Comment & Discuss this article @ homepower.com/165.60

The StarFlower

by Kathleen Jarschke-Schultze

Last summer, I was very excited to get a call from an old friend of mine, Sam Erwin. Sam had invented what I considered to be the most efficient solar cooker I have ever used. Sure enough, he was calling me about his new solar cooker, the StarFlower (see solar-chef.com).

First: The Solar Chef

I first read about Sam's early solar oven, the Solar Chef, in Joe Radabaugh's book, *Heaven's Flame*. I saw my first Solar Chef and met Sam at a Solar Energy Expo and Rally in Willits, California, in August 1994. He had transported the very large "restaurant-sized" Solar Chef from Colorado, where he and his family had used it for 18 years. He was roasting whole ears of corn, husks on, and handing them out to fair-goers to showcase solar cooking. That year, Sam sold every unit he brought to the fair. And that corn was yummy!

The Solar Chef arose from a homemade solar water heater gone awry. It wasn't working very well as a water heater, so Sam removed it from his roof, stuffed an uncooked chicken inside a coffee can, and put that in the unit. It cooked surprisingly well. That was when Sam began fine-tuning the now-patented solar cooker design.

The original Solar Chef is a handsome unit. The center cooking enclosure is covered with a faceted glass cover that is the focus of many mirrors cut and mounted just so. The outside is plywood, painted a neutral brown and cream. The aluminum frame and wheels are what make the Solar Chef so easy to use. The one we bought had a painted wooden cover that slips underneath the cooker to provide a smooth surface for the wheels.

Chef Deux

In 1997, Sam, who had been testing and fine-tuning his cooker, sent me a newly designed Solar Chef. The cooking chamber on this model is covered by a molded, clear plastic dome instead of glass, and has reflectors made of polished metal. They radiate from the cooking chamber like the petals of a large metallic flower. On the back of each "petal" is a bow of metal with an adjustment screw positioned two-thirds of the way up the bow. Turning a knurled screw on the bow allows you to change the curve of the collectors according to what you are cooking. If you are cooking in a pot, you want the light to be very focused on the pot. If you are baking bread, you would want the light/heat more diffused to eliminate hot spots. The Solar Chef finished a 15-pound turkey in 15 minutes less time than called for on my cooking chart. It has quickly become my favorite of all the solar cookers I have used or tested over the years.

We still have and use our Solar Chef. It has become a venerable friend, sitting outside our back door, where it can get full sun. Usually, the recipe rule for solar cookers is that it will take roughly twice as long in a solar cooker as in a conventional oven. But the Solar Chef cooks in real time. This doesn't mean "set it and forget it" like with an electric slow cooker—it means set your time, and check the oven when the alarm sounds.

The StarFlower

That's why I was delighted to hear from Sam this past summer. I thought he had retired—but no, he had been working on and improving his cooker. He offered to let me test the new StarFlower cooker. I jumped at the chance.

My brother-in-law happened to be visiting family a couple of hours from where Sam now lives. He was able to visit Sam, get instructions for assembling the unit, and pick up the StarFlower parts, which were in several boxes.

Now, I love assembly—you know, putting things together according to a plan. Just me, the instruction sheet, and a bunch of parts waiting to become a whole. It's so Zen. Being familiar with the various incarnations of the Solar Chef gave me a foreknowledge of design. This cooker also has petal-shaped metallic reflectors mounted around a central cooking chamber. The control for elevation adjustment is the same. The cooking chamber is covered by a molded, clear plastic dome. There is also an option of buying a dome that contains a small solar-powered fan for convective cooking.

The cooking chamber sits on a turntable. The turntable is attached to a base that can be fit with casters or legs. Placed like large leaves on each side of the turntable are two small

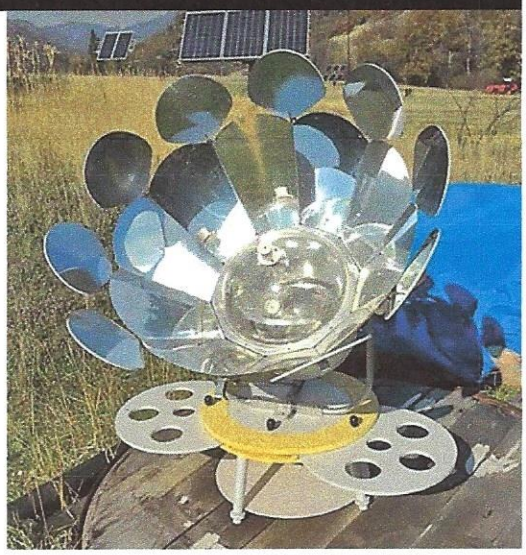
shelves that turn with the cooking chamber. These are handy places for resting oven mitts and seasonings, and setting down pot lids.

Sitting atop the reflectors are the "power petals"—what give the cooking chamber temperature some extra oomph. Shaped like small lily pads, they mount to the spines that hold the larger metal reflectors in place.

Smoke from local wildfires hampered the testing, since I needed ample sunlight to test the StarFlower. But when I did, it performed like a champ. I placed it on the solar cooking platform I made from the bottom of a defunct redwood hot tub. I chose to use the table leg base configuration so the cooker would not roll off the platform.

I used my Polder digital cooking thermometer, which has a plug-in temperature probe on a wire that I was able to place in the cooker next to the cooking vessels. The StarFlower baked some carrot bread in about 35 minutes, at 325°F. For my next dish, a large casserole, the oven temperature rose to 350°F in about 30 minutes. There was a lot of liquid in the casserole and that has a tendency to slow the temperature's climb. But once the dish reached 350°F, maintaining the temperature was easy by turning the cooker to keep the sun focused on the cooking chamber.

One bright sunny day, I put a whole winter squash in the oven with the temperature probe next to it. The first time I checked the temperature and refocused the cooker, the thermometer readout said 386°F. I was pretty excited. I refocused the cooker and watched the temperature climb. When it got to 400°F, my digital readout blipped—apparently, it had reached its readout limit. I quickly located one of my analog oven thermometers and put it next to the squash. It read 435°F! It didn't take long for that squash to be done.



The StarFlower is being beta-tested. Production on this model has not yet started, but interested parties can contact Sam Erwin at P.O. Box 151, Tracyton, WA 98393; (303) 373-1027.

Kathleen Jarschke-Schultze

I have cooked pots of beans, rice, breads, casseroles, squash, and fruit cobblers in the StarFlower. It cooks in real "recipe" time—or less. Everything I've cooked has been delicious.

Design Savvy

The StarFlower makes solar cooking almost effortless. It is so easy to turn and elevate to focus the sun onto the cooking chamber. The chamber itself is stationary, and keeps the pots and food level as you refocus the unit. The small side table and leaves turn with the unit and are so practical for storing cooking implements. The design is well-thought-out on a practical level.

I didn't think it was possible, but now another favorite solar cooker has stolen my heart, and enriched my solar cooking experience.