# 125-10 Observing guidelines

## 1. Set-up (obsinp)

\* First complete the "Startup" widget in obsinp; and press "Save Settings"



\* Next select in the "Primary" widget:

Receiver: **7-Beam** Version: **Pulsar (BW: 300 MHz)** Frequency: **1.36** 

If the 7-beam receiver is not available, use the single-pixel 18/20cm receiver (4-Box) with Version "Pulsar (BW 100 MHz)".

00	X MPIfR Effelsberg 100m Telescope Control								
STOP		Continue		Repeat		START			
Select a widget:	RX: P217mm Vers:	Line with AFFTS only [4]	Freq: 1.380000	SideBand: Lower	Hom: 0				
General: Control Startup Display: Scanl ist									
Telescope_Queue	Primary Focus RX ( UserQueue )								
Frontends: Frequency Primary Secondary	RX: 0	current settings RX: P217mm Vers: Line v	with AFFTS only [4	] Freq: 1.400000	SideBand: Lower	Hom: 0			
Backends: AFFTS Beacon FFTS MultiFiBa XFFTS	- RX -	ver: P217mm 7-Beam (1	.27-1.45 GHz) 😑	Version:	Pulsar (BW: 300 Mi	łz)			
SetupCont: Focus Mapping Pointing Skydip Tracking		ncy: 1.36 Iom: 0	-	SideBand:	Lower				
SetupSpec: FSwitch OnTheFly PSwitch Raster			Load to te	lescope queue					
SetupPulsar: PTracking Search7Beam									
STOP TelC	Control	UserQueue		TOPO:North		Exit			

\* Now observe one of the known test pulsars in "PTracking":

* 0329+54	* 1929+10
* 0355+54	* 2021+51
* 1133+16	* 2351+61
* 1237+25	

Enter the pulsar name in the "ObjectName" box; select Catalog "PSRCAT" and press "Search".

Put SCANTime to **200**.

00				X MPIfR Effels	berg 100m Teleso	cope Control				
	STOP			Continue		Repeat		STAR	т	
Select a widget:	[ -	RX: P217mm	Vers: Line	with AFFTS only [4]		SideBand: Lower	Horn: 0			
General:										
Startup										
Display:										
ScanList					<b>DT</b> 11					
Telescope_Qu	eue	PTracking (UserQueue)								
Frontends:		Ohier	tN me 1237	/+25	11	Search		Catalog	PSRCAT	
Primary		0,000							- Chiun	
Secondary		ObjectLo	ngitude 12h	39m 40.4614s			Obje	ctLatitude +24d	53' 49.29"	
Backends:			lonOff 0.0		Offect in	Coordinate System	-1	Latoff 0.0		_
AFFTS Beacon					onset_in	cobranate system		Laton Joio		- 1
FFTS			_	1						_
XFFTS		CoordinateS	system	Equatorial 🔤				Equinox	J2000	-
Setun Cont:										
Focus		F	MODE	Search 🔤						
Mapping Pointing			-							
Skydip		SCA	NTine 200			Defaults		Sa	veScript	
Tracking										
Setup Spec:										
OnTheFly										
PSwitch Postor					Load to t	elescope queue				
Titister										_
SetupPulsar: PTracking	_									
Search7Beam										
Satun\/I RI+										
	STOP TelC	ontrol		UserQueue		TOPO:North		Exit		4

### 2. EBPP

At the EBPP prompt, type:

#### on

and press enter when asked. Check UTC and correct if needed, following the instructions on the screen. When correct, press "**Esc**" and "**Y**" to continue.

now type: **f1360** to specify the observing frequency. (Note: the frequency is 1360, NOT 1410!)

Now select the pulsar, for example: **psr 1237+25** and hit enter as required.

When the telescope is on source, enter: **observe 1 148** 

The EBPP is now observing.

### 3. Roach (Asterix) system

Open the vncsession 134.104.64.64:3, for example by typing in a terminal window: vncviewer 134.104.64.64:3

the password is **roachobs** 

Go to the second workspace and in the top window, run: /CtrlAsterix 15004 (Uparrow will recall this command.)

Once the observations start, you can run in the second (bottom) window: **rrsh 'python /home/pulsar/bin/check.py' l& grep dspsr** to check if all systems are "OK".

![](_page_4_Picture_7.jpeg)

#### 4. System test

When the test pulsar observation is finished, go back to the Roach VNC session and select the first workspace.

In the terminal window, type:

./ShowTestPulsar.sh

![](_page_5_Picture_6.jpeg)

and after a while, a plot should pop up, showing the Roach data on the test pulsar. Note that the terminal window also prints out when this observation was taken, to make sure you are not looking at an old observation.

![](_page_6_Figure_3.jpeg)

### 5. Actual pulsar observation: PSR J1640+2224

If everything went well, we can now observe the actual pulsar, PSR J1640+2224. To do so, go back to the PTracking widget on obsinp and enter

#### J1640+2224

as pulsar name. Again, hit "Search" after selecting the "PSRCAT" Catalogue. In SCANTime, put:

#### 3000

(or up to how many seconds are left for this project).

In the EBPP, enter: **psr 1640+22** and hit enter as required. Once the telescope is on source, use: **observe 24 120** and hit enter to start observing.

The Roach/Asterix system *Needs no further input*. In order to *check* in case of doubt, you can run in the second workspace, on the bottom window: **rrsh 'python /home/pulsar/bin/check.py' l& grep dspsr** to verify data is being taken. However, <u>this is only to check, and is not strictly needed</u>.

#### 6. Ending an observing run

At the end of the observing run, type the following on the EBPP prompt: **off** 

for the Roach boards, go to workspace 2 and press in the top window: **Ctrl+c**. (This means: press the control key and hold it. Then press the c key and finally release both keys simultaneously.) This should stop CtrlAsterix and return back to the prompt.

<u>Please make sure CtrlAsterix is stopped.</u> In the VNC session, in the second workspace, top window, you should see:

KeyboardInterrupt panoramix:~/ramesh/Python>

if this is not the case, try pressing Ctrl+c again.

#### 7. Check-list

Item	Value/Test			
Receiver and BW in Primary widget	7beam; 300MHz OR 18/21cm; 100MHz			
PTracking with Catalog PSRCAT				
Pulsar found in Catalogue	Check coordinates			
EBPP ran at f1360	uparrow to recall command			
Roach "OK" <i>during</i> observations	2nd workspace, bottom window			
Test pulsar seen	ShowTestPulsar.sh on 1st workspace, top window			

### 7. In case of Trouble

If anything goes wrong, you've double-checked the check-list, but need help from an observer, you should try to contact, in this order::

the observer's call-out phone at: +49 152 0219 6184

Joris Verbiest's office phone at: 6000 246 Joris' mobile phone at: +49 151 4013 7295