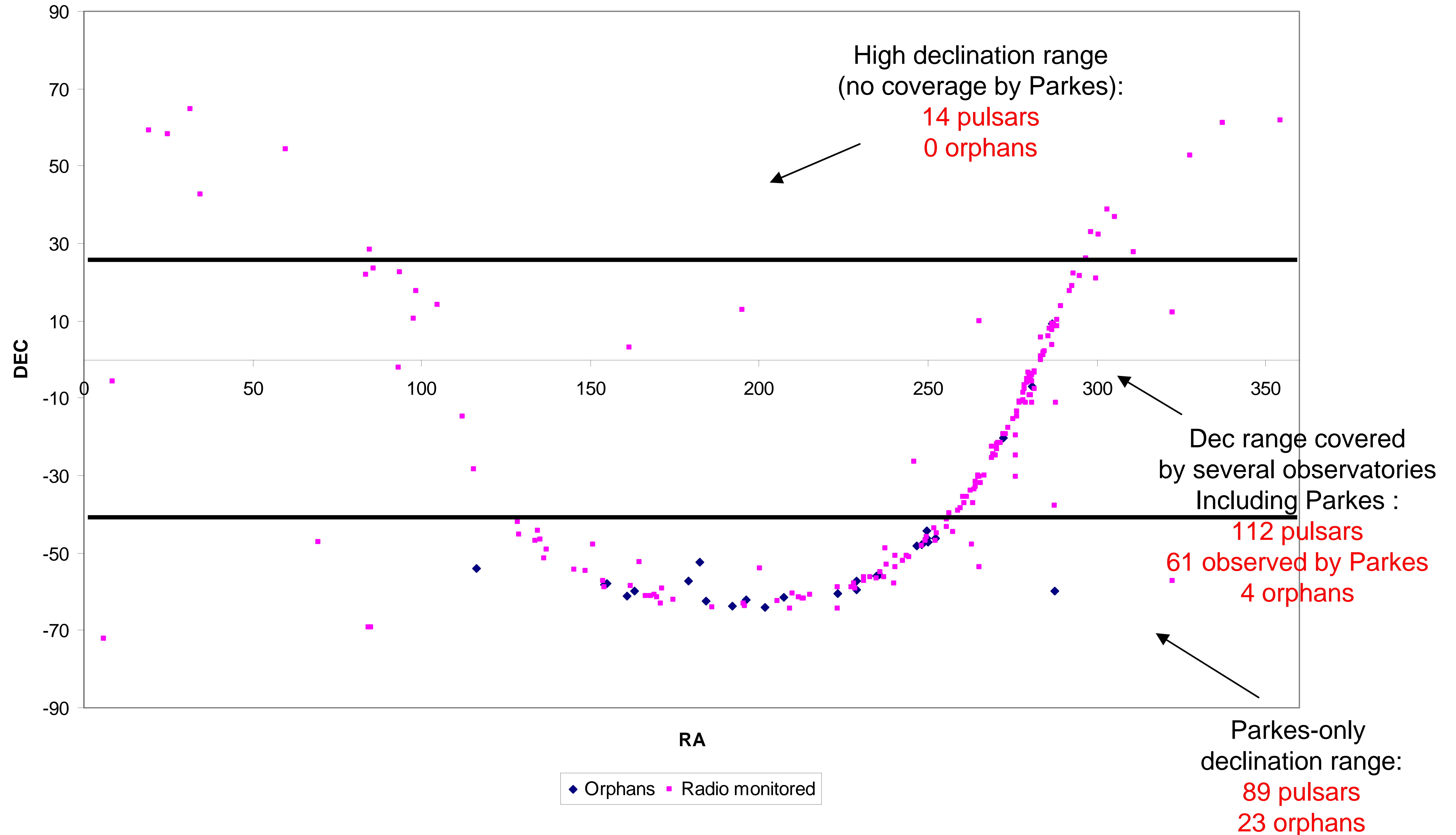


215 GLAST pulsars of interest



Observational status

3 radiotelescopes have sent us reports about the GLAST pulsars they have been monitoring : Parkes, Jodrell and Nançay.

➤ Parkes:

- 125 pulsars monitored between January to October 2006
- 35 with a number of observations $N_{\text{obs}} < 5$

➤ Jodrell:

- 90 pulsars monitored in 2006 (Aristeidis N.)
- 36 of them are « weak pulsars », « need more data », or « bad timing »

➤ Nançay:

- 71 pulsars monitored between Oct 2004 (BON backend) and January 2007
- 43 with a number of observations $N_{\text{obs}} < 5$ or with $P \leq 20\%$ (where P is the fraction of obs. with $\text{SNR} > 8$)

In addition to these radiotelescope reports, RXTE request to observe 4 GLAST pulsars: B0540-69, J0537-6910, J1811-1925, J1846-0258.

To summarize, 27 pulsars are orphans (23 in the Parkes only dec range) and 94 need additional timing efforts.

Seldom observed pulsars in the southern sky

Name	rank (fvel)	Edot (erg/s)	S1400 (mJy)	Nobs (Parkes)	Nobs (Nançay)	Note (Jodrell)
J1740-5340	13	1.4e+35	*	1		
J0940-5428	22	1.9e+36	0.35	4		
B0906-49	29	4.9e+35	10.0	4		
J1105-6107	53	2.5e+36	0.75	4		
J1015-5719	66	8.3e+35	0.90	4		
J1301-6305	73	1.7e+36	0.46	4		
B1001-47	87	3.0e+34	*	1		
B1556-57	131	1.1e+34	1.40	1		
J0954-5430	133	1.6e+34	0.36	4		
J1115-6052	140	1.6e+34	0.38	3		
J1138-6207	151	3.0e+35	0.49	4		
J1123-6259	157	1.0e+34	0.56	3		
J1650-4502	159	1.1e+34	0.35	3		

13 pulsars

These pulsars have $N_{\text{obs}} (\text{Parkes}) < 5$

Note:
$$f_{\text{vel}} = \left(\frac{\sqrt{\dot{E}}}{d^2} \right) / \left(\frac{\sqrt{\dot{E}}}{d^2} \right)_{\text{Vela}}$$

In the northern sky

Name	rank (fvel)	Edot (erg/s)	S1400 (mJy)	Nobs (Parkes)	Nobs (Nançay)	Note (Jodrell)
J1833-1034	12	3.4e+37	0.071		2	
J1930+1852	24	1.2e+37	0.06		3	Bad timing
J0834-4159	27	9.9e+34	0.19	2		
J1909+0912	28	1.3e+35	0.35		2	More data needed
J1046+0304	35	1.4e+34	0.3	2		
J1740+1000	47	2.3e+35	9.2		3	
J0729-1448	62	2.8e+35	0.7		2	More data needed
J1928+1746	65	1.6e+36	0.25			More data needed
J1702-4310	72	6.3e+35	0.72	2		
J1828-1101	74	1.6e+36	2.9	3		More data needed
J1702-4128	77	3.4e+35	1.10	2		
J1705-3950	78	7.4e+34	1.5	2		
J1857+0143	86	4.5e+35	0.74	3		
J1738-2955	95	3.7e+34	0.29		2	Bad timing
J1828-1057	102	5.5e+34	0.23			Weak pulsar
J1838-0549	111	1.0e+35	0.29		1	
J1907+0918	124	3.2e+35	0.29		2	More data needed
J1853+0011	129	2.1e+34	0.30		1	
J1853+0545	139	1.2e+34	1.6	3		

Notes on individual objects:

J1833-1034: discovered recently, Camilo et al ApJ 637 456 (2006)

J1930+1852: Camilo et al ApJ Lett 574 71-74 (2002)

These pulsars have N_{obs} (Parkes, Nançay) < 5

Jodrell: « bad timing », « more data needed » or « weak pulsar »

Red: « Ridiculously difficult » but important pulsars *rwr e-mail, 31 Jan 2006*

In the northern sky (continued)

Name	rank (fvel)	Edot (erg/s)	S1400 (mJy)	Nobs (Parkes)	Nobs (Nançay)	Note (Jodrell)
J1834-0731	163	1.7e+34	1.00	3		More data needed
J1838-0453	171	8.3e+34	0.33		3	Bad timing
J1837-0559	172	1.6e+34	0.5			More data needed
J1845-0743	174	1.3e+34	2.7	2		
J1839-0905	175	1.4e+34	0.16			Weak pulsar
J1853-0004	177	2.1e+35	0.87	2	2	
J1801-2154	178	1.2e+34	0.18			Weak pulsar
J1907+0731	179	1.5e+34	0.35		1	
J1755-2534	181	3.5e+34	0.17			Bad timing
J1907+0345	189	2.3e+34	0.17		3	Weak pulsar
J1842-0905	190	1.0e+34	0.81	3		More data needed
J1904+0800	194	3.7e+34	0.36			More data needed
J1820-1529	195	4.0e+34	0.61	4		Bad timing
J1908+0909	197	3.6e+34	0.22		2	More data needed
J1853+0056	201	4.0e+34	0.21		1	More data needed
J1843-0355	206	1.8e+34	0.8	1		Weak pulsar
J1735-3258	207	2.4e+34	0.46		1	Weak pulsar
J1908+0839	210	1.5e+34	0.49		1	
J1812-1910	212	1.9e+34	0.22			Weak pulsar

These pulsars have N_{obs} (Parkes, Nançay) < 5

Jodrell: « bad timing », « more data needed » or « weak pulsar »

Orange: « Not so hard, but interesting » *rwr e-mail, 31 Jan 2006*

Pulsars only monitored by Parkes, that could be observed by other radiotelescopes

Name	RA	DEC	Nobs (Parkes)
J1046+0304	161,68013	3,06858	2
J1705-3950	256,37433	-39,84972	2
J1715-3903	258,80958	-39,05056	5
J1815-1738	273,81113	-17,63417	8
J1845-0743	281,48825	-7,72733	2
J1853+0545	283,49341	5,76533	3
J1857+0143	284,38753	1,72972	3

The orphans

In the northern sky:

J1843-0702, J1907+0919, J1808-2024, J1638-4417

In the southern sky:

B0743-53, J1648-4611, J1514-5925, J1910-5959D, J1638-4608,
J1210-5226, J1541-5535, J1016-5819, J1019-5749, J1538-5551,
J1156-5707, J1632-4757, J1052-5954, J1349-6130, J1248-6344,
J1452-6036, B1636-47, J1515-5720, J1626-4807, J1305-6203, J1043-
6116, J1327-6400, J1216-6223

Underlined pulsars: never seen at radio wavelengths

To conclude

- Good overall coverage in the northern sky by Nançay and Jodrell: some pulsars with high declination monitored by several telescopes, including Parkes, could be left to Nançay and Jodrell
- 7 north pulsars have only been observed by Parkes, these objects could be timed by other telescopes
- 2 non-X-ray pulsars remain orphans in the north. 13 pulsars with a $\text{rank}_{(\text{vel})} < 100$ and $\dot{E} > 3 \times 10^{34}$ erg/s, need more data.
- More than 20 pulsars in the Parkes-only declination range have not been observed between Jan and Oct 2006. A better distribution of pulsar observations is needed in the northern sky for Parkes to focus on the 20 southern orphans