Recommended PIC alignment tools

Compass has been adequate for most installations

A Quality compass such as a Brunton transit has azimuth accuracy +/- 1/2° with 1° graduations, cost is $350.
If non-magnetic vault materials used....

- Position Compass on center of pier, correct for local declination
- Align plastic ruler and strike a north line with sharpie or 90 degrees to north for a STS2
- Use alignment nubs / rod and align with scored mark
Posthole types have to be aligned from the top...
PICs newest aid is the alignment tool

- Developed for Trillium postholes deployments
- Prototype for 3Ts, STS2s and T120PAs
  - All aluminum or non-magnetic metals
  - Uses forced mechanical coupling for alignment
  - Steadies and eases compass handling for leveling

*See the PIC alignment tools here at the TIMs*
What we have tried...

• We have compared alignments with Brunton compasses in Antarctica and verified with the GPS alignment tool: < 1 degree difference on each of 3 station installs as compared to the GPS alignment tool

• The PIC supports 50-70 experiments a year with the PIs supplying their own compasses

• GPS alignment tool accurate to .2 degrees and cost $7,500 for each kit

• Estimate of upgrade to more accurate GPS tool:
  — 100 units = $750,000!
  — Octans not considered