

## Low Cost Antenna Positioning System

Andrew Lutley is currently working on a computer controlled Alt-Azimuth motor driven satellite dish.

### ***Phase 1 (completed June 2010)***

This consists of:

- (a) Mounting a 60 cm mini dish on an aluminium frame;
- (b) Attaching the frame to a budget Channel Master Rotator for azimuth control



and to a 'ram' actuator for elevation control.



Each is powered from separate 35V motor control boxes;

- (c) Mounting the whole assembly on a base plate;
- (d) Building a relay interface board enabling the motors to be controlled from a computer using logical high and low signals from the computers parallel port;
- (e) Writing a program in C to detect when the keyboard arrow keys are depressed and sending the corresponding logical high and low signals to the relay interface board; and
- (f) Incorporating a shaft encoder on the altitude axis to give a visual read out of position.

### ***Phase 2 (scheduled for completion 2013)***

This consists of:

- (a) Mounting the assembly on a proper steel base-plate;
- (b) Providing a degree of weather protection for outdoor operation;
- (c) Adapting the cabling for outdoor operation; and
- (d) Incorporating a shaft encoder on the azimuth axis (there are some technical constraints here due to the Channel Master rotator design).

Phase 3 consists of connecting the system up to Radio Eyes (<http://www.radiosky.com/radioeyesishere.html>). This will probably involve upgrading the shaft encoders, upgrading the relay interface board and building and programming a PIC processor to act as a controller.

Phase 4 will involve an upgrade to the mount/drive assembly, enabling it to cope with a larger dish.

Andrew would welcome hearing from others who have trodden the same path or may be thinking of doing so. He can be contacted at [andrew@ajlutley.co.uk](mailto:andrew@ajlutley.co.uk).