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MARK HARTMAN: We said that we had made an observation of what elements were present in the supernova remnant. And we can tell what elements were present by identifying which peaks were there. We know that each element gives off certain energies of photons that have to do with the difference between energy levels of the electrons, and the electrons are bouncing around.

And we saw that we had a certain bunch of elements. And we said to ourselves, well, we also know something about supernova remnants. So we had this question, why would we expect to find these particular elements in a supernova remnant? And we came with two different models. One was the elements were already around the outside of the star somewhere. And when the star blew up, it kind of swept him up.

The other model was that the elements were created inside the star. And when you guys read about star formation before, you read fusion-- the process of atoms being squished together in the middle of stars does produce new elements. OK? And indeed, somebody asked this question, how does another star use the elements left behind by the supernova?

These are the elements left behind by the supernova. If a star is mostly made of hydrogen and other gases. That's a really good question. And we said that each of these models is going to make a prediction about what we would foresee if we observed the location of the different elements. We're going to look, because we essentially said that this first model, we expect to see the elements kind of further out, because they'd be pushed out of the way if they were on the surface of the star.

Whereas here, we'd expect to see the elements spread everywhere because they were created inside the star. I'm not actually going to tell you which one of these is correct, because this is a perfect CAI research project. We're developing these questions-- these different models. When you do a project, you want to think about things this way. What I see-- why might I see this?

Neither one of these is completely wrong. But neither one of these is completely right either.

So it's going to be your job, as part of the CAI, to come up with some alternate models for what you think might be going on. We're going to give you the tools to find the answers for yourself. Now you started thinking about well, OK, maybe if I looked at where the elements were we could figure that out. That's actually a really interesting project.