

## FAR ENCOUNTER PHOTOREFERENCE TABLE

Scanned from *The Mariner 6 and 7 Pictures of Mars*, NASA SP 263, S.A. Collins, 1971 (pp. 152-155).  
Mark Robinson, June 11, 1999

I noticed that the range to planet is 3393 km larger than those reported in the *NSSDC Publication 71-09 Data User's Note Mariner 6 and 7 Photographic Data*, March 1971. This discrepancy is equal to the radius of the planet thus I assume the range in this table (see below) is to the center of the planet, not the surface.

| Picture number | Shutter direction | Range, km | Phase angle, ° | Sub-spacecraft point |          | km/pixel |
|----------------|-------------------|-----------|----------------|----------------------|----------|----------|
|                |                   |           |                | Longitude °W         | Latitude |          |
| 6F1            | Bottom            | 1,244,221 | 21             | 100                  | -6       | 34.0     |
| 6F2            | Bottom            | 1,228,388 | 21             | 109                  | -6       | 33.4     |
| 6F3            | Bottom            | 1,212,556 | 21             | 117                  | -6       | 32.9     |
| 6F4            | Bottom            | 1,196,724 | 21             | 126                  | -6       | 32.5     |
| 6F5            | Top               | 1,180,281 | 21             | 136                  | -6       | 32.1     |
| 6F6            | Top               | 1,164,448 | 21             | 145                  | -6       | 31.7     |
| 6F7            | Top               | 1,148,615 | 21             | 153                  | -6       | 31.3     |
| 6F8            | Top               | 1,132,782 | 21             | 162                  | -6       | 30.8     |
| 6F9            | Bottom            | 1,116,342 | 21             | 172                  | -6       | 30.4     |
| 6F10           | Bottom            | 1,100,507 | 21             | 181                  | -6       | 30.0     |
| 6F11           | Bottom            | 1,083,790 | 21             | 190                  | -6       | 29.5     |
| 6F12           | Top               | 1,068,232 | 21             | 199                  | -6       | 29.0     |
| 6F13           | Top               | 1,052,399 | 21             | 208                  | -6       | 28.6     |
| 6F14           | Top               | 1,036,568 | 21             | 217                  | -6       | 28.2     |
| 6F15           | Top               | 1,020,733 | 21             | 226                  | -6       | 27.8     |
| 6F16           | Bottom            | 1,004,291 | 21             | 235                  | -6       | 27.3     |
| 6F17           | Bottom            | 988,457   | 21             | 244                  | -6       | 26.8     |
| 6F18           | Bottom            | 972,624   | 21             | 253                  | -6       | 26.4     |
| 6F19           | Top               | 956,181   | 21             | 262                  | -6       | 26.0     |
| 6F20           | Top               | 940,347   | 21             | 271                  | -6       | 25.6     |
| 6F21           | Top               | 924,514   | 21             | 280                  | -6       | 25.2     |
| 6F22           | Top               | 908,679   | 21             | 289                  | -6       | 24.7     |
| 6F23           | Bottom            | 892,236   | 21             | 298                  | -6       | 24.3     |
| 6F24           | Bottom            | 876,402   | 21             | 307                  | -6       | 23.8     |
| 6F25           | Bottom            | 860,568   | 21             | 316                  | -6       | 23.4     |
| 6F26           | Bottom            | 844,733   | 21             | 325                  | -6       | 23.0     |
| 6F27           | Top               | 828,289   | 21             | 334                  | -6       | 22.6     |
| 6F28           | Top               | 812,455   | 21             | 343                  | -6       | 22.1     |
| 6F29           | Top               | 796,619   | 21             | 352                  | -6       | 21.7     |
| 6F30           | Bottom            | 780,175   | 21             | 1                    | -6       | 21.2     |
| 6F31           | Bottom            | 764,339   | 21             | 10                   | -6       | 20.8     |
| 6F32           | Bottom            | 748,454   | 21             | 19                   | -6       | 20.4     |
| 6F33           | Bottom            | 732,667   | 21             | 28                   | -6       | 19.9     |
| 6F34           | Bottom            | 568,196   | 21             | 120                  | -6       | 15.4     |
| 6F35           | Bottom            | 540,171   | 21             | 136                  | -6       | 14.7     |
| 6F36           | Top               | 512,753   | 21             | 151                  | -6       | 13.9     |
| 6F37           | Top               | 484,723   | 21             | 167                  | -6       | 13.1     |
| 6F38           | Bottom            | 457,301   | 21             | 182                  | -6       | 12.4     |
| 6F39           | Bottom            | 429,267   | 21             | 198                  | -6       | 11.6     |
| 6F40           | Bottom            | 401,840   | 21             | 213                  | -6       | 10.9     |
| 6F41           | Bottom            | 401,231   | 21             | 214                  | -6       | 10.9     |

|      |        |           |    |     |    |      |
|------|--------|-----------|----|-----|----|------|
| 6F42 | Bottom | 376,849   | 21 | 227 | -6 | 10.2 |
| 6F43 | Bottom | 352,463   | 21 | 241 | -6 | 9.5  |
| 6F44 | Bottom | 328,075   | 21 | 255 | -6 | 8.8  |
| 6F45 | Top    | 304,293   | 21 | 268 | -6 | 8.2  |
| 6F46 | Top    | 279,898   | 21 | 282 | -6 | 7.5  |
| 6F47 | Top    | 255,498   | 21 | 295 | -7 | 6.9  |
| 6F48 | Top    | 231,092   | 21 | 309 | -7 | 6.2  |
| 6F49 | Top    | 206,680   | 21 | 322 | -7 | 5.5  |
| 7F0  | Top    | 1,844,034 | 22 | 50  | -4 | 50.3 |
| 7F1  | Bottom | 1,720,371 | 22 | 121 | -4 | 46.9 |
| 7F3  | Top    | 1,697,072 | 22 | 134 | -4 | 46.3 |
| 7F4  | Bottom | 1,685,722 | 22 | 141 | -4 | 46.0 |
| 7F5  | Top    | 1,674,371 | 22 | 147 | -4 | 45.7 |
| 7F6  | Bottom | 1,663,021 | 22 | 154 | -4 | 45.3 |
| 7F7  | Top    | 1,651,670 | 22 | 160 | -4 | 45.0 |
| 7F8  | Bottom | 1,640,320 | 22 | 167 | -4 | 44.7 |
| 7F9  | Bottom | 1,628,371 | 22 | 173 | -4 | 44.4 |
| 7F10 | Top    | 1,617,023 | 22 | 180 | -4 | 44.1 |
| 7F11 | Bottom | 1,605,671 | 22 | 186 | -4 | 43.8 |
| 7F12 | Top    | 1,594,321 | 22 | 193 | -4 | 43.5 |
| 7F13 | Bottom | 1,582,971 | 22 | 199 | -4 | 43.2 |
| 7F14 | Top    | 1,571,621 | 22 | 206 | -4 | 42.9 |
| 7F15 | Top    | 1,559,673 | 22 | 213 | -4 | 42.5 |
| 7F16 | Bottom | 1,548,323 | 22 | 219 | -4 | 42.2 |
| 7F17 | Top    | 1,536,973 | 22 | 226 | -4 | 41.9 |
| 7F18 | Bottom | 1,525,623 | 22 | 233 | -4 | 41.6 |
| 7F19 | Top    | 1,514,167 | 22 | 239 | -4 | 41.3 |
| 7F20 | Bottom | 1,502,923 | 22 | 246 | -4 | 41.0 |
| 7F21 | Bottom | 1,490,977 | 22 | 252 | -4 | 40.7 |
| 7F22 | Top    | 1,479,626 | 22 | 259 | -4 | 40.4 |
| 7F23 | Bottom | 1,468,279 | 22 | 265 | -4 | 40.1 |
| 7F24 | Top    | 1,453,533 | 22 | 272 | -4 | 39.8 |
| 7F25 | Bottom | 1,445,577 | 22 | 278 | -4 | 39.4 |
| 7F26 | Top    | 1,433,630 | 22 | 285 | -4 | 39.1 |
| 7F27 | Top    | 1,422,281 | 22 | 292 | -4 | 38.8 |
| 7F28 | Bottom | 1,410,931 | 22 | 298 | -4 | 38.5 |
| 7F29 | Top    | 1,399,581 | 22 | 305 | -4 | 38.2 |
| 7F30 | Bottom | 1,388,233 | 22 | 311 | -4 | 37.9 |
| 7F31 | Top    | 1,376,882 | 22 | 318 | -4 | 37.6 |
| 7F32 | Top    | 1,364,937 | 22 | 325 | -4 | 37.3 |
| 7F33 | Bottom | 1,353,586 | 22 | 331 | -4 | 37.0 |
| 7F35 | Bottom | 1,199,474 | 23 | 60  | -4 | 32.8 |
| 7F36 | Top    | 1,184,540 | 23 | 68  | -4 | 32.4 |
| 7F37 | Top    | 1,169,009 | 23 | 77  | -4 | 31.9 |
| 7F38 | Bottom | 1,154,076 | 22 | 86  | -4 | 31.5 |
| 7F39 | Bottom | 1,138,545 | 22 | 95  | -4 | 31.1 |
| 7F40 | Top    | 1,123,613 | 23 | 103 | -4 | 30.7 |
| 7F41 | Top    | 1,108,081 | 23 | 112 | -4 | 30.3 |
| 7F42 | Top    | 1,092,551 | 23 | 121 | -4 | 29.9 |
| 7F43 | Bottom | 1,077,617 | 23 | 130 | -4 | 29.5 |
| 7F44 | Bottom | 1,062,086 | 23 | 139 | -4 | 29.0 |
| 7F45 | Top    | 1,047,152 | 23 | 147 | -4 | 28.6 |
| 7F46 | Top    | 1,031,621 | 23 | 156 | -4 | 28.2 |

|      |        |           |    |     |    |      |
|------|--------|-----------|----|-----|----|------|
| 7F47 | Bottom | 1,016,687 | 23 | 165 | -4 | 27.8 |
| 7F48 | Bottom | 1,001,156 | 23 | 174 | -4 | 27.3 |
| 7F49 | Bottom | 985,625   | 23 | 183 | -4 | 26.9 |
| 7F50 | Top    | 970,691   | 23 | 191 | -4 | 26.5 |
| 7F51 | Top    | 955,160   | 23 | 200 | -4 | 26.1 |
| 7F52 | Bottom | 940,225   | 23 | 209 | -4 | 25.7 |
| 7F53 | Bottom | 924,693   | 23 | 218 | -4 | 25.3 |
| 7F54 | Top    | 909,759   | 23 | 226 | -4 | 24.8 |
| 7F55 | Top    | 894,227   | 23 | 235 | -4 | 24.4 |
| 7F56 | Top    | 878,695   | 23 | 244 | -4 | 24.0 |
| 7F57 | Bottom | 863,760   | 23 | 253 | -4 | 23.6 |
| 7F58 | Bottom | 848,227   | 23 | 261 | -4 | 23.2 |
| 7F59 | Top    | 833,292   | 23 | 270 | -4 | 22.8 |
| 7F60 | Top    | 817,760   | 23 | 279 | -4 | 22.4 |
| 7F61 | Bottom | 803,248   | 23 | 287 | -4 | 22.0 |
| 7F62 | Bottom | 787,291   | 23 | 296 | -4 | 21.5 |
| 7F63 | Top    | 772,355   | 23 | 305 | -4 | 21.1 |
| 7F64 | Top    | 756,821   | 23 | 314 | -4 | 20.7 |
| 7F65 | Top    | 741,287   | 23 | 323 | -4 | 20.3 |
| 7F66 | Bottom | 726,351   | 23 | 331 | -4 | 19.9 |
| 7F67 | Bottom | 710,816   | 23 | 340 | -4 | 19.4 |
| 7F69 | Bottom | 535,132   | 23 | 81  | -4 | 14.6 |
| 7F70 | Bottom | 514,811   | 23 | 93  | -4 | 14.0 |
| 7F71 | Top    | 495,087   | 23 | 104 | -4 | 13.5 |
| 7F72 | Top    | 474,764   | 23 | 116 | -4 | 12.9 |
| 7F73 | Bottom | 455,037   | 23 | 127 | -4 | 12.4 |
| 7F74 | Top    | 435,309   | 23 | 138 | -4 | 11.9 |
| 7F75 | Top    | 414,982   | 23 | 150 | -4 | 11.3 |
| 7F76 | Bottom | 395,251   | 23 | 161 | -4 | 10.8 |
| 7F77 | Bottom | 374,920   | 23 | 173 | -4 | 10.2 |
| 7F78 | Top    | 355,185   | 23 | 184 | -4 | 9.7  |
| 7F79 | Bottom | 335,449   | 23 | 195 | -5 | 9.1  |
| 7F80 | Bottom | 315,112   | 23 | 207 | -5 | 8.6  |
| 7F81 | Top    | 295,370   | 23 | 218 | -5 | 8.0  |
| 7F82 | Bottom | 275,625   | 22 | 230 | -5 | 7.5  |
| 7F83 | Bottom | 255,279   | 22 | 241 | -5 | 6.9  |
| 7F84 | Top    | 235,527   | 22 | 252 | -5 | 6.4  |
| 7F85 | Top    | 215,173   | 22 | 264 | -5 | 5.8  |
| 7F86 | Bottom | 195,412   | 22 | 275 | -5 | 5.3  |
| 7F87 | Top    | 175,645   | 22 | 286 | -5 | 4.8  |
| 7F88 | Top    | 155,273   | 22 | 298 | -6 | 4.2  |
| 7F89 | Top    | 150,478   | 22 | 300 | -6 | 4.0  |
| 7F90 | Bottom | 145,084   | 22 | 304 | -6 | 3.9  |
| 7F91 | Bottom | 140,288   | 22 | 306 | -6 | 3.7  |
| 7F92 | Top    | 134,892   | 22 | 309 | -6 | 3.6  |
| 7F93 | Top    | 130,095   | 22 | 312 | -6 | 3.5  |

NOTE from below table on page 152.

6F1-33 and 7F0-67 are 480 pixels in width  
6F34-49 and 7F69-93 are 900 pixels in width