| | | Туре | | Author | History Citation | Literature Cutoff Date | | | | | |
|--|---|--|---------------------------|--|--|--|--|--|--|--|--|
| | | Full Evaluat | tion Cora | al M. Baglin | NDS 134, 149 (2016) | 15-Apr-2015 | | | | | |
| $Q(\beta^{-}) = -2150 50$ Also populated I ¹⁸¹ Ta(⁹ Be,X) | 2; S(n)=8.4. n W(d,X) () (2014Zh30 | 3×10 ³ <i>10</i> ; S(p 2015Du03, 20 0). | 9)=4852 8; 913Di02), V | Q(α)=2124 8 W(d,xn) (2014 | 2012Wa38 Ma43), Re(p,X) (2015He | e05, 2013Di07, 2013Is01) and | | | | | |
| | | | | - | ¹⁸³ Re Levels | | | | | | |
| | | | | Cross Ret | ference (XREF) Flags | | | | | | |
| $\begin{array}{llllllllllllllllllllllllllllllllllll$ | | | | | | | | | | | |
| E(level) [†] | $J^{\pi \ddagger}$ | T _{1/2} | XREF | | | Comments | | | | | |
| 0.0# | 5/2+@ | 70.0 d <i>14</i> | ABCDEF | %ε=100 μ=+3.160 I. μ: from NM Q: presumed detection, J ^π : L(³ He,d T _{1/2} : weigh 2 (1965Bl | 3 (1987Oh10); Q=+2.1 2 IR on oriented nuclei; rel d to supersede 2.3 2 (198 relative to 187 Re.)=2; log ft=6.8 (log f ^{lu} t < ted average of 67.6 d 25 106). | 2 (1985Ha41) ative to ¹⁸⁶ Re. 3Ha49). From static orientation with γ (8.5) to 7/2 ⁻ 453 In ¹⁸³ W. (1958Fo47), 71 d <i>3</i> (1958Ga17), and 71 d | | | | | |
| 114.475 <mark>&</mark> 20 | 7/2+ @ | | ABCDE | J ^π : M1+E2 | intraband 114 γ to 5/2 ⁺ g | J.S | | | | | |
| 259.866 [#] 21 | 9/2+ @ | | AB DE | J^{π} : g.s. band | d member. | | | | | | |
| 435.25 ^{&} 3 | 11/2+@ | | AB DE | J^{π} : g.s. band | d member. | | | | | | |
| 496.242 ^{<i>a</i>} 24 | 9/2 ^{-b} | 7.8 ns 4 | B DE | %IT=100 μ =+5.14 11 μ : from TD Q: from TD J ^{π} : M2 4962 T _{1/2} : weigh 5 (1988B0 | (1980Za09); Q=(+)3.8 $\stackrel{?}{_{\sim}}$ PAD; relative to ¹⁹ F(197) PAC; relative to ¹⁸⁷ Re. y to 5/2 ⁺ g.s.; E1 236y to ted average of 7.7 ns 5 (eYU). | B (1978Ne14) b. c 9/2 ⁺ 260. 1960Ne03 In ε decay (13.0 h)) and 7.9 ns | | | | | |
| 598.83 ^d 5 | (5/2)- | 1.96 ns 5 | BCDEF | %IT=100 XREF: F(60) J^{π} : E1 484 γ T _{1/2} : from (|)3). to 7/2 ⁺ 114; L(³ He,d)=: $(\alpha, 2n\gamma)$. | 3; 102γ from $(1/2)^-$ 701. | | | | | |
| 617.67 ^d 7 | (9/2)- | | B DEF | J^{π} : L(³ He,d) |)=5; strong 503 γ branch | to $7/2^+$ 114. | | | | | |
| 639.05 [#] 6 | 13/2+@ | | AB DE | J^{π} : g.s. band | d member. | | | | | | |
| 664.07 ^c 3 | 11/2 ^{-b} | | B DEF | XREF: F(66 J^{π} : L(³ He,d) | 57).)=4,5; intraband M1+E2 | 168γ to $9/2^{-}$ 496. | | | | | |
| 700.62^{d} 6 | $(1/2)^{-}$ | | C F | J^{π} : L(³ He,d) |)=1; J=3/2 band member | assigned elsewhere. | | | | | |
| 759.54 ^d 11 828.99 ^e 7 | (13/2) ⁻ (3/2) ⁻ | | DE C F | J ^{π} : stretched Q intraband 142 γ to (9/2) ⁻ 617. F XREF: F(835). J ^{π} : L(³ He,d)=1; 829 γ to 5/2 ⁺ g.s.; 128 γ to (1/2) ⁻ 701. | | | | | | | |
| 851.54 <i>^f 3</i> | $(7/2)^+$ | | B DE | J ^π : M1 8512 | γ to 5/2 ⁺ g.s.; (E1) 355 γ | to 9/2 ⁻ 496. | | | | | |
| 861.14 ^{<i>a</i>} 3 | 13/2 ^{-b} | | ΒE | J ^π : 9/2[514] | band member. | | | | | | |
| 870.47 ^{&} 7 | 15/2+@ | | A DE | J^{π} : g.s. band | d member. | | | | | | |
| 878.92 ^g 5 891.79 ^e 5 | 1/2 ⁺ (7/2 ⁻) | | BC F B F | J^{π} : $L({}^{3}He,d)=0.$ XREF: F(899). | | | | | | | |

Continued on next page (footnotes at end of table)

¹⁸³Re Levels (continued)

| E(level) [†] | $J^{\pi \ddagger}$ | XREF | Comments | | | | |
|--------------------------------|--|--------|--|--|--|--|--|
| | | | I^{π} : L(³ He d)=(3): 228 γ to 11/2 ⁻ 664: 892 γ to 5/2 ⁺ g s. | | | | |
| 954.80 <mark>8</mark> 4 | $(3/2)^+$ | CF | XREF: F(961). | | | | |
| | | | J^{π} : L(³ He,d)=(2); E2 955 γ to 5/2 ⁺ g.s.; band assignment. | | | | |
| 999.54 <mark>8</mark> 7 | $(5/2)^+$ | B F | J^{π} : L(³ He,d)=2; strong intraband 121 γ to 1/2 ⁺ 879. | | | | |
| 1002.52 ^{<i>f</i>} 3 | $(9/2)^+$ | BDF | J^{π} : M1+E2 151 γ to (7/2) ⁺ 852; 339 γ to 11/2 ⁻ 664; 568 γ to 11/2 ⁺ 435; 1002 γ to | | | | |
| | (1) | | 5/2 ⁺ g.s | | | | |
| 1023.13 ^d 14 | $(17/2^{-})$ | DE | J^{π} : stretched Q intraband 264 γ to $(13/2)^{-}$ 760. | | | | |
| 1034.74 ^h 4 | $(3/2)^+$ | С | J^{π} : M1+E2 1035 γ to 5/2 ⁺ g.s.; band assignment. | | | | |
| 1040.73 ⁱ 9 | $(5/2)^+$ | CF | J^{π} : L(³ He,d)=2; band assignment. | | | | |
| 1066.10 ^j 9 | (3/2) | CF | J^{π} : 366y to $(1/2)^{-}$ 701: 237y to $(3/2)^{-}$ 829: log <i>ft</i> =8.4 from $1/2^{-}$: band assignment. | | | | |
| 1075 7 | (-1) | F | | | | | |
| 1084.72 [°] 6 | $15/2^{-b}$ | DE | J^{π} : intraband D+Q 223 γ to 13/2 ⁻ 861; intraband stretched Q 420 γ to 11/2 ⁻ 664. | | | | |
| 1101.95 ^k 4 | $(1/2)^+$ | С | J^{π} : M1+E2 67 γ to (3/2) ⁺ 1035: (E2) 1102 γ to 5/2 ⁺ g.s.: 401 γ to (1/2) ⁻ 701. | | | | |
| 1107.88 ^k 4 | $(3/2)^+$ | C | I^{π} : M1 1108v to 5/2 ⁺ g.s.: 993v to 7/2 ⁺ 114: hand assignment. | | | | |
| 1125 7 | $(3/2^+, 5/2^+)$ | F | J^{π} : L(³ He,d)=(2). | | | | |
| 1127.15 [#] 10 | 17/2+@ | A DE | J^{π} : g.s. band member. | | | | |
| 1183.65^{f} 6 | $(11/2)^+$ | R D | I^{π} : intraband 181 γ to (9/2) ⁺ 1003: intraband 332 γ to (7/2) ⁺ 852 | | | | |
| 1290 7 | (11/2) | F | 3 : intrabula 1017 to (72) = 1000; intrabula 5527 to (72) = 052. | | | | |
| 1304.18 ¹ 5 | $(11/2)^{-}$ | BF | XREF: F(1309). | | | | |
| | | | J^{π} : L(³ He,d)=5; M1 808 γ to 9/2 ⁻ 496; likely configuration: π 11/2[505] (1971Lu01). | | | | |
| 1335.09 ^a 7 | 17/2 ^{-b} | DE | J^{π} : 9/2[514] band member. | | | | |
| 1338 7 | | F | | | | | |
| 1348.85 ^e 14 | $(15/2^{-})$ | D | J^{π} : intraband 589 γ to (13/2) ⁻ 759; band assignment. | | | | |
| 1353.74 ^m 5 | $(3/2^+)$ | С | J^{π} : log ft=7.9 (log $f^{1u}t < 8.5$) from 1/2 ⁻ ; 1354 γ to 5/2 ⁺ g.s.; (M1) 252 γ to (1/2) ⁺ | | | | |
| c | | | 1102; band assignment. | | | | |
| 1393.63 ^J 6 | $(13/2^+)$ | D | J^{π} : intraband 210 γ to (11/2 ⁺) 1184; intraband 391 γ to (9/2 ⁺) 1002. | | | | |
| 1403.25 ^{<i>a</i>} 16 | $(21/2^{-})$ | DE | J^{π} : intraband E2 380 γ to (17/2 ⁻) 1023. | | | | |
| 1409.42 ^{&} 12 | 19/2 ⁺ | A DE | J^{π} : g.s. band member. | | | | |
| 1413.23 6 | $(13/2^{-})$ | D | J^{π} : stretched (Q) 917 γ to 9/2 ⁻ 496; 749 γ to 11/2 ⁻ 664. | | | | |
| 1414.61 9 | (1/2, 3/2) | C _ | J^* : 536y to $1/2^+$ 8/9; /14y to $1/2^-$ /01; 816y to (5/2) 599. | | | | |
| 1422 / | $1/2^{+}$ $2/2^{+}$ $5/2$ $7/2^{-}$ | r F | J ^{**} : L(² He,d)=0. likely configuration: $\pi 1/2[000]$ (19/1L001). | | | | |
| 1525 22 5 | $(9/2)^{-}$ | R | $J = E(1265 \times 10^{-2.50} \text{ mery configuration.} \pi 3/2[051] (19/1E001) tayofs 3/2 .$ $I^{\pi} = E1(1265 \times 10^{-9})^2 + 260^{\circ} - 664 \times 10^{-13/2} = 861^{\circ} - 1411 \times 10^{-7} + 114$ | | | | |
| 1523.22.3 | $(3/2^+, 5/2^+)$ | F | $J^{\pi}: L({}^{3}\text{Hed})=(2).$ | | | | |
| 1554.07 4 | $(9/2)^{-}$ | В | J^{π} : E1 1440y to 7/2 ⁺ 114; 693y to 13/2 ⁻ 861; M1+E2 1058y to 9/2 ⁻ 496. | | | | |
| 1563.14 14 | $\leq (1/2^-, 3/2, 5/2^+)$ | С | J^{π} : 965 γ to (5/2) ⁻ 599, 734 γ to (3/2) ⁻ 829 imply $J^{\pi} = (1/2^{-}, 3/2, 5/2, 7/2^{-}); \log ft = 8.3$ | | | | |
| | 1 | | from $1/2^{-}$. | | | | |
| 1608.28 ^c 10 | 19/2 ^{-b} | DE | J^{π} : 9/2[514] band member. | | | | |
| 1628.36 ^y 6 | $(15/2^{-})$ | D | J^{π} : 964 γ to 11/2 ⁻ 664; 767 γ to 13/2 ⁻ 861; band assignment. | | | | |
| 1630.89 ^J 7 | $(15/2)^+$ | D | J^{π} : 237 γ to (13/2 ⁺) 1394; 447 γ to (11/2) ⁺ 1184; band assignment. | | | | |
| 1631 7 | $(1/2^+)$ | F | J^{π} : L(³ He,d)=(0). | | | | |
| 1653 7 | $(1/2^+)$ | F | J^{π} : L(³ He,d)=(0). J^{π} : M1 1160: to 0/27 406: 1544: to 7/2 ⁺ 114 | | | | |
| 1663 78 5 | (1/2,9/2) (11/2) | B | J : MI 11057 to $9/2^{-}$ 496; 15447 to $1/2^{-}$ 114. I^{π} : 1168v to $9/2^{-}$ 496; 1025v to $13/2^{+}$ 639; 802v to $13/2^{-}$ 861; 1404v to $9/2^{+}$ 260 | | | | |
| $1670.41^{x} 8$ | (11/2) (15/2) | D | J^{π} : 809 γ to 13/2 ⁻ 861: 1006 γ to 11/2 ⁻ 664: band assignment. | | | | |
| 1711.65 6 | (9/2 ⁻) | В | J^{π} : 1114 γ to (5/2) ⁻ 599; 1276 γ to 11/2 ⁺ 435; 1048 γ to 11/2 ⁻ 664. | | | | |
| 1713.37 [#] 12 | 21/2+@ | A DE | J^{π} : g.s. band member. | | | | |
| 1740.47 ^e 15 | $(19/2^{-})$ | D | J^{π} : 392γ to $(15/2^{-})$ 1348; 717 γ to $(17/2^{-})$ 1023; band assignment. | | | | |
| 1746.45 7 | $(9/2^{-}, 11/2^{-})$ | В | J^{π} : (M1) 1082 γ to 11/2 ⁻ 664; 1250 γ to 9/2 ⁻ 496; 1487 γ to 9/2 ⁺ 260. | | | | |
| 1763.50 6 | $(17/2^{-})$ | D | $J'': D+Q 679\gamma$ to $15/2^{-} 1085$; (Q) 903γ to $(13/2^{-}) 861$; band assignment. | | | | |
| 1/01.30 3 | (9/2, 11/2) | В | $J^{(1)}$: N11 4/17 10 (11/2) 1304; (N11) 12837 10 9/2 496. | | | | |

Continued on next page (footnotes at end of table)

¹⁸³Re Levels (continued)

| E(level) [†] | J#‡ | T _{1/2} | XREF | Comments |
|---|----------------------------|------------------|--------|--|
| 1798.53 12 | $(5/2^+, 7/2, 9/2^+)$ | | В | J^{π} : 1539 γ to 9/2 ⁺ 260; 1798 γ to 5/2 ⁺ g.s |
| 1819.52 ^y 7 | $(17/2^{-})$ | | D | J^{π} : 959 γ to 13/2 ⁻ 861; 485 γ to 17/2 ⁻ 1335; band assignment. |
| 1864.35 8 | $(7/2, 9/2^+)$ | | В | J^{π} : 1368 γ to 9/2 ⁻ 496; 1864 γ to 5/2 ⁺ g.s.; 1605 γ to 9/2 ⁺ 260. |
| 1893.33 ^d 18 | $(25/2^{-})$ | | DE | J^{π} : E2 490 γ to (21/2 ⁻) 1403; band assignment. |
| 1894.25 ^{<i>f</i>} 7 | $(17/2)^+$ | | D | J^{π} : 500.5 to (13/2 ⁺) 1394; 1024 γ to 15/2 ⁺ 970; band assignment. |
| 1897.84 7 | $(7/2^-, 9/2, 11/2^+)$ | | В | J ^{π} : 1234 γ to 11/2 ⁻ 664; 1783 γ to 7/2 ⁺ 114. |
| 1903.78 7 | $(1/2^+, 3/2^+)$ | | C | J^{π} : (E2) 1904 γ to 5/2 ⁺ g.s.; 796 γ to (3/2) ⁺ 1108; log <i>ft</i> =7.1 from |
| 10060000 | at ia-h | | _ | |
| 1906.83 ^a 10 | $21/2^{-1}$ | 1.04 4 | D | J^{π} : 9/2[514] band member. |
| 1907.21° 13 | $(25/2)^{\circ}$ | 1.04 ms 4 | A DE | %11 = 100 I^{π} : F2 19/av to 21/2 ⁺ 1713 |
| | | | | $T_{1/2}$: from IT decay. |
| 1925.18 ^x 8 | (17/2) | | D | J^{π} : 841 γ to 15/2 ⁻ 1085; 1064 γ to 13/2 ⁻ 861; band assignment. |
| 1927.55 <i>13</i> | $(15/2^+)$ | | D | J^{π} : 1288 γ to 13/2 ⁺ 639; 1492 γ to 11/2 ⁺ 435; dominant |
| _ | | | | configuration: $\pi(5/2[402]+9/2[514]+1/2[541])$? from (¹¹ B,4n γ). |
| 1936.66 ² 9 | $(19/2^{-})$ | | D | J^{π} : 173 γ to (17/2 ⁻) 1763; band assignment. |
| 1936.66+x ¹ | (21/2) | 10 ns 4 | D | %IT=100 |
| | | | | Additional information 1. |
| | | | | E(Ievel): $X < /5$ KeV to account for non-observance of transition feeding the 1037 level, the 1037 level has a 10 ns 4 isometric feeding |
| | | | | component attributed to a low energy transition for which low |
| | | | | detection efficiency or strong electron conversion could render it |
| | | | | unobservable In $(^{11}B,4n\gamma)$. |
| | | | | $T_{1/2}$: from (¹¹ B,4n γ). |
| | | | _ | J^{π} : (D) transition to $19/2^{-}$ 1937. |
| 1948.91 10 | | | В | J^{π} : 109/ γ to (7/2) ⁺ 852, 946 γ to (9/2) ⁺ 1003 suggest J^{π} =(5/2 ⁺ ,7/2,9/2,11/2 ⁺). |
| 1990.99 8 | $(9/2,11/2^+)$ | | В | J^{π} : 1327 γ to 11/2 ⁻ 664; 1876 γ to 7/2 ⁺ 114; 1556 γ to 11/2 ⁺ 435. |
| 2016.89 I3 | (1/2, 9/2, 11/2) | | В | J [*] : 1353 γ to 11/2 664; 1165 γ to (1/2) 852. |
| 2019.94 9 | (19/2) $(9/2^+ 11/2^+)$ | | R | J . 412y to $19/2$ 1008, 392 to $(13/2)$ 1028, band assignment. $I^{\pi} \cdot 1179_{\nu}$ to $(7/2)^{+}$ 852 · 1391 ν to $13/2^{+}$ 639 |
| 2036.00^{-3} 10 | $(19/2^+)$ | | D | I^{π} : 109v to (15/2 ⁺) 1928: 100v to (19/2 ⁻) 1937: hand assignment |
| $2030.97 \cdot 10^{-10}$ | $23/2^+$ | | DF | I^{π} : D+O 327 γ to 21/2 ⁺ 1713: 631 γ to 19/2 ⁺ 1409: g.s. hand |
| 2007.11 10 | 23/2 | | 21 | member. |
| 2137.86 ^z 10 | $(21/2^{-})$ | | D | J^{π} : 201 γ to (19/2 ⁻) 1937; 374 γ to (17/2 ⁻) 1763; band assignment. |
| 2181.29 ^{<i>f</i>} 9 | $(19/2)^+$ | | D | J^{π} : 1054 γ to 17/2 ⁺ 1127; 551 γ to (15/2 ⁺) 1631; band assignment. |
| 2186.38+x ¹ 8 | (23/2) | | D | J ^{π} : 250 γ to (21/2) 1937+x; band assignment. |
| 2209.68^{x} 18 | (19/2) | | D | J^{π} : 875 γ to 17/2 ⁻ 1335; 1125 γ to 15/2 ⁻ 1085; band assignment. |
| 2212.29 ⁿ 16 | $(27/2^+)$ | | D | J^{π} : 305 γ to 21/2 ⁻¹⁹⁰⁷ ; band assignment. |
| 2221.68° 12 | 23/2-0 | | D | J^{π} : 315 γ to 21/2 ⁻ 1907; 613 γ to 19/2 ⁻ 1608; 9/2[504] band member. |
| 2232.08 ² 14 | $(21/2^+)$ | | D | J^{π} : 195 γ to (19/2 ⁺) 2037; band assignment. |
| 2237.52° 16 | $(23/2^{-})$ | | D | J^{π} : 49/ γ to (19/2 ⁻) 1/40; 834 γ to (21/2 ⁻) 1403; band assignment. |
| $2238.20^{\circ} 10$ 2365 21 ² 11 | (21/2) $(23/2^{-})$ | | ע ת | J^{**} : 0507 to 19/2 1008; 4197 to (1/2) 1819; band assignment. I^{π} : 227 $_{2}$ to 21/2 ⁻ 2138: 429 $_{2}$ to (19/2 ⁻) 1937: band assignment |
| 2303.21 11 $2383.85^{\#}$ 14 | (23/2) | | ם ח | $J^{\pi}: 3/4_{2}$ to $23/2^+$ 20/0: 671 ₂ to $21/2^+$ 1713: a.s. hand assignment |
| 2000.00 14 | 2J 2 | | U | J^{π} : g.s. band member. |
| 2454.78 ³ 15 | $(23/2^+)$ | | D | J^{π} : 223 γ to (23/2 ⁺) 2232; 418 γ to (19/2 ⁺) 2037; band assignment. |
| 2464.02+x ¹ 8 | (25/2) | | D | J^{π} : 278 γ to (23/2) 2186; 527 γ to (21/2) 1937; band assignment. |
| 2476.58 ^y 11 | $(23/2^{-})$ | | D | J^{π} : 570 γ to 21/2 ⁻ 1907; 239 γ to (21/2 ⁻) 2238; band assignment. |
| 2483.89 ¹ 11 | $(21/2)^+$ | | D | J^{π} : 7/2[404] band member. |
| 2485.84 ^{<i>d</i>} 21 | (29/2 ⁻) | | D | J^{π} : 593 γ to 25/2 ⁻ 1893; band assignment. |
| 2491.92 ^w 10 | $(21/2^+)$ | | D | J^{π} : 311 γ to 19/2 ⁺ 2181; 598 γ to 21/2 ⁺ 1894; band assignment. |

¹⁸³Re Levels (continued)

| E(level) [†] | $J^{\pi \ddagger}$ | T _{1/2} | XREF | Comments |
|---|------------------------------|------------------|--------|---|
| 2513.9 ^x 3 | (21/2) | | D | J^{π} : 1179 γ to 17/2 ⁻ 1335; band assignment. |
| 2538.40° 16 | $(29/2^{+})$ | | D | J^* : 326 γ to (27/2 ⁺) 2212; 631 γ to 21/2 ⁻ 1907; band assignment. |
| 2563.69 ^u 12 | $25/2^{-1}$ | | D | J^{μ} : 9/2 [514] band member. |
| 2616.45 12 | (25/2) | | D | J^{*} : 251 γ to (23/2) 2365; 44/9 γ to (21/2) 2138; band assignment. |
| 2702.20^2 16 | $(25/2^+)$ | | D | J^{π} : 247 γ to (23/2 ⁺) 2455; 470 γ to (21/2 ⁺) 2232; band assignment. |
| $2/34.20^{\circ}$ 12 | (25/2) | 60 mg 5 | D | J^* : 258 γ to (23/2) 2477; 496 γ to (21/2) 2238; band assignment. |
| 2/5/./8 10 | (29/2) | 0.0 IIS J | U | J^{*} : E1 1999 to (29/2) 2536; 8517 to (25/2) 1907; D 5207 to (27/2) 2212. |
| 2745 22 \$ 15 | 27/2+@ | | D | $I_{1/2}$. Holli (D ,411 <i>y</i>). |
| 2745.25 15 2765.56 ± 10 | 21/2 | | D | J. g.s. band memore. $III_{12} = 2020 \text{ to } (25/2) = 24(4 \text{ to } 5700 \text{ to } (22/2) = 218(4 \text{ to } 4 \text{ to } 5700 \text{ to } 57000 \text{ to } 570000 \text{ to } 570000 \text{ to } 570000 \text{ to } 570000 \text{ to } 5700000000000000000000000000000000000$ |
| $2703.30 + x^2 10$ 2826 71 ^W 12 | (21/2) $(25/2^+)$ | | ע | J^{*} : 502 γ to (25/2) 2404+x; 579 γ to (25/2) 2180+x; band assignment. I^{π} : 335 α to (21/2 ⁺) 2402; band assignment |
| 2820.71 12 2829.31 ^e 19 | $(25/2^{-})$ | | ם ח | I^{π} : 592 y to (23/2 ⁻) 2237: 936 y to (25/2 ⁻) 1893: hand assignment |
| $2829.31^{n}17$ | $(21/2^+)$ $(31/2^+)$ | | D | I^{π} : 346 γ to (29/2 ⁺) 2538: 672 γ to (27/2 ⁺) 2212: hand assignment |
| 2888.78^{2} 13 | $(27/2^{-})$ | | D | J^{π} : 272 γ to (25/2 ⁻) 2616: 524 γ to (23/2 ⁻) 2365: band assignment. |
| 2914 01 [°] 13 | $\frac{27}{2} - \frac{b}{b}$ | | D | I^{π} : 350y to 25/2 ⁻ 2564: 692y to 23/2 ⁻ 2222: 9/2[514] hand member |
| 2071.03 ³ 16 | $(27/2^+)$ | | л П | I^{π} : 270 ₀ to (25/2 ⁺) 2702: 517 ₀ to (23/2 ⁺) 2455: hand assignment |
| 3012 26 15 | $(27/2^{-})$ | | D D | I^{π} : 278 γ to (25/2 ⁻) 2734 ² 536 γ to (23/2 ⁻) 2477 ² hand assignment |
| 3021.73^{r} 16 | (29/2) | | D | J^{π} : 483y to 29/2 ⁺ 2538: 1114y to (25/2) ⁺ 1909: band assignment. |
| 3043.46 ^s 11 | $(29/2^+)$ | | D | J^{π} : 505 γ to (29/2 ⁺) 2538: 1136 γ to (25/2) ⁺ 1907: band assignment. |
| 3048.61 ⁹ 17 | $(31/2^{-})$ | | D | J^{π} : 311 γ to (29/2 ⁻) 2738; band assignment. |
| 3086.21+x ¹ 11 | (29/2) | | D | J^{π} : 321 γ to (27/2) 2766+x; 622 γ to (25/2) 2464+x; band assignment. |
| 3117.22 [#] 15 | 29/2+@ | | D | J^{π} : g.s. band member. |
| 3172.54 ^d 23 | $(33/2^{-})$ | | D | J^{π} : 687 γ to 29/2 ⁻ 2486; band assignment. |
| 3183.26 ^z 14 | $(29/2^{-})$ | | D | J^{π} : 295 γ to (27/2 ⁻) 2889; 567 γ to (25/2 ⁻) 2616; band assignment. |
| 3208.03 ^t 17 | (31/2) | | D | J^{π} : 470 γ to (29/2 ⁻) 2738; band assignment. |
| 3248.30 ⁰ 17 | $(33/2^+)$ | | D | J^{π} : 364 γ to (31/2 ⁺) 2884; 710 γ to (29/2 ⁺) 2538; band assignment. |
| 3253.71 ^w 16 | $(29/2^+)$ | | D | J^{π} : 427 γ to (25/2 ⁺) 2827; band assignment. |
| 3262.01 ² 17 | $(29/2^+)$ | | D | J^{π} : 290 γ to (27/2 ⁺) 2972; 560 γ to (25/2 ⁺) 2702; band assignment. |
| 3274.84 ^{<i>a</i>} 14 | 29/2- ⁰ | | D | J^{π} : 9/2[514] band member. |
| 3321.69 ^r 17 | (31/2) | | D | J^{π} : 437 γ to (31/2 ⁺) 2884; 783 γ to (29/2 ⁺) 2538; band assignment. |
| 3370.20 ^s 18 | (31/2) | | D | J^{π} : 1158 γ to (27/2 ⁺) 2212; band assignment. |
| 3374.95 ^P 17 | $(33/2^{-})$ | | D | J^{π} : 326 γ to (31/2 ⁻) 3049; 63/ γ to (29/2 ⁻) 2/38; band assignment. |
| $3419.33 + x^{-1}$ | (31/2) | | D | J^* : 333 γ to (29/2) 3086+x; 654 γ to (27/2) 2766+x; band assignment. |
| 5452.46 th 10 | (51/2) | | ע | J^{π} : 5087 to (51/2 ⁺) 2884; 9147 to (29/2 ⁺) 2558; band assignment. |
| 3492.06° 10 | $\frac{31}{2^{-1}}$ | | ע | J [*] : g.s. band member. π_{12} 2160 to (20/2 ⁻) 2182, 6116 to (27/2 ⁻) 2880, hand assignment |
| 3499.29° 10 3512.3° 4 | $(31/2^{-})$ | | ע | J . 5107 to $(25/2^{-})$ 5105, 0117 to $(27/2^{-})$ 2009, band assignment |
| $3571 14^3 18$ | $(31/2^+)$ | | D D | I^{π} : 300y to (20/2 ⁺) 3262; 500y to (27/2 ⁺) 2072; band assignment |
| 3580.67 ¹ 18 | (31/2) | | ע | J : 3039 to $(23/2^{-})$ 3202 ; 5339 to $(21/2^{-})$ 2372 ; band assignment. |
| 3628 66 ⁿ 17 | (35/2) $(35/2^+)$ | | ם ח | I^{π} : 381y to (33/2 ⁺) 3248; 745y to (31/2 ⁺) 2884; hand assignment |
| 3643.79 ^r 17 | (33/2) | | D | J^{π} : 3957 to (33/2 ⁺) 3248; 6227 to (29/2) 3022; band assignment. |
| 3680 52 [°] 17 | $31/2^{-b}$ | | D - | I^{π} : 9/2[514] hand member |
| 3713.149 18 | $(35/2^{-})$ | | D | J^{π} : 338v to (33/2 ⁻) 3375: 665v to (31/2 ⁻) 3049: band assignment. |
| 3721.5 ^s 3 | (33/2) | | D | J^{π} : 1183 γ to (29/2 ⁺) 2538: band assignment. |
| 3744.10 ^v 18 | (33/2) | | D | J^{π} : 369 γ to (33/2 ⁻) 3375; 1006 γ to (29/2 ⁻) 2738; band assignment. |
| 3755.81+x ¹ 15 | (33/2) | | D | J^{π} : 670 γ to (29/2) 3086+x; band assignment. |
| 3771.11 ^w 19 | $(33/2^+)$ | | D | J^{π} : 517 γ to (29/2 ⁺) 3254; band assignment. |
| 3815.71 ^{<i>u</i>} 17 | (33/2) | | D | J^{π} : 931 γ to (31/2 ⁺) 2884; band assignment. |
| 3833.46 ^z 17 | $(33/2^{-})$ | | D | J^{π} : 650 γ to (29/2 ⁻) 3183; band assignment. |
| 3852.37 [#] 17 | 33/2+ @ | | D | J^{π} : g.s. band member. |

¹⁸³Re Levels (continued)

| E(level) [†] | $J^{\pi \ddagger}$ | XREF | Comments |
|---|--------------------|--------|--|
| 3898.28 ² 18 | $(33/2^+)$ | D | J^{π} : 327 γ to (31/2 ⁺) 3571; 636 γ to (29/2 ⁺) 3262; band assignment. |
| 3944.84 ^d 25 | $(37/2^{-})$ | D | J^{π} : 772 γ to 33/2 ⁻ 3172; band assignment. |
| 3986.79 ^t 18 | (35/2) | D | J^{π} : 612 γ to (33/2 ⁻) 3375; 779 γ to (31/2) 3208; band assignment. |
| 3986.92 ^r 18 | (35/2) | D | J^{π} : 359 γ to 35/2 ⁺ 3629; 665 γ to (31/2) 3322; band assignment. |
| 4022.94 ° 18 | $(37/2^+)$ | D | J^{π} : 384 γ to 35/2 ⁺ 3629; 775 γ to (33/2 ⁺) 3248; band assignment. |
| 4032.8 ^{<i>a</i>} 4 | 33/2 ^{-b} | D | J^{π} : 9/2[514] band member. |
| 4058.72 ^p 19 | $(37/2^{-})$ | D | J^{π} : 346 γ to (35/2 ⁻) 3713; 684 γ to (33/2 ⁻) 3375; band assignment. |
| 4096.1 ^s 3 | (35/2) | D | J^{π} : 1212 γ to 31/2 ⁺ 2884; band assignment. |
| 4113.07 ^V 18 | (35/2) | D | J^{π} : 400 γ to (35/2 ⁻) 3713; 1064 γ to (31/2 ⁻) 3049; band assignment. |
| 4198.62 ^{<i>u</i>} 18 | (35/2) | D | J^{π} : 383 γ to (33/2) 3186; 746 γ to (31/2) 3452; band assignment. |
| 4206.31 18 | 35/2+@ | D | J^{π} : g.s. band member. |
| 4238.95 ³ 20 | $(35/2^+)$ | D | J^{π} : 341 γ to (33/2+0 3898; 668 γ to (31/2 ⁺) 3571; band assignment. |
| 4345.92 ^r 18 | (37/2) | D | J^{π} : 323 γ to (37/2 ⁺) 4023; 702 γ to (33/2) 3644; band assignment. |
| 4375.81 ^w 21 | $(37/2^+)$ | D | J^{π} : 605 γ to (33/2 ⁺) 3771; band assignment. |
| 4401.60 ⁴ 19 | $(39/2^{-})$ | D | J^{π} : 343 γ to (37/2 ⁻) 4058; 689 γ to (35/2 ⁻) 3713; band assignment. |
| 4429.02" 18 | $(39/2^+)$ | D | J^{*} : 406y to $37/2^{+}$ 4023; 800y to $35/2^{+}$ 3629; band assignment. |
| 4488.3° 0 | (37/2) | D | J^{*} : 1240 γ to (33/2 ⁺) 3248; band assignment. |
| 4510.77 21 | (37/2) | D | J^{T} : 7987 to (55/2) 5715; 1156 to (55/2) 5575; band assignment. |
| 4595.9 ² 3 | $(37/2^+)$ | D | J^{π} : 698 γ to (33/2 ⁺) 3898; band assignment. |
| 4597.66 th 18 | (37/2) | D | $J^*: 399\gamma$ to $(35/2) 3816; 782\gamma$ to $(33/2) 3816;$ band assignment. |
| $4/22.63^{\circ} 21$ | (39/2) | D | J^{*} : /36 γ to (35/2) 398/; band assignment. |
| 4749.00° 20 | (41/2) | D | J^{**} : 548 γ to (59/2) 4402; 691 γ to (57/2) 4059; band assignment. |
| 4792.94 3 | $(41/2^{-})$ | D | J^{π} : 848 γ to $(37/2^{-})$ 3945; band assignment. |
| 4843.51° 20 | $(41/2^{+})$ | D | $J^*: 414\gamma$ to $(39/2^+) 4429$; 821γ to $(37/2^+) 4023$; band assignment. |
| 4966.35 5 | $(39/2^+)$ | D | J^{π} : $72/\gamma$ to $(35/2^{+})$ 4129; band assignment. |
| 5010.9^{u} 3 | (39/2) | D | $J'': 812\gamma$ to (35/2) 4199; band assignment. |
| $5065.2^{\prime\prime} 4$ | $(41/2^{-})$ | D D | J^{-1} : 689 γ to (3//2 ⁻¹) 43/6; band assignment. M_{1} 227 to (41/2 ⁻¹) 4750. 675 to (20/2 ⁻¹) 4402. hand assignment |
| $500032^{\prime}21$ | (45/2) | ע | J : 52.17 to (41/2) 47.50; 07.57 to (59/2) 4402; band assignment. |
| $526653^{n}20$ | $(43/2^+)$ | ם | J^{π} : A^{7}_{2} to A^{1}_{2} + 4844 : 838 α to 39^{2}_{1} + 4429 : hand assignment |
| 5200.35° 20 5440 3 ^u 3 | (41/2) | D | J^{π} : 423y to (37/2) 4598; band assignment |
| 5454.21 ^p 21 | $(45/2^{-})$ | D | I^{π} : 378v to 43/2 ⁻ 5076: 705v to 41/2 ⁻ 4750: hand assignment. |
| 5511.0 ^r 4 | (43/2) | D | J^{π} : 788 γ to (39/2) 4723; band assignment. |
| 5691.72 ⁰ 22 | $(45/2^+)$ | D | J^{π} : 426y to 43/2 ⁺ 5267; 848y to 41/2 ⁺ 4844; band assignment. |
| 5706.1 ^d 4 | $(45/2^{-})$ | D | J^{π} : 913 γ to 41/2 ⁻ 4793: band assignment. |
| 5769.72 ⁹ 23 | $(47/2^{-})$ | D | J^{π} : 315 γ to (45/2 ⁻) 5454; 693 γ to (43/2 ⁻) 5076; band assignment. |
| 5838.3 ^w 7 | $(45/2^+)$ | D | J^{π} : 773 γ to (41/2 ⁺) 5065; band assignment. |
| 6131.5 ⁿ 3 | $(47/2^+)$ | D | J^{π} : 865 γ to 43/2 ⁺ 5267; band assignment. |
| 6178.1 ^p 3 | $(49/2^{-})$ | D | J^{π} : 408 γ to (47/2 ⁻) 5770; 724 γ to (45/2 ⁻) 5454; band assignment. |
| 6211.2 11 | $(49/2^{-})$ | D | J^{π} : intraband 757 γ to (45/2 ⁻) 5454. |
| 6569.8 <mark>0</mark> 4 | $(49/2^+)$ | D | J^{π} : 878 γ to 45/2 ⁺ 5692; band assignment. |
| 7012.5 ⁿ 11 | $(51/2^+)$ | D | J^{π} : 881 γ to 47/2 ⁺ 6132; band assignment. |

[†] From least-squares fit to $E\gamma$, omitting the 273.01 γ which fits its placement poorly. even so, normalized χ^2 =2.28 cf. χ^2 (critical)=1.23 and 7 $E\gamma$ values deviate from least-squares expectation by At least 3σ . [‡] Values rely heavily on measured L-transfer and on deduced rotational band structure. specific arguments are given with the

individual levels. # Band(A): π 5/2[402], α =+1/2 g.s. band. Band parameters: E₀=41.1, α =16.56, B=-12.3 (J=5/2,7/2,9/2)..

¹⁸³Re Levels (continued)

- ^(a) Definite J^π assigned to members of 5/2[402] band based on regular progression of level energies and independently established J^π(g.s.)=5/2⁺ and M1+E2 multipolarity for intraband 114γ.
 [&] Band(a): π 5/2[402] band, α=-1/2 g.s. band. See comment on signature partner band.
 ^a Band(B): π 9/2[514], α=+1/2 band. Band parameters: E₀=426.8, α=15.4, β=-7.1 (J=9/2,11/2,13/2,15/2).
 ^b Definite J^π assigned to members of 9/2[514] band based on regular progression of level energies and independently determined
- $J^{\pi}=9/2^{-}$ for 496 level and M1+E2 multipolarity for intraband 168 γ .
- ^c Band(b): π 9/2[514] band, $\alpha = -1/2$. See comment on signature partner band.
- ^d Band(C): π 1/2[541], α =+1/2 band. Band parameters: E₀=805, α =15.3, a=7.3 (J=1/2,5/2,7/2). Strong Coriolis mixing with 3/2[532] band. J=1/2 band member identified In (³He,d), (α ,t); calculated E=700 (2000Pu01).
- ^e Band(c): π 1/2[541] band, $\alpha = -1/2$. J=3/2, 7/2, 11/2 members identified In (³He,d), (α ,t). See comment on signature partner band.
- ^{*f*} Band(D): 7/2[404] band. π =+ assigned to all band members based on established π =+ for J=9/2 band member. Band parameters: E₀=792, α =17.0, β =-15.9 (J=7/2,9/2,11/2).
- ^g Band(E): 1/2[400] band. Band parameters: E₀=879, α =17.12, a=0.48 (J=1/2,3/2,5/2). Mixed with 1/25/2[402],2+ band.
- ^h Band(F): 3/2[402] band.
- ⁱ Band(G): 5/2[642] band.
- ^j Band(H): 3/2[532] band.
- ^k Band(I): 1/2[411] band.
- ¹ Band(J): 11/2[505] band.
- ^m Band(K): 3/2[411]? band.
- ^{*n*} Band(1): $K^{\pi} = (25/2)^+$ band, $\alpha = -1/2$. $\pi 5/2[402]\nu 9/2[624]\nu 11/2[615]$ configuration (1998Ha51, 2000Pu01) probably dominates the 1907-keV bandhead. Band parameters: $E_0 = 2236$, $\alpha = 11.4$, $\beta = 9.3$ (J=7/2,9/2,11/2,13/2).
- ^o Band(L): $K^{\pi} = (25/2)^+$ band, $\alpha = +1/2$. $\pi 5/2[402]v9/2[624]v11/2[615]$ configuration (1998Ha51, 2000Pu01) probably dominates the 1907-keV bandhead. See comment on signature partner.
- ^{*p*} Band(M): $K^{\pi} = 29/2^{-}$ band, $\alpha = +1/2$. $\pi 9/2[514]v9/2[624]v11/2[615]$, $\alpha = +1/2$ band (1998Ha51, 2000Pu01).
- ^{*q*} Band(m): $K^{\pi}=29/2^{-}$ band, $\alpha=-1/2$. $\pi 9/2[514]\nu 9/2[624]\nu 11/2[615]$, $\alpha=-1/2$ band (1998Ha51, 2000Pu01).

^r Band(N): K=(25/2) band.

- ^s Band(O): band based on $(29/2^+)$ 3043. Possibly a 3-quasiparticle intrinsic state coupled to a γ -vibration phonon, consistent with observed strong interband transitions (2000Pu01).
- ^t Band(P): K=(31/2) band. Based on 3208 level.
- ^{*u*} Band(Q): K=(31/2) band. Based on 3452 level.
- ^{ν} Band(R): K=(33/2) band.
- ^w Band(S): $\pi 1/2[660]$ band.
- ^x Band(T): $K^{\pi}=13/2^{-}$ band. Bandhead May be a $\pi 9/2[514]$ K+2 γ vibration state (2000Pu01).
- ^y Band(U): $K^{\pi} = 15/2^{-}$ band.
- ^{*z*} Band(V): $K^{\pi} = 17/2^{-}$ band.
- ¹ Band(W): K = (21/2) band.
- ² Band(X): $K^{\pi} = (19/2^+)$ band, $\alpha = +1/2$.
- ³ Band(x): $K^{\pi} = (19/2^+)$ band, $\alpha = -1/2$.

| | | | | | | Adopted | Levels, Gan | mas (continued) | |
|------------------------|----------------------|-------------------------|----------------|---------|----------------------|--------------------|-----------------------------|----------------------|--|
| | | | | | | | γ (¹⁸³ R | e) | |
| E _i (level) | \mathbf{J}_i^{π} | E_{γ}^{\ddagger} | I_{γ} ‡ | E_f | \mathbf{J}_f^{π} | Mult. [#] | $\delta^{\#}$ | α^{\dagger} | Comments |
| 114.475 | 7/2+ | 114.43 3 | 100 | 0.0 | 5/2+ | M1+E2 | 0.24 4 | 3.45 6 | E_{γ} : weighted average of 114.48 7 from (α,2nγ), 114.43 5 from ε decay (13.0 h), 114.48 <i>16</i> from IT decay (1.04 ms), 114.35 7 from ε decay (9.9 h) and 114.5 <i>I</i> from (¹¹ B 4nγ) |
| 259.866 | 9/2+ | 145.383 <i>19</i> | 100.0 24 | 114.475 | 7/2+ | M1+E2 | 0.37 <i>13</i> | 1.68 7 | E_{γ} : weighted average of 145.31 <i>I1</i> from (α ,2n γ), 145.39 <i>2</i> from ε decay (13.0 h), 145.35 <i>I2</i> from IT decay (1.04 ms) and 145.3 <i>I</i> from (¹¹ B,4n γ). I _{γ} : from (¹¹ B,4n γ). |
| | | 250.02 (| 21. (| 0.0 | 5/0+ | 50 | | 0.12(5 | other δ : 0.12 +6-12 from $\gamma(\theta)$ In (α ,2n γ). |
| | | 259.92 4 | 21.6 | 0.0 | 5/21 | E2 | | 0.1365 | E _{γ} : weighted average of 259.92 5 from ε decay (13.0 h), 259.8 <i>1</i> from (¹¹ B,4n γ). other E γ : 258.8 3 from (α ,2n γ). |
| | | | | | | | | | $(\alpha, 2n\gamma)$ and 12.6 6 from ε decay (13.0 h). |
| 435.25 | 11/2+ | 175.366 23 | 100.0 17 | 259.866 | 9/2+ | M1+E2 | 0.48 19 | 0.95 7 | E _{γ} : weighted average of 175.38 9 from (α ,2n γ), 175.370 25 from ε decay (13.0 h), 175.3 2 from IT decay (1.04 ms) and 175.3 <i>I</i> from (¹¹ B,4n γ). other MULT: D+Q intraband γ from (α ,2n γ). |
| | | 320.82 6 | 28.2 14 | 114.475 | 7/2+ | (E2) | | 0.0723 | other δ : 0.15 3 from $\gamma(\theta)$ In $(\alpha, 2n\gamma)$. E_{γ} : weighted average of 320.92 17 from $(\alpha, 2n\gamma)$, 320.80 8 from ε decay (13.0 h), 321.1 3 from IT decay (1.04 ms) and 320.8 1 from (¹¹ B,4n γ). I_{γ} : unweighted average of 32.1 10 from (¹¹ B,4n γ), 26.6 18 from (α 2n γ) 28 4 from α decay (13.0 h) and 26.6 from IT. |
| | | | | | | | | | decay (1.04 ms). (1.04 ms) . |
| | | | | | a | | | | Mult.: Q intraband γ from $(\alpha, 2n\gamma)$. |
| 496.242 | 9/2- | 236.42 4 | 3.81 6 | 259.866 | 9/2+ | EI | | 0.0423 | B(E1)(W.u.)= 7.3×10^{-6} 4 E _{γ} : weighted average of 236.2 3 from (α ,2n γ), 236.41 5 from ε decay (13.0 h), 236.5 1 from (¹¹ B,4n γ). |
| | | 381.74 <i>4</i> | 100.0 10 | 114.475 | $7/2^{+}$ | E1 | | 0.01344 | I_{γ} : Iroll ε decay (13.0 ll). other I_{γ} : 4.7 / Iroll (B,4 I_{γ}). B(E1)(W.u.)=4.56×10 ⁻⁷ 25 |
| | | | | | | | | | E _{γ} : weighted average of 381.88 <i>19</i> from (α ,2n γ), 381.74 <i>5</i> from ε decay (13.0 h), 381.7 <i>1</i> from (¹¹ B,4n γ). |
| | | 496.37 5 | 0.713 8 | 0.0 | $5/2^{+}$ | M2 | | 0.191 | I_{γ} : from ε decay (15.0 fr). B(M2)(W.u.)=0.0275 15 |
| | | | | | | | | | E _{γ} : weighted average of 496.4 7 from (α ,2n γ), 496.37 5 from ε decay (13.0 h). |
| 598.83 | (5/2)- | 484.46 6 | 100 4 | 114.475 | 7/2+ | E1 | | 0.00790 | <i>I</i> _γ : from ε decay (15.0 h). B(E1)(W.u.)=9.3×10 ⁻⁷ 6 E _γ : weighted average of 484.59 24 from (α,2nγ), 484.49 5 from ε decay (9.9 h), 484.3 <i>I</i> from (¹¹ B,4nγ). Mult.: from ε decay: D from (α,2nγ). |
| | (0.10) | 599 | | 0.0 | 5/2+ | | | | |
| 617.67 | (9/2)- | (18.84 9) | | 598.83 | (5/2)- | [E2] | | $1.13 \times 10^4 4$ | E_{γ} : from level-energy difference. γ expected but not observed. |

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From ENSDF

From

 $^{183}_{75}\mathrm{Re}_{108}$ -7

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| | | | | | 1 | Adopted Le | evels, Gammas | s (continued | <u>)</u> |
|------------------------|-----------------------------|--|--|------------------------------|---|--------------------|-----------------------------|--------------------|--|
| | | | | | | $\gamma(1)$ | ¹⁸³ Re) (continu | ued) | |
| E _i (level) | J_i^{π} | E _γ ‡ | I_{γ}^{\ddagger} | \mathbf{E}_{f} | J_f^{π} | Mult. [#] | $\delta^{\#}$ | α^{\dagger} | Comments |
| 617.67 | (9/2)- | 182.0 <i>1</i> 357.5 <i>1</i> 502.8 <i>1</i> | 100 8 19 3 72 10 | 435.25 259.866 114.475 | $\frac{11/2^{+}}{9/2^{+}}$ $\frac{7/2^{+}}{7}$ | | | | |
| 639.05 | 13/2+ | 203.77 6 | 100.0 23 | 435.25 | 11/2+ | M1+E2 | 0.14 7 | 0.681 <i>13</i> | E_γ: weighted average of 203.73 <i>10</i> from (α,2nγ), 203.84 <i>10</i> from ε decay (13.0 h), 203.9 <i>2</i> from IT decay (1.04 ms) and 203.7 <i>1</i> from (¹¹B,4nγ). Mult.: D+Q from (α,2nγ) for intraband G. other δ: 0.14 +3-4 from γ(θ) In (α,2nγ). |
| | | 379.4 3 | 39 9 | 259.866 | 9/2+ | (E2) [@] | | 0.0450 | E _γ : unweighted average of 380.0 4 from (α ,2nγ), 379.1 3 from IT decay (1.04 ms) and 379.2 1 from (¹¹ B,4nγ). other E _γ : 379.18 20 from ε decay (13.0 h), presumably for contaminated line. I _γ : unweighted average of 51 13 from IT decay (1.04 ms), 15.7 10 from (α ,2nγ), 35 10 from ε decay (13.0 h), 53.1 16 from (¹¹ B 4nγ) (the weighted average is 26 10) |
| 664.07 | 11/2- | 167.850 <i>19</i> | 100.0 9 | 496.242 | 9/2- | M1+E2 | 0.16 +2-3 | 1.169 <i>18</i> | E _{γ} : weighted average of 167.90 <i>II</i> from (α ,2n γ), 167.85 2 from ε decay (13.0 h), 167.8 <i>I</i> from (¹¹ B,4n γ). δ : from $\gamma(\theta)$ In (α ,2n γ); other δ : 0.14 7 from ε decay (13.0 h). |
| | | 404.28 ^{<i>a</i>} 8 | 0.41 ^{<i>a</i>} 7 | 259.866 | 9/2+ | | | | |
| 700.62 759.54 | $(1/2)^{-}$ $(13/2)^{-}$ | 101.79 ⁶ 5 141.87 9 | 100 ^b 100 | 598.83 617.67 | (5/2) ⁻ (9/2) ⁻ | [E2] E2 | | 3.84 1.073 | E_{γ} : weighted average of 141.79 <i>18</i> from (α,2nγ) and 141.9 <i>I</i> from (¹¹ B,4nγ). |
| 828.99 | $(3/2)^{-}$ | 128.30 <mark>b</mark> 8 | 39 ^b 8 | 700.62 | $(1/2)^{-}$ | [M1] | | 2.53 | |
| | | 230.10 ^b 15 | $100^{b} 32$ | 598.83 | (5/2)- | [M1] | | 0.492 | |
| 051 54 | $(7/2)^+$ | 829.01 ⁰ 18 | $37^{0} 10$ | 0.0 | $5/2^+$ | (E1) | | 0.01595 | |
| 851.54 | $(1/2)^{-1}$ | $355.35^{a} 5$ 591 54 ^a 10 | $14.3^{\circ\circ} 3$ 0.59 ^{<i>a</i>} 16 | 496.242 | 9/2 9/2+ | (E1) (M1) | | 0.01585 | |
| | | 737.15 ^{<i>a</i>} 8 | 6.1^{a} 3 | 114.475 | $7/2^+$ | (M1) (M1) | | 0.0225 | other I(737 γ):I(851 γ)=68 20:100 20 in (α ,2n γ) where 355 γ and 502 α branches were not seen |
| | | 851.46 ^a 5 | 100.0 ^a 7 | 0.0 | $5/2^{+}$ | M1 | | 0.01562 | and 592γ branches were not seen. |
| 861.14 | 13/2- | 197.08 4 | 100.0 21 | 664.07 | 11/2- | M1+E2 | 0.14 3 | 0.748 12 | E _γ : weighted average of 197.05 <i>15</i> from (α ,2n γ), 197.10 <i>4</i> from ε decay (13.0 h), 197.0 <i>1</i> from (¹¹ B,4n γ). I _γ : from (α ,xn γ). δ : from $\gamma(\theta)$ In (α ,2n γ). |
| | | 364.92 <i>3</i> | 9.6 <i>15</i> | 496.242 | 9/2- | (E2) [@] | | 0.0501 | E _γ : weighted average of 365.20 25 from (α ,2nγ), 364.925 23 from ε decay (13.0 h), 364.8 <i>1</i> from (¹¹ B,4nγ). I _γ : unweighted average of 8.8 21 from (α ,2nγ), 7.5 14 from ε decay (13.0 h) and 12.5 12 from (¹¹ B,4nγ). |

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From ENSDF

| | | | | | Ad | lopted Levels, (| Gammas (contir | nued) | |
|------------------------|----------------------|---|--|----------------------------|---|---------------------------|--------------------|--------------------|---|
| | | | | | | $\gamma(^{183}\text{Re})$ | (continued) | | |
| E _i (level) | \mathbf{J}_i^{π} | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | \mathbf{E}_{f} | \mathbf{J}_f^{π} | Mult. [#] | $\delta^{\#}$ | α^{\dagger} | Comments |
| 870.47 | 15/2+ | 231.43 8 | 100 3 | 639.05 | 13/2+ | (M1+E2) [@] | ≤0.14 [@] | 0.481 8 | E_γ: weighted average of 231.29 <i>11</i> from (α,2nγ), 231.6 2 from IT decay (1.04 ms) and 231.5 <i>1</i> from (¹¹B,4nγ). δ: from δ=0.10 +4-10 from γ(θ) In (α,2nγ). |
| | | 435.27 9 | 73.9 24 | 435.25 | 11/2+ | (E2) [@] | | 0.0311 | E _γ : weighted average of 435.45 20 from (α ,2nγ), 435.5 3 from IT decay (1.04 ms) and 435.2 <i>I</i> from (¹¹ B,4nγ). I _γ : from (¹¹ B,4nγ). Other I _γ : 75 3 from (α ,2nγ), 74 <i>I</i> 5 from IT decay (1.04 ms). |
| 878.92 | $1/2^{+}$ | 878.91 ^b 5 | 100 <mark>b</mark> | 0.0 | 5/2+ | E2 | | 0.00615 | |
| 891.79 | $(7/2^{-})$ | 228.02 ^{<i>a</i>} 10 | 100 ^a 18 | 664.07 | $11/2^{-}$ | [E2] | | 0.207 | |
| | | 273.01° 10 | $24^{a} 5$ | 617.67 508.82 | $(9/2)^{-}$ | [M1] | | 0.308 | E_{γ} : fits placement poorly. |
| | | 293.30° 10 892.10 ^a 8 | 43° 14 28 ^{<i>a</i>} 7 | 00 | (3/2) $5/2^+$ | [N11] [E1] | | 0.235 | |
| 954.80 | $(3/2)^+$ | 840.58 ^b 8 | 46^{b} 6 | 114.475 | $\frac{3}{2}$ | [21] | | 0.00250 | |
| 20 1100 | (0/=) | 954.88 ^b 8 | 100.0^{b} 14 | 0.0 | $5/2^+$ | E2 | | 0.00519 | |
| 999.54 | $(5/2)^+$ | 120.62 <i>5</i> 999.59 <i>20</i> | 100 22 25 6 | 878.92 0.0 | $\frac{1/2^{+}}{5/2^{+}}$ | [E2] | | 1.97 | |
| 1002.52 | (9/2)+ | 150.96 ^{<i>a</i>} 3 338.53 ^{<i>a</i>} 5 567.56 ^{<i>a</i>} 20 | $23.4^{a} 18 \\ 11.4^{a} 12 \\ 1.2^{a} 5 \\ 5 2^{a} 0$ | 851.54 664.07 435.25 | $(7/2)^+$ 11/2 ⁻ 11/2 ⁺ | M1+E2 | 0.6 2 | 1.40 10 | other I γ : 100 13 from (¹¹ B,4n γ) for weak G. |
| | | 742.73^{a} 10 887.94 ^a 5 1002.46 ^a 8 | $5.9^{a} 8$ 100.0 ^a 14 $5.9^{a} 5$ | 259.866 114.475 0.0 | 9/2+ 7/2+ 5/2+ | [M1] (M1) | | 0.0221 0.01405 | |
| 1023.13 | $(17/2^{-})$ | 263.7 1 | 100 | 759.54 | $(13/2)^{-}$ | (E2) ^{&} | | 0.1305 | other Ey: 263.33 13 from $(\alpha.2n\gamma)$. |
| 1034.74 | $(3/2)^+$ | 80.03 4 | | 954.80 | $(3/2)^+$ | [M1] | | 9.79 | E_{γ} : from ε decay (9.9 h). |
| | | 1034.68 <mark>b</mark> 5 | 100.0 ^b 10 | 0.0 | 5/2+ | M1+E2 | | 0.007 3 | |
| 1040.73 | $(5/2)^+$ | 926.06 <mark>b</mark> 20 | 44 ^b 12 | 114.475 | 7/2+ | (E2) | | 0.00552 | |
| | | 1040.77 <mark>b</mark> 10 | 100 ^b 14 | 0.0 | $5/2^{+}$ | (M1) | | 0.00944 | |
| 1066.10 | (3/2) | 237.00 ^b 15 | ≈100 ^b | 828.99 | $(3/2)^{-}$ | [M1] | | 0.453 | |
| | | 365.51 ^b 8 | 68 ^b 24 | 700.62 | $(1/2)^{-}$ | [M1] | | 0.1400 | |
| 1084.72 | 15/2- | 223.5 7 | 100.0 21 | 861.14 | 13/2- | (M1+E2) ^{&} | 0.11 +3-5 | 0.529 | E_{γ} : weighted average of 223.6 <i>1</i> from (¹¹ B,4n γ) and 223.48 <i>11</i> from (α ,2n γ). |
| | | | | | | | | | I _{γ} : weighted average of 100 <i>3</i> from (¹¹ B,4n γ) and 100 <i>3</i> from (α ,2n γ). other δ : 0.12 +6-12 from $\gamma(\theta)$ In (α ,2n γ). |
| | | 420.60 11 | 31.5 24 | 664.07 | 11/2- | (E2) ^{&} | | 0.0340 | E _{γ} : weighted average of 420.7 <i>1</i> from (¹¹ B,4n γ) and 420.48 <i>11</i> from (α ,2n γ). I _{γ} : unweighted average of 33.9 <i>24</i> from (¹¹ B,4n γ) and 29.1 <i>3</i> from (α ,2n γ). |

 $^{183}_{75}\mathrm{Re}_{108}$ -9

From ENSDF

 $^{183}_{75}\mathrm{Re}_{108}$ -9

| | | | | | Adop | ted Levels, C | Gammas (o | continued) | |
|------------------------|----------------------|--|---|-------------------------------------|---|---------------------------|------------|--------------------|--|
| | | | | | | $\gamma(^{183}\text{Re})$ | (continued | <u>l)</u> | |
| E _i (level) | \mathbf{J}_i^{π} | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | E_f | \mathbf{J}_{f}^{π} | Mult. [#] | δ# | α^{\dagger} | Comments |
| 1101.95 | $(1/2)^+$ | 67.24 ^b 3 | 1.75 ^b 18 | 1034.74 | $(3/2)^+$ | M1+E2 | ≈0.075 | ≈2.93 | |
| | | 147.11 ^b 10 | $0.91^{b} 25$ | 954.80 | (3/2)+ | (M1) | | 1.718 | |
| | | $401.32^{b} 8$ | 0.85° 7 | 700.62 | $(1/2)^{-}$ 5/2 ⁺ | (F2) | | 0.00300 | |
| 1107.88 | $(3/2)^+$ | 993.43 ^b 15 | 0.77^{b} 9 | 114.475 | $\frac{3}{2}^{+}$ | (E2) | | 0.00590 | |
| | | 1107.93 ^b 5 | 100.0 ^b 9 | 0.0 | 5/2+ | M1 | | 0.00808 | |
| 1127.15 | 17/2+ | 256.91 20 | 100 3 | 870.47 | 15/2+ | M1+E2 | ≤0.19 | 0.359 7 | E _γ : unweighted average of 256.43 21 In (α ,2nγ), 256.9 1 In (¹¹ B,4nγ) and 257.4 2 In IT decay (1.04 ms). I _γ : weighted average from (α ,2nγ), IT decay (1.04 ms) and (¹¹ B,4nγ). St 0.14 + 5. Io from α (0) In (α ,2nγ) |
| | | 488.14 <i>15</i> | 89 8 | 639.05 | 13/2+ | E2 | | 0.0232 | E _γ : unweighted average of 488.2 3 In (α,2nγ), 488.4 1 In (¹¹ B,4nγ) and 487.9 3 In IT decay (1.04 ms). I _γ : unweighted average of 75 7 from (α,2nγ), 90 19 from IT decay (1.04 ms) and 101.9 21 In (¹¹ B,4nγ). |
| 1183.65 | $(11/2)^+$ | 181.1 <i>1</i> | 75 10 | 1002.52 | (9/2)+ | [M1+E2] | | 0.7 3 | other E γ (I γ): 180.78 25 (440 100) In ε decay (13.0 h) suggests that γ May have been contaminated In that study |
| | | 332.1 1 | 55 10 | 851.54 | $(7/2)^+$ | | | | other E γ (I γ): 332.15 15 (67 20) In ε decay (13.0 h). |
| | | 687.10 ^{ad} 20 | 100 ^{<i>a</i>} 27 | 496.242 | 9/2- | | | | γ seen In ε decay (13.0 h) only, so placement shown As uncertain here |
| | | 923.8 1 | 100 15 | 259.866 | 9/2+ | | | | other E γ (I γ): 923.56 20 (100 47) In ε decay (13.0 h). |
| 1304.18 | $(11/2)^{-}$ | 640.24^{a} 8 | 10.2^{a} 13 100.0 ^a 22 | 664.07 496 242 | $\frac{11}{2^{-}}$ | [M1] M1 | | 0.0323 | |
| 1335.09 | 17/2- | 250.24 10 | 100.0 22 | 1084.72 | $15/2^{-}$ | M1+E2 | ≤0.14 | 0.388 | E_{γ} : weighted average of 250.09 <i>14</i> from (α ,2n γ) and |
| | | | | | | | | | I_{γ} : weighted average from (α ,2n γ) and (¹¹ B,4n γ). |
| | | 172 92 21 | 24 10 | 961 14 | 12/2- | E2 | | 0.0250 | δ : 0.10 +4-10 from γ(θ) In (α,2nγ). |
| | | 475.85 21 | 54 10 | 001.14 | 13/2 | L2 | | 0.0250 | L_{γ} . Weighted average of 474.2.5 from (a ,21 γ) and 475.9 I from (^{11}B ,4n γ). |
| | | | | | | | | | I _{γ} : unweighted average of 43 4 from (¹¹ B,4n γ) and 24 4 from (α ,2n γ); the weighted average is 30 <i>10</i> . |
| 1348.85 | (15/2 ⁻) | 589.2 <i>1</i> | 100 | 759.54 | (13/2)- | | | | |
| 1353.74 | $(3/2^+)$ | 245.90 ⁰ 5 | 79 ⁰ 31 | 1107.88 | $(3/2)^+$ | (M1) | | 0.410 | |
| | | $251.92^{b} 8$ | 100^{b} 13 | 1101.95 | $(1/2)^+$ | (M1) (E2) | | 0.383 | |
| 1393.63 | (13/2+) | 1353.57° 10 209.9 1 391.0 1 958.5 1 | 44° 6 100 <i>13</i> 90 <i>16</i> 100 <i>13</i> | 0.0 1183.65 1002.52 435.25 | $5/2^+$ (11/2) ⁺ (9/2) ⁺ 11/2 ⁺ | (E2) | | 0.00265 | |
| 1403.25 | (21/2 ⁻) | 380.28 10 | 100 | 1023.13 | (17/2 ⁻) | E2 | | 0.0447 | E_{γ} : weighted average of 380.3 <i>1</i> from (¹¹ B,4n γ) and 380.0 <i>4</i> from (α ,2n γ). |

From ENSDF

| | | | | Ad | lopted <mark>L</mark> | evels, Gamn | nas (continued) | | |
|------------------------|----------------------------|---|--|---|---|-----------------------------|-----------------|--|---|
| | | | | | <u> </u> | (cont | inued) | | |
| E _i (level) | J_i^π | ${\rm E_{\gamma}}^{\ddagger}$ | I_{γ}^{\ddagger} | E_f | \mathbf{J}_f^{π} | Mult. [#] | $\delta^{\#}$ | α^{\dagger} | Comments |
| 1409.42 | 19/2+ | 282.28 8 | 75 7 | 1127.15 | 17/2+ | M1+E2 | ≤0.59 | 0.258 23 | E _γ : weighted average of 282.3 <i>I</i> from (¹¹ B,4nγ), 282.20 <i>I8</i> from (α ,2n γ) and 202.3 <i>3</i> from IT decay (1.04 ms). I _γ : unweighted average of 87 <i>5</i> from (α ,2n γ), 76 <i>3</i> from (¹¹ B,4n γ) and 63 <i>19</i> from IT decay (1.04 ms). δ : 0.39 +20-39 from $\gamma(\theta)$ In (α ,2n γ) |
| | | 538.8 4 | 100 5 | 870.47 | 15/2+ | E2 | | 0.0182 | E_{γ} : unweighted average of 539.1 <i>l</i> from (¹¹ B,4n γ), 539.32 <i>23</i> from (α ,2n γ) and 538.1 <i>3</i> from IT decay (1.04 ms). |
| 1413.23 | (13/2 ⁻) | 749.2 <i>1</i> 917.1 <i>1</i> | 33.0 27 100 6 | 664.07 496.242 | 11/2 ⁻ 9/2 ⁻ | (O) <mark>&</mark> | | | |
| 1414.61 | (1/2 ⁻ ,3/2) | $535.62^b 25$ $585.60^b 10$ $714.20^b 15$ $815 52^b 20$ | $2.1^{b} 12$ $100^{b} 26$ $48^{b} 14$ $42^{b} 12$ | 878.92 828.99 700.62 | $1/2^+$ (3/2) ⁻ (1/2) ⁻ (5/2) ⁻ | | | | |
| 1525.22 | (9/2)- | 664.22 ^{<i>a</i>} 15 861.16 ^{<i>a</i>} 8 1028.57 ^{<i>a</i>} 20 1089.98 ^{<i>a</i>} 8 | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | 398.85 861.14 664.07 496.242 435.25 | (3/2) $13/2^{-}$ $11/2^{-}$ $9/2^{-}$ $11/2^{+}$ | | | | |
| 1554.05 | (0/0)- | 1265.32 ^{<i>a</i>} 8 1410.77 ^{<i>a</i>} 8 | $68^{a} 3$ 100.0 ^a 16 | 259.866 114.475 | 9/2+ 7/2+ | E1 [E1] | | 1.27×10^{-3} 1.14×10^{-3} | |
| 1554.07 | (9/2) | 693.05 ^{<i>a</i>} 8 889.96 ^{<i>a</i>} 5 1057.79 ^{<i>a</i>} 5 1118.91 ^{<i>a</i>} 10 1294.11 ^{<i>a</i>} 8 1439.63 ^{<i>a</i>} 5 | $\begin{array}{c} 6.9^{ct} \\ 100.0^{a} \\ 11 \\ 55.2^{a} \\ 14 \\ 16.1^{a} \\ 6 \\ 9.6^{a} \\ 3 \\ 63.0^{a} \\ 7 \end{array}$ | 861.14 664.07 496.242 435.25 259.866 114.475 | $ \begin{array}{r} 13/2 \\ 11/2^{-} \\ 9/2^{-} \\ 11/2^{+} \\ 9/2^{+} \\ 7/2^{+} \\ \end{array} $ | (M1) M1+E2 [E1] E1 | | 0.01397 0.0066 25 1.52×10 ⁻³ 1.12×10 ⁻³ | |
| 1563.14 | $\leq (1/2^-, 3/2, 5/2^+)$ | 734.01^{b} 15 | $100^{b} 25$ | 828.99 508 83 | $(3/2)^{-}$ | | | | |
| 1608.28 | 19/2- | 273.21 9 | 100 3 | 1335.09 | (3/2) 17/2 ⁻ | (M1+E2) | 0.33 +13-19 | 0.288 16 | E_{γ} , I_{γ} : weighted average from $(\alpha, 2n\gamma)$ ($E\gamma$ =273.35 <i>18</i>) and from (¹¹ B,4n γ) ($E\gamma$ =273.2 <i>1</i>). Mult.: D+Q intraband γ from $(\alpha, 2n\gamma)$. δ : from $\gamma(\theta)$ In ($\alpha, 2n\gamma$) |
| | | 524.0 5 | 68 7 | 1084.72 | 15/2- | (E2) | | 0.0195 | E_{γ} : unweighted average of 523.5 <i>1</i> |

From ENSDF

| | | | | | Adopted | Levels, Gam | mas (continued | d) | |
|------------------------|--|---|--|--|--|--------------------------------|------------------------|--------------------|---|
| | | | | | | $\gamma(^{183}\text{Re})$ (con | ntinued) | | |
| E _i (level) | \mathbf{J}_i^{π} | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | \mathbf{E}_{f} | J_f^π | Mult. [#] | $\delta^{\texttt{\#}}$ | α^{\dagger} | Comments |
| | | | | | | | | | from (¹¹ B,4n γ) and 524.5 4 from (α ,2n γ). I $_{\gamma}$: unweighted average of 61 5 from (¹¹ B,4n γ) and 75 7 from (α ,2n γ). Mult.: (Q) intraband γ from (α ,2n γ). |
| 1628.36 | (15/2 ⁻) | 215.2 <i>1</i> 767.3 <i>1</i> 964 2 <i>1</i> | 44 5 100 <i>16</i> 61 <i>11</i> | 1413.23 861.14 664.07 | $(13/2^{-})$ $13/2^{-}$ $11/2^{-}$ | | | | |
| 1630.89 | (15/2)+ | 237.3 <i>I</i> 447.2 <i>I</i> 991 9 2 | 44 <i>15</i> 100 <i>12</i> 29 9 | 1393.63 1183.65 639.05 | $(13/2^+)$ $(11/2)^+$ $13/2^+$ | | | | |
| 1659.09 | (7/2,9/2)- | $1162.81^{a} 5$ $1399.52^{a} 10$ $1544.44^{a} 10$ | $100.0^{a} 11$ $1.53^{a} 15$ $1.31^{a} 15$ | 496.242 259.866 114.475 | 9/2 ⁻ 9/2 ⁺ 7/2 ⁺ | M1 | | 0.00716 | |
| 1663.78 | (11/2) | $\begin{array}{c} 802.40^{a} \ 10\\ 1024.66^{a} \ 15\\ 1167.78^{a} \ 10\\ 1228.73^{a} \ 8\\ 1403.71^{a} \ 8\end{array}$ | $ \begin{array}{c} 100^{a} 13 \\ 41^{a} 3 \\ 42^{a} 4 \\ 42.5^{a} 25 \\ 46^{a} 3 \end{array} $ | 861.14 639.05 496.242 435.25 259.866 | $13/2^{-}$ $13/2^{+}$ $9/2^{-}$ $11/2^{+}$ $9/2^{+}$ | | | | |
| 1670.41 | (15/2) | 809.4 <i>1</i> 1006.2 <i>1</i> | 47 <i>5</i> 100 <i>11</i> | 861.14 664.07 | 13/2 ⁻ 11/2 ⁻ | | | | |
| 1711.65 | (9/2 ⁻) | $\begin{array}{c} 1047.82^{a} \ 15\\ 1112.62^{a} \ 20\\ 1215.31^{a} \ 10\\ 1276.01^{a} \ 15\\ 1451.91^{a} \ 8\end{array}$ | $25^{a} 7$ $13^{a} 4$ $26^{a} 5$ $20^{a} 4$ $100^{a} 4$ | 664.07 598.83 496.242 435.25 259.866 | 11/2 ⁻ (5/2) ⁻ 9/2 ⁻ 11/2 ⁺ 9/2 ⁺ | | | | |
| 1713.37 | 21/2+ | 304.1 1 | 61.2 17 | 1409.42 | 19/2+ | (M1+E2) | 0.27 +8-11 | 0.220 7 | other E γ (I γ): 304.2 2 (55 11) In IT decay (1.04 ms) and 304.45 15 (121 6) from (α ,2n γ). Mult.: D+Q intraband γ from (α ,2n γ). |
| | | 586.2 1 | 100.0 20 | 1127.15 | 17/2+ | (E2) | | 0.01492 | δ: from $(\alpha, 2n\gamma)$. other Eγ: 584.9 3 from IT decay (1.04 ms), 586.1 4 from $(\alpha, 2n\gamma)$. Mult : (Ω) intraband γ from $(\alpha, 2n\gamma)$ |
| 1740.47 | (19/2 ⁻) | 391.5 <i>1</i> 717.3 <i>1</i> | 47 5 100 7 | 1348.85 1023.13 | $(15/2^{-})$ $(17/2^{-})$ | | | | |
| 1746.45 | (9/2 ⁻ ,11/2 ⁻) | 1082.31 ^{<i>a</i>} 8 1250.32 ^{<i>a</i>} 10 1486.52 ^{<i>a</i>} 15 | $100^{a} 4$ 18.5 ^a 22 3.7 ^a 15 | 664.07 496.242 259.866 | 11/2 ⁻ 9/2 ⁻ 9/2 ⁺ | (M1) | | 0.00856 | |
| 1763.50 | (17/2 ⁻) | 135.3 <i>I</i> 350.4 <i>I</i> 428.2 <i>I</i> 678.7 <i>I</i> | 3.1 9 100 6 19 3 93 7 | 1628.36 1413.23 1335.09 1084.72 | (15/2 ⁻) (13/2 ⁻) 17/2 ⁻ 15/2 ⁻ | D+Q ^{&} | | | |

 $^{183}_{75}\mathrm{Re}_{108}$ -12

 $^{183}_{75}\mathrm{Re}_{108}$ -12

From ENSDF

| | | | | Ado | pted Leve | els, Gamm | as (continued | | |
|------------------------|---|---|---|--|---|----------------------|-----------------------|---|--|
| | | | | | $\gamma(^{183}$ | Re) (conti | nued) | | |
| E _i (level) | J_i^π | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | E_f | J_f^π | Mult. [#] | $lpha^{\dagger}$ | Comments | |
| 1763 50 | $(17/2^{-})$ | 902.5.7 | 38.4 | 861 14 | 13/2- | (O) ^{&} | | | |
| 1781.36 | $(9/2,11/2)^{-}$ | $477.24^a 5$ 1117.33 ^a 10 | $100.0^{a} 24$ 24.4 ^a 18 | 1304.18 664.07 | $(11/2)^{-}$ $11/2^{-}$ | M1 | 0.0691 | | |
| 1798.53 | (5/2+,7/2,9/2+) | 1284.95 ^{<i>a</i>} 8 1538.86 ^{<i>a</i>} 20 1684.00 ^{<i>a</i>} 20 1708.37 ^{<i>a</i>} 20 | 61.0^{a} 12 100^{a} 50 35^{a} 10 78^{a} 12 | 496.242 259.866 114.475 | 9/2 ⁻ 9/2 ⁺ 7/2 ⁺ 5/2 ⁺ | (M1) | 0.00561 | | |
| 1819.52 | (17/2 ⁻) | 1798.37 20 191.1 <i>I</i> 406.1 <i>3</i> 484.5 <i>I</i> 734.8 <i>I</i> | 78 73 72 7 16 7 23 7 100 14 | 1628.36 1413.23 1335.09 1084.72 | 5/2 (15/2 ⁻) (13/2 ⁻) 17/2 ⁻ 15/2 ⁻ | | | | |
| 1864.35 | (7/2,9/2+) | 958.9 3 1368.19 ^a 20 1604.55 ^a 10 1749.73 ^a 20 1864.21 ^a 15 | $ \begin{array}{c} 16 \\ 100^{a} \\ 40 \\ 80^{a} \\ 20 \\ 20^{a} \\ 8 \\ 42^{a} \\ 8 \end{array} $ | 861.14 496.242 259.866 114.475 0.0 | 13/2 9/2 ⁻ 9/2 ⁺ 7/2 ⁺ 5/2 ⁺ | | | | |
| 1893.33 1894.25 | (25/2 ⁻) (17/2) ⁺ | 490.1 <i>I</i> 263.3 <i>I</i> 500.5 <i>I</i> | 100 31 10 100 12 31 7 | 1403.25 1630.89 1393.63 870.47 | $(21/2^{-})$ $(15/2)^{+}$ $(13/2^{+})$ $15/2^{+}$ | E2 | 0.0230 | other E γ : 489.0 5 from (α ,2n γ). | |
| 1897.84 | (7/2 ⁻ ,9/2,11/2 ⁺) | $\begin{array}{c} 1023.81^{a} \\ 1233.81^{a} \\ 8 \\ 1401.51^{a} \\ 20 \\ 1637.80^{a} \\ 15 \\ 1783.38^{a} \\ 15 \end{array}$ | $ \begin{array}{c} 317 \\ 100^{a} 5 \\ 16^{a} 5 \\ 8.2^{a} 18 \\ 11^{a} 4 \end{array} $ | 664.07 496.242 259.866 114.475 | 13/2 11/2 ⁻ 9/2 ⁻ 9/2 ⁺ 7/2 ⁺ | | | | |
| 1903.78 | (1/2+,3/2+) | 550.28 ^b 10 795.94 ^b 15 948.98 ^b 15 | 56^{b} 12 100^{b} 10 69^{b} 6 | 1353.74 1107.88 954.80 | $(3/2^+)$ $(3/2)^+$ $(3/2)^+$ | | | | |
| 1906.83 | 21/2- | 1903.50 ^b 10 298.6 1 571 7 1 | 34 ⁰ 3 100 6 80 7 | 0.0 1608.28 1335.09 | 5/2 ⁺ 19/2 ⁻ 17/2 ⁻ | (E2) | 1.62×10^{-3} | | |
| 1907.21 | (25/2)+ | 193.84 8 | 100 | 1713.37 | 21/2+ | E2 | 0.355 | B(E2)(W.u.) $\approx 2.4 \times 10^{-5}$ E _{γ} : weighted average of 193.89 <i>16</i> from (α ,2n γ) and 193.8 <i>1</i> from (¹¹ B,4n γ) and 193.9 <i>2</i> from IT decay. Mult : from α (K)exp In ¹⁸³ Re IT decay (1.04 ms) | |
| 1925.18 | (17/2) | 840.6 <i>1</i> 1063.9 <i>1</i> | 81 <i>12</i> 100 <i>12</i> | 1084.72 861.14 | 15/2 ⁻ 13/2 ⁻ | | | | |
| 1927.55 | (15/2 ⁺) | 1287.6 <i>3</i> 1491.8 <i>5</i> | 85 <i>10</i> 100 <i>10</i> | 639.05 435.25 | $13/2^+$ $11/2^+$ | | | | |
| 1936.66 1936.66+x | $(19/2^{-})$ (21/2) | 173.1 <i>1</i> x | 100 | 1763.50 1936.66 | $(17/2^{-})$ $(19/2^{-})$ | (D) | | Mult.: D favored In (¹¹ B,4n γ) based on short T _{1/2} for the level it deexcites. | |

From ENSDF

 $^{183}_{75}\mathrm{Re}_{108}$ -13

| | | | | | $\gamma(^{183}\text{Re}$ |) (continue | ed) | |
|------------------------|------------------------|--------------------------------------|----------------------------|-----------|----------------------------|--------------------|-----------------------|---|
| E _i (level) | ${ m J}^{\pi}_i$ | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | E_f | \mathbf{J}_f^{π} | Mult. [#] | α^{\dagger} | Comments |
| 1948.91 | | 946.20 ^{<i>a</i>} 20 | 33^{a} 7 | 1002.52 | $(9/2)^+$ | | | |
| 1000.00 | $(0/2, 11/2^{+})$ | 1097.42° 10 | $100^{a} \delta$ | 851.54 | $(1/2)^{-1}$ | | | |
| 1990.99 | $(9/2,11/2^{+})$ | $1527.25^{-1}13$ | 100 5 | 406 242 | 11/2 0/2 ⁻ | | | |
| | | 1494.03 20 1555 50a 10 | 10^{10} J | 490.242 | 9/2 11/2+ | | | |
| | | 1333.39 10 $1876 47 \frac{a}{15}$ | 34^{a} 5 | 433.23 | $\frac{11/2}{7/2^+}$ | | | |
| 2016 80 | $(7/2 - 9/2 \ 11/2 +)$ | $1165 \ 10^{-47} \ 15$ | 100^{a} 18 | 851 54 | $(7/2)^+$ | | | |
| 2010.09 | (1/2,9/2,11/2) | $1352 56^{a} 20$ | 45^{a} 14 | 664.07 | (1/2) 11/2 ⁻ | | | |
| 2019 94 | $(19/2^{-})$ | 200.4.7 | 100 16 | 1819 52 | $(17/2^{-})$ | | | |
| 2017.71 | (1)/2) | 391 5 2 | 32.8 | 1628.36 | $(15/2^{-})$ | | | |
| | | 411.6 9 | 12 4 | 1608.28 | $19/2^{-1}$ | | | |
| | | 684.8 2 | 32 12 | 1335.09 | $17/2^{-}$ | | | |
| 2030.06 | $(9/2^+, 11/2^+)$ | 1178.64 ^{<i>a</i>} 20 | 3.5 ^{<i>a</i>} 12 | 851.54 | $(7/2)^+$ | | | |
| | | 1365.97 ^a 10 | 26.2 ^a 20 | 664.07 | $11/2^{-}$ | E1 | 1.17×10^{-3} | |
| | | 1391.12 ^a 20 | 2.0 ^{<i>a</i>} | 639.05 | $13/2^{+}$ | | | |
| | | 1533.73 ^a 8 | 100 ^{<i>a</i>} 4 | 496.242 | 9/2- | E1 | 1.09×10^{-3} | |
| | | 1594.75 ^a 10 | 2.3 ^{<i>a</i>} 8 | 435.25 | $11/2^{+}$ | | | |
| | | 1770.51 ^a 10 | 1.6 ^{<i>a</i>} 4 | 259.866 | $9/2^{+}$ | | | |
| | | 1915.09 ^a 15 | 0.98 ^a 16 | 114.475 | $7/2^{+}$ | | | |
| 2036.97 | $(19/2^+)$ | 100.2 1 | 53 | 1936.66 | $(19/2^{-})$ | | | |
| | . , , | 109.3 <i>1</i> | 8.3 17 | 1927.55 | $(15/2^+)$ | | | |
| | | 273.7 1 | 100 7 | 1763.50 | $(17/2^{-})$ | | | |
| 2039.77 | 23/2+ | 326.5 1 | 60 <i>3</i> | 1713.37 | $21/2^+$ | D+Q | | other E γ (I γ): 325.71 26 (30 9) from (α ,2n γ). Mult.: from (α ,2n γ). |
| | | 630.23 10 | 100 6 | 1409.42 | 19/2+ | (E2) | 0.01262 | E _{γ} : weighted average of 630.7 4 from (α ,2n γ) and 630.2 1 from (¹¹ B,4n γ). Mult: (Ω) intrahand α from (α ,2n γ) |
| 2137.86 | $(21/2^{-})$ | 201.2.1 | 100.6 | 1936 66 | $(19/2^{-})$ | | | |
| 2107.00 | (21/2) | 374.3 1 | 35.5 | 1763.50 | $(17/2^{-})$ | | | |
| 2181.29 | $(19/2)^+$ | 287.1 <i>I</i> | 38.8 | 1894.25 | $(17/2)^+$ | | | |
| | | 550.5 1 | 100 31 | 1630.89 | $(15/2)^+$ | | | |
| | | 1054.2 <i>1</i> | 58 15 | 1127.15 | $17/2^{+}$ | | | |
| 2186.38+x | (23/2) | 249.7 1 | 100 | 1936.66+x | (21/2) | | | |
| 2209.68 | (19/2) | 874.7 2 | 100 29 | 1335.09 | $17/2^{-}$ | | | |
| | | 1124.7 <i>3</i> | 86 29 | 1084.72 | $15/2^{-}$ | | | |
| 2212.29 | $(27/2^+)$ | 305.1 <i>I</i> | 100 | 1907.21 | $(25/2)^+$ | | | |
| 2221.68 | 23/2- | 315.0 1 | 86 7 | 1906.83 | $21/2^{-}$ | | | |
| | | 613.4 <i>1</i> | 100 10 | 1608.28 | 19/2- | | | |
| 2232.08 | $(21/2^+)$ | 195.1 <i>1</i> | | 2036.97 | $(19/2^+)$ | | | |
| 2237.52 | $(23/2^{-})$ | 496.9 1 | 76 6 | 1740.47 | $(19/2^{-})$ | | | |
| 2220.24 | (21/2=) | 834.4 1 | 100 9 | 1403.25 | $(21/2^{-})$ | | | |
| 2238.26 | $(21/2^{-})$ | 218.4 1 | 100 13 | 2019.94 | $(19/2^{-})$ | | | |

| Adopted Levels, Gammas (continued) | | | | | | | | | | | |
|--|--|--|-------------------------------|-----------------------------------|--|----------------------------|--------------------|---|--|--|--|
| γ ⁽¹⁸³ Re) (continued) | | | | | | | | | | | |
| E _i (level) | \mathbf{J}_i^{π} | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | E_{f} | ${ m J}_f^\pi$ | Mult. [#] | α^{\dagger} | Comments | | | |
| 2238.26 | (21/2-) | 418.8 <i>1</i> 630.0 2 | 68 <i>16</i> 19 <i>13</i> | 1819.52 1608-28 | $(17/2^{-})$ 19/2 ⁻ | | | | | | |
| 2365.21 | (23/2 ⁻) | 227.4 <i>I</i> | 100 6 | 2137.86 | $(21/2^{-})$ $(10/2^{-})$ | | | | | | |
| 2383.85 | 25/2+ | 344.0 <i>I</i> | 39 <i>4</i> | 2039.77 | (19/2) 23/2 ⁺ 21/2 ⁺ | | | | | | |
| 2454.78 | $(23/2^+)$ | 222.5 I | 100 5 | 2232.08 | $(21/2^+)$ $(10/2^+)$ | | | | | | |
| 2464.02+x | (25/2) | 417.93 277.71 52741 | 52 4 52 4 | 2030.97 2186.38+x | (19/2) (23/2) (21/2) | | | | | | |
| 2476.58 | (23/2 ⁻) | 238.3 <i>1</i> 456.5 <i>1</i> | 100 7 100 10 62 14 | 2238.26 2019.94 | (21/2) $(21/2^{-})$ $(19/2^{-})$ $21/2^{-}$ | | | | | | |
| 2483.89 | (21/2)+ | 302.9 3 589.6 1 | <9.3 70 20 100 30 | 1900.85 2181.29 1894.25 | $(19/2)^+$ $(17/2)^+$ | | | | | | |
| 2485.84 2491.92 | (29/2 ⁻) (21/2 ⁺) | 1074 <i>^a I</i> 592.5 <i>I</i> 310.8 <i>I</i> | <30 100 7 <i>3</i> | 1409.42 1893.33 2181.29 | $19/2^+$ (25/2 ⁻) (19/2) ⁺ | | | | | | |
| 2513.9 | (21/2) | 597.5 <i>1</i> 1178.8 <i>3</i> | 100 <i>12</i> 100 | 1894.25 1335.09 | $(1^{7}/2)^{+}$ $17/2^{-}$ | | | | | | |
| 2538.40 | (29/2+) | 326.1 <i>I</i> 631.1 <i>I</i> | 73.1 21 100 5 | 2212.29 1906.83 | $(27/2^+)$ $21/2^-$ | | | | | | |
| 2563.69 | 25/2- | 342.1 <i>1</i> 656.7 <i>1</i> | 80 <i>9</i> 100 <i>11</i> | 2221.68 1906.83 | 23/2 ⁻ 21/2 ⁻ | | | | | | |
| 2616.45 | (25/2-) | 251.3 <i>1</i> 478.5 <i>1</i> | 54 <i>4</i> 100 <i>8</i> | 2365.21 2137.86 | $(23/2^{-})$ $(21/2^{-})$ | | | | | | |
| 2702.20 | (25/2+) | 247.4 <i>1</i> 470.3 <i>1</i> | 100 8 28 5 | 2454.78 2232.08 | $(23/2^+)$ $(21/2^+)$ | | | | | | |
| 2734.20 | (25/2 ⁻) | 257.6 <i>1</i> 495.8 <i>1</i> | 100 <i>23</i> 86 <i>18</i> | 2476.58 2238.26 | $(23/2^{-})$ $(21/2^{-})$ | | | | | | |
| 2737.78 | (29/2 ⁻) | 199.4 <i>1</i> | 46.2 16 | 2538.40 | (29/2+) | E1 | 0.0650 | B(E1)(W.u.)= 1.27×10^{-6} 12 Mult.: from intensity balance In ¹⁷⁶ Yb(¹¹ B,4n γ). | | | |
| 2745.23 | 27/2+ | 525.5 <i>1</i> 830.6 <i>1</i> 361.3 <i>1</i> | 100.0 24 10.7 12 37 3 | 2212.29 1907.21 2383.85 | (27/2 ⁺) (25/2) ⁺ 25/2 ⁺ | D ^{&} [M2] | 0.0430 | Mult.: implied by placement. | | | |
| 2765.56+x | (27/2) | 705.5 <i>1</i> 301.6 <i>1</i> 579 1 <i>1</i> | 100 8 30 4 100 6 | 2039.77 2464.02+x 2186.38+x | $23/2^+$ (25/2) (23/2) | | | | | | |
| 2826.71 | (25/2+) | 334.8 <i>1</i> 342 8 <i>1</i> | 100 14 | 2491.92 2483.89 | (23/2) $(21/2^+)$ $(21/2)^+$ | | | | | | |
| 2829.31 | (27/2 ⁻) | 591.7 2 936 0 1 | 38 8 | 2237.52 1893 33 | $(23/2^{-})$ $(25/2^{-})$ | | | | | | |
| 2884.32 | $(31/2^+)$ | 345.9 1 | 36.2 22 | 2538.40 | $(29/2^+)$ | | | | | | |

From ENSDF

$\gamma(^{183}\text{Re})$ (continued)

| E _i (level) | \mathbf{J}_i^{π} | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | E_f | \mathbf{J}_f^{π} | Mult. [#] | E _i (level) | \mathbf{J}_i^π | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | E_f | \mathbf{J}_f^{π} |
|------------------------|----------------------|-------------------------|-------------------------|-----------|----------------------|------------------------|------------------------|--------------------|-------------------------|-------------------------|-----------|----------------------|
| 2884.32 | $(31/2^+)$ | 672.0 1 | 100 5 | 2212.29 | $(27/2^+)$ | | 3492.06 | $31/2^{+}$ | 746.9 1 | 100 15 | 2745.23 | $27/2^{+}$ |
| 2888.78 | $(27/2^{-})$ | 272.4 1 | 55 6 | 2616.45 | $(25/2^{-})$ | | 3499.29 | $(31/2^{-})$ | 316.1 <i>3</i> | 11 5 | 3183.26 | $(29/2^{-})$ |
| | | 523.6 1 | 100 12 | 2365.21 | $(23/2^{-})$ | | | | 610.5 <i>1</i> | 100 13 | 2888.78 | $(27/2^{-})$ |
| 2914.01 | $27/2^{-}$ | 350.3 1 | 83 11 | 2563.69 | $25/2^{-1}$ | | 3512.3 | $(31/2^{-})$ | 683.2 5 | <59 | 2829.31 | $(27/2^{-})$ |
| | , | 692.4 <i>1</i> | 100 15 | 2221.68 | $\frac{23}{2^{-}}$ | | | | 1026.4 <i>3</i> | 100 18 | 2485.84 | $(29/2^{-})$ |
| 2971.93 | $(27/2^+)$ | 269.7 1 | 100 8 | 2702.20 | $(25/2^+)$ | | 3571.14 | $(31/2^+)$ | 309.3 1 | 100 11 | 3262.01 | $(29/2^+)$ |
| | | 517.0 <i>1</i> | 64 8 | 2454.78 | $(23/2^+)$ | | | | 599.0 <i>1</i> | 100 7 | 2971.93 | $(27/2^+)$ |
| 3012.26 | $(27/2^{-})$ | 277.9 1 | 100 17 | 2734.20 | $(25/2^{-})$ | | 3589.67 | (33/2) | 381.6 <i>I</i> | 95 8 | 3208.03 | (31/2) |
| | | 536.3 2 | 89 22 | 2476.58 | $(23/2^{-})$ | | | | 541.2 <i>I</i> | 100 8 | 3048.61 | $(31/2^{-})$ |
| 3021.73 | (29/2) | 483.3 <i>1</i> | 100 7 | 2538.40 | $(29/2^+)$ | | 3628.66 | $(35/2^+)$ | 380.6 1 | 20 4 | 3248.30 | $(33/2^+)$ |
| | | 809.4 <i>1</i> | 28 4 | 2212.29 | $(27/2^+)$ | | | | 744.5 1 | 100 5 | 2884.32 | $(31/2^+)$ |
| | | 1114.4 2 | 717 | 1906.83 | $21/2^{-}$ | | 3643.79 | (33/2) | 395.4 <i>1</i> | 100 12 | 3248.30 | $(33/2^+)$ |
| 3043.46 | $(29/2^+)$ | 504.9 <i>1</i> | 14.6 19 | 2538.40 | $(29/2^+)$ | | | | 622.1 <i>1</i> | 100 12 | 3021.73 | (29/2) |
| | | 1136.3 <i>1</i> | 100 6 | 1907.21 | $(25/2)^+$ | Q ^{&} | | | 759.4 1 | 77 12 | 2884.32 | $(31/2^+)$ |
| 3048.61 | $(31/2^{-})$ | 310.9 <i>1</i> | 100 | 2737.78 | $(29/2^{-})$ | D+Q <mark>&</mark> | 3680.52 | $31/2^{-}$ | 407 1 | 35 10 | 3274.84 | $29/2^{-}$ |
| 3086.21+x | (29/2) | 320.7 1 | 28 <i>3</i> | 2765.56+x | (27/2) | - | | | 766.5 1 | 100 25 | 2914.01 | $27/2^{-}$ |
| | | 622.2 1 | 100 8 | 2464.02+x | (25/2) | | 3713.14 | $(35/2^{-})$ | 338.3 <i>1</i> | 35 <i>3</i> | 3374.95 | $(33/2^{-})$ |
| 3117.22 | $29/2^{+}$ | 371.9 <i>1</i> | 34 <i>3</i> | 2745.23 | $27/2^{+}$ | | | | 664.5 <i>1</i> | 100 4 | 3048.61 | $(31/2^{-})$ |
| | | 733.4 <i>1</i> | 100 15 | 2383.85 | $25/2^+$ | | 3721.5 | (33/2) | 1183.1 2 | 100 | 2538.40 | $(29/2^+)$ |
| 3172.54 | $(33/2^{-})$ | 686.7 <i>1</i> | 100 | 2485.84 | $(29/2^{-})$ | | 3744.10 | (33/2) | 369.4 5 | 1.5 7 | 3374.95 | $(33/2^{-})$ |
| 3183.26 | $(29/2^{-})$ | 294.6 1 | 34 6 | 2888.78 | $(27/2^{-})$ | | | | 695.2 2 | 6.7 15 | 3048.61 | $(31/2^{-})$ |
| | | 566.7 1 | 100 12 | 2616.45 | $(25/2^{-})$ | | | | 1006.3 <i>1</i> | 100 7 | 2737.78 | $(29/2^{-})$ |
| 3208.03 | (31/2) | 470.3 1 | 100 | 2737.78 | $(29/2^{-})$ | | 3755.81+x | (33/2) | 669.6 <i>1</i> | 100 | 3086.21+x | (29/2) |
| 3248.30 | $(33/2^+)$ | 364.0 <i>1</i> | 22.6 23 | 2884.32 | $(31/2^+)$ | | 3771.11 | $(33/2^+)$ | 517.4 <i>I</i> | 100 | 3253.71 | $(29/2^+)$ |
| | | 710.0 <i>1</i> | 100 6 | 2538.40 | $(29/2^+)$ | | 3815.71 | (33/2) | 363.3 <i>1</i> | 100 6 | 3452.48 | (31/2) |
| 3253.71 | $(29/2^+)$ | 427.0 <i>1</i> | 100 | 2826.71 | $(25/2^+)$ | | | | 445.6 <i>1</i> | 28 <i>3</i> | 3370.20 | (31/2) |
| 3262.01 | $(29/2^+)$ | 290.1 <i>I</i> | 66 9 | 2971.93 | $(27/2^+)$ | | | | 494.1 <i>1</i> | 15 <i>3</i> | 3321.69 | (31/2) |
| | | 560.0 1 | 100 26 | 2702.20 | $(25/2^+)$ | | | | 931.4 2 | 14 <i>3</i> | 2884.32 | $(31/2^+)$ |
| 3274.84 | $29/2^{-}$ | 360.9 1 | 58 11 | 2914.01 | $27/2^{-}$ | | 3833.46 | $(33/2^{-})$ | 650.2 <i>1</i> | 100 | 3183.26 | $(29/2^{-})$ |
| | | 711.1 <i>1</i> | 100 19 | 2563.69 | $25/2^{-}$ | | 3852.37 | $33/2^{+}$ | 360 1 | 25 4 | 3492.06 | $31/2^{+}$ |
| 3321.69 | (31/2) | 437.2 <i>1</i> | 100 10 | 2884.32 | $(31/2^+)$ | | | | 735.1 <i>1</i> | 100 21 | 3117.22 | $29/2^{+}$ |
| | | 783.3 2 | 46 8 | 2538.40 | $(29/2^+)$ | | 3898.28 | $(33/2^+)$ | 327.1 <i>I</i> | 46 11 | 3571.14 | $(31/2^+)$ |
| 3370.20 | (31/2) | 1158.0 <i>1</i> | 100 | 2212.29 | $(27/2^+)$ | | | | 636.3 <i>1</i> | 100 18 | 3262.01 | $(29/2^+)$ |
| 3374.95 | $(33/2^{-})$ | 326.4 1 | 77 4 | 3048.61 | $(31/2^{-})$ | | 3944.84 | $(37/2^{-})$ | 772.3 1 | 100 | 3172.54 | $(33/2^{-})$ |
| | | 637.1 <i>1</i> | 100 5 | 2737.78 | $(29/2^{-})$ | | 3986.79 | (35/2) | 397.2 <i>1</i> | 100 12 | 3589.67 | (33/2) |
| 3419.33+x | (31/2) | 333.4 2 | 13 5 | 3086.21+x | (29/2) | | | | 611.7 <i>1</i> | 35 4 | 3374.95 | $(33/2^{-})$ |
| | | 653.7 <i>1</i> | 100 8 | 2765.56+x | (27/2) | | | | 778.8 <i>1</i> | 50 8 | 3208.03 | (31/2) |
| 3452.48 | (31/2) | 244.5 1 | 19.8 25 | 3208.03 | (31/2) | | 3986.92 | (35/2) | 358.5 1 | 33 10 | 3628.66 | $(35/2^+)$ |
| | | 408.9 1 | 100 5 | 3043.46 | $(29/2^+)$ | | | | 665.0 <i>1</i> | 100 14 | 3321.69 | (31/2) |
| | | 430.6 1 | 75 5 | 3021.73 | (29/2) | | 4022.94 | $(37/2^+)$ | 394.4 1 | 16 3 | 3628.66 | $(35/2^+)$ |
| | | 568.2 <i>3</i> | 12 4 | 2884.32 | $(31/2^+)$ | | | | 774.6 1 | 100 9 | 3248.30 | $(33/2^+)$ |
| | 24/21 | 914.1 <i>1</i> | 43 5 | 2538.40 | $(29/2^+)$ | | 4032.8 | 33/2- | 758.0 3 | 100 | 3274.84 | 29/2- |
| 3492.06 | $31/2^+$ | 374.8 1 | 36.6 | 3117.22 | 29/2* | | 4058.72 | $(37/2^{-})$ | 345.6 <i>1</i> | 31.5 | 3/13.14 | $(35/2^{-})$ |

From ENSDF

$\gamma(^{183}\text{Re})$ (continued)

| E _i (level) | \mathbf{J}_i^{π} | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | E_f | \mathbf{J}_{f}^{π} | E_i (level) | \mathbf{J}_i^{π} | E_{γ}^{\ddagger} | I_{γ}^{\ddagger} | E_f | ${ m J}_f^\pi$ |
|------------------------|----------------------|-------------------------|-------------------------|---------|------------------------|---------------|----------------------|-------------------------|-------------------------|---------|----------------|
| 4058.72 | $(37/2^{-})$ | 683.7 1 | 100 6 | 3374.95 | $(33/2^{-})$ | 4749.60 | $(41/2^{-})$ | 690.9 1 | 100 14 | 4058.72 | $(37/2^{-})$ |
| 4096.1 | (35/2) | 1211.8 2 | 100 | 2884.32 | $(31/2^+)$ | 4792.9 | $(41/2^{-})$ | 848.1 <i>1</i> | 100 | 3944.84 | $(37/2^{-})$ |
| 4113.07 | (35/2) | 368.9 1 | 100 5 | 3744.10 | (33/2) | 4843.51 | $(41/2^+)$ | 414.4 2 | 13 4 | 4429.02 | $(39/2^+)$ |
| | | 400 | | 3713.14 | $(35/2^{-})$ | | | 820.6 1 | 100 11 | 4022.94 | $(37/2^+)$ |
| | | 738.2 1 | 57 6 | 3374.95 | $(33/2^{-})$ | 4966.3 | $(39/2^+)$ | 727.3 4 | 100 | 4238.95 | $(35/2^+)$ |
| | | 1064 | | 3048.61 | $(31/2^{-})$ | 5010.9 | (39/2) | 812.3 2 | 100 | 4198.62 | (35/2) |
| 4198.62 | (35/2) | 382.7 1 | 100 16 | 3815.71 | (33/2) | 5065.2 | $(41/2^+)$ | 689.4 <i>3</i> | 100 | 4375.81 | $(37/2^+)$ |
| | | 745.9 <i>1</i> | 100 13 | 3452.48 | (31/2) | 5076.33 | $(43/2^{-})$ | 326.9 2 | 34 17 | 4749.60 | $(41/2^{-})$ |
| 4206.31 | $35/2^+$ | 353.9 1 | 43 7 | 3852.37 | $33/2^{+}$ | | | 674.7 <i>1</i> | 100 10 | 4401.60 | $(39/2^{-})$ |
| | | 714.3 1 | 100 21 | 3492.06 | $31/2^{+}$ | 5099.32 | (41/2) | 753.4 <i>1</i> | 100 | 4345.92 | (37/2) |
| 4238.95 | $(35/2^+)$ | 340.7 2 | 24 12 | 3898.28 | $(33/2^+)$ | 5266.53 | $(43/2^+)$ | 423.1 2 | 16 6 | 4843.51 | $(41/2^+)$ |
| | | 667.8 <i>1</i> | 100 20 | 3571.14 | $(31/2^+)$ | | | 837.5 1 | 100 13 | 4429.02 | $(39/2^+)$ |
| 4345.92 | (37/2) | 323.1 <i>1</i> | 19 6 | 4022.94 | $(37/2^+)$ | 5440.3 | (41/2) | 842.6 2 | 100 | 4597.66 | (37/2) |
| | | 702.0 1 | 100 13 | 3643.79 | (33/2) | 5454.21 | $(45/2^{-})$ | 377.9 <i>1</i> | 62 15 | 5076.33 | $(43/2^{-})$ |
| 4375.81 | $(37/2^+)$ | 604.7 <i>1</i> | 100 | 3771.11 | $(33/2^+)$ | | | 704.6 1 | 100 23 | 4749.60 | $(41/2^{-})$ |
| 4401.60 | $(39/2^{-})$ | 342.8 1 | 26 6 | 4058.72 | $(37/2^{-})$ | 5511.0 | (43/2) | 788.4 <i>3</i> | 100 | 4722.63 | (39/2) |
| | | 688.5 <i>1</i> | 100 7 | 3713.14 | $(35/2^{-})$ | 5691.72 | $(45/2^+)$ | 426 | | 5266.53 | $(43/2^+)$ |
| 4429.02 | $(39/2^+)$ | 406.0 1 | 14 <i>3</i> | 4022.94 | $(37/2^+)$ | | | 848.2 1 | 100 14 | 4843.51 | $(41/2^+)$ |
| | | 800.4 1 | 100 8 | 3628.66 | $(35/2^+)$ | 5706.1 | $(45/2^{-})$ | 913.2 <i>3</i> | 100 | 4792.9 | $(41/2^{-})$ |
| 4488.3 | (37/2) | 1240.0 5 | 100 | 3248.30 | $(33/2^+)$ | 5769.72 | $(47/2^{-})$ | 315.4 5 | <14 | 5454.21 | $(45/2^{-})$ |
| 4510.77 | (37/2) | 397.7 <i>1</i> | 100 8 | 4113.07 | (35/2) | | | 693.4 <i>1</i> | 100 14 | 5076.33 | $(43/2^{-})$ |
| | | 797.6 <i>3</i> | 16 <i>3</i> | 3713.14 | $(35/2^{-})$ | 5838.3 | $(45/2^+)$ | 773.1 5 | 100 | 5065.2 | $(41/2^+)$ |
| | | 1136 | | 3374.95 | $(33/2^{-})$ | 6131.5 | $(47/2^+)$ | 865.0 2 | 100 | 5266.53 | $(43/2^+)$ |
| 4595.9 | $(37/2^+)$ | 697.6 2 | 100 | 3898.28 | $(33/2^+)$ | 6178.1 | $(49/2^{-})$ | 408.4 2 | 100 33 | 5769.72 | $(47/2^{-})$ |
| 4597.66 | (37/2) | 398.6 [°] 1 | 52 10 | 4198.62 | (35/2) | | | 723.9 <i>3</i> | 50 <i>33</i> | 5454.21 | $(45/2^{-})$ |
| | | 782.4 [°] 1 | 100 16 | 3815.71 | (33/2) | 6211.2 | $(49/2^{-})$ | 757 | 100 | 5454.21 | $(45/2^{-})$ |
| 4722.63 | (39/2) | 735.7 1 | 100 | 3986.92 | (35/2) | 6569.8 | $(49/2^+)$ | 878.1 <i>3</i> | 100 | 5691.72 | $(45/2^+)$ |
| 4749.60 | $(41/2^{-})$ | 348.0 1 | 25 6 | 4401.60 | (39/2 ⁻) | 7012.5 | $(51/2^+)$ | 881 | 100 | 6131.5 | $(47/2^+)$ |

[†] Additional information 2.
[‡] From ¹⁷⁶Yb(¹¹B,4nγ), except As noted.
[#] From conversion electron data (1960Ne03, 1968Ha39, 1970Ak01) In ε decay, except As noted.

^(e) from $\gamma(\theta)$ (1968Ne01,1974Si14) In ¹⁸¹Ta(α ,2n γ), assigning $\Delta \pi$ =(No) for intraband transitions. ^(e) From $\gamma(\theta)$ In ¹⁷⁶Yb(¹¹B,4n γ), assigning $\Delta \pi$ =(No) for intraband transitions. ^{*a*} From ¹⁸³Os ε decay (13.0 h). ^{*b*} From ¹⁸³Os ε decay (9.9 h).

^c Fits placement poorly.

^d Placement of transition in the level scheme is uncertain.

Level Scheme





Level Scheme (continued)

Intensities: Relative photon branching from each level



¹⁸³₇₅Re₁₀₈

Level Scheme (continued)



¹⁸³₇₅Re₁₀₈

Level Scheme (continued)



¹⁸³₇₅Re₁₀₈

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

 $--- \rightarrow \gamma$ Decay (Uncertain)



¹⁸³₇₅Re₁₀₈

Level Scheme (continued)



Level Scheme (continued)



Level Scheme (continued)



 $^{183}_{75}$ Re $_{108}$

Level Scheme (continued)

Intensities: Relative photon branching from each level



¹⁸³₇₅Re₁₀₈

Level Scheme (continued)

Intensities: Relative photon branching from each level



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Level Scheme (continued)



¹⁸³₇₅Re₁₀₈

Level Scheme (continued)

Intensities: Relative photon branching from each level



 $^{183}_{75}\mathrm{Re}_{108}$

Legend

Level Scheme (continued)



 $^{183}_{75}\mathrm{Re}_{108}$





 $^{183}_{75}$ Re $_{108}$ -31

From ENSDF

 $^{183}_{75}\mathrm{Re}_{108}\text{--}31$

Level Scheme (continued)

Intensities: Relative photon branching from each level



¹⁸³₇₅Re₁₀₈



 $^{183}_{75}\mathrm{Re}_{108}$





 $^{183}_{75}$ Re $_{108}$

Band(K): 3/2[411]? band

(3/2+) 1353.74

Band(J): 11/2[505] band

(11/2)- 1304.18

Band(I): 1/2[411] band

(3/2)+ 1107.88

(1/2)+ 1101.95

Band(H): 3/2[532] band

(3/2) 1066.10

¹⁸³₇₅Re₁₀₈





 $^{183}_{75}\mathrm{Re}_{108}$



¹⁸³₇₅Re₁₀₈

Adopted Levels, Gammas (continued)



 $^{183}_{75}\mathrm{Re}_{108}$