

National Radio Astronomy Observatory
Socorro, New Mexico
VLBA Antenna Memo #66

Hancock, New Hampshire VLBA Maintenance Visit September 20-27 2006. Team members consisted of Steve Aragon, Eric Carlowe, Kelly Greene, Ken Lakies, Ray McFarlin and Phillip Sanchez. VLBA Site Technicians Tom Baldwin and Don Haenichen assisted in all areas of antenna maintenance.





The FRM was given a thorough inspection. The focus flex shaft was replaced along with the INA bearing seal.

FRM INA BEARING CHECK 50LBS PULL ON EAST MOTOR

East Travel:	+0.001	West Travel:	-0.001
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FRM INA BEARING CHECK 50LBS PULL ON WEST MOTOR

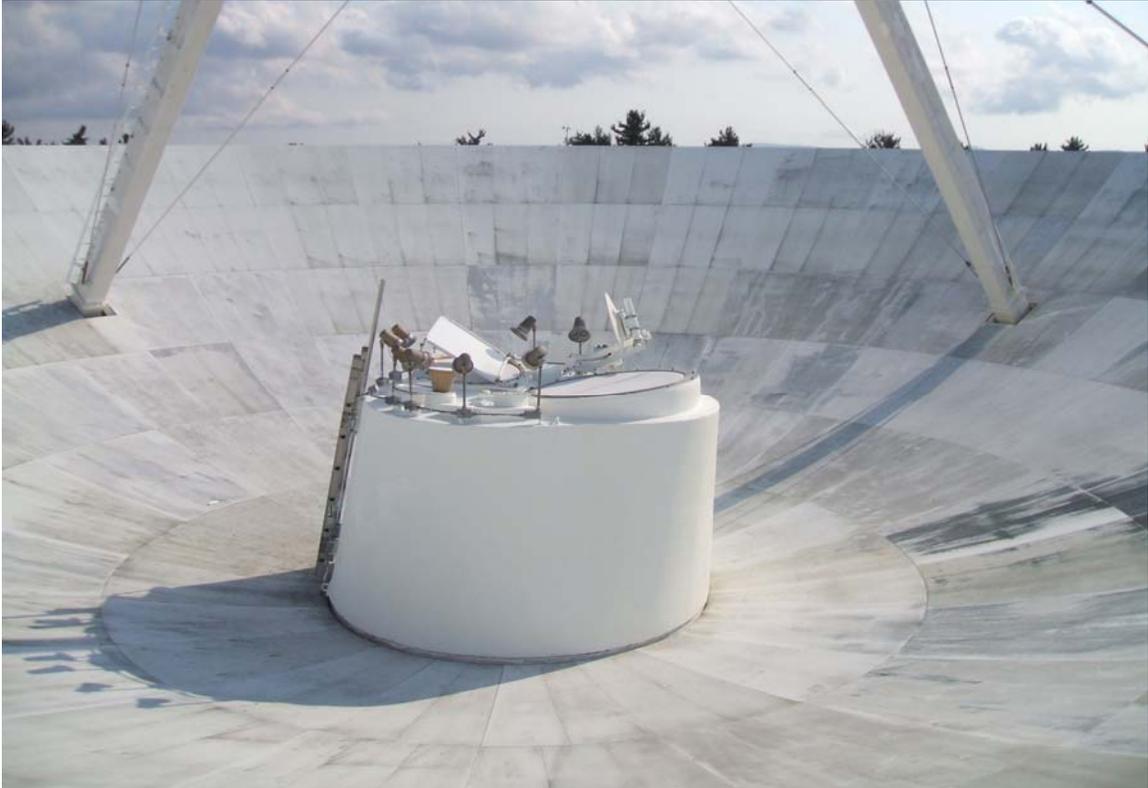
East Travel:	-0.001	West Travel:	+0.001
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The snow tarp was removed and three 1 inch drain holes were drilled in the center of the sub reflector for drainage. The sub reflector was rebalanced. The rotation single motor modification was also completed.



Hancock's sub reflector paint is degrading.



Dish panels are in good condition with no dents. The feed cone was sealed and painted with elastomeric.



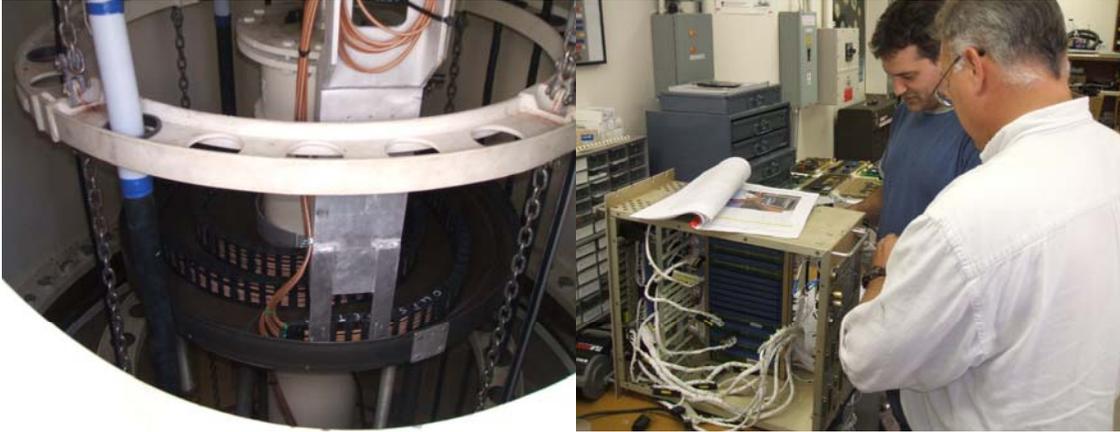
A new dichroic reflector was installed and aligned. The ellipsoid reflector was realigned and is in good operating condition.



Elevation motors #1 and #2 were replaced. AZ #1 motor needed a new brake assembly. A new blower motor and air box was installed on AZ #2. AZ#2 gear box seal was also replaced.



The Elevation synchro side cable wrap was repaired. Vulchem was retaining water on top of the feed cone. The vulchem had to be scrapped off and the feed cone sealed and painted.



The new IF cable wrap was installed and tested. Four pieces of teflon were added to chaffing power SO cables. The ACU power supply and backplane modification was completed and tested.



Azimuth wheel bearings were inspected. No AZ bearings were replaced.

AZIMUTH BEARING GREASE INSPECTION

	INNER BEARING	OUTER BEARING
D1	Few minute flakes.	Few minute flakes.
D2	Few minute flakes.	Few minute flakes.
I1	Good, no metal.	Good, no metal.
I2	Good, no metal.	Good, no metal.

ELEVATION BEARING GREASE INSPECTION

Encoder	Good grease with no metal flakes.
Synchro	Good grease with no metal flakes.
Pintle bearing grease inspection shows no signs of metal.	



Elevation axle has no visible signs of cracks. Both elevation axle ground cables were replaced. Paint is in poor condition.



Feed heaters and FE windows are in good condition. Feed heaters operated correctly, 1 feed heater needed replaced. Apex paint is in fair/poor condition.



Antenna backup structure is in good condition. Paint is in fair condition.



A new Elevation HVAC platform extension was installed.



One section of the Vertex room floor was severely damaged by water. This section was cut out and replaced. Vertex room floor tiles were removed for the site techs to seal and paint the floor.



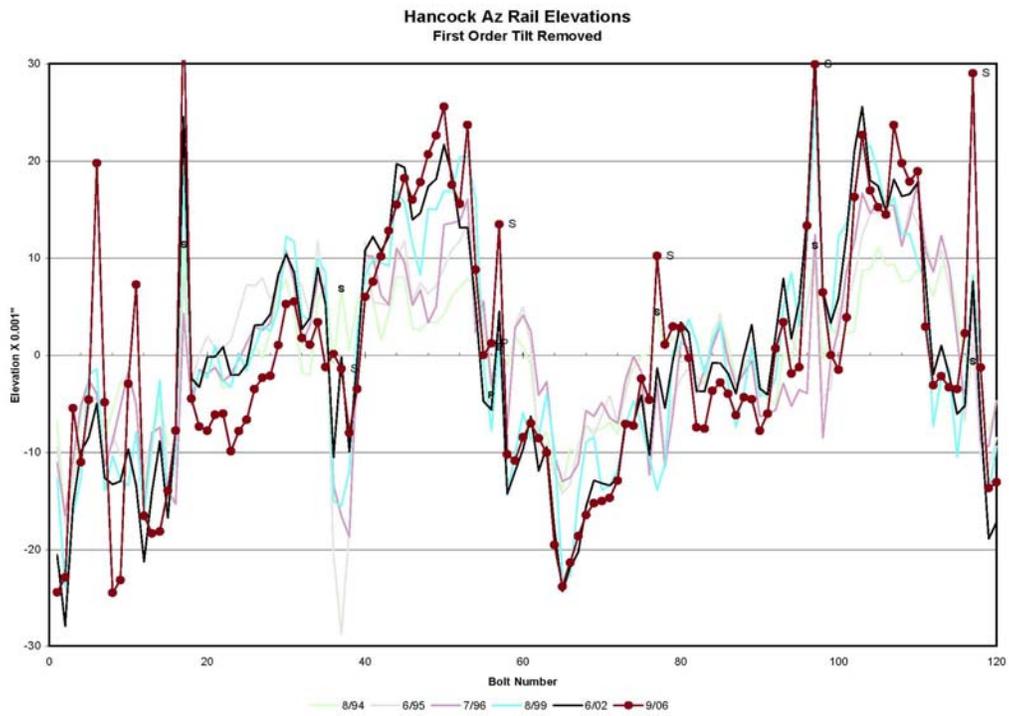
The Vertex room RFI critical power filter was full of water. Vertex room power was shut off. The filter was dried out and connections cleaned. RFI filter leak was located and sealed. The vertex room door was also replaced.



Overall the antenna paint is in poor to fair condition. With mainly lots of surface rust found every where on the structure. The paint on several dish panels is deteriorating.



Hancock's rail grout needs to be replaced.



Splices at bolt numbers, 17, 97 and 117 are failing.