LOFAR Pulsar Modes [Single]

v: March 9, 2011

key:	TBD issues
	work started
	work nearly completed
	work (to be) completed
	previously completed

Key:

IS == IncoherentStokes [data type results are: [I, IQUV]

CS == CoherentStokes [equivalent to TA = TiedArray] [data type results are: [I, IQUV]

FE == Fly's Eye [data type results are: w/CS+ [I, IQUV]; w/BF+ raw voltages

BF = BeamFormed (Complex Voltage/RAW after 2nd polyphase filter, after 2nd transpose) [data type results are: BF] [BF – CS without Stokes parameters]

FD = Filtered Data (RAW Voltage data, after 2nd polyphase filter, before the superstation beam former, before the 2nd transpose) [data type results are: FD, raw voltages]

OCD == Online Coherent De-Dispersion [performed on BG/P, currently for only 1 Dispersion Measure (DM)]

IM == Imaging

NYS = Not Yet Supported (will be supported in the future)

Gray'ed out row = indicates mode/switch-combination is not possible

		modes based on switch settings:						Number of (station) beams:	Number of (TA) beams:	Current Status			6-month Planning TO-DO List (January - June 2011)			2-year Planning TO-DO List (2010-2012)	
	MODES (data rate may exclude some of these possibilities)	**IS (T/F)**	**CS (T/F)**	**FE (T/F)**	**BF (T/F)**	**FD (T/F)**	**OCD (+)**	**N SubArrayPointings**	**M Beams**	**MoM**	**Shell pulp.sh**	**Framework pulp.py**	**Will-Do: SHELL**	**+HS-to-presto**	**Will-Do: Framework**	**Will-Do: SHELL**	**Will-Do: Framework**
	IS [Stokes I]	T						1			DONE	almost DONE	DONE	JD, A2, Tom, unassigned	A2, unassigned	DONE	DONE
	IS [Stokes IQUV]	T						1			Design TBD					A2, Jason, unassigned	A2, unassigned
	CS [Stokes I]		T					1	1		DONE		DONE	JD, A2, Tom, unassigned	A2, unassigned	DONE	DONE
	CS [Stokes IQUV]		T					1	1		Design TBD					A2, Jason, unassigned	A2, unassigned
	FE			T				1									
	BF				T			1	1		Aris N., Joris		Aris N., Joris, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	FD					T		1			no sample data						
	IS [+ OCD] [Stokes I]	T					+	1		DM field, OCD switch	use DM and OCD switch		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	IS [+ OCD] [Stokes IQUV]	T					+	1		DM field, OCD switch	Design TBD					A2, Jason, unassigned	A2, unassigned
	CS [+ OCD] [Stokes I]		T				+	1	1	DM field, OCD switch	use DM and OCD switch		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	CS [+OCD] [Stokes IQUV]		T				+	1	1	DM field, OCD switch	Design TBD					A2, Jason, unassigned	A2, unassigned
	FE [+OCD]			T			+										
	BF [+OCD]				T		+	1	1		Design TBD					Aris N, Joris V, unassigned	A2, unassigned
	FD [+ OCD]					T	+	1									
	IS [xN] [Stokes I]	T						N			DONE		DONE	JD, A2, Tom, unassigned		DONE	A2, unassigned
	IS [xN] [Stokes IQUV]	T						N			Design TBD					A2, Jason, unassigned	A2, unassigned
	CS [xN] [Stokes I]		T					N	1		DONE		DONE	JD, A2, Tom, unassigned		DONE	A2, unassigned
	CS [xN] [Stokes IQUV]		T					N	1		Design TBD					A2, Jason, unassigned	A2, unassigned
	CS [xM] [Stokes I]		T					1	M		DONE		DONE	JD, A2, Tom, unassigned		DONE	A2, unassigned
	CS [xM] [Stokes IQUV]		T					1	M		Design TBD					A2, Jason, unassigned	A2, unassigned
***Note**	CS [xN xM] [Stokes I]		T					N	M		Needs Testing		Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
***Note**	CS [xN xM] [Stokes IQUV]		T					N	M		Design TBD					A2, Jason, unassigned	A2, unassigned
	FE [xN]			T				N									
	BF [xN]				T			N	1		Aris N., Joris (?)		DONE	JD, A2, Tom, unassigned		DONE	A2, unassigned
	BF [xM]				T			1	M		no sample data						
***Note**	BF [xM xN]				T			N	M		no sample data						
	FD [xN]					T		N			no sample data						
	IS [xN] [+OCD] [Stokes I]	T					+	N		DM field, OCD switch	use DM and OCD switch		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	IS [xN] [+OCD] [Stokes IQUV]	T					+	N		DM field, OCD switch	Design TBD					A2, Jason, unassigned	A2, unassigned
	CS [xN] [+OCD] [Stokes I]		T				+	N	1	DM field, OCD switch	use DM and OCD switch		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	CS [xN] [+OCD] [Stokes IQUV]		T				+	N	1	DM field, OCD switch	Design TBD					A2, Jason, unassigned	A2, unassigned
	CS [xM] [+OCD] [Stokes I]		T				+	1	M	DM field, OCD switch	use DM and OCD switch		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	CS [xM] [+OCD] [Stokes IQUV]		T				+	1	M	DM field, OCD switch	Design TBD					A2, Jason, unassigned	A2, unassigned
***Note**	CS [xN xM] [+OCD] [Stokes I]		T				+	N	M	DM field, OCD switch	M and OCD switch + needs Testing		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
***Note**	CS [xN xM] [+OCD] [Stokes IQUV]		T				+	N	M	DM field, OCD switch	Design TBD					A2, Jason, unassigned	A2, unassigned
	FE [xN] [+OCD]			T			+	N									
	BF [xN] [+OCD]				T		+	N	1		Design TBD					Aris N, Joris V, unassigned	A2, unassigned
	BF [xM] [+OCD]				T		+	1	M		Design TBD					Aris N, Joris V, unassigned	A2, unassigned
***Note**	BF [xM xN] [+OCD]				T		+	N	M		Design TBD					Aris N, Joris V, unassigned	A2, unassigned
	FD [xN] [+OCD]					T	+	N									
	FLY'S EYE is CS + FE or BF + FE, but is considered a "single mode"; CS + FE is really IS per Station; BF + FE is really BF per Station																
	CS + FE [Stokes I]		T	T				1			DONE		DONE	JD, A2, Tom, unassigned		DONE	A2, unassigned
	CS + FE [Stokes IQUV]		T	T				1			Design TBD					A2, Jason, unassigned	A2, unassigned
	CS + FE [+OCD] [Stokes I]		T	T			+	1		DM field, OCD switch	use DM and OCD switch		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	CS + FE [+OCD] [Stokes IQUV]		T	T			+	1		DM field, OCD switch	Design TBD					A2, Jason, unassigned	A2, unassigned
	CS + FE [xN] [Stokes I]		T	T				N			Needs Testing		Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	CS + FE [xN] [Stokes IQUV]		T	T				N			Design TBD					A2, Jason, unassigned	A2, unassigned
NYS	CS + FE [xM] [Stokes I]		T	T				1									
NYS	CS + FE [xM] [Stokes IQUV]		T	T				1									
NYS	CS + FE [xN xM] [Stokes I]		T	T				N									
NYS	CS + FE [xN xM] [Stokes IQUV]		T	T				N									
	CS + FE [xN] [+OCD] [Stokes I]		T	T			+	N		DM field, OCD switch	use DM and OCD switch		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	CS + FE [xN] [+OCD] [Stokes IQUV]		T	T			+	N		DM field, OCD switch	Design TBD					A2, Jason, unassigned	A2, unassigned
NYS	CS + FE [xM] [+OCD] [Stokes I]		T	T			+	1									
NYS	CS + FE [xM] [+OCD] [Stokes IQUV]		T	T			+	1									
NYS	CS + FE [xN xM] [+OCD] [Stokes I]		T	T			+	N									
NYS	CS + FE [xN xM] [+OCD] [Stokes IQUV]		T	T			+	N									
	BF + FE		T	T				1			DONE		DONE	JD, A2, Tom, unassigned		DONE	A2, unassigned
	BF + FE [+OCD]		T	T			+	1		DM field, OCD switch	use DM and OCD switch		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
	BF + FE [xN]		T	T				N			Needs Testing		Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
NYS	BF + FE [xM]		T	T				1									
NYS	BF + FE [xN xM]		T	T				N									
	BF + FE [xN] [+OCD]		T	T			+	N		DM field, OCD switch	use DM and OCD switch		Nico, JD, Jason, A2	JD, A2, Tom, unassigned		DONE	A2, unassigned
NYS	BF + FE [xM] [+OCD]		T	T			+	1									
NYS	BF + FE [xN xM] [+OCD]		T	T			+	N									

NOTE: IM can be added to most mode combinations above

*Note: CS [xN xM] [+/- OCD] [Stokes I/IQUV] and BF [xN xM] [+/- OCD]: There is currently no way to specify this configuration, therefore all the same offsets will be used for all TA beams and therefore the N x M beams will be mixed within the output files.

Modes not possible (since FE always used with CS or with BF): FE ; FE [+OCD] ; FE [xN] ; FE [xN] [+OCD]

Modes not possible (since you cannot add OCD to FD observations): FD [+OCD] ; FD [xN] [+OCD]