

The primary goal of this event is to find Shaun, Polymele's moon. It is roughly 6 km in diameter and could be anywhere across a ~200 km zone relative to the position of Polymele. My current notional spacing between stations is 2 km, just slightly bigger than in March 2022. The target for the deployment is 100 stations spread out evenly over this footprint. I suspect this is going to be the largest ever centrally coordinated effort. I expect to have enough equipment for 90 of the 100 stations. I hope that another 10 will be forthcoming from various IOTA and other interested volunteers with suitable equipment. The minimum useful aperture size for this campaign is 8" (20-cm). There are many details to work out for the deployment plan so stay tuned for news in the coming weeks. At present, the nominal plan calls for bringing all observers together in the Denver-Boulder area on Tuesday, January 31 to begin an intensive series of training and practice sessions that will culminate in the observations on the evening of Friday, February 3 (Feb. 4 UT). I do not expect this campaign to operate like anything anyone has tried before. This effort is fundamentally important to the Lucy Mission and to science in general. Getting a successful detection of Shaun will provide critical information on its orbit by combining with the prior event and other constraints. Without that information, it will be impractical to expect to get high-resolution imaging of Shaun. What makes that data so important is the opportunity to learn if Shaun is a collisional fragment or an original remnant of solar system formation. Perhaps Polymele is another Arrokoth that just didn't evolve so far to bring the two components together. Even though this isn't a prime mission objective (and it couldn't be since we didn't know about Shaun before), it could very well be the most significant outcome of the Lucy Mission. Without our occultation efforts, this won't happen.