

$^{73}\text{As}$        $Z = 33$        $N = 40$       adopted link      ENSDF link

Based on ENSDF from Oct 2022, and mass evaluation from 2020

BE = 634.342 ( 0.004) MeV

Qbeta+ = 0.345 ( 0.004) MeV

|         | Energy T | J+   | J-    | J-other           | T1/2              |
|---------|----------|------|-------|-------------------|-------------------|
| 73AS 1  |          |      | 0.000 | 3/2-              | 1 80.30 D 6       |
| 73AS 2  |          |      | 0.067 | 5/2-              | 2 4.95 NS 7       |
| 73AS 3  |          |      |       | 0.084 (1/2)-      | 3                 |
| 73AS 4  |          |      |       | 0.254 (1/2)-      | 4                 |
| 73AS 5  |          |      | 0.393 | 3/2-              | 5                 |
| 73AS 6  | 0.428    | 9/2+ |       |                   | 6 5.7 US 2        |
| 73AS 7  |          |      |       | 0.510 (5/2)+      | 7                 |
| 73AS 8  |          |      |       | 0.575 (1/2)-      | 8                 |
| 73AS 9  |          |      | 0.578 | 5/2-              | 9                 |
| 73AS 10 |          |      |       | 0.628             | 10                |
| 73AS 11 |          |      | 0.655 | 3/2-              | 11                |
| 73AS 12 |          |      |       | 0.674             | 12                |
| 73AS 13 |          |      |       | 0.715             | 13                |
| 73AS 14 |          |      | 0.770 | 5/2-              | 14                |
| 73AS 15 |          |      |       | 0.851 (5/2)-      | 15                |
| 73AS 16 |          |      | 0.861 | 7/2-              | 16                |
| 73AS 17 | 0.886    | 1/2+ |       |                   | 17                |
| 73AS 18 |          |      |       | 0.929 (9/2-)      | 18                |
| 73AS 19 |          |      |       | 0.994 (7/2)-      | 19 0.57 PS +26-18 |
| 73AS 20 |          |      |       | 1.014 (1/2-)      | 20                |
| 73AS 21 |          |      |       | 1.037 (13/2)+     | 21 8.3 PS 6       |
| 73AS 22 |          |      |       | 1.078 (3/2)-      | 22                |
| 73AS 23 |          |      | 1.087 | 5/2-              | 23 0.28 PS +28-12 |
| 73AS 24 |          |      |       | 1.178 (9/2-)      | 24                |
| 73AS 25 |          |      |       | 1.189 (3/2-)      | 25                |
| 73AS 26 |          |      |       | 1.216 (3/2)-      | 26                |
| 73AS 27 |          |      |       | 1.218 (3/2)+      | 27                |
| 73AS 28 |          |      |       | 1.221 (7/2)-      | 28 0.35 PS +10-8  |
| 73AS 29 |          |      |       | 1.275 (7/2)+      | 29                |
| 73AS 30 |          |      |       | 1.293 (11/2)+     | 30                |
| 73AS 31 |          |      |       | 1.293 (7/2)+      | 31                |
| 73AS 32 |          |      |       | 1.299 (1/2-, 3/2) | 32                |
| 73AS 33 |          |      |       | 1.302 (5/2-)      | 33                |
| 73AS 34 |          |      |       | 1.324 (5/2+)      | 34                |
| 73AS 35 |          |      |       | 1.329 (7/2)+      | 35 0.090 PS 21    |
| 73AS 36 |          |      |       | 1.345 (7/2)-      | 36                |
| 73AS 37 |          |      |       | 1.401             | 37                |

|         |       |      |  |       |                   |     |          |        |
|---------|-------|------|--|-------|-------------------|-----|----------|--------|
| 73AS 38 |       |      |  | 1.489 |                   | 38  | 0.29 PS  | +14-9  |
| 73AS 39 |       |      |  | 1.544 |                   | 39  |          |        |
| 73AS 40 |       |      |  | 1.557 | (3/2-, 5/2, 7/2-  | 40) |          |        |
| -----   |       |      |  |       |                   |     |          |        |
| 73AS 41 |       |      |  | 1.589 | (5/2)-            | 41  |          |        |
| 73AS 42 |       |      |  | 1.592 | (3/2)-            | 42  |          |        |
| 73AS 43 |       |      |  | 1.613 | 5/2-, 7/2-        | 43  |          |        |
| 73AS 44 |       |      |  | 1.650 | (1/2, 3/2, 5/2-)  | 44  | 0.30 PS  | +16-10 |
| 73AS 45 |       |      |  | 1.658 | (11/2-)           | 45  |          |        |
| 73AS 46 |       |      |  | 1.690 |                   | 46  |          |        |
| 73AS 47 |       |      |  | 1.706 |                   | 47  |          |        |
| 73AS 48 |       |      |  | 1.716 |                   | 48  |          |        |
| 73AS 49 |       |      |  | 1.755 |                   | 49  |          |        |
| 73AS 50 |       |      |  | 1.762 | (13/2+)           | 50  |          |        |
| -----   |       |      |  |       |                   |     |          |        |
| 73AS 51 |       |      |  | 1.796 |                   | 51  |          |        |
| 73AS 52 |       |      |  | 1.836 |                   | 52  |          |        |
| 73AS 53 |       |      |  | 1.851 | (9/2)+            | 53  | 0.27 PS  | +10-7  |
| 73AS 54 |       |      |  | 1.861 |                   | 54  |          |        |
| 73AS 55 |       |      |  | 1.877 | (1/2:7/2-)        | 55  | 0.065 PS | 14     |
| 73AS 56 |       |      |  | 1.904 | (1/2-:9/2-)       | 56  | 0.26 PS  | 6      |
| 73AS 57 |       |      |  | 1.910 | (9/2+, 11/2)      | 57  |          |        |
| 73AS 58 |       |      |  | 1.950 | (17/2+)           | 58  |          |        |
| 73AS 59 |       |      |  | 1.963 | (3/2, 5/2, 7/2)   | 59  | 0.50 PS  | +15-12 |
| 73AS 60 |       |      |  | 1.973 | (1/2-, 3/2, 5/2-) | 60  |          |        |
| -----   |       |      |  |       |                   |     |          |        |
| 73AS 61 |       |      |  | 1.975 | (7/2, 9/2)        | 61  |          |        |
| 73AS 62 |       |      |  | 1.978 | (1/2:7/2-)        | 62  | 0.22 PS  | 6      |
| 73AS 63 |       |      |  | 1.982 | (1/2, 3/2, 5/2-)  | 63  |          |        |
| 73AS 64 | 2.023 | 1/2+ |  |       |                   | 64  |          |        |
| 73AS 65 |       |      |  | 2.040 | (13/2-)           | 65  |          |        |
| 73AS 66 |       |      |  | 2.096 |                   | 66  |          |        |
| 73AS 67 |       |      |  | 2.125 |                   | 67  |          |        |
| 73AS 68 |       |      |  | 2.136 | 1/2-, 3/2-        | 68  |          |        |
| 73AS 69 |       |      |  | 2.181 | (7/2, 9/2+)       | 69  |          |        |
| 73AS 70 |       |      |  | 2.212 | (5/2)-            | 70  |          |        |
| -----   |       |      |  |       |                   |     |          |        |
| 73AS 71 |       |      |  | 2.239 |                   | 71  |          |        |
| 73AS 72 |       |      |  | 2.312 | (7/2, 9/2+)       | 72  |          |        |
| 73AS 73 |       |      |  | 2.377 |                   | 73  |          |        |
| 73AS 74 |       |      |  | 2.394 | 3/2+, 5/2+        | 74  |          |        |
| 73AS 75 |       |      |  | 2.415 |                   | 75  |          |        |
| 73AS 76 |       |      |  | 2.437 | 3/2+, 5/2+        | 76  |          |        |
| 73AS 77 |       |      |  | 2.461 |                   | 77  |          |        |
| 73AS 78 |       |      |  | 2.476 | (15/2-)           | 78  |          |        |
| 73AS 79 |       |      |  | 2.483 | (7/2, 9/2+)       | 79  |          |        |
| 73AS 80 |       |      |  | 2.485 | (3/2-)            | 80  |          |        |
| -----   |       |      |  |       |                   |     |          |        |
| 73AS 81 |       |      |  | 2.545 | 3/2+, 5/2+        | 81  |          |        |
| 73AS 82 |       |      |  | 2.564 |                   | 82  |          |        |

|          |       |       |        |       |       |                |     |
|----------|-------|-------|--------|-------|-------|----------------|-----|
| 73AS 83  |       |       |        |       | 2.584 | (7/2,9/2-)     | 83  |
| 73AS 84  |       | 2.606 | 1/2+   |       |       |                | 84  |
| 73AS 85  |       |       |        |       | 2.623 |                | 85  |
| 73AS 86  |       |       |        |       | 2.633 |                | 86  |
| 73AS 87  |       |       |        |       | 2.703 | 1/2+(1/2,3/2)- | 87  |
| 73AS 88  |       |       |        |       | 2.730 |                | 88  |
| 73AS 89  |       |       |        |       | 2.744 |                | 89  |
| 73AS 90  |       |       |        |       | 2.823 | +              | 90  |
| -----    |       |       |        |       |       |                |     |
| 73AS 91  |       |       |        |       | 2.848 | (17/2-)        | 91  |
| 73AS 92  |       |       |        |       | 2.903 | 3/2+,5/2+      | 92  |
| 73AS 93  |       |       |        |       | 2.931 |                | 93  |
| 73AS 94  |       |       |        |       | 2.965 | (21/2+)        | 94  |
| 73AS 95  |       |       |        |       | 3.003 |                | 95  |
| 73AS 96  |       |       |        |       | 3.050 | (19/2+)        | 96  |
| 73AS 97  |       |       |        |       | 3.087 |                | 97  |
| 73AS 98  |       | 3.157 | 1/2+   |       |       |                | 98  |
| 73AS 99  |       |       |        |       | 3.203 |                | 99  |
| 73AS 100 |       |       |        |       | 3.257 | 5/2-,7/2-      | 100 |
| -----    |       |       |        |       |       |                |     |
| 73AS 101 |       |       |        |       | 3.294 |                | 101 |
| 73AS 102 |       |       |        |       | 3.372 | (19/2-)        | 102 |
| 73AS 103 |       |       |        |       | 3.392 | (1/2+)         | 103 |
| 73AS 104 |       |       |        |       | 3.491 | (21/2+)        | 104 |
| 73AS 105 |       |       |        |       | 3.532 | (-)            | 105 |
| 73AS 106 |       |       |        |       | 3.610 |                | 106 |
| 73AS 107 |       |       |        |       | 3.666 |                | 107 |
| 73AS 108 |       |       |        |       | 3.724 |                | 108 |
| 73AS 109 |       |       |        |       | 3.751 | (21/2-)        | 109 |
| 73AS 110 |       |       |        |       | 3.791 |                | 110 |
| -----    |       |       |        |       |       |                |     |
| 73AS 111 |       |       |        |       | 3.842 | (19/2-)        | 111 |
| 73AS 112 |       |       |        |       | 3.880 |                | 112 |
| 73AS 113 |       |       |        |       | 3.994 |                | 113 |
| 73AS 114 |       |       |        |       | 4.024 | (23/2+)        | 114 |
| S-alpha= | 4.050 | (     | 0.004) | ----- |       |                |     |
| 73AS 115 |       |       |        |       | 4.083 | (25/2)+        | 115 |
| 73AS 116 |       |       |        |       | 4.267 |                | 116 |
| 73AS 117 |       |       |        |       | 4.457 | (23/2-)        | 117 |
| 73AS 118 |       |       |        |       | 4.470 |                | 118 |
| 73AS 119 |       |       |        |       | 4.518 |                | 119 |
| 73AS 120 |       |       |        |       | 4.586 | (25/2+)        | 120 |
| -----    |       |       |        |       |       |                |     |
| 73AS 121 |       |       |        |       | 4.600 |                | 121 |
| 73AS 122 |       | 4.650 | 1/2+   |       |       |                | 122 |
| 73AS 123 |       |       |        |       | 4.712 | 3/2+,5/2+      | 123 |
| 73AS 124 |       |       |        |       | 4.780 |                | 124 |
| 73AS 125 |       |       |        |       | 4.860 |                | 125 |
| 73AS 126 |       |       |        |       | 4.870 | (25/2-)        | 126 |
| 73AS 127 |       |       |        |       | 4.900 | 7/2+,9/2+      | 127 |

|          |   |                |       |                 |     |
|----------|---|----------------|-------|-----------------|-----|
| 73AS 128 |   |                | 4.952 | 3/2+,5/2+       | 128 |
| 73AS 129 |   |                | 4.964 | (23/2-)         | 129 |
| 73AS 130 |   |                | 5.010 |                 | 130 |
| -----    |   |                |       |                 |     |
| 73AS 131 |   |                | 5.070 | 1/2+&(3/2,5/2)+ | 131 |
| 73AS 132 |   |                | 5.118 |                 | 132 |
| 73AS 133 |   |                | 5.190 | 3/2+,5/2+       | 133 |
| 73AS 134 |   |                | 5.278 | 3/2+,5/2+       | 134 |
| 73AS 135 |   |                | 5.412 | (27/2+)         | 135 |
| 73AS 136 |   |                | 5.412 | (29/2+)         | 136 |
| -----    |   |                |       |                 |     |
| S-p      | = | 5.656 ( 0.004) |       |                 |     |
| 73AS 137 |   |                | 5.686 | (27/2-)         | 137 |
| 73AS 138 |   |                | 5.953 | (29/2+)         | 138 |
| 73AS 139 |   |                | 6.132 | (29/2-)         | 139 |
| 73AS 140 |   |                | 6.311 | (27/2-)         | 140 |
| -----    |   |                |       |                 |     |
| 73AS 141 |   |                | 6.909 | (33/2+)         | 141 |
| 73AS 142 |   |                | 7.434 | (33/2-)         | 142 |
| 73AS 143 |   |                | 7.861 | (3/2,5/2)       | 143 |
| 73AS 144 |   |                | 8.611 | (37/2+)         | 144 |
| 73AS 145 |   |                | 8.788 | (37/2-)         | 145 |
| 73AS 146 |   |                | 8.994 | (5/2)+          | 146 |
| 73AS 147 |   |                | 9.045 |                 | 147 |
| 73AS 148 |   |                | 9.346 | (3/2)-          | 148 |
| 73AS 149 |   |                | 9.375 |                 | 149 |
| 73AS 150 |   |                | 9.489 |                 | 150 |
| -----    |   |                |       |                 |     |
| 73AS 151 |   |                | 9.543 |                 | 151 |
| 73AS 152 |   |                | 9.645 |                 | 152 |
| 73AS 153 |   |                | 9.696 |                 | 153 |
| 73AS 154 |   |                | 9.774 |                 | 154 |
| 73AS 155 |   |                | 9.829 |                 | 155 |
| 73AS 156 |   |                | 9.868 |                 | 156 |
| 73AS 157 |   |                | 9.898 |                 | 157 |

S-p = 5.656 ( 0.004)-----  
S-n = 10.794 ( 0.006)-----  
S-2p = 15.392 ( 0.004)-----  
S-2n = 19.202 ( 0.006)-----  
S-alpha= 4.050 ( 0.004)-----

S+p = -8.549 ( 0.004)  
S+n = -7.979 ( 0.004)  
S+2p = -12.732 ( 0.006)  
S+2n = -18.224 ( 0.004)  
S+alpha = -4.707 ( 0.005)

gap p = -2.894 ( 0.005)  
gap n = 2.816 ( 0.007)

gap 2p = 2.659 ( 0.007)  
gap 2n = 0.978 ( 0.007)  
gap alpha = -0.657 ( 0.006)