



Old Millstone Forge Newsletter

June XX, 2025

Events

Open Forge: Sundays 1-4pm.

Join us at our weekly Open Forge. Our forges and anvils are available for all members who have attended at least one event. Come with a project in mind, or hammer steel until your project spontaneously emerges.

Make your own Hand Tools. June 22.

Zach will teach you how to make a punch and a chisel. You will keep the tools you make. Workshop cost: \$25 (members), \$75 (non-members, includes membership). Cost includes materials.

(TBD) **Monthly blacksmithing competition**

Martin is in the process of looking into the feasibility of running this, and the frequency may be adjusted. The format is to-be-determined, but the goal is to reward volume, consistency, and/or quality for a specified project, which will change each time. Examples of projects include hooks or bottle openers.

Letter from the Board

Dear friends,

It was a rainy May, but here at the Forge, things are looking bright! As spring winds down, I am excited to share some big news about what is coming next for Old Millstone Forge.

Starting in June of 2025, with our new 3-Year Plan guiding our efforts, Old Millstone Forge Foundation will be launching several projects to strengthen our organization, allowing us to expand programming, raise funds for critical repairs, and grow our outreach in the community.

In the coming year, we will debut a new mission, vision, and values to better reflect our long-term goals and community impact. We will be offering special events throughout the season, including one workshop in partnership with the Somerset County Historical Society. And, keep an eye out for our donation link on www.oldmillstoneforge.org, and other website improvements, coming soon.

Behind the scenes, we are putting important systems and policies in place to strengthen our communications and outreach. We are working with a historical architect to plan critical repairs. We are also developing a new membership program with exclusive events and other ways to stay connected, and laying the groundwork for a comprehensive fundraising plan to help sustain our work for generations to come.

We are incredibly proud of what we have accomplished so far, and even more excited for what lies ahead. Thank you for being part of our community, and for helping us carry the Forge's legacy into the future.

Until next time!

Warmly,
Michele Lefkowitz
Secretary, Board of Directors

Note from the editor

Greetings Blacksmiths of Old Millstone Forge! I'm your new newsletter editor Ryan. I've been blacksmithing on-and-off since 2015. I was an active member of the New Jersey Blacksmiths Association, and was a member of the board, taking duties as chair, secretary, and websmith, and doing occasional event organization. I also co-founded the Princeton University Blacksmiths group and lead the group from 2017-2022. When people ask me what I like to make, I usually end up telling them that I teach blacksmithing more than I do blacksmithing, although I'm trying to change that.

We're currently accepting submissions! Please send submissions to amos.ryan.b@gmail.com. Here are some ideas:

- Your recent projects.
- Project tutorials.
- Nearby events of interest, including from other organizations.
- A short article or story, non-fiction or fiction, of interest to blacksmiths. It doesn't have to be strictly about blacksmithing; it can also involve related topics such as metallurgy, fabrication, etc.
- Anything else you think would be worth sharing with other members!

We're also looking into doing short member biographies. If you'd like to be included, please reach out.

-Ryan

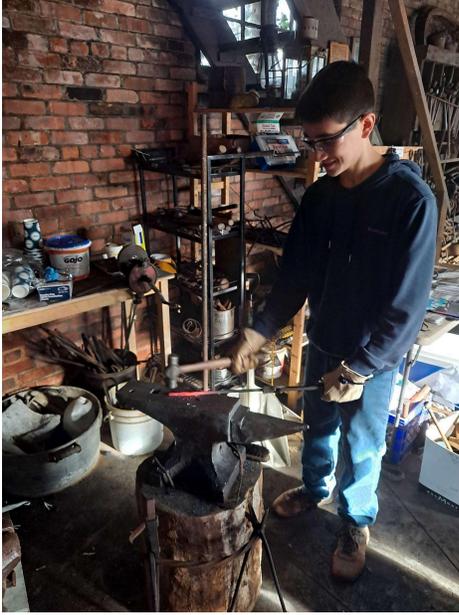
Member projects



Cutlery set, Jim. Guaranteed to boost your blood iron levels.



Drawknife and crowbar, Jason. Great for making, then breaking open, treasure chests.



Jason, working some steel.



Zach has been experimenting with architectural ironwork. This is one of his latest additions.



Ryan is developing techniques to forge pitons. Once he's got the technique down, he plans to write up a tutorial. Not for climbing, decorative only!

Why Blacksmiths Always Reach For The Stars

By Martin Zorde

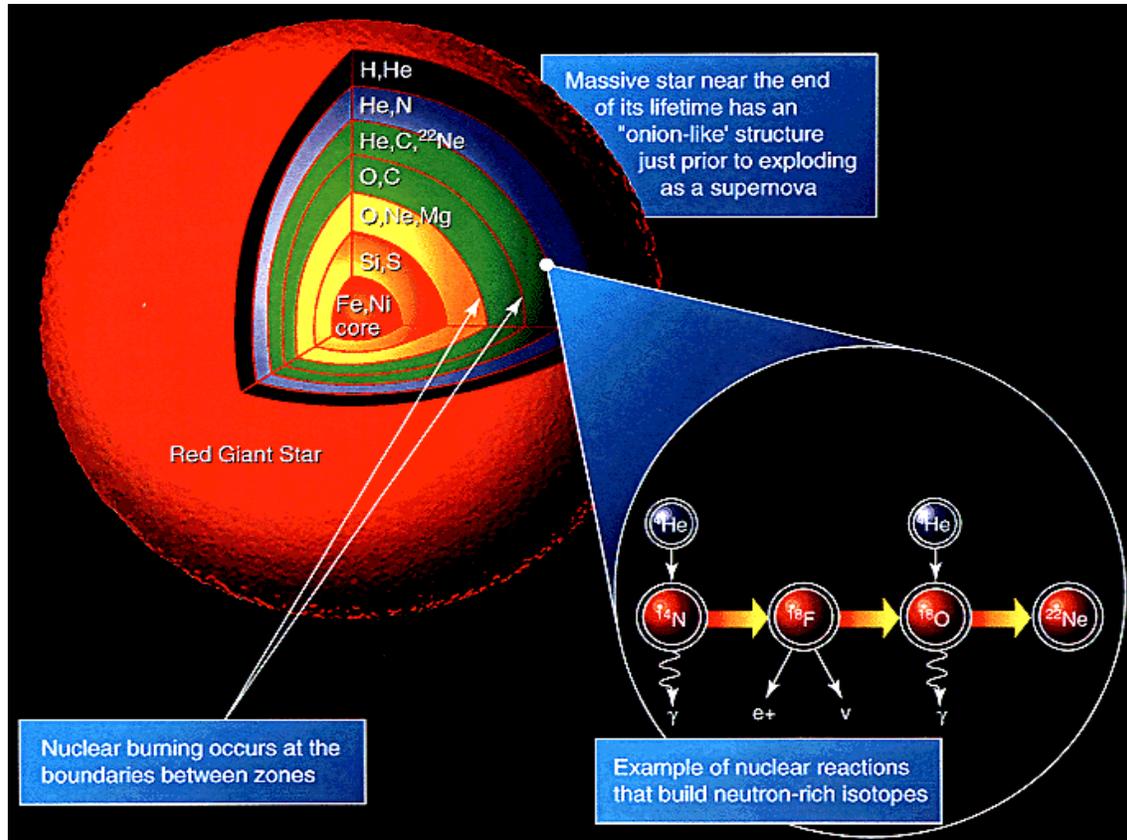


Image from https://commons.wikimedia.org/wiki/File:Nucleosynthesis_in_a_star.gif

Iron has been a vital resource for human civilizations for thousands of years (Briguglio et al., 2020). Not only is element 26 a vital nutrient, being required for making heme, the molecule responsible for making blood red and able to carry oxygen (Perutz et al., 1960), but historically a crucial resource for domestic and military applications (Richards, 1915). From swords to plowshares and from pots to skyscrapers, iron has played a role, and so too has the blacksmiths to shape it. Put simply, our modern world and industries are intrinsically linked with iron, its uses (González & Kamiński, 2011), and the smiths that worked it (Richards, 1915). To quote the opening lines of Talking Heads' 1980 hit "Once in a Lifetime."

"And you may find yourself living in a shotgun shack
 And you may find yourself in another part of the world
 And you may find yourself behind the wheel of a large automobile
 And you may find yourself in a beautiful house, with a beautiful wife"

All of these, in the modern day, were shaped and influenced by the use of iron and iron products. So you may ask yourself: Well, how did Iron get here? Look to the stars and there you will find your answer!

As our understanding of the planet we live on, the solar system it is a part of, and the wider universe has improved, so too has our understanding of fundamental forces of the universe and the natural processes they drive. One of our key understandings is that of the process of nuclear fusion, the combining of smaller elements to make larger ones. For elements to fuse, their nuclei need to be able to touch, which requires overcoming of the electromagnetic force ((S-8A-2) *Nuclear Binding Energy*, n.d.-a). This is normally prevented by the presence of electrons, the negatively charged particles around the nucleus of an atom (for simplicity we are going to ignore the uncertainty of electrons). As an analogy, think of how difficult it is to force the repulsive ends of magnets together, it's possible but it takes a bit of force. This difficulty is the same on an atomic scale, as fusion requires an overcoming of the electromagnetic force of the electron cloud, such that the strong atomic force (the force responsible for keeping all those positively charged protons together in the nucleus) can come into play ((S-8A-2) *Nuclear Binding Energy*, n.d.-b). This is the process that happens in stars. Going off of the magnet analogy, stars are able to force the nuclei close enough to fuse with huge amounts of gravitational force and high temperature (electrons like to go on a stroll on hot days).

As stated, when atoms fuse the strong atomic force comes into play. Interestingly, when atomic nuclei fuse, the resulting atom has less mass than the initial atoms that were combined to make it. Where did the mass go? It got turned into energy! This is where our friend Albert Einstein's famous equation $E=mc^2$ comes in. This equation highlights how much energy you get out of turning any amount of mass into pure energy. Keep in mind 'c' is the speed of light in a vacuum, 299,792,458 meters per second (or 186,000 miles per second), so just one pound of matter turned into energy would yield 11.324 Terawatt hours, or about 19.18 times the energy New Jersey uses in a year (*New Jersey State Energy Profile*, n.d.). These astronomical amounts of energy are what keep the Sun nice and hot for us, but stars have their limits, too. As a star fuses elements, eventually they hit a wall when it starts making iron. This is because, of all the elements, iron has the highest Nuclear binding energy (Dwek, 2016). This means that it takes more energy to get elements to fuse with iron than you get out. Oversimplified, iron is the energy sponge that eventually means the death of a star as it doesn't have enough fuel to stay hot enough to not collapse (thermal expansion keeps stars from collapsing due to gravity).

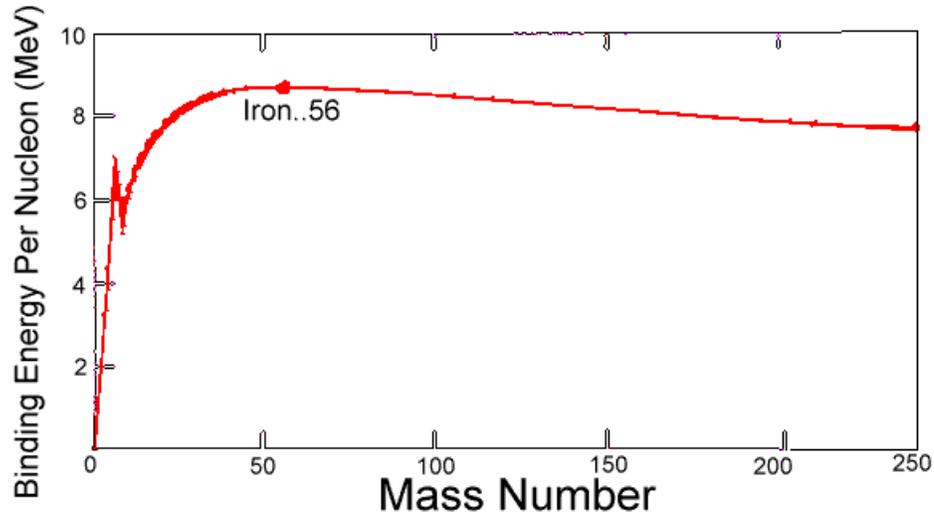


Image from: ((S-8A-2) *Nuclear Binding Energy*, n.d.-c).

What does all this mean for our humble blacksmiths? It means that most if not all of the iron on Earth came from the heart of a dying star and that's pretty metal! So for each story of a legendary weapon or tool forged from the heart of a dying star, reality is stranger than fiction. So the next time you see or work a piece of iron, know that you are touching the stars and your work will always be of stellar quality!

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Old Millstone Forge

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About Us

Old Millstone Forge Association, Inc. was established to support the maintenance and preservation of the Blacksmith Shop and Museum in the Borough of Millstone, Somerset County, NJ.

Our purpose is the proper preservation of both the building and the collection within, as well as the proper use of the equipment to better explain the role of the blacksmith within our culture and history. The Old Millstone Forge Museum is one of the oldest living history groups in the area, and takes pride in the products and the experiences they provide.

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