

# A New Planewave 0.7-metre Telescope for Alston Observatory

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## SUMMARY

A telescope has been purchased for the Alston Observatory. It is a 0.7-m Altitude-Azimuth reflecting telescope, with Nasmyth focus, made by Planewave in the USA. It was imported into Europe by Baader Planetarium of Germany, and into the UK by Green Witch.

The primary mirror is 0.7 metres in diameter and the telescope is 2.1 metres in height. It is mounted on a solid concrete plinth, which is based on foundations more than a metre underground, and is thus isolated from the rest of the building to avoid vibrations.

The telescope 'tube' is constructed of carbon-fibre rods supporting the secondary mirror housing. The primary mirror sits in a yoke mount, allowing the telescope to rotate both horizontally and vertically.

## DELIVERING THE TELESCOPE

The telescope was delivered to the site in August 2015, and was craned into the building in two sections.



Figure 2: The telescope arrives at Alston. The primary mirror housing and yoke mount are lowered into the building in a single section.

## ALTITUDE-AZIMUTH MOUNT

The mount allows the telescope to rotate in altitude and azimuth, thereby covering the whole sky.

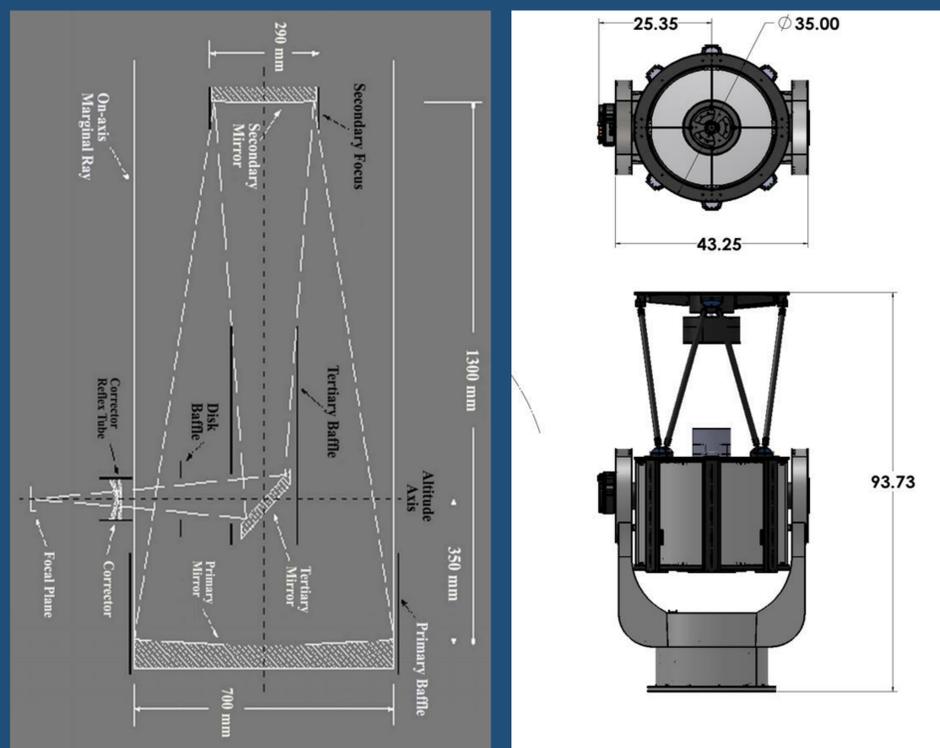
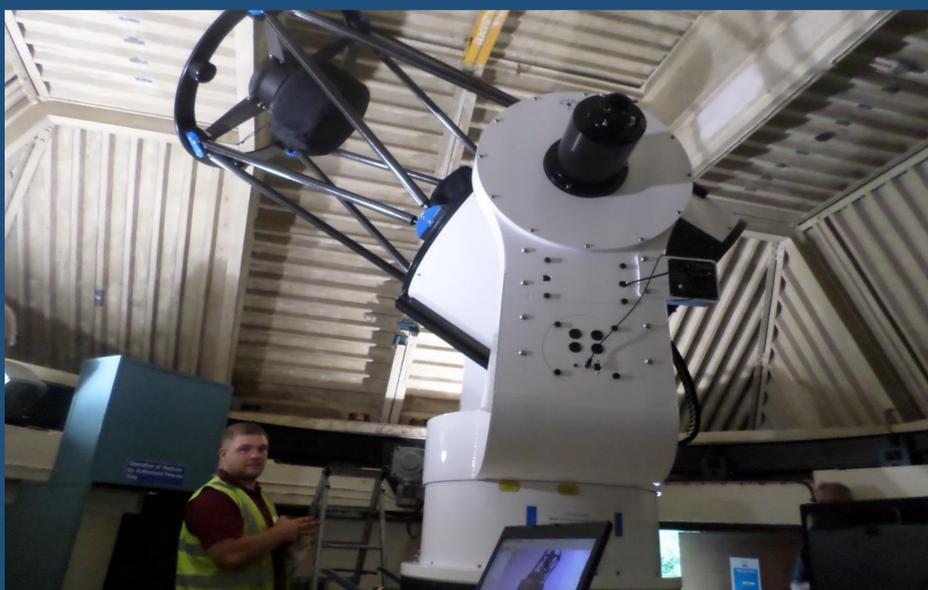


Figure 1: Schematics of the telescope, showing the optical design, as well as plan and elevation views, with the telescope at zenith (dimensions in inches). The optical drawing illustrates the light-path for the Nasmyth focus (dimensions in mm).

## TELESCOPE INSTALLATION

The telescope was installed on the concrete plinth. A metal ring, with attachment bolts was first anchored to the plinth, and then the bolts had to be carefully aligned as the telescope was lowered into place.

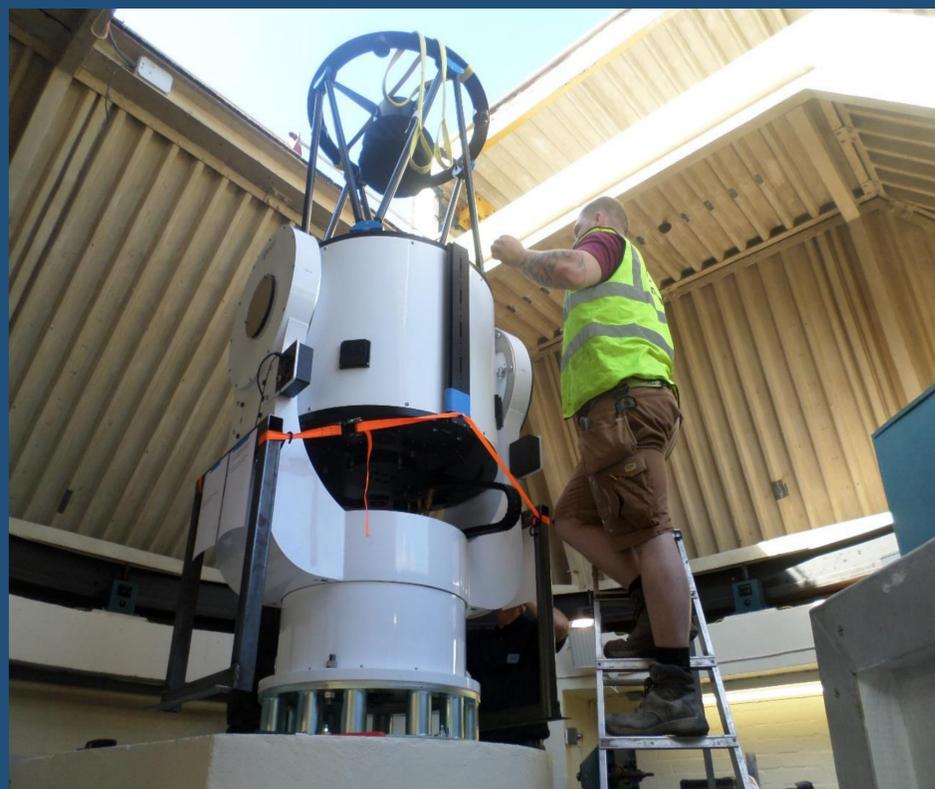


Figure 3: The upper section of the telescope, including the secondary mirror, is lowered carefully into position. The Nasmyth focus can be seen on the axis of the elevation drive. There is another focus on the opposite side, and the tertiary mirror can be rotated to access either side.

## Acknowledgments

The Planewave telescope project was funded entirely internally by the University of Central Lancashire, from a combination of funding from the 2015-16 University Equipment Fund, and from School Teaching Reserves. The telescope is dedicated to teaching students and to outreach activities in the local community.