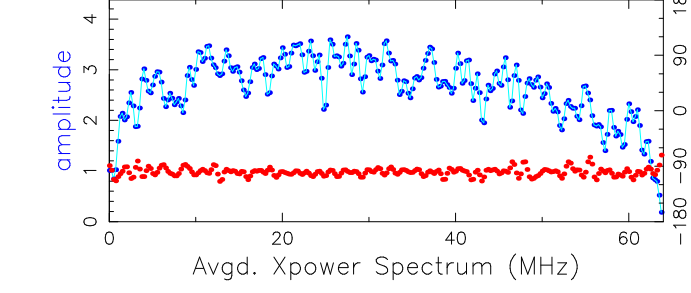
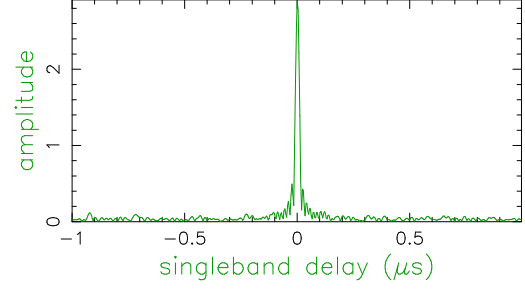
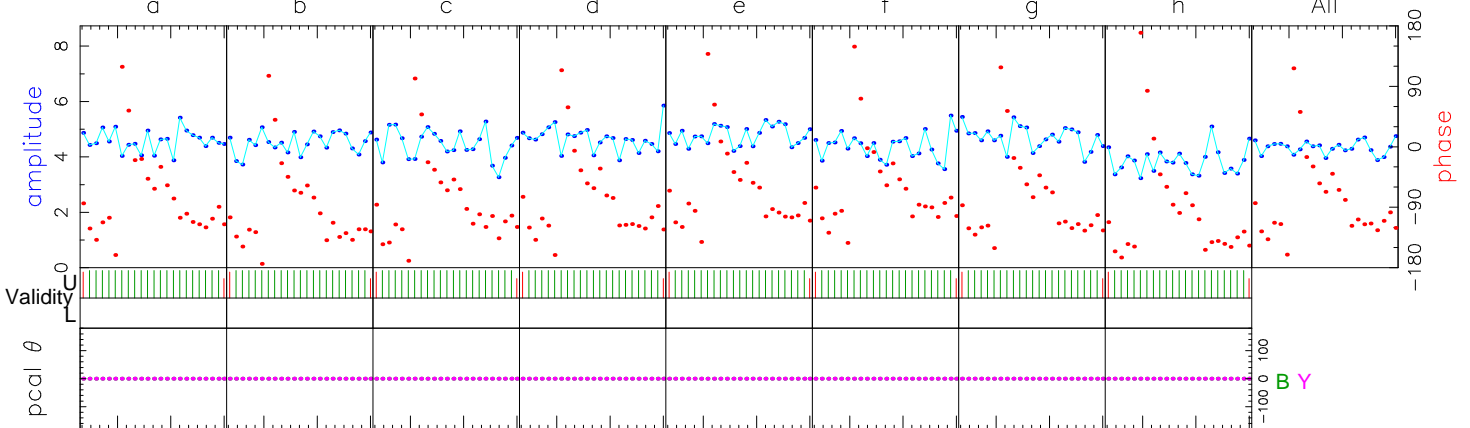


Fringe quality 4  
 SNR 101.4  
 Int time 162.304  
 Amp 2.911  
 Phase -95.9  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.001023  
 MBD 0.000664  
 Fringe rate (Hz) 0.009992  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131723  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-92.3	-110.0	-96.5	-94.9	-79.7	-78.3	-96.5	-124.4	Phase	-95.9
	3.1	3.0	2.9	3.0	3.1	2.9	3.2	2.6	Ampl.	3.0
	257.3	256.9	257.5	257.2	257.3	257.2	257.2	255.9	Sbd box	257.3
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	-1.01437681303E+03	Apriori delay (usec)	-1.01437747697E+03	Resid mbdelay (usec)	6.63940E-04	+/-	1.1E-05
Sband delay (usec)	-1.01437645347E+03	Apriori clock (usec)	7.1172419E+00	Resid sbdelay (usec)	1.02350E-03	+/-	8.5E-05
Phase delay (usec)	-1.01437748006E+03	Apriori clockrate (us/s)	-4.2000000E-07	Resid phdelay (usec)	-3.09275E-06	+/-	3.6E-08
Delay rate (us/s)	1.00977115893E-01	Apriori rate (us/s)	1.00976999900E-01	Resid rate (us/s)	1.15992E-07	+/-	3.9E-10
Total phase (deg)		Apriori accel (us/s/s)	1.37773302189E-05	Resid phase (deg)	-95.9	+/-	1.1

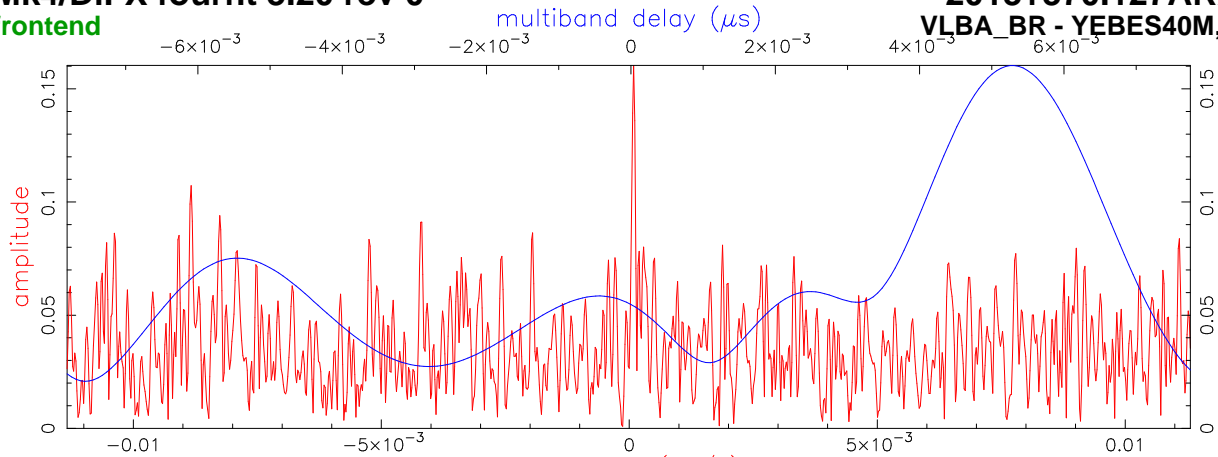
ph/seg (deg)	56.3	RMS	2.7	Theor.	2.911 +/- 0.029	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5	
amp/seg (%)	49.6	Search (1024X32)	2.838	Interp.	0.000	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000	
ph/frq (deg)	16.3	Inc. seg. avg.	4.332	Inc. frq. avg.	2.977	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	6.6	Inc. frq. avg.	2.977			Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011	
						Data rate (Mb/s):	2048	ion window (TEC)	0.00 0.00	

Mk4/DiFX fourfit 3.20 rev 0

frontend

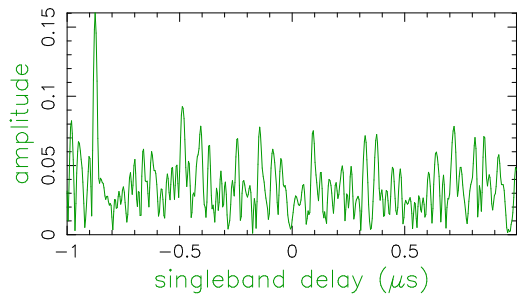
2013+370.127ARX, No0065, bY

VLBA\_BR - YEBES40M, fgroup W, pol LR

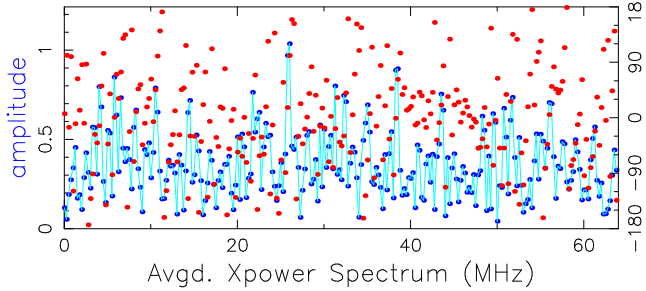


Fringe quality 0

SNR 5.6  
 Int time 161.882  
 Amp 0.160  
 Phase -61.3  
 PFD 9.5e-01  
 Delays (us)  
 SBD -0.875230  
 MBD 0.005282  
 Fringe rate (Hz)  
 0.007646  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

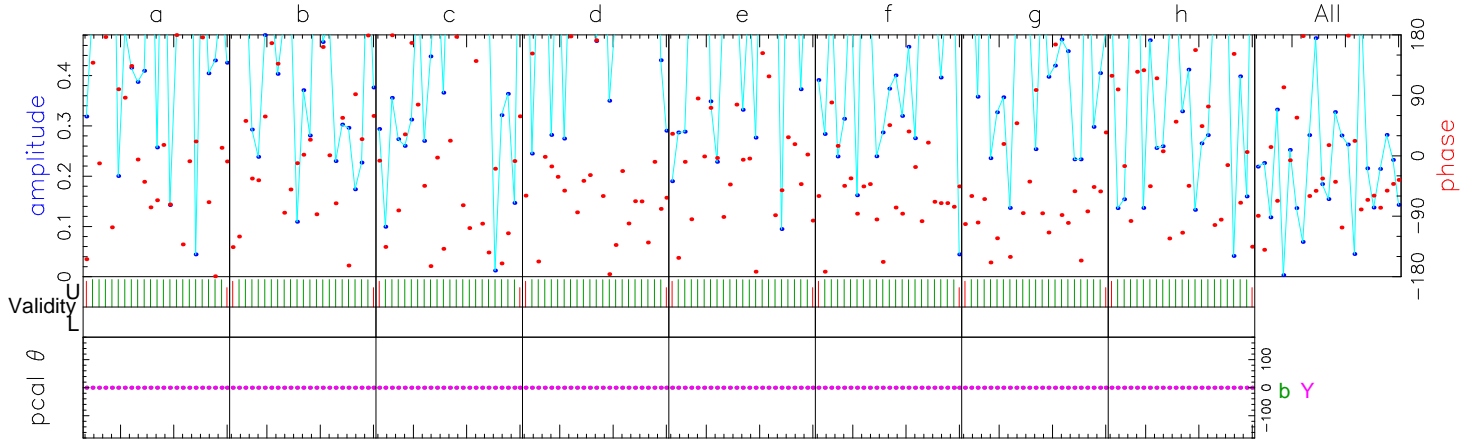


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131724  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec

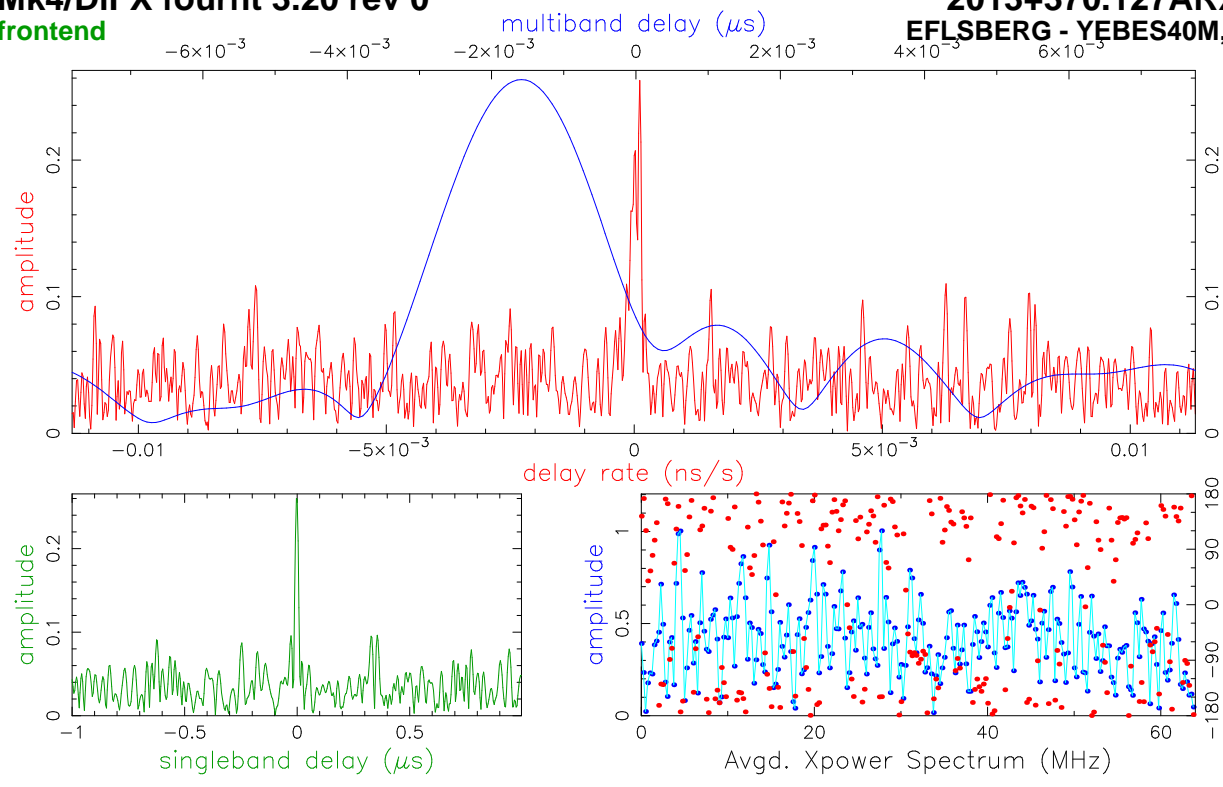


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-54.8	-80.2	-118.5	-67.6	-6.3	-48.3	-77.4	-79.9	Phase	-61.3
	0.1	0.1	0.1	0.4	0.2	0.3	0.3	0.1	Ampl.	0.2
	120.7	356.6	316.1	32.9	82.0	32.9	33.3	268.9	Sbd box	32.9
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	3.72677007939E+03	Apriori delay (usec)	3.72763979741E+03	Resid mbdelay (usec)	5.28198E-03	+/-	1.9E-04
Sband delay (usec)	3.72676456741E+03	Apriori clock (usec)	-1.0304679E+01	Resid sbdelay (usec)	-8.75230E-01	+/-	1.5E-03
Phase delay (usec)	3.72763979543E+03	Apriori clockrate (us/s)	-4.6239510E-07	Resid phdelay (usec)	-1.97549E-06	+/-	6.6E-07
Delay rate (us/s)	1.49244015144E+00	Apriori rate (us/s)	1.49244006268E+00	Resid rate (us/s)	8.87638E-08	+/-	7.0E-09
Total phase (deg)	-7.8	Apriori accel (us/s/s)	-1.33947263513E-05	Resid phase (deg)	-61.3	+/-	20.5

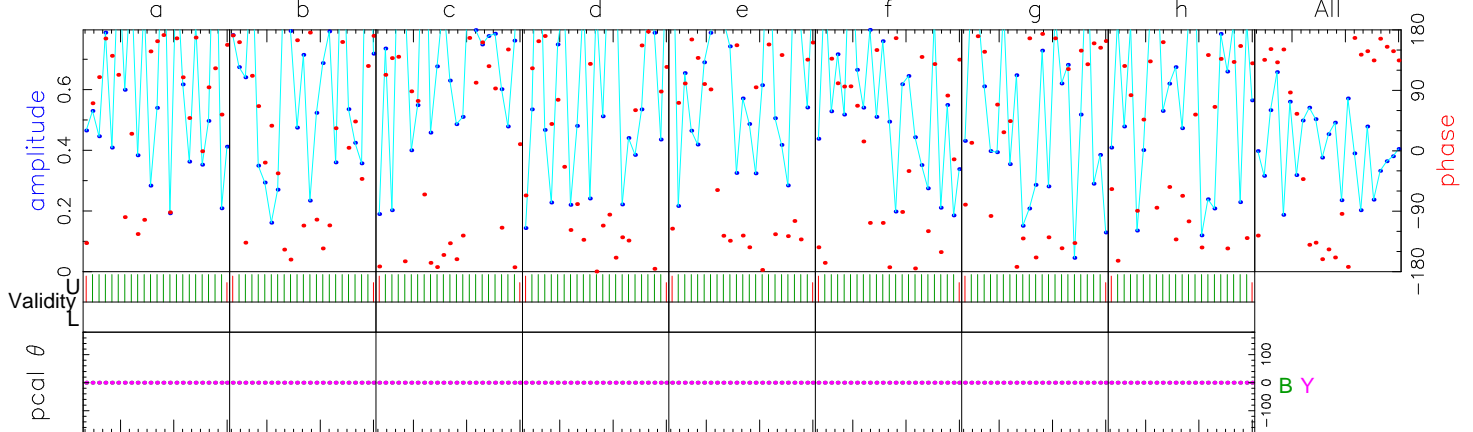
ph/seg (deg)	67.4	Theor.	49.2	Amplitude	0.160 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
amp/seg (%)	87.8		86.0	Search (1024X32)	0.160	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
ph/frq (deg)	35.4		29.0	Inc. seg. avg.	0.164	Bits/sample: 2x2	SampCntNorm: enabled
amp/frq (%)	67.6		50.7	Inc. frq. avg.	0.158	Sample rate(MISamp/s): 128	mb window (us) -0.008 0.008
						Data rate(Mb/s): 2048	dr window (ns/s) -0.011 0.011
						nlags: 256	t_cohere infinite
							ion window (TEC) 0.00 0.00

b: az 88.3 el 52.8 pa -56.9 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10746.539 -66.595 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/bY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/bY.W.115.127ARX



Fringe quality 9  
 SNR 9.3  
 Int time 162.304  
 Amp 0.266  
 Phase 170.6  
 PFD 4.2e-12  
 Delays (us)  
 SBD -0.002087  
 MBD -0.001665  
 Fringe rate (Hz)  
 0.010132  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131725  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
Group delay (usec)(sbd)	144.6	179.6	167.7	-173.9	-167.4	151.7	155.1	-177.5	170.6	
Sband delay (usec)	0.3	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.3	
Phase delay (usec)	256.5	255.7	256.8	462.4	255.8	235.3	72.5	235.8	256.5	
Delay rate (us/s)	1.00977117519E-01					1.00976999900E-01				
Total phase (deg)			-141.2			1.37773302189E-05			170.6	
Apriori delay (usec)										
Apriori clock (usec)										
Apriori clockrate (us/s)										
Apriori rate (us/s)										
Apriori accel (us/s/s)										
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
PCal mode: MANUAL, MANUAL										
PCal rate: 0.000E+00, 0.000E+00 (us/s)										
PCal period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal θ										
pcal mode										
pcal rate										
pcal period										
pcal sb window										
pcal mb window										
pcal dr window										
pcal ion window										
pcal nlags										
pcal t_cohere										
pcal infinite										
pcal simultaneous interpolator										

ph/seg (deg) 56.3 29.7 Search (1024X32) 0.255 PCal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 71.8 51.8 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 19.3 17.5 Inc. seg. avg. 0.361 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 23.7 30.6 Inc. frq. avg. 0.258 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 B: az 287.8 el 35.4 pa 49.5 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -714.302 1689.108 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/BY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/BY.W.124.127ARX

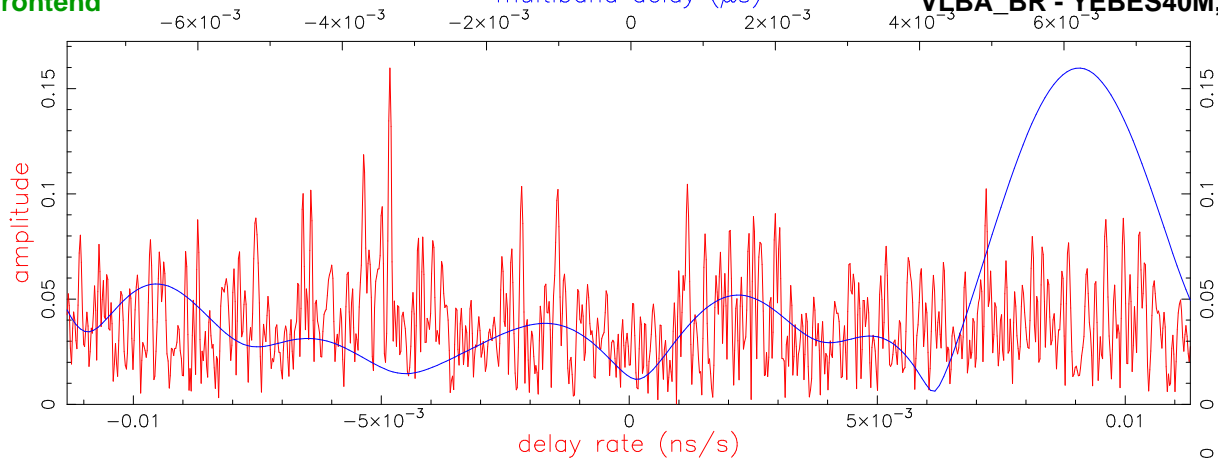
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, bY

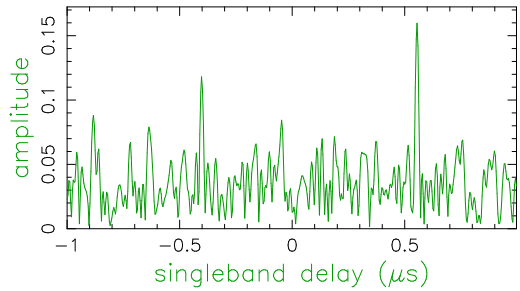
VLBA\_BR - YEBES40M, fgroup W, pol RL

multiband delay ( $\mu$ s)

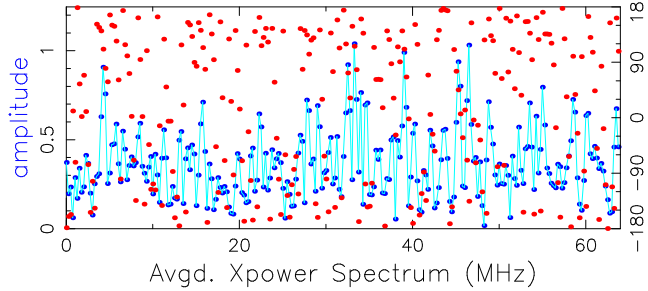


Fringe quality 0

SNR 5.6  
Int time 161.883  
Amp 0.172  
Phase -22.7  
PFD 9.6e-01  
Delays (us)  
SBD 0.554394  
MBD 0.006192  
Fringe rate (Hz) -0.416002  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

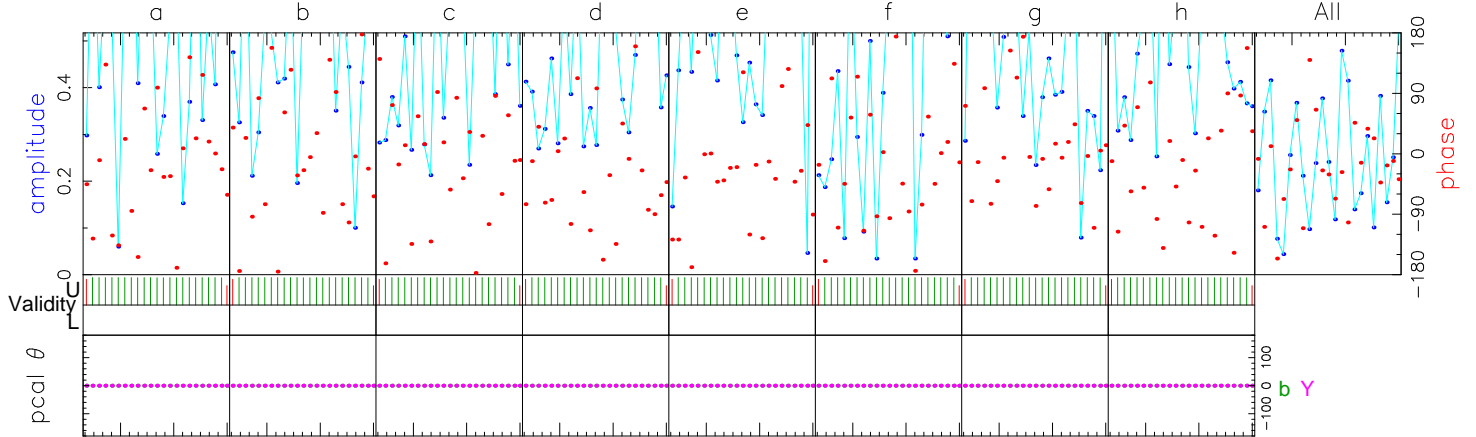


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131726  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-23.0	-15.4	12.6	-59.4	-40.5	-17.8	-6.5	-22.8	Phase	-22.7
	0.2	0.1	0.2	0.2	0.2	0.1	0.3	0.1	Ampl.	0.2
	424.0	106.1	93.8	92.5	232.9	144.9	296.6	443.3	Sbd box	398.9
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	3.72819286423E+03		Apriori delay (usec)		3.72763979741E+03		Resid mbdelay (usec)		6.19183E-03	+/- 2.0E-04
Sband delay (usec)	3.72819419116E+03		Apriori clock (usec)		-1.0304679E+01		Resid sbdelay (usec)		5.54394E-01	+/- 1.5E-03
Phase delay (usec)	3.72763979667E+03		Apriori clockrate (us/s)		-4.6239510E-07		Resid phdelay (usec)		-7.31190E-07	+/- 6.6E-07
Delay rate (us/s)	1.49243523330E+00		Apriori rate (us/s)		1.49244006268E+00		Resid rate (us/s)		-4.82938E-06	+/- 7.1E-09
Total phase (deg)			Apriori accel (us/s/s)		-1.33947263513E-05		Resid phase (deg)		-22.7	+/- 20.6

ph/seg (deg) 64.9 86.2 Search (1024X32) 0.155 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 101.0 86.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 23.2 29.1 Inc. seg. avg. 0.199 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 27.6 50.9 Inc. frq. avg. 0.163 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 b: az 88.3 el 52.8 pa -56.9 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10746.539 -66.595 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/bY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/bY.W.132.127ARX

# Mk4/DiFX fourfit 3.20 rev 0

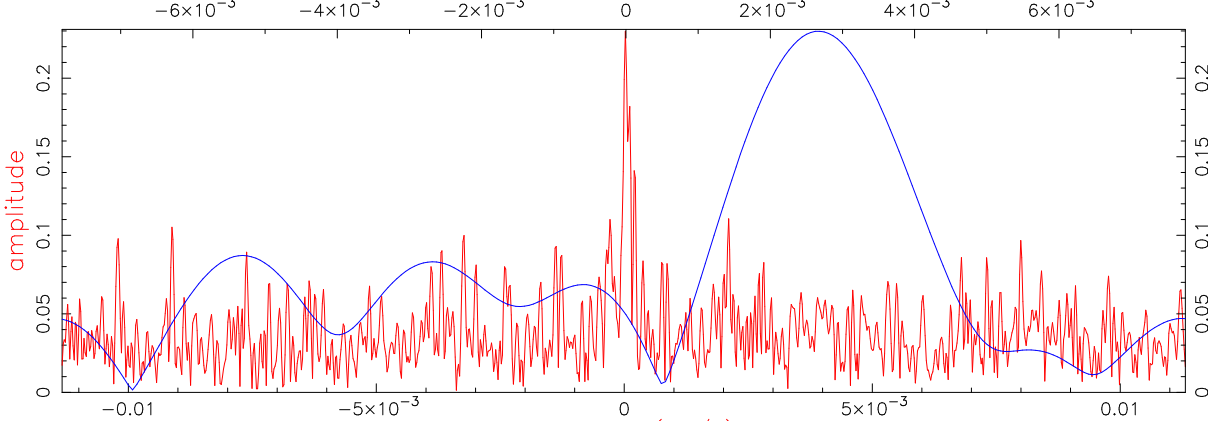
frontend

# 2013+370.127ARX, No0065, BY

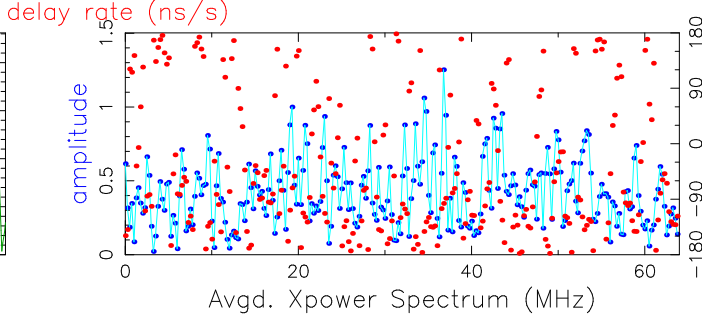
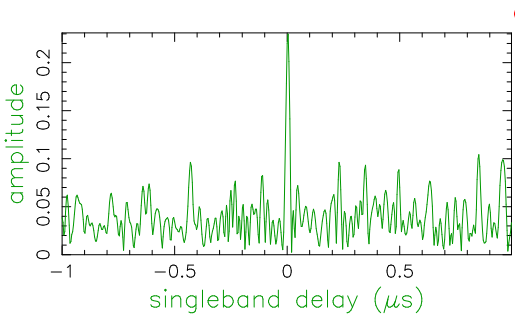
EFLSBERG - YEBES40M, fgroup W, pol RL

multiband delay ( $\mu\text{s}$ )

Fringe quality 9

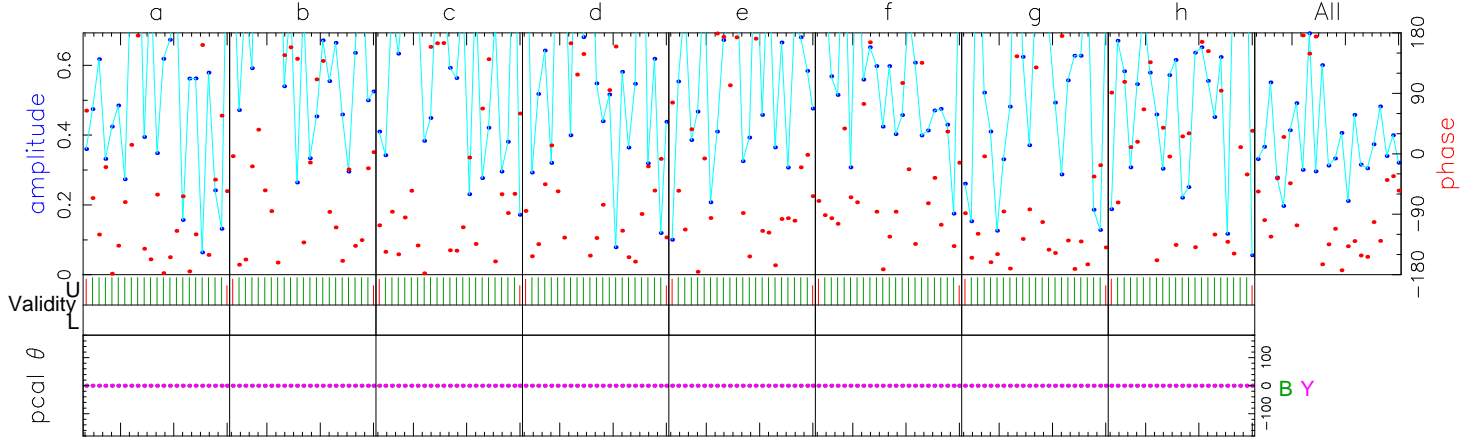


SNR 8.0  
 Int time 162.304  
 Amp 0.231  
 Phase -122.4  
 PFD 1.4e-07  
 Delays (us)  
 SBD 0.002948  
 MBD 0.002645  
 Fringe rate (Hz) 0.001827  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131728  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-129.8	-119.0	-129.4	-117.2	-121.8	-76.6	-143.4	64.6	Phase	-122.4
	0.3	0.2	0.4	0.3	0.2	0.2	0.4	0.0	Ampl.	0.2
	257.6	496.3	257.7	258.2	22.8	256.7	258.5	188.2	Sbd box	257.8
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-1.01437483223E+03	Apriori delay (usec)	-1.01437747697E+03	Resid mbdelay (usec)	2.64474E-03	+/-	1.3E-04
Sband delay (usec)	-1.01437452847E+03	Apriori clock (usec)	7.1172419E+00	Resid sbdelay (usec)	2.94850E-03	+/-	1.1E-03
Phase delay (usec)	-1.01437748092E+03	Apriori clockrate (us/s)	-4.2000000E-07	Resid phdelay (usec)	-3.94611E-06	+/-	4.6E-07
Delay rate (us/s)	1.00977021113E-01	Apriori rate (us/s)	1.00976999900E-01	Resid rate (us/s)	2.12128E-08	+/-	4.9E-09
Total phase (deg)	-74.2	Apriori accel (us/s/s)	1.37773302189E-05	Resid phase (deg)	-122.4	+/-	14.2

ph/seg (deg)	59.9	Theor.	34.1	Amplitude	0.231 +/- 0.029	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	83.1		59.6	Search (1024X32)	0.226	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	73.8		20.1	Inc. seg. avg.	0.325	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	45.9		35.1	Inc. frq. avg.	0.235	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
						Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

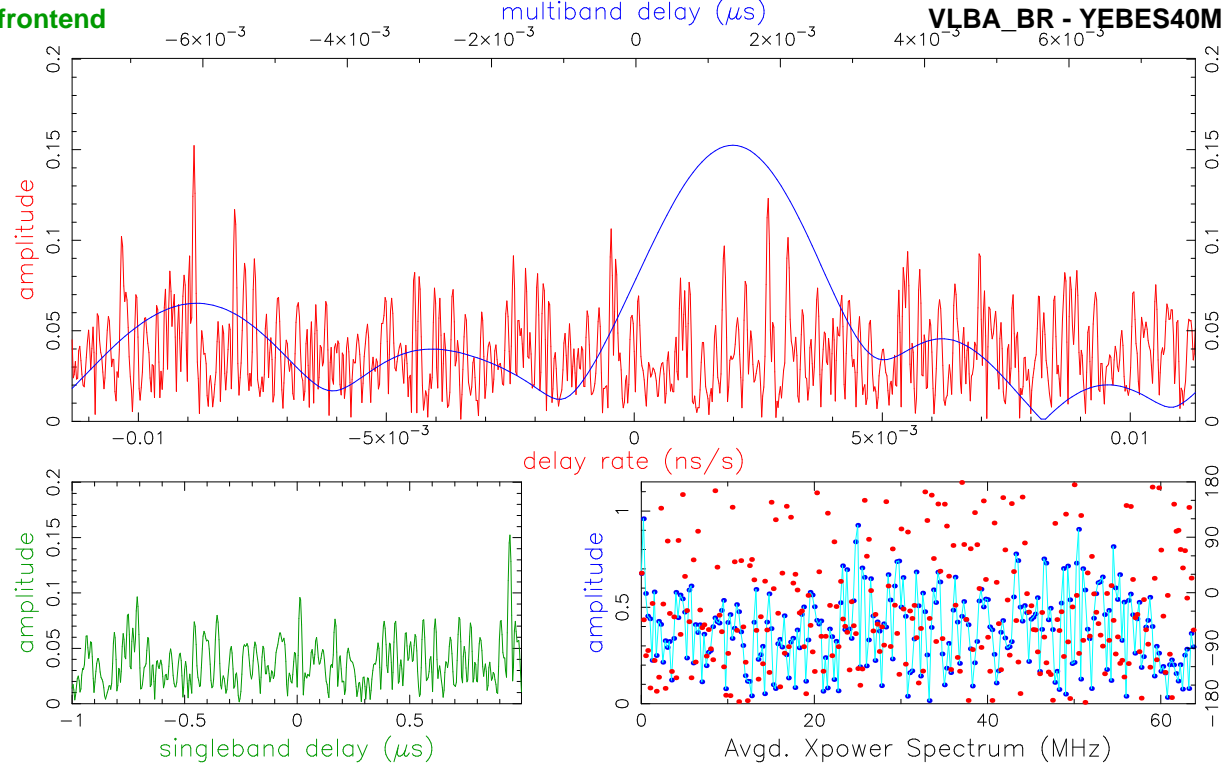
B: az 287.8 el 35.4 pa 49.5 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -714.302 1689.108 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/BY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/BY.W.143.127ARX

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, bY

VLBA\_BR - YEBES40M, fgroup W, pol LL

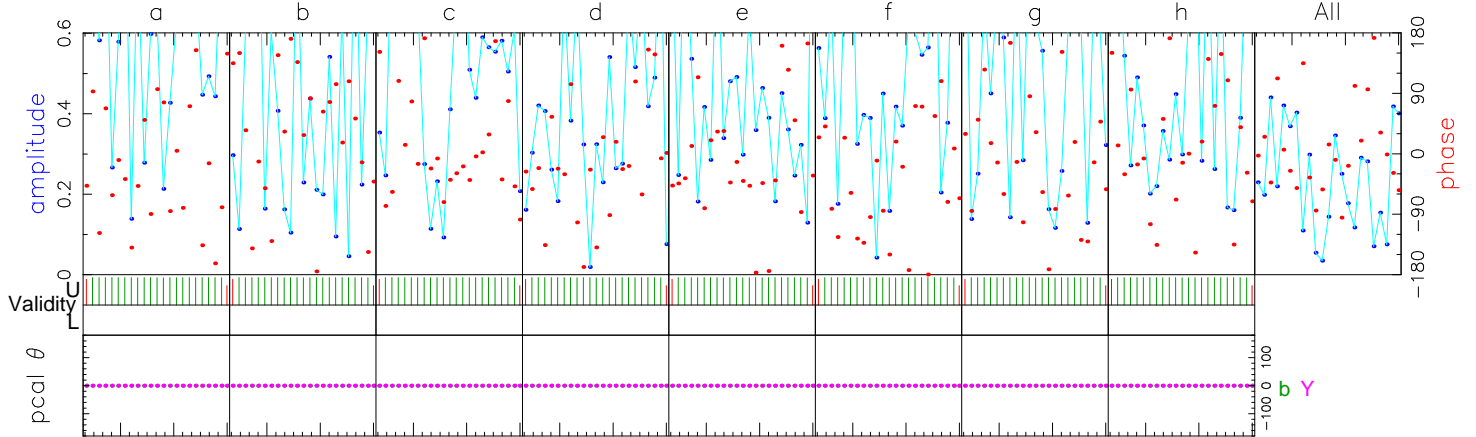


Fringe quality 0

SNR 5.3  
 Int time 161.882  
 Amp 0.200  
 Phase -13.3  
 PFD 1.0e+00  
 Delays (us)  
 SBD 0.944274  
 MBD 0.001276  
 Fringe rate (Hz)  
 -0.766574  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131720  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



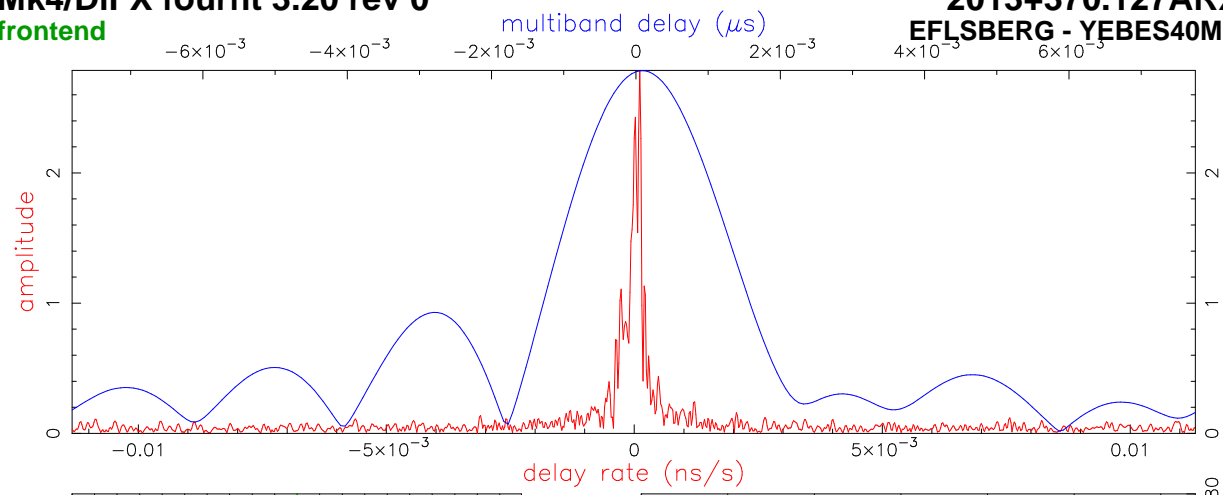
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-32.4	59.9	-10.5	-42.2	-27.1	-17.4	1.9	1.2		-13.3
	0.2	0.1	0.3	0.2	0.3	0.2	0.3	0.1		0.2
	245.5	443.0	280.5	208.2	252.0	335.5	413.5	232.9		498.7
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
b:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	3.72857857315E+03	Apriori delay (usec)	3.72763979741E+03	Resid mbdelay (usec)	1.27575E-03	+/-	2.0E-04
Sband delay (usec)	3.72858407166E+03	Apriori clock (usec)	-1.0304679E+01	Resid sbdelay (usec)	9.44274E-01	+/-	1.6E-03
Phase delay (usec)	3.72763979698E+03	Apriori clockrate (us/s)	-4.6239510E-07	Resid phdelay (usec)	-4.27518E-07	+/-	6.9E-07
Delay rate (us/s)	1.49243116352E+00	Apriori rate (us/s)	1.49244006268E+00	Resid rate (us/s)	-8.89916E-06	+/-	7.4E-09
Total phase (deg)	40.2	Apriori accel (us/s/s)	-1.33947263513E-05	Resid phase (deg)	-13.3	+/-	21.5

ph/seg (deg)	71.8	Theor.	51.5	Search (1024X32)	0.151	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000	
amp/seg (%)	99.9		89.9	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	34.7		30.4	Inc. seg. avg.	0.221	Bits/sample: 2x2	Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011	
amp/frq (%)	43.5		53.0	Inc. frq. avg.	0.190	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

b: az 88.3 el 52.8 pa -56.9 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10746.539 -66.595 simultaneous interpolator

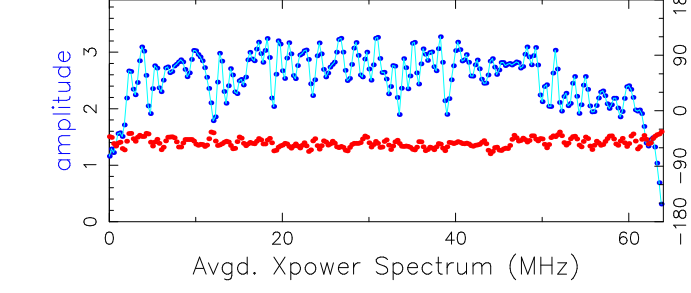
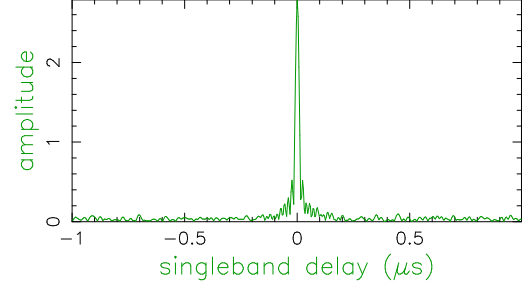
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/bY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/bY.W.81.127ARX



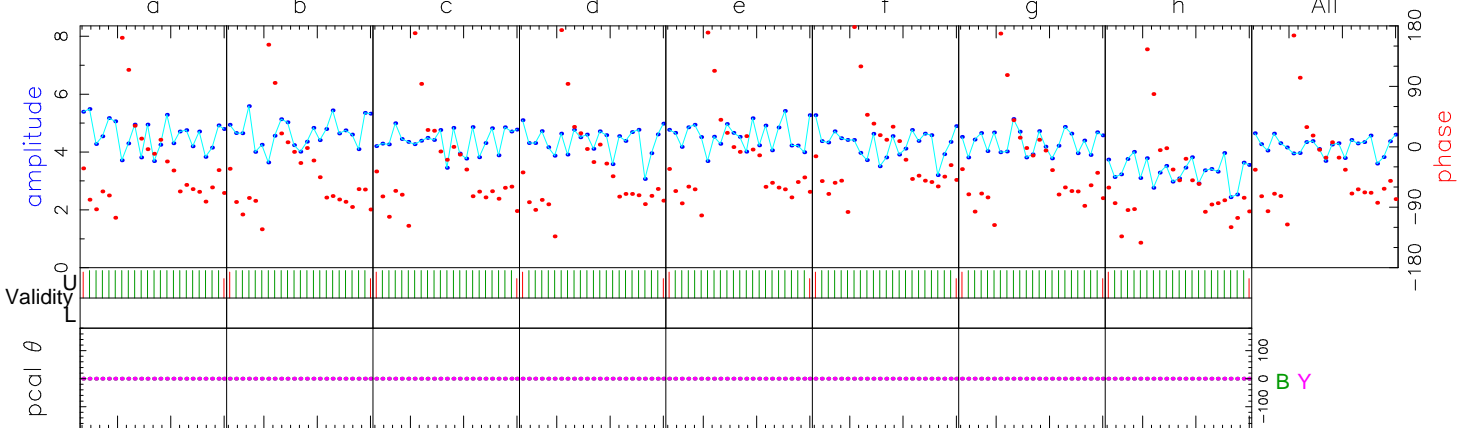
Fringe quality 4

SNR 97.1  
 Int time 162.304  
 Amp 2.788  
 Phase -50.2  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.000299  
 MBD 0.000098  
 Fringe rate (Hz) 0.009974  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131720  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-48.0	-57.3	-52.4	-55.7	-41.1	-29.9	-47.9	-75.4	Phase	-50.2
	3.1	3.1	2.9	2.8	3.1	2.8	2.8	2.2	Ampl.	2.8
	257.0	256.9	257.2	257.0	257.6	256.7	257.0	255.5	Sbd box	257.1
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-1.01437737906E+03		Apriori delay (usec)		-1.01437747697E+03		Resid mbdelay (usec)		9.79089E-05	+/- 1.1E-05
Sband delay (usec)	-1.01437717847E+03		Apriori clock (usec)		7.1172419E+00		Resid sbdelay (usec)		2.98500E-04	+/- 8.9E-05
Phase delay (usec)	-1.01437747859E+03		Apriori clockrate (us/s)		-4.2000000E-07		Resid phdelay (usec)		-1.61976E-06	+/- 3.8E-08
Delay rate (us/s)	1.00977115694E-01		Apriori rate (us/s)		1.00976999900E-01		Resid rate (us/s)		1.15794E-07	+/- 4.0E-10
Total phase (deg)			Apriori accel (us/s/s)		1.37773302189E-05		Resid phase (deg)		-50.2	+/- 1.2

ph/seg (deg) 57.2 2.8 Search (1024X32) 2.747 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 52.0 4.9 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 14.3 1.7 Inc. seg. avg. 4.202 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 9.9 2.9 Inc. frq. avg. 2.844 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 B: az 287.8 el 35.4 pa 49.5 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -714.302 1689.108 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/BY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/BY.W.83.127ARX

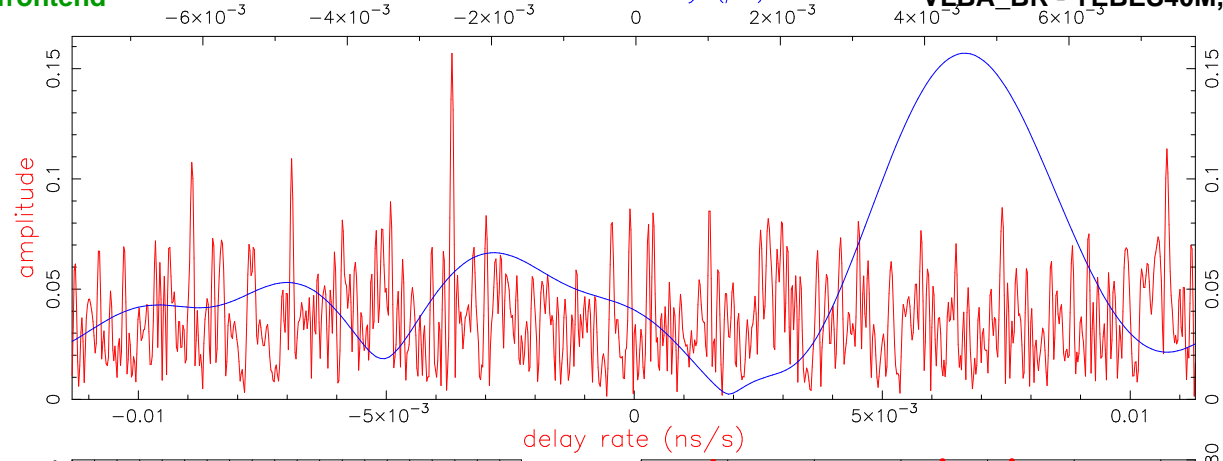
Mk4/DiFX fourfit 3.20 rev 0

frontend

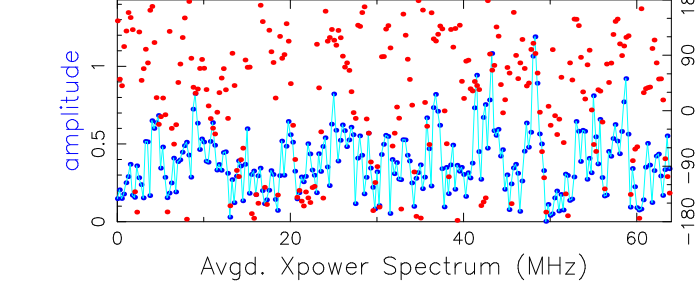
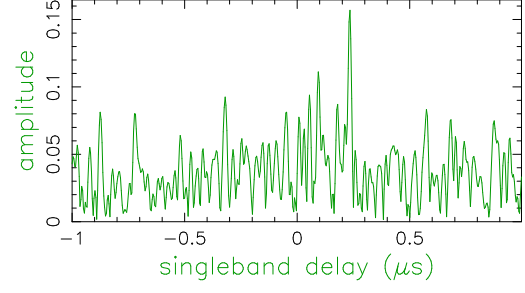
2013+370.127ARX, No0065, bY

VLBA\_BR - YEBES40M, fgroup W, pol RR

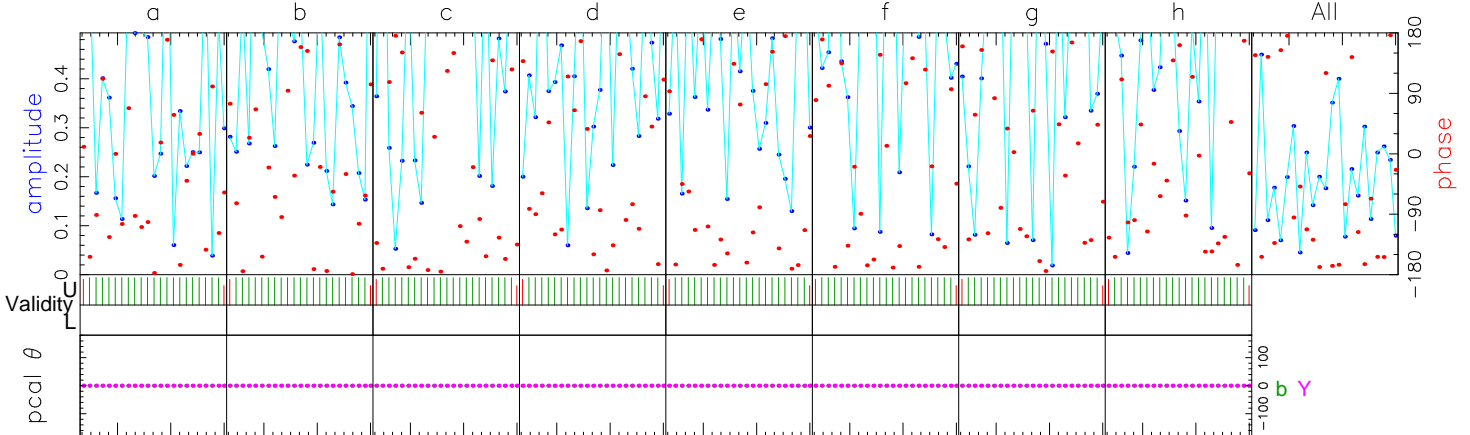
multiband delay ( $\mu$ s)



Fringe quality 0  
 SNR 5.5  
 Int time 161.883  
 Amp 0.165  
 Phase -156.1  
 PFD 9.9e-01  
 Delays (us)  
 SBD 0.233562  
 MBD 0.004519  
 Fringe rate (Hz) -0.316545  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131722  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-123.3	156.7	-166.8	-142.2	-157.7	177.2	-124.6	-135.1	Phase	-156.1
	0.1	0.0	0.3	0.1	0.2	0.3	0.1	0.2	Ampl.	0.2
	49.2	117.7	27.6	403.3	222.8	176.4	436.9	491.9	Sbd box	316.8
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	3.72787869096E+03	Apriori delay (usec)		3.72763979741E+03	Resid mbdelay (usec)		4.51855E-03	+/-	2.0E-04	
Sband delay (usec)	3.72787335966E+03	Apriori clock (usec)		-1.0304679E+01	Resid sbdelay (usec)		2.33562E-01	+/-	1.6E-03	
Phase delay (usec)	3.72763979237E+03	Apriori clockrate (us/s)		-4.6239510E-07	Resid phdelay (usec)		-5.03249E-06	+/-	6.7E-07	
Delay rate (us/s)	1.49243638791E+00	Apriori rate (us/s)		1.49244006268E+00	Resid rate (us/s)		-3.67477E-06	+/-	7.2E-09	
Total phase (deg)		-102.6	Apriori accel (us/s/s)		-1.33947263513E-05	Resid phase (deg)		-156.1	+/-	20.9

ph/seg (deg)	55.1	Theor. 50.1	Amplitude	0.165 +/- 0.030	Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5		sb window (us)	-1.000	1.000
amp/seg (%)	73.6	87.4	Search (1024X32)	0.156	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		SampCntNorm: enabled		mb window (us)	-0.008	0.008
ph/frq (deg)	31.0	29.5	Inc. seg. avg.	0.155	Sample rate(MISamp/s): 128		Data rate(Mb/s): 2048		dr window (ns/s)	-0.011	0.011
amp/frq (%)	56.7	51.6	Inc. frq. avg.	0.156	nlags: 256		t_cohere infinite		ion window (TEC)	0.00	0.00

b: az 88.3 el 52.8 pa -56.9 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10746.539 -66.595 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/bY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/bY.W.97.127ARX



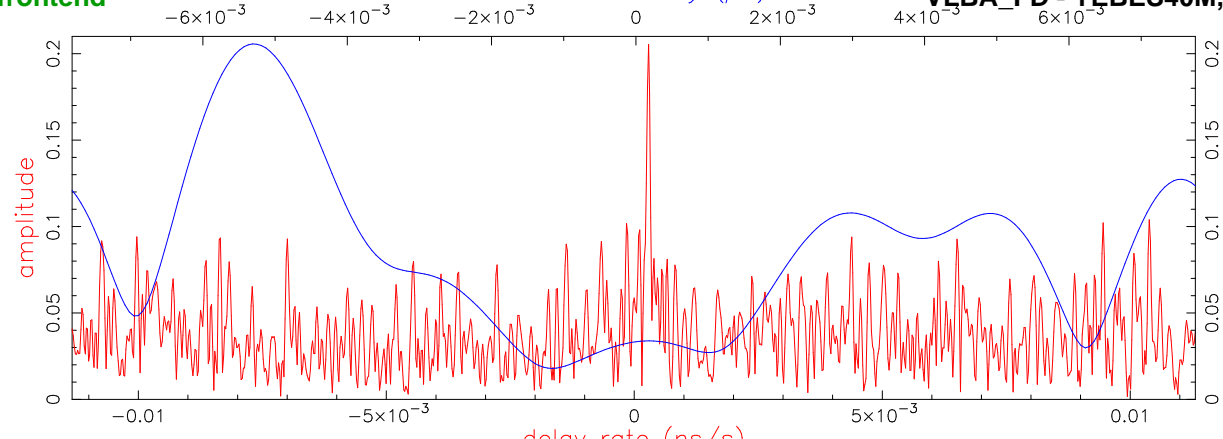
# Mk4/DiFX fourfit 3.20 rev 0

frontend

# 2013+370.127ARX, No0065, fY

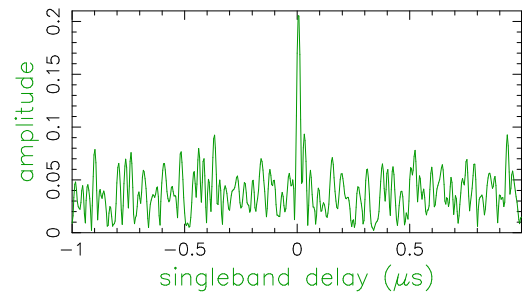
VLBA\_FD - YEBES40M, fgroup W, pol RR

multiband delay ( $\mu\text{s}$ )

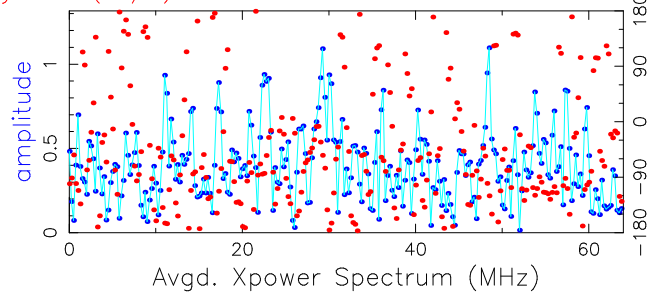


Fringe quality 9  
 SNR 7.3  
 Int time 161.555  
 Amp 0.210  
 Phase 28.4  
 PFD 4.6e-05  
 Delays (us)  
 SBD 0.005824  
 MBD -0.005236  
 Fringe rate (Hz)  
 0.024143  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131724  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

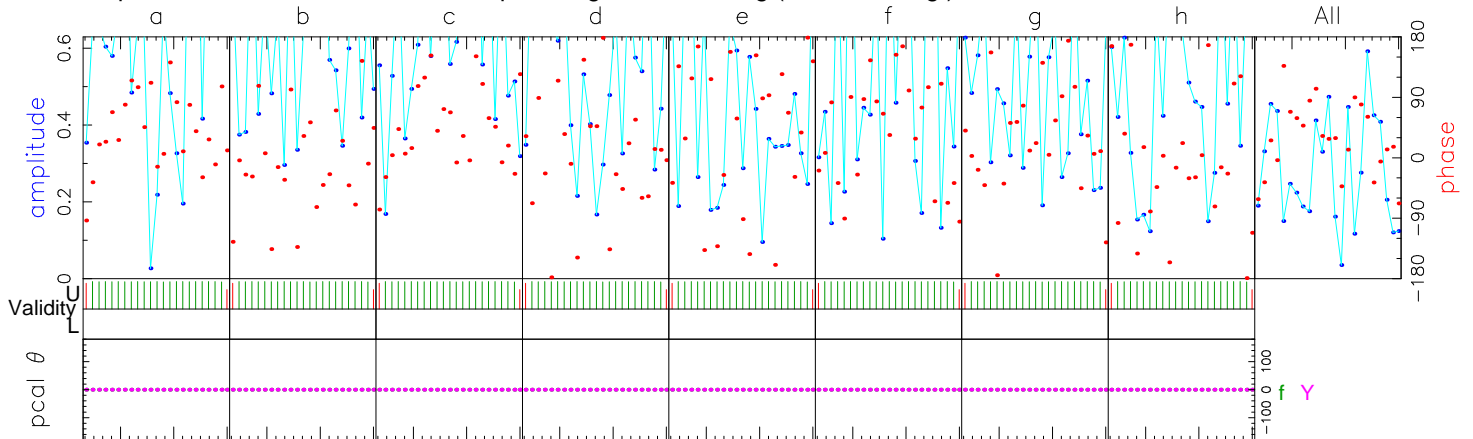
delay rate (ns/s)



singleband delay ( $\mu\text{s}$ )

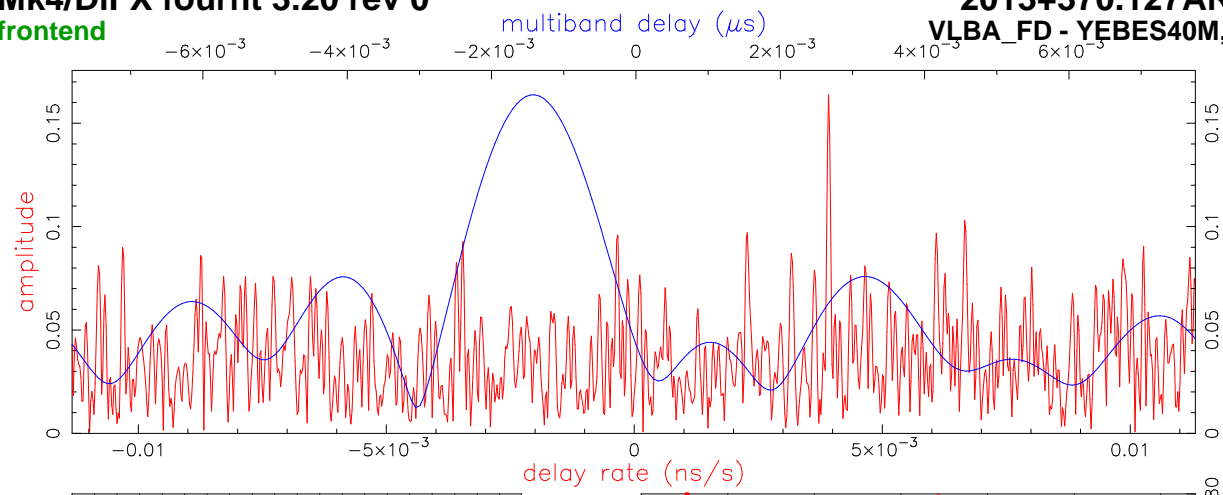


Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec

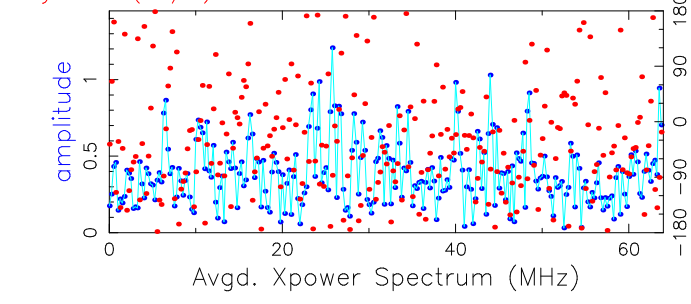
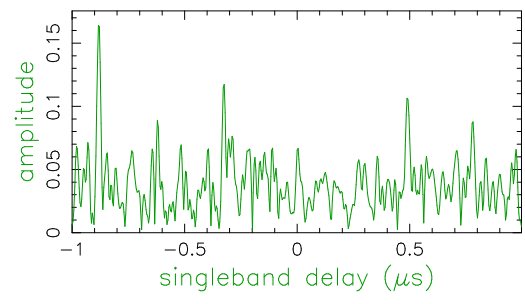


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	43.3	-14.7	45.8	-0.5	130.4	55.9	28.5	-29.7	Phase	28.4
	0.4	0.3	0.4	0.2	0.1	0.2	0.2	0.1	Ampl.	0.2
	258.7	257.9	258.2	183.7	105.0	496.7	257.7	474.1	Sbd box	258.5
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	5.47916868787E+03		Apriori delay (usec)		5.47915829880E+03		Resid mbdelay (usec)		-5.23594E-03	+/- 1.5E-04
Sband delay (usec)	5.47916412305E+03		Apriori clock (usec)		-9.2090502E+00		Resid sbdelay (usec)		5.82425E-03	+/- 1.2E-03
Phase delay (usec)	5.47915829972E+03		Apriori clockrate (us/s)		-3.1094951E-07		Resid phdelay (usec)		9.16089E-07	+/- 5.1E-07
Delay rate (us/s)	1.45258267313E+00		Apriori rate (us/s)		1.45258239286E+00		Resid rate (us/s)		2.80271E-07	+/- 5.4E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.87511306462E-05		Resid phase (deg)		28.4	+/- 15.7

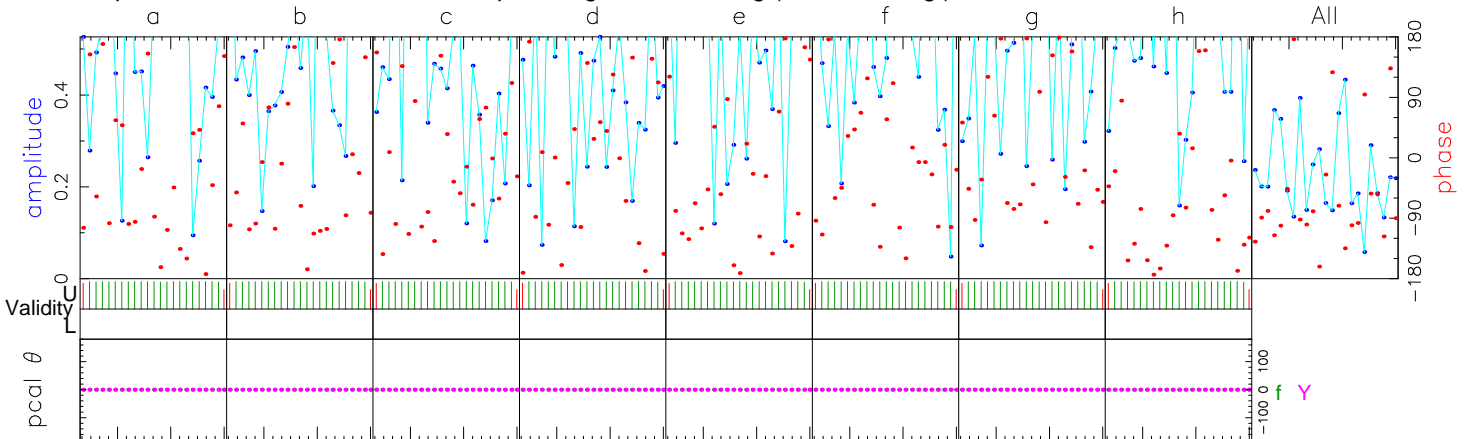
ph/seg (deg) 52.0 37.7 Search (1024X32) 0.201 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 78.0 65.7 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 54.4 22.2 Inc. seg. avg. 0.236 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 58.4 38.8 Inc. frq. avg. 0.233 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 f: az 67.5 el 61.5 pa -93.1 Y: az 289.5 el 38.9 pa 64.1 u, v (fr/asec) -10482.362 -3240.232 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/fY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/fY.W.116.127ARX



Fringe quality 0  
SNR 5.8  
Int time 161.555  
Amp 0.176  
Phase -100.6  
PFD 5.6e-01  
Delays (us)  
SBD -0.880938  
MBD -0.001410  
Fringe rate (Hz) 0.338937  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131727  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-112.2	-96.6	-84.1	-133.6	-104.6	-34.7	-81.8	-127.5	Phase	-100.6
	0.3	0.2	0.2	0.1	0.2	0.1	0.2	0.3	Ampl.	0.2
	320.5	42.7	346.9	178.0	439.4	381.4	338.2	195.7	Sbd box	31.5
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	5.47828188858E+03		Apriori delay (usec)		5.47915829880E+03		Resid mbdelay (usec)		-1.41022E-03	+/- 1.9E-04
Sband delay (usec)	5.47827736105E+03		Apriori clock (usec)		-9.2090502E+00		Resid sbdelay (usec)		-8.80938E-01	+/- 1.5E-03
Phase delay (usec)	5.47915829556E+03		Apriori clockrate (us/s)		-3.1094951E-07		Resid phdelay (usec)		-3.24466E-06	+/- 6.4E-07
Delay rate (us/s)	1.45258632759E+00		Apriori rate (us/s)		1.45258239286E+00		Resid rate (us/s)		3.93473E-06	+/- 6.8E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.87511306462E-05		Resid phase (deg)		-100.6	+/- 19.7

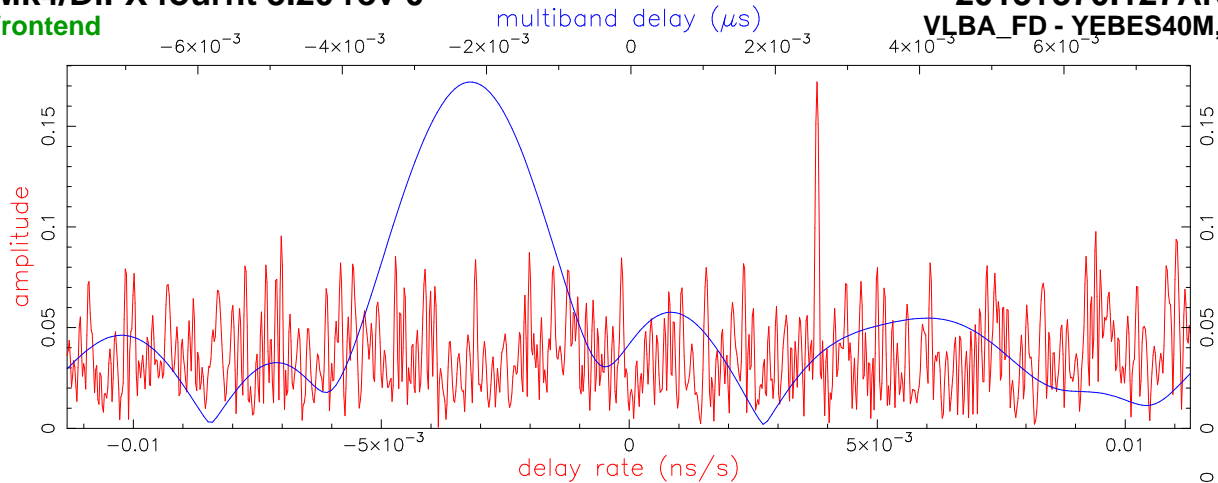
ph/seg (deg) 62.5 47.3 Search (1024X32) 0.159 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 68.4 82.6 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 34.0 27.9 Inc. seg. avg. 0.181 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 36.6 48.7 Inc. frq. avg. 0.170 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
f: az 67.5 el 61.5 pa -93.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10482.362 -3240.232 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/fY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/fY.W.137.127ARX

Mk4/DiFX fourfit 3.20 rev 0

frontend

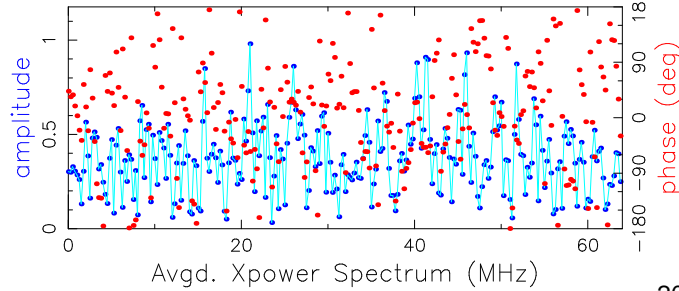
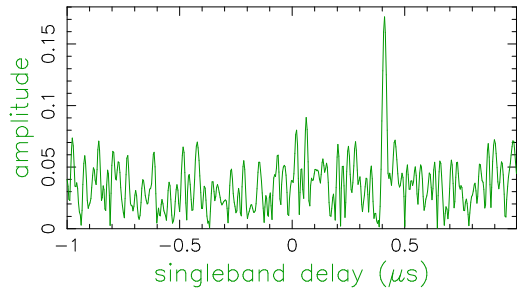
2013+370.127ARX, No0065, fY

VLBA\_FD - YEBES40M, fgroup W, pol RL



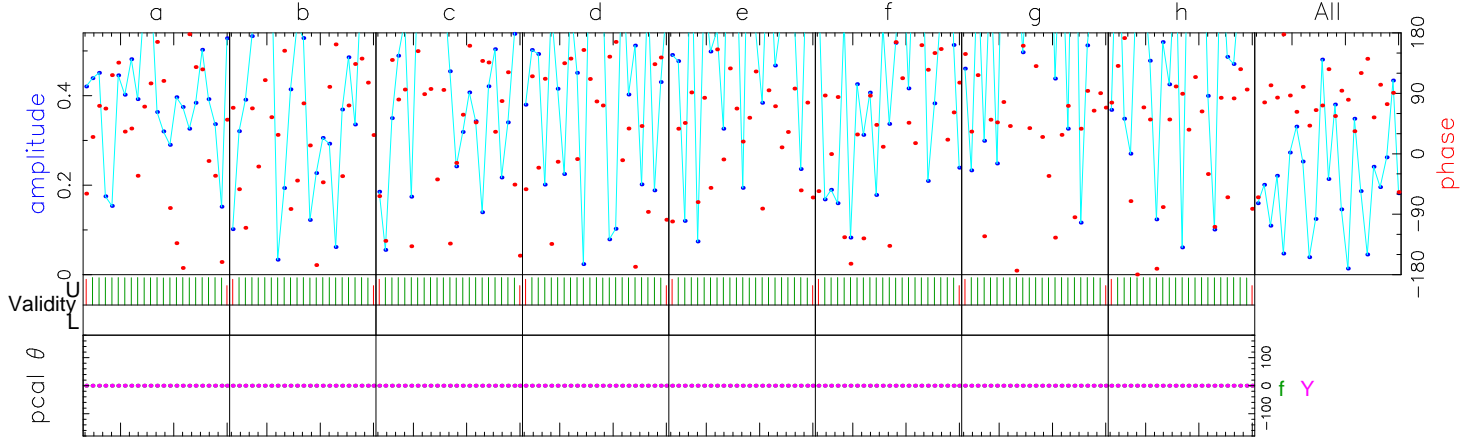
Fringe quality 0

SNR 6.0  
 Int time 161.555  
 Amp 0.180  
 Phase 76.6  
 PFD 2.5e-01  
 Delays (us)  
 SBD 0.410167  
 MBD -0.002222  
 Fringe rate (Hz)  
 0.327494  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131729  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
f	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
f:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
f:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
f	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	5.47956232665E+03		Apriori delay (usec)		5.47915829880E+03		Resid mbdelay (usec)		-2.22215E-03	+/- 1.8E-04
Sband delay (usec)	5.47956846580E+03		Apriori clock (usec)		-9.2090502E+00		Resid sbdelay (usec)		4.10167E-01	+/- 1.4E-03
Phase delay (usec)	5.47915830128E+03		Apriori clockrate (us/s)		-3.1094951E-07		Resid phdelay (usec)		2.47034E-06	+/- 6.2E-07
Delay rate (us/s)	1.45258619474E+00		Apriori rate (us/s)		1.45258239286E+00		Resid rate (us/s)		3.80187E-06	+/- 6.6E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.87511306462E-05		Resid phase (deg)		76.6	+/- 19.2

	RMS	Theor.	Amplitude	0.180 +/- 0.030	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	50.2	46.0	Search (1024X32)	0.169	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	75.3	80.2	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled
ph/frq (deg)	13.2	27.1	Inc. seg. avg.	0.169	Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	38.2	47.3	Inc. frq. avg.	0.165	Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00

f: az 67.5 el 61.5 pa -93.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10482.362 -3240.232 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/fY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/fY.W.152.127ARX

# Mk4/DiFX fourfit 3.20 rev 0

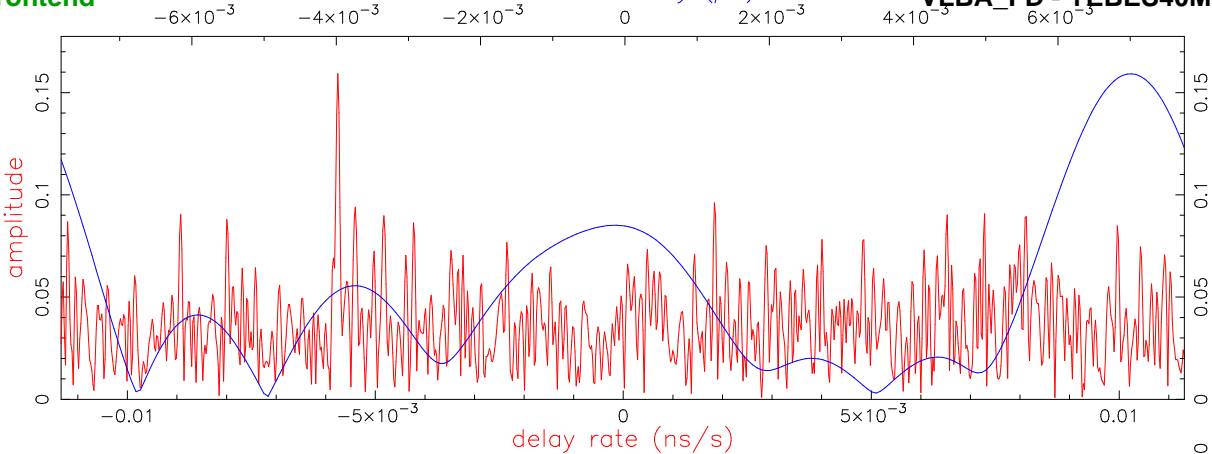
frontend

## 2013+370.127ARX, No0065, fY

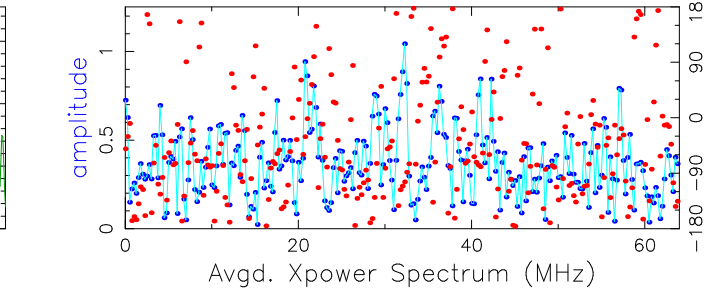
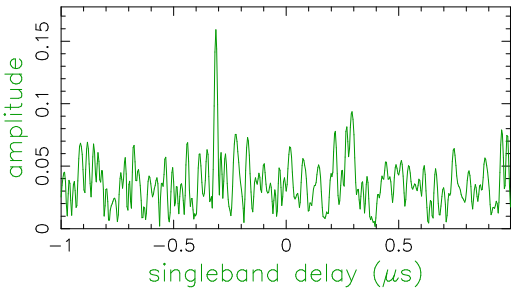
VLBA\_FD - YEBES40M, fgroup W, pol LL

multiband delay ( $\mu$ s)

Fringe quality 0

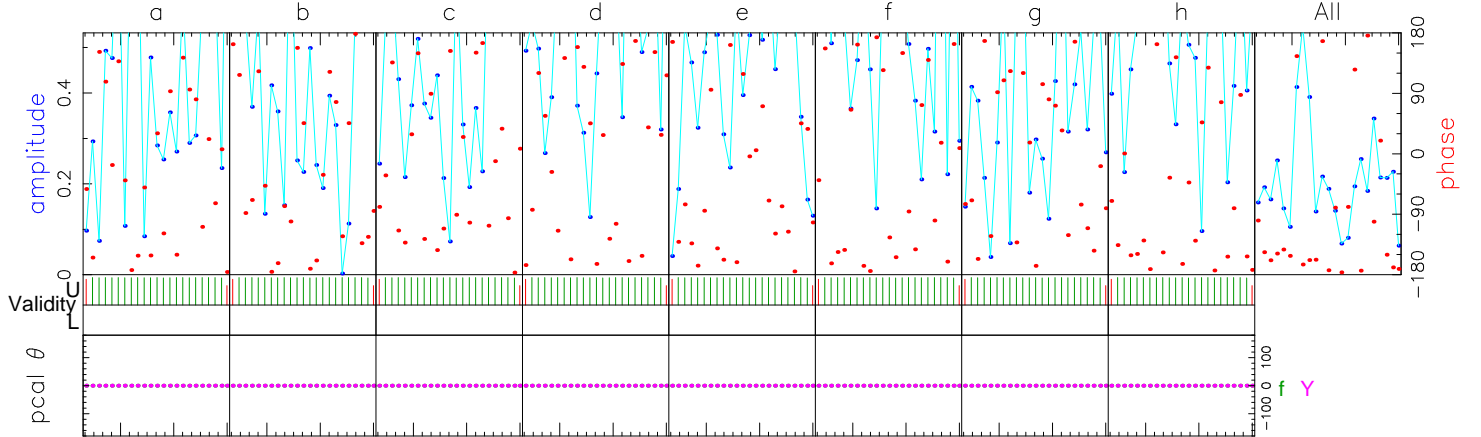


SNR 5.5  
 Int time 161.555  
 Amp 0.177  
 Phase -161.1  
 PFD 9.8e-01  
 Delays (us)  
 SBD -0.312331  
 MBD 0.007009  
 Fringe rate (Hz)  
 -0.495870  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131722  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-179.8	-159.3	-114.0	-179.5	-115.6	-174.3	175.0	-159.5		-161.1
	0.1	0.2	0.1	0.3	0.2	0.3	0.1	0.3		0.2
	60.1	77.1	258.6	326.7	157.5	178.5	222.8	52.4		177.0
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
f	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
f:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
f:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
f	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	5.47885280751E+03	Apriori delay (usec)		5.47915829880E+03	Resid mbdelay (usec)		7.00871E-03	+/- 2.0E-04	
Sband delay (usec)	5.47884596830E+03	Apriori clock (usec)		-9.2090502E-07	Resid sbdelay (usec)		-3.12331E-01	+/- 1.6E-03	
Phase delay (usec)	5.47915829361E+03	Apriori clockrate (us/s)		-3.1094951E-07	Resid phdelay (usec)		-5.19403E-06	+/- 6.7E-07	
Delay rate (us/s)	1.45257663630E+00	Apriori rate (us/s)		1.45258239286E+00	Resid rate (us/s)		-5.75656E-06	+/- 7.1E-09	
Total phase (deg)		148.2	Apriori accel (us/s/s)		-3.87511306462E-05	Resid phase (deg)		-161.1	+/- 20.7

ph/seg (deg)	53.3	Theor. 49.6	Amplitude	0.177 +/- 0.032	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5	sb window (us)	-1.000	1.000		
amp/seg (%)	79.4	86.6	Search (1024X32)	0.158	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	SampCntNorm:	enabled	mb window (us)	-0.008	0.008		
ph/frq (deg)	30.9	29.3	Inc. seg. avg.	0.174	Bits/sample:	2x2	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011	0.011		
amp/frq (%)	45.9	51.1	Inc. frq. avg.	0.171	Data rate (Mb/s):	2048	nlags:	256	t_cohere	infinite	ion window (TEC)	0.00	0.00

f: az 67.5 el 61.5 pa -93.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10482.362 -3240.232 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/fY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/fY.W.98.127ARX

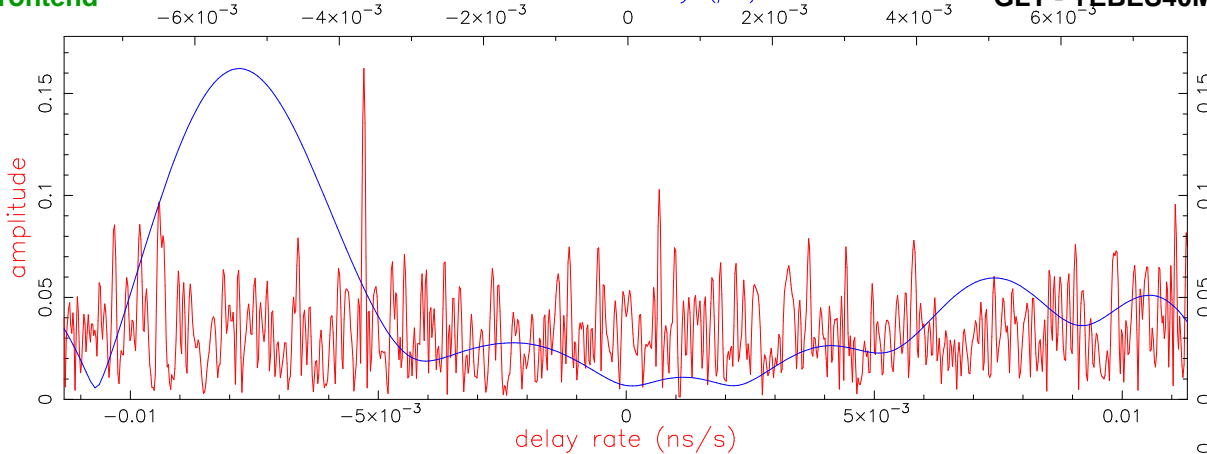
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, gY

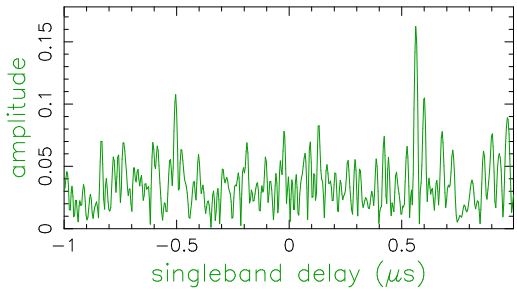
GLT - YEBES40M, fgroup W, pol LL

multiband delay ( $\mu$ s)

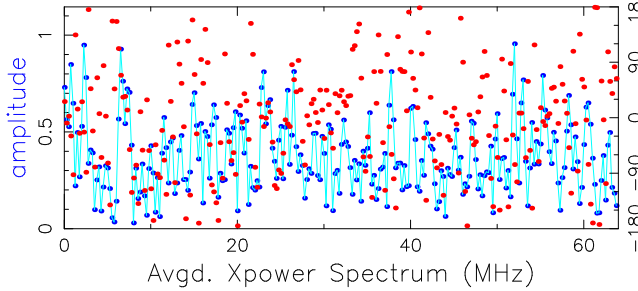


Fringe quality 0

SNR 5.7  
 Int time 162.281  
 Amp 0.178  
 Phase 60.7  
 PFD 8.4e-01  
 Delays (us)  
 SBD 0.562956  
 MBD -0.005378  
 Fringe rate (Hz)  
 -0.455757  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

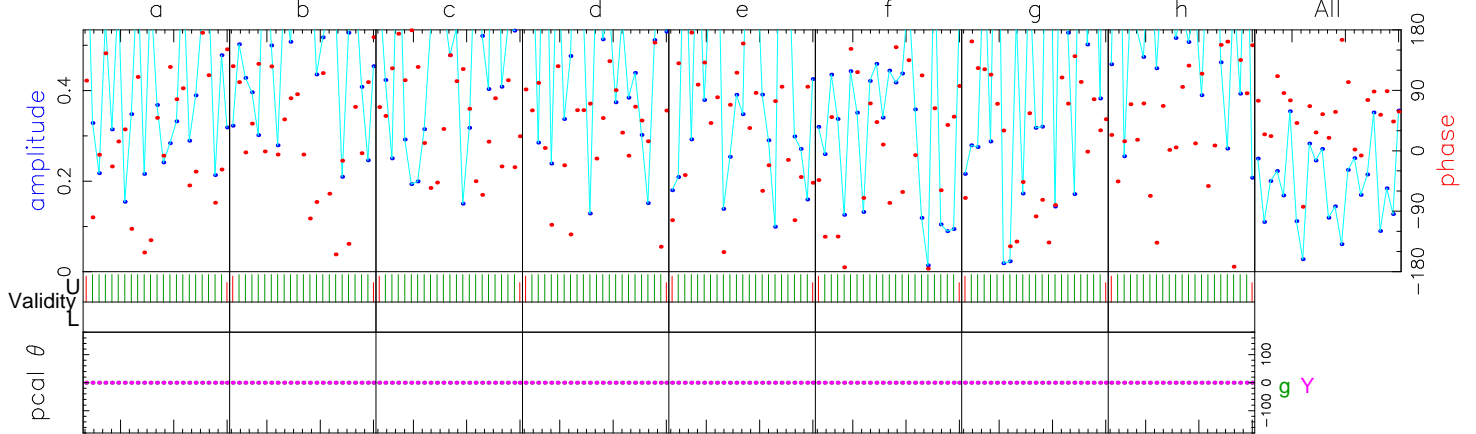


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131733  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	93.7	47.6	45.8	60.5	59.5	71.8	88.4	36.6	Phase	60.7
	0.1	0.1	0.2	0.3	0.2	0.1	0.2	0.2	Ampl.	0.2
	128.7	373.4	188.2	419.2	399.9	221.6	478.4	170.8	Sbd box	401.1
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
g	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)		3.18856862836E+03		Apriori delay (usec)	3.18801150653E+03		Resid mbdelay (usec)	-5.37817E-03	+/-	1.9E-04
Sband delay (usec)		3.18857446228E+03		Apriori clock (usec)	-8.3787680E+00		Resid sbdelay (usec)	5.62956E-01	+/-	1.5E-03
Phase delay (usec)		3.18801150848E+03		Apriori clockrate (us/s)	-1.4500001E-07		Resid phdelay (usec)	1.95753E-06	+/-	6.5E-07
Delay rate (us/s)		8.59180455967E-01		Apriori rate (us/s)	8.59185746856E-01		Resid rate (us/s)	-5.29089E-06	+/-	6.9E-09
Total phase (deg)			122.7	Apriori accel (us/s/s)	5.09677777456E-06		Resid phase (deg)	60.7	+/-	20.2

	RMS	Theor.	Amplitude	0.178 +/- 0.031	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	48.4	48.5	Search (1024X32)	0.161	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	58.1	84.7	Interp.	0.000	Bits/sample: 2x2	mb window (us) -0.008 0.008
ph/frq (deg)	22.2	28.6	Inc. seg. avg.	0.157	Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	37.2	50.0	Inc. frq. avg.	0.166	Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00

g: az 182.0 el 50.7 pa 0.6 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -6173.235 2623.125 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/gY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/gY.W.167.127ARX

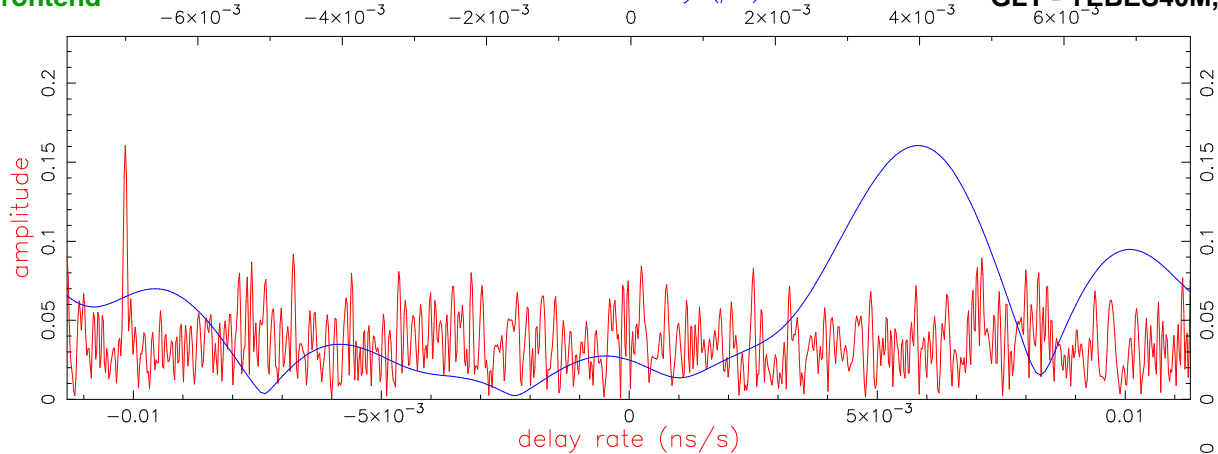
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, gY

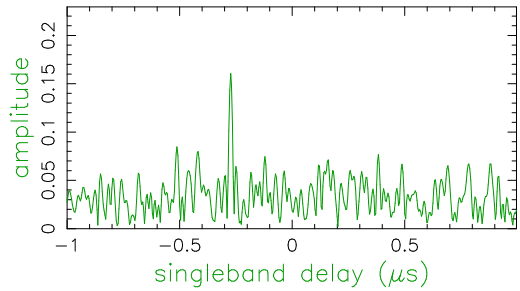
GLT - YEBES40M, fgroup W, pol RR

multiband delay ( $\mu\text{s}$ )

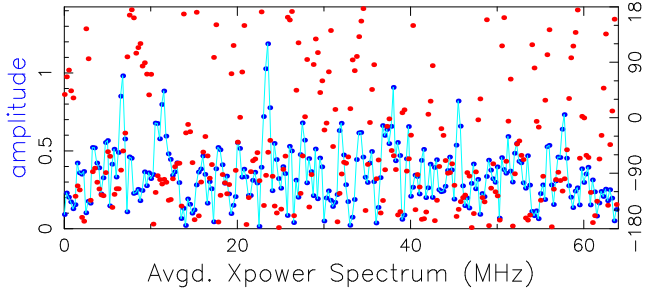


Fringe quality 0

SNR 5.6  
 Int time 162.256  
 Amp 0.230  
 Phase -59.4  
 PFD 9.3e-01  
 Delays (us)  
 SBD -0.273078  
 MBD 0.003991  
 Fringe rate (Hz)  
 -0.877050  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

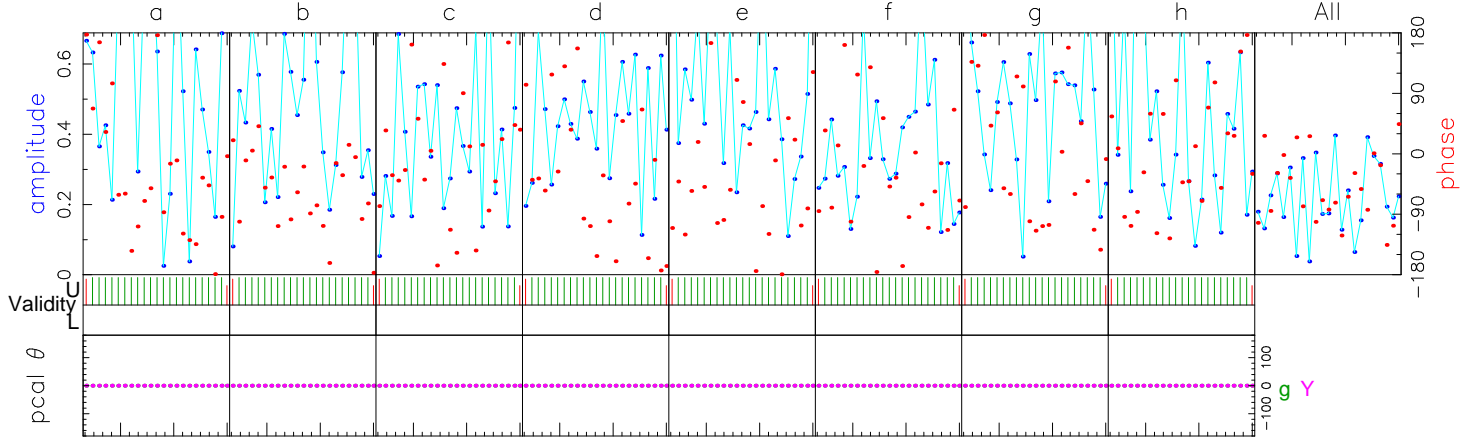


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131736  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-73.8	-42.0	-20.5	-80.9	-87.1	-66.7	-84.5	-19.4	Phase	-59.4
	0.3	0.5	0.2	0.2	0.3	0.2	0.2	0.2	Ampl.	0.2
	316.4	187.3	270.2	311.0	200.4	181.5	428.7	261.9	Sbd box	187.1
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
g	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	3.18773424709E+03	Apriori delay (usec)	3.18801150653E+03	Resid mbdelay (usec)	3.99057E-03	+/-	1.9E-04
Sband delay (usec)	3.18773842878E+03	Apriori clock (usec)	-8.3787680E+07	Resid sbdelay (usec)	-2.73078E-01	+/-	1.5E-03
Phase delay (usec)	3.18801150461E+03	Apriori clockrate (us/s)	-1.4500001E-07	Resid phdelay (usec)	-1.91423E-06	+/-	6.6E-07
Delay rate (us/s)	8.59175565181E-01	Apriori rate (us/s)	8.59185746856E-01	Resid rate (us/s)	-1.01817E-05	+/-	7.0E-09
Total phase (deg)	2.6	Apriori accel (us/s/s)	5.09677777456E-06	Resid phase (deg)	-59.4	+/-	20.5

ph/seg (deg)	50.8	RMS	49.1	Theor.	0.230 +/- 0.041	PCal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	73.9	Search (1024X32)	0.156	Interp.	0.000	PCal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	30.4	Inc. seg. avg.	0.228	Inc. frq. avg.	0.223	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	47.9	Inc. frq. avg.	0.223	Sample rate (MSamp/s):	128	Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	dr window (ns/s)	-0.011 0.011
g: az 182.0 el 50.7 pa 0.6	Y: az 289.5 el 38.9 pa 64.1	u, v (fr/asec)	-6173.235 2623.125	ion window (TEC)	0.00 0.00	simultaneous interpolator					

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/gY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/gY.W.189.127ARX

# Mk4/DiFX fourfit 3.20 rev 0

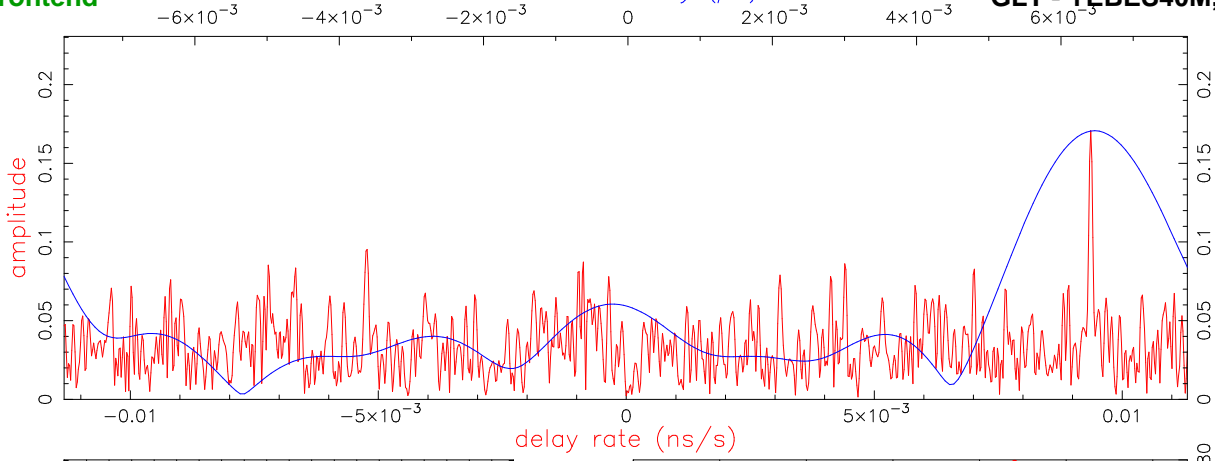
frontend

# 2013+370.127ARX, No0065, gY

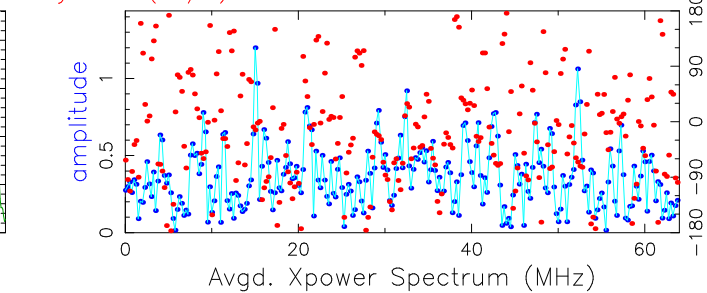
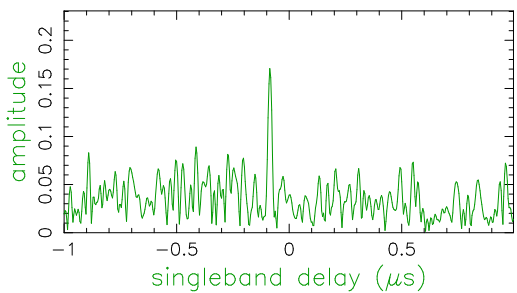
GLT - YEBES40M, fgroup W, pol LR

multiband delay ( $\mu\text{s}$ )

Fringe quality 0

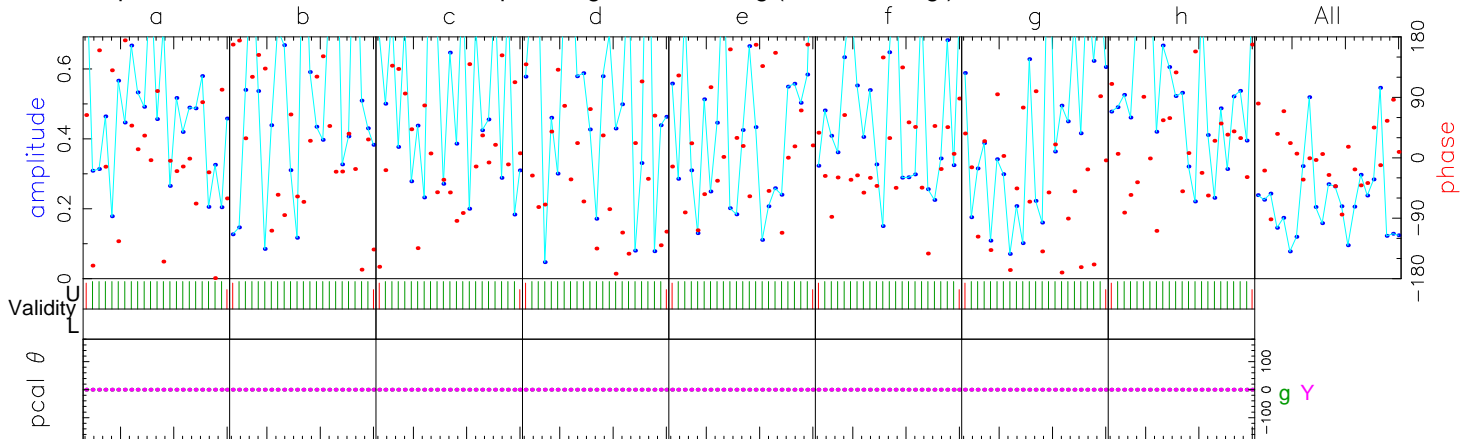


SNR 6.0  
 Int time 162.281  
 Amp 0.231  
 Phase -7.6  
 PFD 2.8e-01  
 Delays (us)  
 SBD -0.085422  
 MBD 0.006476  
 Fringe rate (Hz)  
 0.808311  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131738  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	20.1	-7.0	-6.6	-44.0	-6.9	-6.8	-34.5	12.2	Phase	-7.6
	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.3	Ampl.	0.2
	504.1	149.2	299.5	134.5	151.5	140.4	224.6	182.9	Sbd box	235.1
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
g	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	3.18792423267E+03		Apriori delay (usec)		3.18801150653E+03		Resid mbdelay (usec)		6.47614E-03	+/- 1.8E-04
Sband delay (usec)	3.18792608478E+03		Apriori clock (usec)		-8.3787680E+00		Resid sbdelay (usec)		-8.54217E-02	+/- 1.4E-03
Phase delay (usec)	3.18801150628E+03		Apriori clockrate (us/s)		-1.4500001E-07		Resid phdelay (usec)		-2.46392E-07	+/- 6.2E-07
Delay rate (us/s)	8.59195130544E-01		Apriori rate (us/s)		8.59185746856E-01		Resid rate (us/s)		9.38369E-06	+/- 6.6E-09
Total phase (deg)	54.3		Apriori accel (us/s/s)		5.09677777456E-06		Resid phase (deg)		-7.6	+/- 19.2

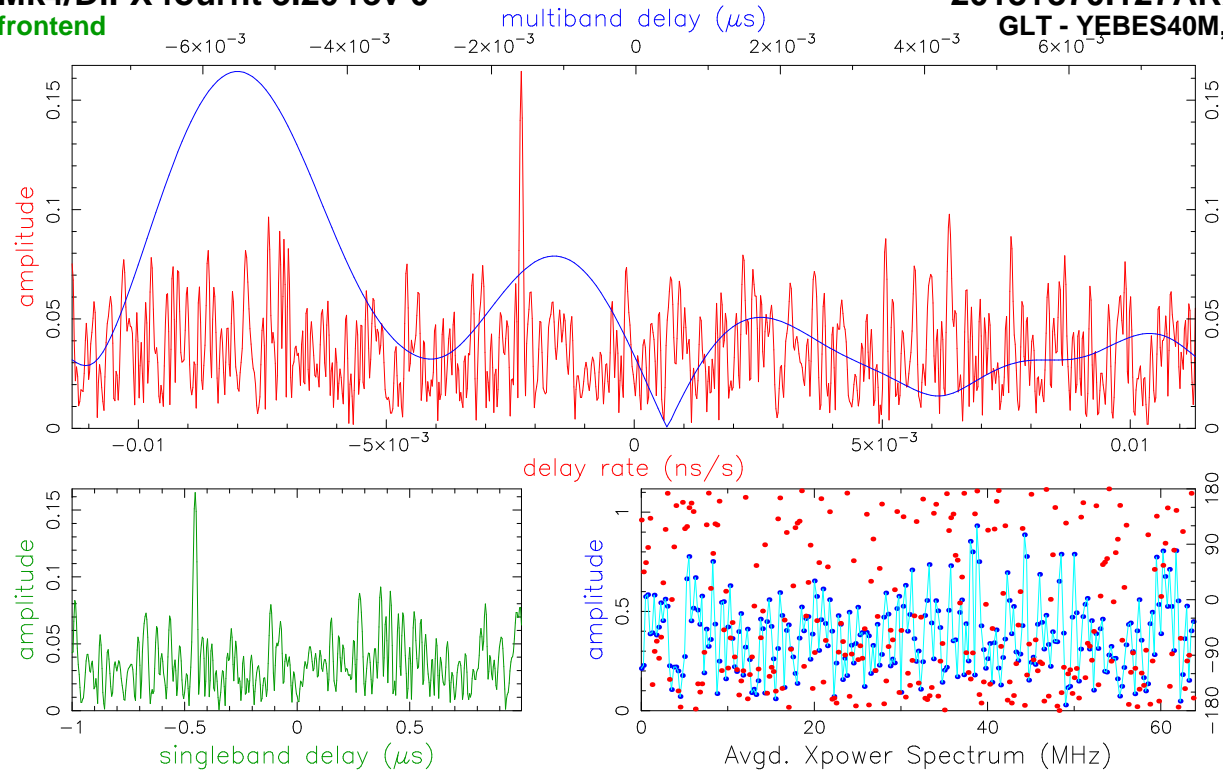
ph/seg (deg) 47.1 46.1 Search (1024X32) 0.169 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 75.4 80.5 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 23.1 27.2 Inc. seg. avg. 0.232 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 30.4 47.5 Inc. frq. avg. 0.218 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 g: az 182.0 el 50.7 pa 0.6 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -6173.235 2623.125 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/gY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/gY.W.206.127ARX

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, gY

GLT - YEBES40M, fgroup W, pol RL

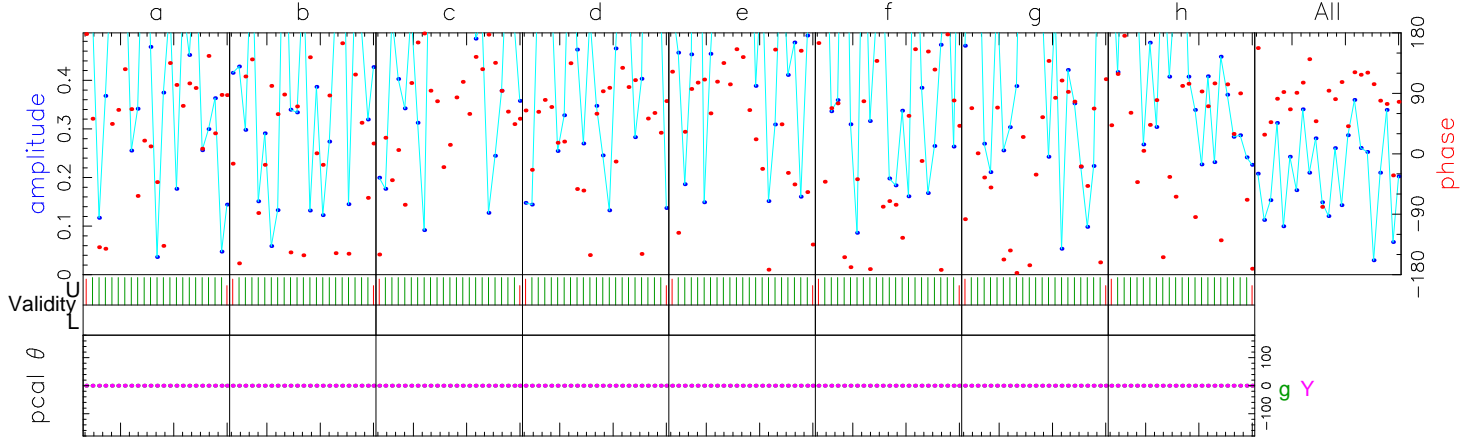


Fringe quality 0

SNR 5.7  
 Int time 162.256  
 Amp 0.166  
 Phase 88.4  
 PFD 8.0e-01  
 Delays (us)  
 SBD -0.453199  
 MBD -0.005522  
 Fringe rate (Hz)  
 -0.196386  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Yr:day 16383  
 Start 2020:07:20 000017.90  
 Stop 2020:07:20 000300.71  
 FRT 2019:280:115849 000131.00  
 Corr/FF/build  
 2020:07:13 2020:07:13 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	86.8	129.3	71.2	71.1	99.7	162.2	63.5	77.7	Phase	88.4
	0.2	0.1	0.3	0.3	0.2	0.1	0.1	0.1	Ampl.	0.2
	23.5	336.3	141.7	140.9	83.6	187.3	222.3	40.3	Sbd box	141.0
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
g	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)		3.18755285960E+03		Apriori delay (usec)		3.18801150653E+03		Resid mbdelay (usec)	-5.52192E-03	+/- 1.9E-04
Sband delay (usec)		3.18755830778E+03		Apriori clock (usec)		-8.3787680E+00		Resid sbdelay (usec)	-4.53199E-01	+/- 1.5E-03
Phase delay (usec)		3.18801150938E+03		Apriori clockrate (us/s)		-1.4500001E-07		Resid phdelay (usec)	2.85149E-06	+/- 6.5E-07
Delay rate (us/s)		8.59183467008E-01		Apriori rate (us/s)		8.59185746856E-01		Resid rate (us/s)	-2.27985E-06	+/- 6.9E-09
Total phase (deg)		150.4		Apriori accel (us/s/s)		5.09677777456E-06		Resid phase (deg)	88.4	+/- 20.2

ph/seg (deg) 53.1 48.3 Search (1024X32) 0.162 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 61.6 84.4 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 37.8 28.5 Inc. seg. avg. 0.157 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 43.1 49.8 Inc. frq. avg. 0.166 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 g: az 182.0 el 50.7 pa 0.6 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -6173.235 2623.125 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/gY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/gY.W.222.127ARX



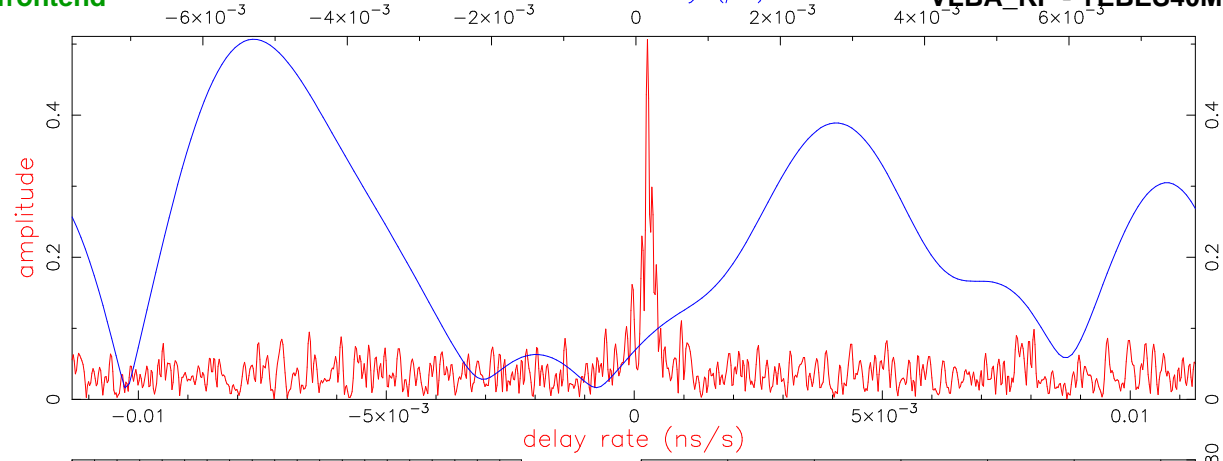
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, kY

VLBA\_KP - YEBES40M, fgroup W, pol LL

multiband delay ( $\mu$ s)



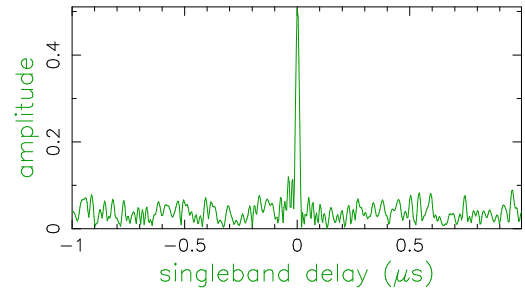
Fringe quality 7

SNR 17.8  
 Int time 161.653  
 Amp 0.511  
 Phase 31.1  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.001152  
 MBD -0.005244  
 Fringe rate (Hz)  
 0.023722  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

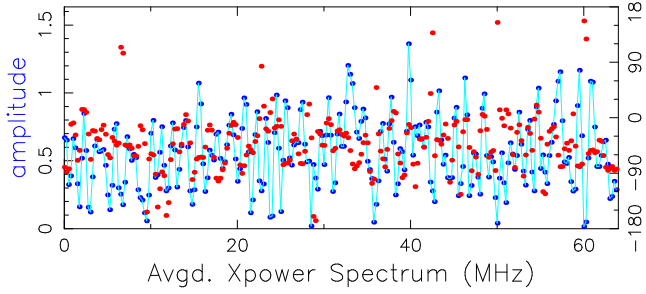
amplitude

amplitude

delay rate (ns/s)



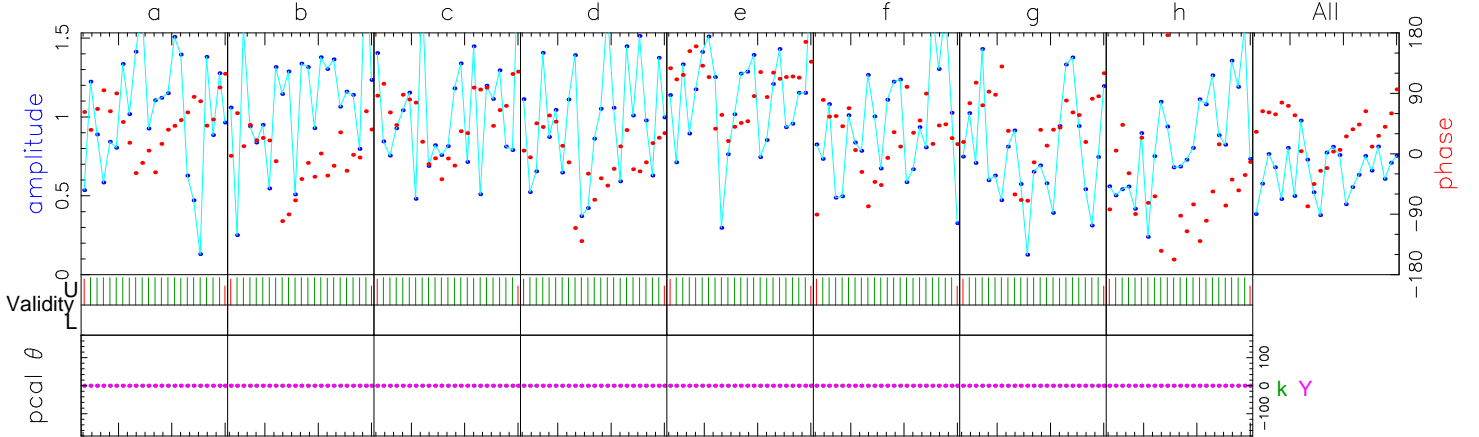
singleband delay ( $\mu$ s)



Avgd. Xpower Spectrum (MHz)

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131735  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



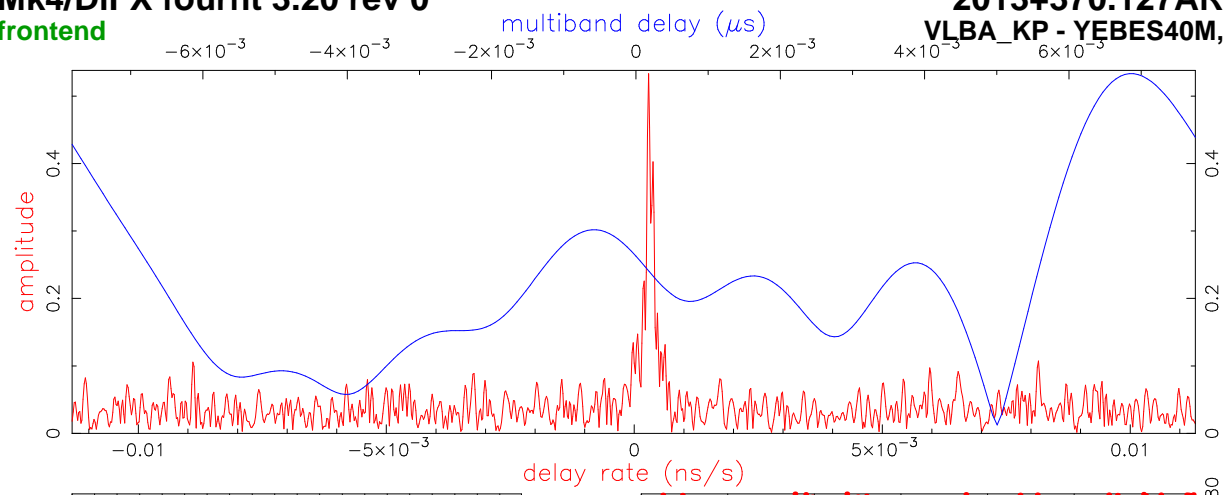
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
k:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	4.40282856136E+03	Apriori delay (usec)	4.40283380563E+03	Resid mbdelay (usec)	-5.24427E-03	+/-	6.1E-05
Sband delay (usec)	4.40283495713E+03	Apriori clock (usec)	-1.0082699E+01	Resid sbdelay (usec)	1.15150E-03	+/-	4.9E-04
Phase delay (usec)	4.40283380664E+03	Apriori clockrate (us/s)	-4.1457899E-07	Resid phdelay (usec)	1.00277E-06	+/-	2.1E-07
Delay rate (us/s)	1.55644180333E+00	Apriori rate (us/s)	1.55644152794E+00	Resid rate (us/s)	2.75384E-07	+/-	2.2E-09
Total phase (deg)		Apriori accel (us/s/s)	-3.16865212267E-05	Resid phase (deg)	31.1	+/-	6.5

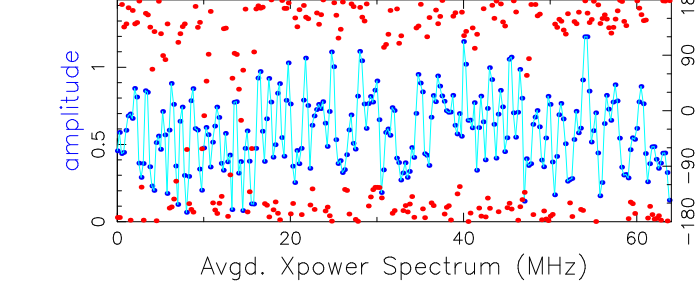
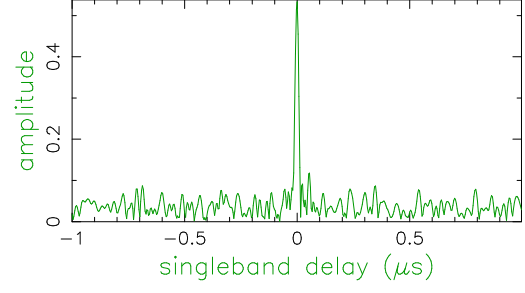
ph/seg (deg)	41.2	Theor.	15.5	Amplitude	0.511 +/- 0.029	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5			
amp/seg (%)	40.8		27.0	Search (1024X32)	0.490	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000			
ph/frq (deg)	56.6		9.1	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008		
amp/frq (%)	46.7		15.9	Inc. seg. avg.	0.632	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011			
				Inc. frq. avg.	0.706	Data rate (Mb/s):	2048	nlags:	256	t_cohere infinite	ion window (TEC)	0.00 0.00

k: az 69.4 el 55.9 pa -86.3 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -11223.927 -2674.860 simultaneous interpolator

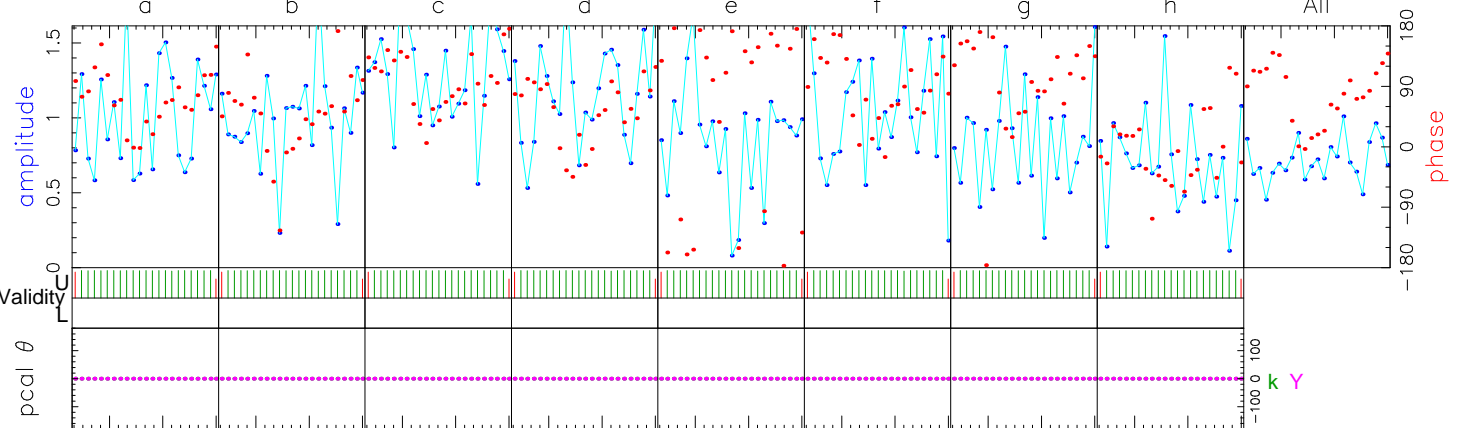
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/kY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/kY.W.178.127ARX



Fringe quality 7  
SNR 18.7  
Int time 161.653  
Amp 0.538  
Phase 79.3  
PFD 0.0e+00  
Delays (us)  
SBD -0.001192  
MBD 0.006842  
Fringe rate (Hz) 0.024052  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131737  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
k:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	4.40282502216E+03				4.40283380563E+03				6.84153E-03	+/- 5.8E-05
Sband delay (usec)	4.40283261363E+03				-1.0082699E+01				-1.19200E-03	+/- 4.6E-04
Phase delay (usec)	4.40283380819E+03				-4.1457899E-07				2.55617E-06	+/- 2.0E-07
Delay rate (us/s)	1.55644180716E+00				1.55644152794E+00				2.79220E-07	+/- 2.1E-09
Total phase (deg)			85.5		-3.16865212267E-05				79.3	+/- 6.1
pcal mode:	MANUAL, MANUAL		PC period (AP's) 5, 5							
pcal rate:	0.000E+00, 0.000E+00 (us/s)		sb window (us)		-1.000		1.000			
Bits/sample:	2x2		SampCntNorm: enabled		mb window (us)		-0.008		0.008	
Sample rate (MSamp/s):	128		dr window (ns/s)		-0.011		0.011			
Data rate (Mb/s):	2048		nlags: 256		t_cohere infinite		ion window (TEC)		0.00	
u,v (fr/asec)	-11223.927		-2674.860						simultaneous interpolator	

Mk4/DiFX fourfit 3.20 rev 0

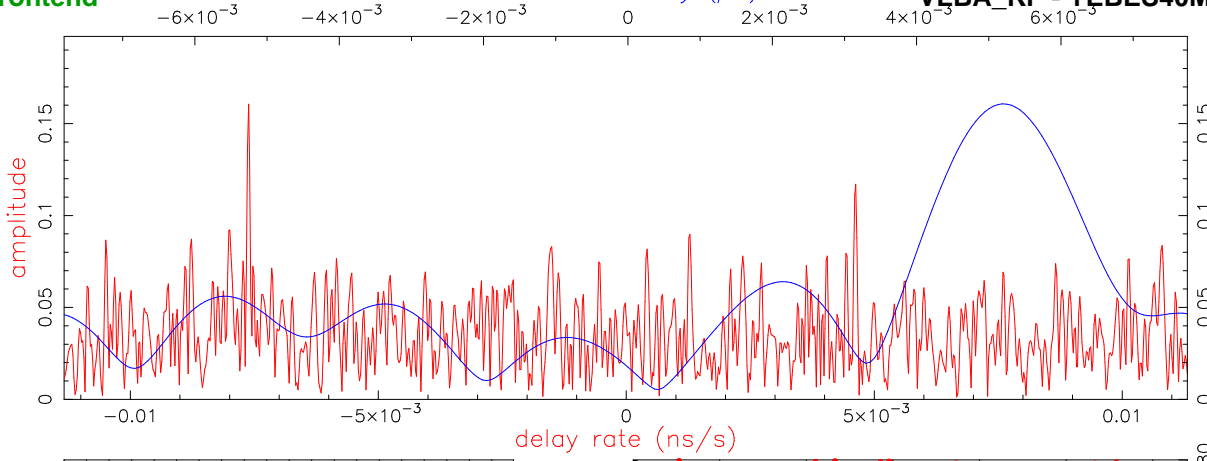
frontend

2013+370.127ARX, No0065, kY

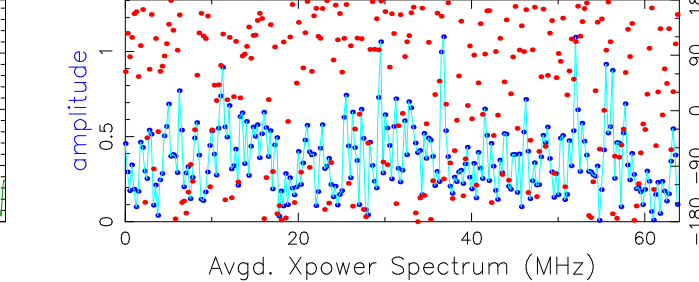
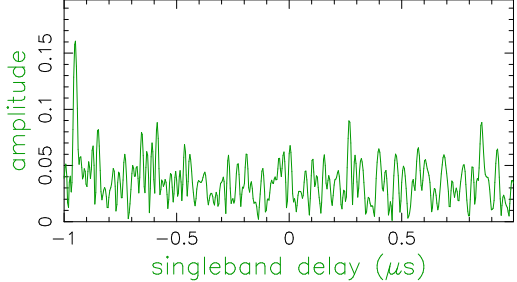
VLBA\_KP - YEBES40M, fgroup W, pol LR

multiband delay ( $\mu$ s)

Fringe quality 0

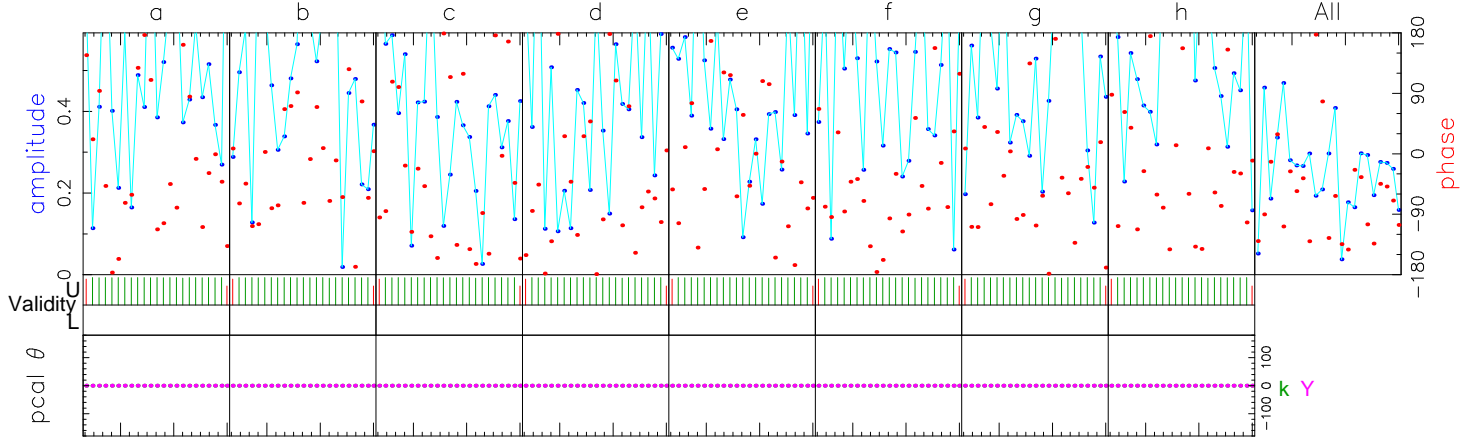


SNR 5.7  
 Int time 161.653  
 Amp 0.197  
 Phase -73.4  
 PFD 8.5e-01  
 Delays (us)  
 SBD -0.950750  
 MBD 0.005150  
 Fringe rate (Hz)  
 -0.657707  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131739  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-96.2	-27.6	-130.1	-98.2	-68.9	-65.0	-64.4	-72.8	Phase	-73.4
	0.1	0.3	0.2	0.2	0.2	0.3	0.3	0.3	Ampl.	0.2
	207.0	333.9	124.1	96.7	320.1	145.7	392.3	69.8	Sbd box	13.6
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
k:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

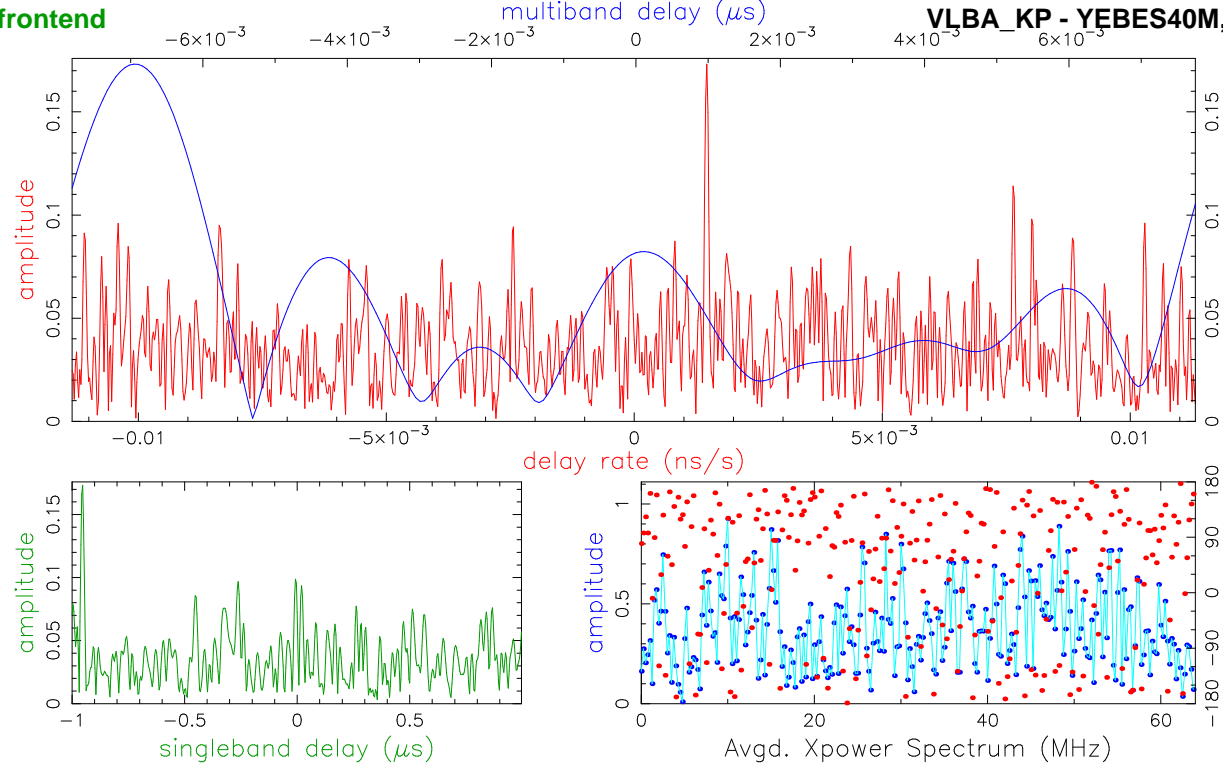
Group delay (usec)(sbd)	4.40188583092E+03	Apriori delay (usec)	4.40283380563E+03	Resid mbdelay (usec)	5.15029E-03	+/-	1.9E-04
Sband delay (usec)	4.40188305613E+03	Apriori clock (usec)	-1.0082699E+01	Resid sbdelay (usec)	-9.50750E-01	+/-	1.5E-03
Phase delay (usec)	4.40283380327E+03	Apriori clockrate (us/s)	-4.1457899E-07	Resid phdelay (usec)	-2.36599E-06	+/-	6.5E-07
Delay rate (us/s)	1.55643389262E+00	Apriori rate (us/s)	1.55644152794E+00	Resid rate (us/s)	-7.63532E-06	+/-	7.0E-09
Total phase (deg)		Apriori accel (us/s/s)	-3.16865212267E-05	Resid phase (deg)	-73.4	+/-	20.3

ph/seg (deg)	RMS 60.5	Theor. 48.6	Amplitude Search (1024X32)	0.197 +/- 0.035	0.160	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	86.3	84.8	Interp.	0.000	0.000E+00	0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008
ph/frq (deg)	33.2	28.7	Inc. seg. avg.	0.229	128	128	Sample rate (MSamp/s):	dr window (ns/s)	-0.011	0.011
amp/frq (%)	28.3	50.0	Inc. frq. avg.	0.194	2048	2048	Data rate (Mb/s):	ion window (TEC)	0.00	0.00

k: az 69.4 el 55.9 pa -86.3 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -11223.927 -2674.860 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/kY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/kY.W.218.127ARX

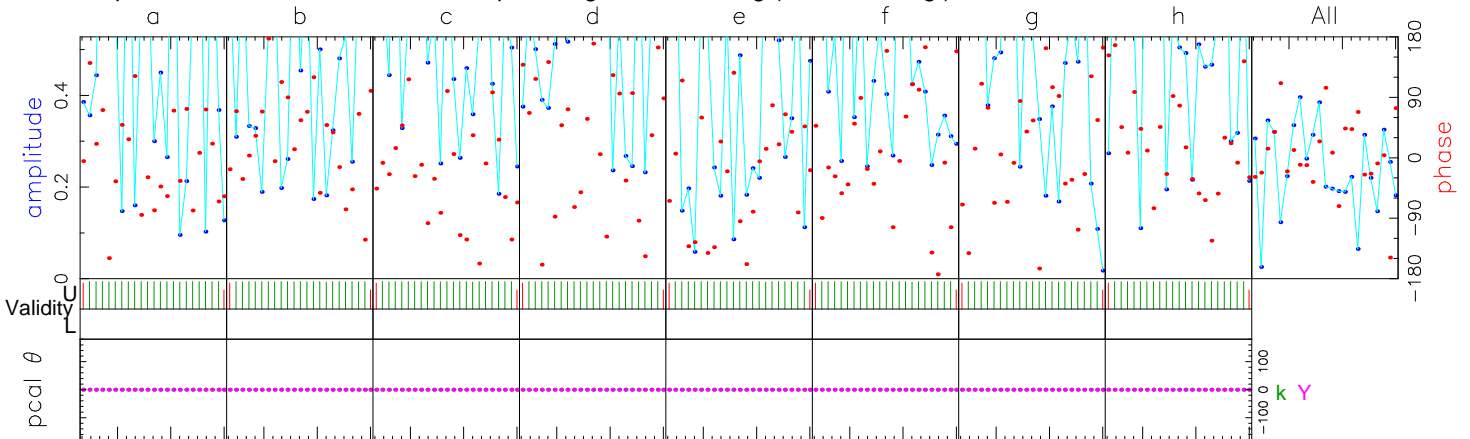
Mk4/DiFX fourfit 3.20 rev 0  
 frontend

2013+370.127ARX, No0065, kY  
 VLBA\_KP - YEBES40M, fgroup W, pol RL



Fringe quality 0  
 SNR 6.1  
 Int time 161.653  
 Amp 0.176  
 Phase 3.5  
 PFD 1.5e-01  
 Delays (us)  
 SBD -0.954314  
 MBD -0.006973  
 Fringe rate (Hz)  
 0.125834  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131742  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
k:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)		4.40187370809E+03			4.40283380563E+03				-6.97254E-03	+/- 1.8E-04
Sband delay (usec)		4.40187949113E+03			-1.0082699E+01				-9.54314E-01	+/- 1.4E-03
Phase delay (usec)		4.40283380574E+03			-4.1457899E-07				1.1464E-07	+/- 6.1E-07
Delay rate (us/s)		1.55644298874E+00			1.55644152794E+00				1.46080E-06	+/- 6.5E-09
Total phase (deg)			9.7		-3.16865212267E-05				3.5	+/- 18.9
ph/seg (deg)	RMS 55.2	Theor. 45.2	Amplitude 0.176 +/- 0.029	Search (1024X32) 0.168	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5			sb window (us)	-1.000 1.000
amp/seg (%)	66.6	78.9	Interp. 0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008 0.008		dr window (ns/s)	-0.011 0.011
ph/frq (deg)	36.8	26.7	Inc. seg. avg. 0.186	Sample rate(MISamp/s): 128	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00		
amp/frq (%)	32.6	46.6	Inc. frq. avg. 0.171	Data rate(Mb/s): 2048						

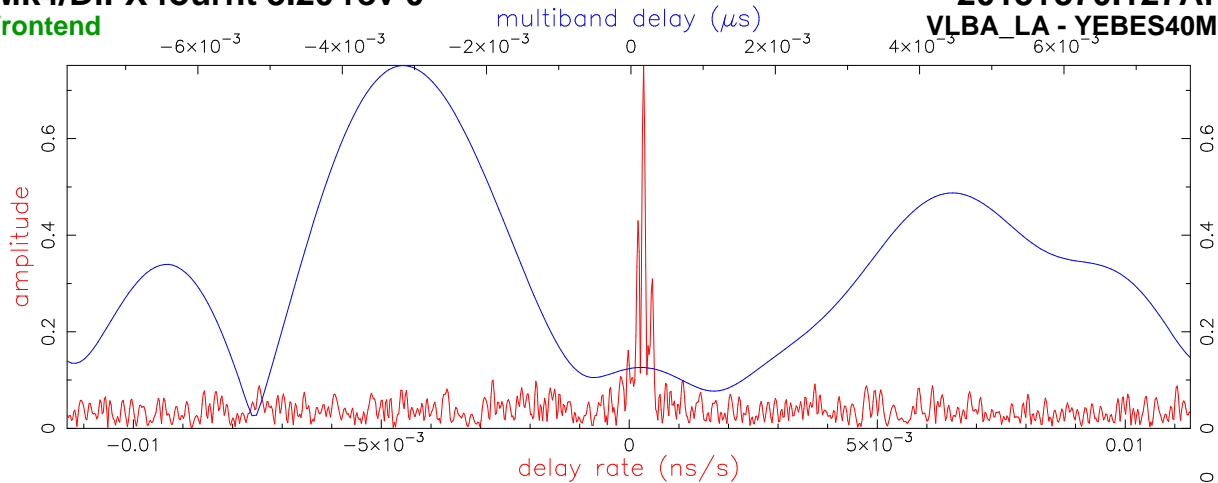
k: az 69.4 el 55.9 pa -86.3 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -11223.927 -2674.860 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/kY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/kY.W.236.127ARX

Mk4/DiFX fourfit 3.20 rev 0

frontend

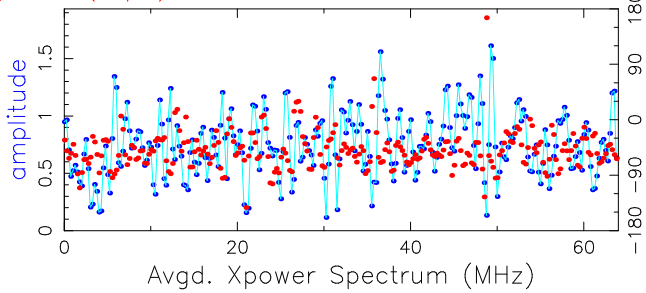
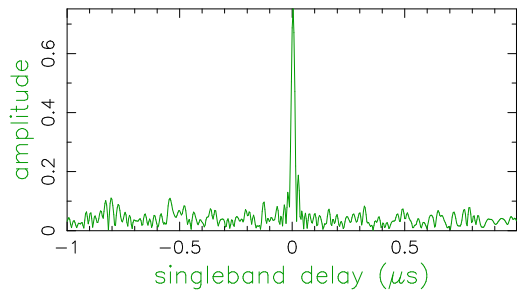
2013+370.127ARX, No0065, IY

VLBA\_LA - YEBES40M, fgroup W, pol LL



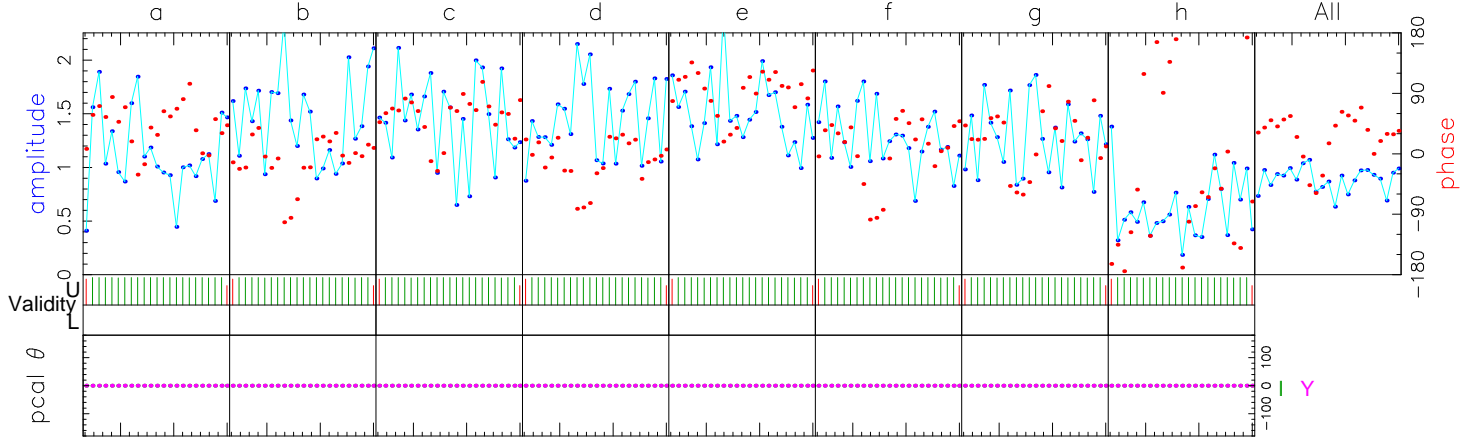
Fringe quality 6

SNR 26.2  
 Int time 162.012  
 Amp 0.752  
 Phase 27.7  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.003692  
 MBD -0.003164  
 Fringe rate (Hz)  
 0.025658  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131745  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
I	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
I:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
I:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
I	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
I	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	5.43658822061E+03	Apriori delay (usec)	5.43659138424E+03	Resid mbdelay (usec)	-3.16362E-03	+/-	4.1E-05
Sband delay (usec)	5.43659507624E+03	Apriori clock (usec)	-1.0451232E+01	Resid sbdelay (usec)	3.69200E-03	+/-	3.3E-04
Phase delay (usec)	5.43659138513E+03	Apriori clockrate (us/s)	-5.7147201E-07	Resid phdelay (usec)	8.94634E-07	+/-	1.4E-07
Delay rate (us/s)	1.45271294088E+00	Apriori rate (us/s)	1.45271264302E+00	Resid rate (us/s)	2.97861E-07	+/-	1.5E-09
Total phase (deg)		Apriori accel (us/s/s)	-3.34086267399E-05	Resid phase (deg)	27.7	+/-	4.4

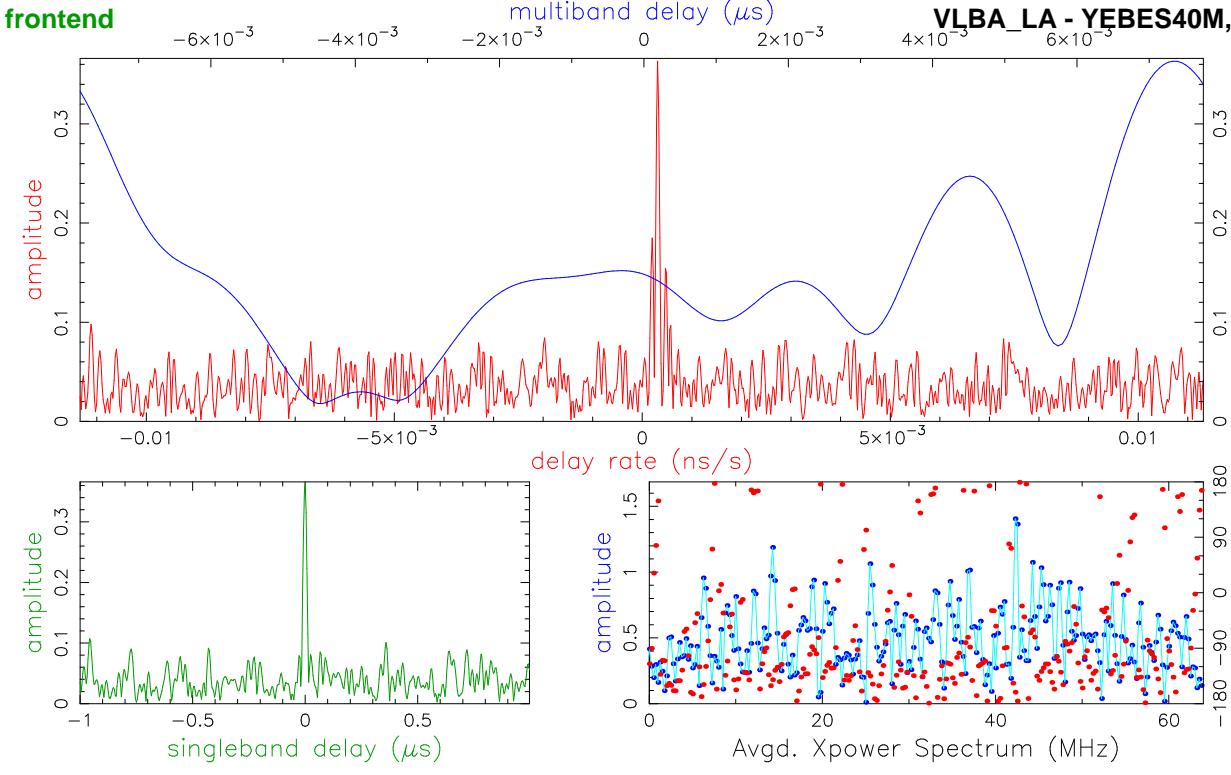
ph/seg (deg)	33.4	Theor.	10.5	Amplitude	0.752 +/- 0.029	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5			
amp/seg (%)	23.4		18.3	Search (1024X32)	0.710	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000			
ph/frq (deg)	75.3		6.2	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008		
amp/frq (%)	52.6		10.8	Inc. seg. avg.	0.874	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011			
				Inc. frq. avg.	0.994	Data rate (Mb/s):	2048	nlags:	256	t_cohere infinite	ion window (TEC)	0.00 0.00

I: az 76.3 el 61.3 pa -82.0 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10478.194 -2392.051 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/IY...127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/IY.W.244.127ARX

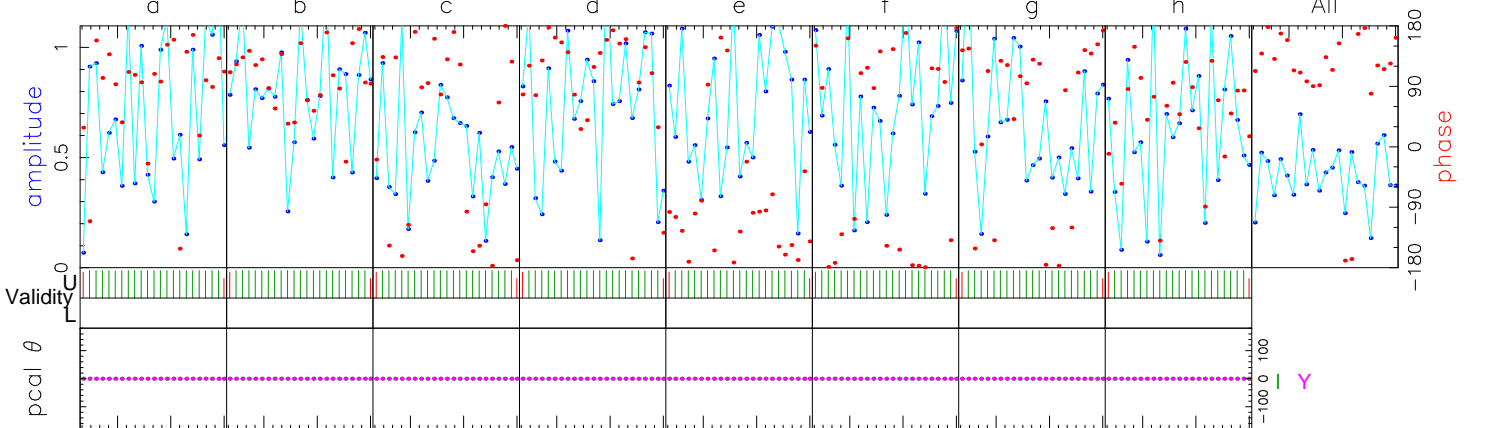
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.127ARX, No0065, IY  
VLBA\_LA - YEBES40M, fgroup W, pol RR



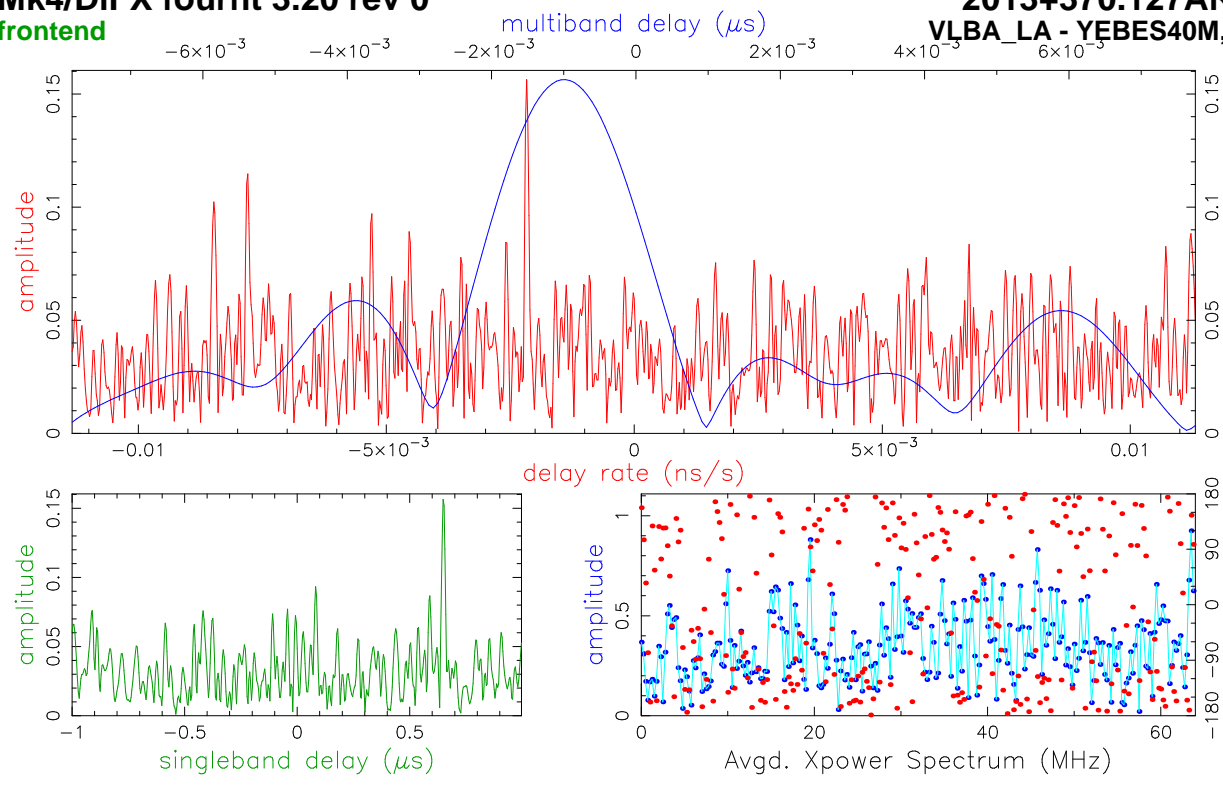
Fringe quality 9  
SNR 12.7  
Int time 162.012  
Amp 0.366  
Phase 136.1  
PFD 9.6e-29  
Delays (us)  
SBD -0.001157  
MBD 0.007323  
Fringe rate (Hz) 0.025817  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build 2020:070:073746  
2020:071:131747  
2019:280:115849  
RA & Dec (J2000) 20h15m28.729803s +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



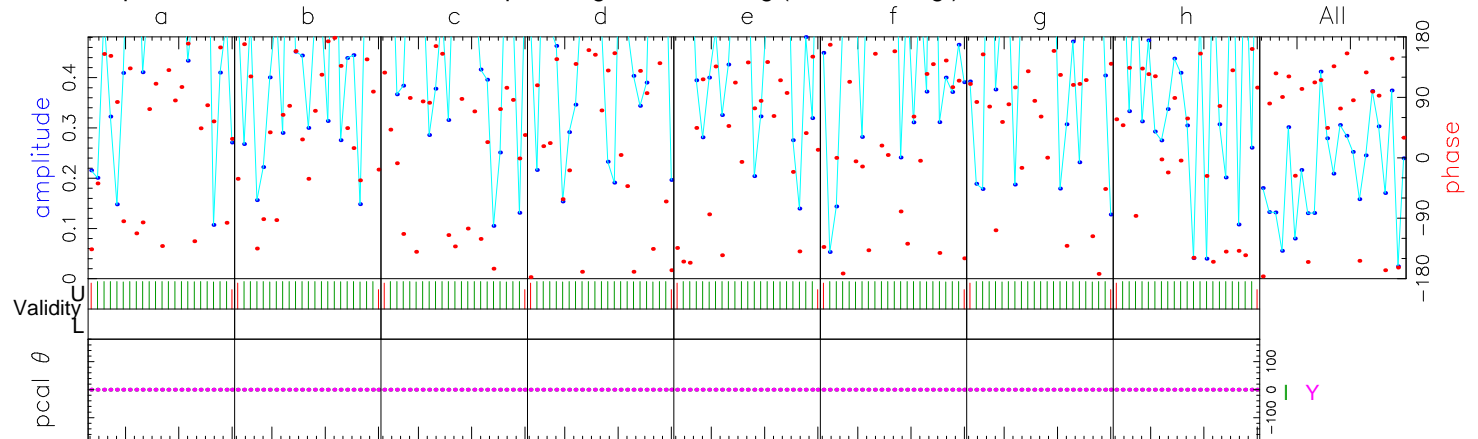
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	121.8	111.4	154.3	130.2	-125.4	155.4	144.3	72.0	Phase	136.1
	0.5	0.6	0.3	0.5	0.5	0.6	0.4	0.4	Ampl.	0.5
	256.3	256.8	256.4	256.2	255.5	256.4	255.6	255.1	Sbd box	256.7
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
I	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
I:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
I:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
I	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
I	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	5.43658308251E+03		Apriori delay (usec)		5.43659138424E+03		Resid mbdelay (usec)		7.32327E-03	+/- 8.5E-05
Sband delay (usec)	5.43659022724E+03		Apriori clock (usec)		-1.0451232E+01		Resid sbdelay (usec)		-1.15700E-03	+/- 6.8E-04
Phase delay (usec)	5.43659138863E+03		Apriori clockrate (us/s)		-5.7147201E-07		Resid phdelay (usec)		4.38924E-06	+/- 2.9E-07
Delay rate (us/s)	1.45271294273E+00		Apriori rate (us/s)		1.45271264302E+00		Resid rate (us/s)		2.99710E-07	+/- 3.1E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.34086267399E-05		Resid phase (deg)		136.1	+/- 9.0

ph/seg (deg) 33.1 21.6 Search (1024X32) 0.351 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 38.6 37.6 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 50.7 12.7 Inc. seg. avg. 0.397 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 37.1 22.2 Inc. frq. avg. 0.467 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
I: az 76.3 el 61.3 pa -82.0 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10478.194 -2392.051 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/IY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/IY.W.265.127ARX



Fringe quality 0  
 SNR 5.5  
 Int time 162.012  
 Amp 0.160  
 Phase 115.4  
 PFD 9.9e-01  
 Delays (us)  
 SBD 0.649780  
 MBD -0.000968  
 Fringe rate (Hz)  
 -0.186694  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Yr:day 16383  
 Start 2019:279  
 Stop 2020:071  
 FRT 2020:131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131749  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	132.0	91.0	102.3	145.6	117.6	136.3	92.2	121.4	Phase	115.4
I	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	Ampl.	0.1
Y	485.0	394.1	407.4	450.4	87.5	237.1	97.6	465.2	Sbd box	423.3
I	1000	1000	1000	1000	1000	1000	1000	1000	APs used	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
I:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
I:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
I	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
I	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	5.4372466632E+03		Apriori delay (usec)		5.43659138424E+03		Resid mbdelay (usec)		-9.67921E-04	+/- 2.0E-04
Sband delay (usec)	5.43724116449E+03		Apriori clock (usec)		-1.0451232E+01		Resid sbdelay (usec)		6.49780E-01	+/- 1.6E-03
Phase delay (usec)	5.43659138796E+03		Apriori clockrate (us/s)		-5.7147201E-07		Resid phdelay (usec)		3.72179E-06	+/- 6.7E-07
Delay rate (us/s)	1.45271047569E+00		Apriori rate (us/s)		1.45271264302E+00		Resid rate (us/s)		-2.16734E-06	+/- 7.1E-09
Total phase (deg)	57.2		Apriori accel (us/s/s)		-3.34086267399E-05		Resid phase (deg)		115.4	+/- 20.8
RMS	56.5	50.0	Search (1024X32)	0.154	Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5		sb window (us)	-1.000 1.000
amp/seg (%)	74.9	87.2	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		SampCntNorm: enabled		mb window (us)	-0.008 0.008
ph/frq (deg)	22.2	29.5	Inc. seg. avg.	0.160	Bits/sample: 2x2		Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011 0.011
amp/frq (%)	18.4	51.4	Inc. frq. avg.	0.148	Data rate(Mb/s): 2048		nlags: 256 t_cohere infinite		ion window (TEC)	0.00 0.00
I: az 76.3 el 61.3 pa -82.0	Y: az 289.5 el 38.9 pa 64.1		u, v (fr/asec) -10478.194 -2392.051						simultaneous interpolator	
Control file: cf_1234_gmva	Input file: /Exps/c192c/v1_CygA2/1234/No0065/IY..127ARX		Output file: /Exps/c192c/v1_CygA2/1234/No0065/IY.W.282.127ARX							

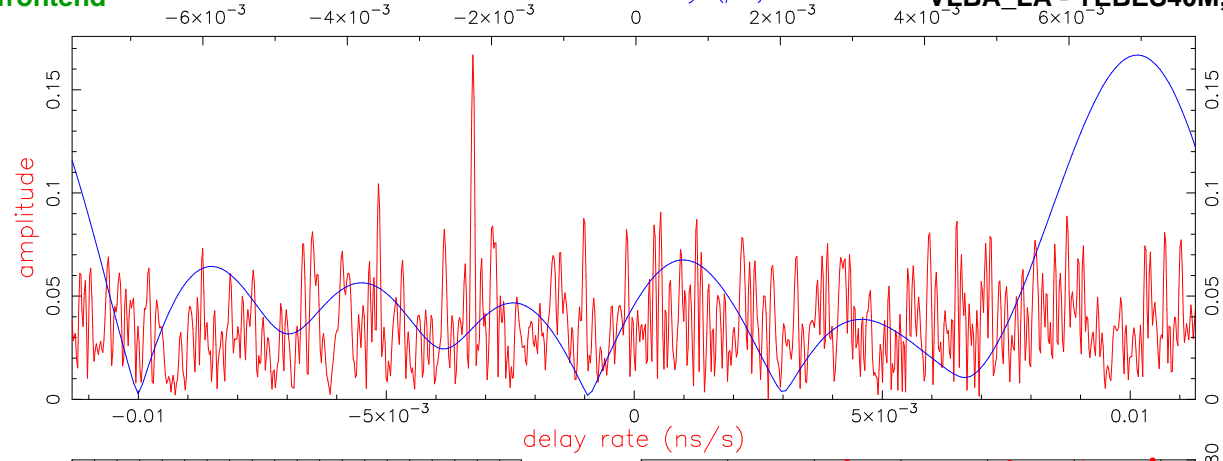
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, IY

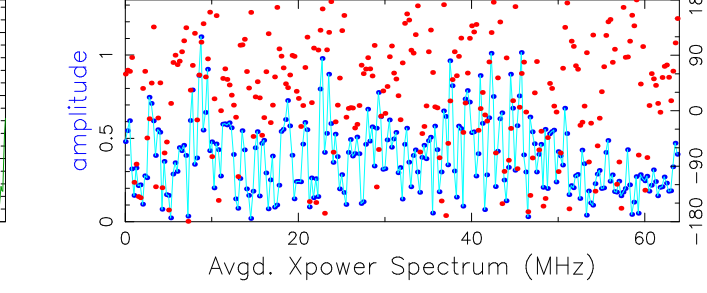
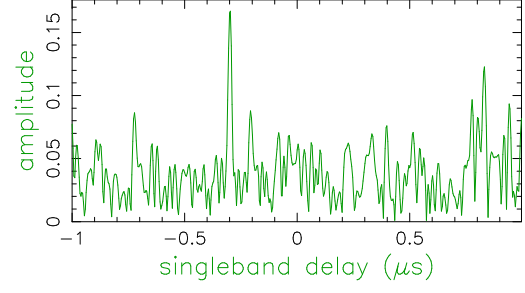
VLBA\_LA - YEBES40M, fgroup W, pol RL

multiband delay ( $\mu$ s)



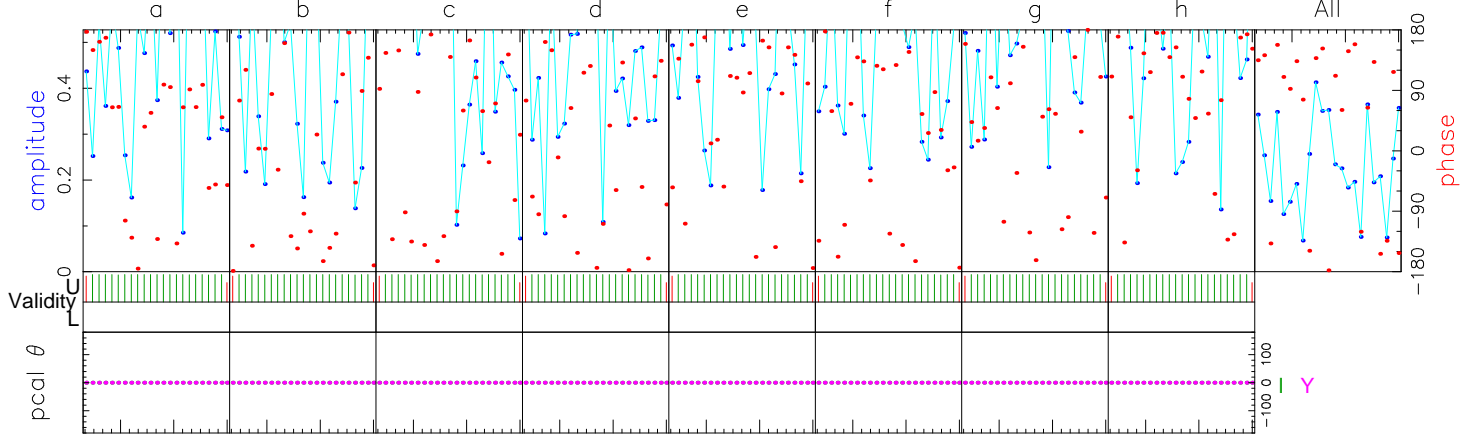
Fringe quality 0

SNR 5.9  
Int time 162.012  
Amp 0.176  
Phase 145.6  
PFD 3.5e-01  
Delays (us)  
SBD -0.298650  
MBD 0.006921  
Fringe rate (Hz)  
-0.281065  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131751  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



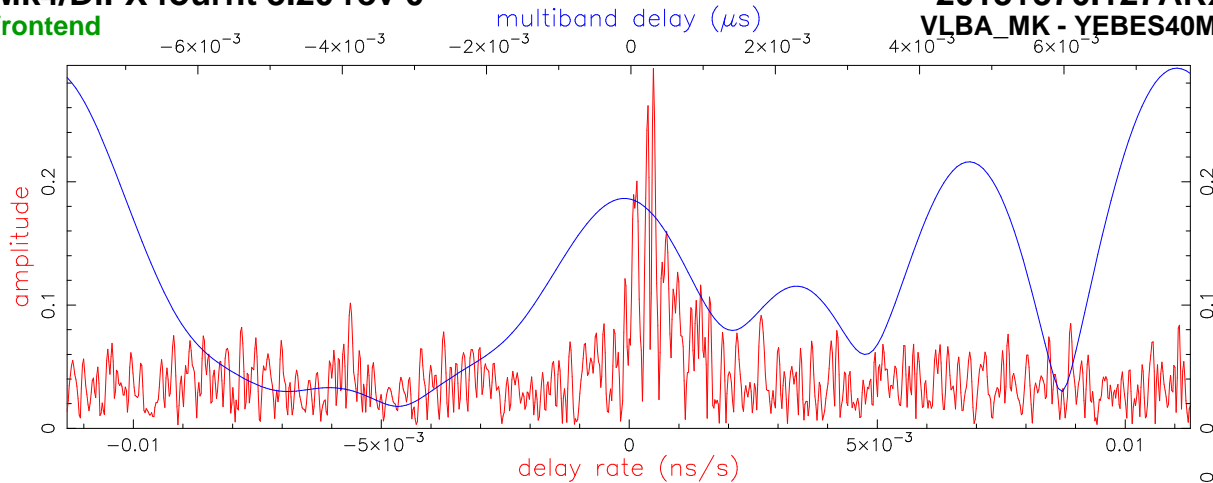
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	104.7	179.5	172.4	133.9	133.1	137.0	141.5	152.8	Phase	145.6
	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.3	Ampl.	0.2
	306.0	204.8	272.7	358.4	179.5	235.7	129.9	498.6	Sbd box	180.5
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
I	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
I:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
I:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
I	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
I	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	5.43628580515E+03	Apriori delay (usec)	5.43659138424E+03	Resid mbdelay (usec)	6.92092E-03	+/-	1.8E-04
Sband delay (usec)	5.43629273399E+03	Apriori clock (usec)	-1.0451232E+01	Resid sbdelay (usec)	-2.98650E-01	+/-	1.5E-03
Phase delay (usec)	5.43659138893E+03	Apriori clockrate (us/s)	-5.7147201E-07	Resid phdelay (usec)	4.69560E-06	+/-	6.2E-07
Delay rate (us/s)	1.45270938014E+00	Apriori rate (us/s)	1.45271264302E+00	Resid rate (us/s)	-3.26288E-06	+/-	6.6E-09
Total phase (deg)	87.4	Apriori accel (us/s/s)	-3.34086267399E-05	Resid phase (deg)	145.6	+/-	19.4

ph/seg (deg)	51.0	Theor.	46.5	Amplitude	0.176 +/- 0.030	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	68.9		81.1	Search (1024X32)	0.163	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
ph/frq (deg)	25.8		27.4	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
amp/frq (%)	34.3		47.8	Inc. seg. avg.	0.181	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
				Inc. frq. avg.	0.167	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite		

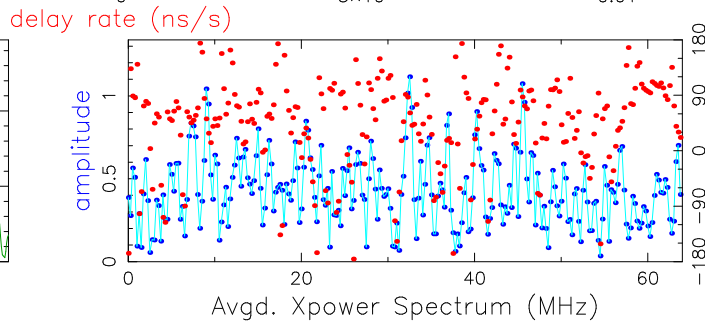
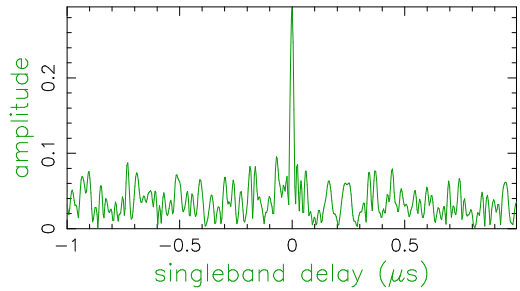
I: az 76.3 el 61.3 pa -82.0 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10478.194 -2392.051 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/IY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/IY.W.299.127ARX





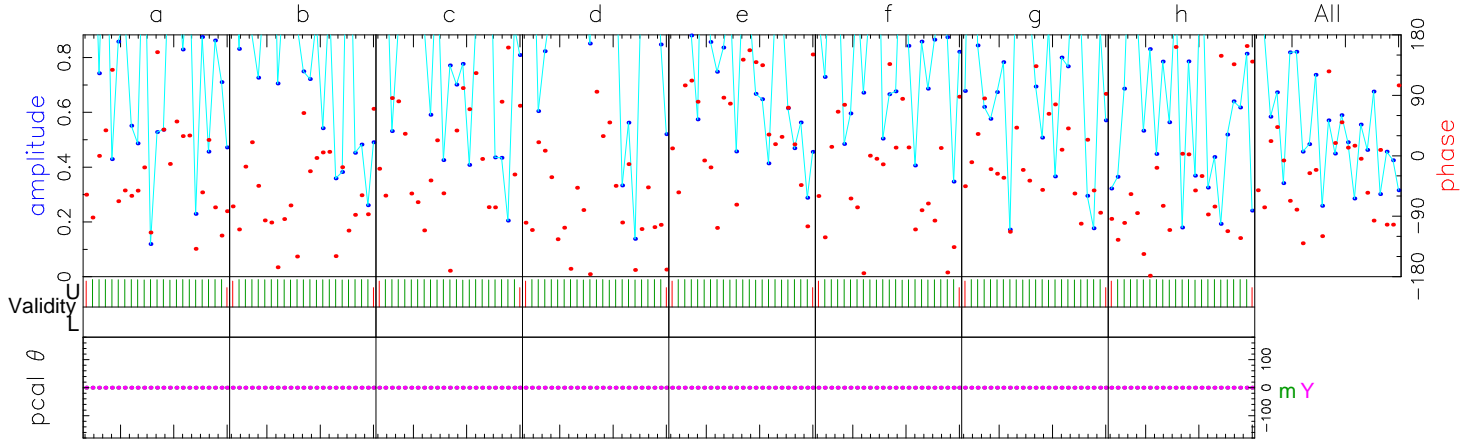
Fringe quality 9

SNR 10.2  
 Int time 161.575  
 Amp 0.294  
 Phase -36.9  
 PFD 3.4e-16  
 Delays (us)  
 SBD -0.001081  
 MBD 0.007514  
 Fringe rate (Hz)  
 0.041459  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131746  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec

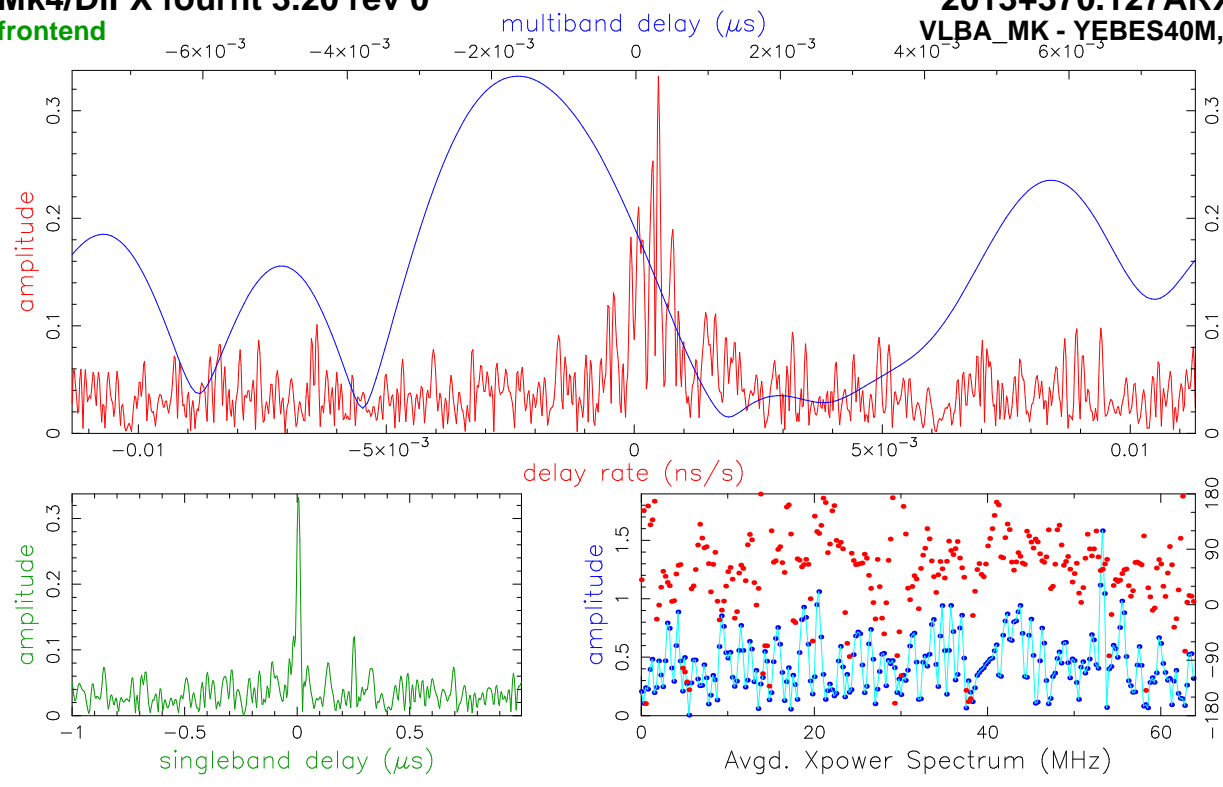


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-25.8	-66.7	-16.6	-82.9	49.6	-14.9	-8.7	-99.0	Phase	-36.9
	0.5	0.5	0.3	0.4	0.3	0.3	0.4	0.3	Ampl.	0.4
	255.7	256.4	256.5	255.5	256.0	255.3	256.2	254.2	Sbd box	256.7
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
m	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-7.45026478632E+03		Apriori delay (usec)		-7.45025667503E+03		Resid mbdelay (usec)		7.51371E-03	+/- 1.1E-04
Sband delay (usec)	-7.45025775628E+03		Apriori clock (usec)		-7.0849600E+00		Resid sbdelay (usec)		-1.08125E-03	+/- 8.4E-04
Phase delay (usec)	-7.45025667622E+03		Apriori clockrate (us/s)		-2.2869228E-07		Resid phdelay (usec)		-1.18942E-06	+/- 3.6E-07
Delay rate (us/s)	2.02749574486E+00		Apriori rate (us/s)		2.02749526356E+00		Resid rate (us/s)		4.81302E-07	+/- 3.8E-09
Total phase (deg)			Apriori accel (us/s/s)		1.83766276431E-05		Resid phase (deg)		-36.9	+/- 11.2

	RMS	Theor.	Amplitude	0.294 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	67.4	26.9	Search (1024X32)	0.282	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	107.2	46.9	Interp.	0.000	SampCntNorm: enabled	mb window (us) -0.008 0.008
ph/frq (deg)	51.9	15.9	Inc. seg. avg.	0.493	Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	42.7	27.7	Inc. frq. avg.	0.373	Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00

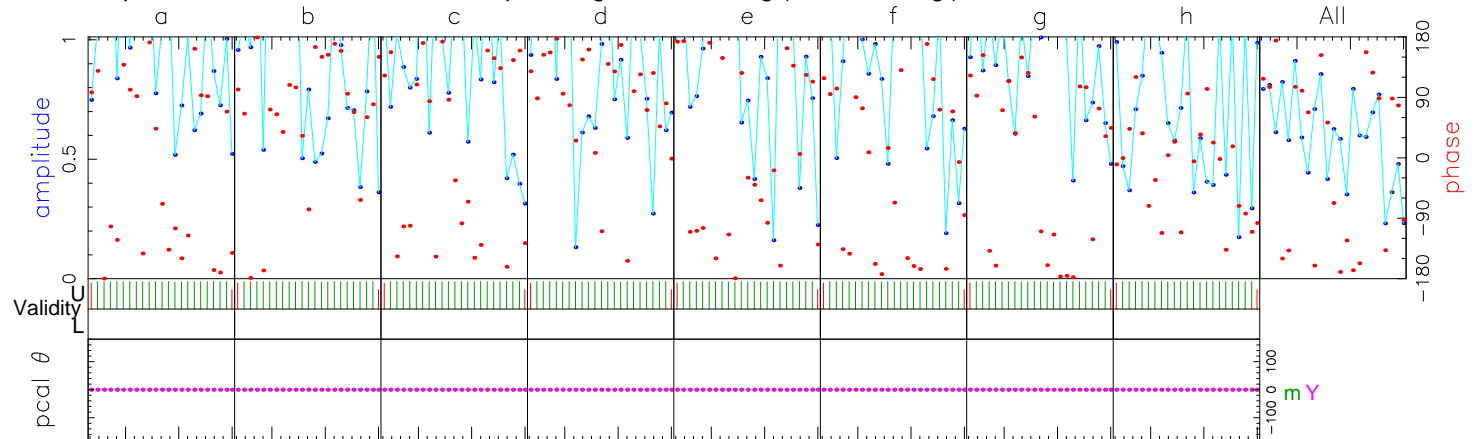
Mk4/DiFX fourfit 3.20 rev 0  
 frontend

2013+370.127ARX, No0065, mY  
 VLBA\_MK - YEBES40M, fgroup W, pol RR



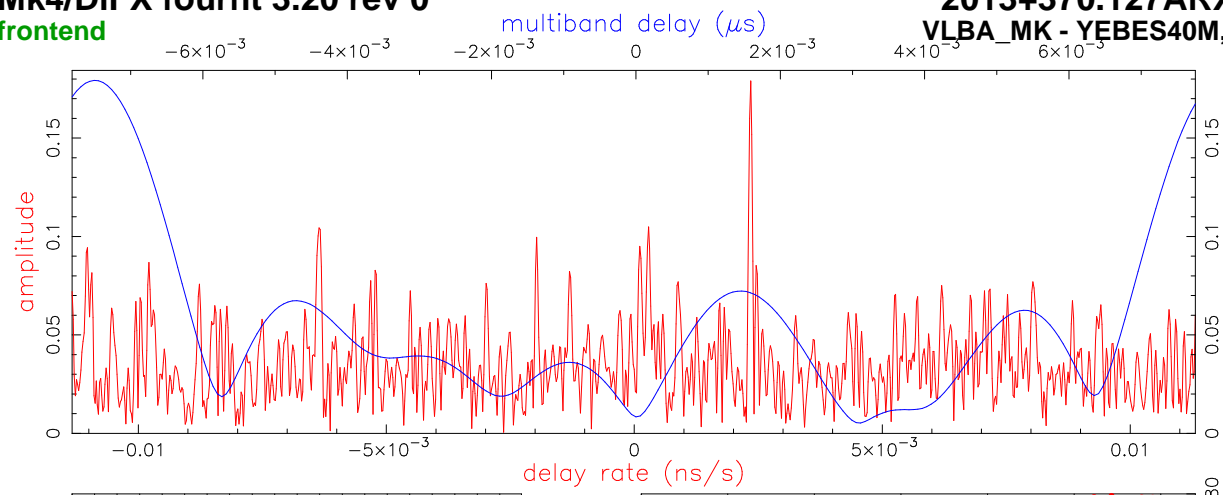
Fringe quality 9  
 SNR 11.7  
 Int time 161.575  
 Amp 0.338  
 Phase 150.1  
 PFD 2.4e-23  
 Delays (us)  
 SBD 0.005524  
 MBD -0.001621  
 Fringe rate (Hz) 0.041803  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131749  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec

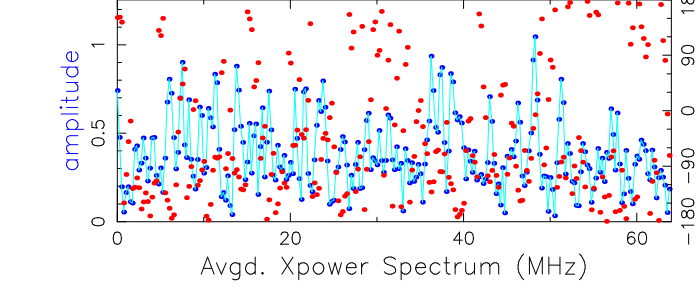
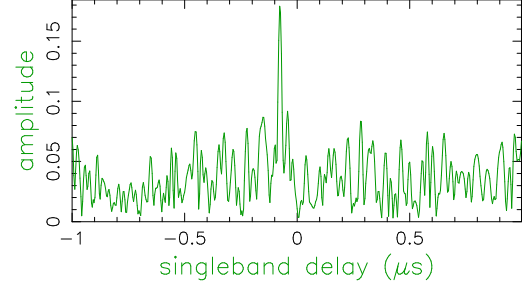


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	173.5	105.6	-174.9	119.9	-164.1	146.9	146.2	-16.7	Phase	150.1
m	0.5	0.6	0.5	0.6	0.5	0.4	0.5	0.3	Ampl.	0.5
Y	258.4	258.6	257.6	257.8	257.6	258.3	256.8	255.6	Sbd box	258.4
m	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	ManI PC	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
m	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	-7.45025829638E+03		Apriori delay (usec)		-7.45025667503E+03		Resid mbdelay (usec)		-1.62136E-03	+/- 9.3E-05
Sband delay (usec)	-7.45025115103E+03		Apriori clock (usec)		-7.0849600E+00		Resid sbdelay (usec)		5.52400E-03	+/- 7.3E-04
Phase delay (usec)	-7.45025667019E+03		Apriori clockrate (us/s)		-2.2869228E-07		Resid phdelay (usec)		4.84059E-06	+/- 3.2E-07
Delay rate (us/s)	2.02749574885E+00		Apriori rate (us/s)		2.02749526356E+00		Resid rate (us/s)		4.85290E-07	+/- 3.4E-09
Total phase (deg)			Apriori accel (us/s/s)		1.83766276431E-05		Resid phase (deg)		150.1	+/- 9.8

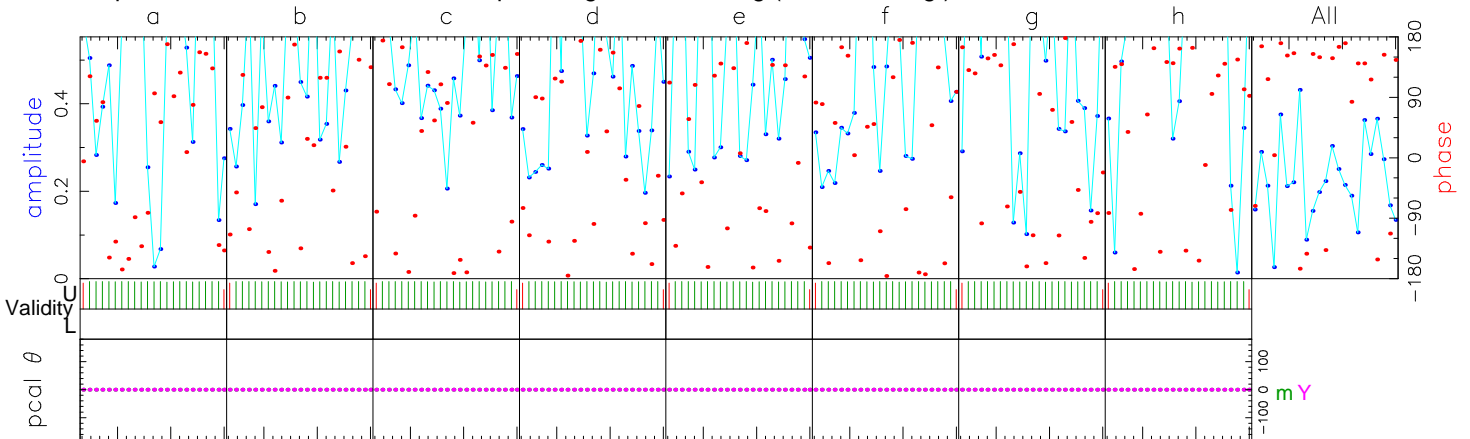
ph/seg (deg) 65.8 23.4 Search (1024X32) 0.328 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 97.7 40.9 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 75.9 13.8 Inc. seg. avg. 0.561 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 49.9 24.1 Inc. frq. avg. 0.462 Sample rate (MSamp/s): 128 Data rate (Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 m: az 55.4 el 15.6 pa -76.7 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -14577.314 -1005.419 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/mY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/mY.W.277.127ARX



Fringe quality 0  
 SNR 6.3  
 Int time 161.575  
 Amp 0.184  
 Phase 164.7  
 PFD 4.0e-02  
 Delays (us)  
 SBD -0.076752  
 MBD -0.007440  
 Fringe rate (Hz) 0.201874  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131751  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



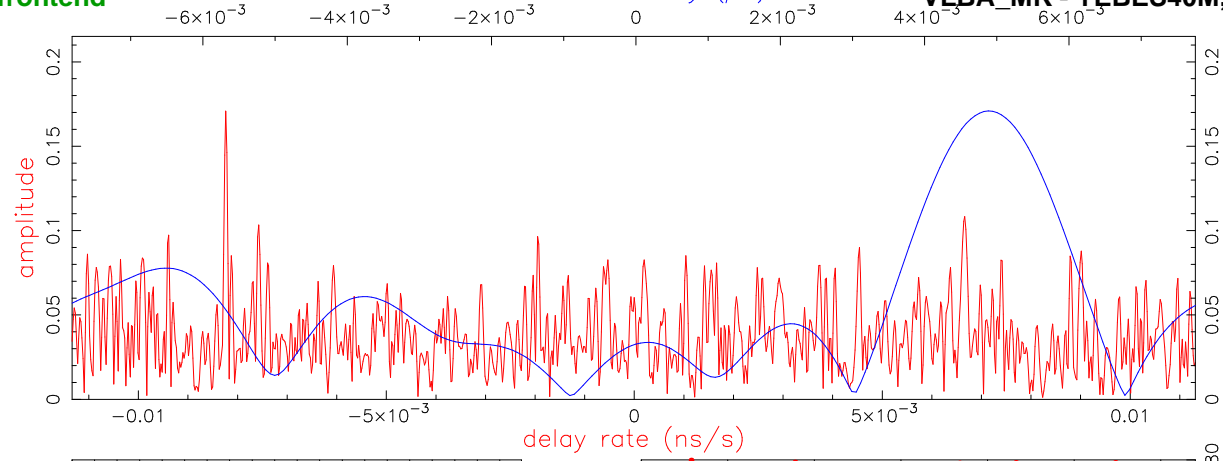
Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



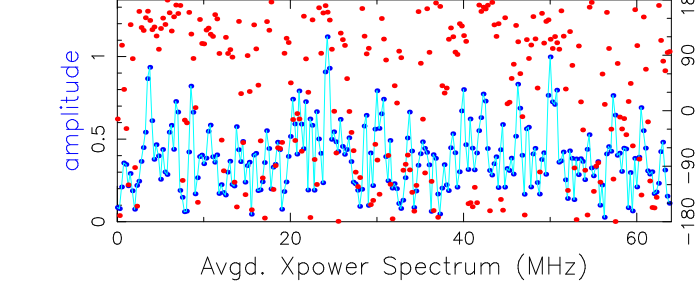
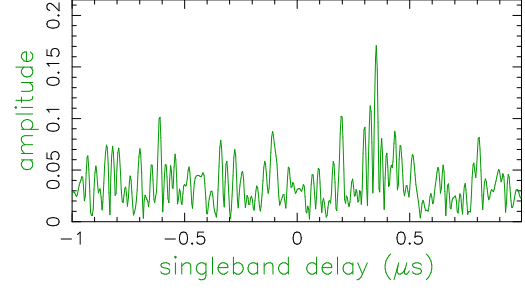
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
m	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
m:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
m:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
m	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
m	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-7.45032661533E+03				-7.45025667503E+03					
Sband delay (usec)	-7.45033342703E+03				-7.0849600E+07					
Phase delay (usec)	-7.45025666972E+03				-2.2869228E-07					
Delay rate (us/s)	2.02749760711E+00				2.02749526356E+00					
Total phase (deg)			-190.6		1.83766276431E-05					
Apriori delay (usec)										
Apriori clock (usec)										
Apriori clockrate (us/s)										
Apriori rate (us/s)										
Apriori accel (us/s/s)										
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
Bits/sample: 2x2										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal mode: MANUAL, MANUAL										
PC period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal mode: MANUAL, MANUAL										
PC period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal mode: MANUAL, MANUAL										
PC period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal mode: MANUAL, MANUAL										
PC period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										

m: az 55.4 el 15.6 pa -76.7 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -14577.314 -1005.419 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/mY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/mY.W.295.127ARX

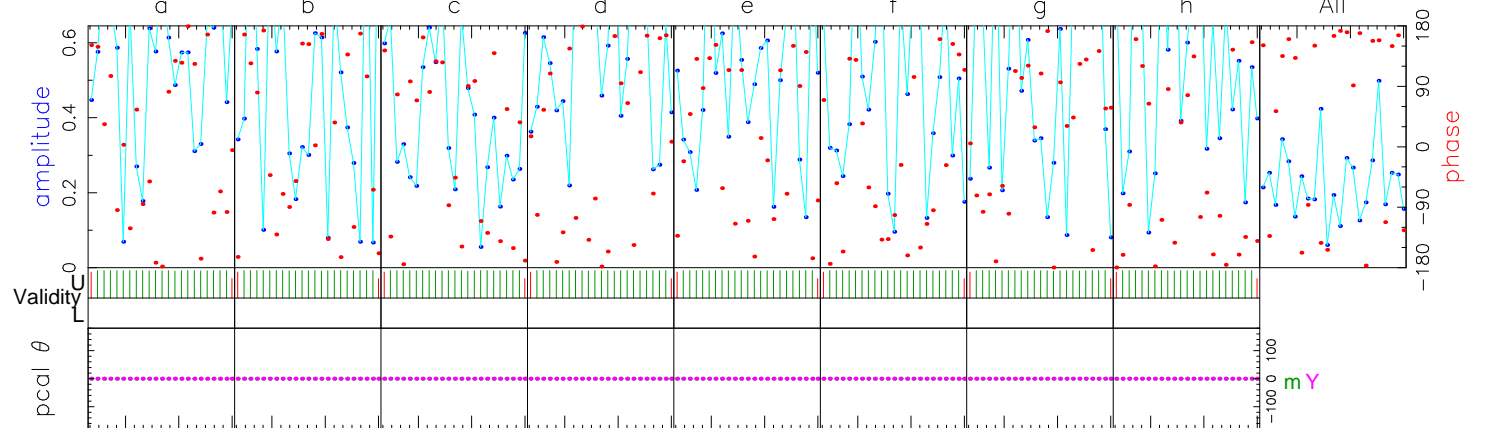
multiband delay ( $\mu$ s)



Fringe quality 0  
 SNR 6.0  
 Int time 161.575  
 Amp 0.215  
 Phase 170.5  
 PFD 2.9e-01  
 Delays (us)  
 SBD 0.350953  
 MBD 0.004851  
 Fringe rate (Hz) -0.710591  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131753  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-177.0	164.0	145.4	-179.3	173.6	-171.4	138.1	-174.1	Phase	170.5
	0.2	0.1	0.2	0.3	0.2	0.1	0.2	0.4	Ampl.	0.2
	248.9	164.1	53.1	388.2	34.1	117.1	377.9	349.3	Sbd box	346.8
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
m	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-7.44990807431E+03		Apriori delay (usec)		-7.45025667503E+03		Resid mbdelay (usec)		4.85071E-03	+/- 1.8E-04
Sband delay (usec)	-7.44990572178E+03		Apriori clock (usec)		-7.0849600E+00		Resid sbdelay (usec)		3.50953E-01	+/- 1.4E-03
Phase delay (usec)	-7.45025666953E+03		Apriori clockrate (us/s)		-2.2869228E-07		Resid phdelay (usec)		5.49667E-06	+/- 6.2E-07
Delay rate (us/s)	2.02748701430E+00		Apriori rate (us/s)		2.02749526356E+00		Resid rate (us/s)		-8.24926E-06	+/- 6.6E-09
Total phase (deg)			Apriori accel (us/s/s)		1.83766276431E-05		Resid phase (deg)		170.5	+/- 19.3

ph/seg (deg) 47.9 46.2 Amplitude 0.215 +/- 0.036 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 66.8 80.6 Search (1024X32) 0.163 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 20.6 27.2 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 41.4 47.5 Inc. seg. avg. 0.218 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 m: az 55.4 el 15.6 pa -76.7 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -14577.314 -1005.419 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/mY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/mY.W.311.127ARX simultaneous interpolator

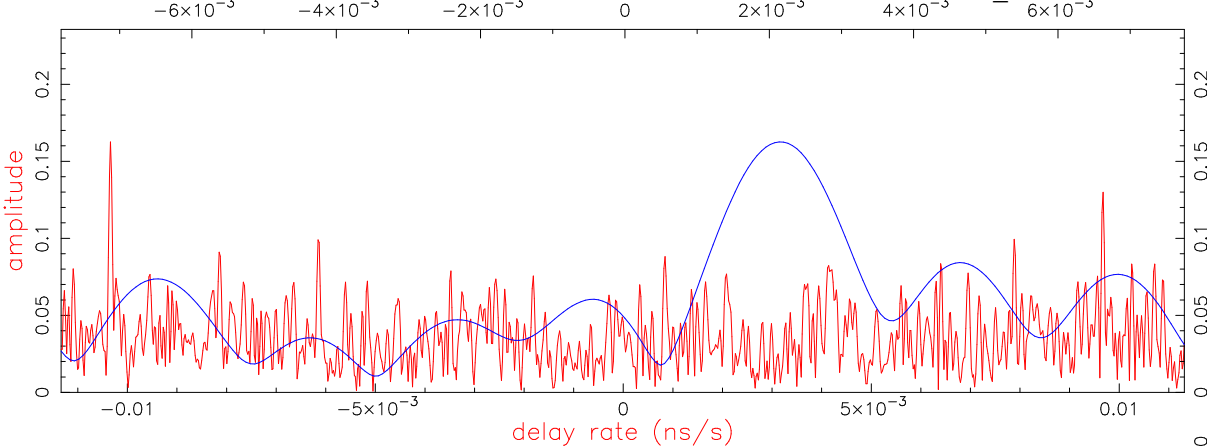
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, nY

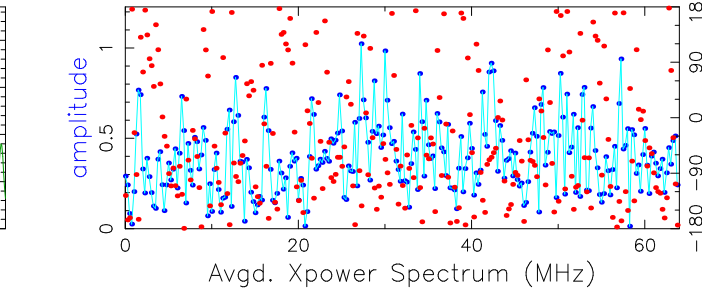
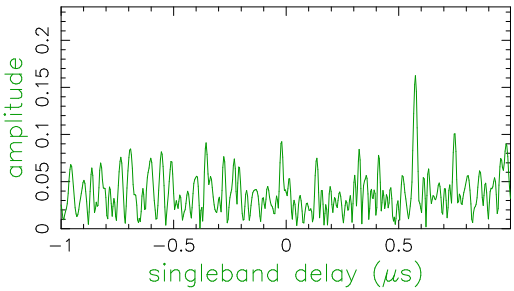
VLBA\_NL - YEBES40M, fgroup W, pol LL

multiband delay ( $\mu$ s)



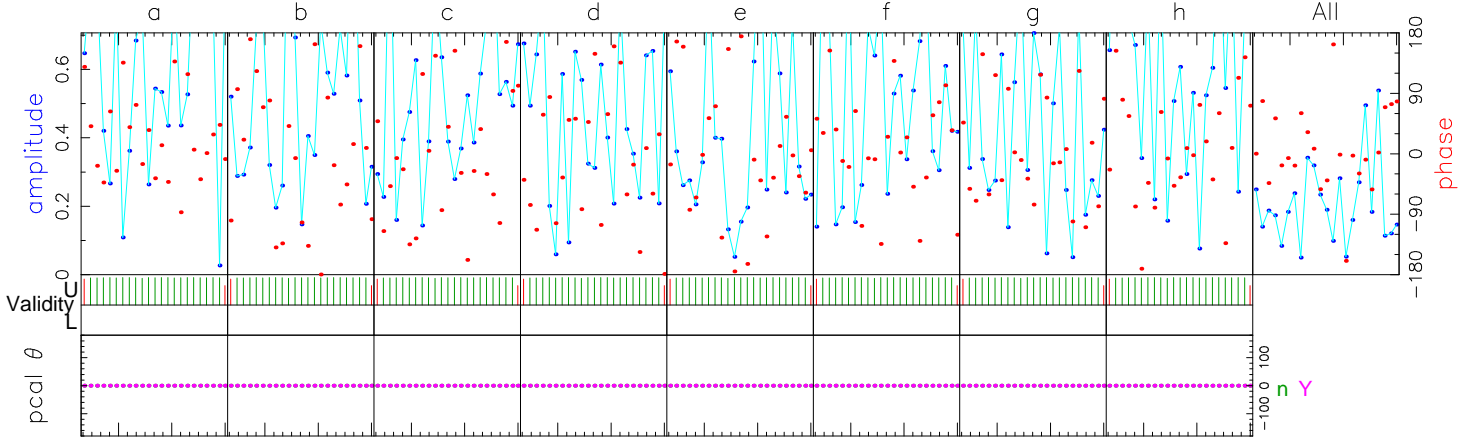
Fringe quality 0

SNR 5.7  
 Int time 161.269  
 Amp 0.236  
 Phase -0.4  
 PFD 8.5e-01  
 Delays (us)  
 SBD 0.573707  
 MBD 0.002130  
 Fringe rate (Hz)  
 -0.891158  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Yr:day 16383  
 Start 2020:070:073746  
 Stop 2020:071:131756  
 FRT 2019:280:115849  
 Corr/FF/build  
 2020:071:131756  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

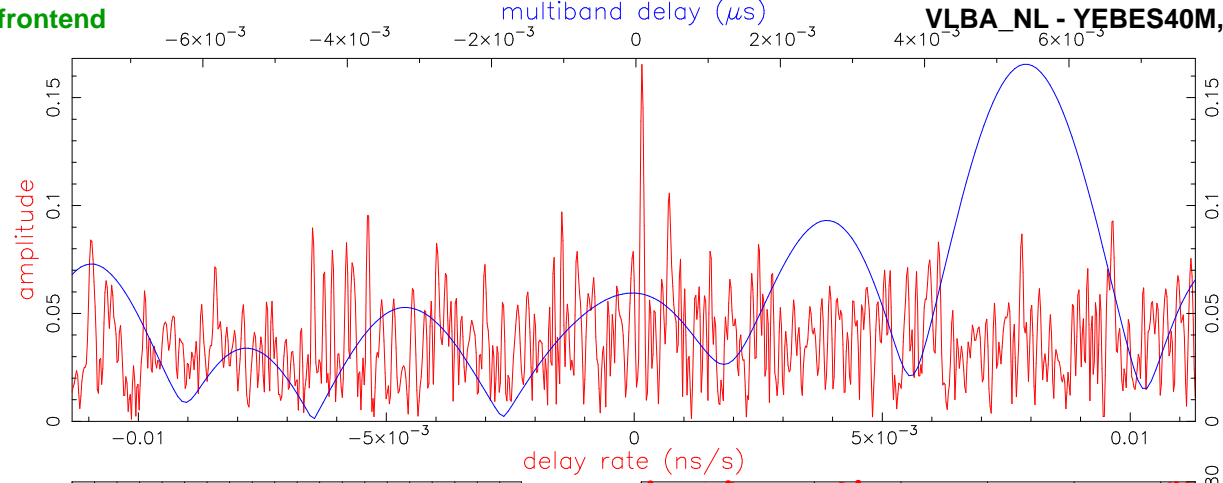
Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



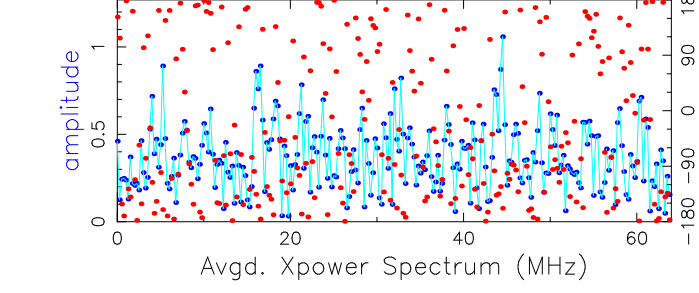
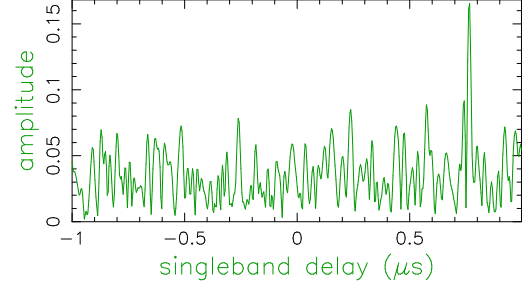
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
n	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
n:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
n:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
n	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd) 7.13390008746E+03 Apriori delay (usec) 7.13331983246E+03 Resid mbdelay (usec) 2.13000E-03 +/- 1.9E-04  
 Sband delay (usec) 7.13389353971E+03 Apriori clock (usec) 0.160 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 Phase delay (usec) 7.13331983245E+03 Apriori clockrate (us/s) -8.5776492E-08 Resid sbdelay (usec) 5.73707E-01 +/- 1.5E-03  
 Delay rate (us/s) 1.19806606020E+00 Apriori rate (us/s) 1.19807640566E+00 Resid phdelay (usec) -1.35354E-08 +/- 6.5E-07  
 Total phase (deg) 132.1 Apriori accel (us/s/s) -3.67275129053E-05 Resid rate (us/s) -1.03455E-05 +/- 7.0E-09  
 Resid phase (deg) -0.4 +/- 20.3

ph/seg (deg) 63.3 48.6 Search (1024X32) 0.160 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 81.0 84.8 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 33.9 28.7 Inc. seg. avg. 0.226 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 48.5 50.0 Inc. frq. avg. 0.230 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 n: az 98.4 el 73.0 pa -67.6 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -8647.594 -2027.069 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/nY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/nY.W.319.127ARX

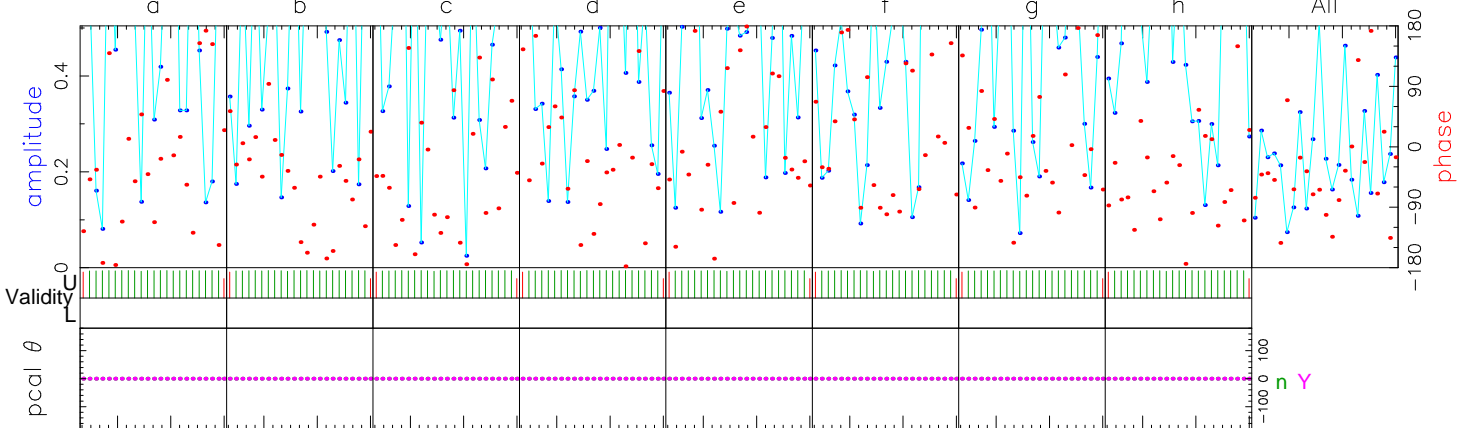


Fringe quality 0  
 SNR 5.8  
 Int time 161.269  
 Amp 0.168  
 Phase -54.7  
 PFD 4.8e-01  
 Delays (us)  
 SBD 0.764062  
 MBD 0.005358  
 Fringe rate (Hz) 0.013075  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131758  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-77.3	-49.5	-81.5	-26.3	-48.6	-31.3	-36.8	-68.3	Phase	-54.7
	0.1	0.3	0.2	0.1	0.1	0.2	0.1	0.3	Ampl.	0.2
	330.1	452.8	41.6	208.5	71.3	491.2	317.6	452.9	Sbd box	452.6
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	7.13409081500E+03		Apriori delay (usec)		7.13331983246E+03		Resid mbdelay (usec)		5.35754E-03	+/- 1.9E-04
Sband delay (usec)	7.13408389471E+03		Apriori clock (usec)		1.6855846E+01		Resid sbdelay (usec)		7.64062E-01	+/- 1.5E-03
Phase delay (usec)	7.13331983070E+03		Apriori clockrate (us/s)		-8.5776492E-08		Resid phdelay (usec)		-1.76413E-06	+/- 6.3E-07
Delay rate (us/s)	1.19807655745E+00		Apriori rate (us/s)		1.19807640566E+00		Resid rate (us/s)		1.51793E-07	+/- 6.7E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.67275129053E-05		Resid phase (deg)		-54.7	+/- 19.6

ph/seg (deg) 67.2 47.0 Search (1024X32) 0.165 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 81.8 82.1 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 22.9 27.7 Inc. seg. avg. 0.180 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 47.5 48.4 Inc. frq. avg. 0.156 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 n: az 98.4 el 73.0 pa -67.6 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -8647.594 -2027.069 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/nY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/nY.W.335.127ARX

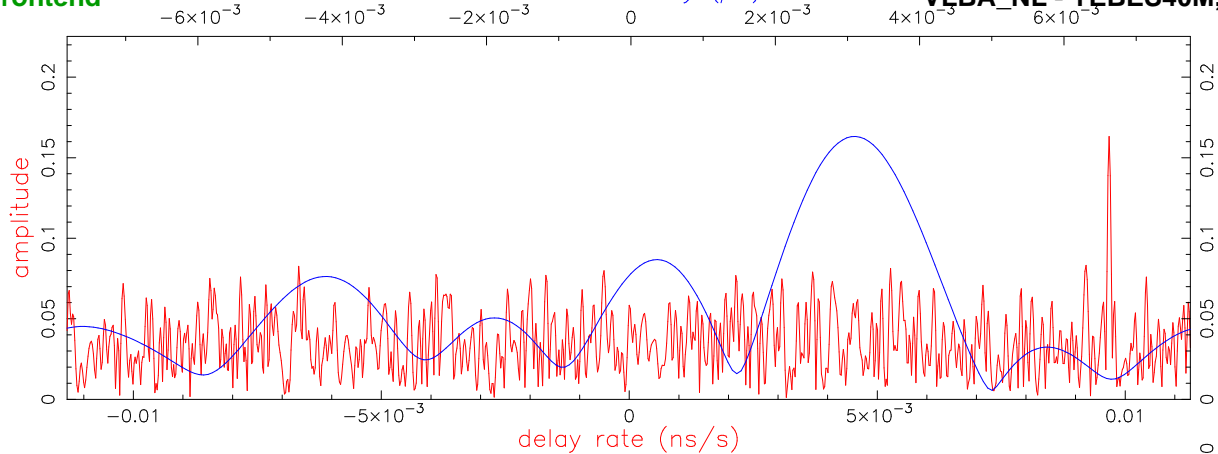
# Mk4/DiFX fourfit 3.20 rev 0

frontend

# 2013+370.127ARX, No0065, nY

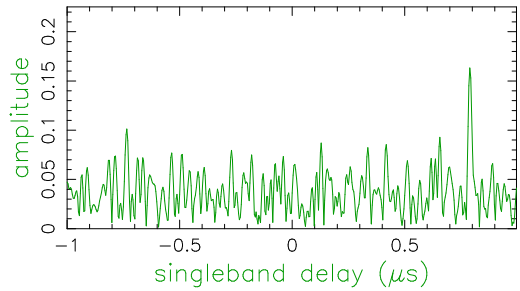
VLBA\_NL - YEBES40M, fgroup W, pol LR

multiband delay ( $\mu$ s)

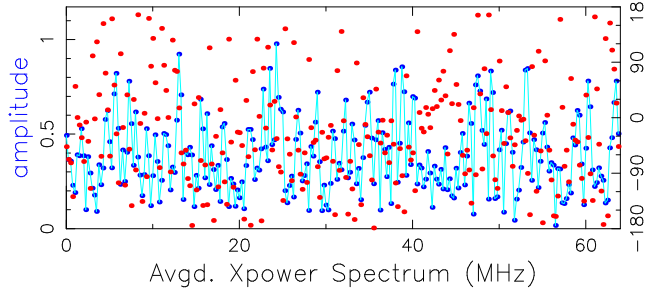


Fringe quality 0

SNR 5.7  
Int time 161.269  
Amp 0.225  
Phase 14.7  
PFD 8.1e-01  
Delays (us)  
SBD 0.789605  
MBD 0.003103  
Fringe rate (Hz) 0.834470  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

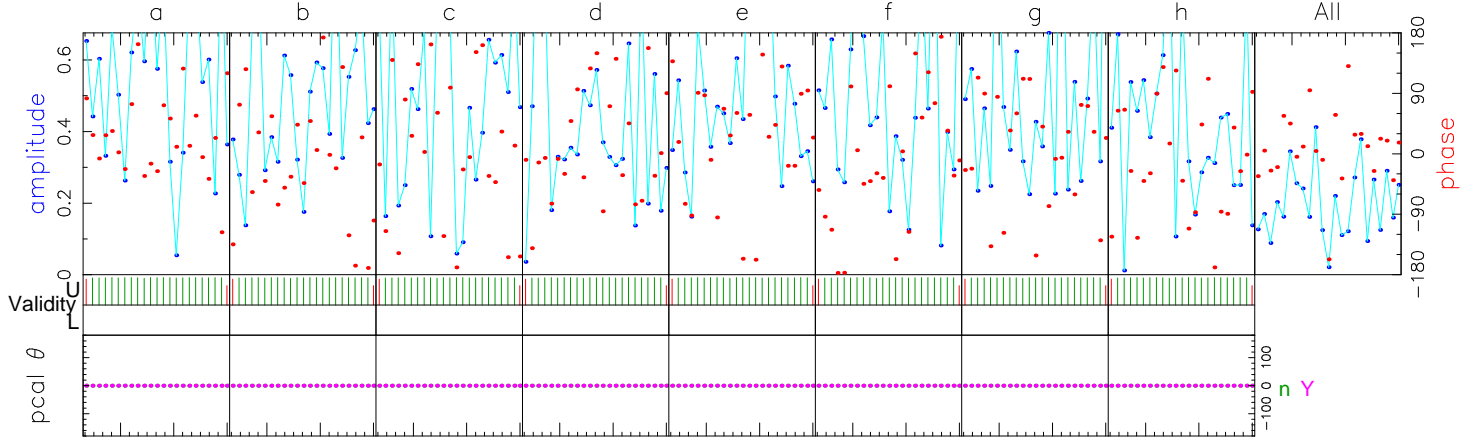


delay rate (ns/s)



Exp. c192c  
Yr:day 16383  
Start 2019:279  
Stop 2019:279  
FRT 000131.00  
Corr/FF/build 2020:070:073746  
2020:071:131800  
2019:280:115849  
RA & Dec (J2000) 20h15m28.729803s +37°10'59.514664"

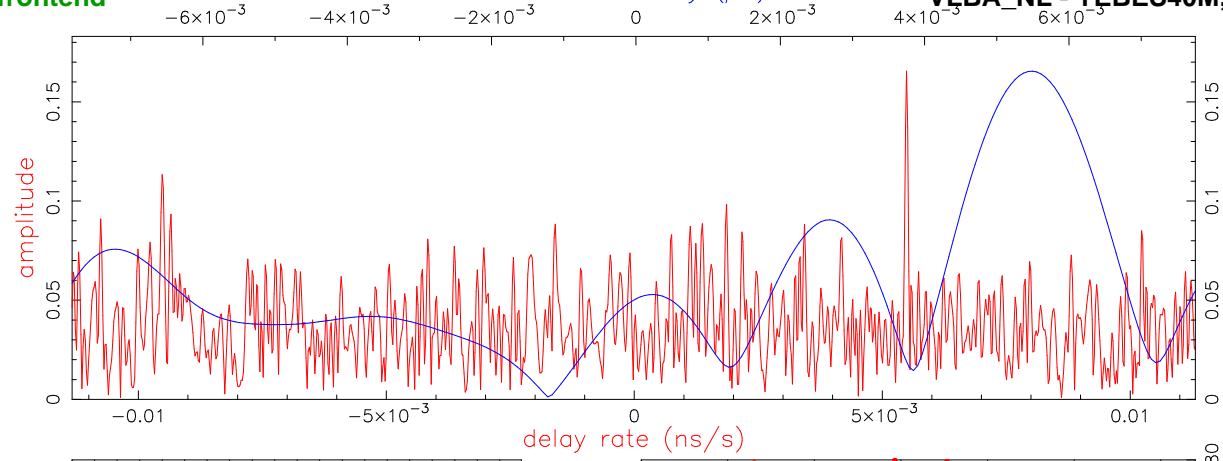
Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	21.9	-18.4	30.3	-8.9	58.5	4.0	25.8	-15.2	Phase	14.7
	0.4	0.2	0.1	0.2	0.3	0.2	0.3	0.2	Ampl.	0.2
	402.6	132.4	296.7	204.2	185.2	261.1	394.2	337.3	Sbd box	459.1
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	7.13410418529E+03		Apriori delay (usec)		7.13331983246E+03		Resid mbdelay (usec)		3.10283E-03	+/- 1.9E-04
Sband delay (usec)	7.13410943796E+03		Apriori clock (usec)		1.6855846E+01		Resid sbdelay (usec)		7.89605E-01	+/- 1.5E-03
Phase delay (usec)	7.13331983293E+03		Apriori clockrate (us/s)		-8.5776492E-08		Resid phdelay (usec)		4.72662E-07	+/- 6.5E-07
Delay rate (us/s)	1.19808609303E+00		Apriori rate (us/s)		1.19807640566E+00		Resid rate (us/s)		9.68737E-06	+/- 6.9E-09
Total phase (deg)	147.2		Apriori accel (us/s/s)		-3.67275129053E-05		Resid phase (deg)		14.7	+/- 20.2

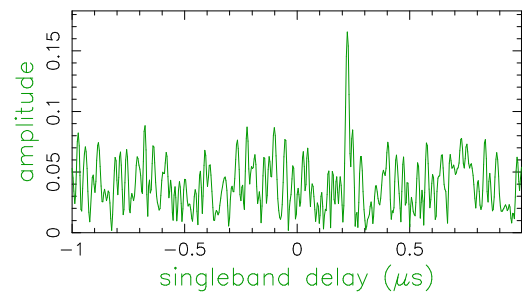
ph/seg (deg) 54.5 48.4 Search (1024X32) 0.156 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 63.3 84.5 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 28.8 28.5 Inc. seg. avg. 0.203 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 37.7 49.8 Inc. frq. avg. 0.220 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
n: az 98.4 el 73.0 pa -67.6 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -8647.594 -2027.069 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/nY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/nY.W.356.127ARX

multiband delay ( $\mu$ s)

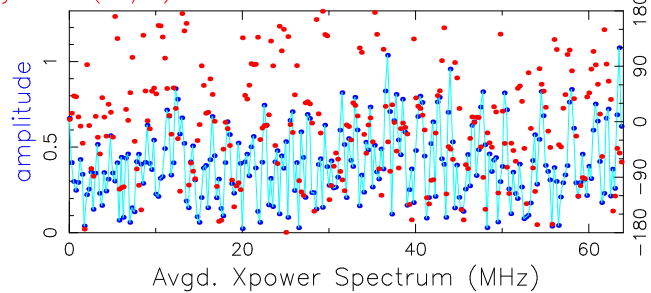


Fringe quality 0

SNR 5.8  
 Int time 161.269  
 Amp 0.183  
 Phase -15.0  
 PFD 6.5e-01  
 Delays (us)  
 SBD 0.223233  
 MBD 0.005479  
 Fringe rate (Hz)  
 0.473119  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

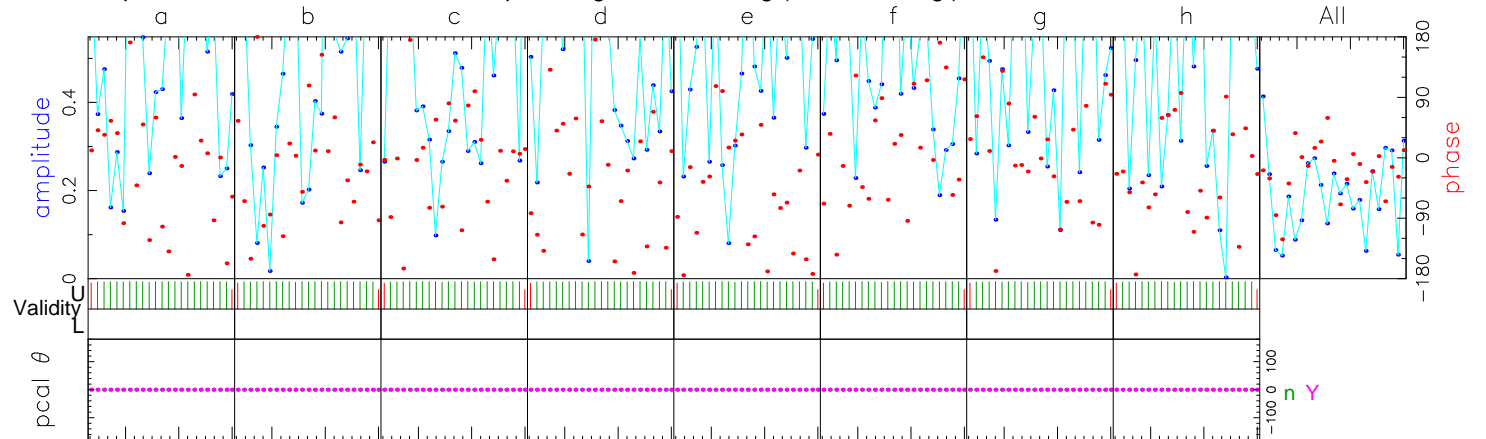


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131803  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	1.9	-14.3	-18.3	0.1	-82.7	-7.2	16.9	-23.0	Phase	-15.0
	0.1	0.3	0.2	0.1	0.2	0.2	0.2	0.3	Ampl.	0.2
	448.1	314.8	255.4	456.4	91.9	208.4	362.9	301.5	Sbd box	314.1
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	7.13354406193E+03		Apriori delay (usec)		7.13331983246E+03		Resid mbdelay (usec)		5.47947E-03	+/- 1.9E-04
Sband delay (usec)	7.13354306521E+03		Apriori clock (usec)		1.6855846E+01		Resid sbdelay (usec)		2.23233E-01	+/- 1.5E-03
Phase delay (usec)	7.13331983198E+03		Apriori clockrate (us/s)		-8.5776492E-08		Resid phdelay (usec)		-4.85024E-07	+/- 6.4E-07
Delay rate (us/s)	1.19808189811E+00		Apriori rate (us/s)		1.19807640566E+00		Resid rate (us/s)		5.49245E-06	+/- 6.8E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.67275129053E-05		Resid phase (deg)		-15.0	+/- 19.9

ph/seg (deg) 39.6 47.7 Search (1024X32) 0.161 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 57.3 83.3 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 32.3 28.1 Inc. seg. avg. 0.157 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 38.6 49.1 Inc. frq. avg. 0.181 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 n: az 98.4 el 73.0 pa -67.6 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -8647.594 -2027.069 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/nY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/nY.W.376.127ARX



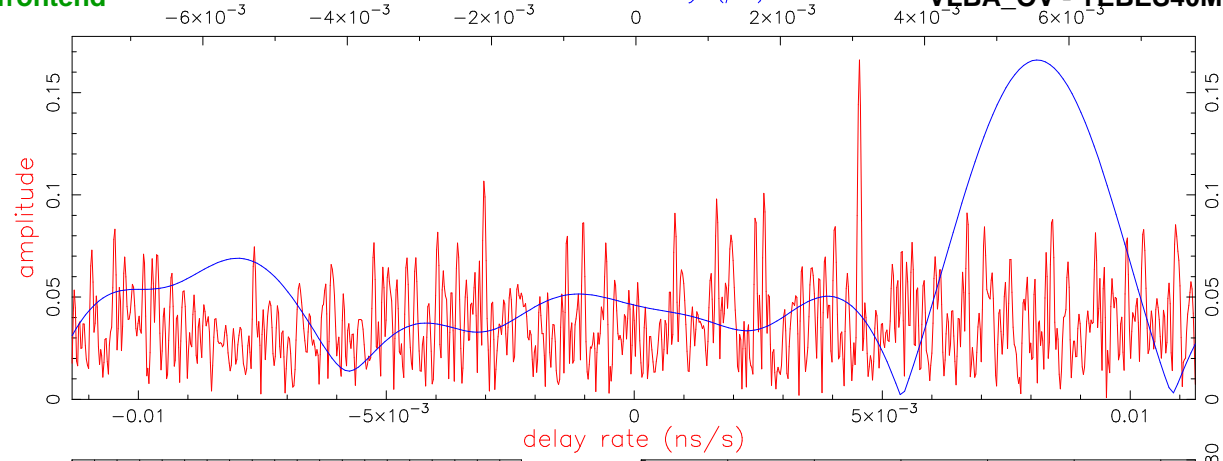
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, oY

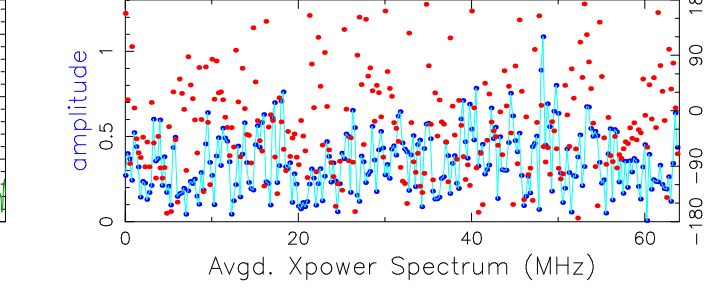
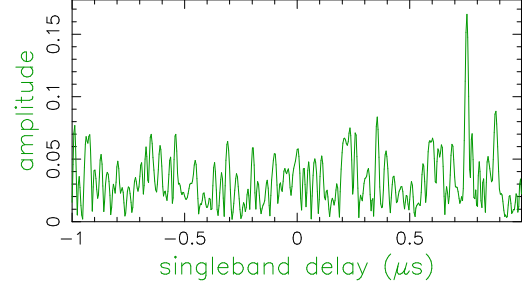
VLBA\_OV - YEBES40M, fgroup W, pol LL

multiband delay ( $\mu$ s)



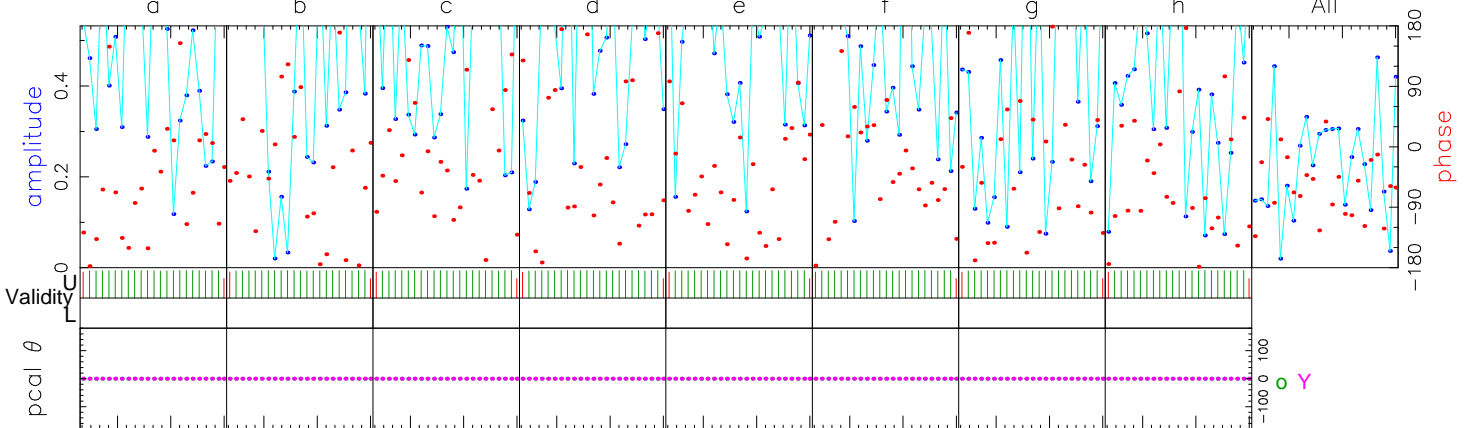
Fringe quality 0

SNR 5.8  
 Int time 161.274  
 Amp 0.177  
 Phase -60.2  
 PFD 6.4e-01  
 Delays (us)  
 SBD 0.753730  
 MBD 0.005558  
 Fringe rate (Hz)  
 0.391385  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131756  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-75.9	-29.4	-40.8	-123.0	-56.2	-32.4	-72.9	-67.5		Phase
	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1		Ampl.
	449.4	33.6	102.9	389.9	172.9	80.2	432.2	254.4		Sbd box
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		APs used
o	1000	1000	1000	1000	1000	1000	1000	1000		PC freqs
Y	1000	1000	1000	1000	1000	1000	1000	1000		PC freqs
o:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		PC phase
o:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		Mani PC
o	1000	1000	1000	1000	1000	1000	1000	1000		PC amp
Y	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		Chan ids
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		Tracks

Group delay (usec)(sbd) 3.62922586484E+03 Apriori delay (usec) 3.62847030717E+03 Resid mbdelay (usec) 5.55767E-03 +/- 1.9E-04  
 Sband delay (usec) 3.62922403767E+03 Apriori clock (usec) 6.9866419E+00 Resid sbdelay (usec) 7.53730E-01 +/- 1.5E-03  
 Phase delay (usec) 3.62847030523E+03 Apriori clockrate (us/s) -2.1901900E-07 Resid phdelay (usec) -1.93972E-06 +/- 6.4E-07  
 Delay rate (us/s) 1.59623142687E+00 Apriori rate (us/s) 1.59622688328E+00 Resid rate (us/s) 4.54359E-06 +/- 6.8E-09  
 Total phase (deg) 33.2 Apriori accel (us/s/s) -2.23110298307E-05 Resid phase (deg) -60.2 +/- 19.9

ph/seg (deg) 48.9 47.7 Search (1024X32) 0.163 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 80.1 83.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 32.9 28.1 Inc. seg. avg. 0.183 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 26.2 49.1 Inc. frq. avg. 0.178 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 o: az 74.9 el 52.2 pa -74.9 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -11501.969 -1579.546 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/oY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/oY.W.321.127ARX

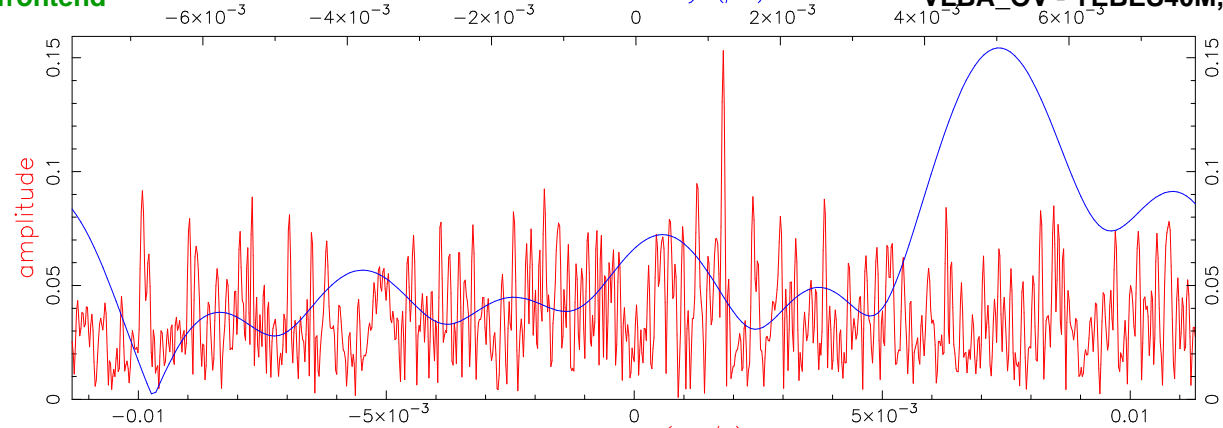
Mk4/DiFX fourfit 3.20 rev 0

frontend

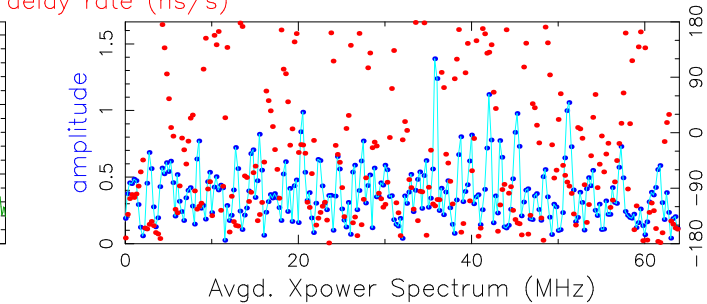
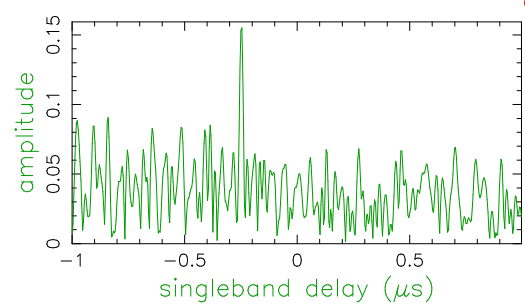
2013+370.127ARX, No0065, oY

VLBA\_OV - YEBES40M, fgroup W, pol RR

multiband delay ( $\mu$ s)

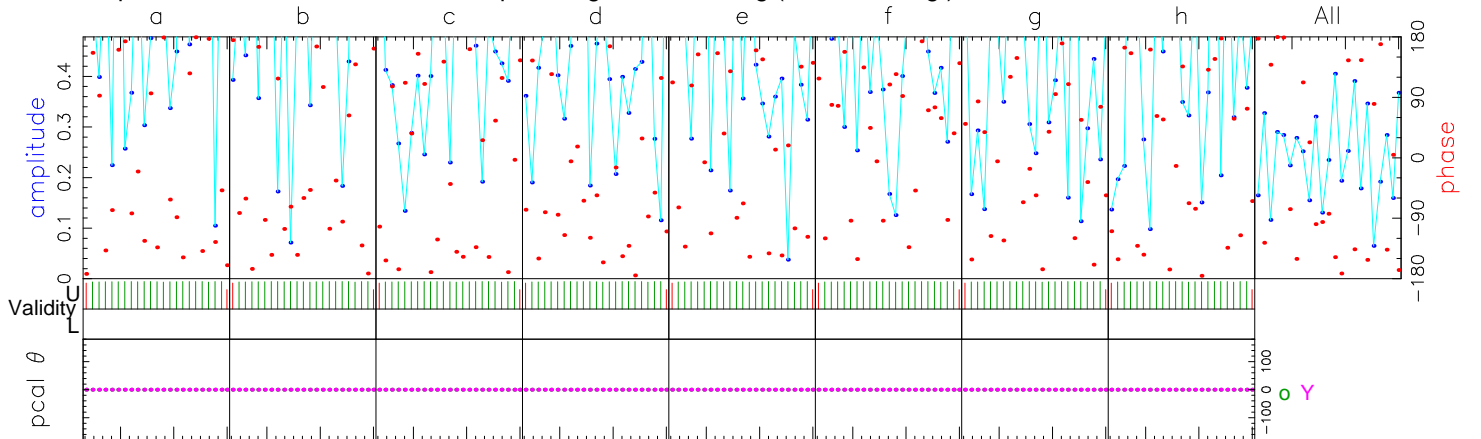


Fringe quality 0  
 SNR 5.5  
 Int time 161.275  
 Amp 0.159  
 Phase -154.8  
 PFD 9.9e-01  
 Delays (us)  
 SBD -0.247777  
 MBD 0.005157  
 Fringe rate (Hz) 0.154981  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131758  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
o:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)		3.62822546448E+03			3.62847030717E+03				5.15731E-03	+/- 2.0E-04
Sband delay (usec)		3.62822253017E+03			6.9866419E+00				-2.47777E-01	+/- 1.6E-03
Phase delay (usec)		3.62847030217E+03			-2.1901900E-07				-4.99072E-06	+/- 6.7E-07
Delay rate (us/s)		1.59622868246E+00			1.59622688328E+00				1.79918E-06	+/- 7.2E-09
Total phase (deg)			-61.4		-2.23110298307E-05				-154.8	+/- 20.9
Apriori delay (usec)										
Apriori clock (usec)										
Apriori clockrate (us/s)										
Apriori rate (us/s)										
Apriori accel (us/s/s)										
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
Bits/sample: 2x2										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
PC period (AP's) 5, 5										
sb window (us)									-1.000	1.000
mb window (us)									-0.008	0.008
dr window (ns/s)									-0.011	0.011
ion window (TEC)									0.00	0.00
pcal mode: MANUAL, MANUAL										
PC period (AP's) 5, 5										
sb window (us)									-1.000	1.000
mb window (us)									-0.008	0.008
dr window (ns/s)									-0.011	0.011
ion window (TEC)									0.00	0.00
simultaneous interpolator										

o: az 74.9 el 52.2 pa -74.9 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -11501.969 -1579.546  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/oY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/oY.W.341.127ARX

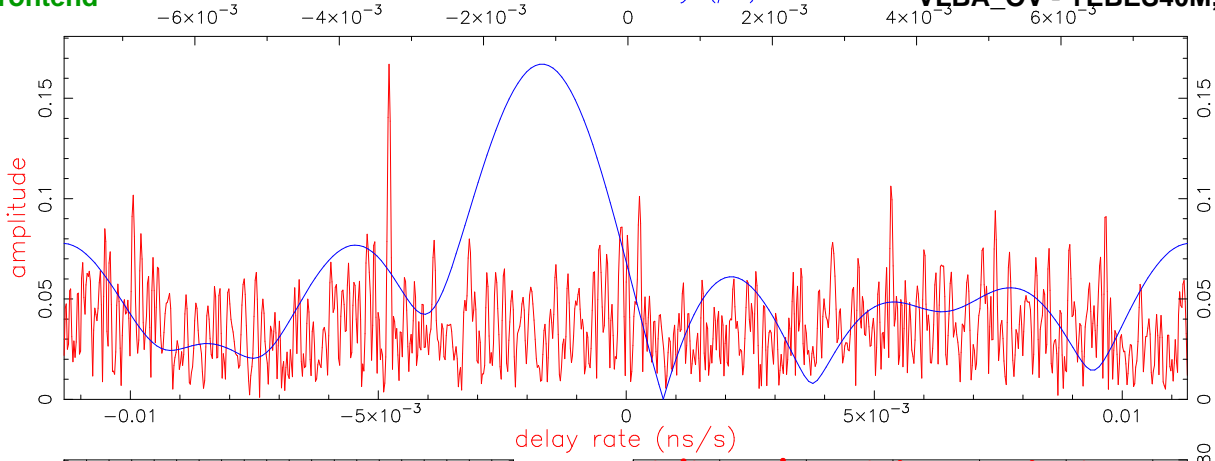
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, oY

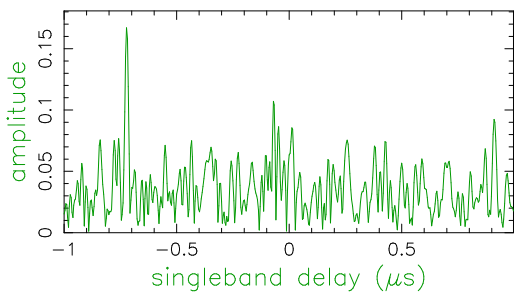
VLBA\_OV - YEBES40M, fgroup W, pol LR

multiband delay ( $\mu$ s)

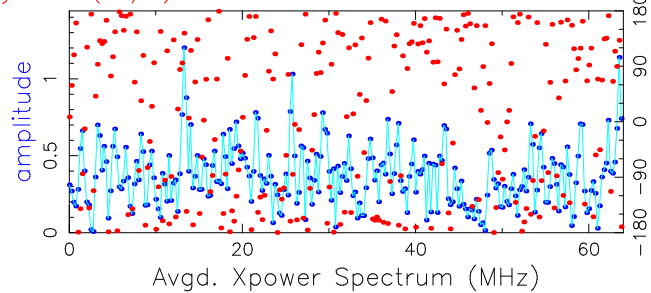


Fringe quality 0

SNR 5.8  
 Int time 161.274  
 Amp 0.181  
 Phase 141.8  
 PFD 5.0e-01  
 Delays (us)  
 SBD -0.721746  
 MBD -0.001159  
 Fringe rate (Hz)  
 -0.412205  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

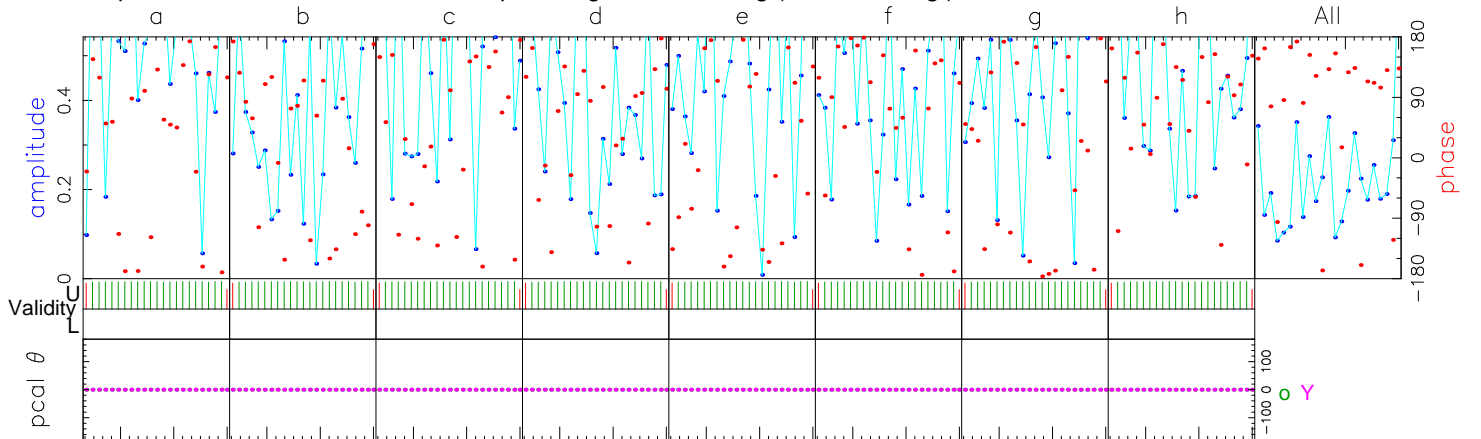


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131801  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	126.6	177.5	146.6	123.1	-149.9	134.3	146.2	123.0	Phase	141.8
	0.3	0.1	0.1	0.1	0.2	0.3	0.2	0.3	Ampl.	0.2
	385.6	298.8	260.4	80.6	42.4	57.6	492.8	267.1	Sbd box	72.2
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
o:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	3.62775039778E+03		Apriori delay (usec)		3.62847030717E+03		Resid mbdelay (usec)		-1.15938E-03	+/- 1.9E-04
Sband delay (usec)	3.62774856142E+03		Apriori clock (usec)		6.9866419E+00		Resid sbdelay (usec)		-7.21746E-01	+/- 1.5E-03
Phase delay (usec)	3.62847031174E+03		Apriori clockrate (us/s)		-2.1901900E-07		Resid phdelay (usec)		4.57260E-06	+/- 6.3E-07
Delay rate (us/s)	1.59622209799E+00		Apriori rate (us/s)		1.59622688328E+00		Resid rate (us/s)		-4.78529E-06	+/- 6.7E-09
Total phase (deg)			Apriori accel (us/s/s)		-2.23110298307E-05		Resid phase (deg)		141.8	+/- 19.7

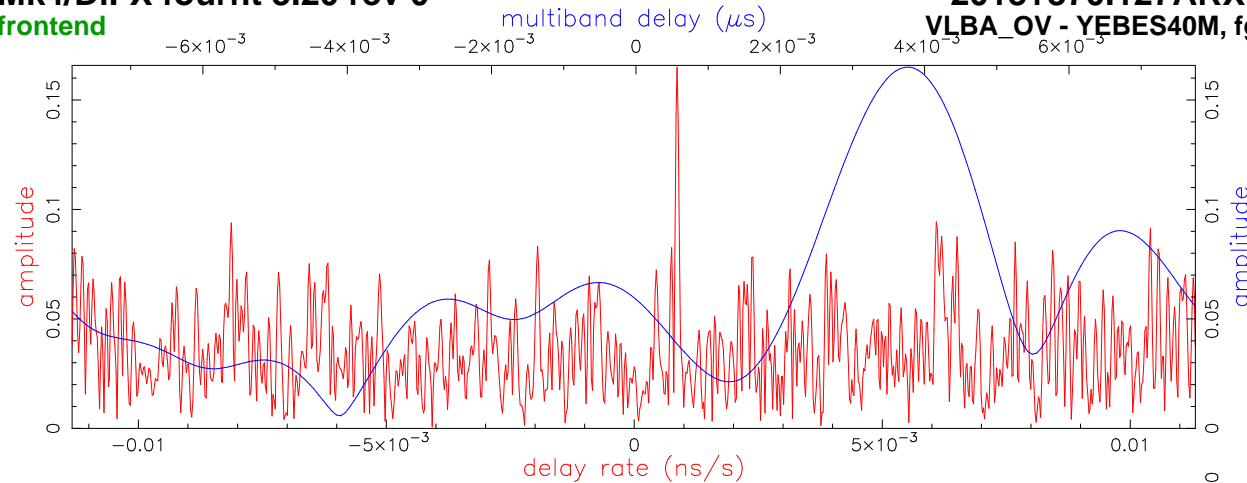
ph/seg (deg) 53.0 47.1 Search (1024X32) 0.164 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 79.9 82.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 34.1 27.8 Inc. seg. avg. 0.181 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 36.6 48.5 Inc. frq. avg. 0.178 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 o: az 74.9 el 52.2 pa -74.9 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -11501.969 -1579.546 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/oY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/oY.W.362.127ARX

Mk4/DiFX fourfit 3.20 rev 0

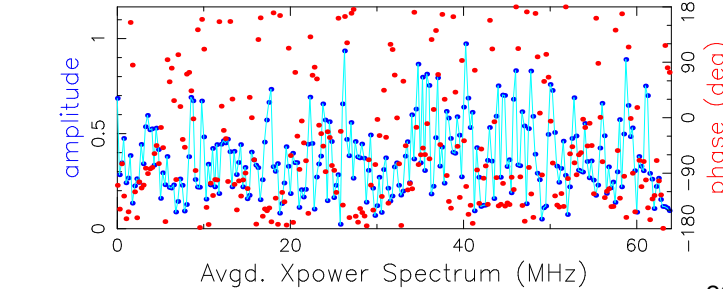
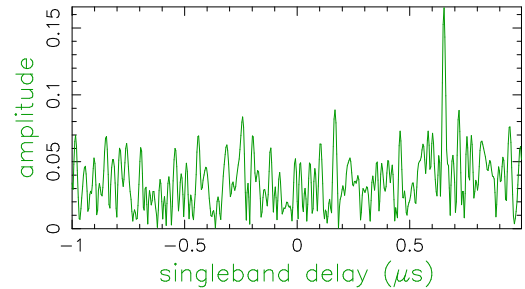
frontend

2013+370.127ARX, No0065, oY

VLBA\_OV - YEBES40M, fgroup W, pol RL

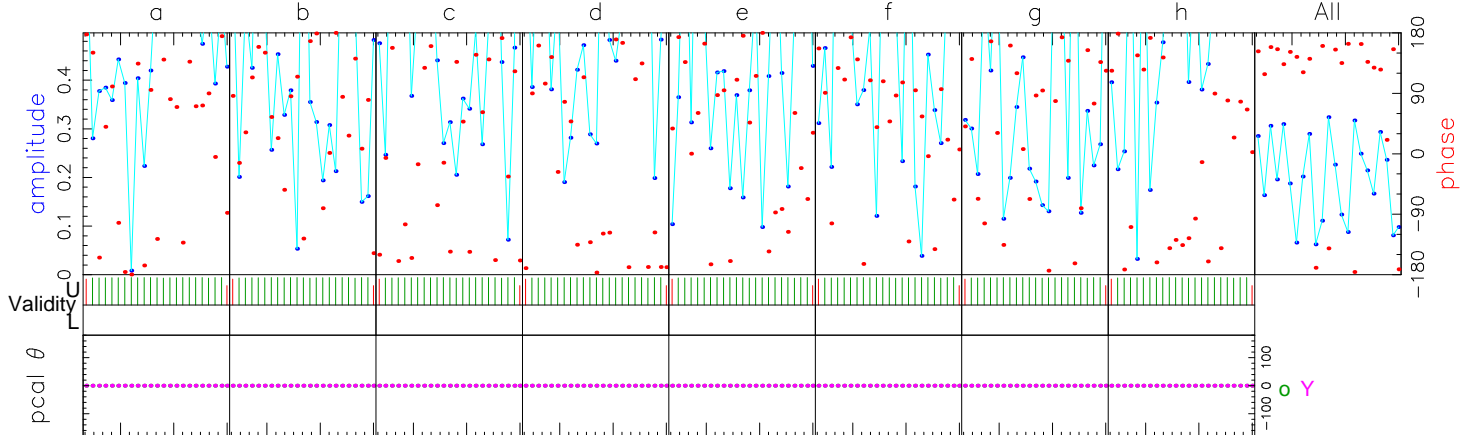


Fringe quality 0  
 SNR 5.7  
 Int time 161.275  
 Amp 0.166  
 Phase 150.0  
 PFD 6.8e-01  
 Delays (us)  
 SBD 0.651750  
 MBD 0.003734  
 Fringe rate (Hz)  
 0.074350  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131804  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

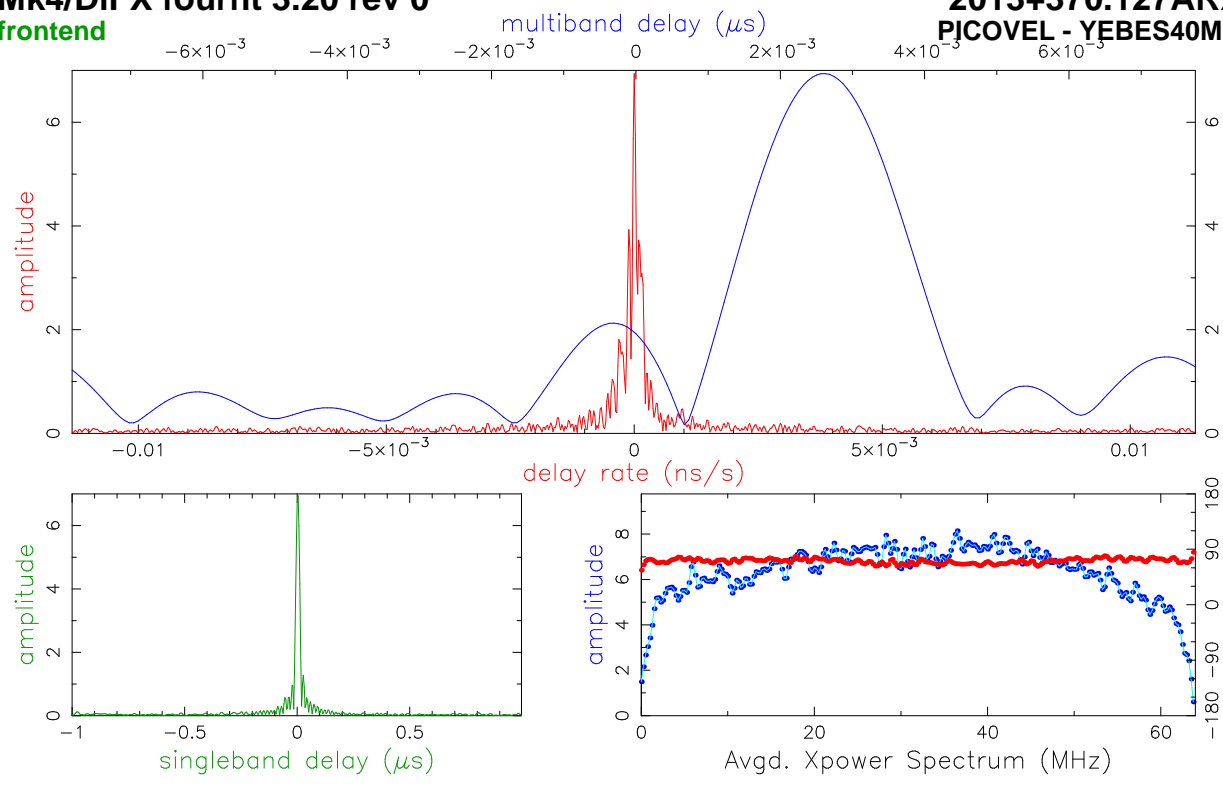


Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All	
Group delay (usec)(sbd)	136.6	111.9	-177.6	173.7	105.6	111.6	136.1	179.3	Phase	150.0	
Sband delay (usec)	0.2	0.1	0.3	0.3	0.1	0.2	0.1	0.1	Ampl.	0.2	
Phase delay (usec)	142.6	406.0	78.4	423.9	496.8	392.5	278.2	164.2	Sbd box	423.8	
Delay rate (us/s)	U/L 318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used		
Total phase (deg)	o 1000	1000	1000	1000	1000	1000	1000	1000	PC freqs		
	o:Y 0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase		
	o:Y 0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC		
	o 1000	1000	1000	1000	1000	1000	1000	1000	PC amp		
	Y 1000	1000	1000	1000	1000	1000	1000	1000			
	o W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids		
	Y W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks		
									Tracks		
Group delay (usec)(sbd)	3.62911466660E+03		Apriori delay (usec)		3.62847030717E+03		Resid mbdelay (usec)		3.73444E-03 +/- 1.9E-04		
Sband delay (usec)	3.62912205692E+03		Apriori clock (usec)		6.9866419E+00		Resid sbdelay (usec)		6.51750E-01 +/- 1.5E-03		
Phase delay (usec)	3.62847031200E+03		Apriori clockrate (us/s)		-2.1901900E-07		Resid phdelay (usec)		4.83672E-06 +/- 6.4E-07		
Delay rate (us/s)	1.59622774641E+00		Apriori rate (us/s)		1.59622688328E+00		Resid rate (us/s)		8.63132E-07 +/- 6.8E-09		
Total phase (deg)	243.3		Apriori accel (us/s/s)		-2.23110298307E-05		Resid phase (deg)		150.0 +/- 20.0		
ph/seg (deg)	RMS 36.2	Theor. 47.8	Amplitude 0.166 +/- 0.029		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5		sb window (us) -1.000 1.000		
amp/seg (%)	56.3	83.5	Search (1024X32) 0.162		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		SampCntNorm: enabled		mb window (us) -0.008 0.008		
ph/frq (deg)	35.9	28.2	Inc. seg. avg. 0.149		Sample rate(MISamp/s): 128		Data rate(Mb/s): 2048		dr window (ns/s) -0.011 0.011		
amp/frq (%)	48.1	49.2	Inc. frq. avg. 0.169		nlags: 256 t_cohere infinite		ion window (TEC) 0.00 0.00		simultaneous interpolator		
o: az 74.9 el 52.2 pa -74.9		Y: az 289.5 el 38.9 pa 64.1		u,v (fr/asec) -11501.969 -1579.546							
Control file: cf_1234_gmva		Input file: /Exps/c192c/v1_CygA2/1234/No0065/oY..127ARX		Output file: /Exps/c192c/v1_CygA2/1234/No0065/oY.W.389.127ARX							

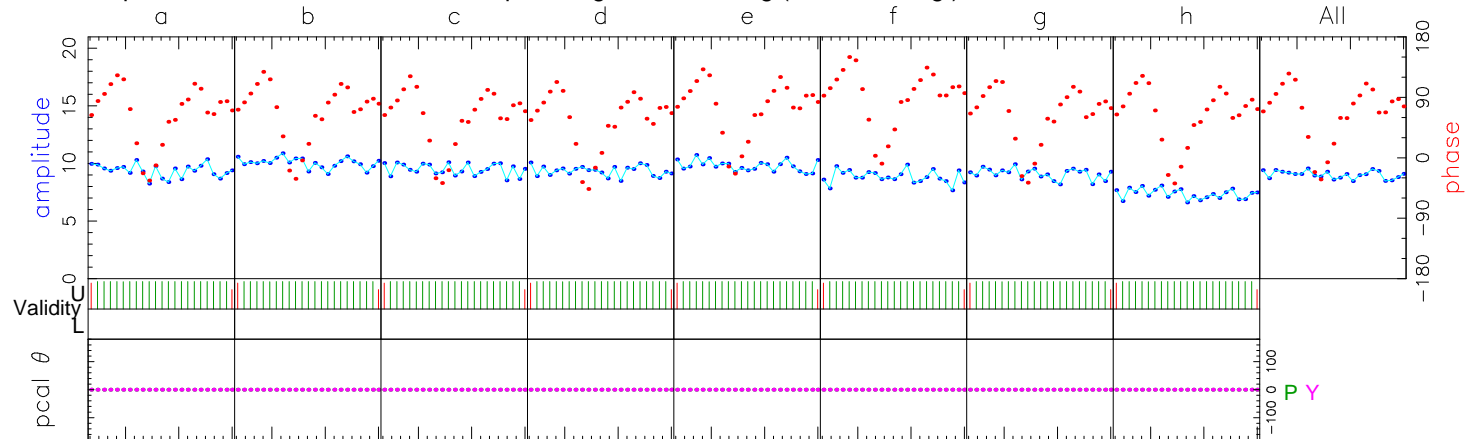


Fringe quality 5

SNR 243.7  
 Int time 162.132  
 Amp 6.998  
 Phase 71.6  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.002635  
 MBD 0.002566  
 Fringe rate (Hz) 0.000620  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131757  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec

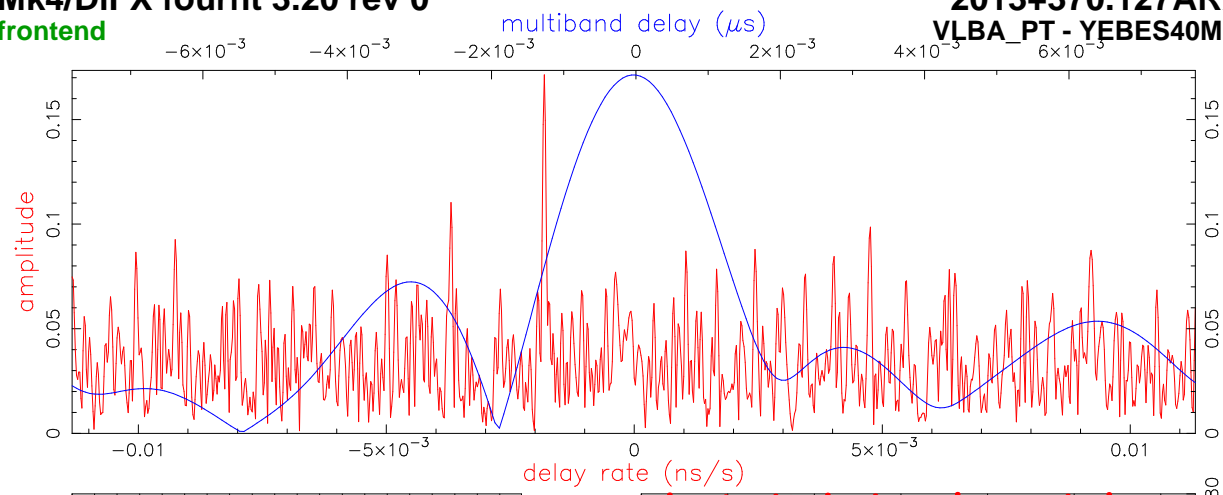


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	69.7	72.5	64.5	59.5	77.9	95.0	67.6	66.6	Phase	71.6
	7.2	7.7	7.3	7.2	7.6	6.8	7.0	5.6	Ampl.	7.0
	257.6	257.7	257.6	257.6	258.1	257.3	257.6	257.3	Sbd box	257.7
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
P:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
P	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-3.00028456449E+02		Apriori delay (usec)		-3.00031022043E+02		Resid mbdelay (usec)		2.56559E-03	+/- 4.5E-06
Sband delay (usec)	-3.00028386793E+02		Apriori clock (usec)		-9.8332396E+00		Resid sbdelay (usec)		2.63525E-03	+/- 3.5E-05
Phase delay (usec)	-3.00031019733E+02		Apriori clockrate (us/s)		-5.7299998E-07		Resid phdelay (usec)		2.30936E-06	+/- 1.5E-08
Delay rate (us/s)	-4.13209240236E-02		Apriori rate (us/s)		-4.13209312183E-02		Resid rate (us/s)		7.19469E-09	+/- 1.6E-10
Total phase (deg)			Apriori accel (us/s/s)		-1.65695523738E-06		Resid phase (deg)		71.6	+/- 0.5

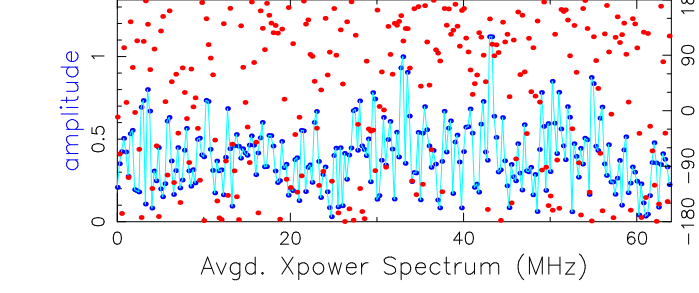
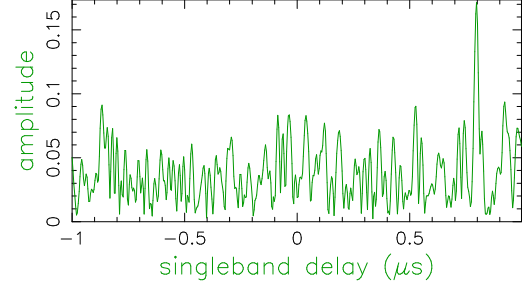
ph/seg (deg) 42.2 1.1 Search (1024X32) 6.729 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 29.4 2.0 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 11.7 0.7 Inc. seg. avg. 9.031 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 8.8 1.2 Inc. frq. avg. 7.042 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 P: az 291.9 el 37.9 pa 68.5 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) 295.381 -431.252 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/PY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/PY.W.326.127ARX

Mk4/DiFX fourfit 3.20 rev 0  
frontend

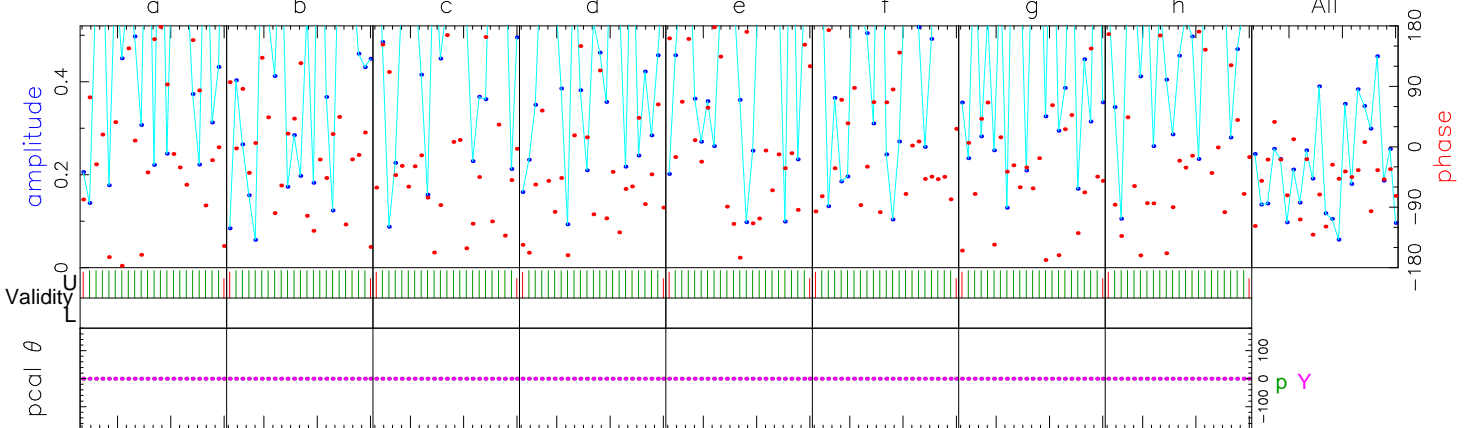
2013+370.127ARX, No0065, pY  
VLBA\_PT - YEBES40M, fgroup W, pol LL



Fringe quality 0  
SNR 6.0  
Int time 162.162  
Amp 0.173  
Phase -43.4  
PFD 2.5e-01  
Delays (us)  
SBD 0.796296  
MBD -0.000037  
Fringe rate (Hz)  
-0.156884  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131757  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec

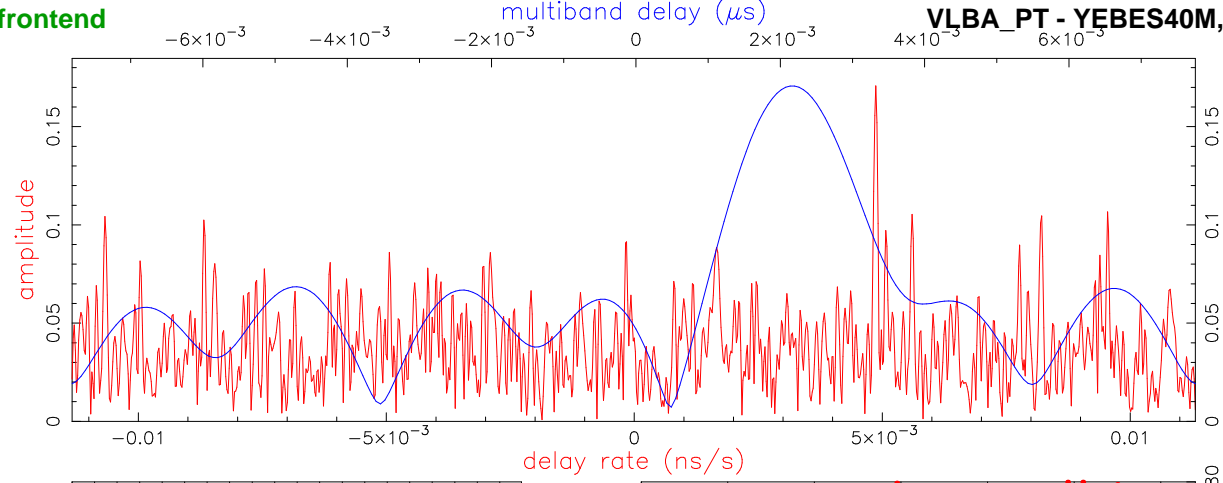


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-41.2	-19.6	-62.8	-56.4	-50.9	-44.1	-22.0	-57.5	Phase	-43.4
	0.1	0.2	0.2	0.2	0.1	0.3	0.2	0.2	Ampl.	0.2
	251.6	396.0	335.0	90.7	439.5	390.2	265.0	60.6	Sbd box	460.9
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
p:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
p	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

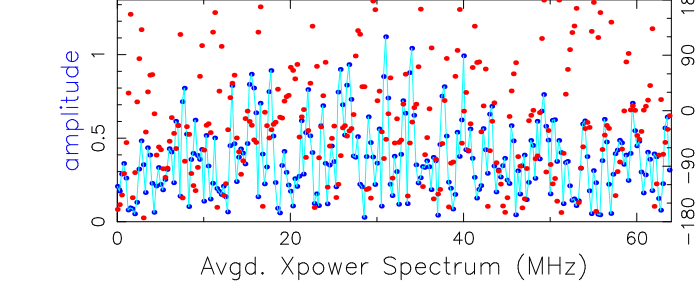
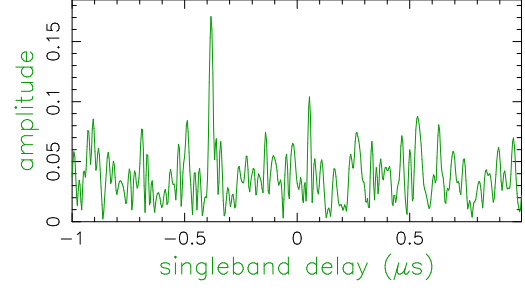
Group delay (usec)(sbd)	5.11134950795E+03	Apriori delay (usec)	5.11055267013E+03	Resid mbdelay (usec)	-3.71748E-05	+/-	1.8E-04
Sband delay (usec)	5.11134896663E+03	Apriori clock (usec)	2.3018236E+00	Resid sbdelay (usec)	7.96296E-01	+/-	1.4E-03
Phase delay (usec)	5.11055266873E+03	Apriori clockrate (us/s)	-1.6113413E-08	Resid phdelay (usec)	-1.39972E-06	+/-	6.2E-07
Delay rate (us/s)	1.49017986224E+00	Apriori rate (us/s)	1.49018168351E+00	Resid rate (us/s)	-1.82127E-06	+/-	6.6E-09
Total phase (deg)	-41.6	Apriori accel (us/s/s)	-3.30426230184E-05	Resid phase (deg)	-43.4	+/-	19.2

ph/seg (deg)	43.2	Theor.	46.0	Amplitude	0.173 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	69.0		80.2	Search (1024X32)	0.168	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008
ph/frq (deg)	17.5		27.1	Inc. seg. avg.	0.172	Bits/sample: 2x2	Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011
amp/frq (%)	38.3		47.3	Inc. frq. avg.	0.162	Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite	ion window (TEC)	0.00	0.00

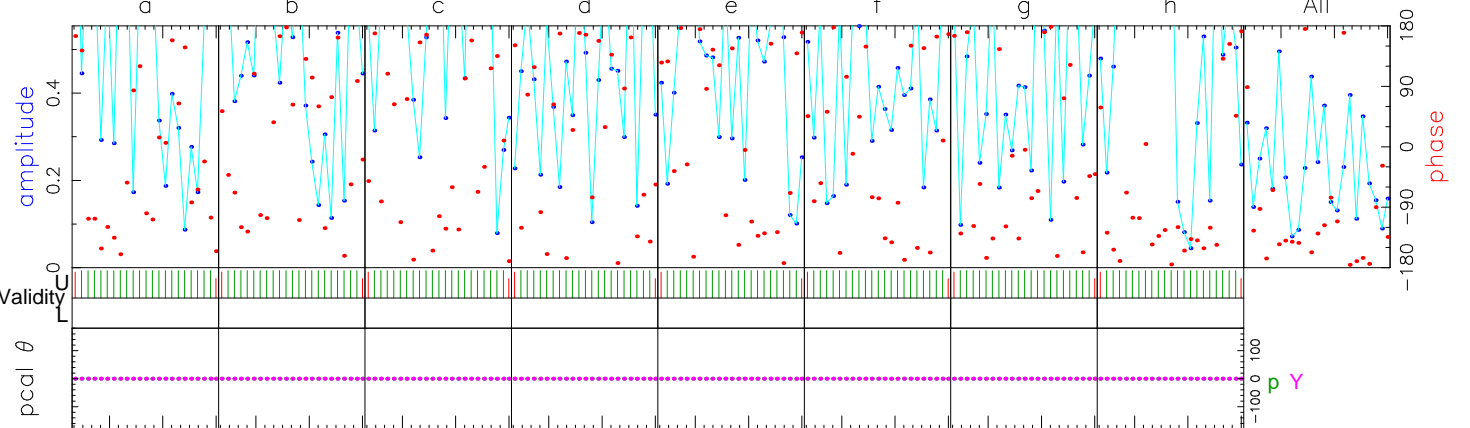
p: az 73.4 el 59.4 pa -84.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10747.775 -2516.858 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/pY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/pY.W.327.127ARX



Fringe quality 0  
 SNR 6.0  
 Int time 162.163  
 Amp 0.185  
 Phase -146.4  
 PFD 2.8e-01  
 Delays (us)  
 SBD -0.382288  
 MBD 0.002183  
 Fringe rate (Hz) 0.420228  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131759  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-125.9	-120.1	-145.1	169.8	-159.9	-142.1	-128.8	-141.9	Phase	-146.4
	0.3	0.0	0.2	0.2	0.3	0.1	0.2	0.3	Ampl.	0.2
	122.1	198.7	341.9	258.1	398.7	485.8	417.2	158.9	Sbd box	159.1
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
p:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	5.11016422859E+03		Apriori delay (usec)		5.11055267013E+03		Resid mbdelay (usec)		2.18346E-03	+/- 1.8E-04
Sband delay (usec)	5.11017038238E+03		Apriori clock (usec)		2.3018236E+00		Resid sbdelay (usec)		-3.82288E-01	+/- 1.4E-03
Phase delay (usec)	5.11055266541E+03		Apriori clockrate (us/s)		-1.6113413E-08		Resid phdelay (usec)		-4.72215E-06	+/- 6.2E-07
Delay rate (us/s)	1.49018656195E+00		Apriori rate (us/s)		1.49018168351E+00		Resid rate (us/s)		4.87843E-06	+/- 6.6E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.30426230184E-05		Resid phase (deg)		-146.4	+/- 19.2

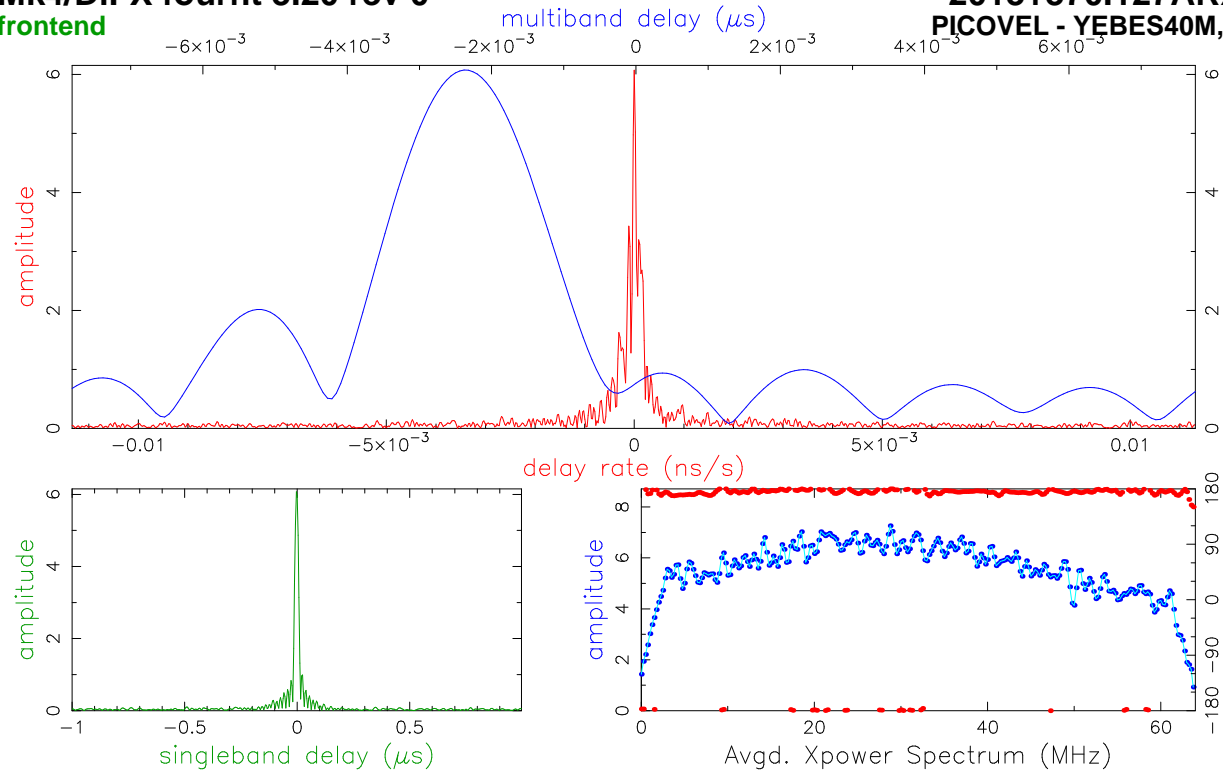
ph/seg (deg) 49.8 46.1 Search (1024X32) 0.167 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 77.3 80.5 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 24.4 27.2 Inc. seg. avg. 0.190 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 51.8 47.5 Inc. frq. avg. 0.176 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 p: az 73.4 el 59.4 pa -84.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10747.775 -2516.858 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/pY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/pY.W.346.127ARX

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, PY

PICOVEL - YEBES40M, fgroup W, pol RR

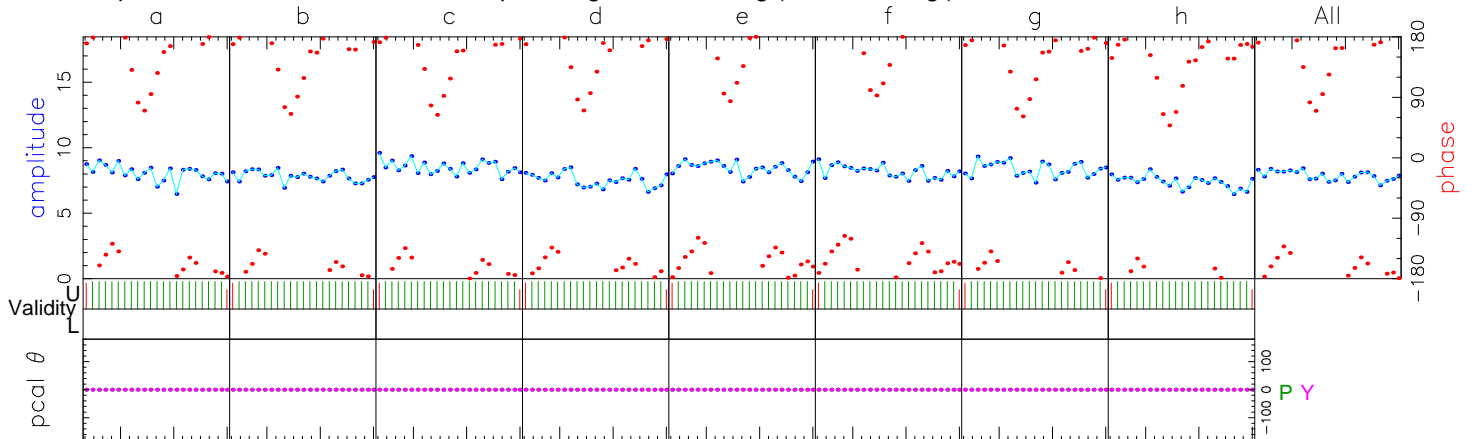


Fringe quality 5

SNR 214.3  
 Int time 162.132  
 Amp 6.154  
 Phase 174.6  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.002372  
 MBD -0.002327  
 Fringe rate (Hz) 0.000620  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131759  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	175.8	169.1	171.4	175.7	-171.4	-167.0	167.1	154.6	Phase	174.6
P	6.1	6.0	6.5	5.9	6.5	6.2	6.5	5.7	Ampl.	6.2
Y	256.8	256.3	256.4	256.7	256.3	256.3	256.2	256.5	Sbd box	256.4
P:Y	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
P:Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
P:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
P	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-3.00033349355E+02		Apriori delay (usec)		-3.00031022043E+02		Resid mbdelay (usec)		-2.32731E-03	+/- 5.1E-06
Sband delay (usec)	-3.00033394293E+02		Apriori clock (usec)		-9.8332396E+00		Resid sbdelay (usec)		-2.37225E-03	+/- 4.0E-05
Phase delay (usec)	-3.00031016411E+02		Apriori clockrate (us/s)		-5.7299998E-07		Resid phdelay (usec)		5.63183E-06	+/- 1.7E-08
Delay rate (us/s)	-4.13209240250E-02		Apriori rate (us/s)		-4.13209312183E-02		Resid rate (us/s)		7.19328E-09	+/- 1.8E-10
Total phase (deg)			Apriori accel (us/s/s)		-1.65695523738E-06		Resid phase (deg)		174.6	+/- 0.5

ph/seg (deg) 42.1 1.3 Search (1024X32) 5.941 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 28.6 2.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 13.1 0.8 Inc. seg. avg. 7.876 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 4.7 1.3 Inc. frq. avg. 6.191 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 P: az 291.9 el 37.9 pa 68.5 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) 295.381 -431.252 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/PY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/PY.W.347.127ARX

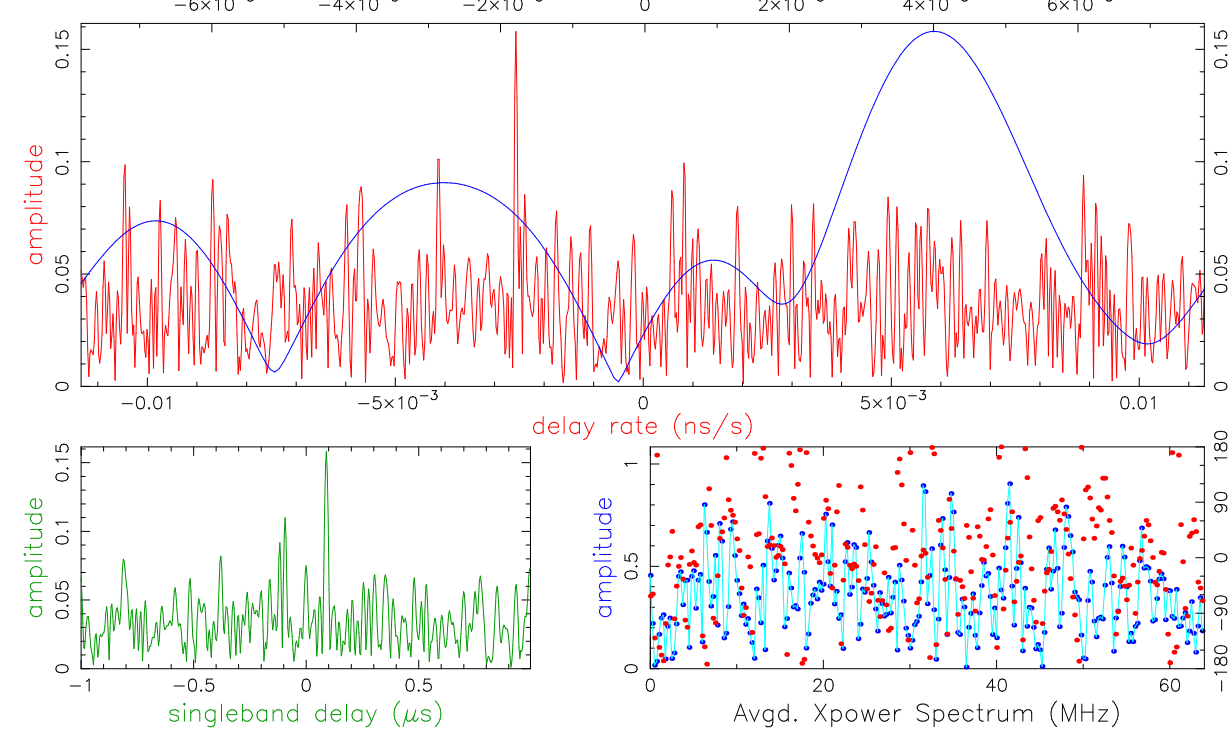


Mk4/DiFX fourfit 3.20 rev 0

frontend

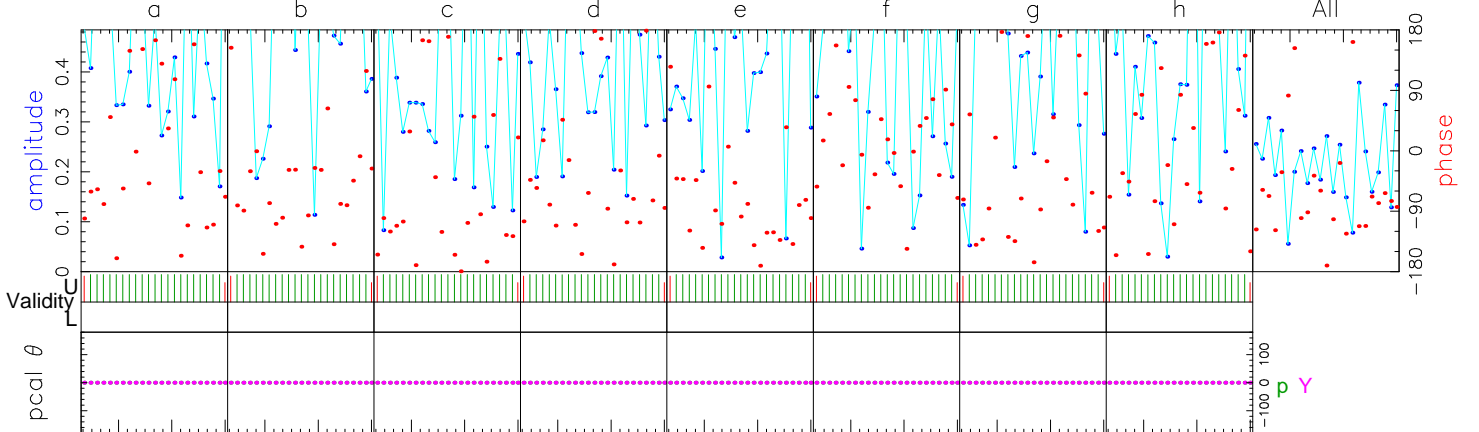
2013+370.127ARX, No0065, pY

VLBA\_PT - YEBES40M, fgroup W, pol LR



Fringe quality 0  
 SNR 5.5  
 Int time 162.162  
 Amp 0.162  
 Phase -86.5  
 PFD 9.9e-01  
 Delays (us)  
 SBD 0.089402  
 MBD 0.004011  
 Fringe rate (Hz)  
 -0.221225  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131801  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-83.2	-68.8	-137.5	-78.9	-94.4	17.7	-108.5	-105.6	Phase	-86.5
	0.1	0.3	0.2	0.3	0.3	0.2	0.2	0.0	Ampl.	0.2
	64.8	279.8	458.7	338.2	233.5	273.9	50.6	503.8	Sbd box	279.9
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
p:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
p	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	5.11063480599E+03		Apriori delay (usec)		5.11055267013E+03		Resid mbdelay (usec)		4.01086E-03	+/- 2.0E-04
Sband delay (usec)	5.11064207213E+03		Apriori clock (usec)		2.3018236E+00		Resid sbdelay (usec)		8.94020E-02	+/- 1.6E-03
Phase delay (usec)	5.11055266734E+03		Apriori clockrate (us/s)		-1.6113413E-08		Resid phdelay (usec)		-2.78867E-06	+/- 6.7E-07
Delay rate (us/s)	1.49017911531E+00		Apriori rate (us/s)		1.49018168351E+00		Resid rate (us/s)		-2.56820E-06	+/- 7.1E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.30426230184E-05		Resid phase (deg)		-86.5	+/- 20.8

ph/seg (deg) 59.6 49.9 Search (1024X32) 0.155 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 64.0 87.1 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 49.6 29.4 Inc. seg. avg. 0.163 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 56.6 51.4 Inc. frq. avg. 0.180 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 p: az 73.4 el 59.4 pa -84.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10747.775 -2516.858 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/pY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/pY.W.364.127ARX

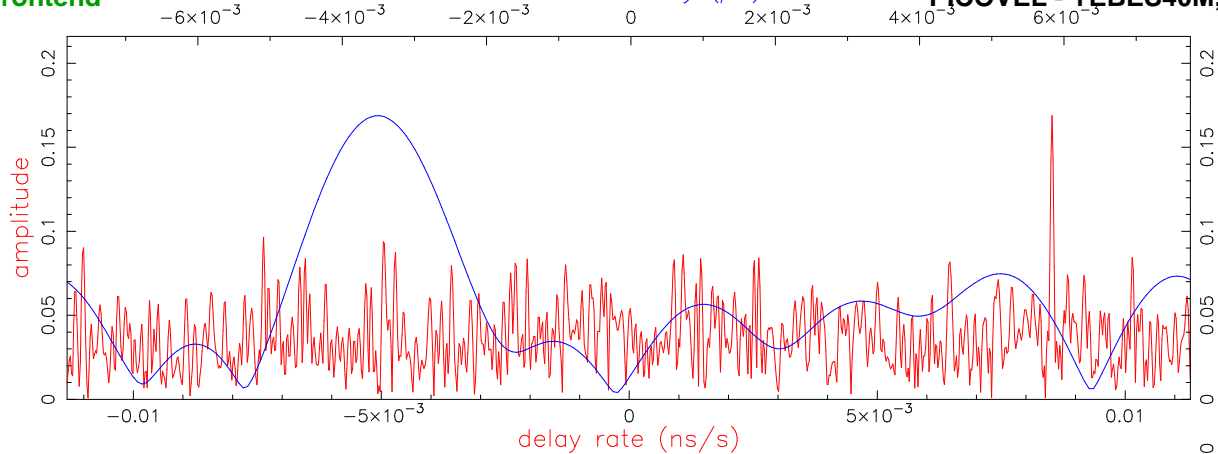
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, PY

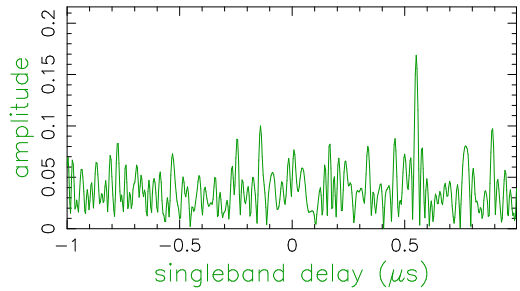
PICOVEL - YEBES40M, fgroup W, pol LR

multiband delay ( $\mu\text{s}$ )

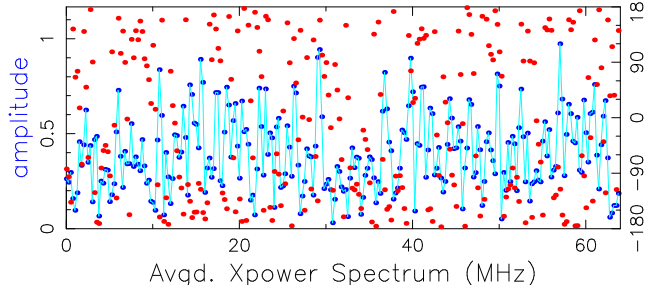


Fringe quality 0

SNR 5.9  
Int time 162.132  
Amp 0.216  
Phase 98.2  
PFD 4.0e-01  
Delays (us)  
SBD 0.551173  
MBD -0.003488  
Fringe rate (Hz) 0.736034  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

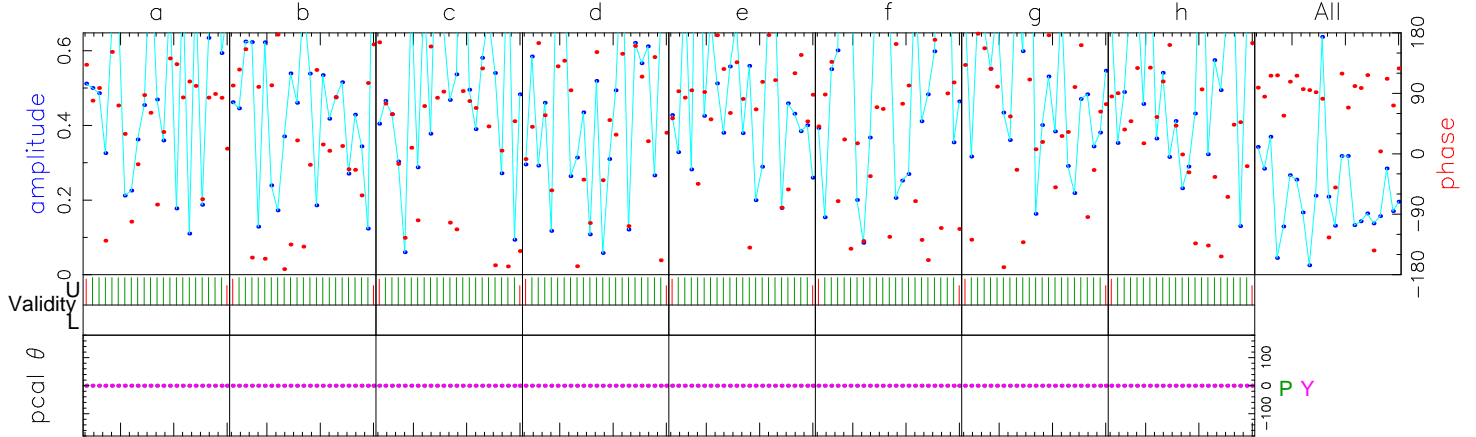


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131801  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
P	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
P:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
P:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
P	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
P	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		

Group delay (usec)(sbd)	-2.99487635506E+02	Apriori delay (usec)	-3.00031022043E+02	Resid mbdelay (usec)	-3.48846E-03	+/-	1.8E-04
Sband delay (usec)	-2.99479848793E+02	Apriori clock (usec)	-9.8332396E+00	Resid sbdelay (usec)	5.51173E-01	+/-	1.5E-03
Phase delay (usec)	-3.00031018877E+02	Apriori clockrate (us/s)	-5.7299998E-07	Resid phdelay (usec)	3.16576E-06	+/-	6.3E-07
Delay rate (us/s)	-4.13123865930E-02	Apriori rate (us/s)	-4.13209312183E-02	Resid rate (us/s)	8.54463E-06	+/-	6.7E-09
Total phase (deg)	12.2	Apriori accel (us/s/s)	-1.65695523738E-06	Resid phase (deg)	98.2	+/-	19.5

ph/seg (deg)	55.7	Theor.	46.7	Amplitude	0.216 +/- 0.037	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	
amp/seg (%)	80.8	Search (1024X32)	0.164	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000 1.000	
ph/frq (deg)	27.0	Inc. seg. avg.	0.213	Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	48.5	Inc. frq. avg.	0.203	Sample rate(MSamp/s): 128		dr window (ns/s)	-0.011 0.011	
				Data rate(Mb/s): 2048		ion window (TEC)	0.00 0.00	
				nlags: 256		t_cohere infinite		

P: az 291.9 el 37.9 pa 68.5 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) 295.381 -431.252 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/PY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/PY.W.365.127ARX

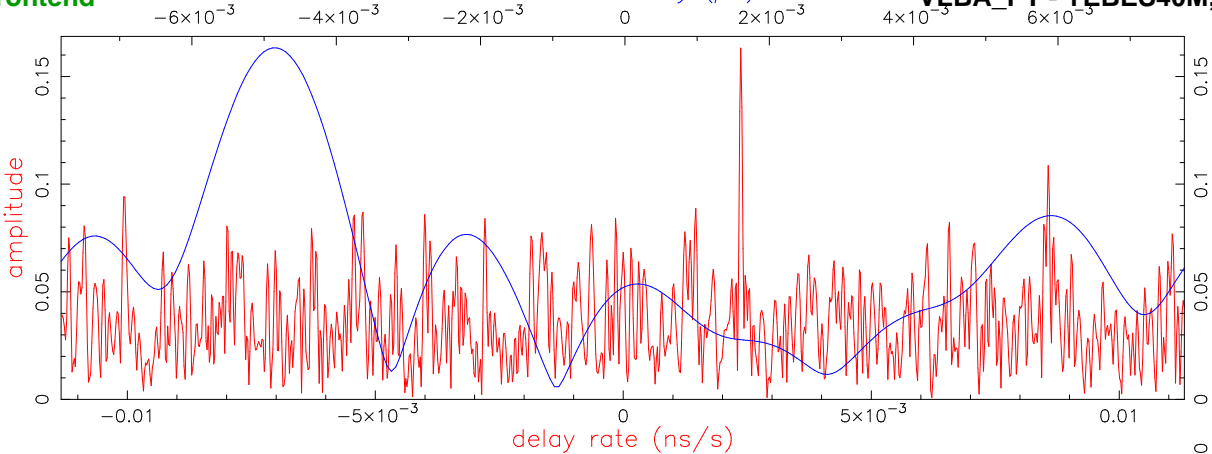
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, pY

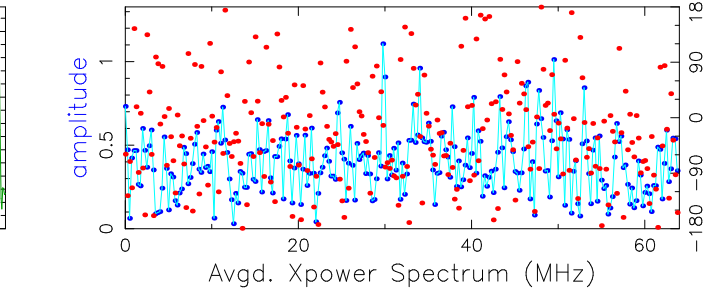
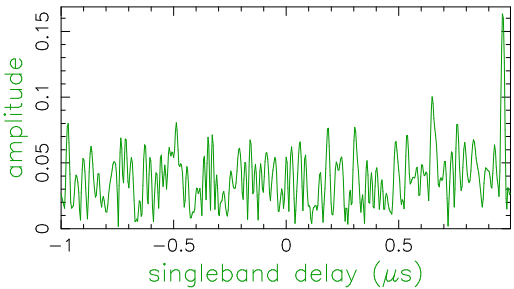
VLBA\_PT - YEBES40M, fgroup W, pol RL

multiband delay ( $\mu$ s)



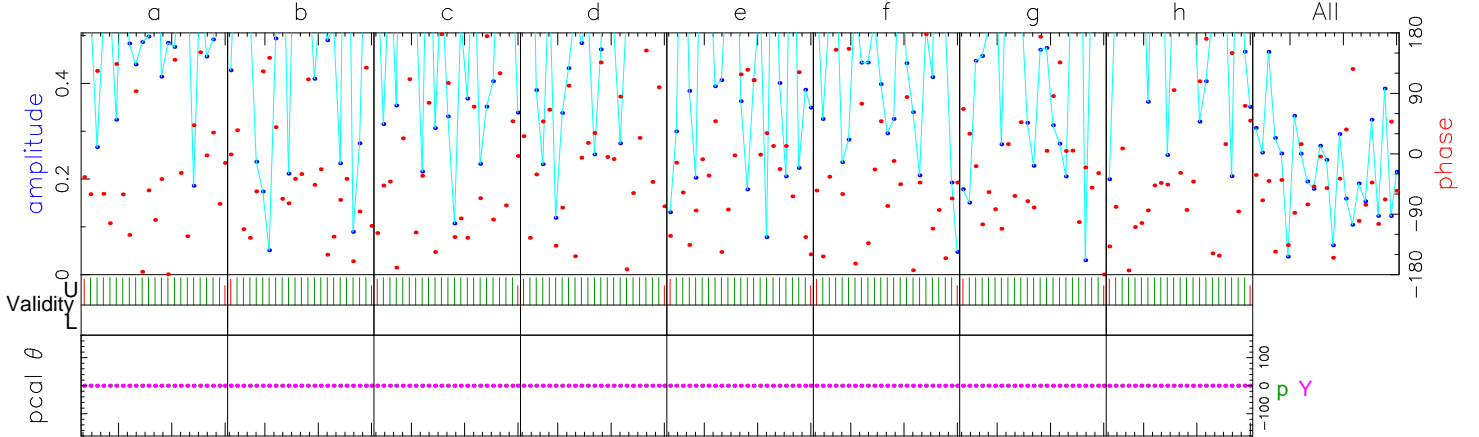
Fringe quality 0

SNR 5.8  
Int time 162.163  
Amp 0.169  
Phase -52.6  
PFD 6.3e-01  
Delays (us)  
SBD 0.962470  
MBD -0.004804  
Fringe rate (Hz)  
0.203996  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131804  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-69.1	-55.1	40.9	3.6	-31.8	-97.6	-45.8	-72.3		Phase
	0.2	0.2	0.0	0.2	0.2	0.1	0.2	0.2		Ampl.
	448.2	131.9	128.5	278.0	246.3	108.5	436.3	215.8		Sbd box
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		APs used
p	1000	1000	1000	1000	1000	1000	1000	1000		PC freqs
Y	1000	1000	1000	1000	1000	1000	1000	1000		PC freqs
p:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		PC phase
p:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		Mani PC
p	1000	1000	1000	1000	1000	1000	1000	1000		PC amp
Y	1000	1000	1000	1000	1000	1000	1000	1000		
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		Chan ids
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		Tracks
										Tracks
Group delay (usec)(sbd)	5.11151661566E+03		Apriori delay (usec)		5.11055267013E+03		Resid mbdelay (usec)		-4.80447E-03	+/- 1.9E-04
Sband delay (usec)	5.11151513988E+03		Apriori clock (usec)		2.3018236E+00		Resid sbdelay (usec)		9.62470E-01	+/- 1.5E-03
Phase delay (usec)	5.11055266844E+03		Apriori clockrate (us/s)		-1.6113413E-08		Resid phdelay (usec)		-1.69461E-06	+/- 6.4E-07
Delay rate (us/s)	1.49018405170E+00		Apriori rate (us/s)		1.49018168351E+00		Resid rate (us/s)		2.36819E-06	+/- 6.8E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.30426230184E-05		Resid phase (deg)		-52.6	+/- 19.9

p: az 73.4 el 59.4 pa -84.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -10747.775 -2516.858 simultaneous interpolator

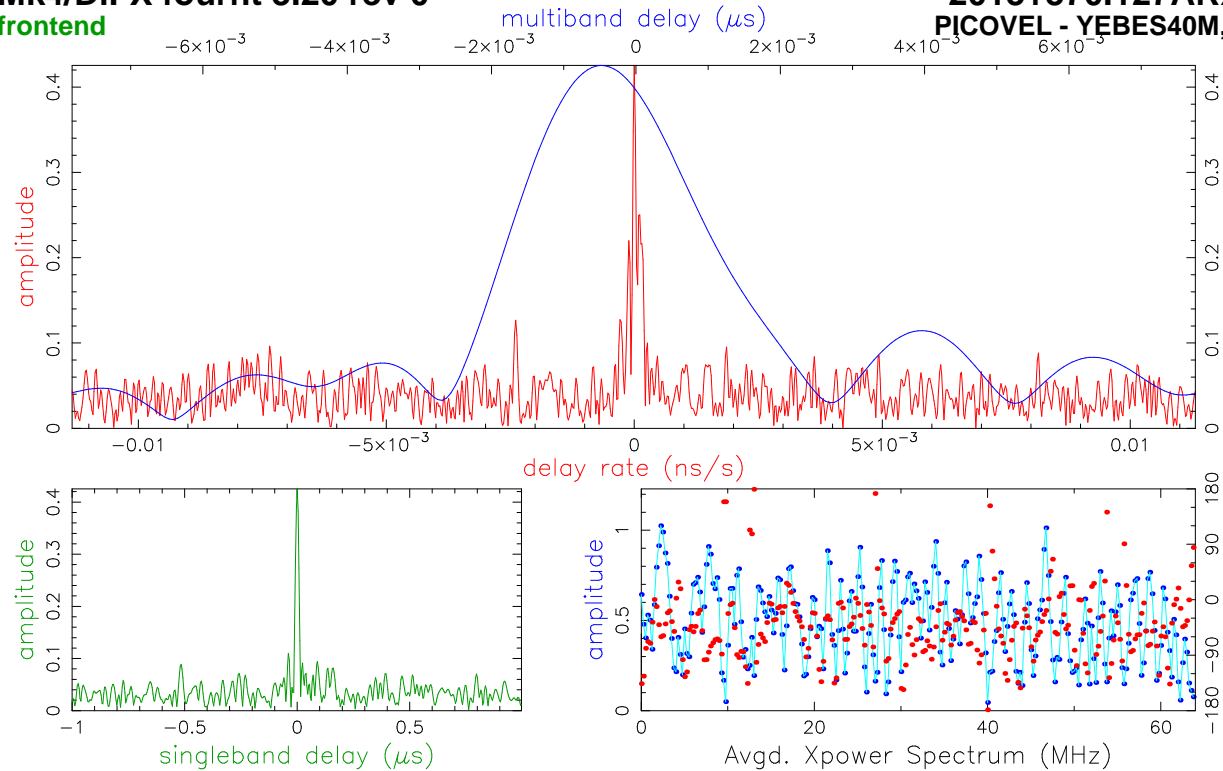
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/pY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/pY.W.384.127ARX

Mk4/DiFX fourfit 3.20 rev 0

frontend

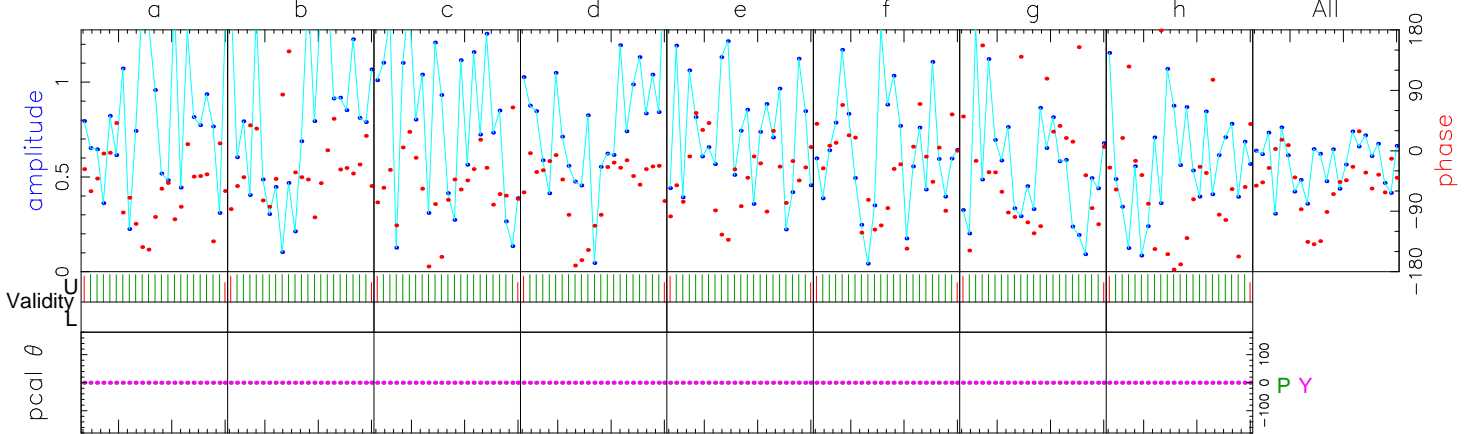
2013+370.127ARX, No0065, PY

PICOVEL - YEBES40M, fgroup W, pol RL



Fringe quality 8  
 SNR 14.8  
 Int time 162.132  
 Amp 0.425  
 Phase -43.5  
 PFD 3.9e-41  
 Delays (us)  
 SBD -0.000111  
 MBD -0.000483  
 Fringe rate (Hz) 0.000836  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131804  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

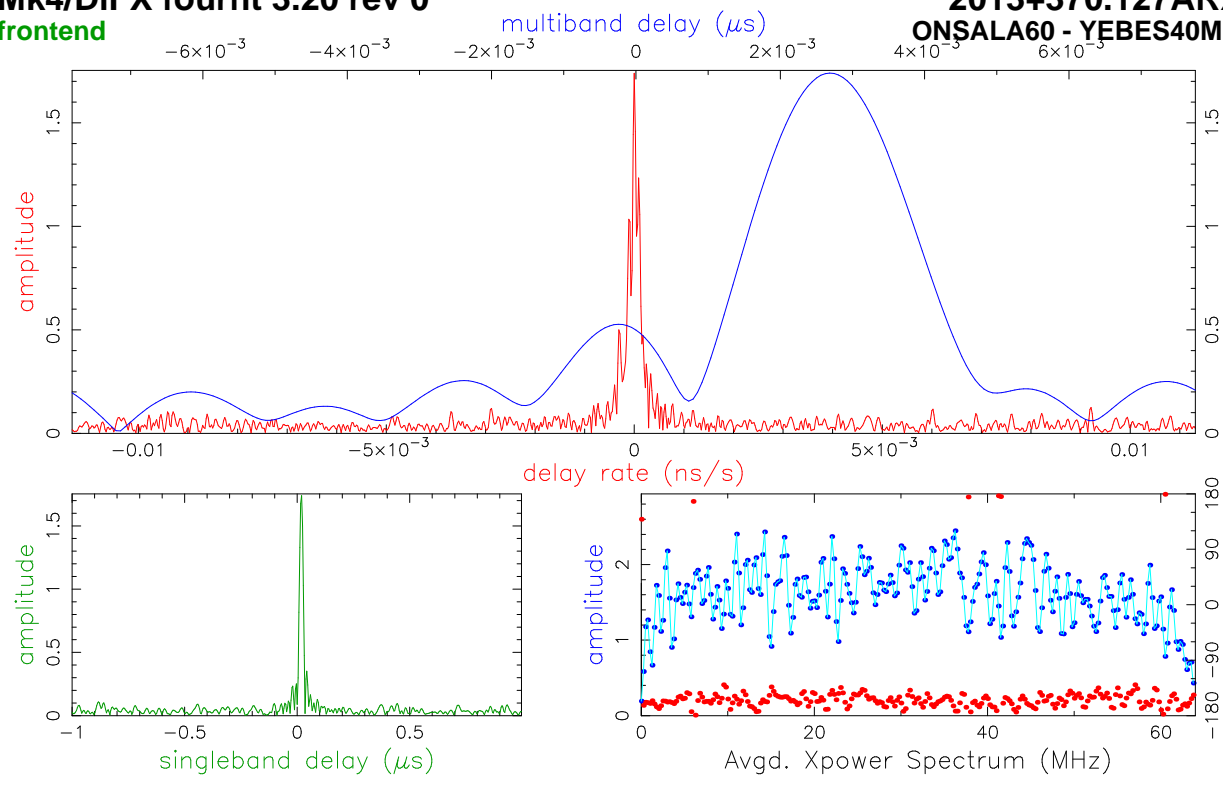
Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-67.4	-29.8	-43.0	-41.8	-41.4	-9.9	-39.6	-90.5	Phase	-43.5
	0.5	0.6	0.6	0.6	0.5	0.4	0.2	0.3	Ampl.	0.4
	257.2	257.0	257.0	257.5	257.6	256.3	246.9	254.9	Sbd box	257.0
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
P:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
P	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-3.00031505293E+02		Apriori delay (usec)		-3.00031022043E+02		Resid mbdelay (usec)		-4.83250E-04	+/- 7.3E-05
Sband delay (usec)	-3.00031133293E+02		Apriori clock (usec)		-9.8332396E+00		Resid sbdelay (usec)		-1.11250E-04	+/- 5.8E-04
Phase delay (usec)	-3.00031023445E+02		Apriori clockrate (us/s)		-5.7299998E-07		Resid phdelay (usec)		-1.40259E-06	+/- 2.5E-07
Delay rate (us/s)	-4.13209215125E-02		Apriori rate (us/s)		-4.13209312183E-02		Resid rate (us/s)		9.70582E-09	+/- 2.7E-09
Total phase (deg)			Apriori accel (us/s/s)		-1.65695523738E-06		Resid phase (deg)		-43.5	+/- 7.7

	RMS	Theor.	Amplitude	0.425 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	45.4	18.6	Search (1024X32)	0.410	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	46.4	32.4	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
ph/frq (deg)	26.2	10.9	Inc. seg. avg.	0.548	Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	34.5	19.1	Inc. frq. avg.	0.443	Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

P: az 291.9 el 37.9 pa 68.5 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) 295.381 -431.252 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/PY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/PY.W.390.127ARX

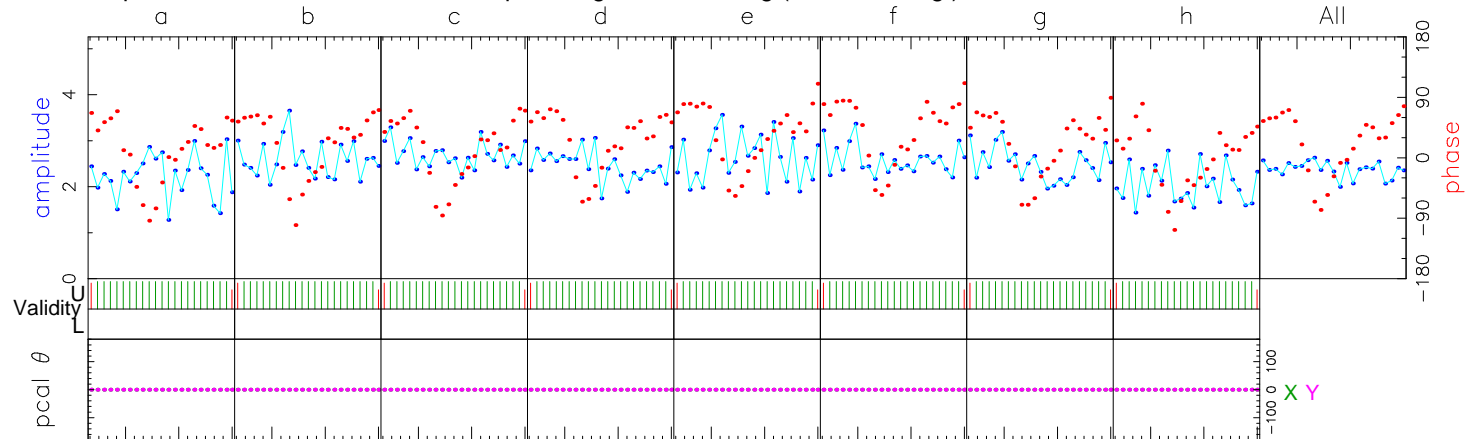


Fringe quality 5

SNR 61.1  
 Int time 162.240  
 Amp 1.753  
 Phase 26.0  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.018388  
 MBD 0.002658  
 Fringe rate (Hz)  
 -0.000182  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131758  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec

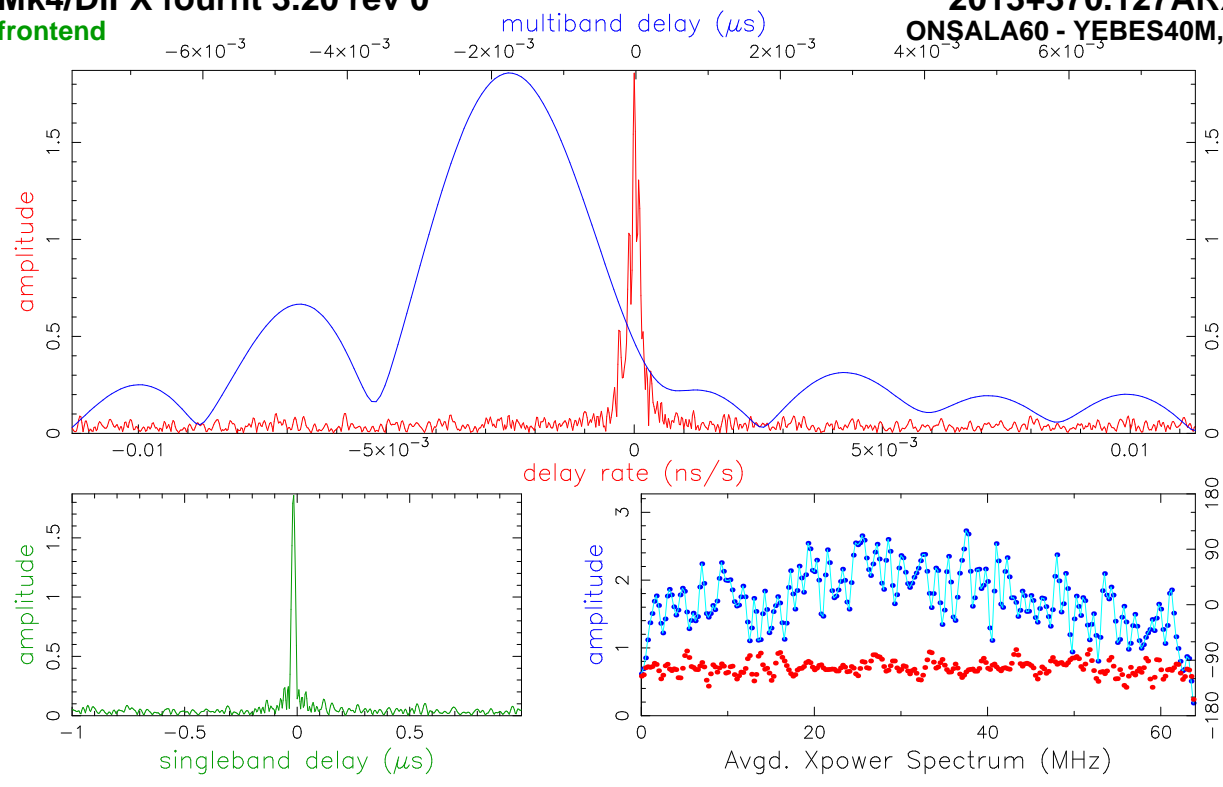


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	14.3	23.3	19.5	29.7	34.8	50.1	28.0	1.3	Phase	26.0
	1.5	1.8	1.9	1.9	1.9	1.9	1.8	1.5	Ampl.	1.8
	261.5	261.9	261.6	261.8	261.9	261.6	261.6	261.1	Sbd box	261.7
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-1.23741246087E+03		Apriori delay (usec)		-1.23743074344E+03		Resid mbdelay (usec)		2.65756E-03	+/- 1.8E-05
Sband delay (usec)	-1.23741235569E+03		Apriori clock (usec)		2.2731556E+01		Resid sbdelay (usec)		1.83877E-02	+/- 1.4E-04
Phase delay (usec)	-1.23743074260E+03		Apriori clockrate (us/s)		3.0800002E-07		Resid phdelay (usec)		8.39868E-07	+/- 6.1E-08
Delay rate (us/s)	2.07792774526E-01		Apriori rate (us/s)		2.07792776633E-01		Resid rate (us/s)		-2.10725E-09	+/- 6.4E-10
Total phase (deg)			Apriori accel (us/s/s)		1.98711955251E-05		Resid phase (deg)		26.0	+/- 1.9

ph/seg (deg) 44.6 4.5 Search (1024X32) 1.699 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 37.1 7.9 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 15.7 2.7 Inc. seg. avg. 2.374 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 9.4 4.6 Inc. frq. avg. 1.784 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 X: az 286.6 el 34.6 pa 40.4 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -1477.178 2555.945 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/XY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/XY.W.334.127ARX

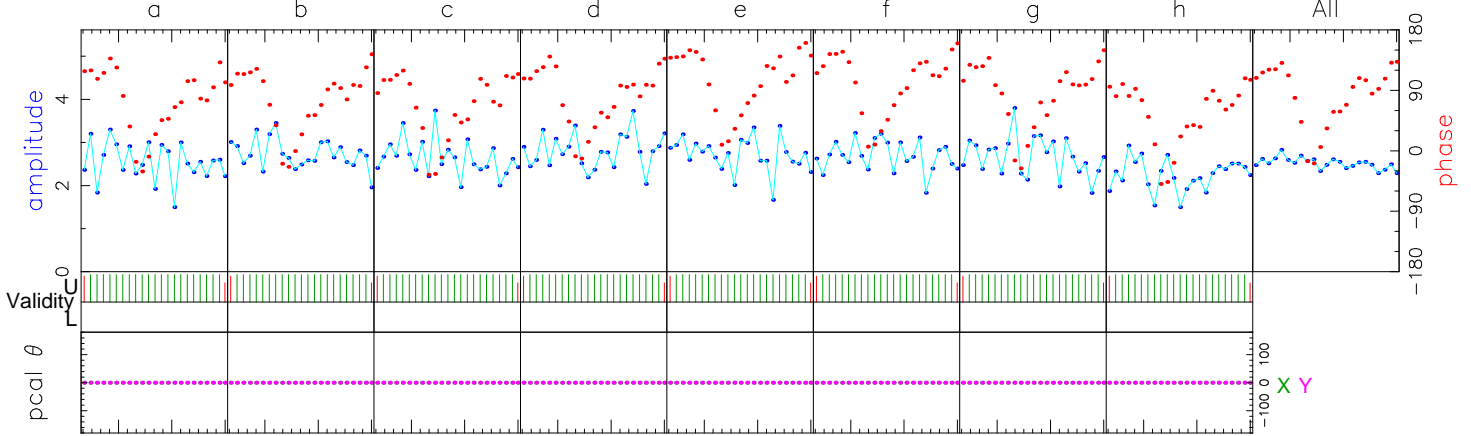
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.127ARX, No0065, XY  
ONŞALA60 - YEŞES40M, fgroup W, pol RR



Fringe quality 5  
SNR 65.2  
Int time 162.240  
Amp 1.871  
Phase 85.8  
PFD 0.0e+00  
Delays (us)  
SBD -0.016771  
MBD -0.001787  
Fringe rate (Hz)  
-0.000206  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131800  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'51.4664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec

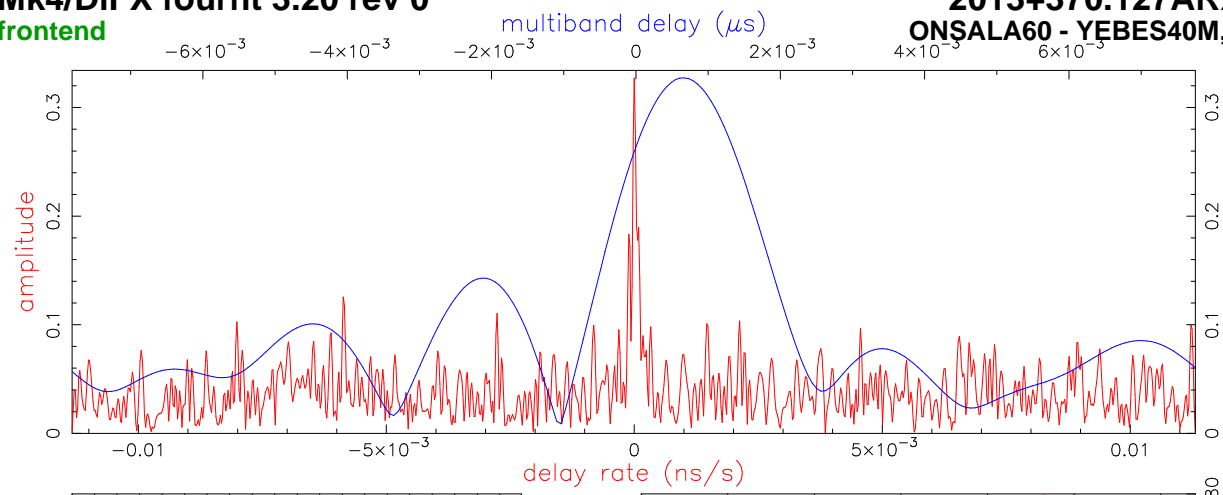


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
X	1000	1000	1000	1000	1000	1000	1000	1000	APs used	1000
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	1000
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	0:0
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	0:0
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	1000
Y	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

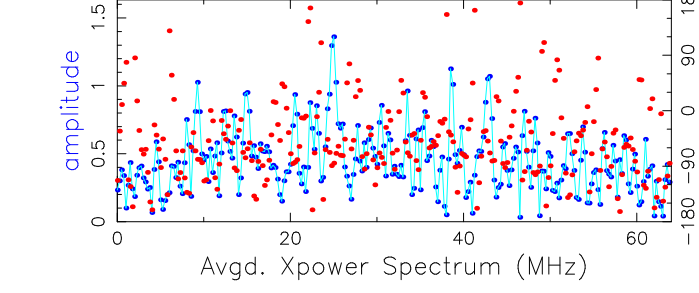
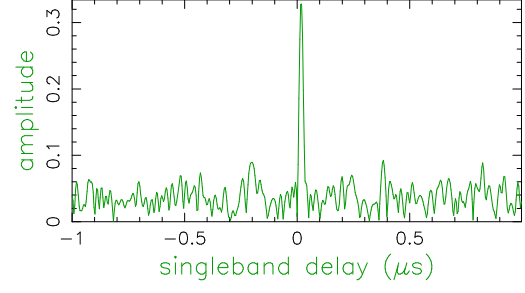
Group delay (usec)(sbd)	-1.23744815531E+03	Apriori delay (usec)	-1.23743074344E+03	Resid mbdelay (usec)	-1.78687E-03	+/-	1.7E-05
Sband delay (usec)	-1.23744751394E+03	Apriori clock (usec)	2.2731556E+01	Resid sbdelay (usec)	-1.67705E-02	+/-	1.3E-04
Phase delay (usec)	-1.23743074067E+03	Apriori clockrate (us/s)	3.0800002E-07	Resid phdelay (usec)	2.76668E-06	+/-	5.7E-08
Delay rate (us/s)	2.07792774243E-01	Apriori rate (us/s)	2.07792776633E-01	Resid rate (us/s)	-2.39067E-09	+/-	6.0E-10
Total phase (deg)	-0.5	Apriori accel (us/s/s)	1.98711955251E-05	Resid phase (deg)	85.8	+/-	1.8

ph/seg (deg)	44.9	RMS	4.2	Theor.	1.871 +/- 0.029	Amplitude	1.825	Search (1024X32)	1.825	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5	
amp/seg (%)	35.3	44.9	4.2	4.2	4.2	4.2	4.2	4.2	4.2	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000	
ph/frq (deg)	17.1	17.1	2.5	2.5	2.5	2.5	2.5	2.5	2.5	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	7.7	7.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3	Sample rate(MISamp/s):	128	dr window (ns/s)	-0.011 0.011	
										Data rate(Mb/s):	2048	ion window (TEC)	0.00 0.00	

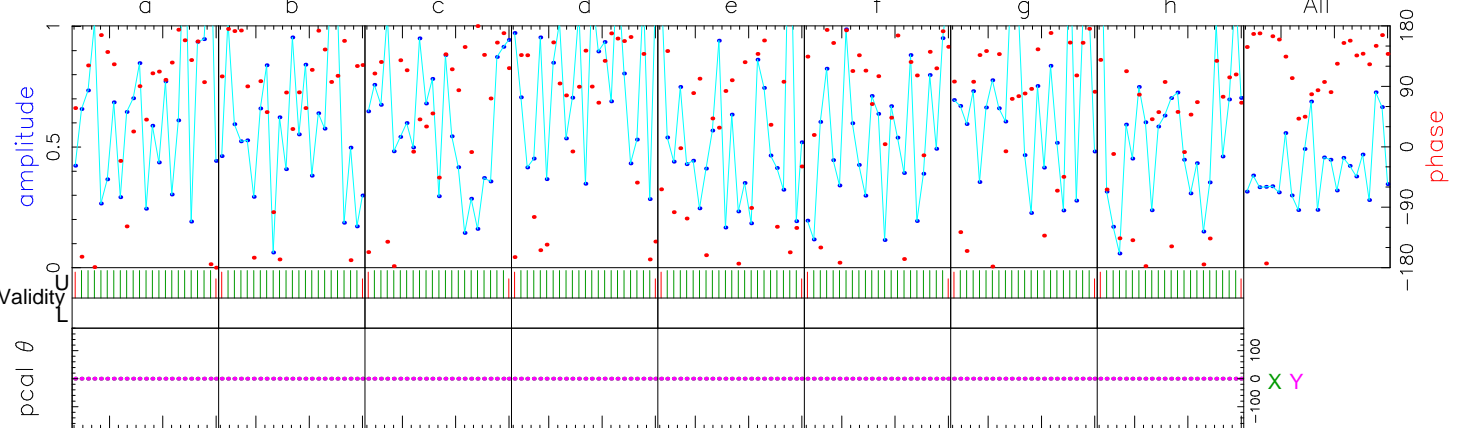
X: az 286.6 el 34.6 pa 40.4 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -1477.178 2555.945 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/XY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/XY.W.355.127ARX



Fringe quality 9  
 SNR 11.6  
 Int time 162.240  
 Amp 0.334  
 Phase 131.0  
 PFD 6.3e-23  
 Delays (us)  
 SBD 0.017630  
 MBD 0.000702  
 Fringe rate (Hz) 0.000402  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131803  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	140.4	116.5	121.3	142.6	151.7	140.5	137.5	104.3	Phase	131.0
X	0.4	0.4	0.3	0.4	0.1	0.4	0.4	0.3	Ampl.	0.3
Y	261.2	261.5	260.5	261.4	493.9	261.9	261.6	261.9	Sbd box	261.5
X:Y	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
X:Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
Group delay (usec)(sbd)	-1.23741441659E+03		Apriori delay (usec)		-1.23743074344E+03		Resid mbdelay (usec)		7.01844E-04	+/- 9.3E-05
Sband delay (usec)	-1.23741311344E+03		Apriori clock (usec)		2.2731556E+01		Resid sbdelay (usec)		1.76300E-02	+/- 7.4E-04
Phase delay (usec)	-1.23743073921E+03		Apriori clockrate (us/s)		3.0800002E-07		Resid phdelay (usec)		4.22395E-06	+/- 3.2E-07
Delay rate (us/s)	2.07792781304E-01		Apriori rate (us/s)		2.07792776633E-01		Resid rate (us/s)		4.67081E-09	+/- 3.4E-09
Total phase (deg)	44.7		Apriori accel (us/s/s)		1.98711955251E-05		Resid phase (deg)		131.0	+/- 9.8

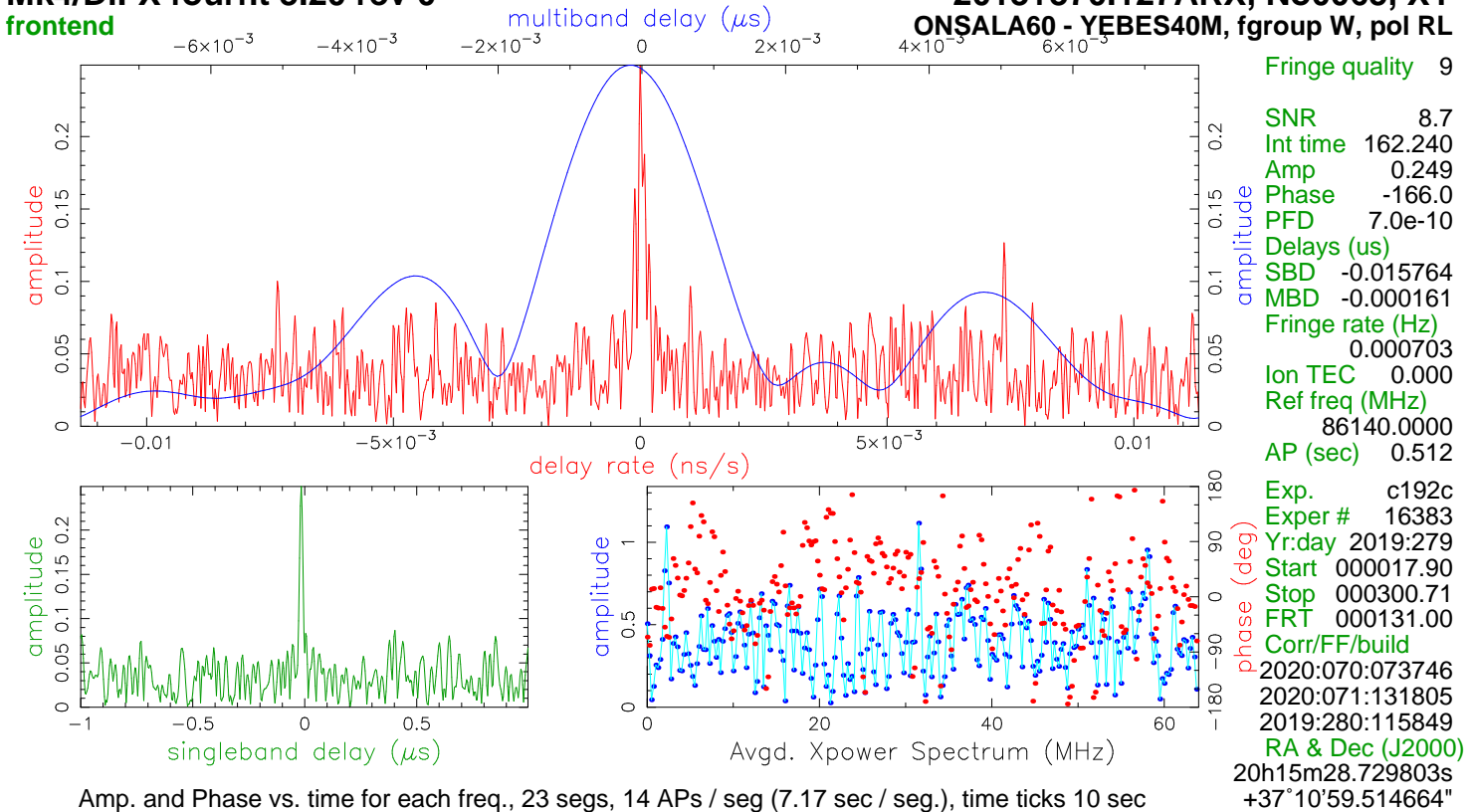
ph/seg (deg) 39.9 23.6 Search (1024X32) 0.320 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 47.1 41.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 17.3 13.9 Inc. seg. avg. 0.382 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 32.5 24.3 Inc. frq. avg. 0.327 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 X: az 286.6 el 34.6 pa 40.4 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -1477.178 2555.945 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/XY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/XY.W.375.127ARX

Mk4/DiFX fourfit 3.20 rev 0

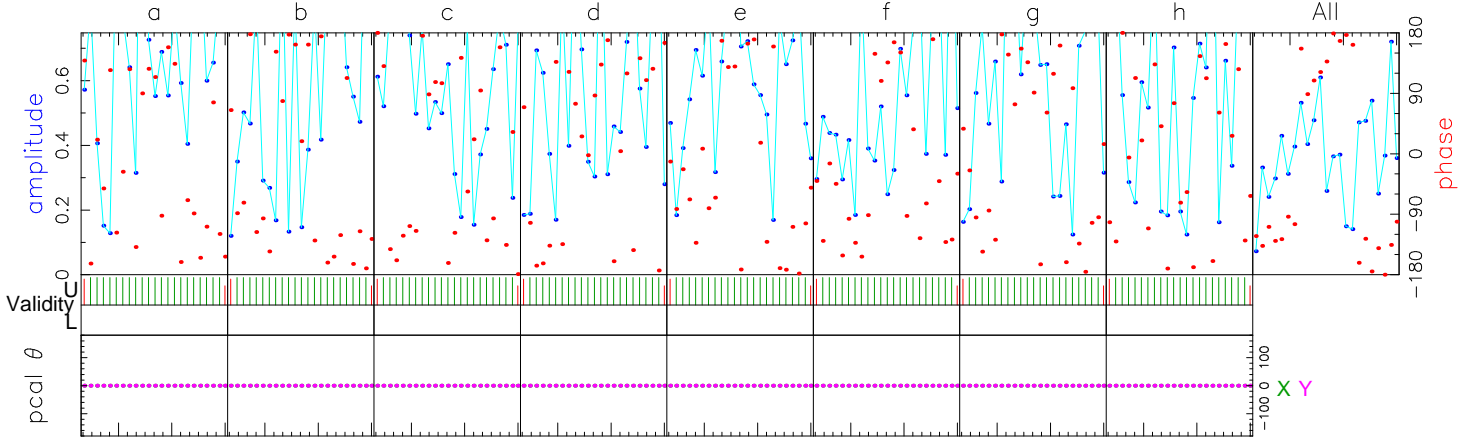
frontend

2013+370.127ARX, No0065, XY

ONŞALA60 - YEŞES40M, fgroup W, pol RL



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-171.7	-157.2	-158.6	152.8	-155.7	-123.1	-179.3	-172.5	Phase	-166.0
	0.2	0.4	0.3	0.3	0.2	0.2	0.2	0.2	Ampl.	0.3
	251.7	252.0	253.0	446.8	215.8	30.2	221.1	117.7	Sbd box	253.0
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-1.23744652937E+03		Apriori delay (usec)	-1.23743074344E+03	Resid mbdelay (usec)	-1.60938E-04	+/-	1.2E-04		
Sband delay (usec)	-1.23744650694E+03		Apriori clock (usec)	2.2731556E+01	Resid sbdelay (usec)	-1.57635E-02	+/-	9.9E-04		
Phase delay (usec)	-1.23743074879E+03		Apriori clockrate (us/s)	3.0800002E-07	Resid phdelay (usec)	-5.35220E-06	+/-	4.3E-07		
Delay rate (us/s)	2.07792784792E-01		Apriori rate (us/s)	2.07792776633E-01	Resid rate (us/s)	8.15833E-09	+/-	4.5E-09		
Total phase (deg)		-252.2	Apriori accel (us/s/s)	1.98711955251E-05	Resid phase (deg)	-166.0	+/-	13.2		

ph/seg (deg) 49.0 31.6 Search (1024X32) 0.241 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5

amp/seg (%) 78.2 55.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000

ph/frq (deg) 25.9 18.7 Inc. seg. avg. 0.324 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008

amp/frq (%) 21.9 32.6 Inc. frq. avg. 0.255 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011

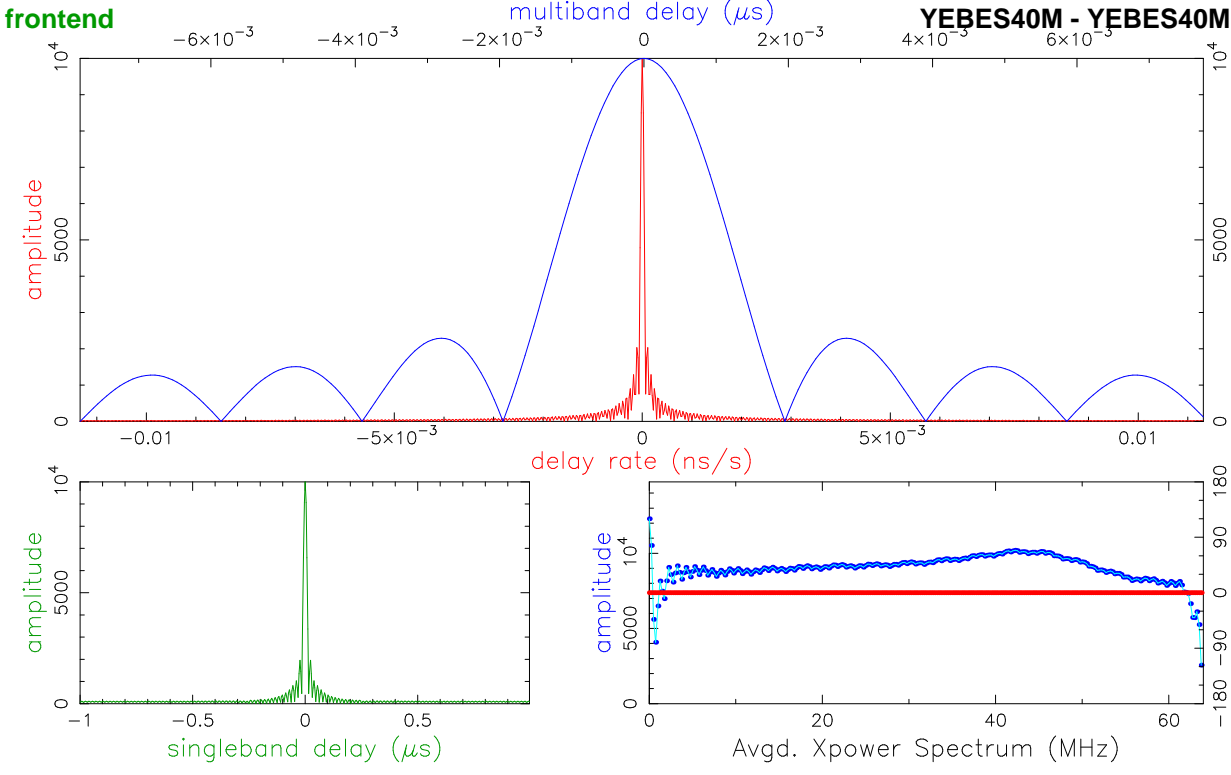
X: az 286.6 el 34.6 pa 40.4 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -1477.178 2555.945 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/XY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/XY.W.392.127ARX



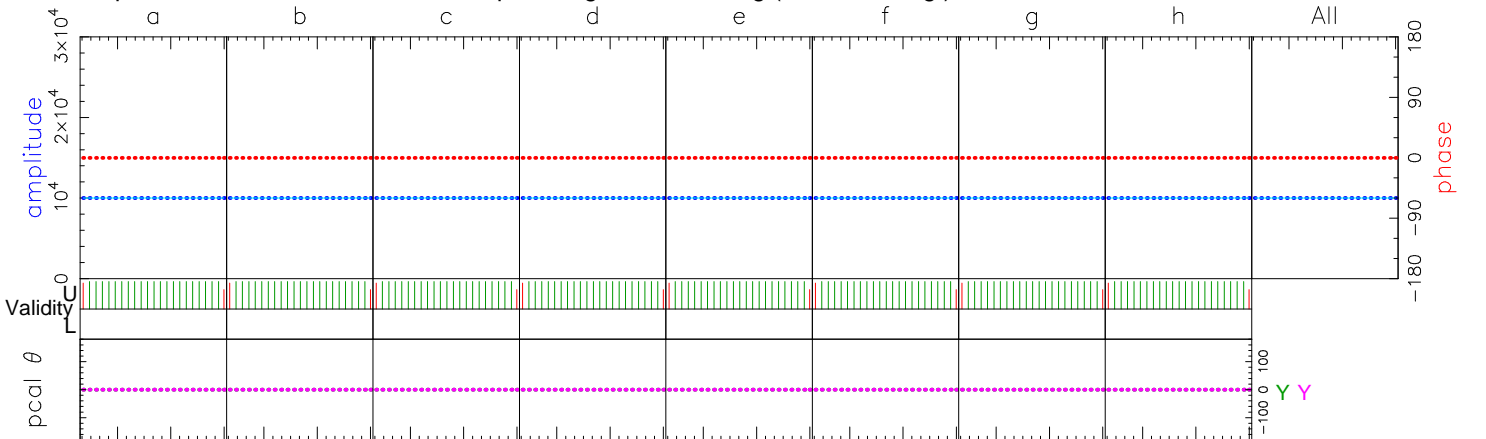
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.127ARX, No0065, YY  
YEBES40M - YEBES40M, fgroup W, pol LL



Fringe quality 9  
SNR 348387.4  
Int time 162.304  
Amp 10000.001  
Phase 0.0  
PFD 0.0e+00  
Delays (us)  
SBD 0.000000  
MBD 0.000000  
Fringe rate (Hz) 0.000000  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131758  
2019:280:115849  
RA & Dec (J2000) 20h15m28.729803s +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	Phase	0.0
	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0	Ampl.	10000.0
	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	Sbd box	257.0
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC phase	
Y:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
Y:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000	Chan ids	
Y	1000	1000	1000	1000	1000	1000	1000	1000	Tracks	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

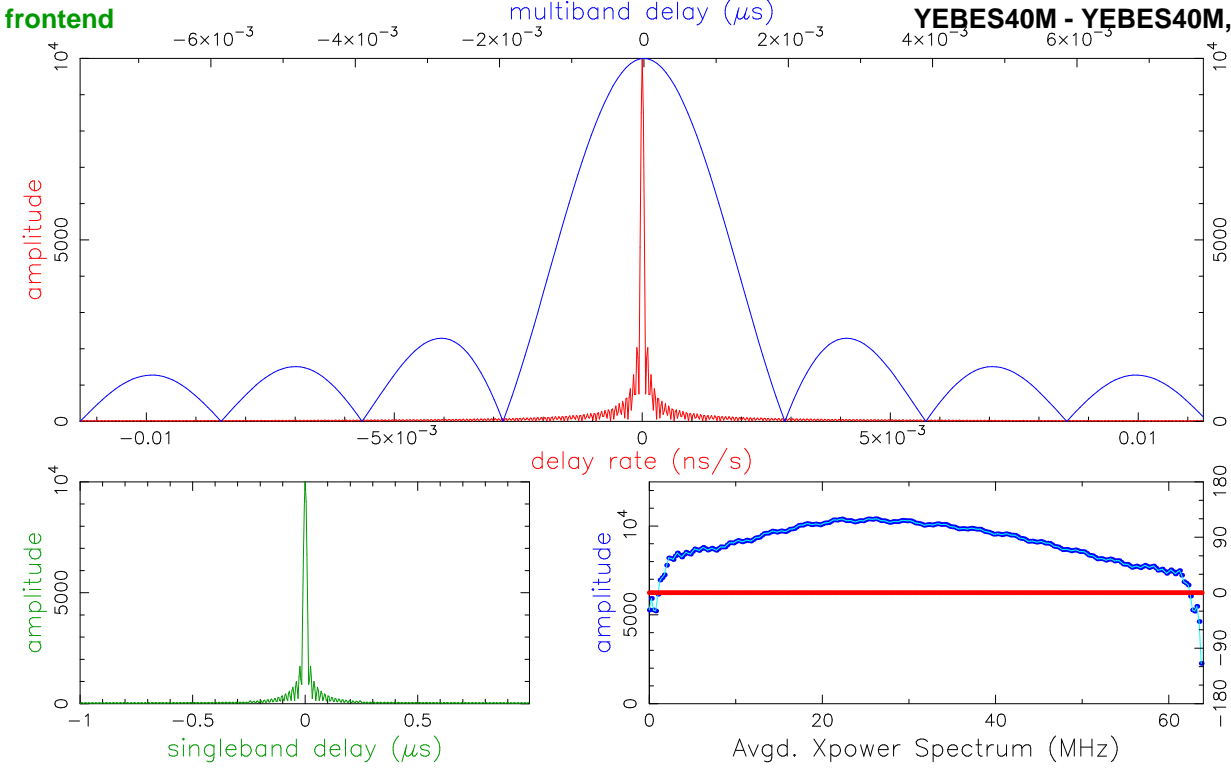
Group delay (usec)(sbd) 0.0000000000E+00 Apriori delay (usec) 0.0000000000E+00 Resid mbdelay (usec) 0.00000E+00 +/- 3.1E-09  
 Sband delay (usec) 0.0000000000E+00 Apriori clock (usec) 0.0000000E+00 Resid sbdelay (usec) 0.00000E+00 +/- 2.5E-08  
 Phase delay (usec) 8.20633305404E-20 Apriori clockrate (us/s) 0.0000000E+00 Resid phdelay (usec) 8.20633E-20 +/- 1.1E-11  
 Delay rate (us/s) 0.0000000000E+00 Apriori rate (us/s) 0.0000000000E+00 Resid rate (us/s) 0.00000E+00 +/- 1.1E-13  
 Total phase (deg) 0.0 Apriori accel (us/s/s) 0.0000000000E+00 Resid phase (deg) 0.0 +/- 0.0

RMS Theor. Amplitude 10000.001 +/- 0.029 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 0.0 0.0 Search (1024X32) 10000.001 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 0.0 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 0.0 0.0 Inc. seg. avg. 10000.000 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 0.0 0.0 Inc. frq. avg. 10000.001 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

Y: az 289.5 el 38.9 pa 64.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/YY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/YY.W.340.127ARX

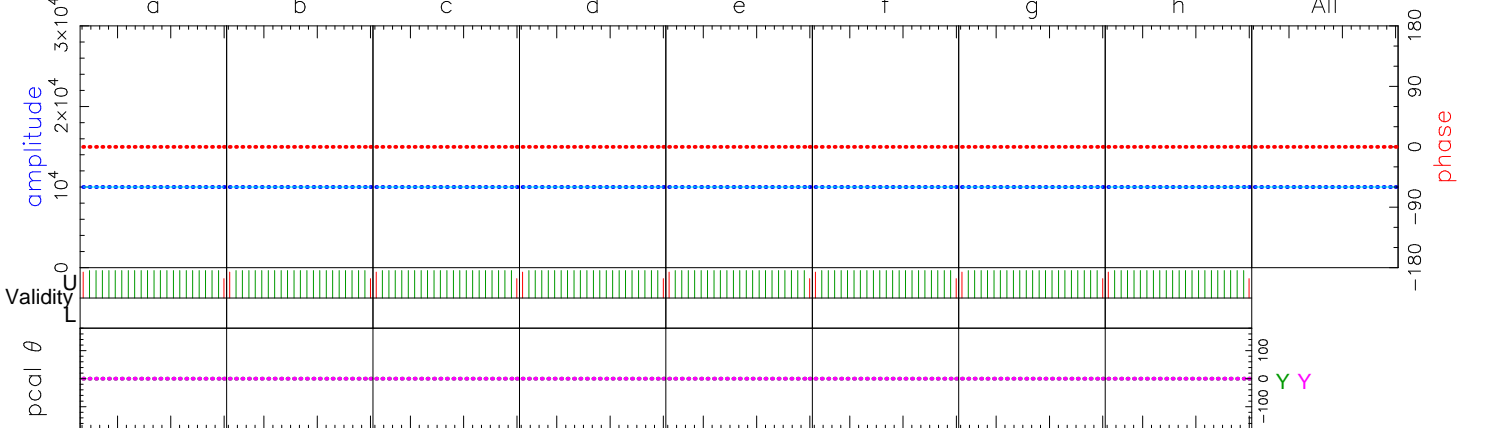
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.127ARX, No0065, YY  
YEBES40M - YEBES40M, fgroup W, pol RR



Fringe quality 9  
SNR 348387.4  
Int time 162.304  
Amp 10000.001  
Phase -0.0  
PFD 0.0e+00  
Delays (us)  
SBD 0.000000  
MBD 0.000000  
Fringe rate (Hz) 0.000000  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 000017.90  
Stop 000300.71  
FRT 000131.00  
Corr/FF/build  
2020:070:073746  
2020:071:131800  
2019:280:115849  
RA & Dec (J2000) 20h15m28.729803s +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
Y:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
Y:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		

Group delay (usec)(sbd) 0.0000000000E+00 Apriori delay (usec) 0.0000000000E+00 Resid mbdelay (usec) 0.00000E+00 +/- 3.1E-09  
Sband delay (usec) 0.0000000000E+00 Apriori clock (usec) 0.0000000E+00 Resid sbdelay (usec) 0.00000E+00 +/- 2.5E-08  
Phase delay (usec) -1.94394650862E-20 Apriori clockrate (us/s) 0.0000000E+00 Resid phdelay (usec) -1.94395E-20 +/- 1.1E-11  
Delay rate (us/s) 0.0000000000E+00 Apriori rate (us/s) 0.0000000000E+00 Resid rate (us/s) 0.00000E+00 +/- 1.1E-13  
Total phase (deg) -0.0 Apriori accel (us/s/s) 0.0000000000E+00 Resid phase (deg) -0.0 +/- 0.0

ph/seg (deg) 0.0 0.0 RMS Theor. Amplitude 10000.001 +/- 0.029 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 0.0 0.0 Search (1024X32) 10000.001 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 0.0 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 0.0 0.0 Inc. seg. avg. 10000.000 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
amp/frq (%) 0.0 0.0 Inc. frq. avg. 10000.001 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

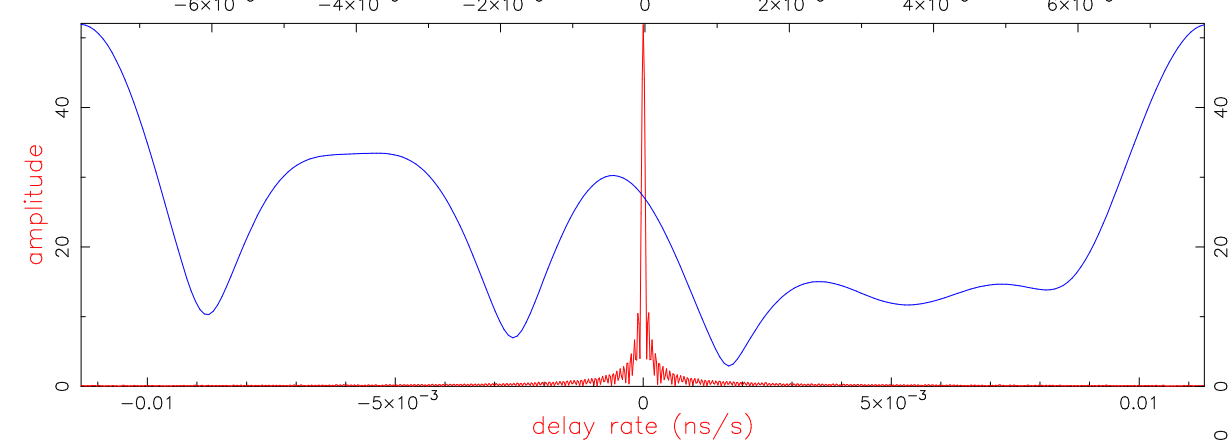
Y: az 289.5 el 38.9 pa 64.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/YY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/YY.W.358.127ARX

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, YY

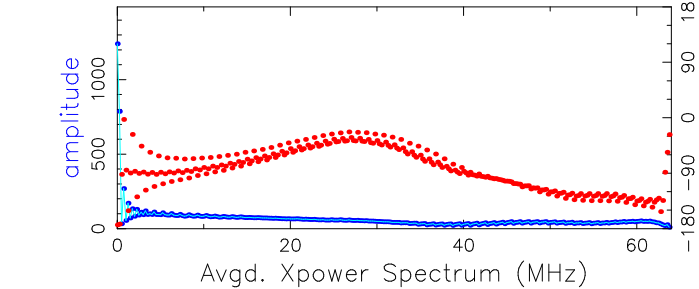
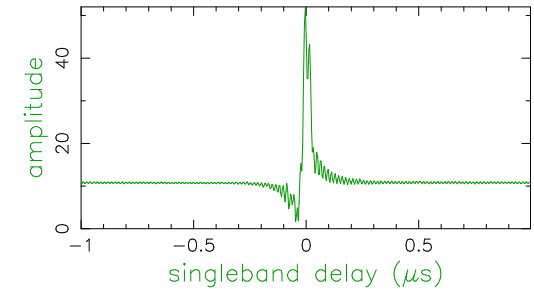
YEBES40M - YEBES40M, fgroup W, pol LR



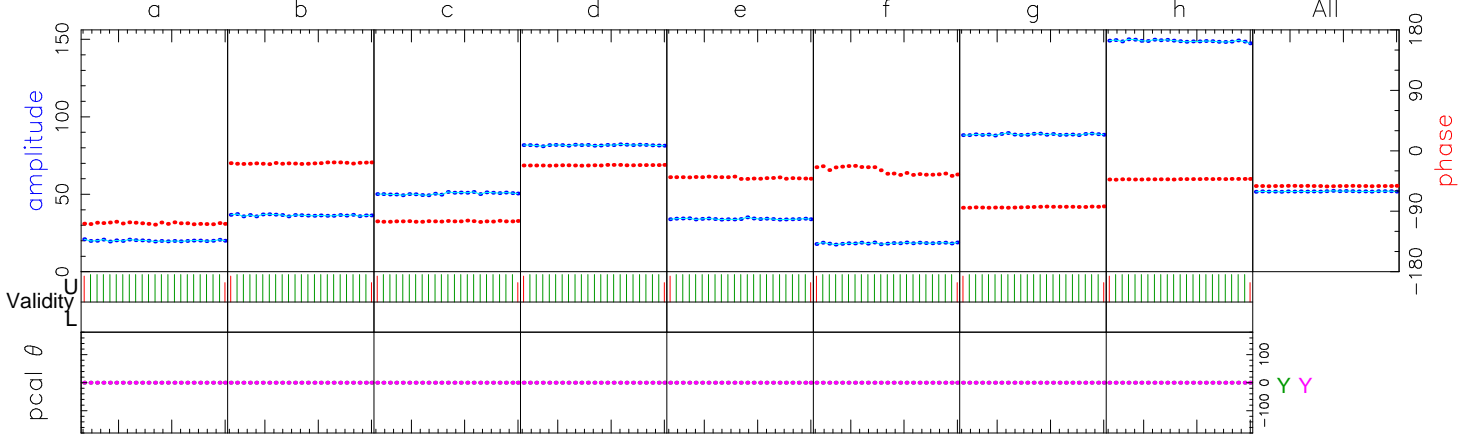
Fringe quality 5

SNR 1813.8  
 Int time 162.304  
 Amp 52.062  
 Phase -52.4  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.004610  
 MBD -0.007871  
 Fringe rate (Hz)  
 -0.000014  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131803  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-107.9	-18.6	-105.0	-21.6	-40.1	-30.0	-83.8	-42.3	Phase	-52.4
	20.1	36.4	50.4	81.7	34.1	18.3	88.6	149.9	Ampl.	59.8
	251.9	257.1	254.9	256.6	254.8	260.9	251.6	259.8	Sbd box	255.8
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Y:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	-7.87106250000E-03		Apriori delay (usec)		0.00000000000E+00		Resid mbdelay (usec)		-7.87106E-03	+/- 6.0E-07
Sband delay (usec)	-4.61000000000E-03		Apriori clock (usec)		0.0000000E+00		Resid sbdelay (usec)		-4.61000E-03	+/- 4.7E-06
Phase delay (usec)	-1.69106366615E-06		Apriori clockrate (us/s)		0.0000000E+00		Resid phdelay (usec)		-1.69106E-06	+/- 2.0E-09
Delay rate (us/s)	-1.65802482983E-10		Apriori rate (us/s)		0.00000000000E+00		Resid rate (us/s)		-1.65802E-10	+/- 2.2E-11
Total phase (deg)			Apriori accel (us/s/s)		0.00000000000E+00		Resid phase (deg)		-52.4	+/- 0.1

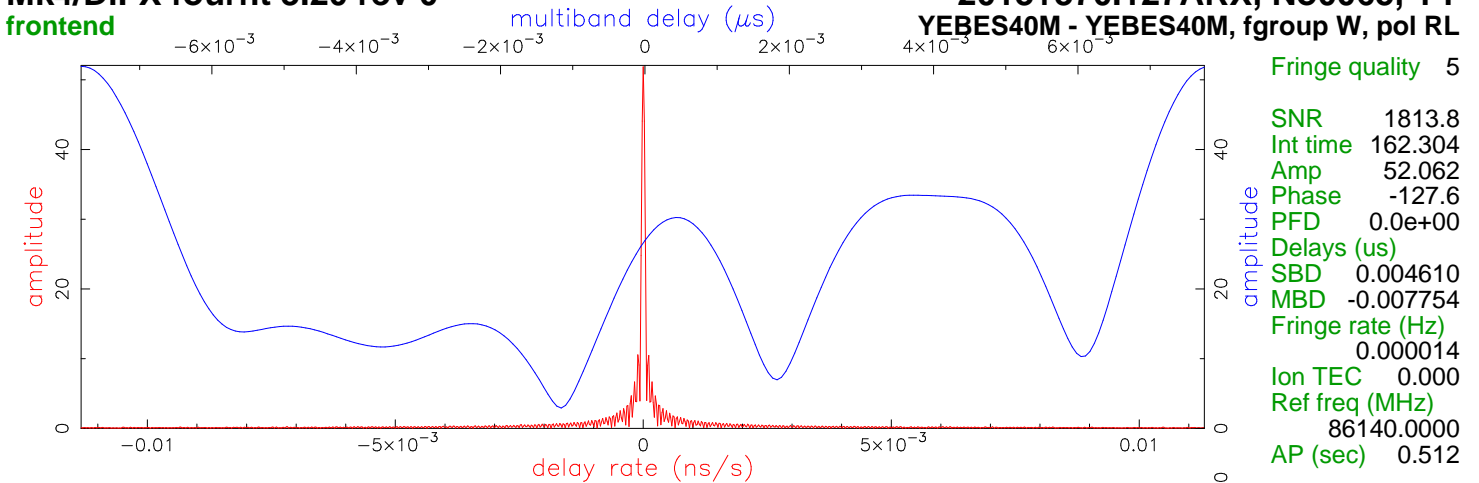
ph/seg (deg) 0.2 0.2 Search (1024X32) 51.917 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 0.5 0.3 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 40.2 0.1 Inc. seg. avg. 51.878 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 81.3 0.2 Inc. frq. avg. 59.837 Sample rate(MISamp/s): 128 Data rate (Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 Y: az 289.5 el 38.9 pa 64.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/YY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/YY.W.377.127ARX

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.127ARX, No0065, YY

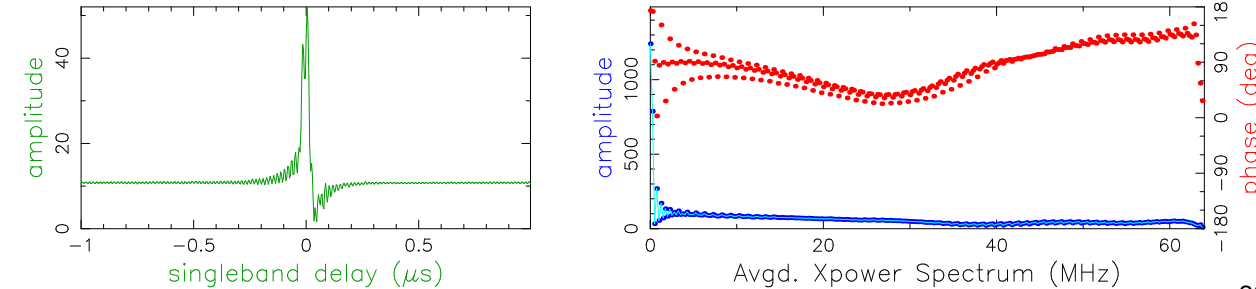
YEBES40M - YEBES40M, fgroup W, pol RL



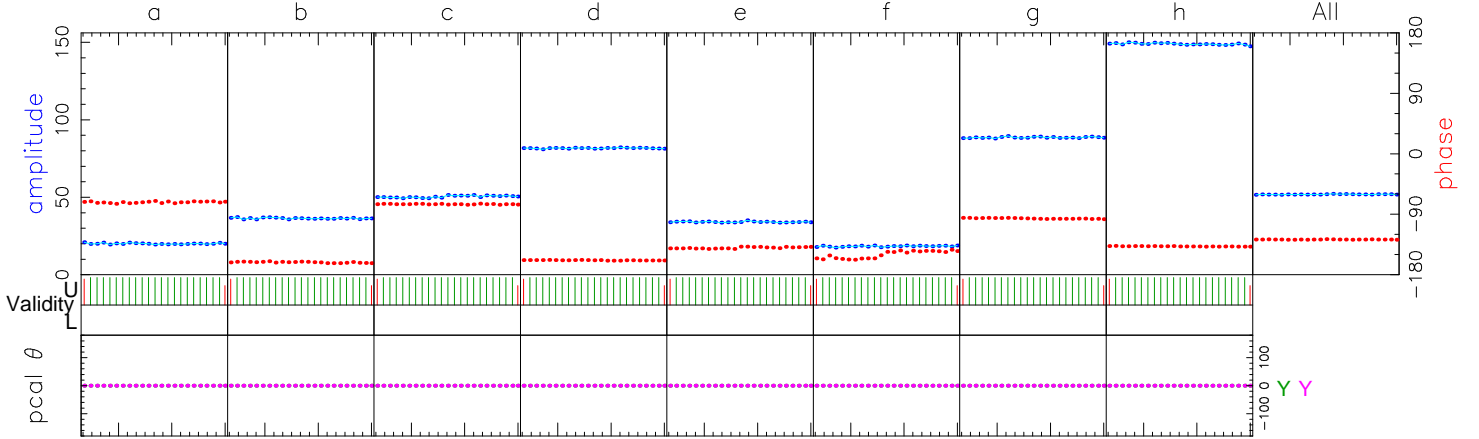
Fringe quality 5

SNR 1813.8  
 Int time 162.304  
 Amp 52.062  
 Phase -127.6  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.004610  
 MBD -0.007754  
 Fringe rate (Hz)  
 0.000014  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131805  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-72.1	-161.4	-75.0	-158.4	-139.9	-150.0	-96.2	-137.7	Phase	-127.6
	20.1	36.4	50.4	81.7	34.1	18.3	88.6	149.0	Ampl.	59.8
	262.1	256.9	259.1	257.4	259.2	253.1	262.4	254.2	Sbd box	258.2
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Y:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd) 7.87106250000E-03 Apriori delay (usec) 0.00000000000E+00 Resid mbdelay (usec) -7.75394E-03 +/- 6.0E-07  
 Sband delay (usec) 4.61000000000E-03 Apriori clock (usec) 0.0000000E+00 Resid sbdelay (usec) 4.61000E-03 +/- 4.7E-06  
 Phase delay (usec) -4.11344062996E-06 Apriori clockrate (us/s) 0.0000000E+00 Resid phdelay (usec) -4.11344E-06 +/- 2.0E-09  
 Delay rate (us/s) 1.65802482983E-10 Apriori rate (us/s) 0.00000000000E+00 Resid rate (us/s) 1.65802E-10 +/- 2.2E-11  
 Total phase (deg) -127.6 Apriori accel (us/s/s) 0.00000000000E+00 Resid phase (deg) -127.6 +/- 0.1

RMS Theor. Amplitude 52.062 +/- 0.029 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 0.2 0.2 Search (1024X32) 51.917 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 0.5 0.3 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 40.2 0.1 Inc. seg. avg. 51.878 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 81.3 0.2 Inc. frq. avg. 59.837 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

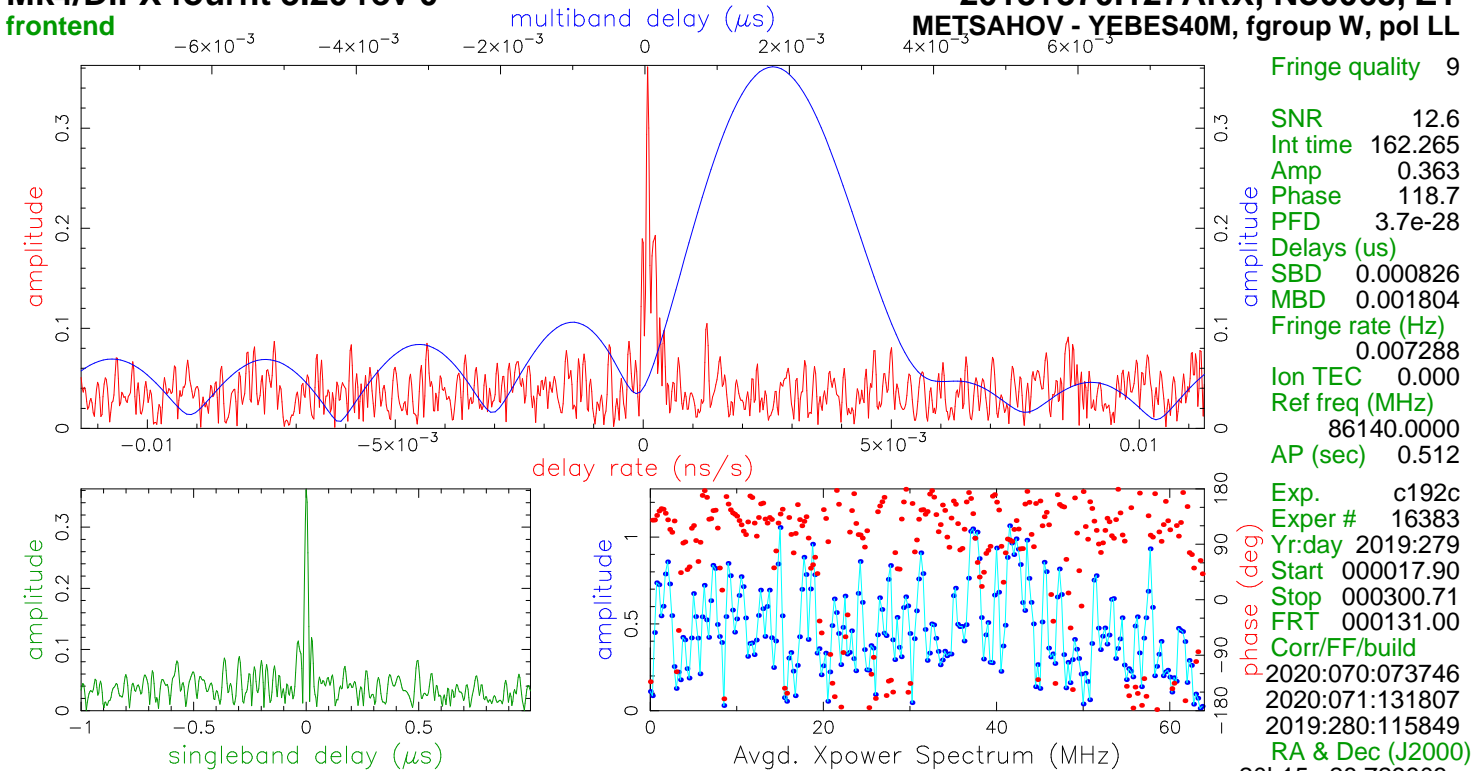
Y: az 289.5 el 38.9 pa 64.1 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/YY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/YY.W.393.127ARX

Mk4/DiFX fourfit 3.20 rev 0

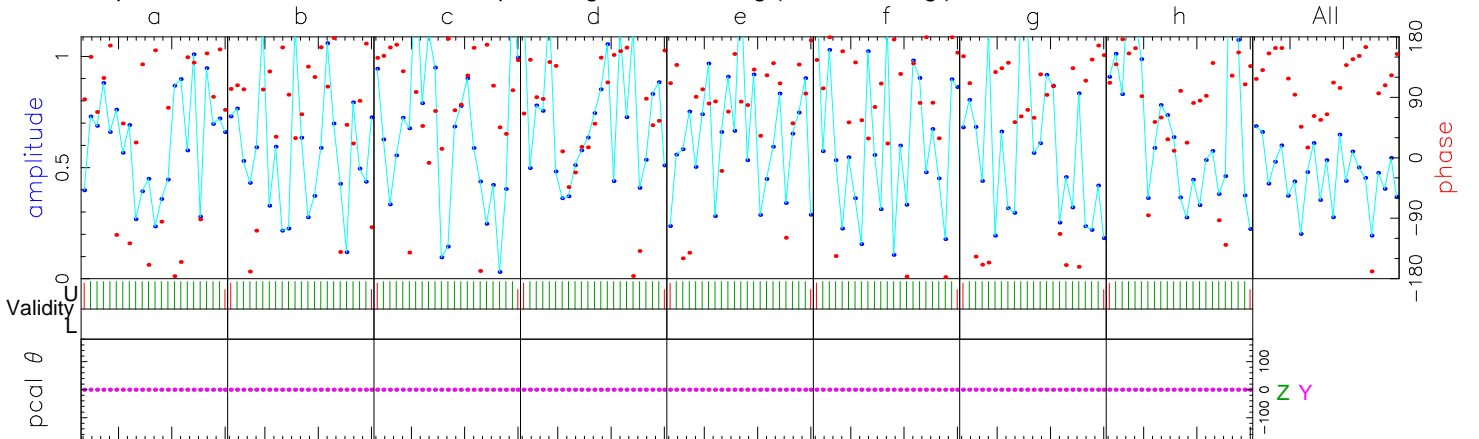
frontend

2013+370.127ARX, No0065, ZY

METSAHOV - YEBES40M, fgroup W, pol LL



Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



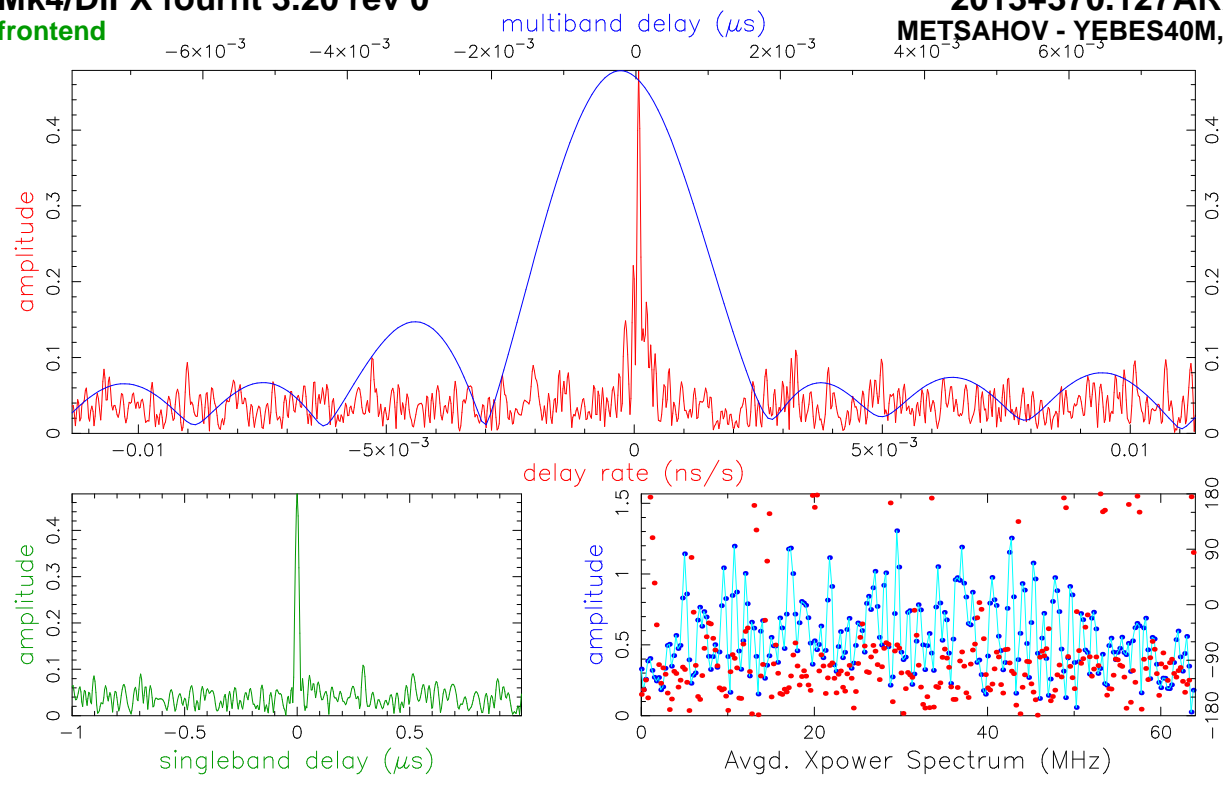
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	150.6	107.2	111.6	106.1	107.8	119.1	130.7	120.2	Phase	118.7
	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.4	Ampl.	0.4
	258.2	257.6	256.7	256.8	257.6	256.8	300.4	257.1	Sbd box	257.2
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Z:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
Z	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-2.86364224643E+03	Apriori delay (usec)	-2.86364405066E+03	Resid mbdelay (usec)	1.80423E-03	+/-	8.6E-05
Sband delay (usec)	-2.86364322491E+03	Apriori clock (usec)	-9.4989796E+00	Resid sbdelay (usec)	8.25750E-04	+/-	6.8E-04
Phase delay (usec)	-2.86364404683E+03	Apriori clockrate (us/s)	-2.0370720E-07	Resid phdelay (usec)	3.82663E-06	+/-	2.9E-07
Delay rate (us/s)	2.56744559048E-01	Apriori rate (us/s)	2.56744474440E-01	Resid rate (us/s)	8.46074E-08	+/-	3.1E-09
Total phase (deg)	-70.0	Apriori accel (us/s/s)	3.00950889333E-05	Resid phase (deg)	118.7	+/-	9.1

ph/seg (deg)	43.8	Theor.	21.7	Amplitude	0.363 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	46.8		38.0	Search (1024X32)	0.354	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
ph/frq (deg)	16.4		12.8	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
amp/frq (%)	12.8		22.4	Inc. seg. avg.	0.437	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
				Inc. frq. avg.	0.363	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite		

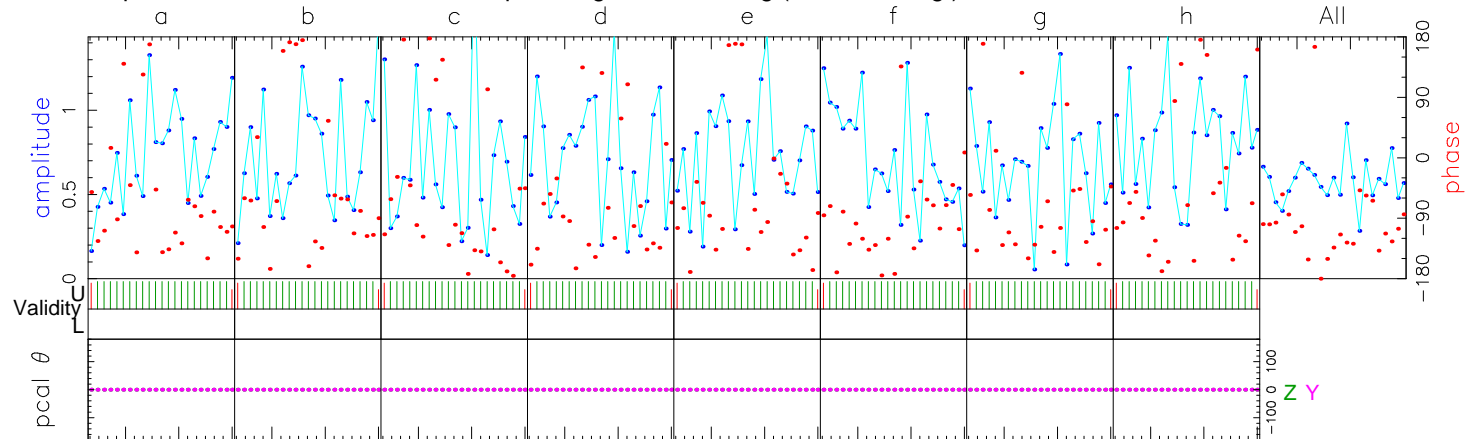
Z: az 294.2 el 29.5 pa 34.7 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -1821.212 3349.164 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/ZY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/ZY.W.399.127ARX



Fringe quality 9  
 SNR 16.7  
 Int time 162.265  
 Amp 0.479  
 Phase -113.8  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.000385  
 MBD -0.000226  
 Fringe rate (Hz) 0.007185  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131809  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-109.2	-112.0	-129.8	-118.9	-108.9	-105.9	-106.2	-121.6	Phase	-113.8
	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	Ampl.	0.5
	256.2	256.8	256.7	257.2	257.0	256.9	257.2	256.3	Sbd box	256.9
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Z:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
Z	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-2.86364427696E+03		Apriori delay (usec)		-2.86364405066E+03		Resid mbdelay (usec)		-2.26298E-04	+/- 6.5E-05
Sband delay (usec)	-2.86364443591E+03		Apriori clock (usec)		-9.4989796E+00		Resid sbdelay (usec)		-3.85250E-04	+/- 5.2E-04
Phase delay (usec)	-2.86364405433E+03		Apriori clockrate (us/s)		-2.0370720E-07		Resid phdelay (usec)		-3.66943E-06	+/- 2.2E-07
Delay rate (us/s)	2.56744557846E-01		Apriori rate (us/s)		2.56744474440E-01		Resid rate (us/s)		8.34057E-08	+/- 2.4E-09
Total phase (deg)			Apriori accel (us/s/s)		3.00950889333E-05		Resid phase (deg)		-113.8	+/- 6.9

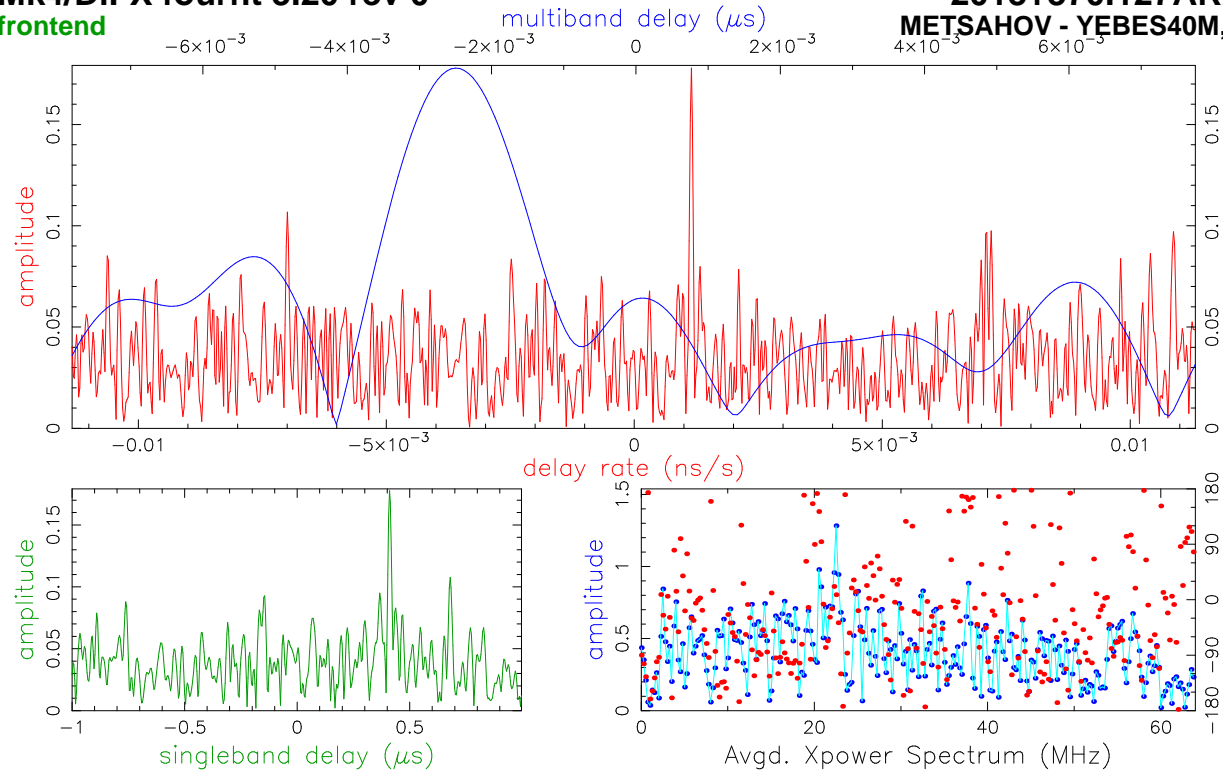
ph/seg (deg) 37.1 16.5 Search (1024X32) 0.466 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 34.0 28.8 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 9.2 9.7 Inc. seg. avg. 0.556 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 6.8 17.0 Inc. frq. avg. 0.476 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 Z: az 294.2 el 29.5 pa 34.7 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -1821.212 3349.164 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/ZY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/ZY.W.404.127ARX

Mk4/DiFX fourfit 3.20 rev 0

frontend

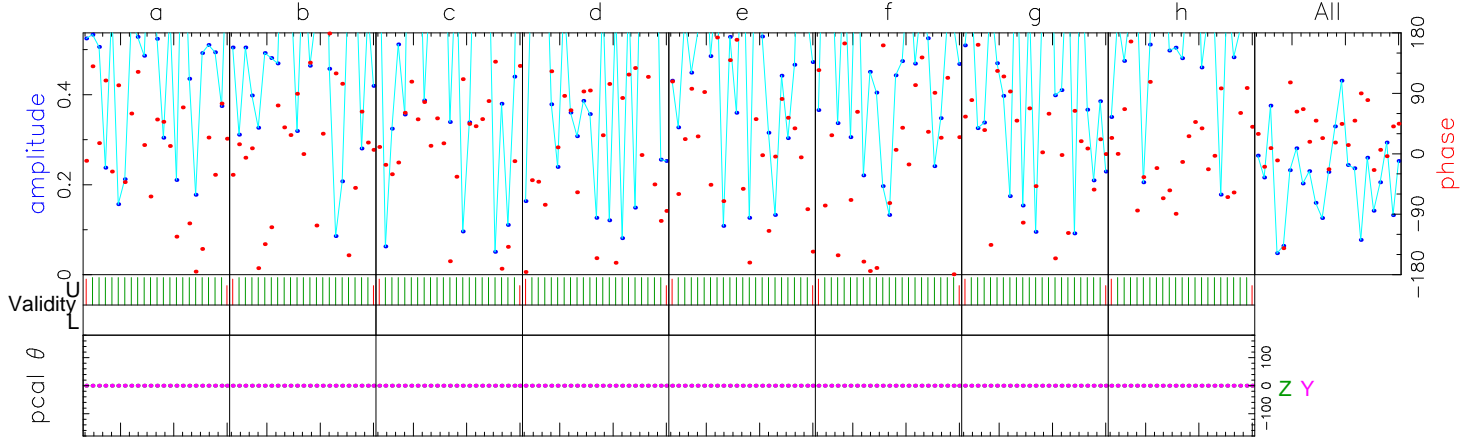
2013+370.127ARX, No0065, ZY

METSAHOV - YEBES40M, fgroup W, pol LR



Fringe quality 0  
 SNR 6.2  
 Int time 162.265  
 Amp 0.179  
 Phase 29.6  
 PFD 6.7e-02  
 Delays (us)  
 SBD 0.410908  
 MBD -0.002467  
 Fringe rate (Hz)  
 0.099887  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131811  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All	
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0			
Z	1000	1000	1000	1000	1000	1000	1000	1000			
Y	1000	1000	1000	1000	1000	1000	1000	1000			
Z:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0			
Z:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0			
Z	1000	1000	1000	1000	1000	1000	1000	1000			
Y	1000	1000	1000	1000	1000	1000	1000	1000			
Z	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL			
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR			
Group delay (usec)(sbd)	-2.86324026725E+03				-2.86364405066E+03				Resid mbdelay (usec)	-2.46659E-03	+/- 1.7E-04
Sband delay (usec)	-2.86323314291E+03				-9.4989796E+00				Resid sbdelay (usec)	4.10908E-01	+/- 1.4E-03
Phase delay (usec)	-2.86364404971E+03				-2.0370720E-07				Resid phdelay (usec)	9.54025E-07	+/- 5.9E-07
Delay rate (us/s)	2.56745634034E-01				2.56744474440E-01				Resid rate (us/s)	1.15959E-06	+/- 6.3E-09
Total phase (deg)			-159.0		3.00950889333E-05				Resid phase (deg)	29.6	+/- 18.4

	RMS	Theor.	Amplitude	0.179 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5				
ph/seg (deg)	50.2	44.2	Search (1024X32)	0.172	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000	1.000		
amp/seg (%)	56.8	77.2	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	30.3	26.1	Inc. seg. avg.	0.169	Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011	0.011	
amp/frq (%)	44.8	45.5	Inc. frq. avg.	0.175	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

Z: az 294.2 el 29.5 pa 34.7 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -1821.212 3349.164 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/ZY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/ZY.W.409.127ARX

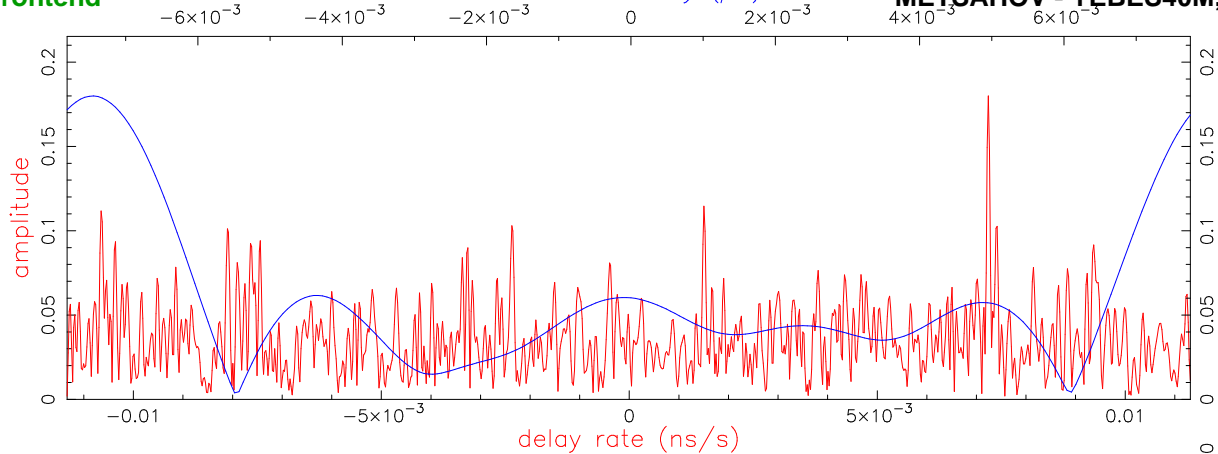
# Mk4/DiFX fourfit 3.20 rev 0

frontend

# 2013+370.127ARX, No0065, ZY

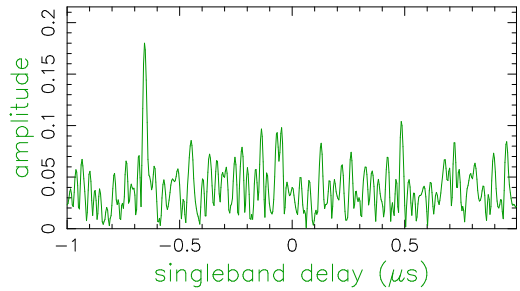
METSAHOV - YEBES40M, fgroup W, pol RL

multiband delay ( $\mu$ s)

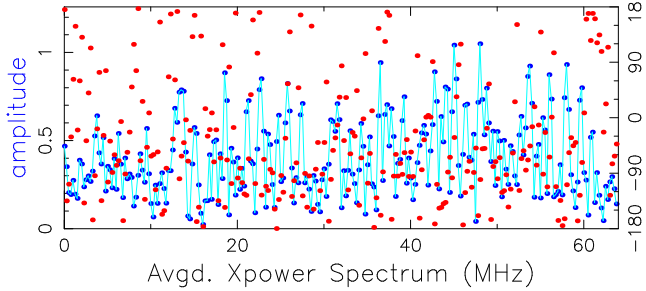


Fringe quality 0

SNR 6.3  
 Int time 162.265  
 Amp 0.215  
 Phase 9.8  
 PFD 4.0e-02  
 Delays (us)  
 SBD -0.655267  
 MBD -0.007451  
 Fringe rate (Hz)  
 0.625234  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

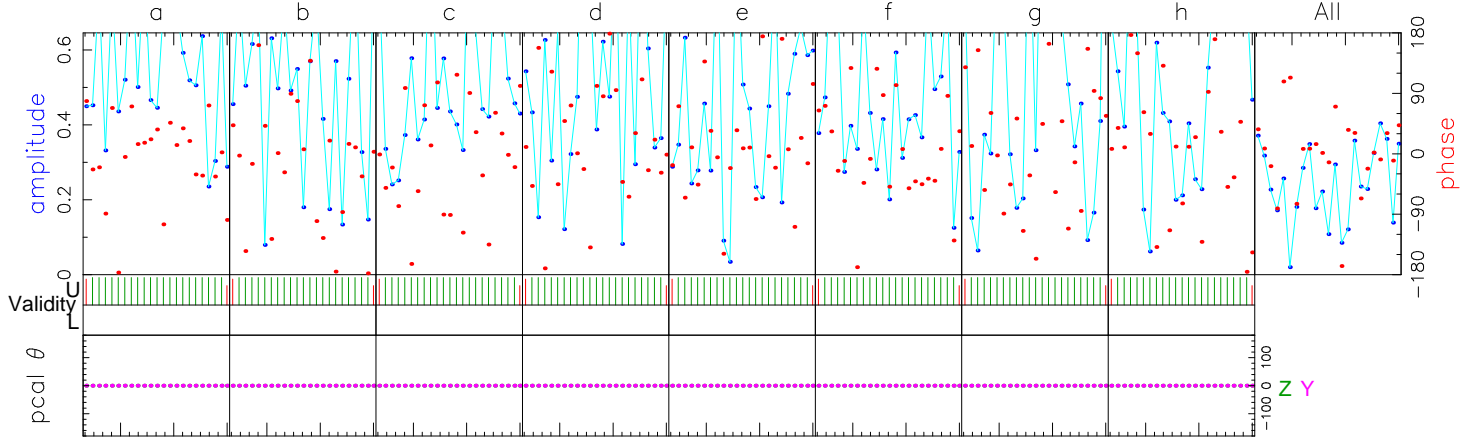


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 000017.90  
 Stop 000300.71  
 FRT 000131.00  
 Corr/FF/build  
 2020:070:073746  
 2020:071:131813  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 23 segs, 14 APs / seg (7.17 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	12.5	-8.0	20.6	17.7	0.3	10.1	3.6	52.8	Phase	9.8
	0.4	0.1	0.2	0.2	0.3	0.3	0.2	0.0	Ampl.	0.2
	242.1	32.9	466.0	69.4	166.3	110.6	245.2	9.0	Sbd box	89.3
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Z:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
Z	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-2.86429212693E+03	Apriori delay (usec)	-2.86364405066E+03	Resid mbdelay (usec)	-7.45127E-03	+/-	1.7E-04
Sband delay (usec)	-2.86429931741E+03	Apriori clock (usec)	-9.4989796E+00	Resid sbdelay (usec)	-6.55267E-01	+/-	1.4E-03
Phase delay (usec)	-2.86364405034E+03	Apriori clockrate (us/s)	-2.0370720E-07	Resid phdelay (usec)	3.16553E-07	+/-	5.9E-07
Delay rate (us/s)	2.56751732782E-01	Apriori rate (us/s)	2.56744474440E-01	Resid rate (us/s)	7.25834E-06	+/-	6.2E-09
Total phase (deg)	-178.8	Apriori accel (us/s/s)	3.00950889333E-05	Resid phase (deg)	9.8	+/-	18.2

ph/seg (deg)	60.4	RMS	43.6	Theor.	20.3	Amplitude	0.215 +/- 0.034	Pcal mode: MANUAL, MANUAL	PC period (AP's)	5, 5	
amp/seg (%)	65.9	60.4	43.6	Search (1024X32)	0.176	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000	
ph/frq (deg)	20.3	25.7	25.7	Inc. seg. avg.	0.223	Inc. frq. avg.	0.198	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	52.3	44.9	44.9	Inc. frq. avg.	0.198	Sample rate (MSamp/s):	128	Data rate (Mb/s):	2048	dr window (ns/s)	-0.011 0.011
						nlags:	256	t_cohere	infinite	ion window (TEC)	0.00 0.00

Z: az 294.2 el 29.5 pa 34.7 Y: az 289.5 el 38.9 pa 64.1 u,v (fr/asec) -1821.212 3349.164 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0065/ZY..127ARX Output file: /Exps/c192c/v1\_CygA2/1234/No0065/ZY.W.414.127ARX