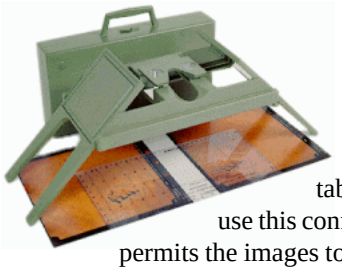
Inexpensive Stereoscope Viewing

Components:

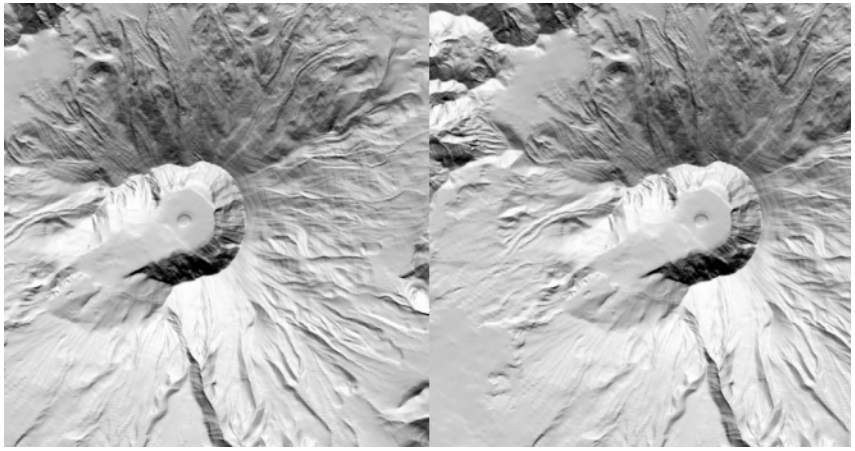
- GeoScope Standard—mirror stereoscope widely available (~ US$200)
- Dual 15" flat-panel monitors with a resolution of 1024 x 768 (~ US$500 for 2)
- Dual-processor Apple G5 PowerMac or your current TNT computer and display board



Configuration:

The monitors are the dual 15" flat panels normally used in their upright position on stands for working with TNTmips. The horizontal configuration pictured to the right with TNTmips is the same as typically used for air photo prints (as shown in the insert at left) in which the physical prints are moved around on the table surface to get stereo fusion and to view different areas. If you use this configuration make sure your display board and monitor combination permits the images to be rotated 90 degrees on the monitors.

In this electronic application with the TNT products the stereoscope does not need to move since the paired stereo images are automatically displayed in the proper positions for stereo fusion and can be moved about in tandem on the monitors under the fixed stereoscope using the mouse. You could also use an alternate assembly in which the legs of the GeoScope are attached to the contacts points on each monitor's bezel with velcro, which permits the monitors to be tilted up from the horizontal. You can then lean forward for stereo viewing and sit back to see a normal view of the 2 monitors under the stereoscope, or simply pull the velcroed legs loose and set the stereoscope aside. This alternate configuration is easier on your back than the one pictured here.



Pros:

- solid stable stereo fusion at low cost
- unaltered brightness and colors—even better than using prints since not reflected light (almost all other stereo viewing devices filter, shutter, or somehow alter the images to create the stereo)
- less eye strain; eye fatigue is about the same as using photo prints (many other stereo viewing devices quickly cause eye strain, not just fatigue)
- may work with the dual monitors you already have for efficiently using your TNT product

Cons:

- optics of this low-cost stereoscope limit the area viewed in stereo to about 5" by 5"
- one user at a time (a mirrored display system can be set up using an additional display board)

High-resolution orthoimages and digital elevation models are now becoming widely available. High-quality stereo views can be rendered from this geodata in TNTmips, TNTedit, and TNTview to augment 2D and 3D perspective viewing. Stereo viewing is effective in helping identify and map ground conditions and features where direct work in the field is too expensive, time-consuming, or hazardous. Stereo can also be used effectively to explore the 3D spatial relationships between land surfaces and multiple subsurface manifolds. Stereo views can be opened in the Spatial Data Editor in TNTmips and TNTedit to assist in editing geodata in the companion 2D view.

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