60.3 | 248.2 | 119.4 | 38.2 | 17.1 | 31.2 | 207.5 | 32.5 |
| Z1-48 | Ⅲ |  |  |  |  |  |  |  |  |  |  |  |  | 17.9 | 1.3 | 23.8 | 270.8 | 542 | 38 | 77.8 | 55.2 | 97.2 | 17.3 | 9.3 | 312.4 | 23.9 |
| Z1-50 | Ⅱ | 54.8 | 3.8 | 17.8 | 8.1 | 0.1 | 1.9 | 1.2 | 1.6 | 1.2 | 0.5 | 8.4 | 99.3 | 22.3 | 2.6 | 25.8 | 298.9 | 234.1 | 29.2 | 88.5 | 138.8 | 169.7 | 34.6 | 42.6 | 341.8 | 53.3 |
| Z1-51 | Ⅲ | 24.5 | 1.4 | 6.4 | 42.3 | 0.4 | 1.3 | 0.8 | 0.3 | 0.3 | 0.1 | 22.3 | 100.2 | 10.7 | 2.1 | 16.4 | 143.1 | 97.5 | 31.6 | 47.2 | 31.8 | 50.5 | 11.4 | 9.4 | 100.4 | 27.4 |
| Z1-54 | Ⅱ | 47.9 | 5.8 | 27.9 | 1.7 | 0 | 0.9 | 0.6 | 1.2 | 1 | 0.4 | 11.9 | 99.4 | 48.9 | 4.3 | 38.1 | 458.5 | 225.4 | 12.1 | 79.6 | 241.9 | 111.3 | 51.6 | 35.3 | 422.4 | 56.4 |
| Z1-61 | Ⅲ |  |  |  |  |  |  |  |  |  |  |  |  | 47.2 | 2.3 | 46 | 613.3 | 187.4 | 37.5 | 73.2 | 334.2 | 181.7 | 37.6 | 41.9 | 434 | 58.8 |
| Z1-64 | Ⅱ | 43.6 | 4 | 18.7 | 9.8 | 0.2 | 3.2 | 3.8 | 1.1 | 3.1 | 0.6 | 11.2 | 99.2 | 27.4 | 3.7 | 27.5 | 294.8 | 139 | 41.1 | 81.6 | 174.8 | 181.8 | 34.4 | 85.6 | 580 | 53 |

| Zr | Nb | Sn | Cs | Ba | La | Ce | Pr | Nd | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Hf | Ta | Tl | Pb | Th | U |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 679.4 | 105.2 | 4.9 | 4.2 | 1379.8 | 107.7 | 222.5 | 25.9 | 97.5 | 15.3 | 3.2 | 12.4 | 2 | 12.3 | 2.2 | 6.2 | 0.9 | 5.3 | 0.7 | 17 | 6.4 | 0.1 | 9.4 | 18.5 | 3.8 |
| 867.6 | 121 | 6 | 0.8 | 731.6 | 138 | 295.5 | 37.8 | 141.1 | 26.9 | 11.1 | 28.1 | 3.8 | 18.6 | 2.9 | 7.5 | 0.9 | 6 | 0.8 | 21.9 | 7.6 | 0.1 | 30.2 | 25.6 | 5.2 |
| 405.6 | 63.2 | 3.1 | 2.3 | 622.6 | 76.6 | 154.6 | 18.3 | 70.8 | 13.2 | 3.4 | 11.1 | 1.6 | 9 | 1.7 | 4.6 | 0.6 | 3.9 | 0.6 | 10.5 | 3.9 | 0.9 | 14.3 | 14.1 | 25.3 |
| 470.2 | 71 | 4.3 | 1.1 | 503.1 | 46.5 | 107.3 | 13.8 | 54.8 | 8.7 | 1.7 | 8.5 | 1.5 | 9 | 1.5 | 4.2 | 0.6 | 3.5 | 0.5 | 12.5 | 4.6 | 0.1 | 7.5 | 14.6 | 3.9 |
| 651.3 | 97.6 | 5 | 2.7 | 879 | 126 | 277 | 34 | 131.1 | 25.2 | 6 | 18.6 | 2.7 | 15.5 | 2.8 | 8 | 1.1 | 6.7 | 1 | 17.5 | 6.1 | 0.4 | 29 | 22.4 | 12.1 |
| 540.1 | 86.3 | 4 | 2.6 | 878.2 | 86.7 | 181.3 | 21.7 | 84.2 | 14.9 | 4 | 12.8 | 1.8 | 10.7 | 1.9 | 5.1 | 0.6 | 3.8 | 0.5 | 13.9 | 5.5 | 0.1 | 13.6 | 15.6 | 3.5 |
| 571.4 | 70.3 | 4.6 | 2 | 797.9 | 100.7 | 214.4 | 26.1 | 106.9 | 21.4 | 6.1 | 19 | 2.5 | 13.5 | 2.5 | 6.9 | 0.9 | 5.5 | 0.8 | 14.9 | 4.6 | 0.2 | 22.8 | 18.6 | 3.8 |
| 569.1 | 84.4 | 4.1 | 2.1 | 702.9 | 100 | 209.8 | 24.9 | 98.5 | 18.5 | 5.1 | 16.1 | 2.1 | 11.6 | 2 | 5.5 | 0.7 | 4.4 | 0.6 | 14.3 | 5.4 | 0.1 | 6.7 | 16.7 | 3.7 |
| 541.5 | 86.6 | 4.3 | 2.7 | 881.4 | 103.4 | 211.6 | 24.6 | 93.9 | 15.8 | 3.8 | 11.1 | 1.7 | 9.7 | 1.8 | 4.8 | 0.7 | 4 | 0.6 | 14.8 | 5.7 | 0.1 | 14.2 | 19 | 3.9 |
| 253.8 | 7.2 | 5.8 | 2.4 | 684.5 | 29.6 | 70.1 | 8.1 | 32 | 6.2 | 1.4 | 5.8 | 0.9 | 5.7 | 1.1 | 3.1 | 0.4 | 2.7 | 0.4 | 7.5 | 1.8 | 0.2 | 82.2 | 36.6 | 6.7 |
| 487 | 62.7 | 3.7 | 2 | 573.5 | 75.8 | 150.4 | 17.2 | 66 | 11.1 | 2.9 | 9.8 | 1.5 | 9.1 | 1.7 | 4.7 | 0.7 | 4 | 0.6 | 12.9 | 4 | 0.2 | 14 | 15.3 | 3.9 |
| 417.3 | 63.9 | 3.5 | 0.7 | 238.3 | 62.6 | 122.6 | 15.2 | 62.1 | 12 | 3.5 | 11.1 | 1.5 | 8.6 | 1.6 | 4.1 | 0.6 | 3.6 | 0.5 | 10.8 | 4.1 | 0.1 | 16.5 | 9.3 | 2.3 |
| 763.8 | 91 | 5.3 | 2.9 | 281.3 | 139.3 | 303.5 | 37.2 | 141.1 | 22.6 | 5.2 | 15.6 | 2.3 | 14.2 | 2.6 | 7 | 1 | 5.8 | 0.8 | 19.3 | 5.8 | 0.2 | 15.8 | 19.2 | 4.5 |
| 483.1 | 62.3 | 3.5 | 2.2 | 136.8 | 91.4 | 190.3 | 22.6 | 87 | 15.2 | 3.6 | 12.9 | 1.8 | 10.3 | 1.9 | 4.9 | 0.7 | 4.2 | 0.6 | 12.1 | 4.1 | 0.2 | 14.1 | 16.3 | 3.6 |
| 396.6 | 51.7 | 3 | 0.9 | 113.6 | 56.6 | 119.1 | 14.9 | 65.4 | 15.7 | 4.7 | 15.1 | 1.9 | 9.3 | 1.6 | 3.8 | 0.5 | 3.2 | 0.5 | 10 | 3.2 | 0.1 | 12.1 | 9.4 | 2.1 |
| 239.2 | 6.3 | 3.8 | 0.9 | 650.8 | 33.8 | 97.3 | 15.9 | 75.1 | 15.2 | 3.9 | 12.6 | 1.6 | 8.6 | 1.4 | 3.5 | 0.5 | 2.8 | 0.4 | 8.8 | 1.5 | 0.2 | 6.6 | 28.4 | 4.2 |
| 271.1 | 33 | 2.7 | 2.7 | 98.5 | 53.8 | 100.9 | 12.6 | 51.2 | 9.4 | 2.2 | 8.5 | 1.2 | 7.1 | 1.4 | 3.5 | 0.5 | 3.1 | 0.4 | 7.2 | 2.3 | 0.3 | 13.7 | 10.2 | 2.2 |
| 357.9 | 7.4 | 1.3 | 0.5 | 479.1 | 499.8 | 1303 | 156.2 | 662.1 | 129.5 | 20.1 | 95.6 | 12.8 | 63.8 | 11.2 | 29.1 | 4.1 | 24.2 | 3.4 | 9.7 | 0.4 | 0 | 16.6 | 7.5 | 4.7 |
| 1138.2 | 161.3 | 8.2 | 0.2 | 91.2 | 134.8 | 3037.2 | 60.9 | 299.9 | 76.2 | 14.3 | 56.6 | 7.7 | 38.2 | 6.6 | 17.6 | 2.6 | 16.6 | 2.4 | 28.5 | 9.9 | 0.1 | 37.9 | 47.5 | 10.2 |
| 1079.9 | 120.2 | 6.5 | 0.3 | 79.7 | 95.2 | 631.5 | 18.2 | 61.1 | 12.1 | 2.4 | 12.2 | 2.3 | 13.8 | 2.7 | 7.5 | 1.1 | 7.3 | 1 | 28.7 | 7 | 0 | 38.7 | 28.8 | 6 |
| 568.8 | 21.2 | 2.5 | 0.3 | 148.5 | 170.8 | 550.7 | 32.7 | 108 | 16.5 | 3 | 10.4 | 1.7 | 9.1 | 1.7 | 4.6 | 0.7 | 4.6 | 0.7 | 14.8 | 0.8 | 0 | 22.8 | 12.2 | 5.8 |
| 1104.9 | 44.8 | 6.2 | 0.5 | 127.9 | 23.8 | 55.1 | 6.3 | 27.6 | 9.1 | 4.3 | 9 | 1.6 | 9 | 1.8 | 5.2 | 0.9 | 5.8 | 0.8 | 28.8 | 1.5 | 0 | 16.8 | 26.1 | 7.4 |
| 278.3 | 8.8 | 2.4 | 0.3 | 231.1 | 21.5 | 50.4 | 5.8 | 23.1 | 4.1 | 0.9 | 2.6 | 0.4 | 2.5 | 0.5 | 1.4 | 0.2 | 1.4 | 0.2 | 7.4 | 0.2 | 0.3 | 19 | 7.7 | 4.4 |
| 1285.5 | 33.9 | 6.5 | 0.2 | 247.4 | 13.2 | 54.1 | 4.1 | 17.2 | 3.8 | 1 | 3.1 | 0.6 | 3.8 | 0.7 | 2.1 | 0.4 | 2.6 | 0.3 | 33.9 | 1.5 | 0.1 | 29.4 | 28.7 | 11.2 |
| 1615.5 | 33.9 | 7.7 | 0.2 | 6770 | 17.4 | 74.2 | 5.5 | 24.3 | 5.7 | 1.8 | 4.3 | 0.8 | 4.6 | 0.9 | 2.4 | 0.4 | 2.6 | 0.3 | 42.2 | 1.6 | 0.2 | 90.4 | 33.1 | 15 |
| 492.3 | 63.4 | 4.3 | 0.7 | 317.4 | 122.5 | 263.9 | 24.5 | 92 | 16.9 | 3.7 | 14.8 | 2.3 | 12.8 | 2.4 | 6.7 | 1 | 6 | 0.8 | 13.1 | 4.2 | 0.9 | 15.5 | 16.5 | 17.1 |
| 582.5 | 53.5 | 4.5 | 1.3 | 1081.3 | 92 | 200.2 | 23.6 | 99 | 20.1 | 5.4 | 17.8 | 2.5 | 13.5 | 2.4 | 6.3 | 0.9 | 5.4 | 0.8 | 14.1 | 2.9 | 0.1 | 6.4 | 14.4 | 3.6 |
| 167.7 | 27.8 | 1.5 | 0.3 | 261.6 | 28.4 | 55.1 | 6.6 | 25.7 | 4.9 | 1.7 | 4.5 | 0.7 | 3.6 | 0.7 | 1.8 | 0.2 | 1.4 | 0.2 | 4.2 | 1.7 | 0.1 | 2.6 | 4 | 0.9 |
| 648.2 | 41.6 | 4.5 | 1.5 | 1671.3 | 76.2 | 137.4 | 14.1 | 48.5 | 8.3 | 2.1 | 8.5 | 1.5 | 8.3 | 1.5 | 3.8 | 0.5 | 3.2 | 0.4 | 16.2 | 1.6 | 0.2 | 15.2 | 17.3 | 4.2 |
| 439.6 | 63.9 | 3.8 | 1.1 | 485.4 | 66.9 | 143.1 | 17.7 | 75.3 | 14.7 | 3.3 | 11.9 | 1.7 | 9.7 | 1.7 | 4.3 | 0.6 | 3.8 | 0.5 | 10.5 | 3.8 | 0.1 | 8.6 | 11.1 | 3.1 |
| 618.1 | 40.7 | 4.7 | 1.7 | 747.6 | 113.1 | 238 | 28.9 | 113.8 | 17.9 | 3.6 | 13.5 | 2.3 | 14.2 | 2.8 | 7.7 | 1.2 | 6.9 | 1 | 15.3 | 1.9 | 0.1 | 9.1 | 15.3 | 3.6 |
| 816.2 | 31.3 | 5 | 1.1 | 661.5 | 40.6 | 82.6 | 9.4 | 34.7 | 7.4 | 2.4 | 8.6 | 1.5 | 8.4 | 1.5 | 3.5 | 0.5 | 3 | 0.4 | 21 | 1.4 | 0.1 | 15.4 | 19.6 | 4.2 |
| 515.4 | 29.6 | 3.8 | 1.5 | 495.8 | 81.1 | 174.6 | 20.6 | 79.9 | 15.6 | 4.3 | 13 | 2 | 11.1 | 2 | 5.3 | 0.8 | 4.6 | 0.7 | 12.8 | 1.3 | 0.1 | 7.7 | 13.3 | 3.6 |
| 541.6 | 37.7 | 3.9 | 1.8 | 512.3 | 96.4 | 206.1 | 24.6 | 100 | 19.7 | 4.3 | 15.2 | 2.3 | 12.2 | 2.2 | 5.8 | 0.8 | 5 | 0.7 | 13.7 | 1.7 | 0.4 | 28.5 | 14.7 | 4.1 |
| 137.8 | 15 | 5.2 | 1.3 | 604.5 | 40.5 | 84.1 | 9.5 | 35.7 | 7.3 | 1.1 | 6.5 | 1.2 | 7.1 | 1.5 | 4.3 | 0.7 | 4.2 | 0.7 | 4.4 | 1.3 | 0.1 | 30.9 | 21.9 | 5.3 |
| 115.4 | 13.8 | 3.9 | 0.7 | 469.1 | 45.3 | 100 | 12.6 | 53.3 | 15.6 | 2 | 17 | 2.6 | 14.6 | 2.8 | 7.2 | 1.1 | 6.2 | 0.9 | 3.6 | 1.2 | 0.1 | 27.8 | 17.2 | 5 |
| 160.8 | 23.5 | 1.3 | 0.3 | 171.4 | 27.3 | 57.7 | 7.2 | 30.3 | 7.3 | 2.3 | 7.2 | 1.1 | 6.3 | 1.2 | 3.1 | 0.5 | 2.9 | 0.5 | 3.8 | 1.4 | 0 | 2.4 | 3.9 | 1 |
| 665.3 | 29.1 | 4.7 | 2.6 | 1061 | 116.7 | 235.2 | 23.7 | 78 | 11.9 | 2.2 | 10.5 | 1.9 | 12.1 | 2.4 | 6.6 | 1 | 6 | 0.8 | 17.4 | 0.9 | 0.2 | 6.3 | 21.3 | 3.8 |
| 124.2 | 17.7 | 1 | 0.3 | 155.7 | 28.5 | 59.1 | 7.1 | 30.6 | 7 | 2.2 | 6.9 | 1 | 5.6 | 1 | 2.7 | 0.4 | 2.4 | 0.4 | 3.2 | 1.2 | 0 | 1.3 | 3.7 | 1.8 |
| 226.6 | 33.3 | 2 | 0.5 | 306.8 | 38 | 76.5 | 9.5 | 37.5 | 8.1 | 2.8 | 7.6 | 1 | 5.1 | 0.9 | 2.2 | 0.3 | 1.9 | 0.3 | 6.2 | 2.1 | 0.1 | 7.4 | 5.9 | 1.1 |
| 821 | 16.9 | 4.7 | 2.3 | 1414 | 120.7 | 259.6 | 29.7 | 113.5 | 20 | 3.2 | 15.9 | 2.5 | 13.6 | 2.4 | 6.1 | 0.9 | 5 | 0.7 | 20.9 | 0.6 | 0.3 | 10.4 | 20.9 | 4.4 |
| 138 | 19.4 | 1.1 | 0.2 | 186.4 | 21.7 | 44.7 | 5.5 | 23.2 | 5.8 | 2.3 | 6.1 | 0.7 | 3.3 | 0.6 | 1.5 | 0.2 | 1.2 | 0.2 | 3.4 | 1.1 | 0 | 4 | 3.5 | 0.8 |
| 338.2 | 45.1 | 2.8 | 1.1 | 555.6 | 53.8 | 114.4 | 13.5 | 54.1 | 11.4 | 3 | 10 | 1.5 | 8.4 | 1.6 | 4.2 | 0.6 | 3.6 | 0.5 | 8.8 | 2.9 | 0.2 | 14.6 | 9.7 | 2.2 |
| 450.7 | 57.1 | 3.9 | 1.9 | 989.6 | 66.7 | 133.9 | 16.2 | 61.8 | 11 | 2.8 | 8.9 | 1.3 | 7.7 | 1.5 | 3.8 | 0.6 | 3.2 | 0.5 | 12.5 | 3.3 | 0.2 | 8.5 | 12.9 | 2.8 |
| 388.6 | 30.1 | 3.1 | 0.9 | 134.8 | 41.2 | 89.4 | 10.7 | 45.2 | 10.2 | 3.6 | 9.5 | 1.5 | 9.3 | 1.7 | 4.5 | 0.6 | 3.9 | 0.6 | 9.5 | 1.5 | 0.3 | 16.5 | 7.4 | 1.7 |
| 1374.1 | 188.1 | 10.5 | 1.2 | 136.4 | 131.2 | 251.7 | 27.2 | 82.5 | 15.4 | 2.5 | 15 | 3.3 | 20.1 | 3.5 | 8.9 | 1.2 | 7.3 | 1 | 34.3 | 9.6 | 0.1 | 26.6 | 28.3 | 7.3 |
| 1794.5 | 233.4 | 11.5 | 0.8 | 171.9 | 122.2 | 210.8 | 32.5 | 139.3 | 31.7 | 9 | 20.1 | 2.3 | 11.7 | 1.9 | 5.3 | 0.7 | 4.3 | 0.6 | 40.5 | 12.7 | 0 | 33.9 | 42.5 | 8.8 |
| 500 | 72.4 | 5.3 | 1.1 | 127.6 | 64 | 136.6 | 15.2 | 57.3 | 9.6 | 2.2 | 9.2 | 1.7 | 9.9 | 1.9 | 5.1 | 0.7 | 4.7 | 0.7 | 13 | 4.6 | 0.3 | 23.2 | 13.9 | 5.3 |
| 479.5 | 80.2 | 4.3 | 1.9 | 483.7 | 88.2 | 180 | 20.4 | 80.7 | 13.6 | 2.7 | 11.4 | 1.8 | 10.8 | 1.9 | 4.8 | 0.6 | 3.8 | 0.5 | 13.5 | 4.3 | 0.2 | 14.6 | 15.1 | 3.2 |
| 189.9 | 28.1 | 1.1 | 0.4 | 209.4 | 42.5 | 94 | 10.2 | 42.6 | 9 | 2.5 | 8.4 | 1.2 | 7 | 1.3 | 3.5 | 0.4 | 3 | 0.4 | 4.2 | 1.5 | 0 | 2.6 | 4.1 | 0.5 |
| 172.1 | 29.2 | 1.2 | 0.3 | 201.7 | 27.2 | 52.7 | 6.1 | 23.4 | 4.3 | 1.4 | 3.4 | 0.5 | 3.1 | 0.6 | 1.6 | 0.2 | 1.2 | 0.2 | 4.3 | 1.8 | 0 | 5 | 5 | 1.3 |
| 1164.2 | 117.8 | 6.5 | 2.3 | 797.3 | 113.2 | 235.8 | 29.7 | 113.1 | 22.7 | 3.9 | 21.3 | 3.6 | 18.9 | 3.8 | 10.1 | 1.4 | 9.1 | 1.3 | 21.2 | 6.9 | 0.2 | 27.7 | 19 | 10.6 |
| 217.7 | 38.5 | 1.5 | 0.3 | 207.1 | 35.6 | 69.5 | 8.3 | 35 | 7.2 | 2.1 | 7.1 | 1.1 | 6.1 | 1.1 | 3 | 0.4 | 2.6 | 0.4 | 5.2 | 2 | 0.1 | 4 | 4.9 | 1.2 |
| 165.6 | 24.7 | 1.5 | 0.2 | 141.4 | 32.4 | 66.5 | 7.5 | 30.7 | 6.8 | 2.1 | 6.1 | 0.9 | 4.4 | 0.9 | 2.2 | 0.3 | 1.9 | 0.3 | 3.6 | 1.5 | 0 | 4.8 | 4.2 | 1.1 |
| 1908.2 | 590.3 | 27.1 | 1.8 | 632 | 237.3 | 439.8 | 52.4 | 189.5 | 36.5 | 2.9 | 33 | 6.1 | 38 | 8.7 | 27.2 | 4.5 | 31.9 | 4.5 | 64.6 | 40.9 | 0.1 | 29.3 | 94.8 | 46.2 |
| 170.5 | 28.5 | 1.1 | 0.2 | 168.1 | 32.4 | 59.3 | 7.1 | 27.8 | 6 | 2.2 | 5.6 | 0.8 | 4.4 | 0.8 | 2.1 | 0.2 | 1.6 | 0.2 | 4.3 | 1.8 | 0 | 4.9 | 4 | 0.9 |
| 396.4 | 65.1 | 2.9 | 0.8 | 339.4 | 53.5 | 105.7 | 12.5 | 48.6 | 9.8 | 3 | 8.8 | 1.2 | 6.4 | 1.3 | 3.2 | 0.4 | 2.8 | 0.4 | 9.5 | 3.8 | 0.1 | 9.5 | 9.9 | 2.2 |
| 397.5 | 54.3 | 2.9 | 2.2 | 593.8 | 71.6 | 154.9 | 18.2 | 76 | 14.8 | 2.7 | 9.5 | 1.4 | 8 | 1.7 | 4.4 | 0.6 | 3.7 | 0.5 | 9.3 | 3.5 | 0.5 | 12.1 | 11 | 23.3 |
| 134.9 | 18.1 | 1.1 | 0.1 | 69.7 | 27.8 | 55.1 | 6.4 | 27 | 6 | 2.1 | 5.4 | 0.7 | 3.9 | 0.7 | 1.7 | 0.2 | 1.3 | 0.2 | 3.1 | 1.1 | 0 | 2.2 | 3.9 | 0.7 |
| 368 | 58.3 | 2.8 | 0.8 | 431 | 66.7 | 136.2 | 15.8 | 62.1 | 11.8 | 3.7 | 9.3 | 1.4 | 7.2 | 1.4 | 3.7 | 0.5 | 3.3 | 0.5 | 9.1 | 3.5 | 0.1 | 4.5 | 9.4 | 2.1 |
| 152.9 | 21.4 | 0.9 | 0.3 | 178.4 | 32.5 | 63.2 | 7.3 | 30.7 | 6.6 | 2.4 | 7.3 | 1 | 5 | 1 | 2.4 | 0.3 | 1.9 | 0.3 | 3.3 | 1.2 | 0 | 3.7 | 3.7 | 1 |
| 345.2 | 38.3 | 2.5 | 1.1 | 323.4 | 56 | 118.1 | 13.6 | 53.1 | 9.7 | 2.1 | 6.6 | 1.1 | 6.6 | 1.3 | 3.6 | 0.5 | 3.1 | 0.4 | 7.6 | 2.2 | 1.8 | 21.7 | 7.5 | 20.7 |
| 260.6 | 43.6 | 1.8 | 0.2 | 173.1 | 38.3 | 76.4 | 9.6 | 40.2 | 8 | 2.5 | 7.1 | 1 | 5.5 | 1.1 | 2.4 | 0.3 | 1.9 | 0.3 | 6.7 | 2.5 | 0 | 5.3 | 5.4 | 1.4 |
| 524.9 | 84.3 | 3.8 | 1.4 | 544 | 83.2 | 167.8 | 20.1 | 78.1 | 15.8 | 4 | 12.9 | 1.9 | 10.8 | 1.9 | 5.3 | 0.7 | 4.4 | 0.6 | 13.1 | 4.9 | 0.1 | 13 | 15.2 | 3.9 |
| 198 | 28.6 | 1.3 | 0.4 | 186.2 | 14.7 | 35.1 | 4.3 | 18 | 4.4 | 1.2 | 4.7 | 0.9 | 5.5 | 1.1 | 2.9 | 0.4 | 2.7 | 0.4 | 4.5 | 1.7 | 0 | 6.1 | 5.4 | 1.8 |
| 699.4 | 102.3 | 5.5 | 1.9 | 623.2 | 84.4 | 194.1 | 25.8 | 99.3 | 22.6 | 6.1 | 19.6 | 2.8 | 14.2 | 2.3 | 6.3 | 0.8 | 5.1 | 0.7 | 17.6 | 6.2 | 0.1 | 20.8 | 17.8 | 4.2 |
| 691.7 | 96.4 | 5.6 | 1.5 | 665.2 | 87.9 | 187.4 | 24.6 | 90.9 | 17.9 | 4.4 | 14.3 | 2.2 | 13.2 | 2.5 | 6.7 | 0.9 | 5.5 | 0.8 | 19.1 | 6.1 | 0.1 | 13 | 17.3 | 3.9 |
| 578.4 | 81.7 | 4 | 1.9 | 613 | 91.4 | 189.5 | 22 | 82 | 15.3 | 3.8 | 12.1 | 1.9 | 10.8 | 2 | 5.4 | 0.7 | 4.5 | 0.6 | 15.8 | 4.4 | 0.1 | 9.8 | 17.8 | 3.5 |
| 注：J-4到J-12引自Yang *et al*., 2021 | | | | | | | | | | | | | | | | | | | | | | | | |