

NATIONAL ASTRONOMY AND IONOSPHERE CENTER
ARECIBO OBSERVATORY



To: Distributions
From:  Jose N. Maldonado Torres

Date: January 26, 2004

Subject: Dome Rotary Floor Weight

The ALFA Receiver will be installed in the Dome Feed Module on the Rotary Floor. There were uncertainties as of the load and weight of equipment and the design capacity to support the weight on the ALFA on the Rotary Floor, not the least in the Feed Module Structure. In order to get rid of some of the uncertainties several components were disclosure for a structural inspection, and to weight the floor with most of the equipment on it.

The floor was weighted using the hydraulic jack previously used to lift and weight the Dome but with smaller dial gages. These gages were calibrated on site using as references a manufacturer calibrated gage. The jacks were set on an aluminum structure designed and connected from the Feed Module outside of the Rotary Floor. A hydraulic jack was used to lift each corner and two other jacks were hydraulic connected to a pump.

The Rotary Floor and equipment weight as of January 14, 2004 was 9,190.8 lbs. As per data taken the load is fairly distributed. As results of the inspection it was found that structural support members with the Camfollowers that hold the floor in place are bent with a deflection at the center. These members are shown on the addendum B-1 with the ID numbers 225 AR and 225 AL. On the addendum C-1 are the member's construction details.

Also, found was that the center connection plate of the Rotary frame members shows small sacks at the center.

JNMT/cr

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