

**MASTER**

Assigned Lines of the  $A^1\Sigma^+ - X^1\Sigma^+$  Bands of  
 $^6\text{LiH}$ ,  $^6\text{LiD}$ ,  $^7\text{LiH}$  and  $^7\text{LiD}$

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The lines given here have been assigned to the  $A^1\Sigma^+ - X^1\Sigma^+$  transitions of the isotopic variants of lithium hydride. The  $^7\text{LiD}$  and most of the  $^7\text{LiH}$  lines are taken from the thesis of Jorgensen [1] (which is difficult to obtain). The  $^6\text{LiH}$ ,  $^6\text{LiD}$  and some of the  $^7\text{LiH}$  lines are taken from the thesis of Li [2] and are a subset of the observed emission lines reported in companion reports (COQ-2326-17,18,19). Spectral constant determinations from these lines and construction of improved Rydberg-Klein-Rees potential energy curves (including Born-Oppenheimer breakdown) is in progress and will be reported elsewhere (see [2].) These spectra are now being compared with spectra obtained in this laboratory from collisions of fast ( $\sim 5$  eV) H atoms with a  $\text{Li}_2$  crossed beam.

#### References

1. T. Jorgensen, Jr., Ph.D. Thesis, Harvard University (1935).
2. K.C. Li, Ph.D. Thesis, University of Iowa (1976).

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Observed  $A^1\Sigma^+ - X^1\Sigma^+$  bands of  ${}^6\text{LiH}$

| J  | ( 3- 0)  |          | ( 4- 0)   |          |
|----|----------|----------|-----------|----------|
|    | R(J)     | P(J)     | R(J)      | P(J)     |
| 0  | 26883.85 |          | 27240.91  |          |
| 1  | 26880.53 | 26862.90 | 27237.63  | 27219.87 |
| 2  | 26867.93 | 26838.62 | 27225.15  | 27195.62 |
| 3  | 26846.49 | 26805.13 | 27203.55  | 27162.25 |
| 4  | 26815.60 | 26762.64 | 27172.64  | 27119.64 |
| 5  | 26775.34 | 26711.02 | 27132.55  | 27068.07 |
| 6  | 26726.44 | 26650.43 | 27083.42  | 27007.53 |
| 7  | 26668.19 | 26580.93 | 27025.17  | 26938.02 |
| 8  | 26600.79 |          | 26957.91  | 26859.67 |
| 9  | 26524.56 | 26415.35 | 26881.73  | 26772.54 |
| 10 | 26439.00 | 26319.33 | 26796.57  | 26676.68 |
| 11 |          | 26215.13 | 26702.43  | 26572.28 |
| 12 | 26241.46 | 26102.35 | 26595.58  | 26459.31 |
| 13 | 26130.07 | 25980.49 | 26488.06  | 26338.23 |
| 14 | 26009.29 | 25850.41 | 26367.85  | 26208.17 |
| 15 | 25880.27 |          | 26239.56  | 26070.54 |
| 16 | 25742.58 | 25565.98 | 26102.35  | 25924.82 |
| 17 |          | 25411.59 | 25957.62* | 25770.86 |
| 18 | 25442.32 | 25249.72 | 25803.85* | 25609.40 |
| 19 | 25279.63 | 25079.02 | 25643.18* | 25440.28 |
| 20 | 25109.89 |          | 25473.13  | 25263.40 |
| 21 |          |          | 25296.49  | 25079.39 |
| 22 |          |          | 25111.90  | 24888.17 |
| 23 |          |          | 24919.78  | 24685.79 |
| 24 |          |          | 24721.17  | 24484.78 |
| 25 |          |          |           | 24273.06 |
| 26 |          |          |           |          |
| 27 |          |          |           |          |
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| J  | ( 5- 0)   |           | ( 6- 0)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 27611.01  |           | 27991.26  |           |
| 1  | 27608.23* | 27589.96  | 27987.80  | 27970.05  |
| 2  | 27595.24  | 27565.80  | 27975.09  | 27945.89  |
| 3  | 27573.46  | 27532.32  | 27953.31  | 27912.12* |
| 4  | 27542.26  | 27489.76  | 27922.33  | 27869.64  |
| 5  | 27502.43  | 27438.07  | 27881.89  | 27817.88  |
| 6  | 27453.16  | 27377.42  | 27832.22* | 27757.07  |
| 7  | 27394.82  | 27307.78  | 27773.89  | 27687.25  |
| 8  | 27327.44  | 27229.40  | 27706.28  | 27608.23* |
| 9  | 27251.10  | 27142.11  | 27629.57  | 27521.14  |
| 10 | 27165.81  | 27046.20  | 27544.15  | 27424.92  |
| 11 | 27071.87  | 26941.64  | 27449.78  | 27320.20  |
| 12 | 26969.09  | 26828.70  | 27346.74  | 27206.96  |
| 13 | 26857.59  | 26707.35  | 27235.13  | 27085.56* |
| 14 | 26737.85  | 26577.69  | 27114.92  | 26955.46  |
| 15 | 26608.92  | 26440.02  | 26986.58* | 26817.53  |
| 16 | 26472.40  | 26294.19  | 26849.40  | 26671.49  |
| 17 | 26327.64  | 26140.62  | 26704.33  | 26517.67  |
| 18 | 26174.64  | 25979.18  | 26551.26  | 26356.29  |
| 19 | 26013.40  | 25810.30  | 26390.65* | 26187.15  |
| 20 | 25844.86  | 25633.94  | 26221.75  | 26010.99  |
| 21 | 25668.33  | 25450.24  | 26045.46  | 25827.26  |
| 22 | 25484.82  | 25260.00* | 25861.58* | 25636.58  |
| 23 | 25293.68  | 25061.61* | 25670.96  | 25439.00  |
| 24 | 25095.48  | 24857.42  | 25473.13  | 25234.58  |
| 25 | 24890.44  | 24646.35  | 25267.99  | 25023.56  |
| 26 | 24678.81  | 24429.04  | 25056.10  | 24806.31  |
| 27 |           |           |           |           |
| 28 |           |           |           |           |
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| 34 |           |           |           |           |

| J  | ( 7- 0)   |           | ( 8- 0)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 28378.20  |           | 28770.38* |           |
| 1  | 28374.76  | 28357.31  | 28766.48  | 28749.20  |
| 2  | 28362.02  | 28332.90  | 28753.58  | 28724.77  |
| 3  | 28339.97  | 28299.26  | 28731.33  | 28691.04  |
| 4  | 28308.65  | 28256.49  | 28699.76  | 28648.10  |
| 5  | 28268.14  | 28204.54  | 28658.96  | 28595.90  |
| 6  | 28218.42  | 28143.58  | 28608.86  | 28534.66  |
| 7  | 28159.52  | 28073.58  | 28549.58  | 28464.45  |
| 8  | 28091.58  | 27994.63  | 28481.48* | 28385.08  |
| 9  | 28014.62  | 27906.82  | 28403.74  | 28296.90  |
| 10 | 27928.62  | 27810.32  | 28317.29  | 28200.00  |
| 11 | 27833.96  | 27704.66* | 28222.02  | 28094.33  |
| 12 | 27730.71* | 27591.50  | 28117.95  | 27980.15  |
| 13 | 27618.34  | 27469.62  | 28004.98* | 27857.53  |
| 14 | 27497.71  | 27335.20  | 27883.93  | 27726.66  |
| 15 | 27368.60  | 27200.70  | 27754.14  | 27587.50  |
| 16 | 27231.38  | 27054.07* | 27616.04  | 27440.38  |
| 17 | 27085.56* | 26900.02  | 27469.62* | 27285.58  |
| 18 | 26932.42  | 26737.85* | 27315.67  | 27122.57  |
| 19 | 26771.00  | 26568.70  | 27153.68  | 26952.73  |
| 20 | 26601.99  | 26391.87  | 26983.84  | 26775.34* |
| 21 | 26425.31  | 26208.17* | 26806.63  | 26590.42  |
| 22 | 26241.46  | 26017.14* | 26621.87  | 26398.55  |
| 23 | 26050.13  | 25818.82  | 26429.71* | 26200.08* |
| 24 | 25851.82  | 25614.19  | 26230.98  | 25994.63  |
| 25 | 25646.82  | 25403.02  | 26025.19  | 25782.84  |
| 26 | 25434.52* | 25185.52  | 25812.70  | 25564.57  |
| 27 | 25216.69  | 24962.01  | 25593.72  | 25340.35  |
| 28 | 24991.92  | 24732.39  | 25368.49  | 25110.14  |
| 29 | 24761.26  | 24497.20* | 25137.10  | 24874.13  |
| 30 | 24524.74* | 24255.87  |           | 24622.78* |
| 31 |           |           |           |           |
| 32 |           |           |           |           |
| 33 |           |           |           |           |
| 34 |           |           |           |           |

| J  | ( 9- 0)   |           | (10- 0)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 29164.58  |           | 29559.81  |           |
| 1  | 29160.93  | 29143.84  | 29556.32  | 29538.63* |
| 2  | 29147.84  | 29119.33  | 29543.01  | 29514.51  |
| 3  | 29125.36  | 29085.44  | 29520.26  | 29480.73  |
| 4  | 29093.44  | 29042.02* | 29488.26* | 29437.49  |
| 5  | 29052.21  | 28989.56  |           | 29384.87  |
| 6  | 29001.95* | 28928.37  | 29395.32  | 29322.87  |
| 7  | 28941.95  | 28857.71  | 29335.01  | 29251.62  |
| 8  | 28873.09  | 28777.57  | 29265.47  | 29171.59  |
| 9  | 28795.08  | 28689.37  | 29186.80  | 29082.37  |
| 10 | 28707.96  | 28591.86  | 29098.57  | 28984.02  |
| 11 | 28611.94  | 28485.92* | 29001.95  | 28877.40  |
| 12 | 28507.20  | 28370.82  | 28896.44  | 28761.81  |
| 13 | 28393.67  | 28247.51  | 28782.31  | 28637.69  |
| 14 | 28271.59  | 28115.88  | 28658.96  | 28505.18  |
| 15 | 28140.98  | 27976.17* | 28527.44  | 28364.37  |
| 16 | 28002.14  | 27828.19  | 28387.36  | 28215.59  |
| 17 | 27854.96  | 27672.29  | 28239.08  | 28058.75  |
| 18 | 27699.68  | 27508.86  | 28082.77  | 27894.17  |
| 19 | 27536.65  | 27337.58  | 27918.53  | 27721.90  |
| 20 | 27365.85  | 27159.14  | 27746.42  | 27542.26  |
| 21 | 27187.48  | 26973.37  | 27566.79  | 27354.84  |
| 22 | 27001.75  | 26780.62  | 27379.56  | 27160.87  |
| 23 | 26808.77  | 26580.93  | 27185.15  | 26960.01  |
| 24 | 26608.92* | 26374.54  | 26983.84  | 26752.33  |
| 25 | 26401.44  | 26162.14* | 26775.34  | 26538.04  |
| 26 | 26188.28* | 25942.50  | 26560.19  | 26317.41  |
| 27 | 25967.93* | 25717.02  | 26338.23* | 26090.56  |
| 28 | 25739.54* | 25485.81  | 26110.59  | 25857.74  |
| 29 | 25507.67  | 25248.57  | 25876.53  | 25619.22  |
| 30 | 25267.99* | 25003.72* | 25636.58* | 25375.04  |
| 31 | 25023.57  | 24757.94* | 25389.66* | 25125.47  |
| 32 |           |           | 25138.29  |           |
| 33 |           |           |           |           |
| 34 |           |           |           |           |

| J  | (11- 0)   |           | (12- 0)   |          |
|----|-----------|-----------|-----------|----------|
|    | R(J)      | P(J)      | R(J)      | P(J)     |
| 0  | 29954.86  |           | 30347.77  |          |
| 1  | 29951.11  | 29934.54  | 30343.62  | 30327.43 |
| 2  | 29937.60  | 29909.83  | 30329.86  | 30302.58 |
| 3  | 29914.48  | 29875.82  | 30306.40  | 30268.15 |
| 4  | 29881.86  | 29832.14  | 30273.33  | 30224.30 |
| 5  | 29839.73  | 29779.12  | 30230.65  | 30170.87 |
| 6  | 29788.17  | 29716.77  | 30178.49  | 30108.08 |
| 7  | 29727.25  | 29645.16  | 30116.87  | 30036.16 |
| 8  | 29657.08  | 29564.34  | 30045.61  | 29954.86 |
| 9  | 29577.45  | 29474.28  | 29965.50  | 29864.29 |
| 10 | 29488.26* | 29375.71  | 29875.82  | 29764.99 |
| 11 | 29390.94  | 29267.97  | 29777.11  | 29656.07 |
| 12 | 29284.34  | 29151.62  | 29669.23  | 29538.63 |
| 13 | 29168.81  | 29026.55  | 29552.15  | 29412.56 |
| 14 | 29044.58  | 28893.09  | 29426.95  | 29278.07 |
| 15 | 28911.79  | 28751.20  | 29292.56  | 29134.91 |
| 16 | 28770.38  | 28601.22  | 29150.13  | 28984.02 |
| 17 | 28620.93  | 28443.21  | 28999.02  | 28824.28 |
| 18 | 28463.10  | 28277.34  | 28839.71  | 28656.98 |
| 19 | 28297.14  | 28103.79  | 28672.34  | 28481.48 |
| 20 | 28123.64  | 27922.33  | 28497.00  | 28299.26 |
| 21 | 27942.71  | 27734.24  | 28313.97  | 28109.09 |
| 22 | 27754.14  | 27538.49  | 28123.64  | 27912.12 |
| 23 | 27557.80  | 27335.98  | 27925.33* | 27707.41 |
| 24 | 27354.84  | 27126.57  | 27721.90  | 27495.96 |
| 25 | 27144.42  | 26910.59  | 27508.86* | 27278.03 |
| 26 | 26927.38  | 26688.27  | 27291.71  | 27054.07 |
| 27 | 26704.33  | 26459.31  |           |          |
| 28 | 26473.99  | 26225.07* |           |          |
| 29 | 26237.86  | 25984.58  |           |          |
| 30 | 25955.69  |           |           |          |
| 31 |           |           |           |          |
| 32 |           |           |           |          |
| 33 |           |           |           |          |
| 34 |           |           |           |          |

| J  | (13- 0)  |           | (14- 0)   |           |
|----|----------|-----------|-----------|-----------|
|    | R(J)     | P(J)      | R(J)      | P(J)      |
| 0  | 30736.52 |           |           |           |
| 1  | 30732.26 | 30716.36  | 31116.90  |           |
| 2  | 30718.55 | 30691.86  |           | 31076.06  |
| 3  | 30694.71 | 30657.23  | 31078.16  | 31041.01* |
| 4  | 30661.09 | 30612.88  | 31044.20  | 30957.21  |
| 5  | 30617.88 | 30558.95  | 31000.36  | 30942.36* |
| 6  | 30565.06 | 30495.96  | 30946.57  | 30879.13  |
| 7  | 30502.67 | 30423.29  | 30883.34  | 30805.80  |
| 8  | 30430.73 | 30341.28  | 30810.43  | 30722.84  |
| 9  | 30349.39 | 30250.03  | 30728.09  | 30630.60  |
| 10 | 30258.74 | 30149.64  | 30636.19  | 30529.19  |
| 11 | 30158.83 | 30039.65* | 30534.72  | 30418.83  |
| 12 | 30049.92 | 29921.71  | 30424.67  | 30299.09  |
| 13 | 29931.64 | 29794.53  | 30305.05  | 30170.87  |
| 14 | 29804.94 | 29658.69  | 30176.70  | 30033.51  |
| 15 | 29669.23 | 29514.51  | 30039.65* | 29887.73  |
| 16 | 29524.75 | 29361.46  | 29893.23  | 29733.39  |
| 17 | 29371.96 | 29200.83  | 29738.52  | 29570.85  |
| 18 | 29210.89 | 29031.64  | 29575.17  | 29399.93  |
| 19 | 29042.02 | 28855.17  | 29403.87  | 29221.23  |
| 20 | 28864.23 | 28670.37  | 29224.32  | 29034.72  |
| 21 | 28679.20 | 28478.40  | 29036.80  | 28839.71* |
| 22 | 28485.92 | 28279.08  | 28841.62  | 28639.04  |
| 23 | 28286.06 | 28072.46  | 28639.04  | 28430.41  |
| 24 | 28078.52 | 27859.16  | 28428.08  | 28214.24  |
| 25 | 27863.68 | 27638.81  | 28210.66  | 27991.14  |
| 26 | 27641.84 | 27411.91  | 27985.69  | 27761.60  |
| 27 | 27413.37 | 27178.48  | 27754.02  | 27525.71  |
| 28 | 27178.48 | 26939.55  |           | 27283.28  |
| 29 | 26936.69 | 26694.04  |           | 27033.93  |
| 30 | 26689.03 | 26442.32  |           |           |
| 31 |          |           |           |           |
| 32 |          |           |           |           |
| 33 |          |           |           |           |
| 34 |          |           |           |           |

| J  | (15- 0)  |          | ( 1- 1)   |          |
|----|----------|----------|-----------|----------|
|    | R(J)     | P(J)     | R(J)      | P(J)     |
| 0  |          |          | 24853.51  |          |
| 1  |          |          | 24850.66  | 24832.72 |
| 2  |          |          | 24839.35  | 24810.39 |
| 3  |          |          | 24818.48* | 24777.21 |
| 4  |          |          | 24789.48  | 24736.84 |
| 5  |          |          | 24751.38  | 24687.23 |
| 6  |          |          | 24703.54  | 24629.24 |
| 7  | 31257.87 | 31181.40 | 24647.93  | 24561.94 |
| 8  | 31183.50 | 31098.08 | 24583.24  | 24486.68 |
| 9  | 31099.97 | 31004.88 | 24509.39  | 24402.67 |
| 10 | 31006.88 | 30902.35 | 24427.26  | 24309.58 |
| 11 | 30904.24 | 30790.66 | 24335.05  | 24208.84 |
| 12 | 30792.39 | 30669.68 | 24234.91  | 24099.50 |
| 13 | 30671.11 | 30539.87 |           | 23980.63 |
| 14 | 30540.91 | 30401.37 | 24007.30  |          |
| 15 | 30401.37 | 30253.61 | 23881.82  | 23720.90 |
| 16 | 30253.61 | 30097.79 | 23747.43  |          |
| 17 | 30096.67 | 29933.11 | 23603.70  | 23427.29 |
| 18 | 29931.64 | 29760.50 | 23452.87  | 23268.26 |
| 19 | 29757.50 | 29579.57 | 23292.07  |          |
| 20 | 29575.17 | 29390.94 |           | 22927.68 |
| 21 |          |          |           |          |
| 22 |          |          |           |          |
| 23 |          |          |           |          |
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| J  | ( 2- 1)  |          | ( 3- 1)   |           |
|----|----------|----------|-----------|-----------|
|    | R(J)     | P(J)     | R(J)      | P(J)      |
| 0  | 25170.69 |          | 25510.61  |           |
| 1  | 25167.95 | 25149.95 | 25507.67  | 25485.46* |
| 2  | 25156.07 | 25126.83 | 25495.99  | 25466.60  |
| 3  | 25135.89 | 25094.63 | 25475.89  | 25434.52  |
| 4  | 25106.68 | 25053.84 | 25446.52  | 25353.69  |
| 5  | 25068.78 | 25004.23 | 25408.73  | 25344.33  |
| 6  | 25022.03 | 24946.45 | 25362.40  | 25286.28  |
| 7  | 24966.56 | 24880.04 | 25307.09  | 25219.52  |
| 8  | 24902.30 | 24804.65 | 25243.11  | 25145.10  |
| 9  | 24829.41 | 24721.17 | 25170.69  | 25061.61  |
| 10 | 24747.95 | 24629.24 | 25089.72  | 24970.14  |
| 11 | 24657.48 | 24528.97 | 25000.23  | 24870.39  |
| 12 | 24559.36 | 24420.77 | 24902.30  | 24762.34  |
| 13 | 24451.89 | 24303.88 | 24755.80  | 24646.35  |
| 14 | 24336.21 | 24179.16 | 24681.46* | 24522.26  |
| 15 | 24211.81 | 24046.67 | 24558.27  | 24390.45  |
| 16 | 24079.75 | 23905.86 | 24427.36  | 24250.88  |
| 17 | 23939.02 | 23756.52 | 24288.28  | 24102.81  |
| 18 | 23790.51 |          | 24141.60  | 23948.86  |
| 19 |          |          | 23987.08  | 23785.51* |
| 20 |          |          | 23825.07  | 23617.65  |
| 21 |          |          | 23655.63* | 23440.74  |
| 22 |          |          | 23478.14  | 23257.31  |
| 23 |          |          | 23293.82  | 23066.50  |
| 24 |          |          |           | 22865.85  |
| 25 |          |          |           |           |
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| J  | ( 4- 1)   |          | ( 5- 1)  |           |
|----|-----------|----------|----------|-----------|
|    | R(J)      | P(J)     | R(J)     | P(J)      |
| 0  | 25867.53  |          | 26237.86 |           |
| 1  | 25864.82  | 25847.08 | 26234.87 | 26217.18  |
| 2  | 25853.29  | 25823.87 | 26223.25 | 26193.67  |
| 3  | 25832.89  | 25791.59 | 26202.95 | 26162.14* |
| 4  | 25803.85  | 25751.11 | 26173.51 | 26120.81  |
| 5  | 25765.90  | 25701.44 | 26135.60 | 26071.43  |
| 6  | 25719.40  | 25643.18 | 26088.87 | 26013.40  |
| 7  | 25664.27  | 25576.86 | 26033.78 | 25946.77  |
| 8  | 25600.12  | 25502.06 | 25969.83 | 25871.76  |
| 9  | 25527.94  | 25418.84 | 25897.42 | 25788.60  |
| 10 | 25446.92  | 25327.34 | 25816.58 | 25696.80  |
| 11 | 25357.94  | 25227.49 | 25727.23 | 25596.96  |
| 12 | 25260.00  | 25119.89 | 25629.38 | 25489.46  |
| 13 | 25154.24  | 25004.23 | 25523.63 | 25373.28  |
| 14 | 25040.28  | 24880.04 | 25409.86 | 25249.72  |
| 15 | 24917.74  | 24748.88 | 25287.65 | 25118.28  |
| 16 | 24787.60  | 24609.84 | 25157.63 | 24979.31  |
| 17 | 24649.47  | 24463.10 | 25019.74 | 24832.72  |
| 18 | 24503.67  |          | 24874.13 | 24678.81  |
| 19 | 24350.09  | 24147.70 | 24721.17 | 24518.03  |
| 20 |           | 23979.14 | 24560.69 | 24350.09  |
| 21 | 24020.41* | 23803.64 | 24392.73 | 24174.74  |
| 22 | 23845.22  | 23621.69 | 24218.07 | 23992.96  |
| 23 | 23662.85  | 23432.48 | 24036.32 | 23804.70  |
| 24 | 23473.45  | 23237.01 | 23847.63 | 23610.16  |
| 25 | 23278.16* | 23035.11 | 23652.62 | 23408.87  |
| 26 | 23074.36  | 22826.26 | 23450.87 | 23201.85  |
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| J  | ( 6- 1)   |           | ( 7- 1)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 26617.73  |           |           |           |
| 1  | 26614.77  | 26557.23  | 27001.75  |           |
| 2  | 26603.11  | 26573.73  | 26989.80  | 26960.01* |
| 3  | 26582.55  | 26541.59  | 26969.09  | 26925.58* |
| 4  | 26553.07  |           | 26939.55  | 26887.43  |
| 5  | 26514.58  | 26450.57  | 26901.33  | 26837.61  |
| 6  | 26468.15  | 26392.90  | 26854.12  | 26775.37  |
| 7  | 26412.72  | 26326.18  | 26798.30  | 26712.47  |
| 8  | 26348.59  | 26250.85  | 26733.83  | 26636.55  |
| 9  | 26275.91  | 26167.45  | 26660.77  | 26552.07  |
| 10 | 26194.86  | 26075.48  | 26579.25  | 26460.82  |
| 11 | 26105.16  | 25975.63  | 26489.26  | 26360.38  |
| 12 | 26007.35  | 25867.53  | 26390.65* | 26252.03  |
| 13 | 25901.29  | 25751.11* | 26284.46  | 26135.60  |
| 14 | 25786.90  | 25627.28  | 26169.59  | 26010.99  |
| 15 | 25664.27* | 25495.59  | 26046.94  | 25875.11  |
| 16 | 25534.91* | 25356.61  | 25916.48  | 25739.54  |
| 17 | 25396.68  | 25209.99  | 25778.13  | 25592.32  |
| 18 | 25251.17  | 25056.16* | 25632.07  | 25437.68  |
| 19 | 25098.05  | 24894.73  | 25478.67  | 25276.31  |
| 20 | 24937.47  | 24726.56  | 25317.93* | 25107.85  |
| 21 | 24770.00  | 24551.98* | 25149.84  | 24932.19  |
| 22 | 24595.17  | 24369.78  | 24974.69  | 24750.12  |
| 23 | 24413.61  | 24181.56  | 24792.81  | 24561.94* |
| 24 | 24225.14  | 23987.08  | 24604.03  | 24366.53  |
| 25 | 24030.18  | 23785.91  | 24409.14  | 24165.29  |
| 26 | 23828.87  | 23579.14  | 24207.48  | 23958.23  |
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| J  | ( 8- 1)  |          | (11- 1)   |           |
|----|----------|----------|-----------|-----------|
|    | R(J)     | P(J)     | R(J)      | P(J)      |
| 0  |          |          |           |           |
| 1  |          |          | 28578.23  | 28561.59  |
| 2  |          |          | 28565.76  | 28537.80  |
| 3  |          |          | 28543.71  | 28505.18  |
| 4  | 27330.78 |          | 28512.95  | 28463.10  |
| 5  | 27291.71 |          | 28472.93  | 28412.28  |
| 6  | 27244.31 | 27170.26 | 28424.00  | 28352.53  |
| 7  |          | 27102.72 | 28366.02  | 28284.02  |
| 8  |          | 27027.40 | 28299.26  | 28206.78  |
| 9  | 27050.18 | 26943.32 | 28223.62  | 28120.75  |
| 10 | 26967.73 |          | 28139.22  | 28026.27  |
| 11 | 26877.24 | 26749.45 | 28046.45  | 27923.42  |
| 12 | 26778.25 | 26640.13 | 27944.70  | 27811.59  |
| 13 | 26671.49 | 26523.28 | 27835.27* | 27692.46  |
| 14 | 26555.88 | 26398.55 | 27716.57  | 27564.91  |
| 15 | 26432.34 | 26265.18 | 27589.96  | 27429.44  |
| 16 | 26301.09 | 26125.58 | 27455.33  |           |
| 17 | 26162.16 | 25977.79 | 27313.37* | 27135.40  |
| 18 | 26015.71 | 25822.70 | 27162.25* | 26976.99* |
| 19 | 25861.58 | 25660.40 |           | 26811.18  |
| 20 | 25699.84 | 25491.17 |           |           |
| 21 |          | 25315.02 |           |           |
| 22 |          | 25132.11 |           |           |
| 23 |          |          |           |           |
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| J  | (12- 1)  |           | (13- 1)  |          |
|----|----------|-----------|----------|----------|
|    | R(J)     | P(J)      | R(J)     | P(J)     |
| 0  | 28574.61 |           | 29363.72 |          |
| 1  | 28971.09 | 28954.47  | 29359.91 |          |
| 2  | 28558.06 | 28930.58  | 29346.64 | 29320.03 |
| 3  | 28935.79 | 28857.70  | 29324.20 | 29286.86 |
| 4  | 28904.40 | 28855.17  | 29292.56 | 29244.18 |
| 5  | 28864.23 | 28804.26  | 29251.62 | 29192.70 |
| 6  | 28814.29 | 28744.15  | 29200.83 | 29132.05 |
| 7  | 28755.81 | 28675.03  | 29141.68 | 29062.34 |
| 8  | 28688.17 | 28597.57* | 29073.15 | 28984.02 |
| 9  | 28611.94 | 28510.46  | 28995.75 | 28896.44 |
| 10 | 28526.36 | 28415.19  | 28909.44 | 28800.22 |
| 11 | 28432.40 | 28311.33  | 28814.29 | 28695.44 |
| 12 | 28329.68 | 28198.93  | 28710.36 | 28582.12 |
| 13 | 28218.42 | 28078.52  | 28597.57 | 28460.26 |
| 14 | 28099.35 | 27949.93  | 28476.83 | 28330.62 |
| 15 | 27571.12 | 27813.24  | 28347.46 | 28192.53 |
| 16 | 27835.27 | 27668.61  | 28209.84 | 28046.45 |
| 17 | 27690.30 | 27515.62  | 28064.03 | 27892.48 |
| 18 |          | 27356.62* | 27910.49 |          |
| 19 |          |           |          |          |
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| J  | (14- 1)  |           | (15- 1)   |           |
|----|----------|-----------|-----------|-----------|
|    | R(J)     | P(J)      | R(J)      | P(J)      |
| 0  | 29748.27 |           | 30126.58  |           |
| 1  | 29744.34 |           | 30122.10  |           |
| 2  | 29730.56 | 29704.38  | 30108.08  | 30082.61  |
| 3  | 29707.70 | 29670.95  | 30084.89  | 30049.92* |
| 4  | 29675.05 | 29628.62* | 30051.94  | 30005.81  |
| 5  | 29633.55 | 29575.17* | 30009.52  | 29953.17  |
| 6  | 29582.68 | 29514.51* | 29957.75  | 29891.71  |
| 7  | 29522.34 |           | 29896.64  | 29820.69  |
| 8  | 29452.83 | 29365.38  | 29826.16  | 29740.58  |
| 9  | 29374.44 | 29277.07  | 29746.51  | 29651.35  |
| 10 | 29286.86 | 29179.97  | 29657.08* |           |
| 11 | 29190.49 | 29074.23  | 29559.81  |           |
| 12 | 29085.44 | 28959.66  | 29452.83  | 29320.32  |
| 13 | 28971.09 | 28836.77  | 29337.29  | 29206.10  |
| 14 | 28848.69 | 28705.44  | 29213.02  | 29073.15  |
| 15 | 28717.58 | 28565.76  | 29080.05  | 28932.08  |
| 16 | 28578.23 | 28418.36  | 28938.67  | 28782.31* |
| 17 | 28430.41 | 28262.93  | 28788.94  | 28625.38  |
| 18 | 28274.97 | 28099.35  | 28631.16  | 28460.26  |
| 19 | 28111.47 | 27928.76  | 28464.45* | 28287.19  |
| 20 | 27940.11 |           | 28291.23* | 28106.64* |
| 21 |          |           | 28110.17  | 27920.39* |
| 22 |          |           | 27922.33* |           |
| 23 |          |           |           |           |
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| J  | (16- 1)   |           | ( 1- 2)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 30497.05  |           | 23526.61  |           |
| 1  | 30492.45  |           | 23523.90  | 23506.59* |
| 2  | 30478.05  | 30452.57  | 23513.04  | 23483.66  |
| 3  | 30454.28  | 30418.83* | 23493.78  | 23452.87  |
| 4  | 30420.67  | 30375.90  | 23466.09  | 23413.67  |
| 5  | 30377.48  | 30322.85  | 23430.00  | 23366.24  |
| 6  | 30324.88  | 30260.37  | 23386.44* | 23310.52  |
| 7  | 30262.53  | 30188.77  | 23332.69  | 23246.63  |
| 8  | 30191.18  | 30108.08* | 23271.03  | 23174.56  |
| 9  | 30110.24  | 30018.06* | 23201.11  | 23094.38  |
| 10 | 30019.96  | 29918.29  | 23122.75  | 23006.02  |
| 11 | 29920.55  | 29809.52  | 23036.08  | 22909.66  |
| 12 | 29812.11  | 29692.69  | 22940.81  | 22805.09  |
| 13 | 29694.79  | 29566.81  | 22837.26  | 22692.84  |
| 14 | 29568.31  | 29432.21  | 22725.32  | 22572.08  |
| 15 | 29433.23  | 29289.44  | 22605.31  | 22444.00  |
| 16 | 29289.44  | 29137.96  | 22476.55  | 22307.94  |
| 17 | 29137.96* | 28978.44  | 22340.62  | 22164.25  |
| 18 | 28976.90  | 28810.96  | 22196.29  | 22012.79  |
| 19 | 28808.15  | 28635.61  | 22044.30  | 21853.13* |
| 20 | 28631.16  | 28452.53  |           | 21687.69  |
| 21 | 28446.69  | 28261.77  |           | 21514.38  |
| 22 | 28254.25  | 28064.03  |           |           |
| 23 | 28053.55  |           |           |           |
| 24 |           | 27645.89  |           |           |
| 25 |           |           |           |           |
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| J  | ( 2- 2)   |           | ( 3- 2)   |          |
|----|-----------|-----------|-----------|----------|
|    | R(J)      | P(J)      | R(J)      | P(J)     |
| 0  | 23843.08  |           | 24182.82  |          |
| 1  | 23840.58  | 23823.00  | 24180.45  | 24162.60 |
| 2  | 23830.05  | 23800.34  | 24169.78  | 24140.20 |
| 3  | 23810.88  | 23769.75  | 24150.70  | 24109.21 |
| 4  | 23783.47  | 23730.40  | 24123.48  | 24070.58 |
| 5  | 23747.43  | 23683.17  | 24087.50  | 24023.07 |
| 6  | 23703.69  | 23627.93  | 24043.57  | 23967.81 |
| 7  | 23651.11  | 23564.71* | 23991.32  | 23904.13 |
| 8  | 23590.55  | 23492.33  | 23930.96  | 23832.55 |
| 9  | 23521.04  | 23412.74  | 23862.36  | 23752.47 |
| 10 | 23443.85  | 23325.05  | 23785.91* | 23666.10 |
| 11 | 23358.51  | 23229.65  | 23700.72  | 23571.26 |
| 12 | 23264.75  | 23126.30  | 23608.09  | 23467.90 |
| 13 | 23162.92  | 23015.15  | 23506.59  | 23357.26 |
| 14 | 23053.18  | 22896.35  | 23398.12  | 23239.32 |
| 15 | 22935.25* | 22770.10* | 23281.63  | 23113.71 |
| 16 | 22809.54  | 22635.52  | 23157.37  | 22980.60 |
| 17 | 22676.13  | 22494.46  | 23025.59  | 22840.55 |
| 18 | 22534.83  | 22345.45  | 22885.96  | 22692.84 |
| 19 | 22385.97  | 22189.38  | 22739.34  | 22538.76 |
| 20 | 22229.82  | 22026.29  | 22585.15  | 22377.29 |
| 21 |           | 21856.18  | 22423.78  | 22209.47 |
| 22 | 21895.34  | 21679.26  | 22255.44  | 22034.51 |
| 23 |           | 21495.76  |           | 21853.13 |
| 24 |           | 21305.81  | 21898.80  | 21665.84 |
| 25 |           | 21109.44  |           |          |
| 26 |           |           |           |          |
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| J  | ( 4- 2)   |           | ( 5- 2)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 24539.94  |           | 24910.11  |           |
| 1  | 24537.93* | 24519.84  | 24907.76  | 24890.43* |
| 2  | 24527.05  | 24497.20  | 24896.91  | 24867.44  |
| 3  | 24507.68  | 24466.42  | 24877.50  |           |
| 4  | 24480.40  | 24427.36  | 24850.66* | 24797.21* |
| 5  | 24444.74  | 24380.03  |           | 24750.12  |
| 6  | 24400.72  | 24324.68  | 24770.00* | 24694.66  |
| 7  | 24348.46  | 24261.42  | 24718.09  |           |
| 8  | 24288.28  |           | 24657.48  | 24555.36  |
| 9  | 24219.55  | 24110.50  | 24589.00  | 24480.40  |
| 10 | 24142.91  | 24023.07  | 24512.38  | 24392.73* |
| 11 | 24058.35  | 23927.99  | 24427.36* | 24297.46  |
| 12 | 23965.92  | 23825.07  | 24335.05  |           |
| 13 | 23865.16  | 23715.15  | 24234.91  | 24084.21  |
| 14 | 23756.92  | 23597.67* | 24126.07* | 23965.52* |
| 15 | 23641.16  | 23471.86* | 24010.36  | 23841.52  |
| 16 | 23517.41  | 23339.58  | 23887.10  | 23709.19  |
| 17 | 23386.40  | 23199.78  | 23756.92* | 23570.00  |
| 18 | 23247.96  | 23053.18  | 23618.74* | 23423.13  |
| 19 | 23102.25  | 22899.84  | 23473.45  | 23269.79  |
| 20 | 22949.26  | 22739.34  | 23320.94  | 23109.70  |
| 21 | 22789.49  | 22572.07  | 23161.49  | 22942.33  |
| 22 | 22622.57  | 22398.78  | 22995.65  | 22770.10* |
| 23 | 22449.27  | 22219.04  | 22822.76  | 22591.09  |
| 24 | 22268.96  |           | 22643.50  | 22406.28* |
| 25 |           |           | 22458.38  | 22214.69  |
| 26 |           |           | 22266.64  |           |
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| J  | ( 8- 2)   |           | ( 9- 2)   |          |
|----|-----------|-----------|-----------|----------|
|    | R(J)      | P(J)      | R(J)      | P(J)     |
| 0  | 26069.19  |           | 26463.61  |          |
| 1  | 26066.45  | 26050.13* | 26460.82* | 26443.70 |
| 2  | 26055.31  | 26026.90* | 26449.18* | 26421.00 |
| 3  | 26035.60  | 25995.69  | 26429.71  | 26389.65 |
| 4  | 26007.35* | 25955.85  | 26401.44  | 26350.09 |
| 5  | 25971.16  | 25908.19  | 26364.27  | 26302.08 |
| 6  | 25926.40  | 25851.82* | 26319.33  | 26245.69 |
| 7  | 25871.76* | 25786.90* | 26265.18  | 26180.94 |
| 8  | 25811.42  | 25715.25  | 26202.95* | 26106.22 |
| 9  | 25741.56  | 25634.82  | 26132.93  | 26026.90 |
| 10 |           | 25546.38  | 26054.29  | 25938.32 |
| 11 | 25578.07  | 25450.24  | 25967.93  | 25841.42 |
| 12 | 25483.97  | 25346.10  | 25873.16  | 25736.70 |
| 13 | 25382.31  | 25234.58  | 25770.86  | 25624.57 |
| 14 | 25272.79  |           | 25660.40  | 25504.76 |
| 15 | 25155.51  | 24988.90  | 25542.46  | 25377.68 |
| 16 | 25031.06  | 24855.29  | 25416.89  | 25243.11 |
| 17 | 24898.76  | 24714.73  | 25283.90  | 25101.57 |
| 18 | 24759.08* | 24566.80  | 25143.50  | 24952.59 |
| 19 | 24613.91* | 24412.23  | 24996.06  | 24797.21 |
| 20 | 24459.69  |           |           | 24635.06 |
| 21 |           |           |           |          |
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| J  | (10- 2)   |           | (11- 2)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  |           |           | 27254.01  |           |
| 1  | 26847.73* |           | 27251.10* |           |
| 2  | 26844.70  | 26815.60* | 27239.17  | 27211.43  |
| 3  | 26824.45  | 26785.39* | 27218.59  | 27179.94  |
| 4  | 26795.63  | 26745.23  | 27189.45  | 27139.69  |
| 5  | 26758.35  | 26696.82  | 27151.40* | 27091.05  |
| 6  | 26712.47* | 26640.13  | 27105.03  | 27033.93  |
| 7  | 26658.29  | 26575.03  | 27050.17  | 26967.73* |
| 8  | 26595.39  |           | 26986.58* | 26894.44  |
| 9  | 26524.56  | 26420.13  | 26915.26  | 26812.37  |
| 10 | 26445.33  | 26330.54  | 26835.11  | 26722.02  |
| 11 | 26357.93  | 26233.16  | 26746.79  | 26623.81  |
| 12 | 26262.61  | 26127.82  | 26650.43  | 26517.67  |
| 13 | 26159.01  | 26014.71  | 26545.76  | 26403.74  |
| 14 | 26047.88  | 25894.11  | 26433.43  | 26281.82  |
| 15 | 25928.83  | 25765.90* | 26313.14  | 26152.70  |
| 16 | 25802.17  | 25630.48* | 26185.35* | 26015.71  |
| 17 | 25668.33  | 25487.74  | 26050.13* | 25871.76* |
| 18 | 25526.51* | 25337.99  | 25906.91  | 25721.21  |
| 19 | 25377.68* | 25181.38  | 25756.85* | 25563.17  |
| 20 | 25222.31  | 25018.07  | 25600.12* | 25398.52  |
| 21 | 25059.72  | 24848.07* | 25435.70  | 25227.49* |
| 22 | 24890.43  | 24671.64  | 25264.69  | 25049.36  |
| 23 | 24714.73  | 24489.31  |           |           |
| 24 | 24532.08  | 24300.62  |           |           |
| 25 |           | 24106.20  |           |           |
| 26 |           |           |           |           |
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| J  | ( 1- 3)   |           | ( 2- 3)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  |           |           | 22560.53  |           |
| 1  |           |           | 22558.53  | 22540.74  |
| 2  |           |           | 22548.50  | 22515.11  |
| 3  | 22214.69* |           | 22530.85  | 22485.50  |
| 4  | 22187.81  |           | 22504.99  | 22452.01  |
| 5  | 22153.60  |           | 22471.53* | 22406.38* |
| 6  |           | 22036.94* | 22429.58  | 22353.86  |
| 7  |           | 21975.86  | 22380.14* | 22293.27  |
| 8  | 22003.50  | 21906.91  | 22322.63  | 22225.09  |
| 9  | 21937.25  | 21830.73  | 22257.36  | 22145.12  |
| 10 | 21862.21* | 21746.31  | 22184.20  |           |
| 11 | 21780.80  | 21654.51  |           | 21974.58  |
| 12 | 21690.60  | 21555.07* | 22014.52  | 21875.90  |
| 13 | 21592.32  | 21447.51  | 21918.28  | 21770.13  |
| 14 | 21486.32  | 21333.25  | 21813.85  | 21657.16  |
| 15 | 21372.36  | 21210.93  | 21701.17* | 21536.97  |
| 16 | 21250.62  | 21081.51  | 21583.21* | 21409.28  |
| 17 | 21121.12  | 20944.56  | 21456.73  | 21274.75  |
| 18 |           | 20800.60  | 21322.71  | 21133.25  |
| 19 | 20839.73  | 20649.58* | 21181.14* | 20985.08* |
| 20 | 20688.21  | 20450.97  | 21032.77* | 20829.59  |
| 21 | 20530.19* | 20326.05  | 20877.84  | 20668.29  |
| 22 | 20363.93  | 20154.33  | 20715.92  | 20499.61  |
| 23 |           |           |           |           |
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| J  | ( 3- 3)   |           | ( 6- 3)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 22899.84* |           | 24007.30  |           |
| 1  | 22898.31  | 22880.49  | 24005.44  | 23987.08* |
| 2  | 22888.47  | 22858.81  | 23995.22  | 23965.92* |
| 3  | 22870.73  | 22829.33  | 23977.24  | 23936.24  |
| 4  | 22844.90  | 22791.97  | 23951.31  | 23898.76  |
| 5  | 22811.34  | 22746.82  | 23917.40  | 23853.40  |
| 6  | 22770.10* | 22694.08  | 23875.61  | 23800.34* |
| 7  | 22720.44  | 22633.46  | 23826.20  | 23739.54  |
| 8  | 22663.35  | 22565.25  | 23768.74  | 23671.26  |
| 9  | 22598.68* | 22489.50* | 23703.69* | 23595.60* |
| 10 | 22525.92  | 22406.38* | 23631.14  | 23511.73  |
| 11 | 22445.55* | 22316.00  | 23550.28* | 23421.00  |
| 12 | 22357.91  | 22217.79  | 23462.50* | 23322.93  |
| 13 | 22262.05  |           | 23367.52  | 23217.65  |
| 14 | 22159.12  | 21999.84* | 23264.75  | 23105.49  |
| 15 | 22048.96  | 21880.67  | 23154.80  | 22986.14  |
| 16 | 21931.00  | 21754.51  | 23038.01  | 22860.07  |
| 17 | 21805.94  | 21620.91  | 22913.91  | 22727.40  |
| 18 | 21673.68  | 21480.61  |           | 22587.86  |
| 19 | 21534.54  | 21334.44* |           | 22442.15  |
| 20 | 21388.35  | 21181.14* | 22500.99  | 22290.29  |
| 21 | 21235.48  | 21020.97  | 22350.64  |           |
| 22 | 21075.86  | 20854.97  |           |           |
| 23 | 20909.83  | 20683.22* |           |           |
| 24 | 20737.60  |           |           |           |
| 25 |           |           |           |           |
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| J  | (13- 3)  |          | (1- 4)    |           |
|----|----------|----------|-----------|-----------|
|    | R(J)     | P(J)     | R(J)      | P(J)      |
| 0  |          |          | 21004.98  |           |
| 1  |          |          | 21003.46  | 20986.23* |
| 2  |          |          | 20994.02  | 20964.68  |
| 3  | 26718.90 | 26681.30 | 20977.45  | 20936.26  |
| 4  |          | 26642.42 | 20952.73* | 20900.45  |
| 5  | 26653.64 |          | 20921.15  | 20857.37  |
| 6  |          | 26539.44 | 20881.38  | 20806.45  |
| 7  | 26555.06 |          | 20834.28  | 20748.78* |
| 8  | 26493.31 |          | 20779.51  | 20683.22  |
| 9  | 26423.65 | 26324.11 | 20717.20  |           |
| 10 |          |          | 20647.36* | 20530.19  |
| 11 | 26259.82 |          | 20569.12  | 20442.87  |
| 12 | 26165.77 | 26037.47 | 20483.88  | 20348.39  |
| 13 |          | 25926.40 | 20390.93  | 20246.44  |
| 14 | 25954.54 | 25808.52 | 20290.51  | 20137.72  |
| 15 | 25837.74 | 25682.77 | 20182.79  | 20021.46  |
| 16 | 25713.42 | 25549.52 | 20067.25  | 19898.31  |
| 17 | 25581.50 |          | 19944.64  | 19768.26  |
| 18 | 25442.32 | 25263.40 | 19814.76  | 19631.27  |
| 19 |          | 25110.14 | 19677.75  | 19487.55  |
| 20 |          |          | 19533.88  |           |
| 21 |          |          |           |           |
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| J  | ( 2- 4)   |           | ( 3- 4)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 21321.65  |           |           |           |
| 1  | 21320.13  | 21302.33  |           |           |
| 2  | 21311.19  | 21281.59  |           |           |
| 3  | 21294.52  | 21253.18  |           |           |
| 4  | 21270.43  | 21217.27  |           |           |
| 5  | 21238.69  | 21174.40  | 21578.89  |           |
| 6  | 21199.53  | 21123.80  | 21539.13* |           |
| 7  | 21152.74  | 21066.04  | 21493.42  | 21406.41* |
| 8  | 21098.74  | 21000.86  | 21439.89* | 21341.97* |
| 9  | 21037.19  | 20928.57  | 21378.45  | 21269.01* |
| 10 | 20968.15  | 20849.53  | 21309.82  | 21190.26  |
| 11 | 20891.69  | 20763.05  | 21234.07  | 21104.00  |
| 12 | 20808.04  | 20669.72* | 21151.06  | 21011.15  |
| 13 | 20717.20* | 20569.12* | 21060.72  | 20911.25  |
| 14 | 20617.78  | 20461.72  | 20963.36  | 20804.48* |
| 15 | 20512.68  | 20347.05  | 20858.96  | 20691.31* |
| 16 | 20399.93  | 20226.11  | 20747.72  | 20571.03  |
| 17 | 20280.18  | 20098.26  | 20630.12* | 20444.52  |
| 18 | 20153.26  | 19963.89  | 20504.46  | 20311.57  |
| 19 | 20020.54  | 19823.04  | 20372.77  | 20172.39  |
| 20 | 19879.19* | 19675.79  | 20234.37  | 20026.81  |
| 21 | 19732.23* | 19522.26  | 20089.70  | 19875.33  |
| 22 | 19584.73  |           | 19938.77  | 19717.89  |
| 23 | 19427.60  |           | 19781.62  | 19554.61  |
| 24 |           |           | 19618.51  | 19385.62  |
| 25 |           |           | 19449.52  |           |
| 26 |           |           |           |           |
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| J  | ( 5- 4)   |          | ( 6- 4)   |           |
|----|-----------|----------|-----------|-----------|
|    | R(J)      | P(J)     | R(J)      | P(J)      |
| 0  | 22388.64  |          |           |           |
| 1  | 22387.18  | 22365.48 | 22767.06  | 22749.46  |
| 2  | 22378.20  | 22348.66 | 22757.86  | 22728.56  |
| 3  | 22361.16* | 22320.12 | 22741.32  | 22700.17  |
| 4  | 22337.42  | 22284.47 | 22716.87  | 22664.39  |
| 5  | 22305.63  | 22241.36 | 22685.04  | 22620.88* |
| 6  | 22266.64  | 22190.75 | 22645.89  | 22570.37  |
| 7  | 22220.20  |          | 22598.68* | 22512.53* |
| 8  | 22165.93* |          | 22544.91  | 22447.72* |
| 9  |           | 21996.25 | 22483.63  | 22375.20  |
| 10 |           | 21916.83 | 22415.03  | 22295.82  |
| 11 | 21560.96  |          | 22339.14  | 22209.47  |
| 12 | 21878.51  |          | 22256.19  |           |
| 13 | 21788.40  | 21638.30 | 22165.93  | 22016.27  |
| 14 |           | 21531.96 |           | 21909.59  |
| 15 | 21588.15  | 21418.84 | 21965.32  | 21796.59  |
| 16 | 21477.66  | 21299.54 | 21854.75  | 21676.80  |
| 17 | 21360.63  |          | 21737.82* | 21550.86  |
| 18 | 21236.93  | 21041.63 | 21613.85  | 21418.84* |
| 19 | 21106.73  | 20903.50 | 21483.55  | 21280.40  |
| 20 | 20970.19  | 20759.45 | 21347.14  | 21136.16  |
| 21 |           |          | 21204.49  | 20986.23  |
| 22 |           | 20453.46 | 21055.74  | 20830.58  |
| 23 |           |          | 20901.32  | 20669.72* |
| 24 |           |          | 20741.71* |           |
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| J  | ( 9- 4)   |           | (10- 4)  |          |
|----|-----------|-----------|----------|----------|
|    | R(J)      | P(J)      | R(J)     | P(J)     |
| 0  | 23940.19* |           |          |          |
| 1  | 23940.19  | 23922.69* |          |          |
| 2  | 23930.96* | 23901.97  |          |          |
| 3  | 23913.03  | 23873.21  |          |          |
| 4  | 23888.30  | 23836.81  | 24282.87 |          |
| 5  | 23855.12  | 23793.00  | 24249.39 |          |
| 6  | 23815.02  | 23741.80  |          | 24136.12 |
| 7  | 23766.85* | 23683.17  | 24160.14 | 24077.27 |
| 8  | 23711.85  | 23616.91  | 24103.81 |          |
| 9  | 23649.14  | 23543.83* | 24040.62 | 23936.24 |
| 10 |           | 23462.50  | 23969.56 |          |
| 11 | 23501.02  | 23374.65  | 23890.92 | 23766.85 |
| 12 | 23416.36  | 23280.04  |          |          |
| 13 |           | 23178.41  | 23713.04 | 23568.88 |
| 14 | 23225.83  | 23069.98  | 23613.13 | 23459.32 |
| 15 | 23120.26  | 22954.74  |          | 23343.28 |
| 16 | 23007.33  | 22833.34  | 23392.24 | 23220.76 |
| 17 |           | 22705.45  | 23272.44 | 23091.64 |
| 18 |           |           | 23145.21 | 22956.67 |
| 19 |           |           | 23011.32 | 22814.94 |
| 20 |           |           | 22871.82 | 22667.61 |
| 21 |           |           |          |          |
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| J  | ( 1- 5)   |          | ( 2- 5)  |           |
|----|-----------|----------|----------|-----------|
|    | R(J)      | P(J)     | R(J)     | P(J)      |
| 0  | 19809.35  |          |          |           |
| 1  | 19808.07  | 19790.52 |          |           |
| 2  | 19799.78  | 19770.42 |          |           |
| 3  | 19784.12* | 19743.27 |          |           |
| 4  | 19761.55  | 19709.12 |          |           |
| 5  | 19731.64  | 19667.86 |          |           |
| 6  | 19694.56  | 19619.65 | 20012.57 |           |
| 7  | 19650.20  | 19564.45 | 19968.78 |           |
| 8  | 19598.69  | 19502.30 | 19917.90 | 19820.00  |
| 9  | 19539.93  | 19433.17 | 19860.03 | 19751.76  |
| 10 | 19473.85  |          | 19794.95 | 19675.79* |
| 11 | 19400.56  |          | 19723.00 | 19594.37  |
| 12 |           |          | 19644.08 | 19505.63* |
| 13 |           |          | 19558.12 | 19410.28  |
| 14 |           |          | 19465.35 |           |
| 15 |           |          |          |           |
| 16 |           |          |          |           |
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| J  | ( 4- 5)   |           | ( 5- 5)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 20823.04  |           | 21193.10  |           |
| 1  | 20821.92  | 20804.48* | 21191.69* | 21172.58* |
| 2  | 20813.67  | 20784.03  | 21183.59  | 21153.99* |
| 3  | 20798.39  | 20756.88  | 21168.27  | 21127.07  |
| 4  | 20775.90  | 20723.05  | 21145.78  | 21092.98  |
| 5  | 20746.59  | 20682.05  | 21116.14  | 21051.88  |
| 6  | 20709.84* | 20634.57* | 21079.51  | 21003.46* |
| 7  | 20666.57  | 20579.11  | 21035.87  | 20948.98  |
| 8  |           | 20517.63  | 20985.08* | 20887.26  |
| 9  | 20558.59* | 20449.32  | 20927.83  | 20819.07  |
| 10 | 20494.13  | 20374.34  | 20863.45  | 20742.78  |
| 11 | 20422.87  | 20292.75  | 20792.10  | 20662.61* |
| 12 | 20345.03  | 20204.67  | 20714.38  | 20573.97  |
| 13 | 20260.56  | 20110.04* | 20630.12* | 20479.53  |
| 14 | 20169.19  | 20009.44  | 20538.58  | 20378.71  |
| 15 | 20071.33  | 19902.38  | 20440.99  | 20271.68  |
| 16 | 19967.01  | 19789.22  | 20336.85  | 20158.64  |
| 17 | 19856.34  | 19670.02  | 20226.11* | 20039.55  |
| 18 | 19738.85* | 19544.78  |           | 19914.34  |
| 19 | 19616.36  | 19413.76  | 19987.16  | 19784.12* |
| 20 |           |           | 19858.44  | 19647.60  |
| 21 |           |           | 19723.99  | 19505.63  |
| 22 |           |           | 19583.63  |           |
| 23 |           |           | 19437.47  |           |
| 24 |           |           |           |           |
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| J  | ( 8- 5)   |           | ( 6- 6)   |           |
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|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 22352.14  |           |           |           |
| 1  | 22350.64  | 22333.41  | 20420.83* | 20401.60  |
| 2  | 22341.99  | 22313.04  | 20411.57  | 20382.39  |
| 3  | 22326.06  | 22286.03* | 20397.32  | 20356.33  |
| 4  | 22302.89  | 22251.20  | 20376.23  | 20322.80  |
| 5  | 22272.63  | 22209.47* |           | 20284.68  |
| 6  | 22235.19  | 22161.00  | 20314.17  | 20238.60* |
| 7  | 22190.75  |           | 20273.14  | 20186.59  |
| 8  |           | 22042.84  |           | 20127.99  |
| 9  |           | 21973.21  | 20171.43  | 20062.85  |
| 10 |           | 21897.18  | 20111.17* | 19991.70  |
| 11 | 21542.39  | 21815.04  | 20043.78  |           |
| 12 | 21862.21* |           | 19970.34  | 19830.66  |
| 13 | 21777.43  | 21629.66  | 19890.94  | 19741.07  |
| 14 | 21684.85  | 21527.69  |           | 19645.52  |
| 15 | 21585.24  | 21418.84  |           |           |
| 16 |           | 21304.89  |           |           |
| 17 | 21368.95  | 21184.60  |           |           |
| 18 | 21250.62  | 21058.25  |           |           |
| 19 | 21127.07  | 20926.31  |           |           |
| 20 | 20997.32  | 20788.80  |           |           |
| 21 | 20861.73  | 20646.17  |           |           |
| 22 |           |           |           |           |
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| J  | ( 7- 6)  |          | ( 9- 7)   |          |
|----|----------|----------|-----------|----------|
|    | R(J)     | P(J)     | R(J)      | P(J)     |
| 0  |          |          |           |          |
| 1  |          |          | 20481.79  |          |
| 2  |          | 20769.50 | 20474.48  | 20446.01 |
| 3  |          |          | 20460.66  |          |
| 4  |          | 20710.92 | 20439.58* | 20389.36 |
| 5  | 20734.92 | 20671.61 | 20413.72  | 20351.88 |
| 6  | 20700.46 | 20625.61 | 20380.82  | 20307.44 |
| 7  | 20659.21 |          | 20341.44  | 20257.41 |
| 8  |          | 20513.92 | 20295.69  | 20200.82 |
| 9  | 20556.34 | 20448.48 | 20243.74  |          |
| 10 | 20495.33 | 20377.00 | 20185.48  | 20069.27 |
| 11 | 20427.89 | 20299.10 | 20121.14  | 19994.94 |
| 12 | 20354.04 | 20215.11 | 20050.69  | 19914.34 |
| 13 | 20274.06 | 20125.09 | 19974.44  | 19828.20 |
| 14 | 20187.72 | 20029.17 | 19892.03  | 19736.53 |
| 15 | 20095.36 | 19927.38 | 19804.03  | 19639.16 |
| 16 | 19996.92 | 19820.00 |           |          |
| 17 | 19892.64 | 19706.82 |           |          |
| 18 | 19782.58 | 19588.37 |           |          |
| 19 | 19666.80 | 19464.37 |           |          |
| 20 |          |          |           |          |
| 21 |          |          |           |          |
| 22 |          |          |           |          |
| 23 |          |          |           |          |
| 24 |          |          |           |          |
| 25 |          |          |           |          |
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| 29 |          |          |           |          |
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| 31 |          |          |           |          |
| 32 |          |          |           |          |
| 33 |          |          |           |          |
| 34 |          |          |           |          |

Observed  $A^1\Sigma^+ - X^1\Sigma^+$  bands of  $^6\text{LiD}$

| J  | ( 5- 0)   |          | ( 6- 0)   |           |
|----|-----------|----------|-----------|-----------|
|    | R(J)      | P(J)     | R(J)      | P(J)      |
| 0  |           |          |           |           |
| 1  |           |          |           |           |
| 2  |           |          |           |           |
| 3  | 27266.42  | 27242.76 |           | 27518.48  |
| 4  | 27248.58  | 27218.14 | 27524.33  | 27493.99  |
| 5  | 27225.43  | 27187.99 | 27501.31  | 27464.22  |
| 6  | 27197.18  | 27153.45 | 27473.07  | 27429.19  |
| 7  | 27163.94  | 27113.36 | 27439.41  | 27385.37* |
| 8  | 27124.87  | 27067.98 | 27400.46  | 27343.64  |
| 9  | 27080.87  | 27017.30 | 27356.46  | 27293.13  |
| 10 | 27031.71  | 26961.90 | 27307.16  | 27237.50  |
| 11 | 26977.02  | 26901.14 | 27253.08* | 27176.72  |
| 12 | 26917.67  | 26835.29 | 27193.07  | 27110.95  |
| 13 | 26852.67  | 26764.76 | 27128.42  | 27040.19  |
| 14 | 26783.03  | 26688.58 | 27058.68  | 26964.32  |
| 15 | 26708.91* | 26607.57 | 26984.39* | 26883.60  |
| 16 | 26628.06  | 26522.44 | 26904.06  | 26798.24* |
| 17 | 26543.92  |          | 26819.27  | 26707.48  |
| 18 | 26454.06  |          | 26729.14* | 26612.22  |
| 19 |           |          | 26634.73  |           |
| 20 |           |          | 26535.21  | 26407.62  |
| 21 |           |          |           | 26298.22  |
| 22 |           |          |           |           |
| 23 |           |          |           |           |
| 24 |           |          |           |           |
| 25 |           |          |           |           |
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| 34 |           |          |           |           |

| J  | ( 7- 0)   |           | ( 8- 0)  |           |
|----|-----------|-----------|----------|-----------|
|    | R(J)      | P(J)      | R(J)     | P(J)      |
| 0  | 27846.39  |           |          |           |
| 1  | 27844.37  |           | 28132.26 |           |
| 2  | 27837.20  |           | 28124.89 | 28108.09  |
| 3  | 27824.73  | 27801.03  | 28112.24 | 28088.42* |
| 4  | 27806.85  | 27776.48  | 28094.47 | 28064.18  |
| 5  | 27783.79  | 27746.47  | 28071.14 | 28034.26  |
| 6  | 27755.34  | 27711.63  | 28042.65 | 27999.24  |
| 7  | 27721.50  | 27671.48  | 28008.85 | 27958.89  |
| 8  | 27682.50  | 27625.78  | 27969.79 | 27913.37  |
| 9  | 27638.50  | 27575.42  | 27925.57 | 27862.67  |
| 10 | 27589.18  | 27519.69  | 27876.09 | 27806.78  |
| 11 | 27534.64  | 27458.80  | 27821.53 | 27745.93  |
| 12 | 27475.07  | 27393.08  | 27761.62 |           |
| 13 | 27409.99* | 27322.07  |          |           |
| 14 | 27340.48  | 27246.09  |          |           |
| 15 | 27265.56  | 27165.37  |          |           |
| 16 | 27185.66  | 27079.65  |          |           |
| 17 | 27100.86  | 26989.38  |          |           |
| 18 | 27010.92  | 26893.85  |          |           |
| 19 | 26915.37* | 26793.83  |          |           |
| 20 | 26815.78* | 26688.58* |          |           |
| 21 | 26711.78  | 26579.74* |          |           |
| 22 | 26602.44  |           |          |           |
| 23 |           |           |          |           |
| 24 |           |           |          |           |
| 25 |           |           |          |           |
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| J  | ( 9- 0)   |          | (10- 0)   |          |
|----|-----------|----------|-----------|----------|
|    | R(J)      | P(J)     | R(J)      | P(J)     |
| 0  | 28426.1E* |          |           |          |
| 1  | 28423.94* | 28414.02 |           |          |
| 2  | 28416.70  | 28399.98 |           | 28695.18 |
| 3  | 28404.06  | 28380.72 | 28698.56  | 28675.76 |
| 4  | 28386.12  | 28356.08 | 28680.95  | 28651.08 |
| 5  | 28362.77  | 28326.15 | 28657.44  | 28621.03 |
| 6  | 28334.16  | 28290.99 | 28628.70  | 28585.75 |
| 7  | 28300.30  | 28250.50 | 28594.64  | 28545.23 |
| 8  | 28261.36* | 28204.87 | 28555.65* | 28495.34 |
| 9  | 28216.69  | 28154.06 | 28510.66  | 28448.47 |
| 10 | 28167.03  | 28098.05 | 28460.78  | 28392.27 |
| 11 | 28112.24  | 28036.97 | 28405.78  | 28331.08 |
| 12 | 28052.26  | 27970.86 | 28345.53  | 28264.69 |
| 13 | 27987.20  | 27899.58 | 28280.18  | 28193.10 |
| 14 | 27917.01  | 27823.33 | 28209.76  |          |
| 15 | 27841.68  | 27742.21 | 28134.16  | 28035.33 |
| 16 | 27761.62  |          | 28053.68  | 27948.53 |
| 17 |           |          | 27968.24  | 27857.66 |
| 18 |           |          | 27877.61  | 27761.62 |
| 19 |           |          | 27782.42  |          |
| 20 |           |          |           |          |
| 21 |           |          |           |          |
| 22 |           |          |           |          |
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| 34 |           |          |           |          |

| J  | (11- 0)  |          | (12- 0)   |          |
|----|----------|----------|-----------|----------|
|    | R(J)     | P(J)     | R(J)      | P(J)     |
| 0  |          |          |           |          |
| 1  | 29016.38 |          | 29315.01  |          |
| 2  | 29009.07 |          | 29307.50  |          |
| 3  | 28996.30 | 28973.00 | 29294.64  | 29271.75 |
| 4  | 28977.84 | 28948.34 | 29276.10  | 29246.81 |
| 5  | 28954.16 | 28918.13 | 29252.43  | 29216.52 |
| 6  | 28925.41 | 28882.68 | 29223.28  | 29181.03 |
| 7  | 28891.07 | 28841.86 | 29188.82  | 29140.14 |
| 8  | 28851.76 | 28796.12 | 29148.98  | 29093.90 |
| 9  | 28806.67 | 28744.88 | 29103.86  | 29042.56 |
| 10 | 28756.61 | 28688.48 | 29053.16* | 28986.00 |
| 11 | 28701.21 | 28627.08 | 28997.91  | 28924.12 |
| 12 | 28640.44 | 28560.23 | 28936.92  | 28857.29 |
| 13 | 28575.03 | 28488.66 | 28870.90  | 28785.21 |
| 14 | 28504.21 | 28411.82 | 28799.69  | 28707.97 |
| 15 | 28428.35 | 28330.05 | 28723.48  | 28625.97 |
| 16 | 28347.43 | 28243.47 | 28642.21  |          |
| 17 | 28261.36 | 28151.97 |           |          |
| 18 | 28170.77 | 28055.60 |           |          |
| 19 | 28075.13 | 27954.53 |           |          |
| 20 | 27974.66 | 27848.60 |           |          |
| 21 | 27869.37 | 27738.28 |           |          |
| 22 | 27759.43 |          |           |          |
| 23 |          |          |           |          |
| 24 |          |          |           |          |
| 25 |          |          |           |          |
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| 32 |          |          |           |          |
| 33 |          |          |           |          |
| 34 |          |          |           |          |

| J  | (13- 0)  |          | (14- 0)   |           |
|----|----------|----------|-----------|-----------|
|    | R(J)     | P(J)     | R(J)      | P(J)      |
| 0  |          |          |           |           |
| 1  | 29614.07 |          |           |           |
| 2  | 29606.71 |          | 29905.39  |           |
| 3  |          | 29570.63 | 29892.11  | 29869.74  |
| 4  | 29574.87 | 29545.74 | 29873.46  | 29844.88* |
| 5  | 29550.81 | 29515.41 | 29849.43  | 29814.17  |
| 6  | 29521.68 | 29479.67 | 29820.15* | 29778.41  |
| 7  | 29486.87 | 29438.81 | 29784.89  | 29737.15  |
| 8  | 29446.84 | 29392.50 | 29744.58  | 29690.68  |
| 9  | 29401.51 | 29340.83 | 29698.81  | 29638.70  |
| 10 | 29350.77 | 29283.95 | 29647.70  | 29581.48  |
| 11 | 29294.64 | 29221.78 | 29591.21  | 29518.93* |
| 12 | 29233.56 | 29154.55 | 29529.61  | 29451.55  |
| 13 | 29167.07 | 29082.28 |           | 29378.80  |
| 14 | 29095.49 | 29004.68 | 29390.81  | 29300.90  |
| 15 | 29018.41 | 28922.06 | 29313.53  | 29217.97  |
| 16 | 28936.92 | 28834.77 | 29231.15  | 29130.07  |
| 17 | 28850.05 | 28742.40 | 29143.81  | 29037.09  |
| 18 | 28758.34 | 28645.12 | 29051.34  | 28939.39  |
| 19 | 28661.66 | 28543.10 | 28954.16  | 28836.70  |
| 20 | 28560.23 | 28436.25 | 28851.76  | 28729.34  |
| 21 | 28453.71 | 28324.76 | 28744.88  | 28617.30  |
| 22 | 28342.64 | 28208.63 | 28633.04  | 28500.59  |
| 23 | 28226.89 | 28088.42 | 28516.60  | 28379.21  |
| 24 | 28106.52 | 27963.03 | 28395.40  | 28253.42  |
| 25 |          | 27833.83 | 28269.82  | 28123.28  |
| 26 |          | 27699.51 | 28139.63  | 27988.72  |
| 27 |          |          | 28005.27* | 27849.90  |
| 28 |          |          | 27866.09  | 27706.66  |
| 29 |          |          | 27722.96  |           |
| 30 |          |          |           |           |
| 31 |          |          |           |           |
| 32 |          |          |           |           |
| 33 |          |          |           |           |
| 34 |          |          |           |           |

| J  | (15- 0)   |           | (16- 0)  |           |
|----|-----------|-----------|----------|-----------|
|    | R(J)      | P(J)      | R(J)     | P(J)      |
| 0  |           |           |          |           |
| 1  |           |           |          |           |
| 2  |           |           |          |           |
| 3  | 30190.15  |           | 30486.73 |           |
| 4  | 30171.31  | 30142.82  | 30467.33 |           |
| 5  | 30147.04  | 30112.36  | 30443.19 | 30409.54* |
| 6  | 30116.71* | 30076.11  | 30413.24 | 30372.62  |
| 7  | 30081.98  | 30034.78  | 30377.59 | 30331.05  |
| 8  | 30041.57* | 29988.05  | 30336.54 | 30283.84  |
| 9  | 29995.16  | 29935.81  | 30290.22 | 30221.29  |
| 10 | 29943.70  | 29878.30  | 30238.07 | 30173.57  |
| 11 | 29886.86  | 29815.40  | 30180.85 | 30110.46  |
| 12 | 29824.78  | 29747.82* | 30118.39 | 30041.57  |
| 13 | 29757.41  | 29674.21  | 30050.36 | 29968.35  |
| 14 | 29684.79  | 29595.92  | 29977.59 | 29885.32  |
| 15 | 29606.71* | 29512.50  | 29898.73 | 29805.55  |
| 16 | 29523.74* | 29424.13  | 29815.40 | 29716.27  |
| 17 | 29436.17  | 29330.74  | 29726.61 | 29622.38  |
| 18 | 29343.22  | 29222.35  | 29632.75 | 29523.74  |
| 19 | 29245.20  | 29128.99  | 29534.12 | 29419.67  |
| 20 | 29142.16  | 29021.14  | 29430.11 | 29310.89  |
| 21 | 29034.45  | 28908.25  | 29321.87 | 29197.57  |
| 22 | 28922.06  | 28790.86  | 29208.54 | 29079.14  |
| 23 | 28804.69  | 28668.79  | 29090.35 | 28956.30  |
| 24 | 28682.71  | 28542.17  | 28967.41 | 28828.56  |
| 25 | 28556.65* | 28411.82* | 28840.00 | 28697.00  |
| 26 | 28425.10  | 28275.91  | 28707.97 | 28560.23  |
| 27 | 28289.62  |           | 28571.40 | 28420.07  |
| 28 | 28149.75  |           | 28430.54 | 28274.99  |
| 29 |           |           | 28285.28 | 28126.07  |
| 30 |           |           | 28135.97 | 27972.88  |
| 31 |           |           |          |           |
| 32 |           |           |          |           |
| 33 |           |           |          |           |
| 34 |           |           |          |           |

| J  | (17- 0)  |          | ( 4- 1)  |          |
|----|----------|----------|----------|----------|
|    | R(J)     | P(J)     | R(J)     | P(J)     |
| 0  |          |          |          |          |
| 1  |          |          |          |          |
| 2  |          |          | 25964.26 |          |
| 3  |          |          | 25952.06 | 25928.60 |
| 4  |          |          | 25935.29 | 25904.73 |
| 5  |          |          | 25912.74 | 25876.06 |
| 6  |          | 30668.38 | 25886.17 | 25842.26 |
| 7  | 30671.55 | 30625.31 | 25853.69 | 25803.67 |
| 8  | 30629.33 | 30577.64 | 25816.14 | 25759.68 |
| 9  | 30582.96 | 30525.09 | 25774.01 | 25710.82 |
| 10 | 30530.57 | 30467.33 | 25726.92 | 25657.05 |
| 11 | 30472.44 | 30403.38 | 25674.32 | 25598.47 |
| 12 | 30409.54 | 30334.34 | 25616.81 |          |
| 13 | 30341.15 | 30260.15 | 25554.40 | 25466.43 |
| 14 | 30267.27 | 30180.85 | 25487.13 | 25393.06 |
| 15 | 30188.17 | 30096.19 | 25414.68 | 25315.02 |
| 16 | 30103.75 | 30006.22 | 25337.69 | 25232.48 |
| 17 | 30014.58 | 29911.83 | 25255.86 | 25144.91 |
| 18 | 29919.94 | 29812.16 | 25169.10 | 25052.21 |
| 19 | 29822.12 | 29707.44 | 25077.66 | 24955.60 |
| 20 | 29718.09 | 29598.25 | 24980.77 |          |
| 21 | 29608.92 | 29483.57 |          |          |
| 22 | 29497.22 |          |          |          |
| 23 |          |          |          |          |
| 24 |          |          |          |          |
| 25 |          |          |          |          |
| 26 |          |          |          |          |
| 27 |          |          |          |          |
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| 32 |          |          |          |          |
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| J  | ( 5- 1)   |           | ( 6- 1)  |          |
|----|-----------|-----------|----------|----------|
|    | R(J)      | P(J)      | R(J)     | P(J)     |
| 0  |           |           |          |          |
| 1  | 26238.66  | 26228.44  |          |          |
| 2  | 26231.86  | 26214.86  |          | 26490.66 |
| 3  | 26220.05  | 26196.22  | 26455.67 | 26472.24 |
| 4  | 26202.97  | 26172.49  | 26479.04 | 26448.32 |
| 5  | 26180.94  | 26143.72  | 26456.62 | 26419.47 |
| 6  | 26153.68  | 26109.93  | 26429.43 | 26385.74 |
| 7  | 26121.46  | 26071.05  | 26397.04 | 26347.20 |
| 8  | 26084.17  | 26027.20  | 26360.03 | 26303.02 |
| 9  | 26041.77  | 25978.68* | 26317.40 | 26254.14 |
| 10 | 25994.32  | 25925.14* | 26270.07 | 26200.51 |
| 11 | 25942.15  | 25866.12  | 26217.53 | 26141.83 |
| 12 | 25884.67  | 25802.41  | 26160.43 | 26078.27 |
| 13 | 25822.52  | 25734.17  | 26098.27 | 26009.79 |
| 14 | 25755.29  | 25660.69* | 26031.23 | 25936.70 |
| 15 | 25683.67* | 25583.04  | 25959.10 | 25858.29 |
| 16 | 25606.34  | 25500.26  | 25882.23 | 25775.69 |
| 17 | 25524.65  | 25413.10  | 25800.60 | 25688.73 |
| 18 | 25438.23  | 25321.05  | 25714.25 | 25596.91 |
| 19 | 25346.96  | 25224.40  | 25623.06 | 25500.26 |
| 20 | 25251.05  | 25123.19  | 25528.20 |          |
| 21 | 25150.52  | 25017.66  |          |          |
| 22 | 25044.09* |           |          |          |
| 23 | 24935.32  |           |          |          |
| 24 |           |           |          |          |
| 25 |           |           |          |          |
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| 34 |           |           |          |          |

| J  | ( 7- 1)   |           | ( 8- 1)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  |           |           |           |           |
| 1  |           |           | 27085.68* |           |
| 2  | 26790.22  | 26772.99* | 27078.08  |           |
| 3  | 26778.25  | 26754.56  | 27065.54  | 27042.44  |
| 4  | 26761.10  | 26730.91  | 27048.84  | 27018.62  |
| 5  | 26739.20  | 26702.16  | 27026.57  | 26985.38* |
| 6  | 26711.78  | 26668.14  | 26998.88* | 26955.63  |
| 7  | 26679.31  | 26629.27  | 26966.60  | 26916.61  |
| 8  | 26642.00  | 26585.28  | 26929.37  | 26872.76  |
| 9  | 26599.21  | 26536.38  | 26886.71  | 26824.32* |
| 10 | 26551.83  | 26482.55  | 26839.07  | 26769.83  |
| 11 | 26499.52  | 26423.82  | 26786.57  | 26710.89  |
| 12 | 26442.32  | 26360.03  | 26729.14  | 26647.16  |
| 13 | 26379.92  | 26291.59  | 26666.57  | 26578.56  |
| 14 | 26312.99* | 26218.83* | 26599.21  | 26505.24  |
| 15 | 26240.61  | 26140.13  | 26526.92  | 26427.01  |
| 16 | 26163.70  | 26057.80  | 26449.88  | 26344.27  |
| 17 | 26082.15  | 25970.31  | 26368.09  | 26256.78  |
| 18 | 25995.82  | 25878.41  | 26281.55  | 26164.73  |
| 19 | 25904.73  | 25781.88  | 26190.43  | 26067.51  |
| 20 | 25809.00  |           | 26094.56  | 25966.85  |
| 21 |           |           | 25994.32  | 25861.09  |
| 22 |           |           | 25889.21  | 25751.06  |
| 23 |           |           | 25780.01  | 25636.87  |
| 24 |           |           | 25666.06  | 25518.12  |
| 25 |           |           | 25547.89  | 25395.33  |
| 26 |           |           | 25425.28  | 25268.40  |
| 27 |           |           | 25298.76  | 25137.49  |
| 28 |           |           | 25167.87  | 25002.43  |
| 29 |           |           | 25033.15  |           |
| 30 |           |           |           |           |
| 31 |           |           |           |           |
| 32 |           |           |           |           |
| 33 |           |           |           |           |
| 34 |           |           |           |           |

| J  | ( 9- 1 )  |           | ( 3- 2 )  |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  |           |           |           |           |
| 1  |           |           |           |           |
| 2  | 27370.83* |           |           | 24668.25* |
| 3  | 27357.93  | 27334.38  |           | 24650.54  |
| 4  | 27340.48  | 27310.42  | 24658.36  | 24628.00  |
| 5  | 27318.21  | 27281.48  | 24637.35  | 24600.08  |
| 6  | 27289.40* | 27247.41  | 24610.58* | 24567.43  |
| 7  | 27258.09  | 27208.48  | 24580.01  | 24525.85  |
| 8  | 27220.36  | 27163.94  | 24543.90  | 24487.21  |
| 9  | 27177.96  | 27115.10  | 24503.07  | 24440.47  |
| 10 | 27130.38  | 27061.07  | 24457.71  | 24388.00  |
| 11 | 27077.20  | 27002.01  | 24407.08  | 24331.66  |
| 12 | 27019.60  | 26938.08  | 24351.83  | 24270.06  |
| 13 | 26956.85  | 26869.36  | 24291.48  | 24203.88  |
| 14 | 26889.43  | 26795.61  | 24226.52  | 24132.83  |
| 15 | 26816.96  | 26717.41  | 24156.64  | 24057.35  |
| 16 | 26739.20  | 26634.73  | 24082.22  | 23977.14  |
| 17 | 26657.60  | 26547.05  | 24002.86  | 23892.54  |
| 18 | 26570.84  | 26454.06  | 23918.80  | 23803.19  |
| 19 | 26479.04  | 26357.61  | 23829.90  | 23709.24  |
| 20 | 26383.03  | 26256.78* | 23736.69  | 23611.05  |
| 21 | 26282.76  | 26150.07  | 23638.72  |           |
| 22 | 26177.53  | 26039.69  |           |           |
| 23 | 26067.91  | 25925.14  |           |           |
| 24 | 25953.95  | 25806.34  |           |           |
| 25 | 25835.55  |           |           |           |
| 26 |           |           |           |           |
| 27 |           |           |           |           |
| 28 |           |           |           |           |
| 29 |           |           |           |           |
| 30 |           |           |           |           |
| 31 |           |           |           |           |
| 32 |           |           |           |           |
| 33 |           |           |           |           |
| 34 |           |           |           |           |

| J  | ( 4- 2)  |           | ( 5- 2)  |          |
|----|----------|-----------|----------|----------|
|    | R(J)     | P(J)      | R(J)     | P(J)     |
| 0  |          |           |          |          |
| 1  |          |           |          |          |
| 2  |          |           |          | 25194.21 |
| 3  | 24932.20 | 24908.98* | 25199.89 | 25176.35 |
| 4  | 24916.10 | 24885.37  | 25183.75 | 25153.69 |
| 5  | 24894.53 | 24857.57  | 25162.67 | 25125.51 |
| 6  | 24868.85 | 24825.16  | 25136.28 | 25092.71 |
| 7  | 24837.88 | 24787.73  | 25105.58 | 25055.16 |
| 8  | 24802.01 | 24745.31  | 25069.66 | 25013.30 |
| 9  | 24761.28 | 24698.06  | 25029.16 | 24965.74 |
| 10 | 24715.86 | 24646.08  | 24983.40 | 24914.21 |
| 11 | 24665.42 | 24589.34  | 24933.47 | 24857.56 |
| 12 | 24610.58 | 24528.09  | 24878.18 | 24796.04 |
| 13 | 24550.30 | 24462.10  | 24818.35 | 24729.56 |
| 14 | 24485.49 | 24391.60  | 24753.85 | 24659.75 |
| 15 | 24416.03 | 24316.58  | 24684.36 | 24584.33 |
| 16 | 24342.15 | 24236.32  | 24610.58 | 24504.68 |
| 17 | 24263.10 | 24151.90  | 24531.78 | 24420.36 |
| 18 | 24179.69 | 24063.18  | 24448.69 | 24331.66 |
| 19 | 24091.57 | 23969.53  | 24361.11 | 24238.38 |
| 20 | 23998.72 | 23872.06  | 24268.64 | 24140.92 |
| 21 | 23901.67 | 23769.72  | 24171.88 | 24038.91 |
| 22 | 23799.96 | 23663.00  | 24070.75 | 23933.00 |
| 23 |          |           | 23964.97 | 23822.63 |
| 24 |          |           | 23854.98 | 23707.90 |
| 25 |          |           | 23741.13 | 23589.34 |
| 26 |          |           | 23622.55 |          |
| 27 |          |           |          |          |
| 28 |          |           |          |          |
| 29 |          |           |          |          |
| 30 |          |           |          |          |
| 31 |          |           |          |          |
| 32 |          |           |          |          |
| 33 |          |           |          |          |
| 34 |          |           |          |          |

| J  | ( 6- 2)  |          | ( 12- 2)  |          |
|----|----------|----------|-----------|----------|
|    | R(J)     | P(J)     | R(J)      | P(J)     |
| 0  |          |          |           |          |
| 1  |          |          |           |          |
| 2  |          |          |           |          |
| 3  | 25475.92 |          |           |          |
| 4  | 25455.58 |          |           |          |
| 5  | 25438.23 | 25401.65 | 27189.53  | 27153.45 |
| 6  | 25412.22 | 25368.71 | 27162.49  | 27120.36 |
| 7  | 25381.01 | 25330.53 | 27130.38* | 27082.07 |
| 8  | 25345.46 | 25288.64 | 27094.09  | 27038.54 |
| 9  | 25304.44 | 25241.61 | 27052.22  | 26990.59 |
| 10 | 25259.27 | 25189.61 | 27005.74  | 26938.08 |
| 11 | 25208.96 | 25132.89 | 26954.07  | 26880.34 |
| 12 | 25153.70 | 25071.68 | 26897.58  | 26817.95 |
| 13 | 25094.03 | 25005.83 | 26836.59  |          |
| 14 | 25029.27 | 24935.32 | 26770.72  |          |
| 15 | 24960.10 | 24859.90 | 26699.84  | 26602.44 |
| 16 | 24886.91 | 24780.40 | 26624.42  | 26521.12 |
| 17 | 24807.89 | 24695.84 | 26543.92  | 26435.85 |
| 18 | 24724.80 | 24607.32 | 26459.39  | 26345.51 |
| 19 | 24637.35 | 24514.40 | 26370.49  | 26251.03 |
| 20 | 24545.23 | 24417.08 | 26276.79  | 26151.53 |
| 21 | 24448.69 | 24315.17 | 26178.80  | 26048.73 |
| 22 | 24347.60 | 24209.46 | 26079.75* | 25941.05 |
| 23 | 24242.15 | 24099.31 | 25970.31  | 25829.68 |
| 24 | 24132.83 | 23984.71 |           |          |
| 25 | 24018.89 | 23866.60 |           |          |
| 26 | 23900.90 | 23744.19 |           |          |
| 27 | 23778.93 | 23617.66 |           |          |
| 28 | 23652.30 |          |           |          |
| 29 |          |          |           |          |
| 30 |          |          |           |          |
| 31 |          |          |           |          |
| 32 |          |          |           |          |
| 33 |          |          |           |          |
| 34 |          |          |           |          |

| J  | (13- 2)  |          | ( 2- 3)   |           |
|----|----------|----------|-----------|-----------|
|    | R(J)     | P(J)     | R(J)      | P(J)      |
| 0  |          |          |           |           |
| 1  |          |          |           |           |
| 2  |          |          |           |           |
| 3  |          |          |           | 23411.67  |
| 4  |          |          | 23419.89  | 23385.45  |
| 5  |          |          | 23359.37  | 23362.35  |
| 6  |          |          | 23374.38  | 23330.87  |
| 7  |          | 27379.83 | 23344.64  | 23254.44  |
| 8  |          | 27337.74 | 23310.05  | 23253.51  |
| 9  | 27349.93 | 27289.40 | 23270.48  | 23207.81  |
| 10 | 27302.88 |          | 23226.49  | 23157.11* |
| 11 | 27251.34 | 27177.56 | 23177.59  | 23102.37  |
| 12 | 27194.36 | 27115.10 | 23124.06  | 23042.57  |
| 13 | 27132.60 | 27047.72 | 23065.78  | 22978.87  |
| 14 | 27065.94 | 26975.15 | 23002.74  | 22910.11  |
| 15 | 26995.12 | 26898.65 | 22934.81  | 22836.98  |
| 16 | 26919.26 | 26816.56 | 22862.64  | 22755.06  |
| 17 | 26837.97 | 26730.51 | 22785.65  | 22676.85  |
| 18 | 26753.49 | 26640.35 | 22703.93  | 22590.06  |
| 19 | 26663.96 | 26545.24 | 22617.66  | 22498.82  |
| 20 | 26569.43 | 26445.72 | 22526.87* | 22403.32  |
| 21 |          | 26342.37 | 22432.61* | 22303.12  |
| 22 |          |          | 22332.73  | 22198.73  |
| 23 |          |          |           |           |
| 24 |          |          |           |           |
| 25 |          |          |           |           |
| 26 |          |          |           |           |
| 27 |          |          |           |           |
| 28 |          |          |           |           |
| 29 |          |          |           |           |
| 30 |          |          |           |           |
| 31 |          |          |           |           |
| 32 |          |          |           |           |
| 33 |          |          |           |           |
| 34 |          |          |           |           |

| J  | ( 3- 3)  |          | ( 4- 3)   |           |
|----|----------|----------|-----------|-----------|
|    | R(J)     | P(J)     | R(J)      | P(J)      |
| 0  | 23699.02 |          |           |           |
| 1  | 23697.63 |          |           |           |
| 2  |          |          |           |           |
| 3  | 23680.64 |          | 23938.33  | 23914.70  |
| 4  | 23665.10 | 23634.73 | 23922.87  | 23892.54  |
| 5  | 23644.96 | 23607.65 | 23902.82  | 23865.37  |
| 6  | 23619.65 |          | 23877.67  | 23832.52  |
| 7  | 23590.31 | 23540.02 | 23848.03  | 23797.68  |
| 8  | 23555.49 | 23498.64 | 23813.65  | 23756.58  |
| 9  | 23516.48 | 23453.50 | 23774.24* | 23711.41  |
| 10 | 23472.42 | 23403.06 | 23730.91  | 23661.24  |
| 11 | 23424.22 | 23348.44 | 23682.53  | 23606.30* |
| 12 | 23370.87 | 23289.17 | 23629.53  | 23547.40  |
| 13 | 23313.16 | 23225.40 |           | 23483.79  |
| 14 | 23250.68 | 23157.11 | 23509.81  | 23415.60  |
| 15 | 23183.62 | 23084.29 | 23443.04  | 23343.07  |
| 16 | 23112.05 | 23007.01 | 23371.82  | 23266.33  |
| 17 | 23035.56 | 22925.38 | 23295.78  | 23184.84  |
| 18 | 22954.87 | 22839.30 | 23215.39  | 23099.18  |
| 19 | 22869.59 | 22748.50 | 23130.85  | 23009.02  |
| 20 | 22779.88 | 22654.09 | 23041.90  | 22915.06  |
| 21 | 22685.59 | 22554.55 | 22948.31  | 22816.48  |
| 22 | 22586.97 | 22451.96 | 22850.53  | 22713.79  |
| 23 | 22484.07 | 22344.23 | 22748.50  | 22607.08  |
| 24 | 22376.57 | 22232.54 | 22642.05  | 22496.50  |
| 25 | 22265.03 |          | 22531.81  | 22381.37  |
| 26 |          |          | 22417.11  | 22262.56  |
| 27 |          |          | 22298.12  |           |
| 28 |          |          |           |           |
| 29 |          |          |           |           |
| 30 |          |          |           |           |
| 31 |          |          |           |           |
| 32 |          |          |           |           |
| 33 |          |          |           |           |
| 34 |          |          |           |           |

| J  | ( 5- 3)  |           | ( 9- 3)  |          |
|----|----------|-----------|----------|----------|
|    | R(J)     | P(J)      | R(J)     | P(J)     |
| 0  |          |           |          |          |
| 1  |          |           | 25360.19 |          |
| 2  |          |           | 25354.67 |          |
| 3  | 24206.08 |           | 25343.75 |          |
| 4  |          |           | 25328.04 | 25297.97 |
| 5  | 24170.13 |           | 25307.32 | 25271.05 |
| 6  | 24145.31 | 24101.87  | 25282.22 | 25239.05 |
| 7  | 24115.82 | 24065.51  | 25252.28 | 25202.28 |
| 8  | 24081.21 | 24025.08* | 25217.68 | 25161.33 |
| 9  | 24042.32 | 23978.83  | 25178.15 | 25115.41 |
| 10 | 23998.72 | 23929.28  | 25134.30 | 25065.45 |
| 11 | 23950.37 | 23874.48  | 25085.47 | 25010.30 |
| 12 | 23897.38 | 23815.55  | 25031.96 | 24950.75 |
| 13 | 23839.90 | 23751.74  | 24974.24 | 24886.91 |
| 14 | 23777.96 | 23683.74  | 24911.97 | 24818.35 |
| 15 | 23711.41 | 23611.05  | 24845.09 | 24745.31 |
| 16 | 23640.29 |           | 24774.08 | 24668.25 |
| 17 |          | 23453.50  | 24698.06 | 24586.48 |
| 18 | 23484.91 | 23367.65  | 24617.28 | 24500.92 |
| 19 | 23400.70 | 23277.93  | 24533.07 | 24410.91 |
| 20 | 23311.70 | 23184.84* | 24444.10 | 24316.58 |
| 21 | 23218.80 | 23086.03  | 24351.83 | 24218.35 |
| 22 | 23121.52 | 22983.62  | 24254.62 | 24115.82 |
| 23 | 23020.02 | 22877.31  | 24154.27 |          |
| 24 | 22914.18 | 22767.16  |          |          |
| 25 | 22804.32 | 22652.82  |          |          |
| 26 | 22690.61 | 22534.45  |          |          |
| 27 | 22572.57 | 22412.61  |          |          |
| 28 | 22450.80 | 22286.65  |          |          |
| 29 | 22325.02 |           |          |          |
| 30 | 22195.55 |           |          |          |
| 31 |          |           |          |          |
| 32 |          |           |          |          |
| 33 |          |           |          |          |
| 34 |          |           |          |          |

| J  | (10- 3)  |           | ( 1- 4)   |           |
|----|----------|-----------|-----------|-----------|
|    | R(J)     | P(J)      | R(J)      | P(J)      |
| 0  |          |           | 22254.59  |           |
| 1  |          |           | 22253.60  | 22242.56  |
| 2  |          |           | 22247.76  | 22230.56  |
| 3  |          |           | 22237.34  | 22213.84  |
| 4  |          | 25593.10  | 22222.65  | 22192.30  |
| 5  | 25602.01 | 25565.76  | 22202.81  | 22165.98  |
| 6  | 25576.98 |           | 22178.62  |           |
| 7  | 25546.64 | 25497.15  |           |           |
| 8  | 25511.85 | 25455.99  |           |           |
| 9  | 25471.96 | 25409.99  |           | 22016.36* |
| 10 | 25427.99 | 25359.51  | 22034.55* | 21967.24  |
| 11 | 25379.05 | 25304.44  | 21988.22  | 21914.27  |
| 12 | 25325.30 | 25244.50  | 21936.02  | 21856.32  |
| 13 | 25267.33 | 25180.26  | 21879.40  | 21793.94  |
| 14 | 25204.51 | 25111.81  | 21817.92  |           |
| 15 | 25137.49 | 25038.39  | 21752.06  | 21655.82  |
| 16 | 25065.45 | 24961.40  | 21681.70  | 21580.33  |
| 17 | 24989.44 | 24878.18* | 21606.01  | 21499.69  |
| 18 | 24908.98 | 24792.98  | 21526.04  | 21414.86  |
| 19 | 24824.14 | 24702.74  | 21441.55  | 21325.87  |
| 20 | 24735.03 | 24608.64  | 21352.42  | 21232.17  |
| 21 | 24641.52 | 24509.63  | 21258.78  | 21134.38  |
| 22 | 24543.90 | 24407.08  | 21161.09  | 21032.12  |
| 23 | 24442.22 | 24299.84* |           |           |
| 24 | 24336.42 |           |           |           |
| 25 | 24226.52 | 24075.15  |           |           |
| 26 | 24112.54 | 23956.85  |           |           |
| 27 | 23995.31 | 23835.07* |           |           |
| 28 | 23873.41 | 23707.90* |           |           |
| 29 | 23747.73 |           |           |           |
| 30 |          |           |           |           |
| 31 |          |           |           |           |
| 32 |          |           |           |           |
| 33 |          |           |           |           |
| 34 |          |           |           |           |

| J  | ( 2- 4)  |          | ( 3- 4)  |           |
|----|----------|----------|----------|-----------|
|    | R(J)     | P(J)     | R(J)     | P(J)      |
| 0  |          |          |          |           |
| 1  |          |          |          |           |
| 2  | 22477.24 |          |          |           |
| 3  | 22466.70 | 22443.52 |          |           |
| 4  | 22451.96 | 22421.78 |          |           |
| 5  | 22432.61 | 22395.43 | 22678.10 | 22640.86  |
| 6  | 22408.47 | 22365.08 | 22654.09 | 22610.40  |
| 7  | 22380.10 | 22330.18 | 22625.65 | 22575.47  |
| 8  | 22346.83 | 22290.44 | 22592.77 | 22536.00  |
| 9  | 22309.16 | 22246.41 | 22554.99 | 22492.13  |
| 10 | 22266.80 | 22197.95 | 22513.15 | 22443.52  |
| 11 | 22220.01 |          | 22466.70 | 22390.83  |
| 12 | 22168.72 |          | 22415.40 | 22333.88  |
| 13 |          | 22025.56 | 22360.05 | 22272.50  |
| 14 | 22052.46 | 21959.46 | 22300.10 | 22206.76  |
| 15 | 21987.34 | 21888.92 | 22235.79 | 22136.46  |
| 16 | 21917.72 | 21814.00 | 22167.00 | 22062.00  |
| 17 | 21843.80 |          |          | 21983.39  |
| 18 | 21765.34 | 21651.42 | 22016.36 | 21900.67  |
| 19 | 21682.48 | 21563.77 | 21934.43 | 21814.00  |
| 20 | 21595.43 | 21471.53 | 21847.94 |           |
| 21 | 21503.37 | 21374.88 | 21757.59 | 21627.25  |
| 22 | 21407.49 | 21274.62 | 21662.88 | 21527.58  |
| 23 | 21306.76 | 21170.03 | 21563.78 | 21424.39  |
| 24 | 21202.39 | 21061.24 | 21461.10 | 21316.58  |
| 25 | 21093.56 | 20948.44 | 21353.55 | 21205.30  |
| 26 | 20980.49 | 20831.64 | 21242.12 | 21089.37* |
| 27 | 20863.51 | 20710.91 | 21126.87 |           |
| 28 | 20743.11 |          |          |           |
| 29 |          |          |          |           |
| 30 |          |          |          |           |
| 31 |          |          |          |           |
| 32 |          |          |          |           |
| 33 |          |          |          |           |
| 34 |          |          |          |           |

| J  | ( 4- 4)  |           | ( 8- 4)  |           |
|----|----------|-----------|----------|-----------|
|    | R(J)     | P(J)      | R(J)     | P(J)      |
| 0  |          |           |          |           |
| 1  |          |           |          |           |
| 2  |          |           | 24093.78 |           |
| 3  |          |           | 24083.72 |           |
| 4  |          |           | 24068.69 |           |
| 5  | 22536.11 |           | 24049.12 | 24012.24  |
| 6  | 22911.87 | 22867.59  | 24025.08 | 23981.72  |
| 7  | 22883.40 | 22833.23  | 23996.62 | 23946.66  |
| 8  | 22850.53 | 22793.92  | 23963.41 | 23906.95  |
| 9  | 22813.21 | 22749.95  | 23925.86 | 23862.72  |
| 10 | 22771.27 | 22701.40  | 23883.60 | 23815.55* |
| 11 | 22724.95 | 22649.27  | 23837.21 | 23761.96  |
| 12 | 22674.20 | 22592.00  | 23786.34 | 23704.60  |
| 13 | 22618.98 | 22530.61  | 23730.91 | 23643.23  |
| 14 | 22559.20 | 22465.04  | 23671.59 | 23577.31  |
| 15 | 22495.09 | 22395.43  | 23607.69 | 23508.25* |
| 16 | 22426.68 | 22321.16  | 23538.93 | 23433.04  |
| 17 | 22353.80 | 22242.78  | 23466.55 | 23354.85  |
| 18 | 22276.93 | 22160.37  | 23389.49 | 23272.48  |
| 19 | 22195.55 |           | 23308.61 | 23186.12  |
| 20 |          | 21983.38  | 23223.56 | 23095.75  |
| 21 | 22020.41 | 21888.92  | 23134.22 | 23001.31  |
| 22 | 21926.56 | 21789.77  | 23041.23 | 22902.08  |
| 23 | 21828.45 | 21686.70  | 22944.14 | 22801.02  |
| 24 |          | 21580.33  | 22842.55 | 22695.01  |
| 25 | 21620.06 | 21465.72  | 22738.14 | 22585.24  |
| 26 | 21509.69 | 21355.58  | 22629.13 | 22472.25  |
| 27 | 21395.68 | 21237.44  | 22516.59 | 22355.36  |
| 28 | 21277.95 | 21115.71  | 22400.35 | 22234.59* |
| 29 | 21155.98 | 20990.28  | 22280.22 |           |
| 30 | 21030.95 | 20861.30* |          |           |
| 31 | 20901.74 | 20727.56  |          |           |
| 32 | 20769.07 |           |          |           |
| 33 |          |           |          |           |
| 34 |          |           |          |           |

| J  | ( 1- 5)  |          | ( 2- 5)  |          |
|----|----------|----------|----------|----------|
|    | R(J)     | P(J)     | R(J)     | P(J)     |
| 0  |          |          |          |          |
| 1  |          |          |          |          |
| 2  | 21304.20 |          |          |          |
| 3  | 21294.25 | 21270.74 |          |          |
| 4  | 21279.57 | 21249.88 |          | 21479.41 |
| 5  | 21261.43 | 21225.03 | 21491.15 | 21454.08 |
| 6  | 21238.41 | 21195.02 | 21468.24 | 21424.39 |
| 7  | 21210.61 | 21161.09 | 21440.77 | 21390.96 |
| 8  | 21178.56 | 21122.68 | 21409.23 | 21352.42 |
| 9  | 21141.92 | 21080.14 | 21372.76 | 21310.35 |
| 10 | 21100.80 | 21033.08 | 21332.46 | 21263.34 |
| 11 | 21055.69 | 20981.66 | 21287.56 | 21212.58 |
| 12 | 21005.85 | 20925.81 | 21238.41 | 21157.42 |
| 13 | 20951.51 | 20865.52 | 21184.78 | 21097.91 |
| 14 | 20892.69 | 20801.62 | 21126.87 | 21034.38 |
| 15 | 20829.08 | 20732.58 | 21064.50 | 20966.40 |
| 16 | 20761.27 | 20659.92 | 20997.82 | 20894.25 |
| 17 | 20689.16 | 20582.70 | 20927.01 | 20818.05 |
| 18 | 20612.22 | 20501.00 | 20851.30 | 20737.35 |
| 19 | 20530.79 | 20415.19 | 20771.96 | 20653.11 |
| 20 | 20445.69 | 20325.32 | 20688.07 | 20564.48 |
| 21 | 20355.79 | 20230.66 | 20600.04 | 20471.76 |
| 22 | 20261.38 | 20132.41 | 20507.72 | 20374.96 |
| 23 | 20162.90 | 20030.09 | 20411.34 | 20274.39 |
| 24 | 20059.30 | 19923.34 | 20310.82 | 20169.79 |
| 25 |          | 19812.59 | 20206.26 | 20061.26 |
| 26 |          |          | 20097.69 |          |
| 27 |          |          |          |          |
| 28 |          |          |          |          |
| 29 |          |          |          |          |
| 30 |          |          |          |          |
| 31 |          |          |          |          |
| 32 |          |          |          |          |
| 33 |          |          |          |          |
| 34 |          |          |          |          |

| J  | ( 3- 5)   |           | ( 7- 5)  |          |
|----|-----------|-----------|----------|----------|
|    | R(J)      | P(J)      | R(J)     | P(J)     |
| 0  |           |           |          |          |
| 1  |           |           |          |          |
| 2  |           |           |          |          |
| 3  |           |           | 22852.76 |          |
| 4  |           |           | 22838.31 |          |
| 5  |           |           | 22819.72 | 22782.86 |
| 6  |           |           | 22796.78 | 22753.58 |
| 7  | 21686.70* |           | 22769.72 | 22715.65 |
| 8  | 21654.73  | 21598.16  | 22738.14 | 22681.61 |
| 9  | 21618.99  | 21556.03  | 22702.51 | 22635.33 |
| 10 | 21578.50  | 21505.65* | 22662.34 | 22592.77 |
| 11 | 21534.44* | 21458.63  | 22617.66 | 22542.02 |
| 12 | 21485.35  | 21403.63  | 22569.08 | 22487.45 |
| 13 | 21432.27  | 21344.85* | 22516.59 | 22427.57 |
| 14 | 21374.88  | 21281.19  | 22459.25 | 22365.08 |
| 15 | 21312.95  | 21213.80  | 22398.02 | 22298.12 |
| 16 | 21246.99  | 21141.92* | 22332.73 | 22226.85 |
| 17 | 21176.82  | 21066.48  | 22263.31 |          |
| 18 | 21102.46  | 20986.83  | 22189.70 |          |
| 19 | 21023.84  | 20903.12  |          | 21989.63 |
| 20 | 20941.08  | 20815.23  |          | 21902.58 |
| 21 | 20854.12  | 20723.67  |          |          |
| 22 | 20763.00* | 20628.07  |          |          |
| 23 | 20668.37* | 20528.58  |          |          |
| 24 | 20569.15  | 20425.21  |          |          |
| 25 |           |           |          |          |
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| J  | ( 1- 6)   |          | ( 2- 6)   |           |
|----|-----------|----------|-----------|-----------|
|    | R(J)      | P(J)     | R(J)      | P(J)      |
| 0  |           |          |           |           |
| 1  |           |          |           |           |
| 2  |           | 20368.45 |           |           |
| 3  | 20375.78  | 20352.39 |           |           |
| 4  | 20362.24  | 20332.10 |           | 20561.25* |
| 5  | 20344.33  | 20307.82 | 20574.34  | 20537.39  |
| 6  | 20222.41  | 20279.27 | 20552.44  | 20509.06  |
| 7  | 20296.13  | 20246.58 | 20526.05* | 20476.43  |
| 8  | 20265.43  | 20209.62 | 20496.07  | 20439.70  |
| 9  | 20230.66  | 20168.62 | 20461.57  | 20398.86  |
| 10 | 20191.39  | 20123.34 | 20422.68* | 20353.90  |
| 11 | 20147.89  | 20073.86 | 20379.55  | 20304.85  |
| 12 | 20100.01  | 20020.36 | 20332.82  | 20251.79  |
| 13 | 20047.96  | 19962.36 | 20281.33  | 20194.44* |
| 14 | 19991.48  | 19900.65 | 20225.92  | 20133.34  |
| 15 | 19930.86  | 19834.61 | 20166.72* | 20068.05  |
| 16 | 19865.77  | 19764.35 | 20102.33  | 19998.75  |
| 17 | 19796.78* | 19690.07 | 20034.52* | 19925.47  |
| 18 | 19722.95  | 19611.65 | 19962.36* | 19848.23  |
| 19 | 19644.97  | 19529.06 | 19885.82  | 19767.01  |
| 20 | 19562.48  | 19442.46 | 19805.48  | 19681.83  |
| 21 |           |          | 19721.05  | 19592.75  |
| 22 |           |          | 19632.58  | 19499.88  |
| 23 |           |          | 19540.10  | 19403.08  |
| 24 |           |          | 19443.65  |           |
| 25 |           |          |           |           |
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| J  | ( 6- 6)   |           | ( 4- 7)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  |           |           |           |           |
| 1  |           |           |           |           |
| 2  |           |           | 20222.99  |           |
| 3  |           |           | 20214.33  | 20190.56  |
| 4  |           |           | 20201.73  | 20171.26  |
| 5  |           |           | 20185.07  | 20147.89  |
| 6  | 21599.16  |           | 20164.39  | 20120.66  |
| 7  | 21573.28  | 21522.64* | 20139.74  | 20089.59  |
| 8  | 21543.16  | 21486.51  | 20111.18  | 20054.58* |
| 9  | 21509.69* | 21445.63  | 20078.53  | 20015.20  |
| 10 |           | 21401.06  | 20041.99  | 19972.43  |
| 11 | 21428.42  | 21352.42  | 20001.50  | 19925.47  |
| 12 | 21381.79  | 21299.59  | 19957.00  | 19875.12  |
| 13 | 21331.33  | 21243.11  | 19908.66  | 19820.51  |
| 14 | 21276.81  | 21182.47  | 19856.38  | 19762.28  |
| 15 | 21218.33  | 21118.07  | 19800.22  | 19700.24  |
| 16 | 21155.98  | 21049.75  | 19740.04  | 19634.68  |
| 17 | 21089.37  | 20977.60  | 19676.13  | 19565.20  |
| 18 | 21019.03  | 20901.74  | 19608.66  | 19492.09  |
| 19 | 20944.84  | 20822.11  | 19537.54* | 19415.48  |
| 20 | 20866.90  | 20738.83  | 19462.11  |           |
| 21 | 20784.99  | 20651.90  |           |           |
| 22 | 20699.35  |           |           |           |
| 23 |           |           |           |           |
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| J  | ( 5- 7)  |           | ( 5- 7)  |      |
|----|----------|-----------|----------|------|
|    | R(J)     | P(J)      | R(J)     | P(J) |
| 0  |          |           |          |      |
| 1  |          |           |          |      |
| 2  |          |           |          |      |
| 3  |          |           |          |      |
| 4  |          |           |          |      |
| 5  | 20452.77 |           | 20452.77 |      |
| 6  | 20432.18 | 20388.74* | 20432.18 |      |
| 7  | 20407.49 | 20357.05  |          |      |
| 8  | 20378.83 | 20322.41* |          |      |
| 9  | 20346.32 | 20283.21  |          |      |
| 10 | 20309.73 | 20239.94  |          |      |
| 11 | 20269.39 | 20193.28  |          |      |
| 12 | 20224.94 | 20142.75  |          |      |
| 13 | 20176.66 | 20088.34  |          |      |
| 14 | 20124.62 | 20030.05  |          |      |
| 15 | 20068.69 | 19968.46  |          |      |
| 16 | 20008.79 | 19902.70  |          |      |
| 17 | 19945.02 | 19833.64  |          |      |
| 18 | 19877.97 | 19760.73  |          |      |
| 19 | 19806.81 | 19684.33  |          |      |
| 20 | 19732.04 | 19604.28  |          |      |
| 21 | 19653.60 | 19520.67  |          |      |
| 22 | 19571.46 | 19433.71  |          |      |
| 23 | 19485.94 |           |          |      |
| 24 |          |           |          |      |
| 25 |          |           |          |      |
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Observed  $A^1\Sigma^+ - X^1\Sigma^+$  bands of  $^7\text{LiH}$

by this author and Crawford and Jorgensen.

| J  | ( 2- 0 )  |           | ( 3- 0 ) |          |
|----|-----------|-----------|----------|----------|
|    | R(J)      | P(J)      | R(J)     | P(J)     |
| 0  | 26542.81  |           | 26878.61 |          |
| 1  | 26541.87* | 26522.20  | 26875.43 | 26857.86 |
| 2  | 26527.35  | 26498.19* | 26863.20 | 26834.18 |
| 3  | 26505.99  | 26465.37* | 26842.00 | 26801.53 |
| 4  |           | 26424.01  | 26811.74 | 26755.81 |
| 5  | 26436.46  | 26373.43  | 26772.46 | 26709.30 |
| 6  | 26388.13  | 26314.01  | 26724.36 | 26649.99 |
| 7  | 26330.79  | 26245.82  | 26667.25 | 26581.77 |
| 8  | 26264.51  | 26168.82  | 26601.26 | 26504.88 |
| 9  | 26189.90* | 26083.15  | 26526.28 | 26419.60 |
| 10 | 26105.29  | 25988.85  | 26442.75 | 26325.57 |
| 11 | 26012.14  | 25885.57  | 26350.32 | 26223.15 |
| 12 | 25857.47* | 25774.62* | 26249.27 | 26112.18 |
| 13 |           | 25654.75  | 26139.62 | 25992.58 |
| 14 |           |           | 26021.48 |          |
| 15 |           |           |          |          |
| 16 |           |           |          |          |
| 17 |           |           |          |          |
| 18 |           |           |          |          |
| 19 |           |           |          |          |
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| J  | ( 4- 0)   |          | ( 5- 0)   |          |
|----|-----------|----------|-----------|----------|
|    | R(J)      | P(J)     | R(J)      | P(J)     |
| 0  | 27232.04* |          | 27600.80* |          |
| 1  | 27228.19  | 27210.77 | 27597.20* | 27576.61 |
| 2  | 27215.98  | 27186.97 | 27581.67  | 27552.79 |
| 3  | 27194.72  | 27154.21 | 27560.40  | 27520.01 |
| 4  |           | 27112.56 | 27530.06  | 27478.30 |
| 5  | 27125.26  | 27062.08 | 27490.76  | 27427.71 |
| 6  | 27077.08  | 27002.75 | 27442.54  | 27368.29 |
| 7  | 27020.07  | 26934.62 | 27385.38  | 27300.08 |
| 8  | 26954.14  | 26857.86 | 27319.36  | 27223.23 |
| 9  | 26879.42  | 26772.46 | 27244.50  | 27137.71 |
| 10 | 26795.93  | 26678.53 | 27161.02  | 27043.71 |
| 11 |           | 26576.04 | 27068.80* | 26941.26 |
| 12 | 26603.03  |          | 26968.08* | 26830.49 |
| 13 | 26493.55* | 26346.39 | 26858.83* | 26711.46 |
| 14 | 26375.97  | 26219.30 | 26742.48  | 26584.24 |
| 15 | 26249.96  | 26084.19 |           |          |
| 16 | 26115.68  | 25941.09 |           |          |
| 17 | 25973.24  |          |           |          |
| 18 |           |          |           |          |
| 19 |           |          |           |          |
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| J  | ( 6- 0)   |          | ( 7- 0)   |           |
|----|-----------|----------|-----------|-----------|
|    | R(J)      | P(J)     | R(J)      | P(J)      |
| 0  | 27572.81  |          | 28355.59* |           |
| 1  |           | 27952.23 | 28352.07  | 28335.72* |
| 2  | 27957.14  | 27528.39 | 28340.38* | 28311.02  |
| 3  | 27935.69  | 27895.55 | 28317.55  | 28278.11  |
| 4  | 27905.24  | 27853.75 | 28287.34  | 28236.20  |
| 5  | 27865.76  | 27803.00 | 28247.64  | 28185.33  |
| 6  | 27817.29  | 27743.41 | 28198.91  | 28125.58  |
| 7  | 27759.93  | 27675.07 | 28141.30  | 28056.56  |
| 8  | 27693.74  | 27598.01 | 28074.75  | 27975.67  |
| 9  | 27618.65  | 27512.33 | 27999.40  | 27893.65  |
| 10 | 27534.96  | 27418.19 | 27915.22  | 27795.06  |
| 11 | 27442.54  |          | 27822.39  | 27696.05  |
| 12 | 27339.17* | 27204.44 | 27721.03* | 27584.67  |
| 13 | 27232.04  | 27085.17 | 27611.17  | 27465.07  |
| 14 | 27114.29  | 26957.89 | 27492.56* | 27337.36  |
| 15 | 26988.27  |          | 27366.47  | 27201.63  |
| 16 |           | 26875.47 | 27231.37* | 27058.11  |
| 17 | 26711.92  | 26528.53 | 27089.22  | 26906.80  |
| 18 |           |          | 26938.78  | 26748.00  |
| 19 |           |          |           | 26581.77  |
| 20 |           |          |           |           |
| 21 |           |          |           |           |
| 22 |           |          |           |           |
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| J  | ( 8- 0)  |          | ( 9- 0)   |           |
|----|----------|----------|-----------|-----------|
|    | R(J)     | P(J)     | R(J)      | P(J)      |
| 0  | 28742.87 |          | 29133.24  |           |
| 1  | 28739.47 | 28722.46 | 29129.61  | 29112.86  |
| 2  | 28726.83 | 28698.53 | 29116.95* | 29088.78  |
| 3  | 28705.03 | 28665.51 | 29094.77  | 29055.73  |
| 4  | 28674.11 | 28623.40 | 29063.59  | 29013.44  |
| 5  | 28634.12 | 28572.25 | 29023.29  | 28962.20  |
| 6  | 28585.11 | 28512.25 | 28973.84  | 28901.86  |
| 7  | 28527.00 | 28443.43 | 28915.36  | 28832.59  |
| 8  | 28460.07 | 28365.79 | 28847.85  |           |
| 9  | 28384.22 | 28279.42 |           | 28667.71  |
| 10 | 28299.62 | 28184.42 | 28686.18  | 28572.25  |
| 11 | 28206.29 | 28080.94 | 28591.34* | 28468.16  |
| 12 | 28104.30 | 27969.02 | 28489.53  | 28355.58  |
| 13 | 27993.95 | 27848.52 | 28378.35  | 28234.86  |
| 14 |          | 27720.67 | 28258.74  | 28105.91  |
| 15 | 27747.87 | 27584.42 | 28130.85  | 27969.02* |
| 16 | 27612.65 | 27440.15 | 27994.79  | 27823.84  |
| 17 | 27469.38 |          | 27850.53  | 27671.15  |
| 18 |          | 27128.77 | 27698.46  | 27510.79  |
| 19 | 27159.38 |          | 27538.67  | 27342.02  |
| 20 |          |          | 27371.16  |           |
| 21 |          |          |           |           |
| 22 |          |          |           |           |
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| J  | (10- 0)   |           | (11- 0)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 29524.75  |           | 29915.76  |           |
| 1  | 29521.02  | 29504.44* | 29911.86  | 29895.48  |
| 2  | 29508.02  | 29480.35  | 29898.61  | 29871.34  |
| 3  | 29485.70  | 29447.07  | 29876.00  | 29837.94  |
| 4  | 29454.18  | 29404.60  | 29844.06  | 29795.26  |
| 5  | 29413.41  | 29352.58  | 29802.85  | 29743.30  |
| 6  | 29363.56  | 29292.39  | 29752.40  | 29682.29  |
| 7  | 29304.43  | 29222.72  | 29692.77  | 29612.20  |
| 8  | 29236.34  | 29144.14  | 29624.04  | 29533.21* |
| 9  | 29159.24  | 29056.74  | 29546.20  | 29445.12  |
| 10 | 29073.27  | 28960.72  | 29459.39  | 29348.26* |
| 11 | 28978.52  | 28855.53  | 29363.56* | 29242.95  |
| 12 | 28876.39* | 28742.87* | 29259.30  | 29128.83  |
| 13 | 28762.97  | 28621.19  | 29146.15  | 29006.38  |
| 14 | 28642.35  |           | 29024.52  | 28874.99* |
| 15 | 28513.47  | 28353.05* | 28894.44  |           |
| 16 | 28376.34  | 28207.59  | 28756.02  |           |
| 17 | 28231.06  | 28053.84  |           |           |
| 18 | 28077.87  | 27892.44  |           |           |
| 19 | 27916.94  | 27723.59  |           |           |
| 20 | 27747.87* |           |           |           |
| 21 |           |           |           |           |
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| J  | (12- 0)  |          | (13- 0)   |           |
|----|----------|----------|-----------|-----------|
|    | R(J)     | P(J)     | R(J)      | P(J)      |
| 0  | 30304.85 |          | 30690.73  |           |
| 1  | 30300.80 |          | 30686.51  | 30670.60  |
| 2  | 30287.26 | 30260.44 | 30672.66  | 30646.27  |
| 3  |          | 30226.85 | 30649.35  | 30612.48  |
| 4  | 30231.99 | 30183.89 | 30616.54  | 30565.25  |
| 5  | 30160.27 | 30121.63 | 30574.26  | 30516.69  |
| 6  | 30139.21 | 30070.19 | 30522.57  | 30454.75  |
| 7  | 30078.90 | 29999.62 | 30461.50  | 30384.07* |
| 8  | 30009.39 | 29915.53 | 30391.14  | 30303.30  |
| 9  | 29930.72 | 29831.27 | 30311.58  | 30213.83  |
| 10 | 29843.00 | 29733.75 | 30222.83  |           |
| 11 | 29746.35 | 29627.45 | 30125.02  | 30008.21  |
| 12 | 29640.87 | 29512.47 | 30018.36  | 29892.27  |
| 13 | 29526.59 | 29389.04 | 29902.82  | 29767.74  |
| 14 | 29403.71 | 29257.16 | 29778.56  | 29634.71  |
| 15 | 29272.33 | 29116.55 | 29645.75  | 29493.27  |
| 16 | 29132.54 | 28968.81 | 29504.44* | 29342.67  |
| 17 | 28984.58 | 28812.63 | 29354.81  | 29186.02  |
| 18 | 28828.45 |          | 29197.03  | 29020.56  |
| 19 |          |          | 29031.23  | 28847.28  |
| 20 |          |          | 28858.90* | 28666.54  |
| 21 |          |          | 28676.27  |           |
| 22 |          |          |           |           |
| 23 |          |          |           |           |
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| J  | (14- 0)   |           | (15- 0)  |          |
|----|-----------|-----------|----------|----------|
|    | R(J)      | P(J)      | R(J)     | P(J)     |
| 0  |           |           |          |          |
| 1  | 31067.48  | 31052.09* |          |          |
| 2  | 31053.35  | 31027.57  |          |          |
| 3  | 31029.66  | 30993.52  |          |          |
| 4  | 30996.37  | 30950.64  |          |          |
| 5  | 30953.54  | 30896.99  |          |          |
| 6  | 30901.11  | 30824.63  |          |          |
| 7  | 30839.26  | 30762.80  | 31210.79 |          |
| 8  | 30767.97  | 30681.80  | 31138.48 |          |
| 9  | 30687.37  | 30591.55  | 31056.72 | 30962.09 |
| 10 | 30597.50  | 30492.27  | 30965.67 | 30862.84 |
| 11 | 30498.53  | 30383.57* | 30865.39 | 30752.47 |
| 12 | 30390.50  |           | 30755.90 | 30635.22 |
| 13 |           | 30141.18  | 30637.39 | 30508.04 |
| 14 | 30147.74  | 30006.78  | 30509.92 | 30372.22 |
| 15 | 30013.30  | 29864.44* | 30373.65 | 30227.64 |
| 16 | 29870.28  | 29712.90  | 30228.69 | 30074.57 |
| 17 | 29718.87  | 29553.64  | 30075.05 |          |
| 18 | 29559.87* | 29386.43  |          |          |
| 19 | 29391.34  |           |          |          |
| 20 |           |           |          |          |
| 21 |           |           |          |          |
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| J  | ( 1- 1)  |           | ( 2- 1)   |           |
|----|----------|-----------|-----------|-----------|
|    | R(J)     | P(J)      | R(J)      | P(J)      |
| 0  |          |           | 25183.05  |           |
| 1  | 24867.23 |           | 25180.42  | 25162.95  |
| 2  | 24855.73 |           | 25168.93  | 25139.60* |
| 3  | 24835.59 | 24795.41  | 25148.91  | 25108.45  |
| 4  | 24806.75 | 24755.34  | 25120.29  | 25068.51  |
| 5  | 24769.23 | 24706.73  | 25083.10  | 25020.05  |
| 6  | 24723.06 | 24649.64  | 25037.31  | 24963.15  |
| 7  | 24668.12 | 24583.32* | 24982.90  | 24897.89  |
| 8  | 24604.54 | 24510.08  | 24919.97  | 24824.25  |
| 9  | 24532.30 | 24427.64  | 24848.51  | 24742.39  |
| 10 | 24451.31 | 24336.88  | 24768.56  | 24652.27  |
| 11 | 24361.63 | 24237.74  | 24680.15  | 24553.97* |
| 12 | 24263.40 | 24130.32  | 24584.06* | 24447.61  |
| 13 | 24156.52 | 24014.71  | 24478.20  | 24333.23  |
| 14 | 24041.06 | 23890.87  | 24364.73  | 24210.85  |
| 15 | 23917.15 | 23758.91  | 24243.08  | 24080.61  |
| 16 | 23784.79 | 23618.90  | 24113.28  | 23942.61  |
| 17 | 23644.16 |           |           | 23796.88  |
| 18 |          |           |           |           |
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| J  | ( 3- 1)   |           | ( 4- 1)   |          |
|----|-----------|-----------|-----------|----------|
|    | R(J)      | P(J)      | R(J)      | P(J)     |
| 0  | 25518.84  |           |           |          |
| 1  | 25516.05  | 25498.60  | 25868.84  |          |
| 2  | 25504.71  | 25475.70  | 25857.47  | 25828.46 |
| 3  | 25484.78  | 25444.24  | 25837.52  | 25796.97 |
| 4  | 25456.22  | 25404.28  | 25808.98  | 25757.08 |
| 5  | 25419.10  | 25355.88  | 25771.91  | 25708.63 |
| 6  | 25373.48  | 25299.07  | 25726.25  | 25651.86 |
| 7  | 25319.30  | 25233.94  | 25672.17  | 25586.71 |
| 8  | 25256.71  |           | 25609.24* | 25513.29 |
| 9  | 25185.64  | 25078.80  | 25538.66  | 25431.63 |
| 10 | 25106.12  | 24989.01  | 25459.36  | 25341.91 |
| 11 | 25018.33  | 24891.07  | 25371.77  | 25244.13 |
| 12 | 24922.26  | 24785.16  | 25276.01  | 25138.38 |
| 13 | 24817.97  | 24671.37  | 25172.11  | 25024.80 |
| 14 | 24705.57  | 24549.74  |           | 24903.49 |
| 15 | 24585.10* | 24420.10* | 24940.30  | 24774.92 |
| 16 | 24456.70  | 24283.44  | 24812.57  | 24638.00 |
| 17 | 24320.39  | 24128.93  | 24677.05  | 24494.11 |
| 18 | 24176.36  | 23987.03  | 24533.95  | 24342.90 |
| 19 | 24024.61  | 23827.83  | 24383.32  |          |
| 20 | 23865.41  | 23661.53  | 24225.33  | 24019.14 |
| 21 | 23698.82  | 23488.12  |           |          |
| 22 |           |           |           |          |
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| J  | ( 5- 1)   |           | ( 6- 1)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  |           |           | 26612.99  |           |
| 1  | 26234.62  | 26217.31  | 26610.12  |           |
| 2  | 26223.15  | 26194.32  | 26598.57  | 26565.85  |
| 3  |           | 26162.83  | 26578.52  | 26538.28  |
| 4  | 26174.56  | 26122.71  | 26549.65  | 26498.20  |
| 5  | 26137.37  | 26074.35  | 26512.25  | 26449.62  |
| 6  | 26091.69  | 26017.43  | 26466.48  | 26392.56  |
| 7  | 26037.46  | 25952.17  | 26412.05  | 26327.16  |
| 8  | 25974.83  | 25878.64  | 26349.20  | 26253.49  |
| 9  | 25903.76* | 25796.57  | 26277.93  | 26171.59  |
| 10 | 25824.43  | 25707.12  | 26198.41  | 26081.51  |
| 11 | 25736.83  | 25609.61* | 26110.53* | 25982.53  |
| 12 | 25641.05  | 25503.50  | 26014.59  | 25877.39  |
| 13 | 25537.22  | 25389.86  | 25910.43  | 25763.58  |
| 14 | 25425.38  | 25268.57  | 25798.48  | 25642.03  |
| 15 | 25305.68  | 25140.05* |           | 25513.29* |
| 16 | 25178.15  | 25003.26  | 25551.00  | 25376.33  |
| 17 | 25042.90  | 24859.45  | 25415.65  |           |
| 18 | 24900.22  | 24708.48  |           |           |
| 19 | 24750.03  | 24550.42  |           |           |
| 20 | 24592.54  | 24385.41  |           |           |
| 21 | 24427.64* | 24213.43* |           |           |
| 22 | 24256.26  |           |           |           |
| 23 |           |           |           |           |
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| J  | ( 0- 2)   |          | ( 1- 2)   |          |
|----|-----------|----------|-----------|----------|
|    | R(J)      | P(J)     | R(J)      | P(J)     |
| 0  | 23274.18  |          | 23555.28  |          |
| 1  | 23271.60  | 23254.48 | 23553.41* | 23535.50 |
| 2  | 23260.64  | 23232.32 | 23542.17  | 23513.37 |
| 3  | 23241.37  | 23201.78 | 23523.25  | 23482.99 |
| 4  | 23213.63  | 23163.16 | 23496.10  | 23444.68 |
| 5  | 23177.43  | 23116.25 | 23460.64  | 23358.11 |
| 6  | 23132.71  | 23061.09 | 23416.93  | 23342.55 |
| 7  | 23079.45  | 22997.66 | 23364.92  | 23280.86 |
| 8  | 23017.54  | 22925.81 | 23304.65  | 23210.13 |
| 9  | 22946.50  | 22845.97 | 23236.06  | 23121.43 |
| 10 | 22867.89  | 22757.74 | 23159.18  | 23044.77 |
| 11 | 22780.11  | 22660.69 | 23074.07  | 22950.15 |
| 12 | 22683.40* | 22556.39 | 22980.69  | 22847.69 |
| 13 | 22579.77  |          | 22879.13  | 22737.34 |
| 14 |           |          | 22769.38  | 22619.18 |
| 15 |           |          | 22651.51  | 22493.29 |
| 16 |           |          | 22525.56  |          |
| 17 |           |          |           |          |
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| J  | ( 2- 2)  |           | ( 3- 2)   |           |
|----|----------|-----------|-----------|-----------|
|    | R(J)     | P(J)      | R(J)      | P(J)      |
| 0  | 23868.26 |           | 24203.94  |           |
| 1  |          | 23848.52  | 24201.61  | 24184.19  |
| 2  | 23855.33 | 23826.38  | 24191.09  | 24162.05  |
| 3  | 23836.56 | 23796.12  | 24172.39  | 24131.87  |
| 4  | 23809.61 | 23757.81  | 24145.53  | 24093.58  |
| 5  | 23774.47 | 23711.46  | 24110.51  | 24047.25  |
| 6  |          | 23657.07  | 24067.35  | 23992.95  |
| 7  | 23679.70 | 23594.71  | 24016.10  | 23930.71  |
| 8  | 23620.08 | 23524.40  | 23956.76  | 23860.60  |
| 9  | 23552.32 | 23446.20  | 23889.45  | 23782.61  |
| 10 | 23476.48 | 23360.19  | 23814.06  | 23696.51  |
| 11 | 23392.56 | 23266.41  | 23730.77  | 23603.52  |
| 12 | 23300.67 | 23164.93  | 23639.61  | 23502.49  |
| 13 |          | 23055.80  | 23540.62  | 23394.53* |
| 14 | 23093.05 | 22939.11  | 23424.68* | 23278.04  |
| 15 | 22577.42 | 22815.00  | 23319.46  | 23154.73  |
| 16 | 22854.04 | 22683.40* | 23197.43  | 23024.19  |
| 17 | 22722.98 | 22544.50  | 23067.98  | 22886.53  |
| 18 | 22584.34 |           | 22932.58* | 22741.81  |
| 19 |          |           | 22786.94  | 22590.16  |
| 20 |          |           | 22635.60  |           |
| 21 |          |           | 22477.20  |           |
| 22 |          |           |           |           |
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| J  | ( 4- 2)   |           | ( 2- 3)   |          |
|----|-----------|-----------|-----------|----------|
|    | R(J)      | P(J)      | R(J)      | P(J)     |
| 0  | 24556.74  |           | 22597.36  |          |
| 1  | 24554.43  |           | 22594.90* | 22577.99 |
| 2  | 24543.83  | 24514.52  | 22585.67  | 22556.71 |
| 3  | 24525.16  | 24484.66  | 22568.11  | 22527.72 |
| 4  | 24458.28  | 24446.36  | 22542.82  | 22491.02 |
| 5  | 24400.03  |           | 22509.73  |          |
| 6  | 24420.38* | 24345.70  | 22468.87  |          |
| 7  | 24283.44* |           |           |          |
| 8  | 24309.65  | 24213.43* |           |          |
| 9  | 24242.42  | 24135.44  |           |          |
| 10 | 24167.24  | 24049.80  |           |          |
| 11 | 24084.19  | 23956.76* |           |          |
| 12 | 23993.34  | 23855.72  |           |          |
| 13 | 23894.74  | 23747.42  |           |          |
| 14 | 23788.46  | 23631.78  |           |          |
| 15 | 23674.67  | 23508.87  |           |          |
| 16 | 23552.82* | 23378.81  |           |          |
| 17 | 23424.68  |           |           |          |
| 18 | 23288.71  | 23097.64  |           |          |
| 19 | 23145.59  | 22946.50* |           |          |
| 20 | 22995.44  | 22789.33  |           |          |
| 21 | 22838.42  | 22625.24  |           |          |
| 22 | 22674.59  |           |           |          |
| 23 |           |           |           |          |
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| J  | ( 3- 3)   |          | ( 0- 4)   |           |
|----|-----------|----------|-----------|-----------|
|    | R(J)      | P(J)     | R(J)      | P(J)      |
| 0  | 22933.08  |          | 20777.41* |           |
| 1  | 22932.58* | 22913.77 | 20774.61* | 20757.56* |
| 2  | 22921.38  | 22892.41 | 20764.63  | 20736.25  |
| 3  | 22903.92  | 22863.43 | 20747.77  | 20708.24  |
| 4  | 22878.76  | 22826.78 | 20723.48* | 20672.79  |
| 5  | 22845.70  | 22782.53 | 20691.39* |           |
| 6  | 22805.08  | 22730.68 | 20651.24  | 20579.61  |
| 7  | 22756.64  | 22671.25 | 20603.57  | 20521.83  |
| 8  | 22700.56  | 22604.35 | 20548.17  | 20456.62  |
| 9  | 22636.87  | 22530.10 | 20484.87  | 20382.75  |
| 10 | 22565.57  |          | 20413.70  | 20302.58  |
| 11 | 22486.71  |          | 20334.68  | 20215.74  |
| 12 |           |          | 20247.76  | 20120.46  |
| 13 |           |          | 20153.18  | 20017.79  |
| 14 |           |          | 20050.80  | 19907.67  |
| 15 |           |          |           | 19790.11  |
| 16 |           |          |           |           |
| 17 |           |          |           |           |
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| J  | ( 1- 4)   |           | ( 2- 4)  |           |
|----|-----------|-----------|----------|-----------|
|    | R(J)      | P(J)      | R(J)     | P(J)      |
| 0  | 21057.93* |           |          |           |
| 1  | 21055.82* | 21038.69* |          |           |
| 2  | 21045.96  | 21017.23  |          |           |
| 3  | 21029.07* | 20989.38  |          |           |
| 4  | 21005.59  | 20954.25  |          |           |
| 5  | 20974.31  | 20911.77  |          |           |
| 6  | 20935.44  | 20862.03  |          |           |
| 7  | 20889.12  | 20805.05  |          | 21118.59  |
| 8  | 20835.29  | 20740.82  |          | 21054.90  |
| 9  | 20773.90  | 20669.25  | 21089.57 | 20984.00  |
| 10 | 20705.09  | 20590.59  | 21022.23 | 20906.00  |
| 11 | 20628.82  | 20504.80  | 20947.18 | 20821.11* |
| 12 | 20544.93  | 20411.79  | 20864.53 | 20729.24  |
| 13 | 20453.65  | 20311.81  | 20775.44 | 20630.32* |
| 14 | 20355.00  | 20204.72  | 20678.74 | 20524.78  |
| 15 | 20248.83  | 20090.64  | 20574.90 | 20412.53  |
| 16 | 20135.53  | 19969.51  | 20464.06 | 20293.33  |
| 17 | 20014.95  | 19841.87  | 20346.26 | 20167.68  |
| 18 | 19887.30  | 19707.11  | 20221.60 | 20035.57  |
| 19 | 19752.73  | 19565.89  | 20089.57 | 19897.01  |
| 20 | 19611.29  | 19418.08  | 19951.90 | 19752.17  |
| 21 | 19463.13  | 19263.74  | 19807.44 | 19601.23  |
| 22 | 19308.41  |           | 19656.53 | 19444.16  |
| 23 |           |           | 19499.34 | 19281.11  |
| 24 |           |           | 19336.19 | 19112.24  |
| 25 |           |           |          |           |
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| J  | ( 3- 4)   |          | ( 0- 5)  |          |
|----|-----------|----------|----------|----------|
|    | R(J)      | P(J)     | R(J)     | P(J)     |
| 0  |           |          |          |          |
| 1  |           |          | 19588.75 | 19571.61 |
| 2  |           |          | 19580.25 | 19552.09 |
| 3  |           |          | 19564.65 | 19525.18 |
| 4  |           |          | 19541.75 | 19491.25 |
| 5  |           |          | 19511.61 | 19450.39 |
| 6  |           |          | 19473.58 | 19402.52 |
| 7  |           |          | 19429.28 | 19347.48 |
| 8  |           |          | 19376.99 | 19285.29 |
| 9  |           |          | 19317.27 | 19216.04 |
| 10 |           |          | 19249.97 |          |
| 11 |           |          |          |          |
| 12 |           | 21066.62 | 19092.92 |          |
| 13 | 21114.96  | 20968.34 |          |          |
| 14 | 21019.58* | 20863.70 |          |          |
| 15 | 20916.97  | 20752.22 |          |          |
| 16 | 20807.54  | 20634.29 |          |          |
| 17 | 20691.39  | 20509.83 |          |          |
| 18 | 20568.46  | 20375.07 |          |          |
| 19 | 20438.95  | 20242.10 |          |          |
| 20 | 20302.86  | 20098.54 |          |          |
| 21 | 20160.53  | 19949.86 |          |          |
| 22 | 20012.00  | 19794.82 |          |          |
| 23 | 19857.41  | 19634.38 |          |          |
| 24 | 19696.87  | 19468.04 |          |          |
| 25 | 19530.65  | 19296.28 |          |          |
| 26 | 19358.79  |          |          |          |
| 27 |           |          |          |          |
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| J  | ( 1- 5)  |           | ( 2- 5)  |          |
|----|----------|-----------|----------|----------|
|    | R(J)     | P(J)      | R(J)     | P(J)     |
| 0  |          |           |          |          |
| 1  | 19869.89 | 19852.80* |          |          |
| 2  | 19861.64 | 19822.93  |          |          |
| 3  | 19846.41 | 19806.24  | 20159.73 |          |
| 4  | 19824.16 | 19772.69  | 20137.70 | 20085.78 |
| 5  | 19794.82 | 19732.23  |          |          |
| 6  | 19758.22 | 19684.86  | 20072.39 | 19958.32 |
| 7  | 19714.68 | 19630.61  | 20029.37 | 19944.36 |
| 8  | 19664.02 | 19565.56  | 19979.43 | 19883.60 |
| 9  | 19606.25 | 19501.65  | 19922.39 | 19816.29 |
| 10 | 19541.34 | 19427.00  | 19858.53 | 19742.27 |
| 11 | 19469.33 | 19345.44* | 19787.76 | 19661.59 |
| 12 | 19390.22 | 19257.12  | 19710.16 | 19574.49 |
| 13 | 19303.98 | 19162.05  | 19625.76 | 19480.73 |
| 14 | 19210.58 | 19060.14  | 19534.42 | 19380.55 |
| 15 | 19110.17 |           | 19436.42 | 19273.89 |
| 16 | 19002.84 |           | 19331.77 | 19161.13 |
| 17 |          |           | 19220.39 |          |
| 18 |          |           | 19102.35 |          |
| 19 |          |           |          |          |
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Observed  $A^1\Sigma^+ - X^1\Sigma^+$  bands of  $^7\text{LiD}$

by Crawford and Jorgensen.

| J  | ( 3- 0)   |           | ( 4- 0)  |          |
|----|-----------|-----------|----------|----------|
|    | R(J)      | P(J)      | R(J)     | P(J)     |
| 0  | 26756.17  |           |          |          |
| 1  | 26754.36  | 26743.12* |          | 26996.67 |
| 2  | 26746.66* | 26731.01  |          | 26983.26 |
| 3  | 26735.48  | 26712.49  | 26987.61 | 26964.68 |
| 4  | 26718.10  | 26688.71  | 26970.56 |          |
| 5  | 26695.89  | 26660.33  | 26948.24 | 26912.38 |
| 6  | 26668.51  | 26626.46  | 26920.86 | 26878.66 |
| 7  | 26636.10  | 26587.67  | 26888.46 | 26839.95 |
| 8  | 26598.58  | 26543.85  | 26851.01 | 26796.18 |
| 9  | 26555.95  |           | 26808.50 | 26747.41 |
| 10 |           |           | 26760.92 | 26693.71 |
| 11 |           |           | 26708.34 | 26635.12 |
| 12 |           |           | 26650.87 | 26571.62 |
| 13 |           |           | 26588.21 | 26503.19 |
| 14 |           |           | 26520.74 | 26429.92 |
| 15 |           |           |          |          |
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| J  | ( 5- 0)   |          | ( 6- 0)   |          |
|----|-----------|----------|-----------|----------|
|    | R(J)      | P(J)     | R(J)      | P(J)     |
| 0  | 27271.44* |          | 27540.45  |          |
| 1  | 27268.53  | 27258.71 | 27538.65  | 27528.82 |
| 2  | 27261.62  | 27245.28 | 27531.71  | 27515.39 |
| 3  | 27249.60  |          | 27519.71  | 27496.82 |
| 4  | 27232.48  | 27203.10 | 27502.54  | 27473.21 |
| 5  | 27210.24  | 27174.42 | 27480.25* | 27444.52 |
| 6  | 27183.00  | 27140.65 | 27452.93  | 27410.76 |
| 7  | 27150.54  | 27101.55 | 27420.53  | 27371.56 |
| 8  | 27113.06  | 27058.20 | 27383.04  | 27328.23 |
| 9  | 27070.60  | 27009.52 | 27340.52  | 27279.47 |
| 10 | 27023.14  | 26955.88 | 27293.05  | 27225.79 |
| 11 | 26970.56  | 26897.23 | 27240.54  | 27167.18 |
| 12 | 26913.18  | 26833.79 | 27183.00  | 27103.66 |
| 13 | 26850.73  | 26765.44 | 27120.65  | 27035.34 |
| 14 | 26783.36  | 26692.23 | 27053.34  | 26962.22 |
| 15 | 26711.08  | 26614.33 | 26981.18  | 26884.22 |
| 16 | 26633.97  |          | 26904.13  | 26801.55 |
| 17 | 26552.09  | 26444.08 | 26822.31  | 26714.20 |
| 18 | 26465.34  |          | 26735.64  | 26622.28 |
| 19 |           |          | 26644.35  |          |
| 20 |           |          |           |          |
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| J  | ( 7- 0)   |          | ( 8- 0)   |          |
|----|-----------|----------|-----------|----------|
|    | R(J)      | P(J)     | R(J)      | P(J)     |
| 0  | 27817.27  |          | 28099.17  |          |
| 1  | 27815.36  |          | 28097.42  | 28087.56 |
| 2  | 27808.39  | 27792.08 | 28090.32  | 28074.07 |
| 3  | 27796.32  | 27773.53 | 28078.17  | 28055.48 |
| 4  | 27779.08  | 27749.85 | 28060.52  | 28031.80 |
| 5  | 27756.82  | 27721.09 | 28038.67* | 28003.01 |
| 6  | 27729.40  |          | 28011.06  | 27965.16 |
| 7  | 27696.95  |          | 27978.50  | 27930.30 |
| 8  |           | 27604.66 | 27940.88  | 27886.33 |
| 9  | 27616.82  | 27555.85 | 27898.21  | 27837.45 |
| 10 | 27569.25  | 27502.11 | 27850.50  | 27783.61 |
| 11 | 27516.67  | 27443.43 | 27797.80  | 27724.78 |
| 12 | 27459.10  | 27379.87 | 27740.14  |          |
| 13 | 27396.63  | 27311.50 |           | 27592.52 |
| 14 | 27329.33  | 27238.26 | 27609.99  | 27519.18 |
| 15 |           | 27160.30 | 27537.60  | 27441.07 |
| 16 | 27181.18* | 27077.49 | 27460.40  | 27358.23 |
| 17 | 27098.06  | 26990.17 | 27378.45  | 27270.75 |
| 18 | 27011.59  | 26898.13 | 27291.72  | 27178.57 |
| 19 |           |          | 27200.31  | 27081.80 |
| 20 |           |          | 27104.26  | 26980.60 |
| 21 |           |          | 27003.57  |          |
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| J  | ( 9- 0)   |           | (10- 0)  |          |
|----|-----------|-----------|----------|----------|
|    | R(J)      | P(J)      | R(J)     | P(J)     |
| 0  | 28385.31  |           | 28674.58 |          |
| 1  | 28383.39  | 28360.78* | 28672.64 | 28662.95 |
| 2  | 28376.33  | 28360.15  | 28665.45 | 28645.46 |
| 3  | 28364.14  | 28341.55  | 28653.20 | 28630.77 |
| 4  | 28346.78  | 28317.81  | 28635.79 | 28606.97 |
| 5  | 28324.30  | 28288.98  | 28613.20 | 28578.08 |
| 6  | 28256.72  | 28255.04  | 28585.51 | 28544.03 |
| 7  | 28264.07  | 28216.04  |          | 28504.53 |
| 8  | 28226.28  |           | 28514.75 | 28460.84 |
| 9  | 28183.49  | 28123.02  | 28471.74 | 28411.65 |
| 10 | 28135.68  | 28069.05  | 28423.69 | 28357.47 |
| 11 | 28082.72  | 28010.10  | 28370.61 | 28298.38 |
| 12 | 28024.93  | 27946.26  | 28312.51 | 28234.34 |
| 13 | 27962.13  | 27877.51  | 28249.51 | 28165.44 |
| 14 | 27894.45  | 27804.02  | 28181.58 | 28091.70 |
| 15 | 27821.84  | 27725.72  | 28108.77 | 28013.15 |
| 16 | 27744.45  |           | 28031.09 | 27925.85 |
| 17 |           | 27554.92  | 27948.61 | 27841.86 |
| 18 | 27575.31  | 27462.55  | 27861.40 | 27745.21 |
| 19 | 27483.66  | 27365.61  | 27769.49 |          |
| 20 | 27387.45* | 27264.14* |          | 27550.20 |
| 21 | 27286.54* | 27150.79* | 27571.68 | 27443.98 |
| 22 | 27179.98* |           | 27465.54 | 27333.29 |
| 23 | 27071.22* |           | 27355.79 | 27218.26 |
| 24 |           |           | 27241.18 | 27098.55 |
| 25 |           |           | 27122.19 | 26975.38 |
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| J  | (11- 0)  |           | (12- 0)   |          |
|----|----------|-----------|-----------|----------|
|    | R(J)     | P(J)      | R(J)      | P(J)     |
| 0  | 28566.13 |           | 29259.21  |          |
| 1  | 28564.17 | 28954.25* | 29257.14  | 29247.66 |
| 2  | 28956.97 | 28941.03  | 29249.88  | 29234.10 |
| 3  | 28944.58 | 28922.31  | 29237.43  | 29215.32 |
| 4  | 28927.05 | 28858.44  | 29219.74  | 29191.33 |
| 5  | 28904.32 | 28869.41  | 29196.88  | 29162.26 |
| 6  | 28876.45 | 28835.30  | 29168.81  | 29127.99 |
| 7  | 28843.48 | 28796.04  | 29135.66  | 29088.62 |
| 8  | 28805.31 | 28751.76  | 29097.28  | 29044.14 |
| 9  | 28762.11 | 28702.35  | 29053.80  | 28994.59 |
| 10 | 28713.84 | 28648.04  | 29005.36* | 28939.98 |
| 11 | 28660.48 | 28588.74  | 28951.62  | 28880.38 |
| 12 | 28602.14 | 28524.44  | 28892.96  | 28815.88 |
| 13 | 28538.85 | 28455.31  | 28829.32  |          |
| 14 | 28470.58 | 28381.31  | 28760.67  | 28672.05 |
| 15 | 28397.48 | 28302.45  | 28687.18  | 28592.92 |
| 16 | 28319.45 | 28218.87  | 28608.81  | 28508.99 |
| 17 | 28236.65 | 28130.59  | 28525.61  | 28420.31 |
| 18 | 28149.06 | 28037.63  | 28437.59  | 28326.95 |
| 19 | 28056.79 | 27940.04  | 28344.85  | 28228.99 |
| 20 | 27959.78 | 27837.89  | 28247.48  | 28126.44 |
| 21 | 27858.25 | 27731.31  | 28145.42  | 28019.38 |
| 22 | 27752.12 |           | 28038.67* | 27907.89 |
| 23 |          |           | 27927.72  | 27792.08 |
| 24 |          |           |           |          |
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| J  | (13- 0)   |           | (14- 0)  |          |
|----|-----------|-----------|----------|----------|
|    | R(J)      | P(J)      | R(J)     | P(J)     |
| 0  | 29552.95  |           | 29846.91 |          |
| 1  | 29550.85  | 29541.44  | 29844.75 | 29835.40 |
| 2  | 29543.42  | 29527.86  | 29837.23 | 29821.71 |
| 3  | 29530.91* | 29508.87* | 29824.50 | 29802.83 |
| 4  | 29513.14  | 29484.96  | 29806.56 | 29778.66 |
| 5  | 29490.07  | 29455.75  | 29783.36 | 29749.35 |
| 6  | 29461.85  | 29421.37  | 29754.85 | 29714.77 |
| 7  | 29428.44  | 29381.83  | 29721.21 | 29675.03 |
| 8  | 29389.84  | 29337.15  | 29682.34 | 29630.14 |
| 9  | 29346.10  | 29287.35  |          | 29580.13 |
| 10 | 29297.23  | 29232.55  | 29589.11 | 29525.08 |
| 11 | 29243.26  | 29172.69  | 29534.78 | 29464.91 |
| 12 | 29184.28  | 29107.93  |          | 29399.73 |
| 13 | 29120.26  | 29038.11  | 29410.93 | 29329.61 |
| 14 | 29051.27  | 28963.39  | 29341.51 | 29254.53 |
| 15 | 28977.28  | 28883.82  | 29267.11 | 29174.55 |
| 16 | 28898.44  | 28799.46  | 29187.74 | 29089.77 |
| 17 | 28814.77  | 28710.39  | 29103.52 | 29000.18 |
| 18 | 28726.26  | 28616.58  | 29014.50 | 28905.87 |
| 19 | 28633.02  | 28518.18  | 28920.65 | 28806.89 |
| 20 | 28535.11  | 28415.17  | 28822.12 | 28703.30 |
| 21 |           | 28307.56  | 28718.90 | 28595.17 |
| 22 |           | 28195.52  | 28611.12 | 28482.58 |
| 23 | 28213.69  |           | 28498.79 | 28365.60 |
| 24 | 28097.42  |           | 28381.85 | 28244.12 |
| 25 | 27977.01  |           | 28260.65 |          |
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| J  | (15- 0)   |           | (16- 0)  |           |
|----|-----------|-----------|----------|-----------|
|    | R(J)      | P(J)      | R(J)     | P(J)      |
| 0  | 30140.22* |           | 30432.19 |           |
| 1  | 30137.90  | 30128.55* | 30429.90 | 30419.55* |
| 2  | 30130.34  | 30114.89  | 30422.27 | 30407.09  |
| 3  | 30117.50  | 30096.06  | 30409.27 | 30388.04  |
| 4  | 30099.34  | 30071.82  | 30391.01 | 30362.72  |
| 5  | 30075.97  | 30042.34  | 30367.34 | 30334.09  |
| 6  | 30047.27  | 30007.60  | 30338.40 | 30299.20  |
| 7  | 30013.33  | 29967.66  | 30304.16 | 30259.02  |
| 8  | 29974.21  | 29922.55  | 30264.67 | 30213.70  |
| 9  | 29929.80  | 29872.28  | 30219.99 | 30162.12  |
| 10 | 29880.24  | 29816.85  | 30170.04 | 30107.40  |
| 11 | 29825.54  | 29756.35  | 30114.89 | 30046.46  |
| 12 | 29765.64  | 29690.86  | 30054.52 | 29980.66  |
| 13 | 29700.82  | 29620.28  | 29989.19 | 29909.66  |
| 14 | 29630.85  | 29544.86  | 29918.64 | 29832.70  |
| 15 | 29555.92  | 29464.38  | 29843.27 | 29752.78  |
| 16 | 29476.01  | 29379.10  | 29762.73 | 29666.96  |
| 17 | 29391.24  | 29289.05  | 29677.31 | 29576.31  |
| 18 | 29301.63  | 29194.19  | 29586.99 | 29480.85  |
| 19 | 29207.14  | 29094.69  | 29491.84 | 29380.68  |
| 20 | 29107.93  | 28990.40  | 29391.95 | 29275.81  |
| 21 | 29004.04  | 28881.63  |          |           |
| 22 | 28895.51  | 28768.31  |          |           |
| 23 | 28782.41  | 28650.63  |          |           |
| 24 | 28664.84  | 28528.49  |          |           |
| 25 | 28542.78  | 28402.05  |          |           |
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| J  | (17- 0)   |           | (18- 0)   |          |
|----|-----------|-----------|-----------|----------|
|    | R(J)      | P(J)      | R(J)      | P(J)     |
| 0  | 30722.54  |           |           |          |
| 1  | 30720.24  | 30711.23  |           |          |
| 2  | 30712.42  | 30697.49  | 31000.25  | 30985.44 |
| 3  | 30699.36  | 30678.40  | 30986.92  | 30966.33 |
| 4  | 30680.78  | 30653.95  | 30968.35  | 30941.78 |
| 5  | 30656.95  | 30624.12  | 30944.19  | 30911.77 |
| 6  | 30627.72  | 30589.08  | 30914.66  | 30876.45 |
| 7  | 30593.21  | 30548.55  | 30879.70  | 30836.01 |
| 8  | 30553.56  | 30503.00  | 30839.48  | 30785.84 |
| 9  | 30508.21  | 30452.11  | 30794.01  | 30738.66 |
| 10 | 30457.86  | 30396.07  | 30743.18  | 30682.33 |
| 11 | 30402.27  | 30334.83  | 30687.27  | 30620.73 |
| 12 | 30341.49  | 30268.51  | 30625.87  | 30553.95 |
| 13 | 30275.53  | 30197.07  | 30559.40  |          |
| 14 | 30204.54  | 30120.65  | 30487.82  | 30404.94 |
| 15 | 30128.55  | 30039.21  | 30410.94  | 30322.97 |
| 16 | 30047.27  | 29952.82  | 30329.15  | 30236.03 |
| 17 | 29961.19  | 29861.59* | 30242.28  | 30144.05 |
| 18 | 29870.18  | 29765.64* | 30150.48  |          |
| 19 | 29773.08* | 29663.06  | 30053.78* | 29945.67 |
| 20 | 29673.56  | 29555.92* | 29943.25* |          |
| 21 | 29568.05  | 29445.06  | 29846.84  |          |
| 22 | 29457.89  |           |           |          |
| 23 | 29343.13  |           |           |          |
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| J  | ( 2- 1)  |           | ( 3- 1)   |           |
|----|----------|-----------|-----------|-----------|
|    | R(J)     | P(J)      | R(J)      | P(J)      |
| 0  |          |           |           |           |
| 1  |          |           |           |           |
| 2  |          | 25462.62  | 25718.90  |           |
| 3  | 25467.33 | 25444.24* | 25707.38  |           |
| 4  | 25450.82 | 25421.63  |           | 25661.64  |
| 5  | 25429.39 | 25393.81  | 25669.59  |           |
| 6  | 25403.02 | 25361.08  | 25643.29  | 25601.20  |
| 7  | 25371.73 | 25323.49  | 25612.08  | 25563.65  |
| 8  | 25335.38 | 25281.01  | 25575.97  | 25521.27  |
| 9  | 25294.18 | 25233.63  | 25534.90  | 25474.11  |
| 10 | 25248.02 | 25181.52  | 25487.29* | 25422.15  |
| 11 | 25196.97 | 25124.53  | 25438.32  | 25365.40  |
| 12 | 25140.95 | 25062.77* | 25382.68  | 25303.83  |
| 13 |          | 24996.18* | 25322.24  | 25237.59  |
| 14 | 25014.23 | 24924.01  | 25256.83  | 25166.60* |
| 15 | 24943.60 |           | 25186.82  | 25090.51* |
| 16 |          |           | 25111.92  |           |
| 17 |          |           | 25032.27  | 24924.88  |
| 18 |          |           | 24947.94  |           |
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| J  | ( 4- 1)   |          | ( 5- 1)   |          |
|----|-----------|----------|-----------|----------|
|    | R(J)      | P(J)     | R(J)      | P(J)     |
| 0  |           |          |           |          |
| 1  | 25977.65  |          |           |          |
| 2  | 25968.92* |          | 26233.16  | 26216.77 |
| 3  | 25959.59  | 25936.71 | 26221.61  | 26198.78 |
| 4  | 25943.18  | 25913.90 | 26205.18  | 26175.83 |
| 5  | 25921.84  | 25886.01 | 26183.89  | 26148.06 |
| 6  | 25895.60  | 25853.40 | 26157.67  | 26115.46 |
| 7  | 25864.46  | 25815.94 | 26126.52  |          |
| 8  | 25828.45  | 25773.60 | 26090.53  | 26035.65 |
| 9  | 25787.53  | 25726.66 | 26049.66  | 25988.48 |
| 10 | 25741.76  | 25674.56 | 26003.95  | 25936.71 |
| 11 | 25691.16  | 25617.90 | 25953.47  | 25880.04 |
| 12 | 25635.72  | 25556.48 | 25898.11  | 25818.70 |
| 13 | 25575.51  | 25490.46 | 25837.92  | 25752.71 |
| 14 | 25510.47  | 25419.70 | 25773.09  | 25681.57 |
| 15 | 25440.77  | 25344.26 | 25703.51  | 25606.64 |
| 16 | 25366.26  | 25264.25 | 25629.22  | 25526.84 |
| 17 | 25287.10  | 25179.66 | 25550.27  | 25442.47 |
| 18 | 25203.38* | 25090.96 | 25467.62* | 25353.56 |
| 19 | 25115.61  |          | 25378.62  | 25260.20 |
| 20 | 24996.91* |          | 25285.88  | 25162.39 |
| 21 |           |          | 25188.71  | 25060.20 |
| 22 |           |          | 25087.02  | 24953.75 |
| 23 |           |          | 24980.92  | 24843.05 |
| 24 |           |          | 24870.50  | 24728.08 |
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| J  | ( 6- 1)  |          | ( 7- 1)  |           |
|----|----------|----------|----------|-----------|
|    | R(J)     | P(J)     | R(J)     | P(J)      |
| 0  | 26511.47 |          | 26788.14 |           |
| 1  | 26509.83 | 26499.98 | 26786.46 | 26776.66  |
| 2  | 26503.19 | 26486.87 | 26779.84 | 26762.56  |
| 3  | 26491.68 | 26468.88 | 26768.27 | 26745.53  |
| 4  | 26475.26 | 26445.93 | 26751.82 | 26722.57  |
| 5  | 26453.89 | 26418.13 | 26730.42 | 26694.69  |
| 6  | 26427.66 | 26385.48 | 26704.07 | 26662.06  |
| 7  | 26396.51 | 26347.96 | 26672.90 | 26624.49  |
| 8  | 26360.49 | 26305.66 | 26636.82 | 26582.14  |
| 9  | 26319.57 | 26258.53 | 26595.89 | 26534.52  |
| 10 | 26273.90 | 26206.60 | 26550.11 | 26482.95  |
| 11 | 26223.33 | 26149.96 | 26499.46 | 26426.22  |
| 12 | 26168.04 | 26088.61 | 26444.08 | 26364.81  |
| 13 | 26107.93 | 26022.58 | 26383.85 | 26298.74  |
| 14 | 26043.08 | 25951.92 | 26318.95 | 26227.57  |
| 15 | 25973.54 | 25876.64 | 26249.41 | 26152.65  |
| 16 | 25899.40 | 25796.87 | 26175.21 | 26072.82  |
| 17 | 25820.51 | 25712.47 | 26096.29 | 25988.49* |
| 18 | 25737.00 | 25623.60 | 26012.91 | 25899.40* |
| 19 | 25649.03 | 25530.29 | 25924.88 | 25806.18  |
| 20 | 25556.51 | 25432.72 | 25832.44 | 25708.55  |
| 21 | 25459.50 | 25330.71 | 25735.59 | 25606.64  |
| 22 | 25358.17 | 25224.49 |          |           |
| 23 | 25252.39 | 25113.92 |          |           |
| 24 |          |          |          |           |
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| J  | ( 8- 1)   |           | ( 1- 2)  |           |
|----|-----------|-----------|----------|-----------|
|    | R(J)      | P(J)      | R(J)     | P(J)      |
| 0  |           |           |          |           |
| 1  | 27068.64* |           |          |           |
| 2  | 27061.74  |           | 24251.10 | 24234.87  |
| 3  |           |           | 24240.01 | 24217.35  |
| 4  | 27033.57  | 27004.49  | 24224.11 | 24195.05  |
| 5  | 27012.14  | 26976.64  | 24203.37 | 24168.07  |
| 6  | 26985.76  | 26943.85  | 24177.89 | 24136.29  |
| 7  | 26954.45  | 26906.18  | 24147.52 | 24099.75  |
| 8  | 26918.25  | 26863.63  | 24112.40 | 24058.53  |
| 9  | 26877.17  | 26816.45  | 24072.35 | 24012.53  |
| 10 | 26831.30  | 26764.55* | 24027.49 | 23961.85  |
| 11 | 26880.55* | 26707.56  | 23977.84 | 23906.44  |
| 12 | 26725.01  | 26646.00  | 23923.33 | 23846.21  |
| 13 | 26664.73  | 26579.83  | 23864.00 | 23781.61  |
| 14 | 26599.73  | 26508.25* | 23799.81 | 23712.43* |
| 15 | 26530.03  | 26433.51  |          |           |
| 16 | 26455.60  | 26353.43  |          |           |
| 17 | 26376.63  | 26269.00  |          |           |
| 18 | 26293.09  | 26179.94  |          |           |
| 19 | 26205.18* | 26086.54  |          |           |
| 20 | 26112.46  | 25988.49* |          |           |
| 21 | 26015.43  | 25886.61  |          |           |
| 22 | 25913.90* | 25780.29  |          |           |
| 23 | 25808.32  | 25669.59  |          |           |
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| J  | ( 2- 2)   |          | ( 3- 2)  |          |
|----|-----------|----------|----------|----------|
|    | R(J)      | P(J)     | R(J)     | P(J)     |
| 0  | 24484.60* |          |          |          |
| 1  | 24482.13  | 24472.29 | 24722.05 | 24712.25 |
| 2  | 24475.89  | 24459.57 | 24715.85 |          |
| 3  | 24464.81  | 24442.04 | 24704.84 | 24682.01 |
| 4  | 24449.01  | 24415.81 |          | 24659.82 |
| 5  | 24428.34  | 24392.87 | 24668.65 | 24632.91 |
| 6  |           | 24361.17 | 24643.39 | 24601.34 |
| 7  | 24373.00  | 24324.82 | 24613.47 | 24565.11 |
| 8  | 24338.15  | 24283.73 | 24578.79 | 24524.10 |
| 9  | 24298.53  | 24228.03 | 24539.38 | 24478.52 |
| 10 | 24254.15  | 24187.62 | 24495.24 | 24428.34 |
| 11 | 24204.96  | 24132.59 | 24446.38 | 24373.44 |
| 12 | 24151.12  | 24072.91 | 24392.87 | 24314.00 |
| 13 | 24092.49  | 24008.64 |          | 24250.02 |
| 14 | 24029.16  | 23939.76 | 24271.82 | 24181.49 |
| 15 |           | 23866.30 | 24204.31 | 24108.45 |
| 16 |           | 23788.35 | 24132.24 | 24030.56 |
| 17 | 23809.62* | 23705.74 | 24055.56 | 23948.99 |
| 18 | 23727.34  |          | 23974.32 |          |
| 19 |           | 23527.23 |          | 23771.82 |
| 20 | 23548.91  |          | 23798.25 | 23676.66 |
| 21 |           |          | 23703.49 | 23577.27 |
| 22 |           |          | 23604.34 | 23473.51 |
| 23 |           |          | 23500.63 |          |
| 24 |           |          |          |          |
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| J  | ( 4- 2)  |          | ( 5- 2)   |          |
|----|----------|----------|-----------|----------|
|    | R(J)     | P(J)     | R(J)      | P(J)     |
| 0  |          |          | 25237.55* |          |
| 1  | 24974.23 |          | 25236.30  |          |
| 2  | 24968.02 | 24951.64 | 25230.07  | 25213.74 |
| 3  | 24957.06 | 24934.21 | 25219.14  | 25156.26 |
| 4  | 24941.39 | 24912.00 | 25203.38  | 25174.08 |
| 5  | 24920.91 | 24885.13 | 25183.00  | 25147.18 |
| 6  | 24895.77 | 24853.56 |           |          |
| 7  |          | 24817.24 | 25127.91  |          |
| 8  | 24831.24 | 24776.37 | 25093.34  | 25038.43 |
| 9  | 24791.90 | 24730.86 | 25054.05  | 24992.92 |
| 10 | 24747.86 | 24680.73 |           | 24942.84 |
| 11 |          | 24625.99 | 24961.53  | 24888.14 |
| 12 | 24645.94 | 24566.78 | 24908.28  | 24828.92 |
| 13 | 24587.99 | 24502.93 | 24850.46  | 24765.17 |
| 14 | 24525.44 | 24434.61 | 24788.00  | 24696.96 |
| 15 | 24458.30 | 24361.81 | 24721.06  | 24624.27 |
| 16 | 24386.59 | 24284.57 |           | 24547.23 |
| 17 | 24310.35 | 24202.92 | 24573.63  | 24465.80 |
| 18 | 24229.60 | 24116.91 | 24493.16  | 24379.93 |
| 19 | 24144.39 | 24026.60 | 24408.28  | 24289.84 |
| 20 | 24054.76 | 23931.97 | 24319.02  |          |
| 21 |          | 23833.07 |           |          |
| 22 |          | 23730.00 |           |          |
| 23 | 23759.64 | 23622.75 |           |          |
| 24 | 23652.66 | 23511.41 |           |          |
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| J  | ( 6- 2)   |           | ( 1- 3)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 25510.52* |           |           |           |
| 1  | 25507.58* | 25498.41* |           |           |
| 2  | 25500.34* | 25484.84* |           |           |
| 3  | 25489.12  | 25467.33* |           | 23239.88  |
| 4  | 25473.50  | 25444.62* | 23247.27  | 23218.70* |
| 5  | 25453.04  | 25417.27  | 23227.48  | 23192.14  |
| 6  | 25427.83  | 25385.65  | 23203.00  | 23161.43  |
| 7  | 25397.93  | 25349.37  | 23173.89  | 23126.07  |
| 8  | 25363.31  | 25308.49  | 23140.12  | 23086.24  |
| 9  | 25324.03  | 25262.94  | 23101.67  | 23041.91  |
| 10 | 25280.08  | 25212.80  | 23058.64  | 22992.92  |
| 11 | 25231.44  | 25157.81* | 23010.89  | 22939.45  |
| 12 | 25178.23  | 25098.83  | 22958.46  | 22881.41  |
| 13 | 25120.39  | 25035.07  | 22894.41* | 22819.17* |
| 14 | 25057.98  | 24966.85  | 22839.57  | 22751.74  |
| 15 | 24991.07  | 24894.23  | 22773.12  | 22680.14  |
| 16 | 24919.67  | 24817.24  | 22702.05  |           |
| 17 | 24843.78  | 24735.75  |           |           |
| 18 | 24763.45  |           |           |           |
| 19 | 24678.75  | 24560.05  |           |           |
| 20 | 24589.70  | 24465.80  |           |           |
| 21 | 24496.32  | 24367.43  |           |           |
| 22 | 24398.65  | 24264.94  |           |           |
| 23 | 24296.78  |           |           |           |
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| J  | ( 2- 3)   |           | ( 3- 3)   |           |
|----|-----------|-----------|-----------|-----------|
|    | R(J)      | P(J)      | R(J)      | P(J)      |
| 0  | 23505.07  |           |           |           |
| 1  | 23503.62  | 23493.94  |           | 23733.05* |
| 2  | 23457.79  | 23481.54  | 23737.81  | 23721.46  |
| 3  | 23487.31  | 23464.56  | 23727.34  | 23704.51  |
| 4  | 23472.22  | 23443.03  | 23712.32  | 23682.59  |
| 5  | 23352.53* | 23416.93  | 23692.71  | 23657.02  |
| 6  | 23428.25  | 23386.28  | 23668.53  | 23626.44  |
| 7  | 23399.37  | 23351.11  | 23639.80  | 23591.39  |
| 8  |           |           | 23606.50  | 23551.88  |
| 9  | 23327.78  | 23267.48  | 23568.70  | 23507.81  |
| 10 | 23285.31  | 23218.78  | 23526.29  | 23455.32  |
| 11 | 23238.08  | 23165.65  | 23479.36  | 23406.42  |
| 12 | 23186.22  | 23108.02  | 23427.86  | 23348.58* |
| 13 | 23129.86  | 23045.98  | 23366.47* | 23287.40  |
| 14 | 23068.92  | 22975.28* | 23311.74* | 23221.33  |
| 15 | 23003.44  |           |           | 23150.84  |
| 16 | 22933.49  | 22833.41  | 23177.33  | 23076.04  |
| 17 | 22858.97  | 22753.78  | 23103.57  | 22997.02  |
| 18 | 22779.97  | 22669.83  | 23025.51  | 22913.71  |
| 19 | 22696.48  |           | 22942.87  | 22826.19  |
| 20 |           |           | 22856.00  | 22734.41  |
| 21 |           |           | 22764.80  | 22638.52  |
| 22 |           |           | 22669.30  |           |
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| J       | R(J)      | P(J)      |
| 0       |           |           |
| 1       | 23995.84  | 23986.03  |
| 2       | 23990.03  | 23973.91* |
| 3       | 23979.57  | 23956.72  |
| 4       | 23964.61  | 23935.20  |
| 5       | 23945.02  | 23908.28* |
| 6       | 23920.89  | 23878.67  |
| 7       | 23892.19  | 23843.62  |
| 8       | 23858.98  | 23804.13  |
| 9       | 23821.25  | 23760.19  |
| 10      | 23779.01  | 23711.75  |
| 11      | 23732.21  | 23658.99  |
| 12      | 23680.99  | 23601.77  |
| 13      | 23625.29  | 23540.24  |
| 14      | 23565.16  | 23474.33  |
| 15      | 23500.63  | 23404.11  |
| 16      |           | 23329.58  |
| 17      | 23358.29  | 23251.03  |
| 18      | 23280.85* |           |
| 19      | 23198.78  | 23080.93  |
| 20      | 23112.50  | 22989.65  |
| 21      | 23022.00  | 22894.41  |
| 22      | 22927.36  | 22795.01  |
| 23      | 22828.52  | 22691.63  |
| 24      | 22725.55  |           |
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