

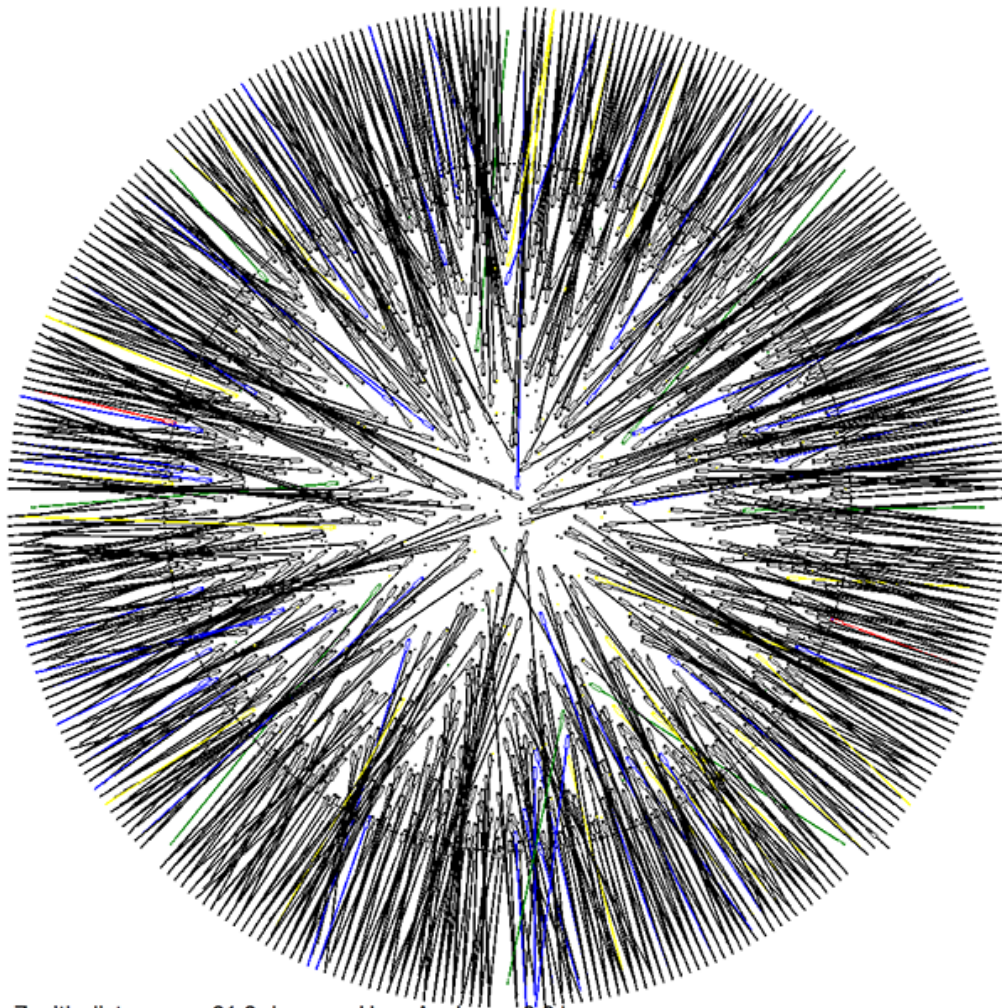
WEAVE Fibre Positioner System

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WEAVE Fibre Positioner System

Pick-and-place technology will be used to position the fibre buttons onto a plate using a commercially available X-Y gantry. A computer simulation shows the complexity of weaving 960 fibres to acquire their targets. The solid circle shows the science field diameter, Green fibres are guide stars, yellow are calibration stars, blue are sky and black are targets.

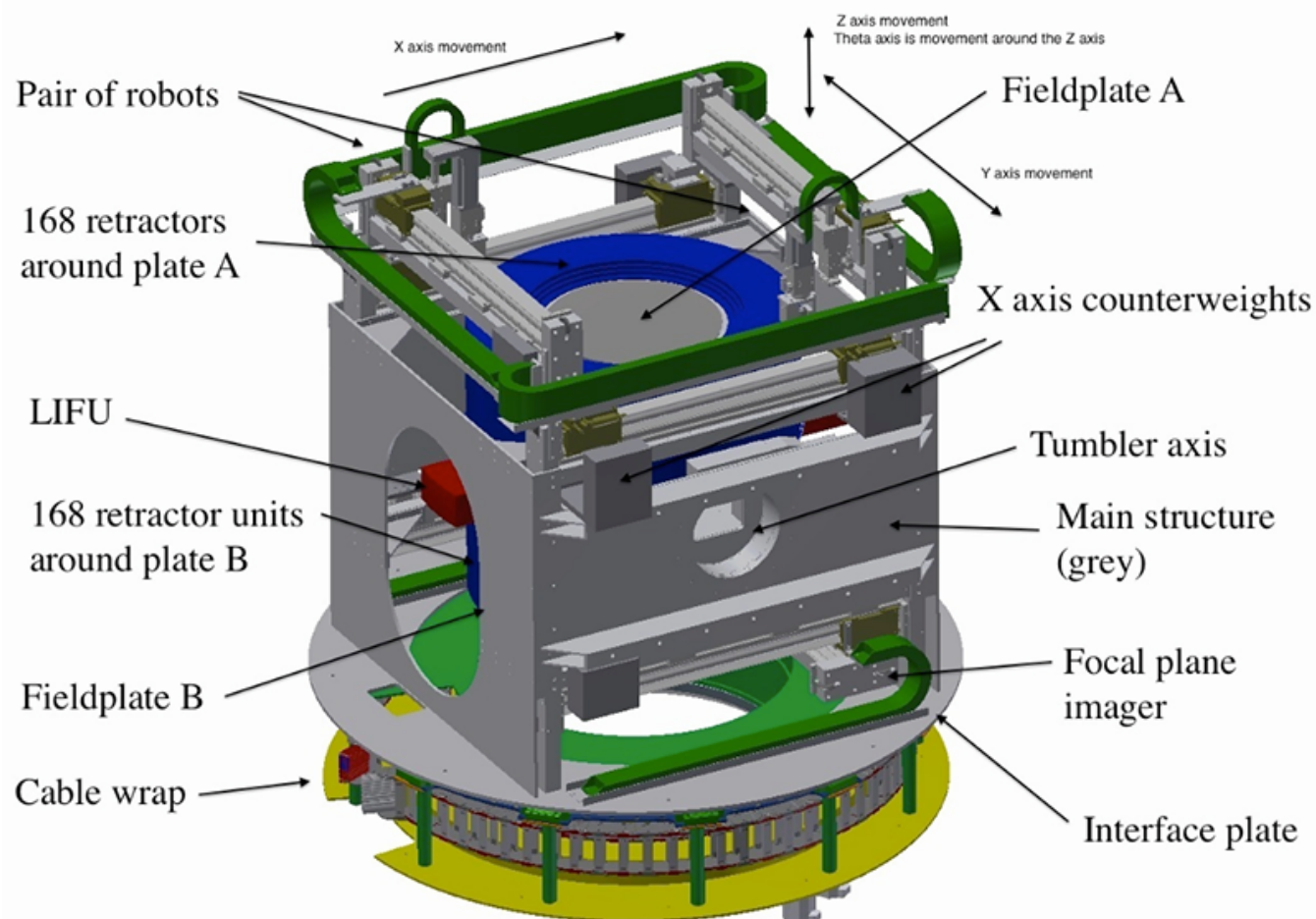


Zenith distance = 31.3 degrees, Hour Angle = -0.0 hours
Science: 890, Calibration: 20, Guide: 8, Sky: 48, Parked: 2

At the edge of the field are the fibre retractors that tension and protect the individual fibres. Each retractor holds six fibres and the buttons are seated at the entrance to the retractors as illustrated in the following pictures.



The fibre positioning mechanism is a twin-based system of fibres, retractors and buttons etc. The arrangement is such that the fibre-assemblies are positioned at each end of the rotating assembly (blue) also known as the tumbler. This fits inside a gantry with a pair of robotic grippers that place the buttons on the plate. The upper plate is configured by the robots while the lower plate sees the image plane of the telescope and diverts light from each target to the spectrograph. Fieldplate B also holds 20 small integral field units that feed an alternate input slit. A fourth slit is fed by a single large integral field unit (red box) that can be moved into the focal plane by the tumbler.



The positioner is now in Oxford in full test assembly. The video below shows the two positioning robots starting to get to grips with the problem...

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