AM-86-311

Crystal structure of hasemite, $BaCrO_4$, a barite structure type

Duesler and Foord

To be deposited: Table 3

AMerican Mineralogist, 71, 9-10, 1217-1220

Table 3. Structure factor amplitude table for hashemite, Fo = F observed, sf = standard deviation of Fo, Fc = F calculated, all values multiplied by 4, unobserved data flagged by negative Fo.

Table 3. Structure factor amplitude table for hashemite, Fo = F observed, sf = standard deviation of Fo, Fc = F calculated, all values multiplied by 4, unobserved data flagged by negative Fo.

STRUCTURE FACTOR AMPLITUDES (X 4) FOR HASHEMITE PAGE 1

| H | FO | SF | FC |
|---|---|---|---|
| ********** | | | |
| *K L = 0, 0* | | | |
| 2 | 248 | 1 | 205 |
| 4 | 224 | 1 | 189 |
| 6 | 212 | 1 | 200 |
| 8 | 449 | 1 | 498 |
| 10 | 76 | 1 | 76 |
| 12 | 56 | 1 | 53 |
| 14 | 95 | 1 | 91 |
| ********** | | | |
| *K L = 1, 0* | | | |
| 2 | 686 | 1 | 738 |
| 4 | 455 | 1 | 430 |
| 6 | 452 | 1 | 468 |
| 8 | 125 | 1 | 125 |
| 10 | 256 | 2 | 272 |
| 12 | 101 | 1 | 100 |
| 14 | 81 | 1 | 77 |
| ********** | | | |
| *K L = 2, 0* | | | |
| 0 | 865 | 10 | 932 |
| 2 | 380 | 1 | 330 |
| 4 | 43 | 1 | 36 |
| 6 | 321 | 2 | 323 |
| 8 | 360 | 1 | 385 |
| 10 | 40 | 2 | 42 |
| 12 | -14 | 3 | 12 |
| 14 | 99 | 1 | 94 |
| ********** | | | |
| *K L = 3, 0* | | | |
| 2 | 496 | 1 | 479 |
| 4 | 322 | 2 | 310 |
| 6 | 327 | 1 | 340 |
| 8 | 97 | 1 | 100 |
| 10 | 200 | 1 | 207 |
| 12 | 80 | 2 | 78 |
| ********** | | | |
| *K L = 4, 0* | | | |
| 0 | 621 | 6 | 695 |
| 2 | 119 | 1 | 111 |
| 4 | 74 | 1 | 73 |
| 6 | 124 | 1 | 123 |
| 8 | 283 | 1 | 298 |
| 10 | 42 | 1 | 42 |
| 12 | 34 | 2 | 33 |
| ********** | | | |
| *K L = 5, 0* | | | |
| 2 | 279 | 1 | 286 |
| 4 | 155 | 1 | 156 |
| 6 | 189 | 1 | 198 |
| 8 | 49 | 1 | 52 |
| 10 | 134 | 1 | 135 |
| 12 | 50 | 1 | 47 |
| ********** | | | |
| *K L = 6, 0* | | | |
| 0 | 254 | 4 | 268 |
| 2 | 90 | 1 | 91 |
| 4 | 14 | 2 | 6 |
| 6 | 104 | 1 | 109 |
| 8 | 147 | 1 | 150 |
| 10 | -15 | 3 | 9 |
| ********** | | | |
| *K L = 7, 0* | | | |
| 2 | 127 | 1 | 127 |
| 4 | 76 | 1 | 79 |
| 6 | 100 | 1 | 98 |
| 8 | 33 | 1 | 32 |
| ********** | | | |
| *K L = 8, 0* | | | |
| 0 | 151 | 3 | 149 |
| 2 | 27 | 1 | 20 |
| 4 | 15 | 2 | 13 |
| 6 | 27 | 2 | 25 |
| ********** | | | |
| *K L = 0, 1* | | | |
| 1 | 69 | 1 | 47 |
| 2 | 200 | 1 | 154 |
| 3 | 333 | 1 | 294 |
| 4 | 719 | 1 | 822 |
| 5 | 250 | 1 | 232 |
| 6 | 57 | 1 | 49 |
| 7 | 32 | 1 | 27 |
| 8 | 65 | 1 | 62 |
| 9 | 66 | 1 | 68 |
| 10 | 104 | 1 | 106 |
| 11 | 126 | 1 | 127 |
| 12 | 183 | 1 | 188 |
| 13 | 42 | 1 | 43 |
| 14 | -8 | 2 | 11 |
| ********** | | | |
| *K L = 1, 1* | | | |
| 0 | 284 | 5 | 222 |
| 1 | 375 | 8 | 304 |
| 2 | 622 | 9 | 603 |
| 3 | 137 | 2 | 117 |
| 4 | 40 | 1 | 36 |
| 5 | 207 | 2 | 197 |
| 6 | 399 | 2 | 407 |
| 7 | 139 | 1 | 133 |
| 8 | 164 | 1 | 166 |
| 9 | 114 | 1 | 115 |
| 10 | 152 | 1 | 155 |
| 11 | 36 | 1 | 36 |
| 12 | 65 | 1 | 65 |
| 13 | 67 | 1 | 66 |
| 14 | 96 | 1 | 91 |
| ********** | | | |
| *K L = 2, 1* | | | |
| 1 | 99 | 4 | 82 |
| 2 | 413 | 11 | 362 |
| 3 | 286 | 5 | 258 |
| 4 | 507 | 4 | 505 |
| 5 | 272 | 3 | 265 |
| 6 | 59 | 1 | 53 |
| 7 | 25 | 2 | 22 |
| 8 | 13 | 2 | 12 |
| 9 | 57 | 1 | 57 |
| 10 | 135 | 1 | 139 |
| 11 | 97 | 1 | 97 |
| 12 | 163 | 1 | 165 |
| 13 | 51 | 1 | 49 |
| 14 | -10 | 2 | 6 |
| ********** | | | |
| *K L = 3, 1* | | | |
| 0 | 217 | 1 | 190 |
| 1 | 225 | 5 | 203 |
| 2 | 414 | 8 | 398 |
| 3 | 114 | 3 | 103 |
| 4 | 46 | 2 | 40 |
| 5 | 151 | 2 | 149 |
| 6 | 284 | 2 | 293 |
| 7 | 110 | 1 | 110 |
| 8 | 124 | 1 | 129 |
| 9 | 86 | 1 | 87 |
| 10 | 125 | 1 | 126 |
| 11 | 30 | 1 | 29 |
| 12 | 55 | .5 | 55 |
| 13 | 55 | .5 | 53 |
| ********** | | | |
| *K L = 4, 1* | | | |
| 1 | 38 | 1 | 35 |
| 2 | 99 | 2 | 92 |
| 3 | 177 | 2 | 174 |
| 4 | 399 | 3 | 423 |
| 5 | 132 | 1 | 132 |
| 6 | 35 | 1 | 36 |
| 7 | 15 | 2 | 14 |
| 8 | 36 | 1 | 37 |
| 9 | 38 | 1 | 39 |
| 10 | 64 | 1 | 65 |
| 11 | 82 | 1 | 81 |
| 12 | 123 | 1 | 121 |
| 13 | 30 | 1 | 28 |
| ********** | | | |
| *K L = 5, 1* | | | |
| 0 | 100 | 1 | 98 |
| 1 | 122 | 1 | 122 |
| 2 | 227 | 1 | 230 |
| 3 | 56 | 1 | 56 |
| 4 | 22 | 1 | 20 |
| 5 | 84 | 2 | 85 |
| 6 | 179 | 1 | 186 |
| 7 | 65 | 1 | 68 |
| 8 | 69 | 1 | 71 |
| 9 | 56 | 1 | 58 |
| 10 | 81 | 1 | 80 |
| 11 | 17 | 1 | 17 |
| 12 | 34 | 1 | 32 |
| ********** | | | |
| *K L = 6, 1* | | | |
| 1 | 11 | 2 | 5 |
| 2 | 93 | 1 | 97 |
| 3 | 96 | 1 | 97 |
| 4 | 171 | 1 | 180 |
| 5 | 87 | 1 | 89 |
| 6 | 21 | 1 | 20 |
| 7 | -10 | 2 | 9 |
| 8 | -6 | 3 | 4 |
| 9 | 19 | 1 | 19 |
| 10 | 56 | .5 | 54 |
| ********** | | | |
| *K L = 7, 1* | | | |
| 0 | 57 | 1 | 58 |
| 1 | 54 | 1 | 54 |
| 2 | 105 | 1 | 106 |
| 3 | 37 | 1 | 36 |
| 4 | 17 | 1 | 16 |
| 5 | 47 | 1 | 46 |
| 6 | 85 | 1 | 85 |
| 7 | 37 | 1 | 36 |
| 8 | 35 | 1 | 35 |
| 9 | 28 | 1 | 26 |
| ********** | | | |
| *K L = 8, 1* | | | |
| 1 | 11 | 2 | 9 |
| 2 | 18 | 1 | 16 |

STRUCTURE FACTOR AMPLITUDES (X 4) FOR HASHEMITE PAGE 2

| H | FO | SF | FC |
|---|---|---|---|
| 3 | 46 | 1 | 44 |
| 4 | 108 | 1 | 104 |
| 5 | 34 | 1 | 31 |
| 6 | -8 | 2 | 5 |
| ********** | | | |
| *K L = 0, 2* | | | |
| 0 | 538 | 5 | 539 |
| 1 | 616 | 6 | 583 |
| 2 | 129 | 2 | 100 |
| 3 | 280 | 2 | 225 |
| 4 | 29 | 1 | 23 |
| 5 | 164 | 1 | 145 |
| 6 | -13 | 3 | 12 |
| 7 | 434 | 1 | 463 |
| 8 | 204 | 1 | 208 |
| 9 | 186 | 1 | 191 |
| 10 | 14 | 2 | 12 |
| 11 | 18 | 1 | 16 |
| 12 | 13 | 2 | 13 |
| 13 | 49 | 1 | 47 |
| 14 | 22 | 1 | 19 |
| ********** | | | |
| *K L = 1, 2* | | | |
| 1 | 554 | 1 | 508 |
| 2 | 326 | 5 | 278 |
| 3 | 547 | 6 | 514 |
| 4 | 30 | 2 | 27 |
| 5 | 350 | 3 | 332 |
| 6 | 183 | 1 | 177 |
| 7 | 141 | 1 | 139 |
| 8 | 39 | 1 | 37 |
| 9 | 189 | 2 | 197 |
| 10 | 94 | 1 | 95 |
| 11 | 148 | 1 | 153 |
| 12 | 14 | 2 | 14 |
| 13 | 98 | 1 | 95 |
| 14 | 42 | 1 | 39 |
| ********** | | | |
| *K L = 2, 2* | | | |
| 0 | 275 | 6 | 255 |
| 1 | 596 | 1 | 594 |
| 2 | 24 | 1 | 13 |
| 3 | 16 | 2 | 15 |
| 4 | 41 | 1 | 36 |
| 5 | 66 | 1 | 56 |
| 6 | 78 | 1 | 75 |
| 7 | 347 | 3 | 362 |
| 8 | 151 | 1 | 154 |
| 9 | 210 | 1 | 221 |
| 10 | 24 | 1 | 24 |
| 11 | 33 | 1 | 33 |
| 12 | 13 | 1 | 9 |
| 13 | 51 | 1 | 50 |
| 14 | 26 | 1 | 24 |
| ********** | | | |
| *K L = 3, 2* | | | |
| 1 | 356 | 2 | 347 |
| 2 | 200 | 4 | 190 |
| 3 | 361 | 5 | 356 |
| 4 | -9 | 3 | 4 |
| 5 | 243 | 3 | 243 |
| 6 | 135 | 1 | 135 |
| 7 | 112 | 1 | 113 |
| 8 | 32 | 1 | 33 |
| 9 | 151 | 1 | 156 |
| 10 | 72 | 1 | 74 |
| 11 | 118 | 1 | 122 |
| 12 | 13 | 2 | 10 |
| 13 | 77 | 1 | 74 |
| ********** | | | |
| *K L = 4, 2* | | | |
| 0 | 256 | 4 | 262 |
| 1 | 300 | 2 | 306 |
| 2 | 30 | 1 | 29 |
| 3 | 88 | 1 | 87 |
| 4 | 14 | 2 | 12 |
| 5 | 77 | 1 | 81 |
| 6 | -9 | 3 | 4 |
| 7 | 250 | 3 | 265 |
| 8 | 124 | 1 | 128 |
| 9 | 115 | 1 | 116 |
| 10 | 13 | 1 | 9 |
| 11 | 12 | 2 | 10 |
| 12 | -8 | 2 | 8 |
| ********** | | | |
| *K L = 5, 2* | | | |
| 1 | 162 | 1 | 171 |
| 2 | 117 | 1 | 120 |
| 3 | 190 | 2 | 199 |
| 4 | -7 | 3 | 3 |
| 5 | 150 | 2 | 156 |
| 6 | 80 | 1 | 83 |
| 7 | 62 | 1 | 62 |
| 8 | 18 | 1 | 18 |
| 9 | 99 | 1 | 100 |
| 10 | 52 | 1 | 51 |
| 11 | 74 | 1 | 72 |
| ********** | | | |
| *K L = 6, 2* | | | |
| 0 | 96 | 1 | 100 |
| 1 | 176 | 2 | 186 |
| 2 | 13 | 2 | 6 |
| 3 | 17 | 2 | 7 |
| 4 | -12 | 3 | 9 |
| 5 | 21 | 1 | 21 |
| 6 | 26 | 1 | 26 |
| 7 | 128 | 1 | 131 |
| 8 | 65 | 1 | 64 |
| 9 | 88 | .5 | 86 |
| 10 | 13 | 1 | 13 |
| ********** | | | |
| *K L = 7, 2* | | | |
| 1 | 88 | 1 | 91 |
| 2 | 54 | 1 | 54 |
| 3 | 90 | 1 | 92 |
| 4 | -11 | 2 | 3 |
| 5 | 69 | 1 | 69 |
| 6 | 44 | 1 | 44 |
| 7 | 41 | 1 | 39 |
| 8 | 14 | 2 | 13 |
| ********** | | | |
| *K L = 8, 2* | | | |
| 0 | 68 | 1 | 66 |
| 1 | 74 | 1 | 72 |
| 2 | 11 | 2 | 8 |
| 3 | 16 | 1 | 14 |
| 4 | -10 | 2 | 3 |
| 5 | 19 | 1 | 16 |
| 6 | -11 | 2 | 2 |
| ********** | | | |
| *K L = 0, 3* | | | |
| 1 | 204 | 2 | 163 |
| 2 | 265 | 1 | 224 |
| 3 | 620 | 3 | 640 |
| 4 | 70 | 1 | 60 |
| 5 | 408 | 2 | 398 |
| 6 | 87 | 1 | 81 |
| 7 | 31 | 2 | 28 |
| 8 | -8 | 3 | 5 |
| 9 | 91 | 1 | 94 |
| 10 | 52 | 1 | 51 |
| 11 | 231 | 1 | 238 |
| 12 | -10 | 2 | 9 |
| 13 | 78 | 1 | 74 |
| 14 | 24 | 1 | 23 |
| ********** | | | |
| *K L = 1, 3* | | | |
| 0 | 171 | 2 | 155 |
| 1 | 552 | 7 | 539 |
| 2 | 28 | 2 | 23 |
| 3 | 334 | 4 | 309 |
| 4 | 45 | 1 | 38 |
| 5 | 391 | 2 | 389 |
| 6 | 28 | 2 | 27 |
| 7 | 263 | 2 | 269 |
| 8 | 111 | 1 | 112 |
| 9 | 186 | 2 | 194 |
| 10 | 24 | 1 | 23 |
| 11 | 61 | 1 | 60 |
| 12 | -8 | 3 | 1 |
| 13 | 123 | 1 | 120 |
| 14 | -8 | 3 | 7 |
| ********** | | | |
| *K L = 2, 3* | | | |
| 1 | 77 | 1 | 70 |
| 2 | 159 | 1 | 145 |
| 3 | 531 | 5 | 541 |
| 4 | 23 | 2 | 16 |
| 5 | 440 | 4 | 456 |
| 6 | 70 | 1 | 70 |
| 7 | 56 | 1 | 58 |
| 8 | 19 | 2 | 17 |
| 9 | 76 | 1 | 76 |
| 10 | 38 | 1 | 38 |
| 11 | 178 | 1 | 181 |
| 12 | -10 | 2 | 9 |
| 13 | 91 | .5 | 88 |
| ********** | | | |
| *K L = 3, 3* | | | |
| 0 | 130 | 2 | 124 |
| 1 | 361 | 4 | 362 |
| 2 | -11 | 3 | 12 |
| 3 | 247 | 2 | 240 |
| 4 | 23 | 1 | 22 |
| 5 | 285 | 4 | 292 |
| 6 | 22 | 1 | 20 |
| 7 | 202 | 2 | 210 |
| 8 | 84 | 1 | 86 |
| 9 | 140 | 1 | 146 |
| 10 | 20 | 2 | 18 |
| 11 | 53 | 1 | 50 |
| 12 | -6 | 3 | 0 |
| 13 | 100 | 1 | 97 |
| ********** | | | |
| *K L = 4, 3* | | | |
| 1 | 73 | 1 | 74 |

STRUCTURE FACTOR AMPLITUDES (X 4) FOR HASHEMITE PAGE 3

| H | FO | SF | FC |
|---|---|---|---|
| 2 | 107 | 1 | 108 |
| 3 | 329 | 3 | 343 |
| 4 | 22 | 2 | 21 |
| 5 | 216 | 3 | 226 |
| 6 | 52 | 1 | 53 |
| 7 | 20 | 2 | 13 |
| 8 | -12 | 2 | 5 |
| 9 | 50 | 1 | 52 |
| 10 | 33 | 1 | 34 |
| 11 | 152 | 1 | 152 |
| 12 | -11 | 2 | 4 |

**********

*K L = 5, 3*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 78 | 1 | 82 |
| 1 | 198 | 1 | 209 |
| 2 | 14 | 2 | 6 |
| 3 | 121 | 1 | 126 |
| 4 | -10 | 3 | 9 |
| 5 | 159 | 2 | 167 |
| 6 | 12 | 2 | 10 |
| 7 | 118 | 2 | 122 |
| 8 | 54 | 1 | 55 |
| 9 | 96 | 1 | 97 |
| 10 | 15 | 1 | 12 |
| 11 | 34 | 1 | 31 |

**********

*K L = 6, 3*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 16 | 1 | 14 |
| 2 | 45 | 1 | 46 |
| 3 | 173 | 1 | 182 |
| 4 | -11 | 2 | 2 |
| 5 | 151 | 1 | 156 |
| 6 | 32 | 1 | 31 |
| 7 | 24 | 1 | 26 |
| 8 | 12 | 2 | 9 |
| 9 | 24 | 1 | 23 |
| 10 | 18 | 1 | 17 |

**********

*K L = 7, 3*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 43 | 1 | 43 |
| 1 | 89 | 1 | 91 |
| 2 | -5 | 4 | 4 |
| 3 | 76 | 1 | 76 |
| 4 | -7 | 3 | 4 |
| 5 | 89 | .5 | 89 |
| 6 | -10 | 2 | 4 |
| 7 | 64 | .5 | 62 |
| 8 | 31 | 1 | 29 |

**********

*K L = 8, 3*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 16 | 2 | 13 |
| 2 | 28 | 1 | 26 |
| 3 | 84 | 1 | 82 |
| 4 | -9 | 2 | 6 |
| 5 | 57 | .5 | 53 |

**********

*K L = 0, 4*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 398 | 5 | 398 |
| 1 | 341 | 2 | 331 |
| 2 | 251 | 1 | 230 |
| 3 | -11 | 4 | 1 |
| 4 | 82 | 1 | 77 |
| 5 | 21 | 2 | 17 |
| 6 | 179 | 1 | 179 |
| 7 | 270 | 3 | 278 |
| 8 | 155 | 1 | 160 |
| 9 | 106 | 1 | 108 |
| 10 | 89 | 1 | 91 |
| 11 | 24 | 1 | 22 |
| 12 | 31 | 1 | 33 |
| 13 | 13 | 2 | 12 |

**********

*K L = 1, 4*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 324 | 3 | 309 |
| 2 | 193 | 1 | 176 |
| 3 | 207 | 1 | 190 |
| 4 | 325 | 3 | 320 |
| 5 | 193 | 1 | 188 |
| 6 | 144 | 1 | 142 |
| 7 | 122 | 1 | 122 |
| 8 | 40 | 1 | 41 |
| 9 | 167 | 2 | 172 |
| 10 | 113 | 1 | 117 |
| 11 | 66 | 1 | 66 |
| 12 | 90 | 1 | 90 |
| 13 | 55 | 1 | 53 |

**********

*K L = 2, 4*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 297 | 1 | 285 |
| 1 | 365 | 3 | 371 |
| 2 | 227 | 1 | 221 |
| 3 | 152 | 1 | 147 |
| 4 | 50 | 2 | 46 |
| 5 | 46 | 1 | 44 |
| 6 | 178 | 2 | 183 |
| 7 | 205 | 2 | 212 |
| 8 | 130 | 2 | 133 |
| 9 | 144 | 3 | 146 |
| 10 | 74 | 1 | 75 |
| 11 | 41 | 1 | 40 |
| 12 | 23 | 1 | 22 |
| 13 | 19 | 1 | 18 |

**********

*K L = 3, 4*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 237 | 3 | 239 |
| 2 | 140 | 1 | 137 |
| 3 | 149 | 1 | 148 |
| 4 | 239 | 1 | 246 |
| 5 | 133 | 2 | 137 |
| 6 | 106 | 2 | 107 |
| 7 | 99 | 1 | 102 |
| 8 | 33 | 1 | 33 |
| 9 | 133 | 1 | 137 |
| 10 | 88 | 1 | 91 |
| 11 | 53 | 1 | 54 |
| 12 | 74 | 1 | 73 |

**********

*K L = 4, 4*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 200 | 3 | 211 |
| 1 | 186 | 3 | 193 |
| 2 | 132 | 1 | 135 |
| 3 | -11 | 3 | 3 |
| 4 | 43 | 4 | 38 |
| 5 | -11 | 2 | 10 |
| 6 | 107 | 1 | 111 |
| 7 | 164 | 1 | 171 |
| 8 | 96 | 2 | 100 |
| 9 | 66 | 1 | 67 |
| 10 | 57 | 1 | 57 |
| 11 | 18 | 1 | 16 |
| 12 | 22 | 1 | 22 |

**********

*K L = 5, 4*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 124 | 2 | 131 |
| 2 | 88 | 1 | 92 |
| 3 | 85 | 1 | 90 |
| 4 | 134 | 1 | 144 |
| 5 | 87 | 1 | 91 |
| 6 | 61 | 1 | 63 |
| 7 | 57 | 1 | 59 |
| 8 | 20 | 1 | 18 |
| 9 | 88 | 1 | 89 |
| 10 | 60 | 1 | 59 |
| 11 | 32 | 1 | 30 |

**********

*K L = 6, 4*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 92 | 2 | 97 |
| 1 | 122 | 2 | 129 |
| 2 | 77 | 1 | 80 |
| 3 | 47 | 1 | 48 |
| 4 | 14 | 2 | 13 |
| 5 | 20 | 1 | 18 |
| 6 | 69 | 1 | 72 |
| 7 | 84 | 1 | 85 |
| 8 | 54 | 1 | 53 |
| 9 | 61 | 1 | 60 |

**********

*K L = 7, 4*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 76 | 1 | 77 |
| 2 | 42 | 1 | 43 |
| 3 | 43 | 1 | 43 |
| 4 | 76 | 1 | 75 |
| 5 | 45 | 3 | 38 |
| 6 | 32 | 1 | 30 |
| 7 | 41 | 1 | 39 |

**********

*K L = 8, 4*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 48 | 1 | 48 |
| 1 | 51 | 1 | 48 |
| 2 | 35 | 1 | 34 |
| 3 | -12 | 2 | 4 |
| 4 | -8 | 2 | 8 |

**********

*K L = 0, 5*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 63 | 1 | 62 |
| 2 | 292 | 2 | 292 |
| 3 | 134 | 1 | 133 |
| 4 | 422 | 2 | 460 |
| 5 | 23 | 2 | 19 |
| 6 | 157 | 1 | 161 |
| 7 | 46 | 1 | 46 |
| 8 | 62 | 1 | 66 |
| 9 | 60 | 1 | 62 |
| 10 | 128 | 1 | 134 |
| 11 | 68 | .5 | 69 |
| 12 | 129 | 1 | 128 |
| 13 | 11 | 2 | 8 |

**********

*K L = 1, 5*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 399 | 5 | 414 |
| 1 | 30 | 2 | 27 |
| 2 | 316 | 3 | 320 |
| 3 | 172 | 1 | 172 |
| 4 | 33 | 1 | 31 |
| 5 | 134 | 1 | 136 |
| 6 | 258 | 2 | 270 |

STRUCTURE FACTOR AMPLITUDES (X 4) FOR HASHEMITE PAGE 4

| H | FO | SF | FC |
|---|---|---|---|
| 7 | -10 | 3 | 3 |
| 8 | 214 | 2 | 225 |
| 9 | 17 | 2 | 14 |
| 10 | 92 | 1 | 93 |
| 11 | 34 | 1 | 33 |
| 12 | 46 | 1 | 44 |
| 13 | 44 | 1 | 42 |

**********

*K L = 2, 5*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 146 | 1 | 144 |
| 2 | 311 | 3 | 323 |
| 3 | 119 | 1 | 118 |
| 4 | 321 | 2 | 337 |
| 5 | 74 | 1 | 75 |
| 6 | 138 | 1 | 143 |
| 7 | 82 | 1 | 85 |
| 8 | 28 | 1 | 28 |
| 9 | 58 | 1 | 58 |
| 10 | 135 | 1 | 140 |
| 11 | 45 | 1 | 44 |
| 12 | 118 | 1 | 113 |

**********

*K L = 3, 5*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 302 | 3 | 318 |
| 1 | 17 | 3 | 18 |
| 2 | 226 | 3 | 234 |
| 3 | 128 | 1 | 133 |
| 4 | 34 | 3 | 29 |
| 5 | 103 | 1 | 109 |
| 6 | 190 | 2 | 203 |
| 7 | -8 | 3 | 2 |
| 8 | 170 | 1 | 177 |
| 9 | 13 | 2 | 9 |
| 10 | 75 | 1 | 75 |
| 11 | 30 | 1 | 29 |
| 12 | 38 | 1 | 37 |

**********

*K L = 4, 5*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 43 | 1 | 42 |
| 2 | 159 | 2 | 166 |
| 3 | 75 | 1 | 78 |
| 4 | 246 | 1 | 265 |
| 5 | 22 | 2 | 17 |
| 6 | 95 | 1 | 97 |
| 7 | 31 | 1 | 31 |
| 8 | 39 | 1 | 41 |
| 9 | 42 | 1 | 40 |
| 10 | 84 | 1 | 84 |
| 11 | 47 | 1 | 46 |

**********

*K L = 5, 5*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 164 | 3 | 178 |
| 1 | 16 | 2 | 4 |
| 2 | 135 | 1 | 143 |
| 3 | 70 | 1 | 73 |
| 4 | 16 | 1 | 14 |
| 5 | 66 | 1 | 67 |
| 6 | 125 | 1 | 130 |
| 7 | -11 | 3 | 6 |
| 8 | 105 | 1 | 106 |
| 9 | 12 | 2 | 9 |
| 10 | 50 | .5 | 47 |

**********

*K L = 6, 5*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 55 | 1 | 56 |
| 2 | 105 | 1 | 110 |
| 3 | 45 | 1 | 45 |
| 4 | 120 | 1 | 124 |
| 5 | 33 | 1 | 33 |
| 6 | 54 | 1 | 54 |
| 7 | 38 | 1 | 38 |
| 8 | 11 | 2 | 11 |

**********

*K L = 7, 5*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 92 | 2 | 93 |
| 1 | -8 | 3 | 5 |
| 2 | 66 | 1 | 67 |
| 3 | 44 | 1 | 44 |
| 4 | 17 | 2 | 11 |
| 5 | 42 | 1 | 41 |
| 6 | 63 | 1 | 60 |

**********

*K L = 8, 5*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 18 | 1 | 16 |
| 2 | 40 | 1 | 38 |

**********

*K L = 0, 6*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 435 | 7 | 471 |
| 1 | 69 | 1 | 65 |
| 2 | 147 | 2 | 148 |
| 3 | 126 | 1 | 131 |
| 4 | 41 | 1 | 44 |
| 5 | 119 | 1 | 124 |
| 6 | 140 | 2 | 148 |
| 7 | 46 | 1 | 47 |
| 8 | 218 | 1 | 235 |
| 9 | 53 | 1 | 55 |
| 10 | 43 | 1 | 44 |
| 11 | 25 | 1 | 25 |
| 12 | 37 | 1 | 37 |

**********

*K L = 1, 6*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 45 | 1 | 45 |
| 2 | 283 | 2 | 299 |
| 3 | 161 | 1 | 165 |
| 4 | 208 | 2 | 220 |
| 5 | 89 | 1 | 92 |
| 6 | 163 | 1 | 171 |
| 7 | 41 | 1 | 43 |
| 8 | 44 | 1 | 45 |
| 9 | 25 | 1 | 24 |
| 10 | 131 | 1 | 135 |
| 11 | 70 | 1 | 71 |
| 12 | 76 | .5 | 75 |

**********

*K L = 2, 6*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 305 | 5 | 315 |
| 1 | 41 | 1 | 42 |
| 2 | 168 | 1 | 174 |
| 3 | 142 | 1 | 147 |
| 4 | -12 | 3 | 4 |
| 5 | 121 | 1 | 126 |
| 6 | 173 | 1 | 186 |
| 7 | 48 | 1 | 49 |
| 8 | 178 | 1 | 186 |
| 9 | 34 | 1 | 35 |
| 10 | 27 | 1 | 27 |
| 11 | 30 | 1 | 29 |
| 12 | 15 | 1 | 14 |

**********

*K L = 3, 6*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 34 | 1 | 36 |
| 2 | 210 | 3 | 220 |
| 3 | 122 | 1 | 129 |
| 4 | 166 | 2 | 175 |
| 5 | 72 | 1 | 75 |
| 6 | 129 | 1 | 134 |
| 7 | 35 | 1 | 35 |
| 8 | 39 | 1 | 40 |
| 9 | 22 | 1 | 20 |
| 10 | 104 | 1 | 105 |
| 11 | 59 | .5 | 58 |

**********

*K L = 4, 6*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 257 | 2 | 275 |
| 1 | 45 | 1 | 44 |
| 2 | 83 | 1 | 87 |
| 3 | 75 | 1 | 78 |
| 4 | 29 | 2 | 26 |
| 5 | 76 | 1 | 80 |
| 6 | 84 | 1 | 88 |
| 7 | 26 | 1 | 27 |
| 8 | 143 | 1 | 148 |
| 9 | 34 | 1 | 35 |
| 10 | 29 | 1 | 28 |

**********

*K L = 5, 6*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 26 | 1 | 24 |
| 2 | 133 | 1 | 142 |
| 3 | 76 | 1 | 80 |
| 4 | 93 | 1 | 99 |
| 5 | 48 | 1 | 48 |
| 6 | 84 | 1 | 85 |
| 7 | 24 | 1 | 23 |
| 8 | 22 | 1 | 21 |
| 9 | 15 | 1 | 14 |

**********

*K L = 6, 6*

| H | FO | SF | FC |
|---|---|---|---|
| 0 | 117 | 2 | 120 |
| 1 | 18 | 2 | 18 |
| 2 | 59 | 1 | 62 |
| 3 | 58 | 1 | 58 |
| 4 | -12 | 2 | 2 |
| 5 | 55 | 1 | 55 |
| 6 | 70 | 1 | 70 |
| 7 | 16 | 1 | 17 |

**********

*K L = 7, 6*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 19 | 1 | 17 |
| 2 | 65 | 1 | 65 |
| 3 | 42 | 1 | 42 |
| 4 | 54 | 1 | 53 |
| 5 | 28 | 1 | 27 |

**********

*K L = 0, 7*

| H | FO | SF | FC |
|---|---|---|---|
| 1 | 160 | 1 | 167 |
| 2 | -12 | 3 | 8 |
| 3 | 179 | 1 | 188 |
| 4 | 212 | 1 | 230 |
| 5 | 155 | 1 | 164 |
| 6 | 15 | 2 | 16 |
| 7 | 74 | 1 | 77 |
| 8 | 29 | 1 | 31 |
| 9 | 102 | 1 | 108 |
| 10 | 27 | 1 | 28 |
| 11 | 78 | 1 | 78 |

STRUCTURE FACTOR AMPLITUDES (X 4) FOR HASHEMITE PAGE 5

| H | FO | SF | FC |
|---|---|---|---|
| ********** | | | |
| *K L = 1, 7* | | | |
| 0 | 61 | 2 | 62 |
| 1 | 241 | 2 | 252 |
| 2 | 139 | 1 | 145 |
| 3 | 26 | 3 | 13 |
| 4 | 40 | 3 | 32 |
| 5 | 46 | 1 | 49 |
| 6 | 105 | 1 | 111 |
| 7 | 165 | 1 | 177 |
| 8 | 26 | 1 | 27 |
| 9 | 98 | 1 | 101 |
| 10 | 63 | 1 | 64 |
| 11 | -11 | 2 | 5 |
| ********** | | | |
| *K L = 2, 7* | | | |
| 1 | 137 | 1 | 143 |
| 2 | 57 | 1 | 57 |
| 3 | 155 | 1 | 165 |
| 4 | 141 | 2 | 150 |
| 5 | 140 | 2 | 149 |
| 6 | 14 | 2 | 16 |
| 7 | 66 | 1 | 66 |
| 8 | -8 | 3 | 3 |
| 9 | 95 | 1 | 98 |
| 10 | 46 | 1 | 47 |
| 11 | 69 | .5 | 67 |
| ********** | | | |
| *K L = 3, 7* | | | |
| 0 | 52 | 2 | 53 |
| 1 | 186 | 2 | 194 |
| 2 | 110 | 1 | 112 |
| 3 | -16 | 3 | 11 |
| 4 | 29 | 1 | 27 |
| 5 | 35 | 1 | 37 |
| 6 | 81 | 1 | 85 |
| 7 | 134 | 1 | 142 |
| 8 | 19 | 1 | 22 |
| 9 | 80 | 1 | 80 |
| 10 | 54 | 1 | 53 |
| ********** | | | |
| *K L = 4, 7* | | | |
| 1 | 98 | 1 | 103 |
| 2 | -12 | 3 | 4 |
| 3 | 109 | 1 | 115 |
| 4 | 136 | 1 | 144 |
| 5 | 97 | 1 | 100 |
| 6 | -9 | 3 | 7 |
| 7 | 50 | 1 | 49 |
| 8 | 21 | 2 | 19 |
| 9 | 71 | 1 | 70 |
| ********** | | | |
| *K L = 5, 7* | | | |
| 0 | 24 | 2 | 23 |
| 1 | 120 | 1 | 121 |
| 2 | 73 | 1 | 76 |
| 3 | -5 | 5 | 3 |
| 4 | 16 | 1 | 13 |
| 5 | 20 | 1 | 20 |
| 6 | 61 | 1 | 61 |
| 7 | 89 | 1 | 90 |
| 8 | 19 | 3 | 11 |
| ********** | | | |
| *K L = 6, 7* | | | |
| 1 | 59 | 1 | 59 |
| 2 | 24 | 1 | 23 |
| 3 | 63 | 1 | 63 |
| 4 | 64 | 1 | 63 |
| 5 | 58 | 1 | 57 |
| 6 | -8 | 2 | 3 |
| ********** | | | |
| *K L = 7, 7* | | | |
| 0 | 18 | 1 | 14 |
| 1 | 65 | 1 | 61 |
| 2 | 40 | 1 | 38 |
| ********** | | | |
| *K L = 0, 8* | | | |
| 0 | 91 | 1 | 94 |
| 1 | 210 | 2 | 219 |
| 2 | 76 | 1 | 77 |
| 3 | 101 | 1 | 104 |
| 4 | -10 | 3 | 8 |
| 5 | 122 | 1 | 132 |
| 6 | 54 | 1 | 55 |
| 7 | 144 | 1 | 153 |
| 8 | 53 | 1 | 55 |
| 9 | 96 | 1 | 97 |
| 10 | 33 | 1 | 32 |
| ********** | | | |
| *K L = 1, 8* | | | |
| 1 | 70 | 1 | 70 |
| 2 | 56 | 1 | 56 |
| 3 | 216 | 1 | 230 |
| 4 | 78 | 1 | 79 |
| 5 | 170 | 1 | 181 |
| 6 | 38 | 1 | 40 |
| 7 | 18 | 2 | 14 |
| 8 | -8 | 3 | 6 |
| 9 | 62 | 1 | 64 |
| 10 | 12 | 2 | 11 |
| ********** | | | |
| *K L = 2, 8* | | | |
| 0 | 37 | 1 | 37 |
| 1 | 195 | 2 | 206 |
| 2 | 46 | 1 | 46 |
| 3 | 67 | 1 | 67 |
| 4 | 27 | 1 | 25 |
| 5 | 102 | 1 | 107 |
| 6 | 20 | 1 | 18 |
| 7 | 124 | 2 | 128 |
| 8 | 36 | 1 | 36 |
| 9 | 98 | 1 | 98 |
| 10 | 37 | 1 | 36 |
| ********** | | | |
| *K L = 3, 8* | | | |
| 1 | 57 | 1 | 57 |
| 2 | 40 | 1 | 42 |
| 3 | 174 | 1 | 180 |
| 4 | 60 | 1 | 61 |
| 5 | 133 | 1 | 140 |
| 6 | 34 | 1 | 33 |
| 7 | 15 | 2 | 13 |
| 8 | 13 | 2 | 7 |
| 9 | 51 | 1 | 50 |
| ********** | | | |
| *K L = 4, 8* | | | |
| 0 | 62 | 1 | 62 |
| 1 | 130 | 1 | 132 |
| 2 | 50 | 1 | 50 |
| 3 | 65 | 1 | 66 |
| 4 | -8 | 3 | 4 |
| 5 | 81 | 1 | 83 |
| 6 | 38 | 1 | 37 |
| 7 | 97 | 1 | 96 |
| 8 | 39 | 1 | 38 |
| ********** | | | |
| *K L = 5, 8* | | | |
| 1 | 31 | 1 | 31 |
| 2 | 33 | 1 | 31 |
| 3 | 113 | 1 | 113 |
| 4 | 46 | 1 | 45 |
| 5 | 92 | 1 | 91 |
| 6 | 25 | 1 | 24 |
| 7 | -8 | 3 | 5 |
| ********** | | | |
| *K L = 6, 8* | | | |
| 0 | 23 | 1 | 20 |
| 1 | 83 | 1 | 79 |
| 2 | 23 | 1 | 21 |
| 3 | 32 | 1 | 28 |
| 4 | -11 | 2 | 10 |
| ********** | | | |
| *K L = 0, 9* | | | |
| 1 | 82 | 1 | 82 |
| 2 | 126 | 2 | 128 |
| 3 | 132 | 1 | 136 |
| 4 | 22 | 2 | 20 |
| 5 | 83 | 1 | 87 |
| 6 | 84 | 1 | 87 |
| 7 | 27 | 1 | 26 |
| 8 | 16 | 2 | 17 |
| 9 | 45 | 1 | 45 |
| ********** | | | |
| *K L = 1, 9* | | | |
| 0 | 161 | 2 | 165 |
| 1 | 126 | 2 | 127 |
| 2 | 18 | 2 | 14 |
| 3 | 45 | 1 | 46 |
| 4 | -12 | 2 | 1 |
| 5 | 61 | 1 | 61 |
| 6 | 29 | 1 | 29 |
| 7 | 97 | 1 | 101 |
| 8 | 99 | 1 | 100 |
| 9 | 61 | 1 | 59 |
| ********** | | | |
| *K L = 2, 9* | | | |
| 1 | 44 | 1 | 43 |
| 2 | 96 | 1 | 97 |
| 3 | 119 | 1 | 121 |
| 4 | 32 | 1 | 34 |
| 5 | 98 | 1 | 100 |
| 6 | 76 | .5 | 77 |
| 7 | -11 | 3 | 5 |
| 8 | 24 | 1 | 25 |
| 9 | 40 | 1 | 39 |
| ********** | | | |
| *K L = 3, 9* | | | |
| 0 | 132 | 2 | 132 |
| 1 | 99 | 2 | 99 |
| 2 | -12 | 3 | 11 |
| 3 | 41 | 1 | 39 |
| 4 | -8 | 3 | 1 |
| 5 | 50 | 1 | 50 |
| 6 | 25 | 1 | 23 |
| 7 | 82 | 1 | 81 |
| 8 | 85 | 1 | 82 |

STRUCTURE FACTOR AMPLITUDES (X 4) FOR HASHEMITE PAGE 6

| H | FO | SF | FC |
|---|---|---|---|
| ********** | | | |
| *K L = 4, 9* | | | |
| 1 | 52 | 1 | 51 |
| 2 | 87 | 1 | 84 |
| 3 | 87 | 1 | 85 |
| 4 | -10 | 2 | 10 |
| 5 | 56 | 1 | 55 |
| 6 | 60 | 1 | 58 |
| ********** | | | |
| *K L = 5, 9* | | | |
| 0 | 94 | 2 | 89 |
| 1 | 69 | 1 | 66 |
| 2 | -8 | 3 | 4 |
| 3 | 20 | 1 | 20 |
| 4 | -4 | 4 | 0 |
| ********** | | | |
| *K L = 0, 10* | | | |
| 0 | 91 | 1 | 87 |
| 1 | 40 | 1 | 40 |
| 2 | 135 | 1 | 132 |
| 3 | -9 | 3 | 8 |
| 4 | 18 | 2 | 15 |
| 5 | -5 | 5 | 11 |
| 6 | 111 | 1 | 111 |
| 7 | 39 | 1 | 38 |
| ********** | | | |
| *K L = 1, 10* | | | |
| 1 | 33 | 1 | 31 |
| 2 | 73 | 2 | 70 |
| 3 | 26 | 2 | 26 |
| 4 | 163 | 2 | 162 |
| 5 | 28 | 1 | 29 |
| 6 | 32 | 1 | 29 |
| 7 | 19 | 1 | 18 |
| ********** | | | |
| *K L = 2, 10* | | | |
| 0 | 84 | 1 | 80 |
| 1 | 51 | 1 | 50 |
| 2 | 120 | 1 | 116 |
| 3 | 23 | 1 | 20 |
| 4 | 19 | 1 | 15 |
| 5 | -8 | 3 | 3 |
| 6 | 100 | 1 | 97 |
| 7 | 26 | 1 | 26 |
| ********** | | | |
| *K L = 3, 10* | | | |
| 1 | 30 | 1 | 28 |
| 2 | 55 | 1 | 54 |
| 3 | 21 | 2 | 21 |
| 4 | 138 | 1 | 131 |
| 5 | 23 | 1 | 21 |
| 6 | 25 | 1 | 22 |
| ********** | | | |
| *K L = 4, 10* | | | |
| 0 | 57 | 1 | 52 |
| 1 | 28 | 1 | 26 |
| 2 | 93 | 1 | 86 |
| 3 | -10 | 3 | 5 |
| 4 | 14 | 2 | 10 |
| ********** | | | |
| *K L = 0, 11* | | | |
| 1 | 31 | 1 | 26 |
| 2 | 101 | 1 | 96 |
| 3 | 14 | 2 | 8 |
| 4 | 81 | 1 | 75 |
| 5 | 23 | 1 | 18 |
| ********** | | | |
| *K L = 1, 11* | | | |
| 0 | 154 | 2 | 144 |
| 1 | 34 | 1 | 31 |
| 2 | 53 | 1 | 48 |
| 3 | 20 | 1 | 16 |
| 4 | 14 | 2 | 11 |
| 5 | 14 | 2 | 11 |
| ********** | | | |
| *K L = 2, 11* | | | |
| 1 | 45 | 1 | 41 |
| 2 | 101 | 1 | 92 |
| 3 | 15 | 2 | 7 |
| 4 | 68 | 1 | 61 |
| ********** | | | |
| *K L = 3, 11* | | | |
| 0 | 130 | 3 | 117 |
| 1 | 31 | 1 | 26 |
| 2 | 39 | 1 | 37 |