

Adopted Levels: not observed

$Q(\beta^-)=24430$ ;  $S(n)=-2370$ ;  $S(p)=29480$  (2019Mo01)

$S(2n)=-470$  (2019Mo01, FRDM).

2019Ah07: A 345-MeV/nucleon 450-pnA  $^{48}\text{Ca}$  beam was provided by the cascade operation of the RIBF accelerator complex at RIKEN and impinging on a 20-mm-thick beryllium target. Projectile fragments were separated and identified using  $\Delta E$ -tof- $B\rho$  by the large-acceptance two-stage separator BigRIPS. ToF was measured using two thin plastic scintillators placed at the intermediate and final foci of the second stage of BigRIPS.  $B\rho$  was measured from position measurement at the intermediate focus using the plastic scintillator.  $\Delta E$  was measured using a stack of six silicon detectors installed at the final focus. Optimum settings of  $B\rho$  were tuned to transmit  $^{33}\text{F}$  for 14 hours and  $^{36}\text{Ne}+^{39}\text{Na}$  for 7.8 hours. The Be target was irradiated with  $1.4\times 10^{17}$  and  $7.8\times 10^{16}$   $^{48}\text{Ca}$  ions, respectively. Measured  $Z$  vs  $A/Z$  particle-identification plot. No  $^{35}\text{Ne}$  events were observed in either setting. Under  $^{33}\text{F}$  setting, the expected  $^{35}\text{Ne}$  yields obtained from LISE++ are 177 53 using the production  $\sigma=37.8$  fb from EPAX 2.15 systematics and 69 17 using the production  $\sigma=14.8$  fb 36 from  $Q_g$  systematics.

2022Ah02: Same experimental setup as 2019Ah07 with 540-pnA  $^{48}\text{Ca}$  beam. Optimum settings of  $B\rho$  were tuned to transmit  $^{39}\text{Na}$  for 46.1 hours and  $^{36}\text{Ne}$  for 25.3 hours. Measured  $Z$  vs  $A/Z$  particle-identification plot. No  $^{35}\text{Ne}$  events were observed in either setting.

2020Mi15: VS-IMSRG ab initio calculations of ground-state energies and  $S(2n)$ .

 $^{35}\text{Ne}$  Levels

<u>E(level)</u>	<u>Comments</u>
0?	<p><math>\%n=?</math>; <math>\%2n=?</math></p> <p>Evaluators estimate the probability of not observing <math>^{35}\text{Ne}</math> events by chance is <math>2.6\times 10^{-23}</math> using the lowest expected yield of 52 events (2019Ah07) and Poisson probability distributions. <math>^{35}\text{Ne}</math> is determined to be unbound at a confidence level of <math>1-2.6\times 10^{-23}</math>. The heaviest bound neon isotope is <math>^{34}\text{Ne}</math>.</p> <p><math>J^\pi</math>: <math>5/2^-</math> calculated projection of the odd-neutron angular momentum along the symmetry axis and parity of the wave function (2019Mo01).</p> <p><math>T_{1/2}</math>: 2.7 ms calculated with respect to Gamow-Teller QRPA transitions and phenomenological first-forbidden contributions (2019Mo01).</p>