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# NATIONAL RADIO ASTRONOMY OBSERVATORY

Socorro, New Mexico

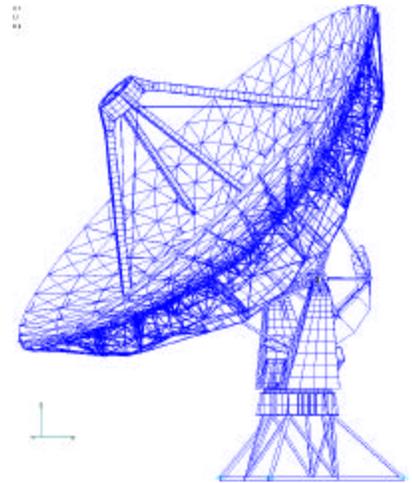
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VLBA Antenna Memo Series No. 44

## Los Alamos Rail Repair

J. E. Thunborg  
August 21, 2002



The grout under the azimuth rail on the Los Alamos, New Mexico VLBA antenna had degraded. On August 12 – August 19 a maintenance team consisting of Kelly Green, Marlin Smith, Jon Thunborg, John Wall and Adrian Zamora were dispatched to Los Alamos to repair the rail with the help of site technician Gene Dunn. An initial measurement of the rail showed that the splices at bolt 1 and 81 were low. Brass shims were placed under these splices to raise the rail and thus eliminate rail movement.

The grout was spot repaired between all but eight of the bolt locations on the rail. In these spot repairs, the old grout between the rail plates and under the rail was removed to a depth of approximately 3 inches. New grout was then poured in the hole under the rail.

Eleven of the bolts that hold the rail clips to the rail plates were broken. When the loaded rail deflects into a section of degraded grout it causes the rail to lift at the adjacent rail plates thus breaking the rail plate bolts. The grout from below these rail plates was removed so that the broken bolts could be replaced with new ones.

