

## FRA28 108-mm Merz et al Refractor Restoration

### Issues:

1. Slow motion control rods were broken and missing, except for one swivel joint, which was used to design and fabricate the new brass control rods.
2. The wooden optical tube and tripod were buried under old varnish and antiquing black paint, and the existing brass and iron hardware badly oxidized and corroded (especially the casters).
3. All the optical accessories came un-mounted in an empty case.

### Actions:

1. The brass swivel joints were fabricated to match the one existing swivel joint; the missing mahogany knobs and brass rods were designed from a same period Merz telescope and the control knobs were turned using aged Pennsylvania mahogany.
2. The varnish and paint were removed and the wood refinished. This reveals a beautiful walnut venier optical tube and an equally beautiful mahogany tripod. The brass and cast iron hardware was appropriately cleaned and restored.
3. The loose lenses and accessories were fitted carefully into an old empty oak case, which came with the telescope. Matching oak strips were used, and the result is both functional and attractive.

### Comment:

Prior to purchase, careful assessment of this telescope was made and it was believed it could be restored to nearly its original beautiful operational condition. This initial assessment, fortunately, appears to have been correct. Furthermore, after purchase the present owner discovered the lens maker's signature on the objective lens brass cell. Result: An important old instrument was returned to near original beauty and full functionality.

### Photo Credit: (Before Restoration)

Dorotheum Vienna, auction catalogue 20 October 2006.

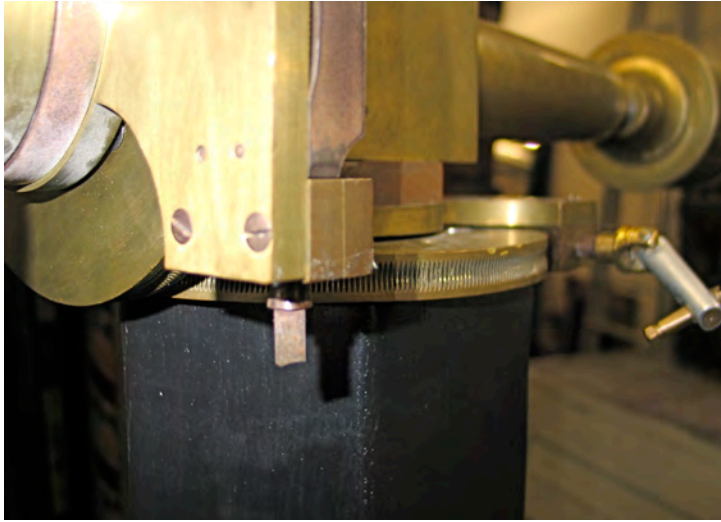


Before Restoration: Black paint, broken/missing adjusters and lenses lying loose in an oak case



After Restoration and Repair

## FRA28 Restoration



Before: Black paint, rust, broken and missing control rods



After: Beautiful original wood revealed (walnut tube and mahogany tripod) and new restored brass control rods. New control rods designed from remaining original swivel (below) and photos of same period Merz - fabricated from mahogany and brass.



Original brass 1/2 swivel



After: Restored/new brass swivels, brass control rods and knobs.

## FRA28 Restoration



Before: Optical accessories came loose, but in a nice oak case.  
Casters & decorative brass heavily corroded.



After: Loose lenses were mounted in the oak storage case that came with the telescope. Oak panels were patterned, stained, finished and installed to store the terrestrial eyepiece, two star-diagonals and eight eyepiece lenses



After: Attention to detail is important in restoration.

FRA28 Restoration



Elegant Telescope Restored



FRA28  
Beautiful walnut tube and mahogany tripod  
beneath the black antique paint!