

# Fine Pointing Mechanism for Optical Transceiver

Steve Kavanagh, VE3SMA

April 2012

The following photographs show a prototype fine pointing mechanism for a small optical transceiver, which allow more precise pointing than that achievable with a basic tripod head. Nothing requires much precision in machining or assembly, as can be seen from the rough nature of the carpentry! A few degrees of motion is provided in both the azimuth and elevation planes. The base of the mechanism mounts to a ¼-20 stud on the tripod, using a T-nut threaded insert in the plywood base, located between the bolt holding the azimuth bearing compression spring and the inside rim of the bearing. The bearing itself is a ball bearing of the "Lazy Susan" type, but is a bit too wobbly without the compression spring. To minimize wobble in the elevation hinge, the hinges chosen are miniature ones, probably intended for making small wooden boxes, for jewelry or the like. Two items yet to be added are stops in the azimuth plane (to avoid over-stretching the return spring) and in the elevation plane (so the transceiver doesn't flip right over, possibly damaging the elevation hinges).



