

Balloon & Kite Mapping

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How Can I Do This?

Our whole toolkit is linked out below, but really fast:

- 1) [Buy our balloon kit](#), [assemble your own](#), or [buy/make a kite](#).
- 2) [find a good camera](#).
- 3) [determine how you will trigger the camera](#), (we suggest a rubber band) or pick out a [timelapse app for your smartphone](#).
- 4) build a [simple housing from a plastic bottle](#).
- 5) find a site to map that is five miles from an airport and [not Washington D.C.](#)
- 6) [follow the pre-flight checklist\(pdf\)](#) and [quickstart guide\(pdf\)](#) to safely fill up your balloon and fly!
- 7) [sort your images on your desktop](#) or with [Mapmill](#).
- 8) make them into a map with [Mapknitter](#).
- 9) Print a poster of your map from Mapknitter, see your map join the public record in our [archive](#), and if you'd like, even in [Google Earth](#).

Why Balloons and Kites?

These tools are being developed to provide a low cost, easy to use, and safe methods for making maps and aerial images. Over the last two years, we've built a global community of mappers who are engaged in discussion around the development and use of this tool and others.

Normally aerial maps are made from satellites and airplanes. The balloon and kite ground-based approach introduces an on-demand capability where events or environmental conditions are mapped at a specific moment in time. Our community is particularly interested in applying this to civic and environmental issues.

Maps are often used by those in power to exert influence over territory, or control territorial narratives. "Grassroots mapping" attempts to invert this dynamic by using maps as a mode of communication and as evidence for an alternative, community-owned definition of a territory. To date, our tools have been used to contest official maps or rhetoric by enabling communities to map sites that are not included in official maps. In Lima Peru, members of an informal settlement developed maps of their community as evidence of their habitation, while on the Gulf Coast of the US, locally produced maps of oil are being used to document damage that is underreported by the state.

Browse maps and data generated with this technique in the [Public Laboratory Archive](#)

Browse [Research Notes on Balloon Mapping](#)

Applications and Example Uses

Residents of the [Gulf Coast](#) are using balloons and kites to produce their own aerial imagery of the Deepwater Horizon oil spill... documentation that will be essential for environmental and legal use in coming years. We believe in complete open access to spill imagery and are releasing all imagery from the oil spill mapping project into the public domain. Browse maps and data from the Gulf Coast and elsewhere in the [Public Laboratory Archive](#)

Get Involved

- check out our [community blog](#)
- Join our [mailing list](#)



- Share your work by [posting research notes](#) to the PLOTS site.
- tag your photos *publiclaboratory* and *grassrootsmapping* on Facebook, Flickr, etc.
- contact our [team](#) directly. Be sure to mention:
 - ** the coordinates of the site
 - ** context; what you'd like to use the data for



Grassroots Mapping Toolkit

Our aerial mapping toolkit is a simplified kite and balloon aerial photography system for easy and accessible high-resolution map-making. The toolkit consists of:

Flight platforms: Assembling a balloon kit will cost from \$100-200, including helium.

- The Public Laboratory [Balloon Mapping Kit](#) is assembled from our preferred parts.
- For alternative and low-cost materials, see the [Balloon Mapping Materials page](#).
- [Use this chart to calculate the lift you'll need.](#)
- For kites, see [Kite Mapping](#)

Camera housings:

Single Line systems: [The PET Bottle & Rubber Band Rig](#) wraps around the small and medium sized cameras (up to micro 4/3) for crash protection while firmly mounting it in a position for vertical images.

For heavy cameras, a [Trash Can Rig offers more protection](#).

Multiple Line Systems: these are more complex to build but can provide added stability, especially useful for video. [Several people have created Picavet rigs](#).

Cameras: A small camera that supports continuous shooting mode and a large storage card, or an excellent camera phone are our preferred options.

- Help [selecting a camera](#)
- Different ways of [triggering the camera shutter](#)

Mapmaking software: Public Laboratory's [MapKnitter](#) is easy to use browser software for map making. Continue on to [MapKnitter Guide](#) and [MapKnitter Help](#) for more information.

- When mapmaking, efficient image sorting [either on your desktop](#), or using [Mapmill](#) is a must.
- Some people also use proprietary software such as Photoshop, [Hypr3d](#), or [PhotoSynth](#). For a freely distributed desktop option, check out the [GNU Image Manipulation Program](#).

Useful guides: Our latest guides can always be found on the [Guides](#) page, including:

- The four-page [Grassroots Mapping Guide](#)
- The [Balloon Mapping Quick Start Guide to filling and flying](#) (pdf) and [editable Google Doc](#)
- The [Balloon Mapping Check Lists](#) (pdf) and [editable Google Doc](#), which are extremely useful in planning field expeditions, even for experienced fliers.
- We also maintain a [guide to FAA regulations](#) page.

Curricula and workshops: Our [Curriculum-Guide](#) covers the entire process and some theory behind mapping. It is still in beta.

Advanced Techniques

- [Near-infrared imagery](#) for vegetation monitoring and other uses.
- [Image analysis](#) - Try some of these techniques for bringing out detail and compositing your images with [near-infrared imagery](#).
- [Ground control point targets](#) for correlating on-the-ground measurements directly with photos.
- [Balloon telemetry](#) for recording GPS and gyroscopic data.
- [Kite Balloons](#) experiments in wind-stabilized balloons
- [Hydrogen ballooning](#) - be very careful!

Places to start contributing

- [Curriculum-Guide](#)
- [Balloon Mapping Materials](#)
- Any of the Advanced Techniques (above)
- [MapKnitter.org](#)
- [MapKnitter Guide](#)

Attachment	Size
Grassroots Mapping English 2 0 0.pdf	983.74 KB
BalloonMappingPre-flightChecklistPackingList.pdf	67.12 KB



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