

Hourly Astronomical Tide Level at Ayukawa port, Miyagi Pref. in 2011 (unit: centimeter) Issued by JMA

| Date | Moon | Time | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|------|---------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |
| 1-Jun | W | | 34 | 45 | 50 | 47 | 33 | 10 | -17 | -45 | -66 | -78 | -76 | -63 | -40 | -13 | 12 | 30 | 39 | 39 | 32 | 21 | 12 | 7 | 8 | 16 |
| 2-Jun | Th | New Moon | 29 | 42 | 52 | 54 | 45 | 26 | -1 | -31 | -58 | -77 | -84 | -77 | -58 | -32 | -4 | 20 | 36 | 42 | 38 | 29 | 18 | 10 | 7 | 12 |
| 3-Jun | F | | 22 | 37 | 50 | 57 | 54 | 40 | 17 | -13 | -44 | -69 | -83 | -85 | -73 | -50 | -22 | 6 | 27 | 39 | 42 | 35 | 25 | 15 | 8 | 8 |
| 4-Jun | Sa | | 16 | 29 | 43 | 54 | 58 | 51 | 33 | 6 | -24 | -53 | -75 | -85 | -81 | -65 | -39 | -11 | 14 | 32 | 40 | 39 | 31 | 20 | 11 | 7 |
| 5-Jun | Su | | 10 | 19 | 33 | 47 | 55 | 55 | 44 | 24 | -4 | -33 | -59 | -76 | -81 | -73 | -53 | -28 | -1 | 21 | 35 | 39 | 35 | 26 | 16 | 8 |
| 6-Jun | M | | 6 | 11 | 21 | 35 | 46 | 52 | 49 | 36 | 15 | -11 | -38 | -59 | -71 | -72 | -61 | -41 | -16 | 8 | 26 | 36 | 37 | 31 | 21 | 11 |
| 7-Jun | Tu | | 4 | 3 | 9 | 20 | 32 | 41 | 45 | 40 | 27 | 8 | -15 | -37 | -54 | -62 | -59 | -47 | -27 | -5 | 16 | 31 | 37 | 35 | 27 | 16 |
| 8-Jun | W | | 6 | 0 | -1 | 5 | 14 | 24 | 32 | 35 | 31 | 20 | 4 | -15 | -32 | -44 | -49 | -44 | -32 | -13 | 6 | 23 | 34 | 37 | 33 | 23 |
| 9-Jun | Th | First Quarter | 11 | 0 | -7 | -8 | -4 | 3 | 13 | 20 | 24 | 23 | 15 | 4 | -9 | -22 | -31 | -33 | -28 | -17 | -1 | 16 | 30 | 38 | 38 | 32 |
| 10-Jun | F | | 20 | 7 | -6 | -15 | -19 | -17 | -11 | -2 | 7 | 14 | 17 | 15 | 8 | 0 | -10 | -16 | -18 | -14 | -3 | 11 | 26 | 37 | 42 | 40 |
| 11-Jun | Sa | | 31 | 17 | 1 | -15 | -27 | -33 | -33 | -27 | -16 | -4 | 7 | 14 | 18 | 16 | 11 | 3 | -3 | -5 | -1 | 8 | 21 | 34 | 43 | 46 |
| 12-Jun | Su | | 42 | 32 | 15 | -5 | -25 | -40 | -49 | -50 | -42 | -29 | -13 | 3 | 16 | 23 | 25 | 22 | 15 | 9 | 6 | 9 | 17 | 29 | 41 | 49 |
| 13-Jun | M | | 51 | 46 | 32 | 12 | -12 | -36 | -54 | -64 | -64 | -55 | -38 | -17 | 3 | 20 | 31 | 34 | 30 | 23 | 16 | 13 | 15 | 24 | 35 | 47 |
| 14-Jun | Tu | | 55 | 56 | 49 | 32 | 8 | -20 | -47 | -67 | -77 | -75 | -63 | -42 | -17 | 7 | 26 | 37 | 40 | 35 | 27 | 19 | 16 | 19 | 28 | 40 |
| 15-Jun | W | | 53 | 61 | 61 | 51 | 31 | 3 | -28 | -56 | -76 | -85 | -80 | -64 | -40 | -12 | 13 | 32 | 42 | 43 | 37 | 27 | 19 | 16 | 20 | 30 |
| 16-Jun | Th | Full Moon | 44 | 58 | 66 | 64 | 50 | 27 | -4 | -36 | -64 | -82 | -88 | -80 | -60 | -33 | -4 | 21 | 38 | 45 | 43 | 34 | 23 | 15 | 14 | 20 |
| 17-Jun | F | | 32 | 48 | 62 | 68 | 63 | 47 | 20 | -12 | -43 | -69 | -84 | -85 | -73 | -50 | -22 | 6 | 28 | 41 | 45 | 39 | 29 | 18 | 10 | 11 |
| 18-Jun | Sa | | 19 | 34 | 50 | 63 | 67 | 59 | 40 | 12 | -19 | -48 | -70 | -80 | -76 | -60 | -36 | -8 | 17 | 35 | 43 | 42 | 34 | 22 | 11 | 5 |
| 19-Jun | Su | | 8 | 19 | 35 | 51 | 61 | 62 | 51 | 30 | 3 | -26 | -51 | -67 | -71 | -63 | -44 | -20 | 6 | 27 | 39 | 43 | 38 | 27 | 14 | 4 |
| 20-Jun | M | | 1 | 6 | 18 | 34 | 48 | 56 | 53 | 41 | 20 | -5 | -30 | -49 | -60 | -58 | -46 | -26 | -3 | 19 | 35 | 42 | 41 | 33 | 20 | 8 |
| 21-Jun | Tu | | -1 | -2 | 4 | 17 | 31 | 42 | 47 | 42 | 29 | 10 | -11 | -31 | -44 | -48 | -43 | -28 | -9 | 12 | 29 | 40 | 43 | 38 | 27 | 14 |
| 22-Jun | W | | 2 | -5 | -5 | 2 | 13 | 25 | 34 | 36 | 31 | 19 | 3 | -13 | -27 | -35 | -34 | -26 | -11 | 7 | 24 | 37 | 43 | 42 | 34 | 22 |
| 23-Jun | Th | Last Quarter | 9 | -3 | -9 | -9 | -3 | 7 | 16 | 24 | 25 | 21 | 12 | 0 | -11 | -19 | -22 | -19 | -10 | 4 | 19 | 33 | 41 | 44 | 39 | 30 |
| 24-Jun | F | | 17 | 4 | -7 | -13 | -14 | -10 | -2 | 7 | 14 | 16 | 15 | 9 | 2 | -4 | -9 | -9 | -5 | 4 | 16 | 28 | 38 | 43 | 43 | 37 |
| 25-Jun | Sa | | 26 | 13 | 0 | -12 | -20 | -22 | -19 | -12 | -3 | 6 | 11 | 13 | 12 | 9 | 5 | 3 | 3 | 7 | 14 | 24 | 34 | 41 | 44 | 42 |
| 26-Jun | Su | | 35 | 24 | 9 | -6 | -20 | -29 | -32 | -29 | -21 | -10 | 1 | 10 | 15 | 18 | 17 | 15 | 13 | 12 | 15 | 21 | 29 | 37 | 43 | 45 |
| 27-Jun | M | | 43 | 35 | 21 | 5 | -13 | -29 | -40 | -43 | -39 | -28 | -14 | 1 | 13 | 22 | 26 | 26 | 23 | 20 | 19 | 20 | 25 | 32 | 40 | 46 |
| 28-Jun | Tu | | 48 | 44 | 34 | 18 | -2 | -23 | -41 | -52 | -54 | -47 | -33 | -14 | 4 | 20 | 30 | 34 | 33 | 29 | 24 | 21 | 22 | 27 | 35 | 44 |
| 29-Jun | W | | 50 | 52 | 46 | 33 | 13 | -11 | -35 | -54 | -64 | -63 | -52 | -33 | -10 | 11 | 28 | 38 | 41 | 37 | 31 | 24 | 21 | 23 | 29 | 39 |
| 30-Jun | Th | | 49 | 56 | 56 | 48 | 30 | 6 | -22 | -47 | -66 | -73 | -68 | -52 | -29 | -3 | 20 | 37 | 45 | 44 | 38 | 29 | 22 | 19 | 23 | 31 |

* Note that tide levels in the calendar are astronomical tide levels. During an intense low pressure system's approaching, tide levels can be higher by a few to tens centimeters than the values in the calendar.

Hourly Astronomical Tide Level at Ayukawa port, Miyagi Pref. in 2011 (unit: centimeter) Issued by JMA

| Date | Moon | Time | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |
| 1-Jul | F | New Moon | 43 | 55 | 61 | 59 | 47 | 25 | -3 | -33 | -59 | -75 | -79 | -69 | -48 | -21 | 7 | 30 | 44 | 48 | 44 | 35 | 25 | 18 | 17 | 22 |
| 2-Jul | Sa | | 34 | 48 | 60 | 65 | 60 | 44 | 18 | -13 | -44 | -68 | -80 | -79 | -64 | -39 | -10 | 18 | 38 | 49 | 49 | 41 | 29 | 18 | 12 | 13 |
| 3-Jul | Su | | 22 | 37 | 52 | 64 | 67 | 58 | 38 | 10 | -22 | -52 | -72 | -80 | -73 | -54 | -26 | 3 | 29 | 45 | 51 | 46 | 35 | 21 | 11 | 6 |
| 4-Jul | M | | 10 | 22 | 38 | 54 | 64 | 64 | 52 | 30 | 1 | -29 | -55 | -71 | -73 | -61 | -39 | -10 | 17 | 38 | 50 | 50 | 41 | 27 | 12 | 2 |
| 5-Jul | Tu | | 0 | 7 | 21 | 37 | 52 | 60 | 57 | 44 | 22 | -5 | -32 | -53 | -63 | -60 | -44 | -20 | 6 | 30 | 46 | 52 | 46 | 34 | 17 | 3 |
| 6-Jul | W | | -6 | -6 | 3 | 17 | 33 | 46 | 52 | 48 | 35 | 15 | -9 | -30 | -45 | -49 | -42 | -24 | -1 | 22 | 41 | 51 | 51 | 41 | 25 | 8 |
| 7-Jul | Th | | -6 | -13 | -12 | -4 | 10 | 24 | 36 | 41 | 37 | 26 | 10 | -8 | -23 | -32 | -31 | -21 | -4 | 17 | 36 | 50 | 54 | 48 | 35 | 18 |
| 8-Jul | F | First Quarter | 0 | -13 | -20 | -19 | -12 | 0 | 13 | 23 | 28 | 27 | 20 | 9 | -2 | -12 | -16 | -12 | -1 | 14 | 32 | 46 | 55 | 54 | 45 | 30 |
| 9-Jul | Sa | | 12 | -5 | -19 | -27 | -28 | -22 | -12 | 0 | 10 | 17 | 20 | 18 | 13 | 7 | 2 | 1 | 5 | 15 | 28 | 42 | 53 | 57 | 54 | 43 |
| 10-Jul | Su | | 28 | 9 | -9 | -24 | -34 | -37 | -34 | -25 | -13 | -1 | 9 | 16 | 20 | 20 | 18 | 16 | 15 | 19 | 27 | 37 | 48 | 55 | 58 | 54 |
| 11-Jul | M | | 43 | 28 | 9 | -11 | -29 | -42 | -47 | -45 | -37 | -24 | -9 | 5 | 17 | 25 | 29 | 28 | 26 | 25 | 27 | 32 | 40 | 49 | 56 | 59 |
| 12-Jul | Tu | | 55 | 45 | 29 | 9 | -14 | -34 | -50 | -57 | -56 | -46 | -31 | -12 | 7 | 22 | 33 | 37 | 36 | 33 | 29 | 29 | 33 | 40 | 49 | 57 |
| 13-Jul | W | | 61 | 59 | 49 | 32 | 8 | -17 | -41 | -58 | -66 | -63 | -51 | -32 | -10 | 12 | 30 | 41 | 44 | 40 | 34 | 28 | 26 | 30 | 38 | 48 |
| 14-Jul | Th | | 59 | 65 | 63 | 52 | 32 | 6 | -23 | -48 | -65 | -72 | -66 | -51 | -27 | -2 | 21 | 39 | 47 | 47 | 40 | 30 | 23 | 20 | 25 | 35 |
| 15-Jul | F | Full Moon | 49 | 62 | 68 | 66 | 53 | 30 | 1 | -29 | -54 | -70 | -73 | -63 | -43 | -17 | 10 | 32 | 46 | 50 | 45 | 35 | 23 | 15 | 14 | 21 |
| 16-Jul | Sa | | 34 | 51 | 65 | 71 | 66 | 50 | 24 | -7 | -36 | -59 | -71 | -69 | -54 | -30 | -3 | 23 | 42 | 51 | 50 | 40 | 26 | 13 | 6 | 8 |
| 17-Jul | Su | | 18 | 35 | 53 | 66 | 70 | 62 | 42 | 15 | -15 | -42 | -60 | -66 | -58 | -39 | -13 | 14 | 36 | 50 | 52 | 45 | 32 | 16 | 4 | -1 |
| 18-Jul | M | | 4 | 18 | 37 | 54 | 65 | 66 | 54 | 32 | 5 | -23 | -45 | -57 | -56 | -43 | -20 | 6 | 30 | 47 | 54 | 50 | 38 | 21 | 6 | -5 |
| 19-Jul | Tu | | -6 | 3 | 19 | 38 | 53 | 61 | 57 | 43 | 21 | -4 | -27 | -43 | -48 | -41 | -23 | 0 | 24 | 43 | 53 | 54 | 44 | 29 | 11 | -4 |
| 20-Jul | W | | -11 | -9 | 3 | 19 | 37 | 49 | 53 | 46 | 31 | 10 | -10 | -27 | -36 | -34 | -22 | -3 | 19 | 39 | 52 | 56 | 50 | 36 | 19 | 2 |
| 21-Jul | Th | | -10 | -14 | -10 | 3 | 18 | 33 | 42 | 43 | 35 | 20 | 4 | -12 | -22 | -24 | -17 | -3 | 16 | 34 | 49 | 56 | 54 | 43 | 28 | 10 |
| 22-Jul | F | | -5 | -14 | -16 | -10 | 1 | 14 | 26 | 33 | 32 | 25 | 13 | 1 | -8 | -12 | -9 | 0 | 14 | 31 | 45 | 54 | 55 | 49 | 36 | 20 |
| 23-Jul | Sa | Last Quarter | 4 | -9 | -17 | -18 | -13 | -3 | 8 | 18 | 23 | 23 | 18 | 11 | 5 | 0 | 1 | 6 | 15 | 28 | 40 | 50 | 54 | 52 | 43 | 30 |
| 24-Jul | Su | | 15 | 0 | -12 | -19 | -21 | -17 | -9 | 0 | 9 | 15 | 17 | 16 | 14 | 12 | 11 | 13 | 19 | 27 | 36 | 45 | 51 | 53 | 48 | 39 |
| 25-Jul | M | | 27 | 12 | -2 | -15 | -23 | -27 | -25 | -18 | -8 | 2 | 10 | 16 | 19 | 21 | 21 | 22 | 24 | 28 | 34 | 40 | 47 | 51 | 51 | 47 |
| 26-Jul | Tu | | 38 | 26 | 11 | -5 | -19 | -30 | -35 | -34 | -27 | -15 | -3 | 9 | 19 | 26 | 30 | 31 | 31 | 31 | 32 | 36 | 41 | 46 | 50 | 51 |
| 27-Jul | W | | 48 | 40 | 27 | 10 | -9 | -27 | -40 | -46 | -44 | -35 | -20 | -3 | 13 | 26 | 35 | 38 | 38 | 35 | 33 | 32 | 35 | 39 | 45 | 51 |
| 28-Jul | Th | | 54 | 52 | 44 | 28 | 8 | -15 | -36 | -51 | -57 | -53 | -40 | -20 | 1 | 21 | 35 | 44 | 45 | 41 | 36 | 31 | 29 | 31 | 37 | 46 |
| 29-Jul | F | | 55 | 60 | 58 | 47 | 28 | 3 | -24 | -47 | -62 | -66 | -58 | -40 | -16 | 9 | 31 | 45 | 50 | 47 | 40 | 31 | 24 | 22 | 27 | 37 |
| 30-Jul | Sa | | 49 | 61 | 66 | 63 | 49 | 25 | -4 | -34 | -57 | -70 | -70 | -57 | -34 | -6 | 21 | 42 | 52 | 53 | 45 | 33 | 22 | 15 | 15 | 23 |
| 31-Jul | Su | New Moon | 37 | 53 | 66 | 71 | 65 | 47 | 20 | -12 | -42 | -64 | -73 | -68 | -49 | -21 | 9 | 34 | 51 | 57 | 51 | 38 | 23 | 10 | 4 | 7 |

* Note that tide levels in the calendar are astronomical tide levels. During an intense low pressure system's approaching, tide levels can be higher by a few to tens centimeters than the values in the calendar.

Hourly Astronomical Tide Level at Ayukawa port, Miyagi Pref. in 2011 (unit: centimeter) Issued by JMA

| Date | Moon | Time | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|-----|-----|-----|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |
| 1-Aug | M | 19 | 38 | 56 | 70 | 73 | 64 | 43 | 13 | -20 | -48 | -65 | -69 | -57 | -34 | -4 | 25 | 47 | 58 | 57 | 45 | 27 | 9 | -4 | -7 | |
| 2-Aug | Tu | 0 | 17 | 38 | 57 | 70 | 70 | 58 | 35 | 6 | -24 | -48 | -59 | -57 | -40 | -14 | 16 | 41 | 57 | 61 | 52 | 35 | 14 | -5 | -16 | |
| 3-Aug | W | -16 | -5 | 14 | 36 | 55 | 65 | 63 | 50 | 27 | 0 | -25 | -42 | -46 | -38 | -18 | 9 | 35 | 55 | 63 | 59 | 44 | 23 | 0 | -17 | |
| 4-Aug | Th | -25 | -22 | -9 | 11 | 32 | 48 | 56 | 52 | 39 | 20 | -2 | -20 | -30 | -28 | -15 | 6 | 30 | 51 | 64 | 65 | 54 | 35 | 11 | -11 | |
| 5-Aug | F | -26 | -31 | -26 | -13 | 6 | 24 | 38 | 43 | 40 | 30 | 15 | 0 | -11 | -14 | -8 | 7 | 27 | 47 | 62 | 67 | 62 | 47 | 26 | 3 | |
| 6-Aug | Sa | First Quarter | -17 | -30 | -34 | -29 | -17 | -1 | 14 | 25 | 30 | 29 | 23 | 14 | 6 | 2 | 3 | 12 | 26 | 43 | 57 | 66 | 66 | 57 | 41 | 20 |
| 7-Aug | Su | | -1 | -19 | -31 | -35 | -31 | -23 | -10 | 2 | 12 | 19 | 21 | 20 | 18 | 15 | 15 | 19 | 27 | 39 | 51 | 61 | 65 | 63 | 53 | 37 |
| 8-Aug | M | | 19 | 0 | -17 | -29 | -35 | -35 | -30 | -20 | -9 | 2 | 11 | 18 | 22 | 24 | 25 | 27 | 30 | 36 | 44 | 52 | 59 | 61 | 59 | 51 |
| 9-Aug | Tu | | 38 | 22 | 4 | -13 | -28 | -37 | -40 | -38 | -29 | -18 | -4 | 9 | 20 | 28 | 33 | 34 | 34 | 35 | 37 | 42 | 48 | 54 | 57 | 57 |
| 10-Aug | W | | 52 | 42 | 27 | 9 | -11 | -29 | -41 | -47 | -45 | -36 | -22 | -4 | 13 | 27 | 37 | 41 | 40 | 36 | 33 | 32 | 35 | 41 | 48 | 55 |
| 11-Aug | Th | | 58 | 56 | 47 | 32 | 11 | -12 | -33 | -47 | -53 | -50 | -38 | -19 | 2 | 21 | 37 | 45 | 46 | 40 | 33 | 26 | 23 | 26 | 34 | 45 |
| 12-Aug | F | | 56 | 62 | 61 | 52 | 34 | 9 | -16 | -38 | -53 | -57 | -50 | -33 | -11 | 13 | 33 | 46 | 51 | 46 | 36 | 24 | 15 | 13 | 18 | 30 |
| 13-Aug | Sa | | 45 | 59 | 67 | 65 | 53 | 31 | 4 | -23 | -45 | -56 | -56 | -44 | -23 | 3 | 27 | 45 | 54 | 52 | 41 | 26 | 12 | 4 | 4 | 13 |
| 14-Aug | Su | Full Moon | 30 | 48 | 63 | 70 | 65 | 49 | 24 | -4 | -30 | -49 | -55 | -49 | -31 | -7 | 20 | 41 | 54 | 56 | 47 | 31 | 13 | -1 | -7 | -2 |
| 15-Aug | M | | 12 | 32 | 52 | 67 | 70 | 61 | 41 | 15 | -13 | -36 | -48 | -48 | -36 | -14 | 12 | 37 | 53 | 59 | 53 | 38 | 18 | 0 | -13 | -14 |
| 16-Aug | Tu | | -5 | 14 | 36 | 56 | 67 | 66 | 53 | 31 | 5 | -20 | -37 | -42 | -35 | -17 | 7 | 31 | 51 | 60 | 58 | 45 | 26 | 4 | -13 | -21 |
| 17-Aug | W | | -18 | -3 | 18 | 40 | 56 | 63 | 58 | 42 | 20 | -4 | -22 | -32 | -30 | -18 | 3 | 27 | 47 | 60 | 62 | 52 | 34 | 12 | -8 | -22 |
| 18-Aug | Th | | -25 | -17 | 0 | 21 | 41 | 53 | 55 | 47 | 30 | 10 | -8 | -20 | -22 | -14 | 2 | 23 | 44 | 58 | 63 | 57 | 42 | 21 | 0 | -18 |
| 19-Aug | F | | -27 | -25 | -14 | 4 | 23 | 39 | 47 | 46 | 36 | 21 | 5 | -7 | -12 | -9 | 4 | 21 | 40 | 55 | 63 | 61 | 49 | 31 | 10 | -9 |
| 20-Aug | Sa | | -23 | -28 | -23 | -11 | 6 | 22 | 34 | 38 | 35 | 26 | 15 | 4 | -2 | -1 | 7 | 20 | 36 | 51 | 60 | 62 | 54 | 40 | 21 | 2 |
| 21-Aug | Su | | -14 | -24 | -26 | -21 | -9 | 4 | 17 | 26 | 29 | 27 | 20 | 13 | 9 | 8 | 12 | 21 | 34 | 46 | 56 | 60 | 57 | 47 | 31 | 14 |
| 22-Aug | M | Last Quarter | -2 | -15 | -23 | -25 | -20 | -11 | 0 | 10 | 18 | 21 | 21 | 19 | 17 | 17 | 19 | 24 | 32 | 42 | 50 | 55 | 56 | 51 | 40 | 27 |
| 23-Aug | Tu | | 12 | -2 | -14 | -22 | -26 | -23 | -17 | -8 | 2 | 11 | 17 | 21 | 23 | 24 | 26 | 29 | 33 | 38 | 44 | 49 | 52 | 51 | 46 | 38 |
| 24-Aug | W | | 27 | 13 | -1 | -14 | -24 | -30 | -31 | -25 | -16 | -5 | 7 | 17 | 25 | 30 | 33 | 35 | 36 | 37 | 39 | 42 | 45 | 48 | 48 | 46 |
| 25-Aug | Th | | 40 | 31 | 17 | 1 | -15 | -29 | -38 | -40 | -35 | -23 | -8 | 7 | 22 | 33 | 39 | 41 | 40 | 37 | 34 | 34 | 36 | 40 | 45 | 49 |
| 26-Aug | F | | 50 | 47 | 37 | 21 | 1 | -20 | -37 | -48 | -50 | -42 | -27 | -7 | 14 | 31 | 42 | 47 | 45 | 39 | 32 | 26 | 25 | 28 | 35 | 45 |
| 27-Aug | Sa | | 53 | 57 | 55 | 43 | 23 | -2 | -26 | -46 | -57 | -56 | -44 | -23 | 1 | 24 | 42 | 51 | 51 | 43 | 32 | 20 | 13 | 13 | 19 | 32 |
| 28-Aug | Su | | 47 | 60 | 66 | 62 | 47 | 22 | -6 | -33 | -53 | -61 | -56 | -38 | -13 | 15 | 38 | 53 | 56 | 49 | 35 | 18 | 5 | -2 | 1 | 13 |
| 29-Aug | M | New Moon | 31 | 51 | 66 | 72 | 66 | 47 | 19 | -12 | -38 | -55 | -59 | -48 | -25 | 4 | 31 | 52 | 60 | 57 | 42 | 21 | 1 | -13 | -17 | -10 |
| 30-Aug | Tu | | 8 | 32 | 54 | 70 | 74 | 65 | 43 | 14 | -16 | -39 | -51 | -48 | -32 | -5 | 24 | 48 | 63 | 63 | 51 | 29 | 4 | -17 | -30 | -30 |
| 31-Aug | W | | -17 | 6 | 32 | 55 | 70 | 71 | 59 | 37 | 9 | -17 | -35 | -40 | -31 | -10 | 18 | 44 | 63 | 69 | 61 | 41 | 14 | -13 | -33 | -42 |

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Hourly Astronomical Tide Level at Ayukawa port, Miyagi Pref. in 2011 (unit: centimeter) Issued by JMA

| Date | Moon | Time | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|-----|-----|-----|-----|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |
| 1-Sep | Th | -38 | -21 | 4 | 31 | 53 | 64 | 63 | 50 | 29 | 6 | -14 | -25 | -23 | -9 | 14 | 39 | 61 | 72 | 69 | 54 | 28 | 0 | -26 | -44 | |
| 2-Sep | F | -49 | -41 | -21 | 3 | 28 | 46 | 55 | 52 | 40 | 23 | 5 | -7 | -11 | -3 | 14 | 36 | 57 | 71 | 74 | 65 | 44 | 17 | -11 | -34 | |
| 3-Sep | Sa | -48 | -49 | -39 | -21 | 1 | 22 | 36 | 42 | 40 | 31 | 19 | 8 | 3 | 5 | 16 | 33 | 51 | 67 | 74 | 71 | 57 | 34 | 8 | -16 | |
| 4-Sep | Su | -35 | -45 | -45 | -36 | -20 | -3 | 13 | 25 | 30 | 29 | 24 | 19 | 14 | 14 | 19 | 31 | 45 | 59 | 69 | 71 | 64 | 48 | 28 | 6 | |
| 5-Sep | M | First Quarter | -15 | -31 | -39 | -39 | -33 | -21 | -8 | 4 | 14 | 20 | 22 | 23 | 22 | 22 | 24 | 30 | 39 | 49 | 59 | 64 | 63 | 56 | 42 | 26 |
| 6-Sep | Tu | | 8 | -9 | -23 | -31 | -34 | -32 | -25 | -15 | -4 | 6 | 15 | 21 | 26 | 28 | 30 | 32 | 35 | 40 | 46 | 52 | 55 | 55 | 50 | 41 |
| 7-Sep | W | | 29 | 14 | -1 | -15 | -26 | -32 | -33 | -29 | -20 | -9 | 4 | 16 | 26 | 32 | 35 | 35 | 34 | 33 | 34 | 37 | 41 | 45 | 48 | 47 |
| 8-Sep | Th | | 43 | 35 | 22 | 6 | -10 | -24 | -34 | -37 | -33 | -23 | -9 | 7 | 22 | 34 | 40 | 41 | 36 | 30 | 25 | 23 | 25 | 31 | 38 | 45 |
| 9-Sep | F | | 49 | 49 | 41 | 28 | 10 | -10 | -26 | -37 | -40 | -34 | -20 | -2 | 17 | 33 | 43 | 46 | 42 | 32 | 21 | 13 | 10 | 13 | 23 | 35 |
| 10-Sep | Sa | | 47 | 54 | 55 | 46 | 30 | 9 | -13 | -31 | -40 | -40 | -30 | -12 | 9 | 30 | 45 | 51 | 48 | 37 | 22 | 7 | -2 | -3 | 5 | 20 |
| 11-Sep | Su | | 37 | 52 | 60 | 59 | 47 | 28 | 4 | -19 | -35 | -41 | -36 | -20 | 1 | 24 | 43 | 54 | 54 | 44 | 27 | 7 | -8 | -15 | -12 | 1 |
| 12-Sep | M | Full Moon | 21 | 42 | 58 | 64 | 60 | 44 | 21 | -3 | -24 | -36 | -36 | -25 | -5 | 18 | 40 | 55 | 59 | 51 | 34 | 12 | -9 | -23 | -26 | -16 |
| 13-Sep | Tu | | 3 | 26 | 48 | 62 | 65 | 56 | 37 | 13 | -10 | -26 | -32 | -26 | -10 | 13 | 36 | 54 | 62 | 57 | 42 | 19 | -5 | -24 | -34 | -31 |
| 14-Sep | W | | -15 | 8 | 33 | 53 | 64 | 62 | 49 | 28 | 5 | -14 | -24 | -23 | -11 | 9 | 32 | 52 | 63 | 62 | 50 | 28 | 2 | -21 | -36 | -40 |
| 15-Sep | Th | | -30 | -10 | 15 | 39 | 55 | 61 | 55 | 39 | 19 | 0 | -13 | -17 | -10 | 7 | 28 | 48 | 62 | 65 | 56 | 37 | 12 | -13 | -33 | -43 |
| 16-Sep | F | | -40 | -26 | -3 | 22 | 42 | 54 | 55 | 45 | 29 | 12 | -2 | -9 | -6 | 6 | 25 | 44 | 59 | 66 | 61 | 46 | 23 | -3 | -25 | -40 |
| 17-Sep | Sa | | -44 | -36 | -18 | 4 | 26 | 42 | 49 | 46 | 35 | 21 | 8 | 0 | 0 | 8 | 23 | 40 | 55 | 64 | 64 | 53 | 33 | 10 | -14 | -32 |
| 18-Sep | Su | | -41 | -40 | -29 | -12 | 9 | 26 | 38 | 41 | 36 | 27 | 17 | 9 | 7 | 11 | 22 | 36 | 50 | 60 | 63 | 57 | 42 | 22 | 0 | -20 |
| 19-Sep | M | | -33 | -39 | -35 | -23 | -7 | 9 | 23 | 31 | 33 | 29 | 22 | 16 | 14 | 16 | 22 | 33 | 45 | 55 | 59 | 57 | 48 | 32 | 13 | -5 |
| 20-Sep | Tu | Last Quarter | -21 | -31 | -34 | -30 | -20 | -7 | 6 | 17 | 24 | 26 | 25 | 22 | 21 | 21 | 25 | 32 | 40 | 48 | 53 | 54 | 50 | 40 | 26 | 10 |
| 21-Sep | W | | -5 | -18 | -27 | -30 | -28 | -21 | -11 | 0 | 10 | 18 | 23 | 25 | 27 | 27 | 29 | 32 | 36 | 41 | 45 | 48 | 47 | 43 | 35 | 25 |
| 22-Sep | Th | | 12 | -1 | -13 | -23 | -30 | -31 | -26 | -18 | -6 | 6 | 16 | 25 | 30 | 33 | 34 | 34 | 34 | 34 | 36 | 37 | 40 | 41 | 40 | 36 |
| 23-Sep | F | | 29 | 19 | 6 | -9 | -22 | -32 | -36 | -33 | -24 | -10 | 5 | 20 | 31 | 38 | 40 | 38 | 34 | 29 | 25 | 24 | 27 | 31 | 37 | 41 |
| 24-Sep | Sa | | 42 | 37 | 27 | 12 | -6 | -24 | -36 | -42 | -38 | -26 | -9 | 11 | 28 | 40 | 46 | 44 | 36 | 26 | 16 | 10 | 10 | 15 | 24 | 36 |
| 25-Sep | Su | | 46 | 50 | 47 | 36 | 17 | -6 | -26 | -41 | -45 | -38 | -22 | -1 | 22 | 40 | 50 | 51 | 42 | 27 | 11 | -2 | -8 | -6 | 4 | 21 |
| 26-Sep | M | | 39 | 53 | 60 | 56 | 41 | 18 | -7 | -29 | -42 | -43 | -32 | -11 | 14 | 37 | 52 | 57 | 50 | 34 | 12 | -9 | -23 | -28 | -21 | -3 |
| 27-Sep | Tu | New Moon | 20 | 43 | 60 | 67 | 61 | 43 | 18 | -8 | -28 | -38 | -34 | -18 | 6 | 32 | 52 | 63 | 60 | 44 | 20 | -7 | -30 | -44 | -44 | -31 |
| 28-Sep | W | | -7 | 21 | 47 | 65 | 70 | 61 | 41 | 16 | -8 | -24 | -28 | -19 | 1 | 26 | 50 | 66 | 68 | 57 | 33 | 3 | -27 | -50 | -60 | -54 |
| 29-Sep | Th | | -36 | -8 | 23 | 49 | 65 | 67 | 56 | 37 | 14 | -6 | -16 | -14 | 0 | 22 | 47 | 66 | 74 | 69 | 49 | 19 | -14 | -44 | -63 | -68 |
| 30-Sep | F | | -58 | -35 | -6 | 24 | 47 | 60 | 59 | 48 | 31 | 13 | -1 | -5 | 2 | 19 | 42 | 63 | 76 | 76 | 63 | 38 | 5 | -27 | -53 | -68 |

* Note that tide levels in the calendar are astronomical tide levels. During an intense low pressure system's approaching, tide levels can be higher by a few to tens centimeters than the values in the calendar.

Hourly Astronomical Tide Level at Ayukawa port, Miyagi Pref. in 2011 (unit: centimeter) Issued by JMA

| Date | Moon | Time | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |
| 1-Oct | Sa | -69 | -55 | -32 | -4 | 23 | 42 | 51 | 49 | 39 | 26 | 13 | 6 | 7 | 18 | 36 | 56 | 72 | 78 | 72 | 54 | 26 | -5 | -34 | -55 | |
| 2-Oct | Su | -65 | -62 | -48 | -26 | -2 | 19 | 34 | 40 | 39 | 32 | 23 | 16 | 14 | 19 | 31 | 48 | 63 | 73 | 74 | 63 | 43 | 17 | -10 | -34 | |
| 3-Oct | M | -50 | -56 | -52 | -39 | -22 | -2 | 14 | 25 | 30 | 30 | 27 | 23 | 20 | 21 | 28 | 39 | 51 | 62 | 67 | 64 | 53 | 34 | 13 | -9 | |
| 4-Oct | Tu | First Quarter | -28 | -40 | -45 | -41 | -32 | -18 | -4 | 9 | 18 | 24 | 26 | 26 | 25 | 24 | 26 | 32 | 39 | 48 | 54 | 56 | 53 | 43 | 29 | 13 |
| 5-Oct | W | | -4 | -18 | -28 | -33 | -33 | -27 | -17 | -6 | 5 | 15 | 22 | 27 | 29 | 29 | 28 | 28 | 30 | 33 | 38 | 42 | 44 | 42 | 37 | 28 |
| 6-Oct | Th | | 17 | 5 | -8 | -18 | -25 | -27 | -25 | -17 | -7 | 5 | 17 | 26 | 32 | 34 | 33 | 29 | 24 | 22 | 22 | 24 | 28 | 32 | 35 | 35 |
| 7-Oct | F | | 31 | 24 | 13 | 0 | -12 | -21 | -25 | -24 | -16 | -4 | 9 | 23 | 33 | 39 | 39 | 33 | 24 | 15 | 9 | 7 | 10 | 17 | 25 | 33 |
| 8-Oct | Sa | | 37 | 37 | 31 | 19 | 5 | -10 | -21 | -25 | -22 | -13 | 2 | 18 | 33 | 42 | 45 | 40 | 29 | 15 | 2 | -6 | -7 | -2 | 10 | 24 |
| 9-Oct | Su | | 36 | 43 | 44 | 36 | 23 | 5 | -11 | -21 | -24 | -19 | -5 | 12 | 30 | 44 | 50 | 48 | 36 | 19 | 0 | -14 | -22 | -20 | -9 | 8 |
| 10-Oct | M | | 27 | 42 | 50 | 49 | 39 | 22 | 3 | -13 | -21 | -21 | -11 | 6 | 25 | 42 | 53 | 54 | 45 | 26 | 4 | -17 | -31 | -35 | -27 | -10 |
| 11-Oct | Tu | | 12 | 34 | 49 | 55 | 51 | 37 | 18 | 0 | -14 | -18 | -13 | 1 | 20 | 40 | 54 | 59 | 52 | 35 | 11 | -14 | -34 | -45 | -43 | -29 |
| 12-Oct | W | Full Moon | -6 | 20 | 42 | 55 | 58 | 49 | 33 | 14 | -3 | -12 | -12 | -2 | 16 | 36 | 53 | 61 | 59 | 45 | 21 | -6 | -32 | -49 | -54 | -45 |
| 13-Oct | Th | | -25 | 2 | 28 | 49 | 58 | 56 | 44 | 26 | 9 | -4 | -8 | -2 | 12 | 31 | 50 | 62 | 63 | 53 | 32 | 4 | -24 | -46 | -58 | -56 |
| 14-Oct | F | | -41 | -16 | 12 | 36 | 52 | 57 | 50 | 37 | 20 | 6 | -2 | 0 | 10 | 27 | 46 | 60 | 66 | 60 | 42 | 16 | -13 | -39 | -56 | -61 |
| 15-Oct | Sa | | -53 | -33 | -6 | 20 | 41 | 52 | 52 | 43 | 29 | 15 | 6 | 3 | 10 | 24 | 41 | 56 | 65 | 64 | 51 | 28 | 1 | -27 | -48 | -59 |
| 16-Oct | Su | | -58 | -45 | -22 | 3 | 26 | 42 | 48 | 45 | 35 | 23 | 13 | 8 | 11 | 21 | 36 | 51 | 62 | 64 | 56 | 39 | 14 | -12 | -36 | -52 |
| 17-Oct | M | | -57 | -51 | -35 | -13 | 9 | 28 | 39 | 42 | 37 | 29 | 20 | 14 | 14 | 20 | 31 | 45 | 56 | 61 | 58 | 46 | 26 | 3 | -21 | -39 |
| 18-Oct | Tu | | -50 | -51 | -43 | -27 | -7 | 12 | 27 | 35 | 36 | 32 | 25 | 20 | 18 | 21 | 28 | 38 | 48 | 55 | 56 | 49 | 35 | 16 | -4 | -23 |
| 19-Oct | W | | -38 | -45 | -44 | -35 | -21 | -5 | 11 | 23 | 30 | 31 | 29 | 26 | 23 | 23 | 26 | 33 | 40 | 46 | 49 | 48 | 40 | 27 | 11 | -6 |
| 20-Oct | Th | Last Quarter | -21 | -33 | -38 | -38 | -31 | -19 | -5 | 9 | 20 | 27 | 30 | 30 | 29 | 27 | 27 | 28 | 31 | 35 | 39 | 40 | 38 | 33 | 23 | 11 |
| 21-Oct | F | | -2 | -15 | -25 | -32 | -33 | -29 | -20 | -7 | 7 | 19 | 28 | 33 | 34 | 32 | 29 | 26 | 24 | 23 | 24 | 27 | 29 | 31 | 29 | 25 |
| 22-Oct | Sa | | 17 | 7 | -6 | -18 | -27 | -31 | -28 | -20 | -7 | 8 | 22 | 33 | 38 | 38 | 34 | 27 | 18 | 12 | 8 | 9 | 13 | 19 | 26 | 31 |
| 23-Oct | Su | | 31 | 27 | 17 | 4 | -11 | -23 | -29 | -27 | -18 | -3 | 14 | 30 | 41 | 45 | 41 | 31 | 18 | 4 | -7 | -11 | -9 | -1 | 12 | 25 |
| 24-Oct | M | | 36 | 41 | 38 | 27 | 11 | -6 | -20 | -26 | -23 | -12 | 6 | 25 | 41 | 50 | 50 | 40 | 23 | 3 | -16 | -29 | -33 | -26 | -12 | 8 |
| 25-Oct | Tu | | 28 | 44 | 51 | 48 | 35 | 17 | -2 | -16 | -21 | -15 | -1 | 19 | 39 | 53 | 58 | 52 | 34 | 9 | -17 | -39 | -51 | -52 | -40 | -18 |
| 26-Oct | W | | 8 | 33 | 51 | 58 | 54 | 39 | 20 | 1 | -11 | -13 | -4 | 14 | 35 | 54 | 65 | 63 | 49 | 24 | -8 | -38 | -60 | -70 | -66 | -48 |
| 27-Oct | Th | New Moon | -20 | 10 | 37 | 56 | 61 | 55 | 40 | 21 | 4 | -4 | -2 | 11 | 31 | 52 | 68 | 73 | 64 | 42 | 10 | -25 | -55 | -76 | -82 | -72 |
| 28-Oct | F | | -49 | -18 | 14 | 40 | 56 | 60 | 52 | 37 | 20 | 8 | 4 | 10 | 26 | 46 | 65 | 76 | 75 | 59 | 32 | -3 | -39 | -67 | -84 | -85 |
| 29-Oct | Sa | | -71 | -45 | -14 | 17 | 40 | 53 | 54 | 46 | 33 | 19 | 11 | 11 | 22 | 39 | 58 | 74 | 79 | 72 | 51 | 20 | -15 | -47 | -72 | -83 |
| 30-Oct | Su | | -80 | -63 | -37 | -8 | 19 | 38 | 47 | 47 | 39 | 28 | 19 | 15 | 19 | 31 | 48 | 64 | 75 | 76 | 64 | 41 | 10 | -22 | -50 | -69 |
| 31-Oct | M | | -76 | -69 | -52 | -28 | -3 | 19 | 34 | 40 | 39 | 33 | 25 | 19 | 18 | 24 | 36 | 51 | 64 | 70 | 67 | 53 | 30 | 3 | -24 | -46 |

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Hourly Astronomical Tide Level at Ayukawa port, Miyagi Pref. in 2011 (unit: centimeter) Issued by JMA

| Date | Moon | Time | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|------|---------------|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |
| 1-Nov | Tu | -60 | -63 | -55 | -39 | -19 | 2 | 19 | 30 | 35 | 34 | 29 | 23 | 19 | 20 | 26 | 37 | 48 | 57 | 60 | 54 | 41 | 21 | -1 | -22 | |
| 2-Nov | W | -38 | -48 | -49 | -41 | -28 | -11 | 5 | 19 | 28 | 32 | 31 | 28 | 23 | 20 | 20 | 24 | 32 | 40 | 45 | 46 | 41 | 31 | 16 | 0 | |
| 3-Nov | Th | First Quarter | -16 | -28 | -35 | -35 | -29 | -18 | -5 | 9 | 20 | 28 | 32 | 32 | 28 | 23 | 19 | 17 | 18 | 22 | 27 | 31 | 33 | 30 | 24 | 15 |
| 4-Nov | F | | 4 | -7 | -17 | -23 | -24 | -20 | -11 | 0 | 12 | 23 | 31 | 35 | 34 | 30 | 23 | 15 | 10 | 7 | 8 | 12 | 17 | 22 | 23 | 22 |
| 5-Nov | Sa | | 18 | 10 | 2 | -7 | -14 | -16 | -13 | -6 | 5 | 18 | 29 | 36 | 39 | 37 | 30 | 19 | 7 | -2 | -7 | -6 | -1 | 7 | 15 | 22 |
| 6-Nov | Su | | 25 | 24 | 18 | 10 | 0 | -8 | -11 | -8 | 0 | 12 | 24 | 36 | 43 | 44 | 38 | 26 | 11 | -5 | -17 | -22 | -20 | -12 | 1 | 14 |
| 7-Nov | M | | 25 | 31 | 31 | 25 | 15 | 4 | -4 | -7 | -3 | 6 | 19 | 33 | 44 | 49 | 46 | 35 | 18 | -2 | -21 | -33 | -37 | -31 | -17 | 1 |
| 8-Nov | Tu | | 18 | 32 | 39 | 38 | 30 | 18 | 6 | -2 | -3 | 2 | 14 | 29 | 42 | 51 | 53 | 44 | 27 | 5 | -19 | -38 | -48 | -48 | -36 | -17 |
| 9-Nov | W | | 6 | 26 | 40 | 46 | 42 | 32 | 19 | 7 | 0 | 1 | 10 | 24 | 39 | 52 | 57 | 53 | 38 | 15 | -12 | -37 | -54 | -60 | -53 | -35 |
| 10-Nov | Th | | -11 | 14 | 35 | 47 | 50 | 43 | 30 | 17 | 7 | 3 | 8 | 19 | 35 | 50 | 59 | 59 | 48 | 27 | -1 | -29 | -53 | -66 | -66 | -53 |
| 11-Nov | F | Full Moon | -30 | -2 | 24 | 43 | 52 | 50 | 40 | 27 | 15 | 7 | 8 | 16 | 30 | 46 | 58 | 63 | 57 | 39 | 13 | -17 | -45 | -65 | -72 | -66 |
| 12-Nov | Sa | | -47 | -20 | 9 | 33 | 48 | 52 | 47 | 35 | 23 | 13 | 9 | 14 | 25 | 41 | 55 | 64 | 63 | 50 | 27 | -3 | -33 | -57 | -72 | -73 |
| 13-Nov | Su | | -60 | -37 | -9 | 18 | 39 | 49 | 49 | 41 | 30 | 19 | 12 | 13 | 21 | 34 | 50 | 61 | 65 | 57 | 39 | 13 | -17 | -45 | -65 | -73 |
| 14-Nov | M | | -68 | -51 | -26 | 2 | 25 | 41 | 47 | 44 | 35 | 25 | 17 | 14 | 18 | 28 | 42 | 55 | 62 | 61 | 48 | 27 | 0 | -28 | -52 | -66 |
| 15-Nov | Tu | | -69 | -59 | -40 | -15 | 10 | 30 | 41 | 44 | 39 | 30 | 22 | 16 | 16 | 23 | 34 | 47 | 56 | 59 | 53 | 37 | 15 | -11 | -35 | -54 |
| 16-Nov | W | | -63 | -61 | -49 | -29 | -6 | 15 | 31 | 39 | 40 | 35 | 27 | 20 | 17 | 19 | 26 | 37 | 46 | 52 | 52 | 43 | 27 | 6 | -17 | -37 |
| 17-Nov | Th | | -51 | -56 | -52 | -39 | -20 | 0 | 19 | 32 | 38 | 37 | 32 | 25 | 20 | 18 | 20 | 26 | 34 | 41 | 44 | 42 | 33 | 19 | 1 | -17 |
| 18-Nov | F | | -33 | -43 | -46 | -41 | -29 | -13 | 5 | 21 | 32 | 37 | 36 | 31 | 24 | 19 | 16 | 16 | 20 | 25 | 30 | 33 | 31 | 25 | 15 | 2 |
| 19-Nov | Sa | Last Quarter | -12 | -25 | -33 | -36 | -31 | -21 | -6 | 10 | 24 | 34 | 38 | 36 | 31 | 23 | 15 | 9 | 7 | 7 | 11 | 16 | 20 | 23 | 21 | 16 |
| 20-Nov | Su | | 8 | -3 | -13 | -21 | -25 | -22 | -13 | 1 | 16 | 29 | 38 | 41 | 38 | 30 | 19 | 7 | -3 | -9 | -10 | -6 | 1 | 10 | 17 | 22 |
| 21-Nov | M | | 22 | 17 | 9 | -1 | -10 | -15 | -13 | -5 | 8 | 23 | 36 | 44 | 46 | 40 | 27 | 11 | -6 | -20 | -29 | -30 | -25 | -13 | 2 | 16 |
| 22-Nov | Tu | | 26 | 31 | 29 | 21 | 10 | 0 | -6 | -4 | 4 | 17 | 33 | 45 | 52 | 50 | 40 | 22 | 0 | -23 | -41 | -50 | -50 | -40 | -23 | -2 |
| 23-Nov | W | | 18 | 33 | 40 | 39 | 31 | 19 | 8 | 2 | 4 | 13 | 28 | 43 | 55 | 60 | 54 | 39 | 14 | -14 | -41 | -61 | -70 | -67 | -52 | -29 |
| 24-Nov | Th | | -2 | 22 | 40 | 48 | 46 | 37 | 24 | 13 | 8 | 12 | 23 | 39 | 54 | 65 | 66 | 56 | 34 | 4 | -29 | -58 | -78 | -84 | -77 | -57 |
| 25-Nov | F | New Moon | -29 | 1 | 27 | 45 | 52 | 49 | 39 | 26 | 16 | 13 | 19 | 32 | 49 | 64 | 73 | 70 | 54 | 27 | -7 | -42 | -71 | -88 | -91 | -80 |
| 26-Nov | Sa | | -56 | -25 | 6 | 32 | 48 | 53 | 48 | 37 | 25 | 17 | 16 | 25 | 40 | 57 | 72 | 77 | 70 | 49 | 19 | -17 | -52 | -78 | -92 | -91 |
| 27-Nov | Su | | -75 | -49 | -17 | 12 | 35 | 48 | 50 | 44 | 33 | 22 | 16 | 18 | 29 | 45 | 63 | 74 | 76 | 65 | 41 | 9 | -26 | -57 | -80 | -89 |
| 28-Nov | M | | -83 | -65 | -38 | -8 | 18 | 37 | 46 | 46 | 38 | 27 | 18 | 14 | 19 | 32 | 48 | 63 | 72 | 70 | 56 | 31 | 0 | -31 | -58 | -75 |
| 29-Nov | Tu | | -79 | -70 | -50 | -24 | 2 | 24 | 38 | 43 | 40 | 32 | 21 | 14 | 13 | 19 | 32 | 47 | 59 | 65 | 60 | 44 | 21 | -7 | -34 | -55 |
| 30-Nov | W | | -66 | -65 | -54 | -34 | -11 | 12 | 29 | 38 | 40 | 35 | 26 | 17 | 10 | 11 | 17 | 29 | 42 | 51 | 53 | 47 | 32 | 11 | -12 | -32 |

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Hourly Astronomical Tide Level at Ayukawa port, Miyagi Pref. in 2011 (unit: centimeter) Issued by JMA

| Date | Moon | Time | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|------|---------------|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |
| 1-Dec | Th | | -47 | -53 | -49 | -36 | -18 | 2 | 20 | 33 | 39 | 38 | 31 | 22 | 13 | 7 | 8 | 13 | 23 | 32 | 39 | 40 | 33 | 21 | 5 | -12 |
| 2-Dec | F | First Quarter | -27 | -36 | -38 | -33 | -20 | -4 | 13 | 27 | 36 | 39 | 36 | 29 | 19 | 10 | 4 | 3 | 6 | 13 | 20 | 25 | 26 | 22 | 13 | 2 |
| 3-Dec | Sa | | -9 | -19 | -24 | -24 | -18 | -7 | 7 | 21 | 32 | 39 | 40 | 35 | 27 | 16 | 6 | -2 | -5 | -4 | 1 | 7 | 13 | 16 | 15 | 11 |
| 4-Dec | Su | | 5 | -2 | -8 | -12 | -11 | -5 | 4 | 16 | 27 | 36 | 41 | 41 | 35 | 25 | 13 | 0 | -10 | -16 | -17 | -12 | -5 | 3 | 9 | 13 |
| 5-Dec | M | | 13 | 11 | 7 | 2 | -1 | -1 | 4 | 12 | 22 | 32 | 40 | 44 | 42 | 34 | 22 | 7 | -9 | -22 | -29 | -30 | -24 | -14 | -3 | 8 |
| 6-Dec | Tu | | 16 | 20 | 20 | 16 | 11 | 8 | 7 | 10 | 18 | 27 | 37 | 44 | 46 | 43 | 33 | 17 | -2 | -21 | -36 | -43 | -42 | -33 | -19 | -3 |
| 7-Dec | W | | 12 | 23 | 28 | 28 | 24 | 18 | 13 | 11 | 15 | 22 | 32 | 42 | 48 | 49 | 43 | 29 | 8 | -14 | -36 | -50 | -56 | -51 | -38 | -19 |
| 8-Dec | Th | | 2 | 20 | 32 | 37 | 35 | 28 | 21 | 15 | 14 | 18 | 27 | 38 | 48 | 53 | 51 | 41 | 21 | -3 | -29 | -51 | -64 | -65 | -56 | -37 |
| 9-Dec | F | | -13 | 10 | 29 | 40 | 42 | 38 | 29 | 21 | 16 | 16 | 22 | 32 | 44 | 54 | 57 | 51 | 35 | 11 | -17 | -44 | -65 | -74 | -70 | -55 |
| 10-Dec | Sa | Full Moon | -31 | -4 | 20 | 37 | 45 | 44 | 37 | 27 | 19 | 15 | 18 | 26 | 39 | 52 | 60 | 59 | 48 | 27 | -2 | -32 | -58 | -75 | -79 | -70 |
| 11-Dec | Su | | -49 | -22 | 6 | 29 | 43 | 48 | 43 | 34 | 23 | 16 | 15 | 20 | 32 | 46 | 58 | 63 | 58 | 41 | 16 | -15 | -45 | -69 | -81 | -79 |
| 12-Dec | M | | -64 | -39 | -10 | 17 | 37 | 47 | 47 | 39 | 29 | 19 | 14 | 15 | 24 | 38 | 52 | 62 | 63 | 53 | 32 | 3 | -28 | -56 | -75 | -82 |
| 13-Dec | Tu | | -74 | -54 | -27 | 2 | 26 | 42 | 47 | 44 | 34 | 23 | 14 | 12 | 16 | 28 | 42 | 55 | 62 | 59 | 44 | 20 | -9 | -39 | -63 | -76 |
| 14-Dec | W | | -77 | -64 | -42 | -14 | 13 | 33 | 44 | 46 | 39 | 28 | 17 | 10 | 10 | 18 | 30 | 44 | 55 | 58 | 51 | 34 | 9 | -19 | -45 | -64 |
| 15-Dec | Th | | -72 | -67 | -51 | -27 | -1 | 22 | 38 | 45 | 42 | 33 | 22 | 12 | 7 | 9 | 17 | 29 | 41 | 49 | 49 | 40 | 23 | 0 | -24 | -45 |
| 16-Dec | F | | -59 | -62 | -53 | -36 | -13 | 11 | 30 | 42 | 44 | 38 | 28 | 15 | 6 | 2 | 5 | 13 | 24 | 34 | 40 | 39 | 30 | 14 | -5 | -24 |
| 17-Dec | Sa | | -40 | -49 | -48 | -37 | -20 | 1 | 21 | 36 | 44 | 42 | 34 | 22 | 9 | 0 | -4 | -2 | 5 | 14 | 22 | 28 | 27 | 21 | 9 | -5 |
| 18-Dec | Su | Last Quarter | -19 | -30 | -34 | -31 | -21 | -5 | 14 | 30 | 41 | 45 | 40 | 30 | 17 | 3 | -7 | -13 | -13 | -8 | 0 | 8 | 15 | 17 | 15 | 9 |
| 19-Dec | M | | 1 | -9 | -16 | -18 | -15 | -5 | 9 | 24 | 37 | 45 | 46 | 39 | 27 | 12 | -3 | -16 | -25 | -27 | -24 | -16 | -7 | 3 | 10 | 13 |
| 20-Dec | Tu | | 13 | 10 | 4 | -1 | -3 | 0 | 8 | 20 | 33 | 43 | 49 | 48 | 40 | 26 | 8 | -11 | -27 | -39 | -44 | -41 | -33 | -20 | -6 | 7 |
| 21-Dec | W | | 16 | 21 | 21 | 17 | 13 | 10 | 11 | 18 | 28 | 39 | 49 | 53 | 51 | 42 | 25 | 4 | -19 | -40 | -55 | -61 | -58 | -47 | -30 | -11 |
| 22-Dec | Th | | 8 | 22 | 30 | 31 | 28 | 22 | 18 | 18 | 23 | 33 | 44 | 54 | 58 | 56 | 44 | 24 | -1 | -28 | -53 | -69 | -76 | -71 | -56 | -34 |
| 23-Dec | F | | -10 | 12 | 29 | 38 | 39 | 34 | 27 | 22 | 21 | 26 | 36 | 48 | 59 | 64 | 60 | 46 | 23 | -7 | -38 | -64 | -81 | -86 | -78 | -59 |
| 24-Dec | Sa | | -33 | -6 | 19 | 36 | 44 | 43 | 36 | 27 | 21 | 20 | 26 | 38 | 52 | 64 | 69 | 63 | 46 | 19 | -14 | -47 | -74 | -89 | -91 | -79 |
| 25-Dec | Su | New Moon | -56 | -27 | 2 | 27 | 42 | 47 | 42 | 33 | 22 | 16 | 17 | 25 | 40 | 56 | 68 | 72 | 63 | 42 | 12 | -22 | -55 | -79 | -91 | -88 |
| 26-Dec | M | | -72 | -46 | -16 | 13 | 34 | 45 | 46 | 38 | 26 | 15 | 10 | 13 | 24 | 41 | 58 | 69 | 70 | 59 | 35 | 4 | -30 | -60 | -80 | -87 |
| 27-Dec | Tu | | -79 | -59 | -31 | -2 | 23 | 40 | 46 | 42 | 31 | 18 | 7 | 4 | 10 | 24 | 42 | 58 | 67 | 65 | 50 | 25 | -6 | -37 | -62 | -76 |
| 28-Dec | W | | -77 | -64 | -42 | -14 | 12 | 33 | 44 | 44 | 36 | 23 | 9 | 0 | -1 | 7 | 23 | 40 | 54 | 60 | 55 | 38 | 13 | -15 | -41 | -60 |
| 29-Dec | Th | | -67 | -62 | -45 | -22 | 4 | 26 | 40 | 45 | 40 | 28 | 14 | 1 | -6 | -5 | 5 | 20 | 36 | 47 | 49 | 42 | 25 | 2 | -21 | -40 |
| 30-Dec | F | | -52 | -53 | -43 | -25 | -3 | 19 | 36 | 44 | 43 | 35 | 21 | 6 | -6 | -11 | -8 | 2 | 16 | 29 | 36 | 36 | 28 | 13 | -5 | -23 |
| 31-Dec | Sa | | -36 | -41 | -36 | -24 | -6 | 14 | 31 | 43 | 46 | 41 | 29 | 15 | 1 | -10 | -14 | -11 | -2 | 9 | 19 | 24 | 23 | 16 | 4 | -9 |

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