Request for Assistance:

Although I have thought about this project for several years, having access to a larger research network will allow further progress and remove some of the technical hurdles.

I will need assistance in the following areas:

- Topological (folding). Need to design a compact structure that can unfold when needed by one average human. The frame will have to nominally support the weight of standard solar panels including brackets for variations in size, plus the electrical interconnect wiring. NASA has done some work in this area (see references), but they have conveniently counted on the absence of gravity and atmospheric conditions (rain, snow, wind, etc) for a one-time deployment in space. Other commercial applications (see reference) have been attempted but rely on irregular-shaped form-factors for panels, minimizing power output, and are generally designed to be installed at a fixed location and left there.

- Electrical/solar. The solar system design will need to be validated and safety-checked and an electrical harness designed which can flex with the structure. Will need to explore latest technologies and best practices with inverters, grid-tie, and local power storage options.

- Business models. Once the bill of materials and design is finalized, there should be some useful data points on the costs involved. Need some marketing/finance help to figure out the best way to get this solution adopted widely enough to make an impact. Is it released under open-source license for people to build themselves? Or sold as a turnkey option?

- Manufacturing. There are a number of small businesses at Nova Labs, some of which do small-scale manufacturing of various electronic or mechanical components and assemblies. At the moment I’m not sure if that experience is relevant to manufacturing in this field. If not, will need help finding resources familiar with transportation accessories and hardening them to survive travel.