

Order of Magnitude – Group α

April 14, 2026

1 A Positive Disaster

Imagine an alien race has come to our solar system with an “electron capture” magnet. They position the magnet at the moon and start ripping away electrons from the moon, making it positively charged, and they conveniently don’t repel each other or attract other positive charges when doing so. As the moon continues to get more positively charged, it will eventually “explode” (become unbound).

(a) Calculate the number of electrons you have to remove before the moon explodes/becomes unbound.

(b) Is this a sensible amount of electrons?