
Parkes
ATUC
Report
June
2006

Observing statistics

(Oct05-Sep06 cf 2005, 2004, 2003, 2002)

- Scheduled observing:

  79% 74%, 74%, 64.5%, 82%

- Director's Time:

  9% 17%, 11.5%, 6.7%, ..

- Maintenance/tests/shutdown:

  12% 9%, 10%, 26%, 18.0%

Parkes downtime statistics

YTD 2006 2005, 2004, 2003, 2002

equipment faults:

<0.5% 1.1%, 1.1%, 1.3%, 1.4%

Weather:

3.3% 2.2%, 3.1%, 3.8%, 3.8%

RFI reports (12-month periods):

22 12, 6, 18, 11

Parkes observer feedback

2005/06 (2004, 2003, 2002, 2001)

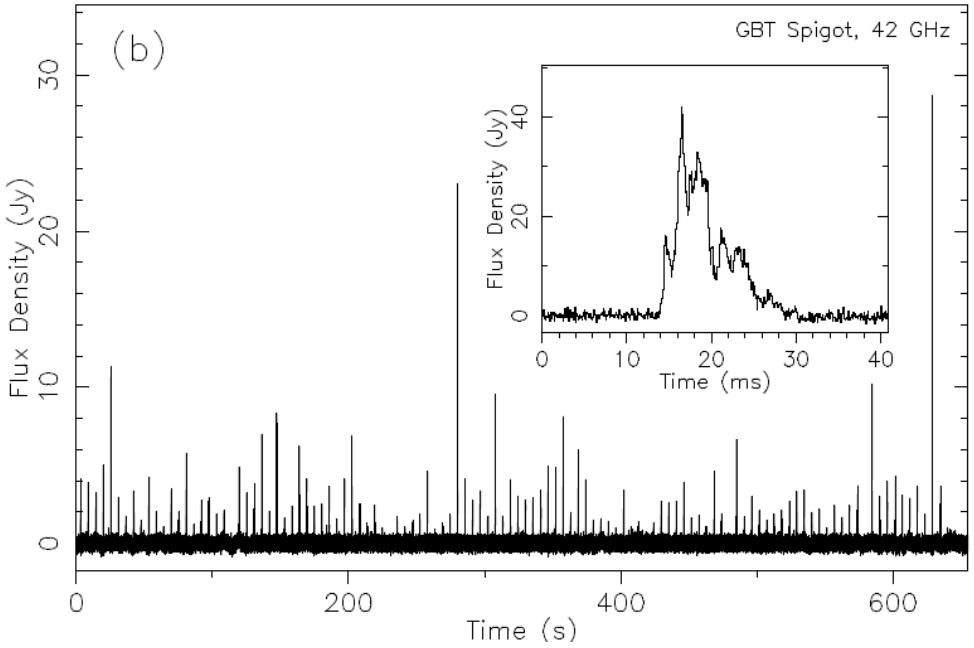
- 33 (24, 37,26,34) responses using WWW form

9.2 (9.5, 9.2, 9.2, 9.1) Tech support
9.2 (9.3, 9.0, 9.1, 9.2) Admin support
8.9 (9.3, 8.8, 9.0,) Training
8.8 (8.7, 8.9, 8.5, 8.8) Overall

8.4 (7.8, 8.3, 7.4, 7.7) Offline software
7.9 (7.7, 7.6, 7.4, 7.6) Documentation
7.8 (7.0, 7.2, 6.1, 6.7) RFI (freedom from)

7.9 (7.8, 8.0 …) Offline computing (Linux wkstns)
7.7 (7.9, 6.9, 8.3, 7.7) Library (visitor workspace)

New magnetar/AXP J1809



Audio file to go on Parkes WWW soon!


Methanol Multibeam
16 Jan 2006

MMB (6-7GHz 7-beam MB) receiver

Nov 2005

trial installation, limited tests

Week of 16th January 2006

Commissioning (25 of 28 channels)

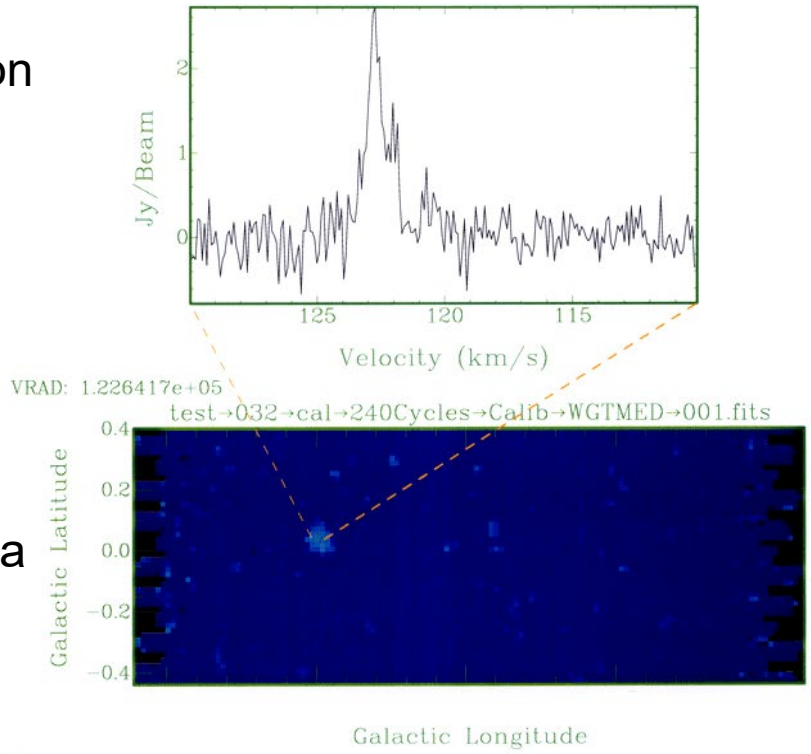
April 2006

2nd frequency fully functional (28 of 28 channels)

Receiver mountable on either rotator (any two of 10/50cm, MMB, 20cm MB can coexist but with operational limitations)

Methanol Galactic Survey

First new detection
Jan 2006

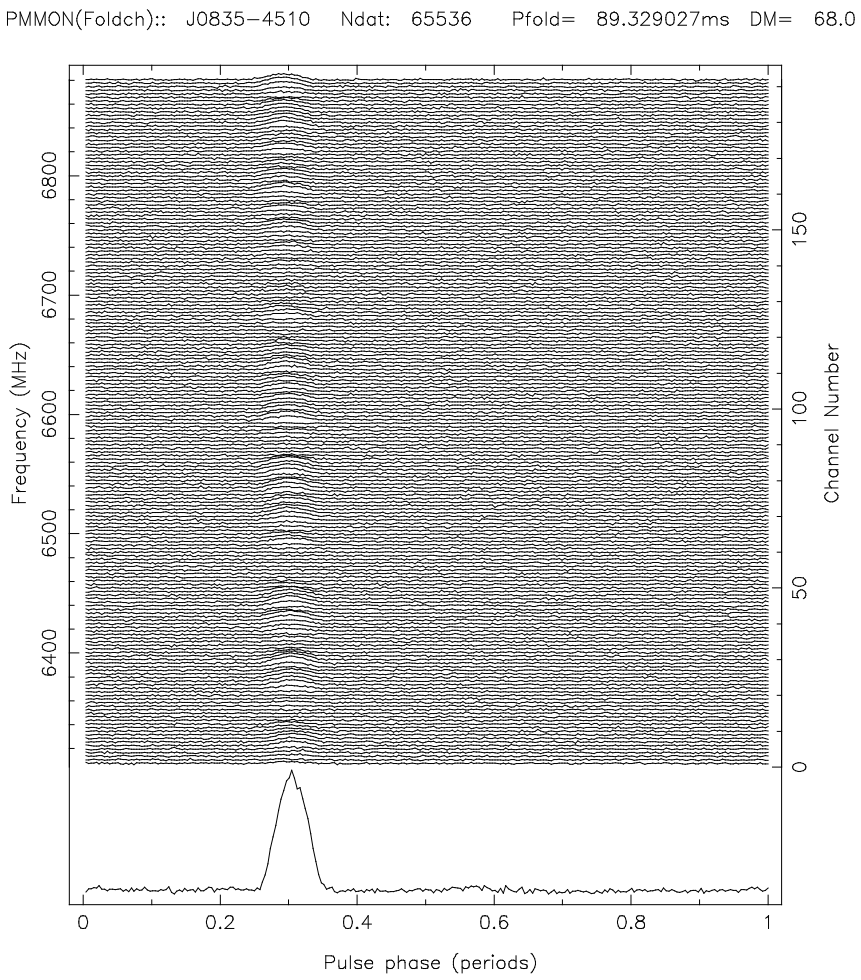


Livedata mods
By Mark Calabretta

MethMBN pulsar survey

Johnston
Possenti
Keith

Kesteven
Caswell
Cohen
Preisig
Reynolds
Maxim
Vlad



Major works

~ 1 Nov 2006:

- Remove 20cm Multibeam for ~5 months
- Refurbish azimuth gears (~3 weeks)

New K-band receiver : due Nov 2007

12m XNTD test-bed antenna, mid-2007?

20cm Multibeam receiver

~1 Nov 2006, offline for 5 months

Current status:

- 3 outer beams + 1 inner beam not usable for pulsar searching (microphonic birdies)
- 1 or more beams not usable for HI (unstable gain or dead)
- Refrigeration is barely adequate

20cm Multibeam Refurb Phase I

- Receiver re-installed Sep 2004
- Target (original specs or better) met
- 14 of 26 original LNAs replaced
- Worst of corrosion controlled

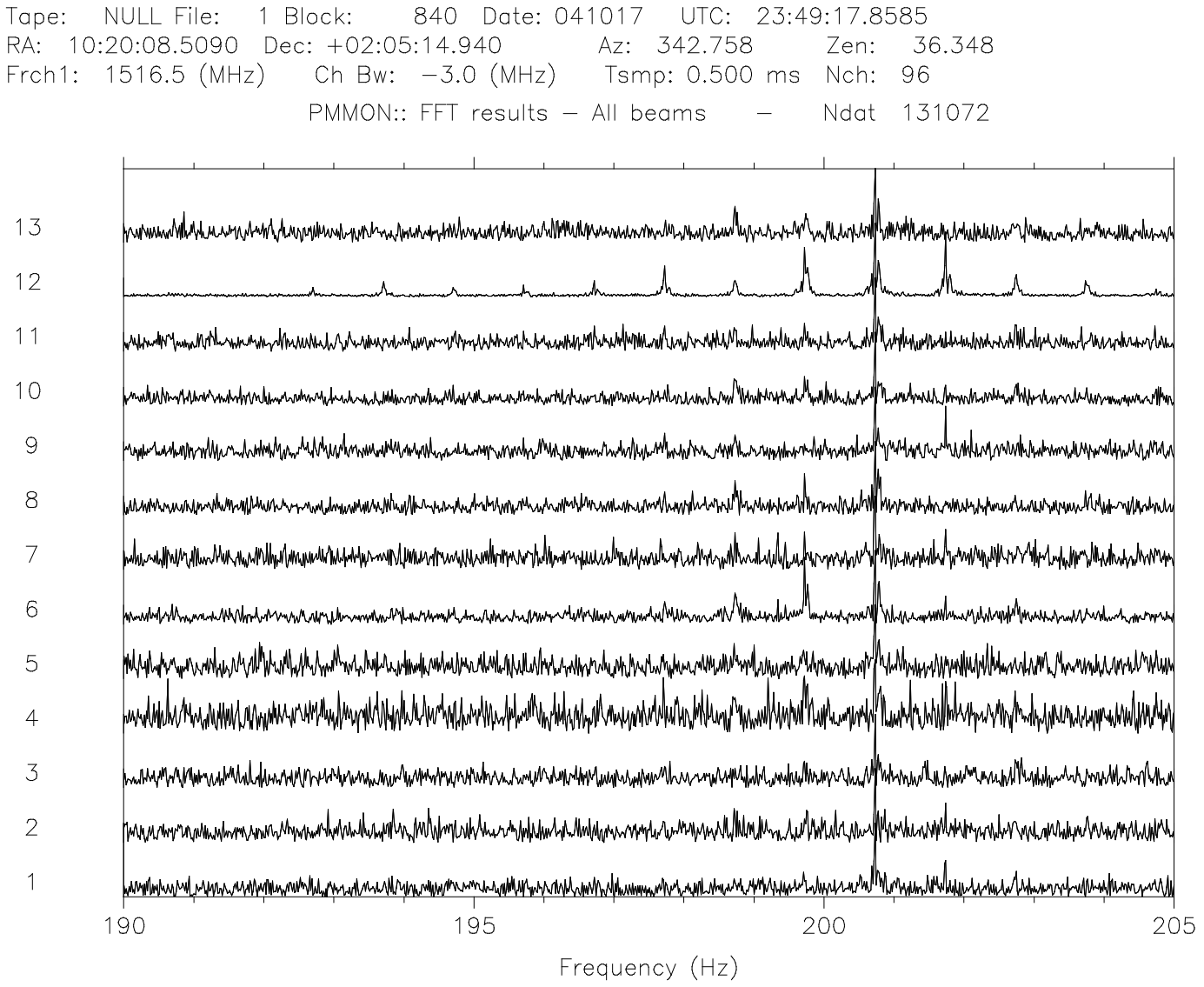
- A strange microphonic problem on some beams affecting pulsar searches.

20cm Multibeam Refurb Phase II

- Replace remaining original LNAs
- Repairs, modifications of other pressing problems
- Improve cooling (new refrigerators)

- When?

  ~1 Nov 2006

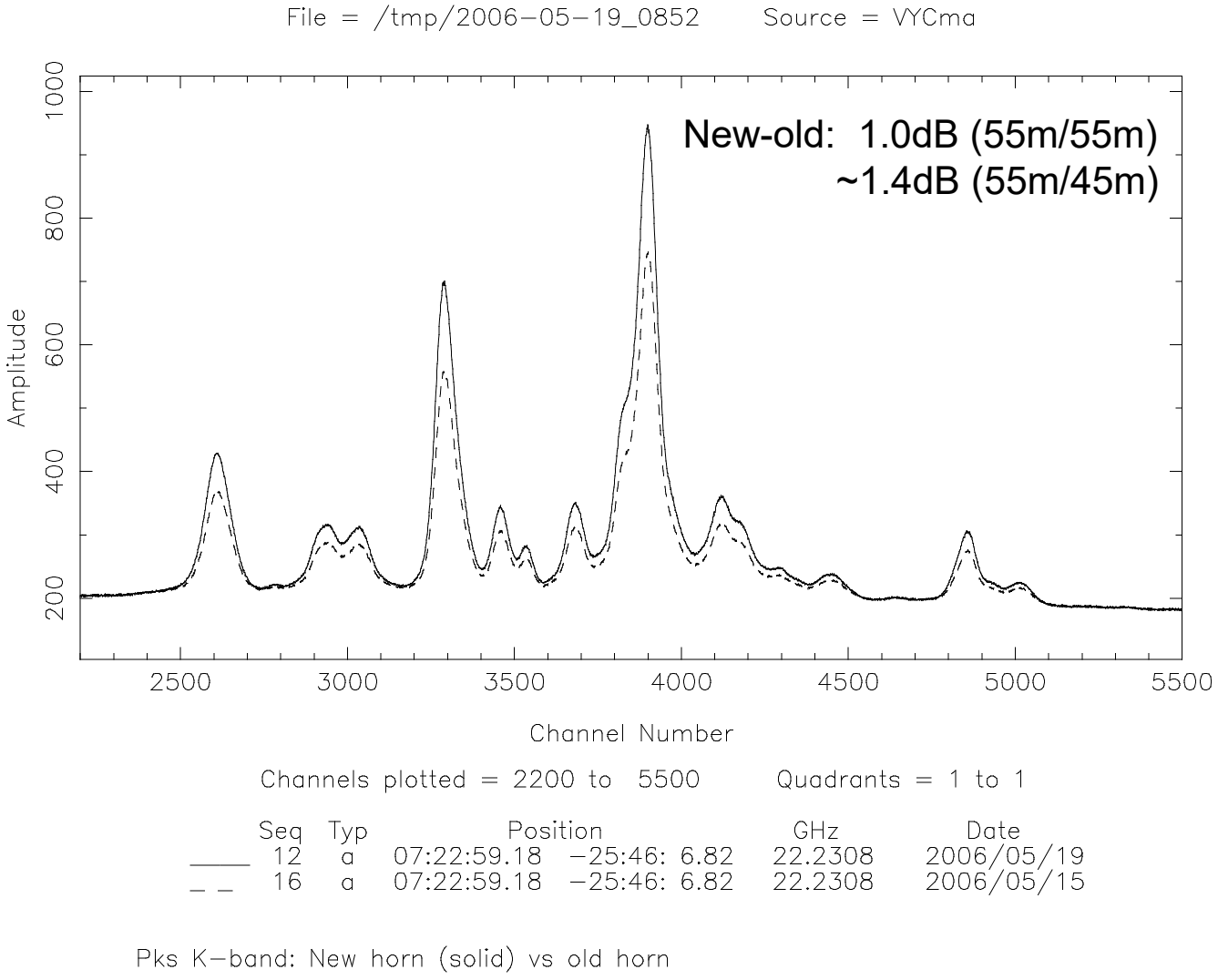

Tape: NULL File: 1 Block: 840 Date: 041017 UTC: 23:49:17.8585
RA: 10:20:08.5090 Dec: +02:05:14.940 Az: 342.758 Zen: 36.348
Frch1: 1516.5 (MHz) Ch Bw: −3.0 (MHz) Tsmp: 0.500 ms Nch: 96
PMMON:: FFT results – All beams – Ndat 131072
13
12
11
10
9
8
7
6
5
4
3
2
1
190
195
200
205
Frequency (Hz)

K-band (13mm) upgrade

New receiver package under construction;

- single horn, dual polarization
- 50~60K, 200-220Jy SEFD (5db improvement)
- 1GHz bandwidth (c.f. e-VLBI)
- 16-26GHz coverage (linear pol)
- VLBI option for ~22GHz (circ pol)

Performance of new Parkes K-band horn



High-Z HI observations

- Observations with existing MB conversion system susceptible to aliased emissions from ~1.6GHz (GLONASS, Iridium) - major problem for observations around e.g. 1330MHz.

- Can change 2nd LO (from 128MHz to 192MHz) to give some relief (P498, April 06).

- Longer term may need to redesign RF module filters or modify conversion system.

Crystal ball gazing

- Upgrade 20cm MB LO system for high-Z HI observing?
- New Multibeam pulsar search machine
  - Improve on 3MHz b/w limitation
- K-band FPA / Multibeam

Fibre en route to Parkes,
31 Jan 2006

Quarters kitchen/dining refurb