^{138}La

Inghram et al. discovered ^{138}La at Argonne National Laboratory in 1947 as reported in "A new naturally occurring lanthanum isotope at mass 138" (1947In10). A Nier-type mass spectrometer with a thermal ionization source was used to identify ^{138}La. "Peaks at masses 154, 155, 156, and 157 were observed. The 155, 156, and 157-peaks were present in relative abundances characteristic of $La^{139}O^{16}$, $La^{139}O^{17}$ and $La^{139}O^{18}$. The peak at 154 was unexpected but was always present to the same relative amount in four different lanthanum samples. The possibilities that this new peak might be due to $Ce^{138}O^{16}$, $Ba^{138}O^{16}$, Sm^{154}, or Gd^{154} were ruled out because these elements would also have given other lines. We are obliged to attribute the 154 line to an isotope of Lanthanum, La^{138}, which is present to 0.089±0.002 percent." A month later the authors submitted a more complete analysis of their results (1947In09).

Adapted from reference (2012Ma48)

1947In09 M. G. Inghram, R. J. Hayden, and D. C. Hess Jr., Phys. Rev. **72**, 967 (1947).

1947In10 M. G. Inghram, R. J. Hayden, and D. C. Hess Jr, Phys. Rev. **72**, 349 (1947).

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