

News from JCMT



CAD model of the SCUBA-2 instrument on the JCMT

The James Clerk Maxwell Telescope (JCMT) is currently in the midst of an ambitious programme of development in which the entire instrument suite is being replaced. This transformation represents an investment of more than £20M by the three funding partners (PPARC and agencies in Canada and the Netherlands). Its motivation is to build on the enormous success of the JCMT to date by changing paradigm from the study and characterisation of

individual objects to the study of statistically-significant samples of objects. This change has already taken place in other spectral ranges, but has only now become possible at submillimetre wavelengths with the recent development of new technologies. The JCMT is leading the world in the development and deployment of instruments optimised for wide-field submillimetre astronomy.

The flagship of this transformation is undoubtedly SCUBA-2. This instrument is being built at the UK ATC (with participation from a number of partners) and is scheduled for delivery to the JCMT in 2007. Designed to capitalise on the profound scientific legacy of SCUBA, it will map the submillimetre sky up to 1000 times faster than its predecessor.

This enormous leap in capability is made possible by a number of features of the instrument design. One of these is its large field of view: more than 50 square arcminutes, as opposed to just 8 for SCUBA. One consequence of this design driver is an instrument which is large – very large – larger than the designers ever had in mind when the JCMT was built in the mid-1980s. We have therefore embarked upon the ‘SCUBA-2 Infrastructure Project’ to rebuild large parts of the telescope support structure.

The SCUBA-2 Infrastructure Project is the largest engineering project ever undertaken at the JCMT. The telescope was closed for 6 months, beginning on 13 February last year, so that the work could be completed without interruption. This period, during which no observing took place, represents

an invisible investment in the scientific promise of SCUBA-2 of another £1M by PPARC and the other agencies. After 18 months of planning, the project was a success in virtually every respect: the work was completed on schedule and within budget, and without any safety incidents. The engineering staff at the JCMT worked long hours at altitude

Reinforcing the observatory floor



under difficult conditions, and are to be congratulated for this achievement. We now look forward to the scientific promise of SCUBA-2.

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