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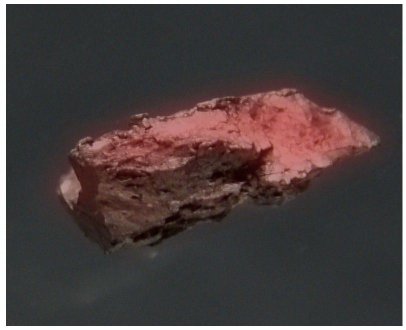
Why is Curium the Last Semi-Stable Element?



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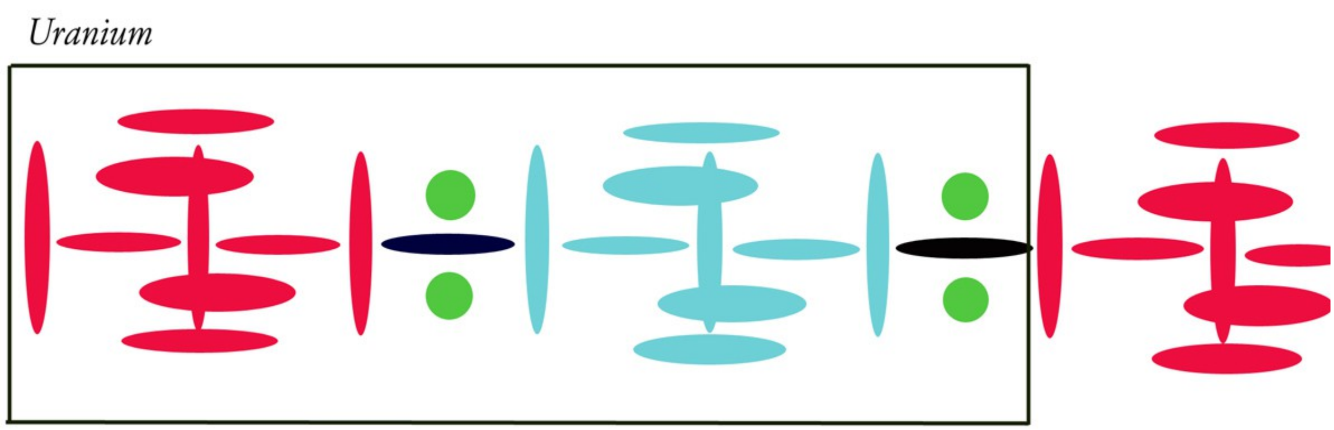
Yes, I am finally back to work on the Periodic Table, after a long break. I saw that Oganesson, number 118, had been added to recent Tables above Radon as a 7th Noble Gas. My readers will know that can't be right, since I have shown that Radon isn't a Noble Gas itself. So Oganesson can't possibly be one. The rules of nuclear construction mostly fail after Barium, with the Lanthanides built on a different 5-proton block, and the Actinides being pieced together from smaller elements. Which led me by meandering paths back to Curium, the last semi-stable element. It has a stability four orders of magnitude greater than the elements beyond it, indicating something important.

Given my earlier diagramming of Uranium, it is pretty easy to discover what that is:



As you see, Uranium is not built from a single nuclear core, but from two smaller ones linked together. So we can diagram Uranium as Barium+Krypton, for instance. Plutonium is the same structure, but instead of one proton (black disk) in the each linking position, we have two. With Curium, we have three. This explains why Neptunium and Americium are less common and less stable: being at odd numbers in the Table, they force us to create different links in each position: one and two with

Neptunium and two and three with Americium. Since charge is moving down the line in the chain, having different strengths at each length creates a problem. Basically it creates a pulsed charge, and as we saw in my paper on the Lanthanides, the elemental cores don't like pulsed charges. They are a source of instability, since they create a rocking of charge. Here, a rocking charge just increases an inherent instability, as you are about to see.

But why isn't Curium more stable than Plutonium? It is about five times less stable, but given the extra protons creating a bond, shouldn't it be *more* stable? Not necessarily. What the extra protons tell us is that Curium should channel more charge, but not that it should thereby be more stable. To see why these elements are unstable, we have to go back to Uranium. Uranium looks to have a problem in that the link appears weak. You have two fairly large cores linked by only one proton. But while it is true that that can be a problem given a field of fast moving neutrons, Uranium's given half-life isn't based on that. It is based on an assumption of a low energy ambient field, and an assumption that the link holds. So Uranium's source of instability is something else. Uranium's source of instability is the dual core itself. In the Barium part of the structure, you have a Xenon core, channeling charge with a potential of 6. Each disk in that part of the structure contains six protons, remember. But in the Krypton part of the core, charge is channeling with a potential of 4. So the element has an inherent imbalance in charge capability, you see.

You will say we have that imbalance any time a molecule is created, which is true. But Uranium isn't a molecule. The plugs here (at the links) are short and tight. In a molecule they are longer and weaker. Therefore, we don't come up against this problem in molecules.

No, when we double that proton link between Barium and Krypton in making Plutonium, we don't actually strengthen the bond. We may double the charge channeling, but as the charge channeling increases, the imbalance also increases.

In the next step—the creation of Californium—we would simply increase each link to four protons. But that doesn't work very well, since Californium is 17,000 times less stable. Why? Since Krypton is made from a core composed of 4-stacks, shouldn't we be able to plug in 4 protons there? No, 4 is the ideal limit, given a small nucleus with no neutrons on the core axis. But we are working here with large nuclear cores with many neutrons plugged into the nuclear axis. I haven't drawn all the neutrons in the basic diagram above, but it is understood that Uranium, as well as the constituents Barium and Krypton, have neutrons plugged into the axial positions, to prevent charge leakage in those positions. As we have seen in previous papers, large nuclei require nucleons in those positions to prevent leakage, but they prevent leakage by channeling charge across the axis at that point in a tight lane. However, neither the blocking nor the channeling is perfect, so in short the nucleus can never be channeling at maximum efficiency. What this means in our case is that a Krypton core can never channel at a full value of 4. At best it can approach that value. Therefore, in any real situation, we cannot plug four protons into a polar position like this. If we do, we will have overloaded the nucleus with charge, breaking it from the inside out. That is precisely what happens with Californium.

That takes us to Californium, number 98, but where do the extra protons go in elements above that? Well, notice that the carousel levels are empty in both parts of the Uranium nucleus. Both Barium and Krypton have no protons plugged into the carousel levels. When nuclear physicists make larger elements above Curium, I assume they are forcing protons into those carousel levels for a few seconds or minutes. But given the basic configuration of the Actinides, the elements reject those protons, and the more protons the more they reject them. All charge streams are moving along the axis, and the carousel level is torpid. There is very little to keep the new protons in the plugs, and they drift out again.

So can I suggest a better way to compose the large elements? I think I can. They should start by creating a variant form of Uranium, composed of Barium and Xenon instead of Barium and Krypton. Since both parts of the core would then be composed of 6-stacks (and be the same color in the diagram), there would be no inherent instability. And the element would then have a starting number of 110, instead of 92. They could then add 8 more protons in the two links (via neutron bombardment or other methods) without overloading the charge channels, giving them the desired total of 118. This variant form of Oganesson might be completely stable, and it would have a huge charge channel.

But how could one go about bringing together Barium and Xenon? Well, since Xenon would have to be frozen to make this happen, I suggest supercooling both elements and putting them under all the pressure that can be mustered. That may be difficult to achieve, since it is somewhat of a contradiction. Pressure tends to add heat, you know. But pressure only adds heat when charge is present, so if most charge can be removed beforehand, the feat might be achieved. We know that stars and even galactic cores don't create these elements, because if they did we would see them in Nature. Why not? Because in stars and galactic cores, the pressures may be fantastic, but they are always in the presence of charge. Charge densities are always very high in such places. Stars and galactic cores have no way to create low charge densities, but we do.

In creating this large element, we would be forcing the pole proton of Barium (black disk) into the hole at the south pole of Xenon, like a plug in a socket. It doesn't normally want to go there, because Xenon has no potential for it. Or, Xenon has no charge vortex there to help pull in the proton. There is no channel, so the proton doesn't know where to go. You are sort of trying to force a plug in the dark, without knowing where it is. Running a current in that direction (south to north) should help, since it will at least line things up and hopefully give the Xenon some small potential.

The other thing to be aware of is that the added pressure has to be from all around. If the nuclei were arrayed as above in the diagram, with the chain running east to west, and you applied pressure north to south, you wouldn't achieve anything. You need to first achieve the plug, and then you need to ram it in there. So you would have to apply the most pressure east/west, with pressure also applied from all other directions to prevent the nuclei from turning. You need to ram the plug with high pressure because we aren't just making a molecule here. We are making a compound element, so the plug needs to be very tight and short.

It looks like it might be possible to create the same element by forcing Cesium to bond with itself on the poles. This might be even easier to achieve than working with Xenon. If you bonded Cesium to itself and then rammed the plug with enough force, you might create a new element at 110 in that way. But if it were that simple, you would expect to see it in Nature. I have some suspicion this element (a variant of Darmstadtium) has already been made, but its existence may be classified. According to mainstream reports, Darmstadtium is currently synthesized from Hassium. A few atoms have been created by bombarding Lead or Bismuth. According to the reports, no one has ever thought to bond Cesium to itself, which is pretty hard to believe. Given the mysteries surrounding Cesium and its uses (see my papers on the nuclear hoaxes), I suspect this is one of its uses, and it might be the primary one.

And what would be the use of such an element? Its weight would seem to make it useless in any sort of propulsion. This wouldn't matter in space, but due to that weight you could never get it into space in any major quantities to start with. However, given what we have discovered above, it might be a new sort of conductor, one that would make Silver look sluggish. Once the imbalance we looked at with Uranium was gone, that imbalance would no longer interfere with conductivity, and the increase in channeling could be completely expressed in conductance. Remember, Silver has great conductivity down the axis, but it also has a potent carousel level, pulling charge out equatorially. Our new element wouldn't be conflicted like that, since—like the current Actinides—it would have a very weak carousel level. Being based on Groups 0, IA and IIA, its charge channel would naturally be extremely linear.