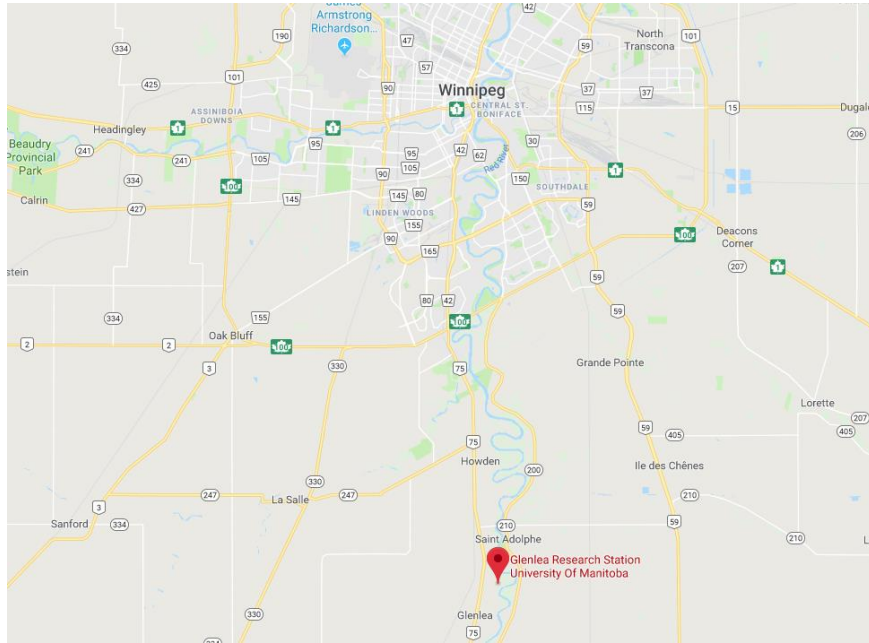


Glenlea Telescope Inspection & Repair

(picture notes for future reference)

Peiqing Wang

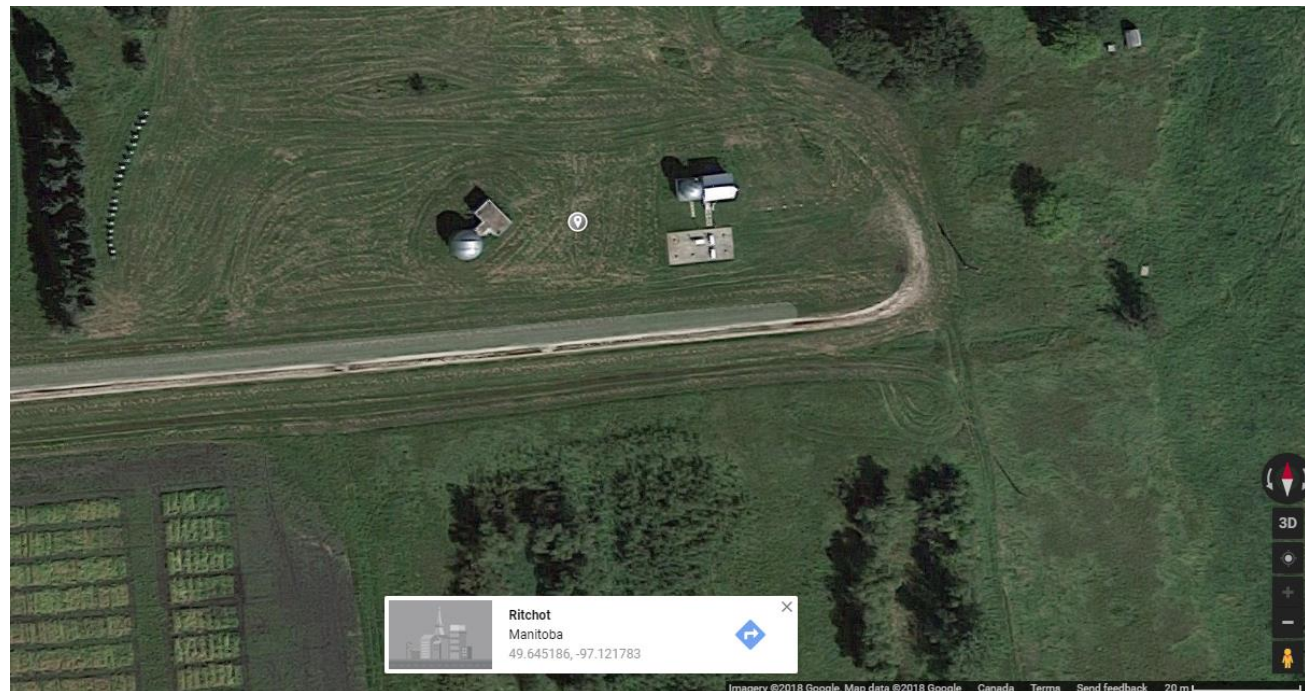
12/20/2018



Glenlea Telescope is located south of Winnipeg,
about 20 minutes drive from U. of Manitoba

1290 Research Station Rd,
Glenlea, MB R0G 0S0

Coordinates:
(49.645186, -97.121783)





Glenlea Telescope is 16" reflecting telescope, commissioned by Robert S. Evans in 1963

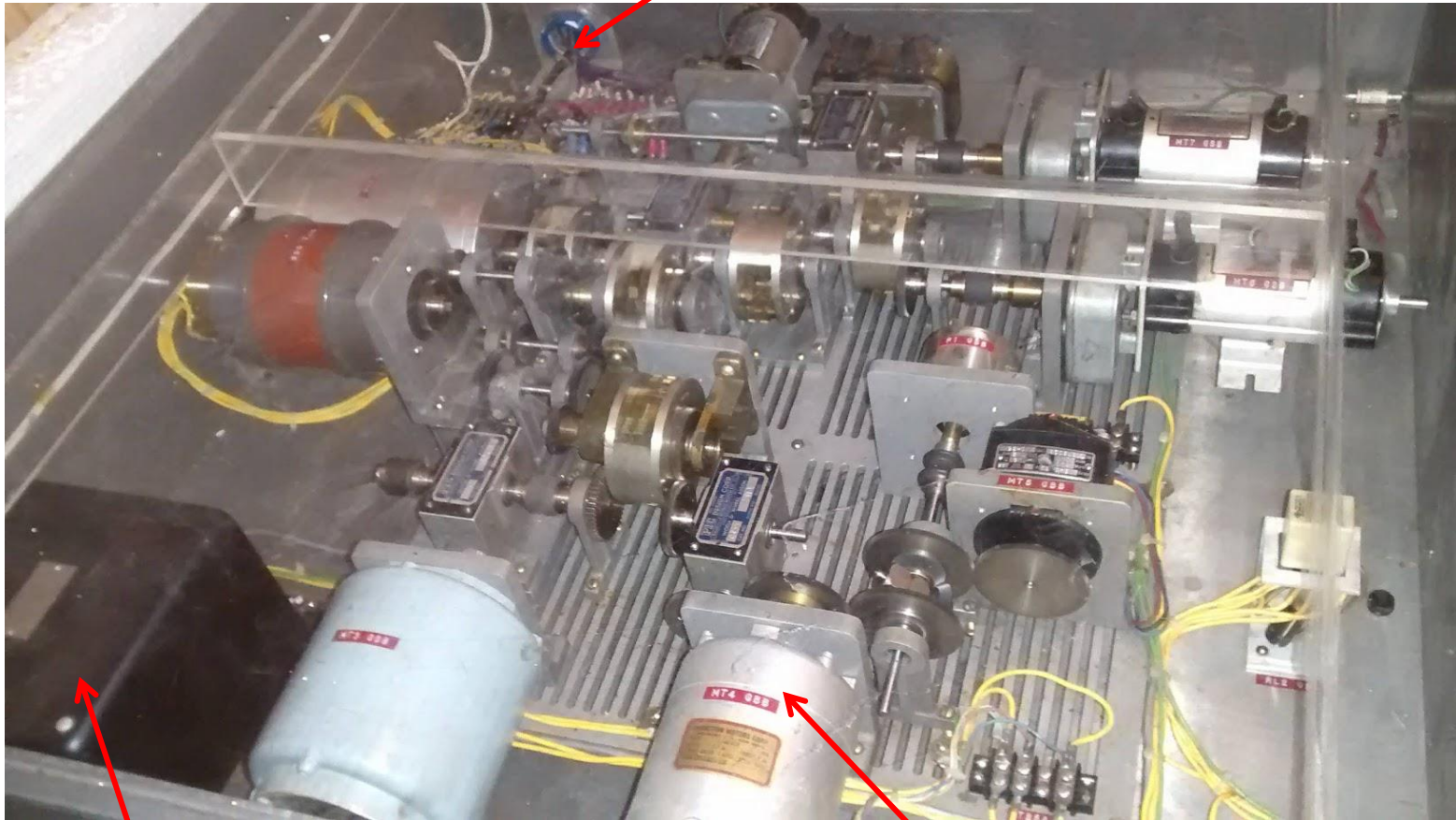
Problem:

The tracking system is not working

No reference materials available (no any drawing or instruction manual), so the inspection and repair could only be based on experience and guesses.

Gear box #1 in the warm control room

AC power feedthrough, and main tracking signals (sync. Rotation/angle)



DC power supply, containing a transformer, capacitors, etc.

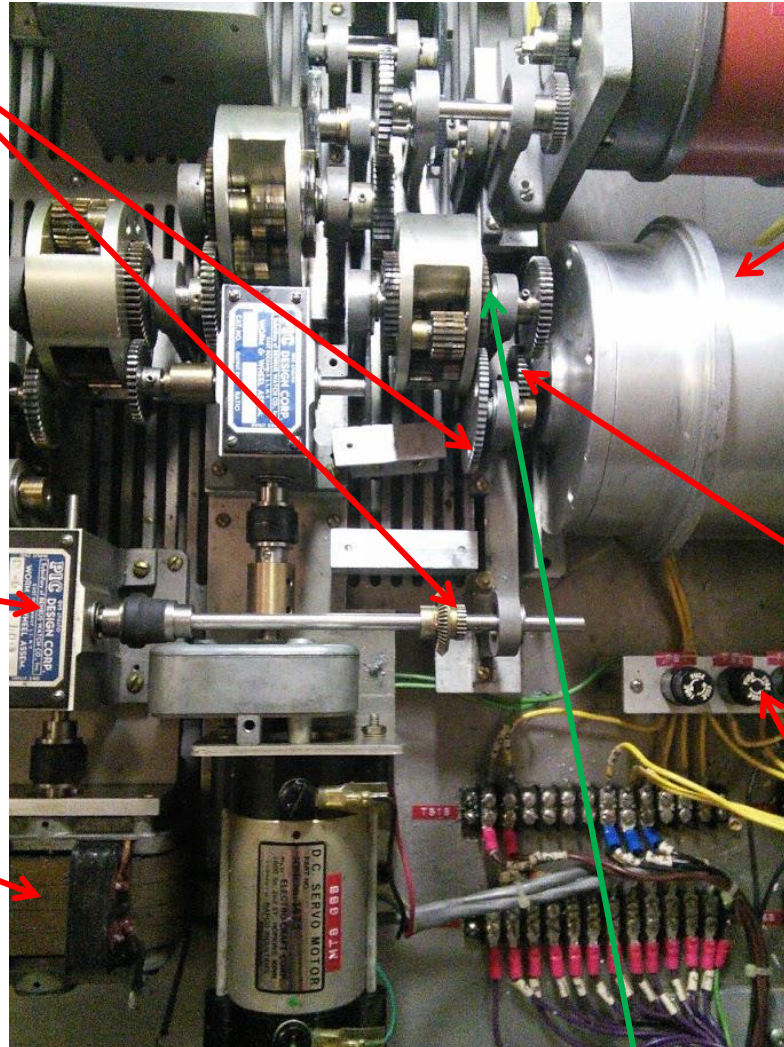
Main motor, for generating tracking signals, turned on by the key switch inside dome

Inspection

Gap and mounting brackets were found in between, suspecting there are missing parts (gears)

40:1 ratio worm gear box

Correction/fine-tune motor (no electrical connections)

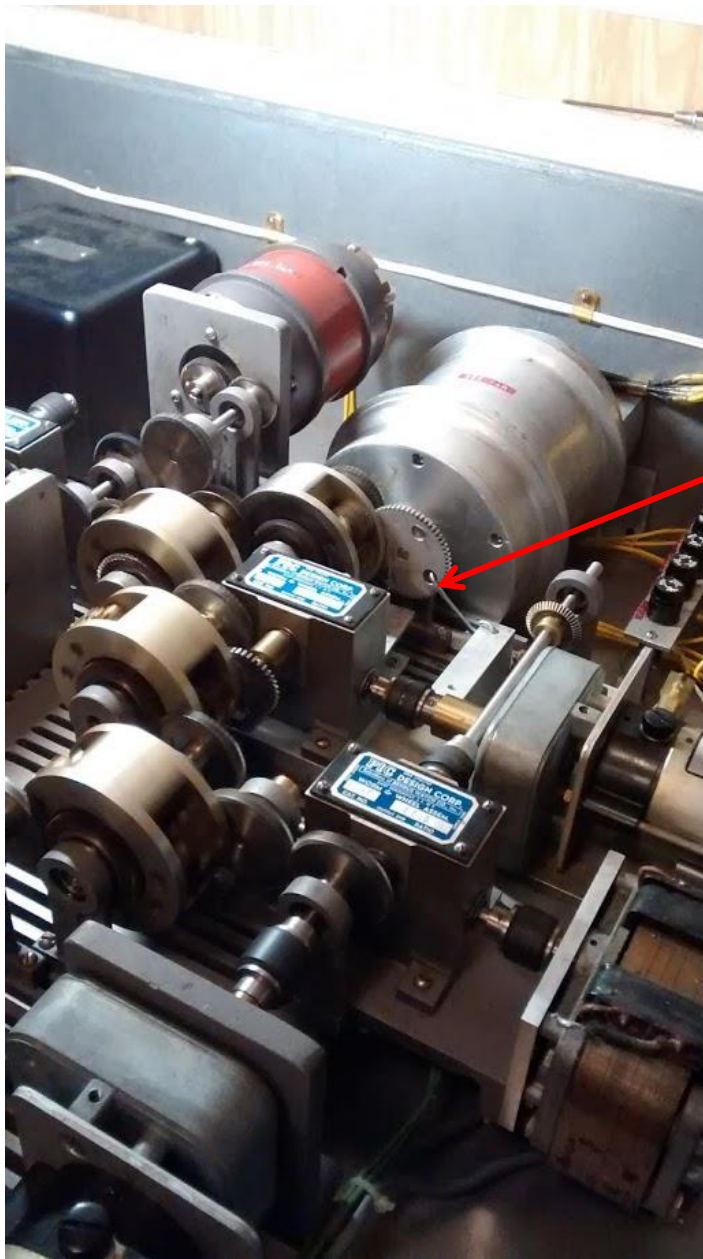


Synchro generator
110V rotor (R1,R2)
3 Phases (S1,S2,S3)

Rotor wasn't
activated hence no
tracking signals
sent to W/E gear
box in the dome

Missing fuse,
inserted a 2A fuse

No locking for this gear, thus no motion transported to the rotor of synchro generator



Temporary fix:

Bypassing the fine-tune mechanism and locking the gear with a piece of steel wire.

Test

1. Turned on the key switch, the main tracking gear started motion

(the main tracking gear is located at the left hand corner of the W-E gear box under the telescope)



2. The needle on the polar angle indicator (West-East) at the control pannel moved about 4 degree in about 15 minutes.

#1, #2 implied the temporary fix was working. More tests need to be done to see:

- if the speed is in right range and,
- if the motion is stable over a long time running

Summary

- The source for the tracking system problem was identified
- A temporary fix was provided
- More detailed test will be obtained, and a permanent solution will be needed when the test results become available