

## 6.1 TOG Report

- Last TOG meeting: Onsala July 1
  - Reliability & Performance
  - Amplitude calibration
  - Mark 5
  - Field System, SCHED, Sessions, reports
- Next TOG meeting: ASTRON March 24
  - possibly mini workshop: Mark 5B, amplitude calibration

## 6.1 TOG Report: TOG meeting

- Near real-time fringe checks: successful, 1 Gbit, more automatic, ramp up number of checks
- Patching: still some problems for large bandwidths (also geo)
- MK2/Lovell phase-referencing: not yet for users
- RFI: stations were requested to measure and report RFI
- Phase-cal: can and should be monitored with MK IV decoder
- Amplitude calibration: discussed procedures how to improve it
- FS: new graphical monitor tool; bug feedback to Himwich
- 22 GHz phase-ref and ampcal: more work needed
- Polarization: Wb local interferometer data to calibrate EVPA
- Schedule checking: works well in general, but can be improved

## 6.1 TOG Report: TOG meeting

- Sessions:
  - 1 fixed day per month reserved for VLBI:  
is like e-VLBI tests, is possible at most stations  
BUT: more strain on resources, should be a workday
  - Target of Opportunity:  
Most stations would need at least 1 week to get ready  
constraints: mm observing, geodesy...

## 6.1 Network Performance and Reliability: 2/2005

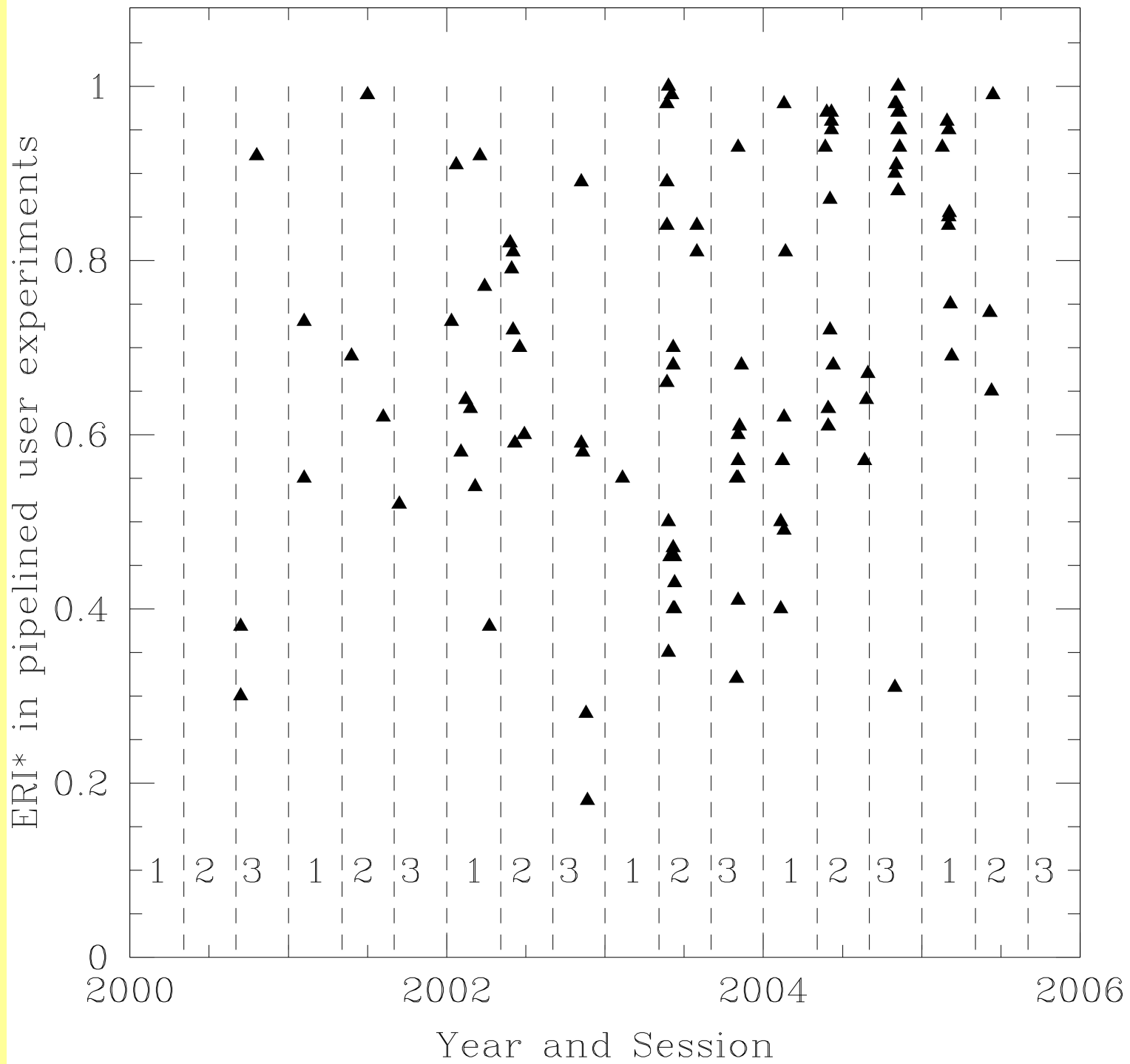
More failures than in session 1/2005

- Noto: azimuth drive broke - nearly all of session lost
- Torun: Rubidium frequency standard - phase-ref & C-band lost
- Mark 5  $\Leftrightarrow$  FS communication problem occasionally
- Urumqi: used wrong block schedule - 1 observation lost

## 6.1 Network Performance and Reliability: 3/2005

Session went well in general

- Noto: azimuth drive still broken - all of session lost
- Torun: disk problems & shortage - lost 3 observations
- Mark 5  $\Leftrightarrow$  FS communication problem occasionally
- Cambridge: power failure in VLBA rack
- Wb, Sh: wrong version of schedule for 1 observation



## 6.1 Amplitude Calibration

- From self-cal results of pipeline (1&2/2005): no big changes
- Problems persist:
  - 18 cm: Cm, Hh, Jb, Nt, Sh, Tr, Ur  
good: Ef, On
  - 21 cm: Jb, Mc, Nt, Tr, Ur(!), Wb - (only 1 obs.)  
good: On
  - C-band: Jb, Ur  
good: Ef, Hh, Mc
  - K-band: all, Ef acceptable  
gain errors are not stable!
- Most stations produce ANTAB files

# 6.1 Ampcal report

## Absolute median amplitude errors:

Station	18cm	21 cm	C band	K band
Cm	0.22 (3)			
Ef	0.07 (6)	0.13 (1)	0.10 (3)	0.18 (2)
Hh	0.25 (3)		0.10 (1)	0.63 (2)
Jb	0.27 (6)	0.46 (1)	0.44 (3)	0.56 (2)
Mc	0.16 (5)	0.47 (1)	0.06 (2)	0.24 (2)
Mh				0.29 (2)
Nt	0.21 (3)	0.27 (1)		0.21 (2)
On	0.10 (4)	0.08 (1)	0.12 (2)	0.90 (2)
Sh	0.38 (1)			0.22 (1)
Tr	0.25 (5)	0.51 (1)	0.18 (2)	
Ur	0.24 (1)	2.20 (1)	0.31 (1)	0.41 (1)
Wb	0.14 (6)	0.25 (1)	0.12 (3)	
VLBA			0.06 (2)	



## 6.1 Automatic Flagging

- Westerbork will implement scheme soon

## 6.1 Mark5 Status (EVN)

- All EVN stations can record with Mark 5 at 1 Gbit
- First VLBA disk recordings for EVN (disk buffer needed)
- First EVN disk recordings for VLBA
- "Disk schedules"
- NRAO track now with disks (entries not all correct)
- 1 Gbit default for EVN possibly in 1/2006  
(correlator priorities should be changed - TOG recommendation)
- Communication problems Mark 5  $\Leftrightarrow$  FS
- Occasionally bad disks
- recorded disks with write pointer "0", mostly from VLBA

## 6.1 Disk Inventory

Station	Total TB	1 TB	1.3 TB	1.4 TB	1.6 TB	2 TB	2.4 TB	3.2 TB
Effelsberg	197	37	0	26	10	12	0	26
Westerbork	58	0	0	20	0	14	0	0
Onsala	85	5	39	0	0	15	0	0
JIVE	52	0	0	0	0	26	0	0
Medicina	89	4	0	0	0	22	0	13
Jodrell	69	0	0	2	5	24	0	3
Urumqi	47	0	0	2	0	22	0	0
Hartrao	26	0	20	0	0	0	0	0
Arecibo	20	0	0	0	0	10	0	0
Metsähovi	15	1	0	0	0	2	3	1
Yebes	11	0	0	0	3	3	0	0
Seshan	28	0	2	0	2	11	0	0
Torun	13	0	0	0	2	5	0	0
Noto	59	12	0	0	0	14	0	6
Wettzell	0							
SUM	768							

"=up to date"      424 packs

# Disk Status: Purchase Plan

According to scheduler ~450 TB needed/session

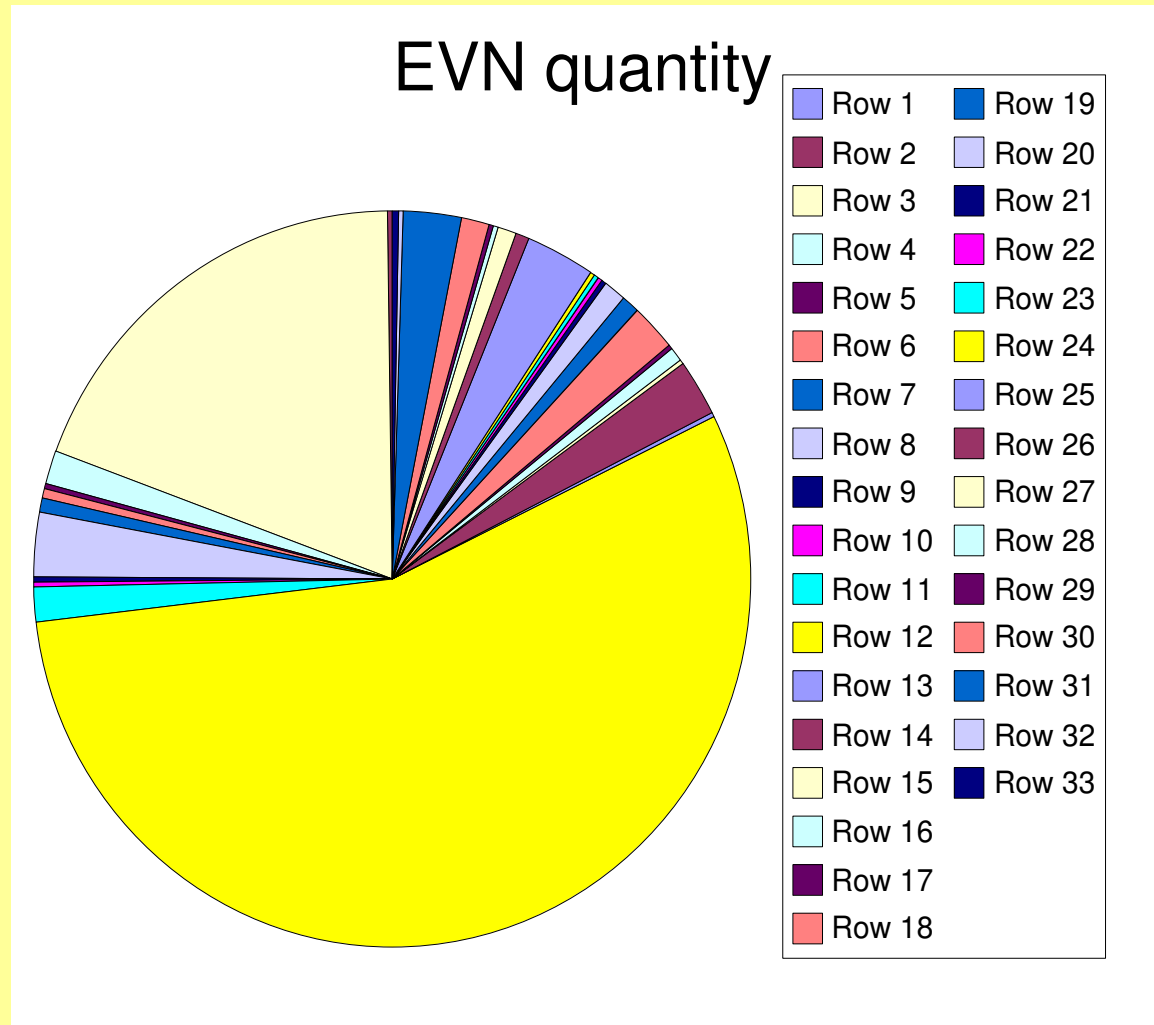
- Eb, Mc, Nt, Jb, On, Wb, Tr      100 TB
- Cm, Ur, Sh                              50 TB
- Ar, Hh, Mh                              20 TB
- Yb    ??

= 910 TB

maybe + 10-20%

# 6.1 Disk status

1	AP	0
2	AR	1
3	BONN	92
4	EB	7
5	FT	1
6	GB	2
7	GC	3
8	HAY	13
9	HH	1
10	HN	1
11	JB	7
12	JV	264
13	KK	1
14	MC	12
15	MH	1
16	MK	3
17	MR	1
18	NT	10
19	NY	4
20	ON	5
21	PB	1
22	PV	1
23	RO	1
24	SH	1
25	SOC	15
26	SV	3
27	TC	4
28	TR	1
29	UR	1
30	WASH	6
31	WB	12
32	WF	1 Hh
33	WZ	1 Hh



total:	477
Geodesy:	25
NRAO/Hays:	34

## 6.1 DBBC development

- A prototype is nearing completion
  - it will be presented at IVS meeting in January
  - 4 IF input channels
  - max output bitrate 2048 Mbits/s
  - 256 MHz input bands with several configurations operational
  - tests in 2006
  - development and testing of new configurations (500 MHz channels)
  - developments for new generation of FPGA chips in 2006

## 6.1 Field System

- Plans as presented and discussed at the TOG meeting:
  - VLBA correlation of FS recorded Mark 5 disks
  - automated ftp transfer
  - phase-cal extraction with MK IV decoder
  - CHECKR monitor of Mark 5
  - automatic station check-out
  - more diagnostic tests
  - improved TSYS
  - continuous cal, 2<sup>nd</sup> stage
  - band changes
  - Mark 5B support
  - IF patching automation for MK IV racks