ATNF ATUC Memorandum

To: ATUC
From: John Reynolds
Date: 7 June 2005
Subject **Parkes Observatory Report**

Methanol Multibeam Receiver
Construction of the new 7-beam "Methanol Multibeam" receiver is proceeding on schedule for commissioning in October this year and is advertised as available for general observing from January 2006 (see recent AO for Oct2005S). Technical specifications are summarised in the Parkes Users Guide.

The receiver will be commissioned with a single-frequency LO system. A second LO chain will be added as resources permit over the following months.

20cm Multibeam Refurbishment
As has been flagged for some time, a second-phase refurbishment of the 20cm Multibeam receiver is being planned, for some time in the next 6-12 months. The main reason the refurbishment is to replace all remaining original LNAs, several of which are exhibiting instabilities that are proving deleterious to pulsar searching and, to a lesser extent, spectral-line observing. Any other maintenance issues of a pressing nature that come to light once the package is disassembled will also be addressed. An upgrade of the cryogenic refrigerators is also being contemplated, subject to the results of further tests.

It is expected that the refurbishment will take approximately 3-4 months. As flagged at previous ATUC meetings, the aim is to schedule the refurbishment with user requirements and demand foremost. First thoughts were to begin the work in late 2005, but this could have serious impact on some existing long-term projects. Undertaking the work towards the end of the 2005Oct Semester could be a better option. To some extent the refurbishment of the 20cm Multibeam and the commissioning of the new Methanol Multibeam receiver are interlinked - this is discussed further below.

12mm upgrade
A project concept document has been submitted for a new 12mm receiver package for Parkes. The new package will employ the same LNAs and OMTs as the ATCA 12mm systems. A live option is to build the receiver as a dual-horn system, to double its efficiency for position-switching observations, however this increases the complexity, cost and construction time. With the newly-designed and manufactured feed illuminating the full 54m high-performance aperture at Parkes the new system should deliver approximately 4dB of extra sensitivity over the old system.

Receiver scheduling in 2005Oct Semester
Owing to the projected high demand in the upcoming Semester for both of large Multibeam receivers (20cm Multibeam and the Methanol Multibeam), a study is being made of the feasibility of allowing the Methanol Multibeam to be mounted in either position on the receiver translator. If feasible, this option will give greater flexibility in scheduling observations with both Multibeam receivers in the same Semester. Such flexibility would come at some cost in the availability of the 10/50cm receiver and other packages, but overall should allow a better match of the schedule to the scientific merits of the proposal pool.